**From:** Anderson, Eric (H.)
**Sent:** Friday, June 17, 2011 10:48 AM
**To:** Cassata, Joe (J.)
**Cc:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** 1FMHK7B81BG[redacted]

Hi Joe:

Please request this gear. I bet you already have. It should go to Eric Estes at WPAC as usual. TR-EE.

Laura and Eric,
The repairing tech is on vacation until 6/20, so I don't have the full story yet. There's only a U0131 on the claim, but the advisor said there were more codes. A new gear did fix the problem.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **16-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 570483

## Vehicle Information

| | |
|---|---|
| Model Year: | 2011 |
| Market Derived: | F - FORD |
| Body/Cab Type: | T/WD - 4 DOOR WAGON |
| Version/Series: | T/EF-FORD SERIES |
| Drive Type: | T/A-2 WHL L/H FRONT DRIVE |
| Vehicle Line: | T/UB-EXPLORER [11-12] |
| Warranty Start Date: | 27-APR-11 |
| Production Date: | 29-MAR-11 |

## Claim Information

| | |
|---|---|
| Document Number: | 07580203 |
| Repair Date: | 13-JUN-11 |
| Distance: | 1484 |
| TIS: | 2 |

VIN: 1FMHK7B81BG[redacted]

**Dealer Information:**

Dealer Name: MATTHEWS-CURRIE FORD COMPANY

Dealer Code: 03591 - *

Address: 130 N TAMIAMI TRAIL

City: NOKOMIS

State: FL Zip Code: 34275

Country: USA Region Code: NA

Phone: (941)488-6787

**Expense Information**

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 320.13 |
| Misc. Expense Amount: | .00 |
| Part Markup Amount: | 763.46 |
| Material Cost: | 1511.22 |
| Total Cost Gross: | 1831.35 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFY POWER STEERING INOP SELF TEST U01310 PERFORM PPT S FAILED NETWORK TEST PPT AC FOUND PSCM FAILED REPLACE STEERING GEAR ASSY PROGRAM WITH AS BUILT DATA CHECK AND ADJUST TOE ROAD TEST RETEST PASS

Customer Comment: CUSTOMER STATES THE VEH HAS NO POWER STEERING AND THE ADV TRAC LIGHT AND POWER ASSIST LIGHT IS ON..TOW IN

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 20.65 |
| 3504E8 | | 10.33 |
| 3504E45 | | 30.98 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 92.94 |
| MT3504 | | 165.23 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | HE | GEAR ASY-STEERING | 110101 | 1 | 1511.22 |

**DTC Sections:** **Mil. Light On =** N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | UNDF | U0131 | | | |

Any comments? You can contact

*webmaster*

1559

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, August 02, 2011 11:34 AM
**To:** Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Napoli, Laura (L.)
**Subject:** 1FMHK7D87BG[redacted] no EPAS no communication

Hi Joe:

Please request this gear to Eric Estes at WPAC, TR EE.

Eric and Laura:
It's one of the no comm gears. I've had a few others like it. Here are my bin comments:

Called dealership. Intermittent EPAS loss. No codes. No communication with gear. New gear fixed problem. Part requested.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **01-AUG-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 751390

## Vehicle Information

Model Year: 2011
Market Derived: F - FORD
Body/Cab Type: T/WD - 4 DOOR WAGON
Version/Series: T/EF-FORD SERIES
Drive Type: T/A-2 WHL L/H FRONT DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 26-MAY-11

## Claim Information

Document Number: 309187A
Repair Date: 14-JUL-11
Distance: 2584
TIS: 2

Production Date: 13-MAY-11

VIN: 1FMHK7D87BG[redacted]

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | LAKE ELSINORE FORD | Deductible Amount: | .00 |
| Dealer Code: | 06787 - * | Dealer Paid Amount: | .00 |
| Address: | 31500 AUTO CENTER | Labor Cost: | 228.55 |
| City: | LAKE ELSINORE | Misc. Expense Amount: | .00 |
| State: | CA Zip Code: 92530 | Part Markup Amount: | 299.10 |
| Country: | USA Region Code: NA | Material Cost: | 1046.86 |
| Phone: | (951)471-4100 | Total Cost Gross: | 1275.41 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFIED CONCERN I HAD NO POWER ASSIST I FOUND NO COMUNICATION WITH STEERING MODULE TALKED TO HOT LINE NO KNOWN CONCERNS CK FOR PWR AND GROUND ON CIRCUIT C1463A ALL PASS CK FUSE C1617A PASS CK PWR ON C1463B PASS AND GROUND PASS REPLACED POWER STEERING CONTROL MODULE ROAD TESTED PERFECT ALSO REST FT WHEEL TOE,ALSO NOTE,CAN REFER TO ATTACHED WORK SHEET ON RO WITH HOTLINE CONTACT WITH

Customer Comment: CUSTOMER REPORTS POWER STEERING DOES NOT WORK

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 19.87 |
| 3504E8 | | 9.94 |
| 3001A1 | CASTER, CAMBER AND TOE-IN CORRECT | 59.62 |
| 3504E45 | | 29.81 |

| | | |
|---|---|---|
| 3514A | STEERING COLUMN ASSEMBLY REMOVE AND INSTALL | 109.31 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | HE | GEAR ASY-STEERING | 110101 | 1 | 1046.86 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

*webmaster*

7730

**From:** Anderson, Eric (H.)
**Sent:** Monday, June 20, 2011 3:08 PM
**To:** Cassata, Joe (J.)
**Cc:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** 1FMHK8B8XBG[redacted]

Hi Joe:

Please request this gear to Eric Estes.

Laura and Eric,
This is the gear with no assist, no warning lights and no DTCs.

Server: **AWS Prod**
Claims loaded through: **17-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 576373

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 28-MAR-11

Production Date: 03-MAR-11

VIN: 1FMHK8B8XBG[redacted]

## Claim Information

Document Number: 03134001

Repair Date: 20-MAY-11

Distance: 2947

TIS: 2

## Expense Information

Customer Paid Amount: .00

Deductible Amount: .00

**Dealer Information:**

Dealer Name EVERGREEN FORD

| | | | |
|---|---|---|---|
| Dealer Code: | 08305 - * | Dealer Paid Amount: | .00 |
| Address: | 1500 - 18TH AVE NW | Labor Cost: | 647.81 |
| City: | ISSAQUAH | Misc. Expense Amount: | .00 |
| State: | WA Zip Code: 98027 | Part Markup Amount: | 305.63 |
| Country: | USA Region Code: NA | Material Cost: | 1069.71 |
| Phone: | (425)392-6900 | Total Cost Gross: | 1717.52 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: REPLACED EPAS ASSEMBLY, PERFORMED PMI PROCESS. CHECKED AND ADJUSTED TOE. NO LABOR OPS FOR ALIGNMENT CHECK & RACK REPLACEMENT. M TIME FOR EXTENSIVE DIAG.

Customer Comment: *STEERINGS AND SUSP. CUSTOMER STATES POWER STEERING FAILED TO OPERATE ONCE WHILE DRIVING 35 MPH, DID NOT OPERATE TILL SHUT ENGINE OFF AND RESTA

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 19.63 |
| 3504E8 | | 9.82 |
| 3504E45 | | 29.45 |
| 3504E47 | | 29.45 |
| MT3504E45 | | 215.93 |
| MT3001A | | 39.26 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 88.34 |
| MT3504 | | 215.93 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | * | 3504 | * | GEAR ASY-STEERING | 110200 | 0 | .00 |
| N | * | W714710 | S439 | | 110200 | 4 | 22.85 |
| N | STE | 65 | * | MOTORCRAFT BATTERY | 110101 | 1 | 1046.86 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

*webmaster*

4843

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, July 12, 2011 11:57 AM
**To:** Cassata, Joe (J.)
**Cc:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** 1FMHK8F81BG[redacted] no EPAS

Hi Joe:

Please request this gear to Eric Estes at WPAC. TR EE.

Laura, Rob and Eric,
This has the usual U3000 codes but a late build date, May 21, 2011. It's still inside our BSAQ, but concerning. The previous latest date was 4/13/2011. Here are my bin comments:

Called dealership. Tech explained gear had no EPAS and power steering fault light on. U3000:49, U3000:48, U3000:96-C8 pulled from gear. New gear fixed problem. Part requested.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **11-JUL-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 661269

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

## Claim Information

Document Number: 31773301

Repair Date: 29-JUN-11

Distance: 215

TIS: 1

Warranty Start Date: 21-JUN-11

Production Date: 21-MAY-11

VIN: 1FMHK8F81BG[redacted]

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | NAPLETON'S PARK RIDGE LINCOLN- | Deductible Amount: | .00 |
| Dealer Code: | 10565 - * | Dealer Paid Amount: | .00 |
| Address: | 826 TOUHY AVENUE | Labor Cost: | 843.76 |
| City: | PARK RIDGE | Misc. Expense Amount: | .00 |
| State: | IL Zip Code: 60068 | Part Markup Amount: | 542.97 |
| Country: | USA Region Code: NA | Material Cost: | 1628.91 |
| Phone: | (847)825-0770 | Total Cost Gross: | 2472.67 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFIED CK FOR CODES U3000 49,U3000 48,U3000 96C8 ALL PRESENT PERFORMED LOAD TEST AND PINPOINT TESTS ALL POWERS AND GROUNDS TO STEERING GEAR GOOD FAILURE IN STEERING GEAR NECESSARY TO RE REPLD STEERING GEAR AND RESET TOE AND ALIGNMENT,UPLOAD PSCM MODULE CONFIG W IDS,PERFORM PMI ON PSCM ALIGN FRT

Customer Comment: GETTING POWER STEERING ASSIST FAUL MSG AND STEERING IS HARD TO TURN

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 22.20 |
| 3504E45 | | 33.31 |
| 3504E8 | | 11.10 |

| | | |
|---|---|---|
| 3504E47 | | 33.31 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 99.92 |
| MT3504 | | 643.92 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | JE | GEAR ASY-STEERING | 110101 | 1 | 1628.91 |

**DTC Sections:** **Mil. Light On =**N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |
| | UNDF | 49 | | | |
| | UNDF | 96C8 | | | |
| | UNDF | 48 | | | |
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |

Any comments? You can contact

*webmaster*

4514

**From:** Anderson, Eric (H.)
**Sent:** Thursday, June 16, 2011 10:15 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Cassata, Joe (J.)
**Subject:** 1FMHK8F85BGA29508 EPAS inop

FYI. Here's another U3000:49. It's within the BSAQ project window. A new gear fixed the problem.

Joe,
Thanks for requesting it.

Server: **AWS Prod**
Claims loaded through: **15-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 566418

**Vehicle Information**

Model Year: 2011
Market Derived: F - FORD
Body/Cab Type: T/WD - 4 DOOR WAGON
Version/Series: T/EF-FORD SERIES
Drive Type: T/F-4 WHL L/H FULL TIME DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 26-MAR-11
Production Date: 04-MAR-11
VIN: 1FMHK8F85BG[redacted]

**Claim Information**

Document Number: 68245502
Repair Date: 09-JUN-11
Distance: 3003
TIS: 3

**Dealer Information:**

Dealer Name VAN BORTEL FORD, INC.
Dealer Code: 07590 - *

**Expense Information**

Customer Paid Amount: .00
Deductible Amount: .00
Dealer Paid Amount: .00

| | | | |
|---|---|---|---|
| Address: | 71 MARSH RD. | Labor Cost: | 244.18 |
| City: | EAST ROCHESTER | Misc. Expense Amount: | .00 |
| State: | NY Zip Code: 14445 | Part Markup Amount: | 537.54 |
| Country: | USA Region Code: NA | Material Cost: | 1623.48 |
| Phone: | (585)924-9525 | Total Cost Gross: | 1867.66 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: MT TMIME FOR UNPUBLISHER LABOR OPERATIONS. DIAG P STEERING REPLACE BINDING GEAR ASSEMBLY TEST DR TO VERIFY,TEST PSCM,CODES U2100,U2000 46U3000 49, CK FUSE E,FUSE 89,OK,CK POWER AT MODULE,OK,REPL STEERING RACK ASSEMBLY. CHECK FRONT ALIGNMENT, SET TOE. TEST DRIVE OK. 2012 UNIT, ALL NEW REQUIRED CLAIM IS OK AS IS

Customer Comment: CUSTOMER STATES SHE LOST THE STEERING IN CAR WE DELIVED A STOCK VEHICLE ESCAPE TO HER LAST NITE, AS PER GUY DIAG AND ADVISE CUSTOMER ASAP THURS

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 16.28 |
| 3504E45 | | 24.42 |
| MT3504 | | 203.48 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | JE | GEAR ASY-STEERING | 110101 | 1 | 1623.48 |

**DTC Sections:** **Mil. Light On =** N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | UNDF | U2100 | | | |
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |
| N | UNDF | U2000 | AUDIO REAR CONTROL UNIT IS NOT RESPONDING | 24 | CCM VEHICLE |

Any comments? You can contact

*webmaster*

227

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, January 04, 2012 12:05 PM
**To:** Surella, Matthew (M.M.); Snider, Tim (T.O.); Flanagan, Thomas (T.P.); Napoli, Laura (L.)
**Cc:** 'Anthony Fleenor' (Anthony.Fleenor@TRW.COM); Christopher Woodruff; 'JoseJ Lopez' (JoseJ.Lopez@TRW.COM); Sergio Alvarez (Sergio.Alvarez@TRW.COM)
**Subject:** 2012 All EPAS Platforms Tyco Relay Claim Count for NA

I thought I sent this before the holiday break, here is the summary of all the warranty, 0KM & line returns.
I have a tab for each platform.

Let me know if you have any questions, thanks

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

| Case Number | Ford DTCs | TRW Code (Sympto m) | Gear Location | Fault found/Root cause | Current Updates | Motor Build Date |
|---|---|---|---|---|---|---|
| UR0090 RUA# 5175 | U2011-49 | B3A | In eval Tyco | NTF | 10/17- B3A reapeating PH2 motor relay open contacts. Ship to Tyco<br>12-7- Tyco found NTF with the relay. SEM on contacts some material found | 4/19/2011 |
| UR0126 | U3000-72 | A30, E30 | in process UK | R28 resistor on ECU PCB | 12/6-fault following ECU found low resistance on R28 generating incorrect Vbatt readings on ECU. Sergio to ship to UK | |
| UR0133 RUA# 5164 | U2011-49 U3000-96 | B3A | in process Tyco | | 12/13- could duplicate B3A failure in lab. surrogate relay test OK, ribbon cable wiggle test ok, 5amp test done found faulty motor relay. Save for workshop next year. | 6/8/2011 |
| UR0137 | U2011-49 | B3A | in eval MAO | | 12/9- pulled stored and EFF data shipped to MAO for analysis | 9/22/2011 |
| UR0138 | U3000-49 | B43 | in eval MAO | | 12/9- pulled stored and EFF data shipped to MAO for analysis | 5/19/2011 |
| 0KM RUA# 5167 | U2011-49 | B3A | in process Tyco | | 12/13- could duplicate B3A failure in lab. surrogate relay test OK, ribbon cable wiggle test ok, 5amp test done found faulty motor relay | |

**4**- B3A motor relays
**1-** B43 Link relay
**1-** A30 R28 resistor
**6 total relay issues**

| Case Number/ RUA | Ford DTCs | TRW Code (Sympto m) | Gear Location | Fault found/Root cause | Current Updates | Motor build Date |
|---|---|---|---|---|---|---|
| FR-0551 RUA# 5258 | U2011-49 | B3A | in eval Tyco | NTF | **12/19- Tyco went through complete relay test with NTF** | 4/10/2011 |
| FR-0554 RUA# 5259 | U2011-49 | B43 | in eval Tyco | Surface contamination | **12/19- Tyco has found surface contamination on contact 4. next step to SEM the contacts** | 6/24/2011 |
| FR-0555 | U2011-49 | B43 | in eval QAO | | **10/28-pulled EFF & stored data. Shipped to QAO for further testing** | 5/26/2011 |
| FR-0557 | U2011-49 | B43 | in eval QAO | | **10/28-pulled EFF & stored data. Shipped to QAO for further testing** | 4/28/2011 |
| FR-0558 | U2011-49 | B3A | in eval QAO | | **10/28-pulled EFF & stored data. Shipped to QAO for further testing** | 5/3/2011 |
| FR-0559 RUA# 5287 | U2011-49 | B43 | in eval Tyco | | **11/23- confirmed link relay** | 5/31/2011 |
| FR-0561 | U2011-49 | B3A | in eval QAO | | **11/1-pulled EFF & stored data. Shipped to QAO for further testing** | 6/22/2011 |
| FR-0562 | U2011-49 | B3A | in eval QAO | | **11/4-pulled EFF & stored data. Shipped to QAO for further testing** | 6/17/2011 |
| FR-0568 | U2011-49 | B3A | in eval QAO | | **11/11-pulled EFF & stored data. Shipped to QAO for further testing** | 5/4/2011 |
| FR-0569 | U2011-49 | B3A | in eval QAO | | **11/18-pulled EFF & stored data. Shipped to QAO for further testing** | 6/1/2011 |
| FR-0570 | U3000-49 U3000-96 | B43,BB7 | in eval QAO | | **11/18-pulled EFF & stored data. Shipped to QAO for further testing** | 7/27/2011 |
| FR-0571 | U2011-49 | B3A | in eval QAO | | **11/18-pulled EFF & stored data. Shipped to QAO for further testing** | 6/21/2011 |
| FR-0572 | U3000-49 U3000-96 | B43 | in eval QAO | | **11/23-pulled EFF & stored data. Shipped to QAO for further testing** | 6/16/2011 |

| | | | | | | |
|---|---|---|---|---|---|---|
| FR-0573 | U2011-49 | B3A | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 6/15/2011 |
| FR-0575 | U2011-49 | B3A | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 5/3/2011 |
| FR-0577 | U2011-49 | B3A | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 6/22/2011 |
| FR-0578 | U2011-49 | B6B | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 5/21/2011 |
| FR-0579 | U3000-49 | B43,BB5 | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 6/15/2011 |
| FR-0581 | U2011-49 | B3A | in process QAO | | 12/12- pulled EFF & stored data shipped gear to QAO for further analysis | 5/20/2011 |
| FR-0585 | U2011-49 U3000-96 | B3A | At WPAC computer issues shipping gears out to MAO | | 12/19- pulled EFF & stored data shipped gear to QAO for further analysis | 7/27/2011 |
| FR-0586 | U2011-49 | B3A | At WPAC computer issues shipping gears out to MAO | | 12/19- pulled EFF & stored data shipped gear to QAO for further analysis | 7/27/2011 |
| 0KM RUA# 5279 | | B43 | In eval Tyco | | QAO damaged link relay removing from PFS | |
| QAO line Bully RUA# 5262 | | E66 | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |
| QAO line Bully RUA# 5253 | | E66 | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| QAO line Bully RUA# 5260 | | E66 | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |
| QAO line Bully RUA# 5261 | | A3A | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |
| QAO line Bully RUA# 5269 | | A3A | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |
| QAO line Bully RUA# 5270 | | A3A | In eval Tyco | damaged ribbon cable due to handling at Anting | 11/15/2011 | |

**13-** B3A Motor relays
**8-** B43 link relays
**3**- E66
**3-** A3A
**1-** B6B motor relay short
**28 total relay issues**

Tyco信号線単品選別 ～2012年1月29日
Sorting result of Tyco cable inspection

2012Jan30

The yellow box means no specification of TYCO work instruction ( 100% Check 1563245-1/1563246-1)
The green box means addition of Nidec sorting instruction based on new standard on TYCO work instruction ( 100% Check 1563245-1/1563246-1)
The red box means TYCO production Lot after Dec-02-2011.

**Last serial number with relay before clean date**

| Ford model | Motor serial number | Motor production date | Relay date code |
|---|---|---|---|
| Redacted for Relevance | | | |
| D3/U502 48mm | CAG0E287110449 | Oct 14, 2011 | 1136411 |
| U502 58mm | BAF0E335210095 | Dec 1, 2011 | 1132621 |
| Redacted for Relevance | | | |

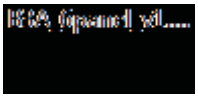
**First serial number of complete clean relay (no motor later than below has relay before clean date)**

| Ford model | Motor serial number | Motor production date |
|---|---|---|
| Redacted for Relevance | | |
| D3/U502 48mm | CAG0E287110450 | Oct 14, 2011 |
| U502 58mm | BAG0E335210004 | Dec 1, 2011 |
| Redacted for Relevance | | |

**From:** Surella, Matthew (M.M.)
**Sent:** Tuesday, January 24, 2012 12:00 AM
**To:** Perri, Ron (R.J.)
**Cc:** Napoli, Laura (L.)
**Subject:** 6 Panel on relay issues

Ron,
Here's a first draft of the 6 Panel. I still need to finish some slides tomorrow.

Matthew (Matt) Surella
Steering EPAS Supervisor / MBB
313-805-3997



STANDARD REPORTING METHOD
FOR PROBLEM SOLVING

# 6-PANEL

## TRW EPAS Gear Relay Issues

Project Leader: Laura Napoli

Project Champion: Ron Perri/John Tetley

Process Owner: Matt Surella

Organization: PD Chassis Steering

Project Location: PD Dearborn

# 6-PANEL



D M A I C R

DEFINE VOICE OF THE CUSTOMER

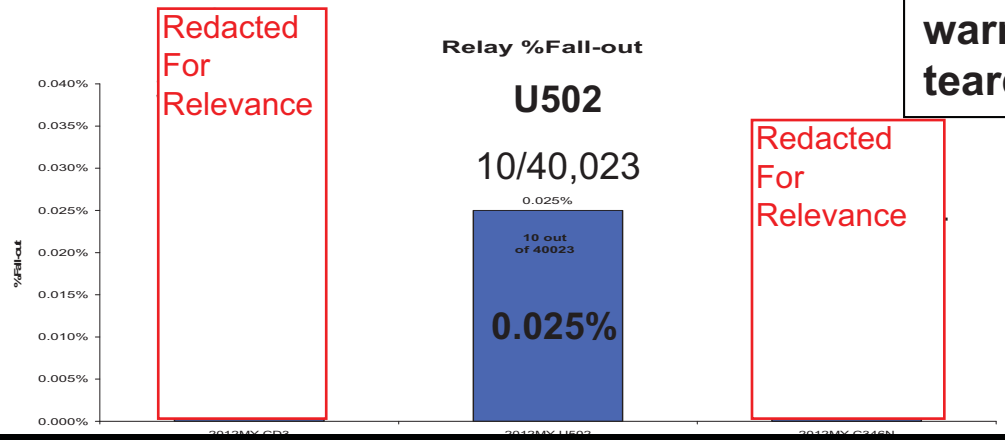
| | | |
|---|---|---|
| Business Unit: PD Dearborn | Functional area: Chassis Steering | Customer: Vehicle owner |
| Vehicle program: U502, CD3, C346 | | Part: EPAS |

## PROJECT CLASSIFICATION:

**BSAQ Item: SAQ201161617-EPAS B3A Motor Relay Contamination**

## TREND CHARTS and BREAKDOWN OF ISSUE:

**based on warranty teardowns**




**VOICE OF THE CUSTOMER:** Some U502, [redacted], and [redacted] vehicles may exhibit loss of steering assist during a journey including an indicator light on the IP. Assist will return when the key is cycled.

**CTQ STATEMENT (Customer Requirement):**

EPAS should give driver power steering assist at all times.

**DEFECT DEFINITION for Y (Objective Metric):**

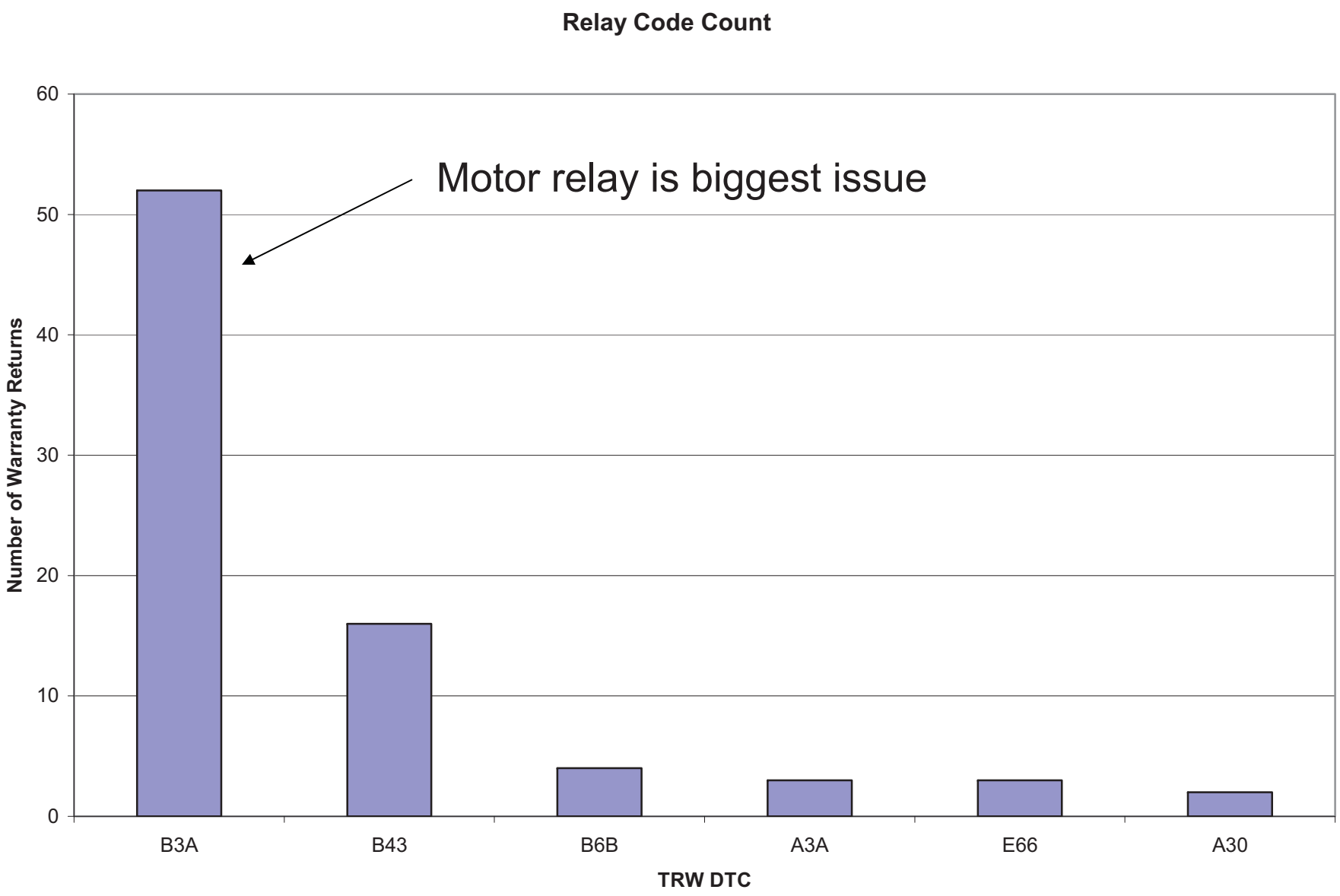
Within the TRW EPAS electronics, there is a motor relay and a link relay. Failure of the motor relay primarily results in the TRW code B3A and failure of the link relay primarily results in the code B43.

**COST OF POOR QUALITY:**

Customer dissatisfaction, warranty cost for EPAS claim.

**PROBLEM STATEMENT, SCOPE, AND GOAL**

Find root causes of relay failures and implement corrective actions to eliminate this issue. [redacted] has highest repair rate at 0.35 R/1000 and problem will be scoped to it.



VEHICLE BUILD MONTH

MOTOR BUILD MONTH

# 6-PANEL





TIME IN SERVICE

Average = 4.54 MIS

MILEAGE

Average = 7282 Miles

# Pie Chart of CD3 Steering Effort Warranty Claims from SOP

This pie chart is based on warranty claim verbatims and shows 15 claims for B3A where tech listed the code.

# 6-PANEL

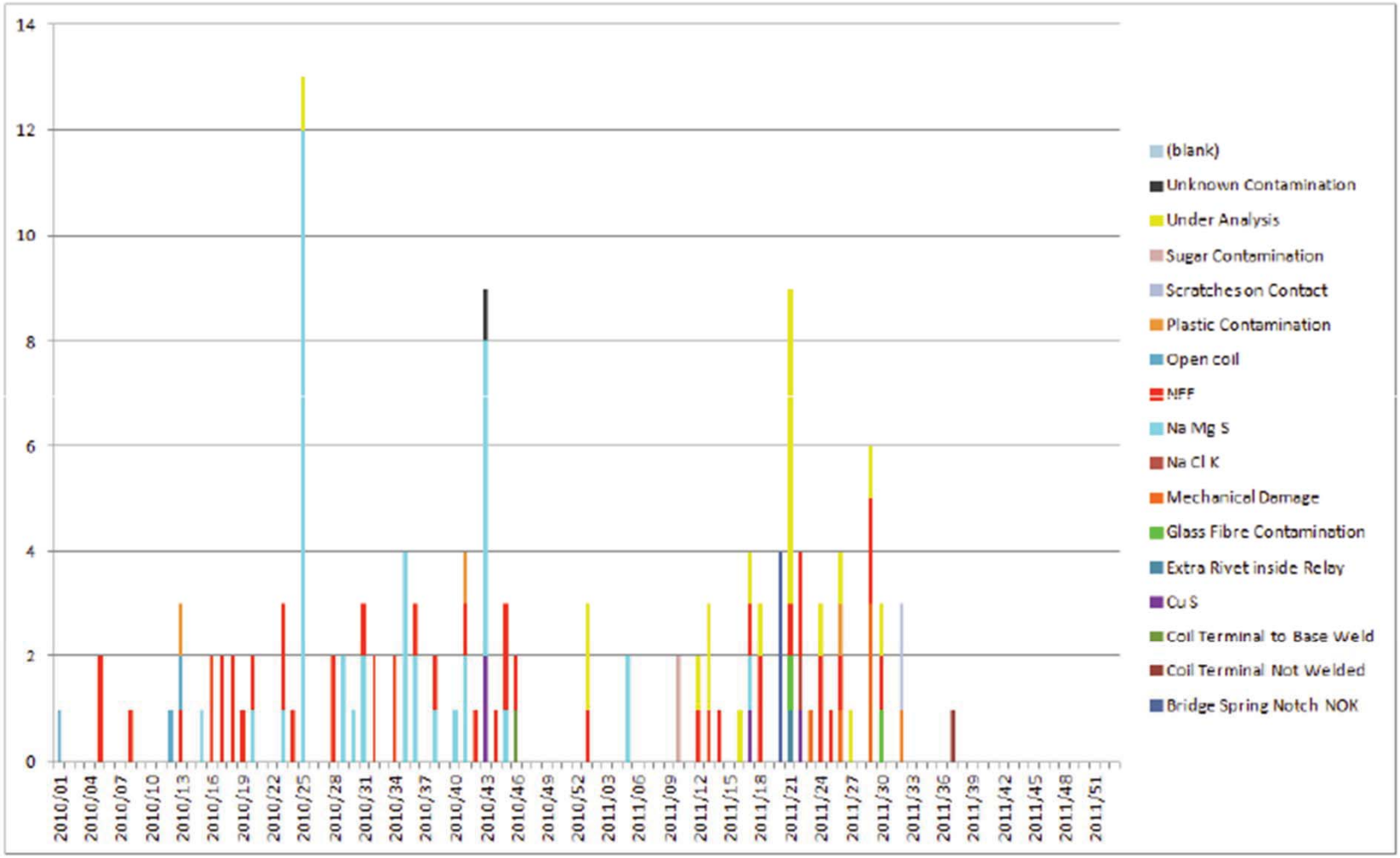


D M A I C R

DEFINE VOICE OF THE CUSTOMER

Redacted for Relevance

# Run Chart of Relay Issues by Motor Build

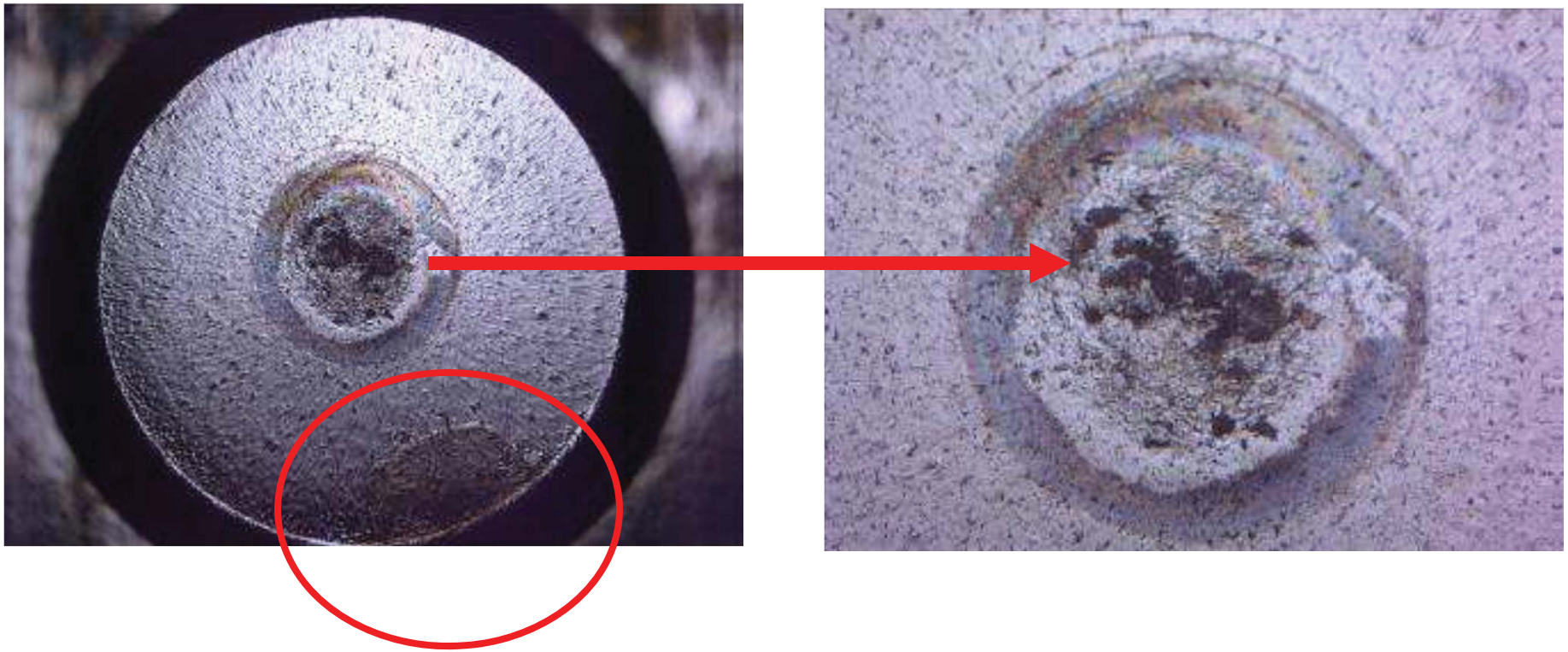


# Relays Under Analysis

- **44 Relays are currently under analysis**
- **Source**
  - 33 from Ford NA
  - 11 form Ford of Europe
- **Relay Type**
  - 13 link relays
  - 31 motor relays
- **Root Causes under investigation**
  - Sugar contamination 2
  - Mechanical damage 3
  - Extra rivet inside relay 1
  - Coil terminal not welded 1
  - Plastic contamination 1
  - Unknown contamination 1
  - Scratches on contact 2
  - CuS 4
  - Initial report NFF 4
- **Relays without initial reports**
  - On hold for workshop 10
  - In transit 5
  - Analysed at TRW 2
  - Waiting for initial report 8

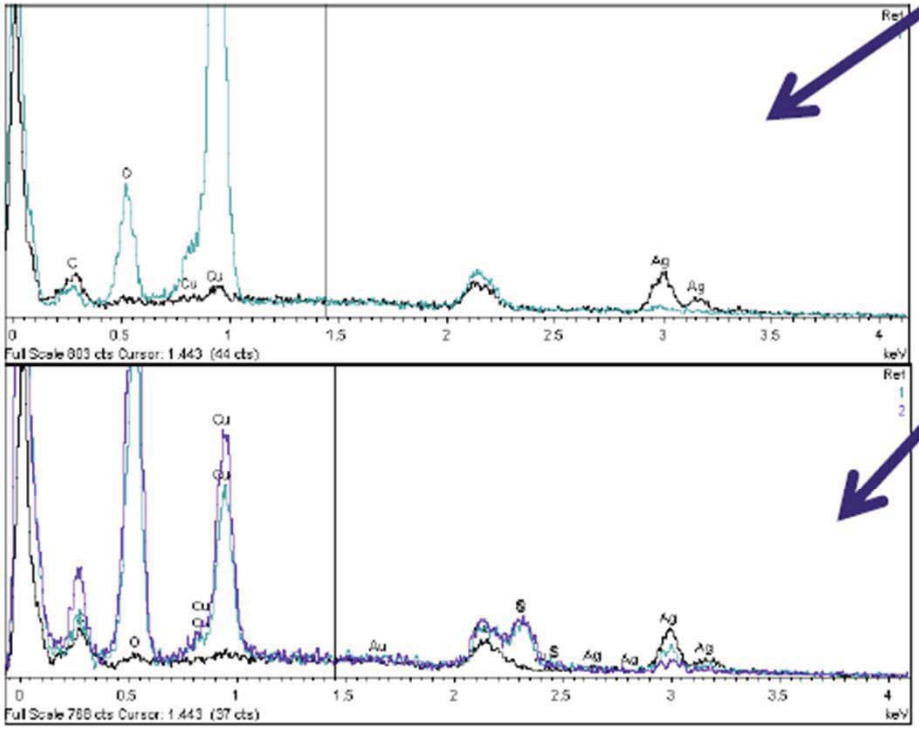
Multiple root causes so focus on largest failure mode which is currently CuS contamination.

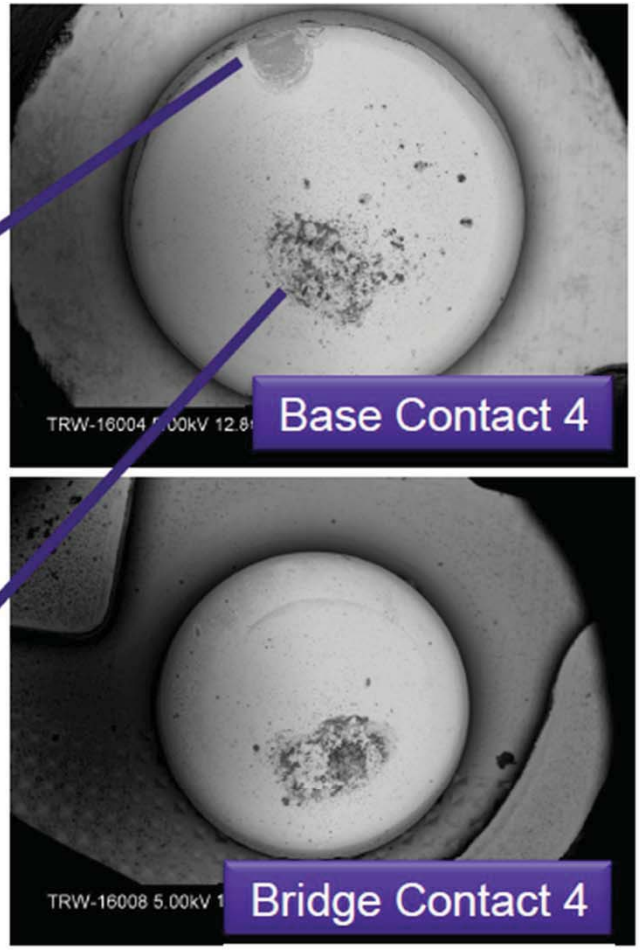
Majority of these 10 look to be CuS contamination



Example warranty return of relay contacts. Note the corrosion not only in the center of the contact but also on the edge (circled in red).

- Contact 4 showed contamination
- EDX analysis of affected area indicated the presence of sulphur and oxygen

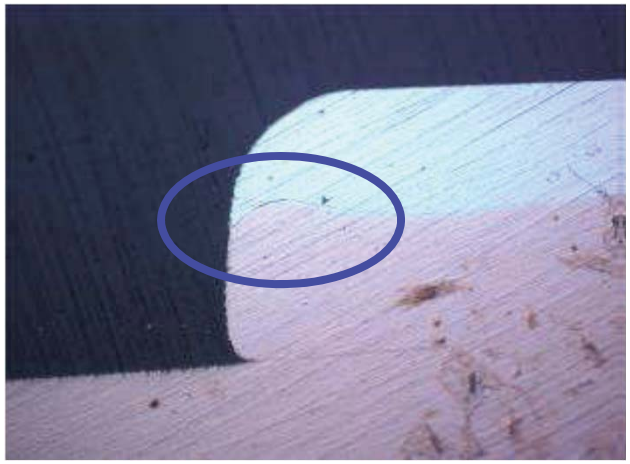


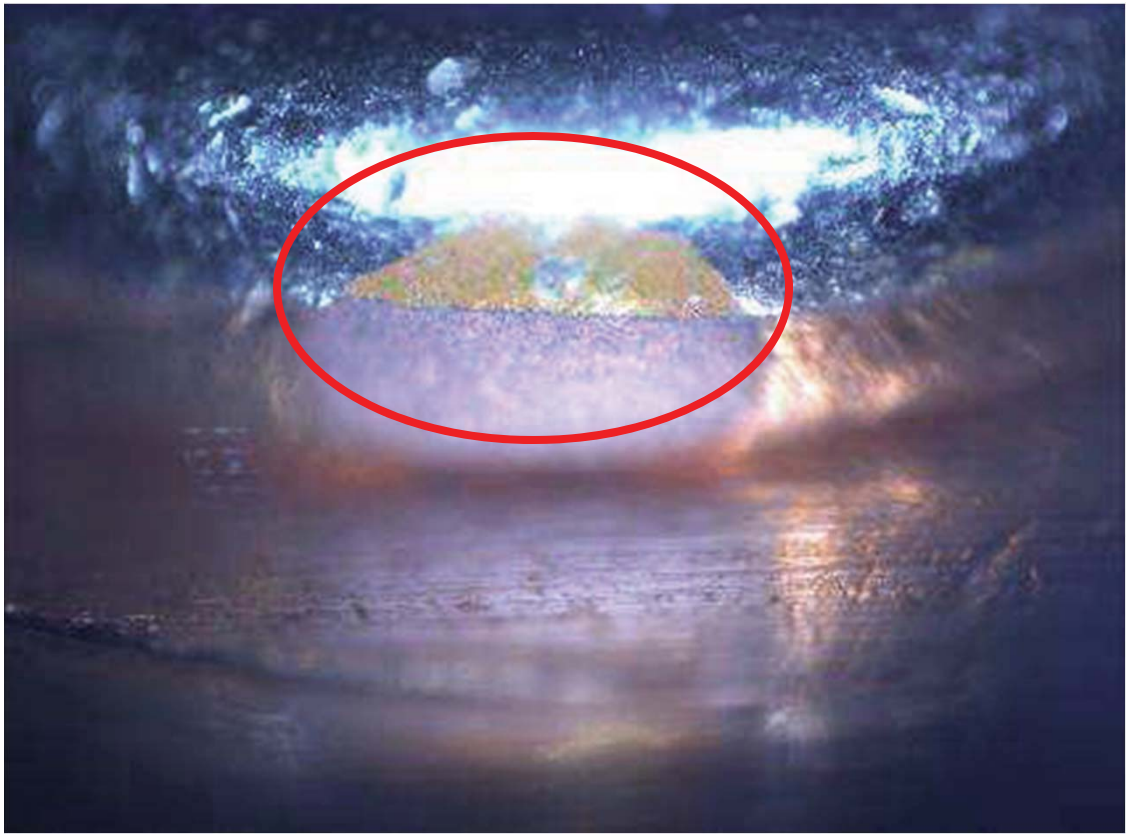

Corrosion areas in both center and edge show presence of copper, sulphur and oxygen

Analysis of the edge of the contacts shows contamination getting in between the bottom copper layer and the top silver layer. Further analysis by Tyco shows that there is actually a crack between the copper and the silver.



Goal of trials at Tyco was to produce cracks between copper and silver layers. They were successful in doing this using their press in Portugal.



Humidity cycling of the part (40 degrees C, 95% humidity, 16 hours / 13 degrees C, 95% humidity, 8 hours) caused corrosion to develop in the area of the crack. This was repeated on 6 different parts with cracks between copper and silver layers. 20 virgin parts with no cracks were subjected to the same humidity test and none of them showed any signs of this type of corrosion.

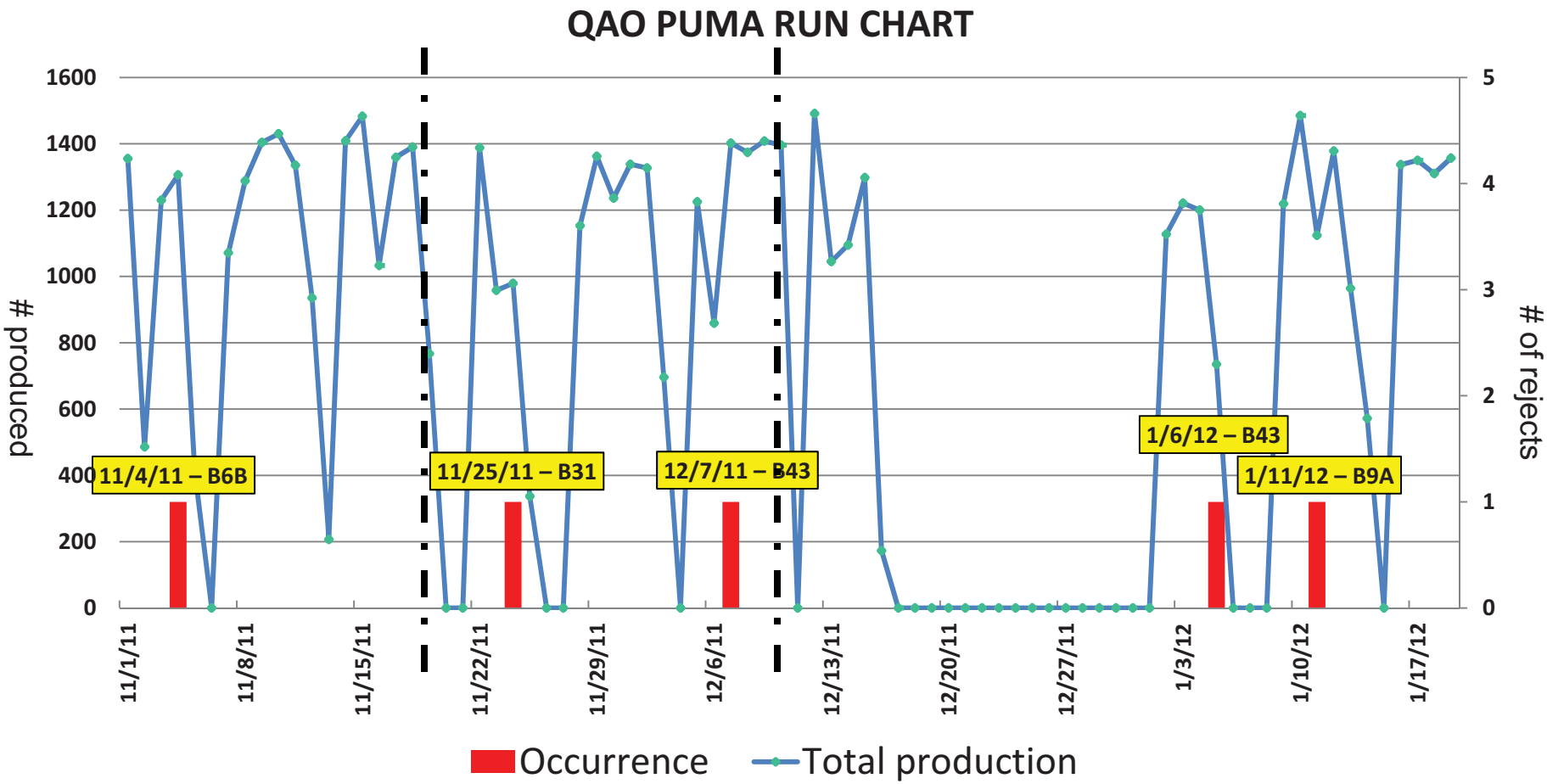
# Root Cause Summary

- After the riveting tests, we can conclude that;
  - Rivets where the crack occurs in Doduco process exhibit the contamination.
  - Rivets where the crack is caused by TE's riveting process do not show any signs of contamination.
  - The set-up of the press, where the silver and copper are welded together, is the root cause for possible crack in the rivet.
  - The contamination source is Doduco
  - This contamination has copper and sulphate on its composition as seen in the complained relay.

TE connectivity RELAY PRODUCTS

23rd January 2012

# Containment Actions at Marion and Queretaro




Hot Puma testing at QTO and MAO was increased from 3000 to 4500 relay cycles on 11/17/2011 to try to force a relay failure. A script was implemented on 12/10/2011 which rejects parts that show any LICs for B3A, A3A, and B43.

# Containment Actions at Tyco

- Check 10 rivet per bag (10,000/bag) under a microscope for evidence of cracks at Tyco.
- Scrap first 1000 parts everytime cold weld press starts up at Doduco. It was found that cracks occur when press first starts up.
- Clean feeder tube of any rivets after every set up/tool change after 1000 rivet scrap at Doduco. It was found that set up parts could potentially get into production.
- All actions implemented Aug 5, 2011

# PCA Actions at Tyco

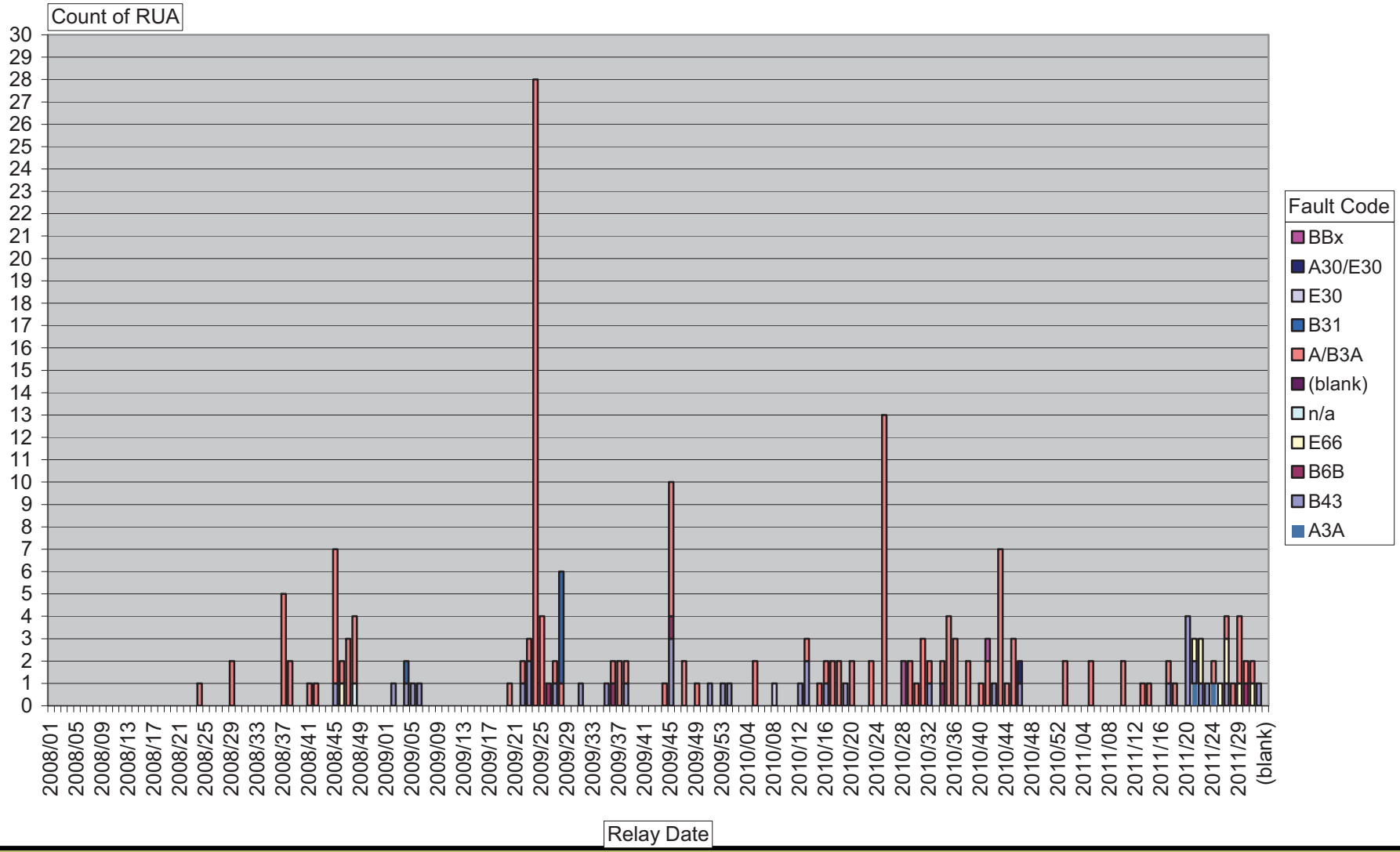
- Investigate going to a solid silver contact rather than bimetal copper/silver

# Next Steps

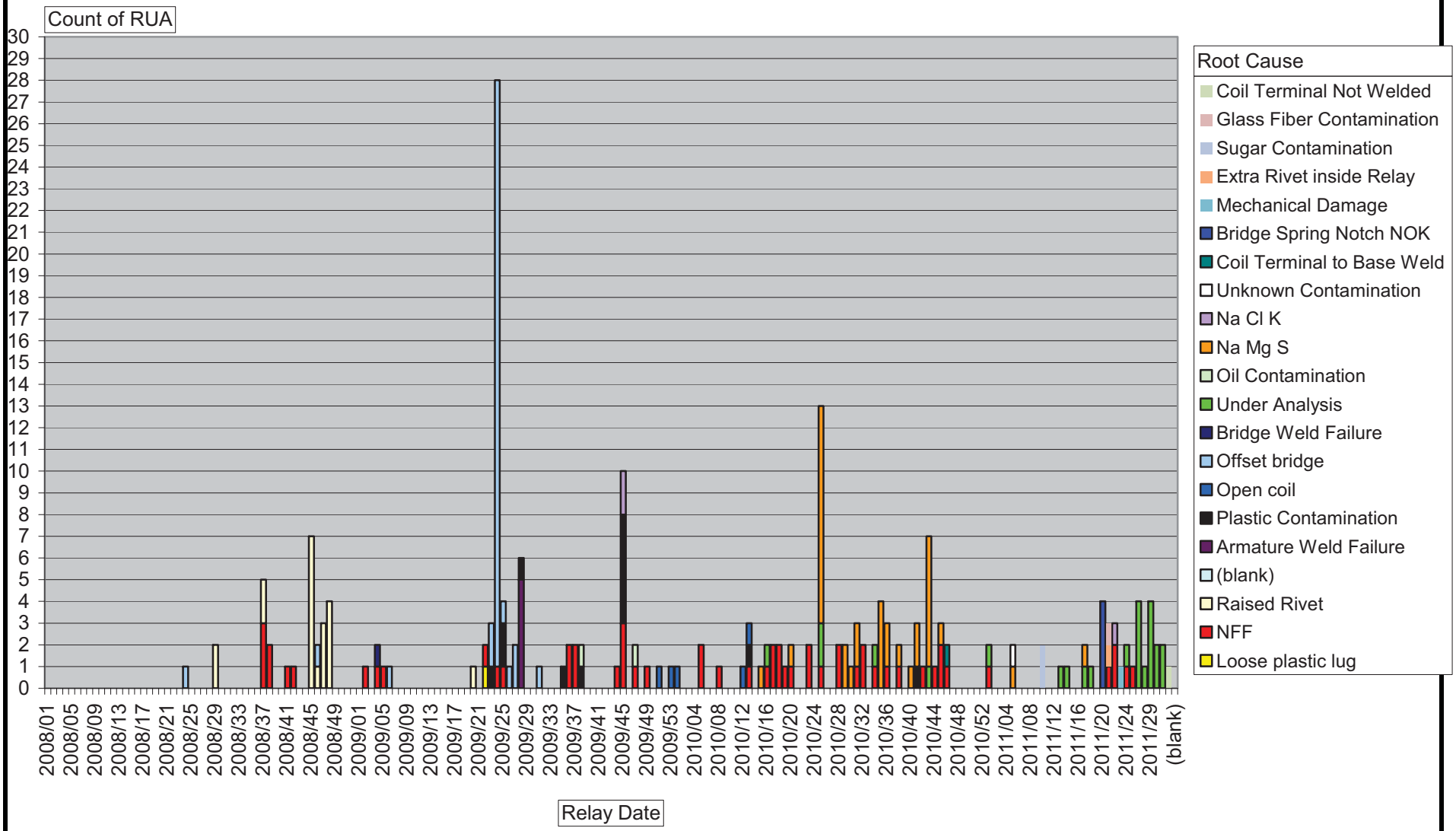
- Complete workshop at Tyco Jan 23-25. Both TRW and Ford attending.
- Complete investigation on solid silver contacts to implement as a possible PCA
- Root cause and implement corrective actions on the other failure modes making up the relay spike in 2012 MY.

# BACK-UP SLIDES

# Run Chart – Fault Code



# Run Chart – Root Cause



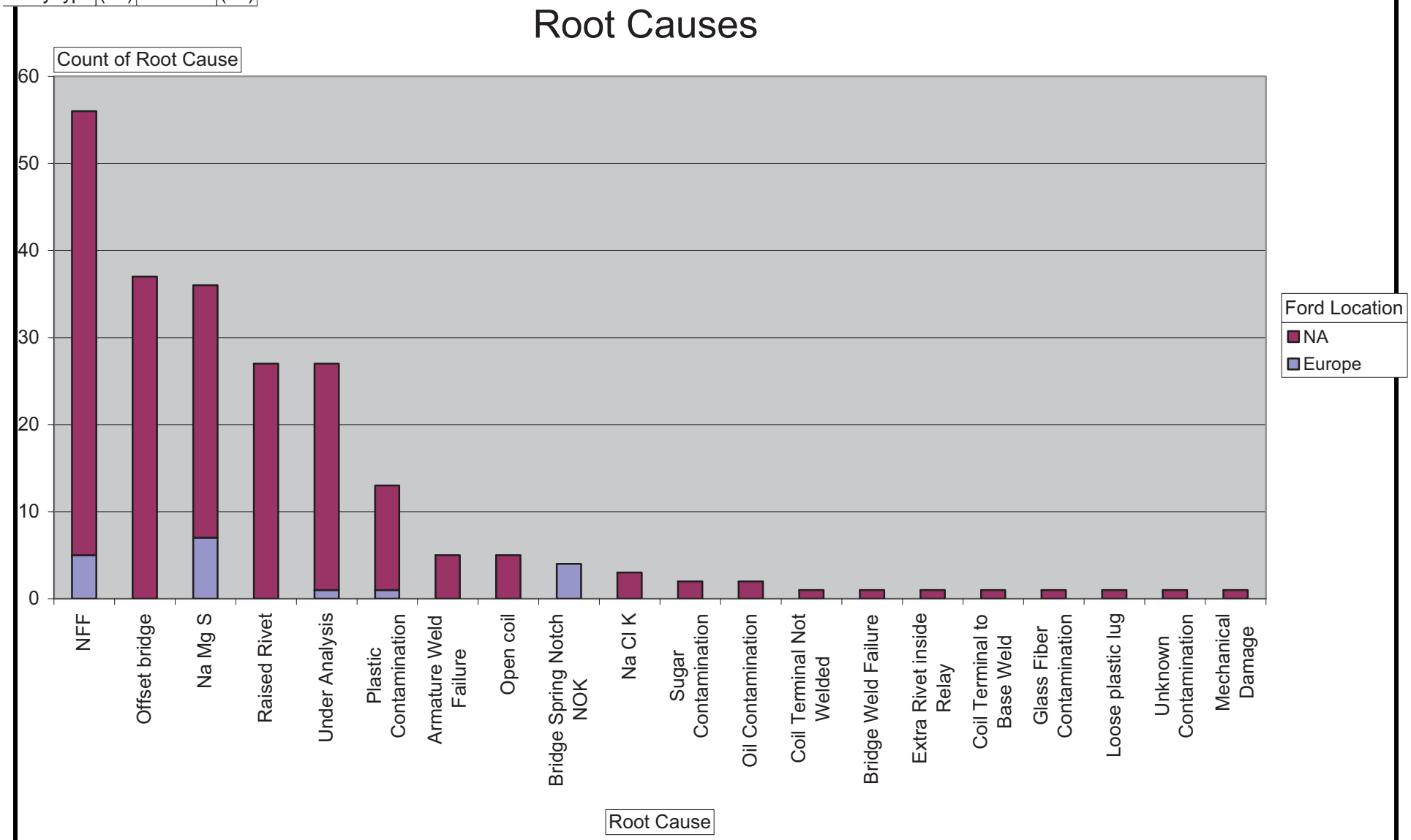
# 6-PANEL



D M A I C R

DEFINE VOICE OF THE CUSTOMER

Relay type (All) Failed at (All)



**From:** Napoli, Laura (L.)
**Sent:** Thursday, February 16, 2012 3:49 PM
**To:** Surella, Matthew (M.M.)
**Subject:** Anting concoat sort

Matt,

Nidec sorted all the completed motors at their and Anting's facilities between 11/11 - 11/27. 30% of that stock was quarantined due to visual presence (using UV light) of conformal coat at the ribbon cable connector. These parts have been scrapped by Nidec, so we were not able to assess how many of these would result in a B9A.

On 11/11, Nidec fixed the conveyor which was the root cause of the concoat contamination. Then from 11/27-12/30, Anting sorted 30% of stock as it was being loaded to the line and found 0 failures.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Quis, Rudolf (R.)
**Sent:** Friday, February 17, 2012 6:40 AM
**To:** Andy Partridge; Mike Davies; Phil Browne
**Cc:** Napoli, Laura (L.); Hilprecht, Ulrike (U.)
**Subject:** AW: AW: AW: AW: AW: TE Ribbon cable action

That's fair.

You know the warranty analysis team can only check for visual damages.
By this I assume we are still sending relays to TE which do not have an issue and which they will declare as NFF.

As discussed one of my targets is to get rid of the very high numbers of NFF from TE.
Therefor we will have the brainstorming workshop in the next weeks on diagnostic improvements.

Best regards / Mit freundlichen Gruessen Rudolf Quis Lead System Engineer & PMST leader C1MCA EPAS Chassis Steering Ford Werke GmbH
D-MC/1-C2
Spessartstrasse
50725 Cologne-Merkenich
Germany
Tel. +49/221/9033868
Fax. +49/221/9033183
Ford internal: 87033868
e-Mail: rquis@ford.com

Ford-Werke GmbH
Henry-Ford-Straße 1, 50735 Köln
Sitz der Gesellschaft: Köln
Registergericht Köln, HRB 54183
Vorsitzender des Aufsichtsrats: Stephen Odell
Geschäftsführung: Bernhard Mattes (Vorsitzender), Wolfgang Booms, Dirk Heller, Caspar Hohage, Dr. Hermann H. Hollmann, Rainer Ludwig, Rüdiger Minrath, Dr. Wolfgang Schneider

-----Ursprüngliche Nachricht-----
Von: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Gesendet: Freitag, 17. Februar 2012 12:17
An: Quis, Rudolf (R.); Mike Davies; Phil Browne
Cc: Napoli, Laura (L.); Hilprecht, Ulrike (U.)
Betreff: Re: AW: AW: AW: AW: TE Ribbon cable action

Hi Rudi.

Once I have results from our initial jig and I am happy it works, finds faulty cables and is the best way of testing, I shall look into producing some for each of the sites. Hopefully it is good first time.

Regards
Andy

>>> "Quis, Rudolf (R.)" <rquis@ford.com> 2/17/2012 10:59 am >>>
Sorry misunderstanding,
I am talking about the warranty analysis areas in Schalke, Nove Mesto and Marion, for returned parts only.

Best regards / Mit freundlichen Gruessen Rudolf Quis Lead System Engineer & PMST leader C1MCA EPAS Chassis Steering Ford Werke GmbH
D-MC/1-C2
Spessartstrasse
50725 Cologne-Merkenich
Germany
Tel. +49/221/9033868
Fax. +49/221/9033183
Ford internal: 87033868
e-Mail: rquis@ford.com



-----Ursprüngliche Nachricht-----
Von: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Gesendet: Freitag, 17. Februar 2012 11:40
An: Quis, Rudolf (R.); Mike Davies; Phil Browne
Cc: Napoli, Laura (L.); Hilprecht, Ulrike (U.)
Betreff: Re: AW: AW: AW: TE Ribbon cable action

Hi Rudi.

It's a test for returning parts. It couldn't be adapted for production.
It's to enable us to diagnose and assess parts here without putting undue strain on the connectors.

Regards
Andy

Quality and Product Support
TRW Electronic Engineering
Technical Centre
Stratford Road
Shirley
B90 4GW

Tel: +44 (0)121 627 3143
Mob: +44 (0)7920 134912

>>> "Quis, Rudolf (R.)" <rquis@ford.com> 2/17/2012 10:05 am >>>

By when will this test be finally developed and in place @ Schalke, Nove Mesto and Marion?

Best regards / Mit freundlichen Gruessen Rudolf Quis Lead System Engineer & PMST leader C1MCA EPAS Chassis Steering Ford Werke GmbH
D-MC/1-C2
Spessartstrasse
50725 Cologne-Merkenich
Germany
Tel. +49/221/9033868
Fax. +49/221/9033183
Ford internal: 87033868
e-Mail: rquis@ford.com



-----Ursprüngliche Nachricht-----
Von: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Gesendet: Freitag, 17. Februar 2012 09:57
An: Quis, Rudolf (R.); Mike Davies; Phil Browne
Cc: Napoli, Laura (L.); Hilprecht, Ulrike (U.)
Betreff: Re: AW: AW: TE Ribbon cable action

Hi Rudi.

This week we have designed and have been building a ribbon cable test jig to allow us to easily test the ribbon cables in a standard way.
This
will allow us to test all incoming B3a ribbon cables to have confidence that the relay is or is not root cause.
I aim to provide a video once it is completed and in operation.

Regards
Andy

Quality and Product Support
TRW Electronic Engineering
Technical Centre
Stratford Road
Shirley
B90 4GW

Tel: +44 (0)121 627 3143
Mob: +44 (0)7920 134912

>>> "Quis, Rudolf (R.)" <rquis@ford.com> 2/17/2012 8:43 am >>>

Thank you very much Andy, you make me happy.
I asked this to multiple TRW people now since two month without success.

What changed on the warranty analysis procedures now (globally).
We need to ensure that we do not send relays to TE if the cable is the root cause.
To detect an intermittent contact, a visual check is not enough.

Best regards / Mit freundlichen Gruessen Rudolf Quis Lead System Engineer & PMST leader C1MCA EPAS Chassis Steering Ford Werke GmbH
D-MC/1-C2
Spessartstrasse
50725 Cologne-Merkenich
Germany
Tel. +49/221/9033868
Fax. +49/221/9033183
Ford internal: 87033868
e-Mail: rquis@ford.com



-----Ursprüngliche Nachricht-----
Von: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Gesendet: Freitag, 17. Februar 2012 09:37
An: Quis, Rudolf (R.); Mike Davies; Phil Browne
Cc: Napoli, Laura (L.)
Betreff: Re: AW: TE Ribbon cable action

Hello Rudi.

An intermittent or loss of signal on pins 10, 11 or pin 12 on the ribbon cable will cause the relay to drop out/lose connectivity. The signals are Motor relay High side, Motor relay low side and Vstar.

We experimented with one of the 3 returned north American units with the "pulled" ribbon cable. We were able to replicate intermittence the same way we can for B9a and then on a bench test running the EPP we were able to replicate a B3a by inducing movement of the cable in the same way that we first proved B9a.

We conclude from this that B3a has been caused and has the potential to be caused by a faulty ribbon cable. I also believe although currently unproven, that a B6b could be caused the same way as it would be relay drop out and immediate pull in under load causing a weld.

Regards
Andy

Quality and Product Support
TRW Electronic Engineering
Technical Centre
Stratford Road
Shirley
B90 4GW

Tel: +44 (0)121 627 3143
Mob: +44 (0)7920 134912

>>> "Quis, Rudolf (R.)" <rquis@ford.com> 2/16/2012 7:12 pm >>>
Hello Mike,
this proposal is acceptable.
By the way, are you able to share the evidence with me, that the ribbon cable could lead to B3A diagnostic codes.
I asked several people @ TRW to do so since 2 month without success.
You know that I am working together with TE Evora on the relay improvements but ~50% of returned parts are claimed by TE as NFF.
This evidence is required to explain some of the NFF. If there is a proof, we need to apply this during the EPP analysis procedure.

Best regards / Mit freundlichen Gruessen Rudolf Quis Lead System Engineer & PMST leader C1MCA EPAS Chassis Steering Ford Werke GmbH
D-MC/1-C2
Spessartstrasse
50725 Cologne-Merkenich
Germany
Tel. +49/221/9033868
Fax. +49/221/9033183
Ford internal: 87033868
e-Mail: rquis@ford.com



Von: Mike Davies [mailto:Mike.Davies@TRW.COM]
Gesendet: Donnerstag, 16. Februar 2012 18:23
An: Quis, Rudolf (R.); Phil Browne
Cc: Napoli, Laura (L.); Andy Partridge
Betreff: TE Ribbon cable action

Hello Rudi
I hope that you are keeping well, wherever you are in the world this week.

As you may recall from the visit to TE in January, we have a list of actions which Laura is tracking in regular calls.
One action related to defining key characteristics for the cable assembly, and the action was assigned to you and myself.

I have spoken with Phil Browne and others on this, and the consensus is that we believe that the functional aspects of the cable are the most important.
We would therefore propose that the following are identified as key characteristics.
1. Continuity from one end of the assembly to the other 2. Isolation of adjacent conductors 3. Resistance value of the individual conduction paths

At this point, we are not intending to define specific values for these last two characteristics. We want to ask TE what they can achieve and realistically measure. When they have provided this data, we can check that the system can accommodate these. They can then be added to the drawing.

We do not believe the overall length of the cable assembly needs to be defined as a key characteristic. It already has a suitable tolerance on it, to allow for the cable routing in the system.

Please can you give us your views on this proposal, so that we can progress with TE.

thanks and regards
Mike

Mike Davies
Senior Manager Supplier Development
European Steering

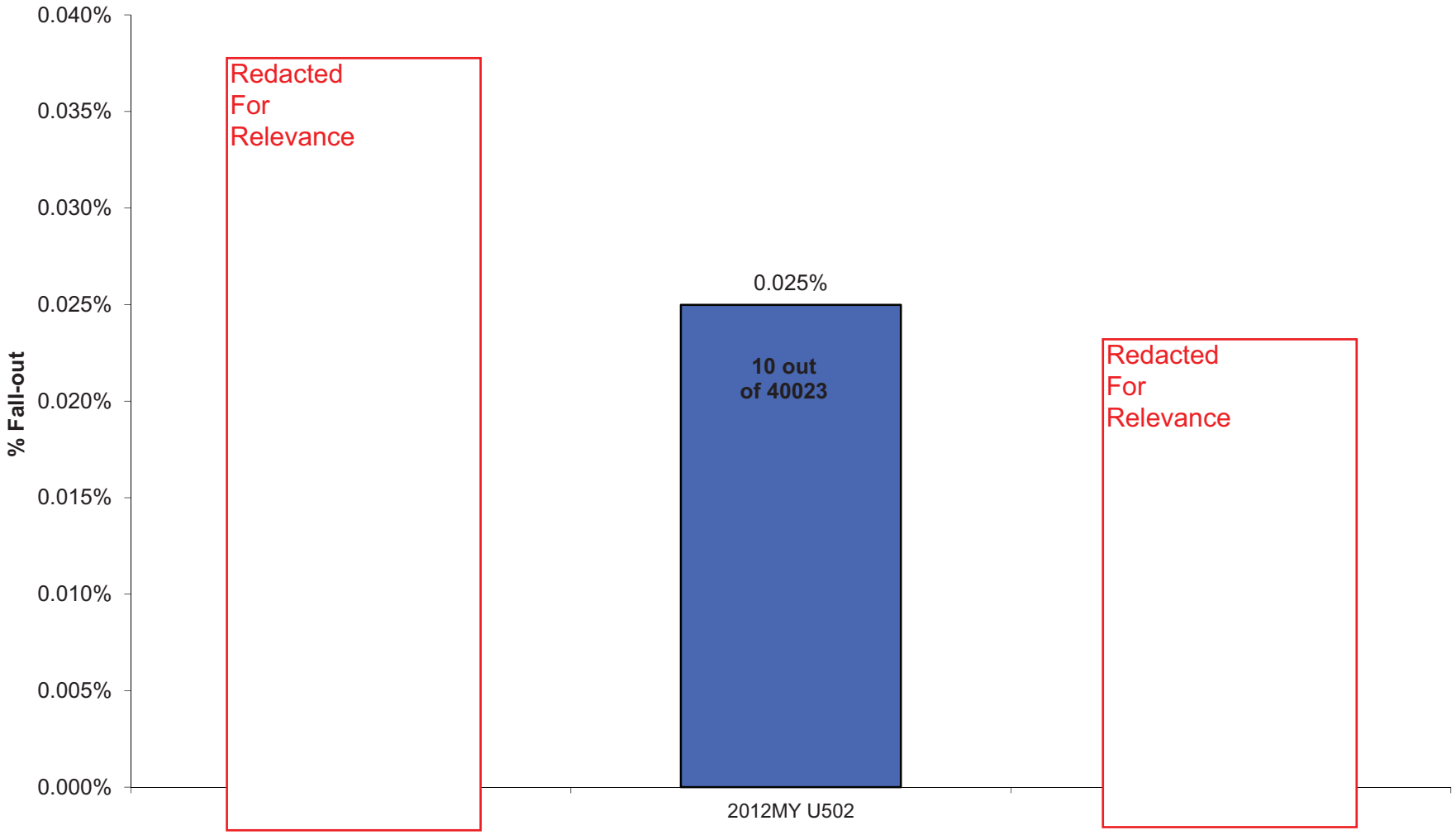
1/23/2012

| | Fallout% | Fallout | Total Checked | Good |
|---|---|---|---|---|
| | | | | |
| **2012MY U502** | 0.025% | 10 | 40023 | 40013 |
| Redacted for Relevance | | | | |

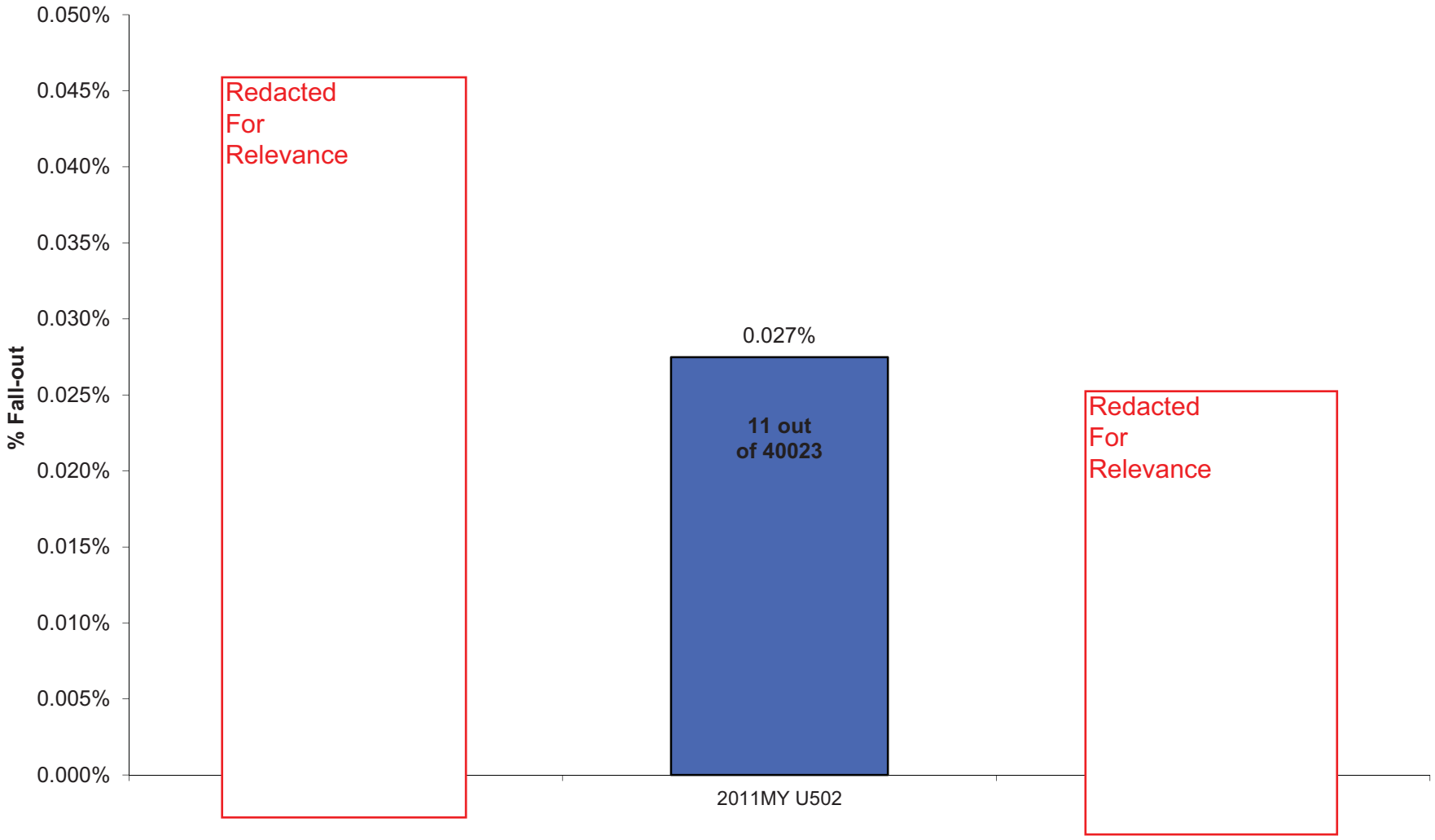
2/23/2012

| | Fallout% | Fallout | Total Checked | Good |
|---|---|---|---|---|
| | | | | |
| **2011MY U502** | 0.027% | 11 | 40023 | 40012 |
| Redacted for Relevance | | | | |

# Relay %Fall-out



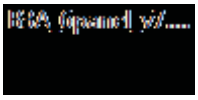
# B3A %Fall-out


0.050%
0.045%
0.040%
0.035%
0.030%
0.025%
0.020%
0.015%
0.010%
0.005%
0.000%
% Fall-out
Redacted For Relevance
0.027%
11 out of 40023
Redacted For Relevance
2011MY U502

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, February 28, 2012 1:55 PM
**To:** Quis, Rudolf (R.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** B3A FNA 6-Panel

Rudi,

Attached is our 6-panel for B3A with FNA implementation dates for solid silver relays. Can you send me information for when you plan to implement in full production on C1? Are all your programs getting massive silver contacts as a running change or is there any program that will be getting the change into any prototype builds? You'll see in our presentation that we will implement on U502 13.5MY PP build before hitting full production in August.




Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

STANDARD REPORTING METHOD
FOR PROBLEM SOLVING

# 6-PANEL

## TRW EPAS Gear Relay Issues

Project Leader: Laura Napoli

Project Champion: Ron Perri/John Tetley

Process Owner: Matt Surella

Organization: PD Chassis Steering

Project Location: PD Dearborn

# 6-PANEL



D M A I C R

DEFINE VOICE OF THE CUSTOMER

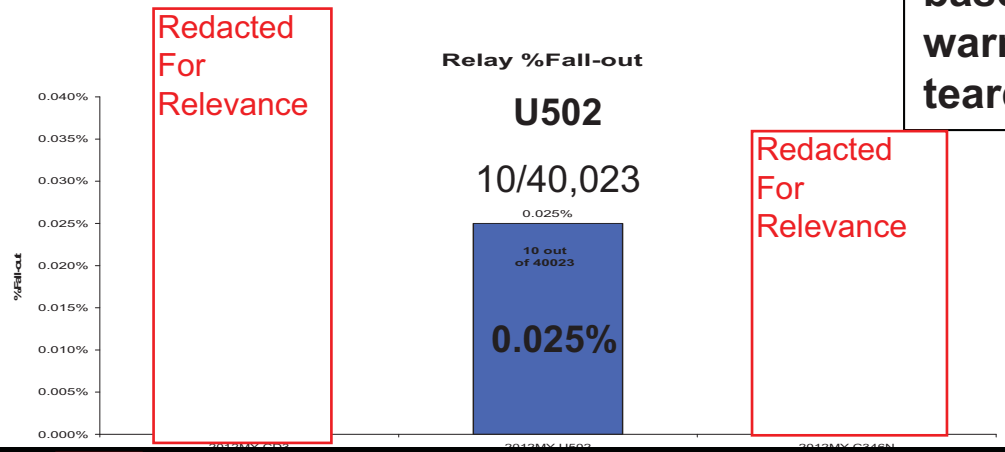
| | | |
|---|---|---|
| Business Unit: PD Dearborn | Functional area: Chassis Steering | Customer: Vehicle owner |
| Vehicle program: U502, CD3, C346 | | Part: EPAS |

## PROJECT CLASSIFICATION:

**BSAQ Item: SAQ2012208065 -EPAS B3A Motor Relay Contamination**

## TREND CHARTS and BREAKDOWN OF ISSUE:

**based on warranty teardowns**




**VOICE OF THE CUSTOMER:** Some U502, [redacted] and [redacted] vehicles may exhibit loss of steering assist during a journey including an indicator light on the IP. Assist will return when the key is cycled.

**CTQ STATEMENT (Customer Requirement):**

EPAS should give driver power steering assist at all times.

**DEFECT DEFINITION for Y (Objective Metric):**

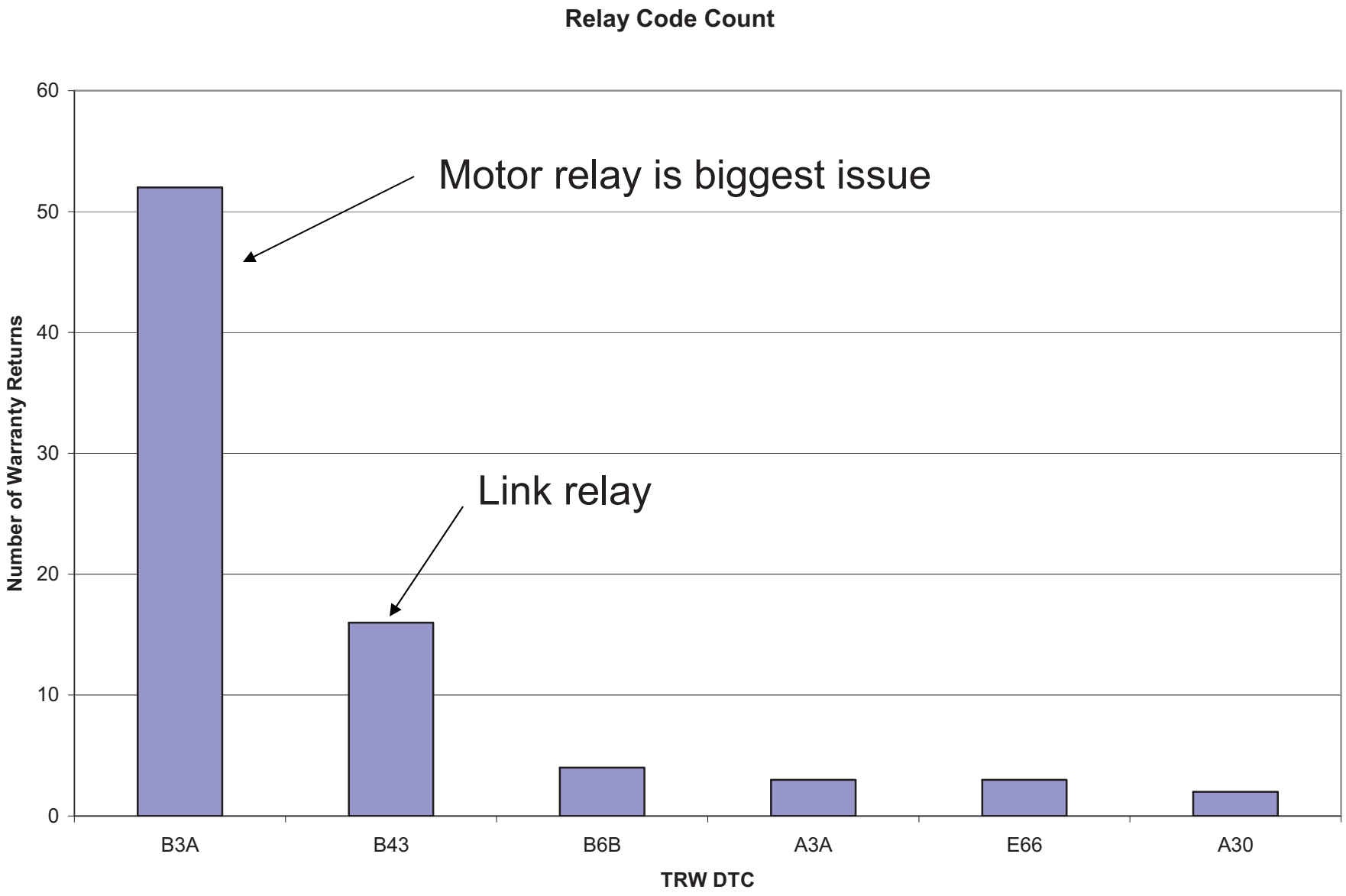
Within the TRW EPAS electronics, there is a motor relay and a link relay. Failure of the motor relay primarily results in the TRW code B3A and failure of the link relay primarily results in the code B43.

**COST OF POOR QUALITY:**

Customer dissatisfaction, warranty cost for EPAS claim.

**PROBLEM STATEMENT, SCOPE, AND GOAL**

Find root causes of relay failures and implement corrective actions to eliminate this issue. [redacted] has highest repair rate at 0.35 R/1000 and problem will be scoped to it.



# 6-PANEL

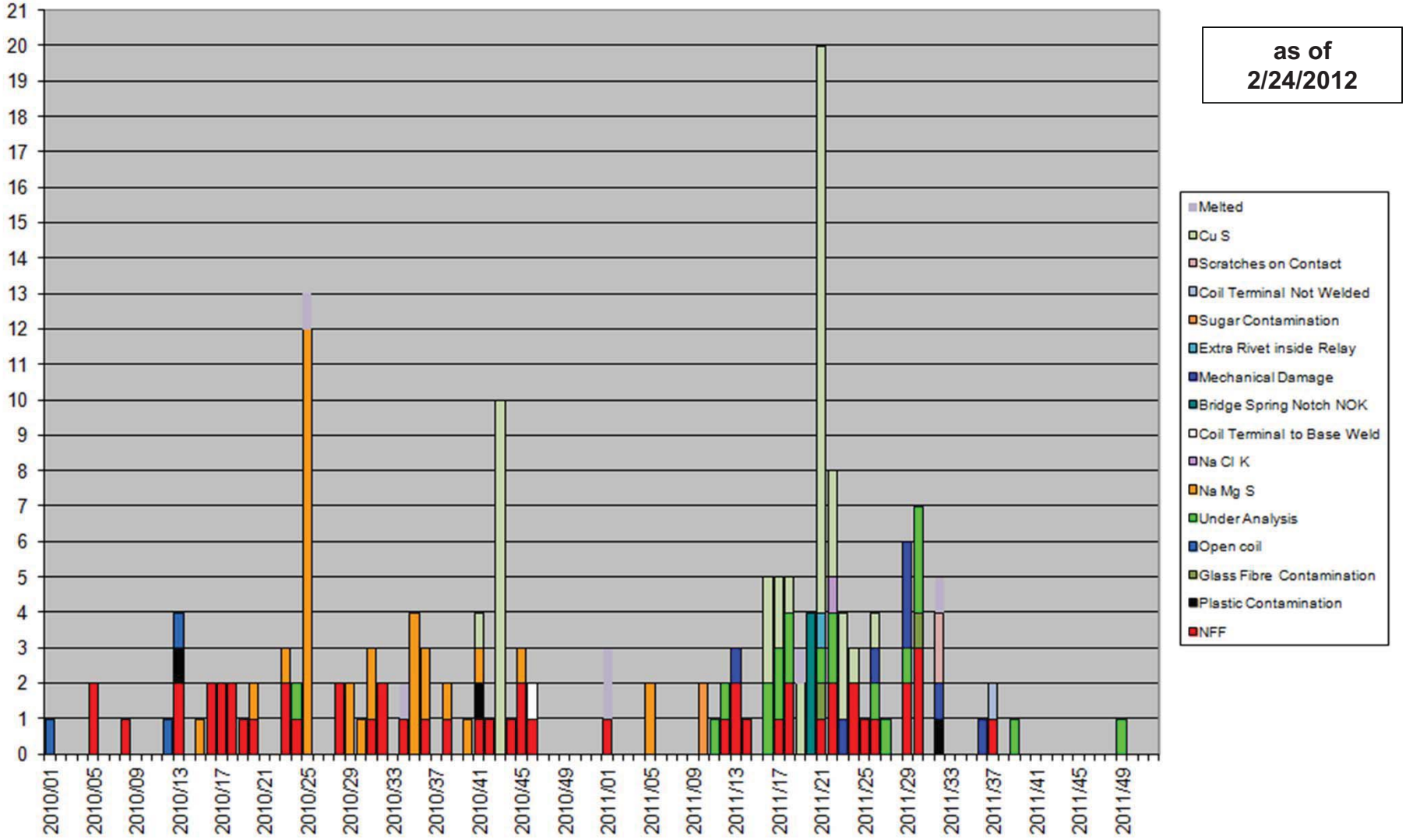


D M A I C R

DEFINE VOICE OF THE CUSTOMER

Redacted
For
Relevance

# Run Chart of Relay Issues by TE Relay Build



# 6-PANEL





- **85 Relays are currently under analysis**
- **Source**
  - 73 from Ford NA
  - 12 form Ford of Europe

as of
2/24/2012

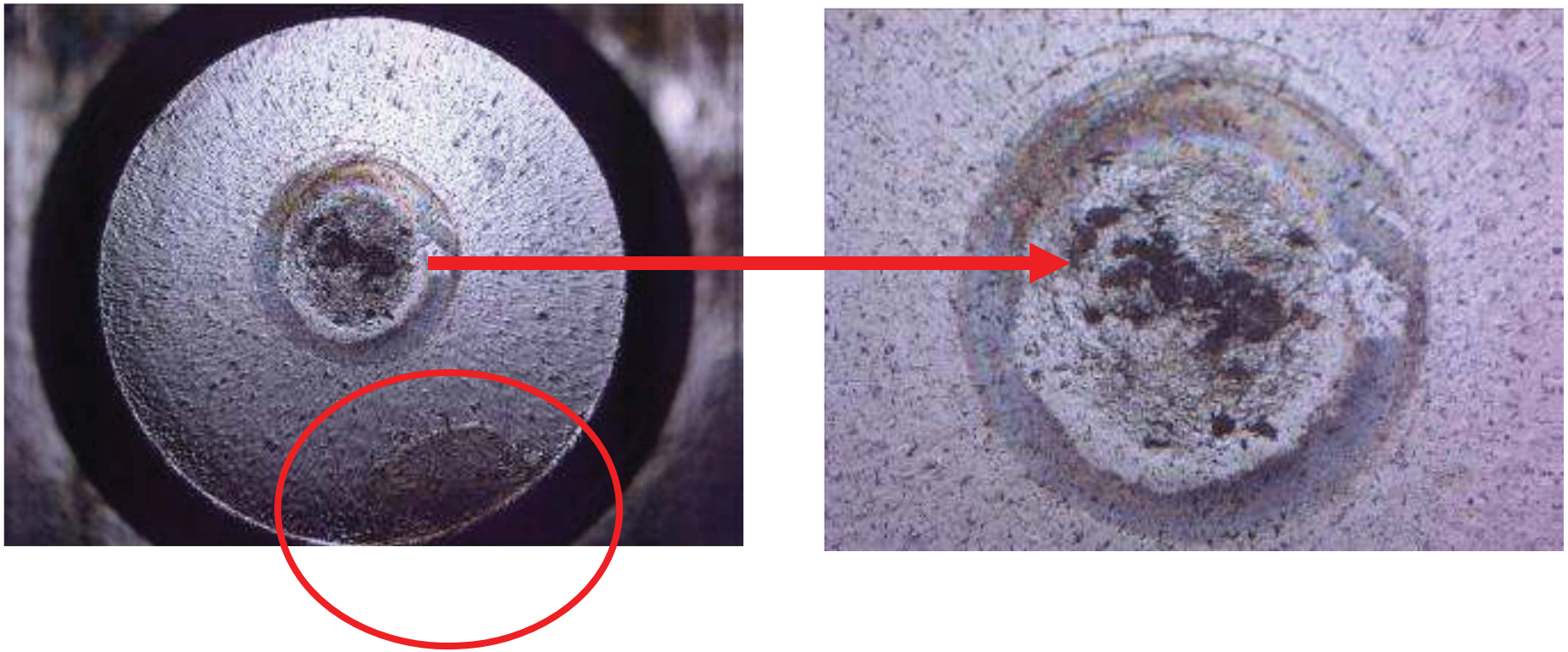
- **Relay Type**
  - 20 link relays
  - 65 motor relays

- **Root Causes under investigation**

| | |
|---|---|
| – Cu S | 45 |
| – Mechanical damage | 8 |
| – Melted plastic | 6 |
| – Plastic contamination | 4 |
| – Scratches on Contact | 2 |
| – Unknown contamination | 2 |
| – Na Cl K | 2 |
| – Sugar contamination | 2 |
| – Extra Rivet inside Relay | 1 |
| – Coil Terminal Not Welded | 1 |

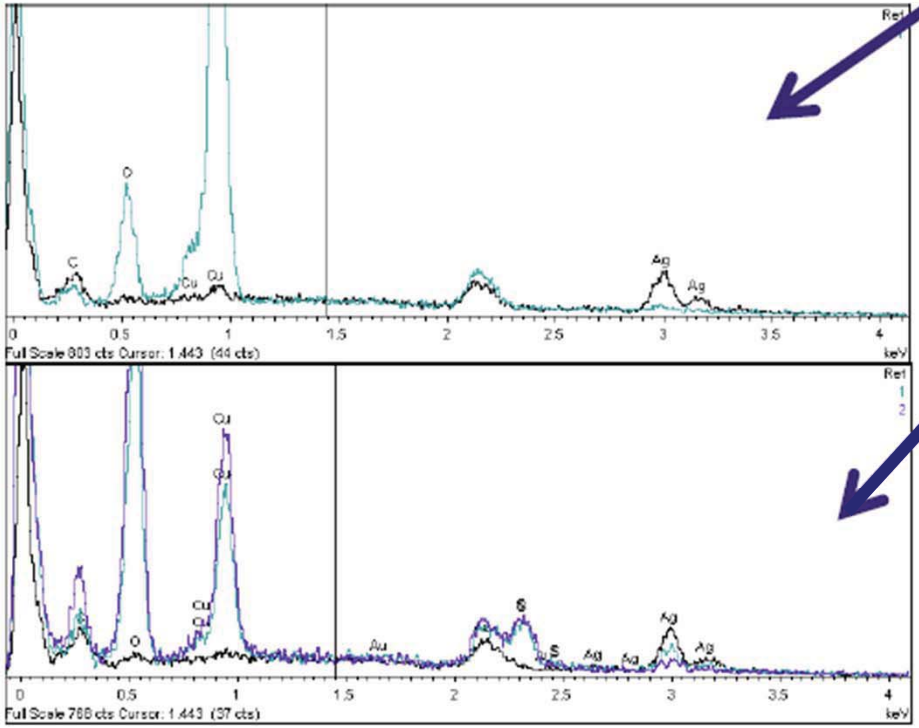
Multiple root causes so focus on largest failure mode which is currently CuS contamination.

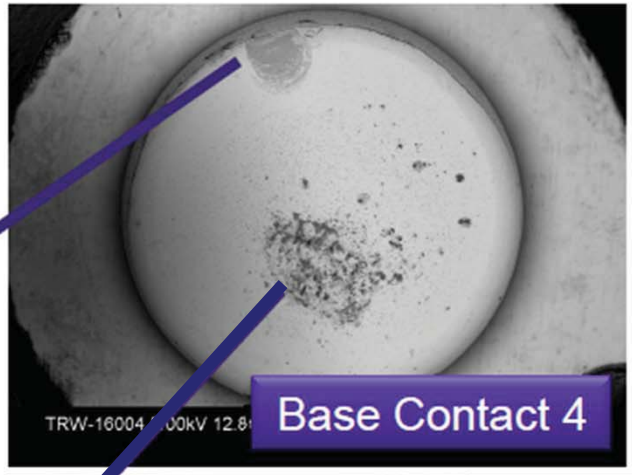
- **Relays without initial reports**
  - Under analysis 12



Example warranty return of relay contacts. Note the corrosion not only in the center of the contact but also on the edge (circled in red).

- Contact 4 showed contamination
- EDX analysis of affected area indicated the presence of sulphur and oxygen



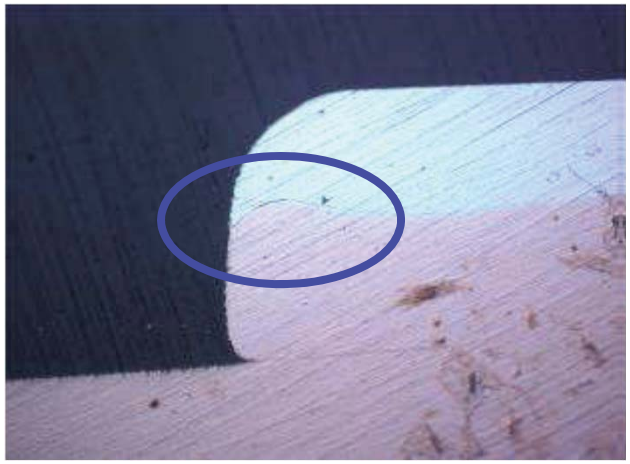

Corrosion areas in both center and edge show presence of copper, sulphur and oxygen

Analysis of the edge of the contacts shows contamination getting in between the bottom copper layer and the top silver layer. Further analysis by TE shows that there is actually a crack between the copper and the silver.

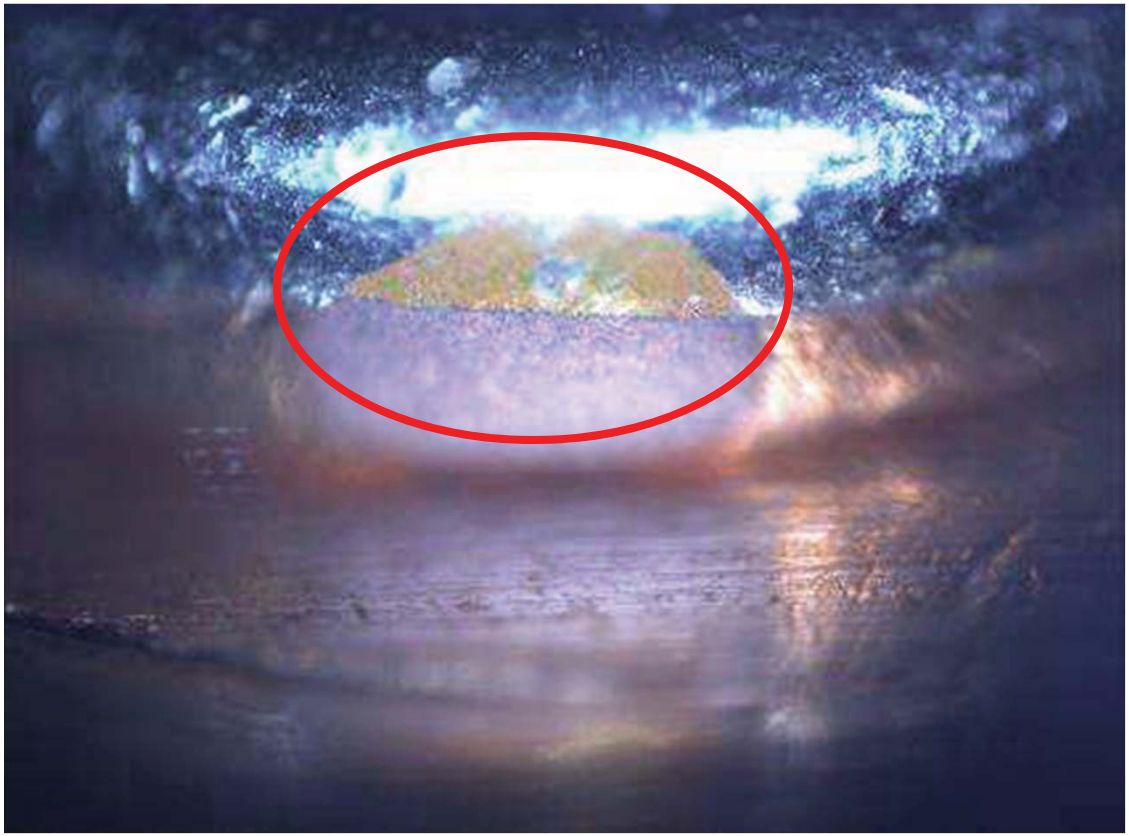
# 6-PANEL







Goal of trials at TE was to produce cracks between copper and silver layers. They were successful in doing this using their press in Portugal.



Humidity cycling of the part (40 degrees C, 95% humidity, 16 hours / 13 degrees C, 95% humidity, 8 hours) caused corrosion to develop in the area of the crack. This was repeated on 6 different parts with cracks between copper and silver layers created before the Doduco process. 20 parts with cracks created after the Doduco process were subjected to the same humidity test and none of them showed any signs of this type of corrosion.

# Root Cause Summary

- After the riveting tests, we can conclude that;
  - Rivets where the crack occurs in Doduco process exhibit the contamination.
  - Rivets where the crack is caused by TE's riveting process do not show any signs of contamination.
  - The set-up of the press, where the silver and copper are welded together, is the root cause for possible crack in the rivet.
  - The contamination source is Doduco
  - This contamination has copper and sulphate on its composition as seen in the complained relay.

TE connectivity RELAY PRODUCTS

23rd January 2012

# Containment Actions at TE/Doduco

- Check 10 rivet per bag (10,000/bag) under a microscope for evidence of cracks at TE.
- Scrap first 1000 parts every time cold weld press starts up at Doduco. It was found that cracks occur when press first starts up.
- Clean feeder tube of any rivets after every set up/tool change after 1000 rivet scrap at Doduco. It was found that set up parts could potentially get into production.
- All actions implemented Aug 5, 2011 at TE/Doduco
  - Changes above implemented at assembly plants as follows:

    C346 - 1/9/2012, U502 w/o APA(48mm) - 1/17/2012, U502 w/APA (58mm) - 2/3/2012 low volume production, CD3 - 1/17/2012

# PCA Actions at TE/Doduco

- Investigate going to a solid silver contact rather than bimetal copper/silver
- Investigate new de-burr process at Doduco in order to eliminate contaminates used in current process

# Solid Silver Contact Benefits vs Risk

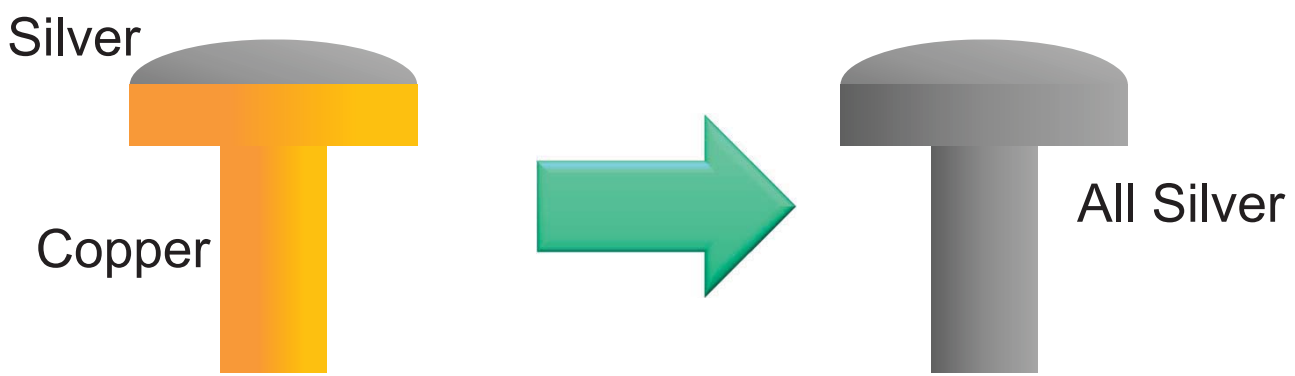
| Benefits | Risks / Issues |
|---|---|
| CuS failure mode elliminated | Increased cost (€0.20 to €0.30 per relay) |
| Reduced contact resistance at low currents | Silver rivet into copper base - new material combination for TRW |
| Reduced contact resistance at start up | |
| Reduced PPMs | |

# 6-PANEL





- When TRW commenced the Belt Drive project and selected the SPR relay, the TE standard contact type was ‘bi-metal’
  - This consists of a copper rivet with a silver contact surface
- The proposed change is to move to the all silver (massive silver) contact
  - Note that the massive silver contact is now the TE standard contact type for SPR
- Except for contact forming material types, the process at Doduco is <u>identical</u> for the two contact types



# Next Steps

- Complete workshops at TE. Both TRW and Ford attending.
  - Week 4, 2012 – completed
  - Week 10, 2012 – planned (Frank Hofmann of TRW coordinating)
- Complete investigation on solid silver contacts to implement as PCA
  - Solid silver contact implementation plan follows…
- Investigate new de-burr process at Doduco as possible PCA
  - Estimated implementation at Ford Assy Plants: Mar, 2013

# Solid Silver Contact Implementation Plan

| Action | Owner | Target Date |
|---|---|---|
| Life endurance testing and results | TE | 10-Feb |
| Double life test to confirm riveting robustness | TE | 10-Feb |
| Testing to portions of TRW test specification to be conducted | TE | 2-Apr |
| dFMEA review | TE | 13-Apr |
| Manufacture relays with massive silver contacts | TE | 17-Feb |
| Manufacture motors with massive silver contacts | Nidec | 16-Mar |
| Manufacture FOE PFSs with massive silver contacts | Kimball | 16-Mar |
| Manufacture FNA PFSs with massive silver contacts | Anting | 18-Mar |
| Manufacture FOE EPPs with massive silver contacts | Schalke | 30-Mar |
| Manufacture FNA EPPs with massive silver contacts | Anting | 18-Mar |
| EPP Level PV Testing: Tri-Temp Puma Testing (woodpecker) | Shirley | 13-Apr |
| U502 13.5MY Gear Phase 0 with massive silver contacts (to be shipped for <PP> build) | Marion | 4-May |
| SOP at Ford | All | Aug 2012 |

# BACK-UP SLIDES

# Ceramic De-Burr Benefits vs Risk

| Benefits | Risks / Issues |
|---|---|
| CuS failure mode elliminated | New process with no previous experience in Doduco |
| Na Mg S failure mode elliminated | Contamination risk from ceramic chips |
| Other potential Doduco failure modes elliminated | Replacement of ceramic chips at appropriate intervals |
| Automatic process | |

# 6-PANEL

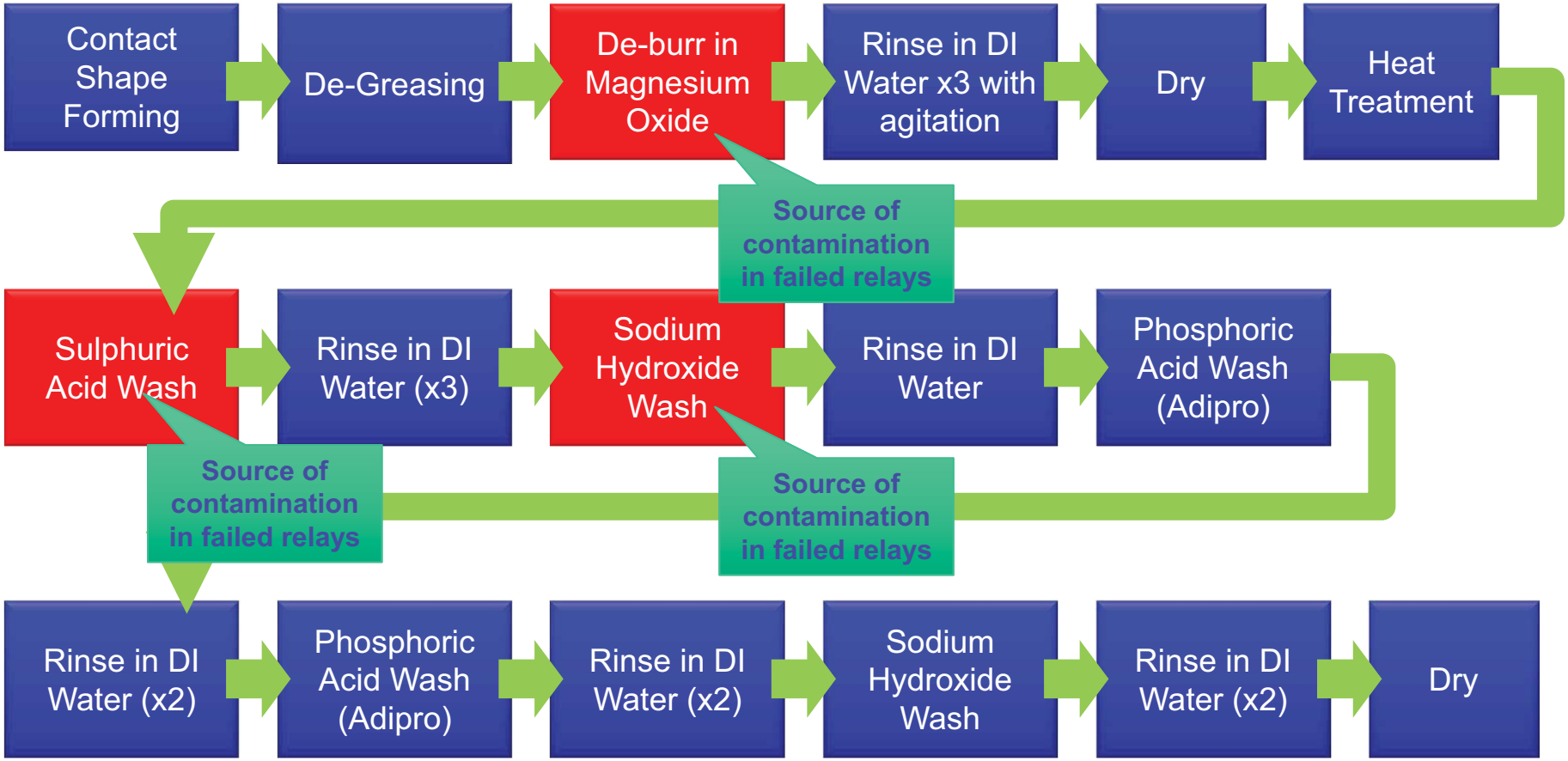




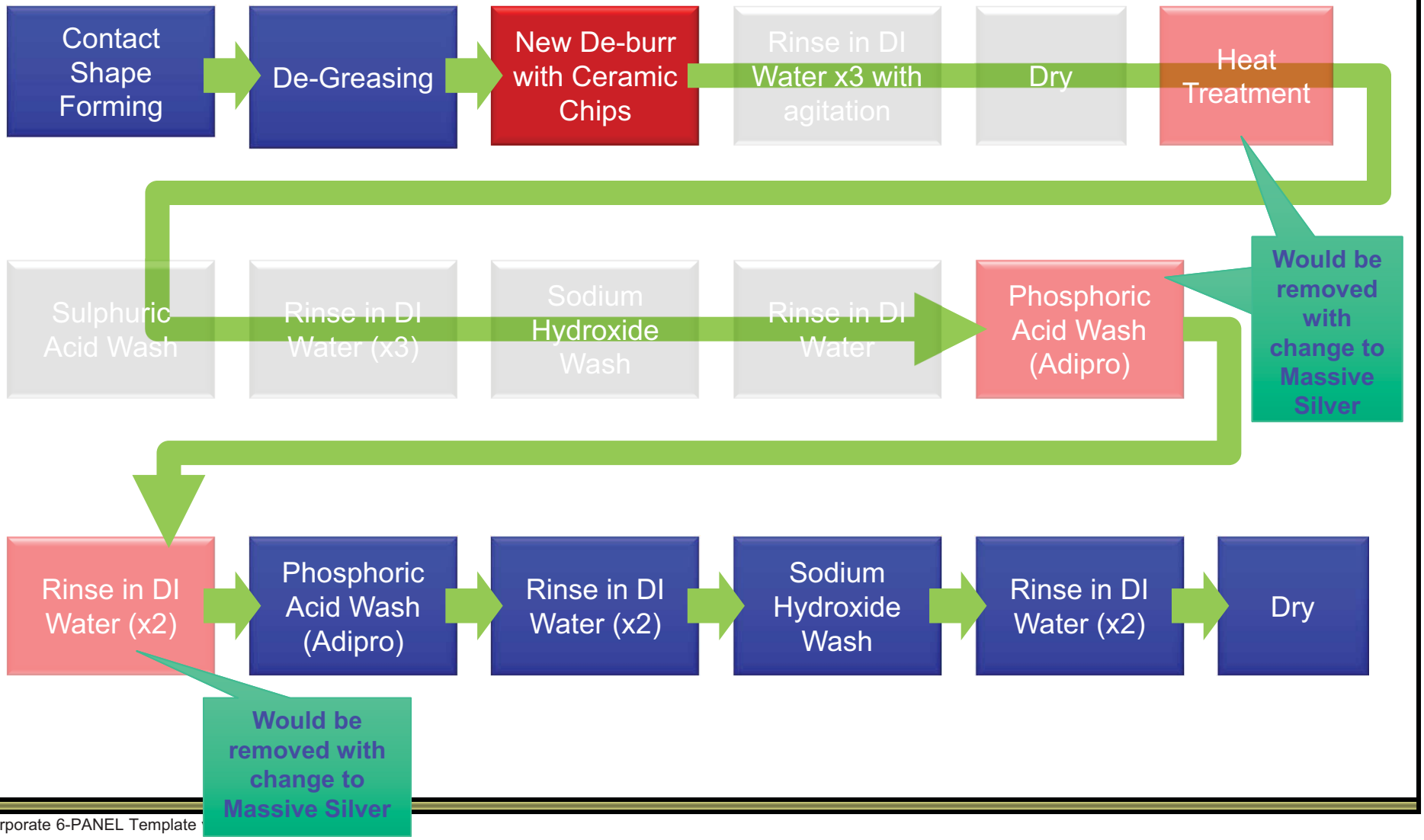
- New de-burr machine is now under evaluation at Doduco
  - Different ceramic chip materials are being tried
  - Once the process is defined and approved by TE, TE will start relay tests to confirm it has no detrimental affect on the relay contacts

New De-Burr Machine

# Current Doduco Process Flow



# Doduco Process Flow with New De-Burr



# New De-burr Process Timing

| Action | Owner | Target Date |
|---|---|---|
| Develop and finalise new de-burr process | Doduco | ~ May ’12 |
| Relay level validation | TE | June ’12 |
| Perform gap level analysis | TE/TRW | July ’12 |
| dFMEA review | TE | July ’12 |
| Testing to portions of TRW test specification to be conducted | TE | Aug ’12 |
| Manufacture relays with new de-burr process | TE | July ’12 |
| Manufacture motors with new de-burr process | Nidec | Aug ’12 |
| Manufacture PFSs with new de-burr process | Kimball | Aug ’12 |
| Manufacture EPPs with new de-burr process | TRW Schalke | Sept ’12 |
| EPP Level Puma Testing | TRW Shirley | Nov ’12 |
| SOP at Ford | All | Mar ’13 |

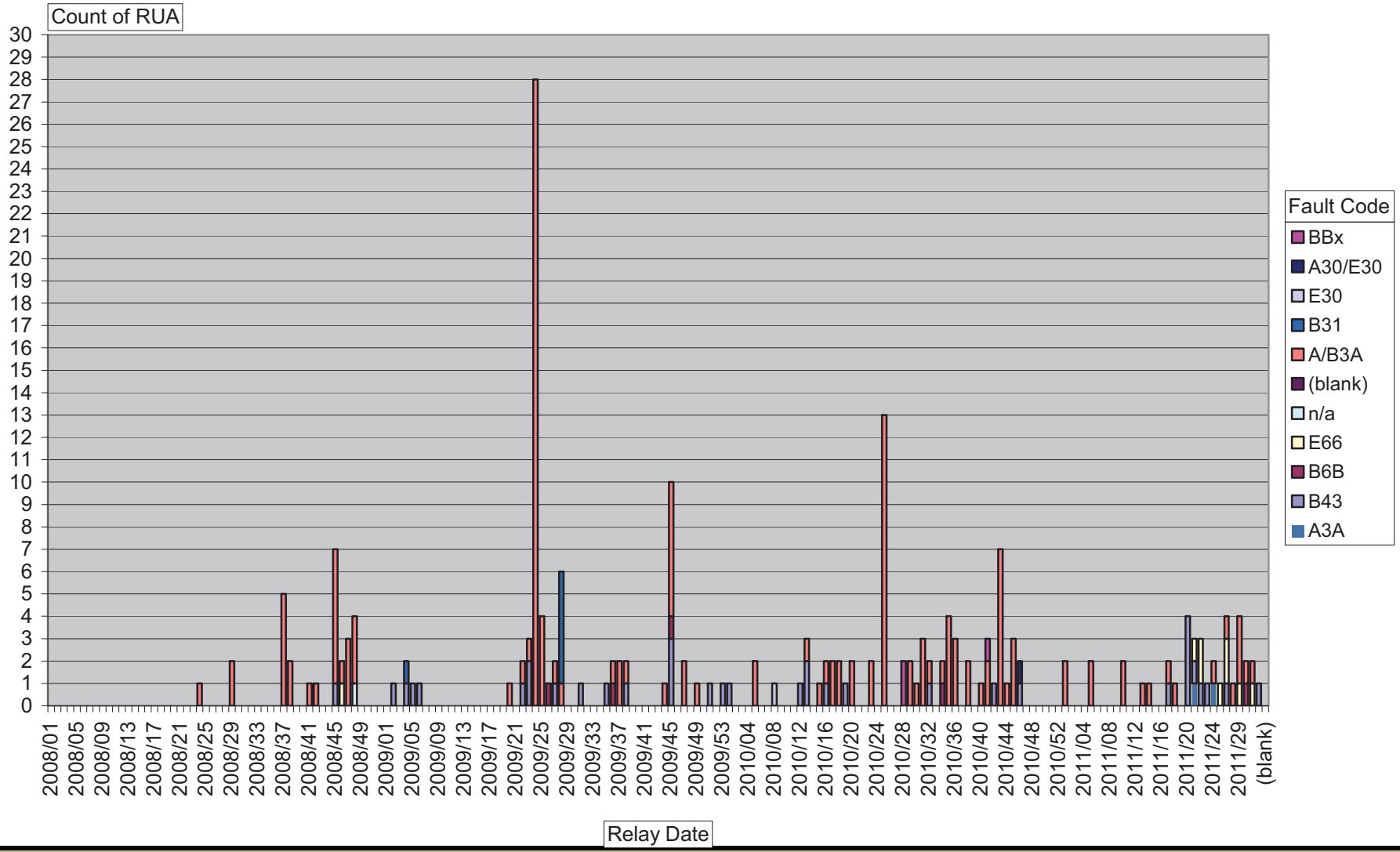
# 6-PANEL



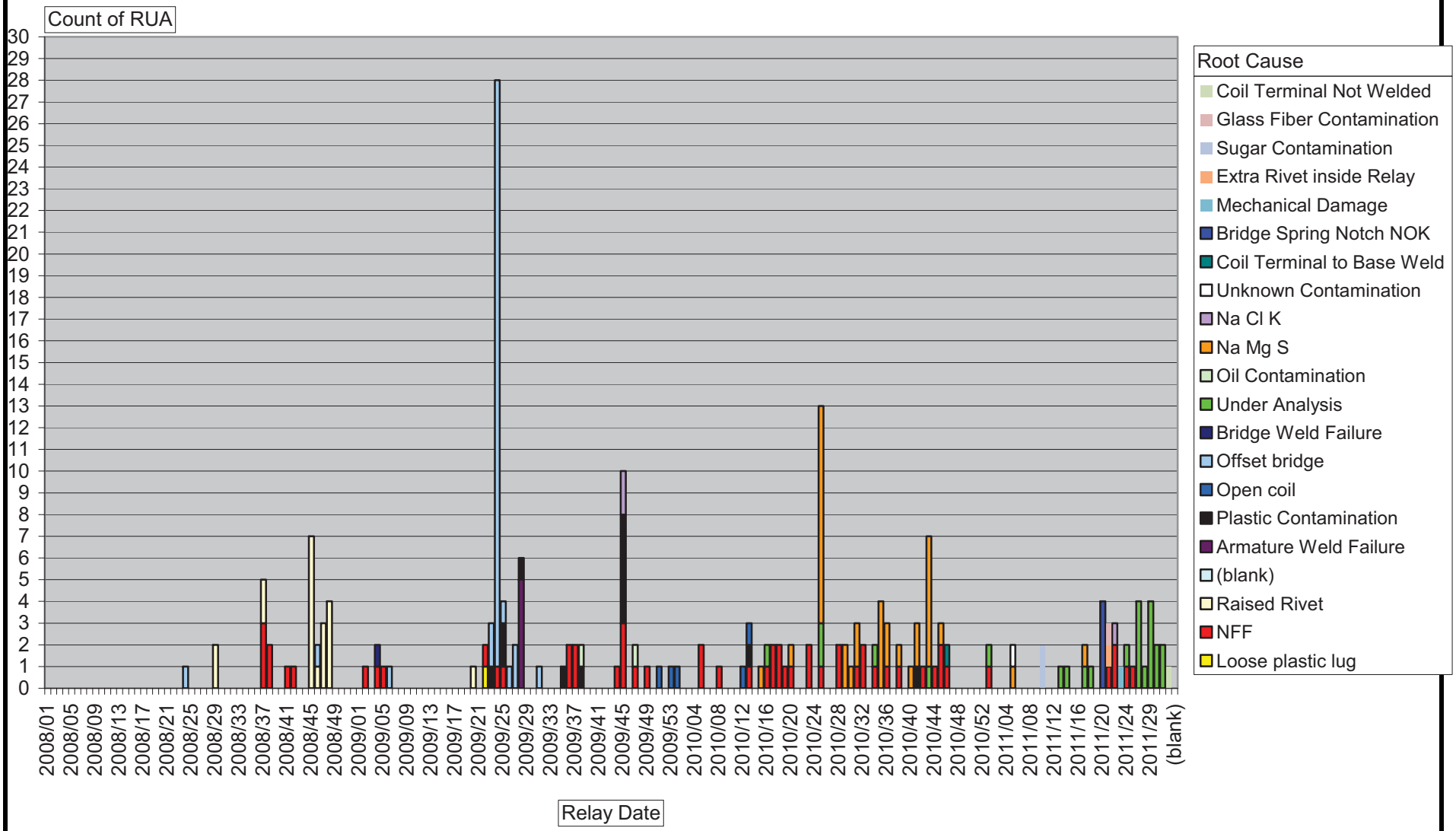


Redacted
For
Relevance

# Run Chart – Fault Code



# Run Chart – Root Cause



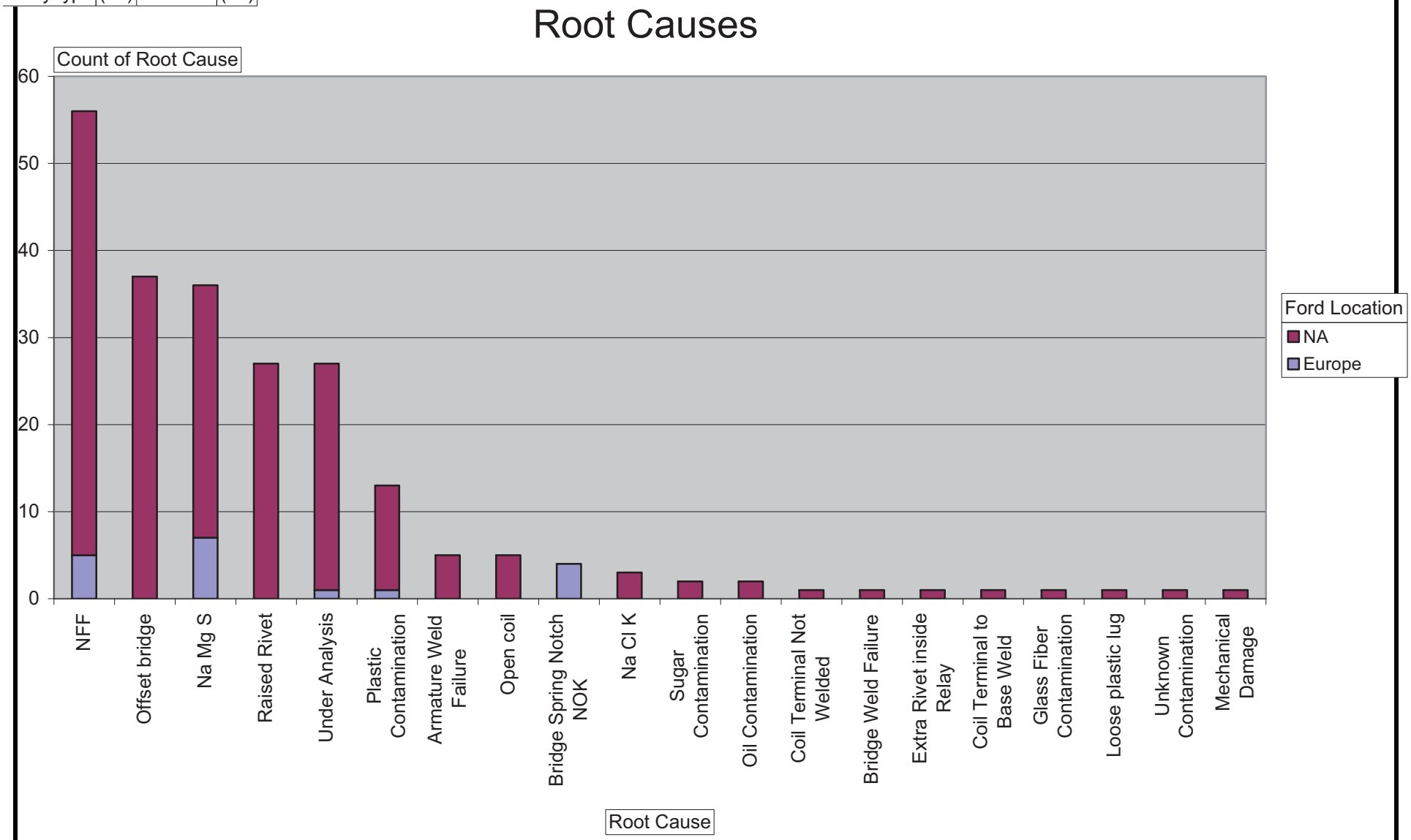
# 6-PANEL



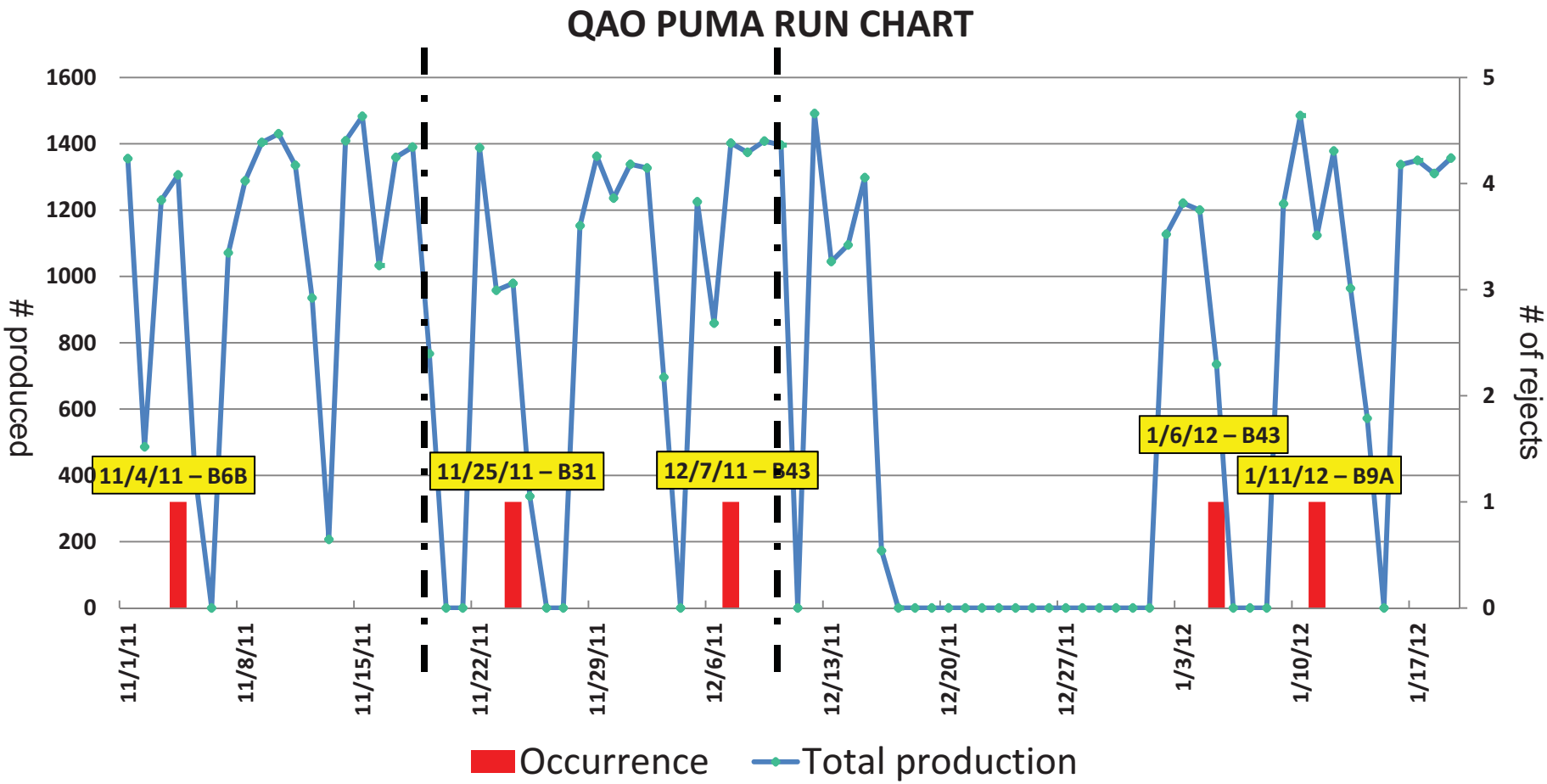
D M A I C R

DEFINE VOICE OF THE CUSTOMER

Relay type (All) Failed at (All)



# Containment Actions at Marion and Queretaro




Hot Puma testing at QTO and MAO was increased from 3000 to 4500 relay cycles on 11/17/2011 to try to force a relay failure. A script was implemented on 12/10/2011 which rejects parts that show any LICs for B3A, A3A, and B43.

| Case Number | Ford DTCs | TRW Code (Symptom) | Component | Gear Location | Current Updates | Miles | VIN | Vehicle Build Date | Gear Build Date | ECU Build Date | EPP Build Date | Eng. Type | Date of Repair | Motor Build Date | other A,B,E codes | LIC's | State | Actual High- low Temp on Claim Date (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0184 | U2011-49<br>U3000-96 | B6B | EPP | in process MAO | 3/5- pulled EFF & stored data, to ship to QAO for further testing | 2673 | 1FMHK8F89CGA67826 | 11/7/2011 | 11/1/2011 | 9/22/2011 | 9/23/2011 | 3.5L wo/APA | 2/2/2012 | 9/1/2011 | B6Bx3<br>C69 | none | PA | 46-37 |
| UR0200 | U2011-49 | B6B | EPP | in process MAO | 3/9- pulled EFF & stored data, to ship to QAO for further testing | 4090 | 1FMHK8D81CGA46519 | 10/17/2011 | 10/8/2011 | 8/25/2011 | 8/25/2011 | 3.5L wo/APA | 2/14/2012 | 6/28/2011 | B6Bx5<br>C69 | E12x85<br>E14x1<br>E1Ex1<br>E66x1<br>B6Bx5 | NJ | 46-33 |

| |
|---|
| **2-** U502 |
| **12-** CD3 |
| **6-** C346 |
| **3-** D-Car |
| **23- Total** |

3/19/2012

| | Fallout% | Fallout | Total Checked | Good |
|---|---|---|---|---|
| | | | | |
| **2012MY U502** | 0.005% | 2 | 40023 | 40021 |

Redacted for Relevance

3/30/2012

| | Fallout% | Fallout | Total Checked | Good |
|---|---|---|---|---|
| | | | | |
| **2012MY U502** | 0.003% | 3 | 104,336 | 104333 |

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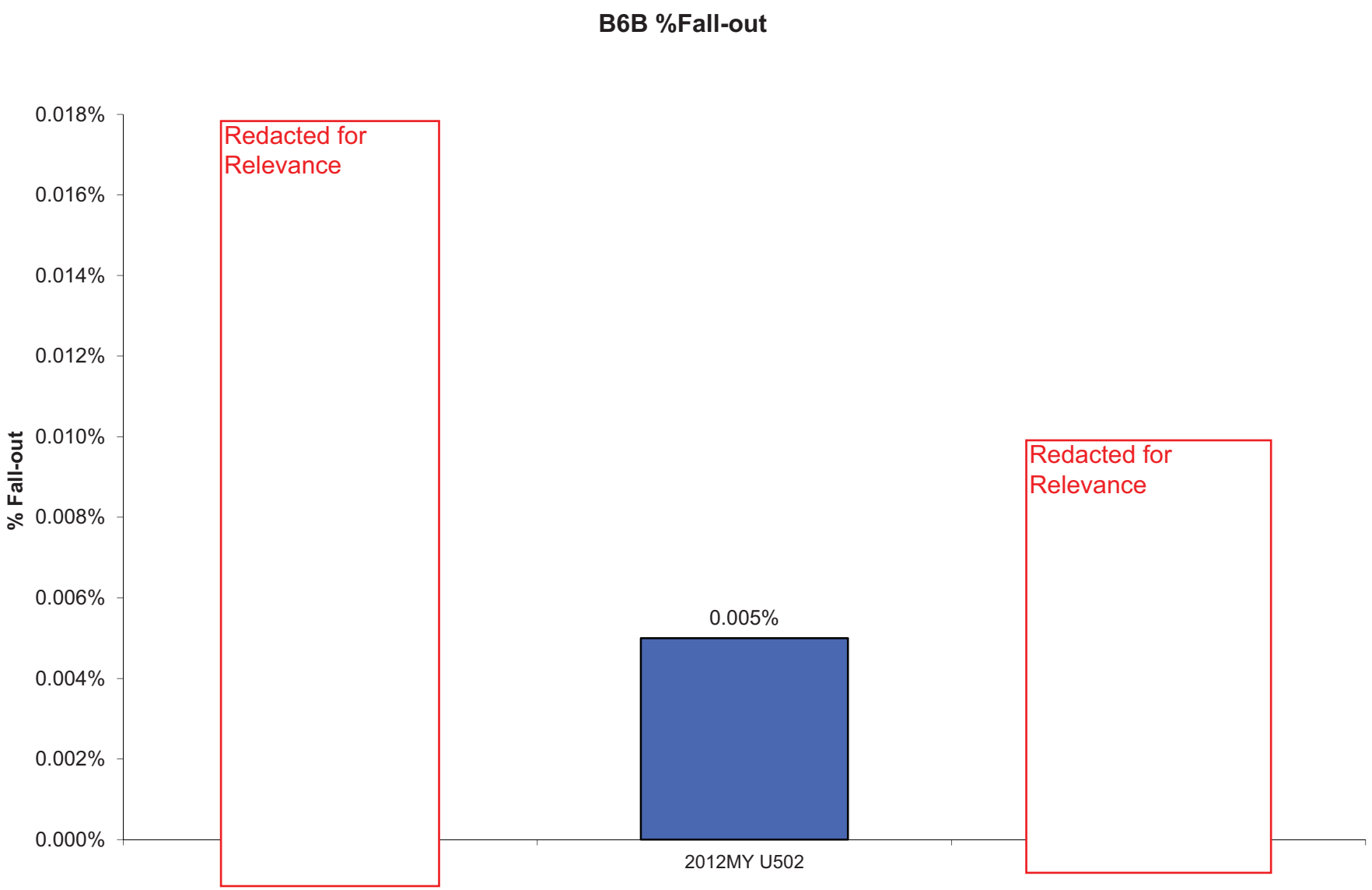
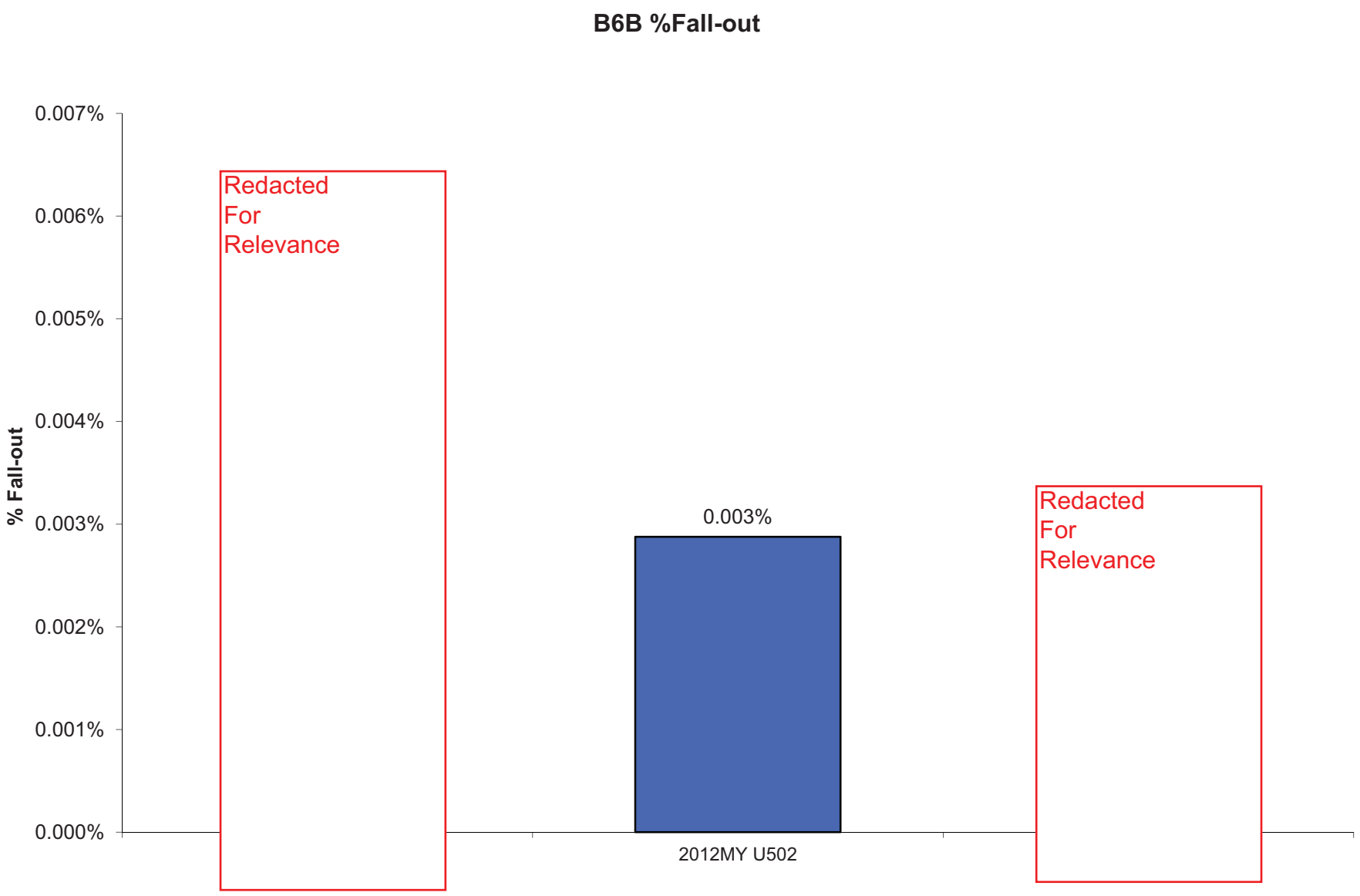

B6B %Fall-out
% Fall-out
0.018%
0.016%
0.014%
0.012%
0.010%
0.008%
0.006%
0.004%
0.002%
0.000%
Redacted for Relevance
0.005%
Redacted for Relevance
2012MY U502


B6B %Fall-out
% Fall-out
0.007%
0.006%
0.005%
0.004%
0.003%
0.002%
0.001%
0.000%
Redacted For Relevance
0.003%
2012MY U502
Redacted For Relevance

**From:** Napoli, Laura (L.)
**Sent:** Friday, January 28, 2011 11:49 AM
**To:** 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'
**Cc:** Mrozek, Robert (R.M.); Estes, Eric (E.E.); 'Abe Ghaphery'
**Subject:** B91 on U502 at CAP

**Importance:** High

Rob, Hemang, Nick,

Please see attached emails with snapshot data and part numbers for the B91 (U3000-61) that occurred last night at CAP on the 2011 U502. This is a non-APA 3.5L TiVCT with a BB53-3200-AG gear with the following SW level:

BB53-14D003-AE
BB53-14D004-AG

This is the R6.2 level with calibration file tuned for rubber mounts and calibrated to turn off the Higher Current Contact Closure Test to resolve the BA0:

Ford needs someone from TRW to go to CAP immediately to test the vehicle before the gear is pulled out of the car. Using the snapshot data, we need you to collect CANape data while driving those conditions to see if you can duplicate.

Eric Anderson is the contact for CAP when you guys arrive. His cell phone is 773-729-0337.

From 26mile:

- Please pull the fishbone we had back in June from our other B91 issue. Rob, can you forward the latest to the team?
- Please confirm that that B91 fix is present in the AE SW.
- Please get Abe Ghaphery involved to help resolve this quickly.

The plant wants to stop ship due to this issue. We need to understand root cause quickly to be able to understand the possibility of this occurring with a customer before we have a fix implemented.

I will be sending a meeting notice to you guys for a 1pm discussion with the plant that I'll need Hemang to support.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Issa, Ibrahim (I.M.)
**Sent:** Thursday, January 27, 2011 4:36 PM
**To:** Napoli, Laura (L.); Anderson, Eric (H.)
**Cc:** Estes, Eric (E.E.); Jackson, Bradley (B.G.); Logli, Michael (M.A.)
**Subject:** RE: 2011 U502 Failed Steering Gear
**Attachments:** BGA22399_Snapshot.rtf; BGA22399_HSCAN.rtf; BGA22399_DIDI Info HS_CAN.rtf

Laura,

Please see attached files for data taken from BGA22399. The vehicle did not fail for any item during dynamic/static EOL tests. Eric will be interviewing the driver and trying to duplicate the concern in the vehicle. Thanks.

Best Regards,
Ibrahim Issa

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, January 27, 2011 2:53 PM
**To:** Anderson, Eric (H.); Issa, Ibrahim (I.M.)
**Cc:** Estes, Eric (E.E.); Jackson, Bradley (B.G.)
**Subject:** 2011 U502 Failed Steering Gear

Eric,

Please have the Electrical guys pull the snapshot data with the Ford Tool. The folllowing screen shot shows what you need to pull...(Then scroll down below this huge picture for the rest of my questions and shipping location.)

Please ask the technician what he was doing when he lost assist. What was the driving maneuver, etc. Also, please ask him if the car was cold when he went to drive it. Was it in the garage before he took it out for the drive or had it been sitting in the parking lot for a couple hours beforehand? Please also ask him if there were any messages in the message center or lights on in the dash when it happened.

If you can duplicate the issue, I'd like to know what the message in the message center says. Then pull codes and verify you have the U3000-61 again.

Then pull the gear and ship it directly to TRW at the following address:

TRW Automotive East Building
Attn: John Burnett
4505 W 26 mile Rd
Washington, MI 48094

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Anderson, Eric (H.)
**Sent:** Friday, January 28, 2011 10:21 AM
**To:** Napoli, Laura (L.)
**Cc:** Docimo, Tony (A.F.); Cantrell, David (D.D.)
**Subject:** RE: 2011 U502 Failed Steering Gear

HI Laura:

I drove BGA22399 again, but could not duplicate the fault. I drove through neighborhoods, on the highway and performed some tight full lock turns. I threw in some key cycle and door opens for good measure too, still no fault.

The original driver said that he began his drive with the vehicle warm, straight off the end of the line. He lost power steering assist while driving straight at about 45mph and braking. He did not report hitting any large potholes or other bumps. The power steering fault message showed up in the message center. After coming to a safe stop, he cycled the key and power steering returned.

My PVT manager is considering going stop ship for this unknown problem. We have not seen a U3000-61 code in any ECB or CQIS claim. Do you have confidence that we are selling vehicles with good EPAS gears?

The gear will be pulled today and sent to John Burnett at TRW.

Thanks,

Eric

---

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Diagnostic Engineering Tool v5.1.1 - DefaultSettings.dcs

File Initialize Hardware Display Tools View Help

User Initialized Connection

Message To Send: Service 0x19 (ReadDTCInformation)

SPRMIB Send Func Send Message

Module ID: 730 0x701 [GPS

SubFunction Values: 0x04 - reportDTCSnapshotRecordByDTCNumber

DTCSnapshotRecordNumber: 0xFF - All Snapshot Records

DTCMaskRecord

User Defined: 123456

```
Date: 2011-01-27    Time: 3:32:30 PM  (v5.1.1)

 >>>>> Active Connection set to User Initialized Connection  - 500k
 >>>>> Active Connection set to User Initialized Connection  - 500k
Request for DiagnosticSessionControl (Service 0x10)  --  [ECU ID: 0x730 (PSCM)]
    Session: 0x01 (defaultSession)  [SPRMIB = False]
Positive Response to DiagnosticSessionControl (Service 0x10)  --  [ECU ID: 0x738 (PSCM)]
    Session: 0x01 (defaultSession)    P2can:  50ms    P2*can: 5000ms
 >>>>> Active Connection set to User Initialized Connection  - 500k
```

C:\Documents and Settings\LNAPOLN\My Documents\Ford NetCom\Diagnostic Engineering Tool\DefaultSettings.dcs  Hardware Connected

Start  C:\Documents an...  S0001151_TSC_C...  S0001152_TSC_In...  PSCM-DS-BB53-3

Please ask the technician what he was doing when he lost assist. What was the driving maneuver, etc. Also, please ask him if the car was cold when he went to drive it. Was it in the garage before he took it out for the drive or had it been sitting in the parking lot for a couple hours beforehand? Please also ask him if there were any messages in the message center or lights on in the dash when it happened.

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Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

Date: 2011-01-27 Time: 3:03:23 PM (v3.2.1)

**Please Note:**
The version of the tool you are using is over 6 months old (Released Date: 6/23/2009). Please verify you are using the latest version by visiting the Ford EESE NetCom eRoom.

Request for DiagnosticSessionControl (Service 0x10) -- [ECU ID: 0x730 (PSCM)]
Session: 0x01 (defaultSession) [SPRMIB = False]
Positive Response to DiagnosticSessionControl (Service 0x10) -- [ECU ID: 0x738 (PSCM)]
Session: 0x01 (defaultSession) P2can: 50ms P2*can: 5000ms
Request for ReadDTCInformation (Service 0x19) -- [ECU ID: 0x730 (PSCM)]
SubFunction: 0x04 (reportDTCSnapshotRecordByDTCNumber) [SPRMIB = False]
DTCMaskRecord: 0xF00061
DTCSnapshotRecordNumber: 0xFF
Positive Response to ReadDTCInformation (Service 0x19) -- [ECU ID: 0x738 (PSCM)]
SubFunction: 0x04 - reportDTCSnapshotRecordByDTCNumber
-- Assuming only a single DTCSnapshotRecordNumber is being returned
DTC: 0xF00061 [Control Module - signal calculation failure]
Status: 0x08
DTCSnapshotRecordNumber: 0x10
DTCSnapshotRecordNumberOfIdentifiers: 0x0A
DID #1: 0x3301 -- Assuming Single DID
Snapshot Data (Hex): 06 33 02 1E D4 33 06 7F FF 00 00 00 00 00 00 00 00 00 33 0C 86 D1 11 7B D1 17 40 D1 18 FF 91 F4 0C 03 84 F4 0D 00 FD AA 91

Date: 2011-01-27 Time: 2:22:09 PM (v3.2.1)

**Scanning Connection (User Initialized Connection) for ECUs:**

ECU #1 - Communication Established with IPC - Instrument Panel Cluster (IPC) Control Module (0x720) - [GGDS]:
ECU #2 - Communication Established with SCCM - Steering Column Control Module (0x724) - [GGDS]:
ECU #3 - Communication Established with BCM - Body Control Module (0x726) - [GGDS]:
ECU #4 - Communication Established with ACM - Audio Front Control Module (0x727) - [GGDS]:
ECU #5 - Communication Established with PSCM - Power Steering Control Module (0x730) - [GGDS]:
ECU #6 - Communication Established with PAM - Parking Assist Control Module (0x736) - [GGDS]:
ECU #7 - Communication Established with RCM - Restraints Control Module (0x737) - [GGDS]:
ECU #8 - Communication Established with ABS - Anti-Lock Brake System (ABS) Control Module (0x760) - [GGDS]:
ECU #9 - Communication Established with OCS - Restraints Occupant Classification System Module (0x765) - [GGDS]:
ECU #10 - Communication Established with DSP - Audio Digital Signal Processing Module (0x783) - [GGDS]:
ECU #11 - Communication Established with FLM - Front Lighting Control Module (0x796) - [GGDS]:
ECU #12 - Communication Established with FCIM - Front Controls Interface Module (0x7A7) - [GGDS]:
ECU #13 - Communication Established with APIM - Accessory Protocol Interface Module (0x7D0) - [GGDS]:
ECU #14 - Communication Established with PCM - Powertrain Control Module (0x7E0) - [GGDS]:
ECU #15 - Communication Established with Unknown ECU (0x7F1) - [Unknown: Assuming CAN GDS]:
Total Number of Found ECUs: 15

Performing Iteration #1, Step 2
Communicating with IPC - Instrument Panel Cluster (IPC) Control Module (0x720):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xFF
Number of Returned DTCs: 0

Communicating with SCCM - Steering Column Control Module (0x724):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with BCM - Body Control Module (0x726):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with ACM - Audio Front Control Module (0x727):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

**Communicating with PSCM - Power Steering Control Module (0x730):**
**Requesting to Read DTCs:**
**Positive Response to ReadDTCInformation (Service 0x19)**
**SubFunction: 0x02 - reportDTCByStatusMask**
**DTCStatusAvailabilityMask: 0xCA**
**Number of Returned DTCs: 1**
**DTC #1: 0xF00061 (U3000-61) [Control Module - signal calculation failure]**
**Status: 0x08**
**Bit 7 - warningIndicatorRequested: 0**
**Bit 6 - testNotCompletedThisOperationCycle: 0**
**Bit 3 - confirmedDTC: 1**
**Bit 1 - testFailedThisOperationCycle: 0**

Date: 2011-01-27 Time: 2:43:46 PM (v3.2.1)

**Scanning Connection (User Initialized Connection) for ECUs:**

ECU #1 - Communication Established with IPC - Instrument Panel Cluster (IPC) Control Module (0x720) - [GGDS]:
ECU #2 - Communication Established with SCCM - Steering Column Control Module (0x724) - [GGDS]:
ECU #3 - Communication Established with BCM - Body Control Module (0x726) - [GGDS]:
ECU #4 - Communication Established with ACM - Audio Front Control Module (0x727) - [GGDS]:
ECU #5 - Communication Established with PSCM - Power Steering Control Module (0x730) - [GGDS]:
ECU #6 - Communication Established with PAM - Parking Assist Control Module (0x736) - [GGDS]:
ECU #7 - Communication Established with RCM - Restraints Control Module (0x737) - [GGDS]:
ECU #8 - Communication Established with ABS - Anti-Lock Brake System (ABS) Control Module (0x760) - [GGDS]:
ECU #9 - Communication Established with OCS - Restraints Occupant Classification System Module (0x765) - [GGDS]:
ECU #10 - Communication Established with DSP - Audio Digital Signal Processing Module (0x783) - [GGDS]:
ECU #11 - Communication Established with FLM - Front Lighting Control Module (0x796) - [GGDS]:
ECU #12 - Communication Established with FCIM - Front Controls Interface Module (0x7A7) - [GGDS]:
ECU #13 - Communication Established with APIM - Accessory Protocol Interface Module (0x7D0) - [GGDS]:
ECU #14 - Communication Established with PCM - Powertrain Control Module (0x7E0) - [GGDS]:
ECU #15 - Communication Established with Unknown ECU (0x7F1) - [Unknown: Assuming CAN GDS]:
Total Number of Found ECUs: 15

Performing Iteration #1, Step 1
Communicating with IPC - Instrument Panel Cluster (IPC) Control Module (0x720):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BB5T-14F094-BE
[0xF113] ECU Delivery Assembly Number: BB5T-10849-GF
[0xF110] Diagnostic Part Number: DS-BT4T-1A292-AD
[0xF188] ECU Software Part Number: BT4T-14C026-BS
[0xF124] ECU Main Calibration Data Number: BT4T-14C088-BN
[0xF18C] ECU Serial Number: 0017552837411829
[0xF15F] NOS Generation Tool Version: Vector 0x08070000810002030000
[0xF166] NOS Message Database #1 Version: 20/January/2010 Version: 09
[0xF167] NOS Message Database #2 Version: 3/July/2009 Version: 35
[0xF159] NOS CAN Driver Version Number: 01.26.02

Communicating with SCCM - Steering Column Control Module (0x724):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BB5T-14F078-BJ
[0xF113] ECU Delivery Assembly Number: BB5T-3F944-BJ
[0xF110] Diagnostic Part Number: DS-BC3T-14B522-AC
[0xF188] ECU Software Part Number: BC3T-14C579-AM
[0xF15F] NOS Generation Tool Version: Vector 0x08060000910003000000
[0xF166] NOS Message Database #1 Version: 1/January/2008 Version: 01

Communicating with BCM - Body Control Module (0x726):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BC3T-14F141-BB
[0xF113] ECU Delivery Assembly Number: BC3T-14B476-DH
[0xF110] Diagnostic Part Number: DS-BC3T-14B476-BB
[0xF188] ECU Software Part Number: BC3T-14C184-BG
[0xF15F] NOS Generation Tool Version: Vector 0x08060000810110020000
[0xF166] NOS Message Database #1 Version: 1/January/2008 Version: 01
[0xF159] NOS CAN Driver Version Number: 05.07.02
[0xF15A] NOS OSEK Network Management Version Number: 03.75.03
[0xF15C] NOS Interaction Layer Version Number: 00.00.00
[0xF15E] NOS Network/Transport Layer Version Number: 03.04.08

[0xF160] NOS Diagnostic Version Number: 05.07.04
[0xF161] NOS CAN Communication Layer Version Number: 02.09.00

Communicating with ACM - Audio Front Control Module (0x727):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BB5T-14F188-CB
[0xF113] ECU Delivery Assembly Number: BB5T-19C107-CS
[0xF110] Diagnostic Part Number: DS-BB5T-19C107-AB
[0xF188] ECU Software Part Number: BB5T-14D099-CL
[0xF124] ECU Main Calibration Data Number: BB5T-14D100-CM
[0xF125] ECU Calibration Data 2 Number: BB5T-14D100-FL
[0xF15F] NOS Generation Tool Version: Vector 0x08070000820064010000
[0xF166] NOS Message Database #1 Version: 2/April/2009 Version: 34
[0xF159] NOS CAN Driver Version Number: 01.26.02
[0xF15A] NOS OSEK Network Management Version Number: 00.00.00
[0xF15C] NOS Interaction Layer Version Number: 05.02.01
[0xF15D] NOS Network Initialization Version Number: 00.00.00
[0xF15E] NOS Network/Transport Layer Version Number: 03.04.08
[0xF160] NOS Diagnostic Version Number: 05.07.05
[0xF161] NOS CAN Communication Layer Version Number: 02.08.00

**Communicating with PSCM - Power Steering Control Module (0x730):**
**Requesting Standard Identification DIDs:**
**[0xD100] Active Diagnostic Session: defaultSession**
**[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003**
**[0xF111] ECU Core Assembly Number: BB53-14F079-AA**
**[0xF113] ECU Delivery Assembly Number: BB53-3F964-BG**
**[0xF110] Diagnostic Part Number: DS-BB53-3F964-AC**
**[0xF188] ECU Software Part Number: BB53-14D003-AE**
**[0xF124] ECU Main Calibration Data Number: BB53-14D004-AG**
**[0xF18C] ECU Serial Number: 103341900F300WW**
**[0xF15F] NOS Generation Tool Version: Vector 0x08050000610031010000**
**[0xF166] NOS Message Database #1 Version: 24/August/2009 Version: 07**
**[0xF159] NOS CAN Driver Version Number: 01.03.00**
**[0xF15B] NOS Network Management Junior Version Number: 01.19.00**
**[0xF15C] NOS Interaction Layer Version Number: 04.06.00**
**[0xF15E] NOS Network/Transport Layer Version Number: 02.88.00**
**[0xF160] NOS Diagnostic Version Number: 04.02.00**
**[0xF161] NOS CAN Communication Layer Version Number: 01.22.00**

Communicating with PAM - Parking Assist Control Module (0x736):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF162] Software Download Specification: SWDL 31808456 Issue 004
[0xF111] ECU Core Assembly Number: BC3T-14F159-AA
[0xF113] ECU Delivery Assembly Number: BB5T-15K866-AC
[0xF112] ECU Assembly Number: BB5T-15K866-AC
[0xF110] Diagnostic Part Number: DS-AE00-E-12080194
[0xF188] ECU Software Part Number: BC3T-14C090-AC
[0xF15F] NOS Generation Tool Version: Vector 0x08050000710061000000
[0xF166] NOS Message Database #1 Version: 2/October/2008 Version: 06
[0xF159] NOS CAN Driver Version Number: 05.02.00
[0xF15B] NOS Network Management Junior Version Number: 01.20.00
[0xF15C] NOS Interaction Layer Version Number: 04.10.02
[0xF15E] NOS Network/Transport Layer Version Number: 02.89.04
[0xF160] NOS Diagnostic Version Number: 05.05.00
[0xF161] NOS CAN Communication Layer Version Number: 01.32.00

Communicating with RCM - Restraints Control Module (0x737):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF162] Software Download Specification: SWDL 31808456 Issue 004

[0xF111] ECU Core Assembly Number: BB5T-14F136-AC
[0xF113] ECU Delivery Assembly Number: BB5T-14B321-AF
[0xF110] Diagnostic Part Number: DS-BC3T-14B321-AC
[0xF188] ECU Software Part Number: BB5T-14C028-AC
[0xF124] ECU Main Calibration Data Number: BB5T-14C098-AF
[0xF18C] ECU Serial Number: 7103516200000000
[0xF15F] NOS Generation Tool Version: Vector 0x08050000810049000000
[0xF166] NOS Message Database #1 Version: 16/April/2010 Version: 07
[0xF167] NOS Message Database #2 Version: 25/October/2005 Version: 01
[0xF159] NOS CAN Driver Version Number: 02.02.01
[0xF15B] NOS Network Management Junior Version Number: 01.23.00
[0xF15C] NOS Interaction Layer Version Number: 04.10.03
[0xF15E] NOS Network/Transport Layer Version Number: 03.04.03
[0xF160] NOS Diagnostic Version Number: 05.06.06
[0xF161] NOS CAN Communication Layer Version Number: 01.32.00

Communicating with ABS - Anti-Lock Brake System (ABS) Control Module (0x760):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF162] Software Download Specification: SWDL 31808456 Issue 004
[0xF111] ECU Core Assembly Number: BB53-14F065-AC
[0xF113] ECU Delivery Assembly Number: BB53-2C219-AE
[0xF110] Diagnostic Part Number: DS-BB53-2C219-AC
[0xF188] ECU Software Part Number: BB53-2D053-AE
[0xF18C] ECU Serial Number: 0001B510C1900859
[0xF180] Boot Software Identification: BB53-14C461-AA
[0xF166] NOS Message Database #1 Version: 5/August/2010 Version: 11

Communicating with OCS - Restraints Occupant Classification System Module (0x765):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BB53-14F601-AA
[0xF113] ECU Delivery Assembly Number: BB53-603B16-BE
[0xF110] Diagnostic Part Number: DS-BB53-603B16-BE
[0xF188] ECU Software Part Number: BB53-14F595-AD
[0xF124] ECU Main Calibration Data Number: BB53-14F596-AD
[0xF18C] ECU Serial Number: 0516283047950342
[0xF15F] NOS Generation Tool Version: Vector 0x08070000910004000000
[0xF166] NOS Message Database #1 Version: 5/May/2010 Version: 10
[0xF159] NOS CAN Driver Version Number: 01.26.02
[0xF15B] NOS Network Management Junior Version Number: 01.24.00
[0xF15C] NOS Interaction Layer Version Number: 05.02.01
[0xF15E] NOS Network/Transport Layer Version Number: 03.04.11
[0xF160] NOS Diagnostic Version Number: 05.07.13
[0xF161] NOS CAN Communication Layer Version Number: 02.09.00

Communicating with DSP - Audio Digital Signal Processing Module (0x783):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BT4T-14F171-BA
[0xF113] ECU Delivery Assembly Number: BT4T-18B849-DE
[0xF110] Diagnostic Part Number: DS-BT4T-18B849-AB
[0xF188] ECU Software Part Number: BT4T-14C589-CH
[0xF15F] NOS Generation Tool Version: Vector 0x08070000820043020000
[0xF180] Boot Software Identification: BT4T-14C591-AA
[0xF166] NOS Message Database #1 Version: 3/July/2009 Version: 35
[0xF159] NOS CAN Driver Version Number: 01.13.00
[0xF15B] NOS Network Management Junior Version Number: 01.24.00
[0xF15C] NOS Interaction Layer Version Number: 04.06.00
[0xF15E] NOS Network/Transport Layer Version Number: 03.04.03
[0xF160] NOS Diagnostic Version Number: 05.07.03
[0xF161] NOS CAN Communication Layer Version Number: 02.08.00
[0xF170] NOS Bootloader Package Version Number: 05.02.02

[0xF171] NOS Bootloader Main Version Number: 03.11.00
[0xF172] NOS Bootloader Diagnostic Version Number: 01.31.00
[0xF173] NOS Bootloader Network/Transport Layer Version Number: 03.02.01
[0xF174] NOS Bootloader Flash Routines Version Number: 02.09.00
[0xF175] NOS Bootloader Hardware File Version Number: 01.24.00
[0xF176] NOS Bootloader API Version Number: 03.21.00
[0xF177] NOS Bootloader Security Algorithm Version Number: 01.05.00
[0xF178] NOS Bootloader Flash I/O Version Number: 01.07.00
[0xF17B] NOS Bootloader Memory I/O Version Number: 01.21.00

Communicating with FLM - Front Lighting Control Module (0x796):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF162] Software Download Specification: Unexpected Response
[0xF111] ECU Core Assembly Number: BB5T-14F116-AB
[0xF113] ECU Delivery Assembly Number: BB5T-14C009-AD
[0xF110] Diagnostic Part Number: DS-BT4T-13D061-AB
[0xF188] ECU Software Part Number: BT4T-14D411-AE
[0xF15F] NOS Generation Tool Version: Vector 0x08070000810071000000
[0xF180] Boot Software Identification: Unexpected Response
[0xF166] NOS Message Database #1 Version: 16/March/2009 Version: 05
[0xF160] NOS Diagnostic Version Number: 05.07.02
[0xF161] NOS CAN Communication Layer Version Number: 02.07.00
[0xF170] NOS Bootloader Package Version Number: Unexpected Response
[0xF171] NOS Bootloader Main Version Number: Unexpected Response
[0xF172] NOS Bootloader Diagnostic Version Number: Unexpected Response
[0xF173] NOS Bootloader Network/Transport Layer Version Number: Unexpected Response
[0xF174] NOS Bootloader Flash Routines Version Number: Unexpected Response
[0xF175] NOS Bootloader Hardware File Version Number: Unexpected Response
[0xF176] NOS Bootloader API Version Number: Unexpected Response
[0xF177] NOS Bootloader Security Algorithm Version Number: Unexpected Response
[0xF178] NOS Bootloader Flash I/O Version Number: Unexpected Response
[0xF17B] NOS Bootloader Memory I/O Version Number: Unexpected Response

Communicating with FCIM - Front Controls Interface Module (0x7A7):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BB5T-14F166-CB
[0xF113] ECU Delivery Assembly Number: BB5T-18A802-CJ
[0xF110] Diagnostic Part Number: DSBB5T-18A802-CA
[0xF188] ECU Software Part Number: BB5T-14D017-BE
[0xF124] ECU Main Calibration Data Number: BB5T-14D018-CE
[0xF15F] NOS Generation Tool Version: Vector 0x08070000810042020000
[0xF166] NOS Message Database #1 Version: 3/July/2009 Version: 35

Communicating with APIM - Accessory Protocol Interface Module (0x7D0):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BT4T-14F130-BA
[0xF113] ECU Delivery Assembly Number: BT4T-14D212-AN
[0xF110] Diagnostic Part Number: DS-BT4T-14D212-BB
[0xF188] ECU Software Part Number: BT4T-14D205-BD
[0xF15F] NOS Generation Tool Version: Vector 0x08070000810099020000
[0xF166] NOS Message Database #1 Version: 19/August/2009 Version: 01
[0xF167] NOS Message Database #2 Version: 10/July/2009 Version: 01

Communicating with PCM - Powertrain Control Module (0x7E0):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: defaultSession
[0xF163] Diagnostic Specification Version: GGDS 31810161 Issue 003
[0xF111] ECU Core Assembly Number: BT4A-12B684-DA
[0xF113] ECU Delivery Assembly Number: BB5A-12A650-MH
[0xF188] ECU Software Part Number: BB5A-14C204-MH

Communicating with Unknown ECU (0x7F1):
**Requesting Standard Identification DIDs:**
[0xD100] Active Diagnostic Session: Not Supported
[0xE21X] ECU Part Number: Not Supported-Not Supported-Not Supported
[0xE220] ECU Software Version Number: Not Supported
[0xE6F3] Diagnostic Specification Version: Not Supported

Parallel Query Complete!

Communicating with PAM - Parking Assist Control Module (0x736):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xFF
Number of Returned DTCs: 0

Communicating with RCM - Restraints Control Module (0x737):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCB
Number of Returned DTCs: 0

Communicating with ABS - Anti-Lock Brake System (ABS) Control Module (0x760):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xFB
Number of Returned DTCs: 0

Communicating with OCS - Restraints Occupant Classification System Module (0x765):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xFB
Number of Returned DTCs: 0

Communicating with DSP - Audio Digital Signal Processing Module (0x783):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with FLM - Front Lighting Control Module (0x796):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with FCIM - Front Controls Interface Module (0x7A7):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with APIM - Accessory Protocol Interface Module (0x7D0):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xCA
Number of Returned DTCs: 0

Communicating with PCM - Powertrain Control Module (0x7E0):
**Requesting to Read DTCs:**
Positive Response to ReadDTCInformation (Service 0x19)
SubFunction: 0x02 - reportDTCByStatusMask
DTCStatusAvailabilityMask: 0xFF
Number of Returned DTCs: 0

Communicating with Unknown ECU (0x7F1):
**Requesting to Read DTCs (CAN GDS):**

Negative Response to ReadDTCInformation on CAN GDS (Service 0x18)
Response Code: 0x11 (Service Not Supported)

Parallel Query Complete!

| Reference Number | Platform | Failure Location | RUA | Root Cause | Status | MotorMechanicalVelocity | ColumnTorque | ColumnVelocity | MotorMechanicalVelocity / ColumnVelocity | vBatt | FilteredVehiclSpeed | Filt2v5RefVoltage | AssistanceTorqueDemand | FilteredMechanicalVelocity | QAxisCurrent | DriveStageTemperature | TorqueLimit | IgnitionOn | ASP | EcuM__rootState_active | sSystemMode__rootState_active | AltHallTransitionTime | B92FilteredMotorVelocityError | HallSensor | DiagCommutationCentrePosition | EncoderPositionRegister |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0030 | U502 | Warranty | 4878 | Under Analysis | Open | -5.234375 | -2.233398438 | 0.221679688 | #REF! | 13.06 | 30.59375 | 2498.162842 | -11.28515625 | -5.234375 | 9.9609375 | 41.05 | 100 | 1 | -6184 | 3 | 2 | 437971 | 270 | 5 | 120.0274725 | 1554 |
| UR0045 | U502 | Warranty | 4998 | Under Analysis | Open | 0.5703125 | -1.53125 | -0.002929688 | -23.6123348 | 12.91 | 0 | 2496.954346 | -10.82421875 | 0.5703125 | 10.28125 | 31.37 | 100 | 1 | 213 | 3 | 2 | 1373942 | 76 | 1 | 60.01648352 | 65406 |
| UR0047 | U502 | Warranty | | Under Analysis | Open | 0 | 2.219726563 | 0 | -194.6666667 | 14.01 | 0 | 2520.520019 | 18.13671875 | 0 | -16.4921875 | 46.6 | 100 | 1 | 0 | 3 | 2 | 3959996 | 0 | 4 | 180.043956 | 2 |
| UR0048 | U502 | Warranty | 5074 | Under Analysis | Open | 0.140625 | 0.09375 | -0.008789063 | #DIV/0! | 12.93 | 28.375 | 2504.406738 | 0.12890625 | 0.140625 | 0.0546875 | 48.09 | 100 | 1 | -86 | 3 | 2 | 57371899 | 0 | 2 | 300.0714286 | 65339 |

Redacted for Relevance

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0059 | U502 | Warranty | | Under Analysis | Open | 0 | 0.795898438 | 0 | #DIV/0! | 13.7890625 | 0 | 2502.191162 | 3.19921875 | 0 | -2.890625 | 37.43 | 100 | 1 | 0 | 3 | 2 | 26573893 | 0 | 5 | 120.0274725 | 2 |
| UR0060 | U502 | Warranty | | Under Analysis | Open | 0 | 0.934570313 | 0 | #DIV/0! | 14.0625 | 0 | 2501.385498 | 3.30859375 | 0 | -2.9140625 | 28.27 | 100 | 1 | 0 | 3 | 2 | 21408100 | 0 | 5 | 120.0274725 | 0 |
| UR0061 | U502 | Warranty | | Under Analysis | Open | 0 | -0.685546875 | 0 | #DIV/0! | 13.765625 | 0 | 2500.982666 | -2.51953125 | 0 | 2.3515625 | 57.07 | 100 | 1 | 163 | 3 | 2 | 13223400 5 | 0 | 4 | 180.043956 | 1731 |
| UR0062 | U502 | Warranty | | Under Analysis | Open | 0 | -0.752929688 | 0 | #DIV/0! | 13.62890625 | 0 | 2487.084961 | -5.23046875 | 0 | 5.0546875 | 50.16 | 100 | 1 | 0 | 3 | 2 | 2567874 | 0 | 5 | 120.0274725 | 65535 |
| UR0063 | U502 | Warranty | | Under Analysis | Open | 0 | 0.58984375 | -0.002929688 | #DIV/0! | 12.87109375 | 10.53125 | 2507.025146 | 0.328125 | 0 | -0.421875 | 58.98 | 100 | 1 | -22 | 3 | 2 | 2783903 | 0 | 6 | 240.0604396 | 62174 |
| UR0064 | U502 | Warranty | | Under Analysis | Open | 11.0546875 | 2.421875 | -0.16015625 | 0 | 13.66015625 | 27.109375 | 2492.724609 | 7.4765625 | 11.0546875 | 2.6328125 | 70.29 | 100 | 1 | 3759 | 3 | 2 | 258024 | 604 | 4 | 180.043956 | 1124 |
| UR0065 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | |
| UR0066 | U502 | Warranty | | Under Analysis | Open | -0.015625 | 1.276367188 | 0 | #DIV/0! | 13.61328125 | 0 | 2492.120361 | 7.50390625 | -0.015625 | -6.859375 | 51.82 | 100 | 1 | 0 | 3 | 2 | 26363944 | 0 | 4 | 180.043956 | 65519 |
| UR0067 | U502 | Warranty | | Under Analysis | Open | 0 | 1.569335938 | -0.002929688 | #DIV/0! | 14.0234375 | 3.1875 | 2494.537353 | 8.91015625 | 0 | -7.828125 | 33.71 | 100 | 1 | -418 | 3 | 2 | 34602106 | 0 | 3 | 0 | 254 |
| UR0068 | U502 | Warranty | | Under Analysis | Open | 0 | 0.568359375 | -0.002929688 | 0 | 12.7578125 | 91.5625 | 2492.926025 | 1.05859375 | 0 | -0.3671875 | 66.52 | 100 | 1 | 18 | 3 | 2 | 16955997 | 0 | 5 | 120.0274725 | 65301 |
| UR0069 | U502 | Warranty | | Under Analysis | Open | 4.8671875 | 1.321289063 | -0.0390625 | 0 | 12.875 | 9.8125 | 2507.427978 | 4.828125 | 4.8671875 | 1.40625 | 59.18 | 100 | 1 | 19333 | 3 | 2 | 402040 | 0 | 6 | 240.0604396 | 61974 |
| UR0070 | U502 | Warranty | | Under Analysis | Open | 3.625 | 2.247070313 | -0.185546875 | -124.6 | 14.1484375 | 26.953125 | 2511.456299 | 7.6875 | 3.625 | -7.015625 | 32.12 | 100 | 1 | 3026 | 3 | 2 | 804000 | 85 | 6 | 240.0604396 | 65132 |
| UR0071 | U502 | Warranty | | Under Analysis | Open | 0 | -2.244140625 | -0.002929688 | -19.53684211 | 14.10546875 | 81.5625 | 2494.335937 | -4.4453125 | 0 | 4.203125 | 42.6 | 100 | 1 | -354 | 3 | 2 | 34398008 | 0 | 1 | 60.01648352 | 550 |
| UR0073 | U502 | Warranty | | Under Analysis | Open | 0.421875 | -2.926757813 | -0.002929688 | 0 | 13.59375 | 27.640625 | 2481.848144 | -14.90625 | 0.421875 | 15.1875 | 63.94 | 100 | 1 | -136 | 3 | 2 | 791913 | 448 | 1 | 60.01648352 | 64767 |
| UR0075 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | |
| UR0076 | U502 | Warranty | | Under Analysis | Open | 1.2734375 | -1.387695313 | -0.00390625 | #DIV/0! | 12.90234375 | 4.875 | 2501.586914 | -4.91015625 | 1.2734375 | 5.28125 | 41.05 | 100 | 1 | 555 | 3 | 2 | 1175927 | 94 | 1 | 60.01648352 | 65401 |
| UR0077 | U502 | Warranty | | Under Analysis | Open | 0 | 0.426757813 | -0.002929688 | -326 | 12.98046875 | 53.390625 | 2487.689209 | 1.1640625 | 0 | -0.9921875 | 49.53 | 100 | 1 | -68 | 3 | 2 | 1344013 | 0 | 1 | 60.01648352 | 431 |
| UR0079 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | |
| UR0080 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | |

Redacted for Relevance

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0081 | U502 | Warranty | | Under Analysis | Open | 0 | 1.03125 | 0 | #DIV/0! | 13.5078125 | 0 | 2501.18 | 3.71875 | 0 | -3.2890625 | 57.36 | 100 | 1 | 0 | 3 | 2 | 103175978 | 0 | 2 | 300.0714286 | 2 |
| UR0082 | U502 | Warranty | | Under Analysis | Open | 0 | 1.581054688 | 0 | #DIV/0! | 12.88671875 | 75.09375 | 2487.89 | 2.23046875 | 0 | -1.9921875 | 37.53 | 100 | 1 | 18 | 3 | 2 | 8207914 | 0 | 6 | 240.0604396 | 65426 |
| UP0083 | U502 | Warranty | | Under Analysis | Open | 0 | 1.294921875 | 0 | #DIV/0! | 13.9453125 | 0 | 2497.96 | 9.04296875 | 0 | -8.0546875 | 58.14 | 100 | 1 | -7486 | 3 | 2 | 2778118 | 0 | 3 | 0 | 1446 |
| UR0084 | U502 | Warranty | | Under Analysis | Open | 0.6171875 | -2.280273438 | -0.002929688 | #DIV/0! | 12.96484375 | 34.515625 | 2504.41 | -8.48046875 | 0.6171875 | 8.421875 | 48.57 | 100 | 1 | -737 | 3 | 2 | 1235854 | 89 | 1 | 60.01648352 | 113 |
| UR0085 | U502 | Warranty | | Under Analysis | Open | 6.5546875 | -2.161132813 | -0.045898438 | -210.6666307 | 13.94140625 | 4.359375 | 2507.23 | -22.41796875 | 6.5546875 | 27.921875 | 31.74 | 100 | 1 | 0 | 3 | 2 | 348100 | 645 | 2 | 300.0714286 | 2531 |
| UR0086 | U502 | Warranty | | Under Analysis | Open | 0 | -1.735351563 | 0 | -142.8085091 | 13.6484375 | 0 | 2492.724609 | -11.43 | 0 | 10.296875 | 43.35 | 100 | 1 | 0 | 3 | 2 | 3299999 | 0 | 1 | 60.01648352 | 1 |
| UR0087 | U502 | Warranty | | Under Analysis | Open | 0 | -0.259765625 | 0 | -142.8085091 | 14.02734375 | 61.421875 | 2487.89 | 1.42578125 | 0 | -1.34375 | 36.78 | 100 | 1 | -277 | 3 | 2 | 3863824 | 27 | 3 | 0 | 68 |
| UR0088 | U502 | Warranty | | Under Analysis | Open | -2.78125 | 3.043945313 | 0 | #DIV/0! | 12.8828125 | 19 | 2496.95 | 33.08984375 | -2.78125 | -28.5625 | 53.07 | 100 | 1 | 2088 | 3 | 2 | 407845 | 601 | 5 | 120.0274725 | 65341 |
| UR0089 | U502 | Warranty | | Under Analysis | Open | 0.8828125 | -2.608398438 | -0.00390625 | #DIV/0! | 12.8359375 | 21.78125 | 2500.78 | -16.4765625 | 0.8828125 | 15.7890625 | 44.16 | 100 | 1 | -4601 | 3 | 2 | 1253904 | 112 | 5 | 120.0274725 | 719 |
| UR0092 | U502 | Warranty | | Under Analysis | Open | -0.0625 | -0.465820313 | 0 | -226 | 12.8046875 | 20.53125 | 2491.52 | -0.33203125 | -0.0625 | 0.0703125 | 59.41 | 100 | 1 | -901 | 3 | 2 | 3731849 | 0 | 3 | 0 | 262 |
| UR0095 | U502 | Warranty | | Under Analysis | Open | -8.4609375 | 3 | 0.041015625 | #DIV/0! | 12.90234375 | 7.859375 | 2493.73 | 41.23828125 | -8.4609375 | -44.8125 | 51.32 | 100 | 1 | 4519 | 3 | 2 | 233904 | 1126 | 5 | 120.0274725 | 64585 |
| UR0096 | U502 | Warranty | | Under Analysis | Open | 0 | 0.162109375 | 0 | -206.2857143 | 13.94921875 | 75.28125 | 2513.67 | 0.515625 | 0 | -0.015625 | 46.86 | 100 | 1 | 31 | 3 | 2 | 15461834 | 0 | 5 | 120.0274725 | 39 |

| MotorElectricalPosition | Error | AltNewHallEvent | AltMotorElectricalVelocity | B92MotorVelocityErrorLimit | AltRotorDirection | AltMotorCommutationState | Hall A | Hall B | Hall C | Distance Travelled | LifetimeCounter | AccumulatedColumnMovement | FastThermalEstTemperatureRise | ThermalEstTemperatureRise | VehicleTuneSelector | MotorTuneSelector | EmulationModeStatus | PDCStatus | PowerOffDriveStageTemperature | CPU_PeakLoadHold | TorqueReInstatmentFlag | IncompletePowerDownTest Count | padding | LRE_PositionState | PositionExtrapActive | EncoderOffset | MotorReversal | Journey time to Fault - Fault 1 (sec) | Journey time to Fault - Fault 2 (sec) | Journey time to Fault - Fault 3 (sec) | Journey time to Fault - Fault 4 (sec) | Journey time to Fault - Fault 5 (sec) | Journey time to Fault - Fault 6 (sec) | Journey time to Fault - Fault 7 (sec) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 202.1703297 | 82.14285714 | 1 | -1609 | 1395 | -1 | 5 | 1 | 0 | 1 | 12571795 | 760329 | 18335 | 0.18 | 0.52 | 4 | 1 | 0 | 1 | 46.78 | 13577 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 811 | - | - | - | - | - | - |
| 352.5 | 292.4835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 2385052 | 308188 | 11188 | 0.05 | 0.9 | 3 | 1 | 0 | 1 | 31.71 | 12847 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | - | - | - | - | - |
| 270 | 89.95604396 | 0 | 0 | 960 | -1 | 4 | 0 | 0 | 1 | 5268408 | 372483 | 8911 | 0.61 | 2.36 | 4 | 1 | 0 | 1 | 52 | 13540 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 861 | 15 | - | - | - | - | - |
| 360 | 59.92857143 | 0 | 18 | 964 | -1 | 2 | 0 | 1 | 0 | 4538883 | 423415 | 10821 | 0.22 | 1.32 | 3 | 1 | 0 | 1 | 46.33 | 12960 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 110 | - | - | - | - | - | - |
| 82.41208791 | -97.63186813 | 0 | 0 | 960 | 1 | 4 | 0 | 0 | 1 | 12047049 | 1056744 | 27303 | 0.18 | 0.4 | 1 | 0 | 0 | 1 | 56.48 | 13551 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 3.4 | 810 | 474 | 933 | 770 | 113 | - |
| 22.5 | -277.5714286 | 0 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 20793 | 5907 | 1004 | 0.63 | 1.41 | 1 | 0 | 0 | 1 | 27.61 | 13442 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 278 | 20 | - | - | - | - | - |
| 187.4120879 | 187.4120879 | 0 | 0 | 960 | 0 | 0 | 0 | 0 | 0 | 21789 | 6922 | 364 | 2.12 | 1.22 | 1 | 0 | 0 | 1 | 44.39 | 13463 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 185 | 134 | 58 | 18 | 3 | - | - |
| 270 | 89.95604396 | 1 | 0 | 960 | -1 | 4 | 0 | 1 | 1 | 4681441 | 418815 | 16348 | 0.29 | 0.88 | 1 | 0 | 0 | 1 | 40.02 | 13543 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1241 | 6 | 74 | - | - | - | - |
| 52.41208791 | -67.61538459 | 1 | 0 | 960 | 1 | 5 | 1 | 0 | 1 | 6856982 | 589012 | 17995 | 1.54 | 1.79 | 1 | 0 | 0 | 1 | 50.5 | 13558 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 627 | 262 | - | - | - | - | - |
| 292.5 | 112.456044 | 1 | 0 | 960 | -1 | 4 | 0 | 0 | 1 | 12420083 | 1078333 | 29011 | 0.29 | 0.38 | 1 | 0 | 0 | 1 | 30.62 | 13651 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1415 | - | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 262.5 | 82.456044 | 1 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 413872 | 34948 | 2104 | 0.41 | 1.26 | 18 | 1 | 0 | 1 | 36.42 | 14647 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 60 | 371 | 715 | 125 | 212 | 43 | 16 |
| 232.5 | 112.4725275 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 6432556 | 681295 | 17260 | 3.57 | 3.33 | 3 | 1 | 0 | 1 | 64.45 | 12837 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 212 | 1101 | 1272 | 37 | 1.9 | 74 | 229 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56.16483516 | -63.86263734 | 0 | 496 | 1093 | 1 | 5 | 1 | 0 | 1 | 8779215 | 2171576 | 102626 | 1.81 | 2.78 | 1 | 0 | 0 | 1 | 69.95 | 13630 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 809 | - | - | - | - | - | - |
| 322.5 | 82.4395604 | 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 9574659 | 566635 | 10028 | 0.4 | 0.42 | 1 | 0 | 0 | 1 | 51.45 | 13518 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1076 | - | - | - | - | - | - |
| 322.5 | 82.4395604 | 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 3418343 | 410602 | 11335 | 0.26 | 0.69 | 1 | 0 | 0 | 1 | 50.33 | 13547 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 186 | 1.9 | - | - | - | - | - |
| 202.5 | 82.47252747 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 4191383 | 473916 | 14186 | 0 | 0.19 | 3 | 1 | 0 | 1 | 66.01 | 12828 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 676 | 1.4 | - | - | - | - |
| 202.5 | 82.47252747 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 4424043 | 312721 | 8242 | 0.21 | 0.34 | 3 | 1 | 0 | 1 | 57.25 | 12997 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 13 | 18 | 13 | 7 | - |
| 119.9120879 | -60.13186813 | 1 | 0 | 960 | 1 | 4 | 0 | 0 | 1 | 5803677 | 499711 | 12241 | 0.12 | 0.41 | 3 | 1 | 0 | 1 | 50.59 | 12880 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1174 | - | - | - | - | - | - |
| 15 | -105.0274725 | 0 | 0 | 960 | 1 | 5 | 1 | 0 | 1 | 14872198 | 1061205 | 25712 | 0.19 | 0.31 | 4 | 1 | 0 | 1 | 65.69 | 12932 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | - | - | - | - | - | - |
| 322.5 | 82.4395604 | 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 22512731 | 1590263 | 39798 | 0.47 | 1.13 | 3 | 1 | 0 | 1 | 66.08 | 13555 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1026 | - | - | - | - | - | - |
| 112.4120879 | -67.63186813 | 0 | 0 | 960 | 1 | 4 | 0 | 0 | 1 | 6371624 | 660893 | 18919 | 0.17 | 0.79 | 3 | 1 | 0 | 1 | 54.64 | 12919 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 262 | 1048 | - | - | - | - | - |
| | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | 59.956044 | 0 | -3 | 961 | -1 | 4 | 0 | 0 | 1 | 5456520 | 707008 | 19052 | 0.2 | 0.61 | 3 | 1 | 0 | 1 | 53.61 | 12868 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 502 | 15 | - | - | - | - | - |
| 112.4120879 | 112.4120879 | 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 7834207 | 699860 | 17725 | 0.09 | 0.22 | 3 | 1 | 0 | 1 | 49.38 | 12829 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 486 | - | - | - | - | - | - |
| 44.91208791 | -75.11538459 | 0 | 0 | 960 | 1 | 5 | 1 | 0 | 1 | 10283245 | 981339 | 30246 | 0.94 | 3.88 | 4 | 1 | 0 | 1 | 48.07 | 12899 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 27 | 7 | - | - | - | - |
| 164.9120879 | -75.1483517 | 0 | 0 | 960 | 1 | 6 | 0 | 1 | 1 | 8395996 | 992239 | 29527 | 0.6 | 0.94 | 3 | 1 | 0 | 1 | 55.09 | 12882 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1115 | 0 | 6 | - | - | - | - |
| 202.1428571 | -37.9175825 | 0 | 777 | 1169 | 1 | 6 | 0 | 1 | 1 | 3937673 | 401430 | 10469 | 0.43 | 0.78 | 4 | 1 | 0 | 1 | 29.37 | 12840 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 176 | 6 | - | - | - | - | - |
| 322.5 | 262.4835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 5414600 | 459294 | 19493 | 0.2 | 0.46 | 3 | 1 | 0 | 1 | 54.09 | 12968 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1963 | 1307 | 137 | 541 | - | - | - |
| 315 | 254.9835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 2663104 | 458541 | 14612 | 0.14 | 0.49 | 3 | 1 | 0 | 1 | 60.08 | 12883 | 1 | 1 | | 0 | 0 | 0 | 0 | 466 | 5 | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 345 | 284.9835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 2830895 | 283078 | 9542 | 5.64 | 3.72 | 4 | 1 | 0 | 1 | 37.75 | 12956 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 654 | 1180 | 7 | 95 | - | - | - |
| 360 | 299.9835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 13852987 | 838181 | 14055 | 0.37 | 0.33 | 4 | 1 | 0 | 1 | 38.32 | 12887 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 337 | 5 | 24 | 151 | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 337.5 | 277.4835165 | 0 | 96 | 985 | 1 | 1 | 1 | 0 | 0 | 1232248 | 150498 | 7360 | 0.65 | 1.14 | 1 | 0 | 0 | 1 | 24.83 | 13477 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 535 | - | - | - | - | - | - |
| 150 | 89.98351648 | 0 | 0 | 960 | -1 | 1 | 1 | 0 | 0 | 2918534 | 323418 | 13499 | 0.32 | 0.69 | 1 | 0 | 0 | 1 | 40.9 | 13488 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 227 | 203 | - | - | - |
| 202.4120879 | 82.3846154 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 29789440 | 1766476 | 36332 | 0.14 | 0.44 | 1 | 0 | 0 | 1 | 42.12 | 13568 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 202 | 0 | 11 | 307 | 362 | 393 | 174 |
| 97.41208791 | -82.63186809 | 0 | 72 | 979 | 1 | 4 | 0 | 0 | 1 | 8998565 | 1022664 | 37997 | 2.54 | 3.52 | 1 | 0 | 0 | 1 | 52.91 | 13546 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4093 | 1287 | 522 | 104 | 291 | 787 | 4 |
| 315 | 74.9395604 | 1 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 10639777 | 763666 | 22093 | 0.17 | 0.52 | 1 | 0 | 0 | 1 | 58 | 13530 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 541 | 11 | 183 | 264 | 484 | - | - |
| 112.4120879 | 112.4120879 | 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 11629231 | 838719 | 18840 | 0.54 | 3.78 | 18 | 1 | 0 | 1 | 60.35 | 14750 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 48 | 6 | 5 | 4 | 1 | 5 | 7 |
| 315 | 254.9835165 | 0 | 0 | 960 | 1 | 6 | 0 | 1 | 1 | 12187035 | 767173 | 15994 | 0.5 | 5.03 | 18 | 1 | 0 | 1 | 53.55 | 14671 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | 1.2 | 1.2 | 1.2 | - | - | - |
| 22.5 | -277.5714286 | 0 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 10164804 | 912037 | 19019 | 0.19 | 0.63 | 4 | 1 | 0 | 1 | 69.05 | 12842 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1767 | 110 | 1 | 1281 | 1230 | 2192 | 118 |
| 322.5 | 82.4395604 | 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 11988558 | 786132 | 14972 | 0.16 | 0.46 | 3 | 1 | 0 | 1 | 58.22 | 12799 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | 1154 | 28 | 6 | 96 | 228 | 314 |
| 112.4120879 | 112.4120879 | 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 25535391 | 1702577 | 36190 | 1.15 | 1.57 | 3 | 1 | 0 | 1 | 66 | 13024 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2073 | 5 | 259 | 364 | 4741 | 384 | 1 |
| 315 | 254.9835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 10260884 | 816674 | 18614 | 0.4 | 0.79 | 3 | 1 | 0 | 1 | 62.09 | 12834 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 775 | 5 | 152 | 243 | - | - | - |
| 164.9120879 | -135.1593407 | 1 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 6710139 | 469090 | 10734 | 0.18 | 0.36 | 4 | 1 | 0 | 1 | 52.91 | 12823 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 20 | - | - | - | - | - | - |
| 315 | 254.9835165 | 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 7400557 | 505705 | 12403 | 0.31 | 0.66 | 3 | 1 | 0 | 1 | 65.52 | 13594 | 1 | 1 | | 0 | 0 | 0 | 0 | | | | | | | |
| 112.5 | 112.5 | 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 2941655 | 243587 | 6105 | 0.14 | 0.38 | 3 | 1 | 0 | 1 | 58.85 | 12857 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 749 | 588 | 563 | - | - | - | - |
| 225 | 104.9725275 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 15037195 | 1106531 | 26291 | 0.18 | 0.9 | 4 | 1 | 0 | 1 | 60.35 | 12829 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 552 | 567 | 1092 | 1093 | 1093 | 336 | 894 |
| 44.91208791 | -75.11538459 | 0 | 0 | 960 | 1 | 5 | 1 | 0 | 1 | 7728168 | 1076230 | 34947 | 0.03 | 0.52 | 3 | 1 | 0 | 1 | 62.54 | 12946 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 401 | 796 | - | - | - | - | - |
| 82.41208791 | 82.41208791 | 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 15695908 | 1769250 | 42788 | 0.04 | 0.51 | 4 | 1 | 0 | 1 | 58.42 | 12901 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1976 | 129 | - | - | - | - | - |
| 255 | 134.9725275 | 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 7397349 | 661273 | 18104 | 0.41 | 1.19 | 3 | 1 | 0 | 1 | 47.72 | 12824 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1.3 | 377 | 177 | 184 | 93 | - | - |
| 45 | -75.02747253 | 0 | 0 | 960 | 1 | 5 | 1 | 0 | 1 | 13920655 | 1087249 | 26318 | 0.06 | 0.14 | 4 | 1 | 0 | 1 | 40.27 | 12942 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 711 | 7 | 8 | 298 | 973 | 4 | 4 |

| Journey time to Fault - Fault 8 (sec) | Average number of journeys between faults | Primary B Code | Other B Codes? | B9A LICs | E22 Faults | E22 LICs | Other LICs? | EPP Build Date | ECU Build Date | PFS Build Date | Motor s/n | Motor Build Date | Where Failed | Application Code | Main Calibration Data Number | Tune | Motor PCB Date | Hall Batch Code | Encoder Batch Code | Main Micro Batch | Main Micro Date Code | IC12 Date Code | Location | Ambient Ignition Cycling | Hot Ignition Cycling | Cold Ignition Cycling | Ribbon cable checks | Bully Test | Power Up Power Down | Temperature and Vibration | Slow Temperature Ramp with Humid | Thermal Shock | EMC - BCI | EMC - Radsus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| - | 12 | B9A | None | 0 | 0 | 0 | E12 | 15-Oct-10 | 26-Sep-10 | 29-Sep-10 | BAF0D260110694 | 17-Sep-10 | Warranty | BB53-14D003-BE | BB53-14D004-BG | 4 | | | | | | | Shirley | | | | | | | | | | | |
| - | 13 | B9A | None | 0 | 0 | 0 | 0 | 29-Jan-11 | 24-Jan-11 | 29-Jan-11 | BAF0D361210284 | 27-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | | | | | | | Shirley | | | | | | | | | | | |
| - | 26 | B9A | None | 0 | 0 | 0 | 0 | 13-Feb-11 | 26-Oct-10 | 12-Feb-11 | BAF0D362210218 | 28-Dec-10 | Warranty | BB53-14D003-BE | BB53-14D004-BG | 4 | | | | | | | 26 Mile | | | | | | | | | | | |
| - | - | B9A | None | 0 | 0 | 0 | E12 E66 | 26-Dec-10 | 25-Dec-10 | 21-Dec-10 | BAF0D338110596 | 4-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | | | | | | | EDG | | | | | | | | | | | |
| - | 20 | B9A | None | 0 | 0 | 0 | 0 | 3-Nov-10 | 3-Nov-10 | 2-Nov-10 | AAG0D287210455 | 14-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | Shirley | | | | | | | | | | | |
| - | 5 | B9A | None | 0 | 0 | 0 | 0 | 6-Oct-10 | 8-Sep-10 | 28-Aug-10 | AAG0D253210356 | 10-Sep-10 | Warranty | AE5C-14D003-BB | AE5C-14D004-BB | | | | | | | | QAO | | | | | | | | | | | |
| - | 1 | B9A | C69 | 0 | 0 | 0 | 0 | 7-Mar-11 | 5-Mar-11 | 6-Mar-11 | AAG0E040210203 | 9-Feb-11 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | --> Nidec | | | | | | | | | | | |
| - | 4 | B9A | None | 0 | 0 | 0 | 0 | 24-Jan-11 | 22-Jan-11 | 22-Jan-11 | AAG0D356210109 | 22-Dec-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | QAO | | | | | | | | | | | |
| - | 139 | B9A | None | 0 | 0 | 0 | 0 | 2-Nov-10 | 29-Oct-10 | 30-Oct-10 | AAG0D288110500 | 15-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | QAO | | | | | | | | | | | |
| - | 7 | B9A | None | 0 | 0 | 0 | E12 | 2-Nov-10 | 28-Aug-10 | 29-Oct-10 | AAG0D287211010 | 14-Oct-10 | Warranty | AE5C-14D003-BC | Comm Error | | | | | | | | Shirley | | | | | | | | | | | |
| | | B38 | B4E | | | | | 12-Apr-11 | 10-Apr-11 | 11-Apr-11 | AAG0E076110254 | 17-Mar-11 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | | | | | | | | | | | | |
| 418 | 4 | B9A | C69 | 56 | 0 | 0 | E12,E2E | 17-Mar-11 | 16-Mar-11 | 16-Mar-11 | FAH0E051220694 | 20-Feb-11 | Warranty | BV6T-14C217-AE | BV6T-14C218-AE | 18 | | | | | | | | | | | | | | | | | | |
| - | 15 | B9A | None | 23 | 0 | 0 | E12 | 27-Jan-11 | 24-Jan-11 | 27-Jan-11 | BAF0D362111116 | 28-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | | | | | | | EDG | | | | | | | | | | | |
| | | | | | | | | | | | | | Warranty | | | | | | | | | | --> Shirley | | | | | | | | | | | |
| - | - | B9A | None | 4 | 0 | 1 | E10,E12 | 18-Oct-10 | 28-Sep-10 | 4-Oct-10 | AAG0D267211029 | 24-Sep-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | | | | | | | | | | | | |
| - | 4 | B9A | None | 0 | 0 | 0 | E2E, E12 | 11-Nov-10 | 11-Nov-10 | 9-Sep-10 | AAG0D289110252 | 16-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | --> Shirley | | | | | | | | | | | |
| - | 10 | B9A | None | 0 | 0 | 0 | 0 | 25-Jan-11 | 24-Jan-11 | 25-Jan-11 | AAG0E004110150 | 4-Jan-11 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | | | --> Shirley | | | | | | | | | | | |
| - | 5 | B9A | None | | | | | 29-Jan-11 | 24-Jan-11 | 27-Jan-11 | | 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 13 | B9A | C69 | | | | | 18-Mar-11 | 6-Mar-11 | 18-Mar-11 | BAF0E025110872 | 25-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |
| - | | B9A | None | | | | | 29-Jan-11 | 24-Jan-11 | 29-Jan-11 | | 27-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | | B9A | None | | | | | 28-Jan-11 | 24-Jan-11 | 28-Jan-11 | | 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 3 | B9A | None | | | | | 29-Dec-10 | 23-Dec-10 | 28-Dec-10 | BAF0D340111166 | 6-Dec-10 | Warranty | BB53-14D003-BE | | | | | | | | | | | | | | | | | | | | |
| - | 22 | B9A | None | | | | | 26-Jan-11 | 25-Jan-11 | 26-Jan-11 | | 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 26-Jan-11 | 21-Dec-10 | 26-Jan-11 | | 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 66 | B9A | None | | | | | 13-Nov-10 | 2-Nov-10 | 13-Nov-10 | | 27-Oct-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 7 | B9A | None | | | | | 15-Jan-11 | 15-Jan-11 | 15-Jan-11 | | 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 3 | B9A | C69 | | | | | 15-Jan-11 | 14-Jan-11 | 14-Jan-11 | | 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 78 | B9A | None | | | | | 30-Oct-10 | 6-Mar-11 | 29-Oct-10 | | 7-Oct-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 8 | B9A | None | | | | | 28-Jan-11 | 24-Jan-11 | 27-Jan-11 | | 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 19 | B9A | None | | | | | 3-Mar-11 | 1-Mar-11 | 2-Mar-11 | | 20-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |
| - | 8 | B9A | None | | | | | 17-Mar-11 | 6-Mar-11 | 17-Mar-11 | | 24-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |
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| - | 55 | B9A | None | | | | | 29-Jan-11 | 26-Jan-11 | 29-Jan-11 | | 27-Dec-10 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |
| - | 13 | B9A | None | | | | | 7-Jan-11 | 4-Jan-11 | 4-Jan-11 | | 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
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| - | 7 | B9A | None | | | | | 23-Jan-11 | 22-Jan-11 | 22-Jan-11 | | 20-Dec-10 | Warranty | AE5C-14D003-BC | | | | | | | | | --> Shirley | | | | | | | | | | | |
| - | 27 | B9A | None | | | | | 14-Dec-10 | 9-Dec-10 | 13-Dec-10 | | 23-Nov-10 | Warranty | AE5C-14D003-BC | | | | | | | | | | | | | | | | | | | | |
| - | 3 | B9A | None | | | | | 3-Nov-10 | 29-Oct-10 | 29-Oct-10 | | 14-Oct-10 | Warranty | AE5C-14D003-BC | | | | | | | | | | | | | | | | | | | | |
| 7 | 33 | B9A | None | | | | | 4-Sep-10 | 11-May-10 | 7-Jun-10 | | 19-Aug-10 | Warranty | AE5C-14D003-BA | | | | | | | | | | | | | | | | | | | | |
| - | 50 | B9A | None | | | | | 17-Nov-10 | 15-Nov-10 | 9-Nov-10 | | 17-Oct-10 | Warranty | AE5C-14D003-BC | | | | | | | | | | | | | | | | | | | | |
| 3 | 12 | B9A | C69 | | | | | 6-Jan-11 | 3-Jan-11 | 2-Jan-11 | FAH0D322210790 | 18-Nov-10 | Warranty | | | | | | | | | | | | | | | | | | | | | |
| - | 3 | B9A | C69 | | | | | 24-Feb-11 | 16-Feb-11 | 24-Feb-11 | FAH0E025120694 | 25-Jan-11 | Warranty | | | | | | | | | | | | | | | | | | | | | |
| 943 | 27 | B9A | None | | | | | 15-Jan-11 | 13-Jan-11 | 14-Jan-11 | BAF0D357110713 | 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| 589 | 23 | B9A | C69 | | | | | 7-Jan-11 | 4-Jan-11 | 4-Jan-11 | BAF0D358110518 | 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| 1 | 95 | B9A | None | | | | | 14-Nov-10 | 14-Nov-10 | 13-Nov-10 | BAF0D300110890 | 27-Oct-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 42 | B9A | None | | | | | 26-Dec-10 | 23-Dec-10 | 20-Dec-10 | BAF0D338110866 | 4-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 7 | B9A | None | | | | | 4-Dec-10 | 14-Dec-10 | 29-Nov-10 | BAF0D312110833 | 8-Nov-10 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 4-Mar-11 | 24-Feb-11 | 4-Mar-11 | BAF0E003110631 | 3-Jan-11 | Warranty | BB53-14D003-BF | | | | | | | | | | | | | | | | | | | | |
| - | 40 | B9A | None | | | | | 4-Mar-11 | 24-Jan-11 | 4-Mar-11 | BAF0E003110631 | 3-Jan-11 | Warranty | BB53-14D003-BF | | | | | | | | | | | | | | | | | | | | |
| 829 | 21 | B9A | BD2,BD3 | | | | | 18-Dec-10 | 10-Dec-10 | 1-Dec-10 | BAF0D315111307 | 11-Nov-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 16 | B9A | None | | | | | 14-Jan-11 | 13-Jan-11 | 14-Jan-11 | BAF0D357110952 | 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 70 | B9A | None | | | | | 22-Dec-10 | 23-Dec-10 | 22-Dec-10 | BAF0D316211409 | 12-Nov-10 | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| - | 4 | B9A | C69 | | | | | | | | | | Warranty | BB53-14D003-AE | | | | | | | | | | | | | | | | | | | | |
| 6 | 21 | B9A | B96,C69 | | | | | 4-Mar-11 | 16-Feb-11 | 2-Mar-11 | BAF0E020110719 | 20-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | | | | | | | | | | | | | | |

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| High Freq Vibration | Target Magnet Check | Hall and Encoder Sensitivity | Motor PCB Integrity | 5V_HALL Disturbances | Dyno Test | B4E test software | Teardown | Hot Puma | IC12 Double Startup | IC12 Regulator Output Fail | Check Motor PCB Clearance | Check Motor PCB solder Joints | Mileage | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | 7812 | | | |
| | | | | | | | | | | | | | 1482 | | | |
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| | | | | | | | | | | | | | 5221 | | | |
| | | | | | | | | | | | | | 7743 | | | |
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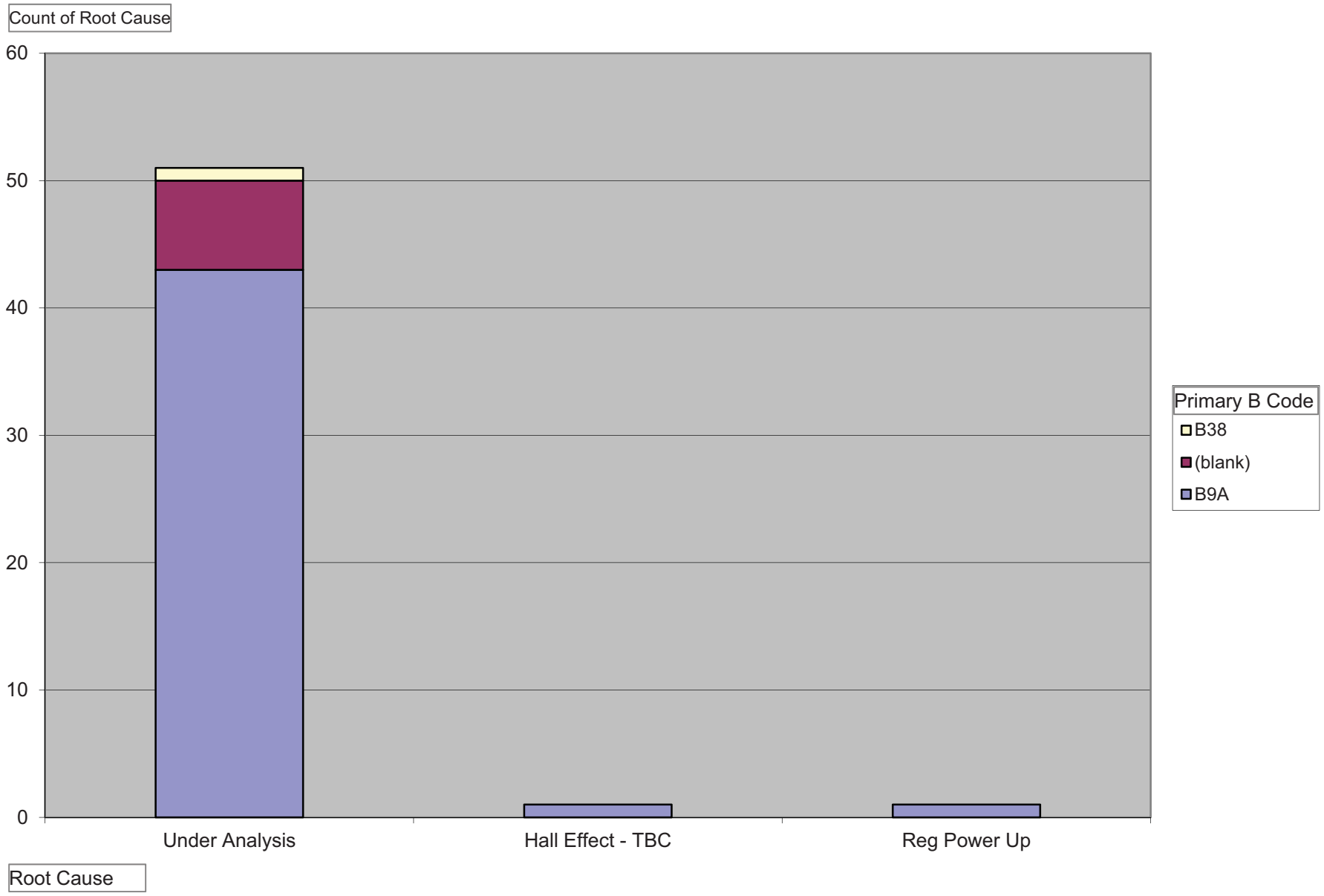
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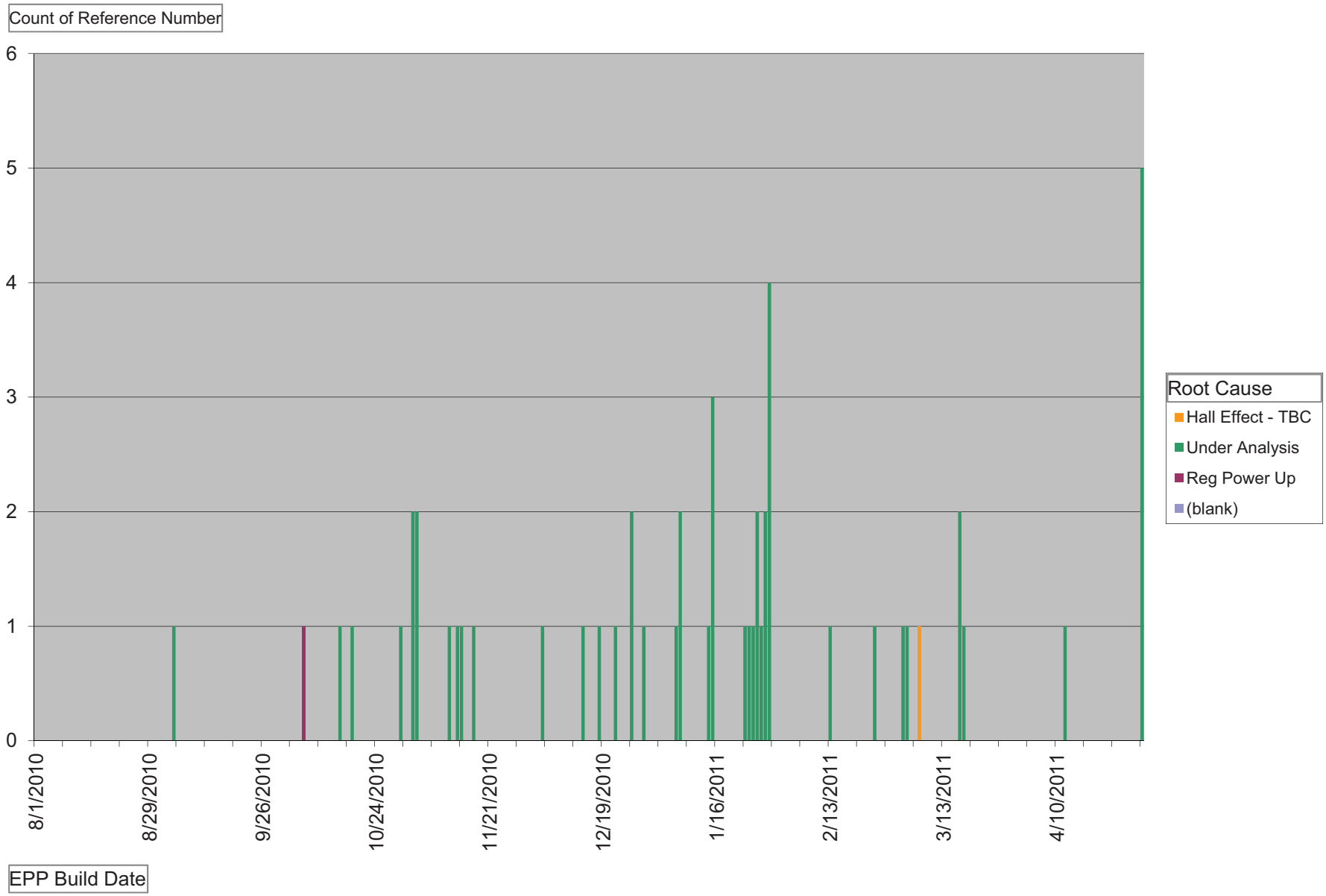
B9A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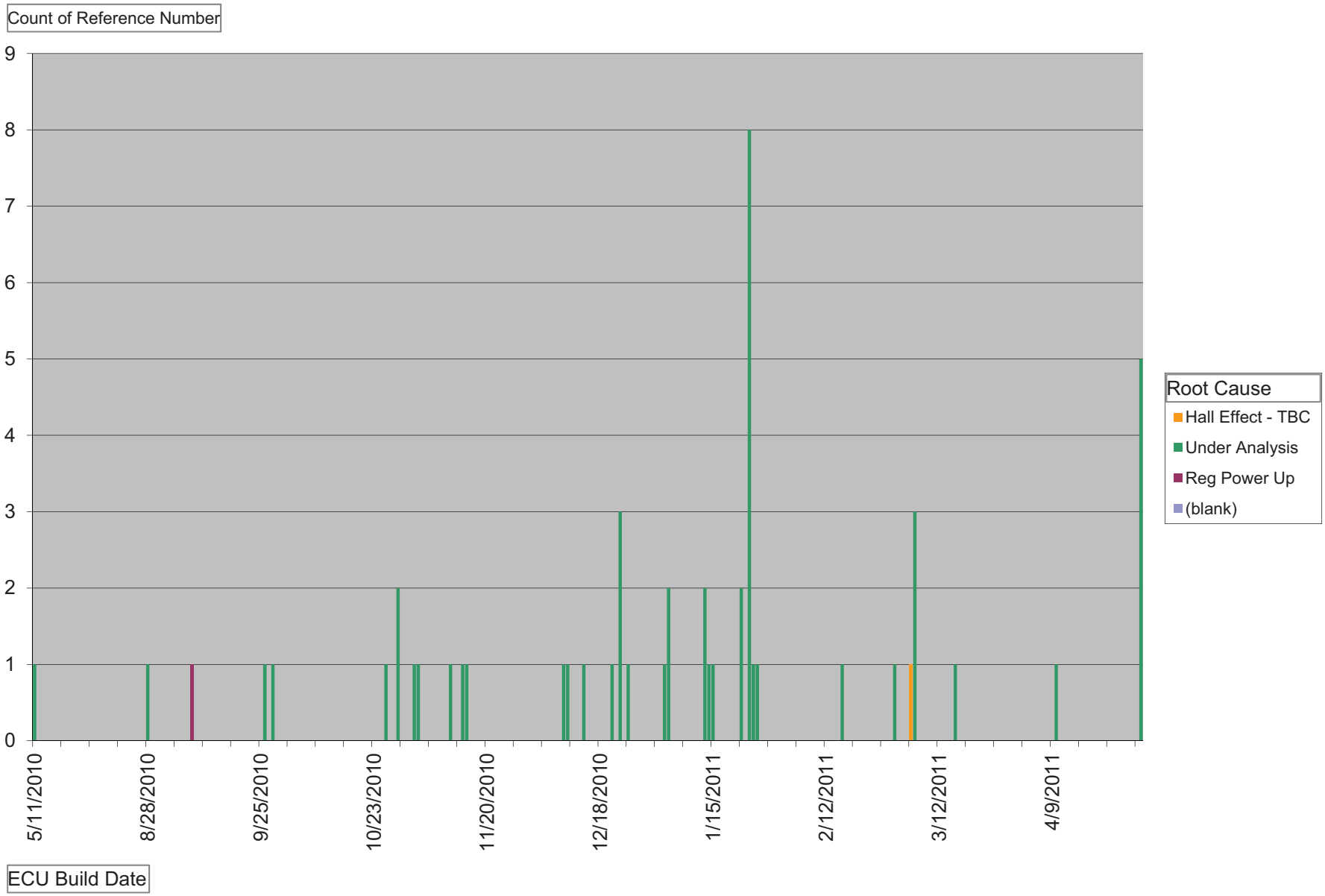
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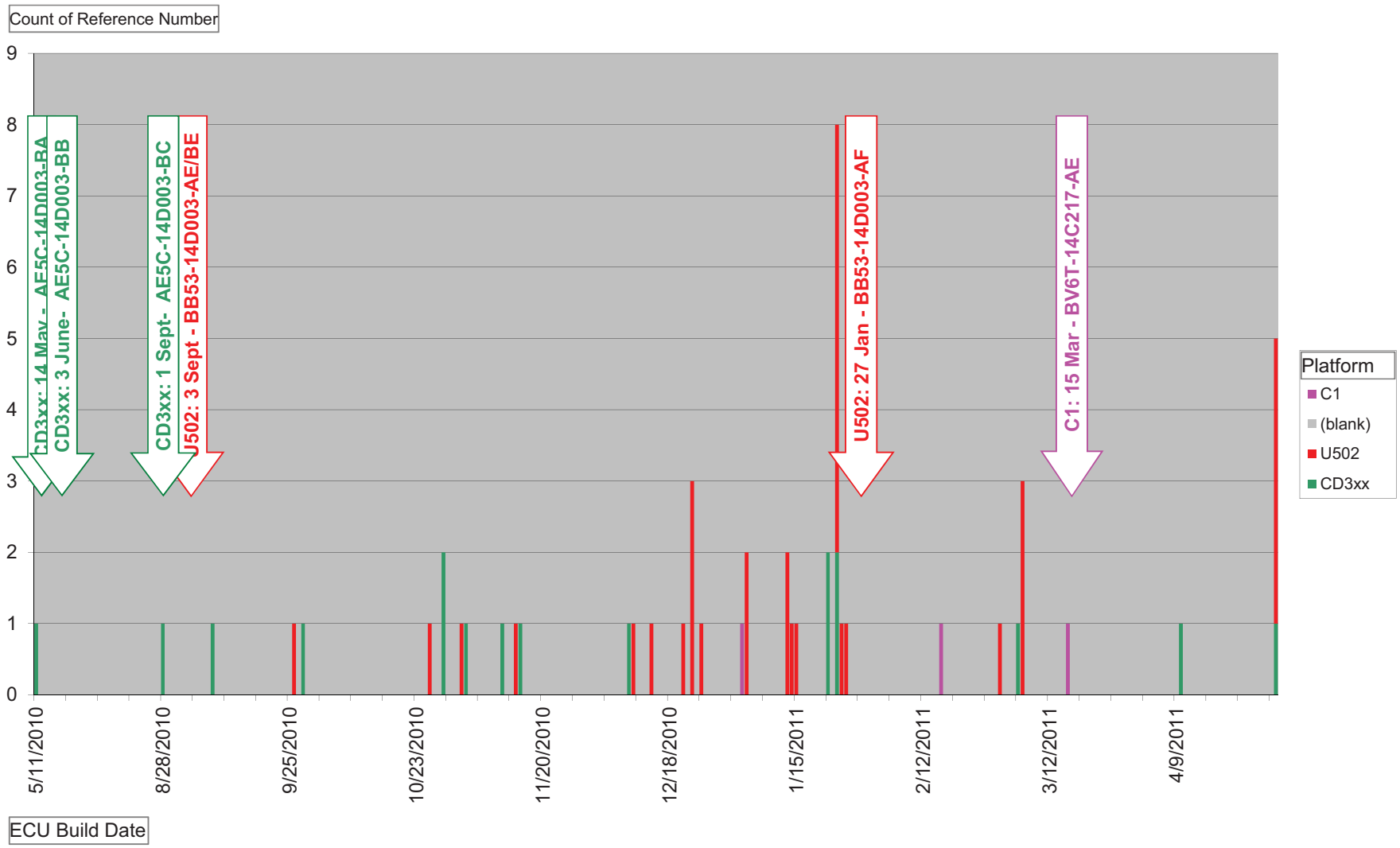
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CD3xx: 3 June- AE5C-14D003-BB
CD3xx: 1 Sept- AE5C-14D003-BC
U502: 3 Sept - BB53-14D003-AE/BE
U502: 27 Jan - BB53-14D003-AF
C1: 15 Mar - BV6T-14C217-AE
5/11/2010
8/28/2010
9/25/2010
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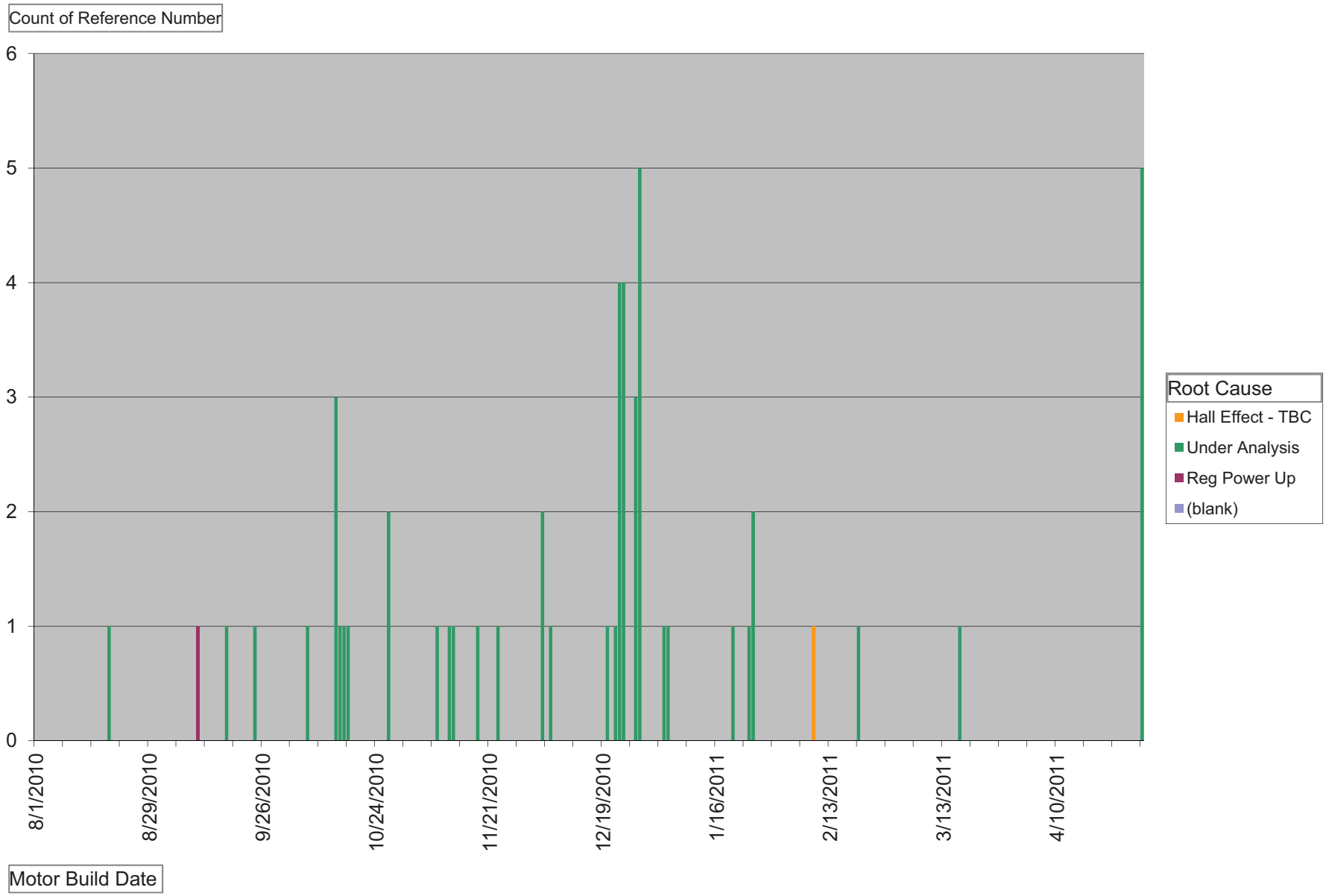
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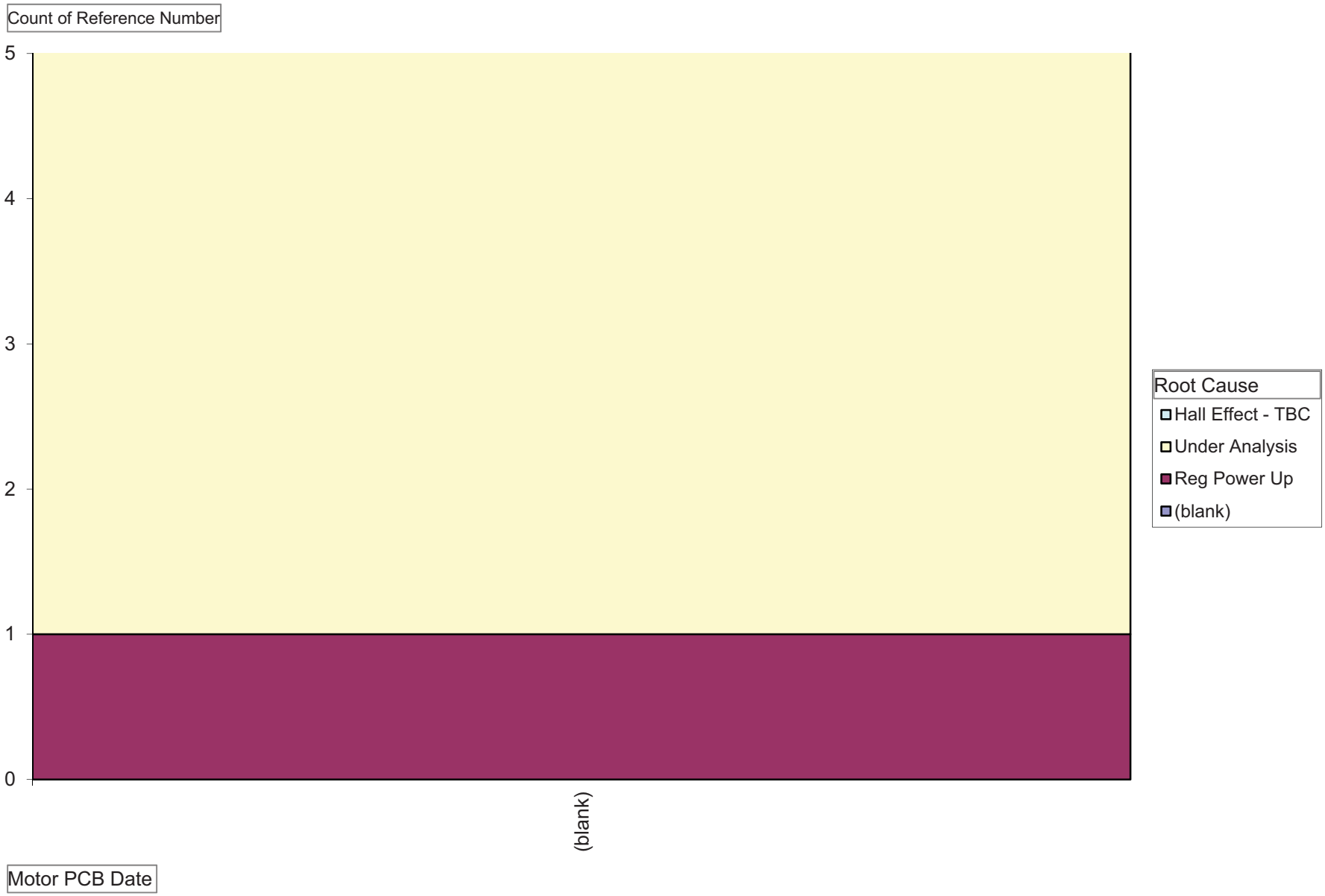
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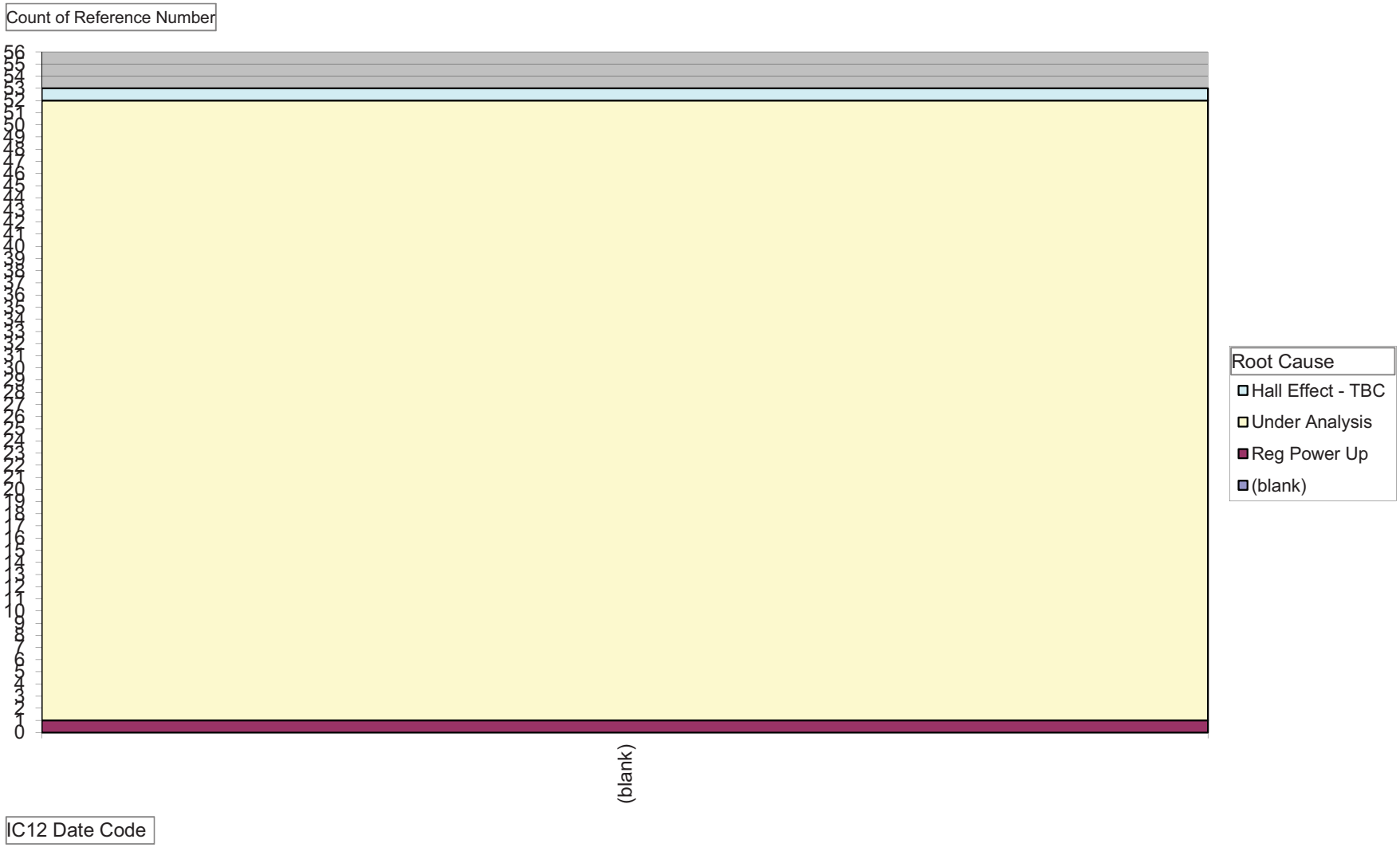
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Root Cause
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Under Analysis
Reg Power Up
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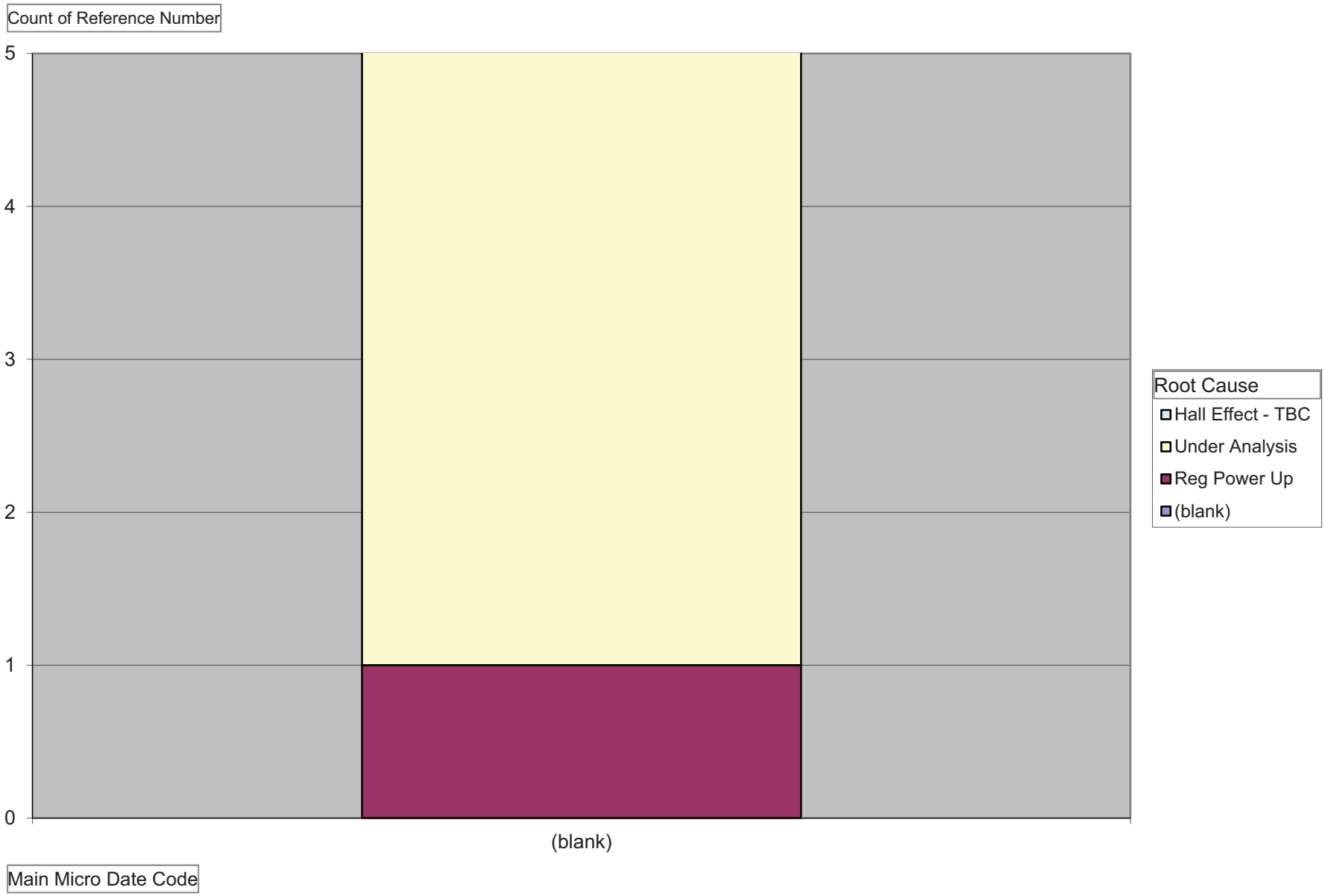
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Main Micro Date Code
Root Cause
Hall Effect - TBC
Under Analysis
Reg Power Up
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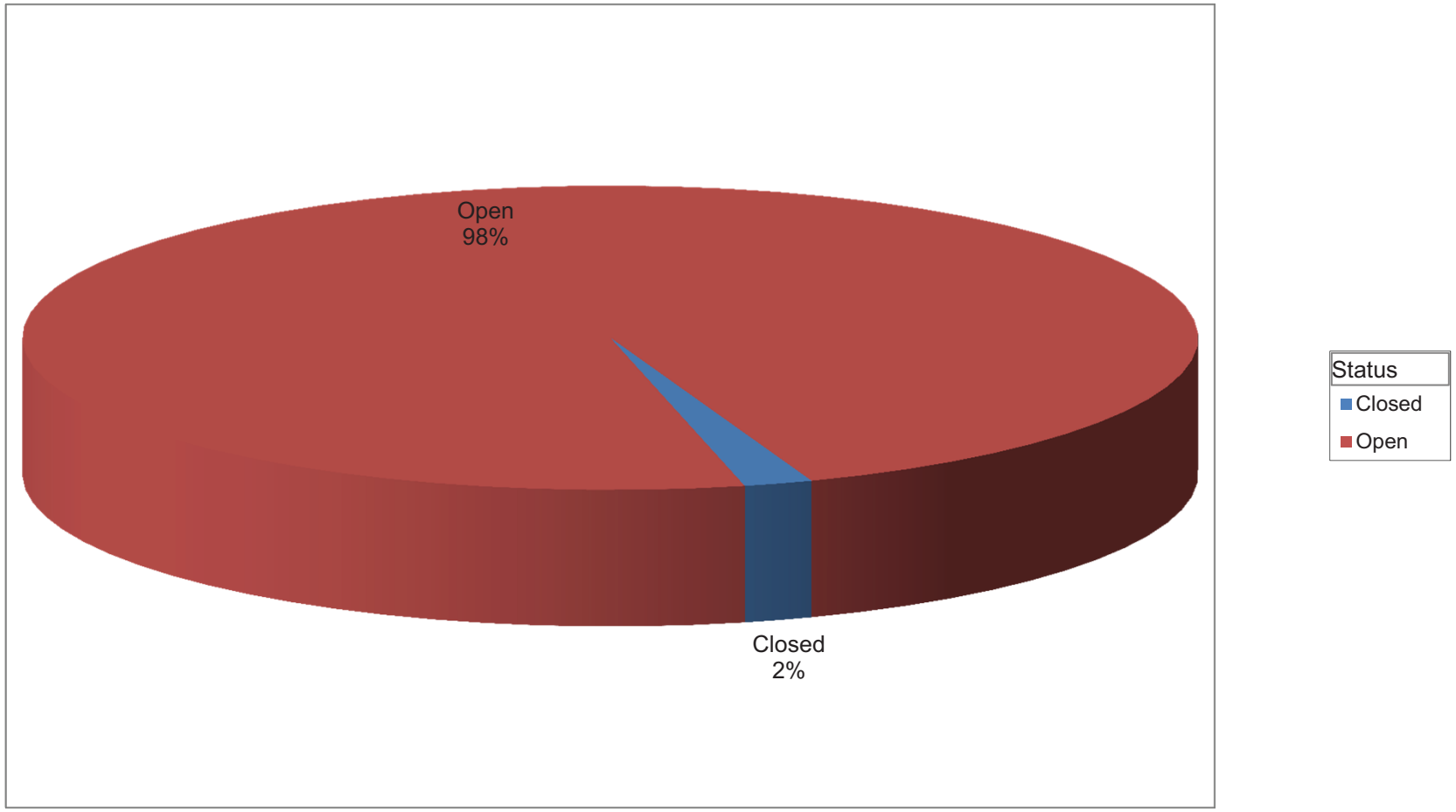
| ECU | Micro Code | CS Pulse | Double Start |
|---|---|---|---|
| 1 | XAA0844 | Yes | |
| 2 | | Yes | |
| 3 | XAA0944 | Yes | |
| 4 | XAA0944 | No | |
| 5 | XAA0944 | Yes | |
| 6 | XAA0944 | Yes | |
| 7 | | No | |
| 8 | XAA0944 | Yes | |
| 9 | XAO0934 | Yes | |
| 10 | | Yes | |

Count of Reference Number

Status by Quantity of Failures



| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMechanicalVelocity | -766 | -857 | -670 | -5.98438 | -6.69531 | -5.23438 |
| ColumnTorque | -2369 | -2481 | -2287 | -2.31348 | -2.42285 | -2.2334 |
| ColumnVelocity | 354 | 397 | 227 | 0.345703 | 0.387695 | 0.22168 |
| vBatt | 3333 | 3331 | 3344 | 13.01953 | 13.01172 | 13.0625 |
| FilteredVehicleSpeed | 1959 | 1959 | 1958 | 30.60938 | 30.60938 | 30.59375 |
| Filt2v5RefVoltage | 12403 | 12403 | 12403 | 2498.163 | 2498.163 | 2498.163 |
| AssistanceTorqueDemand | -3270 | -3682 | -2889 | -12.7734 | -14.3828 | -11.2852 |
| FilteredMechanicalVelocity | -766 | -857 | -670 | -5.98438 | -6.69531 | -5.23438 |
| QAxisCurrent | 1468 | 1702 | 1275 | 11.46875 | 13.29688 | 9.960938 |
| DriveStageTemperature | 4109 | 4099 | 4105 | 41.09 | 40.99 | 41.05 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -6093 | -6093 | -6184 | -6093 | -6093 | -6184 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 1796 | | 0 | | | |
| AltHallTransitionTime | 437971 | 360001 | 437971 | 437971 | 360001 | 437971 |
| B92FilteredMotorVelocityError | 276 | 269 | 270 | 276 | 269 | 270 |
| HallSensor | 5 | 1 | 5 | 5 | 1 | 5 |
| DiagCommutationCentrePosition | 21845 | 10923 | 21845 | 120.0275 | 60.01648 | 120.0275 |
| EncoderPositionRegister | 1548 | 1543 | 1554 | 1548 | 1543 | 1554 |
| MotorElectricalPosition | 29912 | 22254 | 36795 | 164.3516 | 122.2747 | 202.1703 |
| AltNewHallEvent | 0 | 0 | 1 | 0 | 0 | 1 |
| AltMotorElectricalVelocity | -1651 | -1777 | -1609 | -1651 | -1777 | -1609 |
| B92MotorVelocityErrorLimit | 1406 | 1440 | 1395 | 1406 | 1440 | 1395 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 5 | 1 | 5 | 5 | 1 | 5 |

| | | |
|---|---|---|
| DistanceTravelled | 12571795 | 12571795 |
| LifetimeCounter | 760329 | 760329 |
| AccumulatedColumnMovement | 18335 | 18335 |
| FastThermalEstTemperatureRise | 18 | 0.18 |
| ThermalEstTemperatureRise | 52 | 0.52 |
| VehicleTuneSelector | 4 | 4 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4678 | 46.78 |
| CPU_PeakLoadHold | 13577 | 13577 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 1 | 1 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 22 | 20 | 18 | 0.171875 | 0.15625 |
| ColumnTorque | 106 | 91 | 96 | 0.103516 | 0.088867 |
| ColumnVelocity | -9 | -9 | -9 | -0.00879 | -0.00879 |
| vBatt | 3305 | 3305 | 3309 | 12.91016 | 12.91016 |
| FilteredVehicleSpeed | 1816 | 1816 | 1816 | 28.375 | 28.375 |
| Filt2v5RefVoltage | 12434 | 12434 | 12434 | 2504.407 | 2504.407 |
| AssistanceTorqueDemand | 4 | -55 | 33 | 0.015625 | -0.21484 |
| FilteredMechanicalVelocity | 22 | 20 | 18 | 0.171875 | 0.15625 |
| QAxisCurrent | -18 | 11 | 7 | -0.14063 | 0.085938 |
| DriveStageTemperature | 4799 | 4806 | 4809 | 47.99 | 48.06 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -86 | -86 | -86 | -86 | -86 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2446 | | 0 | | |
| AltHallTransitionTime | 57371899 | 57371899 | 57371899 | 57371899 | 57371899 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 65339 | 65339 | 65339 | 65339 | 65339 |
| MotorElectricalPosition | 667 | 667 | 65520 | 3.664835 | 3.664835 |
| AltNewHallEvent | 1 | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 21 | 19 | 18 | 21 | 19 |
| B92MotorVelocityErrorLimit | 965 | 965 | 964 | 965 | 965 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 | 2 |

| | | |
|---|---|---|
| DistanceTravelled | 4538883 | 4538883 |
| LifetimeCounter | 423415 | 423415 |
| AccumulatedColumnMovement | 10821 | 10821 |
| FastThermalEstTemperatureRise | 22 | 0.22 |
| ThermalEstTemperatureRise | 132 | 1.32 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4633 | 46.33 |
| CPU_PeakLoadHold | 12960 | 12960 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0.140625
0.09375
-0.00879
12.92578
28.375
2504.407
0.128906
0.140625
0.054688
48.09
100
1
-86
3
2

57371899
0
2
300.0714
65339
360
0
18
964
-1
2

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 2015 | 2140 | 2273 | 1.967773 | 2.089844 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3584 | 3592 | 3586 | 14 | 14.03125 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12515 | 12515 | 12514 | 2520.721 | 2520.721 |
| AssistanceTorqueDemand | 3707 | 4265 | 4643 | 14.48047 | 16.66016 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -1683 | -1925 | -2111 | -13.1484 | -15.0391 |
| DriveStageTemperature | 4661 | 4657 | 4660 | 46.61 | 46.57 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 4655 | | 0 | | |
| AltHallTransitionTime | 3959996 | 3959996 | 3959996 | 3959996 | 3959996 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 |
| DiagCommutationCentrePosition | 32768 | 32768 | 32768 | 180.044 | 180.044 |
| EncoderPositionRegister | 2 | 2 | 2 | 2 | 2 |
| MotorElectricalPosition | 49140 | 49140 | 49140 | 270 | 270 |
| AltNewHallEvent | 1 | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 4 | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTravelled | 5268408 | 5268408 |
| LifetimeCounter | 372483 | 372483 |
| AccumulatedColumnMovement | 8911 | 8911 |
| FastThermalEstTemperatureRise | 61 | 0.61 |
| ThermalEstTemperatureRise | 236 | 2.36 |
| VehicleTuneSelector | 4 | 4 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5200 | 52 |
| CPU_PeakLoadHold | 13540 | 13540 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
2.219727
0
14.00781
0
2520.52
18.13672
0
-16.4922
46.6
100
1
0
3
2

3959996
0
4
180.044
2
270
0
0
960
-1
4

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 122 | 94 | 73 | 0.953125 | 0.734375 |
| ColumnTorque | -1426 | -1482 | -1568 | -1.39258 | -1.44727 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3304 | 3298 | 3306 | 12.90625 | 12.88281 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12397 | 12397 | 12397 | 2496.954 | 2496.954 |
| AssistanceTorqueDemand | -2105 | -2408 | -2771 | -8.22266 | -9.40625 |
| FilteredMechanicalVelocity | 122 | 94 | 73 | 0.953125 | 0.734375 |
| QAxisCurrent | 1042 | 1154 | 1316 | 8.140625 | 9.015625 |
| DriveStageTemperature | 3140 | 3140 | 3137 | 31.4 | 31.4 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 213 | 213 | 213 | 213 | 213 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2642 | | 0 | | |
| AltHallTransitionTime | 1373942 | 1373942 | 1373942 | 1373942 | 1373942 |
| B92FilteredMotorVelocityError | 80 | 78 | 76 | 80 | 78 |
| HallSensor | 1 | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 | 60.01648 |
| EncoderPositionRegister | 65405 | 65406 | 65406 | 65405 | 65406 |
| MotorElectricalPosition | 62790 | 64155 | 64155 | 345 | 352.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTravelled | 2385052 | 2385052 |
| LifetimeCounter | 308188 | 308188 |
| AccumulatedColumnMovement | 11188 | 11188 |
| FastThermalEstTemperatureRise | 5 | 0.05 |
| ThermalEstTemperatureRise | 90 | 0.9 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 3171 | 31.71 |
| CPU_PeakLoadHold | 12847 | 12847 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0.570313
-1.53125
-0.00293
12.91406
0
2496.954
-10.8242
0.570313
10.28125
31.37
100
1
213
3
2

1373942
76
1
60.01648
65406
352.5
0
0
960
1
1

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 2185 | 2178 | 2212 | 2.133789 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3499 | 3501 | 3495 | 13.66797 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12526 | 12526 | 12526 | 2522.937 |
| AssistanceTorqueDemand | 1379 | 1502 | 1365 | 5.386719 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -806 | -863 | -832 | -6.29688 |
| DriveStageTemperature | 2530 | 2530 | 2521 | 25.3 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1469965 | 1469965 | 1469965 | 1469965 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 |
| DiagCommutationCentrePosition | 32768 | 32768 | 32768 | 180.044 |
| EncoderPositionRegister | 65535 | 65535 | 0 | 65535 |
| MotorElectricalPosition | 47775 | 47775 | 49140 | 262.5 |
| AltNewHallEvent | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTravelled | 4681441 | 4681441 |
| LifetimeCounter | 418815 | 418815 |
| AccumulatedColumnMovement | 16348 | 16348 |
| FastThermalEstTemperatureRise | 29 | 0.29 |
| ThermalEstTemperatureRise | 88 | 0.88 |
| VehicleTuneSelector | 1 | 1 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4002 | 40.02 |
| CPU_PeakLoadHold | 13543 | 13543 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

| | |
|---|---|
| 0 | 0 |
| 2.126953 | 2.160156 |
| 0 | 0 |
| 13.67578 | 13.65234 |
| 0 | 0 |
| 2522.937 | 2522.937 |
| 5.867188 | 5.332031 |
| 0 | 0 |
| -6.74219 | -6.5 |
| 25.3 | 25.21 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 1469965 | 1469965 |
| 0 | 0 |
| 4 | 4 |
| 180.044 | 180.044 |
| 65535 | 0 |
| 262.5 | 270 |
| 0 | 1 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 4 | 4 |

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 586 | 588 | 589 | 0.572266 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 |
| vBatt | 3748 | 3758 | 3750 | 14.64063 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12412 | 12412 | 12412 | 2499.976 |
| AssistanceTorqueDemand | 3 | 3 | 3 | 0.011719 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 5 | 5 | -2 | 0.039063 |
| DriveStageTemperature | 4331 | 4327 | 4327 | 43.31 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1.57E+09 | 1.57E+09 | 1.57E+09 | 1.57E+09 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 0 | 0 | 0 | 0 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 63316 | 63316 | 63316 | 63316 |
| MotorElectricalPosition | 34109 | 34109 | 34109 | 187.4121 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 0 | 0 | 0 | 0 |
| AltMotorCommutationState | 0 | 0 | 0 | 0 |

| | | |
|---|---|---|
| DistanceTravelled | 21789 | 21789 |
| LifetimeCounter | 6922 | 6922 |
| AccumulatedColumnMovement | 364 | 364 |
| FastThermalEstTemperatureRise | 212 | 2.12 |
| ThermalEstTemperatureRise | 122 | 1.22 |
| VehicleTuneSelector | 1 | 1 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4439 | 44.39 |
| CPU_PeakLoadHold | 13463 | 13463 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

| | |
|---|---|
| 0 | 0 |
| 0.574219 | 0.575195 |
| -0.00293 | -0.00293 |
| 14.67969 | 14.64844 |
| 0 | 0 |
| 2499.976 | 2499.976 |
| 0.011719 | 0.011719 |
| 0 | 0 |
| 0.039063 | -0.01563 |
| 43.27 | 43.27 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 1.57E+09 | 1.57E+09 |
| 0 | 0 |
| 0 | 0 |
| 0 | 0 |
| 63316 | 63316 |
| 187.4121 | 187.4121 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| 0 | 0 |
| 0 | 0 |

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 2523 | 1818 | 2170 | 2.463867 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3687 | 3691 | 3679 | 14.40234 |
| FilteredVehicleSpeed | 50 | 48 | 50 | 0.78125 |
| Filt2v5RefVoltage | 12489 | 12489 | 12489 | 2515.485 |
| AssistanceTorqueDemand | 2565 | 1519 | 1901 | 10.01953 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -1363 | -789 | -1012 | -10.6484 |
| DriveStageTemperature | 2874 | 2890 | 2877 | 28.74 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 6929961 | 6929961 | 6929961 | 6929961 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 4095 | 4095 | 4095 | 22.5 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 |

| | | |
|---|---|---|
| DistanceTravelled | 20793 | 20793 |
| LifetimeCounter | 5907 | 5907 |
| AccumulatedColumnMovement | 1004 | 1004 |
| FastThermalEstTemperatureRise | 63 | 0.63 |
| ThermalEstTemperatureRise | 141 | 1.41 |
| VehicleTuneSelector | 1 | 1 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 2761 | 27.61 |
| CPU_PeakLoadHold | 13442 | 13442 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

| | |
|---|---|
| 0 | 0 |
| 1.775391 | 2.119141 |
| 0 | 0 |
| 14.41797 | 14.37109 |
| 0.75 | 0.78125 |
| 2515.485 | 2515.485 |
| 5.933594 | 7.425781 |
| 0 | 0 |
| -6.16406 | -7.90625 |
| 28.9 | 28.77 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 6929961 | 6929961 |
| 0 | 0 |
| 2 | 2 |
| 300.0714 | 300.0714 |
| 0 | 0 |
| 22.5 | 22.5 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 2 | 2 |

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 815 | 630 | 487 | 6.367188 |
| ColumnTorque | -2756 | -2988 | -3536 | -2.69141 |
| ColumnVelocity | -95 | -22 | -6 | -0.09277 |
| vBatt | 3308 | 3310 | 3321 | 12.92188 |
| FilteredVehicleSpeed | 318 | 318 | 319 | 4.96875 |
| Filt2v5RefVoltage | 12548 | 12548 | 12548 | 2527.368 |
| AssistanceTorqueDemand | -4441 | -5984 | -8978 | -17.3477 |
| FilteredMechanicalVelocity | 815 | 630 | 487 | 6.367188 |
| QAxisCurrent | 3154 | 3879 | 4876 | 24.64063 |
| DriveStageTemperature | 5675 | 5669 | 5675 | 56.75 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 347999 | 347999 | 347999 | 347999 |
| B92FilteredMotorVelocityError | 176 | 331 | 323 | 176 |
| HallSensor | 4 | 4 | 4 | 4 |
| DiagCommutationCentrePosition | 32768 | 32768 | 32768 | 180.044 |
| EncoderPositionRegister | 2005 | 2005 | 2006 | 2005 |
| MotorElectricalPosition | 13634 | 13634 | 14999 | 74.91209 |
| AltNewHallEvent | 1 | 0 | 0 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTravelled | 12047049 | 12047049 |
| LifetimeCounter | 1056744 | 1056744 |
| AccumulatedColumnMovement | 27303 | 27303 |
| FastThermalEstTemperatureRise | 18 | 0.18 |
| ThermalEstTemperatureRise | 40 | 0.4 |
| VehicleTuneSelector | 1 | 1 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5648 | 56.48 |
| CPU_PeakLoadHold | 13551 | 13551 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 1 | 1 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

| | |
|---|---|
| 4.921875 | 3.804688 |
| -2.91797 | -3.45313 |
| -0.02148 | -0.00586 |
| 12.92969 | 12.97266 |
| 4.96875 | 4.984375 |
| 2527.368 | 2527.368 |
| -23.375 | -35.0703 |
| 4.921875 | 3.804688 |
| 30.30469 | 38.09375 |
| 56.69 | 56.75 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 347999 | 347999 |
| 331 | 323 |
| 4 | 4 |
| 180.044 | 180.044 |
| 2005 | 2006 |
| 74.91209 | 82.41209 |
| 0 | 0 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 4 | 4 |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1207 | 1230 | 1207 | 1.178711 | 1.201172 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3519 | 3527 | 3527 | 13.74609 | 13.77734 |
| FilteredVehicleSpeed | 3907 | 3907 | 3908 | 61.04688 | 61.04688 |
| Filt2v5RefVoltage | 12471 | 12471 | 12470 | 2511.859 | 2511.859 |
| AssistanceTorqueDemand | 209 | 303 | -51 | 0.816406 | 1.183594 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -92 | -141 | 30 | -0.71875 | -1.10156 |
| DriveStageTemperature | 4586 | 4586 | 4579 | 45.86 | 45.86 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 100 | 100 | 100 | 1.5625 | 1.5625 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 14694005 | 14694005 | 14694005 | 14694005 | 14694005 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 65440 | 65440 | 65440 | 65440 | 65440 |
| MotorElectricalPosition | 58695 | 58695 | 58695 | 322.5 | 322.5 |
| | | | | 82.43956 | 82.43956 |
| AltNewHallEvent | 0 | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 6917091 |
| LifetimeCounter | 613650 |
| AccumulatedColumnMovement | 16130 |
| FastThermalEstTemperatureRise | 21 |
| ThermalEstTemperatureRise | 62 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 4322 |
| CPU_PeakLoadHold | 13384 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

Journey time to Fault - Fault 1
Journey time to Fault - Fault 2
Journey time to Fault - Fault 3

Journey time to Fault - Fault 4
Journey time to Fault - Fault 5
Journey time to Fault - Fault 6
Journey time to Fault - Fault 7
Journey time to Fault - Fault 8

B9A LICs
?
?
?

| |
|---|
| 2 |
| 0 |
| 1.178711 |
| -0.00293 |
| 13.77734 |
| 61.0625 |
| 2511.658 |
| -0.19922 |
| 0 |
| 0.234375 |
| 45.79 |
| 100 |
| 1 |
| 1.5625 |
| 3 |
| 2 |
| 14694005 |
| 0 |
| 6 |
| 240.0604 |
| 65440 |
| 322.5 |
| 82.43956 |
| 1 |
| 0 |
| 960 |
| -1 |
| 6 |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | -4 | -7 | -5 | -0.03125 | -0.05469 |
| ColumnTorque | 2111 | 1922 | 2005 | 2.061523 | 1.876953 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3503 | 3505 | 3501 | 13.68359 | 13.69141 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12418 | 12418 | 12418 | 2501.184 | 2501.184 |
| AssistanceTorqueDemand | 1382 | 1045 | 1176 | 5.398438 | 4.082031 |
| FilteredMechanicalVelocity | -4 | -7 | -5 | -0.03125 | -0.05469 |
| QAxisCurrent | -747 | -604 | -663 | -5.83594 | -4.71875 |
| DriveStageTemperature | 5946 | 5946 | 5953 | 59.46 | 59.46 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -1046 | -1052 | -1046 | -16.3438 | -16.4375 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1866095 | 1866095 | 1866095 | 1866095 | 1866095 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 65461 | 65462 | 65461 | 65461 | 65462 |
| MotorElectricalPosition | 57330 | 58695 | 57330 | 315 | 322.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 6458112 |
| LifetimeCounter | 527336 |
| AccumulatedColumnMovement | 11993 |
| FastThermalEstTemperatureRise | 12 |
| ThermalEstTemperatureRise | 16 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 4490 |
| CPU_PeakLoadHold | 13376 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

Journey time to Fault - Fault 1
Journey time to Fault - Fault 2
Journey time to Fault - Fault 3
Journey time to Fault - Fault 4

Journey time to Fault - Fault 5
Journey time to Fault - Fault 6
Journey time to Fault - Fault 7
Journey time to Fault - Fault 8

B9A LICs
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| |
|---|
| 2 |
| -0.03906 |
| 1.958008 |
| 0 |
| 13.67578 |
| 0 |
| 2501.184 |
| 4.59375 |
| -0.03906 |
| -5.17969 |
| 59.53 |
| 100 |
| 1 |
| -16.3438 |
| 3 |
| 2 |
| 1866095 |
| 0 |
| 6 |
| 240.0604 |
| 65461 |
| 315 |
| 0 |
| 0 |
| 960 |
| -1 |
| 6 |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 505 | 390 | 301 | 3.945313 | 3.046875 |
| ColumnTorque | -3145 | -3475 | -4099 | -3.07129 | -3.39355 |
| ColumnVelocity | -20 | -5 | -3 | -0.01953 | -0.00488 |
| vBatt | 3545 | 3547 | 3540 | 13.84766 | 13.85547 |
| FilteredVehicleSpeed | 1139 | 1138 | 1138 | 17.79688 | 17.78125 |
| Filt2v5RefVoltage | 12419 | 12419 | 12419 | 2501.385 | 2501.385 |
| AssistanceTorqueDemand | -4028 | -5903 | -8984 | -15.7344 | -23.0586 |
| FilteredMechanicalVelocity | 505 | 390 | 301 | 3.945313 | 3.046875 |
| QAxisCurrent | 2641 | 3463 | 4733 | 20.63281 | 27.05469 |
| DriveStageTemperature | 5391 | 5397 | 5387 | 53.91 | 53.97 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -6685 | -6694 | -6715 | -104.453 | -104.594 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 431844 | 431844 | 431844 | 431844 | 431844 |
| B92FilteredMotorVelocityError | 260 | 254 | 248 | 260 | 254 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 1190 | 1190 | 1191 | 1190 | 1190 |
| MotorElectricalPosition | 36839 | 36839 | 37742 | 202.4121 | 202.4121 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 10586896 |
| LifetimeCounter | 602166 |
| AccumulatedColumnMovement | 13285 |
| FastThermalEstTemperatureRise | 2 |
| ThermalEstTemperatureRise | 7 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 4167 |
| CPU_PeakLoadHold | 13358 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 1 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

Journey time to Fault - Fault 1
Journey time to Fault - Fault 2
Journey time to Fault - Fault 3
Journey time to Fault - Fault 4

Journey time to Fault - Fault 5
Journey time to Fault - Fault 6
Journey time to Fault - Fault 7
Journey time to Fault - Fault 8

B9A LICs
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| |
|---|
| 2 |
| 2.351563 |
| -4.00293 |
| -0.00293 |
| 13.82813 |
| 17.78125 |
| 2501.385 |
| -35.0938 |
| 2.351563 |
| 36.97656 |
| 53.87 |
| 100 |
| 1 |
| -104.922 |
| 3 |
| 2 |
| 431844 |
| 248 |
| 2 |
| 300.0714 |
| 1191 |
| 207.3736 |
| 0 |
| 0 |
| 960 |
| 1 |
| 2 |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 1394 | 1171 | 1804 | 10.89063 | 9.148438 |
| ColumnTorque | -4871 | -6926 | -4145 | -4.75684 | -6.76367 |
| ColumnVelocity | -86 | -161 | -380 | -0.08398 | -0.15723 |
| vBatt | 3415 | 3356 | 3346 | 13.33984 | 13.10938 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12363 | 12363 | 12363 | 2490.106 | 2490.106 |
| AssistanceTorqueDemand | -21690 | -28672 | -16245 | -84.7266 | -112 |
| FilteredMechanicalVelocity | 1394 | 1171 | 1804 | 10.89063 | 9.148438 |
| QAxisCurrent | 12262 | 13432 | 10482 | 95.79688 | 104.9375 |
| DriveStageTemperature | 4128 | 4142 | 4132 | 41.28 | 41.42 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -17444 | -17473 | -17425 | -272.563 | -273.016 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 299999 | 197944 | 179944 | 299999 | 197944 |
| B92FilteredMotorVelocityError | 591 | 763 | 413 | 591 | 763 |
| HallSensor | 6 | 4 | 4 | 6 | 4 |
| DiagCommutationCentrePosition | 43691 | 32768 | 32768 | 240.0604 | 180.044 |
| EncoderPositionRegister | 3062 | 3059 | 3060 | 3062 | 3059 |
| MotorElectricalPosition | 17331 | 14999 | 14999 | 95.22527 | 82.41209 |
| AltNewHallEvent | 1 | 1 | 1 | 1 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | -1 | 1 | 1 | -1 |
| AltMotorCommutationState | 6 | 4 | 4 | 6 | 4 |

| | |
|---|---|
| DistanceTravelled | 19063512 |
| LifetimeCounter | 1665106 |
| AccumulatedColumnMovement | 36558 |
| FastThermalEstTemperatureRise | 12 |
| ThermalEstTemperatureRise | 17 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3472 |
| CPU_PeakLoadHold | 13351 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 1 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

Journey time to Fault - Fault 1
Journey time to Fault - Fault 2
Journey time to Fault - Fault 3
Journey time to Fault - Fault 4

Journey time to Fault - Fault 5
Journey time to Fault - Fault 6
Journey time to Fault - Fault 7
Journey time to Fault - Fault 8

B9A LICs
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2
14.09375
-4.04785
-0.37109
13.07031
0
2490.106
-63.457
14.09375
81.89063
41.32
100
1
-272.266
3
2
179944
413
4
180.044
3060
82.41209
1
0
960
1
4

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | -51 | -43 | -48 | -0.0498 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3615 | 3616 | 3609 | 14.12109 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12396 | 12396 | 12396 | 2496.753 |
| AssistanceTorqueDemand | -24 | -24 | 0 | -0.09375 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 24 | 1 | 27 | 0.1875 |
| DriveStageTemperature | 2080 | 2075 | 2075 | 20.8 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1.91E+09 | 1.91E+09 | 1.91E+09 | 1.91E+09 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 49140 | 49140 | 49140 | 270 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 |

| | | |
|---|---|---|
| DistanceTravelled | 6169085 | 6169085 |
| LifetimeCounter | 557584 | 557584 |
| AccumulatedColumnMovement | 18426 | 18426 |
| FastThermalEstTemperatureRise | 14 | 1.4 |
| ThermalEstTemperatureRise | 38 | 3.8 |
| VehicleTuneSelector | 2 | 2 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | Not scaled |
| PowerOffDriveStageTemperature | 4619 | 46.19 |
| CPU_PeakLoadHold | 13484 | Not scaled |
| TorqueReInstatmentFlag | 1 | Not scaled |
| IncompletePowerDownTestCount | 1 | Not scaled |
| padding | 0 | Not scaled |
| LRE_PositionState | 0 | Not scaled |
| PositionExtrapActive | 0 | Not scaled |
| EncoderOffset | 0 | Not scaled |
| MotorReversal | 0 | Not scaled |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| -0.04199 | -0.04688 |
| 0 | 0 |
| 14.125 | 14.09766 |
| 0 | 0 |
| 2496.753 | 2496.753 |
| -0.09375 | 0 |
| 0 | 0 |
| 0.007813 | 0.210938 |
| 20.75 | 20.75 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 1.91E+09 | 1.91E+09 |
| 0 | 0 |
| 3 | 3 |
| 0 | 0 |
| 0 | 0 |
| 270 | 270 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 3 | 3 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | -92 | -154 | -119 | -0.71875 |
| ColumnTorque | 3544 | 3215 | 3335 | 3.460938 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3450 | 3458 | 3454 | 13.47656 |
| FilteredVehicleSpeed | 1120 | 1120 | 1120 | 17.5 |
| Filt2v5RefVoltage | 12435 | 12435 | 12435 | 2504.608 |
| AssistanceTorqueDemand | 5736 | 4110 | 4709 | 22.40625 |
| FilteredMechanicalVelocity | -92 | -154 | -119 | -0.71875 |
| QAxisCurrent | -3117 | -2347 | -2590 | -24.3516 |
| DriveStageTemperature | 4020 | 4027 | 4027 | 40.2 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 857876 | 857876 | 857876 | 857876 |
| B92FilteredMotorVelocityError | 235 | 181 | 241 | 235 |
| HallSensor | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 |
| EncoderPositionRegister | 60090 | 60090 | 60089 | 60090 |
| MotorElectricalPosition | 58695 | 58695 | 57330 | 322.5 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTravelled | 26313320 | 26313320 |
| LifetimeCounter | 2105477 | 2105477 |
| AccumulatedColumnMovement | 63954 | 63954 |
| FastThermalEstTemperatureRise | 45 | 0.45 |
| ThermalEstTemperatureRise | 156 | 1.56 |
| VehicleTuneSelector | 2 | 2 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 3662 | 36.62 |
| CPU_PeakLoadHold | 13380 | 13380 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | Not scaled |
| PositionExtrapActive | 0 | Not scaled |
| EncoderOffset | 0 | Not scaled |
| MotorReversal | 0 | Not scaled |

| | |
|---|---|
| 1 | 2 |
| -1.20313 | -0.92969 |
| 3.139648 | 3.256836 |
| 0 | 0 |
| 13.50781 | 13.49219 |
| 17.5 | 17.5 |
| 2504.608 | 2504.608 |
| 16.05469 | 18.39453 |
| -1.20313 | -0.92969 |
| -18.3359 | -20.2344 |
| 40.27 | 40.27 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 857876 | 857876 |
| 181 | 241 |
| 6 | 6 |
| 240.0604 | 240.0604 |
| 60090 | 60089 |
| 322.5 | 315 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 6 | 6 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | -268 | -207 | -160 | -2.09375 |
| ColumnTorque | 1787 | 2050 | 2251 | 1.745117 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3634 | 3625 | 3619 | 14.19531 |
| FilteredVehicleSpeed | 714 | 714 | 712 | 11.15625 |
| Filt2v5RefVoltage | 12397 | 12397 | 12397 | 2496.954 |
| AssistanceTorqueDemand | 1551 | 1957 | 1926 | 6.058594 |
| FilteredMechanicalVelocity | -268 | -207 | -160 | -2.09375 |
| QAxisCurrent | -204 | -981 | -1146 | -1.59375 |
| DriveStageTemperature | 3669 | 3676 | 3669 | 36.69 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | -8910 | -8901 | -8893 | -139.219 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 437904 | 546107 | 546107 | 437904 |
| B92FilteredMotorVelocityError | 819 | 903 | 985 | 819 |
| HallSensor | 2 | 6 | 6 | 2 |
| DiagCommutationCentrePosition | 54613 | 43691 | 43691 | 300.0714 |
| EncoderPositionRegister | 1545 | 1546 | 1546 | 1545 |
| MotorElectricalPosition | 57330 | 58695 | 58695 | 315 |
| AltNewHallEvent | 0 | 1 | 0 | 14.92857 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 6 | 6 | 2 |
| | | | | 0 |

| | | |
|---|---|---|
| DistanceTravelled | 31521548 | 31521548 |
| LifetimeCounter | 2369480 | 2369480 |
| AccumulatedColumnMovement | 45177 | 45177 |
| FastThermalEstTemperatureRise | 12 | 1.2 |
| ThermalEstTemperatureRise | 36 | 3.6 |
| VehicleTuneSelector | 2 | 2 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | Not scaled |
| PowerOffDriveStageTemperature | 3555 | 35.55 |
| CPU_PeakLoadHold | 13451 | Not scaled |
| TorqueReInstatmentFlag | 1 | Not scaled |
| IncompletePowerDownTestCount | 1 | Not scaled |
| padding | 0 | Not scaled |
| LRE_PositionState | 0 | Not scaled |
| PositionExtrapActive | 0 | Not scaled |
| EncoderOffset | 0 | Not scaled |
| MotorReversal | 1 | Not scaled |

| | |
|---|---|
| 1 | 2 |
| -1.61719 | -1.25 |
| 2.001953 | 2.198242 |
| 0 | 0 |
| 14.16016 | 14.13672 |
| 11.15625 | 11.125 |
| 2496.954 | 2496.954 |
| 7.644531 | 7.523438 |
| -1.61719 | -1.25 |
| -7.66406 | -8.95313 |
| 36.76 | 36.69 |
| 100 | 100 |
| 1 | 1 |
| -139.078 | -138.953 |
| 3 | 3 |
| 2 | 2 |
| 546107 | 546107 |
| 903 | 985 |
| 6 | 6 |
| 240.0604 | 240.0604 |
| 1546 | 1546 |
| 322.5 | 322.5 |
| 82.43956 | 82.43956 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 6 | 6 |
| 0 | 0 |

| | | | | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 44 | 40 | 42 | 0.34375 | 0.3125 |
| ColumnTorque | -764 | -800 | -737 | -0.74609 | -0.78125 |
| ColumnVelocity | -23 | -23 | -23 | -0.02246 | -0.02246 |
| vBatt | 3598 | 3598 | 3600 | 14.05469 | 14.05469 |
| FilteredVehicleSpeed | 3577 | 3578 | 3577 | 55.89063 | 55.90625 |
| Filt2v5RefVoltage | 12379 | 12379 | 12379 | 2493.329 | 2493.329 |
| AssistanceTorqueDemand | -198 | 99 | 205 | -0.77344 | 0.386719 |
| FilteredMechanicalVelocity | 44 | 40 | 42 | 0.34375 | 0.3125 |
| QAxisCurrent | 48 | -22 | -65 | 0.375 | -0.17188 |
| DriveStageTemperature | 4678 | 4671 | 4668 | 46.78 | 46.71 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -44 | -44 | -44 | -0.6875 | -0.6875 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 35753979 | 35753979 | 35753979 | 35753979 | 35753979 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 139 | 139 | 139 | 139 | 139 |
| MotorElectricalPosition | 54501 | 54600 | 54209 | 299.456 | 300 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 76 | 76 | 76 | 76 | 76 |
| B92MotorVelocityErrorLimit | 980 | 980 | 980 | 980 | 980 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 15538746 |
| LifetimeCounter | 1112750 |
| AccumulatedColumnMovement | 17527 |
| FastThermalEstTemperatureRise | 14 |
| ThermalEstTemperatureRise | 48 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3026 |
| CPU_PeakLoadHold | 13365 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 1 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0.328125 |
| -0.71973 |
| -0.02246 |
| 14.0625 |
| 55.89063 |
| 2493.329 |
| 0.800781 |
| 0.328125 |
| -0.50781 |
| 46.68 |
| 100 |
| 1 |
| -0.6875 |
| 3 |
| 2 |
| 35753979 |
| 0 |
| 6 |
| 240.0604 |
| 139 |
| 297.8516 |
| 0 |
| 76 |
| 980 |
| -1 |
| 6 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 1233 | 1223 | 1227 | 1.204102 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3526 | 3532 | 3530 | 13.77344 |
| FilteredVehicleSpeed | 5 | 5 | 5 | 0.078125 |
| Filt2v5RefVoltage | 12399 | 12399 | 12399 | 2497.357 |
| AssistanceTorqueDemand | 224 | 251 | 224 | 0.875 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -118 | -125 | -125 | -0.92188 |
| DriveStageTemperature | 3580 | 3580 | 3583 | 35.8 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 55098060 | 55098060 | 55098060 | 55098060 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 |
| DiagCommutationCentrePosition | 21845 | 21845 | 21845 | 120.0275 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 36855 | 36855 | 36855 | 202.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTravelled | 1211875 | 1211875 |
| LifetimeCounter | 117063 | 117063 |
| AccumulatedColumnMovement | 2621 | 2621 |
| FastThermalEstTemperatureRise | 69 | 6.9 |
| ThermalEstTemperatureRise | 119 | 11.9 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | Not scaled |
| PowerOffDriveStageTemperature | 3771 | 37.71 |
| CPU_PeakLoadHold | 13385 | Not scaled |
| TorqueReInstatmentFlag | 1 | Not scaled |
| IncompletePowerDownTestCount | 1 | Not scaled |
| padding | 0 | Not scaled |
| LRE_PositionState | 0 | Not scaled |
| PositionExtrapActive | 0 | Not scaled |
| EncoderOffset | 0 | Not scaled |
| MotorReversal | 0 | Not scaled |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 1.194336 | 1.198242 |
| 0 | 0 |
| 13.79688 | 13.78906 |
| 0.078125 | 0.078125 |
| 2497.357 | 2497.357 |
| 0.980469 | 0.875 |
| 0 | 0 |
| -0.97656 | -0.97656 |
| 35.8 | 35.83 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 55098060 | 55098060 |
| 0 | 0 |
| 5 | 5 |
| 120.0275 | 120.0275 |
| 0 | 0 |
| 202.5 | 202.5 |
| 0 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 5 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1395 | 1359 | 1331 | 1.362305 | 1.327148 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3733 | 3733 | 3731 | 14.58203 | 14.58203 |
| FilteredVehicleSpeed | 1400 | 1400 | 1400 | 21.875 | 21.875 |
| Filt2v5RefVoltage | 12382 | 12382 | 12382 | 2493.933 | 2493.933 |
| AssistanceTorqueDemand | 26 | 52 | 78 | 0.101563 | 0.203125 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -20 | -20 | -37 | -0.15625 | -0.15625 |
| DriveStageTemperature | 3594 | 3587 | 3587 | 35.94 | 35.87 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 65 | 65 | 58 | 1.015625 | 1.015625 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 43746102 | 43746102 | 43746102 | 43746102 | 43746102 |
| B92FilteredMotorVelocityError | 1 | 1 | 0 | 1 | 1 |
| HallSensor | 3 | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 146 | 146 | 146 | 146 | 146 |
| MotorElectricalPosition | 20475 | 20475 | 20475 | 112.5 | 112.5 |
| AltNewHallEvent | 1 | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 | 3 |

| | |
|---|---|
| DistanceTravelled | 12842 |
| LifetimeCounter | 2804 |
| AccumulatedColumnMovement | 111 |
| FastThermalEstTemperatureRise | 61 |
| ThermalEstTemperatureRise | 198 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3196 |
| CPU_PeakLoadHold | 13457 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 1.299805 |
| 0 |
| 14.57422 |
| 21.875 |
| 2493.933 |
| 0.304688 |
| 0 |
| -0.28906 |
| 35.87 |
| 100 |
| 1 |
| 0.90625 |
| 3 |
| 2 |
| 43746102 |
| 0 |
| 3 |
| 0 |
| 146 |
| 112.5 |
| 0 |
| 0 |
| 960 |
| -1 |
| 3 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1761 | 1840 | 1719 | 1.719727 | 1.796875 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3261 | 3274 | 3251 | 12.73828 | 12.78906 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12311 | 12311 | 12311 | 2479.633 | 2479.633 |
| AssistanceTorqueDemand | 1605 | 1662 | 1548 | 6.269531 | 6.492188 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -887 | -917 | -847 | -6.92969 | -7.16406 |
| DriveStageTemperature | 2591 | 2583 | 2578 | 25.91 | 25.83 |
| TorqueLimit | 1450 | 1500 | 1400 | 5.8 | 6 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 2441876 | 2441876 | 2441876 | 2441876 | 2441876 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 2 | 2 | 2 | 2 | 2 |
| MotorElectricalPosition | 4095 | 4095 | 4095 | 22.5 | 22.5 |
| AltNewHallEvent | 0 | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 | 2 |

| |
|---|
| 2 |
| 0 |
| 1.678711 |
| 0 |
| 12.69922 |
| 0 |
| 2479.633 |
| 6.046875 |
| 0 |
| -6.61719 |
| 25.78 |
| 5.6 |
| 1 |
| 0 |
| 3 |
| 2 |
| 2441876 |
| 0 |
| 2 |
| 300.0714 |
| 2 |
| 22.5 |
| 1 |
| 0 |
| 960 |
| -1 |
| 2 |

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 0 | 0 | 0 | 0 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3055 | 3053 | 3050 | 11.93359 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12331 | 12331 | 12331 | 2483.661 |
| AssistanceTorqueDemand | 0 | 0 | 0 | Not scaled |
| FilteredMechanicalVelocity | 0 | 0 | 0 | Not scaled |
| QAxisCurrent | -10 | -14 | 1 | -0.07813 |
| DriveStageTemperature | 811 | 811 | 804 | 8.11 |
| TorqueLimit | 0 | 0 | 0 | Not scaled |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | Not scaled |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| TorquePwmPulseWidth1 | 0 | 0 | 0 | 0 |
| TorquePwmPulseWidth2 | 0 | 0 | 0 | 0 |
| TorquePwmPulsePeriod1 | 0 | 0 | 0 | 0 |
| TorquePwmPulsePeriod2 | 0 | 0 | 0 | 0 |
| TimeSinceLastEvent1 | 4754 | 4770 | 4786 | Not scaled |
| TimeSinceLastEvent2 | 4754 | 4770 | 4786 | Not scaled |
| AltLowTimeError1 | 0 | 0 | 0 | Not scaled |
| AltLowTimeError2 | 0 | 0 | 0 | Not scaled |

| | | |
|---|---|---|
| DistanceTravelled | 25302444 | 25302444 |
| LifetimeCounter | 1640076 | 1640076 |
| AccumulatedColumnMovement | 37306 | 37306 |
| FastThermalEstTemperatureRise | 36 | 3.6 |
| ThermalEstTemperatureRise | 92 | 9.2 |
| VehicleTuneSelector | 2 | 2 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | Not scaled |
| PowerOffDriveStageTemperature | 3844 | 38.44 |
| CPU_PeakLoadHold | 13416 | Not scaled |
| TorqueReInstatmentFlag | 1 | Not scaled |
| IncompletePowerDownTestCount | 1 | Not scaled |
| padding | 0 | Not scaled |
| empty | 5548 | Not scaled |

| | |
|---|---|
| 0 | 0 |
| 0 | 0 |
| 0 | 0 |
| 11.92578 | 11.91406 |
| 0 | 0 |
| 2483.661 | 2483.661 |
| Not scaled | Not scaled |
| Not scaled | Not scaled |
| -0.10938 | 0.007813 |
| 8.11 | 8.04 |
| Not scaled | Not scaled |
| 1 | 1 |
| Not scaled | Not scaled |
| 3 | 3 |
| 2 | 2 |
| 0 | 0 |
| 0 | 0 |
| 0 | 0 |
| 0 | 0 |
| Not scaled | Not scaled |
| Not scaled | Not scaled |
| Not scaled | Not scaled |
| Not scaled | Not scaled |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -611 | -600 | -604 | -0.59668 | -0.58594 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3588 | 3580 | 3584 | 14.01563 | 13.98438 |
| FilteredVehicleSpeed | 7013 | 7013 | 7013 | 109.5781 | 109.5781 |
| Filt2v5RefVoltage | 12389 | 12389 | 12389 | 2495.343 | 2495.343 |
| AssistanceTorqueDemand | -169 | -148 | -168 | -0.66016 | -0.57813 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 89 | 100 | 89 | 0.695313 | 0.78125 |
| DriveStageTemperature | 2392 | 2397 | 2397 | 23.92 | 23.97 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -132 | -132 | -132 | -2.0625 | -2.0625 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 4.16E+08 | | | 4.16E+08 | 0 |
| B92FilteredMotorVelocityError | 0 | | | 0 | 0 |
| HallSensor | 6 | | | 6 | 0 |
| DiagCommutationCentrePosition | 43691 | | | 240.0604 | 0 |
| EncoderPositionRegister | 17 | | | 17 | 0 |
| MotorElectricalPosition | 57330 | | | 315 | 0 |
| AltNewHallEvent | 0 | | | 0 | 0 |
| AltMotorElectricalVelocity | 0 | | | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | | | 960 | 0 |
| AltRotorDirection | -1 | | | -1 | 0 |
| AltMotorCommutationState | 6 | | | 6 | 0 |

| | |
|---|---|
| DistanceTravelled | 10553441 |
| LifetimeCounter | 589235 |
| AccumulatedColumnMovement | 11847 |
| FastThermalEstTemperatureRise | 0 |
| ThermalEstTemperatureRise | 14 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3538 |
| CPU_PeakLoadHold | 13501 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| -0.58984 |
| -0.00293 |
| 14 |
| 109.5781 |
| 2495.343 |
| -0.65625 |
| 0 |
| 0.695313 |
| 23.97 |
| 100 |
| 1 |
| -2.0625 |
| 3 |
| 2 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |
| 0 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1908 | 1933 | 1960 | 1.863281 | 1.887695 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3772 | 3759 | 3751 | 14.73438 | 14.68359 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12390 | 12390 | 12390 | 2495.544 | 2495.544 |
| AssistanceTorqueDemand | 783 | 823 | 866 | 3.058594 | 3.214844 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -398 | -445 | -446 | -3.10938 | -3.47656 |
| DriveStageTemperature | 704 | 676 | 683 | 7.04 | 6.76 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1.58E+08 | 1.58E+08 | 1.58E+08 | 1.58E+08 | 1.58E+08 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 60060 | 60060 | 60060 | 330 | 330 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| |
|---|
| 2 |
| 0 |
| 1.914063 |
| 0 |
| 14.65234 |
| 0 |
| 2495.544 |
| 3.382813 |
| 0 |
| -3.48438 |
| 6.83 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 1.58E+08 |
| 0 |
| 6 |
| 240.0604 |
| 0 |
| 330 |
| 0 |
| 0 |
| 960 |
| -1 |
| 6 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1637 | 1638 | 1638 | 1.598633 | 1.599609 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3357 | 3355 | 3355 | 13.11328 | 13.10547 |
| FilteredVehicleSpeed | 255 | 249 | 255 | 3.984375 | 3.890625 |
| Filt2v5RefVoltage | 12414 | 12414 | 12414 | 2500.378 | 2500.378 |
| AssistanceTorqueDemand | 586 | 586 | 586 | 2.289063 | 2.289063 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -429 | -356 | -415 | -3.35156 | -2.78125 |
| DriveStageTemperature | -593 | -575 | -585 | -5.93 | -5.75 |
| TorqueLimit | 1050 | 950 | 1000 | 4.2 | 3.8 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1463972 | 1463972 | 1463972 | 1463972 | 1463972 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 60060 | 60060 | 60060 | 330 | 330 |
| AltNewHallEvent | 0 | 1 | 0 | 0 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 3150813 |
| LifetimeCounter | 249911 |
| AccumulatedColumnMovement | 14965 |
| FastThermalEstTemperatureRise | 8 |
| ThermalEstTemperatureRise | 64 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | -564 |
| CPU_PeakLoadHold | 13584 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 1.599609 |
| 0 |
| 13.10547 |
| 3.984375 |
| 2500.378 |
| 2.289063 |
| 0 |
| -3.24219 |
| -5.85 |
| 4 |
| 1 |
| 0 |
| 3 |
| 2 |
| 1463972 |
| 0 |
| 6 |
| 240.0604 |
| 0 |
| 330 |
| 0 |
| 0 |
| 960 |
| -1 |
| 6 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | -544 | -480 | -513 | -0.53125 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3616 | 3621 | 3612 | 14.125 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12342 | 12342 | 12342 | 2485.876 |
| AssistanceTorqueDemand | -272 | -245 | -271 | -1.0625 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 134 | 122 | 134 | 1.046875 |
| DriveStageTemperature | 2990 | 2994 | 3002 | 29.9 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 7157869 | 7157869 | 7157869 | 7157869 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 60060 | 60060 | 60060 | 330 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 |

| | |
|---|---|
| DistanceTravelled | 1737930 |
| LifetimeCounter | 159448 |
| AccumulatedColumnMovement | 5414 |
| FastThermalEstTemperatureRise | 21 |
| ThermalEstTemperatureRise | 107 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2888 |
| CPU_PeakLoadHold | 13320 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| -0.46875 | -0.50098 |
| 0 | 0 |
| 14.14453 | 14.10938 |
| 0 | 0 |
| 2485.876 | 2485.876 |
| -0.95703 | -1.05859 |
| 0 | 0 |
| 0.953125 | 1.046875 |
| 29.94 | 30.02 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 7157869 | 7157869 |
| 0 | 0 |
| 1 | 1 |
| 60.01648 | 60.01648 |
| 0 | 0 |
| 330 | 330 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 1 | 1 |

| | | | | |
|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3188 | 3186 | 3186 | 3186 |
| FilteredVehicleSpeed | 6400 | 6400 | 6400 | 6400 |
| Filt2v5RefVoltage | 12396 | 12396 | 12396 | 12396 |
| QAxisCurrent | -3571 | -3568 | -3565 | -3571 |
| DriveStageTemperature | 2772 | 2767 | 2777 | 2762 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| EcuM__rootState_active | 2 | 2 | 2 | 2 |
| sSystemMode__rootState_active | 1 | 1 | 1 | 1 |
| tune_number | 0 | 0 | 0 | 0 |
| top_value | 42405 | 42405 | 42405 | 42405 |
| stack_pointer | 7767 | 7767 | 7767 | 7767 |
| running_crc | 65535 | 65535 | 65535 | 65535 |
| bottom_value | 42405 | 42405 | 42405 | 42405 |
| ADCA_0_Reference_Voltage | 12389 | 12386 | 12386 | 12389 |
| ADCA_1_Reference_Voltage | 12383 | 12387 | 12379 | 12383 |
| ADCB_0_Reference_Voltage | 12419 | 12424 | 12419 | 12420 |
| ADCB_1_Reference_Voltage | 12370 | 12366 | 12370 | 12362 |
| ExecStarted_MON_SENSOR_TORQUE_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_ASSIST_TRQ_DEMAND_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_MOTOR_VELOCITY_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_RSP_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_TORQUE_ESTIMATE_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_CURRENT_CALC_MONITOR | 255 | 255 | 255 | 255 |
| ExecStarted_MON_PDC_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_SENSOR_TORQUE_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_ASSIST_TRQ_DEMAND_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_MOTOR_VELOCITY_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_RSP_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_TORQUE_ESTIMATE_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_CURRENT_CALC_MONITOR | 255 | 255 | 255 | 255 |
| ExecCompleted_MON_PDC_MONITOR | 255 | 255 | 255 | 255 |
| Padding | 0 | 0 | 0 | 0 |
| SafetyMicroOperatingMode | 2 | 2 | 2 | 2 |
| SafetyMicroStatus | 34304 | 34304 | 34304 | 34304 |
| SafetyMicroInhibitFaults | 58963 | 58963 | 58963 | 58963 |
| SC_Wdg__rootState_active | 2 | 2 | 2 | 2 |
| WdgManagerCurrentConfig | 0 | 0 | 0 | 0 |
| theSupervisedEntity0_ActualAliveCount | 1 | 3 | 1 | 3 |
| theSupervisedEntity1_ActualAliveCount | 0 | 1 | 0 | 1 |
| theSupervisedEntity2_ActualAliveCount | 0 | 1 | 0 | 1 |
| theSupervisedEntity3_ActualAliveCount | 1 | 1 | 1 | 1 |
| theSupervisedEntity4_ActualAliveCount | 0 | 8 | 0 | 8 |
| MotorMechanicalPosition | -5 | -5 | -5 | -5 |
| BridgeEnabled | 1 | 1 | 1 | 1 |
| SPUT_LinkVoltage | 2832 | 2829 | 2826 | 2822 |
| SPUT_FilteredLinkVoltage | 2830 | 2827 | 2825 | 2822 |
| SPUT_LinkRelayClosureRetries | 0 | 0 | 0 | 0 |
| Motor_LinkVoltage | 2879 | 2879 | 2879 | 2879 |
| Motor_SwitchVoltage | 0 | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Motor_StarVoltage | 1464 | 1464 | 1464 | 1464 |
| Motor_Phase1Voltage | 1451 | 1451 | 1451 | 1451 |
| Motor_Phase2Voltage | 1461 | 1461 | 1461 | 1461 |
| Motor_Phase3Voltage | 1461 | 1461 | 1461 | 1461 |
| padding1 | 0 | 0 | 0 | 0 |
| padding2 | 0 | 0 | 0 | 0 |

| | | |
|---|---|---|
| 0 | 0 | 0 |
| 3188 | 3186 | 3186 |
| 6400 | 6400 | 6400 |
| 12396 | 12396 | 12396 |
| -3592 | -3583 | -3555 |
| 2768 | 2771 | 2762 |
| 1 | 1 | 1 |
| 2 | 2 | 2 |
| 1 | 1 | 1 |
| 0 | 0 | 0 |
| 42405 | 42405 | 42405 |
| 7767 | 7767 | 7767 |
| 65535 | 65535 | 65535 |
| 42405 | 42405 | 42405 |
| 12385 | 12385 | 12390 |
| 12379 | 12383 | 12383 |
| 12420 | 12428 | 12428 |
| 12370 | 12370 | 12370 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 255 | 255 | 255 |
| 0 | 0 | 0 |
| 2 | 2 | 2 |
| 34304 | 34304 | 34304 |
| 58963 | 58963 | 58963 |
| 2 | 2 | 2 |
| 0 | 0 | 0 |
| 1 | 3 | 3 |
| 0 | 1 | 1 |
| 0 | 1 | 1 |
| 2 | 2 | 1 |
| 0 | 8 | 8 |
| -5 | -5 | -5 |
| 1 | 1 | 1 |
| 2819 | 2815 | 2833 |
| 2819 | 2816 | 2833 |
| 0 | 0 | 0 |
| 2879 | 2879 | 2879 |
| 0 | 0 | 0 |

| | | |
|---|---|---|
| 1464 | 1464 | 1464 |
| 1451 | 1451 | 1451 |
| 1461 | 1461 | 1461 |
| 1461 | 1461 | 1461 |
| 0 | 0 | 0 |
| 0 | 0 | 0 |

| Parameter | 0 | 1 | 2 |
|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 |
| ColumnTorque | 0 | 0 | 0 |
| ColumnVelocity | 0 | 0 | 0 |
| vBatt | 2841 | 2845 | 2849 |
| FilteredVehicleSpeed | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12428 | 12428 | 12428 |
| AssistanceTorqueDemand | 0 | 0 | 0 |
| FilteredMechanicalVelocity | 0 | 0 | 0 |
| QAxisCurrent | 24 | -12 | 11 |
| DriveStageTemperature | 1942 | 1937 | 1937 |
| TorqueLimit | 0 | 0 | 0 |
| IgnitionOn | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 |
| TorquePwmPulseWidth1 | 0 | 0 | 0 |
| TorquePwmPulseWidth2 | 0 | 0 | 0 |
| TorquePwmPulsePeriod1 | 0 | 0 | 0 |
| TorquePwmPulsePeriod2 | 0 | 0 | 0 |
| TimeSinceLastEvent1 | 1874 | 1890 | 1906 |
| TimeSinceLastEvent2 | 1874 | 1890 | 1906 |
| AltLowTimeError1 | 0 | 0 | 0 |
| AltLowTimeError2 | 0 | 0 | 0 |

| | |
|---|---|
| LifetimeCounter | 125146 |
| AccumulatedColumnMovement | 2290 |
| FastThermalEstTemperatureRise | 22 |
| ThermalEstTemperatureRise | 72 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2153 |
| CPU_PeakLoadHold | 13533 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| empty | -916 |

| | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -740 | -791 | -689 | -0.72266 | -0.77246 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3296 | 3292 | 3303 | 12.875 | 12.85938 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12431 | 12432 | 12431 | 2503.802 | 2504.004 |
| AssistanceTorqueDemand | -526 | -531 | -496 | -2.05469 | -2.07422 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 271 | 283 | 272 | 2.117188 | 2.210938 |
| DriveStageTemperature | 370 | 368 | 370 | 3.7 | 3.68 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 3210001 | 3210001 | 3210001 | 3210001 | 3210001 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 49140 | 49140 | 49140 | 270 | 270 |
| AltNewHallEvent | 0 | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 | 3 |

| | |
|---|---|
| DistanceTravelled | 34063356 |
| LifetimeCounter | 1974880 |
| AccumulatedColumnMovement | 42402 |
| FastThermalEstTemperatureRise | 104 |
| ThermalEstTemperatureRise | 94 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 811 |
| CPU_PeakLoadHold | 13459 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| -0.67285 |
| 0 |
| 12.90234 |
| 0 |
| 2503.802 |
| -1.9375 |
| 0 |
| 2.125 |
| 3.7 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 3210001 |
| 0 |
| 3 |
| 0 |
| 0 |
| 270 |
| 1 |
| 0 |
| 960 |
| 1 |
| 3 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1729 | 1864 | 1598 | 1.688477 | 1.820313 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3549 | 3534 | 3556 | 13.86328 | 13.80469 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12376 | 12376 | 12376 | 2492.725 | 2492.725 |
| AssistanceTorqueDemand | 1129 | 1271 | 995 | 4.410156 | 4.964844 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -618 | -675 | -527 | -4.82813 | -5.27344 |
| DriveStageTemperature | 2118 | 2118 | 2136 | 21.18 | 21.18 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 2526023 | 2526023 | 2526023 | 2526023 | 2526023 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 65534 | 65534 | 65534 | 65534 | 65534 |
| MotorElectricalPosition | 4095 | 4095 | 4095 | 22.5 | 22.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 2650844 |
| LifetimeCounter | 187019 |
| AccumulatedColumnMovement | 5209 |
| FastThermalEstTemperatureRise | 3 |
| ThermalEstTemperatureRise | 8 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2322 |
| CPU_PeakLoadHold | 13543 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 1.560547 |
| 0 |
| 13.89063 |
| 0 |
| 2492.725 |
| 3.886719 |
| 0 |
| -4.11719 |
| 21.36 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 2526023 |
| 0 |
| 2 |
| 300.0714 |
| 65534 |
| 22.5 |
| 0 |
| 0 |
| 960 |
| -1 |
| 2 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 2014 | 2063 | 1963 | 1.966797 | 2.014648 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3738 | 3728 | 3753 | 14.60156 | 14.5625 |
| FilteredVehicleSpeed | 40 | 40 | 39 | 0.625 | 0.625 |
| Filt2v5RefVoltage | 12401 | 12401 | 12401 | 2497.76 | 2497.76 |
| AssistanceTorqueDemand | 1111 | 1197 | 960 | 4.339844 | 4.675781 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -567 | -629 | -508 | -4.42969 | -4.91406 |
| DriveStageTemperature | -1144 | -1144 | -1188 | -11.44 | -11.44 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 26579958 | 26579958 | 26579958 | 26579958 | 26579958 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 | 60.01648 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 27300 | 27300 | 27300 | 150 | 150 |
| AltNewHallEvent | 0 | 0 | 0 | 89.98352 | 89.98352 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 | 1 |
| | | | | 0 | 0 |

| | |
|---|---|
| DistanceTravelled | 43283 |
| LifetimeCounter | 15219 |
| AccumulatedColumnMovement | 1604 |
| FastThermalEstTemperatureRise | 72 |
| ThermalEstTemperatureRise | 259 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 792 |
| CPU_PeakLoadHold | 13500 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 1.916992 |
| 0 |
| 14.66016 |
| 0.609375 |
| 2497.76 |
| 3.75 |
| 0 |
| -3.96875 |
| -11.88 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 26579958 |
| 0 |
| 1 |
| 60.01648 |
| 0 |
| 150 |
| 89.98352 |
| 0 |
| 960 |
| -1 |
| 1 |
| 0 |

| Parameter | 0 | 1 | 2 | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1531 | 1335 | 1431 | 1.495117 | 1.303711 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3748 | 3742 | 3746 | 14.64063 | 14.61719 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12379 | 12379 | 12379 | 2493.329 | 2493.329 |
| AssistanceTorqueDemand | 1034 | 888 | 959 | 4.039063 | 3.46875 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -539 | -471 | -515 | -4.21094 | -3.67969 |
| DriveStageTemperature | -598 | -610 | -588 | -5.98 | -6.1 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 6906003 | 43385950 | 6906003 | 6906003 | 43385950 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 4095 | 4095 | 4095 | 22.5 | 22.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 3 | 2 | 2 | 3 |

| | |
|---|---|
| DistanceTravelled | 3380111 |
| LifetimeCounter | 289130 |
| AccumulatedColumnMovement | 6943 |
| FastThermalEstTemperatureRise | 25 |
| ThermalEstTemperatureRise | 43 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 638 |
| CPU_PeakLoadHold | 13316 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 1.397461 |
| 0 |
| 14.63281 |
| 0 |
| 2493.329 |
| 3.746094 |
| 0 |
| -4.02344 |
| -5.88 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 6906003 |
| 0 |
| 2 |
| 300.0714 |
| 0 |
| 22.5 |
| 0 |
| 0 |
| 960 |
| -1 |
| 2 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 2250 | 2340 | 2188 | 2.197266 | 2.285156 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3394 | 3394 | 3394 | 13.25781 | 13.25781 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12449 | 12449 | 12449 | 2507.428 | 2507.428 |
| AssistanceTorqueDemand | 1661 | 2000 | 1405 | 6.488281 | 7.8125 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -1008 | -1176 | -816 | -7.875 | -9.1875 |
| DriveStageTemperature | 63 | 63 | 56 | 0.63 | 0.63 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1056065 | 1056065 | 1056065 | 1056065 | 1056065 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 60060 | 60060 | 60060 | 330 | 330 |
| AltNewHallEvent | 0 | 0 | 1 | 89.93956 | 89.93956 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 14410549 |
| LifetimeCounter | 988449 |
| AccumulatedColumnMovement | 17191 |
| FastThermalEstTemperatureRise | 16 |
| ThermalEstTemperatureRise | 71 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 71 |
| CPU_PeakLoadHold | 13367 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| 2.136719 |
| 0 |
| 13.25781 |
| 0 |
| 2507.428 |
| 5.488281 |
| 0 |
| -6.375 |
| 0.56 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 1056065 |
| 0 |
| 6 |
| 240.0604 |
| 0 |
| 330 |
| 89.93956 |
| 0 |
| 960 |
| -1 |
| 6 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -1992 | -2033 | -1957 | -1.94531 | -1.98535 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3354 | 3349 | 3358 | 13.10156 | 13.08203 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12446 | 12445 | 12446 | 2506.824 | 2506.622 |
| AssistanceTorqueDemand | -1076 | -1125 | -996 | -4.20313 | -4.39453 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 570 | 616 | 514 | 4.453125 | 4.8125 |
| DriveStageTemperature | 924 | 924 | 931 | 9.24 | 9.24 |
| TorqueLimit | 22950 | 23000 | 22900 | 91.8 | 92 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 16139957 | 16139957 | 16139957 | 16139957 | 16139957 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 |
| DiagCommutationCentrePosition | 32768 | 32768 | 32768 | 180.044 | 180.044 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 16380 | 16380 | 16380 | 90 | 90 |
| AltNewHallEvent | 0 | 0 | 1 | -90.044 | -90.044 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 4 | 4 | 4 | 4 | 4 |

| | |
|---|---|
| DistanceTravelled | 9967568 |
| LifetimeCounter | 675030 |
| AccumulatedColumnMovement | 14176 |
| FastThermalEstTemperatureRise | 4 |
| ThermalEstTemperatureRise | 26 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 951 |
| CPU_PeakLoadHold | 13342 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| 2 |
| 0 |
| -1.91113 |
| 0 |
| 13.11719 |
| 0 |
| 2506.824 |
| -3.89063 |
| 0 |
| 4.015625 |
| 9.31 |
| 91.6 |
| 1 |
| 0 |
| 3 |
| 2 |
| 16139957 |
| 0 |
| 4 |
| 180.044 |
| 0 |
| 90 |
| -90.044 |
| 0 |
| 960 |
| 1 |
| 4 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 0 | 1 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 4539 | 5439 | 3929 | 4.432617 | 5.311523 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3661 | 3658 | 3657 | 14.30078 | 14.28906 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12392 | 12392 | 12392 | 2495.947 | 2495.947 |
| AssistanceTorqueDemand | 8955 | 13365 | 6020 | 34.98047 | 52.20703 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -5081 | -7097 | -3485 | -39.6953 | -55.4453 |
| DriveStageTemperature | 2603 | 2609 | 2612 | 26.03 | 26.09 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 599956 | 491907 | 599956 | 599956 | 491907 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 5 | 1 | 1 |
| DiagCommutationCentrePosition | 21845 | 10923 | 21845 | 120.0275 | 60.01648 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 36855 | 36855 | 36855 | 202.5 | 202.5 |
| | | | | 82.47253 | 142.4835 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 5 | 1 | 5 | 5 | 1 |

| |
|---|
| 2 |
| 0 |
| 3.836914 |
| 0 |
| 14.28516 |
| 0 |
| 2495.947 |
| 23.51563 |
| 0 |
| -27.2266 |
| 26.12 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 599956 |
| 0 |
| 5 |
| 120.0275 |
| 0 |
| 202.5 |
| 82.47253 |
| 0 |
| 0 |
| 960 |
| -1 |
| 5 |

| | | | | 0 | 1 |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -1179 | -1211 | -1241 | -1.15137 | -1.18262 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3708 | 3710 | 3710 | 14.48438 | 14.49219 |
| FilteredVehicleSpeed | 116 | 117 | 117 | 1.8125 | 1.828125 |
| Filt2v5RefVoltage | 12454 | 12454 | 12454 | 2508.435 | 2508.435 |
| AssistanceTorqueDemand | -516 | -546 | -522 | -2.01563 | -2.13281 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 295 | 278 | 312 | 2.304688 | 2.171875 |
| DriveStageTemperature | 2663 | 2676 | 2677 | 26.63 | 26.76 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 3887975 | 3887975 | 3887975 | 3887975 | 3887975 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 | 300.0714 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 36855 | 36855 | 36855 | 202.5 | 202.5 |
| AltNewHallEvent | 1 | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 12410 |
| LifetimeCounter | 1999 |
| AccumulatedColumnMovement | 1005 |
| FastThermalEstTemperatureRise | 17 |
| ThermalEstTemperatureRise | 575 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3107 |
| CPU_PeakLoadHold | 13479 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| |
|---|
| **2** |
| 0 |
| -1.21191 |
| 0 |
| 14.49219 |
| 1.828125 |
| 2508.435 |
| -2.03906 |
| 0 |
| 2.4375 |
| 26.77 |
| 100 |
| 1 |
| 0 |
| 3 |
| 2 |
| 3887975 |
| 0 |
| 2 |
| 300.0714 |
| 0 |
| 202.5 |
| 0 |
| 0 |
| 960 |
| 1 |
| 2 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 1783 | 1903 | 2045 | 1.741211 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3768 | 3754 | 3743 | 14.71875 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12429 | 12429 | 12429 | 2503.4 |
| AssistanceTorqueDemand | 1155 | 1276 | 1492 | 4.511719 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -636 | -702 | -928 | -4.96875 |
| DriveStageTemperature | 5026 | 5026 | 5026 | 50.26 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1710005 | 1710005 | 1710005 | 1710005 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 4095 | 4095 | 4095 | 22.5 |
| AltNewHallEvent | 1 | 0 | 0 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 19743 |
| LifetimeCounter | 5964 |
| AccumulatedColumnMovement | 1087 |
| FastThermalEstTemperatureRise | 10 |
| ThermalEstTemperatureRise | 47 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 5419 |
| CPU_PeakLoadHold | 13473 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 1.858398 | 1.99707 |
| 0 | 0 |
| 14.66406 | 14.62109 |
| 0 | 0 |
| 2503.4 | 2503.4 |
| 4.984375 | 5.828125 |
| 0 | 0 |
| -5.48438 | -7.25 |
| 50.26 | 50.26 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 1710005 | 1710005 |
| 0 | 0 |
| 2 | 2 |
| 300.0714 | 300.0714 |
| 0 | 0 |
| 22.5 | 22.5 |
| 0 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | -1166 | -894 | -1030 | -1.13867 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3762 | 3766 | 3771 | 14.69531 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12423 | 12423 | 12423 | 2502.191 |
| AssistanceTorqueDemand | -1027 | -890 | -957 | -4.01172 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 539 | 479 | 515 | 4.210938 |
| DriveStageTemperature | 495 | 474 | 481 | 4.95 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 1.07E+08 | 1.07E+08 | 1.07E+08 | 1.07E+08 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 36855 | 36855 | 36855 | 202.5 |
| AltNewHallEvent | 0 | 0 | 0 | -97.5714 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 4697531 |
| LifetimeCounter | 302743 |
| AccumulatedColumnMovement | 7721 |
| FastThermalEstTemperatureRise | 14 |
| ThermalEstTemperatureRise | 74 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 742 |
| CPU_PeakLoadHold | 13487 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| -0.87305 | -1.00586 |
| 0 | 0 |
| 14.71094 | 14.73047 |
| 0 | 0 |
| 2502.191 | 2502.191 |
| -3.47656 | -3.73828 |
| 0 | 0 |
| 3.742188 | 4.023438 |
| 4.74 | 4.81 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 1.07E+08 | 1.07E+08 |
| 0 | 0 |
| 2 | 2 |
| 300.0714 | 300.0714 |
| 0 | 0 |
| 202.5 | 202.5 |
| -97.5714 | -97.5714 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 432 | 396 | 446 | 0.421875 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 |
| vBatt | 3589 | 3589 | 3589 | 14.01953 |
| FilteredVehicleSpeed | 4796 | 4796 | 4796 | 74.9375 |
| Filt2v5RefVoltage | 12333 | 12333 | 12333 | 2484.064 |
| AssistanceTorqueDemand | -185 | -246 | -217 | -0.72266 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 120 | 120 | 133 | 0.9375 |
| DriveStageTemperature | 4164 | 4163 | 4164 | 41.64 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 409 | 409 | 409 | 6.390625 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 17765938 | 17765938 | 17765938 | 17765938 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 |
| EncoderPositionRegister | 2779 | 2779 | 2779 | 2779 |
| MotorElectricalPosition | 43680 | 43680 | 43680 | 240 |
| AltNewHallEvent | 0 | 0 | 0 | -60.0714 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 |

| | |
|---|---|
| DistanceTravelled | 1542370 |
| LifetimeCounter | 152721 |
| AccumulatedColumnMovement | 5966 |
| FastThermalEstTemperatureRise | 49 |
| ThermalEstTemperatureRise | 319 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 4198 |
| CPU_PeakLoadHold | 13739 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 0.386719 | 0.435547 |
| -0.00293 | -0.00293 |
| 14.01953 | 14.01953 |
| 74.9375 | 74.9375 |
| 2484.064 | 2484.064 |
| -0.96094 | -0.84766 |
| 0 | 0 |
| 0.9375 | 1.039063 |
| 41.63 | 41.64 |
| 100 | 100 |
| 1 | 1 |
| 6.390625 | 6.390625 |
| 3 | 3 |
| 2 | 2 |
| 17765938 | 17765938 |
| 0 | 0 |
| 2 | 2 |
| 300.0714 | 300.0714 |
| 2779 | 2779 |
| 240 | 240 |
| -60.0714 | -60.0714 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 1095 | 1095 | 1095 | 1.069336 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3320 | 3323 | 3324 | 12.96875 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12349 | 12349 | 12349 | 2487.286 |
| AssistanceTorqueDemand | 442 | 442 | 442 | 1.726563 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -217 | -217 | -217 | -1.69531 |
| DriveStageTemperature | 2371 | 2371 | 2384 | 23.71 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 2.8E+09 | 2.8E+09 | 2.8E+09 | 2.8E+09 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 27300 | 27300 | 27300 | 150 |
| AltNewHallEvent | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 1658924 |
| LifetimeCounter | 315516 |
| AccumulatedColumnMovement | 6597 |
| FastThermalEstTemperatureRise | 0 |
| ThermalEstTemperatureRise | 33 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | -403 |
| CPU_PeakLoadHold | 13948 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 1.069336 | 1.069336 |
| 0 | 0 |
| 12.98047 | 12.98438 |
| 0 | 0 |
| 2487.286 | 2487.286 |
| 1.726563 | 1.726563 |
| 0 | 0 |
| -1.69531 | -1.69531 |
| 23.71 | 23.84 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 2.8E+09 | 2.8E+09 |
| 0 | 0 |
| 6 | 6 |
| 240.0604 | 240.0604 |
| 0 | 0 |
| 150 | 150 |
| 0 | 1 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 6 | 6 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | -1641 | -1696 | -1738 | -1.60254 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3406 | 3410 | 3414 | 13.30469 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12412 | 12412 | 12412 | 2499.976 |
| AssistanceTorqueDemand | -888 | -904 | -858 | -3.46875 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 460 | 472 | 484 | 3.59375 |
| DriveStageTemperature | 1228 | 1238 | 1222 | 12.28 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 27863959 | 27863959 | 27863959 | 27863959 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 49140 | 49140 | 49140 | 270 |
| AltNewHallEvent | 1 | 0 | 0 | 270 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 |

| | |
|---|---|
| DistanceTravelled | 1261631 |
| LifetimeCounter | 165814 |
| AccumulatedColumnMovement | 8208 |
| FastThermalEstTemperatureRise | 42 |
| ThermalEstTemperatureRise | 179 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2755 |
| CPU_PeakLoadHold | 13460 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| -1.65625 | -1.69727 |
| 0 | 0 |
| 13.32031 | 13.33594 |
| 0 | 0 |
| 2499.976 | 2499.976 |
| -3.53125 | -3.35156 |
| 0 | 0 |
| 3.6875 | 3.78125 |
| 12.38 | 12.22 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 27863959 | 27863959 |
| 0 | 0 |
| 3 | 3 |
| 0 | 0 |
| 0 | 0 |
| 270 | 270 |
| 270 | 270 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 3 | 3 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | -1829 | -1693 | -1763 | -1.78613 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3705 | 3707 | 3707 | 14.47266 |
| FilteredVehicleSpeed | 38 | 38 | 38 | 0.59375 |
| Filt2v5RefVoltage | 12418 | 12418 | 12418 | 2501.184 |
| AssistanceTorqueDemand | -988 | -899 | -973 | -3.85938 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | 571 | 488 | 526 | 4.460938 |
| DriveStageTemperature | 3172 | 3176 | 3172 | 31.72 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 2915888 | 2915888 | 2915888 | 2915888 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 49140 | 49140 | 49140 | 270 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 |

| | |
|---|---|
| DistanceTravelled | 11816 |
| LifetimeCounter | 3282 |
| AccumulatedColumnMovement | 943 |
| FastThermalEstTemperatureRise | 3021 |
| ThermalEstTemperatureRise | 1466 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 4966 |
| CPU_PeakLoadHold | 13464 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| -1.65332 | -1.72168 |
| 0 | 0 |
| 14.48047 | 14.48047 |
| 0.59375 | 0.59375 |
| 2501.184 | 2501.184 |
| -3.51172 | -3.80078 |
| 0 | 0 |
| 3.8125 | 4.109375 |
| 31.76 | 31.72 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 2915888 | 2915888 |
| 0 | 0 |
| 3 | 3 |
| 0 | 0 |
| 0 | 0 |
| 270 | 270 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 3 | 3 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | -267 | -448 | -324 | -2.08594 |
| ColumnTorque | 2463 | 2482 | 2464 | 2.405273 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3720 | 3701 | 3724 | 14.53125 |
| FilteredVehicleSpeed | 157 | 155 | 155 | 2.453125 |
| Filt2v5RefVoltage | 12433 | 12433 | 12433 | 2504.205 |
| AssistanceTorqueDemand | 3168 | 3047 | 3176 | 12.375 |
| FilteredMechanicalVelocity | -267 | -448 | -324 | -2.08594 |
| QAxisCurrent | -1725 | -1666 | -1657 | -13.4766 |
| DriveStageTemperature | 3846 | 3846 | 3839 | 38.46 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | -2562 | -2746 | -2653 | -40.0313 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 107973 | 119994 | 120002 | 107973 |
| B92FilteredMotorVelocityError | 17697 | 14581 | 16178 | 17697 |
| HallSensor | 4 | 1 | 2 | 4 |
| DiagCommutationCentrePosition | 43691 | 10923 | 54613 | 240.0604 |
| EncoderPositionRegister | 485 | 516 | 499 | 485 |
| MotorElectricalPosition | 37440 | 12933 | 55253 | 205.7143 |
| AltNewHallEvent | 1 | 1 | 1 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 5 | 3 | 6 |

| | |
|---|---|
| DistanceTravelled | 11372 |
| LifetimeCounter | 2826 |
| AccumulatedColumnMovement | 1034 |
| FastThermalEstTemperatureRise | 29 |
| ThermalEstTemperatureRise | 569 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3647 |
| CPU_PeakLoadHold | 13449 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 1 |
| EncoderOffset | 0 |
| MotorReversal | 1 |

| | |
|---|---|
| 1 | 2 |
| -3.5 | -2.53125 |
| 2.423828 | 2.40625 |
| 0 | 0 |
| 14.45703 | 14.54688 |
| 2.421875 | 2.421875 |
| 2504.205 | 2504.205 |
| 11.90234 | 12.40625 |
| -3.5 | -2.53125 |
| -13.0156 | -12.9453 |
| 38.46 | 38.39 |
| 100 | 100 |
| 1 | 1 |
| -42.9063 | -41.4531 |
| 3 | 3 |
| 2 | 2 |
| 119994 | 120002 |
| 14581 | 16178 |
| 1 | 2 |
| 60.01648 | 300.0714 |
| 516 | 499 |
| 71.06044 | 303.5879 |
| 1 | 1 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 5 | 3 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | -5 | -5 | -5 | -0.03906 |
| ColumnTorque | 944 | 966 | 977 | 0.921875 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3670 | 3677 | 3674 | 14.33594 |
| FilteredVehicleSpeed | 7837 | 7837 | 7837 | 122.4531 |
| Filt2v5RefVoltage | 12411 | 12411 | 12411 | 2499.774 |
| AssistanceTorqueDemand | -116 | -116 | -115 | -0.45313 |
| FilteredMechanicalVelocity | -5 | -5 | -5 | -0.03906 |
| QAxisCurrent | 69 | 60 | 54 | 0.539063 |
| DriveStageTemperature | 4531 | 4538 | 4534 | 45.31 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | -29 | -29 | -29 | -0.45313 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 3179943 | 3179943 | 3179943 | 3179943 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 |
| EncoderPositionRegister | 64395 | 64395 | 64395 | 64395 |
| MotorElectricalPosition | 32744 | 32744 | 32744 | 179.9121 |
| AltNewHallEvent | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | -7 | -7 | -7 | -7 |
| B92MotorVelocityErrorLimit | 962 | 962 | 962 | 962 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 |

| | |
|---|---|
| DistanceTravelled | 855553 |
| LifetimeCounter | 59735 |
| AccumulatedColumnMovement | 2650 |
| FastThermalEstTemperatureRise | 9 |
| ThermalEstTemperatureRise | 41 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2840 |
| CPU_PeakLoadHold | 13466 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| -0.03906 | -0.03906 |
| 0.943359 | 0.954102 |
| 0 | 0 |
| 14.36328 | 14.35156 |
| 122.4531 | 122.4531 |
| 2499.774 | 2499.774 |
| -0.45313 | -0.44922 |
| -0.03906 | -0.03906 |
| 0.46875 | 0.421875 |
| 45.38 | 45.34 |
| 100 | 100 |
| 1 | 1 |
| -0.45313 | -0.45313 |
| 3 | 3 |
| 2 | 2 |
| 3179943 | 3179943 |
| 0 | 0 |
| 6 | 6 |
| 240.0604 | 240.0604 |
| 64395 | 64395 |
| 179.9121 | 179.9121 |
| 0 | 0 |
| -7 | -7 |
| 962 | 962 |
| 1 | 1 |
| 6 | 6 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 2287 | 1767 | 2492 | 17.86719 |
| ColumnTorque | -3963 | -4689 | -3362 | -3.87012 |
| ColumnVelocity | -646 | -197 | -184 | -0.63086 |
| vBatt | 3671 | 3673 | 3715 | 14.33984 |
| FilteredVehicleSpeed | 693 | 697 | 693 | 10.82813 |
| Filt2v5RefVoltage | 12396 | 12396 | 12396 | 2496.753 |
| AssistanceTorqueDemand | -9634 | -12306 | -6673 | -37.6328 |
| FilteredMechanicalVelocity | 2287 | 1767 | 2492 | 17.86719 |
| QAxisCurrent | 5757 | 7826 | 2801 | 44.97656 |
| DriveStageTemperature | 2124 | 2133 | 2124 | 21.24 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 162175 | 161824 | 150006 | 162175 |
| B92FilteredMotorVelocityError | 5464 | 5343 | 5386 | 5464 |
| HallSensor | 4 | 2 | 5 | 4 |
| DiagCommutationCentrePosition | 32768 | 54613 | 21845 | 180.044 |
| EncoderPositionRegister | 1626 | 1629 | 1620 | 1626 |
| MotorElectricalPosition | 19094 | 24554 | 11603 | 104.9121 |
| AltNewHallEvent | 1 | 0 | 1 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 2011 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 1502 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 4 | 6 | 5 | 4 |

| | |
|---|---|
| DistanceTravelled | 40719968 |
| LifetimeCounter | 3958600 |
| AccumulatedColumnMovement | 95429 |
| FastThermalEstTemperatureRise | 14 |
| ThermalEstTemperatureRise | 40 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 5165 |
| CPU_PeakLoadHold | 13438 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 13.80469 | 19.46875 |
| -4.5791 | -3.2832 |
| -0.19238 | -0.17969 |
| 14.34766 | 14.51172 |
| 10.89063 | 10.82813 |
| 2496.753 | 2496.753 |
| -48.0703 | -26.0664 |
| 13.80469 | 19.46875 |
| 61.14063 | 21.88281 |
| 21.33 | 21.24 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 161824 | 150006 |
| 5343 | 5386 |
| 2 | 5 |
| 300.0714 | 120.0275 |
| 1629 | 1620 |
| 134.9121 | 63.75275 |
| 0 | 1 |
| 0 | 2011 |
| 960 | 1502 |
| 1 | 1 |
| 6 | 5 |

| | | | |
|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 |
| ColumnTorque | 0 | 0 | 0 |
| ColumnVelocity | 0 | 0 | 0 |
| vBatt | 3098 | 3093 | 3083 |
| FilteredVehicleSpeed | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12344 | 12343 | 12343 |
| AssistanceTorqueDemand | 0 | 0 | 0 |
| FilteredMechanicalVelocity | 0 | 0 | 0 |
| QAxisCurrent | -16 | -8 | -3 |
| DriveStageTemperature | 2899 | 2903 | 2907 |
| TorqueLimit | 0 | 0 | 0 |
| IgnitionOn | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 |
| TorquePwmPulseWidth1 | 0 | 0 | 0 |
| TorquePwmPulseWidth2 | 0 | 0 | 0 |
| TorquePwmPulsePeriod1 | 0 | 0 | 0 |
| TorquePwmPulsePeriod2 | 0 | 0 | 0 |
| TimeSinceLastEvent1 | 1714 | 1730 | 1747 |
| TimeSinceLastEvent2 | 1714 | 1730 | 1747 |
| AltLowTimeError1 | 0 | 0 | 0 |
| AltLowTimeError2 | 0 | 0 | 0 |

| | |
|---|---|
| DistanceTravelled | 4090683 |
| LifetimeCounter | 319039 |
| AccumulatedColumnMovement | 9865 |
| FastThermalEstTemperatureRise | 13 |
| ThermalEstTemperatureRise | 21 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 2887 |
| CPU_PeakLoadHold | 13484 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| empty | 27451 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 4229 | 4259 | 4308 | 4.129883 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3421 | 3420 | 3422 | 13.36328 |
| FilteredVehicleSpeed | 4 | 4 | 4 | 0.0625 |
| Filt2v5RefVoltage | 12397 | 12397 | 12397 | 2496.954 |
| AssistanceTorqueDemand | 13182 | 13587 | 13947 | 51.49219 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -7039 | -7206 | -7424 | -54.9922 |
| DriveStageTemperature | 3633 | 3629 | 3633 | 36.33 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 17447895 | 17447895 | 17447895 | 17447895 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 |
| EncoderPositionRegister | 65475 | 65475 | 65475 | 65475 |
| MotorElectricalPosition | 21840 | 21840 | 21840 | 120 |
| AltNewHallEvent | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 |

| | |
|---|---|
| DistanceTravelled | 4686287 |
| LifetimeCounter | 359632 |
| AccumulatedColumnMovement | 8458 |
| FastThermalEstTemperatureRise | 17 |
| ThermalEstTemperatureRise | 23 |
| VehicleTuneSelector | 3 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3563 |
| CPU_PeakLoadHold | 13367 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 4.15918 | 4.207031 |
| 0 | 0 |
| 13.35938 | 13.36719 |
| 0.0625 | 0.0625 |
| 2496.954 | 2496.954 |
| 53.07422 | 54.48047 |
| 0 | 0 |
| -56.2969 | -58 |
| 36.29 | 36.33 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 17447895 | 17447895 |
| 0 | 0 |
| 1 | 1 |
| 60.01648 | 60.01648 |
| 65475 | 65475 |
| 120 | 120 |
| 0 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 1 | 1 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 |
| ColumnTorque | 1118 | 1081 | 1098 | 1.091797 |
| ColumnVelocity | 0 | 0 | 0 | 0 |
| vBatt | 3643 | 3654 | 3648 | 14.23047 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12368 | 12368 | 12368 | 2491.113 |
| AssistanceTorqueDemand | 377 | 347 | 322 | 1.472656 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 |
| QAxisCurrent | -197 | -176 | -176 | -1.53906 |
| DriveStageTemperature | 1475 | 1479 | 1479 | 14.75 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 16319923 | 16319923 | 16319923 | 16319923 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 |
| EncoderPositionRegister | 2 | 2 | 2 | 2 |
| MotorElectricalPosition | 27300 | 27300 | 27300 | 150 |
| AltNewHallEvent | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 |

| | |
|---|---|
| DistanceTravelled | 14094330 |
| LifetimeCounter | 1008897 |
| AccumulatedColumnMovement | 21800 |
| FastThermalEstTemperatureRise | 9 |
| ThermalEstTemperatureRise | 110 |
| VehicleTuneSelector | 2 |
| MotorTuneSelector | 0 |
| EmulationModeStatus | 0 |
| PDCStatus | 1 |
| PowerOffDriveStageTemperature | 3126 |
| CPU_PeakLoadHold | 13426 |
| TorqueReInstatmentFlag | 1 |
| IncompletePowerDownTestCount | 1 |
| padding | 0 |
| LRE_PositionState | 0 |
| PositionExtrapActive | 0 |
| EncoderOffset | 0 |
| MotorReversal | 0 |

| | |
|---|---|
| 1 | 2 |
| 0 | 0 |
| 1.055664 | 1.072266 |
| 0 | 0 |
| 14.27344 | 14.25 |
| 0 | 0 |
| 2491.113 | 2491.113 |
| 1.355469 | 1.257813 |
| 0 | 0 |
| -1.375 | -1.375 |
| 14.79 | 14.79 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 16319923 | 16319923 |
| 0 | 0 |
| 1 | 1 |
| 60.01648 | 60.01648 |
| 2 | 2 |
| 150 | 150 |
| 0 | 0 |
| 0 | 0 |
| 960 | 960 |
| -1 | -1 |
| 1 | 1 |

| | | | | |
|---|---|---|---|---|
| | | | | 0 |
| MotorMechanicalVelocity | 436 | 730 | 564 | 3.40625 |
| ColumnTorque | -3434 | -2674 | -2908 | -3.35352 |
| ColumnVelocity | -5 | -72 | -18 | -0.00488 |
| vBatt | 3692 | 3671 | 3681 | 14.42188 |
| FilteredVehicleSpeed | 100 | 99 | 99 | 1.5625 |
| Filt2v5RefVoltage | 12405 | 12405 | 12405 | 2498.566 |
| AssistanceTorqueDemand | -8350 | -4538 | -5778 | -32.6172 |
| FilteredMechanicalVelocity | 436 | 730 | 564 | 3.40625 |
| QAxisCurrent | 4580 | 3093 | 3557 | 35.78125 |
| DriveStageTemperature | 1240 | 1233 | 1229 | 12.4 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 |
| AltHallTransitionTime | 395951 | 395951 | 395951 | 395951 |
| B92FilteredMotorVelocityError | 385 | 261 | 395 | 385 |
| HallSensor | 2 | 2 | 2 | 2 |
| DiagCommutationCentrePosition | 54613 | 54613 | 54613 | 300.0714 |
| EncoderPositionRegister | 63971 | 63971 | 63972 | 63971 |
| MotorElectricalPosition | 35474 | 35474 | 36839 | 194.9121 |
| AltNewHallEvent | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 2 | 2 | 2 | 2 |

| | | |
|---|---|---|
| DistanceTravelled | 10354575 | 10354575 |
| LifetimeCounter | 828077 | 828077 |
| AccumulatedColumnMovement | 32918 | 32918 |
| FastThermalEstTemperatureRise | 9 | 0.9 |
| ThermalEstTemperatureRise | 53 | 5.3 |
| VehicleTuneSelector | 2 | 2 |
| MotorTuneSelector | 0 | 0 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | Not scaled |
| PowerOffDriveStageTemperature | 2245 | 22.45 |
| CPU_PeakLoadHold | 13392 | Not scaled |
| TorqueReInstatmentFlag | 1 | Not scaled |
| IncompletePowerDownTestCount | 1 | Not scaled |
| padding | 0 | Not scaled |
| LRE_PositionState | 0 | Not scaled |
| PositionExtrapActive | 0 | Not scaled |
| EncoderOffset | 0 | Not scaled |
| MotorReversal | 0 | Not scaled |

| | |
|---|---|
| 1 | 2 |
| 5.703125 | 4.40625 |
| -2.61133 | -2.83984 |
| -0.07031 | -0.01758 |
| 14.33984 | 14.37891 |
| 1.546875 | 1.546875 |
| 2498.566 | 2498.566 |
| -17.7266 | -22.5703 |
| 5.703125 | 4.40625 |
| 24.16406 | 27.78906 |
| 12.33 | 12.29 |
| 100 | 100 |
| 1 | 1 |
| 0 | 0 |
| 3 | 3 |
| 2 | 2 |
| 395951 | 395951 |
| 261 | 395 |
| 2 | 2 |
| 300.0714 | 300.0714 |
| 63971 | 63972 |
| 194.9121 | 202.4121 |
| 1 | 0 |
| 0 | 0 |
| 960 | 960 |
| 1 | 1 |
| 2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 847 | 782 | 815 | 0.827148 | 0.763672 | 0.795898 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3528 | 3537 | 3530 | 13.78125 | 13.81641 | 13.78906 |
| FilteredVel | 0 | 0 | 0 | 0 | 0 | 0 |
| Filt2v5Ref\ | 12423 | 12423 | 12423 | 2502.191 | 2502.191 | 2502.191 |
| Assistance | 879 | 760 | 819 | 3.433594 | 2.96875 | 3.199219 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -415 | -340 | -370 | -3.24219 | -2.65625 | -2.89063 |
| DriveStage | 3740 | 3743 | 3743 | 37.4 | 37.43 | 37.43 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3734 | | 0 | | | |
| AltHallTran | 26573893 | 26573893 | 26573893 | 26573893 | 26573893 | 26573893 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 | 5 |
| DiagComm | 21845 | 21845 | 21845 | 120.0275 | 120.0275 | 120.0275 |
| EncoderPo | 2 | 2 | 2 | 2 | 2 | 2 |
| MotorElect | 36855 | 36855 | 36855 | 202.5 | 202.5 | 202.5 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 5 | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTr | 4191383 | 4191383 |
| LifetimeCo | 473916 | 473916 |
| Accumulate | 14186 | 14186 |
| FastTherm | 0 | 0 |
| ThermalEs | 19 | 0.19 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6601 | 66.01 |
| CPU_Peak | 12828 | 12828 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 999 | 918 | 957 | 0.975586 | 0.896484 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3606 | 3598 | 3600 | 14.08594 | 14.05469 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12419 | 12419 | 12419 | 2501.385 | 2501.385 |
| AssistanceTorqueDemand | 961 | 808 | 847 | 3.753906 | 3.15625 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -430 | -323 | -373 | -3.35938 | -2.52344 |
| DriveStageTemperature | 2832 | 2827 | 2827 | 28.32 | 28.27 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2819 | | 0 | | |
| AltHallTransitionTime | 21408100 | 7.47E+08 | 21408100 | 21408100 | 7.47E+08 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 |
| DiagCommutationCentrePosition | 21845 | 21845 | 21845 | 120.0275 | 120.0275 |
| EncoderPositionRegister | 0 | 0 | 0 | 0 | 0 |
| MotorElectricalPosition | 36855 | 36855 | 36855 | 202.5 | 202.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 5 | 4 | 5 | 5 | 4 |

| | | |
|---|---|---|
| DistanceTravelled | 4424043 | 4424043 |
| LifetimeCounter | 312721 | 312721 |
| AccumulatedColumnMovement | 8242 | 8242 |
| FastThermalEstTemperatureRise | 21 | 0.21 |
| ThermalEstTemperatureRise | 34 | 0.34 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5725 | 57.25 |
| CPU_PeakLoadHold | 12997 | 12997 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
0.93457
0
14.0625
0
2501.385
3.308594
0
-2.91406
28.27
100
1
0
3
2

21408100
0
5
120.0275
0
202.5
0
0
960
-1
5

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -693 | -697 | -702 | -0.67676 | -0.68066 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3521 | 3503 | 3524 | 13.75391 | 13.68359 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12417 | 12417 | 12417 | 2500.983 | 2500.983 |
| AssistanceTorqueDemand | -586 | -703 | -645 | -2.28906 | -2.74609 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 256 | 292 | 301 | 2 | 2.28125 |
| DriveStageTemperature | 5707 | 5707 | 5707 | 57.07 | 57.07 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 163 | 163 | 163 | 163 | 163 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 3906 | | 0 | | |
| AltHallTransitionTime | 1.32E+08 | 1.32E+08 | 1.32E+08 | 1.32E+08 | 1.32E+08 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 |
| DiagCommutationCentrePosition | 32768 | 32768 | 32768 | 180.044 | 180.044 |
| EncoderPositionRegister | 1731 | 1731 | 1731 | 1731 | 1731 |
| MotorElectricalPosition | 21824 | 21824 | 21824 | 119.9121 | 119.9121 |
| AltNewHallEvent | 0 | 0 | 1 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 4 | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTravelled | 5803677 | 5803677 |
| LifetimeCounter | 499711 | 499711 |
| AccumulatedColumnMovement | 12241 | 12241 |
| FastThermalEstTemperatureRise | 12 | 0.12 |
| ThermalEstTemperatureRise | 41 | 0.41 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5059 | 50.59 |
| CPU_PeakLoadHold | 12880 | 12880 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
-0.68555
0
13.76563
0
2500.983
-2.51953
0
2.351563
57.07
100
1
163
3
2

1.32E+08
0
4
180.044
1731
119.9121
1
0
960
1
4

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -829 | -893 | -771 | -0.80957 | -0.87207 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3499 | 3510 | 3489 | 13.66797 | 13.71094 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12348 | 12348 | 12348 | 2487.085 | 2487.085 |
| AssistanceTorqueDemand | -1516 | -1637 | -1339 | -5.92188 | -6.39453 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 715 | 780 | 647 | 5.585938 | 6.09375 |
| DriveStageTemperature | 5022 | 5019 | 5016 | 50.22 | 50.19 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 5011 | | 0 | | |
| AltHallTransitionTime | 2567874 | 2567874 | 2567874 | 2567874 | 2567874 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 |
| DiagCommutationCentrePosition | 21845 | 21845 | 21845 | 120.0275 | 120.0275 |
| EncoderPositionRegister | 65535 | 65535 | 65535 | 65535 | 65535 |
| MotorElectricalPosition | 2730 | 2730 | 2730 | 15 | 15 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTravelled | 14872198 | 14872198 |
| LifetimeCounter | 1061205 | 1061205 |
| AccumulatedColumnMovement | 25712 | 25712 |
| FastThermalEstTemperatureRise | 19 | 0.19 |
| ThermalEstTemperatureRise | 31 | 0.31 |
| VehicleTuneSelector | 4 | 4 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 6569 | 65.69 |
| CPU_PeakLoadHold | 12932 | 12932 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
-0.75293
0
13.62891
0
2487.085
-5.23047
0
5.054688
50.16
100
1
0
3
2

2567874
0
5
120.0275
65535
15
0
0
960
1
5

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 588 | 627 | 604 | 0.574219 | 0.612305 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3291 | 3288 | 3295 | 12.85547 | 12.84375 |
| FilteredVehicleSpeed | 674 | 671 | 674 | 10.53125 | 10.48438 |
| Filt2v5RefVoltage | 12447 | 12447 | 12447 | 2507.025 | 2507.025 |
| AssistanceTorqueDemand | 257 | 84 | 84 | 1.003906 | 0.328125 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -115 | -22 | -54 | -0.89844 | -0.17188 |
| DriveStageTemperature | 5888 | 5892 | 5898 | 58.88 | 58.92 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -22 | -45 | -22 | -22 | -45 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 4272 | | 0 | | |
| AltHallTransitionTime | 2783903 | 2783903 | 2783903 | 2783903 | 2783903 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 43691 | 43691 | 43691 | 240.0604 | 240.0604 |
| EncoderPositionRegister | 62174 | 62174 | 62174 | 62174 | 62174 |
| MotorElectricalPosition | 58695 | 58695 | 58695 | 322.5 | 322.5 |
| AltNewHallEvent | 0 | 1 | 0 | 0 | 1 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTravelled | 22512731 | 22512731 |
| LifetimeCounter | 1590263 | 1590263 |
| AccumulatedColumnMovement | 39798 | 39798 |
| FastThermalEstTemperatureRise | 47 | 0.47 |
| ThermalEstTemperatureRise | 113 | 1.13 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 6608 | 66.08 |
| CPU_PeakLoadHold | 13555 | 13555 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
0.589844
-0.00293
12.87109
10.53125
2507.025
0.328125
0
-0.42188
58.98
100
1
-22
3
2

2783903
0
6
240.0604
62174
322.5
0
0
960
-1
6

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 1093 | 1832 | 1415 | 8.539063 | 14.3125 |
| ColumnTorque | 2374 | 2535 | 2480 | 2.318359 | 2.475586 |
| ColumnVelocity | -38 | -607 | -164 | -0.03711 | -0.59277 |
| vBatt | 3495 | 3493 | 3497 | 13.65234 | 13.64453 |
| FilteredVehicleSpeed | 1738 | 1735 | 1735 | 27.15625 | 27.10938 |
| Filt2v5RefVoltage | 12377 | 12377 | 12376 | 2492.926 | 2492.926 |
| AssistanceTorqueDemand | 1531 | 2303 | 1914 | 5.980469 | 8.996094 |
| FilteredMechanicalVelocity | 1093 | 1832 | 1415 | 8.539063 | 14.3125 |
| QAxisCurrent | 801 | -490 | 337 | 6.257813 | -3.82813 |
| DriveStageTemperature | 7022 | 7029 | 7029 | 70.22 | 70.29 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 3504 | 3759 | 3759 | 3504 | 3759 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 4961 | | 0 | | |
| AltHallTransitionTime | 281907 | 251898 | 258024 | 281907 | 251898 |
| B92FilteredMotorVelocityError | 987 | 618 | 604 | 987 | 618 |
| HallSensor | 6 | 4 | 4 | 6 | 4 |
| DiagCommutationCentrePosition | 43691 | 32768 | 32768 | 240.0604 | 180.044 |
| EncoderPositionRegister | 1123 | 1123 | 1124 | 1123 | 1123 |
| MotorElectricalPosition | 19094 | 19094 | 20459 | 104.9121 | 104.9121 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 6 | 5 | 4 | 6 | 5 |

| | | |
|---|---|---|
| DistanceTravelled | 6371624 | 6371624 |
| LifetimeCounter | 660893 | 660893 |
| AccumulatedColumnMovement | 18919 | 18919 |
| FastThermalEstTemperatureRise | 17 | 0.17 |
| ThermalEstTemperatureRise | 79 | 0.79 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5464 | 54.64 |
| CPU_PeakLoadHold | 12919 | 12919 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

11.05469
2.421875
-0.16016
13.66016
27.10938
2492.725
7.476563
11.05469
2.632813
70.29
100
1
3759
3
2

258024
604
4
180.044
1124
112.4121
0
0
960
1
4

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -2 | -2 | -2 | -0.01563 | -0.01563 | -0.01563 |
| ColumnTor | 1304 | 1303 | 1307 | 1.273438 | 1.272461 | 1.276367 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3489 | 3493 | 3485 | 13.62891 | 13.64453 | 13.61328 |
| FilteredVel | 0 | 0 | 0 | 0 | 0 | 0 |
| Filt2v5Ref\ | 12373 | 12373 | 12373 | 2492.12 | 2492.12 | 2492.12 |
| Assistance | 1921 | 1921 | 1921 | 7.503906 | 7.503906 | 7.503906 |
| FilteredMe | -2 | -2 | -2 | -0.01563 | -0.01563 | -0.01563 |
| QAxisCurre | -870 | -858 | -878 | -6.79688 | -6.70313 | -6.85938 |
| DriveStage | 5178 | 5178 | 5182 | 51.78 | 51.78 | 51.82 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 5171 | | 0 | | | |
| AltHallTran | 26363944 | 26363944 | 26363944 | 26363944 | 26363944 | 26363944 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 | 4 |
| DiagComm | 32768 | 32768 | 32768 | 180.044 | 180.044 | 180.044 |
| EncoderPo | 65519 | 65519 | 65519 | 65519 | 65519 | 65519 |
| MotorElect | 43680 | 43680 | 43680 | 240 | 240 | 240 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | -3 | -3 | -3 | -3 | -3 | -3 |
| B92MotorV | 961 | 961 | 961 | 961 | 961 | 961 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 4 | 4 | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTr | 5456520 | 5456520 |
| LifetimeCo | 707008 | 707008 |
| Accumulate | 19052 | 19052 |
| FastTherm | 20 | 0.2 |
| ThermalEs | 61 | 0.61 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5361 | 53.61 |
| CPU_Peak | 12868 | 12868 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 1613 | 1605 | 1607 | 1.575195 | 1.567383 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3588 | 3588 | 3590 | 14.01563 | 14.01563 |
| FilteredVehicleSpeed | 204 | 201 | 204 | 3.1875 | 3.140625 |
| Filt2v5RefVoltage | 12385 | 12384 | 12385 | 2494.537 | 2494.336 |
| AssistanceTorqueDemand | 2225 | 2170 | 2281 | 8.691406 | 8.476563 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | -1016 | -985 | -1002 | -7.9375 | -7.69531 |
| DriveStageTemperature | 3371 | 3375 | 3371 | 33.71 | 33.75 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -418 | -418 | -418 | -418 | -418 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2694 | | 0 | | |
| AltHallTransitionTime | 34602106 | 34602106 | 34602106 | 34602106 | 34602106 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 | 3 |
| DiagCommutationCentrePosition | 0 | 0 | 0 | 0 | 0 |
| EncoderPositionRegister | 254 | 254 | 254 | 254 | 254 |
| MotorElectricalPosition | 20459 | 20459 | 20459 | 112.4121 | 112.4121 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | -1 | -1 | -1 | -1 | -1 |
| AltMotorCommutationState | 3 | 3 | 3 | 3 | 3 |

| | | |
|---|---|---|
| DistanceTravelled | 7834207 | 7834207 |
| LifetimeCounter | 699860 | 699860 |
| AccumulatedColumnMovement | 17725 | 17725 |
| FastThermalEstTemperatureRise | 9 | 0.09 |
| ThermalEstTemperatureRise | 22 | 0.22 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4938 | 49.38 |
| CPU_PeakLoadHold | 12829 | 12829 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
1.569336
-0.00293
14.02344
3.1875
2494.537
8.910156
0
-7.82813
33.71
100
1
-418
3
2

34602106
0
3
0
254
112.4121
0
0
960
-1
3

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 380 | 424 | 582 | 0.371094 | 0.414063 | 0.568359 |
| ColumnVel | -3 | -3 | -3 | -0.00293 | -0.00293 | -0.00293 |
| vBatt | 3264 | 3260 | 3266 | 12.75 | 12.73438 | 12.75781 |
| FilteredVel | 5859 | 5859 | 5860 | 91.54688 | 91.54688 | 91.5625 |
| Filt2v5Ref\ | 12377 | 12377 | 12377 | 2492.926 | 2492.926 | 2492.926 |
| Assistance | -309 | -86 | 271 | -1.20703 | -0.33594 | 1.058594 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | 151 | 79 | -47 | 1.179688 | 0.617188 | -0.36719 |
| DriveStage | 6655 | 6658 | 6652 | 66.55 | 66.58 | 66.52 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 13 | 13 | 18 | 13 | 13 | 18 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 4212 | | 0 | | | |
| AltHallTran | 16955997 | 16955997 | 16955997 | 16955997 | 16955997 | 16955997 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 | 5 |
| DiagComm | 21845 | 21845 | 21845 | 120.0275 | 120.0275 | 120.0275 |
| EncoderPo | 65302 | 65301 | 65301 | 65302 | 65301 | 65301 |
| MotorElect | 9539 | 8174 | 8174 | 52.41209 | 44.91209 | 44.91209 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 5 | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTr | 10283245 | 10283245 |
| LifetimeCo | 981339 | 981339 |
| Accumulate | 30246 | 30246 |
| FastTherm | 94 | 0.94 |
| ThermalEs | 388 | 3.88 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 4807 | 48.07 |
| CPU_Peak | 12899 | 12899 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 482 | 807 | 623 | 3.765625 | 6.304688 | 4.867188 |
| ColumnTor | 1348 | 1362 | 1353 | 1.316406 | 1.330078 | 1.321289 |
| ColumnVel | -10 | -173 | -40 | -0.00977 | -0.16895 | -0.03906 |
| vBatt | 3294 | 3301 | 3296 | 12.86719 | 12.89453 | 12.875 |
| FilteredVel | 629 | 628 | 628 | 9.828125 | 9.8125 | 9.8125 |
| Filt2v5Ref\ | 12449 | 12449 | 12449 | 2507.428 | 2507.428 | 2507.428 |
| Assistance | 1189 | 1247 | 1236 | 4.644531 | 4.871094 | 4.828125 |
| FilteredMe | 482 | 807 | 623 | 3.765625 | 6.304688 | 4.867188 |
| QAxisCurre | 263 | -170 | 180 | 2.054688 | -1.32813 | 1.40625 |
| DriveStage | 5909 | 5915 | 5918 | 59.09 | 59.15 | 59.18 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 19333 | 19333 | 19333 | 19333 | 19333 | 19333 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 4553 | | 0 | | | |
| AltHallTran | 396015 | 402040 | 402040 | 396015 | 402040 | 402040 |
| B92Filterec | 142 | 0 | 0 | 142 | 0 | 0 |
| HallSensor | 2 | 6 | 6 | 2 | 6 | 6 |
| DiagComm | 54613 | 43691 | 43691 | 300.0714 | 240.0604 | 240.0604 |
| EncoderPo | 61974 | 61973 | 61974 | 61974 | 61973 | 61974 |
| MotorElect | 31379 | 30014 | 30014 | 172.4121 | 164.9121 | 164.9121 |
| AltNewHall | 1 | 1 | 0 | 1 | 1 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 2 | 6 | 6 | 2 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTr | 8395996 | 8395996 |
| LifetimeCo | 992239 | 992239 |
| Accumulate | 29527 | 29527 |
| FastTherm | 60 | 0.6 |
| ThermalEs | 94 | 0.94 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5509 | 55.09 |
| CPU_Peak | 12882 | 12882 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 476 | 448 | 464 | 3.71875 | 3.5 | 3.625 |
| ColumnTor | 2315 | 2282 | 2301 | 2.260742 | 2.228516 | 2.24707 |
| ColumnVel | -190 | -190 | -190 | -0.18555 | -0.18555 | -0.18555 |
| vBatt | 3626 | 3620 | 3622 | 14.16406 | 14.14063 | 14.14844 |
| FilteredVel | 1725 | 1723 | 1725 | 26.95313 | 26.92188 | 26.95313 |
| Filt2v5Ref\ | 12469 | 12469 | 12469 | 2511.456 | 2511.456 | 2511.456 |
| Assistance | 1975 | 2033 | 1968 | 7.714844 | 7.941406 | 7.6875 |
| FilteredMe | 476 | 448 | 464 | 3.71875 | 3.5 | 3.625 |
| QAxisCurre | -867 | -948 | -898 | -6.77344 | -7.40625 | -7.01563 |
| DriveStage | 3212 | 3219 | 3212 | 32.12 | 32.19 | 32.12 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 3026 | 3026 | 3026 | 3026 | 3026 | 3026 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 2999 | | 0 | | | |
| AltHallTran | 810001 | 804000 | 804000 | 810001 | 804000 | 804000 |
| B92Filterec | 83 | 87 | 85 | 83 | 87 | 85 |
| HallSensor | 2 | 6 | 6 | 2 | 6 | 6 |
| DiagComm | 54613 | 43691 | 43691 | 300.0714 | 240.0604 | 240.0604 |
| EncoderPo | 65134 | 65130 | 65132 | 65134 | 65130 | 65132 |
| MotorElect | 39811 | 33239 | 36790 | 218.7418 | 182.6319 | 202.1429 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 772 | 775 | 777 | 772 | 775 | 777 |
| B92MotorV | 1168 | 1169 | 1169 | 1168 | 1169 | 1169 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 2 | 6 | 6 | 2 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTr | 3937673 | 3937673 |
| LifetimeCo | 401430 | 401430 |
| Accumulate | 10469 | 10469 |
| FastTherm | 43 | 0.43 |
| ThermalEs | 78 | 0.78 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 2937 | 29.37 |
| CPU_Peak | 12840 | 12840 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 1 | 1 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | -2307 | -2292 | -2298 | -2.25293 | -2.23828 |
| ColumnVelocity | -3 | -3 | -3 | -0.00293 | -0.00293 |
| vBatt | 3611 | 3611 | 3611 | 14.10547 | 14.10547 |
| FilteredVehicleSpeed | 5219 | 5220 | 5220 | 81.54688 | 81.5625 |
| Filt2v5RefVoltage | 12384 | 12384 | 12384 | 2494.336 | 2494.336 |
| AssistanceTorqueDemand | -1115 | -1158 | -1138 | -4.35547 | -4.52344 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 514 | 559 | 538 | 4.015625 | 4.367188 |
| DriveStageTemperature | 4260 | 4257 | 4260 | 42.6 | 42.57 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -354 | -354 | -354 | -354 | -354 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2593 | | 0 | | |
| AltHallTransitionTime | 34398008 | 34398008 | 34398008 | 34398008 | 34398008 |
| B92FilteredMotorVelocityError | 0 | 2 | 0 | 0 | 2 |
| HallSensor | 1 | 1 | 1 | 1 | 1 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 | 60.01648 |
| EncoderPositionRegister | 550 | 550 | 550 | 550 | 550 |
| MotorElectricalPosition | 58695 | 58695 | 58695 | 322.5 | 322.5 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTravelled | 5414600 | 5414600 |
| LifetimeCounter | 459294 | 459294 |
| AccumulatedColumnMovement | 19493 | 19493 |
| FastThermalEstTemperatureRise | 20 | 0.2 |
| ThermalEstTemperatureRise | 46 | 0.46 |
| VehicleTuneSelector | 3 | 3 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5409 | 54.09 |
| CPU_PeakLoadHold | 12968 | 12968 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
-2.24414
-0.00293
14.10547
81.5625
2494.336
-4.44531
0
4.203125
42.6
100
1
-354
3
2

34398008
0
1
60.01648
550
322.5
0
0
960
1
1

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 91 | 70 | 54 | 0.710938 | 0.546875 | 0.421875 |
| ColumnTor | -2731 | -2842 | -2997 | -2.66699 | -2.77539 | -2.92676 |
| ColumnVel | -3 | -3 | -3 | -0.00293 | -0.00293 | -0.00293 |
| vBatt | 3470 | 3478 | 3480 | 13.55469 | 13.58594 | 13.59375 |
| FilteredVel | 1772 | 1772 | 1769 | 27.6875 | 27.6875 | 27.64063 |
| Filt2v5Ref\ | 12322 | 12322 | 12322 | 2481.848 | 2481.848 | 2481.848 |
| Assistance | -2783 | -3294 | -3816 | -10.8711 | -12.8672 | -14.9063 |
| FilteredMe | 91 | 70 | 54 | 0.710938 | 0.546875 | 0.421875 |
| QAxisCurre | 1527 | 1690 | 1944 | 11.92969 | 13.20313 | 15.1875 |
| DriveStage | 6394 | 6383 | 6394 | 63.94 | 63.83 | 63.94 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -136 | -136 | -136 | -136 | -136 | -136 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 5845 | | 0 | | | |
| AltHallTran | 791913 | 791913 | 791913 | 791913 | 791913 | 791913 |
| B92Filterec | 399 | 459 | 448 | 399 | 459 | 448 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 64767 | 64768 | 64767 | 64767 | 64768 | 64767 |
| MotorElect | 57330 | 58695 | 57330 | 315 | 322.5 | 315 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 2663104 | 2663104 |
| LifetimeCo | 458541 | 458541 |
| Accumulate | 14612 | 14612 |
| FastTherm | 14 | 0.14 |
| ThermalEs | 49 | 0.49 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6008 | 60.08 |
| CPU_Peak | 12883 | 12883 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 126 | 97 | 163 | 0.984375 | 0.757813 | 1.273438 |
| ColumnTor | -1472 | -1544 | -1421 | -1.4375 | -1.50781 | -1.3877 |
| ColumnVel | -3 | -3 | -4 | -0.00293 | -0.00293 | -0.00391 |
| vBatt | 3303 | 3303 | 3303 | 12.90234 | 12.90234 | 12.90234 |
| FilteredVel | 312 | 312 | 312 | 4.875 | 4.875 | 4.875 |
| Filt2v5Ref\ | 12420 | 12420 | 12420 | 2501.587 | 2501.587 | 2501.587 |
| Assistance | -1419 | -1554 | -1257 | -5.54297 | -6.07031 | -4.91016 |
| FilteredMe | 126 | 97 | 163 | 0.984375 | 0.757813 | 1.273438 |
| QAxisCurre | 673 | 733 | 676 | 5.257813 | 5.726563 | 5.28125 |
| DriveStage | 4109 | 4109 | 4105 | 41.09 | 41.09 | 41.05 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 555 | 509 | 555 | 555 | 509 | 555 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3433 | | 0 | | | |
| AltHallTran | 1175927 | 1175927 | 1175927 | 1175927 | 1175927 | 1175927 |
| B92Filterec | 90 | 88 | 94 | 90 | 88 | 94 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 65402 | 65403 | 65401 | 65402 | 65403 | 65401 |
| MotorElect | 64155 | 65088 | 62790 | 352.5 | 357.6264 | 345 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 2830895 | 2830895 |
| LifetimeCo | 283078 | 283078 |
| Accumulate | 9542 | 9542 |
| FastTherm | 564 | 5.64 |
| ThermalEs | 372 | 3.72 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 3775 | 37.75 |
| CPU_Peak | 12956 | 12956 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 1 | 1 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 468 | 462 | 437 | 0.457031 | 0.451172 | 0.426758 |
| ColumnVel | -3 | -3 | -3 | -0.00293 | -0.00293 | -0.00293 |
| vBatt | 3319 | 3311 | 3323 | 12.96484 | 12.93359 | 12.98047 |
| FilteredVel | 3417 | 3417 | 3417 | 53.39063 | 53.39063 | 53.39063 |
| Filt2v5Ref\ | 12351 | 12351 | 12351 | 2487.689 | 2487.689 | 2487.689 |
| Assistance | 299 | 180 | 298 | 1.167969 | 0.703125 | 1.164063 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -133 | -80 | -127 | -1.03906 | -0.625 | -0.99219 |
| DriveStage | 4949 | 4949 | 4953 | 49.49 | 49.49 | 49.53 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -68 | -68 | -68 | -68 | -68 | -68 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 2762 | | 0 | | | |
| AltHallTran | 1344013 | 1344013 | 1344013 | 1344013 | 1344013 | 1344013 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 431 | 431 | 431 | 431 | 431 | 431 |
| MotorElect | 65520 | 65520 | 65520 | 360 | 360 | 360 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 13852987 | 13852987 |
| LifetimeCo | 838181 | 838181 |
| Accumulate | 14055 | 14055 |
| FastTherm | 37 | 0.37 |
| ThermalEs | 33 | 0.33 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 3832 | 38.32 |
| CPU_Peak | 12887 | 12887 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

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|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 8 | 0 | 0 | 0.0625 |
| ColumnTor | 360 | 344 | 326 | 0.351563 | 0.335938 | 0.318359 |
| ColumnVel | -3 | -3 | -7 | -0.00293 | -0.00293 | -0.00684 |
| vBatt | 3619 | 3608 | 3610 | 14.13672 | 14.09375 | 14.10156 |
| FilteredVel | 2667 | 2667 | 2666 | 41.67188 | 41.67188 | 41.65625 |
| Filt2v5Ref\ | 12487 | 12487 | 12487 | 2515.082 | 2515.082 | 2515.082 |
| Assistance | -287 | -222 | -241 | -1.12109 | -0.86719 | -0.94141 |
| FilteredMe | 0 | 0 | 8 | 0 | 0 | 0.0625 |
| QAxisCurre | 150 | 103 | 116 | 1.171875 | 0.804688 | 0.90625 |
| DriveStage | 3465 | 3461 | 3468 | 34.65 | 34.61 | 34.68 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 366 | 366 | 361 | 366 | 366 | 361 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| AltHallTran | 4517877 | 4517877 | 4517877 | 4517877 | 4517877 | 4517877 |
| B92Filtere | 12 | 23 | 21 | 12 | 23 | 21 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 687 | 687 | 688 | 687 | 687 | 688 |
| MotorElect | 60060 | 60060 | 61425 | 330 | 330 | 337.5 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 0 | 0 | 96 | 0 | 0 | 96 |
| B92MotorV | 960 | 960 | 985 | 960 | 960 | 985 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 1232248 | 1232248 |
| LifetimeCo | 150498 | 150498 |
| Accumulate | 7360 | 7360 |
| FastTherm | 65 | 0.65 |
| ThermalEs | 114 | 1.14 |
| VehicleTun | 1 | 1 |
| MotorTune | 0 | 0 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 2483 | 24.83 |
| CPU_Peak | 13477 | 13477 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

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|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 2103 | 2151 | 2195 | 2.053711 | 2.100586 | 2.143555 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3205 | 3209 | 3205 | 12.51953 | 12.53516 | 12.51953 |
| FilteredVel | 62 | 61 | 61 | 0.96875 | 0.953125 | 0.953125 |
| Filt2v5Ref\ | 12416 | 12416 | 12416 | 2500.781 | 2500.781 | 2500.781 |
| Assistance | 1256 | 1345 | 1434 | 4.90625 | 5.253906 | 5.601563 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -677 | -712 | -762 | -5.28906 | -5.5625 | -5.95313 |
| DriveStage | 2773 | 2779 | 2774 | 27.73 | 27.79 | 27.74 |
| TorqueLimi | 18750 | 18800 | 18850 | 75 | 75.2 | 75.4 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| AltHallTran | 9294036 | 9294036 | 9294036 | 9294036 | 9294036 | 9294036 |
| B92Filtere | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 65534 | 65534 | 65534 | 65534 | 65534 | 65534 |
| MotorElect | 27300 | 27300 | 27300 | 150 | 150 | 150 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 2918534 | 2918534 |
| LifetimeCo | 323418 | 323418 |
| Accumulate | 13499 | 13499 |
| FastTherm | 32 | 0.32 |
| ThermalEs | 69 | 0.69 |
| VehicleTun | 1 | 1 |
| MotorTune | 0 | 0 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 4090 | 40.9 |
| CPU_Peak | 13488 | 13488 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -42 | -35 | -27 | -0.32813 | -0.27344 | -0.21094 |
| ColumnTor | -3020 | -3095 | -3241 | -2.94922 | -3.02246 | -3.16504 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3440 | 3440 | 3444 | 13.4375 | 13.4375 | 13.45313 |
| FilteredVel | 811 | 811 | 813 | 12.67188 | 12.67188 | 12.70313 |
| Filt2v5Ref\ | 12502 | 12502 | 12502 | 2518.103 | 2518.103 | 2518.103 |
| Assistance | -3700 | -4095 | -4717 | -14.4531 | -15.9961 | -18.4258 |
| FilteredMe | -42 | -35 | -27 | -0.32813 | -0.27344 | -0.21094 |
| QAxisCurre | 1897 | 2161 | 2368 | 14.82031 | 16.88281 | 18.5 |
| DriveStage | 4269 | 4266 | 4273 | 42.69 | 42.66 | 42.73 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -16274 | -16268 | -16283 | -16274 | -16268 | -16283 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| AltHallTran | 2087946 | 2087946 | 2087946 | 2087946 | 2087946 | 2087946 |
| B92Filtere | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 | 5 |
| DiagComm | 21845 | 21845 | 21845 | 120.0275 | 120.0275 | 120.0275 |
| EncoderPo | 2830 | 2829 | 2830 | 2830 | 2829 | 2830 |
| MotorElect | 36839 | 35474 | 36839 | 202.4121 | 194.9121 | 202.4121 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 5 | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTr | 29789440 | 29789440 |
| LifetimeCo | 1766476 | 1766476 |
| Accumulate | 36332 | 36332 |
| FastTherm | 14 | 0.14 |
| ThermalEs | 44 | 0.44 |
| VehicleTun | 1 | 1 |
| MotorTune | 0 | 0 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 4212 | 42.12 |
| CPU_Peak | 13568 | 13568 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 14 | 0 | 0 | 0.109375 |
| ColumnTor | -1410 | -1401 | -1440 | -1.37695 | -1.36816 | -1.40625 |
| ColumnVel | -3 | -3 | -16 | -0.00293 | -0.00293 | -0.01563 |
| vBatt | 3408 | 3406 | 3412 | 13.3125 | 13.30469 | 13.32813 |
| FilteredVel | 2788 | 2788 | 2788 | 43.5625 | 43.5625 | 43.5625 |
| Filt2v5Ref\ | 12413 | 12413 | 12413 | 2500.177 | 2500.177 | 2500.177 |
| Assistance | -357 | -212 | -359 | -1.39453 | -0.82813 | -1.40234 |
| FilteredMe | 0 | 0 | 14 | 0 | 0 | 0.109375 |
| QAxisCurre | 149 | 153 | 176 | 1.164063 | 1.195313 | 1.375 |
| DriveStage | 6791 | 6784 | 6794 | 67.91 | 67.84 | 67.94 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -42 | -48 | -48 | -42 | -48 | -48 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| AltHallTran | 52235934 | 52235934 | 52235934 | 52235934 | 52235934 | 52235934 |
| B92Filtere | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 | 4 |
| DiagComm | 32768 | 32768 | 32768 | 180.044 | 180.044 | 180.044 |
| EncoderPo | 62689 | 62690 | 62690 | 62689 | 62690 | 62690 |
| MotorElect | 16364 | 17729 | 17729 | 89.91209 | 97.41209 | 97.41209 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 72 | 0 | 0 | 72 |
| B92MotorV | 960 | 960 | 979 | 960 | 960 | 979 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 4 | 4 | 4 | 4 | 4 | 4 |

| | | |
|---|---|---|
| DistanceTr | 8998565 | 8998565 |
| LifetimeCo | 1022664 | 1022664 |
| Accumulate | 37997 | 37997 |
| FastTherm | 254 | 2.54 |
| ThermalEs | 352 | 3.52 |
| VehicleTun | 1 | 1 |
| MotorTune | 0 | 0 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5291 | 52.91 |
| CPU_Peak | 13546 | 13546 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -399 | -308 | -484 | -3.11719 | -2.40625 | -3.78125 |
| ColumnTor | -2330 | -2358 | -2323 | -2.27539 | -2.30273 | -2.26855 |
| ColumnVel | 10 | 1 | 35 | 0.009766 | 0.000977 | 0.03418 |
| vBatt | 3441 | 3437 | 3445 | 13.44141 | 13.42578 | 13.45703 |
| FilteredVel | 2004 | 2006 | 2004 | 31.3125 | 31.34375 | 31.3125 |
| Filt2v5Ref\ | 12397 | 12397 | 12397 | 2496.954 | 2496.954 | 2496.954 |
| Assistance | -916 | -1016 | -791 | -3.57813 | -3.96875 | -3.08984 |
| FilteredMe | -399 | -308 | -484 | -3.11719 | -2.40625 | -3.78125 |
| QAxisCurre | 11 | -76 | 195 | 0.085938 | -0.59375 | 1.523438 |
| DriveStage | 4779 | 4779 | 4772 | 47.79 | 47.79 | 47.72 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -5071 | -5071 | -5065 | -5071 | -5071 | -5065 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| AltHallTran | 515917 | 527927 | 515917 | 515917 | 527927 | 515917 |
| B92Filtere | 213 | 314 | 109 | 213 | 314 | 109 |
| HallSensor | 6 | 4 | 6 | 6 | 4 | 6 |
| DiagComm | 43691 | 32768 | 43691 | 240.0604 | 180.044 | 240.0604 |
| EncoderPo | 932 | 932 | 931 | 932 | 932 | 931 |
| MotorElect | 58695 | 58695 | 57330 | 322.5 | 322.5 | 315 |
| AltNewHall | 0 | 1 | 1 | 0 | 1 | 1 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 6 | 4 | 6 | 6 | 4 | 6 |

| | | |
|---|---|---|
| DistanceTr | 10639777 | 10639777 |
| LifetimeCo | 763666 | 763666 |
| Accumulate | 22093 | 22093 |
| FastTherm | 17 | 0.17 |
| ThermalEs | 52 | 0.52 |
| VehicleTun | 1 | 1 |
| MotorTune | 0 | 0 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5800 | 58 |
| CPU_Peak | 13530 | 13530 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 1052 | 1056 | 1056 | 1.027344 | 1.03125 | 1.03125 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3468 | 3472 | 3458 | 13.54688 | 13.5625 | 13.50781 |
| FilteredVel | 0 | 0 | 0 | 0 | 0 | 0 |
| Filt2v5Ref\ | 12418 | 12418 | 12418 | 2501.184 | 2501.184 | 2501.184 |
| Assistance | 1011 | 1011 | 952 | 3.949219 | 3.949219 | 3.71875 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -464 | -509 | -421 | -3.625 | -3.97656 | -3.28906 |
| DriveStage | 5746 | 5736 | 5736 | 57.46 | 57.36 | 57.36 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 5633 | | 0 | | | |
| AltHallTran | 1.03E+08 | 1.03E+08 | 1.03E+08 | 1.03E+08 | 1.03E+08 | 1.03E+08 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 2 | 2 | 2 | 2 | 2 | 2 |
| DiagComm | 54613 | 54613 | 54613 | 300.0714 | 300.0714 | 300.0714 |
| EncoderPo | 2 | 2 | 2 | 2 | 2 | 2 |
| MotorElect | 4095 | 4095 | 4095 | 22.5 | 22.5 | 22.5 |
| AltNewHall | 1 | 0 | 0 | 1 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 2 | 2 | 2 | 2 | 2 | 2 |

| | | |
|---|---|---|
| DistanceTr | 10164804 | 10164804 |
| LifetimeCo | 912037 | 912037 |
| Accumulate | 19019 | 19019 |
| FastTherm | 19 | 0.19 |
| ThermalEs | 63 | 0.63 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6905 | 69.05 |
| CPU_Peak | 12842 | 12842 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 1611 | 1618 | 1619 | 1.573242 | 1.580078 | 1.581055 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3299 | 3297 | 3299 | 12.88672 | 12.87891 | 12.88672 |
| FilteredVel | 4806 | 4806 | 4806 | 75.09375 | 75.09375 | 75.09375 |
| Filt2v5RefV | 12352 | 12352 | 12352 | 2487.891 | 2487.891 | 2487.891 |
| Assistance | 547 | 548 | 571 | 2.136719 | 2.140625 | 2.230469 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -246 | -255 | -255 | -1.92188 | -1.99219 | -1.99219 |
| DriveStage | 3750 | 3753 | 3753 | 37.5 | 37.53 | 37.53 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 13 | 18 | 18 | 13 | 18 | 18 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3409 | | 0 | | | |
| AltHallTran | 8207914 | 8207914 | 8207914 | 8207914 | 8207914 | 8207914 |
| B92Filtered | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 | 6 |
| DiagComm | 43691 | 43691 | 43691 | 240.0604 | 240.0604 | 240.0604 |
| EncoderPo | 65426 | 65426 | 65426 | 65426 | 65426 | 65426 |
| MotorElect | 58695 | 58695 | 58695 | 322.5 | 322.5 | 322.5 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 6 | 6 | 6 | 6 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTr | 11988558 | 11988558 |
| LifetimeCo | 786132 | 786132 |
| Accumulate | 14972 | 14972 |
| FastTherm | 16 | 0.16 |
| ThermalEs | 46 | 0.46 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5822 | 58.22 |
| CPU_Peak | 12799 | 12799 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | 1130 | 1221 | 1326 | 1.103516 | 1.192383 | 1.294922 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3572 | 3568 | 3570 | 13.95313 | 13.9375 | 13.94531 |
| FilteredVel | 0 | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefV | 12402 | 12402 | 12402 | 2497.961 | 2497.961 | 2497.961 |
| Assistance | 1770 | 1953 | 2315 | 6.914063 | 7.628906 | 9.042969 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -820 | -857 | -1031 | -6.40625 | -6.69531 | -8.05469 |
| DriveStage | 5814 | 5814 | 5814 | 58.14 | 58.14 | 58.14 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -7491 | -7491 | -7486 | -7491 | -7491 | -7486 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3088 | | 0 | | | |
| AltHallTran | 3.98E+09 | 2778118 | 2778118 | 3.98E+09 | 2778118 | 2778118 |
| B92Filtered | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 | 3 | 3 |
| DiagComm | 0 | 0 | 0 | 0 | 0 | 0 |
| EncoderPo | 1446 | 1447 | 1446 | 1446 | 1447 | 1446 |
| MotorElect | 20459 | 21824 | 20459 | 112.4121 | 119.9121 | 112.4121 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 1 | 3 | 3 | 1 | 3 | 3 |

| | | |
|---|---|---|
| DistanceTr | 25535391 | 25535391 |
| LifetimeCo | 1702577 | 1702577 |
| Accumulate | 36190 | 36190 |
| FastTherm | 115 | 1.15 |
| ThermalEs | 157 | 1.57 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6600 | 66 |
| CPU_Peak | 13024 | 13024 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 61 | 47 | 79 | 0.476563 | 0.367188 | 0.617188 |
| ColumnTor | -2435 | -2569 | -2335 | -2.37793 | -2.50879 | -2.28027 |
| ColumnVel | -3 | -3 | -3 | -0.00293 | -0.00293 | -0.00293 |
| vBatt | 3313 | 3307 | 3319 | 12.94141 | 12.91797 | 12.96484 |
| FilteredVel | 2206 | 2206 | 2209 | 34.46875 | 34.46875 | 34.51563 |
| Filt2v5RefV | 12434 | 12434 | 12434 | 2504.407 | 2504.407 | 2504.407 |
| Assistance | -2493 | -2922 | -2171 | -9.73828 | -11.4141 | -8.48047 |
| FilteredMe | 61 | 47 | 79 | 0.476563 | 0.367188 | 0.617188 |
| QAxisCurre | 1161 | 1345 | 1078 | 9.070313 | 10.50781 | 8.421875 |
| DriveStage | 4857 | 4864 | 4857 | 48.57 | 48.64 | 48.57 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -737 | -737 | -737 | -737 | -737 | -737 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3917 | | 0 | | | |
| AltHallTran | 1235854 | 1235854 | 1235854 | 1235854 | 1235854 | 1235854 |
| B92Filtered | 87 | 85 | 89 | 87 | 85 | 89 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 114 | 115 | 113 | 114 | 115 | 113 |
| MotorElect | 58695 | 60060 | 57330 | 322.5 | 330 | 315 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 10260884 | 10260884 |
| LifetimeCo | 816674 | 816674 |
| Accumulate | 18614 | 18614 |
| FastTherm | 40 | 0.4 |
| ThermalEs | 79 | 0.79 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6209 | 62.09 |
| CPU_Peak | 12834 | 12834 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 1 | 1 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 648 | 1086 | 839 | 5.0625 | 8.484375 | 6.554688 |
| ColumnTor | -2710 | -2023 | -2213 | -2.64648 | -1.97559 | -2.16113 |
| ColumnVel | -11 | -206 | -47 | -0.01074 | -0.20117 | -0.0459 |
| vBatt | 3569 | 3558 | 3569 | 13.94141 | 13.89844 | 13.94141 |
| FilteredVel | 280 | 279 | 279 | 4.375 | 4.359375 | 4.359375 |
| Filt2v5RefV | 12448 | 12448 | 12448 | 2507.227 | 2507.227 | 2507.227 |
| Assistance | -8371 | -4558 | -5739 | -32.6992 | -17.8047 | -22.418 |
| FilteredMe | 648 | 1086 | 839 | 5.0625 | 8.484375 | 6.554688 |
| QAxisCurre | 4088 | 2787 | 3574 | 31.9375 | 21.77344 | 27.92188 |
| DriveStage | 3167 | 3171 | 3174 | 31.67 | 31.71 | 31.74 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3145 | | 0 | | | |
| AltHallTran | 348100 | 311829 | 348100 | 348100 | 311829 | 348100 |
| B92Filterec | 790 | 495 | 645 | 790 | 495 | 645 |
| HallSensor | 2 | 6 | 2 | 2 | 6 | 2 |
| DiagComm | 54613 | 43691 | 54613 | 300.0714 | 240.0604 | 300.0714 |
| EncoderPo | 2532 | 2532 | 2531 | 2532 | 2532 | 2531 |
| MotorElect | 31379 | 31379 | 30014 | 172.4121 | 172.4121 | 164.9121 |
| AltNewHall | 0 | 1 | 1 | 0 | 1 | 1 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 2 | 6 | 2 | 2 | 6 | 2 |

| | | |
|---|---|---|
| DistanceTr | 6710139 | 6710139 |
| LifetimeCo | 469090 | 469090 |
| Accumulate | 10734 | 10734 |
| FastTherm | 18 | 0.18 |
| ThermalEs | 36 | 0.36 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5291 | 52.91 |
| CPU_Peak | 12823 | 12823 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | -1 | 0 | 0 | -0.00781 | 0 |
| ColumnTor | -255 | -285 | -266 | -0.24902 | -0.27832 | -0.25977 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3595 | 3595 | 3591 | 14.04297 | 14.04297 | 14.02734 |
| FilteredVel | 3931 | 3931 | 3931 | 61.42188 | 61.42188 | 61.42188 |
| Filt2v5RefV | 12352 | 12352 | 12352 | 2487.891 | 2487.891 | 2487.891 |
| Assistance | 328 | 402 | 365 | 1.28125 | 1.570313 | 1.425781 |
| FilteredMe | 0 | -1 | 0 | 0 | -0.00781 | 0 |
| QAxisCurre | -139 | -180 | -172 | -1.08594 | -1.40625 | -1.34375 |
| DriveStage | 3685 | 3682 | 3678 | 36.85 | 36.82 | 36.78 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -286 | -277 | -277 | -286 | -277 | -277 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 2910 | | 0 | | | |
| AltHallTran | 3863824 | 3863824 | 3863824 | 3863824 | 3863824 | 3863824 |
| B92Filterec | 25 | 14 | 27 | 25 | 14 | 27 |
| HallSensor | 3 | 3 | 3 | 3 | 3 | 3 |
| DiagComm | 0 | 0 | 0 | 0 | 0 | 0 |
| EncoderPo | 68 | 68 | 68 | 68 | 68 | 68 |
| MotorElecti | 20475 | 20475 | 20475 | 112.5 | 112.5 | 112.5 |
| AltNewHall | 0 | 1 | 0 | 0 | 1 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 3 | 3 | 3 | 3 | 3 | 3 |

| | | |
|---|---|---|
| DistanceTr | 2941655 | 2941655 |
| LifetimeCo | 243587 | 243587 |
| Accumulate | 6105 | 6105 |
| FastTherm | 14 | 0.14 |
| ThermalEs | 38 | 0.38 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5885 | 58.85 |
| CPU_Peak | 12857 | 12857 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -596 | -460 | -356 | -4.65625 | -3.59375 | -2.78125 |
| ColumnTor | 2294 | 2595 | 3117 | 2.240234 | 2.53418 | 3.043945 |
| ColumnVel | 19 | 3 | 0 | 0.018555 | 0.00293 | 0 |
| vBatt | 3292 | 3296 | 3298 | 12.85938 | 12.875 | 12.88281 |
| FilteredVel | 1216 | 1216 | 1216 | 19 | 19 | 19 |
| Filt2v5Ref\ | 12397 | 12397 | 12397 | 2496.954 | 2496.954 | 2496.954 |
| Assistance | 4025 | 5914 | 8471 | 15.72266 | 23.10156 | 33.08984 |
| FilteredMe | -596 | -460 | -356 | -4.65625 | -3.59375 | -2.78125 |
| QAxisCurre | -2313 | -2898 | -3656 | -18.0703 | -22.6406 | -28.5625 |
| DriveStage | 5301 | 5304 | 5307 | 53.01 | 53.04 | 53.07 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 2088 | 2088 | 2088 | 2088 | 2088 | 2088 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3804 | | 0 | | | |
| AltHallTran | 407845 | 407845 | 407845 | 407845 | 407845 | 407845 |
| B92Filterec | 629 | 615 | 601 | 629 | 615 | 601 |
| HallSensor | 5 | 5 | 5 | 5 | 5 | 5 |
| DiagComm | 21845 | 21845 | 21845 | 120.0275 | 120.0275 | 120.0275 |
| EncoderPo | 65341 | 65341 | 65341 | 65341 | 65341 | 65341 |
| MotorElect | 40950 | 40950 | 40950 | 225 | 225 | 225 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 5 | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTr | 15037195 | 15037195 |
| LifetimeCo | 1106531 | 1106531 |
| Accumulate | 26291 | 26291 |
| FastTherm | 18 | 0.18 |
| ThermalEs | 90 | 0.9 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6035 | 60.35 |
| CPU_Peak | 12829 | 12829 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 87 | 67 | 113 | 0.679688 | 0.523438 | 0.882813 |
| ColumnTor | -2775 | -2949 | -2671 | -2.70996 | -2.87988 | -2.6084 |
| ColumnVel | -3 | -3 | -4 | -0.00293 | -0.00293 | -0.00391 |
| vBatt | 3278 | 3278 | 3286 | 12.80469 | 12.80469 | 12.83594 |
| FilteredVel | 1395 | 1395 | 1394 | 21.79688 | 21.79688 | 21.78125 |
| Filt2v5RefV | 12416 | 12417 | 12416 | 2500.781 | 2500.983 | 2500.781 |
| Assistance | -4770 | -5594 | -4218 | -18.6328 | -21.8516 | -16.4766 |
| FilteredMe | 87 | 67 | 113 | 0.679688 | 0.523438 | 0.882813 |
| QAxisCurre | 2214 | 2601 | 2021 | 17.29688 | 20.32031 | 15.78906 |
| DriveStage | 4405 | 4405 | 4416 | 44.05 | 44.05 | 44.16 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -4601 | -4601 | -4601 | -4601 | -4601 | -4601 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3402 | | 0 | | | |
| AltHallTran | 1253904 | 1253904 | 1253904 | 1253904 | 1253904 | 1253904 |
| B92Filterec | 108 | 104 | 112 | 108 | 104 | 112 |
| HallSensor | 5 | 5 | 5 | 5 | 5 | 5 |
| DiagComm | 21845 | 21845 | 21845 | 120.0275 | 120.0275 | 120.0275 |
| EncoderPo | 720 | 720 | 719 | 720 | 720 | 719 |
| MotorElect | 9539 | 9539 | 8174 | 52.41209 | 52.41209 | 44.91209 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 5 | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTr | 7728168 | 7728168 |
| LifetimeCo | 1076230 | 1076230 |
| Accumulate | 34947 | 34947 |
| FastTherm | 3 | 0.03 |
| ThermalEs | 52 | 0.52 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6254 | 62.54 |
| CPU_Peak | 12946 | 12946 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -6 | -5 | -8 | -0.04688 | -0.03906 | -0.0625 |
| ColumnTor | -484 | -481 | -477 | -0.47266 | -0.46973 | -0.46582 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3285 | 3283 | 3278 | 12.83203 | 12.82422 | 12.80469 |
| FilteredVel | 1314 | 1315 | 1314 | 20.53125 | 20.54688 | 20.53125 |
| Filt2v5RefV | 12370 | 12370 | 12370 | 2491.516 | 2491.516 | 2491.516 |
| Assistance | -85 | 23 | -85 | -0.33203 | 0.089844 | -0.33203 |
| FilteredMe | -6 | -5 | -8 | -0.04688 | -0.03906 | -0.0625 |
| QAxisCurre | 5 | -19 | 9 | 0.039063 | -0.14844 | 0.070313 |
| DriveStage | 5935 | 5938 | 5941 | 59.35 | 59.38 | 59.41 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -901 | -914 | -901 | -901 | -914 | -901 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemMo | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 3798 | | 0 | | | |
| AltHallTran | 3731849 | 3731849 | 3731849 | 3731849 | 3731849 | 3731849 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 3 | 3 | 3 | 3 | 3 | 3 |
| DiagComm | 0 | 0 | 0 | 0 | 0 | 0 |
| EncoderPo | 262 | 261 | 262 | 262 | 261 | 262 |
| MotorElect | 14999 | 13634 | 14999 | 82.41209 | 74.91209 | 82.41209 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 3 | 3 | 3 | 3 | 3 | 3 |

| | | |
|---|---|---|
| DistanceTr | 15695908 | 15695908 |
| LifetimeCo | 1769250 | 1769250 |
| Accumulate | 42788 | 42788 |
| FastTherm | 4 | 0.04 |
| ThermalEs | 51 | 0.51 |
| VehicleTun | 4 | 4 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 5842 | 58.42 |
| CPU_Peak | 12901 | 12901 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | -836 | -1402 | -1083 | -6.53125 | -10.9531 | -8.46094 |
| ColumnTor | 4165 | 2651 | 3072 | 4.067383 | 2.588867 | 3 |
| ColumnVel | 8 | 194 | 42 | 0.007813 | 0.189453 | 0.041016 |
| vBatt | 3289 | 3278 | 3303 | 12.84766 | 12.80469 | 12.90234 |
| FilteredVel | 503 | 501 | 503 | 7.859375 | 7.828125 | 7.859375 |
| Filt2v5RefV | 12381 | 12381 | 12381 | 2493.732 | 2493.732 | 2493.732 |
| Assistance | 18759 | 6841 | 10557 | 73.27734 | 26.72266 | 41.23828 |
| FilteredMe | -836 | -1402 | -1083 | -6.53125 | -10.9531 | -8.46094 |
| QAxisCurre | -7917 | -4863 | -5736 | -61.8516 | -37.9922 | -44.8125 |
| DriveStage | 5145 | 5138 | 5132 | 51.45 | 51.38 | 51.32 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 4519 | 4300 | 4519 | 4519 | 4300 | 4519 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 4590 | | 0 | | | |
| AltHallTran | 233904 | 209928 | 233904 | 233904 | 209928 | 233904 |
| B92Filterec | 1100 | 663 | 1126 | 1100 | 663 | 1126 |
| HallSensor | 5 | 4 | 5 | 5 | 4 | 5 |
| DiagComm | 21845 | 32768 | 21845 | 120.0275 | 180.044 | 120.0275 |
| EncoderPo | 64586 | 64586 | 64585 | 64586 | 64586 | 64585 |
| MotorElect | 47775 | 47775 | 46410 | 262.5 | 262.5 | 255 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 5 | 4 | 5 | 5 | 4 | 5 |

| | | |
|---|---|---|
| DistanceTr | 7397349 | 7397349 |
| LifetimeCo | 661273 | 661273 |
| Accumulate | 18104 | 18104 |
| FastTherm | 41 | 0.41 |
| ThermalEs | 119 | 1.19 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 4772 | 47.72 |
| CPU_Peak | 12824 | 12824 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 253 | -6 | 166 | 0.24707 | -0.00586 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3581 | 3575 | 3571 | 13.98828 | 13.96484 |
| FilteredVehicleSpeed | 4819 | 4819 | 4818 | 75.29688 | 75.29688 |
| Filt2v5RefVoltage | 12480 | 12480 | 12480 | 2513.672 | 2513.672 |
| AssistanceTorqueDemand | -138 | -544 | 132 | -0.53906 | -2.125 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 26 | 212 | -2 | 0.203125 | 1.65625 |
| DriveStageTemperature | 4693 | 4693 | 4686 | 46.93 | 46.93 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | 31 | 31 | 31 | 31 | 31 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 2610 | | 0 | | |
| AltHallTransitionTime | 15461834 | 15461834 | 15461834 | 15461834 | 15461834 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 5 | 5 | 5 | 5 | 5 |
| DiagCommutationCentrePosition | 21845 | 21845 | 21845 | 120.0275 | 120.0275 |
| EncoderPositionRegister | 40 | 39 | 39 | 40 | 39 |
| MotorElectricalPosition | 9555 | 8190 | 8190 | 52.5 | 45 |
| AltNewHallEvent | 0 | 0 | 0 | 0 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 5 | 5 | 5 | 5 | 5 |

| | | |
|---|---|---|
| DistanceTravelled | 13920655 | 13920655 |
| LifetimeCounter | 1087249 | 1087249 |
| AccumulatedColumnMovement | 26318 | 26318 |
| FastThermalEstTemperatureRise | 6 | 0.06 |
| ThermalEstTemperatureRise | 14 | 0.14 |
| VehicleTuneSelector | 4 | 4 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 4027 | 40.27 |
| CPU_PeakLoadHold | 12942 | 12942 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| padding | 0 | |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
0.162109
0
13.94922
75.28125
2513.672
0.515625
0
-0.01563
46.86
100
1
31
3
2

15461834
0
5
120.0275
39
45
0
0
960
1
5

| | | HALL | | | | Diag comm state | | | | Encoder Posn Reg | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0030 | U502 | 5 | 1 | 5 | | 120.0275 | 60.01648 | 120.0275 | | 1548 | 1543 |
| UR0045 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 65405 | 65406 |
| UR0047 | U502 | 4 | 4 | 4 | | 180.044 | 180.044 | 180.044 | | 2 | 2 |
| UR0048 | U502 | 2 | 2 | 2 | | 300.0714 | 300.0714 | 300.0714 | | 65339 | 65339 |
| Redacted for Relevance | | | | | | | | | | | |
| UR0059 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 2 | 2 |
| UR0060 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 0 | 0 |
| UR0061 | U502 | 4 | 4 | 4 | | 180.044 | 180.044 | 180.044 | | 1731 | 1731 |
| UR0062 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 65535 | 65535 |
| UR0063 | U502 | 6 | 6 | 6 | | 240.0604 | 240.0604 | 240.0604 | | 62174 | 62174 |
| UR0064 | U502 | 6 | 4 | 4 | | 240.0604 | 180.044 | 180.044 | | 1123 | 1123 |
| UR0065 | U502 | | | | | | | | | | |
| UR0066 | U502 | 4 | 4 | 4 | | 180.044 | 180.044 | 180.044 | | 65519 | 65519 |
| UR0067 | U502 | 3 | 3 | 3 | | 0 | 0 | 0 | | 254 | 254 |
| UR0068 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 65302 | 65301 |
| UR0069 | U502 | 2 | 6 | 6 | | 300.0714 | 240.0604 | 240.0604 | | 61974 | 61973 |
| UR0070 | U502 | 2 | 6 | 6 | | 300.0714 | 240.0604 | 240.0604 | | 65134 | 65130 |
| UR0071 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 550 | 550 |
| UR0073 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 64767 | 64768 |
| UR0075 | U502 | | | | | | | | | | |
| UR0076 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 65402 | 65403 |
| UR0077 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 431 | 431 |
| UR0079 | U502 | | | | | | | | | | |
| UR0080 | U502 | | | | | | | | | | |
| Redacted for Relevance | | | | | | | | | | | |
| UR0081 | U502 | 2 | 2 | 2 | | 300.0714 | 300.0714 | 300.0714 | | 2 | 2 |
| UR0082 | U502 | 6 | 6 | 6 | | 240.0604 | 240.0604 | 240.0604 | | 65426 | 65426 |
| UP0083 | U502 | 3 | 3 | 3 | | 0 | 0 | 0 | | 1446 | 1447 |
| UR0084 | U502 | 1 | 1 | 1 | | 60.01648 | 60.01648 | 60.01648 | | 114 | 115 |
| UR0085 | U502 | 2 | 6 | 2 | | 300.0714 | 240.0604 | 300.0714 | | 2532 | 2532 |
| UR0087 | U502 | 3 | 3 | 3 | | 0 | 0 | 0 | | 68 | 68 |
| UR0088 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 65341 | 65341 |
| UR0089 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 720 | 720 |
| UR0092 | U502 | 3 | 3 | 3 | | 0 | 0 | 0 | | 262 | 261 |
| UR0095 | U502 | 5 | 4 | 5 | | 120.0275 | 180.044 | 120.0275 | | 64586 | 64586 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0096 | U502 | 5 | 5 | 5 | | 120.0275 | 120.0275 | 120.0275 | | 40 | 39 |

| | | Motor Elec Position | | |
|---|---|---|---|---|
| 1554 | | 164.3516 | 122.2747 | 202.1703 |
| 65406 | | 345 | 352.5 | 352.5 |
| 2 | | 270 | 270 | 270 |
| 65339 | | 3.664835 | 3.664835 | 360 |
| 2006 | | 74.91209 | 74.91209 | 82.41209 |
| 0 | | 22.5 | 22.5 | 22.5 |
| 63316 | | 187.4121 | 187.4121 | 187.4121 |
| 0 | | 262.5 | 262.5 | 270 |
| | | 52.41209 | | |
| | | 292.5 | | |
| | | | | |
| | | 262.5 | | |
| | | 232.5 | | |
| | | | | |
| | | 56.16484 | | |
| | | 322.5 | | |
| | | 322.5 | | |
| 2 | | 202.5 | 202.5 | 202.5 |
| 0 | | 202.5 | 202.5 | 202.5 |
| 1731 | | 119.9121 | 119.9121 | 119.9121 |
| 65535 | | 15 | 15 | 15 |
| 62174 | | 322.5 | 322.5 | 322.5 |
| 1124 | | 104.9121 | 104.9121 | 112.4121 |
| | | | | |
| 65519 | | 240 | 240 | 240 |
| 254 | | 112.4121 | 112.4121 | 112.4121 |
| 65301 | | 52.41209 | 44.91209 | 44.91209 |
| 61974 | | 172.4121 | 164.9121 | 164.9121 |
| 65132 | | 218.7418 | 182.6319 | 202.1429 |
| 550 | | 322.5 | 322.5 | 322.5 |
| 64767 | | 315 | 322.5 | 315 |
| | | | | |
| 65401 | | 352.5 | 357.6264 | 345 |
| 431 | | 360 | 360 | 360 |
| | | | | |
| | | | | |
| 688 | | 330 | 330 | 337.5 |
| 65534 | | 150 | 150 | 150 |
| 2830 | | 202.4121 | 194.9121 | 202.4121 |
| 62690 | | 89.91209 | 97.41209 | 97.41209 |
| 931 | | 322.5 | 322.5 | 315 |
| | | | | |
| | | | | |
| 2 | | 22.5 | 22.5 | 22.5 |
| 65426 | | 322.5 | 322.5 | 322.5 |
| 1446 | | 112.4121 | 119.9121 | 112.4121 |
| 113 | | 322.5 | 330 | 315 |
| 2531 | | 172.4121 | 172.4121 | 164.9121 |
| 68 | | 112.5 | 112.5 | 112.5 |
| 65341 | | 225 | 225 | 225 |
| 719 | | 52.41209 | 52.41209 | 44.91209 |
| 262 | | 82.41209 | 74.91209 | 82.41209 |
| 64585 | | 262.5 | 262.5 | 255 |

| | | | | |
|---|---|---|---|---|
| 39 | | 52.5 | 45 | 45 |

| | | | | | |
|---|---|---|---|---|---|
| MotorMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| ColumnTorque | 3133 | 3433 | 3727 | 3.05957 | 3.352539 |
| ColumnVelocity | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3029 | 3021 | 3017 | 11.83203 | 11.80078 |
| FilteredVehicleSpeed | 0 | 0 | 0 | 0 | 0 |
| Filt2v5RefVoltage | 12469 | 12469 | 12469 | 2511.456 | 2511.456 |
| AssistanceTorqueDemand | 9963 | 11624 | 13570 | 38.91797 | 45.40625 |
| FilteredMechanicalVelocity | 0 | 0 | 0 | 0 | 0 |
| QAxisCurrent | 6234 | 7176 | 8309 | 48.70313 | 56.0625 |
| DriveStageTemperature | 1996 | 1996 | 1996 | 19.96 | 19.96 |
| TorqueLimit | 25000 | 25000 | 25000 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 |
| ASP | -20446 | -20446 | -20450 | -20446 | -20446 |
| EcuM__rootState_active | 3 | 3 | 3 | 3 | 3 |
| sSystemMode__rootState_active | 2 | 2 | 2 | 2 | 2 |
| Padding | 1 | | 12469 | | |
| AltHallTransitionTime | 2613265 | 2613265 | 2613265 | 2613265 | 2613265 |
| B92FilteredMotorVelocityError | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 6 | 6 | 6 | 6 | 6 |
| DiagCommutationCentrePosition | 10923 | 10923 | 10923 | 60.01648 | 60.01648 |
| EncoderPositionRegister | 2 | 1 | 1 | 2 | 1 |
| MotorElectricalPosition | 58695 | 57330 | 57330 | 322.5 | 315 |
| AltNewHallEvent | 1 | 0 | 0 | 1 | 0 |
| AltMotorElectricalVelocity | 0 | 0 | 0 | 0 | 0 |
| B92MotorVelocityErrorLimit | 960 | 960 | 960 | 960 | 960 |
| AltRotorDirection | 1 | 1 | 1 | 1 | 1 |
| AltMotorCommutationState | 6 | 6 | 6 | 6 | 6 |

| | | |
|---|---|---|
| DistanceTravelled | 12187035 | 12187035 |
| LifetimeCounter | 767173 | 767173 |
| AccumulatedColumnMovement | 15994 | 15994 |
| FastThermalEstTemperatureRise | 50 | 0.5 |
| ThermalEstTemperatureRise | 503 | 5.03 |
| VehicleTuneSelector | 18 | 18 |
| MotorTuneSelector | 1 | 1 |
| EmulationModeStatus | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffDriveStageTemperature | 5355 | 53.55 |
| CPU_PeakLoadHold | 14671 | 14671 |
| TorqueReInstatmentFlag | 1 | 1 |
| IncompletePowerDownTestCount | 1 | 1 |
| SchedulerUnderrunFaultCount | 0 | Not scaled |
| LRE_PositionState | 0 | 0 |
| PositionExtrapActive | 0 | 0 |
| EncoderOffset | 0 | 0 |
| MotorReversal | 0 | 0 |

0
3.639648
0
11.78516
0
2511.456
53.00781
0
64.91406
19.96
100
1
-20450
3
2

2613265
0
6
60.01648
1
315
0
0
960
1
6

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | -1448 | -1482 | -1482 | -1.41406 | -1.44727 | -1.44727 |
| ColumnVel | -3 | -3 | -3 | -0.00293 | -0.00293 | -0.00293 |
| vBatt | 3185 | 3182 | 3180 | 12.44141 | 12.42969 | 12.42188 |
| FilteredVel | 1835 | 1832 | 1835 | 28.67188 | 28.625 | 28.67188 |
| Filt2v5Ref\ | 12408 | 12408 | 12408 | 2499.17 | 2499.17 | 2499.17 |
| Assistance | -190 | -377 | -173 | -0.74219 | -1.47266 | -0.67578 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | -114 | -197 | -114 | -0.89063 | -1.53906 | -0.89063 |
| DriveStage | 5287 | 5287 | 5284 | 52.87 | 52.87 | 52.84 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | -50 | -50 | -50 | -50 | -50 | -50 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 1 | | 12407 | | | |
| AltHallTran | 15833944 | 15833944 | 39895842 | 15833944 | 15833944 | 39895842 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 4 | 4 | 4 | 4 | 4 | 4 |
| DiagComm | 0 | 0 | 0 | 0 | 0 | 0 |
| EncoderPo | 61852 | 61852 | 61852 | 61852 | 61852 | 61852 |
| MotorElect | 20459 | 20459 | 20459 | 112.4121 | 112.4121 | 112.4121 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | -1 | -1 | -1 | -1 | -1 | -1 |
| AltMotorCo | 4 | 4 | 6 | 4 | 4 | 6 |

| | | |
|---|---|---|
| DistanceTr | 11629231 | 11629231 |
| LifetimeCo | 838719 | 838719 |
| Accumulate | 18840 | 18840 |
| FastTherm | 54 | 0.54 |
| ThermalEs | 378 | 3.78 |
| VehicleTun | 18 | 18 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6035 | 60.35 |
| CPU_Peak | 14750 | 14750 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| SchedulerU | 0 | Not scaled |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| MotorMech | 0 | 0 | 0 | 0 | 0 | 0 |
| ColumnTor | -1602 | -1692 | -1777 | -1.56445 | -1.65234 | -1.73535 |
| ColumnVel | 0 | 0 | 0 | 0 | 0 | 0 |
| vBatt | 3514 | 3502 | 3494 | 13.72656 | 13.67969 | 13.64844 |
| FilteredVel | 0 | 0 | 0 | 0 | 0 | 0 |
| Filt2v5Ref\ | 12376 | 12376 | 12376 | 2492.725 | 2492.725 | 2492.725 |
| Assistance | -2471 | -2677 | -2925 | -9.65234 | -10.457 | -11.4258 |
| FilteredMe | 0 | 0 | 0 | 0 | 0 | 0 |
| QAxisCurre | 1120 | 1229 | 1318 | 8.75 | 9.601563 | 10.29688 |
| DriveStage | 4340 | 4337 | 4335 | 43.4 | 43.37 | 43.35 |
| TorqueLimi | 25000 | 25000 | 25000 | 100 | 100 | 100 |
| IgnitionOn | 1 | 1 | 1 | 1 | 1 | 1 |
| ASP | 0 | 0 | 0 | 0 | 0 | 0 |
| EcuM__roc | 3 | 3 | 3 | 3 | 3 | 3 |
| sSystemM | 2 | 2 | 2 | 2 | 2 | 2 |
| Padding | 4295 | | 0 | | | |
| AltHallTran | 3299999 | 3299999 | 3299999 | 3299999 | 3299999 | 3299999 |
| B92Filterec | 0 | 0 | 0 | 0 | 0 | 0 |
| HallSensor | 1 | 1 | 1 | 1 | 1 | 1 |
| DiagComm | 10923 | 10923 | 10923 | 60.01648 | 60.01648 | 60.01648 |
| EncoderPo | 2 | 2 | 1 | 2 | 2 | 1 |
| MotorElect | 58695 | 58695 | 57330 | 322.5 | 322.5 | 315 |
| AltNewHall | 0 | 0 | 0 | 0 | 0 | 0 |
| AltMotorEle | 0 | 0 | 0 | 0 | 0 | 0 |
| B92MotorV | 960 | 960 | 960 | 960 | 960 | 960 |
| AltRotorDir | 1 | 1 | 1 | 1 | 1 | 1 |
| AltMotorCo | 1 | 1 | 1 | 1 | 1 | 1 |

| | | |
|---|---|---|
| DistanceTr | 7400557 | 7400557 |
| LifetimeCo | 505705 | 505705 |
| Accumulate | 12403 | 12403 |
| FastTherm | 31 | 0.31 |
| ThermalEs | 66 | 0.66 |
| VehicleTun | 3 | 3 |
| MotorTune | 1 | 1 |
| EmulationM | 0 | 0 |
| PDCStatus | 1 | 1 |
| PowerOffD | 6552 | 65.52 |
| CPU_Peak | 13594 | 13594 |
| TorqueRel | 1 | 1 |
| Incomplete | 1 | 1 |
| padding | 0 | |
| LRE_Positi | 0 | 0 |
| PositionExt | 0 | 0 |
| EncoderOf | 0 | 0 |
| MotorReve | 0 | 0 |

| Reference Number | Platform | Failure Location | RUA | Root Cause | Status | MotorMechanicalVelocity | ColumnTorque | ColumnVelocity | MotorMechanicalVelocity / ColumnVelocity | vBatt | FilteredVehicleSpeed | Filt2v5RefVoltage | AssistanceTorqueDemand | FilteredMechanicalVelocity | QAxisCurrent | DriveStageTemperature | TorqueLimit | IgnitionOn | ASP | EcuM__rootState_active | sSystemMode__rootState_active | AltHallTransitionTime | B92FilteredMotorVelocityError | HallSensor | DiagCommutationCentrePosition | EncoderPositionRegister | MotorElectricalPosition | Error | AltNewHallEvent | AltMotorElectricalVelocity | B92MotorVelocityErrorLimit | AltRotorDirection | AltMotorCommutationState | Hall A | Hall B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0030 | U502 | Warranty | 4878 | Under Analysis | Open | -5.23438 | -2.2334 | 0.22168 | #VALUE! | 13.06 | 30.59375 | 2498.163 | -11.2852 | -5.23438 | 9.960938 | 41.05 | 100 | 1 | -6184 | 3 | 2 | 437971 | 270 | 5 | 120.0275 | 1554 | 202.1703 | 82.14286 | 1 | -1609 | 1395 | -1 | 5 | 1 | 0 |
| UR0045 | U502 | Warranty | 4998 | Under Analysis | Open | 0.570313 | -1.53125 | -0.00293 | -23.6123 | 12.91 | 0 | 2496.954 | -10.8242 | 0.570313 | 10.28125 | 31.37 | 100 | 1 | 213 | 3 | 2 | 1373942 | 76 | 1 | 60.01648 | 65406 | 352.5 | 292.4835 | 0 | 0 | 960 | 1 | 1 | 1 | 0 |
| UR0047 | U502 | Warranty | | Under Analysis | Open | 0 | 2.219727 | 0 | -194.667 | 14.01 | 0 | 2520.52 | 18.13672 | 0 | -16.4922 | 46.6 | 100 | 1 | 0 | 3 | 2 | 3959996 | 0 | 4 | 180.044 | 2 | 270 | 89.95604 | 0 | 0 | 960 | -1 | 4 | 0 | 0 |
| UR0048 | U502 | Warranty | 5074 | Under Analysis | Open | 0.140625 | 0.09375 | -0.00879 | #DIV/0! | 12.93 | 28.375 | 2504.407 | 0.128906 | 0.140625 | 0.054688 | 48.09 | 100 | 1 | -86 | 3 | 2 | 57371899 | 0 | 2 | 300.0714 | 65339 | 360 | 59.92857 | 0 | 18 | 964 | -1 | 2 | 0 | 1 |
| UR0059 | U502 | Warranty | | Under Analysis | Open | 0 | 0.795898 | 0 | #DIV/0! | 13.78906 | 0 | 2502.191 | 3.199219 | 0 | -2.89063 | 37.43 | 100 | 1 | 0 | 3 | 2 | 26573893 | 0 | 5 | 120.0275 | 2 | 202.5 | 82.47253 | 0 | 0 | 960 | -1 | 5 | 1 | 0 |
| UR0060 | U502 | Warranty | | Under Analysis | Open | 0 | 0.93457 | 0 | #DIV/0! | 14.0625 | 0 | 2501.385 | 3.308594 | 0 | -2.91406 | 28.27 | 100 | 1 | 0 | 3 | 2 | 21408100 | 0 | 5 | 120.0275 | 0 | 202.5 | 82.47253 | 0 | 0 | 960 | -1 | 5 | 1 | 0 |
| UR0061 | U502 | Warranty | | Under Analysis | Open | 0 | -0.68555 | 0 | #DIV/0! | 13.76563 | 0 | 2500.983 | -2.51953 | 0 | 2.351563 | 57.07 | 100 | 1 | 163 | 3 | 2 | 1.32E+08 | 0 | 4 | 180.044 | 1731 | 119.9121 | -60.1319 | 1 | 0 | 960 | 1 | 4 | 0 | 0 |
| UR0062 | U502 | Warranty | | Under Analysis | Open | 0 | -0.75293 | 0 | #DIV/0! | 13.62891 | 0 | 2487.085 | -5.23047 | 0 | 5.054688 | 50.16 | 100 | 1 | 0 | 3 | 2 | 2567874 | 0 | 5 | 120.0275 | 65535 | 15 | -105.027 | 0 | 0 | 960 | 1 | 5 | 1 | 0 |
| UR0063 | U502 | Warranty | | Under Analysis | Open | 0 | 0.589844 | -0.00293 | #DIV/0! | 12.87109 | 10.53125 | 2507.025 | 0.328125 | 0 | -0.42188 | 58.98 | 100 | 1 | -22 | 3 | 2 | 2783903 | 0 | 6 | 240.0604 | 62174 | 322.5 | 82.43956 | 0 | 0 | 960 | -1 | 6 | 0 | 1 |
| UR0064 | U502 | Warranty | | Under Analysis | Open | 11.05469 | 2.421875 | -0.16016 | 0 | 13.66016 | 27.10938 | 2492.725 | 7.476563 | 11.05469 | 2.632813 | 70.29 | 100 | 1 | 3759 | 3 | 2 | 258024 | 604 | 4 | 180.044 | 1124 | 112.4121 | -67.6319 | 0 | 0 | 960 | 1 | 4 | 0 | 0 |
| UR0065 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | | | 0 | | | | | | | |
| UR0066 | U502 | Warranty | | Under Analysis | Open | -0.01563 | 1.276367 | 0 | #DIV/0! | 13.61328 | 0 | 2492.12 | 7.503906 | -0.01563 | -6.85938 | 51.82 | 100 | 1 | 0 | 3 | 2 | 26363944 | 0 | 4 | 180.044 | 65519 | 240 | 59.95604 | 0 | -3 | 961 | -1 | 4 | 0 | 0 |
| UR0067 | U502 | Warranty | | Under Analysis | Open | 0 | 1.569336 | -0.00293 | #DIV/0! | 14.02344 | 3.1875 | 2494.537 | 8.910156 | 0 | -7.82813 | 33.71 | 100 | 1 | -418 | 3 | 2 | 34602106 | 0 | 3 | 0 | 254 | 112.4121 | 112.4121 | 0 | 0 | 960 | -1 | 3 | 1 | 1 |
| UR0068 | U502 | Warranty | | Under Analysis | Open | 0 | 0.568359 | -0.00293 | 0 | 12.75781 | 91.5625 | 2492.926 | 1.058594 | 0 | -0.36719 | 66.52 | 100 | 1 | 18 | 3 | 2 | 16955997 | 0 | 5 | 120.0275 | 65301 | 44.91209 | -75.1154 | 0 | 0 | 960 | 1 | 5 | 1 | 0 |
| UR0069 | U502 | Warranty | | Under Analysis | Open | 4.867188 | 1.321289 | -0.03906 | 0 | 12.875 | 9.8125 | 2507.428 | 4.828125 | 4.867188 | 1.40625 | 59.18 | 100 | 1 | 19333 | 3 | 2 | 402040 | 0 | 6 | 240.0604 | 61974 | 164.9121 | -75.1484 | 0 | 0 | 960 | 1 | 6 | 0 | 1 |
| UR0070 | U502 | Warranty | | Under Analysis | Open | 3.625 | 2.24707 | -0.18555 | -124.6 | 14.14844 | 26.95313 | 2511.456 | 7.6875 | 3.625 | -7.01563 | 32.12 | 100 | 1 | 3026 | 3 | 2 | 804000 | 85 | 6 | 240.0604 | 65132 | 202.1429 | -37.9176 | 0 | 777 | 1169 | 1 | 6 | 0 | 1 |
| UR0071 | U502 | Warranty | | Under Analysis | Open | 0 | -2.24414 | -0.00293 | -19.5368 | 14.10547 | 81.5625 | 2494.336 | -4.44531 | 0 | 4.203125 | 42.6 | 100 | 1 | -354 | 3 | 2 | 34398008 | 0 | 1 | 60.01648 | 550 | 322.5 | 262.4835 | 0 | 0 | 960 | 1 | 1 | 1 | 0 |
| UR0073 | U502 | Warranty | | Under Analysis | Open | 0.421875 | -2.92676 | -0.00293 | 0 | 13.59375 | 27.64063 | 2481.848 | -14.9063 | 0.421875 | 15.1875 | 63.94 | 100 | 1 | -136 | 3 | 2 | 791913 | 448 | 1 | 60.01648 | 64767 | 315 | 254.9835 | 0 | 0 | 960 | 1 | 1 | 1 | 0 |
| UR0075 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UR0076 | U502 | Warranty | | Under Analysis | Open | 1.273438 | -1.3877 | -0.00391 | #DIV/0! | 12.90234 | 4.875 | 2501.587 | -4.91016 | 1.273438 | 5.28125 | 41.05 | 100 | 1 | 555 | 3 | 2 | 1175927 | 94 | 1 | 60.01648 | 65401 | 345 | 284.9835 | 0 | 0 | 960 | 1 | 1 | 1 | 0 |
| UR0077 | U502 | Warranty | | Under Analysis | Open | 0 | 0.426758 | -0.00293 | -326 | 12.98047 | 53.39063 | 2487.689 | 1.164063 | 0 | -0.99219 | 49.53 | 100 | 1 | -68 | 3 | 2 | 1344013 | 0 | 1 | 60.01648 | 431 | 360 | 299.9835 | 0 | 0 | 960 | 1 | 1 | 1 | 0 |
| UR0079 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UR0080 | U502 | Warranty | | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Redacted for Relevance

Redacted for Relevance

| Hall C | Distance Travelled | LifetimeCounter | AccumulatedColumnMovement | FastThermalEstTemperatureRise | ThermalEstTemperatureRise | VehicleTuneSelector | MotorTuneSelector | EmulationModeStatus | PDCStatus | PowerOffDriveStageTemperature | CPU_PeakLoadHold | TorqueReInstatementFlag | IncompletePowerDownTestCount | padding | LRE_PositionState | PositionExtrapActive | Encoder Offset | MotorReversal | Journey time to Fault - Fault 1 (sec) | Journey time to Fault - Fault 2 (sec) | Journey time to Fault - Fault 3 (sec) | Journey time to Fault - Fault 4 (sec) | Journey time to Fault - Fault 5 (sec) | Journey time to Fault - Fault 6 (sec) | Journey time to Fault - Fault 7 (sec) | Journey time to Fault - Fault 8 (sec) | Average number of journeys between faults | Primary B Code | Other B Codes? | B9A LICs | E22 Faults | E22 LICs | Other LICs? | EPP Build Date | ECU Build Date | PFS Build Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12571795 | 760329 | 18335 | 0.18 | 0.52 | 4 | 1 | 0 | 1 | 46.78 | 13577 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 811 | - | - | - | - | - | - | - | 12 | B9A | None | 0 | 0 | 0 | E12 | 15-Oct-10 | 26-Sep-10 | 29-Sep-10 |
| 0 | 2385052 | 308188 | 11188 | 0.05 | 0.9 | 3 | 1 | 0 | 1 | 31.71 | 12847 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 10 | - | - | - | - | - | - | 13 | B9A | None | 0 | 0 | 0 | 0 | 29-Jan-11 | 24-Jan-11 | 29-Jan-11 |
| 1 | 5268408 | 372483 | 8911 | 0.61 | 2.36 | 4 | 1 | 0 | 1 | 52 | 13540 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 861 | 15 | - | - | - | - | - | - | 26 | B9A | None | 0 | 0 | 0 | 0 | 13-Feb-11 | 26-Oct-10 | 12-Feb-11 |
| 0 | 4538883 | 423415 | 10821 | 0.22 | 1.32 | 3 | 1 | 0 | 1 | 46.33 | 12960 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 110 | - | - | - | - | - | - | - | - | B9A | None | 0 | 0 | 0 | E12 E66 | 26-Dec-10 | 25-Dec-10 | 21-Dec-10 |
| 1 | 12047049 | 1056744 | 27303 | 0.18 | 0.4 | 1 | 0 | 0 | 1 | 56.48 | 13551 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 3.4 | 810 | 474 | 933 | 770 | 113 | - | - | 20 | B9A | None | 0 | 0 | 0 | 0 | 3-Nov-10 | 3-Nov-10 | 2-Nov-10 |
| 0 | 20793 | 5907 | 1004 | 0.63 | 1.41 | 1 | 0 | 0 | 1 | 27.61 | 13442 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 278 | 20 | - | - | - | - | - | - | 5 | B9A | None | 0 | 0 | 0 | 0 | 6-Oct-10 | 8-Sep-10 | 28-Aug-10 |
| 0 | 21789 | 6922 | 364 | 2.12 | 1.22 | 1 | 0 | 0 | 1 | 44.39 | 13463 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 185 | 134 | 58 | 18 | 3 | - | - | - | 1 | B9A | C69 | 0 | 0 | 0 | 0 | 7-Mar-11 | 5-Mar-11 | 6-Mar-11 |
| 1 | 4681441 | 418815 | 16348 | 0.29 | 0.88 | 1 | 0 | 0 | 1 | 40.02 | 13543 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1241 | 6 | 74 | - | - | - | - | - | 4 | B9A | None | 0 | 0 | 0 | 0 | 24-Jan-11 | 22-Jan-11 | 22-Jan-11 |
| 1 | 6856982 | 589012 | 17995 | 1.54 | 1.79 | 1 | 0 | 0 | 1 | 50.5 | 13558 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 627 | 262 | - | - | - | - | - | - | 139 | B9A | None | 0 | 0 | 0 | 0 | 2-Nov-10 | 29-Oct-10 | 30-Oct-10 |
| 1 | 12420083 | 1078333 | 29011 | 0.29 | 0.38 | 1 | 0 | 0 | 1 | 30.62 | 13651 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1415 | - | - | - | - | - | - | - | 7 | B9A | None | 0 | 0 | 0 | E12 | 2-Nov-10 | 28-Aug-10 | 29-Oct-10 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | B38 | B4E | | | | | | | |
| 0 | 413872 | 34948 | 2104 | 0.41 | 1.26 | 18 | 1 | 0 | 1 | 36.42 | 14647 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 60 | 371 | 715 | 125 | 212 | 43 | 16 | 418 | 245 | B9A | C69 | 56 | 0 | 0 | E12,E2E | 17-Mar-11 | 16-Mar-11 | 16-Mar-11 |
| 1 | 6432556 | 681295 | 17260 | 3.57 | 3.33 | 3 | 1 | 0 | 1 | 64.45 | 12837 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 212 | 1101 | 1272 | 37 | 1.9 | 74 | 229 | - | 420 | B9A | None | 23 | 0 | 0 | E12 | 27-Jan-11 | 24-Jan-11 | 27-Jan-11 |
| 1 | 8779215 | 2171576 | 102626 | 1.81 | 2.78 | 1 | 0 | 0 | 1 | 69.95 | 13630 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 809 | - | - | - | - | - | - | - | - | B9A | None | 4 | 0 | 1 | E10,E12 | 18-Oct-10 | 28-Sep-10 | 4-Oct-10 |
| 1 | 9574659 | 566635 | 10028 | 0.4 | 0.42 | 1 | 0 | 0 | 1 | 51.45 | 13518 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1076 | - | - | - | - | - | - | - | 4 | B9A | None | 0 | 0 | 0 | E2E, E12 | 11-Nov-10 | 11-Nov-10 | 9-Sep-10 |
| 1 | 3418343 | 410602 | 11335 | 0.26 | 0.69 | 1 | 0 | 0 | 1 | 50.33 | 13547 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 186 | 1.9 | - | - | - | - | - | - | 10 | B9A | None | 0 | 0 | 0 | 0 | 25-Jan-11 | 24-Jan-11 | 25-Jan-11 |
| 1 | 4191383 | 473916 | 14186 | 0 | 0.19 | 3 | 1 | 0 | 1 | 66.01 | 12828 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 676 | 1.4 | - | - | - | - | - | 228 | B9A | None | | | | | 29-Jan-11 | 24-Jan-11 | 27-Jan-11 |
| 1 | 4424043 | 312721 | 8242 | 0.21 | 0.34 | 3 | 1 | 0 | 1 | 57.25 | 12997 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 13 | 18 | 13 | 7 | - | - | 13 | B9A | C69 | | | | | 18-Mar-11 | 6-Mar-11 | 18-Mar-11 |
| 1 | 5803677 | 499711 | 12241 | 0.12 | 0.41 | 3 | 1 | 0 | 1 | 50.59 | 12880 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1174 | - | - | - | - | - | - | - | | B9A | None | | | | | 29-Jan-11 | 24-Jan-11 | 29-Jan-11 |
| 1 | 14872198 | 1061205 | 25712 | 0.19 | 0.31 | 4 | 1 | 0 | 1 | 65.69 | 12932 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | - | - | - | - | - | - | - | | B9A | None | | | | | 28-Jan-11 | 24-Jan-11 | 28-Jan-11 |
| 1 | 22512731 | 1590263 | 39798 | 0.47 | 1.13 | 3 | 1 | 0 | 1 | 66.08 | 13555 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1026 | - | - | - | - | - | - | - | 3 | B9A | None | | | | | 29-Dec-10 | 23-Dec-10 | 28-Dec-10 |
| 1 | 6371624 | 660893 | 18919 | 0.17 | 0.79 | 3 | 1 | 0 | 1 | 54.64 | 12919 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 262 | 1048 | - | - | - | - | - | - | 22 | B9A | None | | | | | 26-Jan-11 | 25-Jan-11 | 26-Jan-11 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 26-Jan-11 | 21-Dec-10 | 26-Jan-11 |
| 1 | 5456520 | 707008 | 19052 | 0.2 | 0.61 | 3 | 1 | 0 | 1 | 53.61 | 12868 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 502 | 15 | - | - | - | - | - | - | 66 | B9A | None | | | | | 13-Nov-10 | 2-Nov-10 | 13-Nov-10 |
| 0 | 7834207 | 699860 | 17725 | 0.09 | 0.22 | 3 | 1 | 0 | 1 | 49.38 | 12829 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 486 | - | - | - | - | - | - | - | 7 | B9A | None | | | | | 15-Jan-11 | 15-Jan-11 | 15-Jan-11 |
| 1 | 10283245 | 981339 | 30246 | 0.94 | 3.88 | 4 | 1 | 0 | 1 | 48.07 | 12899 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 27 | 7 | - | - | - | - | - | 3 | B9A | C69 | | | | | 15-Jan-11 | 14-Jan-11 | 14-Jan-11 |
| 1 | 8395996 | 992239 | 29527 | 0.6 | 0.94 | 3 | 1 | 0 | 1 | 55.09 | 12882 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1115 | 0 | 6 | - | - | - | - | - | 78 | B9A | None | | | | | 30-Oct-10 | 6-Mar-11 | 29-Oct-10 |
| 1 | 3937673 | 401430 | 10469 | 0.43 | 0.78 | 4 | 1 | 0 | 1 | 29.37 | 12840 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 176 | 6 | - | - | - | - | - | - | 8 | B9A | None | | | | | 28-Jan-11 | 24-Jan-11 | 27-Jan-11 |
| 0 | 5414600 | 459294 | 19493 | 0.2 | 0.46 | 3 | 1 | 0 | 1 | 54.09 | 12968 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1963 | 1307 | 137 | 541 | - | - | - | - | 19 | B9A | None | | | | | 3-Mar-11 | 1-Mar-11 | 2-Mar-11 |
| 0 | 2663104 | 458541 | 14612 | 0.14 | 0.49 | 3 | 1 | 0 | 1 | 60.08 | 12883 | 1 | 1 | | 0 | 0 | 0 | 0 | 466 | 5 | - | - | - | - | - | - | 8 | B9A | None | | | | | 17-Mar-11 | 6-Mar-11 | 17-Mar-11 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 2830895 | 283078 | 9542 | 5.64 | 3.72 | 4 | 1 | 0 | 1 | 37.75 | 12956 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 654 | 1180 | 7 | 95 | - | - | - | - | 55 | B9A | None | | | | | 29-Jan-11 | 26-Jan-11 | 29-Jan-11 |
| 0 | 13852987 | 838181 | 14055 | 0.37 | 0.33 | 4 | 1 | 0 | 1 | 38.32 | 12887 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 337 | 5 | 24 | 151 | - | - | - | - | 13 | B9A | None | | | | | 7-Jan-11 | 4-Jan-11 | 4-Jan-11 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 1232248 | 150498 | 7360 | 0.65 | 1.14 | 1 | 0 | 0 | 1 | 24.83 | 13477 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 535 | - | - | - | - | - | - | - | 7 | B9A | None | | | | | 23-Jan-11 | 22-Jan-11 | 22-Jan-11 |
| 0 | 2918534 | 323418 | 13499 | 0.32 | 0.69 | 1 | 0 | 0 | 1 | 40.9 | 13488 | 1 | 1 | | 0 | 0 | 0 | 0 | 2 | 2 | 227 | 203 | - | - | - | - | 27 | B9A | None | | | | | 14-Dec-10 | 9-Dec-10 | 13-Dec-10 |
| 1 | 29789440 | 1766476 | 36332 | 0.14 | 0.44 | 1 | 0 | 0 | 1 | 42.12 | 13568 | 1 | 1 | | 0 | 0 | 0 | 0 | 202 | 0 | 11 | 307 | 362 | 393 | 174 | - | 3 | B9A | None | | | | | 3-Nov-10 | 29-Oct-10 | 29-Oct-10 |
| 1 | 8998565 | 1022664 | 37997 | 2.54 | 3.52 | 1 | 0 | 0 | 1 | 52.91 | 13546 | 1 | 1 | | 0 | 0 | 0 | 0 | 4093 | 1287 | 522 | 104 | 291 | 787 | 4 | 7 | 33 | B9A | None | | | | | 4-Sep-10 | 11-May-10 | 7-Jun-10 |
| 1 | 10639777 | 763666 | 22093 | 0.17 | 0.52 | 1 | 0 | 0 | 1 | 58 | 13530 | 1 | 1 | | 0 | 0 | 0 | 0 | 541 | 11 | 183 | 264 | 484 | - | - | - | 50 | B9A | None | | | | | 17-Nov-10 | 15-Nov-10 | 9-Nov-10 |

| Motor Build Date | Where Failed | Application Code | Main Calibration Data Number | Tune | Location | Mileage | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17-Sep-10 | Warranty | BB53-14D003-BE | BB53-14D004-BG | 4 | Shirley | 7812 | | | |
| 27-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | Shirley | 1482 | | | |
| 28-Dec-10 | Warranty | BB53-14D003-BE | BB53-14D004-BG | 4 | 26 Mile | 3274 | | | |
| 4-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | EDG | 2820 | | | |
| 14-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | Shirley | 7486 | | | |
| 10-Sep-10 | Warranty | AE5C-14D003-BB | AE5C-14D004-BB | | QAO | 13 | | | |
| 9-Feb-11 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | --> Nidec | 14 | | | |
| 22-Dec-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | QAO | 2909 | | | |
| 15-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | QAO | 5221 | | | |
| 14-Oct-10 | Warranty | AE5C-14D003-BC | Comm Error | | Shirley | 7743 | | | |
| | | | AE5C-14D004-BB | | | 7743 | | | |
| 20-Feb-11 | Warranty | BV6T-14C217-AE | BV6T-14C218-AE | 18 | | 1020 | | | |
| 28-Dec-10 | Warranty | BB53-14D003-AE | BB53-14D004-AG | 3 | EDG | | | | |
| 24-Sep-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | |
| 16-Oct-10 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | |
| 4-Jan-11 | Warranty | AE5C-14D003-BC | AE5C-14D004-BB | | | | | | |
| 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 25-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | |
| 27-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 6-Dec-10 | Warranty | BB53-14D003-BE | | | | | | | |
| 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 27-Oct-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 23-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 7-Oct-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 28-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| 20-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | |
| 24-Jan-11 | Warranty | BB53-14D003-AF | | | | | | | |
| | | | | | | | | | |
| 27-Dec-10 | Warranty | BB53-14D003-AF | | | | | | | |
| 24-Dec-10 | Warranty | BB53-14D003-AE | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 20-Dec-10 | Warranty | AE5C-14D003-BC | | | | | | | |
| 23-Nov-10 | Warranty | AE5C-14D003-BC | | | | | | | |
| 14-Oct-10 | Warranty | AE5C-14D003-BC | | | | | | | |
| 19-Aug-10 | Warranty | AE5C-14D003-BA | | | | | | | |
| 17-Oct-10 | Warranty | AE5C-14D003-BC | | | | | | | |

10/14/2011

| | Fallout% | Fallout | Total Checked | Good | Date | MAP Start Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| **2011MY U502** | 0.055% | 48 | 87369 | 87321 | 8/25/2011 | 8/30/2011 |
| Redacted for Relevance | | | | | | |

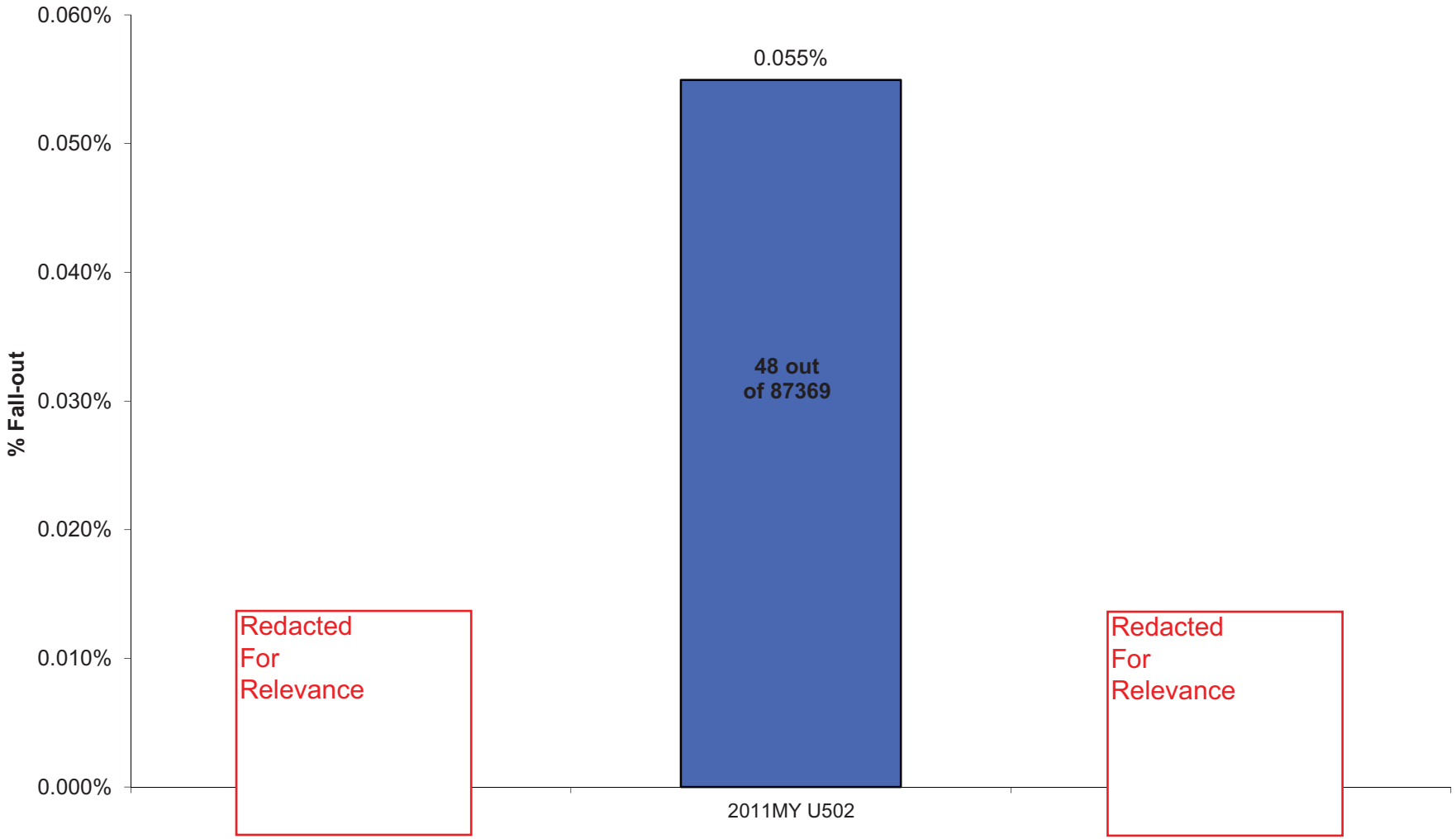
1/6/2012

| | Fallout% | Fallout | Total Checked | Good | Date | MAP Start Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| **2011MY U502** | 0.061% | 56 | 92037 | 91981 | 8/25/2011 | 8/30/2011 |
| Redacted for Relevance | | | | | | |

2/20/2012

| | Fallout% | Fallout | Total Checked | Good | Date | MAP Start Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| **2011MY U502** | 0.068% | 63 | 92037 | 91974 | 8/25/2011 | 8/30/2011 |
| Redacted for Relevance | | | | | | |

# B9A %Fall-out


0.060%
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48 out
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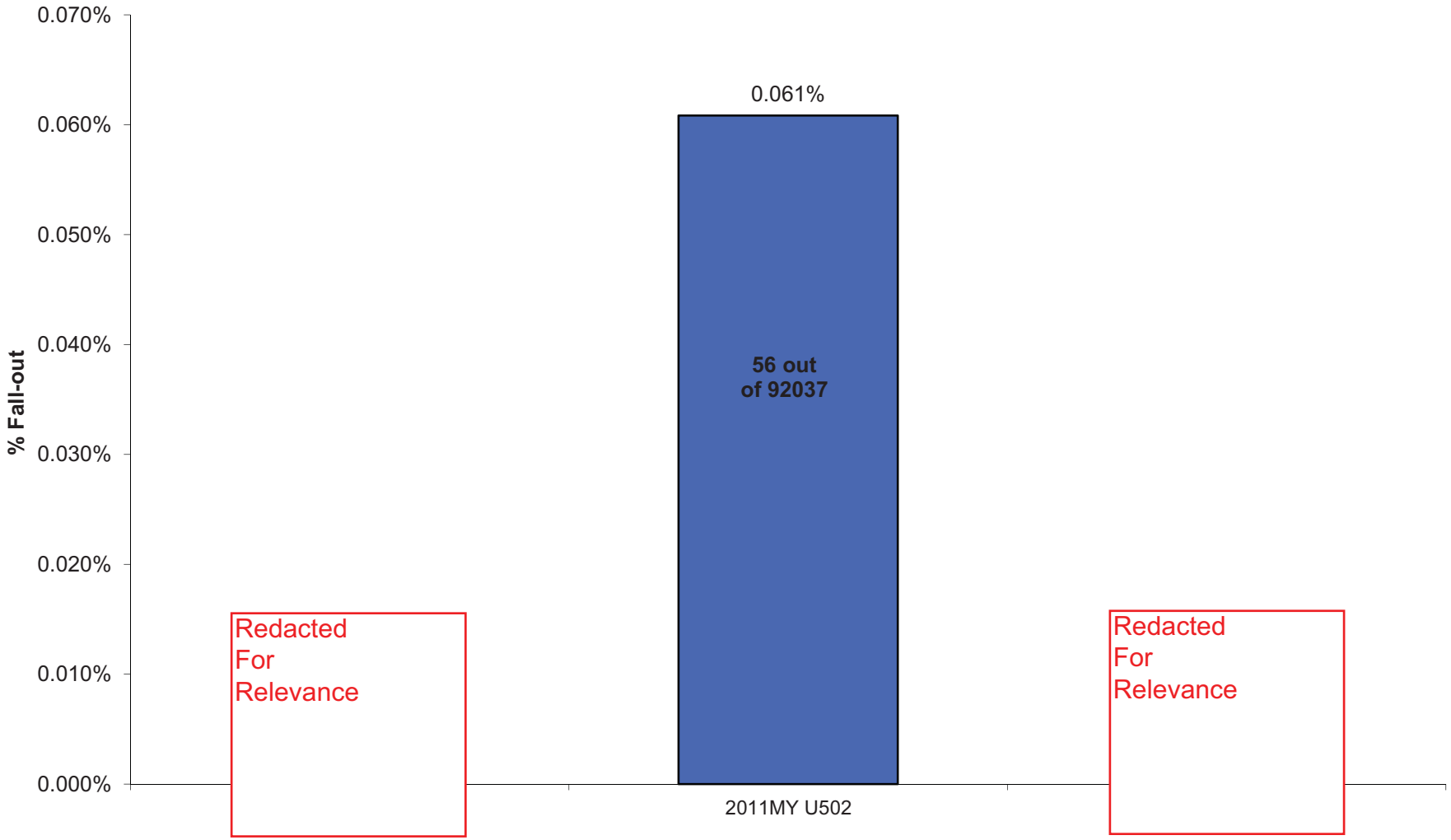
2011MY U502

# B9A %Fall-out


0.070%
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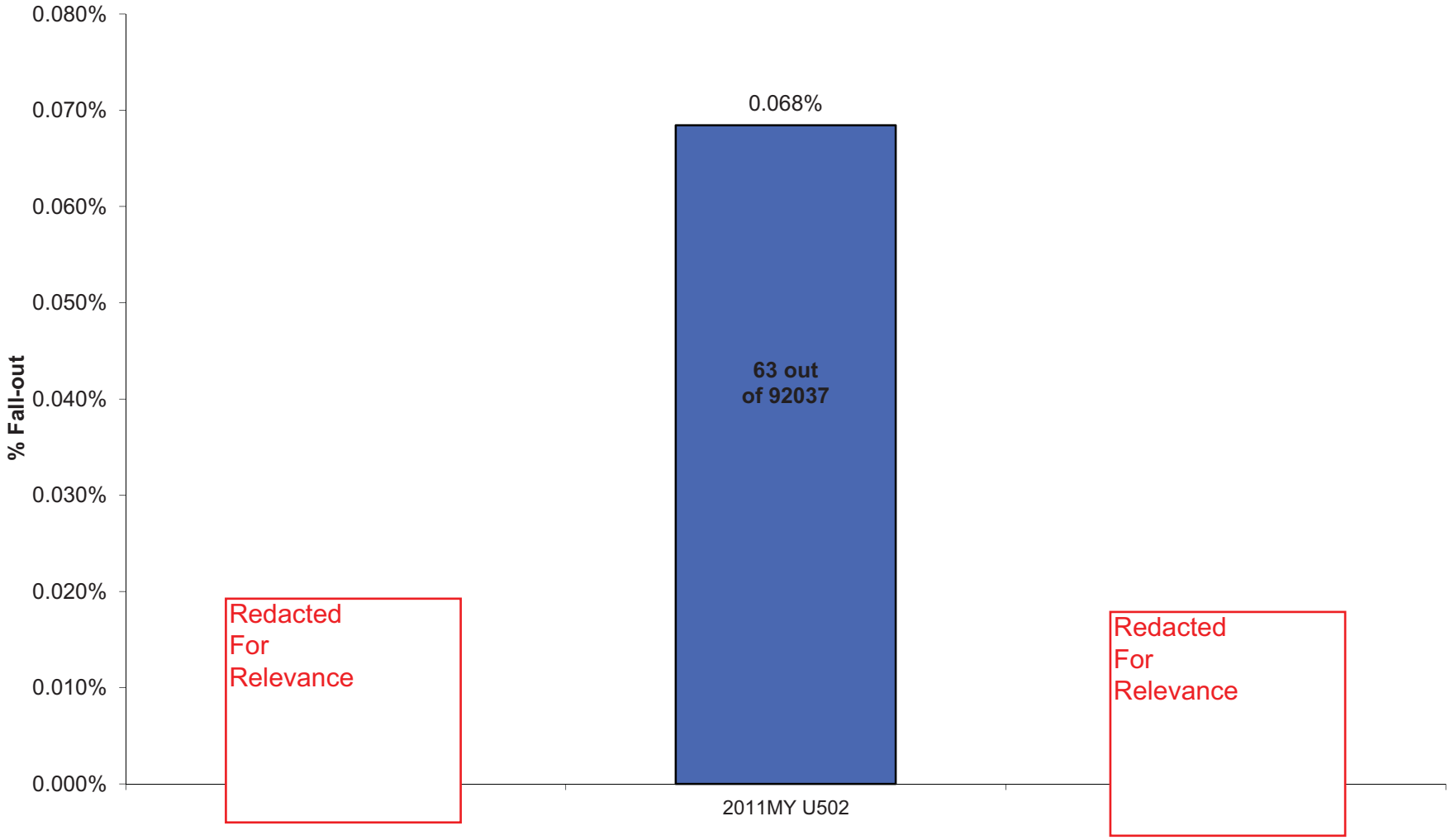
2011MY U502

# B9A %Fall-out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of 92037
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Relevance

**From:** Napoli, Laura (L.)
**Sent:** Thursday, December 22, 2011 10:25 AM
**To:** Perri, Ron (R.J.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

Ron,

I have the most recent numbers for fallout at Tyco, Nidec, and Anting/Shalke/Nove Mesto for the visual inspections they're doing for misalignment and concoat.

Tyco:
Since Nov 12, Tyco is finding 0 misalignment on ribbon cables at EOL with 5x magnification.

Nidec:
For batches of ribbon cables that were built before PCAs were put in place at Tyco, Nidec found 22 out of 14,800 with misalignment.
Since Nov 12, Nidec has 0 fallout at IQ for ribbon cable misalignment when inspected with 5x magnification.
Nidec inspected 69,122 motor assys that were already built before the ribbon cable visual inspections went into place on Nov 12. They found 638 suspect parts. They x-rayed 42 of them and found 9 to be misaligned. They are going through the rest and visually re-checking them with 30x magnification to find which parts are truly misaligned.
Since Nov 11, Nidec has been inspecting motor assys at EOL for conformal coat running from the relay. This is the same day they fixed the conveyor. They have 0 fall out for concoat since this date.
For conformal coat inspections on finished stock, they have quarantined 11k parts. These are parts with any amount of conformal coat at the connector from the relay.

Anting:
From 11/11-11/21, Anting found 15 out of 25,783 assys with protruding wires (misalignment) and rejected these parts.
Anting initially reported that they had 30% fallout for conformal coat at the connector. Since 11/24, they have 0 fallout.

Shalke and Nove Mesto:
Shalke and Nove Mesto have been inspecting for misalignment since Nov 15 with 0 fallout.

Next Steps:
TRW is going through each and every return to determine root cause of B9A and B3A/B43.
There is a study going on between TRW and Nidec with help from Tyco to confirm that conformal coat is the root cause of the high resistance measured on parts that do not have misaligned cables. This is to confirm that there is no other root cause of failure.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Napoli, Laura (L.)
**Sent:** Thursday, December 01, 2011 1:43 PM
**To:** Perri, Ron (R.J.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** B9A Fallout

Ron,

Matt said you wanted to know the part fallout at Tyco, Nidec, and Anting for the con coat and misaligned cable. The info I have right now is the following. I'll have confirmation in tomorrow's 9am meeting.

200/14000 parts were found at Nidec with protruding wires caused by the misalignment. These parts were out of a batch of cables built in Aug 2010 which is before the final PCA was put on the Tyco tooling (9/2/2010).

Nidec has reported that NO concoat parts have been found since the conveyor was fixed.

I need fallout data from Anting and Tyco. I'm not sure if the 1% misalignment and 30% concoat is still accurate at Anting. I'm expecting the 30% concoat fallout to be much lower by now.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

| Reference Number | RUA | Root Cause | Status | MotorMechanicalVelocity | ColumnTorque | ColumnVelocity | MotorMechanicalVelocity / ColumnVelocity | vBatt | FilteredVehicleSpeed | Filt2v5RefVoltage | AssistanceTorqueDemand | FilteredMechanicalVelocity | QAxisCurrent | DriveStageTemperature | TorqueLimit | IgnitionOn | ASP | EcuM__rootState_active | sSystemMode__rootState_active | AltHallTransitionTime | B92FilteredMotorVelocityError | HallSensor | DiagCommutationCentrePosition | EncoderPositionRegister | MotorElectricalPosition | Error |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FR0004 | 2550 | Cable Insertion | Open | | | | | | | | | | | | | | | | | | | | | | | |
| FR0030 | 2983 | Under Analysis | Open | 0 | 1.178710938 | -0.002929688 | 0 | 13.77734375 | 61.0625 | 2511.657715 | -0.19921875 | 0 | 0.234375 | 45.79 | 100 | 1 | 1.5625 | 3 | 2 | 14694005 | 0 | 6 | 240.0604396 | 65440 | 322.5 | 82.43956044 |
| FR0033 | 2983 | Under Analysis | Open | -0.0390625 | 1.958007813 | 0 | #DIV/0! | 13.67578125 | 0 | 2501.184082 | 4.59375 | -0.0390625 | -5.1796875 | 59.53 | 100 | 1 | -16.34375 | 3 | 2 | 1866095 | 0 | 6 | 240.0604396 | 65461 | 315 | 74.93956044 |
| FR0054 | 2983 | Under Analysis | Open | 2.3515625 | -4.002929688 | -0.002929688 | -802.6666667 | 13.828125 | 17.78125 | 2501.385498 | -35.09375 | 2.3515625 | 36.9765625 | 53.87 | 100 | 1 | -104.921875 | 3 | 2 | 431844 | 248 | 2 | 300.0714286 | 1191 | 207.3736264 | -92.6978022 |
| FR0065 | 2983 | Under Analysis | Open | 14.09375 | -4.047851563 | -0.37109375 | -37.97894737 | 13.0703125 | 0 | 2490.106201 | -63.45703125 | 14.09375 | 81.890625 | 41.32 | 100 | 1 | -272.265625 | 3 | 2 | 179944 | 413 | 4 | 180.043956 | 3060 | 82.41208791 | -97.63186813 |
| FR0072 | 3810 | Under Analysis | Open | 0.328125 | -0.719726563 | -0.022460938 | -14.60869565 | 14.0625 | 55.890625 | 2493.328857 | 0.80078125 | 0.328125 | -0.5078125 | 46.68 | 100 | 1 | -0.6875 | 3 | 2 | 35753979 | 0 | 6 | 240.0604396 | 139 | 297.8516484 | 57.79120879 |
| FR0073 | 3588 | Encoder IC | Contained | 0 | 1.299804688 | 0 | #DIV/0! | 14.57421875 | 21.875 | 2493.933105 | 0.3046875 | 0 | -0.2890625 | 35.87 | 100 | 1 | 0.90625 | 3 | 2 | 43746102 | 0 | 3 | 0 | 146 | 112.5 | 112.5 |
| FR0096 | 3811 | Reg Power Up | Open | 0 | 1.678710938 | 0 | #DIV/0! | 12.69921875 | 0 | 2479.632568 | 6.046875 | 0 | -6.6171875 | 25.78 | 5.6 | 1 | 0 | 3 | 2 | 2441876 | 0 | 2 | 300.0714286 | 2 | 22.5 | -277.5714286 |
| FR0097 | 3162 | Under Analysis | Open | 0 | -0.596679688 | -0.002929688 | 0 | 14.015625 | 109.578125 | 2495.343018 | -0.66015625 | 0 | 0.6953125 | 23.92 | 100 | 1 | -2.0625 | 3 | 2 | 416106104 | 0 | 6 | 240.0604396 | 17 | 315 | 74.93956044 |
| FR0108 | 3551 | Reg Power Up | Open | 0 | 1.9140625 | 0 | #DIV/0! | 14.65234375 | 0 | 2495.544434 | 3.3828125 | 0 | -3.484375 | 6.83 | 100 | 1 | 0 | 3 | 2 | 157770003 | 0 | 6 | 240.0604396 | 0 | 330 | 89.93956044 |
| FR0110 | 3688 | Reg Power Up | Open | 0 | -0.500976563 | 0 | #DIV/0! | 14.109375 | 0 | 2485.876465 | -1.05859375 | 0 | 1.046875 | 30.02 | 100 | 1 | 0 | 3 | 2 | 7157869 | 0 | 1 | 60.01648352 | 0 | 330 | 269.9835165 |
| FR0126 | 3408 | Flux Density - Halls | Contained | B4E in EFF | | | | | | | | | | | | | | | | | | | | | | |
| FR0129 | 3500 | Reg Power Up | Open | BD2 in EFF | | | | | | | | | | | | | | | | | | | | | | |
| FR0134 | 3744 | Reg Power Up | Open | 0 | -0.672851563 | 0 | #DIV/0! | 12.90234375 | 0 | 2503.80249 | -1.9375 | 0 | 2.125 | 3.7 | 100 | 1 | 0 | 3 | 2 | 3210001 | 0 | 3 | 0 | 0 | 270 | 270 |
| FR0141 | 3445 | Motor PCB connector solder | Closed | 0 | 1.560546875 | 0 | #DIV/0! | 13.890625 | 0 | 2492.724609 | 3.88671875 | 0 | -4.1171875 | 21.36 | 100 | 1 | 0 | 3 | 2 | 2526023 | 0 | 2 | 300.0714286 | 65534 | 22.5 | 82.5 |
| FR0146 | 3446 | Motor PCB clearance | Closed | 0 | 1.916992188 | 0 | #DIV/0! | 14.66015625 | 0.609375 | 2497.76001 | 3.75 | 0 | -3.96875 | -11.88 | 100 | 1 | 0 | 3 | 2 | 26579958 | 0 | 1 | 60.01648352 | 0 | 150 | 89.98351648 |
| AR657700 | 3680 | Reg Power Up | Open | 0 | 3.836914063 | 0 | #DIV/0! | 14.28515625 | 0 | 2495.947266 | 23.515625 | 0 | -27.2265625 | 26.12 | 100 | 1 | 0 | 3 | 2 | 599956 | 0 | 5 | 120.0274725 | 0 | 202.5 | 82.47252747 |
| FR0158 | 3746 | Reg Power Up | Open | 0 | 1.397460938 | 0 | #DIV/0! | 14.6328125 | 0 | 2493.328857 | 3.74609375 | 0 | -4.0234375 | -5.88 | 100 | 1 | 0 | 3 | 2 | 6906003 | 0 | 2 | 300.0714286 | 0 | 22.5 | -277.5714286 |
| QAO 1 | 3813 | Under Analysis | Open | | | | | | | | | | | | | | | | | | | | | | | |
| QAO 2 | 3812 | Flux Density - Halls | Contained | | | | | | | | | | | | | | | | | | | | | | | |
| QAO 3 | 3812 | Flux Density - Halls | Contained | | | | | | | | | | | | | | | | | | | | | | | |
| FR0174 | 3745 | Reg Power Up | Open | 0 | 2.13671875 | 0 | #DIV/0! | 13.2578125 | 0 | 2507.427978 | 5.48828125 | 0 | -6.375 | 0.56 | 100 | 1 | 0 | 3 | 2 | 1056065 | 0 | 6 | 240.0604396 | 0 | 330 | 89.93956044 |
| FR0177 | 3753 | Reg Power Up | Open | 0 | -1.911132813 | 0 | #DIV/0! | 13.1171875 | 0 | 2506.82373 | -3.890625 | 0 | 4.015625 | 9.31 | 91.6 | 1 | 0 | 3 | 2 | 16139957 | 0 | 4 | 180.043956 | 0 | 90 | -90.04395604 |
| AR354559 | 3681 | Reg Power Up | Open | 0 | -1.211914063 | 0 | #DIV/0! | 14.4921875 | 1.828125 | 2508.435059 | -2.0390625 | 0 | 2.4375 | 26.77 | 100 | 1 | 0 | 3 | 2 | 3887975 | 0 | 2 | 300.0714286 | 0 | 202.5 | -97.57142857 |
| AR661730 | 3682 | Motor PCB clearance | Closed | 0 | 1.997070313 | 0 | #DIV/0! | 14.62109375 | 0 | 2503.399658 | 5.828125 | 0 | -7.25 | 50.26 | 100 | 1 | 0 | 3 | 2 | 1710005 | 0 | 2 | 300.0714286 | 0 | 22.5 | -277.5714286 |
| FR0192 | 3751 | Reg Power Up | Open | 0 | -1.005859375 | 0 | #DIV/0! | 14.73046875 | 0 | 2502.191162 | -3.73828125 | 0 | 4.0234375 | 4.81 | 100 | 1 | 0 | 3 | 2 | 107285913 | 0 | 2 | 300.0714286 | 0 | 202.5 | -97.57142857 |
| DR0022 | 3663 | Cable Insertion | Open | 0 | 0.435546875 | -0.002929688 | 0 | 14.01953125 | 74.9375 | 2484.063721 | -0.84765625 | 0 | 1.0390625 | 41.64 | 100 | 1 | 6.390625 | 3 | 2 | 17765938 | 0 | 2 | 300.0714286 | 2779 | 240 | -60.07142857 |
| FR0204 | 3747 | Reg Power Up | Open | 0 | -1.697265625 | 0 | #DIV/0! | 13.3359375 | 0 | 2499.975586 | -3.3515625 | 0 | 3.78125 | 12.22 | 100 | 1 | 0 | 3 | 2 | 27863959 | 0 | 3 | 0 | 0 | 270 | 270 |
| AR390291 | 3752 | Reg Power Up | Open | 0 | -1.721679688 | 0 | #DIV/0! | 14.48046875 | 0.59375 | 2501.184082 | -3.80078125 | 0 | 4.109375 | 31.72 | 100 | 1 | 0 | 3 | 2 | 2915888 | 0 | 3 | 0 | 0 | 270 | 270 |
| AR378362 | | Under Analysis | Open | -2.53125 | 2.40625 | 0 | #DIV/0! | 14.546875 | 2.421875 | 2504.205322 | 12.40625 | -2.53125 | -12.9453125 | 38.39 | 100 | 1 | -41.453125 | 3 | 2 | 120002 | 16178 | 2 | 300.0714286 | 499 | 303.5879121 | 3.516483516 |
| DR0004 | 3545 | Reg Power Up | Open | EFF suggests Torque Sensor Power Failure (all Widths and Periods = 0) and fault occus at Power Up | | | | | | | | | | | | | | | | | | | | | | |
| FR0229 | | Under Analysis | Open | -0.0390625 | 0.954101563 | 0 | #DIV/0! | 14.3515625 | 122.453125 | 2499.77417 | -0.44921875 | -0.0390625 | 0.421875 | 45.34 | 100 | 1 | -0.453125 | 3 | 2 | 3179943 | 0 | 6 | 240.0604396 | 64395 | 179.9120879 | -60.14835165 |
| FR0234 | | Under Analysis | Open | 19.46875 | -3.283203125 | -0.1796875 | -108.3478261 | 14.51171875 | 10.828125 | 2496.75293 | -26.06640625 | 19.46875 | 21.8828125 | 21.24 | 100 | 1 | 0 | 3 | 2 | 150006 | 5386 | 5 | 120.0274725 | 1620 | 63.75274725 | -56.27472527 |
| FR0197 | 3781 | Reg Power Up | Open | EFF suggests Torque Sensor Power Failure (all Widths and Periods = 0) and fault occus at Power Up | | | | | | | | | | | | | | | | | | | | | | |
| FR0243 | | Under Analysis | Open | 0 | 4.20703125 | 0 | #DIV/0! | 13.3671875 | 0.0625 | 2496.954346 | 54.48046875 | 0 | -58 | 36.33 | 100 | 1 | 0 | 3 | 2 | 17447895 | 0 | 1 | 60.01648352 | 65475 | 120 | 59.98351648 |
| FR0244 | | Under Analysis | Open | 0 | 1.072265625 | 0 | #DIV/0! | 14.25 | 0 | 2491.113281 | 1.2578125 | 0 | -1.375 | 14.79 | 100 | 1 | 0 | 3 | 2 | 16319923 | 0 | 1 | 60.01648352 | 2 | 150 | 89.98351648 |
| FR0249 | | Under Analysis | Open | 4.40625 | -2.83984375 | -0.017578125 | #DIV/0! | 14.37890625 | 1.546875 | 2498.565674 | -22.5703125 | 4.40625 | 27.7890625 | 12.29 | 100 | 1 | 0 | 3 | 2 | 395951 | 395 | 2 | 300.0714286 | 63972 | 202.4120879 | -97.65934066 |
| FR0109 | 3781 | Reg Power Up | Open | EFF suggests Torque Sensor Power Failure (all Widths and Periods = 0) and fault occus at Power Up | | | | | | | | | | | | | | | | | | | | | | |
| FR0265 | | Under Analysis | Open | -1.25 | 2.198242188 | 0 | #VALUE! | 14.13671875 | 11.125 | 2496.954346 | 7.5234375 | -1.25 | -8.953125 | 36.69 | 100 | 1 | -138.953125 | 3 | 2 | 546107 | 985 | 6 | 240.0604396 | 1546 | 322.5 | 82.43956044 |
| FR0266 | | Under Analysis | Open | 0 | -0.046875 | 0 | #DIV/0! | 14.09765625 | 0 | 2496.75293 | 0 | 0 | 0.2109375 | 20.75 | 100 | 1 | 0 | 3 | 2 | 1913483962 | 0 | 3 | 0 | 0 | 270 | 270 |
| FR0268 | | Under Analysis | Open | 0 | 1.198242188 | 0 | #DIV/0! | 13.7890625 | 0.078125 | 2497.357178 | 0.875 | 0 | -0.9765625 | 35.83 | 100 | 1 | 0 | 3 | 2 | 55098060 | 0 | 5 | 120.0274725 | 0 | 202.5 | 82.47252747 |

| AltNewHallEvent | AltMotorElectricalVelocity | B92MotorVelocityErrorLimit | AltRotorDirection | AltMotorCommutationState | Hall A | Hall B | Hall C | Distance Travelled | LifetimeCounter | AccumulatedColumnMovement | FastThermalEstTemperatureRise | ThermalEstTemperatureRise | VehicleTuneSelector | MotorTuneSelector | EmulationModeStatus | PDCStatus | PowerOffDriveStageTemperature | CPU_PeakLoadHold | TorqueReInstatmentFlag | IncompletePowerDownTest Count | padding | LRE_PositionState | PositionExtrapActive | Encoder Offset | MotorReversal | Journey time to Fault - Fault 1 (sec) | Journey time to Fault - Fault 2 (sec) | Journey time to Fault - Fault 3 (sec) | Journey time to Fault - Fault 4 (sec) | Journey time to Fault - Fault 5 (sec) | Journey time to Fault - Fault 6 (sec) | Journey time to Fault - Fault 7 (sec) | Journey time to Fault - Fault 8 (sec) | Average number of journeys between faults | Primary B Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | B9A |
| 1 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 6917091 | 613650 | 16130 | 0.21 | 0.62 | 2 | 0 | 0 | 1 | 4322 | 13384 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 317 | 810 | - | - | - | - | - | - | 122 | B9A |
| 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 6458112 | 527336 | 11993 | 0.12 | 0.16 | 2 | 0 | 0 | 1 | 4490 | 13376 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1288 | 2645 | 8 | 3 | 3 | 1760 | - | - | 4.6 | B9A |
| 0 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 10586896 | 602166 | 13285 | 0.02 | 0.07 | 2 | 0 | 0 | 1 | 4167 | 13358 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1981 | 840 | 609 | 1564 | 3663 | - | - | - | 27.5 | B9A |
| 1 | 0 | 960 | 1 | 4 | 0 | 0 | 1 | 19063512 | 1665106 | 36558 | 0.12 | 0.17 | 2 | 0 | 0 | 1 | 3472 | 13351 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 923 | 911 | 12 | - | - | - | - | - | 1 | B9A |
| 0 | 76 | 980 | -1 | 6 | 0 | 1 | 1 | 15538746 | 1112750 | 17527 | 0.14 | 0.48 | 2 | 0 | 0 | 1 | 3026 | 13365 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 3120 | 1256 | 547 | 7 | 3 | 1724 | - | 46 | B9A |
| 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 12842 | 2804 | 111 | 0.61 | 1.98 | 3 | 0 | 0 | 1 | 3196 | 13457 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 361 | 3757 | - | - | - | - | - | - | 5 | B9A |
| 1 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 7894725 | 549108 | 11408 | 0.19 | 0.68 | 3 | 0 | 0 | 1 | 4437 | 13395 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1.8 | 0.9 | 0.7 | 0.6 | 16 | 1.3 | 606 | - | 36 | B9A |
| 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 10553441 | 589235 | 11847 | 0 | 0.14 | 2 | 0 | 0 | 1 | 3538 | 13501 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 540 | 24 | - | - | - | - | - | - | 1 | B9A |
| 0 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 15635 | 5261 | 200 | 1.83 | 3.08 | 2 | 0 | 0 | 1 | 992 | 13442 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 166 | 17 | 9 | 10 | 10 | - | - | - | 31 | B9A |
| 0 | 0 | 960 | 1 | 1 | 1 | 0 | 0 | 1737930 | 159448 | 5414 | 21 | 107 | 2 | 0 | 0 | 1 | 2888 | 13320 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 5.6 | 8.4 | 8 | - | - | - | - | 140 | B9A |
| | | | | | | | | 2695 | 920 | 1305 | 11.36 | 28.56 | 2 | 0 | 0 | 1 | 2745 | 13544 | 1 | 1 | 0 | | | | | 192 | - | - | - | - | - | - | - | 6 | B4E |
| | | | | | | | | 1834092 | 125146 | 2290 | 0.22 | 0.72 | 2 | 0 | 0 | 1 | 2153 | 13533 | 1 | 1 | 0 | | | | | 1.8 | 2.1 | - | - | - | - | - | - | 3 | BDx |
| 1 | 0 | 960 | 1 | 3 | 1 | 1 | 0 | 34063356 | 1974880 | 42402 | 1.04 | 0.94 | 2 | 0 | 0 | 1 | 811 | 13459 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3.4 | - | - | - | - | - | - | - | 10 | B9A |
| 0 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 2650844 | 187019 | 5209 | 0.03 | 0.08 | 2 | 0 | 0 | 1 | 2322 | 13543 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 6 | 28 | - | - | - | - | - | 1 | B9A |
| 89.98351648 | 0 | 960 | -1 | 1 | 1 | 0 | 0 | 43283 | 15219 | 1604 | 0.72 | 2.59 | 3 | 0 | 0 | 1 | 792 | 13500 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 12 | 2 | - | - | - | - | 2 | B9A |
| 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 14251 | 1948 | 738 | 0.09 | 3.37 | 3 | 0 | 0 | 1 | 2833 | 13466 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4.5 | - | - | - | - | - | - | - | - | B9A |
| 0 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 3380111 | 289130 | 6943 | 0.25 | 0.43 | 2 | 0 | 0 | 1 | 638 | 13316 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 33 | - | - | - | - | - | - | - | - | B9A |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | B4E |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | B4E |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | B4E |
| 89.93956044 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 14410549 | 988449 | 17191 | 1.6 | 0.71 | 2 | 0 | 0 | 1 | 71 | 13367 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4.5 | 8 | 28 | 8.5 | - | - | - | - | 130 | B9A |
| -90.04395604 | 0 | 960 | 1 | 4 | 0 | 0 | 1 | 9967568 | 675030 | 14176 | 0.04 | 0.26 | 2 | 0 | 0 | 1 | 951 | 13342 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2.5 | - | - | - | - | - | - | - | - | B9A |
| 0 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 12410 | 1999 | 1005 | 17 | 575 | 3 | 0 | 0 | 1 | 3107 | 13479 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 28 | - | - | - | - | - | - | - | - | B9A |
| 0 | 0 | 960 | -1 | 2 | 0 | 1 | 0 | 19743 | 5964 | 1087 | 0.1 | 0.47 | 2 | 0 | 0 | 1 | 5419 | 13473 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 8 | 1.5 | - | - | - | - | - | 1 | B9A |
| -97.57142857 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 4697531 | 302743 | 7721 | 0.14 | 0.74 | 2 | 0 | 0 | 1 | 742 | 13487 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2.5 | - | - | - | - | - | - | - | - | B9A |
| -60.07142857 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 1542370 | 152721 | 5966 | 0.49 | 3.19 | 3 | 0 | 0 | 1 | 4198 | 13739 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 174 | 589 | - | - | - | - | - | - | 2 | B9A |
| 270 | 0 | 960 | 1 | 3 | 1 | 1 | 0 | 1261631 | 165814 | 8208 | 0.42 | 1.79 | 2 | 0 | 0 | 1 | 2755 | 13460 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 29 | - | - | - | - | - | - | 9 | B9A |
| 0 | 0 | 960 | 1 | 3 | 1 | 1 | 0 | 11816 | 3282 | 943 | 30.21 | 14.66 | 3 | 0 | 0 | 1 | 4966 | 13464 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 45 | - | - | - | - | - | - | - | - | B9A |
| 0 | 0 | 960 | -1 | 3 | 1 | 1 | 0 | 11372 | 2826 | 1034 | 0.29 | 5.69 | 2 | 0 | 0 | 1 | 3647 | 13449 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | - | - | - | - | - | - | - | - | - | B92 |
| | | | | | | | | 798133 | 47129 | 1382 | 0.15 | 0.2 | 3 | 0 | 0 | 1 | 1740 | 13524 | 1 | 1 | 0 | | | | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | - | 23 | BDx |
| 0 | -7 | 962 | 1 | 6 | 0 | 1 | 1 | 855553 | 59735 | 2650 | 0.09 | 0.41 | 2 | 0 | 0 | 1 | 2840 | 13466 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2123 | - | - | - | - | - | - | - | - | B9A |
| 1 | 2011 | 1502 | 1 | 5 | 1 | 0 | 1 | 40719968 | 3958600 | 95429 | 0.14 | 0.4 | 2 | 0 | 0 | 1 | 5165 | 13438 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 3.3 | 1025 | - | - | - | - | - | 1 | B9A |
| | | | | | | | | 4090683 | 319039 | 9865 | 0.13 | 0.21 | 2 | 0 | 0 | 1 | 2887 | 13484 | 1 | 1 | 0 | | | | | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 3 | BDx |
| 0 | 0 | 960 | -1 | 1 | 1 | 0 | 0 | 4686287 | 359632 | 8458 | 0.17 | 0.23 | 3 | 0 | 0 | 1 | 3563 | 13367 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 200 | 3.6 | 842 | - | - | - | - | - | 95 | B9A |
| 0 | 0 | 960 | -1 | 1 | 1 | 0 | 0 | 14094330 | 1008897 | 21800 | 0.09 | 1.1 | 2 | 0 | 0 | 1 | 3126 | 13426 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 667 | 22 | - | - | - | - | - | - | 18 | B9A |
| 0 | 0 | 960 | 1 | 2 | 0 | 1 | 0 | 10354575 | 828077 | 32918 | 0.09 | 5.3 | 2 | 0 | 0 | 1 | 2245 | 13392 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 18 | 1.6 | 7 | 4 | 10 | - | - | - | 4 | B9A |
| | | | | | | | | 25302444 | 1640076 | 37306 | 0.36 | 0.92 | 2 | 0 | 0 | 1 | 3844 | 13416 | 1 | 1 | 0 | | | | | 1.2 | - | - | - | - | - | - | - | - | BDx |
| 82.43956044 | 0 | 960 | -1 | 6 | 0 | 1 | 1 | 31521548 | 2369480 | 45177 | 0.12 | 0.36 | 2 | 0 | 0 | 1 | 3555 | 13451 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 72 | 11 | 1232 | 1693 | 21 | 4 | 10 | - | 6 | B9A |
| 0 | 0 | 960 | 1 | 3 | 1 | 1 | 0 | 6169085 | 557584 | 18426 | 0.14 | 0.38 | 2 | 0 | 0 | 1 | 4619 | 13484 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 32 | - | - | - | - | - | - | - | - | B9A |
| 0 | 0 | 960 | -1 | 5 | 1 | 0 | 1 | 1211875 | 117063 | 2621 | 0.69 | 1.19 | 3 | 0 | 0 | 1 | 3771 | 13385 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | - | - | - | - | - | - | - | - | B9A |

| Other B Codes? | B9A LICs | E22 Faults | E22 LICs | Other LICs? | EPP Build Date | ECU Build Date | PFS Build Date | Motor Build Date | Where Failed | Application Code | Motor PCB Date | Hall Batch Code | Encoder Batch Code | Main Micro Batch | Main Micro Date Code | IC12 Date Code | Location | Ambient Ignition Cycling | Hot Ignition Cycling | Cold Ignition Cycling | Ribbon cable checks | Bully Test | Power Up Power Down | Temperature and Vibration | Slow Temperature Ramp with Humid | Thermal Shock | EMC - BCI | EMC - Radsus | High Freq Vibration | Target Magnet Check | Hall and Encoder Sensitivity | Motor PCB Integrity | 5V_HALL Disturbances | Dyno Test | B4E test software | Teardown | Hot Puma | IC12 Double Startup | IC12 Regulator Output Fail | Check Motor PCB Clearance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 9-Feb-09 | 23-Jan-09 | 14-Jan-09 | 31-Oct-08 | Warranty | | | | | | | | Shirley | FAIL | FAIL | FAIL | FAIL | | | | | | | | | | | | | | | | | | | |
| None | 8 | 0 | 0 | None | 6-Oct-08 | 25-Sep-08 | 4-Sep-08 | 21-Jul-08 | Warranty | MEJ7 | 25-Mar-08 | | | | | 0820 | Shirley | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | | ✓ | ✓ |
| None | 0 | | | None | 25-Nov-08 | 20-Nov-08 | 12-Nov-08 | 18-Sep-08 | Warranty | MEJ7 | | | | | | 0838 | Shirley | ✓ | | | ✓ | | ✓ | | | | | | | ✓ | ✓ | ✓ | | ✓ | | ✓ | | | ✓ | |
| None | 0 | | | None | 3-Dec-08 | 28-Nov-08 | 18-Nov-08 | 26-Sep-08 | Warranty | MEJ7 | 30-Jun-08 | | | XAA0829 | 829 | 0838 | Shirley | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | | | | ✓ | | | | | | | ✓ | ✓ | | |
| C69 | 0 | | | 4 x A65 | 27-Jan-09 | 6-Jan-09 | 4-Dec-08 | 21-Oct-08 | Warranty | MEJ7 | 25-Aug-08 | | | | | 0845 | Shirley | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | | ✓ | ✓ |
| C69 | 44 | 0 | 0 | None | 24-Nov-08 | 18-Nov-08 | 7-Nov-08 | 18-Sep-08 | Warranty | MEJ7 | | | | | | 0838 | Shirley | ✓ | | | | | | | | | | | | ✓ | | | | | | | | ✓ | | |
| None | 0 | | | None | 28-Jul-09 | 1-Jun-09 | 26-Jun-09 | 16-Jul-09 | Warranty | MEJ9 | 18-May-09 | | | | | 0904 | Shirley | FAIL | | | | | | | | | | | | ✓ | | | | | | | FAIL | FAIL | FAIL | |
| None | 19 | 0 | 0 | None | 24-Nov-08 | 18-Nov-08 | 12-Nov-08 | 18-Sep-08 | Warranty | MEJ7 | | | | XAE0828 | 828 | 0838 | Shirley | ✓ | | | | | | | | | | | | ✓ | | | | | | | | FAIL | | |
| 2 x B38 | 0 | | | None | 22-Jun-09 | 10-Mar-09 | 25-Mar-09 | 14-Jun-09 | Warranty | MEJ9 | 9-Mar-09 | | | XAE0843 | 843 | 0850 | Shirley | ✓ | | | | | | | ✓ | FAIL | ✓ | ✓ | | ✓ | | | ✓ | | | | ✓ | ✓ | ✓ | |
| None | 14 | 0 | 0 | None | 31-Jul-09 | 8-Jul-09 | 4-Jul-09 | 20-Jul-09 | Warranty | MEJ9 | 18-May-09 | | | XAA0851 | 851 | 0910 | Shirley | ✓ | ✓ | FAIL | | | | | | | | | | | | | | | | | ✓ | FAIL | | |
| None | 10 | 3 | 14 | None | 23-Mar-09 | 9-Feb-09 | 26-Feb-09 | 24-Nov-08 | Warranty | MEJ7 | | | | | | 0850 | Shirley | FAIL | FAIL | FAIL | | | | | | | | | | | | | | | | | | FAIL | FAIL | |
| 6xB4E, 1xB38 | 4 | 0 | 0 | 14xB38 | 17-Sep-09 | 24-Aug-09 | 18-Jul-09 | 7-Sep-09 | Warranty | MEJ9 | | | | | | 0930 | Shirley | ✓ | | | | | | | | | | | | FAIL | ✓ | | | | | ✓ | | | | |
| B9A, C69 | 0 | 6 | 1 | None | 21-Jul-09 | 22-Jun-09 | 1-Jun-09 | 10-Jul-09 | Warranty | MEJ9 | 18-May-09 | | | | | 0908 | Infineon | ✓ | ✓ | | | | | | | | | | | | | | | | | | | FAIL | FAIL | |
| None | 4 | 0 | 0 | None | 23-Oct-08 | 20-Oct-08 | 1-Oct-08 | 7-Aug-08 | Warranty | MEJ7 | | | | XAF0819 | 819 | 0820 | Shirley | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | FAIL | | |
| C69 | 0 | 0 | 0 | None | 17-Sep-09 | 24-Aug-09 | 16-Jul-09 | 7-Sep-09 | Warranty | MEJ9 | 22-Jun-09 | | | | | 0930 | Shirley | ✓ | | | ✓ | | | | | | | | | | | | | | | | | | | |
| C69 | 0 | 0 | 0 | None | 30-Jul-09 | 7-Jul-09 | 9-Jul-09 | 19-Jul-09 | Warranty | MEJ9 | 18-May-09 | | | | | 0910 | Shirley | ✓ | | | ✓ | | | | | | | | | | | | | | | | | | | FAIL |
| None | 4 | 0 | 0 | None | 7-Jan-10 | 13-Nov-09 | 3-Nov-09 | 14-Dec-09 | 0km | MEJ9 | | | | | | 0938 | Shirley | FAIL | ✓ | FAIL | ✓ | | | | | | | | | | | | | | | ✓ | FAIL | FAIL | |
| None | 4 | 1 | 0 | None | 9-Mar-09 | 8-Jan-09 | 21-Jan-09 | 6-Nov-08 | Warranty | MEJ9 | | | | XAC0839 | 839 | 0845 | Shirley | ✓ | ✓ | ✓ | | ✓ | | | | | | | | | | | | | | ✓ | FAIL | | |
| | | | | | 16-Jul-09 | 21-May-09 | 24-Jun-09 | 2-Jul-09 | QAO | | | | | | | | Shirley | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | | | | | |
| | | | | | 3-Jul-09 | | | 21-Aug-09 | QAO | | | | | | | | Shirley | ✓ | | | | | ✓ | ✓ | | | | | FAIL | ✓ | | ✓ | | | ✓ | | | | | |
| | | | | | 2-Sep-09 | 8-Aug-09 | 1-Jul-09 | 21-Aug-09 | QAO | | | | | | | | Shirley | ✓ | | | | | ✓ | ✓ | | | | | FAIL | ✓ | | | | | ✓ | | | | | |
| None | 0 | 1 | 0 | None | 13-May-09 | 13-Feb-09 | 19-Feb-09 | 9-Apr-09 | Warranty | | | | | XAG0843 | 843 | 0904 | Shirley | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | FAIL | | |
| None | 0 | 0 | 0 | None | 21-Oct-08 | 13-Oct-08 | 18-Sep-08 | 1-Aug-08 | Warranty | | | | | XAF0819 | 819 | 0820 | Shirley | ✓ | FAIL | FAIL | | | | | | | | | | | | | | | | | | | FAIL | |
| None | 4 | 0 | 0 | None | 11-Feb-10 | 21-Jan-10 | 1-Dec-09 | 21-Jan-10 | 0km | MEJ9 | | | | XAC0946 | 946 | 0950 | Shirley | FAIL | ✓ | FAIL | ✓ | | | | | | | | | | | | | | | ✓ | FAIL | FAIL | |
| C69 | 12 | 0 | 0 | None | 7-Mar-10 | 4-Feb-10 | 23-Dec-09 | 5-Feb-10 | 0km | MEJ9 | | | | | | 0950 | Shirley | FAIL | ✓ | ✓ | ✓ | | | | | | | | | | | ✓ | | | | ✓ | ✓ | ✓ | | FAIL |
| None | 0 | 0 | 0 | None | 14-Jul-09 | 18-May-09 | 19-Jun-09 | 3-Jul-09 | Warranty | MEJ9 | | | | XAG0843 | 843 | 0852 | Shirley | ✓ | ✓ | Pending | | ✓ | | | | | | | | | | | | | | | | FAIL | | |
| None | 0 | 0 | 0 | None | 16-Nov-09 | 22-Sep-09 | 7-Sep-09 | 9-Oct-09 | Warranty | AMDB0 | | | | | | 0920 | Shirley | FAIL | FAIL | FAIL | | | | | | | | | | | | | | | | | | | | |
| None | 0 | 0 | 0 | None | 5-Sep-09 | 12-Aug-09 | 27-Jul-09 | 25-Aug-09 | Warranty | MEJ9 | | | | XAD0851 | 851 | 0920 | Shirley | | | | | | | | | | | | | | | | | | | | | FAIL | | |
| None | 4 | 1 | 1 | None | 19-Mar-10 | 6-Feb-10 | 16-Jan-10 | 19-Feb-10 | 0km | MEJ9 | | | | XAF0948 | 948 | | Shirley | | | | | | | | | | | | | | | | | | | | | FAIL | | |
| B92 | 0 | | | None | 21-Mar-10 | 12-Feb-10 | 23-Feb-10 | 23-Feb-10 | 0km | MEJ9 | | | | | | | QAO | ✓ | ✓ | | | | | | | | | | | | | | | | | ✓ | | | |
| None | 0 | 0 | 0 | None | 7-Jan-09 | 6-Dec-08 | 5-Dec-08 | 4-Dec-08 | Warranty | MEJ9 | | | | | | 0846 | Shirley | FAIL | FAIL | FAIL | | | | | | | | | | | | | | | | | | FAIL | FAIL | |
| B38, B4E | 0 | 0 | 0 | None | 16-Jan-10 | 30-Nov-09 | 4-Nov-09 | 6-Jan-10 | Warranty | MEJ9 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| C69 | 0 | 0 | 0 | None | 21-Nov-08 | 13-Nov-08 | 5-Nov-08 | 20-Sep-08 | Warranty | MEJ9 | | | | | | | --> Shirley | | | | | | | | | | | | | | | | | | | | | | | |
| None | 0 | 5 | 8 | None | 25-Sep-09 | 1-Sep-09 | 28-Aug-09 | 16-Sep-09 | Warranty | MEJ9 | | | | XAE0903 | 903 | | Shirley | | | | | | | | | | | | | | | | | | | | | FAIL | | |
| None | 7 | 0 | 0 | None | 23-Jan-09 | 9-Dec-08 | 3-Dec-08 | 19-Oct-08 | Warranty | MEJ7 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| None | 8 | 0 | 1 | None | 28-Oct-08 | 16-Oct-08 | 30-Sep-08 | 5-Aug-08 | Warranty | MEJ7 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| C69 | 0 | 0 | 0 | None | 24-Nov-08 | 18-Nov-08 | 12-Nov-08 | 18-Sep-08 | Warranty | MEJ7 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| None | 0 | 0 | 0 | None | 26-Nov-08 | 18-Nov-08 | 7-Nov-08 | 21-Sep-08 | Warranty | MEJ7 | | | | | | | 26 Mile | | | | | | | | | | | | | | | | | | | | | FAIL | | |
| C69 | 38 | 0 | 0 | None | 25-Nov-08 | 18-Nov-08 | 7-Nov-08 | 18-Sep-08 | Warranty | MEJ7 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| None | 0 | 0 | 0 | None | 24-Dec-09 | 17-Nov-09 | 21-Oct-09 | 7-Dec-09 | Warranty | MEJ9 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |
| None | 4 | 0 | 0 | None | 5-Jun-09 | 12-Mar-09 | 10-Mar-09 | 2-Jun-09 | Warranty | MEJ7 | | | | | | | --> QAO | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1-Jul-08 | 1-Jul-08 | 1-Jul-08 | 1-Jul-08 | | | 1-Mar-08 |
| 2-Jul-08 | 2-Jul-08 | 2-Jul-08 | 2-Jul-08 | | | 2-Mar-08 |
| 3-Jul-08 | 3-Jul-08 | 3-Jul-08 | 3-Jul-08 | | | 3-Mar-08 |
| 4-Jul-08 | 4-Jul-08 | 4-Jul-08 | 4-Jul-08 | | | 4-Mar-08 |
| 5-Jul-08 | 5-Jul-08 | 5-Jul-08 | 5-Jul-08 | | | 5-Mar-08 |
| 6-Jul-08 | 6-Jul-08 | 6-Jul-08 | 6-Jul-08 | | | 6-Mar-08 |
| 7-Jul-08 | 7-Jul-08 | 7-Jul-08 | 7-Jul-08 | | | 7-Mar-08 |
| 8-Jul-08 | 8-Jul-08 | 8-Jul-08 | 8-Jul-08 | | | 8-Mar-08 |
| 9-Jul-08 | 9-Jul-08 | 9-Jul-08 | 9-Jul-08 | | | 9-Mar-08 |
| 10-Jul-08 | 10-Jul-08 | 10-Jul-08 | 10-Jul-08 | | | 10-Mar-08 |
| 11-Jul-08 | 11-Jul-08 | 11-Jul-08 | 11-Jul-08 | | | 11-Mar-08 |
| 12-Jul-08 | 12-Jul-08 | 12-Jul-08 | 12-Jul-08 | | | 12-Mar-08 |
| 13-Jul-08 | 13-Jul-08 | 13-Jul-08 | 13-Jul-08 | | | 13-Mar-08 |
| 14-Jul-08 | 14-Jul-08 | 14-Jul-08 | 14-Jul-08 | | | 14-Mar-08 |
| 15-Jul-08 | 15-Jul-08 | 15-Jul-08 | 15-Jul-08 | | | 15-Mar-08 |
| 16-Jul-08 | 16-Jul-08 | 16-Jul-08 | 16-Jul-08 | | | 16-Mar-08 |
| 17-Jul-08 | 17-Jul-08 | 17-Jul-08 | 17-Jul-08 | | | 17-Mar-08 |
| 18-Jul-08 | 18-Jul-08 | 18-Jul-08 | 18-Jul-08 | | | 18-Mar-08 |
| 19-Jul-08 | 19-Jul-08 | 19-Jul-08 | 19-Jul-08 | | | 19-Mar-08 |
| 20-Jul-08 | 20-Jul-08 | 20-Jul-08 | 20-Jul-08 | | | 20-Mar-08 |
| 21-Jul-08 | 21-Jul-08 | 21-Jul-08 | 21-Jul-08 | | | 21-Mar-08 |
| 22-Jul-08 | 22-Jul-08 | 22-Jul-08 | 22-Jul-08 | | | 22-Mar-08 |
| 23-Jul-08 | 23-Jul-08 | 23-Jul-08 | 23-Jul-08 | | | 23-Mar-08 |
| 24-Jul-08 | 24-Jul-08 | 24-Jul-08 | 24-Jul-08 | | | 24-Mar-08 |
| 25-Jul-08 | 25-Jul-08 | 25-Jul-08 | 25-Jul-08 | | | 25-Mar-08 |
| 26-Jul-08 | 26-Jul-08 | 26-Jul-08 | 26-Jul-08 | | | 26-Mar-08 |

| | |
|---|---|
| 810 | 0810 |
| 811 | 0811 |
| 812 | 0812 |
| 813 | 0813 |
| 814 | 0814 |
| 815 | 0815 |
| 816 | 0816 |
| 817 | 0817 |
| 818 | 0818 |
| 819 | 0819 |
| 820 | 0820 |
| 821 | 0821 |
| 822 | 0822 |
| 823 | 0823 |
| 824 | 0824 |
| 825 | 0825 |
| 826 | 0826 |
| 827 | 0827 |
| 828 | 0828 |
| 829 | 0829 |
| 830 | 0830 |
| 831 | 0831 |
| 832 | 0832 |
| 833 | 0833 |
| 834 | 0834 |
| 835 | 0835 |

**Key:**

- FAIL — Test conducted and failed --> root cause determined
- FAIL — Test conducted and failed --> further testing required to determine root cause
- Pending — Test planned
- ✓ — Test conducted and passed --> not root cause
- Test not required/result not reported (root cause already determined)
- Test capable of identifying known potential root cause

| | | | | | | |
|---|---|---|---|---|---|---|
| 27-Jul-08 | 27-Jul-08 | 27-Jul-08 | 27-Jul-08 | | | 27-Mar-08 |
| 28-Jul-08 | 28-Jul-08 | 28-Jul-08 | 28-Jul-08 | | | 28-Mar-08 |
| 29-Jul-08 | 29-Jul-08 | 29-Jul-08 | 29-Jul-08 | | | 29-Mar-08 |
| 30-Jul-08 | 30-Jul-08 | 30-Jul-08 | 30-Jul-08 | | | 30-Mar-08 |
| 31-Jul-08 | 31-Jul-08 | 31-Jul-08 | 31-Jul-08 | | | 31-Mar-08 |
| 1-Aug-08 | 1-Aug-08 | 1-Aug-08 | 1-Aug-08 | | | 1-Apr-08 |
| 2-Aug-08 | 2-Aug-08 | 2-Aug-08 | 2-Aug-08 | | | 2-Apr-08 |
| 3-Aug-08 | 3-Aug-08 | 3-Aug-08 | 3-Aug-08 | | | 3-Apr-08 |
| 4-Aug-08 | 4-Aug-08 | 4-Aug-08 | 4-Aug-08 | | | 4-Apr-08 |
| 5-Aug-08 | 5-Aug-08 | 5-Aug-08 | 5-Aug-08 | | | 5-Apr-08 |
| 6-Aug-08 | 6-Aug-08 | 6-Aug-08 | 6-Aug-08 | | | 6-Apr-08 |
| 7-Aug-08 | 7-Aug-08 | 7-Aug-08 | 7-Aug-08 | | | 7-Apr-08 |
| 8-Aug-08 | 8-Aug-08 | 8-Aug-08 | 8-Aug-08 | | | 8-Apr-08 |
| 9-Aug-08 | 9-Aug-08 | 9-Aug-08 | 9-Aug-08 | | | 9-Apr-08 |
| 10-Aug-08 | 10-Aug-08 | 10-Aug-08 | 10-Aug-08 | | | 10-Apr-08 |
| 11-Aug-08 | 11-Aug-08 | 11-Aug-08 | 11-Aug-08 | | | 11-Apr-08 |
| 12-Aug-08 | 12-Aug-08 | 12-Aug-08 | 12-Aug-08 | | | 12-Apr-08 |
| 13-Aug-08 | 13-Aug-08 | 13-Aug-08 | 13-Aug-08 | | | 13-Apr-08 |
| 14-Aug-08 | 14-Aug-08 | 14-Aug-08 | 14-Aug-08 | | | 14-Apr-08 |
| 15-Aug-08 | 15-Aug-08 | 15-Aug-08 | 15-Aug-08 | | | 15-Apr-08 |
| 16-Aug-08 | 16-Aug-08 | 16-Aug-08 | 16-Aug-08 | | | 16-Apr-08 |
| 17-Aug-08 | 17-Aug-08 | 17-Aug-08 | 17-Aug-08 | | | 17-Apr-08 |
| 18-Aug-08 | 18-Aug-08 | 18-Aug-08 | 18-Aug-08 | | | 18-Apr-08 |
| 19-Aug-08 | 19-Aug-08 | 19-Aug-08 | 19-Aug-08 | | | 19-Apr-08 |
| 20-Aug-08 | 20-Aug-08 | 20-Aug-08 | 20-Aug-08 | | | 20-Apr-08 |
| 21-Aug-08 | 21-Aug-08 | 21-Aug-08 | 21-Aug-08 | | | 21-Apr-08 |
| 22-Aug-08 | 22-Aug-08 | 22-Aug-08 | 22-Aug-08 | | | 22-Apr-08 |
| 23-Aug-08 | 23-Aug-08 | 23-Aug-08 | 23-Aug-08 | | | 23-Apr-08 |
| 24-Aug-08 | 24-Aug-08 | 24-Aug-08 | 24-Aug-08 | | | 24-Apr-08 |
| 25-Aug-08 | 25-Aug-08 | 25-Aug-08 | 25-Aug-08 | | | 25-Apr-08 |
| 26-Aug-08 | 26-Aug-08 | 26-Aug-08 | 26-Aug-08 | | | 26-Apr-08 |
| 27-Aug-08 | 27-Aug-08 | 27-Aug-08 | 27-Aug-08 | | | 27-Apr-08 |
| 28-Aug-08 | 28-Aug-08 | 28-Aug-08 | 28-Aug-08 | | | 28-Apr-08 |
| 29-Aug-08 | 29-Aug-08 | 29-Aug-08 | 29-Aug-08 | | | 29-Apr-08 |
| 30-Aug-08 | 30-Aug-08 | 30-Aug-08 | 30-Aug-08 | | | 30-Apr-08 |
| 31-Aug-08 | 31-Aug-08 | 31-Aug-08 | 31-Aug-08 | | | 1-May-08 |
| 1-Sep-08 | 1-Sep-08 | 1-Sep-08 | 1-Sep-08 | | | 2-May-08 |
| 2-Sep-08 | 2-Sep-08 | 2-Sep-08 | 2-Sep-08 | | | 3-May-08 |
| 3-Sep-08 | 3-Sep-08 | 3-Sep-08 | 3-Sep-08 | | | 4-May-08 |
| 4-Sep-08 | 4-Sep-08 | 4-Sep-08 | 4-Sep-08 | | | 5-May-08 |
| 5-Sep-08 | 5-Sep-08 | 5-Sep-08 | 5-Sep-08 | | | 6-May-08 |
| 6-Sep-08 | 6-Sep-08 | 6-Sep-08 | 6-Sep-08 | | | 7-May-08 |
| 7-Sep-08 | 7-Sep-08 | 7-Sep-08 | 7-Sep-08 | | | 8-May-08 |
| 8-Sep-08 | 8-Sep-08 | 8-Sep-08 | 8-Sep-08 | | | 9-May-08 |
| 9-Sep-08 | 9-Sep-08 | 9-Sep-08 | 9-Sep-08 | | | 10-May-08 |
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| 24-Nov-09 | 24-Nov-09 | 24-Nov-09 | 24-Nov-09 | | | 25-Jul-09 |
| 25-Nov-09 | 25-Nov-09 | 25-Nov-09 | 25-Nov-09 | | | 26-Jul-09 |
| 26-Nov-09 | 26-Nov-09 | 26-Nov-09 | 26-Nov-09 | | | 27-Jul-09 |
| 27-Nov-09 | 27-Nov-09 | 27-Nov-09 | 27-Nov-09 | | | 28-Jul-09 |
| 28-Nov-09 | 28-Nov-09 | 28-Nov-09 | 28-Nov-09 | | | 29-Jul-09 |
| 29-Nov-09 | 29-Nov-09 | 29-Nov-09 | 29-Nov-09 | | | 30-Jul-09 |
| 30-Nov-09 | 30-Nov-09 | 30-Nov-09 | 30-Nov-09 | | | 31-Jul-09 |
| 1-Dec-09 | 1-Dec-09 | 1-Dec-09 | 1-Dec-09 | | | 1-Aug-09 |
| 2-Dec-09 | 2-Dec-09 | 2-Dec-09 | 2-Dec-09 | | | 2-Aug-09 |
| 3-Dec-09 | 3-Dec-09 | 3-Dec-09 | 3-Dec-09 | | | 3-Aug-09 |
| 4-Dec-09 | 4-Dec-09 | 4-Dec-09 | 4-Dec-09 | | | 4-Aug-09 |
| 5-Dec-09 | 5-Dec-09 | 5-Dec-09 | 5-Dec-09 | | | 5-Aug-09 |
| 6-Dec-09 | 6-Dec-09 | 6-Dec-09 | 6-Dec-09 | | | 6-Aug-09 |
| 7-Dec-09 | 7-Dec-09 | 7-Dec-09 | 7-Dec-09 | | | 7-Aug-09 |
| 8-Dec-09 | 8-Dec-09 | 8-Dec-09 | 8-Dec-09 | | | 8-Aug-09 |
| 9-Dec-09 | 9-Dec-09 | 9-Dec-09 | 9-Dec-09 | | | 9-Aug-09 |
| 10-Dec-09 | 10-Dec-09 | 10-Dec-09 | 10-Dec-09 | | | 10-Aug-09 |
| 11-Dec-09 | 11-Dec-09 | 11-Dec-09 | 11-Dec-09 | | | 11-Aug-09 |
| 12-Dec-09 | 12-Dec-09 | 12-Dec-09 | 12-Dec-09 | | | 12-Aug-09 |
| 13-Dec-09 | 13-Dec-09 | 13-Dec-09 | 13-Dec-09 | | | 13-Aug-09 |
| 14-Dec-09 | 14-Dec-09 | 14-Dec-09 | 14-Dec-09 | | | 14-Aug-09 |
| 15-Dec-09 | 15-Dec-09 | 15-Dec-09 | 15-Dec-09 | | | 15-Aug-09 |
| 16-Dec-09 | 16-Dec-09 | 16-Dec-09 | 16-Dec-09 | | | 16-Aug-09 |
| 17-Dec-09 | 17-Dec-09 | 17-Dec-09 | 17-Dec-09 | | | 17-Aug-09 |
| 18-Dec-09 | 18-Dec-09 | 18-Dec-09 | 18-Dec-09 | | | 18-Aug-09 |
| 19-Dec-09 | 19-Dec-09 | 19-Dec-09 | 19-Dec-09 | | | 19-Aug-09 |
| 20-Dec-09 | 20-Dec-09 | 20-Dec-09 | 20-Dec-09 | | | 20-Aug-09 |
| 21-Dec-09 | 21-Dec-09 | 21-Dec-09 | 21-Dec-09 | | | 21-Aug-09 |
| 22-Dec-09 | 22-Dec-09 | 22-Dec-09 | 22-Dec-09 | | | 22-Aug-09 |
| 23-Dec-09 | 23-Dec-09 | 23-Dec-09 | 23-Dec-09 | | | 23-Aug-09 |
| 24-Dec-09 | 24-Dec-09 | 24-Dec-09 | 24-Dec-09 | | | 24-Aug-09 |
| 25-Dec-09 | 25-Dec-09 | 25-Dec-09 | 25-Dec-09 | | | 25-Aug-09 |
| 26-Dec-09 | 26-Dec-09 | 26-Dec-09 | 26-Dec-09 | | | 26-Aug-09 |
| 27-Dec-09 | 27-Dec-09 | 27-Dec-09 | 27-Dec-09 | | | 27-Aug-09 |
| 28-Dec-09 | 28-Dec-09 | 28-Dec-09 | 28-Dec-09 | | | 28-Aug-09 |
| 29-Dec-09 | 29-Dec-09 | 29-Dec-09 | 29-Dec-09 | | | 29-Aug-09 |
| 30-Dec-09 | 30-Dec-09 | 30-Dec-09 | 30-Dec-09 | | | 30-Aug-09 |
| 31-Dec-09 | 31-Dec-09 | 31-Dec-09 | 31-Dec-09 | | | 31-Aug-09 |
| 1-Jan-10 | 1-Jan-10 | 1-Jan-10 | 1-Jan-10 | | | 1-Sep-09 |
| 2-Jan-10 | 2-Jan-10 | 2-Jan-10 | 2-Jan-10 | | | 2-Sep-09 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3-Jan-10 | 3-Jan-10 | 3-Jan-10 | 3-Jan-10 | | | 3-Sep-09 |
| 4-Jan-10 | 4-Jan-10 | 4-Jan-10 | 4-Jan-10 | | | 4-Sep-09 |
| 5-Jan-10 | 5-Jan-10 | 5-Jan-10 | 5-Jan-10 | | | 5-Sep-09 |
| 6-Jan-10 | 6-Jan-10 | 6-Jan-10 | 6-Jan-10 | | | 6-Sep-09 |
| 7-Jan-10 | 7-Jan-10 | 7-Jan-10 | 7-Jan-10 | | | 7-Sep-09 |
| 8-Jan-10 | 8-Jan-10 | 8-Jan-10 | 8-Jan-10 | | | 8-Sep-09 |
| 9-Jan-10 | 9-Jan-10 | 9-Jan-10 | 9-Jan-10 | | | 9-Sep-09 |
| 10-Jan-10 | 10-Jan-10 | 10-Jan-10 | 10-Jan-10 | | | 10-Sep-09 |
| 11-Jan-10 | 11-Jan-10 | 11-Jan-10 | 11-Jan-10 | | | 11-Sep-09 |
| 12-Jan-10 | 12-Jan-10 | 12-Jan-10 | 12-Jan-10 | | | 12-Sep-09 |
| 13-Jan-10 | 13-Jan-10 | 13-Jan-10 | 13-Jan-10 | | | 13-Sep-09 |
| 14-Jan-10 | 14-Jan-10 | 14-Jan-10 | 14-Jan-10 | | | 14-Sep-09 |
| 15-Jan-10 | 15-Jan-10 | 15-Jan-10 | 15-Jan-10 | | | 15-Sep-09 |
| 16-Jan-10 | 16-Jan-10 | 16-Jan-10 | 16-Jan-10 | | | 16-Sep-09 |
| 17-Jan-10 | 17-Jan-10 | 17-Jan-10 | 17-Jan-10 | | | 17-Sep-09 |
| 18-Jan-10 | 18-Jan-10 | 18-Jan-10 | 18-Jan-10 | | | 18-Sep-09 |
| 19-Jan-10 | 19-Jan-10 | 19-Jan-10 | 19-Jan-10 | | | 19-Sep-09 |
| 20-Jan-10 | 20-Jan-10 | 20-Jan-10 | 20-Jan-10 | | | 20-Sep-09 |
| 21-Jan-10 | 21-Jan-10 | 21-Jan-10 | 21-Jan-10 | | | 21-Sep-09 |
| 22-Jan-10 | 22-Jan-10 | 22-Jan-10 | 22-Jan-10 | | | 22-Sep-09 |
| 23-Jan-10 | 23-Jan-10 | 23-Jan-10 | 23-Jan-10 | | | 23-Sep-09 |
| 24-Jan-10 | 24-Jan-10 | 24-Jan-10 | 24-Jan-10 | | | 24-Sep-09 |
| 25-Jan-10 | 25-Jan-10 | 25-Jan-10 | 25-Jan-10 | | | 25-Sep-09 |
| 26-Jan-10 | 26-Jan-10 | 26-Jan-10 | 26-Jan-10 | | | 26-Sep-09 |
| 27-Jan-10 | 27-Jan-10 | 27-Jan-10 | 27-Jan-10 | | | 27-Sep-09 |
| 28-Jan-10 | 28-Jan-10 | 28-Jan-10 | 28-Jan-10 | | | 28-Sep-09 |
| 29-Jan-10 | 29-Jan-10 | 29-Jan-10 | 29-Jan-10 | | | 29-Sep-09 |
| 30-Jan-10 | 30-Jan-10 | 30-Jan-10 | 30-Jan-10 | | | 30-Sep-09 |
| 31-Jan-10 | 31-Jan-10 | 31-Jan-10 | 31-Jan-10 | | | 1-Oct-09 |
| 1-Feb-10 | 1-Feb-10 | 1-Feb-10 | 1-Feb-10 | | | 2-Oct-09 |
| 2-Feb-10 | 2-Feb-10 | 2-Feb-10 | 2-Feb-10 | | | 3-Oct-09 |
| 3-Feb-10 | 3-Feb-10 | 3-Feb-10 | 3-Feb-10 | | | 4-Oct-09 |
| 4-Feb-10 | 4-Feb-10 | 4-Feb-10 | 4-Feb-10 | | | 5-Oct-09 |
| 5-Feb-10 | 5-Feb-10 | 5-Feb-10 | 5-Feb-10 | | | 6-Oct-09 |
| 6-Feb-10 | 6-Feb-10 | 6-Feb-10 | 6-Feb-10 | | | 7-Oct-09 |
| 7-Feb-10 | 7-Feb-10 | 7-Feb-10 | 7-Feb-10 | | | 8-Oct-09 |
| 8-Feb-10 | 8-Feb-10 | 8-Feb-10 | 8-Feb-10 | | | 9-Oct-09 |
| 9-Feb-10 | 9-Feb-10 | 9-Feb-10 | 9-Feb-10 | | | 10-Oct-09 |
| 10-Feb-10 | 10-Feb-10 | 10-Feb-10 | 10-Feb-10 | | | 11-Oct-09 |
| 11-Feb-10 | 11-Feb-10 | 11-Feb-10 | 11-Feb-10 | | | 12-Oct-09 |
| 12-Feb-10 | 12-Feb-10 | 12-Feb-10 | 12-Feb-10 | | | 13-Oct-09 |
| 13-Feb-10 | 13-Feb-10 | 13-Feb-10 | 13-Feb-10 | | | 14-Oct-09 |
| 14-Feb-10 | 14-Feb-10 | 14-Feb-10 | 14-Feb-10 | | | 15-Oct-09 |
| 15-Feb-10 | 15-Feb-10 | 15-Feb-10 | 15-Feb-10 | | | 16-Oct-09 |
| 16-Feb-10 | 16-Feb-10 | 16-Feb-10 | 16-Feb-10 | | | 17-Oct-09 |
| 17-Feb-10 | 17-Feb-10 | 17-Feb-10 | 17-Feb-10 | | | 18-Oct-09 |
| 18-Feb-10 | 18-Feb-10 | 18-Feb-10 | 18-Feb-10 | | | 19-Oct-09 |
| 19-Feb-10 | 19-Feb-10 | 19-Feb-10 | 19-Feb-10 | | | 20-Oct-09 |
| 20-Feb-10 | 20-Feb-10 | 20-Feb-10 | 20-Feb-10 | | | 21-Oct-09 |
| 21-Feb-10 | 21-Feb-10 | 21-Feb-10 | 21-Feb-10 | | | 22-Oct-09 |
| 22-Feb-10 | 22-Feb-10 | 22-Feb-10 | 22-Feb-10 | | | 23-Oct-09 |
| 23-Feb-10 | 23-Feb-10 | 23-Feb-10 | 23-Feb-10 | | | 24-Oct-09 |
| 24-Feb-10 | 24-Feb-10 | 24-Feb-10 | 24-Feb-10 | | | 25-Oct-09 |
| 25-Feb-10 | 25-Feb-10 | 25-Feb-10 | 25-Feb-10 | | | 26-Oct-09 |
| 26-Feb-10 | 26-Feb-10 | 26-Feb-10 | 26-Feb-10 | | | 27-Oct-09 |
| 27-Feb-10 | 27-Feb-10 | 27-Feb-10 | 27-Feb-10 | | | 28-Oct-09 |
| 28-Feb-10 | 28-Feb-10 | 28-Feb-10 | 28-Feb-10 | | | 29-Oct-09 |
| 1-Mar-10 | 1-Mar-10 | 1-Mar-10 | 1-Mar-10 | | | 30-Oct-09 |
| 2-Mar-10 | 2-Mar-10 | 2-Mar-10 | 2-Mar-10 | | | |
| 3-Mar-10 | 3-Mar-10 | 3-Mar-10 | 3-Mar-10 | | | |
| 4-Mar-10 | 4-Mar-10 | 4-Mar-10 | 4-Mar-10 | | | |
| 5-Mar-10 | 5-Mar-10 | 5-Mar-10 | 5-Mar-10 | | | |
| 6-Mar-10 | 6-Mar-10 | 6-Mar-10 | 6-Mar-10 | | | |
| 7-Mar-10 | 7-Mar-10 | 7-Mar-10 | 7-Mar-10 | | | |
| 8-Mar-10 | 8-Mar-10 | 8-Mar-10 | 8-Mar-10 | | | |
| 9-Mar-10 | 9-Mar-10 | 9-Mar-10 | 9-Mar-10 | | | |
| 10-Mar-10 | 10-Mar-10 | 10-Mar-10 | 10-Mar-10 | | | |
| 11-Mar-10 | 11-Mar-10 | 11-Mar-10 | 11-Mar-10 | | | |
| 12-Mar-10 | 12-Mar-10 | 12-Mar-10 | 12-Mar-10 | | | |
| 13-Mar-10 | 13-Mar-10 | 13-Mar-10 | 13-Mar-10 | | | |
| 14-Mar-10 | 14-Mar-10 | 14-Mar-10 | 14-Mar-10 | | | |
| 15-Mar-10 | 15-Mar-10 | 15-Mar-10 | 15-Mar-10 | | | |
| 16-Mar-10 | 16-Mar-10 | 16-Mar-10 | 16-Mar-10 | | | |
| 17-Mar-10 | 17-Mar-10 | 17-Mar-10 | 17-Mar-10 | | | |
| 18-Mar-10 | 18-Mar-10 | 18-Mar-10 | 18-Mar-10 | | | |

| | | | |
|---|---|---|---|
| 19-Mar-10 | 19-Mar-10 | 19-Mar-10 | 19-Mar-10 |
| 20-Mar-10 | 20-Mar-10 | 20-Mar-10 | 20-Mar-10 |
| 21-Mar-10 | 21-Mar-10 | 21-Mar-10 | 21-Mar-10 |
| 22-Mar-10 | 22-Mar-10 | 22-Mar-10 | 22-Mar-10 |
| 23-Mar-10 | 23-Mar-10 | 23-Mar-10 | 23-Mar-10 |
| 24-Mar-10 | 24-Mar-10 | 24-Mar-10 | 24-Mar-10 |
| 25-Mar-10 | 25-Mar-10 | 25-Mar-10 | 25-Mar-10 |
| 26-Mar-10 | 26-Mar-10 | 26-Mar-10 | 26-Mar-10 |
| 27-Mar-10 | 27-Mar-10 | 27-Mar-10 | 27-Mar-10 |
| 28-Mar-10 | 28-Mar-10 | 28-Mar-10 | 28-Mar-10 |
| 29-Mar-10 | 29-Mar-10 | 29-Mar-10 | 29-Mar-10 |
| 30-Mar-10 | 30-Mar-10 | 30-Mar-10 | 30-Mar-10 |
| 31-Mar-10 | 31-Mar-10 | 31-Mar-10 | 31-Mar-10 |


Check Motor PCB solder Joints
✓
✓
FAIL
✓

**From:** Anthony Fleenor <Anthony.Fleenor@TRW.COM>
**Sent:** Monday, April 02, 2012 9:58 AM
**To:** Surella, Matthew (M.M.)
**Cc:** Estes, Eric (E.E.); Napoli, Laura (L.); Andy Partridge; Salim Semssar
**Subject:** B9A Mileage for U502

Matt,

Looking in AWS for C200D (B9A) I see an average mileage of 7,932.

Minimum of 1,695
Maximum of 25,878

76% are under 10,000 but that may just be due to the "newness" of the vehicle line and not many have reached higher miles.

I have all the claims in a file so if you think of other information you need just let me know.

Tony Fleenor
TRW Steering Warranty
423-272-4221

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, December 07, 2011 1:08 PM
**To:** Napoli, Laura (L.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** B9A root cause /ribbon cable dates list

Have added updated ribbon cable dates and some new root cause analysis.

[redacted]


Eric J Estes
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# [redacted]

| Case Number | U502 B9A EPP s/n | Motor Build date | Ribbon Cable Date | Root Cause | Location | still need analysis | other codes set | |
|---|---|---|---|---|---|---|---|---|
| UR0030 | 102881920F30188 | 2010-09-17 | | torn down | motors grp-UK | | | cannot test |
| UR0045 | 110291919G30475 | 2010-12-27 | | under analysis | UK? | X | | |
| UR0047 | 110441920G30308 | 2010-12-28 | | torn down | Tyco | | | cannot test |
| UR0048 | 103601919G30367 | 2010-12-04 | | conformal coat | Nidec | | | |
| UR0058 | 110271919G31290 | 2010-12-28 | | under analysis | motors grp-UK | X | | |
| UR0059 | 110291919G31227 | 2010-12-28 | 2010-11-15 | misalignment | Tyco | | | |
| UR0060 | 110771919J30898 | 2011-01-25 | 2010-11-16 | misalignment | Tyco | | | |
| UR0061 | 110291919G30593 | 2010-12-27 | 2010-11-16 | conformal coat | UK | | | |
| UR0062 | 110291919G30862 | 2010-12-28 | 2010-11-17 | conformal coat | UK | | | |
| UR0063 | 103631920G30133 | 2010-12-06 | 2010-10-25 | conformal coat | UK | | | |
| UR0064 | 110261919G30786 | 2010-12-24 | 2010-11-17 | misalignment | Tyco | | | |
| UR0065 | 103591919G30091 | 2010-12-24 | 2010-10-12 | conformal coat | UK | | | |
| UR0066 | 103171919F30938 | 2010-10-27 | | under analysis | Micronis to UK? | X | | |
| UR0067 | 110151919G31298 | 2010-12-13 | | under analysis | Micronis to UK? | X | | |
| UR0068 | 110151919G30515 | 2010-12-23 | | under analysis | Micronis to UK? | X | | |
| UR0069 | 103031919F30506 | 2010-10-07 | | under analysis | Micronis to UK? | X | | |
| UR0070 | 110281919G30095 | 2010-12-28 | 2010-11-26 | misalignment | UK | | | |
| UR0071 | 110621919J30710 | 2011-01-20 | 2010-12-02 | conformal coat | MAO | | | |
| UR0073 | 110761919J31074 | 2011-01-24 | | conformal coat | MAO | | | |
| UR0075 | 110451919G30577 | 2010-12-30 | 2010-11-16 | conformal coat | MAO | | | |
| UR0076 | 110291919G30300 | 2010-12-27 | 2010-11-16 | misalignment | MAO | | | |
| UR0077 | 110071919G30749 | 2010-12-24 | 2010-11-16 | conformal coat | MAO | | | |
| UR0079 | 110481919G30125 | 2010-12-30 | 2010-11-16 | misalignment | MAO | | | |
| UR0080 | 110491919J30546 | 2010-12-30 | | conformal coat | MAO | | | |
| UR0081 | 110151919G30544 | 2010-12-23 | 2010-11-08 | conformal coat | MAO | | | |
| UR0082 | 110071919G30887 | 2010-12-24 | 2010-11-08 | conformal coat | MAO | | | |
| UR0083 | 103181919F31151 | 2010-10-27 | 2010-09-13 | conformal coat | MAO | | | |
| UR0084 | 103601919G30305 | 2010-12-04 | | conformal coat | MAO | | | |
| UR0085 | 103381919G30931 | 2010-11-08 | | conformal coat | MAO | | | |
| UR0086 | 110631920J30819 | 2011-01-03 | 2010-11-16 | conformal coat | MAO | | | |
| UR0087 | 110291919G30215 | 2011-12-27 | 2010-11-16 | misalignment | MAO | | | |
| UR0088 | 103521919G31407 | 2010-11-11 | 2010-09-07 | conformal coat | MAO | | | |
| UR0089 | 110141919G30775 | 2011-12-23 | 2010-11-08 | conformal coat | MAO | | | |
| UR0092 | 103561919G30991 | 2010-11-12 | | conformal coat | MAO | | | |
| UR0095 | 110271919G30664 | 2010-12-25 | 2010-11-15 | misalignment | MAO | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| UR0096 | 110631919J30050 | 2011-01-20 | | remove from vehicle | Gary Smith in-vehicle test | | B92 |
| UR0098 | 103521919G31407 | 2010-11-11 | | conformal coat | MAO | | |
| UR0099 | 103451919G30811 | 2010-11-10 | 2010-09-07 | conformal coat | MAO | | |
| UR0100 | 110901919J35745 | 2011-02-12 | 2010-12-14 | conformal coat | MAO | | |
| UR0101 | 110761919J30756 | 2011-01-24 | 2010-12-06 | conformal coat | MAO | | |
| UR0103 | 110281919G31045 | 2011-12-27 | | under analysis | MAO | X | |
| UR0104 | 110151919G30511 | 2011-12-23 | | conformal coat | MAO | | |
| UR0105 | 110421919G30598 | 2011-12-29 | 2010-11-17 | conformal coat | MAO | | |
| UR0108 | 110081919G30406 | 2011-12-24 | 2010-11-08 | conformal coat | MAO | | |
| UR0109 | 103031919F30809 | 2010-10-25 | 2010-09-02 | conformal coat | MAO | | |
| UR0111 | 110151919G30342 | 2010-12-23 | 2010-11-08 | conformal coat | MAO | | |
| UR0113 | 110161919G30045 | 2011-12-23 | | conformal coat | MAO | | |
| UR0114 | 110261919G30136 | 2010-12-27 | | conformal coat | MAO | | |
| UR0115 | 110291919G30096 | 2010-12-27 | | conformal coat | MAO | | |
| UR0116 | 103381919G30367 | 2010-10-27 | | remove from vehicle | Matt Surella's in-vehicle test | | |
| UR0117 | 110281919G30762 | 2011-12-28 | 2010-11-15 | misalignment | MAO | | BD0-BD3 |
| UR0118 | 110671920J30011 | 2011-01-02 | | under analysis | Allegro | X | |
| UR0119 | 110071919G30999 | 2010-12-24 | | under analysis | Allegro | X | |
| UR0120 | 110911919J35411 | 2011-02-15 | 2010-12-21 | misalignment | MAO | | |
| UR0123 | 111051919J35133 | 2011-03-14 | | under analysis | Allegro | X | |
| UR0124 | 110901919J36048 | 2011-02-14 | | under analysis | Allegro | X | |

31- con coat
10- misalignment
11- under analysis
2- torn down
2-in-vehicle

| Case Number | CD3 B9A EPP s/n | Motor Build date | Ribbon Cable Date | root cause | Location | Still need analysis | other codes set |
|---|---|---|---|---|---|---|---|
| FR-0493 | 102792002C30419 | 2010-10-14 | 2010-09-02 | conformal coat | UK | | |
| FR-0496 | 102792002C30419 | | | regulator PU | QAO | | |
| FR-0512 | 110662002D35100 | 2011-02-09 | | hall effect | Micronas | | |
| FR-0518 | 110242002D30163 | 2010-12-22 | 2010-11-16 | misalignment | QAO | | |
| FR-0525 | 103062002D30239 | 2010-10-15 | | conformal coat | QAO | | |
| FR-0532 | 103062002D31029 | 2010-10-14 | | conformal coat | UK | | |
| FR-0533 | 111022002D35025 | 2011-03-17 | | under analysis | QAO | X | NO B9A(B38,B4E) |
| FR-0534 | 110322002D35261 | 2011-01-08 | | under analysis | UK | | lost EPP |
| FR-0535 | 102912002C30375 | 2010-09-24 | 2010-08-30 | conformal coat | QAO | | |
| FR-0536 | 103152002D31020 | 2010-10-16 | | conformal coat | UK | | |
| FR-0537 | 110252002D30179 | 2011-01-04 | 2010-11-22 | misalignment | Tyco | | |
| FR-0538 | 110232002D30097 | 2010-12-20 | | under analysis | UK | X | Find Gear |
| FR-0539 | 103482002D30282 | 2010-11-23 | 2010-10-10 | conformal coat | QAO | | |
| FR-0543 | 103072002D30992 | 2010-10-14 | | conformal coat | 26mile | | |
| FR-0544 | 102472002B30653 | 2010-08-19 | | conformal coat | 26mile | | |
| FR-0545 | 103212002D30532 | 2010-10-17 | | conformal coat | 26mile | | |
| FR-0546 | 103412002D30674 | 2010-11-04 | 2010-09-16 | conformal coat | QAO | | |
| FR-0547 | 110672002D30526 | 2011-02-09 | 2010-12-13 | misalignment | QAO | | |
| FR-0548 | 103192002D30082 | 2010-10-15 | 2010-09-05 | conformal coat | QAO | | |
| FR-0549 | 103192002D30791 | 2010-10-15 | 2010-09-03 | conformal coat | QAO | | |
| FR0552 | 103052002D30193 | 2010-10-13 | 2010-09-01 | conformal coat | QAO | | |
| FR0553 | 111292002D36263 | 2011-04-10 | 2010-09-01 | conformal coat | 26mile | | 2012 m/y |
| FR0567 | 111612002D31167 | 2011-05-23 | | | in eval QAO | X | 2012 m/y |

X

14- Con. Coat
3- misalignment
1- hall effect
1- Reg. power up
4-under analysis

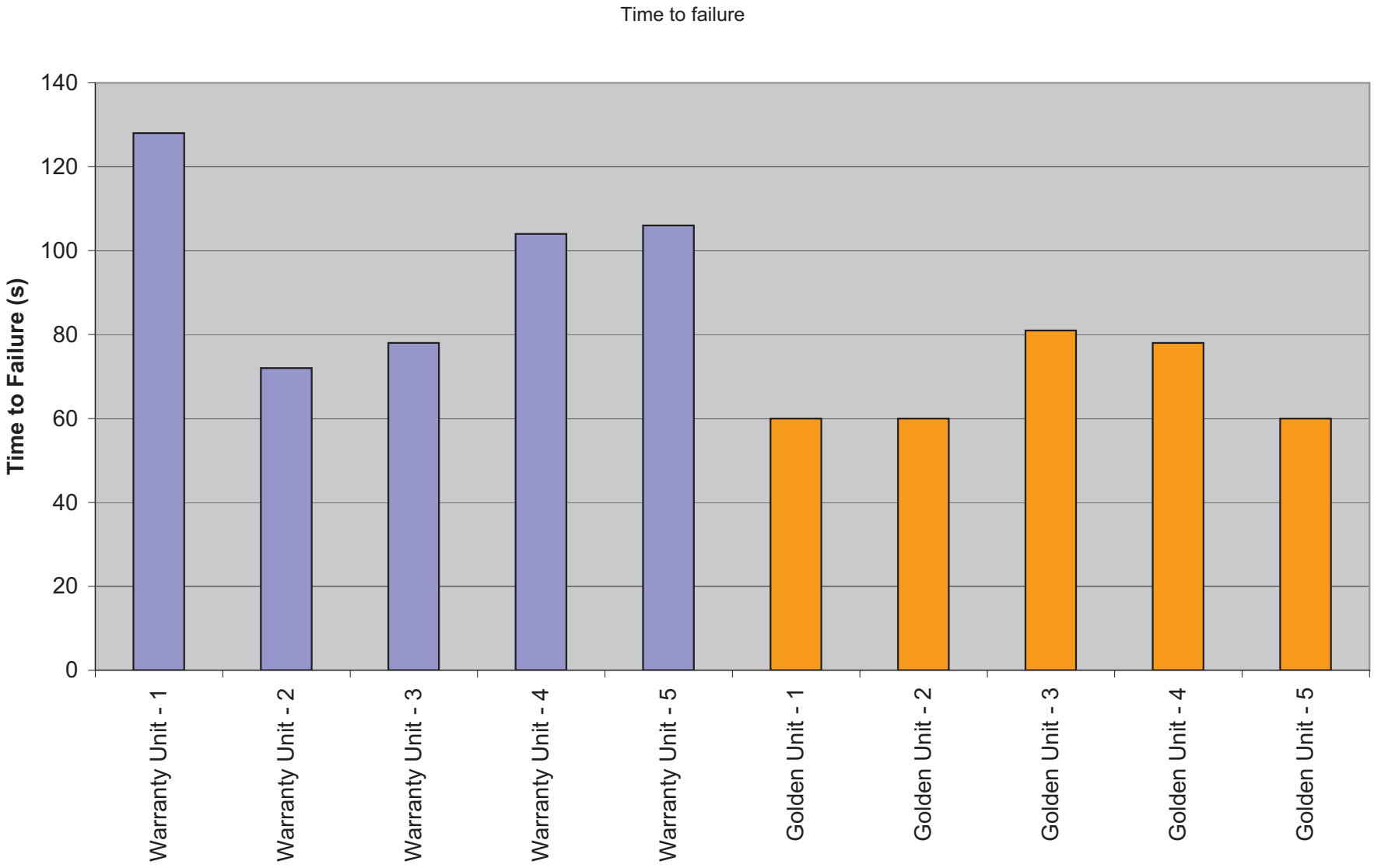
| Case Number | C346 B9A EPP s/n | Motor Build date | Ribbon Cable Date | Root Cause | location | |
|---|---|---|---|---|---|---|
| CR0075 | 110761923D36352 | 2011-02-20 | | misalignment | in process MAO | Laura's vehicle test |
| CR0088 | 110061923D35205 | 2010-11-18 | | conformal coat-testing at Tyco | in eval Tyco | |
| CR0093 | 110551923D35104 | 2011-01-25 | 2010-11-29 | misalignment | 26mile | |
| CR0112 | 110141923D35643 | 2010-11-19 | 2010-09-29 | misalignment | MAO | |
| CR0136 | 110571923D35913 | 2011-02-09 | | misalignment | UK | was CR0090 has duplicate so I changed the CR# |
| C1-Europe | | | | misalignment | Tyco | |
| 0km CL180760 | | | 2010-10-12 | misalignment | MAO | |

5-misalignment
1- con coat
1- under analysis

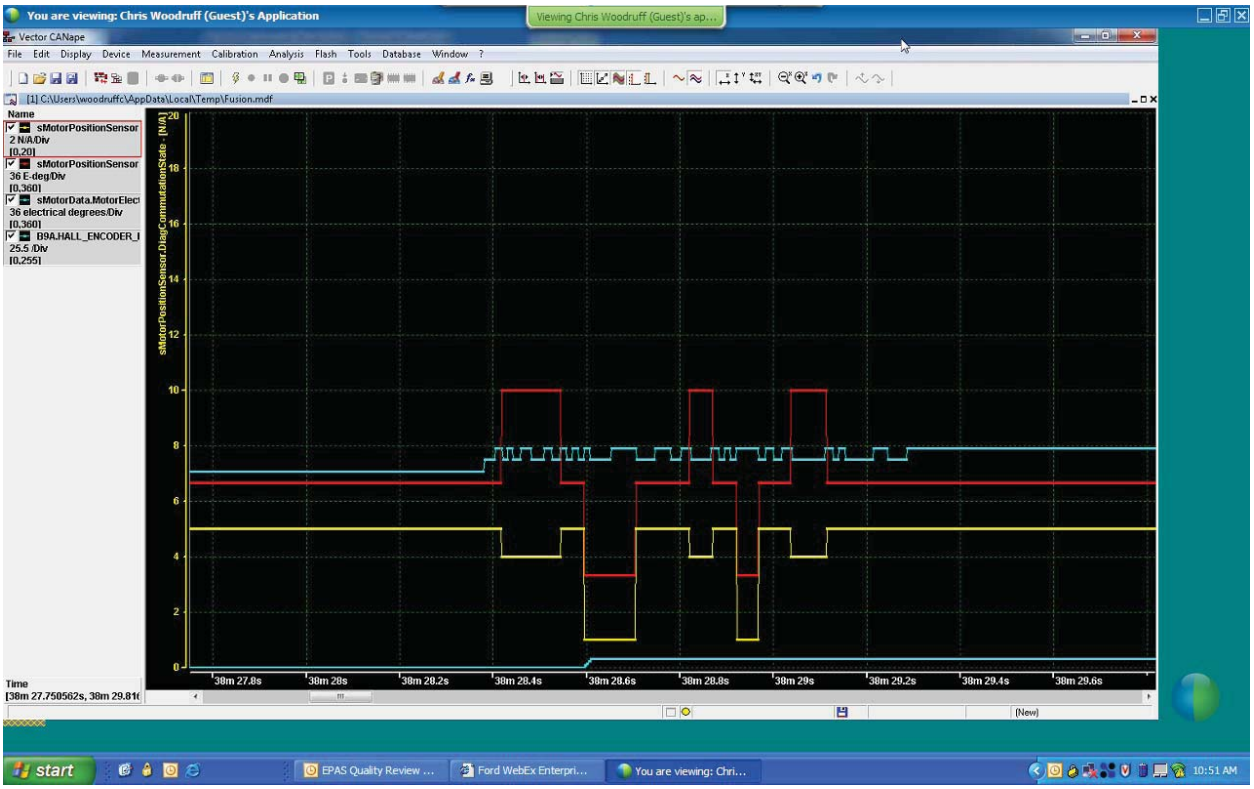
UR0045

| | Time to failure |
|---|---|
| Warranty Unit - 1 | 128 |
| Warranty Unit - 2 | 72 |
| Warranty Unit - 3 | 78 |
| Warranty Unit - 4 | 104 |
| Warranty Unit - 5 | 106 |
| Golden Unit - 1 | 60 |
| Golden Unit - 2 | 60 |
| Golden Unit - 3 | 81 |
| Golden Unit - 4 | 78 |
| Golden Unit - 5 | 60 |

| | Warranty Unit - 1 | Warranty Unit - 2 | Warranty Unit - 3 | Warranty U | Warranty Unit - 5 | Golden Unit - 1 | Golden Unit - 2 | Golden Unit - 3 | Golden Unit - 4 | Golden Unit - 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Time to failure | 128 | 72 | 78 | 104 | 106 | 60 | 60 | 81 | 78 | 60 |


Time to failure
Time to Failure (s)
140
120
100
80
60
40
20
0
Warranty Unit - 1
Warranty Unit - 2
Warranty Unit - 3
Warranty Unit - 4
Warranty Unit - 5
Golden Unit - 1
Golden Unit - 2
Golden Unit - 3
Golden Unit - 4
Golden Unit - 5

**From:** Pienta, Alan (A.)
**Sent:** Wednesday, November 02, 2011 9:41 AM
**To:** Rossi, Roberto (R.A.)
**Subject:** B9a trace
**Attachments:** b9a failure.doc


You are viewing: Chris Woodruff (Guest)'s Application
Viewing Chris Woodruff (Guest)'s ap...
Vector CANape
File Edit Display Device Measurement Calibration Analysis Flash Tools Database Window ?
[1] C:\Users\woodruffc\AppData\Local\Temp\Fusion.mdf
Name
sMotorPositionSensor
2 N/A/Div
[0,20]
sMotorPositionSensor
36 E-deg/Div
[0,360]
sMotorData.MotorElec
36 electrical degrees/Div
[0,360]
B9A.HALL_ENCODER_I
25.5 /Div
[0,255]
sMotorPositionSensor.DiagCommutationState - [N/A]
20
18
16
14
12
10
8
6
4
2
0
38m 27.8s
38m 28s
38m 28.2s
38m 28.4s
38m 28.6s
38m 28.8s
38m 29s
38m 29.2s
38m 29.4s
38m 29.6s
Time
[38m 27.750562s, 38m 29.81
[New]
start
EPAS Quality Review ...
Ford WebEx Enterpri...
You are viewing: Chri...
10:51 AM

**From:** Anderson, Eric (H.)
**Sent:** Thursday, March 24, 2011 11:05 AM
**To:** Napoli, Laura (L.)
**Subject:** BGA27421 power steering inop

Hi Laura:

FYI. Steering failed right after customer took delivery, of course. This is #8 for EPAS inop in general and #4 for U**** codes. The build date is still within our BSAQ dates. The gear has been requested and will go to TRW in Washington, MI. Have TRW, Tyco or Dudoco reported a confident clean date? Are they building with the new software you mentioned?

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **23-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 308468

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 08-MAR-11

Production Date: 16-FEB-11

VIN: 1FMHK8F85BG[redacted]

## Claim Information

Document Number: 234129A

Repair Date: 09-MAR-11

Distance: 115

TIS: 1

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | CREST FORD FLAT ROCK, INC. | Deductible Amount: | .00 |
| Dealer Code: | 00807 - * | Dealer Paid Amount: | .00 |
| Address: | 22675 GIBRALTAR RD | Labor Cost: | 340.62 |
| City: | FLAT ROCK | Misc. Expense Amount: | .00 |
| State: | MI Zip Code: 48134 | Part Markup Amount: | 293.04 |
| Country: | USA Region Code: NA | Material Cost: | 1025.64 |
| Phone: | (734)782-2400 | Total Cost Gross: | 1366.26 |

Cust. Concern Code: N58 - STEERING NOISY

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: PERFORM EPAS DIAG AQUIRED DTC U3000:69, PERFORM DRIVE CYCLE,PERFORM PINPOINT TESTS, MT MECHANICAL TIME NECESSARY TO REPLACE EPAS STEERING GEAR, PERFORM PMI, CK ALIGNMENT AND SET TOE

Customer Comment: PWR STEERING HAS NO PWR ASSIST MESSAGE CENTER READS PWR STEERING FAULT INSP AND ADV

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 17.93 |
| 3504E8 | | 8.96 |
| 3504E45 | | 26.89 |
| 3504E46 | | 8.96 |
| 3001A1 | CASTER, CAMBER AND TOE-IN CORRECT | 53.78 |
| MT3504 | | 224.10 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | CE | GEAR ASY-STEERING | 110101 | 1 | 1025.64 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

*webmaster*

815

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, June 21, 2011 12:52 PM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** CQIS Report BFTAQ006

Hi Laura, Eric and Rob:

Check out this CQIS. It's got the same code as the car that's gone through two gears here in the plant. U3000:96-C8. Could the gear get too much current and be damaged by a faulty electrical system?

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFTAQ006 NHL | | | **Received:** | 06/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F87BGA66103 | | | **Build Date:** | 05/10/2011 |
| **Odometer :** | 1,410 M | **Engine:** | 3.5L CYCLO | **Calibration :** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04927 J.C. Lewis Ford | | | **Phone#:** | (912) 925-2678 |
| **City:** | Savannah | **State:** | Georgia | **Country :** | USA |
| **Originator:** | AARON MOORE | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | U3000:96 | | | | |
| **Fix:** | **Causal Component :** -- | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** CBISHO41 **Phone:** 313 317-9359 **Regn Cd:** S1 Atlanta

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** AARON MOORE **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 06/20/2011 09:27AM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE

WEB FORM DATA - CONCERN: POWER STEERING IS INOP NO POWER STEERING AND

SERVICE ADVANCE TRACK AND POWER ASST FAULT LIGHTS ON AND ABS LIGHT ON

AT ALL TIMES DIAGNOSTICS: PERFORMED PINPOINT FOR CODES U3000:96-C8

PSCM U3000:96-C8 PARTS REPLACED:: NONE TECH QUESTION: PINPOINT

SAYS TO REPLACE PSCM RACK GEAR ASSY MOD. PINPOINT TEST C-1.HAS THERE

BEEN ANY OTHER CONCERNS ON THIS OR SSMS TSBS OR HAS THE REPLACEMENT OF

THE PSCM. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN

APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE

PINPOINT TEST FOLLOWED? YES

**RECOMM 06/20/2011 09:27AM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE**

IF THE U3000:96 DTC IS RETURNING AS A CMDTC AFTER BEING CLEARED, THE

EPAS SHOULD BE REPLACED. PLEASE VERIFY THAT THERE ARE NO POWER OR

GROUND ISSUES TO THE EPAS MODULE. RECOMMEND LOAD TESTING POWER/GROUND

IN ADDITION TO INSPECTING THE CONNECTOR TERMINALS (PINS)

AND VERIFY

THERE ARE NO FIT CONCERNS AT THE EPAS MODEL. IF THIS IS OK, REPLACE

THE EPAS.

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Monday, March 07, 2011 3:06 PM
**To:** Michael Fontana; 'Simon Malsbury'; 'Geoff Jacks'; Andy Partridge; Robert Kostadina; Nick turovich; 'Greg Austin'; 'Gregory Sheets'; 'Phil Browne'
**Cc:** Mrozek, Robert (R.M.); Snider, Tim (T.O.); Diez, Timothy (T.P.); Kingstrom, Mark (M.D.); Bahena, Miguel (Mike.)
**Subject:** Data on Management Lease B3A Vehicle

**Importance:** High

**Attachments:** BG[redacted]_Taras.ppt; BG[redacted]_Taras.PAR

Team,

We have another B3A on a U502 management lease car. This one happened on Friday and I pulled the data out of the vehicle in Dearborn this afternoon. Driver lost assist one time on Friday morning. They will be taking their vehicle in for a gear swap in the management garage. Eric Estes will expedite the replacement and pickup of this gear to get it to 26mi as soon as possible.

Attached is the data. A few points…

1. VIN is BG[redacted] Eric, please send ECU and EPP serial numbers so we can get relay build date ASAP.
2. This vehicle had 36 E66's present in the LIC data. There was only one that lead to a B3A.
3. I don't want any more contacts built at Doduco until an ICA is in place!

BG[redacted]_Taras.ppt BG[redacted]_Taras.PAR

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

BG [redacted]

3/7/2011

1: Fault Store Data | 2: LICS | 3: SafetMicro | 4: Maintaince Data | 5: Control Pannel | 6: Part Numbers/Traceability | 7: Calibration Data | 8: CAN Signals

| [1] A Co... | [2] A Jo... | [3] A Times... |
|---|---|---|
| 02h | 21 N/A | 326313 |
| 02h | 0 N/A | 693625 |
| 02h | 255 N/A | 781209 |
| 02h | 3 N/A | 6729 |
| 02h | 35 N/A | 3905 |
| 02h | 0 N/A | 104849 |
| 02h | 46 N/A | 196073 |
| 02h | 0 N/A | 234385 |

| [4] Level A Fault Store | |
|---|---|
| TRW_FaultStore.itsFaultStores.[0].Las | 2 N/A |
| TRW_FaultStore.itsFaultStores.[0].Nun | 10 N/A |

| [7] BC C... | [6] BC J... | [8] BC Time... |
|---|---|---|
| 02h | 0 N/A | 693625 |
| 02h | 255 N/A | 781209 |
| 3Ah | 27 N/A | 19333 |
| 02h | 35 N/A | 3905 |
| 02h | 0 N/A | 104849 |
| 02h | 46 N/A | 196073 |
| 02h | 0 N/A | 234385 |
| 02h | 21 N/A | 326313 |

| [5] Level BC Fault Store | |
|---|---|
| TRW_FaultStore.itsFaultStores.[1].Las | 2 N/A |
| TRW_FaultStore.itsFaultStores.[1].Nun | 10 N/A |

| [9] E Co... | [10] E J... | [11] E Time... |
|---|---|---|
| 66h | 3 N/A | 580 |
| 66h | 1 N/A | 582 |
| 66h | 1 N/A | 587 |
| 66h | 7 N/A | 584 |
| 66h | 1 N/A | 586 |
| 66h | 3 N/A | 579 |
| 66h | 0 N/A | 582 |
| 12h | 1 N/A | 32260 |

| [12] Level E Fault Store | |
|---|---|
| TRW_FaultStore.itsFaultStores.[2].Las | 0 N/A |
| TRW_FaultStore.itsFaultStores.[2].Nur | 64 N/A |

| [14] Numeric | |
|---|---|
| sSystemMode.rootState_a | NormalOperation N/A |
| EcuM.rootState_active | MotorDriveOn N/A |
| VehicleTuneID_NVV | VEHICLE_TUNE_3 N/A |
| MotorTuneID_NVV | MOTOR_TUNE_2 N/A |
| BuildVersion | FNU5-B2-AMBBB |

[20] sEFF_Bu

| \ | 0 |
|---|---|
| 0 | 00h |
| 1 | 00h |
| 2 | 24h |
| 3 | 00h |
| 4 | 3Ah |
| 5 | 0Bh |
| 6 | 01h |
| 7 | 00h |
| 8 | 03h |
| 9 | 01h |
| 10 | 03h |
| 11 | 01h |
| 12 | ECh |
| 13 | 00h |
| 14 | 96h |
| 15 | 2Ch |
| 16 | 1Ah |
| 17 | 00h |
| 18 | 94h |
| 19 | 77h |
| 20 | 03h |
| 21 | 00h |
| 22 | D7h |
| 23 | 21h |
| 24 | 00h |
| 25 | 00h |
| 26 | 6Ah |

# LICS—36 E66!

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A0D.PSU_STUCK_ON_FAULT.I | 0 | AA8.PULL_DRIFT_COMPEI | 0 | B23.BOTTOM_FET_OPEN_CIRCUIT_ | 0 | B92.INTEG_CHECK_MOTOR_VE | 0 | BEE.MOTOR_TUNE_DATA_CRC_FAU | 0 |
| A0E.CAN_ENGINE_SPEED_INV | 0 | AB0.CAN_HEV_READY_AB | 0 | B24.TOP_FET_THREE_OPEN_CIRCI | 0 | B93.INTEG_CHECK_RSP_FAULT | 0 | BEF.DEV_TUNE_DATA_CRC_FAULT. | 0 |
| A0F.CAN_HARDWARE_NOT_R | 0 | AB1.HFAC_SPD_GRADIENT | 0 | B25.LNK_CAP_CHARGING_TOO_SI | 0 | B95.INTEG_CHECK_TORQUE_E: | 0 | BFA.TUNE_COMPATIBILITY_FAULT.I | 0 |
| A11.CAN_BUS_ERROR_FAULT | 0 | AB2.HFAC_TRQ_GRADIENT | 0 | B31.LINK_RELAY_SHORT_CIRCUIT_ | 0 | B97.INTEG_CHECK_CURRENT_( | 0 | BFC.EEPROM_INCOMPATIBLE_FAUI | 0 |
| A12.CAN_CHARGING_SYSTEM | 0 | AB3.HFAC_SPD_OUT_OF_ | 0 | B32.LINK_VOLTAGE_WILL_NOT_S | 0 | B9A.HALL_ENCODER_REFEREN | 0 | BFD.HARDWARE_INCOMPATIBLE_F | 0 |
| A13.CAN_CHR_SYS_STUCK_F | 0 | AB4.HFAC_TRQ_OUT_OF_ | 0 | B38.MOTOR_POSITION_SENSOR_F | 0 | B9B.I_SENSE_STATIC_ZERO_O | 0 | C41.MON_TRIP_LATCH_NOT_HOLD | 0 |
| A14.CAN_STR_WHL_OFST_ST | 0 | ABC.HFAC_GAIN_BELOW_ | 0 | B39.UNABLE_TO_READ_HALL_STA | 0 | B9E.LOAD_DUMP_TIMEOUT_EX | 0 | C69.LEVEL_B_LATCHED_FAULT.LIC | 1 |
| A15.CAN_VEHICLE_SPEED_IN | 0 | AE5.CAN_VEH_SPD_STUC | 0 | B3A.MOTOR_STAR_POINT_VOLTA | 19 | B9F.INTEG_CHECK_MONITOR_E | 0 | CFE.EOLT_EPS_OUT_OF_SPEC_FAU | 0 |
| A16.CAN_MUTE_FAULT.LIC | 0 | AE6.CAN_ENG_SPD_STUC | 0 | B40.MON_PASSIVE_CTRL_TIMEOU | 0 | BA4.SAFETY_CIRCUIT_TRIPPED | 0 | CFF.EOLT_NOT_PASSED_FAULT.LIC | 0 |
| A17.CAN_ENGINE_SPEED_AB: | 0 | AE7.COLUMN_TORQUE_C | 0 | B42.MON_PASSIVE_TRIP_TIMEOUT | 0 | BA5.SAFETY_CIRCUIT_COMMS_ | 0 | E08.LOW_PWM_SUSPEND_EVENT. | 0 |
| A18.CAN_VEHICLE_SPEED_AE | 0 | AE8.NVM_TRQ_REINST_BI | 0 | B43.LINK_VOLTAGE_FAULT.LIC | 0 | BA6.LINK_RELAY_HIGH_SIDE_D | 0 | E09.LOAD_DUMP_EVENT.LIC | 0 |
| A19.INVALID_RSP_COUNTER_ | 0 | AF0.VEHICLE_TYPE_SELE( | 0 | B45.INT_WATCHDOG_RESET_FAUL | 0 | BA7.BRIDGE_NOT_DISABLED_D | 0 | E10.SUPPLY_LOW_VOLTAGE_TRQ_ | 0 |
| A1A.LOW_BATTERY_VOLTAG | 0 | AF1.FRICTION_DETECTION | 0 | B47.ASIC_COMMS_POWER_UP_FA | 0 | BA9.MOTOR_I_SENSE_DYNAMI | 0 | E12.OVER_USE_TORQUE_LIMIT_AF | 18 |
| A1B.ECU_CALIB_DATA_CRC_I | 0 | AF2.FRICTION_DETECTION | 0 | B4A.UNEXPECTED_INTERRUPT_FA | 0 | BAA.I_SENSE_STATIC_POSITIV | 0 | E14.ENGINE_STALLED_TORQUE_LII | 0 |
| A1C.MAINTENANCE_DATA_CR | 0 | AF3.EOLT_DATA_CRC_FAI | 0 | B4E.MOTOR_POSITION_SENSOR_I | 0 | BAB.I_SENSE_STATIC_NEGATIV | 0 | E1A.LOW_BATTERY_VOLTAGE_EVE | 0 |
| A1E.VEHICLE_TUNE_DATA_CF | 0 | AF4.TRACEABILITY_NUMS_ | 0 | B4F.LINK_RELAY_LOW_SIDE_DISA | 0 | BAC.MOTOR_I_SENSE_DYNAMI | 0 | E1E.CURRENT_LIMIT_THERMAL_EV | 0 |
| A1F.TUNE_PLAUSIBILITY_FAU | 0 | AF6.VEHICLE_TUNE_SELE( | 0 | B51.STACK_FAULT.LIC | 0 | BAD.MOTOR_I_SENSE_DYNAMI | 0 | E21.HIGH_BATTERY_VOLTAGE_EVE | 0 |
| A21.HIGH_BATTERY_VOLTAGE | 0 | AF7.VEHICLE_TUNE_SELE( | 0 | B53.RAM_CONTINUOUS_TEST_FAU | 0 | BAE.I_SENSE_STATIC_COMMO | 0 | E22.MICRO_LOW_VOLTAGE_FAULT | 0 |
| A26.DEFAULT_DRIVE_STAGE_ | 0 | A05.ANC_GATEWAY_LINK_ | | B55.PORT_REGISTERS_FAULT.LIC | 0 | BAF.MOTOR_I_SENSE_DYNAMI( | 0 | E26.DRIVE_STAGE_TEMP_EVENT.LI | 0 |
| A28.ANGLE_OFFSET_INVALID_ | 0 | A14.CAN_BRAKE_SENSOF | | B56.FAST_ROM_CHECK_FAULT.LIC | 0 | BB5.MOTOR_PHASE_VOLTAGE | 0 | E2E.INCOMPLETE_POWER_DOWN_ | 0 |
| A29.INVALID_ASP_COUNTER_ | 0 | A1D.TPMS_COUNTER_CR( | | B5F.MON_PASSIVE_RE_CTRL_TIM | 0 | BB6.MOTOR_PHASE_VOLTAGE | 0 | E30.LINK_RELAY_OPEN_CIRCUIT_E | 0 |
| A2A.CAN_ANGLE_OFFSET_AB | 0 | A20.CAN_VEH_YAW_RATE | | B60.ADC_REFERENCE_VOLTAGE_F | 0 | BB7.MOTOR_PHASE_VOLTAGE | 0 | E4C.THERM_EST_TEMP_EVENT.LIC | 0 |
| A2E.INCOMPLETE_POWER_D( | 0 | A34.CAN_VEH_YAW_RATE | | B61.PROC_CORE_TEST_FAULT.LIC | 0 | BB8.MOTOR_PHASE_VOLTAGE | 0 | E4D.FAST_THERM_EST_TEMP_EVE | 0 |
| A30.LINK_RELAY_OPEN_CIRC | 0 | A35.CAN_VEH_YAW_RATE | | B64.LNK_CAP_CHARGING_TOO_FA | 0 | BB9.MOTOR_PHASE_VOLTAGE | 0 | E62.ASIC_RAM_EVENT.LIC | 0 |
| A33.BRIDGE_ENABLE_SENSE_ | 0 | A36.CAN_ABS_STABILITY_ | | B6B.MOTOR_RELAY_SHORT_CIRC | 0 | BBA.MOTOR_PHASE_VOLTAGE | 0 | E78.NVM_RESEEDED_EVENT.LIC | 0 |
| A3B.MCU_TEMPERATURE_FAI | 0 | A37.CAN_DESIRED_TORQI | | B6C.RAM_POWER_UP_TEST_FAUL | 0 | BBB.BRIDGE_NOT_DISABLED_M | 0 | E9D.HIGH_PWM_SUSPEND_EVENT. | 0 |
| A3C.NVM_TEMPORARY_DATA | 0 | A3A.MOTOR_A_STAR_PO | 0 | B6F.MON_ACTIVE_CTRL_TIMEOUT_ | 0 | BC1.BRIDGE_NOT_DISABLED_T | 0 | EDF.EXCESSIVE_COLUMN_VELOCIT | 0 |
| A3D.NVM_DEM_BLOCK_CRC_ | 0 | A3E.NVM_FEATURE_SW_( | | B70.MON_ACTIVE_TRIP_TIMEOUT_ | 0 | BC2.SAFETY_CIRCUIT_PROG_S | 0 | EF5.NO_VEH_TUNE_SELECTED_FAU | 0 |
| A49.FLASH_ACCESS_VIOLATI | 0 | A3F.NVM_TIRE_ID_CRC_B | | B71.SOFTWARE_OVERRUN_FAULT | 0 | BC4.LINK_RELAY_LOW_SIDE_D | 0 | EF9.VEHICLE_TYPE_SELECTOR_CO | 0 |
| A62.ASIC_COMMUNICATIONS_ | 0 | A44.PLATFORM_TUNE_DA | 0 | B7A.PUT_MOTOR_PHASE_VOLTAC | 0 | BC5.LINK_RELAY_HIGH_SIDE_D | 0 | F6A.FRICTION_DETECTED_ON_LAST | 0 |
| A65.BATT_LOSS_ON_LAST_J | 0 | AC3.CAN_WHL_SPD_STU( | | B7B.PUT_MOTOR_PHASE_VOLTAC | 0 | BC6.BRIDGE_NOT_ENABLED_DI | 0 | A5C.INTEG_CHECK_ARB_LIM_FAUL | |
| A66.MOTOR_RELAY_OPEN_CI | 0 | AC8.CAN_WHL_SPD_INVA | 0 | B7C.PUT_MOTOR_PHASE_VOLTAC | 0 | BC7.BRIDGE_NOT_ENABLED_M | 0 | A63.LA_CAMERA_HANDS_OFF_RES | |
| A77.NVM_COMPATIBILITY_ID_ | 0 | ACA.CAN_RSP_INVALID_F | 0 | B7D.PUT_MOTOR_PHASE_VOLTAC | 0 | BD0.TAS_RAW_TORQUE_1_RA | 0 | A67.LA_LDW_NEUTRALITY_FAULT.I | |
| B9C.CALIBRATION_INTEGRITY | 0 | ACB.CAN_ANC_WHL_SPD | | B7E.PUT_MOTOR_PHASE_VOLTAC | 0 | BD1.TAS_RAW_TORQUE_2_RA | 0 | A73.EAC_STATE_FLT_RAISED_FAUI | 0 |
| BA0.MOTOR_RELAY_CONTAC | 0 | ACC.ANC_NIBBLE_CONTR | | B7F.PUT_MOTOR_PHASE_VOLTAG | 0 | BD2.TAS_RAW_TORQUE_FREQ | 0 | A74.EAC_STATE_FLT_LATCHED_FA | 0 |
| BEB.INVALID_MOTOR_TUNE_: | 0 | ACD.ANC_MONITOR_COM | | B86.ROM_CONTINUOUS_CSUM_FA | 0 | BD3.TAS_RAW_TORQUE_FREQ | 0 | A76.EAC_FAULT_LATCHED_FAULT.I | 0 |
| E11.SUPPLY_HIGH_VOLTAGE_ | 0 | ACE.CAN_LANE_ASSIST_D | | B8F.REF_TUNE_DATA_INTEG_REM_ | 0 | BD4.TAS_TORQUE_CROSSCHE | 0 | A75.EAC_ACTIVE_ILLEGAL_STATE_ | 0 |
| E1D.HARD_RST_RQST_REPR( | 0 | ACF.CAN_LANE_ASSIST_D | | B90.INTEG_CHECK_SENSOR_TORC | 0 | B68.LA_LDW_LIMIT_FAULT.LIC | | A8A.CAN_VEH_LAT_ACCL_ABOVE_ | 0 |
| EE0.DSR_HANDSHAKE_EVENT | | AD5.CAN_STR_WHEEL_AI | 0 | A8C.CAN_BRK_SEN_DATA_STUCK | 0 | B6D.PU_TAS_RAW_TORQUE_1 | | A8B.REF_TUNE_DATA_INTEGRITY_F | 0 |
| E98.POWERDOWN_DEICE_AB | 0 | AD6.CAN_AUTOPARK_CM | 0 | A8D.CAN_VEH_LAT_ACCL_ABSENT | 0 | B6E.PU_TAS_RAW_TORQUE_2_ | | AA2.MOTOR_RELAY_CONTACT_TE: | 0 |
| E66.MOTOR_RELAY_OPEN_CI | 36 | AD7.CAN_WHL_SPD_ABS | 0 | AA1.MOTOR_RELAY_CONTACT_TE | 0 | B87.INTEG_CHECK_PU_SENSOI | | AA3.MOTOR_RELAY_CONTACT_RE | 0 |

# Ford DTC Info

Positive Response to ReadDTCInformation (Service 0x19) -- [ECU ID: 0x738 (PSCM)]

SubFunction: 0x02 - reportDTCByStatusMask

DTCStatusAvailabilityMask: 0xCA

Number of Returned DTCs: 1

DTC #1: 0xE01149 (U2011-49) [Motor - internal electronic failure]

Status: 0x08

Bit 7 - warningIndicatorRequested: 0

Bit 6 - testNotCompletedThisOperationCycle: 0

Bit 3 - confirmedDTC: 1

Bit 1 - testFailedThisOperationCycle: 0

# Veh Config Info

Positive Response to ReadDataByIdentifier (Service 0x22) -- [ECU ID: 0x738 (PSCM)] -- Assuming Single DID

DataIdentifier: 0xDE00 Data Size: 2 byte(s)

Data (Hex): 03 03

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CANape PAR V3.1: FNU5-B2-AMBBB.a2l 1 0 ccp
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;
;
;
;
; Taras U502 with B3A and E66
ALT_COMP_EAC_INPUT_LIMIT_MAP [INT(16),(1,7)]  1152 ;  1152
:  1088 ;  1088
:  1024 ;  1024
:  1024 ;  1024
:  1024 ;  1024
:  512 ;  512
:  0 ;  0
ALT_COMP_EAC_INPUT_VSPD_MAP [INT(16),(1,7)]  0 ;  0
:  96 ;  96
:  192 ;  192
:  480 ;  480
:  768 ;  768
:  800 ;  800
:  832 ;  832
ASP_VALID_MULT_CHANGE_RATE [UINT(16)]  26 ;  9.92
ATF2_A0 [UINT(16)]  16384 ;  16384
ATF2_A1_MAP [UINT(16),(1,5)]  27301 ;  1.67
:  27293 ;  1.67
:  27285 ;  1.67
:  27285 ;  1.67
:  27277 ;  1.66
ATF2_A1_MAP_VTD [UINT(16),(1,5)]  27301 ;  27301
:  27293 ;  27293
:  27285 ;  27285
:  27285 ;  27285
:  27277 ;  27277
ATF2_A2_MAP [UINT(16),(1,5)]  10939 ;  0.67
:  10933 ;  0.67
:  10928 ;  0.67
:  10928 ;  0.67
:  10923 ;  0.67
ATF2_A2_MAP_VTD [UINT(16),(1,5)]  10939 ;  10939
:  10933 ;  10933
:  10928 ;  10928
:  10928 ;  10928
:  10923 ;  10923
ATF2_B0_MAP [UINT(16),(1,5)]  14025 ;  0.86
:  15774 ;  0.96
:  17522 ;  1.07
:  17522 ;  1.07
:  19270 ;  1.18
ATF2_B0_MAP_VTD [UINT(16),(1,5)]  14025 ;  14025
:  15774 ;  15774
:  17522 ;  17522
:  17522 ;  17522
:  19270 ;  19270
ATF2_B1_MAP [UINT(16),(1,5)]  26950 ;  1.64
:  30311 ;  1.85
:  33670 ;  2.06
:  33670 ;  2.06
:  37028 ;  2.26
ATF2_B1_MAP_VTD [UINT(16),(1,5)]  26950 ;  26950
:  30311 ;  30311
:  33670 ;  33670
:  33670 ;  33670
:  37028 ;  37028
ATF2_B2_MAP [UINT(16),(1,5)]  12947 ;  0.79
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:  14561 ;  0.89
:  16175 ;  0.99
:  16175 ;  0.99
:  17788 ;  1.09
ATF2_B2_MAP_VTD [UINT(16),(1,5)]  12947 ;  12947
:  14561 ;  14561
:  16175 ;  16175
:  16175 ;  16175
:  17788 ;  17788
ATF2_VEHICLE_SPEED_MAP_VTD [UINT(8),(1,5)]  0 ;  0
:  5 ;  5
:  10 ;  10
:  15 ;  15
:  20 ;  20
ATF2_VehicleSpeed_Map [UINT(8),(1,5)]  0 ;  0
:  5 ;  5
:  10 ;  10
:  15 ;  15
:  20 ;  20
AltCompEAC_LimitMapBrkpts [INT(16),(1,7)]  0 ;  0
:  96 ;  96
:  192 ;  192
:  480 ;  480
:  768 ;  768
:  800 ;  800
:  832 ;  832
AltCompEAC_LimitMapData [INT(16),(1,7)]  1152 ;  1152
:  1088 ;  1088
:  1024 ;  1024
:  1024 ;  1024
:  1024 ;  1024
:  512 ;  512
:  0 ;  0
BATT_CUR_FILT_COEF [UINT(16)]  16384 ;  1
BLENDING_FILTER_FREQ_MAP [UINT(8),(1,12)]  80 ;  8
:  88 ;  8.8
:  98 ;  9.8
:  110 ;  11
:  123 ;  12.3
:  130 ;  13
:  135 ;  13.5
:  136 ;  13.6
:  137 ;  13.7
:  138 ;  13.8
:  138 ;  13.8
:  138 ;  13.8
BLENDING_FILTER_FREQ_MAP_VTD [UINT(8),(1,12)]  80 ;  8
:  88 ;  8.8
:  98 ;  9.8
:  110 ;  11
:  123 ;  12.3
:  130 ;  13
:  135 ;  13.5
:  136 ;  13.6
:  137 ;  13.7
:  138 ;  13.8
:  138 ;  13.8
:  138 ;  13.8
BUS_CLAMPING_THRESHOLD_HIGH_SQRD [UINT(16)]  607 ;  0.59
BUS_CLAMPING_THRESHOLD_LOW_SQRD [UINT(16)]  576 ;  0.56
CAN_STUCK_BITS_TIME_THRESH_APV [UINT(16)]  2000 ;  2000
CCP_Enable [UINT(8)]  1 ;  1
CCP_RequestedSAPPVehicleMode [UINT(32)]  0 ;  0
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CCP_Requested_Maintenance_Mode [UINT(32)]  0 ;  0
CHARGING_SYS_CHG_FLT_TIME_VTD [UINT(16)]  500 ;  500
COMP_EAC_A1_VTD [UINT(16)]  13650 ;  13650
COMP_EAC_A2_VTD [UINT(16)]  5470 ;  5470
COMP_EAC_B0_VTD [UINT(16)]  7013 ;  7013
COMP_EAC_B1_VTD [UINT(16)]  13475 ;  13475
COMP_EAC_B2_VTD [UINT(16)]  6474 ;  6474
COMP_EAC_BOOST_GAIN_VTD [INT(16)]  160 ;  20
COMP_EAC_INPUT_LIMIT_MAP [UINT(16),(1,4)]  1152 ;  1152
:  1024 ;  1024
:  1024 ;  1024
:  0 ;  0
COMP_EAC_INPUT_VSPD_MAP [UINT(8),(1,4)]  0 ;  0
:  3 ;  3
:  12 ;  12
:  13 ;  13
COMP_EAC_MODE_IN_TIME_VTD [UINT(16)]  200 ;  0.2
COMP_EAC_MODE_OUT_TIME_VTD [UINT(16)]  200 ;  0.2
COMP_EAC_OFF_CVEL_THRESH [UINT(16)]  5120 ;  5
COMP_EAC_OFF_TRQ_THRESH_PTD [UINT(16)]  5120 ;  5
COMP_EAC_OFF_VSPD_THRESH_PTD [UINT(16)]  768 ;  12
COMP_EAC_ON_CVEL_THRESH_PTD [UINT(16)]  102 ;  0.1
COMP_EAC_ON_TRQ_THRESH_PTD [UINT(16)]  3072 ;  3
COMP_EAC_ON_VSPD_THRESH_PTD [UINT(16)]  768 ;  12
COMP_EAC_TRQ_FILTER_FREQ_VTD [UINT(16)]  640 ;  2.5
CURRENT_INTEGRAL_GAIN [UINT(16)]  35 ;  42.72
CURRENT_PROPORTIONAL_GAIN [UINT(16)]  1409 ;  0.17
CURRENT_SHAPING_DISABLE_THRESH [INT(16)]  0 ;  0
CURRENT_SHAPING_ENABLE_THRESH [INT(16)]  0 ;  0
ClearEFFData [UINT(32)]  0 ;  0
ClearTRWFaults [UINT(32)]  0 ;  0
D0_DAMPING_TORQUE_DEADBAND_VTD [INT(16)]  0 ;  0
D1Q_DAMPING_TRQ_GAIN_MAP [UINT(8),(1,12)]  18 ;  1.8
:  18 ;  1.8
:  19 ;  1.9
:  20 ;  2
:  21 ;  2.1
:  22 ;  2.2
:  24 ;  2.4
:  26 ;  2.6
:  29 ;  2.9
:  32 ;  3.2
:  35 ;  3.5
:  37 ;  3.7
D1Q_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  18 ;  1.8
:  18 ;  1.8
:  19 ;  1.9
:  20 ;  2
:  21 ;  2.1
:  22 ;  2.2
:  24 ;  2.4
:  26 ;  2.6
:  29 ;  2.9
:  32 ;  3.2
:  35 ;  3.5
:  37 ;  3.7
D1_DAMPING_TRQ_GAIN_MAP [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  7 ;  0.7
:  17 ;  1.7
:  39 ;  3.9
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:  64 ;  6.4
:  91 ;  9.1
:  116 ;  11.6
:  139 ;  13.9
:  156 ;  15.6
D1_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  7 ;  0.7
:  17 ;  1.7
:  39 ;  3.9
:  64 ;  6.4
:  91 ;  9.1
:  116 ;  11.6
:  139 ;  13.9
:  156 ;  15.6
D2_DAMPING_TRQ_MAX_MAP [UINT(8),(1,12)]  85 ;  8.5
:  85 ;  8.5
:  85 ;  8.5
:  86 ;  8.6
:  88 ;  8.8
:  90 ;  9
:  94 ;  9.4
:  97 ;  9.7
:  100 ;  10
:  102 ;  10.2
:  103 ;  10.3
:  103 ;  10.3
D2_DAMPING_TRQ_MAX_MAP_VTD [UINT(8),(1,12)]  85 ;  8.5
:  85 ;  8.5
:  85 ;  8.5
:  86 ;  8.6
:  88 ;  8.8
:  90 ;  9
:  94 ;  9.4
:  97 ;  9.7
:  100 ;  10
:  102 ;  10.2
:  103 ;  10.3
:  103 ;  10.3
D3_DMP_TRQ_MULT_LWR_THRESH_VTD [UINT(16)]  819 ;  0.8
D4_DMP_TRQ_MULT_UPR_THRESH_VTD [UINT(16)]  3277 ;  3.2
D5_DMP_TRQ_MULT_FILT_FREQ_VTD [UINT(8)]  200 ;  20
D6_DMP_TRQ_DIFF_FLT_FREQ_VTD [UINT(8)]  255 ;  25.5
D7_DMP_TRQ_DIFF_MULT_LWR_THRESH [UINT(8)]  250 ;  250
D8_DMP_TRQ_DIFF_MULT_UPR_THRESH [UINT(8)]  255 ;  255
DECOUPLING_GAIN [UINT(16)]  0 ;  0
DEFAULT_DRIVE_STAGE_TEMP [INT(16)]  13000 ;  130
DEFAULT_MOTOR_CURRENT_A_RIPPLE [INT(16)]  192 ;  1.5
DEFAULT_MOTOR_CURRENT_C_RIPPLE [INT(16)]  346 ;  2.7
DEF_VEHICLE_SPEED [UINT(16)]  6400 ;  100
DEF_VSPD_IN_USE_MUL_CHNG_RATE [UINT(16)]  131 ;  49.97
DM_ACTIVE_PRECHARGE_SAFE_V_DROP [INT(16)]  3840 ;  15
DM_ADC_REF_VOLTAGE_MAX_RAW_INPUT [INT(16)]  14100 ;  2.84
DM_ADC_REF_VOLTAGE_MIN_RAW_INPUT [INT(16)]  10774 ;  2.17
DM_ASIC_MIN_BRIDGE_CLAMP_BAT_V [INT(16)]  5990 ;  23.4
DM_ASIC_WORKAROUND_PULSE_TIME [UINT(16)]  50 ;  5
DM_BATTERY_MAX_OVER_V_DURATION [UINT(32)]  3900000 ;  3900000
DM_BATTERY_MAX_V [INT(16)]  6144 ;  24
DM_BATTERY_MIN_V [INT(16)]  2304 ;  9
DM_BATTERY_NORMAL_V [INT(16)]  2304 ;  9
DM_BATTERY_V_CHECK_TIME [UINT(16)]  10 ;  10
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DM_CAP_TST_CHARGE_FAST_COEFF [UINT(16)]  703 ;  0.043
DM_CAP_TST_CHARGE_SLOW_COEFF [UINT(16)]  176 ;  0.011
DM_CAP_TST_CHRG_FST_COEF_PREP2C [UINT(16)]  676 ;  0.041
DM_CAP_TST_CHRG_SLO_COEF_PREP2C [UINT(16)]  169 ;  0.01
DM_CAP_TST_CURVE_FIT_TOLERANCE_V [INT(16)]  128 ;  0.5
DM_CAP_TST_FULL_CHRG_BAT_V_DROP [INT(16)]  282 ;  1.1
DM_CAP_TST_MAX_VLINK_CHARGE_TIME [UINT(16)]  240 ;  240
DM_CAP_TST_MAX_VLINK_PCNT_OF_BAT [INT(16)]  11469 ;  70.001
DM_CAP_TST_STOP_CLOSE_V_HEADROOM [INT(16)]  192 ;  0.75
DM_FET_MAX_UNLOADED_BOT_V_DROP [INT(16)]  128 ;  0.5
DM_FET_MAX_UNLOADED_OFF_V_DROP [INT(16)]  512 ;  2
DM_FET_MAX_UNLOADED_TOP_V_DROP [INT(16)]  384 ;  1.5
DM_FET_OFF_PHASE_V_NOM_BIAS_PCNT [INT(16)]  8864 ;  54.102
DM_FET_TST_MAX_PHASE_V_TST_COUNT [UINT(16)]  40 ;  40
DM_FET_TST_MAX_VLINK_PAUSE_COUNT [UINT(16)]  200 ;  200
DM_FET_TST_MIN_INTER_STATE_V_GAP [INT(16)]  64 ;  0.25
DM_FET_TST_MIN_PHASES_BAD_COUNT [UINT(16)]  10 ;  10
DM_FET_TST_MIN_PHASES_OK_COUNT [UINT(16)]  8 ;  8
DM_GATE_DRV_MAX_SUPPLY_ERR_TIME [UINT(16)]  115 ;  115
DM_GATE_DRV_SUPPLY_MAX_ERR [INT(16)]  640 ;  2.5
DM_GATE_DRV_SUPPLY_MIN_VBATT [INT(16)]  3200 ;  12.5
DM_I_SENSE_RT_MAX_CM_I_SHIFT [INT(16)]  675 ;  675
DM_I_SENSE_RT_MAX_SIGNAL_DIFF [INT(16)]  100 ;  100
DM_I_SENSE_RT_MAX_TEST_CURRENT [INT(16)]  13200 ;  13200
DM_I_SENSE_RT_MIN_NEG_I_SHIFT [INT(16)]  1295 ;  1295
DM_I_SENSE_RT_MIN_POS_I_SHIFT [INT(16)]  1245 ;  1245
DM_I_SENSE_RT_MIN_TEST_CURRENT [INT(16)]  76 ;  76
DM_I_SENSE_SPUT_I_SETTLING_TIME [UINT(16)]  60 ;  6
DM_I_SENSE_SPUT_MAX_CM_I_SHIFT [UINT(16)]  620 ;  620
DM_I_SENSE_SPUT_MAX_TEST_COUNT [UINT(16)]  10 ;  10
DM_I_SENSE_SPUT_MIN_NEG_I_SHIFT [UINT(16)]  3160 ;  3160
DM_I_SENSE_SPUT_MIN_POS_I_SHIFT [UINT(16)]  3160 ;  3160
DM_I_SENSE_SPUT_OFFSET_MAX_ERROR [UINT(16)]  3006 ;  3006
DM_I_SENSE_SPUT_OFFSET_NOMINAL [UINT(16)]  14669 ;  14669
DM_LNK_CONTACT_MAX_CLOSED_V_DROP [INT(16)]  230 ;  0.9
DM_LNK_CONTACT_MAX_TEST_TIME [UINT(16)]  7000 ;  7000
DM_LNK_CONTACT_NUM_DELTA_V_DIFFS [UINT(16)]  4 ;  4
DM_LNK_CONTACT_OPEN_DELTA_V_DROP [INT(16)]  128 ;  0.5
DM_LNK_CONTACT_PRE_CLOSE_V_DROP [INT(16)]  845 ;  3.3
DM_LNK_RLY_CLS_MAX_RETRIES [UINT(16)]  4 ;  4
DM_LNK_RLY_CLS_TEST_CONF_OPN_CNT [UINT(16)]  95 ;  95
DM_LNK_RLY_CLS_TEST_MAX_COUNT [UINT(16)]  140 ;  140
DM_LNK_RLY_DISABL_CHG_MAX_RISE_V [INT(16)]  256 ;  1
DM_LNK_RLY_OPEN_MAX_TEST_COUNT [UINT(16)]  15 ;  15
DM_LNK_RLY_OPN_TEST_MAX_COUNT [UINT(16)]  5000 ;  5000
DM_LNK_RLY_RETEST_OPENING_TIME [UINT(16)]  100 ;  100
DM_LNK_RLY_RE_OPN_CONF_OPN_CNT [UINT(16)]  5 ;  5
DM_LNK_RLY_RE_OPN_EXTD_VBAT_DROP [INT(16)]  51 ;  0.2
DM_LNK_RLY_RE_OPN_EXTEND_COUNT [UINT(16)]  20 ;  20
DM_LNK_RLY_RE_OPN_EXTEND_MAX_CNT [UINT(16)]  200 ;  200
DM_LNK_RLY_RE_OPN_MAX_COUNT [UINT(16)]  35 ;  35
DM_LOAD_DUMP_MAX_DETECT_ERR_TIME [UINT(16)]  25 ;  100
DM_LOAD_DUMP_TIME_LIMIT [UINT(16)]  100 ;  400
DM_MON_MAX_ACTIVE_TRIP_TIME [UINT(16)]  30 ;  30
DM_MON_MAX_INITIAL_CONTROL_TIME [UINT(16)]  30 ;  30
DM_MON_MAX_INIT_BRDG_ENABLE_TIME [UINT(16)]  4 ;  4
DM_MON_MAX_PASSIVE_TRIP_TIME [UINT(16)]  30 ;  30
DM_MON_MAX_PWR_DOWN_TRIP_RETESTS [UINT(16)]  3 ;  3
DM_MON_MAX_RE_CONTROL_TIME [UINT(16)]  30 ;  30
DM_MON_MAX_TRIP_BRDG_DISABL_TIME [UINT(16)]  4 ;  4
DM_MTR_RLY_CLEAN_MAX_TEMPERATURE [INT(16)]  0 ;  0
DM_MTR_RLY_CLS_MAX_RETRIES [UINT(16)]  4 ;  4
DM_MTR_RLY_CLS_TEST_CNF_CLS_CNT [UINT(16)]  20 ;  20
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DM_MTR_RLY_CLS_TEST_MAX_COUNT [UINT(16)]  150 ;  150
DM_MTR_RLY_MAX_FET_3_OFF_COUNT [UINT(16)]  4 ;  4
DM_MTR_RLY_OPN_TEST_CNF_OPN_CNT [UINT(16)]  20 ;  20
DM_MTR_RLY_OPN_TEST_MAX_COUNT [UINT(16)]  100 ;  100
DM_MTR_RLY_PWM_DISCHRG_VLNK_PCNT [INT(16)]  3277 ;  20.001
DM_MTR_RLY_RETEST_OPENING_TIME [UINT(16)]  100 ;  100
DM_PHASE_3_BACK_EMF_ADJUST_PCNT [INT(16)]  3758 ;  22.937
DM_RELAY_CLEAN_CYCLE_TIME [UINT(16),(1,8)]  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
DM_RELAY_CLEAN_DURATION [UINT(16),(1,8)]  3000 ;  3000
:  1000 ;  1000
:  500 ;  500
:  500 ;  500
:  1500 ;  1500
:  1000 ;  1000
:  500 ;  500
:  500 ;  500
DM_RELAY_CLOSURE_TIMING [UINT(16),(1,9)]  110 ;  110
:  88 ;  88
:  60 ;  60
:  47 ;  47
:  39 ;  39
:  34 ;  34
:  30 ;  30
:  27 ;  27
:  25 ;  25
DM_SPDT_PAUSE_TEST_INDEFINITELY [INT(16)]  0 ;  0
DM_SPUT_PAUSE_TEST_INDEFINITELY [INT(16)]  0 ;  0
DM_SPUT_RESUME_HIGH_BATTERY_V [INT(16)]  4096 ;  16
DM_SPUT_RESUME_HIGH_LINK_V [INT(16)]  4096 ;  16
DM_SPUT_RESUME_LOW_BATTERY_V [INT(16)]  2816 ;  11
DM_SPUT_SUSPEND_HIGH_BATTERY_V [INT(16)]  4352 ;  17
DM_SPUT_SUSPEND_HIGH_LINK_V [INT(16)]  4352 ;  17
DM_SPUT_SUSPEND_LOW_BATTERY_V [INT(16)]  2560 ;  10
DM_SUSPEND_DE_GLITCH_TIME [UINT(16)]  2 ;  2
DRIVE_STAGE_TEMP_FALL_RATE [INT(16)]  -4096 ; -0.5
DRIVE_STAGE_TEMP_LOWER_LIMIT [INT(16)]  -5000 ; -50
DRIVE_STAGE_TEMP_RISE_RATE [INT(16)]  6390 ;  0.78
DRIVE_STAGE_TEMP_UPPER_LIMIT [INT(16)]  15500 ;  155
DRIVE_STAGE_VOLTAGE_FILTER_CONST [UINT(16)]  2730 ;  85.31
DevTune.AltPWM_Period [UINT(16)]  3760 ;  470
DevTune.AltTRQ_TimeThreshold [UINT(16)]  461 ;  57.63
DevTune.BATTERY_VOLTAGE_CHECK_TIME [UINT(16)]  100 ;  100
DevTune.CAN_STUCK_BITS_TIME_THRESH [UINT(16)]  2000 ;  2000
DevTune.DEF_VSPD_IN_USE_MUL_CHNG_RATE [UINT(16)]  131 ;  49.97
DevTune.DEMAND_PHASE_CURRENT [UINT(16)]  512 ;  4
DevTune.DM_ActivePrechargeSafeVDrop [INT(16)]  3840 ;  15
DevTune.DM_AdcRefVoltageMaxRawInput [INT(16)]  14100 ;  2.84
DevTune.DM_AdcRefVoltageMinRawInput [INT(16)]  10774 ;  2.17
DevTune.DM_AsicMinBridgeClampBatV [INT(16)]  5990 ;  23.4
DevTune.DM_AsicWorkaroundPulseTime [UINT(16)]  50 ;  5
DevTune.DM_BatteryMaxV [INT(16)]  6144 ;  24
DevTune.DM_BatteryMaxoverVDuration [UINT(32)]  3900000 ;  3900000
DevTune.DM_BatteryMinV [INT(16)]  2304 ;  9
DevTune.DM_BatteryNormalV [INT(16)]  2304 ;  9
DevTune.DM_BatteryVCheckTime [UINT(16)]  10 ;  10
DevTune.DM_CapTstChargeFastCoeff [UINT(16)]  703 ;  0.043
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DevTune.DM_CapTstChargeSlowCoeff [UINT(16)]  176 ;  0.011
DevTune.DM_CapTstChrgFastCoeff_PreP2c [UINT(16)]  676 ;  0.041
DevTune.DM_CapTstChrgSlowCoeff_PreP2c [UINT(16)]  169 ;  0.01
DevTune.DM_CapTstCurveFitToleranceV [INT(16)]  128 ;  0.5
DevTune.DM_CapTstFullChrgBatVDrop [INT(16)]  282 ;  1.1
DevTune.DM_CapTstMaxVlinkChargeTime [UINT(16)]  240 ;  240
DevTune.DM_CapTstMaxVlinkPcntOfBat [INT(16)]  11469 ;  70.001
DevTune.DM_CapTstStopCloseVHeadroom [INT(16)]  192 ;  0.75
DevTune.DM_FetMaxUnloadedBotVDrop [INT(16)]  128 ;  0.5
DevTune.DM_FetMaxUnloadedOffVDrop [INT(16)]  512 ;  2
DevTune.DM_FetMaxUnloadedTopVDrop [INT(16)]  384 ;  1.5
DevTune.DM_FetOffPhaseVNomBiasPcnt [INT(16)]  8864 ;  54.102
DevTune.DM_FetTstMaxPhaseVTstCount [UINT(16)]  40 ;  40
DevTune.DM_FetTstMaxVlinkPauseCount [UINT(16)]  200 ;  200
DevTune.DM_FetTstMinInterStateVGap [INT(16)]  64 ;  0.25
DevTune.DM_FetTstMinPhasesBadCount [UINT(16)]  10 ;  10
DevTune.DM_FetTstMinPhasesOkCount [UINT(16)]  8 ;  8
DevTune.DM_GateDrvMaxSupplyErrTime [UINT(16)]  115 ;  115
DevTune.DM_GateDrvSupplyMaxErr [INT(16)]  640 ;  2.5
DevTune.DM_GateDrvSupplyMinVBatt [INT(16)]  3200 ;  12.5
DevTune.DM_ISenseRtMaxCmIShift [INT(16)]  675 ;  675
DevTune.DM_ISenseRtMaxCrosscheckError [INT(16)]  100 ;  100
DevTune.DM_ISenseRtMaxTestCurrent [INT(16)]  13200 ;  13200
DevTune.DM_ISenseRtMinNegIShift [INT(16)]  1295 ;  1295
DevTune.DM_ISenseRtMinPosIShift [INT(16)]  1245 ;  1245
DevTune.DM_ISenseRtMinTestCurrent [INT(16)]  76 ;  76
DevTune.DM_ISenseSputISettlingTime [UINT(16)]  60 ;  6
DevTune.DM_ISenseSputMaxCmIShift [UINT(16)]  620 ;  620
DevTune.DM_ISenseSputMaxTestCount [UINT(16)]  10 ;  10
DevTune.DM_ISenseSputMinNegIShift [UINT(16)]  3160 ;  3160
DevTune.DM_ISenseSputMinPosIShift [UINT(16)]  3160 ;  3160
DevTune.DM_ISenseSputOffsetMaxError [UINT(16)]  3006 ;  3006
DevTune.DM_ISenseSputOffsetNominal [UINT(16)]  14669 ;  14669
DevTune.DM_LnkContactMaxClosedVDrop [INT(16)]  230 ;  0.9
DevTune.DM_LnkContactMaxTestTime [UINT(16)]  7000 ;  7000
DevTune.DM_LnkContactNumDeltaVDiffs [UINT(16)]  4 ;  4
DevTune.DM_LnkContactOpenDeltaVDrop [INT(16)]  128 ;  0.5
DevTune.DM_LnkContactPreCloseVDrop [INT(16)]  845 ;  3.3
DevTune.DM_LnkRlyClsMaxRetries [UINT(16)]  4 ;  4
DevTune.DM_LnkRlyClsTestConfOpnCnt [UINT(16)]  95 ;  95
DevTune.DM_LnkRlyClsTestMaxCount [UINT(16)]  140 ;  140
DevTune.DM_LnkRlyDisablChgMaxRiseV [INT(16)]  256 ;  1
DevTune.DM_LnkRlyDisablChgSenseTime [UINT(16)]  15 ;  15
DevTune.DM_LnkRlyOpnTestMaxCount [UINT(16)]  5000 ;  5000
DevTune.DM_LnkRlyReOpenConfOpnCnt [UINT(16)]  5 ;  5
DevTune.DM_LnkRlyReOpenExtendCount [UINT(16)]  20 ;  20
DevTune.DM_LnkRlyReOpenExtendMaxCount [UINT(16)]  200 ;  200
DevTune.DM_LnkRlyReOpenExtendVbatDrop [INT(16)]  51 ;  0.2
DevTune.DM_LnkRlyReOpenMaxCount [UINT(16)]  35 ;  35
DevTune.DM_LnkRlyRetestOpeningTime [UINT(16)]  100 ;  100
DevTune.DM_LoadDumpMaxDetectErrTime [UINT(16)]  25 ;  100
DevTune.DM_LoadDumpTimeLimit [UINT(16)]  100 ;  400
DevTune.DM_MaxIncompletePowerDownTests [UINT(8)]  24 ;  24
DevTune.DM_MonMaxActiveTripTime [UINT(16)]  30 ;  30
DevTune.DM_MonMaxInitBrdgEnableTime [UINT(16)]  4 ;  4
DevTune.DM_MonMaxInitialControlTime [UINT(16)]  30 ;  30
DevTune.DM_MonMaxPassiveTripTime [UINT(16)]  30 ;  30
DevTune.DM_MonMaxPwrDownTripRetests [UINT(16)]  3 ;  3
DevTune.DM_MonMaxReControlTime [UINT(16)]  30 ;  30
DevTune.DM_MonMaxTripBrdgDisablTime [UINT(16)]  4 ;  4
DevTune.DM_MtrRlyCleanMaxTemperature [INT(16)]  0 ;  0
DevTune.DM_MtrRlyClsMaxRetries [UINT(16)]  4 ;  4
DevTune.DM_MtrRlyClsTstCnfClsCnt [UINT(16)]  20 ;  20
```

```
DevTune.DM_MtrRlyClsTstMaxCount [UINT(16)]  150 ;  150
DevTune.DM_MtrRlyMaxFet3OffCount [UINT(16)]  4 ;  4
DevTune.DM_MtrRlyOpnTstCnfOpnCnt [UINT(16)]  20 ;  20
DevTune.DM_MtrRlyOpnTstMaxCount [UINT(16)]  100 ;  100
DevTune.DM_MtrRlyPwmDischrgVlnkPcnt [INT(16)]  3277 ;  20.001
DevTune.DM_MtrRlyRetestOpeningTime [UINT(16)]  100 ;  100
DevTune.DM_Phase3BackEmfAdjustPcnt [INT(16)]  3758 ;  22.937
DevTune.DM_RelayCleanCycleTime [UINT(16),(1,8)]  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
:  50 ;  50
DevTune.DM_RelayCleanDuration [UINT(16),(1,8)]  3000 ;  3000
:  1000 ;  1000
:  500 ;  500
:  500 ;  500
:  1500 ;  1500
:  1000 ;  1000
:  500 ;  500
:  500 ;  500
DevTune.DM_RelayClosureTiming [UINT(16),(1,9)]  110 ;  110
:  88 ;  88
:  60 ;  60
:  47 ;  47
:  39 ;  39
:  34 ;  34
:  30 ;  30
:  27 ;  27
:  25 ;  25
DevTune.DM_SpdtPauseTestIndefinitely [INT(16)]  0 ;  0
DevTune.DM_SputPauseTestIndefinitely [INT(16)]  0 ;  0
DevTune.DM_SputResumeHighBatteryV [INT(16)]  4096 ;  16
DevTune.DM_SputResumeHighLinkV [INT(16)]  4096 ;  16
DevTune.DM_SputResumeLowBatteryV [INT(16)]  2816 ;  11
DevTune.DM_SputSuspendDeGlitchTime [UINT(16)]  2 ;  2
DevTune.DM_SputSuspendHighBatteryV [INT(16)]  4352 ;  17
DevTune.DM_SputSuspendHighLinkV [INT(16)]  4352 ;  17
DevTune.DM_SputSuspendLowBatteryV [INT(16)]  2560 ;  10
DevTune.DefaultDriveStageTemp [INT(16)]  13000 ;  130
DevTune.DriveStageTempFallRate [INT(16)]  -4096 ; -0.5
DevTune.DriveStageTempLowerLimit [INT(16)]  -5000 ; -50
DevTune.DriveStageTempRiseRate [INT(16)]  6390 ;  0.78
DevTune.DriveStageTempUpperLimit [INT(16)]  15500 ;  155
DevTune.DriveStageVoltageFilterConst [UINT(16)]  2730 ;  85.31
DevTune.ENG_STOP_HELD_DELAY_THRESH [UINT(16)]  15000 ;  300
DevTune.EncoderExtrapDisableElecVel [UINT(16)]  19 ;  0.15
DevTune.EncoderExtrapEnabledElecVel [UINT(16)]  40 ;  0.31
DevTune.FAST_IGNITION_OFF_DETECTION_TIME [UINT(16)]  30 ;  30
DevTune.HFAC_GAIN_MAP_SPD_GRAD_CNG_LIMIT [UINT(16)]  100 ;  10
DevTune.HFAC_GAIN_MAP_TRQ_GRAD_CNG_LIMIT [UINT(16)]  20 ;  20
DevTune.HFAC_LIMIT_LINE_GRADIENT [INT(8)]  -1 ; -0.1
DevTune.HFAC_LIMIT_LINE_OFFSET [UINT(8)]  128 ;  128
DevTune.HFAC_ON_CENTRE_TRQ_CHANGE_LIMIT [INT(8)]  -4 ; -2
DevTune.HFAC_ON_CENTRE_TRQ_LIMIT [UINT(8)]  20 ;  2
DevTune.HIGH_BATTERY_VLT_EVENT_DURATION [UINT(32)]  600000 ;  600000
DevTune.HIGH_BATTERY_VLT_EVENT_THRESHOLD [INT(16)]  5120 ;  20
DevTune.HallSensorPlacementAccuracy [UINT(16)]  432 ;  27
DevTune.IGNITION_DETECTION_TIME [UINT(16)]  109 ;  109
DevTune.IGNITION_IMMINENT_TIME [UINT(16)]  30 ;  30
DevTune.LAT_ACCELERATION_LIMIT [UINT(16)]  24000 ;  15
```

```
DevTune.LOW_BATTERY_VLT_EVENT_DURATION [UINT(16)]  50 ;  50
DevTune.LOW_BATTERY_VLT_EVENT_THRESHOLD [INT(16)]  2560 ;  10
DevTune.MAX_CAN_READ_COL_TORQUE_ERROR [UINT(8)]  64 ;  0.06
DevTune.MAX_DTCT_TORSION_BAR_DEFLECTION [INT(16)]  128 ;  4
DevTune.MAX_HALL_ENCODER_POSITION_ERROR [INT(16)]  9649 ;  53
DevTune.MAX_VEHICLE_LAT [UINT(16)]  7000 ;  40
DevTune.MAX_VEH_SPD_ERROR_RECOVERY_RATE [UINT(16)]  1280 ;  1250
DevTune.MIN_BATTERY_VOLTAGE [INT(16)]  2304 ;  9
DevTune.MaxCAN_ReadbackRSP_Error [UINT(8)]  69 ;  13.8
DevTune.MaxHallPeriod [UINT(16)]  278 ;  1.09
DevTune.MotorElecAccelSignFuncVelLimit [UINT(8)]  37 ;  37
DevTune.MotorPowerupCurrentFilterConst [UINT(16)]  16384 ;  512
DevTune.MotorRippleCurrentFilterConst [UINT(16)]  16 ;  0.5
DevTune.MotorTorqueDemandErrorLimit [UINT(8)]  20 ;  0.16
DevTune.MotorVelExtrapolationConst [UINT(16)]  4096 ;  128
DevTune.MotorVelocityEstimateErrorLimit [UINT(8)]  15 ;  15
DevTune.MotorVelocityFilterConstant [UINT(16)]  1024 ;  32
DevTune.MotorZeroCurrentFilterConst [UINT(16)]  202 ;  6.31
DevTune.NORMAL_BATTERY_VOLTAGE [INT(16)]  2560 ;  10
DevTune.NO_TORQUE_LOWER_SUP_VOLT_DEMAND [INT(16)]  2406 ;  9.4
DevTune.OVER_USE_COLUMN_VEL_THRESHOLD [UINT(16)]  307 ;  0.3
DevTune.OVER_USE_INITIATION_TIME [UINT(16)]  25 ;  0.5
DevTune.OVER_USE_LOWER_TORQUE_THRESHOLD [UINT(16)]  2048 ;  2
DevTune.OVER_USE_TORQUE_LIMIT_VALUE [UINT(16)]  2500 ;  10
DevTune.OVER_USE_TRQ_LIM_DOWN_SLEW_RATE [UINT(8)]  30 ;  30
DevTune.OVER_USE_TRQ_LIM_UP_SLEW_RATE [UINT(8)]  100 ;  100
DevTune.OVER_USE_UPPER_TORQUE_THRESHOLD [UINT(16)]  5120 ;  5
DevTune.PDC_ASP_VALID_MULT_CHANGE_RATE [UINT(16)]  26 ;  9.92
DevTune.PDC_REPAIR_DETECTION_TIME [UINT(16)]  1000 ;  1
DevTune.PDC_SUPPRESSION_MULT_CHANGE_RATE [UINT(16)]  131 ;  49.97
DevTune.PDC_TYPE_THRESHOLD [UINT(16)]  1000 ;  500
DevTune.PD_DE_ICE_BATTERY_VOLTAGE_THRESH [INT(16)]  3020 ;  11.8
DevTune.PHASE_CURRENT_TEST_THRESHOLD [UINT(16)]  192 ;  1.5
DevTune.PWMS_High_Bat_Reinst_Delay [UINT(16)]  0 ;  0
DevTune.PWMS_High_Diag_Reinst_Delay [UINT(16)]  9 ;  9
DevTune.PWMS_Low_Bat_Reinst_Delay [UINT(16)]  0 ;  0
DevTune.PWMS_Low_Diag_Reinst_Delay [UINT(16)]  9 ;  9
DevTune.RELAY_POWERDOWN_CAN_CHECK_TIME [UINT(16)]  48 ;  48
DevTune.RELAY_POWERDOWN_CURRENT [INT(16)]  7936 ;  62
DevTune.RELAY_POWERDOWN_DS_TEMP [INT(16)]  5000 ;  50
DevTune.RELAY_POWERDOWN_F_THRM_EST_TEMP [INT(16)]  5000 ;  50
DevTune.RELAY_POWERDOWN_MAX_ENC_CHANGE [INT(16)]  1 ;  1
DevTune.RELAY_POWERDOWN_RAMP_DOWN_TIME [UINT(16)]  1000 ;  1000
DevTune.RELAY_POWERDOWN_RAMP_TIME [UINT(16)]  1000 ;  1000
DevTune.RELAY_POWERDOWN_THERM_EST_TEMP [INT(16)]  5000 ;  50
DevTune.RELAY_POWERDOWN_TIME [UINT(16)]  3000 ;  3000
DevTune.RELAY_TEMPERATURE_PD [INT(16)]  0 ;  0
DevTune.RSP_ErrorLimit [UINT(8)]  50 ;  5
DevTune.SC_FI_COL_VEL_CUT_OF_FREQC_ACD [UINT(16)]  22476 ;  0.69
DevTune.STRAIGHT_AHEAD_CONFIDENCE_LEVEL [INT(16)]  800 ;  25
DevTune.SwitchedVoltageFilterConst [UINT(16)]  2730 ;  5
DevTune.TAS_TorqueCrosscheckThreshold [UINT(16)]  25 ;  2.5
DevTune.TAS_TorqueDutyOffset [UINT(16)]  1000 ;  50
DevTune.TAS_TorqueDutyRange [UINT(16)]  1500 ;  75
DevTune.TAS_TorqueRange [UINT(16)]  400 ;  20
DevTune.TORQUE_LIMIT_DOWN_SLEW_RATE [UINT(8)]  50 ;  50
DevTune.TORQUE_LIMIT_UP_SLEW_RATE [UINT(8)]  50 ;  50
DevTune.TRW_EOL_TRQ_LIMIT_DOWN_SLEW_RATE [UINT(8)]  100 ;  100
DevTune.TRW_EOL_TRQ_LIMIT_UP_SLEW_RATE [UINT(8)]  100 ;  100
DevTune.VEHICLE_ACCEL_LIMIT [INT(16)]  1024 ;  1000
DevTune.VEHICLE_DECEL_LIMIT [INT(16)]  -2368 ; -2312.5
DevTune.VEHICLE_MOVING_DETECTION_DELAY [UINT(16)]  60 ;  60
DevTuneTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
```

```
EACAbsoluteAngleSelector [UINT(16)]  0 ; EAC_ANGLE_SELECTED
EAC_ABSOLUTE_ANGLE_SELECTOR [UINT(8)]  0 ;  0
EAC_CM3_MVS_VTD [UINT(16)]  192 ;  3
EAC_CM3_SWSp_VTD [UINT(16)]  51 ;  0.05
EAC_CM3_SWT_VTD [UINT(16)]  1024 ;  1
EAC_CM3_dSWA_VTD [UINT(16)]  455 ;  10
EAC_CM5_MVS_VTD [UINT(16)]  704 ;  11
EAC_CM5_SWSp_VTD [UINT(16)]  5120 ;  5
EAC_CM5_SWT_VTD [UINT(16)]  3581 ;  3.5
EAC_CM5_dSWA_VTD [UINT(16)]  5461 ;  119.99
EAC_FAULT_RECOVERY_A_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_B_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_C_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_D_PTD [UINT(8)]  2 ;  2
EAC_FAULT_RECOVERY_E_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_F_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_G_PTD [UINT(8)]  0 ;  0
EAC_FAULT_RECOVERY_H_PTD [UINT(8)]  0 ;  0
EAC_Filt_Freq_PTD [UINT(16)]  768 ;  3
EAC_Filt_Freq_Pos_PTD [UINT(16)]  19200 ;  75
EAC_GD_VTD [UINT(16)]  15360 ;  15
EAC_GF_VTD [UINT(16)]  1024 ;  1
EAC_ING_VTD [UINT(16)]  1311 ;  0.02
EAC_KD_VTD [UINT(16)]  9830 ;  1.2
EAC_KI_VTD [UINT(16)]  0 ;  0
EAC_KP_VTD [UINT(16)]  12800 ;  100
EAC_LIC_COUNTER [INT(16)]  0 ;  0
EAC_MAX_INTEGRAL_TRQ_VTD [INT(32)]  532676608 ;  127
EAC_MAX_PROPORTIONAL_TRQ_VTD [INT(32)]  33292288 ;  127
EAC_MAX_VELOCITY_ERROR_PTD [UINT(16)]  40960 ;  40
EAC_Max_Available_Current_PTD [UINT(8)]  100 ;  100
EAC_TORQUE_LIMIT_PTD [INT(16)]  1295 ;  5.08
EAC_T_ACTIVATE_LIMIT_PTD [INT(16)]  100 ;  100
EAC_T_SAPP_in_VTD [INT(16)]  500 ;  0.5
EAC_T_SAPP_out_VTD [INT(16)]  200 ;  0.2
EAL_SWA_LIMIT_VTD [UINT(16)]  21825 ;  479.55
EAL_SWA_MARGIN_VTD [UINT(16)]  227 ;  4.99
EAL_T_PTD [UINT(16)]  2000 ;  2000
ECU_Calib.BatteryVoltageGain [UINT(16)]  32336 ;  0.98682
ECU_Calib.BatteryVoltageOffset [INT(16)]  206 ;  206
ECU_Calib.CurrentSenseAveGain [UINT(16)]  32886 ;  1.0036
ECU_Calib.CurrentSenseAveOffset [INT(16)]  46 ;  46
ECU_Calib.CurrentSenseGain [INT(16)]  8765 ;  1.06995
ECU_Calib.CurrentSenseGainADCA [UINT(16)]  32915 ;  1.00449
ECU_Calib.CurrentSenseGainADCB [UINT(16)]  32931 ;  1.00497
ECU_Calib.CurrentSenseOffsetADCA [INT(16)]  38 ;  38
ECU_Calib.CurrentSenseOffsetADCB [INT(16)]  5 ;  5
ECU_Calib.External5VoltGain [UINT(16)]  32768 ;  1
ECU_Calib.External5VoltOffset [INT(16)]  0 ;  0
ECU_Calib.FET_TemperatureGain [UINT(16)]  32768 ;  1
ECU_Calib.FET_TemperatureOffset [INT(16)]  0 ;  0
ECU_Calib.LinkRelayVoltageGain [UINT(16)]  33107 ;  1.01035
ECU_Calib.LinkRelayVoltageOffset [INT(16)]  -29 ; -29
ECU_Calib.MotorStarVoltageGain [UINT(16)]  33046 ;  1.00848
ECU_Calib.MotorStarVoltageOffset [INT(16)]  -37 ; -37
ECU_Calib.PhaseVoltage1Gain [UINT(16)]  32964 ;  1.00598
ECU_Calib.PhaseVoltage1Offset [INT(16)]  -25 ; -25
ECU_Calib.PhaseVoltage2Gain [UINT(16)]  33075 ;  1.00937
ECU_Calib.PhaseVoltage2Offset [INT(16)]  -132 ; -132
ECU_Calib.PhaseVoltage3Gain [UINT(16)]  33011 ;  1.00742
ECU_Calib.PhaseVoltage3Offset [INT(16)]  -39 ; -39
ECU_Calib.Reference2V5GainADCA [UINT(16)]  32768 ;  1
ECU_Calib.Reference2V5GainADCB [UINT(16)]  32768 ;  1
```

```
ECU_Calib.Reference2V5OffsetADCA [INT(16)]  0 ;  0
ECU_Calib.Reference2V5OffsetADCB [INT(16)]  0 ;  0
ECU_Calib.SwitchVoltageGain [UINT(16)]  32391 ;  0.98849
ECU_Calib.SwitchVoltageOffset [INT(16)]  152 ;  152
ECU_Calib.TorqueSense1Gain [UINT(16)]  32768 ;  1
ECU_Calib.TorqueSense1Offset [INT(16)]  0 ;  0
ECU_Calib.TorqueSense2Gain [UINT(16)]  32768 ;  1
ECU_Calib.TorqueSense2Offset [INT(16)]  0 ;  0
ECU_CalibTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
ECU_Delivery_Assembly_Number [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  51 ;  51
:  70 ;  70
:  57 ;  57
:  54 ;  54
:  52 ;  52
:  45 ;  45
:  66 ;  66
:  71 ;  71
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
ECU_EOLT_Reject_Code [UINT(8)]  0 ;  0
ECU_EOL_TEST_PASSED [UINT(8)]  85 ;  85
ENCODER_EXTRAP_DISABLED_ELEC_VEL [UINT(16)]  19 ;  0.15
ENCODER_EXTRAP_ENABLED_ELEC_VEL [UINT(16)]  40 ;  0.31
ENGINE_STOPPED_HELD_DELAY_VTD [UINT(16)]  0 ;  0
ENGINE_STOPPED_HELD_TORQUE_VTD [UINT(8)]  0 ;  0
ENG_SPEED_CRANKING_RPM [UINT(16)]  1200 ;  300
ENG_SPEED_CRANKING_RPM_VTD [UINT(16)]  1200 ;  1200
ENG_SPEED_RUNNING_RPM [UINT(16)]  2000 ;  500
ENG_SPEED_RUNNING_VTD [UINT(16)]  2000 ;  2000
ENG_STALLED_INITIATION_TIME_VTD [UINT(16)]  0 ;  0
ENG_STATUS_CHG_FLT_TIME_VTD [UINT(16)]  50 ;  50
ENG_STL_TRQ_LMT_DN_SLEW_RATE_VTD [UINT(8)]  30 ;  30
ENG_STL_TRQ_LMT_UP_SLEW_RATE_VTD [UINT(8)]  100 ;  100
ENG_STOP_HELD_DELAY_THRESH [UINT(16)]  15000 ;  300
EPP_EOLT_Reject_Code [UINT(8)]  0 ;  0
EPP_EOL_TEST_PASSED [UINT(8)]  85 ;  85
EPP_Traceability [UINT(8),(1,15)]  49 ;  49
:  48 ;  48
:  50 ;  50
:  53 ;  53
:  57 ;  57
:  49 ;  49
:  57 ;  57
:  49 ;  49
:  57 ;  57
:  68 ;  68
:  51 ;  51
:  48 ;  48
:  48 ;  48
```

```
:  49 ;  49
:  53 ;  53
EPS_EOLT_Function_Test_Indicator [UINT(8)]  0 ;  0
EPS_EOLT_Reject_Code [UINT(8)]  0 ;  0
EPS_EOLT_Test_Status [UINT(8)]  128 ;  128
EPS_to_ECC_Comms_Indicator [UINT(8)]  1 ;  1
FAST_THERMAL_EST_COOLING_RES [UINT(16)]  512 ;  2
FAST_THERMAL_EST_HEATING_RES [UINT(16)]  22118 ;  10.8
FAST_THERMAL_EST_THERMAL_CAP [UINT(16)]  12800 ;  50
FP_FRICTION_BOUND_AXIS [UINT(16),(1,2)]  0 ;  0
:  3000 ;  3000
FP_FRICTION_BOUND_AXIS_VTD [UINT(16),(1,2)]  0 ;  0
:  3000 ;  3000
FP_LAT_ACCEL_2_LOAD_MAP [UINT(16),(1,2)]  6195 ;  774.38
:  5200 ;  650
FP_LAT_ACCEL_2_LOAD_MAP_VTD [UINT(16),(1,2)]  6195 ;  774.38
:  5200 ;  650
FP_UPPER_FRICTION_BOUND [UINT(16),(1,2)]  950 ;  950
:  950 ;  950
FP_UPPER_FRICTION_BOUND_VTD [UINT(16),(1,2)]  950 ;  950
:  950 ;  950
FP_VSPD_GAIN [UINT(16),(1,2)]  1352 ;  1.32
:  1147 ;  1.12
FP_VSPD_GAIN_MAP [UINT(8),(1,2)]  45 ;  45
:  75 ;  75
FP_VSPD_GAIN_MAP_VTD [UINT(8),(1,2)]  45 ;  45
:  75 ;  75
FP_VSPD_GAIN_VTD [UINT(16),(1,2)]  1352 ;  1.32
:  1147 ;  1.12
FP_VSPD_LAT_MAP [UINT(8),(1,2)]  50 ;  50
:  120 ;  120
FP_VSPD_LAT_MAP_VTD [UINT(8),(1,2)]  50 ;  50
:  120 ;  120
Gear_Hardware_Part_Number [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  51 ;  51
:  50 ;  50
:  48 ;  48
:  48 ;  48
:  45 ;  45
:  66 ;  66
:  71 ;  71
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
HALL_SENSOR_INIT_ERROR_TIMEOUT [UINT(16)]  100 ;  100
HFAC_GAIN_MAP [UINT(8),(12,10)]  109 ;  54.5
:  116 ;  58
:  119 ;  59.5
:  121 ;  60.5
:  123 ;  61.5
```

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:  127 ;  63.5
:  132 ;  66
:  135 ;  67.5
:  139 ;  69.5
:  144 ;  72
:  83 ;  41.5
:  90 ;  45
:  93 ;  46.5
:  95 ;  47.5
:  97 ;  48.5
:  101 ;  50.5
:  106 ;  53
:  109 ;  54.5
:  113 ;  56.5
:  118 ;  59
:  72 ;  36
:  79 ;  39.5
:  82 ;  41
:  84 ;  42
:  86 ;  43
:  90 ;  45
:  95 ;  47.5
:  98 ;  49
:  102 ;  51
:  107 ;  53.5
:  60 ;  30
:  67 ;  33.5
:  70 ;  35
:  72 ;  36
:  74 ;  37
:  78 ;  39
:  83 ;  41.5
:  86 ;  43
:  90 ;  45
:  95 ;  47.5
:  52 ;  26
:  59 ;  29.5
:  62 ;  31
:  64 ;  32
:  66 ;  33
:  70 ;  35
:  75 ;  37.5
:  78 ;  39
:  82 ;  41
:  87 ;  43.5
:  45 ;  22.5
:  52 ;  26
:  55 ;  27.5
:  57 ;  28.5
:  59 ;  29.5
:  63 ;  31.5
:  68 ;  34
:  71 ;  35.5
:  75 ;  37.5
:  80 ;  40
:  40 ;  20
:  47 ;  23.5
:  50 ;  25
:  52 ;  26
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
:  66 ;  33
```

```
:  70 ;  35
:  75 ;  37.5
:  33 ;  16.5
:  40 ;  20
:  43 ;  21.5
:  45 ;  22.5
:  47 ;  23.5
:  51 ;  25.5
:  56 ;  28
:  59 ;  29.5
:  63 ;  31.5
:  70 ;  35
:  31 ;  15.5
:  38 ;  19
:  41 ;  20.5
:  43 ;  21.5
:  45 ;  22.5
:  49 ;  24.5
:  54 ;  27
:  57 ;  28.5
:  61 ;  30.5
:  68 ;  34
:  30 ;  15
:  37 ;  18.5
:  40 ;  20
:  42 ;  21
:  44 ;  22
:  48 ;  24
:  53 ;  26.5
:  56 ;  28
:  60 ;  30
:  65 ;  32.5
:  29 ;  14.5
:  36 ;  18
:  39 ;  19.5
:  41 ;  20.5
:  43 ;  21.5
:  47 ;  23.5
:  52 ;  26
:  55 ;  27.5
:  59 ;  29.5
:  64 ;  32
:  28 ;  14
:  35 ;  17.5
:  38 ;  19
:  40 ;  20
:  42 ;  21
:  46 ;  23
:  51 ;  25.5
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
HFAC_GAIN_MAP_SPD_GRAD_CNG_LIMIT [UINT(16)]  100 ;  10
HFAC_GAIN_MAP_TRQ_GRAD_CNG_LIMIT [UINT(16)]  20 ;  20
HFAC_GAIN_MAP_Transposed [UINT(8),(10,12)]  109 ;  54.5
:  83 ;  41.5
:  72 ;  36
:  60 ;  30
:  52 ;  26
:  45 ;  22.5
:  40 ;  20
:  33 ;  16.5
:  31 ;  15.5
```

```
:  30 ;  15
:  29 ;  14.5
:  28 ;  14
:  116 ;  58
:  90 ;  45
:  79 ;  39.5
:  67 ;  33.5
:  59 ;  29.5
:  52 ;  26
:  47 ;  23.5
:  40 ;  20
:  38 ;  19
:  37 ;  18.5
:  36 ;  18
:  35 ;  17.5
:  119 ;  59.5
:  93 ;  46.5
:  82 ;  41
:  70 ;  35
:  62 ;  31
:  55 ;  27.5
:  50 ;  25
:  43 ;  21.5
:  41 ;  20.5
:  40 ;  20
:  39 ;  19.5
:  38 ;  19
:  121 ;  60.5
:  95 ;  47.5
:  84 ;  42
:  72 ;  36
:  64 ;  32
:  57 ;  28.5
:  52 ;  26
:  45 ;  22.5
:  43 ;  21.5
:  42 ;  21
:  41 ;  20.5
:  40 ;  20
:  123 ;  61.5
:  97 ;  48.5
:  86 ;  43
:  74 ;  37
:  66 ;  33
:  59 ;  29.5
:  54 ;  27
:  47 ;  23.5
:  45 ;  22.5
:  44 ;  22
:  43 ;  21.5
:  42 ;  21
:  127 ;  63.5
:  101 ;  50.5
:  90 ;  45
:  78 ;  39
:  70 ;  35
:  63 ;  31.5
:  58 ;  29
:  51 ;  25.5
:  49 ;  24.5
:  48 ;  24
:  47 ;  23.5
:  46 ;  23
```

```
:  132 ;  66
:  106 ;  53
:  95 ;  47.5
:  83 ;  41.5
:  75 ;  37.5
:  68 ;  34
:  63 ;  31.5
:  56 ;  28
:  54 ;  27
:  53 ;  26.5
:  52 ;  26
:  51 ;  25.5
:  135 ;  67.5
:  109 ;  54.5
:  98 ;  49
:  86 ;  43
:  78 ;  39
:  71 ;  35.5
:  66 ;  33
:  59 ;  29.5
:  57 ;  28.5
:  56 ;  28
:  55 ;  27.5
:  54 ;  27
:  139 ;  69.5
:  113 ;  56.5
:  102 ;  51
:  90 ;  45
:  82 ;  41
:  75 ;  37.5
:  70 ;  35
:  63 ;  31.5
:  61 ;  30.5
:  60 ;  30
:  59 ;  29.5
:  58 ;  29
:  144 ;  72
:  118 ;  59
:  107 ;  53.5
:  95 ;  47.5
:  87 ;  43.5
:  80 ;  40
:  75 ;  37.5
:  70 ;  35
:  68 ;  34
:  65 ;  32.5
:  64 ;  32
:  63 ;  31.5
HFAC_GAIN_MAP_VTD [UINT(8),(1,120)]  109 ;  54.5
:  116 ;  58
:  119 ;  59.5
:  121 ;  60.5
:  123 ;  61.5
:  127 ;  63.5
:  132 ;  66
:  135 ;  67.5
:  139 ;  69.5
:  144 ;  72
:  83 ;  41.5
:  90 ;  45
:  93 ;  46.5
:  95 ;  47.5
:  97 ;  48.5
```

```
:  101 ;  50.5
:  106 ;  53
:  109 ;  54.5
:  113 ;  56.5
:  118 ;  59
:  72 ;  36
:  79 ;  39.5
:  82 ;  41
:  84 ;  42
:  86 ;  43
:  90 ;  45
:  95 ;  47.5
:  98 ;  49
:  102 ;  51
:  107 ;  53.5
:  60 ;  30
:  67 ;  33.5
:  70 ;  35
:  72 ;  36
:  74 ;  37
:  78 ;  39
:  83 ;  41.5
:  86 ;  43
:  90 ;  45
:  95 ;  47.5
:  52 ;  26
:  59 ;  29.5
:  62 ;  31
:  64 ;  32
:  66 ;  33
:  70 ;  35
:  75 ;  37.5
:  78 ;  39
:  82 ;  41
:  87 ;  43.5
:  45 ;  22.5
:  52 ;  26
:  55 ;  27.5
:  57 ;  28.5
:  59 ;  29.5
:  63 ;  31.5
:  68 ;  34
:  71 ;  35.5
:  75 ;  37.5
:  80 ;  40
:  40 ;  20
:  47 ;  23.5
:  50 ;  25
:  52 ;  26
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
:  66 ;  33
:  70 ;  35
:  75 ;  37.5
:  33 ;  16.5
:  40 ;  20
:  43 ;  21.5
:  45 ;  22.5
:  47 ;  23.5
:  51 ;  25.5
:  56 ;  28
:  59 ;  29.5
```

```
:  63 ;  31.5
:  70 ;  35
:  31 ;  15.5
:  38 ;  19
:  41 ;  20.5
:  43 ;  21.5
:  45 ;  22.5
:  49 ;  24.5
:  54 ;  27
:  57 ;  28.5
:  61 ;  30.5
:  68 ;  34
:  30 ;  15
:  37 ;  18.5
:  40 ;  20
:  42 ;  21
:  44 ;  22
:  48 ;  24
:  53 ;  26.5
:  56 ;  28
:  60 ;  30
:  65 ;  32.5
:  29 ;  14.5
:  36 ;  18
:  39 ;  19.5
:  41 ;  20.5
:  43 ;  21.5
:  47 ;  23.5
:  52 ;  26
:  55 ;  27.5
:  59 ;  29.5
:  64 ;  32
:  28 ;  14
:  35 ;  17.5
:  38 ;  19
:  40 ;  20
:  42 ;  21
:  46 ;  23
:  51 ;  25.5
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
HFAC_LIMIT_LINE_GRADIENT [INT(8)]  -1 ; -0.1
HFAC_LIMIT_LINE_OFFSET [UINT(8)]  128 ;  128
HFAC_ON_CENTRE_TRQ_CHANGE_LIMIT [INT(8)]  -4 ; -2
HFAC_ON_CENTRE_TRQ_LIMIT [UINT(8)]  20 ;  2
HFAC_SPD_BRKPNT_MAP [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
HFAC_SPD_BRKPNT_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
```

```
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
HFAC_TRQ_BRKPNT_MAP [UINT(8),(1,10)]  0 ;  0
:  5 ;  0.5
:  10 ;  1
:  15 ;  1.5
:  20 ;  2
:  25 ;  2.5
:  30 ;  3
:  35 ;  3.5
:  45 ;  4.5
:  60 ;  6
HFAC_TRQ_BRKPNT_MAP_VTD [UINT(8),(1,10)]  0 ;  0
:  5 ;  0.5
:  10 ;  1
:  15 ;  1.5
:  20 ;  2
:  25 ;  2.5
:  30 ;  3
:  35 ;  3.5
:  45 ;  4.5
:  60 ;  6
HSD0_COLUMN_VELOCITY_MAP_VTD [INT(16),(1,12)]  2253 ;  2.2
:  2765 ;  2.7
:  3277 ;  3.2
:  3789 ;  3.7
:  4301 ;  4.2
:  4813 ;  4.7
:  5325 ;  5.2
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
HSD0_Column_Velocity_Map [INT(16),(1,12)]  2253 ;  2.2
:  2765 ;  2.7
:  3277 ;  3.2
:  3789 ;  3.7
:  4301 ;  4.2
:  4813 ;  4.7
:  5325 ;  5.2
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
HSD1_DAMPING_TORQUE_GAIN_MAP_VTD [INT(16),(1,12)]  100 ;  100
:  75 ;  75
:  50 ;  50
:  25 ;  25
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
```

```
HSD1_Damping_Torque_Gain_Map [INT(16),(1,12)]  100 ;  100
:  75 ;  75
:  50 ;  50
:  25 ;  25
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
HSD2_MAX_HIGH_SPEED_DAMPING_VTD [UINT(8),(1,12)]  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
HSD2_Max_High_Speed_Damping [UINT(8),(1,12)]  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
MANUFACTURING_RESET [UINT(32)]  0 ;  0
MAXIMUM_ASSISTANCE_TORQUE_MTD [UINT(8)]  250 ;  125
MAXIMUM_BATTERY_CURRENT [INT(16)]  15360 ;  120
MAX_CAN_READ_COL_TORQUE_ERROR [UINT(8)]  64 ;  0.06
MAX_DRIVE_STAGE_TEMP [INT(16)]  15000 ;  150
MAX_DTCT_TORSION_BAR_DEFLECTION [INT(16)]  128 ;  4
MAX_HALL_ENCODER_POSITION_ERROR [INT(16)]  9649 ;  53
MAX_INCOMPLETE_POWER_DOWN_TESTS [UINT(8)]  24 ;  24
MAX_MODULATION_DEPTH [UINT(16)]  1178 ;  1.15
MAX_THERMAL_ESTIMATOR_TEMP [INT(16)]  19000 ;  190
MOTOR_RIPPLE_I_FILTER_CONST [UINT(16)]  16 ;  0.5
MOTOR_STALLED_THRESHOLD [UINT(16)]  42 ;  0.33
MOTOR_TORQUE_CONSTANT [INT(16)]  959 ;  0.06
MOTOR_TORQUE_CONSTANT_TRIM [INT(16)]  0 ;  0
MOTOR_VELOCITY_FILTER_CONSTANT [UINT(16)]  1024 ;  32
MOTOR_VEL_EXTRAPOLATION_CONST [UINT(16)]  4096 ;  128
MOTOR_ZERO_CURRENT_FILTER_CONST [UINT(16)]  202 ;  6.31
MotorTune.BusClampingThresholdHighSquared [UINT(16)]  607 ;  0.59
MotorTune.BusClampingThresholdLowSquared [UINT(16)]  576 ;  0.56
MotorTune.CurrentIntegralGain [UINT(16)]  35 ;  42.72
MotorTune.CurrentProportionalGain [UINT(16)]  1409 ;  0.17
MotorTune.CurrentShapeA18MapData [INT(16),(1,31)]  56 ;  0.44
:  56 ;  0.44
:  56 ;  0.44
:  56 ;  0.44
:  45 ;  0.35
:  34 ;  0.27
```

```
:  20 ;  0.16
:  6 ;  0.05
:  -11 ; -0.09
:  -28 ; -0.22
:  -24 ; -0.19
:  -19 ; -0.15
:  -14 ; -0.11
:  -9 ; -0.07
:  -5 ; -0.04
:  0 ;  0
:  6 ;  0.05
:  11 ;  0.09
:  17 ;  0.13
:  23 ;  0.18
:  29 ;  0.23
:  34 ;  0.27
:  15 ;  0.12
:  -4 ; -0.03
:  -20 ; -0.16
:  -35 ; -0.27
:  -48 ; -0.38
:  -60 ; -0.47
:  -60 ; -0.47
:  -60 ; -0.47
:  -60 ; -0.47
MotorTune.CurrentShapeB18MapData [INT(16),(1,31)]  -24 ; -0.19
:  -24 ; -0.19
:  -24 ; -0.19
:  -24 ; -0.19
:  -25 ; -0.2
:  -26 ; -0.2
:  -24 ; -0.19
:  -21 ; -0.16
:  -15 ; -0.12
:  -9 ; -0.07
:  -8 ; -0.06
:  -6 ; -0.05
:  -5 ; -0.04
:  -3 ; -0.02
:  -2 ; -0.02
:  0 ;  0
:  -3 ; -0.02
:  -5 ; -0.04
:  -7 ; -0.05
:  -9 ; -0.07
:  -12 ; -0.09
:  -14 ; -0.11
:  -22 ; -0.17
:  -29 ; -0.23
:  -33 ; -0.26
:  -37 ; -0.29
:  -38 ; -0.3
:  -39 ; -0.3
:  -39 ; -0.3
:  -39 ; -0.3
:  -39 ; -0.3
MotorTune.CurrentShapingDisableThreshold [INT(16)]  0 ;  0
MotorTune.CurrentShapingEnableThreshold [INT(16)]  0 ;  0
MotorTune.DecouplingGain [UINT(16)]  0 ;  0
MotorTune.DefaultMotorCurrentARipple [INT(16)]  192 ;  1.5
MotorTune.DefaultMotorCurrentCRipple [INT(16)]  346 ;  2.7
MotorTune.DrvStgTempMotI_LimMapBrkpts [INT(16),(1,4)]  -4000 ; -40
:  13000 ;  130
```

```
:  15000 ;  150
:  16000 ;  160
MotorTune.DrvStgTempMotI_LimMapData [INT(16),(1,4)]  15360 ;  120
:  15360 ;  120
:  0 ;  0
:  0 ;  0
MotorTune.FastThermalEstCoolingRes [UINT(16)]  512 ;  2
MotorTune.FastThermalEstHeatingRes [UINT(16)]  22118 ;  10.8
MotorTune.FastThermalEstI_LimMapBrkpts [INT(16),(1,4)]  -4000 ; -40
:  15000 ;  150
:  17000 ;  170
:  30000 ;  300
MotorTune.FastThermalEstI_LimMapData [INT(16),(1,4)]  15360 ;  120
:  15360 ;  120
:  0 ;  0
:  0 ;  0
MotorTune.FastThermalEstThermalCap [UINT(16)]  12800 ;  50
MotorTune.HallSensorInitErrorTimeout [UINT(16)]  100 ;  100
MotorTune.MPS_POWERDOWN_DE_ICE_FILT_CONST [UINT(16)]  3000 ;  3000
MotorTune.MaxDriveStageTemp [INT(16)]  15000 ;  150
MotorTune.MaxFastThermalEstimatorTemp [INT(16)]  17000 ;  170
MotorTune.MaxModulationDepth [UINT(16)]  1178 ;  1.15
MotorTune.MaxMotorPhaseCurrentLowerMapData [INT(16),(1,30)]  14592 ;  114
:  14592 ;  114
:  14592 ;  114
:  14080 ;  110
:  13184 ;  103
:  12544 ;  98
:  12032 ;  94
:  11904 ;  93
:  11904 ;  93
:  11904 ;  93
:  11904 ;  93
:  11776 ;  92
:  11648 ;  91
:  11648 ;  91
:  11776 ;  92
:  11776 ;  92
:  11776 ;  92
:  11904 ;  93
:  11904 ;  93
:  11904 ;  93
:  12032 ;  94
:  12032 ;  94
:  12032 ;  94
:  12160 ;  95
:  12288 ;  96
:  12288 ;  96
:  12288 ;  96
:  12288 ;  96
:  12288 ;  96
:  12288 ;  96
MotorTune.MaxMotorPhaseCurrentUpperMapData [INT(16),(1,30)]  14592 ;  114
:  14592 ;  114
:  14592 ;  114
:  14080 ;  110
:  13184 ;  103
:  12544 ;  98
:  12032 ;  94
:  11392 ;  89
:  10880 ;  85
:  10368 ;  81
:  9728 ;  76
```

```
:  9216 ;  72
:  8832 ;  69
:  8576 ;  67
:  8448 ;  66
:  8448 ;  66
:  8448 ;  66
:  8448 ;  66
:  8448 ;  66
:  8576 ;  67
:  8704 ;  68
:  8832 ;  69
:  8960 ;  70
:  9216 ;  72
:  9344 ;  73
:  9344 ;  73
:  9344 ;  73
:  9344 ;  73
:  9344 ;  73
:  9344 ;  73
MotorTune.MaxThermalEstimatorTemp [INT(16)]  19000 ;  190
MotorTune.MaximumAssistanceTorqueDemand [UINT(8)]  250 ;  125
MotorTune.MaximumBatteryCurrent [INT(16)]  15360 ;  120
MotorTune.MotorStalledThreshold [UINT(16)]  42 ;  0.33
MotorTune.MotorTorqueConstant [INT(16)]  959 ;  0.06
MotorTune.MotorTorqueConstantTrim [INT(16)]  0 ;  0
MotorTune.NumPhaseVoltageTestFailures [UINT(8)]  19 ;  19
MotorTune.NumStarPointTestFailures [UINT(8)]  19 ;  19
MotorTune.PD_DE_ICE_MPS_PHASE_ALLOWANCE [UINT(16)]  5461 ;  30
MotorTune.PU_MTR_RLY_TEST_MPS_PHASE_ALL [UINT(16)]  182 ;  1
MotorTune.PhaseAdvanceLowerMapData [INT(16),(1,30)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  1638 ;  9
:  3095 ;  17
:  4551 ;  25
:  5825 ;  32
:  6918 ;  38
:  7828 ;  43
:  8556 ;  47
:  9102 ;  50
:  9648 ;  53
:  10195 ;  56
:  10741 ;  59
:  11105 ;  61
:  11469 ;  63
:  11833 ;  65
:  12197 ;  67
:  12561 ;  69
:  12743 ;  70
:  12925 ;  71
:  13107 ;  72
:  13107 ;  72
:  13107 ;  72
:  13107 ;  72
:  13107 ;  72
:  13107 ;  72
MotorTune.PhaseAdvanceUpperMapData [INT(16),(1,30)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
```

```
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  728 ;  4
:  1820 ;  10
:  2913 ;  16
:  4005 ;  22
:  5097 ;  28
:  6008 ;  33
:  6918 ;  38
:  7646 ;  42
:  8374 ;  46
:  8920 ;  49
:  9648 ;  53
:  10377 ;  57
:  10923 ;  60
:  11287 ;  62
:  11651 ;  64
:  12015 ;  66
:  12015 ;  66
:  12015 ;  66
:  12015 ;  66
:  12015 ;  66
:  12015 ;  66
MotorTune.PhaseVoltageThresholdHigh [INT(16)]  886 ;  3.46
MotorTune.PhaseVoltageThresholdLow [INT(16)]  253 ;  0.99
MotorTune.RotatingMotorRMSPowerFraction [UINT(16)]  32 ;  0.25
MotorTune.SectorHysteresis [UINT(16)]  210 ;  0.07
MotorTune.StarPointVoltA1MaxError [INT(16)]  908 ;  3.55
MotorTune.StarPointVoltC1MaxError [INT(16)]  908 ;  3.55
MotorTune.StarPointVoltSumMaxError [INT(16)]  908 ;  3.55
MotorTune.SvmSectorHysteresisHigh [UINT(16)]  50 ;  0.05
MotorTune.SvmSectorHysteresisLow [UINT(16)]  15 ;  0.01
MotorTune.SvmSectorPositionHysteresis [UINT(16)]  910 ;  5
MotorTune.ThermalEstCoolingRes [UINT(16)]  7680 ;  30
MotorTune.ThermalEstHeatingRes [UINT(16)]  2048 ;  1
MotorTune.ThermalEstInitFracMapBrkpts [INT(16),(1,4)]  -7000 ; -70
:  -3500 ; -35
:  -800 ; -8
:  1000 ;  10
MotorTune.ThermalEstThermalCap [UINT(16)]  6144 ;  24
MotorTune.ThermalEstimatorI_LimMapBrkpts [INT(16),(1,4)]  -4000 ; -40
:  16000 ;  160
:  19000 ;  190
:  30000 ;  300
MotorTune.ThermalEstimatorI_LimMapData [INT(16),(1,4)]  15360 ;  120
:  15360 ;  120
:  0 ;  0
:  0 ;  0
MotorTuneID_NVCopy [UINT(16)]  1 ;  1
MotorTuneID_NVV [UINT(16)]  1 ; MOTOR_TUNE_2
MotorTuneTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
Motor_Traceability [UINT(8),(1,15)]  66 ;  66
:  65 ;  65
:  70 ;  70
:  48 ;  48
:  68 ;  68
:  50 ;  50
:  52 ;  52
:  50 ;  50
:  50 ;  50
```

```
:  49 ;  49
:  48 ;  48
:  52 ;  52
:  50 ;  50
:  48 ;  48
:  0 ;  0
NUM_PHASE_VOLTAGE_TEST_FAILURES [UINT(8)]  19 ;  19
NUM_STAR_POINT_TEST_FAILURES [UINT(8)]  19 ;  19
NvM.EraseNVM [UINT(32)]  0 ;  0
NvM.ForceReseedNVM [UINT(32)]  0 ;  0
OVER_USE_COLUMN_VEL_THRESHOLD [UINT(16)]  307 ;  0.3
OVER_USE_INITIATION_TIME [UINT(16)]  25 ;  0.5
OVER_USE_LOWER_TORQUE_THRESHOLD [UINT(16)]  2048 ;  2
OVER_USE_TORQUE_LIMIT_VALUE [UINT(16)]  2500 ;  10
OVER_USE_TRQ_LIM_DOWN_SLEW_RATE [UINT(8)]  30 ;  30
OVER_USE_TRQ_LIM_UP_SLEW_RATE [UINT(8)]  100 ;  100
OVER_USE_UPPER_TORQUE_THRESHOLD [UINT(16)]  5120 ;  5
P0 [UINT(8),(1,12)]  1 ;  0.05
:  2 ;  0.1
:  3 ;  0.15
:  4 ;  0.2
:  5 ;  0.25
:  7 ;  0.35
:  9 ;  0.45
:  11 ;  0.55
:  13 ;  0.65
:  14 ;  0.7
:  15 ;  0.75
:  16 ;  0.8
P0_BOOST_CURVE_Q1_START_MAP_VTD [UINT(8),(1,12)]  1 ;  0.05
:  2 ;  0.1
:  3 ;  0.15
:  4 ;  0.2
:  5 ;  0.25
:  7 ;  0.35
:  9 ;  0.45
:  11 ;  0.55
:  13 ;  0.65
:  14 ;  0.7
:  15 ;  0.75
:  16 ;  0.8
P1 [UINT(8),(1,12)]  18 ;  0.9
:  24 ;  1.2
:  25 ;  1.25
:  25 ;  1.25
:  25 ;  1.25
:  24 ;  1.2
:  23 ;  1.15
:  22 ;  1.1
:  21 ;  1.05
:  20 ;  1
:  20 ;  1
:  20 ;  1
P1_BOOST_CURVE_Q1_WIDTH_MAP_VTD [UINT(8),(1,12)]  18 ;  0.9
:  24 ;  1.2
:  25 ;  1.25
:  25 ;  1.25
:  25 ;  1.25
:  24 ;  1.2
:  23 ;  1.15
:  22 ;  1.1
:  21 ;  1.05
:  20 ;  1
```

```
:  20 ;  1
:  20 ;  1
P2 [UINT(8),(1,12)]  180 ;  9
:  130 ;  6.5
:  96 ;  4.8
:  82 ;  4.1
:  77 ;  3.85
:  75 ;  3.75
:  74 ;  3.7
:  73 ;  3.65
:  73 ;  3.65
:  72 ;  3.6
:  71 ;  3.55
:  70 ;  3.5
P2_BOOST_CURVE_Q1_GAIN_MAP_VTD [UINT(8),(1,12)]  180 ;  9
:  130 ;  6.5
:  96 ;  4.8
:  82 ;  4.1
:  77 ;  3.85
:  75 ;  3.75
:  74 ;  3.7
:  73 ;  3.65
:  73 ;  3.65
:  72 ;  3.6
:  71 ;  3.55
:  70 ;  3.5
P3 [UINT(8),(1,12)]  20 ;  1
:  27 ;  1.35
:  29 ;  1.45
:  30 ;  1.5
:  31 ;  1.55
:  32 ;  1.6
:  33 ;  1.65
:  34 ;  1.7
:  35 ;  1.75
:  36 ;  1.8
:  37 ;  1.85
:  38 ;  1.9
P3_BOOST_CURVE_Q2_START_MAP_VTD [UINT(8),(1,12)]  20 ;  1
:  27 ;  1.35
:  29 ;  1.45
:  30 ;  1.5
:  31 ;  1.55
:  32 ;  1.6
:  33 ;  1.65
:  34 ;  1.7
:  35 ;  1.75
:  36 ;  1.8
:  37 ;  1.85
:  38 ;  1.9
P4 [UINT(8),(1,12)]  20 ;  1
:  22 ;  1.1
:  25 ;  1.25
:  29 ;  1.45
:  34 ;  1.7
:  40 ;  2
:  48 ;  2.4
:  56 ;  2.8
:  63 ;  3.15
:  70 ;  3.5
:  77 ;  3.85
:  81 ;  4.05
P4_BOOST_CURVE_Q2_WIDTH_MAP_VTD [UINT(8),(1,12)]  20 ;  1
```

```
:  22 ;  1.1
:  25 ;  1.25
:  29 ;  1.45
:  34 ;  1.7
:  40 ;  2
:  48 ;  2.4
:  56 ;  2.8
:  63 ;  3.15
:  70 ;  3.5
:  77 ;  3.85
:  81 ;  4.05
P5 [UINT(8),(1,12)]  179 ;  35.8
:  176 ;  35.2
:  169 ;  33.8
:  160 ;  32
:  151 ;  30.2
:  140 ;  28
:  123 ;  24.6
:  105 ;  21
:  85 ;  17
:  73 ;  14.6
:  67 ;  13.4
:  62 ;  12.4
P5_BOOST_CURVE_Q2_GAIN_MAP_VTD [UINT(8),(1,12)]  179 ;  35.8
:  176 ;  35.2
:  169 ;  33.8
:  160 ;  32
:  151 ;  30.2
:  140 ;  28
:  123 ;  24.6
:  105 ;  21
:  85 ;  17
:  73 ;  14.6
:  67 ;  13.4
:  62 ;  12.4
PD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  3 ;  0.03
:  11 ;  0.11
:  17 ;  0.17
:  23 ;  0.23
:  27 ;  0.27
:  28 ;  0.28
:  28 ;  0.28
PDC_COLUMN_TORQUE_FILT_FREQ [UINT(16)]  37 ;  0.07
PDC_COL_ANGLE_MAX_VTD [UINT(16)]  228 ;  5.01
PDC_COL_TRQ_MAX_VTD [UINT(8)]  80 ;  2.5
PDC_COL_TRQ_MIN_VTD [UINT(8)]  26 ;  0.2
PDC_ColumnTorqueFrequency [UINT(16)]  37 ;  2.98
PDC_LIMIT [UINT(8)]  48 ;  1.5
PDC_MAX_RATE_LIMIT [INT(32)]  262 ;  1
PDC_TIMER [UINT(16)]  500 ;  2
PDC_TIME_CONSTANT_VTD [UINT(16)]  60 ;  30
PDC_USE_LAST_JOURNEY_VTD [UINT(8)]  0 ;  0
PDC_VSPD_HIGHER_GAIN_THRESHOLD [UINT(16)]  2600 ;  40
PDC_VSPD_LOWER_GAIN [UINT(16)]  0 ;  0
PDC_VSPD_LOWER_GAIN_THRESHOLD [UINT(16)]  640 ;  10
PDC_VSPD_MAX [INT(16)]  12800 ;  200
PDC_VSPD_MIN [INT(16)]  2560 ;  40
PDC_VSPD_ZERO_GAIN_THRESHOLD [UINT(16)]  192 ;  3
```

PD_BOOST_CURVE_GAIN_D_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  3 ;  0.03
:  11 ;  0.11
:  17 ;  0.17
:  23 ;  0.23
:  27 ;  0.27
:  28 ;  0.28
:  28 ;  0.28
PHASE_VOLTAGE_THRESHOLD_HIGH [INT(16)]  886 ;  3.46
PHASE_VOLTAGE_THRESHOLD_LOW [INT(16)]  253 ;  0.99
PartNumbersDataROM.VM_EcuSoftwareNumber [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  49 ;  49
:  52 ;  52
:  68 ;  68
:  48 ;  48
:  48 ;  48
:  51 ;  51
:  45 ;  45
:  65 ;  65
:  69 ;  69
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
Peak_CPU_LoadOtherStates [UINT(16)]  12380 ;  77.38
PlatformTune.BATT_CURRENT_FILTER_COEF_PTD [UINT(16)]  16384 ;  1
PlatformTune.COMP_EAC_INPUT_LIMIT_MAP [UINT(16),(1,4)]  1152 ;  1152
:  1024 ;  1024
:  1024 ;  1024
:  0 ;  0
PlatformTune.COMP_EAC_INPUT_VSPD_MAP [UINT(8),(1,4)]  0 ;  0
:  3 ;  3
:  12 ;  12
:  13 ;  13
PlatformTune.COMP_EAC_OFF_CVEL_THRESH [UINT(16)]  5120 ;  5
PlatformTune.COMP_EAC_OFF_TRQ_THRESH_PTD [UINT(16)]  5120 ;  5
PlatformTune.COMP_EAC_OFF_VSPD_THRESH_PTD [UINT(16)]  768 ;  12
PlatformTune.COMP_EAC_ON_CVEL_THRESH_PTD [UINT(16)]  102 ;  0.1
PlatformTune.COMP_EAC_ON_TRQ_THRESH_PTD [UINT(16)]  3072 ;  3
PlatformTune.COMP_EAC_ON_VSPD_THRESH_PTD [UINT(16)]  768 ;  12
PlatformTune.EAC_CM5_SWSp [UINT(16)]  5120 ;  5
PlatformTune.EAC_FAULT_RECOVERY_A_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_B_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_C_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_D_PTD [UINT(8)]  2 ;  2
PlatformTune.EAC_FAULT_RECOVERY_E_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_F_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_G_PTD [UINT(8)]  0 ;  0
PlatformTune.EAC_FAULT_RECOVERY_H_PTD [UINT(8)]  0 ;  0

```
PlatformTune.EAC_Filt_Freq_PTD [UINT(16)]  768 ;  3
PlatformTune.EAC_Filt_Freq_Pos_PTD [UINT(16)]  19200 ;  75
PlatformTune.EAC_MAX_VELOCITY_ERROR_PTD [UINT(16)]  40960 ;  40
PlatformTune.EAC_Max_Available_Current_PTD [UINT(8)]  100 ;  100
PlatformTune.EAC_TORQUE_LIMIT_PTD [INT(16)]  1295 ;  5.08
PlatformTune.EAC_T_ACTIVATE_LIMIT_PTD [INT(16)]  100 ;  100
PlatformTune.EAL_T_PTD [UINT(16)]  2000 ;  2000
PlatformTune.TIRE_CIRCUMFERENCE_PTD [UINT(32),(1,12)]  70411878 ;  70411878
:  70041600 ;  70041600
:  70411878 ;  70411878
:  70411878 ;  70411878
:  71257292 ;  71257292
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
PlatformTuneTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
Power_Stage_Traceability [UINT(8),(1,15)]  49 ;  49
:  48 ;  48
:  50 ;  50
:  53 ;  53
:  54 ;  54
:  49 ;  49
:  56 ;  56
:  48 ;  48
:  55 ;  55
:  66 ;  66
:  51 ;  51
:  48 ;  48
:  48 ;  48
:  49 ;  49
:  70 ;  70
REVERSE_GEAR_ENGAGED [UINT(8)]  0 ; NO_SIGNAL_SELECTED
ReprogRequest [UINT(32)]  305419896 ; NO_REPROG_REQUEST
SAPPFeatureEnabled [UINT(16)]  1 ; ENABLED
SAPP_FEATURE_ENABLED_MASTER [UINT(8)]  1 ;  1
SECTOR_HYSTERESIS [UINT(16)]  210 ;  0.07
SLOW_REINST_TRQ_LIM_UP_SLEW_RATE [UINT(16)]  30 ;  30
STAR_POINT_VOLT_A1_MAX_ERROR [INT(16)]  908 ;  3.55
STAR_POINT_VOLT_C1_MAX_ERROR [INT(16)]  908 ;  3.55
STAR_POINT_VOLT_SUM_MAX_ERROR [INT(16)]  908 ;  3.55
STRAIGHT_AHEAD_CONFIDENCE_LEVEL [INT(16)]  800 ;  25
SVM_SECTOR_HYSTERESIS [UINT(16)]  910 ;  5
SVM_SECTOR_HYSTERESIS_HIGH [UINT(16)]  50 ;  0.05
SVM_SECTOR_HYSTERESIS_LOW [UINT(16)]  15 ;  0.01
SaveNVM_CCP_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_COMPATIBILITY_ID_A_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_COMPATIBILITY_ID_B_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_COMPATIBILITY_ID_C_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_CONFIGURATION_ID_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_DEM_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_ECU_CALIB_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_EFF_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_END_OF_LINE_DATA_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_FEATURE_SWITCH_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_FREEZE_FRAMES_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_FRICTION_DETECTION_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_MAINTENANCE_DATA_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_MOTOR_TUNE_ID_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_MULTI_BLOCK [UINT(16)]  1 ; TRUE
```

```
SaveNVM_PART_NUMBERS_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_PDC_BLOCK [UINT(16)]  1 ; TRUE
SaveNVM_QUICK_PWR_DN_DATA_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_SAPP_BLOCK [UINT(16)]  1 ; TRUE
SaveNVM_SIZE_DETECT_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_SYS_CALIB_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TEMPORARY_DATA_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TIRE_CIRCUMFERENCE_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TM_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TRACEABILITY_NUMBERS_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TRQ_REINST_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_TRW_FAULTS_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_VEHICLE_ID_BLOCK [UINT(16)]  0 ; FALSE
SaveNVM_VEHICLE_TUNE_ID_BLOCK [UINT(16)]  0 ; FALSE
SwitchedVoltageFilterConst [UINT(16)]  2730 ;  5
SysCalib.InverseBallNutBeltEfficiency [UINT(16)]  38552 ;  1.18
SysCalibTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
THERMAL_EST_COOLING_RES [UINT(16)]  7680 ;  30
THERMAL_EST_HEATING_RES [UINT(16)]  2048 ;  1
THERMAL_EST_THERMAL_CAP [UINT(16)]  6144 ;  24
TIRE_CIRCUMFERENCE_TABLE [UINT(32),(1,12)]  70411878 ;  70411878
:  70041600 ;  70041600
:  70411878 ;  70411878
:  70411878 ;  70411878
:  71257292 ;  71257292
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
:  70411878 ;  70411878
TM_NVV.EmuRequestFlag_NVV [UINT(32)]  0 ; EMULATION_MODE_NOT_REQUESTED
TM_NVV.ProductComplete_NVV [UINT(32)]  0 ;  0
TORQUE_DAMPING_TRQ_GAIN_MAP [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
TORQUE_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
TORQUE_LIMIT_DOWN_SLEW_RATE [UINT(8)]  50 ;  50
TORQUE_LIMIT_UP_SLEW_RATE [UINT(8)]  50 ;  50
TRQ_DAMPING_TRQ_FILTER_FREQ_VTD [UINT(8)]  6 ;  6
TRQ_DAMPING_TRQ_LWR_THRESH_VTD [UINT(16)]  1024 ;  1
TRQ_DAMPING_TRQ_UPR_THRESH_VTD [UINT(16)]  2048 ;  2
```

```
TRQ_DAMPING_TRQ_UPR_TRQ_MULT_VTD [UINT(16)]  60 ;  0.24
TRW_EOL_TRQ_LIMIT_DOWN_SLEW_RATE [UINT(8)]  100 ;  100
TRW_EOL_TRQ_LIMIT_UP_SLEW_RATE [UINT(8)]  100 ;  100
TRW_FaultStore.ClearTRWFaults [UINT(32)]  0 ;  0
UPDATE_EOLT_DATA [UINT(32)]  0 ;  0
UPDATE_TRACEABILITY_NUMBERS [UINT(32)]  0 ;  0
UpdateMotorTuneID [UINT(16)]  0 ; FALSE
UpdateVehicleTuneID [UINT(16)]  0 ; FALSE
VEHICLE_MOVING_THRESHOLD [UINT(16)]  173 ;  2.7
VEHICLE_SPEED_BREAKPOINTS_VTD [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
VM_EcuSoftwareNumber [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  49 ;  49
:  52 ;  52
:  68 ;  68
:  48 ;  48
:  48 ;  48
:  51 ;  51
:  45 ;  45
:  65 ;  65
:  69 ;  69
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
VehicleSpeed [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
VehicleTune.ATF2_A0_VTD [UINT(16)]  16384 ;  16384
VehicleTune.ATF2_A1_MAP_VTD [UINT(16),(1,5)]  27301 ;  27301
:  27293 ;  27293
:  27285 ;  27285
:  27285 ;  27285
:  27277 ;  27277
```

```
VehicleTune.ATF2_A2_MAP_VTD [UINT(16),(1,5)]  10939 ;  10939
:  10933 ;  10933
:  10928 ;  10928
:  10928 ;  10928
:  10923 ;  10923
VehicleTune.ATF2_B0_MAP_VTD [UINT(16),(1,5)]  14025 ;  14025
:  15774 ;  15774
:  17522 ;  17522
:  17522 ;  17522
:  19270 ;  19270
VehicleTune.ATF2_B1_MAP_VTD [UINT(16),(1,5)]  26950 ;  26950
:  30311 ;  30311
:  33670 ;  33670
:  33670 ;  33670
:  37028 ;  37028
VehicleTune.ATF2_B2_MAP_VTD [UINT(16),(1,5)]  12947 ;  12947
:  14561 ;  14561
:  16175 ;  16175
:  16175 ;  16175
:  17788 ;  17788
VehicleTune.ATF2_VEHICLE_SPEED_MAP_VTD [UINT(8),(1,5)]  0 ;  0
:  5 ;  5
:  10 ;  10
:  15 ;  15
:  20 ;  20
VehicleTune.BLENDING_FILTER_FREQ_MAP_VTD [UINT(8),(1,12)]  80 ;  8
:  88 ;  8.8
:  98 ;  9.8
:  110 ;  11
:  123 ;  12.3
:  130 ;  13
:  135 ;  13.5
:  136 ;  13.6
:  137 ;  13.7
:  138 ;  13.8
:  138 ;  13.8
:  138 ;  13.8
VehicleTune.CHARGING_SYS_CHG_FLT_TIME [UINT(16)]  500 ;  500
VehicleTune.COMP_EAC_A1_VTD [UINT(16)]  13650 ;  13650
VehicleTune.COMP_EAC_A2_VTD [UINT(16)]  5470 ;  5470
VehicleTune.COMP_EAC_B0_VTD [UINT(16)]  7013 ;  7013
VehicleTune.COMP_EAC_B1_VTD [UINT(16)]  13475 ;  13475
VehicleTune.COMP_EAC_B2_VTD [UINT(16)]  6474 ;  6474
VehicleTune.COMP_EAC_BOOST_GAIN_VTD [INT(16)]  160 ;  20
VehicleTune.COMP_EAC_MODE_IN_TIME_VTD [UINT(16)]  200 ;  0.2
VehicleTune.COMP_EAC_MODE_OUT_TIME_VTD [UINT(16)]  200 ;  0.2
VehicleTune.COMP_EAC_TRQ_FILTER_FREQ_VTD [UINT(16)]  640 ;  2.5
VehicleTune.D0_DAMPING_TORQUE_DEADBAND_VTD [INT(16)]  0 ;  0
VehicleTune.D1Q_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  18 ;  1.8
:  18 ;  1.8
:  19 ;  1.9
:  20 ;  2
:  21 ;  2.1
:  22 ;  2.2
:  24 ;  2.4
:  26 ;  2.6
:  29 ;  2.9
:  32 ;  3.2
:  35 ;  3.5
:  37 ;  3.7
VehicleTune.D1_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
```

```
:  0 ;  0
:  7 ;  0.7
:  17 ;  1.7
:  39 ;  3.9
:  64 ;  6.4
:  91 ;  9.1
:  116 ;  11.6
:  139 ;  13.9
:  156 ;  15.6
VehicleTune.D2_DAMPING_TRQ_MAX_MAP_VTD [UINT(8),(1,12)]  85 ;  8.5
:  85 ;  8.5
:  85 ;  8.5
:  86 ;  8.6
:  88 ;  8.8
:  90 ;  9
:  94 ;  9.4
:  97 ;  9.7
:  100 ;  10
:  102 ;  10.2
:  103 ;  10.3
:  103 ;  10.3
VehicleTune.D3_DMP_TRQ_MULT_LWR_THRESH_VTD [UINT(16)]  819 ;  0.8
VehicleTune.D4_DMP_TRQ_MULT_UPR_THRESH_VTD [UINT(16)]  3277 ;  3.2
VehicleTune.D5_DMP_TRQ_MULT_FILT_FREQ_VTD [UINT(8)]  200 ;  20
VehicleTune.D6_DMP_TRQ_DIFF_FLT_FREQ_VTD [UINT(8)]  255 ;  25.5
VehicleTune.D7_DMP_TRQ_DIFF_MULT_LWR_THRESH [UINT(8)]  250 ;  250
VehicleTune.D8_DMP_TRQ_DIFF_MULT_UPR_THRESH [UINT(8)]  255 ;  255
VehicleTune.DEF_VEHICLE_SPEED [UINT(16)]  6400 ;  50
VehicleTune.EAC_CM3_MVS_VTD [UINT(16)]  192 ;  3
VehicleTune.EAC_CM3_SWSp_VTD [UINT(16)]  51 ;  0.05
VehicleTune.EAC_CM3_SWT_VTD [UINT(16)]  1024 ;  1
VehicleTune.EAC_CM3_dSWA_VTD [UINT(16)]  455 ;  10
VehicleTune.EAC_CM5_MVS_VTD [UINT(16)]  704 ;  11
VehicleTune.EAC_CM5_SWT_VTD [UINT(16)]  3581 ;  3.5
VehicleTune.EAC_CM5_dSWA_VTD [UINT(16)]  5461 ;  119.99
VehicleTune.EAC_GD_VTD [UINT(16)]  15360 ;  15
VehicleTune.EAC_GF_VTD [UINT(16)]  1024 ;  1
VehicleTune.EAC_ING_VTD [UINT(16)]  1311 ;  0.02
VehicleTune.EAC_KD_VTD [UINT(16)]  9830 ;  1.2
VehicleTune.EAC_KI_VTD [UINT(16)]  0 ;  0
VehicleTune.EAC_KP_VTD [UINT(16)]  12800 ;  100
VehicleTune.EAC_MAX_INTEGRAL_TRQ_VTD [INT(32)]  532676608 ;  127
VehicleTune.EAC_MAX_PROPORTIONAL_TRQ_VTD [INT(32)]  33292288 ;  127
VehicleTune.EAC_T_SAPP_in_VTD [INT(16)]  500 ;  0.5
VehicleTune.EAC_T_SAPP_out_VTD [INT(16)]  200 ;  0.2
VehicleTune.EAL_SWA_LIMIT_VTD [UINT(16)]  21825 ;  479.55
VehicleTune.EAL_SWA_MARGIN_VTD [UINT(16)]  227 ;  4.99
VehicleTune.ENGINE_STOPPED_HELD_DELAY_VTD [UINT(16)]  0 ;  0
VehicleTune.ENGINE_STOPPED_HELD_TORQUE_VTD [UINT(8)]  0 ;  0
VehicleTune.ENG_SPEED_CRANKING_RPM [UINT(16)]  1200 ;  1200
VehicleTune.ENG_SPEED_RUNNING_RPM [UINT(16)]  2000 ;  2000
VehicleTune.ENG_STALLED_INITIATION_TIME_VTD [UINT(16)]  0 ;  0
VehicleTune.ENG_STATUS_CHG_FLT_TIME [UINT(16)]  50 ;  50
VehicleTune.ENG_STL_TRQ_LMT_DN_SLEW_RATE_VTD [UINT(8)]  30 ;  30
VehicleTune.ENG_STL_TRQ_LMT_UP_SLEW_RATE_VTD [UINT(8)]  100 ;  100
VehicleTune.FP_ACCEL_CUTOFF_VTD [UINT(16)]  1024 ;  1
VehicleTune.FP_ACCEL_FILTER_BETA_VTD [UINT(16)]  9911 ;  0.6049
VehicleTune.FP_COLUMN_TORQUE_MAX_VTD [UINT(16)]  2048 ;  8
VehicleTune.FP_DRIVESTAGE_TEMP_FAULT_TIME [UINT(16)]  30000 ;  600
VehicleTune.FP_FRICTION_BOUND_AXIS_VTD [UINT(16),(1,2)]  0 ;  0
:  3000 ;  3000
VehicleTune.FP_HIGH_SPEED_CUTOFF_VTD [UINT(16)]  1000 ;  125
VehicleTune.FP_LAT_ACCEL_2_LOAD_MAP_VTD [UINT(16),(1,2)]  6195 ;  774.38
```

```
:  5200 ;  650
VehicleTune.FP_LAT_ACCEL_CUTOFF_VTD [UINT(16)]  448 ;  1.75
VehicleTune.FP_LAT_ACCEL_ERROR_VTD [UINT(16)]  800 ;  0.5
VehicleTune.FP_LAT_ACC_FILTER_BETA_VTD [UINT(16)]  14449 ;  0.8819
VehicleTune.FP_LOAD_MEAS_FILTER_BETA_VTD [UINT(16)]  15581 ;  0.951
VehicleTune.FP_LOAD_PRED_FILTER_BETA_VTD [UINT(16)]  15581 ;  0.951
VehicleTune.FP_LOW_SPEED_CUTOFF_VTD [UINT(16)]  360 ;  45
VehicleTune.FP_MINTEMP_VTD [INT(16)]  0 ;  0
VehicleTune.FP_MIN_STABLE_TIME_VTD [UINT(16)]  50 ;  50
VehicleTune.FP_ONE_OVER_PINION_VTD [UINT(16)]  14588 ;  113.9688
VehicleTune.FP_PDC_GAIN_VTD [UINT(16)]  256 ;  1
VehicleTune.FP_SW_VEL_CUTOFF_VTD [UINT(16)]  600 ;  75
VehicleTune.FP_SW_VEL_FILTER_BETA_VTD [UINT(16)]  5995 ;  0.3659
VehicleTune.FP_UPPER_FRICTION_BOUND_VTD [UINT(16),(1,2)]  950 ;  950
:  950 ;  950
VehicleTune.FP_UP_DOWN_COUNTER_THRESHOLD_VTD [UINT(16)]  15 ;  15
VehicleTune.FP_UP_DOWN_LIMIT_VTD [UINT(16)]  200 ;  200
VehicleTune.FP_VSPD_GAIN_MAP_VTD [UINT(8),(1,2)]  45 ;  45
:  75 ;  75
VehicleTune.FP_VSPD_GAIN_VTD [UINT(16),(1,2)]  1352 ;  1.32
:  1147 ;  1.12
VehicleTune.FP_VSPD_LAT_MAP_VTD [UINT(8),(1,2)]  50 ;  50
:  120 ;  120
VehicleTune.FRICTION_THRESHOLD_VTD [UINT(16)]  4 ;  4
VehicleTune.HFAC_GAIN_MAP_VTD [UINT(8),(1,120)]  109 ;  54.5
:  116 ;  58
:  119 ;  59.5
:  121 ;  60.5
:  123 ;  61.5
:  127 ;  63.5
:  132 ;  66
:  135 ;  67.5
:  139 ;  69.5
:  144 ;  72
:  83 ;  41.5
:  90 ;  45
:  93 ;  46.5
:  95 ;  47.5
:  97 ;  48.5
:  101 ;  50.5
:  106 ;  53
:  109 ;  54.5
:  113 ;  56.5
:  118 ;  59
:  72 ;  36
:  79 ;  39.5
:  82 ;  41
:  84 ;  42
:  86 ;  43
:  90 ;  45
:  95 ;  47.5
:  98 ;  49
:  102 ;  51
:  107 ;  53.5
:  60 ;  30
:  67 ;  33.5
:  70 ;  35
:  72 ;  36
:  74 ;  37
:  78 ;  39
:  83 ;  41.5
:  86 ;  43
:  90 ;  45
```

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:  95 ;  47.5
:  52 ;  26
:  59 ;  29.5
:  62 ;  31
:  64 ;  32
:  66 ;  33
:  70 ;  35
:  75 ;  37.5
:  78 ;  39
:  82 ;  41
:  87 ;  43.5
:  45 ;  22.5
:  52 ;  26
:  55 ;  27.5
:  57 ;  28.5
:  59 ;  29.5
:  63 ;  31.5
:  68 ;  34
:  71 ;  35.5
:  75 ;  37.5
:  80 ;  40
:  40 ;  20
:  47 ;  23.5
:  50 ;  25
:  52 ;  26
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
:  66 ;  33
:  70 ;  35
:  75 ;  37.5
:  33 ;  16.5
:  40 ;  20
:  43 ;  21.5
:  45 ;  22.5
:  47 ;  23.5
:  51 ;  25.5
:  56 ;  28
:  59 ;  29.5
:  63 ;  31.5
:  70 ;  35
:  31 ;  15.5
:  38 ;  19
:  41 ;  20.5
:  43 ;  21.5
:  45 ;  22.5
:  49 ;  24.5
:  54 ;  27
:  57 ;  28.5
:  61 ;  30.5
:  68 ;  34
:  30 ;  15
:  37 ;  18.5
:  40 ;  20
:  42 ;  21
:  44 ;  22
:  48 ;  24
:  53 ;  26.5
:  56 ;  28
:  60 ;  30
:  65 ;  32.5
:  29 ;  14.5
:  36 ;  18
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:  39 ;  19.5
:  41 ;  20.5
:  43 ;  21.5
:  47 ;  23.5
:  52 ;  26
:  55 ;  27.5
:  59 ;  29.5
:  64 ;  32
:  28 ;  14
:  35 ;  17.5
:  38 ;  19
:  40 ;  20
:  42 ;  21
:  46 ;  23
:  51 ;  25.5
:  54 ;  27
:  58 ;  29
:  63 ;  31.5
VehicleTune.HFAC_SPD_BRKPNT_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
VehicleTune.HFAC_TRQ_BRKPNT_MAP_VTD [UINT(8),(1,10)]  0 ;  0
:  5 ;  0.5
:  10 ;  1
:  15 ;  1.5
:  20 ;  2
:  25 ;  2.5
:  30 ;  3
:  35 ;  3.5
:  45 ;  4.5
:  60 ;  6
VehicleTune.HSD0_COLUMN_VELOCITY_MAP_VTD [INT(16),(1,12)]  2253 ;  2.2
:  2765 ;  2.7
:  3277 ;  3.2
:  3789 ;  3.7
:  4301 ;  4.2
:  4813 ;  4.7
:  5325 ;  5.2
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
:  5837 ;  5.7
VehicleTune.HSD1_DAMPING_TORQUE_GAIN_MAP_VTD [INT(16),(1,12)]  100 ;  100
:  75 ;  75
:  50 ;  50
:  25 ;  25
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
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:  0 ;  0
VehicleTune.HSD2_MAX_HIGH_SPEED_DAMPING_VTD [UINT(8),(1,12)]  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
:  106 ;  106
VehicleTune.NOMINAL_TIRE_PRESSURE_VTD [UINT(16)]  0 ;  0
VehicleTune.ONE_MIN_EXP_FP_THERM_FILTER_TC_VTD [INT(32)]  58 ;  58
VehicleTune.P0_BOOST_CURVE_Q1_START_MAP_VTD [UINT(8),(1,12)]  1 ;  0.05
:  2 ;  0.1
:  3 ;  0.15
:  4 ;  0.2
:  5 ;  0.25
:  7 ;  0.35
:  9 ;  0.45
:  11 ;  0.55
:  13 ;  0.65
:  14 ;  0.7
:  15 ;  0.75
:  16 ;  0.8
VehicleTune.P1_BOOST_CURVE_Q1_WIDTH_MAP_VTD [UINT(8),(1,12)]  18 ;  0.9
:  24 ;  1.2
:  25 ;  1.25
:  25 ;  1.25
:  25 ;  1.25
:  24 ;  1.2
:  23 ;  1.15
:  22 ;  1.1
:  21 ;  1.05
:  20 ;  1
:  20 ;  1
:  20 ;  1
VehicleTune.P2_BOOST_CURVE_Q1_GAIN_MAP_VTD [UINT(8),(1,12)]  180 ;  9
:  130 ;  6.5
:  96 ;  4.8
:  82 ;  4.1
:  77 ;  3.85
:  75 ;  3.75
:  74 ;  3.7
:  73 ;  3.65
:  73 ;  3.65
:  72 ;  3.6
:  71 ;  3.55
:  70 ;  3.5
VehicleTune.P3_BOOST_CURVE_Q2_START_MAP_VTD [UINT(8),(1,12)]  20 ;  1
:  27 ;  1.35
:  29 ;  1.45
:  30 ;  1.5
:  31 ;  1.55
:  32 ;  1.6
:  33 ;  1.65
:  34 ;  1.7
:  35 ;  1.75
:  36 ;  1.8
:  37 ;  1.85
:  38 ;  1.9
```

```
VehicleTune.P4_BOOST_CURVE_Q2_WIDTH_MAP_VTD [UINT(8),(1,12)]  20 ;  1
:  22 ;  1.1
:  25 ;  1.25
:  29 ;  1.45
:  34 ;  1.7
:  40 ;  2
:  48 ;  2.4
:  56 ;  2.8
:  63 ;  3.15
:  70 ;  3.5
:  77 ;  3.85
:  81 ;  4.05
VehicleTune.P5_BOOST_CURVE_Q2_GAIN_MAP_VTD [UINT(8),(1,12)]  179 ;  35.8
:  176 ;  35.2
:  169 ;  33.8
:  160 ;  32
:  151 ;  30.2
:  140 ;  28
:  123 ;  24.6
:  105 ;  21
:  85 ;  17
:  73 ;  14.6
:  67 ;  13.4
:  62 ;  12.4
VehicleTune.PDC_COL_ANGLE_MAX_VTD [UINT(16)]  228 ;  5.01
VehicleTune.PDC_COL_TRQ_MAX_VTD [UINT(8)]  80 ;  2.5
VehicleTune.PDC_COL_TRQ_MIN_VTD [UINT(8)]  26 ;  0.2
VehicleTune.PDC_ColumnTorqueFrequency [UINT(16)]  37 ;  0.07
VehicleTune.PDC_LIMIT [UINT(8)]  48 ;  1.5
VehicleTune.PDC_MaxRateLimit [INT(32)]  262 ;  1
VehicleTune.PDC_REPAIR_LOWER_THRESHOLD [UINT(8)]  16 ;  0.5
VehicleTune.PDC_REPAIR_UPPER_THRESHOLD [UINT(8)]  3 ;  0.09
VehicleTune.PDC_TIMER [UINT(16)]  500 ;  2
VehicleTune.PDC_TIME_CONSTANT_VTD [UINT(16)]  60 ;  30
VehicleTune.PDC_VSPD_HIGHER_GAIN_THRESHOLD [UINT(16)]  2600 ;  40
VehicleTune.PDC_VSPD_LOWER_GAIN [UINT(16)]  0 ;  0
VehicleTune.PDC_VSPD_LOWER_GAIN_THRESHOLD [UINT(16)]  640 ;  10
VehicleTune.PDC_VSPD_MAX [INT(16)]  12800 ;  200
VehicleTune.PDC_VSPD_MIN [INT(16)]  2560 ;  40
VehicleTune.PDC_VSPD_ZERO_GAIN_THRESHOLD [UINT(16)]  192 ;  3
VehicleTune.PD_BOOST_CURVE_GAIN_D_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  3 ;  0.03
:  11 ;  0.11
:  17 ;  0.17
:  23 ;  0.23
:  27 ;  0.27
:  28 ;  0.28
:  28 ;  0.28
VehicleTune.SLOW_REINST_TRQ_LIM_UP_SLEW_RATE [UINT(16)]  30 ;  30
VehicleTune.SLOW_TRQ_REINST_ENG_RUN_CHK_TIME [UINT(16)]  50 ;  50
VehicleTune.SLOW_TRQ_REINST_LIMIT_THRESH [UINT(8)]  5 ;  5
VehicleTune.SQRT_FP_UNDER_STEER_COEF_VTD [UINT(16)]  16 ;  0.0625
VehicleTune.TIRE_PRESSURE_TOLERANCE [UINT(8)]  0 ;  0
VehicleTune.TORQUE_DAMPING_TRQ_GAIN_MAP_VTD [UINT(8),(1,12)]  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
```

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:  0 ;  0
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:  0 ;  0
:  0 ;  0
:  0 ;  0
VehicleTune.TRQ_DAMPING_TRQ_FILTER_FREQ_VTD [UINT(8)]  6 ;  6
VehicleTune.TRQ_DAMPING_TRQ_LWR_THRESH_VTD [UINT(16)]  1024 ;  1
VehicleTune.TRQ_DAMPING_TRQ_UPR_THRESH_VTD [UINT(16)]  2048 ;  2
VehicleTune.TRQ_DAMPING_TRQ_UPR_TRQ_MULT_VTD [UINT(16)]  60 ;  0.24
VehicleTune.USE_LAST_JOURNEY_PDC_VTD [UINT(8)]  0 ;  0
VehicleTune.VEHICLE_MOVING_THRESHOLD [UINT(16)]  173 ;  1.35
VehicleTune.VEHICLE_SPEED_BREAKPOINTS_VTD [UINT(8),(1,12)]  0 ;  0
:  8 ;  8
:  15 ;  15
:  25 ;  25
:  35 ;  35
:  45 ;  45
:  60 ;  60
:  75 ;  75
:  95 ;  95
:  120 ;  120
:  150 ;  150
:  190 ;  190
VehicleTune.WHEEL_BASE_VTD [UINT(16)]  6130 ;  2.993
VehicleTuneID_NVCopy [UINT(16)]  3 ;  3
VehicleTuneID_NVV [UINT(16)]  3 ; VEHICLE_TUNE_3
VehicleTuneTB.SaveRAM_Copy [UINT(16)]  0 ; FALSE
reverseGearSignalSelected [UINT(8)]  0 ; NO_SIGNAL_SELECTED
sAssistanceController.NVM_Data.PDC_Initial_Torque_Value [INT(32)]  0 ;  0
sAssistanceController.NVM_Data.Pdc_Enabled [UINT(8)]  1 ;  1
sEAC_AssistMode.EAC_NVM_Data.EAC_ABSOLUTE_ANGLE_SELECTOR [UINT(8)]  0 ;  0
sEAC_AssistMode.EAC_NVM_Data.EAC_LIC_COUNTER [INT(16)]  0 ;  0
sEAC_AssistMode.EAC_NVM_Data.REVERSE_GEAR_SELECTED [UINT(8)]  0 ; NO_SIGNAL_SELECTED
sEAC_AssistMode.EAC_NVM_Data.SAPP_FEATURE_ENABLED_MASTER [UINT(8)]  1 ;  1
sEAC_PositionFilter.EACAbsoluteAngleSelector [UINT(16)]  0 ; EAC_ANGLE_SELECTED
sEFF_Buffer [UINT(8),(1312,1)]  0 ;  0
:  0 ;  0
:  36 ;  36
:  0 ;  0
:  58 ;  58
:  11 ;  11
:  1 ;  1
:  0 ;  0
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:  1 ;  1
:  3 ;  3
:  1 ;  1
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:  119 ;  119
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:  0 ;  0
:  0 ;  0
:  106 ;  106
```

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```

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:  10 ;  10
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:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
sEFF_Manager.ClearEFFData [UINT(32)]  0 ;  0
sEndOfLineData.NVM_Data.EcuEolTestPassed [UINT(8)]  85 ;  85
sEndOfLineData.NVM_Data.EcuEoltRejectCode [UINT(8)]  0 ;  0
sEndOfLineData.NVM_Data.EppEolTestPassed [UINT(8)]  85 ;  85
sEndOfLineData.NVM_Data.EppEoltRejectCode [UINT(8)]  0 ;  0
sEndOfLineData.NVM_Data.EpsEoltFunctionTestIndicator [UINT(8)]  0 ;  0
sEndOfLineData.NVM_Data.EpsEoltRejectCode [UINT(8)]  0 ;  0
sEndOfLineData.NVM_Data.EpsEoltTestStatus [UINT(8)]  128 ;  128
sEndOfLineData.NVM_Data.EpsToEccCommsIndicator [UINT(8)]  1 ;  1
sEndOfLineData.NVM_Data.SpareBytes [UINT(8),(1,2)]  0 ;  0
:  0 ;  0
sEndOfLineData.UpdateNVM_Request [UINT(32)]  0 ;  0
sFeatureSwitch.CCP_RequestedSAPPVehicleMode [UINT(32)]  0 ;  0
sFeatureSwitch.TRWModeEnableSAPPStatus_NVV [UINT(16)]  0 ; DISABLED
sManufacturingServices.ManufacturingResetRequest [UINT(32)]  0 ;  0
sMotorCurrentDemand.CurrentControlTestModeActive [UINT(16)]  0 ; FALSE
sMotorCurrentDemand.TestCurrentDemand [INT(16)]  0 ;  0
sMotorPositionSensor.ElectricalPositionOffset [INT(16)]  0 ;  0
sPartNumbers.NVM_Data.ecuDeliveryAssemblyNumber [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  51 ;  51
:  70 ;  70
:  57 ;  57
:  54 ;  54
:  52 ;  52
:  45 ;  45
:  66 ;  66
:  71 ;  71
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
```

```
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
sPartNumbers.NVM_Data.gearHardwarePartNumber [UINT(8),(1,24)]  66 ;  66
:  66 ;  66
:  53 ;  53
:  51 ;  51
:  45 ;  45
:  51 ;  51
:  50 ;  50
:  48 ;  48
:  48 ;  48
:  45 ;  45
:  66 ;  66
:  71 ;  71
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
sSystemMode.CCP_RequestedMaintenanceMode [UINT(32)]  0 ;  0
sTM.SaveTuneDataRequestFlag [UINT(16)]  0 ; CANCEL
sTaskController.CPU_PeakLoad [UINT(16)]  12380 ;  77.38
sTemporaryDataManager.NVM_Data.ccpEnable [UINT(8)]  1 ;  1
sTraceabilityNumbers.NVM_Data.EppTraceabilityNumber [UINT(8),(1,15)]  49 ;  49
:  48 ;  48
:  50 ;  50
:  53 ;  53
:  57 ;  57
:  49 ;  49
:  57 ;  57
:  49 ;  49
:  57 ;  57
:  68 ;  68
:  51 ;  51
:  48 ;  48
:  48 ;  48
:  49 ;  49
:  53 ;  53
sTraceabilityNumbers.NVM_Data.MotorTraceabilityNumber [UINT(8),(1,15)]  66 ;  66
:  65 ;  65
:  70 ;  70
:  48 ;  48
:  68 ;  68
:  50 ;  50
:  52 ;  52
:  50 ;  50
:  50 ;  50
:  49 ;  49
:  48 ;  48
:  52 ;  52
:  50 ;  50
:  48 ;  48
:  0 ;  0
sTraceabilityNumbers.NVM_Data.PaddingByte [UINT(8)]  0 ;  0
```

```
sTraceabilityNumbers.NVM_Data.PowerStageTraceabilityNumber [UINT(8),(1,15)]  49 ;
49
:  48 ;  48
:  50 ;  50
:  53 ;  53
:  54 ;  54
:  49 ;  49
:  56 ;  56
:  48 ;  48
:  55 ;  55
:  66 ;  66
:  51 ;  51
:  48 ;  48
:  48 ;  48
:  49 ;  49
:  70 ;  70
sTraceabilityNumbers.UpdateNVM_Request [UINT(32)]  0 ;  0
xDevTune [UINT(8),(1,548)]  244 ;  244
:  209 ;  209
:  0 ;  0
:  0 ;  0
:  7 ;  7
:  48 ;  48
:  5 ;  5
:  48 ;  48
:  42 ;  42
:  34 ;  34
:  208 ;  208
:  7 ;  7
:  20 ;  20
:  55 ;  55
:  22 ;  22
:  42 ;  42
:  102 ;  102
:  23 ;  23
:  0 ;  0
:  0 ;  0
:  96 ;  96
:  130 ;  130
:  59 ;  59
:  0 ;  0
:  0 ;  0
:  24 ;  24
:  0 ;  0
:  9 ;  9
:  0 ;  0
:  9 ;  9
:  10 ;  10
:  0 ;  0
:  115 ;  115
:  0 ;  0
:  128 ;  128
:  2 ;  2
:  128 ;  128
:  12 ;  12
:  163 ;  163
:  2 ;  2
:  100 ;  100
:  0 ;  0
:  144 ;  144
:  51 ;  51
:  15 ;  15
:  5 ;  5
```

```
:  221 ;  221
:  4 ;  4
:  76 ;  76
:  0 ;  0
:  25 ;  25
:  0 ;  0
:  100 ;  100
:  0 ;  0
:  128 ;  128
:  0 ;  0
:  200 ;  200
:  50 ;  50
:  0 ;  0
:  240 ;  240
:  246 ;  246
:  24 ;  24
:  120 ;  120
:  236 ;  236
:  140 ;  140
:  60 ;  60
:  170 ;  170
:  10 ;  10
:  16 ;  16
:  0 ;  0
:  202 ;  202
:  0 ;  0
:  19 ;  19
:  0 ;  0
:  40 ;  40
:  0 ;  0
:  0 ;  0
:  16 ;  16
:  0 ;  0
:  4 ;  4
:  144 ;  144
:  1 ;  1
:  220 ;  220
:  5 ;  5
:  232 ;  232
:  3 ;  3
:  25 ;  25
:  0 ;  0
:  109 ;  109
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  32 ;  32
:  28 ;  28
:  0 ;  0
:  9 ;  9
:  0 ;  0
:  10 ;  10
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  0 ;  0
:  192 ;  192
:  39 ;  39
:  9 ;  9
:  0 ;  0
:  0 ;  0
```

```
:  10 ;  10
:  50 ;  50
:  0 ;  0
:  100 ;  100
:  0 ;  0
:  0 ;  0
:  5 ;  5
:  0 ;  0
:  4 ;  4
:  192 ;  192
:  246 ;  246
:  60 ;  60
:  0 ;  0
:  204 ;  204
:  87 ;  87
:  152 ;  152
:  58 ;  58
:  51 ;  51
:  1 ;  1
:  25 ;  25
:  0 ;  0
:  0 ;  0
:  8 ;  8
:  0 ;  0
:  20 ;  20
:  30 ;  30
:  100 ;  100
:  196 ;  196
:  9 ;  9
:  50 ;  50
:  50 ;  50
:  100 ;  100
:  100 ;  100
:  176 ;  176
:  14 ;  14
:  205 ;  205
:  1 ;  1
:  69 ;  69
:  50 ;  50
:  0 ;  0
:  4 ;  4
:  96 ;  96
:  240 ;  240
:  212 ;  212
:  48 ;  48
:  136 ;  136
:  19 ;  19
:  140 ;  140
:  0 ;  0
:  0 ;  0
:  50 ;  50
:  154 ;  154
:  0 ;  0
:  192 ;  192
:  0 ;  0
:  90 ;  90
:  1 ;  1
:  155 ;  155
:  1 ;  1
:  0 ;  0
:  15 ;  15
:  50 ;  50
:  0 ;  0
```

```
:  191 ;  191
:  2 ;  2
:  176 ;  176
:  0 ;  0
:  164 ;  164
:  2 ;  2
:  169 ;  169
:  0 ;  0
:  128 ;  128
:  0 ;  0
:  26 ;  26
:  1 ;  1
:  240 ;  240
:  0 ;  0
:  205 ;  205
:  44 ;  44
:  192 ;  192
:  0 ;  0
:  128 ;  128
:  0 ;  0
:  0 ;  0
:  2 ;  2
:  128 ;  128
:  1 ;  1
:  160 ;  160
:  34 ;  34
:  40 ;  40
:  0 ;  0
:  200 ;  200
:  0 ;  0
:  64 ;  64
:  0 ;  0
:  10 ;  10
:  0 ;  0
:  8 ;  8
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  108 ;  108
:  2 ;  2
:  10 ;  10
:  0 ;  0
:  88 ;  88
:  12 ;  12
:  88 ;  88
:  12 ;  12
:  190 ;  190
:  11 ;  11
:  77 ;  77
:  57 ;  57
:  230 ;  230
:  0 ;  0
:  88 ;  88
:  27 ;  27
:  4 ;  4
:  0 ;  0
:  128 ;  128
:  0 ;  0
:  77 ;  77
:  3 ;  3
:  4 ;  4
:  0 ;  0
:  95 ;  95
```

```
:  0 ;  0
:  140 ;  140
:  0 ;  0
:  0 ;  0
:  1 ;  1
:  15 ;  15
:  0 ;  0
:  136 ;  136
:  19 ;  19
:  5 ;  5
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  200 ;  200
:  0 ;  0
:  51 ;  51
:  0 ;  0
:  35 ;  35
:  0 ;  0
:  100 ;  100
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  4 ;  4
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  3 ;  3
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  4 ;  4
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  4 ;  4
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  150 ;  150
:  0 ;  0
:  128 ;  128
:  2 ;  2
:  4 ;  4
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  100 ;  100
:  0 ;  0
:  205 ;  205
:  12 ;  12
:  100 ;  100
:  0 ;  0
:  174 ;  174
:  14 ;  14
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
```

```
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  184 ;  184
:  11 ;  11
:  232 ;  232
:  3 ;  3
:  244 ;  244
:  1 ;  1
:  244 ;  244
:  1 ;  1
:  220 ;  220
:  5 ;  5
:  232 ;  232
:  3 ;  3
:  244 ;  244
:  1 ;  1
:  244 ;  244
:  1 ;  1
:  110 ;  110
:  0 ;  0
:  88 ;  88
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  47 ;  47
:  0 ;  0
:  39 ;  39
:  0 ;  0
:  34 ;  34
:  0 ;  0
:  30 ;  30
:  0 ;  0
:  27 ;  27
:  0 ;  0
:  25 ;  25
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  16 ;  16
:  0 ;  0
:  16 ;  16
:  0 ;  0
:  11 ;  11
:  2 ;  2
:  0 ;  0
:  0 ;  0
:  17 ;  17
:  0 ;  0
:  17 ;  17
:  0 ;  0
:  10 ;  10
:  20 ;  20
```

```
:  37 ;  37
:  22 ;  22
:  1 ;  1
:  176 ;  176
:  1 ;  1
:  15 ;  15
:  0 ;  0
:  131 ;  131
:  0 ;  0
:  128 ;  128
:  21 ;  21
:  32 ;  32
:  3 ;  3
:  0 ;  0
:  0 ;  0
:  9 ;  9
:  0 ;  0
:  9 ;  9
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  9 ;  9
:  0 ;  0
:  0 ;  0
:  6 ;  6
:  0 ;  0
:  24 ;  24
:  255 ;  255
:  107 ;  107
:  176 ;  176
:  227 ;  227
:  124 ;  124
:  57 ;  57
:  21 ;  21
:  0 ;  0
:  18 ;  18
:  100 ;  100
:  20 ;  20
:  20 ;  20
:  100 ;  100
:  52 ;  52
:  100 ;  100
:  100 ;  100
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  255 ;  255
:  128 ;  128
:  252 ;  252
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  144 ;  144
:  1 ;  1
:  128 ;  128
:  21 ;  21
:  177 ;  177
:  37 ;  37
:  170 ;  170
:  10 ;  10
:  232 ;  232
:  3 ;  3
```

```
:  26 ;  26
:  0 ;  0
:  64 ;  64
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  184 ;  184
:  11 ;  11
:  0 ;  0
:  31 ;  31
:  102 ;  102
:  9 ;  9
:  165 ;  165
:  165 ;  165
:  204 ;  204
:  11 ;  11
:  232 ;  232
:  3 ;  3
:  232 ;  232
:  3 ;  3
:  48 ;  48
:  0 ;  0
:  192 ;  192
:  93 ;  93
:  88 ;  88
:  27 ;  27
:  1 ;  1
:  0 ;  0
:  0 ;  0
:  3 ;  3
:  183 ;  183
:  1 ;  1
:  0 ;  0
:  4 ;  4
:  10 ;  10
:  0 ;  0
:  136 ;  136
:  19 ;  19
:  136 ;  136
:  19 ;  19
:  136 ;  136
:  19 ;  19
:  50 ;  50
:  0 ;  0
:  0 ;  0
:  10 ;  10
:  25 ;  25
:  50 ;  50
:  50 ;  50
:  0 ;  0
:  128 ;  128
:  2 ;  2
:  128 ;  128
:  2 ;  2
:  128 ;  128
:  2 ;  2
:  0 ;  0
:  1 ;  1
:  0 ;  0
:  1 ;  1
:  131 ;  131
:  0 ;  0
:  232 ;  232
```

```
:  3 ;  3
:  120 ;  120
:  236 ;  236
:  0 ;  0
:  0 ;  0
:  232 ;  232
:  3 ;  3
:  64 ;  64
:  31 ;  31
:  16 ;  16
:  39 ;  39
:  4 ;  4
:  41 ;  41
:  248 ;  248
:  42 ;  42
:  32 ;  32
:  78 ;  78
:  205 ;  205
:  9 ;  9
:  205 ;  205
:  9 ;  9
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  102 ;  102
:  10 ;  10
:  102 ;  102
:  10 ;  10
:  205 ;  205
:  9 ;  9
:  205 ;  205
:  9 ;  9
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  154 ;  154
:  11 ;  11
:  102 ;  102
:  10 ;  10
:  102 ;  102
:  10 ;  10
:  0 ;  0
:  64 ;  64
:  0 ;  0
:  2 ;  2
:  192 ;  192
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  3 ;  3
:  0 ;  0
:  0 ;  0
:  0 ;  0
xMotorTune [UINT(8),(1,532)]  236 ;  236
:  27 ;  27
```

```
:  1 ;  1
:  0 ;  0
:  7 ;  7
:  48 ;  48
:  0 ;  0
:  2 ;  2
:  0 ;  0
:  30 ;  30
:  102 ;  102
:  86 ;  86
:  0 ;  0
:  8 ;  8
:  0 ;  0
:  50 ;  50
:  0 ;  0
:  24 ;  24
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  60 ;  60
:  191 ;  191
:  3 ;  3
:  0 ;  0
:  0 ;  0
:  35 ;  35
:  0 ;  0
:  129 ;  129
:  5 ;  5
:  0 ;  0
:  0 ;  0
:  154 ;  154
:  4 ;  4
:  95 ;  95
:  2 ;  2
:  64 ;  64
:  2 ;  2
:  50 ;  50
:  0 ;  0
:  15 ;  15
:  0 ;  0
:  142 ;  142
:  3 ;  3
:  192 ;  192
:  0 ;  0
:  90 ;  90
:  1 ;  1
:  56 ;  56
:  74 ;  74
:  104 ;  104
:  66 ;  66
:  118 ;  118
:  3 ;  3
:  253 ;  253
:  0 ;  0
:  96 ;  96
:  240 ;  240
:  200 ;  200
:  50 ;  50
:  152 ;  152
:  58 ;  58
:  128 ;  128
```

```
:  62 ;  62
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  96 ;  96
:  240 ;  240
:  128 ;  128
:  62 ;  62
:  56 ;  56
:  74 ;  74
:  48 ;  48
:  117 ;  117
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  96 ;  96
:  240 ;  240
:  152 ;  152
:  58 ;  58
:  104 ;  104
:  66 ;  66
:  48 ;  48
:  117 ;  117
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  60 ;  60
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  0 ;  0
:  128 ;  128
:  2 ;  2
:  213 ;  213
:  0 ;  0
:  29 ;  29
:  0 ;  0
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  55 ;  55
:  128 ;  128
:  51 ;  51
:  0 ;  0
:  49 ;  49
:  0 ;  0
:  47 ;  47
:  128 ;  128
:  44 ;  44
```

```
:  128 ;  128
:  42 ;  42
:  128 ;  128
:  40 ;  40
:  0 ;  0
:  38 ;  38
:  0 ;  0
:  36 ;  36
:  128 ;  128
:  34 ;  34
:  128 ;  128
:  33 ;  33
:  0 ;  0
:  33 ;  33
:  0 ;  0
:  33 ;  33
:  0 ;  0
:  33 ;  33
:  0 ;  0
:  33 ;  33
:  0 ;  0
:  33 ;  33
:  128 ;  128
:  33 ;  33
:  0 ;  0
:  34 ;  34
:  128 ;  128
:  34 ;  34
:  0 ;  0
:  35 ;  35
:  0 ;  0
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  128 ;  128
:  36 ;  36
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  57 ;  57
:  0 ;  0
:  55 ;  55
:  128 ;  128
:  51 ;  51
:  0 ;  0
:  49 ;  49
:  0 ;  0
:  47 ;  47
:  128 ;  128
:  46 ;  46
:  128 ;  128
:  46 ;  46
:  128 ;  128
```

```
:  46 ;  46
:  128 ;  128
:  46 ;  46
:  0 ;  0
:  46 ;  46
:  128 ;  128
:  45 ;  45
:  128 ;  128
:  45 ;  45
:  0 ;  0
:  46 ;  46
:  0 ;  0
:  46 ;  46
:  0 ;  0
:  46 ;  46
:  128 ;  128
:  46 ;  46
:  128 ;  128
:  46 ;  46
:  128 ;  128
:  46 ;  46
:  0 ;  0
:  47 ;  47
:  0 ;  0
:  47 ;  47
:  0 ;  0
:  47 ;  47
:  128 ;  128
:  47 ;  47
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  48 ;  48
:  0 ;  0
:  181 ;  181
:  0 ;  0
:  5 ;  5
:  30 ;  30
:  0 ;  0
:  56 ;  56
:  0 ;  0
:  56 ;  56
:  0 ;  0
:  56 ;  56
:  0 ;  0
:  56 ;  56
:  0 ;  0
:  45 ;  45
:  0 ;  0
:  34 ;  34
:  0 ;  0
:  20 ;  20
:  0 ;  0
:  6 ;  6
:  0 ;  0
```

```
:  245 ;  245
:  255 ;  255
:  228 ;  228
:  255 ;  255
:  232 ;  232
:  255 ;  255
:  237 ;  237
:  255 ;  255
:  242 ;  242
:  255 ;  255
:  247 ;  247
:  255 ;  255
:  251 ;  251
:  255 ;  255
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:  232 ;  232
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:  102 ;  102
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:  102 ;  102
:  50 ;  50
:  4 ;  4
:  102 ;  102
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:   102 ;  102
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:   75 ;  75
:   100 ;  100
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```

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:  0 ;  0
:  0 ;  0
:  0 ;  0
:  60 ;  60
:  82 ;  82
:  53 ;  53
:  94 ;  94
:  21 ;  21
:  101 ;  101
:  27 ;  27
:  163 ;  163
:  52 ;  52
:  74 ;  74
:  25 ;  25
:  0 ;  0
:  0 ;  0
```

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, June 14, 2011 12:16 PM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 1FMHK8D81BG[redacted]

Can you look this VIN up and see if the U3000-49 snapshot data is in the system?

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, June 14, 2011 11:55 AM
**To:** Cassata, Joe (J.)
**Cc:** Logli, Michael (M.A.); Docimo, Tony (A.F.); Napoli, Laura (L.); Mrozek, Robert (R.M.); Annadi, Hari (H.); Estes, Eric (E.E.)
**Subject:** 1FMHK8D81BG[redacted]

Hi Joe:

Please request this steering gear from the dealership. It should go to Eric Estes at WPAC, TR-EE.

Steering and Electrical teams,
I'm rebinning this claim to Electrical after talking to the repairing technician. He never did manage to repair the vehicle. It was eventually bought back. Here are my notes and bin comments from our conversation:

Called dealership. Multiple fault lights in IP. Service manual initially directed tech to replace rack because of U3000:49 code. Unit never lost steering assist. Unknown if problem with rack. New gear did not fix problem. Something dropping HS CAN network. Fault lights still come on. Intermittent problem, hard to isolate because of interdependent modules required to test drive vehicle. Technician's best guess is wire chafe or short somewhere in network. Technician could short HS CAN network on purpose and produce same codes. Unit never repaired, bought back by FoMoCo. Codes are U0001, U0100, U0131, U0140, U0420, C1B00:29-68, C1B00:86-28, U0140:00-28, U0121, U0212, U0155, U0423, U0554, U0138, U0151, U0159, U0553, U0534, P193P, P260F, U0415, U3000:49.

Laura Napoli is looking into the possibility of inducing a U3000:49 without losing steering assist.

Electrical team,
Any guesses?

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **13-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 549026

**Vehicle Information**

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 19-MAR-11

Production Date: 07-MAR-11

VIN: 1FMHK8D81B[redacted]

**Claim Information**

Document Number: 01309051

Repair Date: 15-APR-11

Distance: 1343

TIS: 1

**Dealer Information:**

Dealer Name WALDORF FORD, INC.

Dealer Code: 00149 - *

Address: 2440 CRAIN HIGHWAY

City: WALDORF

State: MD Zip Code: 20601

Country: USA Region Code: NA

Phone: (301)843-2400

**Expense Information**

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 678.96 |
| Misc. Expense Amount: | .00 |
| Part Markup Amount: | 292.57 |
| Material Cost: | 1024.00 |
| Total Cost Gross: | 1702.96 |

Cust. Concern Code: E29 - CHECK ENGINE LIGHT TROUBLE

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: IC, CENTER CONSOLD, & FRONT DIAPLAY. DISCONNECTING ALL MODULES ON HS CAN NETWORK TO PP CONSERN W FEILD SERVICE ENGINEER. WIGGLE TESTED VERIUS HARNESS & INSP HS CAN NET WORK JOINT CONNECTORS. PROBLEM BECAME VERY INTERMITTANT &

WAS UNABLE TO ISOLATE CONSERN WITH ENGINEER. CHECKED & CLEANED GROUNDS G100,G101,G103. CHECK PCM,IC, BCM FOR UPDATES & RECALIBRATED. VEHILCE WAS NOT REPAIRED & BOUGHT BACK B

Customer Comment: CUSTOMER STS SERVICE ENGINE SOON LIGHT IS ON DASH

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 19.68 |
| 3504E8 | | 9.84 |
| 3504E45 | | 29.52 |
| 3504E47 | | 29.52 |
| MTDIAG | | 590.40 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | BE | GEAR ASY-STEERING | 110101 | 1 | 1024.00 |

**DTC Sections:** **Mil. Light On =** Y

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | KOEC | P123D | | | |
| Y | KOEC | P260F | EVAPORATIVE SYSTEM MONITORING PROCESSOR PERFORMANCE | 21 | CCM MODULE |
| N | KOEO | PASS | SYSTEM PASS | 27 | NO-FAULT CODES |
| N | KOER | PASS | SYSTEM PASS | 27 | NO-FAULT CODES |

Any comments? You can contact

*webmaster*

3354

**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 16, 2011 10:48 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 1FMHK8F85BG[redacted] EPAS inop

How the hell did a U2100 (A5B, AF5) get in this gear? Is something happening to the gear due to electrical surges or shorts causing it to lose it's configuration? We need to try and duplicate this because that's a big deal if gears are losing their configs.

---

**From:** Anderson, Eric (H.)
**Sent:** Thursday, June 16, 2011 10:15 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Cassata, Joe (J.)
**Subject:** 1FMHK8F85BG[redacted] EPAS inop

FYI. Here's another U3000:49. It's within the BSAQ project window. A new gear fixed the problem.

Joe,
Thanks for requesting it.

Server: **AWS Prod**
Claims loaded through: **15-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 566418

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 26-MAR-11

Production Date: 04-MAR-11

VIN: 1FMHK8F85BG[redacted]

## Claim Information

Document Number: 68245502

Repair Date: 09-JUN-11

Distance: 3003

TIS: 3

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | VAN BORTEL FORD, INC. | Deductible Amount: | .00 |
| Dealer Code: | 07590 - * | Dealer Paid Amount: | .00 |
| Address: | 71 MARSH RD. | Labor Cost: | 244.18 |
| City: | EAST ROCHESTER | Misc. Expense Amount: | .00 |
| State: | NY Zip Code: 14445 | Part Markup Amount: | 537.54 |
| Country: | USA Region Code: NA | Material Cost: | 1623.48 |
| Phone: | (585)924-9525 | Total Cost Gross: | 1867.66 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: MT TMIME FOR UNPUBLISHER LABOR OPERATIONS. DIAG P STEERING REPLACE BINDING GEAR ASSEMBLY TEST DR TO VERIFY,TEST PSCM,CODES U2100,U2000 46U3000 49, CK FUSE E,FUSE 89,OK,CK POWER AT MODULE,OK,REPL STEERING RACK ASSEMBLY. CHECK FRONT ALIGNMENT, SET TOE. TEST DRIVE OK. 2012 UNIT, ALL NEW REQUIRED CLAIM IS OK AS IS

Customer Comment: CUSTOMER STATES SHE LOST THE STEERING IN CAR WE DELIVED A STOCK VEHICLE ESCAPE TO HER LAST NITE, AS PER GUY DIAG AND ADVISE CUSTOMER ASAP THURS

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 16.28 |
| 3504E45 | | 24.42 |
| MT3504 | | 203.48 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | JE | GEAR ASY-STEERING | 110101 | 1 | 1623.48 |

**DTC Sections:** **Mil. Light On =**N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | UNDF | U2100 | | | |
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |
| N | UNDF | U2000 | AUDIO REAR CONTROL UNIT IS NOT RESPONDING | 24 | CCM VEHICLE |

Any comments? You can contact

*webmaster*

227

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 14, 2011 8:44 AM
**To:** Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Importance:** High

Please get intimately involved in this issue and push it for root cause. Thanks!


Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 5:17 PM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, I know exactly how the system works. I use it everyday. I also know how to circumvent the process to make things happen quickly when needed. We can send parts directly to the dealer, the dealer receives the part and replaces old, and sends out the old part under my FedEx account number at the same time. When the dealer puts the claim into the system, he just claims the labor....since we supplied the part.

U502 is under a microscope right now and we are being required to report out to senior mgmt on every single claim and CQIS report coming in every day. The longer it takes for analysis, the more energy is going to be wrapped around the issue.

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 3:57 PM
**To:** Jackson, Bradley (B.G.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Bradley welcome to the new parts return system at Ford WPAC.

Here is the time line after the claim at the dealer is totally closed. The claim is not send by UPS until it show's up on the PEAR's register then add 3-5 days to WPAC. Not much of a hot process return system but this is how the new system works since July 2010. It will take 2-3 weeks for parts to return under the normal parts return system.

Here is an example:

Monday night Claim Paid

Tuesday morning visible in AWS

Tuesday/Wednesday submit request for part

Wednesday night PEARS 700Tag generates

Thursday morning Tag shows up on Dealers PEARS Register

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 4:17 PM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, there doesn't seem to be much urgency to get this gear back. We are being pushed very hard for every CQIS report coming in. Would you rather me ship a gear directly out of ZF tonight? I have 1.5 hours that I could get a gear into FedEx tonight. How do we make this happen sooner rather than later?

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 3:03 PM
**To:** Jackson, Bradley (B.G.)
**Subject:** RE: 2011 Exp - BGA10846 - Loss of power steering, lamp on, 18 mi, BD 12/16/10

No I will call the dealer on Monday and make sure the RO paperwork is filled out properly and closed so we can get the gear back hopefully by the end of next week.

Eric

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 3:53 PM
**To:** Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, is getting the replacement gear going to hold up getting the suspect gear back for analysis?

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 2:39 PM
**To:** Jackson, Bradley (B.G.); 'Gregory Sheets'; Mrozek, Robert (R.M.); Snider, Tim (T.O.)

**Cc:** Napoli, Laura (L.); 'Anthony Fleenor'; 'Michael Fontana'; 'Pat Messer'; 'Sergio Alvarez'; 'Simon Malsbury'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Talked to the part manager and the dealer is open till 2pm on Saturday so hopefully the delivery will get their before then, if not it will be delivered on Monday.
Dealer probably will not do the job till Monday anyway.

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 2:15 PM
**To:** 'Gregory Sheets'; Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Pat Messer; Sergio Alvarez; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Why can't it leave tonight and be at the dealership tomorrow? Some Michigan dealerships aren't even open on Saturdays.

Brad

---

**From:** Gregory Sheets [mailto:Gregory.Sheets@TRW.COM]
**Sent:** Thursday, January 13, 2011 1:13 PM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Pat Messer; Sergio Alvarez; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

The replacement gear will leave TRW Marion on Friday, via FEDEX for a Saturday delivery at the dealership.

Greg Sheets
Quality Manager
TRW Automotive
Marion Assembly Operations
276-783-1284

>>> "Estes, Eric (E.E.)" <eestes@ford.com> 1/13/2011 12:02 PM >>>
That's the one we need, can that be direct shipped?

Eric

---

**From:** Gregory Sheets [mailto:Gregory.Sheets@TRW.COM]
**Sent:** Thursday, January 13, 2011 11:59 AM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

The current service gear part number is up to the BG level.

BB53-3504-BG ( 3.5 TiVct)

Will this work for this vehicle?

Greg Sheets
Quality Manager
TRW Automotive
Marion Assembly Operations
276-783-1284

>>> "Estes, Eric (E.E.)" <eestes@ford.com> 1/13/2011 11:23 AM >>>
Greg is their any way we can get an EPAS gear direct shipped to the addess below, Ford part# BB5Z-3504-BE (wo/APA 3.5L)

Atten: Clay Berry (PM)

| | |
|---|---|
| | BROWN MOTORS INC |
| Dealer Address: | 2170 NORTH U.S. 31 |
| | PETOSKEY MI 49770 |
| Dealer Main Phone: | 231-439-3673 |

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 11:13 AM
**To:** Estes, Eric (E.E.); Snider, Tim (T.O.); 'Corrine Schraffenberger'; Koszegi, Martin (M.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Malsbury, Simon'; 'Michael Fontana'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Can we send him a gear straight from Marion?

Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 10:37 AM
**To:** Snider, Tim (T.O.); Corrine Schraffenberger; Koszegi, Martin (M.)
**Cc:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Napoli, Laura (L.); Malsbury, Simon; 'Michael Fontana'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Just talked to the tech he will go back through Interactive diagnosis and he has a B3A motor relay code. The code is intermittent but this code reset right after start-up and vehicle was in a hot soak. This Explorer is a stock unit at the dealer, its not a sold unit but customers are looking to road test this new vehicle.

Corrine/ Martin this EPAS gear BB5Z- 3504-BE is on back order do we know when we will have stock?

I need to get this dealer a gear as soon as possible, can we direct ship them a gear? P&A code 09618

Atten: Clay Berry (PM)

| | |
|---|---|
| | BROWN MOTORS INC |
| Dealer Address: | 2170 NORTH U.S. 31 |
| | PETOSKEY MI 49770 |
| Dealer Main Phone: | 231-439-3673 |

Let me know thanks

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Snider, Tim (T.O.)
**Sent:** Thursday, January 13, 2011 9:46 AM
**To:** Estes, Eric (E.E.)
**Cc:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric,

Probably a good time to discuss this, do you have a hot request in place for all US U502 EPAS warranty gears??

Regards,
Tim Snider (tsnider1@ford.com)
***CD3/C489 Steering Engineering***
***Ford Motor Company***
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:44 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Jackson, Bradley (B.G.); Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

I will hot process the gear back to WPAC

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:43 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Jackson, Bradley (B.G.); Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] Loss of power steering, lamp on, 18 mi, BD 12/16/10

Thanks Tim. I would expect the same. But we need to get the part to TRW for asap analysis.

*Rob Mrozek*

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Snider, Tim (T.O.)
**Sent:** Thursday, January 13, 2011 9:41 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Just some background, on CD3 DTC 2011-49 is usually a reverse fitted capacitor, raised rivet, offset bridge, plastic contamination, or B6B relay.

Regards,
Tim Snider (tsnider1@ford.com)
***CD3/C489 Steering Engineering***
***Ford Motor Company***
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:28 AM
**To:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10
**Importance:** High

Brad - Damn it! I should have shut my mouth yesterday.

Laura - Please dig into this asap.

Eric - What can you tell us about the codes or any other info on this gear?

*Rob Mrozek*

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Saleh, Salim (S.A.)
**Sent:** Thursday, January 13, 2011 9:24 AM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

fyi..

***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, January 13, 2011 9:22 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Holland, James (J.P.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu,

Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10


*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, January 13, 2011 8:15 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BALEI002 NHL | | | **Received:** | 01/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 12/16/2010 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09618 Brown Motors, Inc. | | | **Phone#:** | (231! ! ) 439-9604 |
| **City:** | Petoskey | **State:** | Michigan | **Country :** | USA |
| **Originator:** | JIM MILBRANDT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF POWER STEERING | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** DMU! ! RRA86 **Phone:** 313 248-8233 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JIM MILBRANDT **Phone:** 231 439-3673 **Title Cde:** T

**DTCs:**

KOEO:U0253 U2011

KOEC:

KOER:

**Comments:**

REPAIR 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES WHEN ON TEST DRIVE THE POWER
STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS:
PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM IN MEMORY
PARTS REPLACED:: NONE TECH QUESTION: ANY REPORTS FOR THIS
CONCERN? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN
APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE
PINPOINT TEST FOLLOWED?

**RECOMM 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE**
JIM, IT IS RECOMMENDED TO GO TO THE WSM SECTION 211-00/DIAGNOSIS
AND TESTING/DTC AND SYMPTOM CHARTS/INTERACTIVE DIAGNOSTICS AND GO TO
THE INTERACTIVE DIAGNOSTICS SECTION. FROM THERE, GO TO THE DTC LIST
AND LOOK UP U2011. THIS IS A MOTOR CODE AND THERE ARE 2 DIFFERENT PPT
TESTS DEPENDING ON WHICH BITMAP CODE YOU HAVE. THIS CODE INDICATES
THAT THE PSCM HAS SEEN A MOTOR ISSUE AND WILL SHUT DOWN THE POWER
ASSIST FUNCTION. PLEASE TRY TO DUPLICATE THE CONCERN AND IF CODE
U2011 SETS, PERFORM THE APPROPRIATE CHART. THERE ARE NO COMMON
TRENDS FOR THIS CONCERN. THANK YOU.

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:49 AM
**To:** Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10


Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:49 AM
**To:** Mrozek, Robert (R.M.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

I looked at Interactive diagnosis and cannot tell if the tech cleared the code and the code reset look below

**Year = MY11**
**Model = U502**
**Engine =**
**VIN = 1FMHK8D83BG[redacted]**
**IDS Version = Not Available**

---

**Start: Wed Jan 12 15:50:58 EST 2011**

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Menu Selection: DTC U2011 (PSCM) - Motor

---

⊟ B: DTCs C1B00, C200B, C200C, C200D, U2011, U2200 and U3000: Steering Angle Sensor, Steering Shaft Torque Sensor 1, Steering Shaft Torque Sensor 2, Motor and Control Module - Failure or Erratic

Normal Operation

The power steering control module (PSCM) monitors various inputs and outputs of the electronic power assist steering (EPAS) system in order to keep the system operating at peak capacity. Information provided by sensors (steering torque, vehicle speed, vehicle travel distance, etc.) are all compared to programmed and learned information. Likewise, outputs like the motor and steering rack (travel) are tested against programmed and learned information.

Note:

If a damaged bellows boot(s) was discovered during Inspection and Verification and this pinpoint test DOES NOT lead to the installation of a new EPAS gear or bellows boot(s), then go to Pinpoint Test K to address the damaged boot(s) before returning the vehicle to the customer.

---

⊟ B1: CHECK FOR PREVIOUSLY SET DTCS

- Go to KNOWN CONCERNS.

Check for DTCs listed in the section: System Related CMDTCs cleared since initial read.

- Are any of the following DTCs present?

PSCM DTCs C1B00:2F, C1B00:62, C200B:2F, C200B:61, C200B:62, U2011:49, U2011:61, U2200:54, U3000:41, U3000:46, U3000:49.

| Yes | No |
|---|---|
| Go to B2. | Go to B2. |

---

**Exit: Wed Jan 12 15:51:44 EST 2011**

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:45 AM
**To:** Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Is there anything else you can find from the available on-line systems? Pease compile all you can. Thanks Eric.


Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:43 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

This is a B3A or B6B code most likely, but it also could be a BB5-BB9 code which is a motor phase voltage high or low fault

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:28 AM
**To:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10
**Importance:** High

Brad - Damn it! I should have shut my mouth yesterday.

Laura - Please dig into this asap.

Eric - What can you tell us about the codes or any other info on this gear?

*Rob Mrozek*

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Saleh, Salim (S.A.)
**Sent:** Thursday, January 13, 2011 9:24 AM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

fyi..

***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, January 13, 2011 9:22 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Holland, James (J.P.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson,

Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10


*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, January 13, 2011 8:15 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BALEI002 NHL | | | **Received:** | 01/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 12/16/2010 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09618 Brown Motors, Inc. | | | **Phone#:** | (231! ! ) 439-9604 |
| **City:** | Petoskey | **State:** | Michigan | **Country :** | USA |
| **Originator:** | JIM MILBRANDT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF POWER STEERING | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** DMU! ! RRA86 **Phone:** 313 248-8233 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JIM MILBRANDT **Phone:** 231 439-3673 **Title Cde:** T

**DTCs:**

KOEO:U0253 U2011

KOEC:

KOER:

**Comments :**

REPAIR 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES WHEN ON TEST DRIVE THE POWER
STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS:
PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM IN MEMORY
PARTS REPLACED:: NONE TECH QUESTION: ANY REPORTS FOR THIS
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APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE
PINPOINT TEST FOLLOWED?

**RECOMM 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE**
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THE INTERACTIVE DIAGNOSTICS SECTION. FROM THERE, GO TO THE DTC LIST
AND LOOK UP U2011. THIS IS A MOTOR CODE AND THERE ARE 2 DIFFERENT PPT
TESTS DEPENDING ON WHICH BITMAP CODE YOU HAVE. THIS CODE INDICATES
THAT THE PSCM HAS SEEN A MOTOR ISSUE AND WILL SHUT DOWN THE POWER
ASSIST FUNCTION. PLEASE TRY TO DUPLICATE THE CONCERN AND IF CODE
U2011 SETS, PERFORM THE APPROPRIATE CHART. THERE ARE NO COMMON
TRENDS FOR THIS CONCERN. THANK YOU.

**From:** Napoli, Laura (L.)
**Sent:** Saturday, January 15, 2011 12:23 PM
**To:** Anderson, Eric (H.); Jackson, Bradley (B.G.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Importance:** High

Eric,
Not sure if Brad already forwarded you the chain of emails on this claim. Brad has been pushing TRW to get this gear back quickly. The fault code points to a motor relay failure. We need to test the gear to verify.

Brad,
Did you get an answer from Eric Estes on Fri to your suggestion of using your FedEx account to get the gear back more quickly than following the parts return process? I didn't see any notes on Fri, and didn't get a chance to call Eric directly.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 5:17 PM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, I know exactly how the system works. I use it everyday. I also know how to circumvent the process to make things happen quickly when needed. We can send parts directly to the dealer, the dealer receives the part and replaces old, and sends out the old part under my FedEx account number at the same time. When the dealer puts the claim into the system, he just claims the labor....since we supplied the part.

U502 is under a microscope right now and we are being required to report out to senior mgmt on every single claim and CQIS report coming in every day. The longer it takes for analysis, the more energy is going to be wrapped around the issue.

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 3:57 PM
**To:** Jackson, Bradley (B.G.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Bradley welcome to the new parts return system at Ford WPAC.

Here is the time line after the claim at the dealer is totally closed. The claim is not send by UPS until it show's up on the PEAR's register then add 3-5 days to WPAC. Not much of a hot process return system but this is how the new system works since July 2010. It will take 2-3 weeks for parts to return under the normal parts return system.

Here is an example:

Monday night Claim Paid

Tuesday morning visible in AWS

Tuesday/Wednesday submit request for part

Wednesday night PEARS 700Tag generates

Thursday morning Tag shows up on Dealers PEARS Register

*Eric J Estes*

TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 4:17 PM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, there doesn't seem to be much urgency to get this gear back. We are being pushed very hard for every CQIS report coming in. Would you rather me ship a gear directly out of ZF tonight? I have 1.5 hours that I could get a gear into FedEx tonight. How do we make this happen sooner rather than later?

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 3:03 PM
**To:** Jackson, Bradley (B.G.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

No I will call the dealer on Monday and make sure the RO paperwork is filled out properly and closed so we can get the gear back hopefully by the end of next week.

Eric

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 3:53 PM
**To:** Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric, is getting the replacement gear going to hold up getting the suspect gear back for analysis?

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 2:39 PM
**To:** Jackson, Bradley (B.G.); 'Gregory Sheets'; Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Napoli, Laura (L.); 'Anthony Fleenor'; 'Michael Fontana'; 'Pat Messer'; 'Sergio Alvarez'; 'Simon Malsbury'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Talked to the part manager and the dealer is open till 2pm on Saturday so hopefully the delivery will get their before then, if not it will be delivered on Monday.
Dealer probably will not do the job till Monday anyway.

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, January 13, 2011 2:15 PM
**To:** 'Gregory Sheets'; Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Pat Messer; Sergio Alvarez; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Why can't it leave tonight and be at the dealership tomorrow? Some Michigan dealerships aren't even open on Saturdays.

Brad

---

**From:** Gregory Sheets [mailto:Gregory.Sheets@TRW.COM]
**Sent:** Thursday, January 13, 2011 1:13 PM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Pat Messer; Sergio Alvarez; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

The replacement gear will leave TRW Marion on Friday, via FEDEX for a Saturday delivery at the dealership.

Greg Sheets
Quality Manager
TRW Automotive
Marion Assembly Operations
276-783-1284

>>> "Estes, Eric (E.E.)" <eestes@ford.com> 1/13/2011 12:02 PM >>>
That's the one we need, can that be direct shipped?

Eric

---

**From:** Gregory Sheets [mailto:Gregory.Sheets@TRW.COM]
**Sent:** Thursday, January 13, 2011 11:59 AM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.); Snider, Tim (T.O.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Anthony Fleenor; Michael Fontana; Simon Malsbury
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

The current service gear part number is up to the BG level.

BB53-3504-BG ( 3.5 TiVct)

Will this work for this vehicle?

Greg Sheets
Quality Manager
TRW Automotive
Marion Assembly Operations
276-783-1284

>>> "Estes, Eric (E.E.)" <eestes@ford.com> 1/13/2011 11:23 AM >>>
Greg is their any way we can get an EPAS gear direct shipped to the addess below, Ford part# BB5Z-3504-BE (wo/APA 3.5L)

Atten: Clay Berry (PM)

| | |
|---|---|
| | BROWN MOTORS INC |
| Dealer Address: | 2170 NORTH U.S. 31 |
| | PETOSKEY MI 49770 |
| Dealer Main Phone: | 231-439-3673 |

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 11:13 AM
**To:** Estes, Eric (E.E.); Snider, Tim (T.O.); 'Corrine Schraffenberger'; Koszegi, Martin (M.)
**Cc:** Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Malsbury, Simon'; 'Michael Fontana'
**Subject:** RE: 2011 Exp - BGA10846 - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Can we send him a gear straight from Marion?

Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 10:37 AM
**To:** Snider, Tim (T.O.); Corrine Schraffenberger; Koszegi, Martin (M.)
**Cc:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Napoli, Laura (L.); Malsbury, Simon; 'Michael Fontana'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Just talked to the tech he will go back through Interactive diagnosis and he has a B3A motor relay code. The code is intermittent but this code reset right after start-up and vehicle was in a hot soak. This Explorer is a stock unit at the dealer, its not a sold unit but customers are looking to road test this new vehicle.

Corrine/ Martin this EPAS gear BB5Z- 3504-BE is on back order do we know when we will have stock?

I need to get this dealer a gear as soon as possible, can we direct ship them a gear? P&A code 09618

Atten: Clay Berry (PM)

| | |
|---|---|
| | BROWN MOTORS INC |
| Dealer Address: | 2170 NORTH U.S. 31 |
| | PETOSKEY MI 49770 |
| Dealer Main Phone: | 231-439-3673 |

Let me know thanks

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Snider, Tim (T.O.)
**Sent:** Thursday, January 13, 2011 9:46 AM
**To:** Estes, Eric (E.E.)
**Cc:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Eric,

Probably a good time to discuss this, do you have a hot request in place for all US U502 EPAS warranty gears??

Regards,
Tim Snider (tsnider1@ford.com)
***CD3/C489 Steering Engineering***
***Ford Motor Company***
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:44 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Jackson, Bradley (B.G.); Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

I will hot process the gear back to WPAC

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:43 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Jackson, Bradley (B.G.); Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Thanks Tim. I would expect the same. But we need to get the part to TRW for asap analysis.

*Rob Mrozek*

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Snider, Tim (T.O.)
**Sent:** Thursday, January 13, 2011 9:41 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Just some background, on CD3 DTC 2011-49 is usually a reverse fitted capacitor, raised rivet, offset bridge, plastic contamination, or B6B relay.

Regards,
Tim Snider (tsnider1@ford.com)
***CD3/C489 Steering Engineering***
***Ford Motor Company***
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:28 AM
**To:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10
**Importance:** High

Brad - Damn it! I should have shut my mouth yesterday.

Laura - Please dig into this asap.

Eric - What can you tell us about the codes or any other info on this gear?

*Rob Mrozek*

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Saleh, Salim (S.A.)
**Sent:** Thursday, January 13, 2011 9:24 AM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

fyi..

***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage

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**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, January 13, 2011 9:22 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Holland, James (J.P.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John

(J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"You miss 100 percent of the shots you never take." - Wayne Gretzky

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, January 13, 2011 8:15 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BALEI002 NHL | | | **Received:** | 01/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 12/16/2010 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09618 Brown Motors, Inc. | | | **Phone#:** | (231! ! ) 439-9604 |
| **City:** | Petoskey | **State:** | Michigan | **Country :** | USA |
| **Originator:** | JIM MILBRANDT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** LOSS OF POWER STEERING

**Fix:** **Causal Component :**

**Condition Code:**

**Hotliner:** DMU! ! RRA86 **Phone:** 313 248-8233 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JIM MILBRANDT **Phone:** 231 439-3673 **Title Cde:** T

**DTCs:**

KOEO:U0253 U2011

KOEC:

KOER:

**Comments :**

REPAIR 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES WHEN ON TEST DRIVE THE POWER
STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS: PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM IN MEMORY PARTS REPLACED:: NONE TECH QUESTION: ANY REPORTS FOR THIS CONCERN? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE**
JIM, IT IS RECOMMENDED TO GO TO THE WSM SECTION 211-00/DIAGNOSIS AND TESTING/DTC AND SYMPTOM CHARTS/INTERACTIVE DIAGNOSTICS AND GO TO
THE INTERACTIVE DIAGNOSTICS SECTION. FROM THERE, GO TO THE DTC LIST AND LOOK UP U2011. THIS IS A MOTOR CODE AND THERE ARE 2 DIFFERENT PPT TESTS DEPENDING ON WHICH BITMAP CODE YOU HAVE. THIS CODE INDICATES THAT THE PSCM HAS SEEN A MOTOR ISSUE AND WILL SHUT DOWN THE POWER ASSIST FUNCTION. PLEASE TRY TO DUPLICATE THE CONCERN AND IF CODE U2011 SETS, PERFORM THE APPROPRIATE CHART. THERE ARE NO COMMON TRENDS FOR THIS CONCERN. THANK YOU.

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, February 03, 2011 3:22 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.); Buelow, Steve (S.E.)
**Cc:** Docimo, Tony (A.F.)
**Subject:** FW: 2011 Exp - BG[redacted] - Traction control fault, C1B00, U0121, U0126, 3 mi, BD 1/13/11

I confirmed with this dealer that the root cause of this CQIS report was the spread terminal issue on C139. This vehicle did go through evac/fill machine #3. The tech stated he had a second vehicle with the same codes on the lot today. He will call me back with the VIN so I can check that this unit went through #3 as well just to ensure this is a spread terminal eligible vehicle.

Brad

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**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, February 03, 2011 10:18 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Smith, Eugenia (E.R.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BGA12929 - Traction control fault, C1B00, U0121, U0126, 3 mi, BD 1/13/11


***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
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Cell 313-805-8334 sbuelow@ford.com

"You miss 100 percent of the shots you never take." - Wayne Gretzky

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, February 03, 2011 8:40 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Traction control fault, C1B00, U0121, U0126, 3 mi, BD 1/13/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBAA9020 NHL | | | **Received:** | 02/01/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F8XBG[redacted] | | | **Build Date:** | 01/13/2011 |
| **Odometer :** | 3 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | CAN B2412 Desjardins Ford Ltee | | | **Phone#:** | (514)! ! 332-3850 |
| **City:** | St Laurent | **Province** | Quebec | **Country :** | CAN |
| **Originator:** | MICHEL LALONDE | | | | |
| **Symptom:** | 3 01 A 04 CHASS.,SERVICE BRAKE ,INDICATOR,T/C LIGHT | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | TRAC LIGHT C1B00 U0121 U0126 | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** T! ! FUMEROL **Phone:** 000 317-9383 **Regn Cd:** 02 02 FCSD REGION-CANADA

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MICHEL LALONDE **Phone:** 514 332-3850 **Title Cde:** T

**DTCs:**
KOEO:C1B00 U0121 U0126 U0150 U0428
KOEC:
KOER:

**Comments :**

REPAIR 02/01/2011 04:03PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: TRACTION LIGHT ON DIAGNOSTICS:

KOEO PARTS REPLACED:: NONE TECH QUESTION: EVERY CODE IS IN MEMORY ONLY...WHEN I CHECK THE PIDS I HAVE TWO IDENTICAL PIDS SW_ANGLE....ONE SAYS 0 DEGREE AND THE OTCHER ONE SAYS -223 DEGREE WHEN THE STEERING IS CENTERED...DO YOU HAVE ANYTHING ON THAT ISSU ??? THANKS WERE YOU ABLE TO VERIFY THE CONCERN? IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 02/01/2011 04:03PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE**

MICHEL, PERFORM A PIN DRAG TEST ON C139 PINS 24 AND 25. THERE HAVE BEEN SOME REPORTS OF SPREAD TERMINALS CAUSING AN INTERMITTENT NETWORK FAULT WITH THE U-CODES YOU ARE SEEING. IT IS RECOMMENDED TO BYPASS C139 BY SPLICING AND SHRINK TUBING THE CIRCUITS. ISM 11-01-018 HS-CAN LOSS OF COMMUNICATION, C1B00

**REPAIR 02/01/2011 04:20PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE**

TECHNICIAN REPLY: WHEN YOU SAYS BYPASS C139 DO YOU MEAN ONLY CIRCUIT 24 AND 25 OR THE HOLE CONNECTOR ??

**RECOMM 02/01/2011 04:20PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE**

MICHEL, THERE IS NO NEED TO BY-PASS THE ENTIRE CONNECTOR. WE RECOMMEND THAT YOU BY-PASS TERMINALS 24 AND 25 ONLY. IF YOU WOULD LIKE ANY ADDITIONAL INFORMATION OR ASSISTANCE, PLEASE UPDATE THIS FORM IN THE SPACE PROVIDED BELOW.

**From:** Perri, Ron (R.J.)
**Sent:** Sunday, May 22, 2011 11:30 PM
**To:** Mrozek, Robert (R.M.); Pascarella, Michael (M.); Napoli, Laura (L.); Annadi, Hari (H.)
**Cc:** Menz, Kenneth (K.C.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

---

**From:** Cantrell, David (D.D.)
**Sent:** Friday, May 20, 2011 6:41 PM
**To:** Chamberlain, Steve (J.); Anderson, Eric (H.)
**Cc:** Docimo, Tony (A.F.); Buelow, Steve (S.E.); Perri, Ron (R.J.); Annadi, Hari (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

Eric,

This is a good find on the electrical ground wire--may be a systemic issue. Please make sure you are working with Hari and Ron on this, as they are investigating also. Thanks.

Regards,
**D. David Cantrell, Jr.**
Chicago Assembly PVT Manager
Taurus / MKS / Explorer Programs
Ford Motor Company
*Ford-UofM Lead Recruiter*
Ford Cell Ph: 313-805-8324
Chicago Assembly Plant – PVT Office
dcantrel@ford.com

---

**From:** Chamberlain, Steve (J.)
**Sent:** Friday, May 20, 2011 4:40 PM
**To:** Anderson, Eric (H.)
**Cc:** Docimo, Tony (A.F.); Buelow, Steve (S.E.); Cantrell, David (D.D.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

Hi Eric,

I called the technician on BG[redacted]6 to get a better understanding of what is going on. He was already gone for the day. I will call back Monday.

Thanks,

**Steve Chamberlain**
PVT Electrical/Wiring Harnesses
Chicago Assembly Plant
Ford Motor Company
**ONE FORD • ONE TEAM • ONE PLAN • ONE GOAL**

---

**From:** Anderson, Eric (H.)
**Sent:** Friday, May 20, 2011 4:26 PM
**To:** Cantrell, David (D.D.); Chamberlain, Steve (J.)
**Cc:** Docimo, Tony (A.F.); Buelow, Steve (S.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

Hi David:

I'm not sure if this is a new issue, but am working with Electrical to determine if root cause is here at the plant, the supplier or elsewhere. I was able to talk to the tech for the EPAS inop BG[redacted] CQIS. The tech followed the SSM and hotline's directions and eventually found ground circuit GD108 would not carry a load. This is the ground circuit that goes to the gear. The tech overlaid a new wire from the fender ground to the PSCM connector. This fixed the problem. The tech did not mention any damaged parts to the wire loom.

Steve,
Have you ever had any supplier problems with this loom? Have you had any problems with pinched wires elsewhere recently?

I did a process walk this afternoon, but did not see anything out of the ordinary.

Thanks,

Eric

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**From:** Cantrell, David (D.D.)
**Sent:** Friday, May 20, 2011 3:51 PM
**To:** Anderson, Eric (H.)
**Cc:** Docimo, Tony (A.F.); Buelow, Steve (S.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

Eric,

We've had several claims recently for loss of power steering---is this open? What is root cause and corrective actions? Thanks.

Regards,
**D. David Cantrell, Jr.**
Chicago Assembly PVT Manager
Taurus / MKS / Explorer Programs
Ford Motor Company
*Ford-UofM Lead Recruiter*
Ford Cell Ph: 313-805-8324
Chicago Assembly Plant – PVT Office
dcantrel@ford.com

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**From:** Buelow, Steve (S.E.)
**Sent:** Friday, May 20, 2011 11:08 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.) (egilland@ford.com); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.) (ahays@ford.com); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.) (wsimkus1@ford.com); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.) (jallman@ford.com); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.) (adocimo@ford.com); Ferguson, Hugh (H.) (hferguso@ford.com); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.) (singlis@ford.com); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.) (kmartin@ford.com); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.) (lmoskwa@ford.com); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, N (N.) (nrutovic@ford.com); Sarkisian, Mark (M.) (msarkisi@ford.com); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.) (dwertman@ford.com); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.) (mberzeri@ford.com); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.) (rgerrard@ford.com); Iannotti, Jason (JRI.) (jiannott@ford.com); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.) (polsso21@ford.com); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.) (mtrygar@ford.com); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.) (bwidrick@ford.com); Young, Richard (R.C.) (ryoung27@ford.com); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BGA27891 - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com

"Quality means doing it right when no one is looking." - Henry Ford

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Friday, May 20, 2011 9:53 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, trac light on, 1921 mi, BD 2/18/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BESEA011 NHL | | | **Received:** | 05/19/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 02/18/2011 |
| **Odometer :** | 1,921 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 03926 Park Ford Lincoln Mercury Inc. | | | **Phone#:** | (845) 628-8800 |
| **City:** | Mahopac | **State:** | New York | **Country :** | USA |
| **Originator:** | JOSEPH MAURO | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | HIGH STEERING EFFORT | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** MABELA3 **Phone:** 000 248-9263 **Regn Cd:** N1 New York

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOSEPH MAURO **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:C1B00 U0422 U0131
KOER:

**Comments :**

REPAIR 05/19/2011 05:04PM MATT ABELA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: TERRAIN MANAGEMENT FAULT LIGHT CAME ON, LOST
POWER STEERING DIAGNOSTICS: U0131,C1B00,U0422. FOUND SSM 21737.

PARTS REPLACED:: NONE TECH QUESTION: FOUND SSM 21737. VEHICLE IS PAST BUILD DATE SPECIFIED IN SSM. SHOULD SSM BE FOLLOWED OR NOT. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 05/19/2011 05:04PM MATT ABELA MSS - FCSD - TECH SVC HOTLINE**

JOE, YOU SHOULD NOT SEE THE SAME CONDITION AS EXPERIENCED IN SSM 21737 ON THIS VEHICLE; HOWEVER THE DIAGNOSTIC IN THAT SSM IS VALID AND YOU CAN CERTAINLY USE IT AS A GUIDE FOR DIAGNOSING THIS VEHICLE. PLEASE NOTE WE HAVE SEEN A FEW INSTANCES OF SIMILAR CONCERNS CAUSED BY THE STABILITY CONTROL SENSOR CLUSTER IN THE RCM SENDING FALSE YAW RATE INFORMATION TO THE ABS MODULE. SINCE YAW RATE AND STEERING WHEEL ANGLE SHOULD DIRECTLY CORRELATE WITH ONE ANOTHER, WE SUSPECT THAT THE C1B00 DTC IS SETTING FALSELY DUE TO THE ABS MODULE NOT SEEING CORRELATION BETWEEN THE TWO INPUTS. TO DETERMINE THE CAUSE OF THE CONCERN, PLACE THE VEHICLE ON A LEVELED ALIGNMENT RACK AND MONITOR THE YAW AND ROLL RATE AS WELL AS THE LATERAL AND LONGITUDINAL ACCELERATION PID'S IN THE ABS MODULE. ALL PID'S SHOULD READ AT OR NEAR ZERO WITH MINIMAL FLUCTUATION. COMPARE ANY SUSPECT PID READING TO A LIKE VEHICLE. IF A FAULTY PID READING IS PRESENT ON THE CUSTOMER'S VEHICLE, REPLACE THE RCM, AND RE EVALUATE THE CONCERN.

**From:** Perri, Ron (R.J.)
**Sent:** Thursday, May 19, 2011 3:04 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.); Pascarella, Michael (M.)
**Cc:** Menz, Kenneth (K.C.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

Please get into. Get part back, etc.
Thanks.

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

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**From:** Menz, Kenneth (K.C.)
**Sent:** Thursday, May 19, 2011 1:14 PM
**To:** Perri, Ron (R.J.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

Ron - Bill Gubing just sent this over; 2 warranty claims in 1 day for EPAS loss of assist. How shall I respond? I am not aware of any warranty spike for EPAS on U502 nor aware of any recent quality issues.

**Kenneth C. Menz**
Chassis Integration Mgr for
Med/Large Family & CUV
313-805-3156
PDC 2B-G80

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**From:** Gubing, William (Bill.)
**Sent:** Thursday, May 19, 2011 11:59 AM
**To:** Menz, Kenneth (K.C.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

2 of these in the same day hit warranty. And ideas?

Thanks

Bill

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, May 19, 2011 11:42 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BGA61636 - Loss of steering assist, 256 mi, BD 5/3/11

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, May 19, 2011 9:26 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

**Attachments :** 0

**Report# :** BERDT010 NHL **Received:** 05/18/2011

| | | | | | |
|---|---|---|---|---|---|
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 05/03/2011 |
| **Odometer :** | 256 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00838 Lynch Ford-Mt. Vernon, Inc. | | | **Phone#:** | (319) 895-8500 |
| **City:** | Mount Vernon | **State:** | Iowa | **Country :** | USA |

**Originator:** CHAD HONKOMP

**Symptom:** 6 98 2 98 DRVABL,INDICATOR,CHECK ENGINE,MIL ONLY

**Status:**

**VFG:** V29 CHECK ENGINE LIGHT

**Additional Symptom:** LOSS OF ASSIST U0131

**Fix:** **Causal Component :**

**Condition Code:**

**Hotliner:** FSHEPHE2 **Phone:** 000 317-6305 **Regn Cd:** G1 Chicago

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** CHAD HONKOMP **Phone:** 319 895-8500 **Title Cde:** T

**DTCs:**

KOEO:U0131

KOEC:

KOER:

**Comments :**

REPAIR 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STERRING IS ACTING ERRATTIC DURING PARKING GARAGE DRIVING. DIAGNOSTICS: ROADTEST FOR CONERNS , NOT PRESENT , CHECK DTCS CONT U0131 PSCM KOEO- PASS PARTS REPLACED:: NONE TECH QUESTION: WSM IS INCOMPLETE. CHEKCING FOR REPORTS OR KNOWN CONCERNS. ANY FURTHER DIAG?

**RECOMM 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**
HI CHAD. WE ARE NOT AWARE OF ANY COMMON TRENDS OR CONCERNS FOR THIS
ISSUE OTHER THEN SSM 21737. PLEASE DUPLICATE THE CONCERN PRIOR TO ANY REPAIR AND WHEN PRESENT, REFER TO THE SSM AND CHECK FOR CONCERNS AT C139 AND REPAIR AS NEEDED. IF OK, LOAD TEST ALL PSCM POWERS AND GROUNDS AND REPAIR IF NECESSARY AND RETEST. IF YOU NEED ADDITIONAL ASSISTANCE, PLEASE LET US KNOW. THANKS. SSM 21737 CODES C1B00,

U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF
THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 01, 2011 11:18 AM
**To:** 'apienta@yahoo.com'
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

**Importance:** High

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**From:** Anderson, Eric (H.)
**Sent:** Friday, May 20, 2011 2:15 PM
**To:** Logli, Michael (M.A.); Issa, Ibrahim (I.M.); Chamberlain, Steve (J.); Jackson, Marcell (M.)
**Cc:** Docimo, Tony (A.F.); Jackson, Bradley (B.G.); Estes, Eric (E.E.); Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11
**Importance:** High

Hi Electrical Team:

I called this dealership about a recently built U502 that lost assist. The tech explained that he eventually found circuit GD108 would not carry a load. He then overlaid GD108 from the fender attachment point to the PSCM connector with a new wire. EPAS returned and has been working properly.

Do you think we could be pinching this wire somewhere in our process? Have you ever had supplier quality problems with this wire loom?

Thanks,

Eric

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**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, May 19, 2011 10:42 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.);

Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11


*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
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773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, May 19, 2011 9:26 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BERDT010 NHL | | | **Received:** | 05/18/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 05/03/2011 |
| **Odometer :** | 256 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00838 Lynch Ford-Mt. Vernon, Inc. | | | **Phone#:** | (319) 895-8500 |
| **City:** | Mount Vernon | **State:** | Iowa | **Country :** | USA |
| **Originator:** | CHAD HONKOMP | | | | |
| **Symptom:** | 6 98 2 98 DRVABL,INDICATOR,CHECK ENGINE,MIL ONLY | | | | |
| **Status:** | | | | | |
| **VFG:** | V29 CHECK ENGINE LIGHT | | | | |
| **Additional Symptom:** | LOSS OF ASSIST U0131 | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** FSHEPHE2 **Phone:** 000 317-6305 **Regn Cd:** G1 Chicago

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** CHAD HONKOMP **Phone:** 319 895-8500 **Title Cde:** T

**DTCs:**

KOEO:U0131

KOEC:

KOER:

**Comments:**

REPAIR 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STERRING IS ACTING ERRATTIC DURING PARKING GARAGE DRIVING. DIAGNOSTICS: ROADTEST FOR CONERNS , NOT PRESENT , CHECK DTCS CONT U0131 PSCM KOEO- PASS PARTS REPLACED:: NONE TECH QUESTION: WSM IS INCOMPLETE. CHEKCING FOR REPORTS OR KNOWN CONCERNS. ANY FURTHER DIAG?

**RECOMM 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**
HI CHAD. WE ARE NOT AWARE OF ANY COMMON TRENDS OR CONCERNS FOR THIS
ISSUE OTHER THEN SSM 21737. PLEASE DUPLICATE THE CONCERN PRIOR TO ANY REPAIR AND WHEN PRESENT, REFER TO THE SSM AND CHECK FOR CONCERNS AT C139 AND REPAIR AS NEEDED. IF OK, LOAD TEST ALL PSCM POWERS AND GROUNDS AND REPAIR IF NECESSARY AND RETEST. IF YOU NEED ADDITIONAL ASSISTANCE, PLEASE LET US KNOW. THANKS. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF
THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, October 12, 2011 10:27 AM
**To:** Flanagan, Thomas (T.P.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

The one you showed me this morning is Israel.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Wednesday, October 12, 2011 10:06 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Annadi, Hari (H.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Look how latent a B9A can be. 10K miles? And we are now shipping B9A's internationally. The 2nd report is in Israel.

Brad

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BJKAN009 NHL | | | **Received:** | 10/11/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK8D86BG[redacted] | | | **Build Date:** | 03/20/2011 |
| **Odometer :** | 10,258 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 03605 Sunshine Ford-Lincoln, Inc. | | | **Phone#:** | (845) 561-3900 |
| **City:** | Newburgh | **State:** | New York | **Country :** | USA |
| **Originator:** | BRIAN WARREN | | | | |
| **Symptom:** | 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING FAULT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JREDDMAN **Phone:** 000 248-9292 **Regn Cd:** N1 New York

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** BRIAN WARREN **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:C1B00:86 C200D:49
KOEC:
KOER:

**Comments :**

REPAIR 10/11/2011 01:30PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN:C/S STEERING LOCKED UP, ALMOST CAUSED COLLISION. DIAGNOSTICS: CK. DTCS,ROAD TEST, PERFORMED PINPOINT TESTS PARTS REPLACED:NONE TECH QUESTION:CONCERN WAS NOT VERFIED, AFTER PERFORMING PINPOINT TEST B3 NO DTCS WERE RECORDED. DUE TO THE NATURE OF THIS CONCERN PLEASE ADVISE.

**RECOMM** **10/11/2011 01:30PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE**
BRIAN, BASED ON THE DESCRIPTION OF THE CONCERN, THE DTCS THAT ARE PRESENT AND PRIOR HOTLINE REPORTS, WE RECOMMEND THAT YOU REPLACE THE
STEERING RACK AND RE-EVALUATE THE CONCERN. IF YOU NEED ANY ADDITIONAL ASSISTANCE, PLEASE UPDATE THIS FORM IN THE SPACE PROVIDED. ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BJKCJ008 NHL | | | **Received:** | 10/11/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK8F81BG[redacted] | | | **Build Date:** | 04/13/2011 |
| **Odometer :** | 2,316 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | ISR W0B34 Delek Motors Ltd. | | | **Phone#:** | |
| **City:** | Nir Zvi | | | **Country :** | ISR |
| **Originator:** | ASAF ARVIV | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LACKS ASSIST ON U-TURN | | | | |
| **Fix:** | **Causal Component :** | | -- | | |

**Condition Code:**

**Hotliner:** GBARTOS **Phone:** 313 317-6301 **Regn Cd:** 9B FCSD REGION 9B

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** ASAF ARVIV **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C200D

KOER:

**Comments :**

REPAIR 10/11/2011 10:37AM GREG BARTOS MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:SUDDENLY DURING U-TURN DRIVING, THE STEERING
BECAME VERY HARD, AND STEERING MULFUNCTION LIGHT SET ON ON IC. CYCLING
THE IGNITION ELIMINATE THE CONCERN. THERE WAS ANOTHER EVENT LATER ON.
THE ENGINE ALMOST STALLED AS THE EVENT OCCUR. DIAGNOSTICS: WE
PREFORMED DIAGNOSTICS ACCORDING TO WSM AND IDS DTCS. C200D
TROUBLESHOOTING COMPLETED WITH THE CONCLUSION THAT THE VEHICLE SHOULD
BE DELIVERED TO CUSTOMER IF NO WE HAVE NOT SCSEED TO DUPLICATE THE
CONCERN. U3003 INDICATE HIGH VOLTAGE CONCERN AND TROUBLE SHOOTING HAS
NOT IDENTIFIED ANY CONCERN. LONG TEST DRIVE HAS NOT DUPLICATE THE
CONCERN PARTS REPLACED:NONE YET TECH QUESTION:WE AFFRAID TO
DELIVER THE VEHICLE BACK TO CUSTOMER. IT IS A BRAND NEW VEHICLE AND
ANY FAULTS CAN AFFEC US BADLY. PLEASE REVIEW THE INFORMATION AND
ADVICE IF YOU CAN UNDERSTAND THE ROOT CAUSE OF THE CONCERN. MANY
THANKS!

**RECOMM 10/11/2011 10:37AM GREG BARTOS MSS - FCSD - TECH SVC HOTLINE**
ASAF, SINCE DTC C200D HAS BEEN SET, IT WILL BE NECESSARY TO REPLACE
THE EPAS GEAR. ENGINEERING HAS CONFIRMED THAT DTC C200D HAS BEEN SET
DUE TO AN INTERNAL FAULT WITH THE EPAS GEAR WHICH REQUIRES GEAR
REPLACEMENT. REPLACE THE EPAS GEAR AND RE-EVALUATE THE
CONCERN. ----------
---------- ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN
PSCM

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BJKAJ015 NHL | | | **Received:** | 10/11/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK7F80CG[redacted] | | | **Build Date:** | 08/18/2011 |
| **Odometer :** | 1,192 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08223 Link Ford & RV-Minong LLC | | | **Phone#:** | (715) 466-2222 |
| **City:** | Minong | **State:** | Wisconsin | **Country :** | USA |

**Originator:** ANDREW DURST

**Symptom:** 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** U0131 IN IC AND ABS

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** MDREWYOU **Phone:** 000 317-9369 **Regn Cd:** G5 Twin Cities

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** ANDREW DURST **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:U0131 C1B00:29 U0415

KOEC:

KOER:

**Comments :**

REPAIR 10/11/2011 02:15PM MICHAEL DREWYOU MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN:CUSTOMER STATES THE POWER STEERING IS INTERMITTENTLY INOPERATIVE, WARNING LIGHTS COME ON WHEN INOPERATIVE. DIAGNOSTICS: PERFORMED SELF TESTS FOR PSCM, SCCM, ABS, AND IPC. AT THE TIME OF INITIAL TESTING, EPAS SYSTEM WAS OPERATING NORMALLY. AFTER A 15 MILE TEST DRIVE, PULLING ONTO HIGHWAY, ADVANCETRAC WARNING AND ABS LIGHTS CAME ON AND POWER ASSIST QUIT WORKING. UPON RETURN TO THE SHOP, SCAN SHOWED NO RESPONSE FROM PSCM ON
THE NETWORK, PSCM FAILED NETWORK TEST, PPT ADVISED TO REPLACE PSCM.

HOWEVER, AFTER SHUTTING VEHICLE OFF AND SITTING FOR 15 MINUTES, WARNING LIGHTS ARE OFF AND EPAS IS WORKING NORMALLY AGAIN. INSPECTED ALL CONNECTORS, ALL APPEAR TO BE OKAY (ON STEERING GEAR, ABS MODULE, DLC). PARTS REPLACED:NONE AT THIS TIME TECH QUESTION:DIAGNOSTICS ADVISE TO REPLACE THE PSCM (STEERING GEAR ASSEMBLY). LOOKING FOR ANY INFORMATION ABOUT THIS CONCERN. WHEN PSCM FAILED THE NETWORK TEST, ALL POWERS, GROUNDS, AND NETWORK CONNECTIONS (TO DLC) TESTED NORMAL, LOAD TESTS OKAY. ANY HELP APPRECIATED.

**RECOMM 10/11/2011 02:15PM MICHAEL DREWYOU MSS - FCSD - TECH SVC HOTLINE**

ANDREW, RECOMMEND CHECKING POWERS AND GROUND TO THE PSCM WHEN THE CONCERN IS PRESENT. ALSO RECOMMEND VERIFYING PIN FITS USING A FLEX PROBE AT THE PCSM AND VERIFY THE COMMUNICATION CIRCUITS TO THE PCSM. INSPECT THE HARNESS FOR ANY CHEFFING.

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, September 01, 2011 8:16 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Buelow, Steve (S.E.)
**Cc:** Mrozek, Robert (R.M.); Fumerola, Tom (T.)
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Laura / Eric, a C200D gear below

Steve, our new message to the Hotliners should have directed Jonathan below to advise replacing the gear. Is our ISM active?

Brad

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| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BH5CN008 NHL | | | **Received:** | 08/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D80BG[redacted] | | | **Build Date:** | 05/05/2011 |
| **Odometer :** | 2,454 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 07761 Orchid Isle Auto Center | | | **Phone#:** | (808) 935-1191 |
| **City:** | Hilo | **State:** | Hawaii | **Country :** | USA |
| **Originator:** | SCOTT NAKASONE | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD TRACTION LIGHT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JSAVOY1 **Phone:** 313 317-9352 **Regn Cd:** W1 Los Angeles

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MARK NISHIOKA **Phone:** 808 326-5655 **Title Cde:** T

**DTCs:**
KOEO:C1B00 C200D
KOEC:
KOER:

**Comments**

:

REPAIR 08/31/2011 07:23PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUST STATES ADVANCE TRAC LIGHT CAME ON LOST
POWERSTEERING DIAGNOSTICS: PULLED CODES . RAN OASIS FOUND TSB PER CODE #11-6-12. TRIED TO PEFORM UPDATE ON SCCM AND IT SAYS THERE IS NO UDATE FOR SCCM PARTS REPLACED:: NONE TECH QUESTION: IS THERE ANY OTHER KNOWN REPAIR FOR THIS CONCERN.

**RECOMM 08/31/2011 07:23PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE**
SCOTT, PLEASE CONFIRM THAT THE IDS IS UPDATED TO THE LATEST VERSION 74.04A PRIOR TO PERFORMING THE UPDATE. IF THE IDS IS NOT UPDATED, IT MAY NOT HAVE CALIBRATIONS THEREFORE IT WILL SHOW NO UPDATES FOR THE
VEHICLE. IF THERE ARE NO UPDATES FOR THE VEHICLE, IT IS POSSIBLE THAT THE STEERING RACK IS CAUSING THIS CONCERN. IN ORDER TO HELP ISOLATE THE ROOT CAUSE OF THIS CONCERN, DUPLICATED THE CONCERN THEN PERFORM THE INTERACTIVE DIAGNOSTICS.

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**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, August 26, 2011 9:48 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Fumerola, Tom (T.)
**Cc:** Buelow, Steve (S.E.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

2 more U502 C200D CQIS calls today.....fyi.

Tom, do you have an ETA on service message that will direct the dealer to replace the steering gear whenever they see a C200D DTC on U502?

Brad

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BHYEO003 NHL | | | **Received:** | 08/25/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D88BG[redacted] | | | **Build Date:** | 04/05/2011 |
| **Odometer :** | 6,008 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04910 Cook-Whitehead Ford | | | **Phone#:** | (850) 784-0400 |
| **City:** | Panama City | **State:** | Florida | **Country :** | USA |
| **Originator:** | WILLIAM MARLEY | | | | |
| **Symptom:** | 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | C200D | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** S3 Orlando

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** WILLIAM MARLEY **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:C1B00 C200D
KOEC:
KOER:

**Comments**

:

REPAIR 08/25/2011 02:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: ADVANCE TRACK LIGHT CAME ON AND COULD NOT
STEER WHEN WAS ON. HAD TO TURN CAR OFF FOR IT TO
RESTART. DIAGNOSTICS: SCANNED FOR CODES. FOUND CODE C1B00:86 IN THE
ABS MODULE AND C200D:49 IN THE PSCM . PARTS REPLACED::
NONE. TECH QUESTION: SEEKING ANY KNOWN CAUSES FOR THIS CONCERN IN
YOUR DATA BASE. ALL CODES SEEM TO LEAD ME BACK TO THE SCCM BUT NO
CODES PRESENT BUT WHEN I GO TO DATA LOGGER THE STEERING ANGLE READINGS
DO NOT MATCH. THANKS FOR THE HELP.

**RECOMM 08/25/2011 02:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
WILLIAM, IF YOU HAVE NOT DONE SO ALREADY, RECOMMEND TO VERIFY THE
INTEGRITY OF THE POWER AND GROUND CIRCUITS TO THE PSCM BY VOLTAGE DROP
TESTING THEM. IF THE VOLTAGE DROP EXCEEDS .2V, REPAIR THE CIRCUIT AS
NECESSARY. IF NO CIRCUITRY CONCERNS ARE FOUND, IT IS RECOMMENDED TO
REFER TO THE ONLINE WORKSHOP MANUAL SECTION 211-00 INTERACTIVE
DIAGNOSTICS AND PERFORM DIAGNOSTIC ROUTINE B TO DIAGNOSE THIS CONCERN.

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BHYAW014 NHL | | | **Received:** | 08/25/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK8F88BG[redacted] | | | **Build Date:** | 02/18/2011 |
| **Odometer :** | 8,411 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08199 Dave Sinclair Ford, Inc. | | | **Phone#:** | (314) 892-2600 |
| **City:** | St Louis | **State:** | Missouri | **Country :** | USA |
| **Originator:** | MIKE CRITES | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LACK OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** MHINDERE **Phone:** 000 337-9292 **Regn Cd:** C4 Kansas City

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MIKE CRITES **Phone:** 314 892-2600 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C1B00 C200D

KOER:

**Comments :**

REPAIR 08/25/2011 11:45AM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: EPAS INOP AT TIMES AND MESSAGE CENTER READS
SERVICE TERRAIN MGT SYSTEM DIAGNOSTICS: CHECKED OASIS FOUND TSB
11-06-12 FOR SSCM RECAL HAS LATEST CALIB CHECKED FOR CODES HAS
C1B00-68 ABS AND C200D:49-08PSCM CHECKED PSCM WIRING AND CONNECTORS NO
ISSUE S FOUND PARTS REPLACED:: NONE TECH QUESTION: I CANNOT
FIND C1B00:86-68 WHAT MAY BE CAUSING THIS CONCERN ;

**RECOMM 08/25/2011 11:45AM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**
MICHAEL, RECOMMEND TO LOAD TEST AND VOLTAGE DROP POWER AND GROUND AT
THE PSCM. ALSO CLOSELY INSPECT PINFIT AND CONNECTION AT THE PSCM. IF
ALL OK, RECOMMEND TO REPLACE THE STEERING GEAR ASSEMBLY AND RETEST.

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**From:** Napoli, Laura (L.)
**Sent:** Thursday, July 14, 2011 9:19 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

We have another C200D...

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Wednesday, July 13, 2011 2:34 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 13 report summary(s).

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BGLCF008 NHL | | | **Received:** | 07/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D86BG[redacted] | | | **Build Date:** | 04/25/2011 |
| **Odometer :** | 4,885 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04962 World Ford-Pensacola | | | **Phone#:** | (850) 479-1311 |
| **City:** | Pensacola | **State:** | Florida | **Country :** | USA |
| **Originator:** | DIANNE TUMINO | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD C1B00 C200D | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** DKNAPP7 **Phone:** 000 317-6316 **Regn Cd:** S3 Orlando

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** DIANNE TUMINO **Phone:** 000 000-0000 **Title Cde:** WA

**DTCs:**

KOEO:C1B00 C200D
KOEC:
KOER:

**Comments**
**:**

REPAIR 07/12/2011 02:03PM DAVID KNAPP MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: C/S THAT HIS WIFE WAS DRIVING DOWN THE ROAD AND A STEERING FAILURE LIGHT CAME ON THENSTEERING WHEEL LOCKED UP. DIAGNOSTICS: USED IDS AND INTERACTIVE DIAGNOSTICS,RETRIEVED CODES AND FOLLOWED PIN POINT PROCEDURES,VERIFIED ELECTRICAL CONNECTIONS AND WIRING LOOKS OK,NO VISIBLE DAMAGE TO STEERING SYSTEM. PARTS REPLACED:: NONE TECH QUESTION: HAD CODES C1BOO:86-28,C200D:49-08,WENT THROUGH PIN POINT TESTS AND ENDED UP AT CLEAR CODE AND RETURN TRUCK TO CUSTOMER,THEN DROVE IT 15 MILES WITH LOTS OF SIDE ROAD TURNING MANUEVERS AND DIDNT DUPLICATE CONCERN.LOOKING FOR ANY KNOWN CONCERNS OR FURTHER THINGS I CAN CHECK DUE TO THE LIABILITY IF THIS CONDITION OCCURS AGAIN AND CUST HAS ACCIDENT OR SOMETHING BAD HAPPENS.NOT COMFORTABLE RETURNING CAR WITHOUT CHECKING WITH YOU GUYS DUE TO THE SAFETY NATURE OF THEIR CONCERN.THANKS.

**RECOMM 07/12/2011 02:03PM DAVID KNAPP MSS - FCSD - TECH SVC HOTLINE**
DIANNE, WE WOULD SUGGEST YOU USE <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THIS CONDITION.

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**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 30, 2011 9:00 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Another B9A and one F00049-48 which is an A0B. Haven't seen one of those yet. There's also a C69 which we obviously don't know what is causing that.

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Thursday, June 30, 2011 4:53 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 10 report summary(s).

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BF3AJ001 NHL | | | **Received:** | 06/29/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F84BG[redacted] | | | **Build Date:** | 04/13/2011 |
| **Odometer :** | 2,359 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 01597 Santa Margarita Ford | | | **Phone#:** | (949) 888-4348 |
| **City:** | Rancho Santa Mar | **State:** | California | **Country :** | USA |
| **Originator:** | OMAR TRIANA | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | INTERM LOSS OF P/S ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** RHAIST1 **Phone:** 313 317-9342 **Regn Cd:** W1 Los Angeles

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** OMAR TRIANA **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:C200D:49
KOEC:

KOER:

**Comments :**

REPAIR 06/29/2011 07:39AM RICK HAIST MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: VEHICLE AT TIMES POWER STEERING LOSS ON TURNS AND AT DASH READ POWER STEERING FAILURE DIAGNOSTICS: PERFORMED PINPOINT TEST B1 B2 B3/ . INSPECTED EPAS GEAR BOOST FOR DAMAGE , NO PROBLEMS FOUND/ INSPECTED WIRE HARNNES AND THREE CONNECTORS , NO PROBLEMS FOUND/ TEST DRIVE FOR RETURNING DTCS, PASSED
BUT VEHICLE WAS PARKING FOR TWO HOURS , REROAD TEST WHEN BACKING UP AND TURN THE STEERING WHEEL TO THE RIGHT LOOS POWER STEERING AND AT DASH READING P/S FAILURE. DTC C200D:49 AGEN PARTS REPLACED::
NONE TECH QUESTION: SO DTC C200D:49 RETURN ACCORDING WITH THE WORK SHOP MANUAL I HAVE TO REPLACE THE EPAS GEAR? YOU KNOW OTHER VEHICLES
FOR THE SAME CONCERN.?I DID THE WIGGLE TEST STILL THE SAME WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 06/29/2011 07:39AM RICK HAIST MSS - FCSD - TECH SVC HOTLINE**
OMAR, BASED ON THE CONCERN SYMPTOMS AND THE C200D:49 DC RETURNING IN
THE PSCM MODULE AFTER CLEARING IT AND ROAD TESTING THE VEHICLE, WE WOULD RECOMMEND REPLACEMENT OF THE EPAS STEERING GEAR ASSEMBLY PER
PINPOINT TEST "B" IN SECTION 211-00 OF THE ONLINE WSM. -THERE WERE NO PAST REPORTS ON LIKE VEHICLES WITH THIS TYPE OF CONCERN AND A
C200D:49 DTC BEING SET.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BF3FM006 NHL | | | **Received:** | 06/29/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F81BG[redacted] | | | **Build Date:** | 05/21/2011 |
| **Odometer :** | 215 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 10565 Napleton's Park Ridge Lincoln- | | | **Phone#:** | (847) 825-0770 |
| **City:** | Park Ridge | **State:** | Illinois | **Country :** | USA |
| **Originator:** | BROCK KENSKI | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | POWER ASSIST FAULT U3000 | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** G1 Chicago

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** BROCK KENSKI **Phone:** 847 825-0770 **Title Cde:** T

**DTCs:**

KOEO:U3000:96-C8 U3000:49-48

KOEC:

KOER:

**Comments :**

REPAIR 06/29/2011 04:21PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: GETTING POWER STEERING ASSIST FAULT MSG AND
HARD TO TURN DIAGNOSTICS: U 3000 49-48 PSCM AND U3000 96-C8.
PINPOINT TEST AND STATES REFLASH PSCM SOFTWARE PARTS REPLACED::
NONE TECH QUESTION: TRIED TO REFLASH THE PSCM MODULE BUT NO OPTION
TO REFLASH AT ALL WERE YOU ABLE TO VERIFY THE CONCERN? YES IS
THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN?
YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 06/29/2011 04:21PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
BROCK, ACCORDING TO THE INTERACTIVE DIAGNOSTIC ROUTINE C, REPLACEMENT
OF THE PSCM IS REQUIRED. RECOMMEND TO CHECK THE PSCM CONNECTOR FOR
PROPER PIN FIT, CORROSION OR PUSHED OUT PINS. IF NO CONNECTOR CONCERNS
ARE FOUND, REPLACE THE PSCM AND RE-EVALUATE THE CONCERN. IF FURTHER
ASSISTANCE IS REQUIRED, PLEASE UPDATE THE FORM WITH YOUR LATEST
RESULTS.

**From:** Napoli, Laura (L.)
**Sent:** Friday, April 29, 2011 8:54 AM
**To:** Estes, Eric (E.E.); 'Greg Austin'
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

TS failure in warranty on U502. Let's hope this TS was built before the visual inspection...assuming it's a bent finger.

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, April 29, 2011 5:01 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BD2BP002 NHL | | | **Received:** | 04/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F80BG[redacted] | | | **Build Date:** | 02/04/2011 |
| **Odometer :** | 13 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02058 Beechmont Ford Inc | | | **Phone#:** | (513) 752-7474 |
| **City:** | Cincinnati | **State:** | Ohio | **Country :** | USA |
| **Originator:** | SHANE JONES | | | | |
| **Symptom:** | 3 03 0 00 CHASS.,STRG/HANDLING ,OTHER-CODE NA,OTHER-CODE NA | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | MULTIPLE CODES | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JELLERH2 **Phone:** 313 317-9374 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHANE JONES **Phone:** 513 752-7474 **Title Cde:** T

**DTCs:**

KOEO:U3000:96-C8 C200B:2F-48 C200B:61-48 C200B:62-48
KOEC:
KOER:

**Comments :**

| | |
|---|---|
| REPAIR | 04/28/2011 09:08AM JAMES ELLERHOLZ MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: IDS TESTED AND GOT DTC U3000:96-C8 C200B:2F-48 C200B:61-48 C200B:62-48 THE U3000:96-C8 WOULD NOT CLEAR PINPOINT TEST SHOWED TO REPLACE THE STEERING GEAR PARTS REPLACED:: NONE TECH QUESTION: BEING A LOW MILE VEH I WANTED TO SEE IF THERE WERE ANY KNOWN CONCERNS WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES |
| **RECOMM** | **04/28/2011 09:08AM JAMES ELLERHOLZ MSS - FCSD - TECH SVC HOTLINE** SHANE, WE DO NOT HAVE ANY TRENDS OR SIMILAR CONCERNS. IF THE WIRING AND ALL CONNECTORS ARE IN GOOD SHAPE, WE RECOMMEND REPLACE THE STEERING GEAR AS INSTRUCTED. |

**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, April 22, 2011 12:22 PM
**To:** Buelow, Steve (S.E.); Millard, Lyle (L.); Brucker, Eric (.); Napoli, Laura (L.)
**Cc:** Docimo, Tony (A.F.); McAllister, Derek (D.)
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Steve / Lyle, the 2011 Explorer in the hotline report below is not a candidate for SSM 21737 based on vehicle build date. SSM 21737 is only valid on units built prior to 24 January 2011.

Laura / Eric, based on the lost communication codes below, do you have any recommendations for this dealer to help diagnosis?

The only thing I could suggest is that the dealer monitor steering angle signal from the PSCM and the yaw/roll signal from the RCM while replicating the customer concern.

Brad Jackson

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BDUB5007 NHL | | | **Received:** | 04/21/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D84BG[redacted] | | | **Build Date:** | 03/24/2011 |
| **Odometer :** | 164 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 05662 Crossroads Ford Lincoln, Inc. | | | **Phone#:** | (502) 695-1990 |
| **City:** | Frankfort | **State:** | Kentucky | **Country :** | USA |
| **Originator:** | MARTY MITCHAM | | | | |
| **Symptom:** | 3 01 A 04 CHASS.,SERVICE BRAKE ,INDICATOR,T/C LIGHT | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | TRAC LIGHT ON/NO ASSIST INT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** LMILLA11 **Phone:** 313 317-9130 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MARTY MITCHAM **Phone:** 502 695-1990 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:

KOER:

**Comments:**

REPAIR 04/21/2011 10:08AM LYLE MILLARD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER SAYS WHILE LEAVING A RESTURANT YESTERDAY, HE HAD NO POWER STEERING ALL THE WAY HOME. ALSO THE TRAC CONTROL LIGHT CAME ON TWICE AND WENT OFF. EVERY THING OK THIS MORNING DIAGNOSTICS: IDS DIAG. PSCM-PINPOINT TEST B. CHECKED CONNECTIONS AT GEAR-OK CODES C1B00:86-28 ABS, U0182:87-0A BCM, U0212:87-0A BCM, U0253:00-28 IPC, C200D:49-08 PSCM ALL OK AT THIS TIME PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONCERNS WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 04/21/2011 10:08AM LYLE MILLARD MSS - FCSD - TECH SVC HOTLINE**
MARTY, PLEASE ENSURE THAT THE CONCERN CAN BE VERIFIED BEFORE ANY REPAIRS ARE TO BE PERFORMED. IF THE CONCERN CAN BE DUPLICATED AND VERIFIED, THIS CONCERN CAN BE ADDRESSED BY CONSULTING SSM 21737. THIS SSM ADDRESSES COMMUNICATION ISSUES THAT WOULD SET THESE CODES. DTC U0253 DOES NOT PERTAIN TO THE CONCERN AND SHOULD BE DISREGARDED. IF COMMUNICATION IS RESTORED PLEASE RETEST, AND EVALUATE. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

---

**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 9:34 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

2 wiring issues below causing loss of assist. Did either of you talk to these dealers already? If not, I'll call to make sure they don't pull the gears. Please let me know.

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, April 01, 2011 4:47 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5AL007 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F82BG[redacted] | | | **Build Date:** | 02/23/2011 |
| **Odometer :** | 13 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00978 Capital Ford, Inc. | | | **Phone#:** | (919) 790-4700 |
| **City:** | Raleigh | **State:** | North Caroli | **Country :** | USA |

**Originator:** RYAN WALLACE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** NO POWER STEERING ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** WHOUST13 **Phone:** 313 317-7044 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** RYAN WALLACE **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:

KOER:

**Comments :**

REPAIR 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING INOP DIAGNOSTICS: NETWORK TEST NO COMMUNICATION WITH PSCM, PINPIONT TEST AC1-12VOLTS AT C1463A PIN 3, PINPIONT AC2- .2 OHMS C1463B PIN2, PINPIONT TEST AC3- C1463A PIN 1 TO DLC PIN6 1.2 OHMS, C1463A PIN 2 TO DLC PIN14 1 OHM, PINPIONT TEST AC4 NO PUSHED OUT PINS OR CORROSION OR BENT OR DAMAGED PINS PARTS REPLACED:: STEERING GEAR TECH QUESTION: ANY KNOWN PROBLEMS WITH REPROGRAM OR COMMUNICATION WITH THE PSCM, ANY OTHER
PINPIONT TEST? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE**
RYAN, THE EPAS SYSTEM THAT THIS VEHICLE HAS IS TOTALLY SELF CONTAINED. THE GEAR REQUIRES POWER AND GROUND AND NETWORK CIRCUITS FOR
COMMUNICATION. IF THE EPAS GEAR HAS BEEN REPLACED, AND THERE IS NO ASSIST OR COMMUNICATION WITH THE MODULE, LOAD TEST THE POWERS AND GROUNDS TO THE EPAS USING A HEADLAMP BULB TO VERIFY THAT THEY ARE CAPABLE OF CARRYING SUFFICIENT AMPERAGE AND PERFORM WIGGLE TESTS DURING THIS LOAD TEST. IF OKAY, VERIFY THAT THE NETWORK VOLTAGES AT THE PSCM CONNECTOR CORRESPOND WITH THE VOLTAGES AT PINS 6 AND 14 OF THE DLC WITH THE VEHICLE IN A KOEO STATE. CLOSELY INSPECT FOR LOOSE/DAMAGE OR OTHER PINFIT ISSUES AT THE PSCM AND BJB. REFERENCE PAGE 43-1 OF THE ONLINE EVTM FOR CIRCUIT DETAILS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5EH004 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/02/2011 |
| **Odometer :** | 33 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |

| | | | | | |
|---|---|---|---|---|---|
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02561 Sewell Ford, Inc. | | | **Phone#:** | (432) 498-0421 |
| **City:** | Odessa | **State:** | Texas | **Country :** | USA |
| **Originator:** | STEFAN DROUI | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEFAN DROUI **Phone:** 432 432-3320 **Title Cde:** T

**DTCs:**

KOEO:C1B00:29 C1B00:41 U0131

KOEC:

KOER:

**Comments :**

REPAIR 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: LOST ALL POWER STEERING ,TOWED IN,POWER STEERING NOW. ADVANCE TRACK LIGHT ON ABS LIGHT ON DIAGNOSTICS: IDS TEST,MONITERED PIDS STEERING ANGLE PI WAS 49150.95. INSPECTED CONNECTIONS ON EPAS,ABS MODULE,SJB,BJB ALL OK,INSPECTED GRONDS PARTS REPLACED:: NO PARTS REPLACED TECH QUESTION: POWER STEERING LOCKED,ADVANCED TRACK LIGHT ON,SOMETIMES STEERING FUNCTIONS,OTHER TIMES IT DOESNT,CANT COMMUNICATE WITH PSCM AT TIMES,OTHER TIMES CAN. CODES C1B00:29-68 AND C1B00:41-68. CANNOT FIND CORRECT PIN POINT TEST. I FEEL LIKE IT IS THE PSCM,EPAS RAC-N-PINION. DO HAVE ANY REPAIR IDEAS NOT SURE WHERE TO GO.

**RECOMM 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
STEFAN, THE READING OF THE STEERING ANGLE SENSOR IS NORMAL. THE STEERING ANGLE SENSOR LEARNS A ZERO POINT AFTER DRIVING STRAIGHT. REFER TO <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THE FAULTS PRESENT. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN,

BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, February 15, 2011 3:04 PM
**To:** Diez, Timothy (T.P.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Just noticed you weren't on my response.

And to answer your question from yesterday, 48mm motor is used on 2.0L, 58mm is used on 3.5L.

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, February 15, 2011 3:04 PM
**To:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.)
**Cc:** Anderson, Eric (H.)
**Subject:** RE: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

There was a C69 in the fault store. So we need snapshot data on the gear if they haven't tried clearing the Ford DTCs. Either way, a C69 due to 3 or more B-level faults would mean the gear is locked out and service directs them to pull the gear. We need to get it back to know exactly what happened to the gear due to the disconnected connector.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Tuesday, February 15, 2011 7:59 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.)
**Cc:** Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Any clues about the first report from Maryland? If a loose connector was found and re-connected, any ideas on why there would still be no assist?

Also, have a look at the 3rd report from North Carolina.

Brad

This email contains 3 report summary(s).

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBLAA025 NHL | | | **Received:** | 02/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F8XBG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 303 M | **Engine:** | 3.5L | **Calibration:** | BUB1ST0A |

| | | | | | |
|---|---|---|---|---|---|
| | | | CYCLO | | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00089 Koons Ford of Annapolis, Inc. | | | **Phone#:** | (410) 266-3087 |
| **City:** | Annapolis | **State:** | Maryland | **Country :** | USA |
| **Originator:** | JAMES MORELAND | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | U3000:96 | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** CBISHO41 **Phone:** 313 317-9359 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMES MORELAND **Phone:** 410 266-3087 **Title Cde:** T

**DTCs:**

KOEO:U3000:96

KOEC:

KOER:

**Comments :**

REPAIR 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: SELF TEST VISUAL INSPECTION FOUND CONNECTOR ON GEAR DISCONNECTED PARTS REPLACED:: NONE TECH QUESTION: CODE U3000 96 LEADS TO REPLACEMENT OF EPAS GEAR W/NO PINPOINT TESTS IS THIS CORRECT, VEHICLE WAS DX TO OUR DEALER SAID P/S WENT OUT IN OUR PARKING LOT, TESTED AND FOUND CONNECTOR 1453A DISCONNECTED. PLUGGED BACK IN BUT NO P/S AND CODE AND
MESSAGE CENTER WILL NOT CLEAR OUT. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE**
JAMES, YOU ARE CORRECT. IF THE U3000:96 IS PRESENT AS A HARD FAULT THEN STEERING GEAR REPLACEMENT IS REQUIRED. THIS CODE INDICATES THAT THE ELECTRONIC STEERING GEAR HAS EXPERIENCED AN INTERNAL FAULT. RECOMMEND REPLACING THE GEAR AS NEEDED THEN RETESTING FOR NORMAL OPERATION.

**Attachments :** 2

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBNEY164 NHLDIG--or-- HD 201100413212 | | | **Received:** | 02/14/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,TAURUS,SEL ,SEDAN ,1FAHP2HW0BG[redacted] | | | **Build Date:** | 01/26/2011 |
| **Odometer :** | 1,396 M | **Engine:** | DURATEC 35 | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | 2.77 RATIO | **A/C:** | YES |
| **Dealer:** | USA 02393 Kowalski Ford | | | **Phone#:** | (440) 933-3291 |
| **City:** | Avon Lake | **State:** | Ohio | **Country :** | USA |
| **Originator:** | chastity christman | | | | |
| **Symptom:** | 3 06 7 04 CHASS.,TIRES/WHEELS,APPEARANCE,PEELING | | | | |
| **Status:** | | | | | |
| **VFG:** | V88 TIRES | | | | |
| **Additional Symptom:** | Processed | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Region Code:** G4 **Region Name:** Pittsburgh

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

| | |
|---|---|
| CONCER | 02/14/2011 12:38PM<br>drivers front rim is discolored, can only see it at certain angles, recommend replacing rim |
| **RECOMM** | **02/14/2011 12:38PM**<br>Please perform the ssm 21548 for the wheel concern. This appears to have a film on the wheel as mentioned in the ssm and will remove if cleaned as the ssm states. No need for an approval code. Thanks Sean contact id: 104364134 |

Please click on the link below to view the attachments associated with this report
https://www.gcqis.dealerconnection.com/gcqis/asp/DIViewAttachment_Mainx.asp?ReportNumber=BBNEY164

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBND7002 NHL | | | **Received:** | 02/14/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7B86BG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 519 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1NN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09151 Huntersville Ford | | | **Phone#:** | (704) 875-6547 |
| **City:** | Huntersville | **State:** | North Caroli | **Country :** | USA |

**Originator:** TIM BARRON
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** INTERMIT NO STR ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** JTAYL466 **Phone:** 000 000-0000 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** TIM BARRON **Phone:** 704 400-9384 **Title Cde:** T

**DTCs:**
KOEO:U0131
KOEC:
KOER:

**Comments :**

REPAIR 02/14/2011 04:13PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE
THE CUSTOMER STATES THAT INTERMITTENTLY THERE IS NO STEERING ASSIST. THE TECH HAS ONLY BEEN ABLE TO DUPLICATE THIS CONCERN ONCE. THE TECH STATES THAT HE LET THE VEHICLE IDLE FOR TWENTY MINUTES IN HIS BAY AND WHEN HE RETURNED THE CONCERN WAS PRESENT. THE PSCM DOES FAIL THE NETWORK TEST. THERE ARE CODES U0131 IN THE ABS AND IC MODULES. WHEN THE VEHICLE CAME IN THERE WAS A CONTINUOUS CODE U3000 IN THE PSCM, BUT
THAT CODE CLEARED AND DID NOT RETURN.

**RECOMM 02/14/2011 04:13PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE**

TIM, SUGGEST INSPECTING THE VEHICLE FOR ANY AFTER MARKET EQUIPMENT.
IF THERE IS ANY AFTER MARKET EQUIPMENT PRESENT THEN REMOVE IT FROM THE
VEHICLE. IF THERE IS NO AFTER MARKET EQUIPMENT PRESENT AND THE PSCM
IS NOT COMMUNICATING, THEN SUGGEST PERFORMING A LOAD TEST ON THE POWER
AND GROUND TO THE PSCM. IF THE POWER AND GROUND PROVE OUT THEN CHECK
THE COMMUNICATION CIRCUITS BETWEEN THE PSCM AND DLC FOR ANY OPEN OR
HIGH RESISTANCE ISSUES. INSPECT THE PIN FITS AT THE PSCM FOR ANY LOOSE
OR DAMAGED PINS.

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**From:** Napoli, Laura (L.)
**Sent:** Saturday, January 29, 2011 1:47 PM
**To:** Greg Austin; Gregory Sheets; 'Pat Messer'
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

**Importance:** High

Greg,

The part number for the gear I need is BB53-3200-BE. The dealership is open today until 4. Tomorrow the sales department is there from 1-5, so if the gear can be driven to the dealership tomorrow, the sales department can receive it and get it to the service area so they can begin pulling the gear first thing in the morning. Please let me know how Marion can support expediting this gear.

The dealership is:

I-77 Ford
HC80 Box 71B
(on Route 21 exit 132)
Ripley, WV 25271
(304) 372-2480
http://i77fordmercury.dealerconnection.com/?lang=en

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

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**From:** Jackson, Bradley (B.G.)
**Sent:** Saturday, January 29, 2011 12:36 PM
**To:** Anderson, Eric (H.); Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

note p/s inop claim from w. virginia dealer below.....1st report.

brad

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Saturday, January 29, 2011 11:29 AM
**To:** BJACKSON
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 2 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |

**Originator:** JOHNATHAN FRYE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** POWER STEERING INOP
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**
KOEO:U3000
KOEC:
KOER:

**Comments :**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING IS INOP DIAGNOSTICS: KOEO KOER PINPOINT TEST C1 PARTS REPLACED:: NO AT THIS TIME TECH QUESTION: ANY KNOWN CONCERNS WITH STEERING RACK WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
JONATHAN. INSPECT CONNECTOR PIN FITS TO THE PSCM. WE HAVE SEEN SOME CONCERNS DUE TO SPREAD PINS AT CONNECTOR C139. INSPECT THIS

CONNECTION
USING A FLEX PROBE AND REPAIR/REPLACE ANY LOOSE PINS. PERFORM THE INTERACTIVE DIAGNOSTICS FOR FURTHER ASSISTANCE DIAGNOSING THIS CONCERN. TO PERFORM THE DIAGNOSTICS. CONNECT IDS TO VEHICLE AND GO TO
THE PTS WEB PAGE. OPEN THE ONLINE WORKSHOP MANUAL OPEN SECTION 211-00
AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AL015 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 11/19/2010 |
| **Odometer :** | 1,331 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09568 Stivers Ford Lincoln Mercury | | | **Phone#:** | (515) 987-3697 |
| **City:** | Waukee | **State:** | Iowa | **Country :** | USA |
| **Originator:** | AARON KING | | | | |
| **Symptom:** | 3 01 A 01 CHASS.,SERVICE BRAKE ,INDICATOR,RED ONLY | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | BRAKE LIGHT SPEED CONTROL INOP | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** NGARCI32 **Phone:** 313 248-8202 **Regn Cd:** C4 Kansas City

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** AARON KING **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:C0040
KOEC:
KOER:

**Comments :**

REPAIR 01/28/2011 01:18PM NOEL GARCIA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CRUISE INOP / BRAKE LIGHTS STAY
ON DIAGNOSTICS: RAN OASIS, SELF TESTED PARTS REPLACED::
NONE TECH QUESTION: SEEMS LIKE THERE IS ALOT OF MOVEMENT IN BRAKE
PEDAL, HAVE ANY REPORTS ON THIS? WERE YOU ABLE TO VERIFY THE
CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR
THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 01/28/2011 01:18PM NOEL GARCIA MSS - FCSD - TECH SVC HOTLINE**
HELLO AARON, THE TECHNICAL HOTLINE HAS NOT SEEN ANY SIMILAR REPORTS
FOR ISSUES WITH BRAKE PEDAL MOVEMENT. IT IS RECOMMENDED TO COMPARE
THE BRAKE PEDAL MOVEMENT TO ANOTHER SIMILAR VEHICLE TO VERIFY IF
THIS
IS A NORMAL CHARACTERISTIC. IT IS RECOMMENDED TO FOLLOW DIAGNOSTIC
ROUTINE E IN SECTION 06 OF THE WORKSHOP MANUAL TO BEGIN
DIAGNOSIS. THANK YOU.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Saturday, April 21, 2012 12:06 PM
**To:** Napoli, Laura (L.); Flanagan, Thomas (T.P.); Surella, Matthew (M.M.)
**Cc:** Estes, Eric (E.E.); Farmer, Marty (M.F.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Note EPAS concern in first report below.

Also, you get a feel for what is in the field by seeing the other C200D reports below. This is just from today's CQIS download.

Brad

This email contains 9 report summary(s).

Redacted for Relevance

Redacted for Relevance

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDTEI003 NHL | | | **Received:** | 04/20/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK8F88BG[redacted] | | | **Build Date:** | 04/04/2011 |
| **Odometer :** | 5,096 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00429 Townsend Ford | | | **Phone#:** | (205) 752-0401 |
| **City:** | Tuscaloosa | **State:** | Alabama | **Country :** | USA |
| **Originator:** | TECHNICIAN | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |

**VFG:** V87 STEERING

**Additional Symptom:** LOSS OF STEERING ASSIST

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** TWATERS **Phone:** 313 317-9366 **Regn Cd:** S1 Atlanta

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** **Phone:** **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 04/20/2012 02:33PM TROY WATERS MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:AT TIMES CAR WILL LOOSE POWER STEERING, CAN PULL OVER, TURN CAR OFF AND WHEN START IT BACK THE STEERING IS FINE DIAGNOSTICS: USED IDS, CHECKED AND HAD NO CODES FOR ELECTRIC STEER. PARTS REPLACED:NONE TECH QUESTION:HAVE YOU SEEN THIS PROBLEM WITH ANY OTHER EXPLORERS. DO YOU KNOW WHAT ELSE I CAN CHECK.
THANKS

**RECOMM** **04/20/2012 02:33PM TROY WATERS MSS - FCSD - TECH SVC HOTLINE**
IF THE CONCERN CAN BE DUPLICATED PLEASE PREFORM THE ON DEMAND TEST OF
THE ABS AND PSCM TO BE SURE THERE ARE NO COMMUNICATION CODES STATING A
COMMUNICATION LOSS. IF DTCS ARE RETRIEVED PLEASE PREFORM THE INTERACTIVE DIAGNOSIS LOCATED IN THE WORKSHOP MANUAL 211-00 AND DIAGNOSE ACCORDINGLY. IF NO DTCS ARE FOUND AND AND THE CONCERN IS PRESENT, VERIFY THE POWER AND GROUNDS TO PSCM. IF THESE CIRCUITS PROVE
OUT REPLACE THE STEERING GEAR AND RETEST FOR CORRECT OPERATION.

**ADD-ON** **04/20/2012 02:33PM TROY WATERS MSS - FCSD - TECH SVC HOTLINE**
( CONSULTED KIRK HENDERSON )

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**Attachments :** 0

**Report# :** CDTFB001 NHL **Received:** 04/20/2012

| | | | | | |
|---|---|---|---|---|---|
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK8D87BG[redacted] | | | **Build Date:** | 04/12/2011 |
| **Odometer :** | 14,093 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 03717 Crown Ford, Inc. | | | **Phone#:** | (516) 599-0600 |
| **City:** | Lynbrook | **State:** | New York | **Country :** | USA |

**Originator:** MARK DASCHER
**Symptom:** 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** C200D
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** N1 New York

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MARK DASCHER **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:C1B00 C200D:49
KOEC:
KOER:

**Comments :**

REPAIR 04/20/2012 03:52PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:CUSTOMER STATES WHILE DRIVING LOST STEERING
NEEDED TO TURN OFF AND RESTART TO GET STEERING BACK HAPPENED A FEW TIMES. CUSTOMER ALSO STATES THAT WHILE DRIVING IN MESSAGE CENTER OIL PRESSURE OIL CAME ON DIAGNOSTICS: SCANNED FOR CODES AND RAN OAISIS CONCERNS PARTS REPLACED:NONE TECH QUESTION:THE CONCERN IS NOT PRESENT AT THIS TIME. HAVE YOU HEARD OF THIS CONDITION BEFORE, AND SHOULD I JUST GO AHEAD AND REPLACE THE EPAS RACK

**RECOMM 04/20/2012 03:52PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
MARK, YOU ARE CORRECT TO BELIEVE THAT PSCM REPLACEMENT WILL RESOLVE
THIS CONCERN. PRIOR TO REPLACEMENT OF THE PSCM, RECOMMEND TO VERIFY POWER AND GROUND BY LOAD TEST AS WELL AS INSPECT THE PSCM

CONNECTOR
FOR PROPER PIN FIT OR PUSHED OUT PINS USING FLEX PROBES. IF NO CIRCUIT OR CONNECTOR FAULTS ARE FOUND, REPLACE THE PSCM AND RETEST.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDTEE003 NHL | | | **Received:** | 04/20/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK7F88BG[redacted] | | | **Build Date:** | 03/31/2011 |
| **Odometer :** | 17,819 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04888 Santa Fe Ford, Inc. | | | **Phone#:** | (386) 462-2802 |
| **City:** | Alachua | **State:** | Florida | **Country :** | USA |
| **Originator:** | KEVIN SHICK | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST AND C200D:49 | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JWIBERG5 **Phone:** 313 317-6313 **Regn Cd:** S3 Orlando

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** KEVIN SHICK **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

REPAIR 04/20/2012 02:21PM JAMES WIBERG MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:CUST COMPLAIT OF NO POWER STEERING INTERMITTANTLY. DIAGNOSTICS: EEC TESTS, C-200D ONLY DTC. PERF P.P.TEST B IN STEERING SECTION. PASSES TESTS DID NOT DUPLICATE CONCERN ON ROAD TESTS, DTC DID NOT RESET YET. PARTS REPLACED:NONE

YET TECH QUESTION:CUST HAS BEEN IN THREE TIMES FOR THIS CONCERN( FRONT END TECH HAS BEEN WORKING ON IT), AND HAS NOT FIXED PROBLEM.I HAVE CLEARED DTCS AND I AM PLANNING ON DRIVING UNTIL I GET IT TO ACT UP. I AM WONDERING IF THERE HAVE BEEN ANY SIMILAR REPORTS OF THIS CONCERN?

**RECOMM** **04/20/2012 02:21PM JAMES WIBERG MSS - FCSD - TECH SVC HOTLINE**

KEVIN, THE HOTLINE HAS SEEN SEVERAL REPORTS OF THIS CONDITION WITH 2011 EXPLORERS WHERE THE EPAS LOOSES ASSIST INTERMITTENTLY AND SET A C200D IN THE PSCM. THIS CONDITION IS CAUSED BY A MALFUNCTIONING EPAS GEAR. RECOMMEND TESTING POWER AND GROUND INPUTS TO THE EPAS GEAR AND

INSPECTING CONNECTIONS TO EPAS FOR THE PRESENCE OF CORROSION OR POOR PIN FIT,IF FOUND CORRECT THESE ISSUES FIRST. IF NO CONNECTION ISSUES ARE FOUND AND ALL INPUTS ARE GOOD, REPLACE THE EPAS GEAR AND RE-EVALUATE THE CUSTOMERS CONCERN. ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM

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Redacted for Relevance

Redacted for Relevance

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDTEG008 NHL | | | **Received:** | 04/20/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D8XCG[redacted] | | | **Build Date:** | 09/20/2011 |
| **Odometer :** | 8,586 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 06684 Riggins Motor Company | | | **Phone#:** | (757) 868-6777 |
| **City:** | Poquoson | **State:** | Virginia | **Country :** | USA |
| **Originator:** | LARRY GRAHAM | | | | |
| **Symptom:** | 6 62 0 00 SP/ST/RD,STEER/STER WHL,UNKNOWN,UNKNOWN | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |

**Additional Symptom:** LOSS OF ASSIST

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** JBOALES **Phone:** 000 317-9341 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** LARRY GRAHAM **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:C200D:49 C1B00:86

KOEC:

KOER:

**Comments :**

REPAIR 04/20/2012 03:30PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:CUSTOMER STATES THAT WHILE DRIVING AROUND 25
MPH , LOST POWER STEERING AND POWER STEERING FAULT LIGHT CAME ON AND
SERVICE ADVANCE TRAC LIGHT CAME ON. DIAGNOSTICS: RETRIEVED DTCS
C200D-49 AND C1B00-86. PER FORMED PINPOINT TEST B IN WSM MANUAL FOR
EPAS SYSTEM. TEST RESULTS CONCLUDED THAT EPAS ASSEMBLY WAS AT
FAULT. PARTS REPLACED:NONE TECH QUESTION:CUSTOMER REFUSES TO
DRIVE THE VEHICLE AT THIS POINT...BASED ON OUR TEST FINDINGS THAT THE
EPAS (3504) ASSY IS AT FAULT. ARE WE CORRECT TO ASSUME THAT WE NEED TO
REPLACE THIS UNIT ASSY? HAVE THERE BEEN ANY OTHER REPORTS OF THIS
CONCERN? CUSTOMER STATES HE FOUND A VEHICLE IN CALIFORNIA THAT HAD THE
SAME CONCERN, BUT COULD NOT FIND ANY TEST RESULTS TO BACK REPLACEMENT
OF ANY PARTS). WE HAVE PROVIDED THE CUSTOMER A LOANER VEHICLE. WE
WOULD APPRECIATE INPUT REGARDING THIS CONCERN.

**RECOMM 04/20/2012 03:30PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE**
LARRY, BASED ON THE C200D DTC, YOU ARE CORRECT IN BELIEVING THE
STEERING GEAR IS AT FAULT. IT IS RECOMMENDED THAT YOU REPLACE THE EPAS
STEERING GEAR AT THIS TIME. THERE ARE MULTIPLE REPORTS OF A STEERING
GEAR FAILURE CAUSING THIS CONCERN AND THE C200D DTC. ONCE REPLACED,
RE-EVALUATE THE CONCERN.ISM 11-08-019 LOSS OF POWER STEERING ASSIST
WITH C200D IN PSCM

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDTEG011 NHL | | | **Received:** | 04/20/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D8XCG[redacted] | | | **Build Date:** | 08/01/2011 |
| **Odometer :** | 7,503 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 06633 Cavalier Ford Lincoln | | | **Phone#:** | (757) 424-1111 |
| **City:** | Chesapeake | **State:** | Virginia | **Country :** | USA |
| **Originator:** | STEVE BEASLEY | | | | |
| **Symptom:** | 6 62 3 81 SP/ST/RD,STEER/STER WHL,FEEL/WAN/PULL,RIGHT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | TORQUE STEER | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JBOALES **Phone:** 000 317-9341 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEVE BEASLEY **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 04/20/2012 04:05PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:VEHICLE HAS TORQUE STERRING CONDITION . PULLS
TO RIGHT UNDER MODERATE AND HEAVY ACCELAERATION DIAGNOSTICS: VISUAL
INSP FOR DAMAGE . TIRE PRESSURES OK . NO DAMGE . PRESSURES OK.
INTERMEDIATE AXLE SUPPORT OK . ENGINE MOUNTS OK , FRAME TO BODY MOUNTS
OK . PARTS REPLACED:NONE TECH QUESTION:ARE THERE ANY KNOWN
CONCERNS FOR THIS CONDITION IN THIS MODEL . UPDATED MOUNTS ?

**RECOMM 04/20/2012 04:05PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE**

STEVE, THERE ARE NO UPDATED MOUNTS FOR THIS VEHICLE TO RESOLVE THIS ISSUE. HOWEVER, THERE HAVE BEEN REPORTS OF TORQUE STEER ON THIS VEHICLE. BEGIN BY PERFORMING THE POWERTRAIN/DRIVETRAIN MOUNT NEUTRALIZATION PROCEDURE. THIS PROCEDURE IS FOUND IN SECTION 303-00 OF THE ONLINE WSM. NEXT PERFORM PINPOINT TEST A IN SECTION 204-00 OF THE ONLINE WSM. PERFORM STEPS A1-A4. THIS IS FOR A STEADY STATE DRIFT/PULL CONCERN, BUT ALSO HELPS DIAGNOSE TORQUE STEER ISSUES. MEASURE THE FRONT SUSPENSION ALIGNMENT, ESPECIALLY FRONT CROSS CAMBER (LEFT MINUS RIGHT). IF THE FRONT CROSS CAMBER IS GREATER THAN +.3 DEGREES, ROTATE THE R/F UPPER STRUT MOUNT SO CHANGE THE ADJUSTMENT. THE FINAL CROSS CAMBER SHOULD BE NO LESS THAN -.3 DEGREES. REGARDLESS OF FRONT CROSS CAMBER, ADJUST THE FRONT TOES NEXT. ONCE THE FRONT TOES HAS BEEN ADJUSTED, TEST DRIVE THE VEHICLE.-----ISM 11-11-008 2011-2012 EXPLORER TORQUE STEER

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**Attachments :** 0

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|---|---|---|---|---|---|
| **Report# :** | CDTB4015 NHL | | | **Received:** | 04/20/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D95CG[redacted] | | | **Build Date:** | 09/21/2011 |
| **Odometer :** | 6,751 M | **Engine:** | 2.0L GTDI | **Calibration:** | CUB1F40A |
| **Transmission:** | 6SP 6F MID | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 03381 Marysville Ford | | | **Phone#:** | (360) 659-4000 |
| **City:** | Marysville | **State:** | Washington | **Country :** | USA |
| **Originator:** | CHRIS WILLIAMSON | | | | |
| **Symptom:** | 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST C200D | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JBOALES **Phone:** 000 317-9341 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** CHRIS WILLIAMSON **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:C200D C1B00 U0131
KOEC:
KOER:

**Comments**
**:**

| | |
|---|---|
| REPAIR | 04/20/2012 12:13PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE<br>WEB FORM DATA - CONCERN:CUSTOMER STATES POWER ASSIST WARNING AND LOOSES POWER STEERING ASSIST CUSTOMER STATED IT IS UNSAFE TO DRIVE WHEN THIS HAPPENS. DIAGNOSTICS: RAN PINPOINT TESTS FOR CODES PASSES AT THIS TIME. PARTS REPLACED:NOTHING YET TECH QUESTION:LOOKING FOR ANY KNOWN CONCERNS AT THIS TIME. |
| **RECOMM** | **04/20/2012 12:13PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE**<br>CHRIS, THE C200D DTC INDICATES A STEERING GEAR FAULT. IT IS RECOMMENDED THAT YOU PLACE THE PSCM/EPAS STEERING GEAR AT THIS TIME.<br>CLEAR THE DTCS AND RE-EVALUATE THE CONCERN. ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM |

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Redacted for Relevance

Redacted for Relevance

**From:** Surella, Matthew (M.M.)
**Sent:** Tuesday, July 10, 2012 9:09 AM
**To:** Napoli, Laura (L.); Perri, Ron (R.J.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** FW: Explorer EPAS/ABS Engineering Review at Discovery Ford

Laura,
I forgot to mention yesterday that Transport Canada has identified a complaint vehicle in Burlington, Ontario. The proposal from yesterday's meeting was to send an ABS engineer and an EPAS engineer to this dealership in Canada (4 hour drive). Can you check the code and let us know the details? Ron can then engage the ABS folks once he has a little more info.

Matthew (Matt) Surella
Steering EPAS Supervisor / MBB
313-805-3997

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**From:** Williams, Trevor (T.G.)
**Sent:** Monday, July 09, 2012 2:01 PM
**To:** Surella, Matthew (M.M.)
**Cc:** Setili, Frank (F.E.); Matckars, Vic (V.A.); Hotrum, Erin (E.M.)
**Subject:** Explorer EPAS/ABS Engineering Review at Discovery Ford

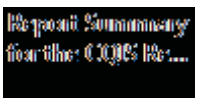
Matt:

Vic Matckars, Ford Canada Technical Service Specialist (FCSD) is the contact for an engineering review of the Transport Canada compliant vehicle that is at Discovery Ford, in Burlington, Ontario.
CDIS ID: VMATCKAR Ford net phone#: 9-1-853-1575

The customer has been in a rental vehicle since last Thursday so please prioritize the visit.

The engineers should be cautioned to state that the purpose of their visit to Canada is to attend a meeting related to a Transport Canada defect investigation. Canada Border Service Agency has been known to deny entry to US employees who's response indicates he/she is working in Canada.

Copy of the CQIS hotline report is attached.




Thanks

*Trevor G. Williams*
Manager, Vehicle Safety
Environment, Energy & Vehicle Safety
Ford of Canada

Canadian Head Quarters Bldg, Office 625
(905) 845-2511, ext 1145
Dial net: 9-1-853-1145
twillia4@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Saturday, January 29, 2011 4:58 PM
**To:** Jackson, Bradley (B.G.); Anderson, Eric (H.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** FW: FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

The gear will be delivered to the dealership Sunday at 1. Sales is open from 1-5 and can receive the gear. I'll call them tomorrow to let them know it's coming.

Then I'll call the service manager Mon to see when he can get the gear to 26 mile.

---

**From:** Pat Messer [mailto:Pat.Messer@TRW.COM]
**Sent:** Saturday, January 29, 2011 4:53 PM
**To:** Napoli, Laura (L.); Greg Austin; Gregory Sheets
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** Re: FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Laura,
We have contracted a courier to deliver this gear to the dealership listed by 1:00 p.m. tomorrow. We will be sending a BB53-3200-BG gear as this is current revision level.

If there are any issues with this, please let us know.

Thank you,

Pat Messer
Plant Manager
TRW - Marion Plant
Office: 276-783-1261
Cell: 276-759-9120
e-mail: pat.messer@trw.com

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 1/29/2011 1:47 PM >>>
Greg,

The part number for the gear I need is BB53-3200-BE. The dealership is open today until 4. Tomorrow the sales department is there from 1-5, so if the gear can be driven to the dealership tomorrow, the sales department can receive it and get it to the service area so they can begin pulling the gear first thing in the morning. Please let me know how Marion can support expediting this gear.

The dealership is:

I-77 Ford
HC80 Box 71B

(on Route 21 exit 132)
Ripley, WV 25271
(304) 372-2480
http://i77fordmercury.dealerconnection.com/?lang=en

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

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**From:** Jackson, Bradley (B.G.)
**Sent:** Saturday, January 29, 2011 12:36 PM
**To:** Anderson, Eric (H.); Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

note p/s inop claim from w. virginia dealer below.....1st report.

brad

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Saturday, January 29, 2011 11:29 AM
**To:** BJACKSON
**Subject:** 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 2 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |
| **Originator:** | JOHNATHAN FRYE | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional** | POWER STEERING INOP | | | | |

**Symptom:**

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**

KOEO:U3000

KOEC:

KOER:

**Comments :**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING IS INOP DIAGNOSTICS: KOEO KOER PINPOINT TEST C1 PARTS REPLACED:: NO AT THIS TIME TECH QUESTION: ANY KNOWN CONCERNS WITH STEERING RACK WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
JONATHAN. INSPECT CONNECTOR PIN FITS TO THE PSCM. WE HAVE SEEN SOME CONCERNS DUE TO SPREAD PINS AT CONNECTOR C139. INSPECT THIS CONNECTION
USING A FLEX PROBE AND REPAIR/REPLACE ANY LOOSE PINS. PERFORM THE INTERACTIVE DIAGNOSTICS FOR FURTHER ASSISTANCE DIAGNOSING THIS CONCERN. TO PERFORM THE DIAGNOSTICS. CONNECT IDS TO VEHICLE AND GO TO
THE PTS WEB PAGE. OPEN THE ONLINE WORKSHOP MANUAL OPEN SECTION 211-00
AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

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**Attachments :** 0

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|---|---|---|---|---|---|
| **Report# :** | BA2AL015 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 11/19/2010 |
| **Odometer :** | 1,331 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 09568 Stivers Ford Lincoln Mercury | | | **Phone#:** | (515) 987-3697 |
| **City:** | Waukee | **State:** | Iowa | **Country :** | USA |
| **Originator:** | AARON KING | | | | |
| **Symptom:** | 3 01 A 01 CHASS.,SERVICE BRAKE ,INDICATOR,RED ONLY | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | BRAKE LIGHT SPEED CONTROL INOP | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** NGARCI32 **Phone:** 313 248-8202 **Regn Cd:** C4 Kansas City

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** AARON KING **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:C0040

KOEC:

KOER:

**Comments :**

REPAIR 01/28/2011 01:18PM NOEL GARCIA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CRUISE INOP / BRAKE LIGHTS STAY
ON DIAGNOSTICS: RAN OASIS, SELF TESTED PARTS REPLACED::
NONE TECH QUESTION: SEEMS LIKE THERE IS ALOT OF MOVEMENT IN BRAKE PEDAL, HAVE ANY REPORTS ON THIS? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 01/28/2011 01:18PM NOEL GARCIA MSS - FCSD - TECH SVC HOTLINE**
HELLO AARON, THE TECHNICAL HOTLINE HAS NOT SEEN ANY SIMILAR REPORTS FOR ISSUES WITH BRAKE PEDAL MOVEMENT. IT IS RECOMMENDED TO COMPARE THE BRAKE PEDAL MOVEMENT TO ANOTHER SIMILAR VEHICLE TO VERIFY IF THIS
IS A NORMAL CHARACTERISTIC. IT IS RECOMMENDED TO FOLLOW DIAGNOSTIC ROUTINE E IN SECTION 06 OF THE WORKSHOP MANUAL TO BEGIN DIAGNOSIS. THANK YOU.

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, May 24, 2011 11:34 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Good summary from Eric Anderson on our recent claims...

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, May 24, 2011 10:50 AM
**To:** Buelow, Steve (S.E.)
**Cc:** Napoli, Laura (L.)
**Subject:** FW: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Hi Steve:

FYI. V87 is working on all the ECB and CQIS for EPAS. Here's an update on the recently received CQIS claims:

BGA36413 build date 3/3/11 no DTC codes, wiring problem probable
BGA27891 build date 2/18/11 C1B00, U0131 indicate wiring problem
BGA61636 build date 5/3/11 U0131 and tech interview indicate wiring problem
BGA64725 build date 5/9/11 C1B00 and U0131 codes indicate wiring problem
BGA15758 build date 1/19/11 C200D is a known and cut-off internal EPAS problem

Thanks,

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, May 24, 2011 9:40 AM
**To:** Annadi, Hari (H.); Mrozek, Robert (R.M.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Eric A,

Can you please make sure Steve is aware that we're working on all EPAS claims and the new findings is that we have a new wiring problem?

---

**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:54 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Steve Beulow.

Pl read stapled note. Thanks.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, May 24, 2011 7:47 AM
**To:** Annadi, Hari (H.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Who is the plant FCSD person?

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:45 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Understood. I did have a conversation with Laura about this yesterday. We need to communicate this to the FCSD rep in the plant so he does not open an Emerging concern with Chassis as the lead function. I am sure your team will be supporting Electrical to root cause.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, May 24, 2011 7:40 AM
**To:** Annadi, Hari (H.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

We get all these CQIS reports. Intermittent is typically an electrical issue and not related to EPAS. We design EPAS not to deliver assist intermittently. Due to severity of intermittent assist, we will completely pull assist. So this is likely a wiring/connection/grounding issue.

Laura is working with PVT on this one.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:34 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

CQIS for intermittent loss of assist.

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BETBK025 NHL | | | **Received:** | 05/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B8XBG[redacted] | | | **Build Date:** | 03/03/2011 |
| **Odometer :** | 2,947 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08305 Evergreen Ford | | | **Phone#:** | (425) 392-6900 |
| **City:** | Issaquah | **State:** | Washington | **Country :** | USA |
| **Originator:** | JASON DESCHAMBAULT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | INT. LOSS OF STEERING | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** MHINDERE **Phone:** 000 337-9292 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JASON DESCHAMBAULT **Phone:** 425 392-6900 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

REPAIR 05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUSTOMER LOST STEERING ASSIST AT 35 MPH, DIDNT RETURN UNTILL ENGINE SHUT OFF AND RETSTARTED. DIAGNOSTICS:

CHECKED OASIS, CHECKED FOR DTCS PASS. PARTS REPLACED:: NONE TECH QUESTION: ROAD TESTED, UNABLE TO VERIFY CONCERN. ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM** **05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**

JASON, TO ACTIVATE THE EPAS SYSTEM, A 12-VOLT HOT AT ALL TIMES AND A 12-VOLT IGNITION/RUN INPUT TO THE PSCM IS REQUIRED. THE PSCM THEN MONITORS THE HS-CAN TO DETERMINE IF THE VEHICLE IS OPERATING IN A MANNER CAPABLE OF SUPPORTING THE EPAS SYSTEM. THE PSCM USES INPUTS FROM VARIOUS MODULES OVER THE HS-CAN, THE STEERING TORQUE SENSOR AND

THE MOTOR TO DETERMINE THE AMOUNT OR LEVEL OF ASSIST PROVIDED BY THE

EPAS SYSTEM. INSPECT PINFIT AND CONNECTION AT THE PSCM. VERIFY THERE ARE NO CONCERNS WITH A LOSS OF POWER TO THE PSCM. GIVEN THE CONCERN IS INTERMITTENT, A CONNECTION CONCERN IS POSSIBLE.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Monday, August 22, 2011 9:26 AM
**To:** Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Buelow, Steve (S.E.); Mrozek, Robert (R.M.)
**Subject:** FW: Steering wheel lock up - 2011 Explorer

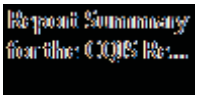
Per CQIS report below, there is a Ford employee's vehicle that has a C200D flagged on a 23 February 2011 build. This may be a good opportunity to see customer's vehicle before gear replacement. Also note the dealer states the employee will not take the U502 back because of this condition.

Brad

---

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, August 22, 2011 8:18 AM
**To:** Jackson, Bradley (B.G.)
**Subject:** FW: Steering wheel lock up - 2011 Explorer

Per our brief discussion.




*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com

"Quality means doing it right when no one is looking." - Henry Ford

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**From:** Buckman, Lynne (L.A.)
**Sent:** Monday, August 22, 2011 7:48 AM
**To:** Buelow, Steve (S.E.)
**Cc:** Buckman, Lynne (L.A.)
**Subject:** Steering wheel lock up - 2011 Explorer

Hi Steve

Here is the VIN # 1FMHK8D89BG[redacted] for the vehicle we discussed this morning.

Thanks

Lynne

PRIVILEGED AND CONFIDENTIAL

*Lynne Buckman*
*Executive Liaison - CCGO*
*Phone - 313-845-6232*
*Fax - 866-626-8586*
*lbuckman@ford.com*

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, August 22, 2011 9:10 AM
**To:** Buelow, Steve (S.E.)
**Subject:** Report Summary for the CQIS Report#BHPD7005

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BHPD7005 NHL | | | **Received:** | 08/16/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK8D89BG[redacted] | | | **Build Date:** | 02/23/2011 |
| **Odometer :** | 9,708 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02890 Russ Milne Ford, Inc. | | | **Phone#:** | (586) 948-7700 |
| **City:** | Macomb | **State:** | Michigan | **Country :** | USA |

**Originator:** JOHN BARBIAN
**Symptom:** 2 27 2 68 AID/INFO,WNG IND/MESS/C,ADV TRAC,STAYS ON
**Status:**
**VFG:** V21 BRAKING
**Additional Symptom:** ABS AND T/C LIGHTS ON
**Fix:** **Causal Component :**
**Condition Code:**

**Hotliner:** MABELA3 **Phone:** 000 248-9263 **Regn Cd:** G2 Detroit
**Engineering:** **Phone:** **TAR:**
**Dlr Contact:** JOHN BARBIAN **Phone:** 586 948-2572 **Title Cde:** SF

**DTCs:**
KOEO:C1B00:86-28 C200D:49-08
KOEC:
KOER:

**Comments :**

REPAIR 08/16/2011 12:22PM MATT ABELA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: ABS LIGHT AND TRAC CONTROL LIGHT CAME ON WHILE DRIVING AND STEERING WOULD NOT TURN ONLY WOULD TURN MAYBE 20

DEGREES ALSO MESSAGE CENTER CAME UP WITH WARNING FOR 4X4
SYSTEM DIAGNOSTICS: RETRIEVED CODES C1B00 86-28 ABS & C200D 49-08
PSCM PARTS REPLACED:: NONE YET TECH QUESTION: FOLLOWED
PINPOINT TEST PERFORMED TEST B3 TEST DRIVE AND RECHECKED NO CODES
RETURNED PER PPT RETURN VEHICLE TO CUST. CUST VERY WORRIED ABOUT
CONCERN STATED WAS UNABLE TO STEER VEHICLE BUT APPROX 20 DEG EITHER
WAY WE COULD NOT DUPLICATE THIS COMPLAINT ARE THERE ANY OTHER KNOWN
CONCERNS OR SUGGESTIONS OTHER THAN RETURNING VEHICLE BACK TO OWNER
THANKS JOHN

**RECOMM 08/16/2011 12:22PM MATT ABELA MSS - FCSD - TECH SVC HOTLINE**

JOHN, IF YOU HAVE PERFORMED THE DRIVE CYCLE IN PINPOINT TEST B, STEP
B3, AND THE CONCERN HAS NOT RECURRED, THIS SET OF DTC'S AND SYMPTOM
MAY HAVE OCCURRED DUE TO IMPACT WITH A LARGE POTHOLE OR A CURB. LOOK
FOR POSSIBLE RASH ON THE SIDEWALLS OF THE RIMS AND OR TIRES. IF NO
CONCERNS ARE NOTED AND IF PINPOINT TEST B HAS PASSED, NO FURTHER
SERVICE ACTION IS ADVISED - PLEASE RELEASE THE VEHICLE TO YOUR
CUSTOMER.

**REPAIR 08/16/2011 05:26PM IONET PUSTA MSS - FCSD - TECH SVC HOTLINE**

TECHNICIAN REPLY: CUST WILL NOT ACCEPT VEHICLE BACK IN CURRENT
CONDITION WILL NOT RETUR RENTAL CAR HE WORKS AT FOMOCO & DOES NOT
ACCEPT DIAGNOSIS ANY SUGGESTIONS

**RECOMM 08/16/2011 05:26PM IONET PUSTA MSS - FCSD - TECH SVC HOTLINE**

HELLO JOHN, TO BETTER ASSIST YOU ON THIS WARRANTY RELATED QUESTION,
THE TECHNICAL SERVICE HOTLINE RECOMMENDS THAT YOU REFER TO THE
DEALERSHIP WARRANTY ADMINISTRATOR, THE WARRANTY AND POLICY MANUAL, OR
YOU MAY CONTACT THE WARRANTY ASSISTANCE CENTER DIRECTLY AT
1-800-423-8851, FOR ADDITIONAL ASSISTANCE WITH THE CUSTOMER HANDLING.

**From:** Keinath, Wayne (W.)
**Sent:** Friday, April 13, 2012 9:41 AM
**To:** Flanagan, Thomas (T.P.)
**Subject:** FW: U502 EPAS gear C200D with 15 February 2012 build date

Tom:

Since you mentioned you were replacing Laura, I thought you should see this claims and request. Thanks.

Regards:

*Wayne Keinath*

**CAP VE/Chass/Elec PVT Supervisor**
(773) 646-7372 or (313) 805-3771
Fax (773) 646-7377

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, April 13, 2012 8:38 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Cassata, Joe (J.)
**Cc:** Surella, Matthew (M.M.); Farmer, Marty (M.F.); Keinath, Wayne (W.)
**Subject:** U502 EPAS gear C200D with 15 February 2012 build date

Laura / Eric, hope somebody jumps on this 2013MY U502 gear. I did submit PEARS 190861 just to be safe. If you have already requested, then that's fine too.

Joe, please have the dealer ship this out quickly. This one is hot.

# Claim Detail Report

**Vehicle Information** **Claim Information**

Model Year: 2013 Document Number: 01254501
Market Derived: F - FORD Repair Date: 03-APR-2012
Body/Cab Type: T/WD - 4 DOOR WAGON Distance: 1264
Version/Series: T/EF-FORD SERIES TIS: 1
Drive Type: T/F-4 WHL L/H FULL TIME DRIVE AWS Load Date: 12-APR-2012
Vehicle Line: T/UB-EXPLORER [11-13]
Warranty Start Date: 30-MAR-2012
Production Date: 15-FEB-2012
VIN: 1FM5K8F80DG[redacted]

**Expense Information**

**Dealer Information**

Customer Paid Amount: .00
Dealer Name COUNTRYSIDE FORD OF CLEARWATER Deductible Amount: .00
Dealer Code: 08183 - * Dealer Paid Amount: .00
Address: 24825 U.S. HWY 19 NORTH Labor Cost: 202.00
City: CLEARWATER Misc. Expense Amount: .00
State: FL Zip Code:33763 Part Markup Amount: .00

Country: USA Region Code: NA Material Cost: 1696.25
Phone: (727)793-6222 Total Cost Gross: 1898.25

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Cust. Concern Code: C50 - OTHER STEERING/HANDLING AND RIDE TROUBLES
Condition Code: 42 - DOES NOT OPERATE PROPERLY
Technician Comment: VERIFIED COMPLAINT.PREFORMED SELF TEST ON PSCM.DTCU3000 96,C200D 49.PREFORMED PINPOINT TEST C .TEST RESULTS REPLACE STEERING GEAR.INSTALLED NEW EPAS STEERING GEAR AS PER WSM.MEASURE AND RESET ALGINMENT ANGLES TO SPECS.RECHECKED OK
Customer Comment: CUST STATES THAT POWER STEERING IS NOT ASSISTING...

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| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504A | STEERING GEAR ASSEMBLY REMOVE AND INSTALL OR REPLACE | 146.91 |
| 3001A | CASTER, CAMBER, TOE-IN CHECK | 36.73 |
| 3001A6F | TOE-IN CORRECT | 18.36 |

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| Causal Flag | PREF | Full Part Number BASE | SUFF | Part Description | Part CPSC | Extended Quantity | Amount |
|---|---|---|---|---|---|---|---|
| Y | DB5Z | 3504 | CE | GEAR ASY-STEERING | 110101 | 1 | 1696.25 |

---

**DTC Sections:** **Mil. Light On =** N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | KOEO | C200D | | | |
| N | KOEO | U3000 | CONTROL MODULE | 48 | HYBRID |

Regards,
Brad Jackson

Chassis Resident Engineer
Chicago Assembly Plant
Ford Motor Company
Phone: +1.313.805.4798
bjackson@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Thursday, February 24, 2011 8:55 AM
**To:** 'Rob Kostadina'; 'Jim Loria'; 'Shafqat Bhatti'
**Subject:** FW: UR0003(BD0,BD2,BD4)- Bent torque sensor finger

Keep this in mind from U502 2011 warranty when analyzing the gear that was picked up last night. May be the same root cause…?

---

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, February 23, 2011 12:50 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Snider, Tim (T.O.); Bahena, Miguel (Mike.)
**Subject:** UR0003(BD0,BD2,BD4)- Bent torque sensor finger

We have found one bent torque sensor finger similar to the other returns(see attached pic's)

IPA should arrive at Rogersville today for analysis.

At this time Rogersville sent two people to inspect 3,500 IPA's in stock at the Marion Plant before assembly and Rogersville they are inspecting 5K IPA's before shipping to Marion. At this time have not found any bent fingers at this time.

Apparently all IPA's for U502 use line 2 and now Rogersville is trying to find the cause of the bent finger at this time since we are making all the changes to line 1 for a bent finger since all the bent finger returns came off line 1 and this is the first bent finger that came off of line 2.

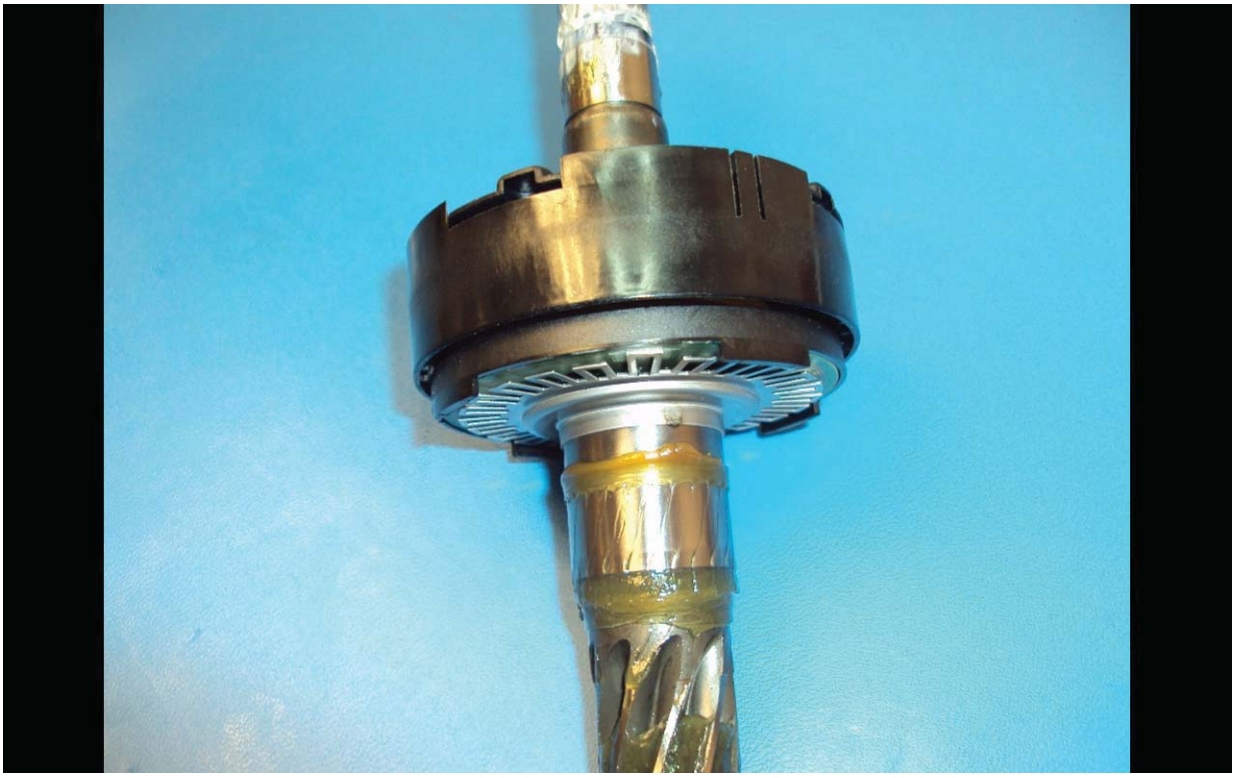
The EOL operator at Rogersville was the only one inspecting for bent fingers on line 2 and missed this one.

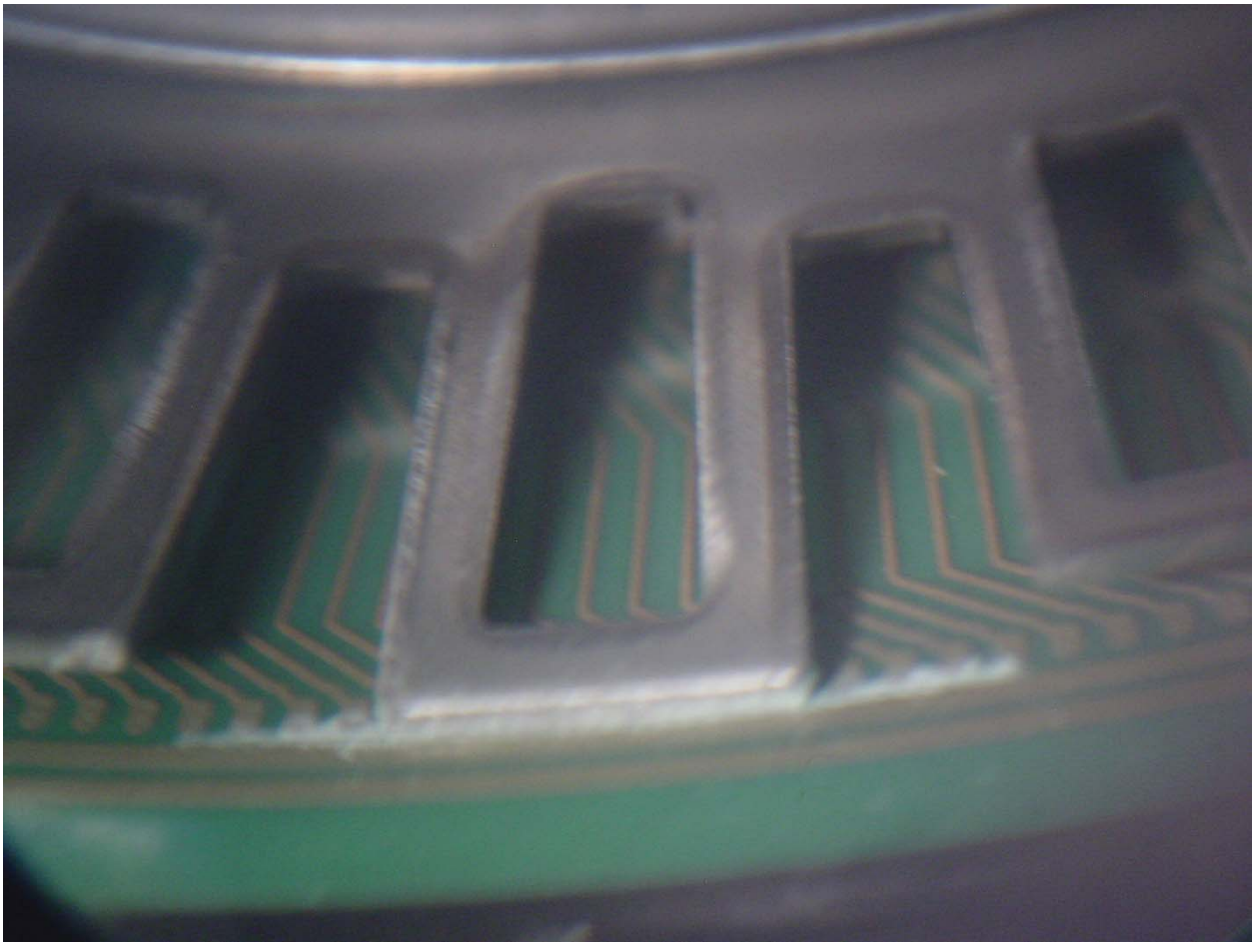
So the containment at this time is 100% offline inspection at Rogersville and 100% inspection at Marion before assembly into the gear.

Should have more updates on the corrective action by Friday.

Let me know if you have any questions, thanks

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493





**From:** Anderson, Eric (H.)
**Sent:** Thursday, January 13, 2011 10:27 AM
**To:** Bahena, Miguel (Mike.)
**Subject:** FW: 2011 Exp - BGA10846 - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Hi Mike:

CAP just received this CQIS claim about an inoperative EPAS gear. Do you have any idea what could be wrong with it based on the hotline conversation below?

Thanks,

Eric Anderson

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, January 13, 2011 8:22 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Holland, James (J.P.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BGA10846 - Loss of power steering, lamp on, 18 mi, BD 12/16/10


***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com

"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, January 13, 2011 8:15 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BALEI002 NHL | | | **Received:** | 01/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 12/16/2010 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09618 Brown Motors, Inc. | | | **Phone#:** | (231! ! ) 439-9604 |
| **City:** | Petoskey | **State:** | Michigan | **Country :** | USA |
| **Originator:** | JIM MILBRANDT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF POWER STEERING | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** DMU! ! RRA86 **Phone:** 313 248-8233 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JIM MILBRANDT **Phone:** 231 439-3673 **Title Cde:** T

**DTCs:**
KOEO:U0253 U2011
KOEC:
KOER:

**Comments :**

REPAIR 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES WHEN ON TEST DRIVE THE POWER

STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS: PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM IN MEMORY PARTS REPLACED:: NONE TECH QUESTION: ANY REPORTS FOR THIS CONCERN? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE**

JIM, IT IS RECOMMENDED TO GO TO THE WSM SECTION 211-00/DIAGNOSIS AND TESTING/DTC AND SYMPTOM CHARTS/INTERACTIVE DIAGNOSTICS AND GO TO

THE INTERACTIVE DIAGNOSTICS SECTION. FROM THERE, GO TO THE DTC LIST AND LOOK UP U2011. THIS IS A MOTOR CODE AND THERE ARE 2 DIFFERENT PPT TESTS DEPENDING ON WHICH BITMAP CODE YOU HAVE. THIS CODE INDICATES THAT THE PSCM HAS SEEN A MOTOR ISSUE AND WILL SHUT DOWN THE POWER ASSIST FUNCTION. PLEASE TRY TO DUPLICATE THE CONCERN AND IF CODE U2011 SETS, PERFORM THE APPROPRIATE CHART. THERE ARE NO COMMON TRENDS FOR THIS CONCERN. THANK YOU.

**From:** Flanagan, Thomas (T.P.)
**Sent:** Thursday, July 19, 2012 7:18 AM
**To:** Surella, Matthew (M.M.)
**Cc:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Matt,

4 C200D U502's yesterday.

Tom Flanagan
Ford Motor Company
CD3, D3 EPAS Steering Engineering
PDC 2B-K24
(313) 845-4062
Cell (313) 815-6885

**From:** SBUELOW
**Sent:** Thursday, July 19, 2012 2:49 AM
**To:** TFLANAG1
**Subject:** 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 11 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CGRD1005 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK8F82BG[redacted] | | | **Build Date:** | 04/25/2011 |
| **Odometer :** | 21,939 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00693 Romano Ford | | | **Phone#:** | (315) 637-4668 |
| **City:** | Fayetteville | **State:** | New York | **Country :** | USA |
| **Originator:** | WARREN JONES | | | | |
| **Symptom:** | 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | C200D49 | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** NHARRIER **Phone:** 313 317-9290 **Regn Cd:** N1 New York

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** WARREN JONES **Phone:** 315 637-4668 **Title Cde:** T

**DTCs:**
KOEO:C1B00:85 C200D:49
KOEC:
KOER:

**Comments :**

REPAIR 07/18/2012 10:55AM NATHAN HARRIER MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN:LOSS OF STEARING ASSIST DIAGNOSTICS: MONITORED PIDS DTCS PARTS REPLACED:REPLACES SCCM/ANGLE SENSOR TOOK CARE OF 1 CODE TECH QUESTION:STILL GETTING C200D BOOK SAYS TO REPLACE STEARING GEAR?

**RECOMM** **07/18/2012 10:55AM NATHAN HARRIER MSS - FCSD - TECH SVC HOTLINE** WARREN, BASED ON DTC C220D-49 SUSPECT A EPASS RACK CAUSING THIS CONCERN. PLEASE ENSURE THAT NO BATTERY OR CHARGING SYSTEM FAULTS EXISTS AS THIS CAN CAUSE A LACK OF ASSISTS. IF A CHARGING OR BATTERY ISSUE EXISTS FURTHER DIAGNOSE USING SECTION 414-00 IN THE ONLINE WORKSHOP MANUAL. IF NO BATTERY OR CHARGING SYSTEM FAULTS EXISTS REPLACE THE EPASS RACK (PSCM) PER WORKSHOP MANUAL SECTION 211-00 IN THE ONLINE WORKSHOP MANUAL AND REEVALUATE THE CONCERN. IF FURTHER ASSISTANCE IS NEEDED FEEL FREE TO CONTACT US AGAIN. THANK YOU ==========
ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CGRD9008 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D83CG[redacted] | | | **Build Date:** | 10/14/2011 |
| **Odometer :** | 12,391 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00025 Preston Ford Lincoln | | | **Phone#:** | (410) 673-7171 |

**City:** Hurlock **State:** Maryland **Country :** USA
**Originator:** ROB LYNCH
**Symptom:** 6 62 4 38 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INOPERATIVE
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** C200D
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** N4 Washington
**Engineering:** **Phone:** **TAR:**
**Dlr Contact:** ROB LYNCH **Phone:** 410 673-7171 **Title Cde:** T

**DTCs:**
KOEO:C200D:49 C1B00:86
KOEC:
KOER:

**Comments :**

REPAIR 07/18/2012 11:48AM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:CUSTOMER STATED VEHICLE LOST STEERING AND SERVICE TRAC LAMP CAME ON WORKING NOW BUT HAD CODES C1B00:86 IN ABS MODULE PINPOINT TEST REFERS YOU TO GO TO PSCM AND FIX ANY CODES THERE
PSCM HAS CODE C200D:49 THERE IS NO TEST STATES TO REPLACE STEERING GEAR ASSEMBLY DIAGNOSTICS: WROTE IT IN VEHICLE CONCERN AREA
SERVICE MANAGER WANTED ME TO CONTACT TECHNICAL SUPPORT BECAUSE CUSTOMER HAS BEEN ONLINE AND READ ABOUT THIS BEING A CONCERN WITH MULTIPLE VEHICLES AND WANTS TO MAKE SURE EVERY EFFORT IS MADE TO PROPERLY FIX THIS VEHICLE IS THERE ANY UPDATED REPAIRS PARTS REPLACED:NONE TECH QUESTION:SERVICE MANUAL STATES REPLACE STEERING GEAR IS THERE ANY THING ELSE THAT SHOULD BE DONE OR ANY UPDATED PARTS

**RECOMM 07/18/2012 11:48AM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
ROBERT, YOU ARE CORRECT THAT PSCM (STEERING GEAR) REPLACEMENT IS NECESSARY TO RESOLVE THIS CONCERN. ENGINEERING HAS DETERMINED THAT THE
PSCM IS THE CAUSE OF THIS CONCERN AND REPLACE IS NECESSARY WITH THESE DTCS AND SYMPTOM. PLEASE CONTINUE WITH REPLACEMENT OF THE PSCM AT THIS

TIME.

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**Attachments :** 0

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|---|---|---|---|---|---|
| **Report# :** | CGRGP010 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | S | **Reviewed Status:** | | **Date:** | 07/18/2012 |
| **Vehicle:** | 2012,EXPLORER 4X2 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK7F80CG[redacted] | | | **Build Date:** | 09/12/2011 |
| **Odometer :** | 14,615 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02750 Avis Ford, Inc. | | | **Phone#:** | (800) 358-2778 |
| **City:** | Southfield | **State:** | Michigan | **Country :** | USA |
| **Originator:** | SHAWN ALDRICH | | | | |
| **Symptom:** | 6 60 3 40 SP/ST/RD,STOPPING,PEDAL,LONG TRAVEL | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | BRAKE PEDAL DROPS TO FLOOR | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** WWHITTI1 **Phone:** 313 317-6304 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHAWN ALDRICH **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 07/18/2012 05:20PM WESLEY WHITTINGTON MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN:WHILE CREEPING AT IDLE FOOT RESTING ON THE BRAKE PEDAL WITH VERY LITTLE BRAKE APPLIED, PEDAL WILL FALL TO THE FLOOR AND UNABLE TO STOP THE VEHICLE ONCE THIS OCCURS. UNLESS YOU TAKE
YOUR FOOT OFF THE PEDAL AND REAPPLY THE BRAKES. DIAGNOSTICS: CHECK

FOR LEAKS NONE. NOT LOW ON FLUID. VEHICLE STOPS FINE AT HIGH SPEEDS, PROBLEM ONLY HAPPENS WHILE CREEPING AT A LIGHT, HEAVY TRAFFIC, IN PRAKING LOTS. UNDER 5 MPH. PARTS REPLACED:NONE. TECH QUESTION:ANY KNOWN ISSUES AND/OR AREAS TO CHECK FOR POSSABLE CAUSES.

**RECOMM** **07/18/2012 05:20PM WESLEY WHITTINGTON MSS - FCSD - TECH SVC HOTLINE**
SHAWN, IT IS RECOMMENDED TO ATTEMPT TO DUPLICATE THE CONCERN WHILE THE VEHICLE IS STATIONARY BY SLOWLY APPLYING THE BRAKE PEDAL. ONCE WITH THE ENGINE RUNNING AND AGAIN WITH THE ENGINE OFF AND THE BOOSTER
RELIEVED OF THE VACUUM. IF THE CONCERN CAN BE DUPLICATE WITH THE ENGINE OFF AND BOOSTER WITH NO VACUUM, SUSPECT A MASTER CYLINDER BYPASS ISSUE. AT THIS POINT DISCONNECT THE MASTER CYLINDER OUTPUT LINES AND PLUG THE PORTS ON THE MASTER CYLINDER. APPLY FIRM BRAKE PRESSURE AND MONITOR FOR A DROPPING PEDAL. IF THE PEDAL FEELS FIRM PERFORM THE SAME TEST ON THE HCU AND MONITOR FOR A DROP IN PEDAL. IF THE PEDAL DROPS SUSPECT A HCU BYPASS CONDITION. BRAKE BOOSTER AND MASTER CYLINDER COMPONENT TESTS CAN BE FOUND IN SECTION 206-00.

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**Attachments :** 5

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CGRBR004 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK7D87BG[redacted] | | | **Build Date:** | 06/07/2011 |
| **Odometer :** | 12,196 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 03990 Morris Ford, Inc. | | | **Phone#:** | (518) 399-9188 |
| **City:** | Burnt Hills | **State:** | New York | **Country :** | USA |
| **Originator:** | MATTHEW GURDINEER | | | | |
| **Symptom:** | 6 62 2 03 SP/ST/RD,STEER/STER WHL,APPEAR/CLEAR,APPEARANCE | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | STEERIGN WHEEL SWITCHES LOOSE | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** GSTAVROP **Phone:** 000 317-4877 **Regn Cd:** N1 New York

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MATTHEW GURDINEER **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments**
**:**

REPAIR 07/18/2012 09:07AM GEORGE STAVROPOULUS MSS - FCSD - TECH SVC HOTLINE
DATA FROM PRIOR APPROVAL REQUEST FORM: PLEASE DESCRIBE CUSTOMERS CONCERN.CUSTOMER STATES STEERING WHEEL BUTTONS ON RIGHT SIDE FELL INSIDE STEERING WHEEL WHAT IS THE INTENDED REPAIR, LIST ALL COMPONENTS NEEDED FOR REPAIR?REPLACEMENT PROVIDE ANY ADDITIONAL DETAILS NECESSARY.
PLEASE INCLUDE ANY AVAILABLE TECHNICAL
INFORMATION THAT YOU BELIEVE WILL HELP
PROCESS YOUR PRIOR APPROVAL
REQUEST.NONE REPAIR ESTIMATE - LABOR: REPAIR ESTIMATE -
TOTAL: VEHICLE/COMPONENT ABUSE: MODIFICATIONS: LACK OF
MAINTENANCE: RO#: 287525RO DATE:2012-07-18WARRANTY TYPE:NEW VEHICLE
WARRANTY SPW MILEAGE: SPW INSTALL DATE:

**RECOMM 07/18/2012 09:07AM GEORGE STAVROPOULUS MSS - FCSD - TECH SVC HOTLINE**
MATT,
WITH COMMENTS PROVIDED IT'S NOT CLEAR WHAT NEEDS
REPLACEMENT? STEERING WHEEL SWITCHES ARE AVAILABLE FOR THIS STEERING WHEEL AND DO NOT REQUIRE OUR PRIOR APPROVALS. IF STEERING WHEEL NEEDS REPLACEMENT PLEASE CLARIFY WHY?
SWITCH PART NUMBERS ARE
BT4Z-9C888-AB LEFT SIDE / BT4Z-9C888-CA RIGHT SIDE

FUTURE
CLAIM SUBMISSIONS SHOULD INCLUDE IMAGES THAT ARE RIGHT SIDE UP. PROVIDING IMAGES RIGHT SIDE UP WILL HELP IMPROVE HANDLING TIME AND REDUCE CLARIFICATIONS.

PLEASE REFER TO THE 2012 INTERIOR /
EXTERIOR PRIOR APPROVAL PROGRAM COVERED COMPONENT LIST AND BEST PRACTICE INSTRUCTIONS ON PRIOR APPROVAL SUBMISSIONS SUBMISSIONS.

<="" td="">
HREF=HTTP://WWW.FMCDEALER.DEALERCONNECTION.COM/SITES/FORD_LM/EDC/JUL2012/DOCUMENTS/IEPA%20BEST%20PRACTICE_FINAL.PDF TARGET=_BLANK>FCSD TECHNICAL SERVICE HOTLINE 2012 INTERIOR / EXTERIOR PRIOR APPROVAL PROGRAM REQUEST AND IMAGE SUBMISSION BEST PRACTICE JOB AID

<="" td="">
HREF=HTTP://WWW.FMCDEALER.DEALERCONNECTION.COM/SITES/FORD_LM/EDC/JUL2012/DOCUMENTS/UPDATED%20US%202012%20IEPA%20COVERED%20COMPONENTS_JULY_%0FINAL.PDF TARGET=_BLANK> U.S. DEALERS - 2012 INTERIOR/EXTERIOR PRIOR APPROVAL PROGRAM COMPONENT LIST

DIPA PRIOR APPROVAL
NOT NECESSARY

**REPAIR** **07/18/2012 01:26PM GEORGE STAVROPOULUS MSS - FCSD - TECH SVC HOTLINE**
TABS FOR RIGHT SIDE SWITCHES ON SILVER COVER BROKEN

**RECOMM 07/18/2012 01:26PM GEORGE STAVROPOULUS MSS - FCSD - TECH SVC HOTLINE**
MATT,
THANK YOU FOR THE DIAGNOSTIC INFORMATION.
BASED ON
INFORMATION AND IMAGES PROVIDED, CLAIM REQUEST IS APPROVED TO REPLACE THE STEERING WHEEL (PART #:3600 STEERING WHEEL ASSY) TO CORRECT LOOSE SWITCHES DUE TO BROKEN MOUNT TABS WITHIN STEERING WHEEL. DIPA APPROVED APPROVAL CODE: PAAYS

**REPAIR** **07/18/2012 02:51PM GARY BUSH MSS - FCSD - TECH SVC HOTLINE**
THANK YOU SORRY ABOUT THE PICTURES BEING UPSIDE DOWN, MY IPHONE FLIPPED THEM OVER.

**RECOMM 07/18/2012 02:51PM GARY BUSH MSS - FCSD - TECH SVC HOTLINE**
YOU ARE WELCOME. IMAGES ARE CLEAR SO WE WERE ABLE TO WORK WITH THEM. DIPA APPROVED APPROVAL CODE: PAAYS

Please click on the link below to view the attachments associated with this report
https://www.gcqis.dealerconnection.com/gcqis/asp/DIViewAttachment_Mainx.asp?ReportNumber=CGRBR004

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Redacted for Relevance

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**Attachments :** 0

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|---|---|---|---|---|---|
| **Report# :** | CGRB8002 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X4 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK8D84CG[redacted] | | | **Build Date:** | 10/27/2011 |
| **Odometer :** | 9,235 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 07392 Salem Ford | | | **Phone#:** | (603) 898-9766 |
| **City:** | Salem | **State:** | New Hampshir | **Country :** | USA |

**Originator:** ERIC DEBISZ
**Symptom:** 6 62 4 39 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INTERMITTENT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** LACK OF ASSIST C200D
**Fix:** **Causal Component :** --
**Condition Code:**

| | | | | | |
|---|---|---|---|---|---|
| **Hotliner:** | WWHITTI1 | **Phone:** | 313 317-6304 | **Regn Cd:** | N2 Boston |
| **Engineering:** | | **Phone:** | | **TAR:** | |
| **Dlr Contact:** | ERIC DEBISZ | **Phone:** | 000 000-0000 | **Title Cde:** | T |

**DTCs:**
KOEO:C200D:49
KOEC:
KOER:

**Comments :**

REPAIR 07/18/2012 08:55AM WESLEY WHITTINGTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:CUSTOMER STATES TAKING A RIGHT HAND TURN LOST
POWER STEERING. TURNED VEHICLE OFF AND RESTARTED AND THE STEERING WAS
FINE. DIAGNOSTICS: INSPECTION, ROAD TEST, EEC TEST, OASIS PARTS
REPLACED:NONE TECH QUESTION:PERFORMED DIAG WITH THE INTERACTIVE
WORKSHOP MANUAL TESTING. MANUAL STATES THE ACTION TO BE PERFORMED FOR
THIS CODE IN TO REPLACE THE RACK? IS THIS CORRECT, THERE IS NOTHING TO
DO BUT TO REPLACE THE RACK? JUST WANT TO MAKE SURE BEFORE I ORDER THE
RACK. I COULD NOT DUPLICATE CONCERN ON MY ROAD TEST. INSPECTED AND
FOUND NO CHAFT WIRING OR DAMAGE TO THE VEHICLE OR RACK IN ANY WAY.

**RECOMM 07/18/2012 08:55AM WESLEY WHITTINGTON MSS - FCSD - TECH SVC HOTLINE**
ERIC, ERIC, WITH THE CODE THAT IS SET IT IS RECOMMENDED TO
REPLACE THE EPAS STEERING GEAR. ENGINEERING HAS DETERMINED THE ROOT
CAUSE FOR THIS CONCERN AND HAS UPDATED THE NEW GEARS. ISM

11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM SSM 22383
THE WORKSHOP MANUAL SECTION 211-00A HAS BEEN UPDATED WITH REVISED DIAGNOSIS FOR POWER STEERING CONTROL MODULE DTCS U2011:49 AND C200D

**REPAIR** **07/18/2012 09:24AM MATTHEW BERELS MSS - FCSD - TECH SVC HOTLINE**
THANK YOU!

**RECOMM** **07/18/2012 09:24AM MATTHEW BERELS MSS - FCSD - TECH SVC HOTLINE**
ERIC, YOU'RE WELCOME. IF EPAS STEERING GEAR REPLACEMENT RESOLVES THIS CONCERN, PLEASE COMPLETE THE ONLINE SURVEY WITH THE FIX INFORMATION. IF FURTHER ASSISTANCE IS NEEDED, PLEASE FEEL FREE TO CONTACT THE HOTLINE. THANK YOU.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CGRD1007 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2012,EXPLORER 4X4 (U502) ,BASE ,4 DOOR ,MPV ,1FMHK8B8XCG[redacted] | | | **Build Date:** | 08/10/2011 |
| **Odometer :** | 8,816 M | **Engine:** | 3.5L CYCLO | **Calibration:** | CUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | BHS F0A62 Friendly Ford | | | **Phone#:** | |
| **City:** | Nassau | | | **Country :** | BHS |
| **Originator:** | ANTON SMITH | | | | |
| **Symptom:** | 6 62 4 38 SP/ST/RD,STEER/STER WHL,PERFORMANCE,INOPERATIVE | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** ASIMS38 **Phone:** 313 317-9367 **Regn Cd:** 9A FCSD REGION- 9A

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** ANTON SMITH **Phone:** 242 356-7100 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:B00A0:63 C1B00:86 C200D:49 U3000:96 U3003:16
KOER:

**Comments :**

REPAIR 07/18/2012 10:57AM AARON SIMS MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:STEERING WHEEL IS STIFF, THERE IS NO POWER STEERING ASSIT WHILE DRIVING. THE POWER STEERING ASSIT LIGHT IS ON, ADVANCE TRAC LIGHT AND AIRBAG LIGHT IS ON. DIAGNOSTICS: A VISIUAL INSPECTION IS DONE TO SEE IF THERE WAS ANY DAMAGE WIRES NONE SEEN. CHECKED FUSES ,(OK). FOLLOWED THE PINPOINT TEST. PARTS REPLACED:NO PARTS WAS REPLACED. TECH QUESTION:ACCORDING TO THE DTC CHART FOR DTC CODE U3000 , IT SAYS TO DIAGNOSE OTHER DTCS AND IF THERE IS NO OTHER DTC ORESENT TO REPLACE THE RFA MODULE. SO I WENT AND CLEARED THE
CODES TO SEE IF THEIR IS A HARD CODE IN THE SYSTEM AND ONLY THE U3000 WAS PRESENT. SO AS A RESULT I WENT TO INSPECT THE RFA MODULE TO SEE IF THERE WAS ANY DAMAGE WIRES OR ANY OBVIOUS PROBLEM. SO I FOLLOWED THE
REMOVAL PROCEDURE BUT COULD NOT LOCATE THE MODULE. WANTED TO KNOW IF I
AM FOLLOWING THE RIGHT DIAGNOSTIC PROCEDURE AND IF THIS PATICULAR VEHICLE IS EQUPIED WITH A RFA MODULE.

**RECOMM 07/18/2012 10:57AM AARON SIMS MSS - FCSD - TECH SVC HOTLINE**
ANTON, WITH THIS CONCERN, IF THE U3000:96 CODE IS PRESENT IN THE PSCM VERIFY CONNECTORS AT PSCM ARE SEATED CORRECTLY AND NOT DAMAGED.
IF THESE ARE GOOD SUSPECT A FAULTY STEERING GEAR CAUSING THE CONCERN.
WHEN FOLLOWING THE U3000:96 DTC BEING STORED IN THE PSCM AS OUTLINED IN INTERACTIVE DIAGNOSTICS IN SECTION 211-00 THIS IS THE DIRECTION IT LEADS. SINCE THIS VEHICLE IS NOT EQUIPPED WITH IA KEYS(PUSH BUTTON START) THIS VEHICLE WILL NOT HAVE AN RFA MODULE. IF DTC U3003:16 IS PRESENT IN THE RCM RECOMMEND REVIEWING DIAGNOSTIC ROUTINE Y IN SECTION
501-20 OF THE ONLINE WSM.

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**Attachments :** 0

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|---|---|---|---|
| **Report# :** | CGRCP001 NHL | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | **Reviewed Status:** | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK7F84BG[redacted] | **Build Date:** | 02/11/2011 |

| | | | | | |
|---|---|---|---|---|---|
| **Odometer :** | 26,757 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04893 Midway Ford | | | **Phone#:** | (305) 266-4357 |
| **City:** | Miami | **State:** | Florida | **Country :** | USA |

**Originator:** ELIEZER ZEQUEIRA

**Symptom:** 6 62 2 03 SP/ST/RD,STEER/STER WHL,APPEAR/CLEAR,APPEARANCE

**Status:**

**VFG:** V89 RIDE & HANDLING

**Additional Symptom:** REARVIEW CAMERA GUIDELINES

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** JWIBERG5 **Phone:** 313 317-6313 **Regn Cd:** S4 Miami

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** ELIEZER ZEQUEIRA **Phone:** 305 266-3000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 07/18/2012 09:13AM JAMES WIBERG MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:REAR VIEW CAMARA NOT ALIGMING
STRAIGHT DIAGNOSTICS: RADIO TECNICIAN CHECK RADIO AND IS OK// NO
CODES PARTS REPLACED:RACK&PINION TECH QUESTION:COSTOMER
COMPLEING THE AFTER RACK WAS REPLACE THE LINE ON THE RADIO DONT MASH
THE DIRECTION OF THE VEHICLE OR THE STEERING WHEEL// I CHECK RACK AND
TIE RODS ARE CENTER IN BOTH SIDE// I NEED TO KNOW: THIS LINE ARE
CONTROL BY THE RACK OR SOMETING ELSE IN THE STEERING COLUM// IF IS IN
THE STEERING COLUM I CAN ROTATE STEERING WHEEL 360 DEGREE AND WILL BY
OK// IF IS ON, DO I HAVE TO REPLACE THE RACK AGAIN?// OR I CAN
REPROGRAM A MODULE?

**RECOMM** **07/18/2012 09:13AM JAMES WIBERG MSS - FCSD - TECH SVC HOTLINE**
ELIECER, THE FIXED GUIDELINES THAT ARE DISPLAYED WHEN THE VEHICLE
IS IN REVERSE ARE CONTROLLED BY THE STEERING WHEEL ROTATION SENSOR.

IF
THE STEERING WHEEL WAS MOVED WHEN REPLACING THE STEERING GEAR, DAMAGE
MAY HAVE OCCURRED TO THE SWR SENSOR WHICH IS WHY THE GUIDELINES ARE
READING INCORRECTLY. SUGGEST THAT YOU REMOVE THE STEERING WHEEL AND
CLOCKSPRING AND INSPECT THE SWR SENSOR FOR DAMAGE OR INCORRECT
MOUNTING AND REPLACE/REINSTALL AS NEEDED PER ONLINE WORKSHOP MANUAL
PROCEDURES.

---

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CGRGB014 NHL | | | **Received:** | 07/18/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,TAURUS ,FWD ,LIMITED,SEDAN ,1FAHP2FW4BG[redacted] | | | **Build Date:** | 05/02/2011 |
| **Odometer :** | 9,886 M | **Engine:** | DURATEC 35 | **Calibration:** | BPH1FT0A |
| **Transmission:** | 6F50 | **Axle:** | 3.16 RATIO | **A/C:** | YES |
| **Dealer:** | USA 02968 Tyler Ford, LTD | | | **Phone#:** | (903) 597-9331 |
| **City:** | Tyler | **State:** | Texas | **Country :** | USA |
| **Originator:** | JOSHUA STAPLES | | | | |
| **Symptom:** | 6 62 3 00 SP/ST/RD,STEER/STER WHL,FEEL/WAN/PULL,UNKNOWN | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | PULL TO RIGHT ON HARD ACCEL | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JBOALES **Phone:** 000 317-9341 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOSHUA STAPLES **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:

KOER:

**Comments :**

REPAIR 07/18/2012 06:25PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:PULLS HARD TO THE RIGHT UNDER
ACCELERATION DIAGNOSTICS: TEST DROVE TO VERIFY CONCERN, INSPECTED
ALL SUSPENSION, CHECKED ALIGNMENT. ALIGNMENT IS ON THE MONEY WITH ONE
EXCEPTION. FRONT CASTER IS SLIGHTLY OUT OF SPECS ON THE HIGH SIDE BUT
THE CASTER SPLIT IS GOOD. PARTS REPLACED:NONE TECH
QUESTION:WITH NO CASTER ADJUSTMENT IS THERE ANYTHING I CAN DO OR
SHOULD THE -.04 CASTER SPLIT BE OK AT THIS TIME?

**RECOMM 07/18/2012 06:25PM JEFFREY BOALES MSS - FCSD - TECH SVC HOTLINE**
JOSHUA, A SLIGHTLY OUT OF SPECIFICATION CASTER SPLIT WILL NOT CAUSE
THE VEHICLE TO PULL ON ACCELERATION LIKE THIS. IT IS RECOMMENDED THAT
YOU BEGIN BY COMPARING THE OPERATION TO A LIKE UNIT WITH THE EXACT
SAME POWERTRAIN ON THE SAME ROAD. THERE HAVE BEEN MULTIPLE INSTANCES
WHERE TORQUE STEER UNDER HARD ACCELERATION HAS BEEN FOUND TO BE
NORMAL. IF THE OPERATION OF THE LIKE UNIT IS SIMILAR, NO REPAIRS ARE
RECOMMENDED. ATTEMPTING TO ALTER A NORMAL CHARACTERISTIC WILL LEAD TO
A REPEAT ISSUE. VERIFY THAT THE CUSTOMER IS NOT REMOVING THEIR
HANDS FROM THE WHEEL. PULLING WITH HANDS REMOVED FROM THE WHEEL IS
NORMAL UNDER ANY CONDITION. THIS IS NOT A VALID TEST. DISCONNECT
THE ABS MODULE TO ENDURE THE IS NO TRACTION CONTROL EVENT CAUSING THE
PULL. IF THE ISSUE IS GONE, THIS IS TRACTION CONTROL RELATED. MONITOR
THE YAW, LAT, SWA, AND WSS PIDS USING THE IDS. THE PIDS MUST BE
MONITORED WHEN THE CONCERN ACTUALLY OCCURS. IF ANY PID READS
ERRATICALLY OR DROPS OUT, SUSPECT THIS IS THE CAUSE OF THE CONCERN.

---

Redacted for Relevance

Redacted for Relevance

Redacted for Relevance

Redacted for Relevance

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, October 25, 2011 3:46 PM
**To:** Moody, Sandra (S.L.); Perri, Ron (R.J.); Surella, Matthew (M.M.); Dukkipati, Srini (S.); Brezee, Shane (S.B.)
**Subject:** FW: 2011 U502 B9A Buy Back vehicle

TRW has a potential buy back. Good news is that it is at a rental company, so we are not holding up a customer. The gear is locked out, so there is no way of knowing if the failure is a hard failure. There's no reason to buy the car back if it is a hard failure because the gear will not be testable. TRW is going out to the dealer tomorrow in San Fran to pull codes and verify if the gear has a complete failure or just a temporary lock out. They will also take data and try to duplicate the failure.

If it is a permanent failure, we should not buy back the car, but just have the gear returned.
If it's not a permanent failure and they duplicate it while taking data, we may not need to buy the car back.
If neither of the above happens, this would be a good buy back car and we should move quickly.

On another note, I have a couple responses from the 6-sigma study of management lease cars that would be potential cars to test instead of buying one back. I should have more info on that this week.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, October 25, 2011 1:30 PM
**To:** Napoli, Laura (L.)
**Cc:** Salim Semssar; Anthony.Fleenor@TRW.COM; John Burnett
**Subject:** FW: 2011 U502 B9A Buy Back vehicle

John Burnett is all set to arrive at Future Ford tomorrow afternoon to pull the data on the 2011 Explorer then clearing the data to see if the B9A code resets.
I did let the service manager know our intentions of buying back the vehicle if it fits our criteria.

The dealer information is below: Tracy is the Service Manager that I talked to.

FUTURE FORD OF CLOVIS
920 West Shaw Avenue, Clovis, CA 93612

- Call Us Now: (866) 875-7137

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, October 25, 2011 11:37 AM
**To:** Napoli, Laura (L.)
**Subject:** 2011 U502 B9A Buy Back vehicle

Laura I found this vehicle in Clovis, California and this vehicle is a AVIS RAC so it might be easy to buy back, the problem with this vehicle is that it set B9A three times then set U3000-96(C69) not the exact issues with the other B9A returns but we can get the tech to perform the proper snap shot data below and look at the freeze frame data for the B9A.

Let me know the tech will not replace the gear until I call him back.

**Year = MY11**
**Model = U502**
**Engine = 3.5L**
**VIN = 1FMHK8D87BG[redacted]**
**IDS Version = 73.03A (IDS-73.03A)**

**PCM = BB5A-14C204-NJ**
**ABS = BB53-2C219-AF**
**ACM = BB5T-19C107-BS**
**APIM = BT4T-14D212-BM**
**ATCM = N\A**
**BCM = BC3T-14B476-DH**
**C-CM = N\A**
**CLM = N\A**
**DCSM = N\A**
**DSM = N\A**
**DSP = N\A**
**FCDIM = N\A**
**FCIM = N\A**
**FLM = N\A**
**GPSM = N\A**
**HSWM = N\A**
**HUD = N\A**
**HVAC = BB5T-18C612-BG**

**IPC = BB5T-10849-GG**
**LTM = N\A**
**OCSM = N\A**
**PAM = BB5T-15K866-AC**
**PSCM = BB53-3F964-BG**
**RCM = BB5T-14B321-AF**
**RFA = N\A**
**RLCM-A = N\A**
**SCCM = BB5T-3F944-AJ**
**SOD-L = N\A**
**SOD-R = N\A**
**TPM = N\A**

### Current DTCs {retrieved 19 October 2011 15:14:25}

| DTC | Snap Shot Data | Source |
|---|---|---|

### Historic DTCs {retrieved 19 October 2011 15:14:25}

| DTC | Snap Shot Data | Source |
|---|---|---|

### DTCs cleared since initial read:

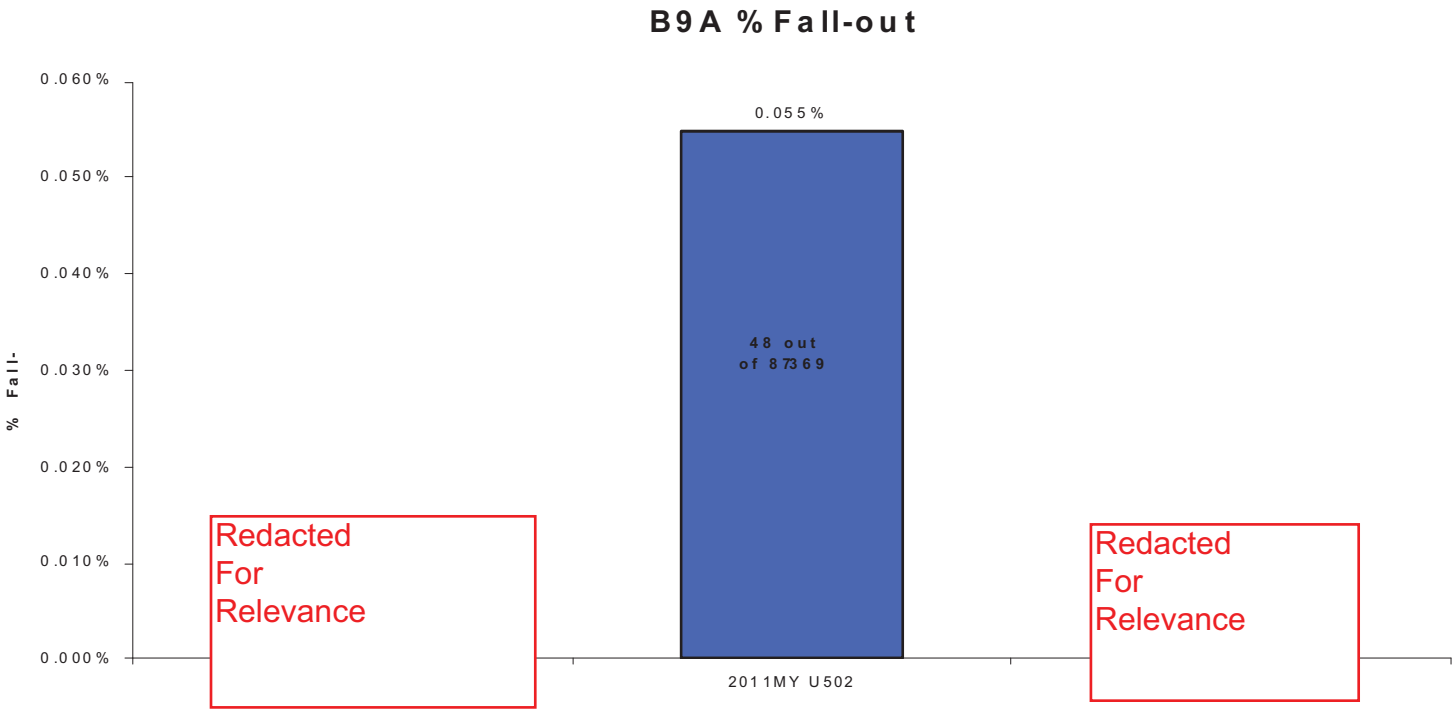
| DTC | Snap Shot Data | Source |
|---|---|---|
| U0402:68 | N/A | ABS |
| C1B00:86 | N/A | ABS |
| (ABS) | N/A | ABS |
| P1285:00 | N/A | PCM |
| P1299:00 | N/A | PCM |
| U3000:96 | N/A | PSCM |
| C200D:49 | N/A | PSCM |

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

**From:** Perri, Ron (R.J.)
**Sent:** Thursday, January 05, 2012 3:25 PM
**To:** Surella, Matthew (M.M.)
**Subject:** FW: B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

**Attachments:** Picture (Metafile)

Please update this….




Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

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**From:** Napoli, Laura (L.)
**Sent:** Thursday, December 22, 2011 10:25 AM
**To:** Perri, Ron (R.J.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

Ron,

I have the most recent numbers for fallout at Tyco, Nidec, and Anting/Shalke/Nove Mesto for the visual inspections they're doing for misalignment and concoat.

Tyco:
Since Nov 12, Tyco is finding 0 misalignment on ribbon cables at EOL with 5x magnification.

Nidec:
For batches of ribbon cables that were built before PCAs were put in place at Tyco, Nidec found 22 out of 14,800 with

misalignment.
Since Nov 12, Nidec has 0 fallout at IQ for ribbon cable misalignment when inspected with 5x magnification.
Nidec inspected 69,122 motor assys that were already built before the ribbon cable visual inspections went into place on Nov 12. They found 638 suspect parts. They x-rayed 42 of them and found 9 to be misaligned. They are going through the rest and visually re-checking them with 30x magnification to find which parts are truly misaligned.
Since Nov 11, Nidec has been inspecting motor assys at EOL for conformal coat running from the relay. This is the same day they fixed the conveyor. They have 0 fall out for concoat since this date.
For conformal coat inspections on finished stock, they have quarantined 11k parts. These are parts with any amount of conformal coat at the connector from the relay.

Anting:
From 11/11-11/21, Anting found 15 out of 25,783 assys with protruding wires (misalignment) and rejected these parts.
Anting initially reported that they had 30% fallout for conformal coat at the connector. Since 11/24, they have 0 fallout.

Shalke and Nove Mesto:
Shalke and Nove Mesto have been inspecting for misalignment since Nov 15 with 0 fallout.

Next Steps:
TRW is going through each and every return to determine root cause of B9A and B3A/B43.
There is a study going on between TRW and Nidec with help from Tyco to confirm that conformal coat is the root cause of the high resistance measured on parts that do not have misaligned cables. This is to confirm that there is no other root cause of failure.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Diez, Timothy (T.P.)
**Sent:** Wednesday, February 16, 2011 3:00 PM
**To:** Rossi, Roberto (R.A.)
**Subject:** FW: Explorers with inoperative steering

Please read below...

Sincerely,
Tim Diez
Ford Electric Power Steering, EESE
313-805-1060; Fax: 313-317-4387
e-mail: tdiez@ford.com
cube 3C071, Building 5

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 16, 2011 2:58 PM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Cc:** Docimo, Tony (A.F.); Cantrell, David (D.D.)
**Subject:** RE: Explorers with inoperative steering

Hi All:

Please see the latest power steering inoperative claim. It is the fifth suspected internal gear fault known to CAP. The list to date is:

BGA14928: U3000:96
BGA10846: U0253:00-28, U2011:49-08
BGA14928: U3000:96
BGA22399: U3000:61 discovered in plant
BGA18724: C200B:2F

CAP is working toward 50R per 1000 units for the Explorer as a whole vehicle. Five inverted delta parts that stop functioning within weeks of vehicle launch is unacceptable. What is TRW doing to fix these problems? What can CAP do to detect faulty gears before our customers experience steering assist loss? Please explain your fixes as soon as possible.

Thanks,

Eric

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBLAA025 NHL | | | **Received:** | 02/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F8XBG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 303 M | **Engine:** | 3.5L CYCLO | **Calibration :** | BUB1ST0A |

| | | | | | |
|---|---|---|---|---|---|
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00089 Koons Ford of Annapolis, Inc. | | | **Phone#:** | (41! ! 0) 266-3087 |
| **City:** | Annapolis | **State:** | Maryland | **Country :** | USA |
| **Originator:** | JAMES MORELAND | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | U3000:96 | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** C! ! BISHO41 **Phone:** 313 317-9359 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMES MORELAND **Phone:** 410 266-3087 **Title Cde:** T

**DTCs:**

KOEO:U3000:96

KOEC:

KOER:

**Comments :**

REPAIR 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE

WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: SELF TEST

VISUAL INSPECTION FOUND CONNECTOR ON GEAR DISCONNECTED PARTS

REPLACED:: NONE TECH QUESTION: CODE U3000 96 LEADS TO REPLACEMENT

OF EPAS GEAR W/NO PINPOINT TESTS IS THIS CORRECT, VEHICLE WAS DX TO

OUR DEALER SAID P/S WENT OUT IN OUR PARKING LOT, TESTED AND FOUND

CONNECTOR 1453A DISCONNECTED. PLUGGED BACK IN BUT NO P/S AND CODE AND

MESSAGE CENTER WILL NOT CLEAR OUT. WERE YOU ABLE TO VERIFY THE

CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR

THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE**

JAMES, YOU ARE CORRECT. IF THE U3000:96 IS PRESENT AS A HARD FAULT

THEN STEERING GEAR REPLACEMENT IS REQUIRED. THIS CODE INDICATES THAT

THE ELECTRONIC STEERING GEAR HAS EXPERIENCED AN INTERNAL FAULT.

RECOMMEND REPLACING THE GEAR AS NEEDED THEN RETESTING FOR NORMAL

OPERATION.

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**From:** Napoli, Laura (L.)
**Sent:** Wednesday, February 09, 2011 3:23 PM
**To:** Anderson, Eric (H.); Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Subject:** RE: Explorers with inoperative steering

Please see my comments below...

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**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 09, 2011 4:14 PM
**To:** Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Subject:** Explorers with inoperative steering

Hi All:

Please give me an update on root cause for these U502 units that experienced steering assist loss, if you have one. If the part has yet to be returned for analysis and root cause is unknown, please note it.

BGA10846: Petoskey, MI. Inoperative because of contamination in B3A motor relay.
B3A caused by contamination on motor relay. Source of contamination at Tyco unknown.

BGA14928: Ripley, WV. Root cause unknown.
B3A. Part shipped to Tyco but not yet received. Cause of B3A will be known by COB tomorrow once relay is analyzed by Tyco.

BGA22399: Chicago Assembly Plant. Gear hand carried to TRW for analysis. Root cause unknown.
B91. Unable to duplicate. Root cause not yet known. Suspect gear was installed into a 2011 U502 and TRW is trying to duplicate issue before HW is sent out for analysis.

BGA18724: Dixon, CA. Intermittently inoperative. Root cause unknown.
BD2 & BD4. Torque Sensor Faults. Gear not yet returned to TRW. Root cause unknown.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Surella, Matthew (M.M.)
**Sent:** Friday, June 15, 2012 12:22 AM
**To:** Perri, Ron (R.J.)
**Cc:** Napoli, Laura (L.)
**Subject:** FW: U502/D3 "New" Clean dates

Ron,
Wayne Keinath called me yesterday about the assignment below. Somehow the PVT at CAP got asked to provide Bennie a summary of TRW EPAS issues. I told Wayne that Chassis has our own meetings with Bennie but Wayne was still wondering if I could send him a summary document.

I updated our summary file for both ribbon cable and relay issues and attached it below. We still do not have all the new clean dates for the copper sulfur relay issues but Laura is actively working on this. Please take a look at the file and send it to Wayne if you think this is appropriate. He wanted something by the end of the week and I will let him know that it is in your hands. Thanks.

Matthew (Matt) Surella
Steering EPAS Supervisor / MBB
313-805-3997


---

**From:** Farmer, Marty (M.F.)
**Sent:** Monday, June 11, 2012 11:11 AM
**To:** Surella, Matthew (M.M.)
**Cc:** Keinath, Wayne (W.); Brown, Jude (J.); Szalay, Michael (M.A.)
**Subject:** FW: U502/D3 "New" Clean dates

Matt,

Apparently Bennie Fowler is asking for a summary of TRW EPAS issues for all vehicle lines along with "new" clean points and why we have broken containment.

Can this be provided to us today?

Marty Farmer CHICAGO ASSEMBLY PLANT | CHASSIS PVT | FORD MOTOR COMPANY | mfarmer2@ford.com | 313.805.5605

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**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 06, 2012 1:04 PM
**To:** Farmer, Marty (M.F.)
**Cc:** Brown, Jude (J.); Surella, Matthew (M.M.)
**Subject:** RE: U502/D3 "New" Clean dates

Here are the clean dates for CAP programs for CuS on relays and misaligned ribbon cables…

CuS fix on motor and link relays:

- D3 Base: 5/11/2012
- D3 Police: 2/10/2012
- U502 48mm: 2/10/2012
- U502 58mm: 2/23/2012

Ribbon Cable Misalignment:

- D3 Base: 8/16/2012
- D3 Police: 8/16/2012
- U502 48mm: 6/30/2012
- U502 58mm: 8/8/2012

For D3 Base CuS relay fix, I need to confirm with China. This is what Mexico gave me but it seems too far out compared to D3 Police. And for ribbon cable misalignment, the dates are based on 100% clean stock. Need to know from China what percentage of current stock is clean. We know U502 is already shipping a mix of parts before and after the clean date. Not sure what the ratio is. It's the best I have for you now. If they ask why each program is so different, you should tell them that high volume (like U502 48mm) gets clean quicker because they build more often. The lower volume programs get built in large batches and stored until requested by TRW. For example, for U502 58mm, Nidec only builds once every 1-2 months based on the orders. Therefore they're holding old stock and not using it at TRW until now.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Farmer, Marty (M.F.)
**Sent:** Wednesday, June 06, 2012 9:55 AM
**To:** Napoli, Laura (L.)
**Cc:** Brown, Jude (J.)
**Subject:** U502/D3 "New" Clean dates

Laura,

Please send Jude and I clean dates for the misaligned ribbon cable and relay contamination.

Marty Farmer CHICAGO ASSEMBLY PLANT | CHASSIS PVT | FORD MOTOR COMPANY | mfarmer2@ford.com | 313.805.5605

# TRW EPAS Gear Quality Issues

## TRW EPAS Gear Containment Actions for H22 CCC - B9A warranty

**A. Root cause** - PCB ribbon cable header assembly quality and conformal coat location on PCB quality

**B. Corrective Actions**

At Tier 1 - TRW

• Modify Puma script to reject for B9A LIC's - implemented 11/11 - gears arrived at CAP ~Monday 11/21

• 100% sort cable for protruding wire strands with magnification at Novo Mesto and Schalke - implemented 11/14 – gears arrived Saar louis, Valencia ~Monday 11/21

• 100% sort cable for conformal coat contamination w/ UV light at Novo Mesto and Schalke - implemented 11/16 - gears arrived Saar louis, Valencia ~Wednesday 11/23

At Tier 2 – Anting - China

• 100% sort cable for conformal coat contamination w/ UV light - implemented 11/10 – arrived at TRW-MAO, TRW-QTO 01/10/2012

• Modify EOLT program to reject for B9A LIC's - implemented 11/11

• Modify Puma script to reject for B9A LIC's - implemented 11/11

• 100% sort cable for protruding wire strands with magnification - implemented 11/16

At Tier 3 – Nidec - China

• 100% sort cable for conformal coat contamination w/ UV light - implemented 11/11

• 100% sort cable for protruding wire strands with magnification - implemented 11/14

• **Conveyor angle corrected for conformal coat running from relay - implemented 11/11, – arrived at Assembly Plants 01/30/2012**

At Tier 4 – Tyco - Germany

• 100% sort cable for protruding wire strands with magnification - implemented 11/14

• Added calibrated set-up block for header to ribbon cable assembly - implemented 11/25

• Increase frequency of set-up teardown cross-section to verify set-up ribbon cable assembly alignment - implemented 11/17

• **Ribbon cable header assembly wedge adjusted 9/6, started cross sectioning parts and added visual inspection for misalignment 11/17, added set up gages 11/25, implemented blade change every 50,000 cuts 12/2 – arrived at Assembly Plants as follows:**

| Platform | EPP ( out of motor clean date: Mar.22=F082 ) | | EPP ( within motor clean date:Mar.22=F082 ) | | Anting EPP clean date | last ship date of Anting with motor build date prior to F082 | Parts arrive at MAO/QAO | Parts arrive at Ford Assy Plant |
|---|---|---|---|---|---|---|---|---|
| | Qty | Anting EPP build period | Qty | Anting EPP build period | | | | |
| Redacted for Relevance | | | | | | | | |
| U502 48 | 10,447 | Mar.27 ~May.11.2012 | 12,099 | Apr.10~May.17.2012 | May.12.2012 | May 17, 2012 | June 27, 2012 | June 30, 2012 |
| U502 58 | 4,245 | Apr.1 ~May.22.2012 | 0 | to be confirmed | May.22.2012 | June 24, 2012 | August 5, 2012 | August 8, 2012 |
| Redacted for Relevance | | | | | | | | |

Estimates. These programs subject to undetermined amount of time sitting in China warehouse.

**C. Standard Bill of Process Globally** => C1, U502, D2/D3/D4, [redacted] TRW EPAS ribbon cables are supplied from Tier 4: Tyco-Germany; C1, U502, D2/D3/D4, [redacted] TRW EPAS conformal coat processed at same Tier 3: Nidec-China

**D. Warranty and Assembly Plant Fall-out Status**

N.A. Warranty pre-containment: 2011 U502: 63/92037, [redacted]: 8/142773; Post containment: Zero.

Redacted for Relevance

Redacted for Relevance

**Warranty and Assembly Plant Fall-out Status**

N.A. Warranty pre-containment: 2012 U502: 11/40023, [redacted]; Post containment: Zero.

| Steering Products Center | 8D Corrective & Preventive Action Form | TRW |
|---|---|---|

**I D**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Report #'s / Reference #'s | | | | Date Opened: | 02/22/11 | Platform(s) | Team Leader: | Angie Caudill |
| QCCAR# | N/A | NCT/ QR# | N/A | Revised Date: | | All IPA | QRQC Rank: | A |
| | | | | Time: | 7:59 AM | | | |
| CS# | N/A | WAR# | UR0003 | TRW Person Entering Complaint: | | Plant(s): Rogersville / Marion | | Clean Date: 02/23/11 |
| Customer: | Ford | Contact: | Bobby Sandhu | Customer DM# | | TRW Part #: | 80SA1G1 | |
| Customer Plant: | MAO | Phone: | 276-783-1116 | Referral # | | Customer Part #: | A0025456 | |

**T E A M**

(1a) Team Name: IPA corrective action team

(1b) Team Members: Misty Christian, Todd Williams, Angie Caudill, Carl Craig and Andy Ausband

**P U R P O S E**

(2a) Customer's Description of Problem:

IPA assembly with bent rotor finger

(2b) Expert's Description of Problem:

Defective IPA assembly was a warranty return with one bent rotor vane. Vane was touching the PCB. Build date of IPA was 01/14/2011

Repeat Issue? Yes

| | | | |
|---|---|---|---|
| Inspection Report# | | Met Lab Report# | |
| Func. Test Report# | | Eng. Test Report# | |
| dFMEA Reviewed? | | PFMEA Reviewed? | |
| Severity | | | |

**Click** Go To Containment Worksheet To Enter Data

**A C T I O N**

(3a) Implementation of Interim Containment Actions:

| | Containment Action | Date Checked |
|---|---|---|
| 1 | External Customer (See Above) | 02/23/11 |
| 2 | Interdivisional TRW (See Above) | 02/23/11 |
| 3 | TRW (See Above) | 02/23/11 |
| 4 | Supplier (See Above) | 02/23/11 |

(3b) How are Containment Measures Effectiveness Verified?

| | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |

(3c) Interim Actions prior to identifying Root Cause: (List actions, primes, dates, etc.)

(T) = Times Changed

| | Action | Prime: | Status | Target Date | New Date | T | Completed Date |
|---|---|---|---|---|---|---|---|
| 1 | Post / implement quality alert on Prodel lines one and two to inform operators there has been an additional requirement of a 100% visual off line inspection added. Alert must also mandate that the inspection be performed by someone other than the Prodel operator. IPA assemblies will be certified to the customer for this condition and marked with a blue dot on the rotor | A. Caudill | Quality alert posted. 100% off - line visual inspection is in place. | 2/22/2011 | | | 2/22/2011 |
| 2 | Create and implement procedure on Prodel lines one and two for 100% visual off line inspection for bent rotor vanes | A. Caudill | Procedure is completed and has been implemented | 2/22/2011 | | | 2/22/2011 |
| 3 | Verify that the 100% on-line mistake proof check for bent rotors is functioning correctly | A. Caudill | Red masters are functioning correctly. Verification that lines one and two will reject a bent rotor | 2/22/2011 | | | 2/22/2011 |
| 4 | Perform analysis on returned part | A. Caudill | One rotor vane was bent. There was no witness mark present on top of the vane. Historically, we have seen two methods of bending the rotor vanes. (1) impact (witness mark will be visible) (2) steady force over time | 2/28/2011 | | | |

| Steering Products Center | 8D Corrective & Preventive Action Form | TRW |
|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | Through the established check points (Rog on-line MP, Rog EOL, Rog. off-line and MAO), we are trying to isolate where the defect occurred | A. Caudill | | TBD | | | |

Click **Go To 3L Root Cause Analysis To Enter Data**

CAUSE

| (4a) Define the Root Cause (3L ) (Root Cause) | | Cause: | Date Identified: | | (4b) How was the Root Cause Verified? | Duplicated? (Yes/No) |
|---|---|---|---|---|---|---|
| 1 | Primary: | Root cause still under investigation. | | 1 | | |
| 2 | Secondary: | | | 2 | | |

| Cause & Effect Done? (Y/N) | | Timeline Done? (Y/N) | | DOE Done? (Y/N) | |
|---|---|---|---|---|---|

| Steering Products Center | 8D Corrective & Preventive Action Form | TRW |
|---|---|---|

**(5) Implementation of Permanent Corrective Actions: (List actions, primes, dates, etc.)** (T) = Times Changed

ACTION

| | Action | Prime: | Status | Target Date | New Date | T | Completed Date |
|---|---|---|---|---|---|---|---|
| 1 | Creation of electrical PM to verify correct alignment of axis on station B3 (sensor weld). Ensures part does not make contact and damage rotor | A. Caudill | PM has been added to the system (read across from line 1 issue) | 1/6/2011 | | | 1/6/2011 |
| 2 | Creation of tech PM to verify correct clamp jaw position on station B3 (sensor weld) | A. Caudill | PM has been added to the system (read across from line 1 issue) | 1/6/2011 | | | 1/6/2011 |
| 3 | Addition of a 100% visual EOL check for bent rotors to the operator's standard work. Parts to be verified prior to packaging | A. Caudill | 100% visual EOL check has been added to the operator's standard work (read across from line 1 issue) | 2/22/2011 | | | 1/6/2011 |
| 4 | Investigate the possibility of reducing the contact area of gap set tooling depending on the results of the tool design stack-up | T. Williams | Timing includes design, fabrication and installation of tooling | 3/21/2011 | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |

**Mistake proofing Required? (Y/N)** **Explain:**

**(6) Verify Effectiveness of Actions:**

VERIFY

| | Verified: (List How verified and Who verified) | Verified Date: |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |

| Steering Products Center | 8D Corrective & Preventive Action Form | TRW |
|---|---|---|

**ACTION**

**(7) Control Plan to Prevent Recurrence (List actions, primes, dates, etc.)** (T) = Times Changed

| | Action | Prime: | Status | Target Date | New Date | T | Completed Date |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |

**Expected Verification Time Period:** Days **Date:**

**GLOBAL**

**(8) How will the Global System be Modified to Prevent Similar Events within the Business?** (T) = Times Changed

| | Action | Prime: | Status | Target Date | New Date | T | Completed Date |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |

**dFMEA Updated? (Y/N)** **pFMEA Updated? (Y/N)**

**Detection# Changed from:** **to:** **Occurrence# changed from:** **to:**

**SIGNATURES**

**APPROVE PLAN**

Quality Engineer: Date:

Quality Manager: Date:

**CLOSURE**

Supplier Quality Manager: _____ Date: _____

Quality Specialist or SDE: _____ Date: _____

Quality Manager: _____ Date: _____

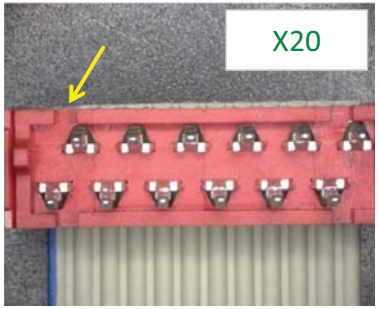
Director of Quality: _____ Date: _____

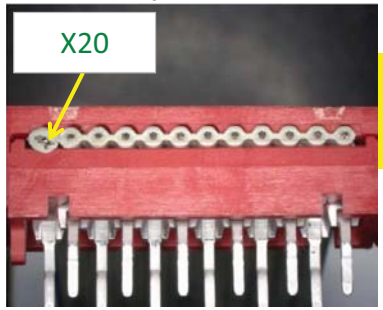
Other(s): _____ Date: _____

| Cause: (Place "X" where applicable) | | Systemic: | Design: | Process: | Operator: | Supplier: | Customer or Dealer |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| If Systemic Breakdown is Evident, List Applicable ISO/TS 16949 Element(s) and Clause(s). | Element: | | Element: | | Element: | | |

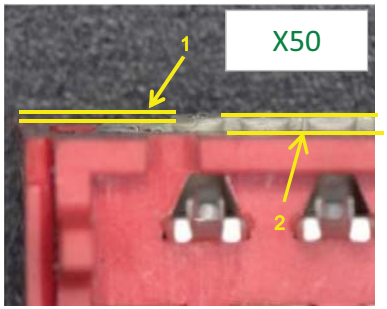
# New problem in TE 12way cable assy

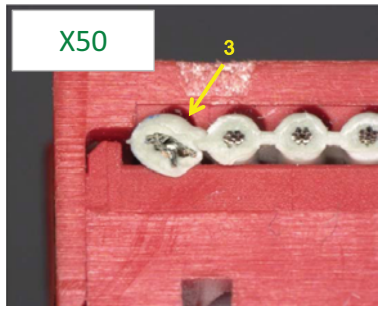
TE date code 1563245-1A 14/12/11 (Dec 14th, 2011)

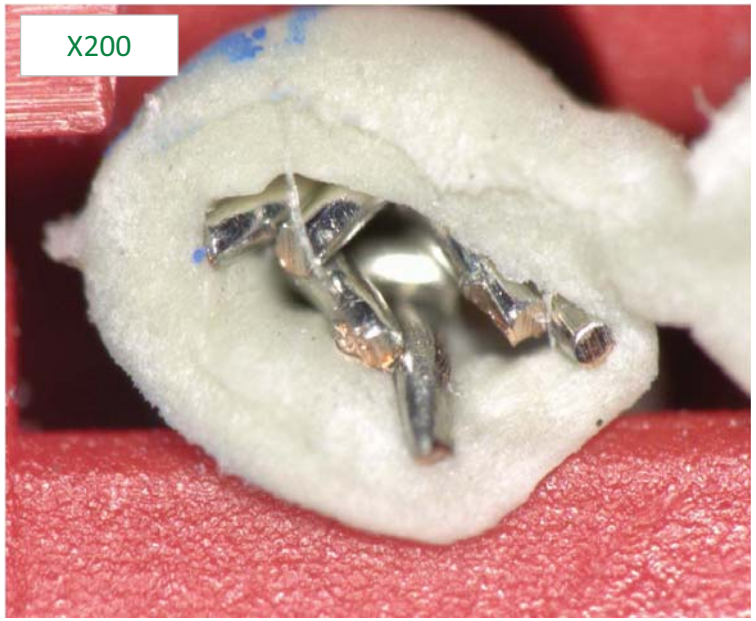


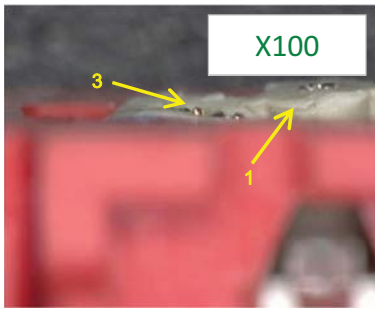



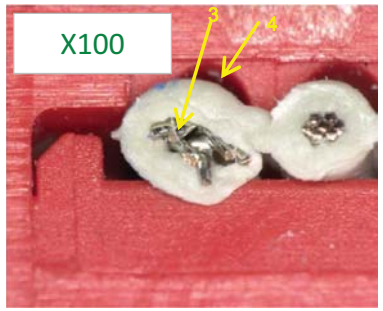

1 Cutting point No.1 (blue) is different from other lines
2 Other line insulation protruded
3 Strand of No.1 (blue) damaged and protruded
4 Misalignment



B9A 10-5-11

REDACTED FOR RELEVANCE

- OF ~~55~~ U502 B9A'S, 31 HAD ELECTRICAL ISSUES W/ TOUCH SCREEN SYNC NAV...

REDACTED FOR RELEVANCE

AP/LN/GJ/EE/M SCROLLA/T. FLANAGAN
BRAD JACKSON
CHRIS WOODRUFF
GUILLERMO, PEPE

B9A FOLLOW UP FRIDAY 10:00 10-7-11

REDACTED FOR RELEVANCE

U502° NEW B92 CODE ON NEW B9A UR0096 SHIPPING TO MARION, VA.

TO TRY TO REPEAT ISSUE UNDER TEST.

95SEC → B92 → B9A → B9A → C69

REDACTED FOR RELEVANCE

TUESDAY SYSTEMS PAT @ TRW 10/18/11

REDACTED FOR RELEVANCE

6000 AVG U502 MILES TO FAILURE. (B9A)

REDACTED FOR RELEVANCE

MONDAY WARRANTY MEETING (ESTES)

10/31/11

REDACTED FOR RELEVANCE

U502 - RON COLLINS Hi TEMP DRIVER ISSUES FISHBONE REQ'D.

B9A EFF DATA @ 25°C - 28°C NOT ALL @ HIGH TEMPS

20°C - 70°C TOTAL RANGE (FROM MICRO.)

HALL EFFECT HARD FAILURE - @ TEMP BIASED REGION OF CHIP

- ANDY TO INVESTIGATE 8D INDICATED EXHAUST AS POSSIBLE FAILURE MODE

113 C200B'S REPORTED ON U502 NOT ALL RETURNED.

OUT OF IDS.

"EMC" IS ONE AREA NOT CLOSED OUT YET.

- MY FORD TOUCH IMPACT ON HEAT

REDACTED FOR RELEVANCE

MONDAY WARRANTY RETURN MTG 6/23/12

VEIL
JUNE BLD

REDACTED FOR RELEVANCE

U502.

5-6 GEARS REC'D FROM FIELD EVERY DAY.

SERGIO OUT ON VACATION 3 WEEKS:

TOM FLANAGAN NOV. CLAIMS NOT LOOKED AT & NO DATA LISTED.
CERIC SAID RESOURCES FOCUSED ON B9A + B3A REWY.

JOHN BURNETT SENT TO HELP SERGIO

QAO PUMA RUN CHART

| | | |
|---|---|---|
| 11/4 | B6B | |
| | B51 | |
| 11/7 | B43 | |
| 1/5 | B43 | |
| 1/11 | B9A | |

• 11/17/11 FIX @ QAO B3A/A3A/B43 NEW SCRIPT IMPLEMENT

PRIOR TO 11/17 LIC COULD REJECT B9A, B43, B3A, A3A 1 4-5 LICS TO SET FAULT

• 12/__/11 2ND LIC CHECK ADD.

JIM PARKER MICHELLE V SOFTWARE TEAM CONFIRMED MORE THAN 1 LICK REQ'D. TO GET FAULT + REJECT. (3) B9A (4)

—WEDNESDAY—
2-22-12

REDACTED FOR RELEVANCE

EMERGING ISSUE: B6B 2010 INITIAL SAW THESE FAILURES PCB MOTOR CLEARANCE ISSUE.

- U502 NEVER HAD THESE BEFORE.

REDACTED FOR RELEVANCE

SERGIO COULD NOT DUPLICATE

- welding of contacts can be caused by opening under load

REDACTED FOR RELEVANCE

SALEEM SEMSAR / GEOFF / AP / MSURELLA / T SNIDER.

MONDAY WARRANTY REVIEW. 4-30-12

C346 • B45 LINK RELAY – MOTOR BUILD DATE 9-17-12.

• SERGIO: B3A – 10 SUSPECT 4 TO UK

B6B – 5 TO UK.

REDACTED FOR RELEVANCE

# MELTED RELAY BASE RELAYS (4) U502

PER MIKE DAVIES – PLAN TO THERMOCOUPLE RELAYS TO DETERMINE ROOT CAUSE OF WELDING @ NIDEC.

TE TO SEND RELAYS PRIOR TO APPLYING SEALANT TO RELAYS.

TIG WELDING PROCESS USED. HAVE NOT BEEN ABLE LINK B3A TO WELDING PROCESS.

THERE ARE 3 WELDING MACHINES IN EACH (2) LINES AT NIDEC.

PER GEOFF: 1ST MELTED BASE WAS A B6B.

10 EU + 10 NA MELTED BASE FAILURES (1) B6B, (1) B97, B3A

NEW: * BUILDING + HAD A B97 RELAY FAILURE, SIMON SENT RELAY TO UK – PHIL BROWNE. (WAS USED ON PV TESTING)

* RECENT BENT FINGER ISSUES ATTRIBUTED TO DUNNAGE ISSUE WHERE TOP PARTS WERE SLID ACROSS LOWER PARTS BENDING FINGERS. @ ROGERSVILLE

MONDAY 8:30 WARRANTY MEETING
(ERIC ESTES)

10/3/11

U502 B9A SET ONCE @ CHARLSTON S. CAROLINA

ERIC { BARRY MOSES NOTIFIED OF B9A ISSUE
DON ABRAHAMS @ FORD GARAGE (MGT.)

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

(2) U502 } RUNNING TRITEMP ON FOR 1 MONTH - NEED DIRECTION

ANTING HAS 2 EPP LINES NEED TO CONFIRM 1 OR 2 ADDL SREA'S - NO INFO AVAILABLE YET

12/25 - 12/28 NOTHING ABNORMAL @ NIDEC.

10/4/11 REDACTED FOR RELEVANCE

CANAPY DATA BOX.

MGT. GARAGE. REQUEST FOR B9A OR LOSS OF ASSIST

GJ/LN TORN DOWN 1 UNIT - 2ND IN PROCESS.

TD - SEND ALL COMPONENTS BACK TO SUPPLIERS FOR ANALYSIS

DAVE RUTKOWSKI CHASSIS SPECIALIST

GEOFF JACKS TRYING TO EXCLUDE SOFTWARE PROBLEM.

ROUNDING ERROR FOUND + CONVINCED NOT VEHICLE FAULT.

U502 - BULLETIN SAYS SWAP GEAR ON 1ST FAULT [C69 LOCK OUT CANNOT CLEAR CODES

JOHN BURNETT

MONDAY WARRANTY MTG (ESTES) 9-19-11

U502 B9A 8 SENT TO MARION FROM WARRANTY FRIDAY 9-16-11.
@ WARRANTY CTR
67 TO CHRIS WOODRUF. GEOFF JACKS TO SUPPLY TEST FROM

REDACTED FOR RELEVANCE

- ALL PROGRAMS HAVE THE 53° LIMIT INCORPORATED IN PRODUCTION NOW REDACTED U502
- GEOFF HAS SW VERSIONS & DATES

WORKPLAN: B9A GEOFF JACKS

- DISCUSS MOTOR CONTROL W/SPECIALIST FROM MOTOR C
- MEASURED FLUX DENSITY BUT NO HYSTERESIS TEST NEED TO CONDUCT THIS ON TORN DOWN UNIT.
- RUN ON DYNO TEST W/MODIFIED SW
- BENCH TEST W/SMALL MOVEMENTS NOT ROUND + ROUND
- SYNCHRONIZATION OCCURS W/(1) MOTOR REVOLUTION

WHAT CAN NIDEC DO TO HELP? LN

ON SEMME ASIC ISSUE
PSD MASK - PARTS APRIL 2012 EST. BEFORE PARTS GET INTO PLANT

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, June 14, 2011 3:07 PM
**To:** Anderson, Eric (H.); Napoli, Laura (L.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK7B80BG[redacted] please request gear

Heavy load testing at the 2-pin batt. & grd. is needed for this issue, we have found main BJB main battery feed issues and C1617A connector issues at the BJB.
Also need to load test ignition feed, this is not in the workshop manual but this load test is where we have found all our wiring issues on U502, normally hotline advises to perform this operation if CQIS report is used.

I will check the gear for issues when it returns

Eric

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**From:** Anderson, Eric (H.)
**Sent:** Tuesday, June 14, 2011 2:33 PM
**To:** Napoli, Laura (L.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK7B80BG[redacted] please request gear

The tech did say he performed all the electrical tests the workshop manual and hotline directed him too. Looking up U0131 and C1B00:29 in the workshop manual both eventually lead techs to replace the gear after following electrical test steps AC1, AC2, AC3 and AC4. We'll have to see if there's anything new to learn from the gear when it's returned. Is there anything like this on REDACTED FOR

VERIFY NO POWER STEERING AND ADVANCE TRAC LIGHT ON. CHECK FOR CODES NO COMM WITH PSCM, ABS U0131, C1B00, IPC U0131. CHECK OASIS FOR SSM OR TSB NONE FOUND. CHECK UNDERHOOD FUSE OK. FOLLOW PINPOINT TESTS AC1 CHECK FOR VOLTAGE TO PSCM 12 VOLTS OK. AC2 CHECK GROUND WIRE 2 OHMS OK. AC3 CHECK HS CAN CIRCUITS ALL OK. AC4 CHECK CONNECTORS ALL OK. VERIFY ALL CONNECTORS ARE TIGHT AND WIGGLE TEST ALL OK. RE

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, June 14, 2011 12:48 PM
**To:** Anderson, Eric (H.); Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK7B80BG[redacted] please request gear

Why are they pulling gears? Are they being instructed to do so? There's a lot on the electrical side to check before pulling a gear besides the fuse. There are no EPAS codes so I don't see why they pulled the gear. New gear fixing the problem doesn't mean it won't come back if the whole electrical system wasn't checked.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, June 14, 2011 1:09 PM
**To:** Cassata, Joe (J.)
**Cc:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** 1FMHK7B80BG[redacted] please request gear

Hi Joe:

Here's another one today. Please request it to Eric Estes at WPAC, TR-EE.

Laura and Eric,

Here are my notes from my conversation with the tech. Any news on a communication problem in gears?

Called dealership. Tech pulled U0131:00-AB, C1B00:29-68, U0131:00-2F. Customer lost assist at ignition, would not return with multiple key cycles. Tech pulled and reinserted steering fuse, assist returned briefly. Assist lost again a few hours later. Could not be regained with fuse pull method. New gear fixed problem. Part requested.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **13-JUN-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 556186

**Vehicle Information**

Model Year: 2011
Market Derived: F - FORD
Body/Cab Type: T/WD - 4 DOOR WAGON
Version/Series: T/EF-FORD SERIES
Drive Type: T/A-2 WHL L/H FRONT DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 25-MAY-11
Production Date: 18-APR-11
VIN: 1FMHK7B80BG[redacted]

**Claim Information**

Document Number: 04137001
Repair Date: 04-JUN-11
Distance: 872
TIS: 1

**Dealer Information:**

Dealer Name: NEW BRIGHTON FORD, INC.
Dealer Code: 08452 - *

**Expense Information**

Customer Paid Amount: .00
Deductible Amount: .00
Dealer Paid Amount: .00

| | | | |
|---|---|---|---|
| Address: | 1100 SILVER LAKE ROAD | Labor Cost: | 284.15 |
| City: | NEW BRIGHTON | Misc. Expense Amount: | .00 |
| State: | MN Zip Code: 55112 | Part Markup Amount: | 299.10 |
| Country: | USA Region Code: NA | Material Cost: | 1046.86 |
| Phone: | (651)633-9010 | Total Cost Gross: | 1331.01 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFY NO POWER STEERING AND ADVANCE TRAC LIGHT ON. CHECK FOR CODES NO COMM WITH PSCM, ABS U0131, C1B00, IPC U0131. CHECK OASIS FOR SSM OR TSB NONE FOUND. CHECK UNDERHOOD FUSE OK. FOLLOW PINPOINT TESTS AC1 CHECK FOR VOLTAGE TO PSCM 12 VOLTS OK. AC2 CHECK GROUND WIRE 2 OHMS OK. AC3 CHECK HS CAN CIRCUITS ALL OK. AC4 CHECK CONNECTORS ALL OK. VERIFY ALL CONNECTORS ARE TIGHT AND WIGGLE TEST ALL OK. RE

Customer Comment: STEERING & SUSPENSIO CUSTOMER STATES THE POWER STEERING IS INOP

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 12651D | BODY / CHASSIS / ELECTRIAL (BCE) TEST | 21.05 |
| 12651D45 | | 31.57 |
| 12651DX1 | EXTRA TIME TO REPEAT FINAL QUICK TEST | 10.52 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 94.72 |
| MTPROGRAM | | 31.57 |
| MT3504 | | 94.72 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | HE | GEAR ASY-STEERING | 110101 | 1 | 1046.86 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | CHAS | C1B00 | | | |
| | UNDF | U0131 | | | |

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

3508

**From:** Mrozek, Robert (R.M.)
**Sent:** Monday, March 28, 2011 2:16 PM
**To:** Napoli, Laura (L.)
**Subject:** RE: 1FMHK8F83BG[redacted] p/s inop

This is a warranty claim and not a 0km claim.


Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


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**From:** Napoli, Laura (L.)
**Sent:** Monday, March 28, 2011 1:11 PM
**To:** Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.); ruckerlimosine@comcast.net
**Subject:** RE: 1FMHK8F83BG[redacted] p/s inop

Did you contact James Rucker about this gear? From this point on, I'd like to follow the normal process for all failed gears. QR TRW, contact James to pick up the gear, and he will send it to 26mile or Marion, depending on the failure.

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, March 28, 2011 12:13 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.)
**Subject:** 1FMHK8F83BG[redacted] p/s inop

Hi Laura and Rob:

FYI. Another B3A power steering inop claim. Part has been requested to go to John Burnett at TRW.

Server: **AWS Prod**
Claims loaded through: **25-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 315373

**Vehicle Information**

Model Year: 2011

**Claim Information**

Document Number: 431545A

Market Derived: F - FORD

Repair Date: 22-MAR-11

Body/Cab Type: T/WD - 4 DOOR WAGON

Distance: 1425

Version/Series: T/EF-FORD SERIES

TIS: 3

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 03-JAN-11

Production Date: 22-NOV-10

VIN: 1FMHK8F83BG[redacted]

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | BEECHMONT FORD INC | Deductible Amount: | .00 |
| Dealer Code: | 02058 - * | Dealer Paid Amount: | .00 |
| Address: | 600 OHIO PIKE | Labor Cost: | 217.57 |
| City: | CINCINNATI | Misc. Expense Amount: | .00 |
| State: | OH Zip Code: 452452118 | Part Markup Amount: | 293.04 |
| Country: | USA Region Code: NA | Material Cost: | 1025.64 |
| Phone: | (513)752-6611 | Total Cost Gross: | 1243.21 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: TEST DROVE VEH AND HAD NO POWER STEERING IDS TESTED AND GOT DTC U2011:49 48 U2011:61 48 U3000:96 C8CONTACTED HOT LINE AND THEY RECOMMENDED TO REPLACED THE PSCM REPLACED THE PSCM RACK ASY PERFORMED PMI AND PERFORMED ALIGNMENT TEST DROVE VEH AND NORMAL OPERATION

Customer Comment: THE POWER STEERING ASST. FAULT IS ON AND VEHICLE IS VERY TOUGH TO STEER HAS HAPPEND OTHER TIMES THIS IS THE SECOND

TIME ITS IN FOR THIS

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 16.12 |
| 3504E45 | | 24.17 |
| 3504E8 | | 8.06 |
| 3504E46 | | 8.06 |
| MT3504 | | 161.16 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | CE | GEAR ASY-STEERING | 110101 | 1 | 1025.64 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

1112

Eric Anderson
PVT Engineer

Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Anderson, Eric (H.)
**Sent:** Monday, March 28, 2011 2:14 PM
**To:** Napoli, Laura (L.)
**Subject:** RE: 1FMHK8F83BG[redacted] p/s inop

Hi Laura:

I did not contact James Rucker about this failed gear. This is a warranty claim, so I only get it after the part has been replaced. Unfortunately, snapshot data is not available with most warranty claims. I have put in a hot part request for the gear. It will be sent to John Burnett.

For gears that become inoperative in the plant with known DTC codes (U2011, U3000, C200B, C200C), I've started using the normal incoming quality process with James.

Thanks,

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, March 28, 2011 12:11 PM
**To:** Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.); ruckerlimosine@comcast.net
**Subject:** RE: 1FMHK8F83BG[redacted] p/s inop

Did you contact James Rucker about this gear? From this point on, I'd like to follow the normal process for all failed gears. QR TRW, contact James to pick up the gear, and he will send it to 26mile or Marion, depending on the failure.

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, March 28, 2011 12:13 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.)
**Subject:** 1FMHK8F83BG[redacted] p/s inop

Hi Laura and Rob:

FYI. Another B3A power steering inop claim. Part has been requested to go to John Burnett at TRW.

Server: **AWS Prod**
Claims loaded through: **25-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 315373

**Vehicle Information**

Model Year: 2011

**Claim Information**

Document Number: 431545A

Market Derived: F - FORD

Repair Date: 22-MAR-11

Body/Cab Type: T/WD - 4 DOOR WAGON

Distance: 1425

Version/Series: T/EF-FORD SERIES

TIS: 3

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 03-JAN-11

Production Date: 22-NOV-10

VIN: 1FMHK8F83BG[redacted]

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | BEECHMONT FORD INC | Deductible Amount: | .00 |
| Dealer Code: | 02058 - * | Dealer Paid Amount: | .00 |
| Address: | 600 OHIO PIKE | Labor Cost: | 217.57 |
| City: | CINCINNATI | Misc. Expense Amount: | .00 |
| State: | OH Zip Code: 452452118 | Part Markup Amount: | 293.04 |
| Country: | USA Region Code: NA | Material Cost: | 1025.64 |
| Phone: | (513)752-6611 | Total Cost Gross: | 1243.21 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: TEST DROVE VEH AND HAD NO POWER STEERING IDS TESTED AND GOT DTC U2011:49 48 U2011:61 48 U3000:96 C8CONTACTED HOT LINE AND THEY RECOMMENDED TO REPLACED THE PSCM REPLACED THE PSCM RACK ASY PERFORMED PMI AND PERFORMED ALIGNMENT TEST DROVE VEH AND NORMAL OPERATION

Customer Comment: THE POWER STEERING ASST. FAULT IS ON AND VEHICLE IS VERY TOUGH TO STEER HAS HAPPEND OTHER TIMES THIS IS THE SECOND

TIME ITS IN FOR THIS

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 16.12 |
| 3504E45 | | 24.17 |
| 3504E8 | | 8.06 |
| 3504E46 | | 8.06 |
| MT3504 | | 161.16 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | CE | GEAR ASY-STEERING | 110101 | 1 | 1025.64 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

1112

Eric Anderson
PVT Engineer

Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Monday, March 28, 2011 1:34 PM
**To:** Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.)
**Subject:** RE: 1FMHK8F83BG[redacted] p/s inop

Did you take snapshot data? How do you know it's B3A? Please send snapshot data if you have it.

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, March 28, 2011 12:13 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.)
**Subject:** 1FMHK8F83BGA02503 p/s inop

Hi Laura and Rob:

FYI. Another B3A power steering inop claim. Part has been requested to go to John Burnett at TRW.

Server: **AWS Prod**
Claims loaded through: **25-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 315373

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 03-JAN-11

Production Date: 22-NOV-10

VIN: 1FMHK8F83BG[redacted]

## Claim Information

Document Number: 431545A

Repair Date: 22-MAR-11

Distance: 1425

TIS: 3

## Expense Information

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | BEECHMONT FORD INC | Deductible Amount: | .00 |
| Dealer Code: | 02058 - * | Dealer Paid Amount: | .00 |
| Address: | 600 OHIO PIKE | Labor Cost: | 217.57 |
| City: | CINCINNATI | Misc. Expense Amount: | .00 |
| State: | OH Zip Code: 452452118 | Part Markup Amount: | 293.04 |
| Country: | USA Region Code: NA | Material Cost: | 1025.64 |
| Phone: | (513)752-6611 | Total Cost Gross: | 1243.21 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: TEST DROVE VEH AND HAD NO POWER STEERING IDS TESTED AND GOT DTC U2011:49 48 U2011:61 48 U3000:96 C8CONTACTED HOT LINE AND THEY RECOMMENDED TO REPLACED THE PSCM REPLACED THE PSCM RACK ASY PERFORMED PMI AND PERFORMED ALIGNMENT TEST DROVE VEH AND NORMAL OPERATION

Customer Comment: THE POWER STEERING ASST. FAULT IS ON AND VEHICLE IS VERY TOUGH TO STEER HAS HAPPEND OTHER TIMES THIS IS THE SECOND TIME ITS IN FOR THIS

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 16.12 |
| 3504E45 | | 24.17 |
| 3504E8 | | 8.06 |
| 3504E46 | | 8.06 |
| MT3504 | | 161.16 |

| Causal | Full Part Number | Part | Part | Extended |
|---|---|---|---|---|

| Flag | PREF | BASE | SUFF | Description | CPSC | Quantity | Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | CE | GEAR ASY-STEERING | 110101 | 1 | 1025.64 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

1112

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Estes, Eric (E.E.)
**Sent:** Monday, July 25, 2011 12:20 PM
**To:** Anderson, Eric (H.); Napoli, Laura (L.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BGA61262 EPAS inop

Most EPAS gear returns will have a U3000 code, U3000-96 codes sets with most of the relay or all other electronic failure codes that set three times within three ignition cycles and most internal electronic failure's are U3000-49.
Most of the internal U3000-49 codes are separate electronic failures(see the attached warranty chart).

Here is the latest U502 warranty paynter-pareto chart

Eric

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, July 25, 2011 11:53 AM
**To:** Napoli, Laura (L.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BGA61262 EPAS inop

Do we have a root cause for U3000 codes then? I just got another one today. Should I open a new project and make it red red?

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, July 25, 2011 10:49 AM
**To:** Anderson, Eric (H.); Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BGA61262 EPAS inop

Eric,

These are not B3A gears. U2011-49 is the B3A DTC with a PCA date of 7/11. We received 2 B3A gears recently which had build dates of last year.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, July 19, 2011 10:23 AM
**To:** Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** 1FMHK8F85BGA61262 EPAS inop

Hi Joe:

Please request this gear to Eric Estes at WPAC, TR EE.

Eric, Laura and Rob,
These U3000 faulted gears continue to come. This unit was built 5/2/11. Do you still have confidence in the July 11 PCA date?

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **18-JUL-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 687210

**Vehicle Information**

| | |
|---|---|
| Model Year: | 2011 |
| Market Derived: | F - FORD |
| Body/Cab Type: | T/WD - 4 DOOR WAGON |
| Version/Series: | T/EF-FORD SERIES |
| Drive Type: | T/F-4 WHL L/H FULL TIME DRIVE |
| Vehicle Line: | T/UB-EXPLORER [11-12] |
| Warranty Start Date: | 23-MAY-11 |
| Production Date: | 02-MAY-11 |
| VIN: | 1FMHK8F85BG[redacted] |

**Claim Information**

| | |
|---|---|
| Document Number: | 515439A |
| Repair Date: | 11-JUL-11 |
| Distance: | 4666 |
| TIS: | 2 |

**Dealer Information:**

| | |
|---|---|
| Dealer Name | CHARLES GABUS FORD |
| Dealer Code: | 03334 - * |
| Address: | 4545 MERLE HAY RD |
| City: | DES MOINES |

**Expense Information**

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 406.23 |
| Misc. Expense Amount: | .00 |

State: IA Zip Code: 50310

Country: USA Region Code: NA

Phone: (515)270-0707

Part Markup Amount: 434.38

Material Cost: 1520.32

Total Cost Gross: 1926.55

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFY CONCERN HOOK UP IDS AND RUN SELF TESTS PULLED CODES U3000:49 8A PSCM AND U3000:96 C8 PSCM RUN PIN POINT TESTS INTERNAL FAULT REPLACE PSCM ORDERED PARTS REPLACE PS RACK OR PSCM VERIFY REPAIR AND ALIGN FRONT END SET TOE

Customer Comment: CUSTOMER STATES THAT THE POWER STEERING QUIT WORKING BARELY ABLE TO STEER INSPECT AND ADVISE

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 17.66 |
| 3504E45 | | 26.49 |
| 3504E8 | | 8.83 |
| MT3504A | | 309.09 |
| MT3001A | | 44.16 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | JE | GEAR ASY-STEERING | 110101 | 1 | 1520.32 |

**DTC Sections:**

**Mil. Light On =** N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

N UNDF U3000 CONTROL MODULE 48 HYBRID

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

9452

| Case Number | Ford DTCs | TRW Code (Symptom) | Component | Gear Location | Current Updates | Issue Status | Gear location | Report State | Verbatim | Assigned To | Root Cause | P&A Code/ Dealer Name/ Dealer State | Miles | Snap Shot Data (if known) | TRW Fault (fault store codes) | VIN | Vehicle Build Date | Gear Build Date | ECU Build Date | EPP Build Date | Eng. Type | Date of Repair | Model Year | Date | Part ETA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0KM BGA41610 | C200B-62 | BD4 | TS | CAP | no returned part from CAP | | | | | | | | | | | 1FMHK8F81BGA | 3/16/2011 | | | | 3.5L w/APA | 3/16/2011 | | | |
| 0KM BGA30310 | No Assist | ? | | CAP | no returned part from CAP | | | | | | | | | | | | | | | | 3.5L w/APA | | | | |
| UR0003 | C200B-2F C200B-62 | BD0,BD2, BD4 | TS | In Eval (MAO) | 5/23- made decision to keep 400% inspection in place for PCA. But to follow through on the parts req. so if we do find a bent finger to order parts for reflection gage on station 50. | 2/4- seen interactive diagnosis for the codes and the dealer ordered an EPAS gear. Put hot process request to be returned to WPAC<br>2/9- dealer will ship out part once 700 tag is assigned, should be tomorrow. Then part should arrive at WPAC by Monday 2/14.<br>4/6- need to discuss next week the poke yokes designed at station 50 to check for bent veins/fingers on the torgue sensor. Andrew Bradley will join in the discussion to assist Marion to find a reasonable PCA. QAO will also be involved with the discussion.<br>5/3- have parts request in for TS check at station 50 on one line at MAO. Update timing chart for implemetation.<br>5/10- sent the timing plan and needs to update with PPAP and production timing | | | | | | 07955 Ron Dupratt Ford | 15 | | | 1FMHK8D87BG[redacted] | 1/24/2011 | 1/17/2011 | 11/16/2010 | 11/22/2010 | 3.5L wo/APA | 2/2/2011 | | | |
| UR0004 | U3000-96 | EF5 | | In Eval (26mile) | 5/2- NTF with the testing on this gear at 26mile. UK testing another similar NV ram issue, NTF with that unit at this time. I will keep in pending to see if we get any other returns. | 2/21- 700 tag should generate today, hoping to get the gear back to WPAC for initial analysis.<br>2/22- dealer ordered wrong steering gear, now waiting for new part with AP feature to be sent through the Ford parts | | | CHECK THE P S JUST WENT OUT WENT TO TEST DRIVE VEHICLE AND COULD NOT GET IT TO TURN AT ALL REALLY. PULLED VEHICLE INTO STALL. PULLED CODES HAD U3000:96. PULLED OASIS NO TSB, NO SSM, DID SOME PIN POINT TEST, AND EEC TEST. SENT HOTLINE INFO | | | 00089 Koons Ford | 303 | | | 1FMHK8F8XBG[redacted] | 1/20/2011 | 1/19/2011 | 12/1/2010 | 12/4/2010 | 3.5L w/APA | 2/12/2011 | | | |
| UR0007 | loud growl noise gear hard to turn | | NVH | At CAP, unknown location | 5/3- found out the gear was shipped to CAP unknown who has the gear at this time. | 3/3- talked to tech states vehicle is hard to turn the wheel even on the hoist, no boot damage only code tech states he had U0253 which is not a PSCM code advise tech to call back with more | | | WEB FORM DATA - CONCERN: STEERING ASSIST IS INOP, LOUD GROWLING NOISE WHEN ATTEMPTING TO TURN THE STEERING WHEEL DIAGNOSTICS: VISUAL INSPECTION IS OK, NO VISIBLE SIGNS OF CAUSE, GROWLING NOISE | | | 08398 Don Aadsen Ford | 18 | | | 1FMHK8F86BG[redacted] | 1/31/2011 | | | | 3.5L wo/APA | 3/2/2011 | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0008 RUA# 4530 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Confirned no fault found, contacts clean, no other testing can be done with relay cut out of the board | 3/9- EFF stored data pulled by Ford, will set-up appointment next week with the VSC center to have the gear pulled.<br>3/16- I pulled EFF and fault store, 26mile came down and picked up gear for testing tomorrow.<br>3/21- tri-temp ignition cycled for 36 hrs wit<br>4/6- relay at shirley under analysis | | | | | | Lease management vehicle- Steve Baker | 1661 | | | 1FMHK8D 86BG[redacted] | 11/5/2010 | 10/23/2010 | 8/17/2010 | 8/27/2010 | 3.5L wo/APA | 3/7/2011 | | | |
| UR0009 RUA# 4558 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Confirned no fault found, contacts clean, no other testing can be done with relay cut out of the board | 3/10- EFF stored data pulled by Ford, will set-up appointment next week with the VSC center to have the gear pulled<br>3/24- surrogate relay installed and being testing for any resetting codes.<br>3/28- no codes set with surrogate relay to remove the relay and<br>4/6- shipped relay to UK this afternoon, Geoff should have it Friday | | | | | | Lease management vehicle- Doug White | 3984 | | | 1FMHK8D 88BG[redacted] | 11/12/2010 | 10/23/2010 | 8/17/2010 | 8/27/2010 | 3.5L wo/APA | 3/9/2011 | | | |
| UR0023 | TC Lamp on, U3000 49 | AE0 | | In Eval MAO | 6/17- high voltage spike testing did not produce any A codes into the system, cannot reproduce the AEO code. NTF<br>6/22- will need to get gear back with similar codes and perform vehicle testing. Laura will provide the vehicle. | 5/20- pulled data found several can bus codes. Unknown if any would cause the TC lamp to come on.<br>6/6- Laura to check with Rob Kostadina on history of AE0 code<br>6/15- Sergio to perform open and short testing on reference EPP to see if similar code sets. Also perform voltage spikes to see if code can be set. | | | | | | 06700 Magic City Ford | 5155 | | | 1FMHK8F 84BG[redacted] | 1/19/2011 | 1/11/2011 | 10/13/2010 | 10/30/2010 | 3.5L wo/APA | 4/19/2011 | | | |

| Case Number | Ford DTCs | TRW Code (Symptom) | Component | Gear Location | Current Updates | Issue Status | Gear location | Report State | Verbatim | Assigned To | Root Cause | P&A Code/ Dealer Name/ Dealer State | Miles | Snap Shot Data (if known) | TRW Fault (fault store codes) | VIN | Vehicle Build Date | Gear Build Date | ECU Build Date | EPP Build Date | Eng. Type | Date of Repair | Model Year | Date | Part ETA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0KM BGA59863 | steering noise on full left stop | | NVH | in Eval (26mile) | 5/9- mark on the ITR that indicates the ITR over articulated. the gear was dropped or impacted before assembly in the vehicle. Marion,ZF or MAP the gear could be dropped. No marks on the EPAS housing. Unknown source at this time. | 5/2- shipped direct to 26mile from CAP<br>5/4- found right side tie rod bent, cannot find out how this happen, waiting for Ford to instruct next steps. | | | | | | | 34 | | | BG[redacted] | | | | 3/2/2011 | | 4/27/2011 | | | |
| UR0001 RUA# 4308 | U2011-49 | B3A | EPP | In Eval (Tyco) | 3/9- have implemented some containment actions. Starting today Tyco will heat treat(150deg for 1.5hrs) 100% of the rivets from Doduco to reduce contact resistance. 3/2 start shipping rivets weekly to U of Madrid for SEM/EDX analysis. Sorting of Ford stoc | 2/21- waiting on Duduco line audit information and also looking to get Tyco's presentation to send to Ford. Still at this time no new information on where the contamination came from.<br>3/9- have implemented some containment actions. Starting today Tyco wi | | | CUSTOMER STATES WHEN ON TEST DRIVE THE POWER STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS: PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM CODE RESETS INTERMITTENTLY AND MAINLY RESETS AFTER A HOT SOAK. WILL REPLACED THE RESETTING U2 | | | 09618 Brown Motors | 18 | | | 1FMHK8D83B[redacted] | 12/16/2010 | | | | 3.5L wo/APA | 1/12/2011 | | | |
| UR0002 (UR0008) RUA# 4384 | U2011-49 U3000-96 | B3A | EPP | In Eval (Tyco) | 3/9- have implemented some containment actions. Starting today Tyco will heat treat(150deg for 1.5hrs) 100% of the rivets from Doduco to reduce contact resistance. 3/2 start shipping rivets weekly to U of Madrid for SEM/EDX analysis. Sorting of Ford stoc | 2/21- waiting on Duduco line audit information and also looking to get Tyco's presentation to send to Ford. Still at this time no new information on where the contamination came from.<br>3/9- have implemented some containment actions. Starting today Tyco wil | | | CUSTOMER STATES NO PS ASSIST TECH HAS U3000-96 PPT IN WSM LEADS TO EPAS GEAR REPLAEMENT.<br>1/28- MAO shipped EPAS gear to dealer on Saturday<br>2/3- identified another B3A, will check other components in the EPP if OK to ship relay to Tyco for analysis.<br>2/3- | | | 02071 I-77 Ford | 10 | | | 1FMHK8D83B[redacted] | 1/12/2011 | | 11/11/2010 | 11/13/2010 | 3.5L wo/APA | 1/28/2011 | | | |
| UR0005 RUA# 4498 | U2011-49 | B3A | EPP | in Eval (Tyco) | 3/16- confirmed Mag,sulfer,sodium contamination, same as UR1 & UR2. here are the changes that are being made at Doduco before the next batch build that will be supervised by Tyco & TRW. Containments such as bucket washing and new sulphur bath to be implem | 3/3- pulled snap shot data that has B3A, gear now in process to 26mile for analysis.<br>3/4- will arrive at 26mile this afternoon for analysis. Will hook up surrogate relay over the weekend if no codes set will remove the relay and ship to Tyco for test when | | | | | | Ford Management Lease Car- Chicago | 1700 | | | 1FMHK8F88B[redacted] | 11/22/2010 | 11/14/2010 | 9/21/2010 | 9/24/2010 | 3.5L w/APA | 3/1/2011 | | | |
| UR0006 RUA# 4529 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/7- customer will drop off vehicle at VSC garage for replacement as soon as MAO gear arrives at the VSC center. I will pick-up the gear after | | | | | | Ford PDC Fleet vehicle- Taras Palczynsk | 2010 | | | 1FMHK7D89B[redacted] | 11/16/2010 | 11/9/2010 | 9/13/2010 | 9/16/2010 | 3.5L wo/APA | 3/7/2011 | | | |
| UR0010 RUA# 4585 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/1- picked up gear from WHQ VSC garage, pulled EFF and stored data. 4/4 John Burnett will install surrogate relay and test ambient if testing passes will remove relay and ship to | | | | | | lease management vehicle WHQ VSC | 1838 | | | 1FMHK8F89B[redacted] | 11/18/2010 | 11/14/2010 | 9/21/2010 | 9/24/2010 | 3.5L w/APA | 3/29/2010 | | | |
| UR0011 RUA# 4621 | U2011-49 | B3A | EPP | At Dealer | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/30- checked interactive diagnostic's intermittent B3A sets to ship gear back to 26mile for analysis. | | | | | | 04331 Brondes Ford | | | | 1FMHK7F87B[redacted] | 2/24/2011 | | | | 3.5L wo/APA | 3/28/2011 | | | |
| UR0012 RUA# 4596 | U2011-49 U2011-61 U3000-96 | B3A, B95 | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/1- shipped from the dealer to CAP then to 26mile for testing, install surrogate relay test with | | | | | | 02058 Beechmont Ford | 1425 | | | 1FMHK8F83B[redacted] | 11/22/2010 | | | | | | | | |
| UR0013 RUA# 4601 | U2011-49 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/8- Arrived at 26mile for testing, will not make the workshop will install surrogate relay and test<br>4/13- done testing with the surrogate relay will ship relay to | | | | | | 00807 Crest Ford | 115 | | | 1FMHK8F85B[redacted] | 2/16/2011 | | | | 3.5L w/APA | 3/9/2011 | | | |
| UR0014 RUA# 4618 | U2011-49 U3000-96 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/11- pulled fault store and EFF data, shipped gear to 26mile for further testing<br>4/13- testing with surrogate relay if passes will ship out relay to UK | | | | | | 03820 Landers Ford | 3096 | | ` | 1FMHK8F8XB[redacted] | 11/3/2010 | | | | 3.5L w/APA | 3/5/2011 | | | |
| UR0015 RUA# 4619 | U2011-49 U3000-96 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/11- pulled fault store and EFF data, shipped gear to 26mile for further testing<br>4/13- testing with surrogate | | | | | | 00807 Crest Ford | 1356 | | | 1FMHK7B87B[redacted] | 11/16/2010 | | | | 3.5L wo/APA | 2/25/2011 | | | |
| UR0016 | TC lamp on | no codes | | Ship to 26mile for storage | 4/26- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | | | | 02761 Southgate Ford | 249 | | | 1FMHK7D82B[redacted] | 3/8/2011 | 3/3/2011 | | | 3.5L wo/APA | 3/30/2011 | | | |
| UR0017 | TC lamp on | no codes | | Ship to 26mile for storage | 4/29- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | CUST REPORTS T/C LIGHT STAYING ON. TECH VERIFIED THIS CONCERN SELF TEST CODE C-1B00-64 FROM ABS MODULE. TECH REPORTS NO CODES FROM RCM. TECH REPORTS REPLACED THE STEERING RACK PER NHL RECOMMENDATION. TECH REPORTS VEHICLE STILL HAS T/C LIGHT ON CONCERN. RECONTACTED NHL WAS INFORMED TO REPLACE THE RCM. TECH REPLACED THE RCM REPORTS NORMAL T/C LIGHT FUNCTION NO RETURN CODES. TECH IS NOW SEEKING APPROVAL CODE FOR RCM REPLACEMENT | | | 02731 Atchinson Ford | 111 | | | 1FMHK8D89B[redacted] | 3/4/2011 | 3/1/2011 | | | 3.5L wo/APA | 3/31/2011 | | | |

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| UR0018 | TC lamp on | no codes | | at 26mile storage | 5/12- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | WEB FORM DATA - CONCERN: ADVANCE TRAC LIGHT ON DIAGNOSTICS: RUN OASIS NO TSBS FOUND ROADTEST VECH PARTS REPLACED:: NONE TECH QUESTION: THIS IS A NEW VECH WITH ABS DTC C1B00:64-68 IN MEMORY.I CLEARED THE DTC WENT APPROX 1 MILE HIT THE BRACKES TRACTION CONTROL ACTIVATED AND LAMP CAME BACK ON. SAME DTC SET AGIAN.ANY KNOWN CONCERNS,REPAIRS OR SUGGESTIONS BEFORE I START WITH NORMAL DIAGNOSTICS? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN?: YES WAS THE PINPOINT TEST FOLLOWED? NO TECHNICIAN REPLY: OK I CHECKED PIN FIT AT ABS MODULE ALL TEST OK. DID FIND I CAN GET FALSE ACTIVATION GOING STRAIGHT ALSO.MONITORED PID FOUND THAT STEERING WHEEL ANGLE SENSOR READS AROUND -20 DEG WITH STEERING WHEEL STRAIGHT AT TIMES.COULD THIS CAUSE THE FALSE ACTIVATION ISSUE? AFTER REPLACING SCCM RETESTED CONCERN STILL PRESENT.PERFORMED FUTHER TESTING FOUND THAT ELECTICAL SCHEMATIC ONLY SHOWS STEER WHEEL ANGLE IN SCCM.I FOUND THAT VECH WITHOUT PARK ASSIST THE ANGLE IS INSIDE THE PSCM.DUE TO THAT WE REPLACED THE PSCM.STILL INT CONCERN WITHIN 1 MILE TRAC CONTROL WILL FALSE ACTIVATE AND FLASH. NO DTCS.I REALLY HAVE A FEELING THIS | | | 05646 Crown Ford | 30 | | | 1FMHK7D85B[redacted] | 3/8/2011 | | | | 3.5L wo/APA | 4/6/2011 | | | |
| UR0022 | Int. No Assist | no codes | | at WPAC | 5/20- pulled data no ford codes or TRW codes checked hotline CQIS claim and found electrical connection issue with the wiring(UNKNOWN SOURCE) EPAS Gear did not fix symptom. this vehicle set ABS codes U0131,C1B00 & U0253 | | | | WEB FORM DATA - CONCERN: NO POWER STEERING ASSIST DIAGNOSTICS: INSPECTED THE STEERING GEAR AND CONNECTOR AND FOUND OK. RAN THE SELF TEST AND THE POWER STEERING MODULE PASSED. THE ABS MODULE HAD CODES C1B00 AND U0131. FOUND THE STEERING ASSIT STARTED WORKING MOMENTARELY AFTER THE SELF TES AND THE STOPED WORKING. MONITORED THE STEERING ANGLE PID AND FOUND IT DOES NOT MATCH THE ACTUAL STEERING ANGLE. TECHNICIAN REPLY: I REPLACED THE STEERING GEAR AND MODULE ASSEMBLY. ON THE 3RD TRIP THE STEERING HAD NO ASSIST FOR 10 MINUTES AND CODES U0131 C1B00 U0253 SET. THE STEERING ASSIST THEN CAME BACK. INSPECTED THE CONNECTORS AND WIGGLE TESTED THE WIRING TO THE GEAR TECH PERFORMED $400 WORTH OF WIRING REPAIR TO THE PSCM, UNKNOWN WHERE THE | | | 07737 Serramote Ford | 611 | | | 1FMHK8D89B[redacted] | 2/15/2011 | 2/7/2011 | | | 3.5L wo/APA | 3/23/2011 | | | |
| UR0020 RUA# 4743 | U2011-49 | B3A | EPP | in eval (Tyco) | 6/23- Contamination - confirmed as Mg,Na,S at Tyco | 5/16- CAP shipped gear direct to 26mile, performed level1 analysis shipped to MAO for level 3<br>5/24- Scope traces indicate a motor relay failure. EPP serial number is not found withing | | | | | | 05126 Gary Crossley Ford | 4475 | | | 1FMHK8F80B[redacted] | 11/5/2010 | 10/22/2010 | | | 3.5L w/APA | 4/18/2011 | | | |
| UR0024 RUA# 4827 | U2011-49 | B3A | EPP | In Eval Tyco | 6/23- Tyco confirmed Mg,S,Na contamination week 35 relay build was in the 3rd batch- Aug 26th.-Sept. 7th | 5/25- surrogate relay test, raise RUA ship to UK for week 24 workshop<br>6/8- shipped relay to Tyco for relay workshop next week | | | | | | 06081 San Francisco Ford | 14 | | | 1FMHK8D81B[redacted] | 3/8/2011 | 3/2/2011 | | 12/27/2010 | 3.5L wo/APA | 4/28/2011 | | | |
| UR0026 RUA# 4809 | U2011-49 U3000-96 | B3A | EPP | In Eval Tyco | 6/23- Tyco confirmed Mg,S,Na contamination, week 25 relay build was in the 1st contact batch- June 13th.-June 20th. | 5/26- pulled stored & EFF data shipped to MAO for further testing, motor build date 8/30/2011<br>6/9- shipped relay out to Tyco for relay workshop next week. | | | | | | 02694 Dean Sellers | 3754 | | | 1FMHK8F8XB[redacted] | 11/22/2010 | 11/11/2010 | 9/13/2010 | 9/16/2010 | 3.5L wo/APA | 5/13/2011 | | | |
| UR0028 | rubbing noise while turning at stop | no codes | NVH | in process MAO | 6/10- No problem found EOL EDF/NVH testing. Did find a couple of impact markes on the OBH & EPP. Unsure what the tech moved or changed during gear replacement to fix noise. NPF- unknown cause | 6/6- no codes in fault store, did not notice any noise turning input shaft back & forth from center. Shipped to MAO for EDF/NVH testing | | | CONCERN: FRONT END MAKES RUBBING SOUND FROM FRONT WHEN TURNING IN A PARKING LOT. DIAGNOSTICS: N/A PARTS REPLACED:N/A TECH QUESTION: ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? YES AT WHAT SPEED DOES THIS OCCUR? WHEN VEHICLE IS STOPPED AND TURNING WHEEL MOST FREQUENTLY. AT WHAT RPM DOES THIS OCCUR? 750 CUSTOMER STATES CHEKC FOR NOISE WHEN TURNING WHEEL<br>VERIFY NOISE WHEN TURNING. ISOLATE NOISE TO RACK ASSY. | | | 20636 Schultz Ford | 5475 | | | 1FMHK8D8XB[redacted] | 1/20/2011 | 1/6/2011 | 9/27/2010 | 10/7/2010 | 3.5L wo/APA | 5/18/2011 | | | |
| UR0029 | TC Lamp on | no codes | | At WPAC | 6/10- pulled stored and EFF data, no ford codes or TRW codes that would cause the TC lamp to come on. | | | | 5/9- TECH TO CHECK PIDS FOR ERRATIC OPERATION WHEN THIS INTERMITTENT TC LAMP CAME ON, REPLACED THE EPAS GEAR SAME SYMPTOMS OCCUR<br>05/19/2011 02:45PM ERIC ESTES MSS - TSO - DIGITAL IMAGE RTDA CONTACTED DEALER FOUND OUT THE YAW SIGNAL WAS STUCK ON 0 ALL THE TIME DURING ROAD TEST. DEALER REPLACED THE RCM AFTER 20 MILES OF ROAD TEST NO TC LAMP ON, TC ACTIVATION OR ABS CODES, VEHICLE FIXED AT THIS TIME. TO RELEASE BACK TO CUSTOMER | | | 08868 John C. Stewart & Son | 17 | | | 1FMHK8D83B[redacted] | 3/8/2011 | 3/2/2011 | 1/5/2011 | 1/13/2011 | 3.5L wo/APA | 5/6/2011 | | | |

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| 0KM<br>BGA39357<br>RUA# 4531 | U2011-49<br>U2011-61<br>U3000-49<br>U3000-96 | B3A | EPP | In Eval<br>(Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/15- pulled Ford codes unknown what the TRW codes are at this time, to pull CANape codes and ship to 26mile for analysis.<br>3/21- tri-temp ignition cycled for 36 hrs with no A3A's, E66's or B3A's. relay still in the chamber.<br>3/23- gear shipped out to UK to 4/18- under analysis at Tyco, on the contamination suspect list<br>this unit has been tri-temp tested over 36hrs. | | | | | | | | | | 1FMHK8D81B[redacted] | 3/14/2011 | | | | 3.5L<br>wo/APA | 3/2/2011 | | | |

| Case Number | Ford DTCs | TRW Code (Symptom) | Component | Gear Location | Current Updates | Issue Status | Gear location | Report State | Verbatim | Assigned To | Root Cause | P&A Code/ Dealer Name/ Dealer State | Miles | Snap Shot Data (if known) | TRW Fault (fault store codes) | VIN | Vehicle Build Date | Gear Build Date | ECU Build Date | EPP Build Date | Eng. Type | Date of Repair | Model Year | Date | Part ETA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0KM BGA41610 | C200B-62 | BD4 | TS | CAP | no returned part from CAP | | | | | | | | | | | 1FMHK8F81BGA | 3/16/2011 | | | | 3.5L w/APA | 3/16/2011 | | | |
| 0KM BGA30310 | No Assist | ? | | CAP | no returned part from CAP | | | | | | | | | | | | | | | | 3.5L w/APA | | | | |
| UR0003 | C200B-2F C200B-62 | BD0,BD2, BD4 | TS | In Eval (MAO) | 5/23- made decision to keep 400% inspection in place for PCA. But to follow through on the parts req. so if we do find a bent finger to order parts for reflection gage on station 50. | 2/4- seen interactive diagnosis for the codes and the dealer ordered an EPAS gear. Put hot process request to be returned to WPAC<br>2/9- dealer will ship out part once 700 tag is assigned, should be tomorrow. Then part should arrive at WPAC by Monday 2/14.<br>4/6- need to discuss next week the poke yokes designed at station 50 to check for bent veins/fingers on the torgue sensor. Andrew Bradley will join in the discussion to assist Marion to find a reasonable PCA. QAO will also be involved with the discussion.<br>5/3- have parts request in for TS check at station 50 on one line at MAO. Update timing chart for implemetation.<br>5/10- sent the timing plan and needs to update with PPAP and production timing | | | | | | 07955 Ron Dupratt Ford | 15 | | | 1FMHK8D87BG[redacted] | 1/24/2011 | 1/17/2011 | 11/16/2010 | 11/22/2010 | 3.5L wo/APA | 2/2/2011 | | | |
| UR0004 | U3000-96 | EF5 | | In Eval (26mile) | 5/2- NTF with the testing on this gear at 26mile. UK testing another similar NV ram issue, NTF with that unit at this time. I will keep in pending to see if we get any other returns. | 2/21- 700 tag should generate today, hoping to get the gear back to WPAC for initial analysis.<br>2/22- dealer ordered wrong steering gear, now waiting for new part with AP feature to be sent through the Ford parts | | | CHECK THE P S JUST WENT OUT WENT TO TEST DRIVE VEHICLE AND COULD NOT GET IT TO TURN AT ALL REALLY. PULLED VEHICLE INTO STALL. PULLED CODES HAD U3000:96. PULLED OASIS NO TSB, NO SSM, DID SOME PIN POINT TEST, AND EEC TEST. SENT HOTLINE INFO | | | 00089 Koons Ford | 303 | | | 1FMHK8F8XBG[redacted] | 1/20/2011 | 1/19/2011 | 12/1/2010 | 12/4/2010 | 3.5L w/APA | 2/12/2011 | | | |
| UR0007 | loud growl noise gear hard to turn | | NVH | At CAP, unknown location | 5/3- found out the gear was shipped to CAP unknown who has the gear at this time. | 3/3- talked to tech states vehicle is hard to turn the wheel even on the hoist, no boot damage only code tech states he had U0253 which is not a PSCM code advise tech to call back with more | | | WEB FORM DATA - CONCERN: STEERING ASSIST IS INOP, LOUD GROWLING NOISE WHEN ATTEMPTING TO TURN THE STEERING WHEEL DIAGNOSTICS: VISUAL INSPECTION IS OK, NO VISIBLE SIGNS OF CAUSE, GROWLING NOISE | | | 08398 Don Aadsen Ford | 18 | | | 1FMHK8F86BG[redacted] | 1/31/2011 | | | | 3.5L wo/APA | 3/2/2011 | | | |

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| UR0008 RUA# 4530 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Confirned no fault found, contacts clean, no other testing can be done with relay cut out of the board | 3/9- EFF stored data pulled by Ford, will set-up appointment next week with the VSC center to have the gear pulled.<br>3/16- I pulled EFF and fault store, 26mile came down and picked up gear for testing tomorrow.<br>3/21- tri-temp ignition cycled for 36 hrs wit<br>4/6- relay at shirley under analysis | | | | | | Lease management vehicle- Steve Baker | 1661 | | | 1FMHK8D 86BG[redacted] | 11/5/2010 | 10/23/2010 | 8/17/2010 | 8/27/2010 | 3.5L wo/APA | 3/7/2011 | | | |
| UR0009 RUA# 4558 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Confirned no fault found, contacts clean, no other testing can be done with relay cut out of the board | 3/10- EFF stored data pulled by Ford, will set-up appointment next week with the VSC center to have the gear pulled<br>3/24- surrogate relay installed and being testing for any resetting codes.<br>3/28- no codes set with surrogate relay to remove the relay and<br>4/6- shipped relay to UK this afternoon, Geoff should have it Friday | | | | | | Lease management vehicle- Doug White | 3984 | | | 1FMHK8D 88BG[redacted] | 11/12/2010 | 10/23/2010 | 8/17/2010 | 8/27/2010 | 3.5L wo/APA | 3/9/2011 | | | |
| UR0023 | TC Lamp on, U3000 49 | AE0 | | In Eval MAO | 6/17- high voltage spike testing did not produce any A codes into the system, cannot reproduce the AEO code. NTF<br>6/22- will need to get gear back with similar codes and perform vehicle testing. Laura will provide the vehicle. | 5/20- pulled data found several can bus codes. Unknown if any would cause the TC lamp to come on.<br>6/6- Laura to check with Rob Kostadina on history of AE0 code<br>6/15- Sergio to perform open and short testing on reference EPP to see if similar code sets. Also perform voltage spikes to see if code can be set. | | | | | | 06700 Magic City Ford | 5155 | | | 1FMHK8F 84BG[redacted] | 1/19/2011 | 1/11/2011 | 10/13/2010 | 10/30/2010 | 3.5L wo/APA | 4/19/2011 | | | |

| Case Number | Ford DTCs | TRW Code (Symptom) | Component | Gear Location | Current Updates | Issue Status | Gear location | Report State | Verbatim | Assigned To | Root Cause | P&A Code/ Dealer Name/ Dealer State | Miles | Snap Shot Data (if known) | TRW Fault (fault store codes) | VIN | Vehicle Build Date | Gear Build Date | ECU Build Date | EPP Build Date | Eng. Type | Date of Repair | Model Year | Date | Part ETA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0KM BGA59863 | steering noise on full left stop | | NVH | in Eval (26mile) | 5/9- mark on the ITR that indicates the ITR over articulated. the gear was dropped or impacted before assembly in the vehicle. Marion,ZF or MAP the gear could be dropped. No marks on the EPAS housing. Unknown source at this time. | 5/2- shipped direct to 26mile from CAP<br>5/4- found right side tie rod bent, cannot find out how this happen, waiting for Ford to instruct next steps. | | | | | | | 34 | | | BG[redacted] | | | | 3/2/2011 | | 4/27/2011 | | | |
| UR0001 RUA# 4308 | U2011-49 | B3A | EPP | In Eval (Tyco) | 3/9- have implemented some containment actions. Starting today Tyco will heat treat(150deg for 1.5hrs) 100% of the rivets from Doduco to reduce contact resistance. 3/2 start shipping rivets weekly to U of Madrid for SEM/EDX analysis. Sorting of Ford stoc | 2/21- waiting on Duduco line audit information and also looking to get Tyco's presentation to send to Ford. Still at this time no new information on where the contamination came from.<br>3/9- have implemented some containment actions. Starting today Tyco wi | | | CUSTOMER STATES WHEN ON TEST DRIVE THE POWER STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS: PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM CODE RESETS INTERMITTENTLY AND MAINLY RESETS AFTER A HOT SOAK. WILL REPLACED THE RESETTING U2 | | | 09618 Brown Motors | 18 | | | 1FMHK8D83B[redacted] | 12/16/2010 | | | | 3.5L wo/APA | 1/12/2011 | | | |
| UR0002 (UR0008) RUA# 4384 | U2011-49 U3000-96 | B3A | EPP | In Eval (Tyco) | 3/9- have implemented some containment actions. Starting today Tyco will heat treat(150deg for 1.5hrs) 100% of the rivets from Doduco to reduce contact resistance. 3/2 start shipping rivets weekly to U of Madrid for SEM/EDX analysis. Sorting of Ford stoc | 2/21- waiting on Duduco line audit information and also looking to get Tyco's presentation to send to Ford. Still at this time no new information on where the contamination came from.<br>3/9- have implemented some containment actions. Starting today Tyco wil | | | CUSTOMER STATES NO PS ASSIST TECH HAS U3000-96 PPT IN WSM LEADS TO EPAS GEAR REPLAEMENT.<br>1/28- MAO shipped EPAS gear to dealer on Saturday<br>2/3- identified another B3A, will check other components in the EPP if OK to ship relay to Tyco for analysis.<br>2/3- | | | 02071 I-77 Ford | 10 | | | 1FMHK8D83B[redacted] | 1/12/2011 | | 11/11/2010 | 11/13/2010 | 3.5L wo/APA | 1/28/2011 | | | |
| UR0005 RUA# 4498 | U2011-49 | B3A | EPP | in Eval (Tyco) | 3/16- confirmed Mag,sulfer,sodium contamination, same as UR1 & UR2. here are the changes that are being made at Doduco before the next batch build that will be supervised by Tyco & TRW. Containments such as bucket washing and new sulphur bath to be implem | 3/3- pulled snap shot data that has B3A, gear now in process to 26mile for analysis.<br>3/4- will arrive at 26mile this afternoon for analysis. Will hook up surrogate relay over the weekend if no codes set will remove the relay and ship to Tyco for test when | | | | | | Ford Management Lease Car- Chicago | 1700 | | | 1FMHK8F88B[redacted] | 11/22/2010 | 11/14/2010 | 9/21/2010 | 9/24/2010 | 3.5L w/APA | 3/1/2011 | | | |
| UR0006 RUA# 4529 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/7- customer will drop off vehicle at VSC garage for replacement as soon as MAO gear arrives at the VSC center. I will pick-up the gear after | | | | | | Ford PDC Fleet vehicle- Taras Palczynsk | 2010 | | | 1FMHK7D89B[redacted] | 11/16/2010 | 11/9/2010 | 9/13/2010 | 9/16/2010 | 3.5L wo/APA | 3/7/2011 | | | |
| UR0010 RUA# 4585 | U2011-49 | B3A | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/1- picked up gear from WHQ VSC garage, pulled EFF and stored data. 4/4 John Burnett will install surrogate relay and test ambient if testing passes will remove relay and ship to | | | | | | lease management vehicle WHQ VSC | 1838 | | | 1FMHK8F89B[redacted] | 11/18/2010 | 11/14/2010 | 9/21/2010 | 9/24/2010 | 3.5L w/APA | 3/29/2010 | | | |
| UR0011 RUA# 4621 | U2011-49 | B3A | EPP | At Dealer | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/30- checked interactive diagnostic's intermittent B3A sets to ship gear back to 26mile for analysis. | | | | | | 04331 Brondes Ford | | | | 1FMHK7F87B[redacted] | 2/24/2011 | | | | 3.5L wo/APA | 3/28/2011 | | | |
| UR0012 RUA# 4596 | U2011-49 U2011-61 U3000-96 | B3A, B95 | EPP | In Eval (Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/1- shipped from the dealer to CAP then to 26mile for testing, install surrogate relay test with | | | | | | 02058 Beechmont Ford | 1425 | | | 1FMHK8F83B[redacted] | 11/22/2010 | | | | | | | | |
| UR0013 RUA# 4601 | U2011-49 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/8- Arrived at 26mile for testing, will not make the workshop will install surrogate relay and test<br>4/13- done testing with the surrogate relay will ship relay to | | | | | | 00807 Crest Ford | 115 | | | 1FMHK8F85B[redacted] | 2/16/2011 | | | | 3.5L w/APA | 3/9/2011 | | | |
| UR0014 RUA# 4618 | U2011-49 U3000-96 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/11- pulled fault store and EFF data, shipped gear to 26mile for further testing<br>4/13- testing with surrogate relay if passes will ship out relay to UK | | | | | | 03820 Landers Ford | 3096 | | ` | 1FMHK8F8XB[redacted] | 11/3/2010 | | | | 3.5L w/APA | 3/5/2011 | | | |
| UR0015 RUA# 4619 | U2011-49 U3000-96 | B3A | EPP | In Eval (26mile) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 4/11- pulled fault store and EFF data, shipped gear to 26mile for further testing<br>4/13- testing with surrogate | | | | | | 00807 Crest Ford | 1356 | | | 1FMHK7B87BGA02763 | 11/16/2010 | | | | 3.5L wo/APA | 2/25/2011 | | | |
| UR0016 | TC lamp on | no codes | | Ship to 26mile for storage | 4/26- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | | | | 02761 Southgate Ford | 249 | | | 1FMHK7D82BGA[redacted] | 3/8/2011 | 3/3/2011 | | | 3.5L wo/APA | 3/30/2011 | | | |
| UR0017 | TC lamp on | no codes | | Ship to 26mile for storage | 4/29- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | CUST REPORTS T/C LIGHT STAYING ON. TECH VERIFIED THIS CONCERN SELF TEST CODE C-1B00-64 FROM ABS MODULE. TECH REPORTS NO CODES FROM RCM. TECH REPORTS REPLACED THE STEERING RACK PER NHL RECOMMENDATION. TECH REPORTS VEHICLE STILL HAS T/C LIGHT ON CONCERN. RECONTACTED NHL WAS INFORMED TO REPLACE THE RCM. TECH REPLACED THE RCM REPORTS NORMAL T/C LIGHT FUNCTION NO RETURN CODES. TECH IS NOW SEEKING APPROVAL CODE FOR RCM REPLACEMENT | | | 02731 Atchinson Ford | 111 | | | 1FMHK8D89B[redacted] | 3/4/2011 | 3/1/2011 | | | 3.5L wo/APA | 3/31/2011 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UR0018 | TC lamp on | no codes | | at 26mile storage | 5/12- pulled stored data from gear no codes stored in gear, check CQIS data and found the RCM fixed the vehicle. Cannot chargeback the gear to the dealer because hotline advised to change | | | | WEB FORM DATA - CONCERN: ADVANCE TRAC LIGHT ON DIAGNOSTICS: RUN OASIS NO TSBS FOUND ROADTEST VECH PARTS REPLACED:: NONE TECH QUESTION: THIS IS A NEW VECH WITH ABS DTC C1B00:64-68 IN MEMORY.I CLEARED THE DTC WENT APPROX 1 MILE HIT THE BRACKES TRACTION CONTROL ACTIVATED AND LAMP CAME BACK ON. SAME DTC SET AGIAN.ANY KNOWN CONCERNS,REPAIRS OR SUGGESTIONS BEFORE I START WITH NORMAL DIAGNOSTICS? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? NO TECHNICIAN REPLY: OK I CHECKED PIN FIT AT ABS MODULE ALL TEST OK. DID FIND I CAN GET FALSE ACTIVATION GOING STRAIGHT ALSO.MONITORED PID FOUND THAT STEERING WHEEL ANGLE SENSOR READS AROUND -20 DEG WITH STEERING WHEEL STRAIGHT AT TIMES.COULD THIS CAUSE THE FALSE ACTIVATION ISSUE? AFTER REPLACING SCCM RETESTED CONCERN STILL PRESENT.PERFORMED FUTHER TESTING FOUND THAT ELECTICAL SCHEMATIC ONLY SHOWS STEER WHEEL ANGLE IN SCCM.I FOUND THAT VECH WITHOUT PARK ASSIST THE ANGLE IS INSIDE THE PSCM.DUE TO THAT WE REPLACED THE PSCM.STILL INT CONCERN WITHIN 1 MILE TRAC CONTROL WILL FALSE ACTIVATE AND FLASH. NO DTCS.I REALLY HAVE A FEELING THIS | | | 05646 Crown Ford | 30 | | | 1FMHK7D85B[redacted] | 3/8/2011 | | | | 3.5L wo/APA | 4/6/2011 | | | |
| UR0022 | Int. No Assist | no codes | | at WPAC | 5/20- pulled data no ford codes or TRW codes checked hotline CQIS claim and found electrical connection issue with the wiring(UNKNOWN SOURCE) EPAS Gear did not fix symptom. this vehicle set ABS codes U0131,C1B00 & U0253 | | | | WEB FORM DATA - CONCERN: NO POWER STEERING ASSIST DIAGNOSTICS: INSPECTED THE STEERING GEAR AND CONNECTOR AND FOUND OK. RAN THE SELF TEST AND THE POWER STEERING MODULE PASSED. THE ABS MODULE HAD CODES C1B00 AND U0131. FOUND THE STEERING ASSIT STARTED WORKING MOMENTARELY AFTER THE SELF TES AND THE STOPED WORKING. MONITORED THE STEERING ANGLE PID AND FOUND IT DOES NOT MATCH THE ACTUAL STEERING ANGLE. TECHNICIAN REPLY: I REPLACED THE STEERING GEAR AND MODULE ASSEMBLY. ON THE 3RD TRIP THE STEERING HAD NO ASSIST FOR 10 MINUTES AND CODES U0131 C1B00 U0253 SET. THE STEERING ASSIST THEN CAME BACK. INSPECTED THE CONNECTORS AND WIGGLE TESTED THE WIRING TO THE GEAR TECH PERFORMED $400 WORTH OF WIRING REPAIR TO THE PSCM, UNKNOWN WHERE THE | | | 07737 Serramote Ford | 611 | | | 1FMHK8D89B[redacted] | 2/15/2011 | 2/7/2011 | | | 3.5L wo/APA | 3/23/2011 | | | |
| UR0020 RUA# 4743 | U2011-49 | B3A | EPP | in eval (Tyco) | 6/23- Contamination - confirmed as Mg,Na,S at Tyco | 5/16- CAP shipped gear direct to 26mile, performed level1 analysis shipped to MAO for level 3<br>5/24- Scope traces indicate a motor relay failure. EPP serial number is not found withing | | | | | | 05126 Gary Crossley Ford | 4475 | | | 1FMHK8F80B[redacted] | 11/5/2010 | 10/22/2010 | | | 3.5L w/APA | 4/18/2011 | | | |
| UR0024 RUA# 4827 | U2011-49 | B3A | EPP | In Eval Tyco | 6/23- Tyco confirmed Mg,S,Na contamination week 35 relay build was in the 3rd batch- Aug 26th.-Sept. 7th | 5/25- surrogate relay test, raise RUA ship to UK for week 24 workshop<br>6/8- shipped relay to Tyco for relay workshop next week | | | | | | 06081 San Francisco Ford | 14 | | | 1FMHK8D81B[redacted] | 3/8/2011 | 3/2/2011 | | 12/27/2010 | 3.5L wo/APA | 4/28/2011 | | | |
| UR0026 RUA# 4809 | U2011-49 U3000-96 | B3A | EPP | In Eval Tyco | 6/23- Tyco confirmed Mg,S,Na contamination, week 25 relay build was in the 1st contact batch- June 13th.-June 20th. | 5/26- pulled stored & EFF data shipped to MAO for further testing, motor build date 8/30/2011<br>6/9- shipped relay out to Tyco for relay workshop next week. | | | | | | 02694 Dean Sellers | 3754 | | | 1FMHK8F8XB[redacted] | 11/22/2010 | 11/11/2010 | 9/13/2010 | 9/16/2010 | 3.5L wo/APA | 5/13/2011 | | | |
| UR0028 | rubbing noise while turning at stop | no codes | NVH | in process MAO | 6/10- No problem found EOL EDF/NVH testing. Did find a couple of impact markes on the OBH & EPP. Unsure what the tech moved or changed during gear replacement to fix noise. NPF- unknown cause | 6/6- no codes in fault store, did not notice any noise turning input shaft back & forth from center. Shipped to MAO for EDF/NVH testing | | | CONCERN: FRONT END MAKES RUBBING SOUND FROM FRONT WHEN TURNING IN A PARKING LOT. DIAGNOSTICS: N/A PARTS REPLACED:N/A TECH QUESTION: ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? YES AT WHAT SPEED DOES THIS OCCUR? WHEN VEHICLE IS STOPPED AND TURNING WHEEL MOST FREQUENTLY. AT WHAT RPM DOES THIS OCCUR? 750 CUSTOMER STATES CHEKC FOR NOISE WHEN TURNING WHEEL<br>VERIFY NOISE WHEN TURNING. ISOLATE NOISE TO RACK ASSY. | | | 20636 Schultz Ford | 5475 | | | 1FMHK8D8XB[redacted] | 1/20/2011 | 1/6/2011 | 9/27/2010 | 10/7/2010 | 3.5L wo/APA | 5/18/2011 | | | |
| UR0029 | TC Lamp on | no codes | | At WPAC | 6/10- pulled stored and EFF data, no ford codes or TRW codes that would cause the TC lamp to come on. | | | | 5/9- TECH TO CHECK PIDS FOR ERRATIC OPERATION WHEN THIS INTERMITTENT TC LAMP CAME ON, REPLACED THE EPAS GEAR SAME SYMPTOMS OCCUR<br>05/19/2011 02:45PM ERIC ESTES MSS - TSO - DIGITAL IMAGE RTDA CONTACTED DEALER FOUND OUT THE YAW SIGNAL WAS STUCK ON 0 ALL THE TIME DURING ROAD TEST. DEALER REPLACED THE RCM AFTER 20 MILES OF ROAD TEST NO TC LAMP ON, TC ACTIVATION OR ABS CODES, VEHICLE FIXED AT THIS TIME. TO RELEASE BACK TO CUSTOMER | | | 08868 John C. Stewart & Son | 17 | | | 1FMHK8D83B[redacted] | 3/8/2011 | 3/2/2011 | 1/5/2011 | 1/13/2011 | 3.5L wo/APA | 5/6/2011 | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0KM<br>BGA39357<br>RUA# 4531 | U2011-49<br>U2011-61<br>U3000-49<br>U3000-96 | B3A | EPP | In Eval<br>(Tyco) | 5/4- Tyco confirmed this as a Mg,Na,S failure. | 3/15- pulled Ford codes unknown what the TRW codes are at this time, to pull CANape codes and ship to 26mile for analysis.<br>3/21- tri-temp ignition cycled for 36 hrs with no A3A's, E66's or B3A's. relay still in the chamber.<br>3/23- gear shipped out to UK to 4/18- under analysis at Tyco, on the contamination suspect list<br>this unit has been tri-temp tested over 36hrs. | | | | | | | | | | 1FMHK8D81B[redacted] | 3/14/2011 | | | | 3.5L<br>wo/APA | 3/2/2011 | | | |

**From:** Napoli, Laura (L.)
**Sent:** Monday, July 25, 2011 12:03 PM
**To:** Anderson, Eric (H.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BG[redacted] EPAS inop

U3000-49 is a code that encompasses MANY root causes. As we get the gears back, we group them based on the failure (TRW code). Do not open another project and make it red. Please see Eric Estes' spreadsheet for our open issues. You are welcome to call into our Monday 9am meetings where we go through U502 returns.

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, July 25, 2011 11:53 AM
**To:** Napoli, Laura (L.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BGA61262 EPAS inop

Do we have a root cause for U3000 codes then? I just got another one today. Should I open a new project and make it red red?

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, July 25, 2011 10:49 AM
**To:** Anderson, Eric (H.); Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Subject:** RE: 1FMHK8F85BG[redacted] EPAS inop

Eric,

These are not B3A gears. U2011-49 is the B3A DTC with a PCA date of 7/11. We received 2 B3A gears recently which had build dates of last year.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, July 19, 2011 10:23 AM
**To:** Cassata, Joe (J.)
**Cc:** Estes, Eric (E.E.); Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** 1FMHK8F85BG[redacted] EPAS inop

Hi Joe:

Please request this gear to Eric Estes at WPAC, TR EE.

Eric, Laura and Rob,
These U3000 faulted gears continue to come. This unit was built 5/2/11. Do you still have confidence in the July 11 PCA date?

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

Server: **AWS Prod**
Claims loaded through: **18-JUL-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 687210

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date: 23-MAY-11

Production Date: 02-MAY-11

VIN: 1FMHK8F85BG[redacted]

## Claim Information

Document Number: 515439A

Repair Date: 11-JUL-11

Distance: 4666

TIS: 2

## Dealer Information:

Dealer Name CHARLES GABUS FORD

Dealer Code: 03334 - *

Address: 4545 MERLE HAY RD

City: DES MOINES

State: IA Zip Code: 50310

Country: USA Region Code: NA

Phone: (515)270-0707

## Expense Information

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 406.23 |
| Misc. Expense Amount: | .00 |
| Part Markup Amount: | 434.38 |
| Material Cost: | 1520.32 |
| Total Cost Gross: | 1926.55 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: VERIFY CONCERN HOOK UP IDS AND RUN SELF TESTS PULLED CODES U3000:49 8A PSCM AND U3000:96 C8 PSCM RUN PIN POINT TESTS INTERNAL FAULT REPLACE PSCM ORDERED PARTS REPLACE PS RACK OR PSCM VERIFY REPAIR AND ALIGN FRONT END SET TOE

Customer Comment: CUSTOMER STATES THAT THE POWER STEERING QUIT WORKING BARELY ABLE TO STEER INSPECT AND ADVISE

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 17.66 |
| 3504E45 | | 26.49 |
| 3504E8 | | 8.83 |
| MT3504A | | 309.09 |
| MT3001A | | 44.16 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | JE | GEAR ASY-STEERING | 110101 | 1 | 1520.32 |

**DTC Sections:** **Mil. Light On** =N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| N | UNDF | U3000 | CONTROL MODULE | 48 | HYBRID |

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

9452

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, January 26, 2011 5:00 PM
**To:** Napoli, Laura (L.); Jackson, Bradley (B.G.); Anderson, Eric (H.); Bahena, Miguel (Mike.); Pasquarella, Michael (M.S.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Power steering fault, codes, 289 mi, BD 11/22/10

No DTC's collected on interactive diagnosis. I called the tech and he never saw any lamps on or no assist, starting the vehicle up from the write up area, he cleared the codes performed the parking lot road test and road tested the vehicle did not have any problems. the customer was waiting for the vehicle and has been driving it since last thursday with no problem at this time.

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, January 26, 2011 4:45 PM
**To:** Jackson, Bradley (B.G.); Anderson, Eric (H.); Bahena, Miguel (Mike.); Pasquarella, Michael (M.S.); Estes, Eric (E.E.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Power steering fault, codes, 289 mi, BD 11/22/10

Brad,
You are right. I only read Eric's list and overlooked the U2011:49-08. Disregard my last comments.

Eric Estes, can you try to find the snapshot data in IDS and see if there are any EPAS codes for this one linking to the POWER STEERING ASSIST FAULT?

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Wednesday, January 26, 2011 4:41 PM
**To:** Napoli, Laura (L.); Anderson, Eric (H.); Bahena, Miguel (Mike.); Pasquarella, Michael (M.S.); Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Power steering fault, codes, 289 mi, BD 11/22/10

Laura, are we certain? I have not seen these codes on the spread terminal stop ship we had. The codes that were repeating on vehicles with the spread terminal were C1B00, U0131, and U0001.

Brad

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**From:** Napoli, Laura (L.)
**Sent:** Wednesday, January 26, 2011 2:51 PM
**To:** Anderson, Eric (H.); Bahena, Miguel (Mike.); Pasquarella, Michael (M.S.); Estes, Eric (E.E.)
**Cc:** Jackson, Bradley (B.G.)
**Subject:** RE: 2011 Exp - BGA02503 - Power steering fault, codes, 289 mi, BD 11/22/10

The wiring issue at CAP will cause these codes.

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**From:** Anderson, Eric (H.)
**Sent:** Wednesday, January 26, 2011 11:27 AM
**To:** Bahena, Miguel (Mike.); Pasquarella, Michael (M.S.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Power steering fault, codes, 289 mi, BD 11/22/10

Hi All:

I translated these error codes from this CQIS claim. Do you know what might cause them together? We currently have a stop ship on the C139 connector for spread terminals on circuit 24.

U0121= lost communication with ABS
U0159= lost communication with active park assist module A
U2011= module transmitted invalid data
U0126= lost communication with steering angle sensor
U0428= invalid data from steering angle sensor

Thanks,

Eric

---

**From:** Buelow, Steve (S.E.)
**Sent:** Friday, January 21, 2011 10:40 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Power steering fault, codes, 289 mi, BD 11/22/10


***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"You miss 100 percent of the shots you never take." - Wayne Gretzky

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Friday, January 21, 2011 10:07 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - power steering fault, codes, 289 mi, BD 11/22/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BATDZ004 NHL | | | **Received:** | 01/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F83BG[redacted] | | | **Build Date:** | 11/22/2010 |
| **Odometer :** | 289 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02058 BEECHMONT FORD INC | | | **Phone#:** | (51! ! 3) 752-7474 |
| **City:** | Cincinnati | **State:** | Ohio | **Country :** | USA |
| **Originator:** | SHANE JONES | | | | |
| **Symptom:** | 3 03 A 99 CHASS.,STRG/HANDLING ,STEERING WHEEL ,NOT LISTED | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD INTERMITTENT | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** JSAV! ! OY1 **Phone:** 313 317-9352 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHANE JONES **Phone:** 513 752-7474 **Title Cde:** T

**DTCs:**
KOEO:U0121 U2011:49-08 U0126 U0159 U0428
KOEC:
KOER:

**Comments :**

REPAIR 01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUST STATES THAT THE MESSAGE CENTER HAD A MESSAGE THAT SAID POWER STEERING ASSIST FAULT AND THE STEERING WAS VERY HARD DIAGNOSTICS: TEST DROVE VEH AND NORMAL OPERATION AT THIS

TIME 0 WARNINGS IN THE MESSAGE CENTER IDS TESTED AND FOLLOWED PINPOINT TEST PER WORK SHOP MANUAL AND IT LED ME TO THE CONSERN IS NOT PRESENT AND TO RETURN THE VEH BACK TO THE CUST DTC U2011:49-08,U0121,U0126,U0159,U0428 THE WORK SHOP MANUAL TOLD ME TO CLEAR THE DTC AND TEST DRIVE VEH AND RETEST I CLEARD THE DTC AND THE SYSTEM PASSED PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONSERNS SHOULD I RETURN THE VEH TO THE CUST WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE**

SHANE, THIS CONCERN IS LIKELY CAUSED BY A LOOSE CONNECTION WITHIN THE MAIN ENGINE OR BODY WIRING HARNESS. THIS WOULD RESULT IN INTERMITTENT COMMUNICATION CODES AND POSSIBLE INOPERATIVE ACCESSORIES.

IN ORDER TO HELP ISOLATE THE ROOT CAUSE OF THIS CONCERN, PLEASE START THE VEHICLE AND WIGGLE TEST THE MAIN ENGINE AND BODY WIRING HARNESS. THIS MAY HELP TO INDUCE THE CONCERN. PLEASE ALSO INSPECT FOR LOOSE OR UNSEATED CONNECTORS. THE HOTLINE HAS NOT SEEN TRENDS OF THIS CONCERN AT THIS TIME. IF THE CONCERN CANNOT BE DUPLICATED, NO REPAIRS SHOULD BE PERFORMED. IF ADDITIONAL ASSISTANCE IS NEEDED, PLEASE UPDATE YOUR FORM WITH ANY ADDITIONAL DETAILS OF THIS CONCERN.

**From:** Napoli, Laura (L.)
**Sent:** Monday, June 13, 2011 12:10 PM
**To:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, fuse 89 blown, 4506 mi, BD 12/1/10

Why are they being told to replace the gear??? There are no EPAS codes.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, June 10, 2011 8:22 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, fuse 89 blown, 4506 mi, BD 12/1/10

Interesting way to lose EPAS. fyi.

brad

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**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, June 09, 2011 8:21 PM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Chones, Marvin (M.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Lux, Tracie (T.L.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, fuse 89 blown, 4506 mi, BD 12/1/10


***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer

Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com

"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, June 09, 2011 8:17 PM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, fuse 89 blown, 4506 mi, BD 12/1/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFIAY027 NHL | | | **Received:** | 06/09/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D80BG[redacted] | | | **Build Date:** | 12/01/2010 |
| **Odometer :** | 4,506 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00615 DeLacy Ford, Inc. | | | **Phone#:** | (716) 668-1200 |
| **City:** | Elma | **State:** | New York | **Country :** | USA |
| **Originator:** | MIKE MONTOUR | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST F89 OPEN | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** FSHEPHE2 **Phone:** 000 317-6305 **Regn Cd:** G4 Pittsburgh

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MIKE MONTOUR **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments**

:

REPAIR 06/09/2011 04:12PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING, TRAC LIGHT ON, NO BLWER OPERATION. DIAGNOSTICS: SELF TEST, CODES U0131, U0253. CHECKED CONNECTOR C139- GOOD. FOUND FUSE F89- 5 AMP IN BJB BLOWN. REPLACED FUSE, ALL GOOD. UNABLE TO FIND ROOT CAUSE FOR FUSE TO BLOW. PARTS REPLACED:: #F89 FUSE TECH QUESTION: KNOWN CONCERNS. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? NO WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM 06/09/2011 04:12PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**
HI MIKE. WE ARE NOT AWARE OF ANY COMMON TRENDS OR CONCERNS FOR THIS
ISSUE OTHER THEN WHAT IS ADDRESSED IN SSM 21737. PLEASE BE SURE THERE ARE NO AFTERMARKET SYSTEMS OR COMPONENTS INSTALLED AND IF SO, REMOVE
THEM PRIOR TO DIAGNOSIS. BASED ON THE DESCRIPTION, IF THERE ARE NO CIRCUIT SHORTS OR CONNECTION ISSUES, I WOULD SUSPECT AN INTERNAL PSCM
CONCERN. TO CONFIRM THIS, I WOULD ISOLATE THE BLOWER MOTOR RELAY PORTION OF CIRCUIT CBB89 FROM S123 AND ATTEMPT TO DUPLICATE THE CONCERN. IF THE FUSE OPENS, REPLACE THE PSCM. IF THE CONCERN IS RESOLVED, SUSPECT A BLOWER ISSUE. TRACE AND REPAIR AS NEEDED. IF YOU NEED ADDITIONAL ASSISTANCE, PLEASE LET US KNOW. THANKS. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 15, 2011 2:03 PM
**To:** Buelow, Steve (S.E.); Anderson, Eric (H.); Mrozek, Robert (R.M.); Annadi, Hari (H.); Cassata, Joe (J.)
**Cc:** Perri, Ron (R.J.)
**Subject:** RE: 2011 Exp - BG[redacted] - No steering assist, 5016 mi, BD 12/2/10

Steve,

We already looked this vehicle up and saw that there is a B3A code for this vehicle (motor relay failure). There is an open BSAQ in the system for this failure mode (relay contamination: SAQ2011161617). Once we get the part back through the warranty system, we can investigate if this part was built before or after the PCA's went into place at the Tier 4.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

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**From:** Buelow, Steve (S.E.)
**Sent:** Wednesday, June 15, 2011 1:27 PM
**To:** Annadi, Hari (H.); Napoli, Laura (L.); Mrozek, Robert (R.M.); Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Chones, Marvin (M.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Lux, Tracie (T.L.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - B[redacted] - No steering assist, 5016 mi, BD 12/2/10

*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com

"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Wednesday, June 15, 2011 12:07 PM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - No steering assist, 5016 mi, BD 12/2/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFNC5004 NHL | | | **Received:** | 06/14/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B88BG[redacted] | | | **Build Date:** | 12/02/2010 |
| **Odometer :** | 5,016 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02199 Bob Gillingham Ford, Inc. | | | **Phone#:** | (216) 398-1300 |
| **City:** | Parma | **State:** | Ohio | **Country :** | USA |
| **Originator:** | DINO MICELI | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | NO STEERING ASSIST | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** JTAYL466 **Phone:** 000 000-0000 **Regn Cd:** G4 Pittsburgh

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** DINO MICELI **Phone:** 216 398-1300 **Title Cde:** T

**DTCs:**

KOEO:C1B00 U3000 U2011

KOEC:

KOER:

**Comments :**

REPAIR 06/14/2011 12:25PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: VISUAL, PINPOINT TEST B. LEAD TO RWEPLACED RACK PARTS REPLACED::
NONE TECH QUESTION: PINPOINT TEST LEAD TO REPLACE RACK. NEVER HAD U CHECK POWERS AND GROUNDS TO RACK JUST VISUAL ON WIRES AND CONNECTORS.
ANY KNOWN CONCERNS. ALSO SHOULD SSM 21737 BE PERFORMED. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 06/14/2011 12:25PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE**
DINO, THE SSM 21737 IS ADDRESSING AN INTERMITTENT COMMUNICATION CONCERN WITH THE PSCM AND IS SPECIFIC TO THE CODES LISTED IN THE SSM. THIS VEHICLE DOES FALL WITHIN THE BUILD DATE OF THE SSM SO I WOULD SUGGEST INSPECTING THESE PINS FOR ANY LOOSENESS OR DAMAGE. IF ANY PIN FIT ISSUES ARE FOUND, THEN I WOULD SUGGEST PERFORMING THE SSM 21737. IF NO PIN FIT ISSUES ARE FOUND OR THE CONCERN IS STILL PRESENT AFTER PERFORMING THE SSM, THEN SUGGEST PERFORMING A LOAD TEST ON THE POWER
AND GROUND TO PSCM. IF THE POWERS AND GROUND CIRCUITS PROVE OUT, THEN
SUGGEST REPLACING THE RACK FOR THIS CONCERN. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF
THE WIRING DIAGRAMS.

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:49 AM
**To:** Mrozek, Robert (R.M.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

I looked at Interactive diagnosis and cannot tell if the tech cleared the code and the code reset look below

**Year = MY11**
**Model = U502**
**Engine =**
**VIN = 1FMHK8D83BG[redacted]**
**IDS Version = Not Available**

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**Start: Wed Jan 12 15:50:58 EST 2011**

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Menu Selection: DTC U2011 (PSCM) - Motor

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⊟ B: DTCs C1B00, C200B, C200C, C200D, U2011, U2200 and U3000: Steering Angle Sensor, Steering Shaft Torque Sensor 1, Steering Shaft Torque Sensor 2, Motor and Control Module - Failure or Erratic

Normal Operation

The power steering control module (PSCM) monitors various inputs and outputs of the electronic power assist steering (EPAS) system in order to keep the system operating at peak capacity. Information provided by sensors (steering torque, vehicle speed, vehicle travel distance, etc.) are all compared to programmed and learned information. Likewise, outputs like the motor and steering rack (travel) are tested against programmed and learned information.

Note:

If a damaged bellows boot(s) was discovered during Inspection and Verification and this pinpoint test DOES NOT lead to the installation of a new EPAS gear or bellows boot(s), then go to Pinpoint Test K to address the damaged boot(s) before returning the vehicle to the customer.

---

⊟ B1: CHECK FOR PREVIOUSLY SET DTCS

- Go to KNOWN CONCERNS.

Check for DTCs listed in the section: System Related CMDTCs cleared since initial read.

- Are any of the following DTCs present?

PSCM DTCs C1B00:2F, C1B00:62, C200B:2F, C200B:61, C200B:62, U2011:49, U2011:61, U2200:54, U3000:41, U3000:46, U3000:49.

| Yes | No |
|---|---|
| Go to B2. | Go to B2. |

---

**Exit: Wed Jan 12 15:51:44 EST 2011**

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**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:45 AM
**To:** Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

Is there anything else you can find from the available on-line systems? Pease compile all you can. Thanks Eric.

Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Estes, Eric (E.E.)
**Sent:** Thursday, January 13, 2011 9:43 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.)
**Cc:** Snider, Tim (T.O.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

This is a B3A or B6B code most likely, but it also could be a BB5-BB9 code which is a motor phase voltage high or low fault

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, January 13, 2011 9:28 AM
**To:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10
**Importance:** High

Brad - Damn it! I should have shut my mouth yesterday.

Laura - Please dig into this asap.

Eric - What can you tell us about the codes or any other info on this gear?

Rob Mrozek

Electric Power Steering Supervisor
C346N/CD3/D3/D4/U502/Police/Limo Programs
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

**From:** Saleh, Salim (S.A.)
**Sent:** Thursday, January 13, 2011 9:24 AM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

fyi..


***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage


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**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, January 13, 2011 9:22 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Holland, James (J.P.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10


***-The Customer Defines Quality-***
*Steve Buelow - Ford Motor Company*
FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com

"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, January 13, 2011 8:15 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering, lamp on, 18 mi, BD 12/16/10

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BALEI002 NHL | | | **Received:** | 01/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 12/16/2010 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09618 Brown Motors, Inc. | | | **Phone#:** | (231! ! ) 439-9604 |
| **City:** | Petoskey | **State:** | Michigan | **Country :** | USA |
| **Originator:** | JIM MILBRANDT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF POWER STEERING | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** DMU! ! RRA86 **Phone:** 313 248-8233 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JIM MILBRANDT **Phone:** 231 439-3673 **Title Cde:** T

**DTCs:**
KOEO:U0253 U2011
KOEC:
KOER:

**Comments :**

REPAIR 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES WHEN ON TEST DRIVE THE POWER

STEERING QUIT AND A RED INDICATOR LIGHT CAME ONE. DIAGNOSTICS: PERFORMED IDS TESTS U0253:00-28 IPC U2011:49-08 PSCM IN MEMORY PARTS REPLACED:: NONE TECH QUESTION: ANY REPORTS FOR THIS CONCERN? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? WAS THE PINPOINT TEST FOLLOWED?

**RECOMM 01/12/2011 02:45PM DOUGLAS MURRAY MSS - FCSD - TECH SVC HOTLINE**

JIM, IT IS RECOMMENDED TO GO TO THE WSM SECTION 211-00/DIAGNOSIS AND TESTING/DTC AND SYMPTOM CHARTS/INTERACTIVE DIAGNOSTICS AND GO TO

THE INTERACTIVE DIAGNOSTICS SECTION. FROM THERE, GO TO THE DTC LIST AND LOOK UP U2011. THIS IS A MOTOR CODE AND THERE ARE 2 DIFFERENT PPT TESTS DEPENDING ON WHICH BITMAP CODE YOU HAVE. THIS CODE INDICATES THAT THE PSCM HAS SEEN A MOTOR ISSUE AND WILL SHUT DOWN THE POWER ASSIST FUNCTION. PLEASE TRY TO DUPLICATE THE CONCERN AND IF CODE U2011 SETS, PERFORM THE APPROPRIATE CHART. THERE ARE NO COMMON TRENDS FOR THIS CONCERN. THANK YOU.

**From:** Napoli, Laura (L.)
**Sent:** Monday, January 31, 2011 3:13 PM
**To:** Saleh, Salim (S.A.); Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

Thanks Salim. We got this one handled over the weekend. The gear is on it's way to TRW today.

---

**From:** Saleh, Salim (S.A.)
**Sent:** Monday, January 31, 2011 2:21 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

FYI..


***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage


---

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, January 31, 2011 1:42 PM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker, Scott (S.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Smith, Eugenia (E.R.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

*-The Customer Defines Quality-*

**Steve Buelow - Ford Motor Company**

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com

"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Monday, January 31, 2011 10:18 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304! ! ) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |
| **Originator:** | JOHNATHAN FRYE | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | POWER STEERING INOP | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** I! ! WRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**

KOEO:U3000

KOEC:

KOER:

**Comments:**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING IS INOP DIAGNOSTICS: KOEO KOER PINPOINT TEST C1 PARTS REPLACED:: NO AT THIS TIME TECH QUESTION: ANY KNOWN CONCERNS WITH STEERING RACK WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
JONATHAN. INSPECT CONNECTOR PIN FITS TO THE PSCM. WE HAVE SEEN SOME CONCERNS DUE TO SPREAD PINS AT CONNECTOR C139. INSPECT THIS CONNECTION
USING A FLEX PROBE AND REPAIR/REPLACE ANY LOOSE PINS. PERFORM THE INTERACTIVE DIAGNOSTICS FOR FURTHER ASSISTANCE DIAGNOSING THIS CONCERN. TO PERFORM THE DIAGNOSTICS. CONNECT IDS TO VEHICLE AND GO TO
THE PTS WEB PAGE. OPEN THE ONLINE WORKSHOP MANUAL OPEN SECTION 211-00
AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

**From:** Napoli, Laura (L.)
**Sent:** Monday, January 31, 2011 3:15 PM
**To:** Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

No. Same C69 in West Virginia.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Monday, January 31, 2011 3:08 PM
**To:** Estes, Eric (E.E.)
**Cc:** Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted]- Power steering inop, 12 mi, BD 1/12/11

Is this a new one?

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Saleh, Salim (S.A.)
**Sent:** Monday, January 31, 2011 2:21 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted]- Power steering inop, 12 mi, BD 1/12/11

FYI..

***Salim Saleh***
U502 Explorer
Chassis PMT Leader
Phone: (313)805-2451 Fax: (313)322-0744
ssaleh@ford.com Cubicle: 2B-L37
http://vm7.dearborn.ford.com/cgi/textpage

---

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, January 31, 2011 1:42 PM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gubing, William (Bill.); Hays, Andy (A.R.); Henker,

Scott (S.); Lubin Henney, Michele (MLH.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Smith, Scott (S.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Abrams, Donald (D.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moses, Barry (B.A.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Smith, Eugenia (E.R.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Williams, TRACE (S.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Stonewall, Wendy (M.); Svetich, Chris (C.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Siddiqui, Saif (S.S.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


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---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Monday, January 31, 2011 10:18 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Power steering inop, 12 mi, BD 1/12/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |

| | | | | | |
|---|---|---|---|---|---|
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304! ! ) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |

**Originator:** JOHNATHAN FRYE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** POWER STEERING INOP
**Fix:** **Causal Component :**
**Condition Code:**

**Hotliner:** I! ! WRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**
KOEO:U3000
KOEC:
KOER:

**Comments :**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING IS INOP DIAGNOSTICS: KOEO KOER PINPOINT TEST C1 PARTS REPLACED:: NO AT THIS TIME TECH QUESTION: ANY KNOWN CONCERNS WITH STEERING RACK WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
JONATHAN. INSPECT CONNECTOR PIN FITS TO THE PSCM. WE HAVE SEEN SOME CONCERNS DUE TO SPREAD PINS AT CONNECTOR C139. INSPECT THIS CONNECTION
USING A FLEX PROBE AND REPAIR/REPLACE ANY LOOSE PINS. PERFORM THE INTERACTIVE DIAGNOSTICS FOR FURTHER ASSISTANCE DIAGNOSING THIS CONCERN. TO PERFORM THE DIAGNOSTICS. CONNECT IDS TO VEHICLE AND GO TO
THE PTS WEB PAGE. OPEN THE ONLINE WORKSHOP MANUAL OPEN SECTION 211-00
AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, March 09, 2011 4:54 PM
**To:** Napoli, Laura (L.)
**Subject:** RE: 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11

Hi Laura:

This claim came through ECB today. I had the gear sent to John Burnett at TRW. The tech was only able to pull the one U0253 code. His interactive diagnostics tool would not work with the gear.

Thanks,

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, March 07, 2011 9:41 AM
**To:** Napoli, Laura (L.); Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11

Sorry, you didn't call on this. It was Eric Estes.

Eric Estes called last week and is trying to get EPAS codes and more info to understand the "growl". Trying to understand if there was a boot leak causing contamination.

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, March 07, 2011 10:39 AM
**To:** Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11

You already called them once, right? Just see if you can ask questions to understand the "growl" and if it's rack noise or actually motor. And need codes. I think you already asked for this.

---

**From:** Anderson, Eric (H.)
**Sent:** Monday, March 07, 2011 10:19 AM
**To:** Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11

FYI. I'll give the dealer a call today to get more of the story. This car did not go over the problem brake fill connector.

Thanks,

Eric

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, March 03, 2011 3:43 PM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy

(A.R.); Krochmalny, Kevin (K.); Lysik, Kevin (K.M.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Elting, Tim (T.H.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Smith, Eugenia (E.R.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11


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*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"You miss 100 percent of the shots you never take." - Wayne Gretzky

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, March 03, 2011 12:39 PM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - No steering assist, noisy, 18 mi, BD 1/31/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BCBAW023 NHL | | | **Received:** | 03/02/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F86BG[redacted] | | | **Build Date:** | 01/31/2011 |
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |

| | | | | | |
|---|---|---|---|---|---|
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08398 Don Aadsen Ford | | | **Phone#:** | (406! ! ) 676-4400 |
| **City:** | Ronan | **State:** | Montana | **Country :** | USA |
| **Originator:** | KEN LOZEAU | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LACK OF ASSIST, GROWL NOISE | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** TFUMER! ! OL **Phone:** 000 317-9383 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** KEN LOZEAU **Phone:** 406 676-4420 **Title Cde:** T

**DTCs:**

KOEO:U0253

KOEC:

KOER:

**Comments :**

REPAIR 03/02/2011 04:10PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: STEERING ASSIST IS INOP, LOUD GROWLING NOISE WHEN ATTEMPTING TO TURN THE STEERING WHEEL DIAGNOSTICS: VISUAL INSPECTION IS OK, NO VISIBLE SIGNS OF CAUSE, GROWLING NOISE APPEARS TO BE COMING FROM ELECTRIC MOTOR ON STEERING RACK. HOOKED UP IDS AND RETRIEVED CONT CODE U0253, TRACTION CONTROL LIGHT IS ON PARTS REPLACED:: NONE TECH QUESTION: ANY DIAG ASSISTANCE WOULD BE GREATLY APPRECIATED, POWER STEERING WORKED NORMAL UNTIL IT WAS DRIVEN INTO WASH BAY THEN QUIT WORKING WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? NO WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM 03/02/2011 04:10PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE**
KENNETH, IT IS RECOMMENDED TO PERFORM THE INTERACTIVE VEHICLE DIAGNOSTICS AVAILABLE THROUGH THE ONLINE WORKSHOP MANUAL 211-00, DTC
AND SYMPTOM CHART. THIS WILL AID IN DIAGNOSING THE SYSTEM. SINCE THE MOTOR IS MAKING NOISE THERE MAY BE AN INTERNAL FAULT. SERVICE AS NEEDED.

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 31, 2011 9:02 AM
**To:** Anderson, Eric (H.); Estes, Eric (E.E.); Jackson, Bradley (B.G.); Issa, Ibrahim (I.M.); Logli, Michael (M.A.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

Eric Estes,

Please contact this dealer and make sure they understand they are NOT to change the gear without performing the pinout and wiggle tests.

Thanks.

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, March 30, 2011 6:09 PM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Jackson, Bradley (B.G.); Issa, Ibrahim (I.M.); Logli, Michael (M.A.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

Hi All:

I called the dealership this afternoon and spoke the to repair technician. He explained that this unit is for a local rental car branch and that a new steering gear has been ordered but not installed. He is available to talk tomorrow to figure out if this is an EPAS gear problem or a wiring problem.

Thanks,

Eric

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, March 30, 2011 9:34 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Jackson, Bradley (B.G.); Issa, Ibrahim (I.M.); Logli, Michael (M.A.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

Hi All:

We were talking about this CQIS last week. Is there an update? There weren't any EPAS specific codes and the problem started to look like wiring (the gear wasn't getting any power).

Thanks,

Eric

---

**From:** Docimo, Tony (A.F.)
**Sent:** Tuesday, March 29, 2011 9:29 PM
**To:** Anderson, Eric (H.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

Any more info on this?

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, March 24, 2011 10:26 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Imperati, Daniel (D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Sluis, Jim (JS.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, March 24, 2011 9:37 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 611 mi, BD 2/15/11

**Attachments :** 0

**Report# :** BCWFW001 NHL **Received:** 03/23/2011

| | | | | | |
|---|---|---|---|---|---|
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D89BG[redacted] | | | **Build Date:** | 02/15/2011 |
| **Odometer :** | 611 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 07737 Serramonte Ford, Inc. | | | **Phone#:** | (650) 301-7065 |
| **City:** | Colma | **State:** | California | **Country :** | USA |

**Originator:** OMAR NAVARRO

**Symptom:** 3 03 0 00 CHASS.,STRG/HANDLING ,OTHER-CODE NA,OTHER-CODE NA

**Status:**

**VFG:** V89 RIDE & HANDLING

**Additional Symptom:** LOSS OF STEERING ASSIST

**Fix:** **Causal Component :**

**Condition Code:**

**Hotliner:** MHINDERE **Phone:** 313 337-9292 **Regn Cd:** W2 San Francisco

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** OMAR NAVARRO **Phone:** 650 577-0577 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C1B00 U0131

KOER:

**Comments :**

REPAIR 03/23/2011 06:19PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING ASSIST DIAGNOSTICS:
INSPECTED THE STEERING GEAR AND CONNECTOR AND FOUND OK. RAN THE SELF
TEST AND THE POWER STEERING MODULE PASSED. THE ABS MODULE HAD CODES
C1B00 AND U0131. FOUND THE STEERING ASSIT STARTED WORKING MOMENTARELY
AFTER THE SELF TES AND THE STOPED WORKING. MONITORED THE STEERING
ANGLE PID AND FOUND IT DOES NOT MATCH THE ACTUAL STEERING ANGLE.
PARTS REPLACED:: NONE TECH QUESTION: DOES THE STEERING GEAR
ASSEMBLY NEED TO HAVE APPROVAL FOR REPLACEMENT WERE YOU ABLE TO
VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN
THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/23/2011 06:19PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**

TO BETTER ASSIST YOU ON THIS WARRANTY RELATED QUESTION, THE TECHNICAL

SERVICE HOTLINE RECOMMENDS THAT YOU REFER TO THE DEALERSHIP WARRANTY

ADMINISTRATOR, THE WARRANTY AND POLICY MANUAL, OR YOU MAY CONTACT THE

WARRANTY ASSISTANCE CENTER DIRECTLY AT 1-800-423-8851

**From:** Napoli, Laura (L.)
**Sent:** Monday, May 23, 2011 2:03 PM
**To:** Annadi, Hari (H.); Perri, Ron (R.J.); Mrozek, Robert (R.M.); Pascarella, Michael (M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

No. The gear was not changed out on this one. It sounds like a wiring issue to me. PVT said they lost assist and it came back on the next key cycle with no DTC's. There's a new wiring issue popping up that the PVT is invetigating with the electrical team. We need to start directing dealers to look for this wiring problem when they have no communication with the gear or intermittent assist with no EPAS DTC's.

---

**From:** Annadi, Hari (H.)
**Sent:** Monday, May 23, 2011 12:12 PM
**To:** Perri, Ron (R.J.); Mrozek, Robert (R.M.); Pascarella, Michael (M.); Napoli, Laura (L.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

Do we have any of these parts back?

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**From:** Perri, Ron (R.J.)
**Sent:** Monday, May 23, 2011 10:12 AM
**To:** Annadi, Hari (H.); Mrozek, Robert (R.M.); Pascarella, Michael (M.); Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

This concern is being added to the emerging issues list

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

---

**From:** Gubing, William (Bill.)
**Sent:** Monday, May 23, 2011 10:10 AM
**To:** Menz, Kenneth (K.C.); Perri, Ron (R.J.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

FYI

Bill

---

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, May 23, 2011 10:02 AM

**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

This is the 5th report in the last 3 weeks. This concern is being added to the emerging issues list.

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Monday, May 23, 2011 8:59 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

**Attachments :** 0

| | | | |
|---|---|---|---|
| **Report# :** | BETBK025 NHL | **Received:** | 05/20/2011 |
| **CCRG/EPRC:** | **Reviewed Status:** | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B8XBG[redacted] | **Build Date:** | 03/03/2011 |

| | | | | | |
|---|---|---|---|---|---|
| **Odometer :** | 2,947 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08305 Evergreen Ford | | | **Phone#:** | (425) 392-6900 |
| **City:** | Issaquah | **State:** | Washington | **Country :** | USA |

**Originator:** JASON DESCHAMBAULT

**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** INT. LOSS OF STEERING

**Fix:** **Causal Component :**

**Condition Code:**

**Hotliner:** MHINDERE **Phone:** 000 337-9292 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JASON DESCHAMBAULT **Phone:** 425 392-6900 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUSTOMER LOST STEERING ASSIST AT 35 MPH, DIDNT RETURN UNTILL ENGINE SHUT OFF AND RETSTARTED. DIAGNOSTICS: CHECKED OASIS, CHECKED FOR DTCS PASS. PARTS REPLACED:: NONE TECH QUESTION: ROAD TESTED, UNABLE TO VERIFY CONCERN. ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM** **05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE** JASON, TO ACTIVATE THE EPAS SYSTEM, A 12-VOLT HOT AT ALL TIMES AND A 12-VOLT IGNITION/RUN INPUT TO THE PSCM IS REQUIRED. THE PSCM THEN MONITORS THE HS-CAN TO DETERMINE IF THE VEHICLE IS OPERATING IN A MANNER CAPABLE OF SUPPORTING THE EPAS SYSTEM. THE PSCM USES INPUTS FROM VARIOUS MODULES OVER THE HS-CAN, THE STEERING TORQUE SENSOR AND

THE MOTOR TO DETERMINE THE AMOUNT OR LEVEL OF ASSIST PROVIDED BY THE

EPAS SYSTEM. INSPECT PINFIT AND CONNECTION AT THE PSCM. VERIFY THERE ARE NO CONCERNS WITH A LOSS OF POWER TO THE PSCM. GIVEN THE CONCERN IS INTERMITTENT, A CONNECTION CONCERN IS POSSIBLE.

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, May 04, 2011 12:44 PM
**To:** Anderson, Eric (H.); Docimo, Tony (A.F.)
**Cc:** Jackson, Bradley (B.G.); Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

Sorry Eric and Tony. I misunderstood which issues you've had in CAP, so I would like to reword my statement below...

It's still correct that -- No. The C200D has nothing to do with the torque sensor. This is a motor fault.

To further add, in waranty, we saw one vehicle last week with a C200D-49 motor fault. The dealer cleared codes and returned the vehicle to the customer since they could not duplicate the failure. Since we don't have the part back, we cannot investigate this failure. If the customer has a repeat fault, and brings the car back in, then we can start to investigate the C200D-49. I thought you said you had a 0km at CAP with C200D-49, but you did not have that fault. Therefore, there are no gears for us to use to investigate this fault at this time.

Regarding ICA or PCA per Tony's question below...no, there is no ICA or PCA in place for C200D-49 per the reasoning above. There is an ICA in place for C200B and C200C which are the torque sensor faults that you have gotten in CAP on one vehicle. We are replacing the ICA with a PCA which is currently being developed at the TRW assy facility.

I hope this clears things up.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, May 03, 2011 10:59 AM
**To:** Anderson, Eric (H.)
**Cc:** Docimo, Tony (A.F.); Jackson, Bradley (B.G.); Mrozek, Robert (R.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

No. This has nothing to do with the torque sensor. This is a motor fault. At this point there are no U502 warranty issues with this fault code. No ICA or PCA is in place since there was only one claim and the gear has not been changed out. We would need the gear back to do an analysis of what the specific TRW code is for this one C200D claim. We can analyze the 0km gear that was found yesterday, but that is not necessarily the same issue that happened in warranty, so it cannot be used to specifically analyze this warranty claim below.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, May 03, 2011 10:20 AM

**To:** Napoli, Laura (L.)
**Cc:** Docimo, Tony (A.F.); Jackson, Bradley (B.G.)
**Subject:** RE: 2011 Exp - BGA42179 - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

Hi Laura:

Would I be correct in adding C200D code claims to *SAQ2011167053 D3/U502 EPAS defective torque sensor (C200B, C200C codes)*? Does C200D indicate the same root cause as C200B and C200C?

Thanks,

Eric

---

**From:** Docimo, Tony (A.F.)
**Sent:** Monday, May 02, 2011 6:58 PM
**To:** Napoli, Laura (L.); Jackson, Bradley (B.G.); Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11
**Importance:** High

Do we have an ICA or PCA plan for this C200D DTC?

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, May 02, 2011 8:55 AM
**To:** Jackson, Bradley (B.G.); Docimo, Tony (A.F.)
**Cc:** Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

Yes. C200D is a gear HW DTC. Service is to clear codes and try to duplicate. If they cannot duplicate, they return to customer. If they do duplicate, they replace gear. If they return to customer and customer brings it back a second time, they immediately replace gear.

This dealer cleared codes and returned to customer same day.

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Saturday, April 30, 2011 5:40 AM
**To:** Docimo, Tony (A.F.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

Tony, not sure. The C200D might be pointing to the gear.

Laura, any insight on this CQIS report?

Brad

---

**From:** Docimo, Tony (A.F.)
**Sent:** Friday, April 29, 2011 5:31 PM
**To:** Jackson, Bradley (B.G.); Anderson, Eric (H.)
**Subject:** FW: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

Any ideas on this?

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, April 25, 2011 3:15 PM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Pesch, Vincent (V.J.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

*-The Customer Defines Quality-*


*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 313-805-8334 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Monday, April 25, 2011 10:32 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - No power steering, traction fault lmap on, 164 mi, BD 3/24/11

**Attachments :** 0

**Report# :** BDUB5007 NHL **Received:** 04/21/2011

| | | | | | |
|---|---|---|---|---|---|
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D84BG[redacted] | | | **Build Date:** | 03/24/2011 |
| **Odometer :** | 164 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 05662 Crossroads Ford Lincoln, Inc. | | | **Phone#:** | (502) 695-1990 |
| **City:** | Frankfort | **State:** | Kentucky | **Country :** | USA |

**Originator:** MARTY MITCHAM

**Symptom:** 3 01 A 04 CHASS.,SERVICE BRAKE ,INDICATOR,T/C LIGHT

**Status:**

**VFG:** V21 BRAKING

**Additional Symptom:** TRAC LIGHT ON/NO ASSIST INT

**Fix:** **Causal Component :**

**Condition Code:**

**Hotliner:** LMILLA11 **Phone:** 313 317-9130 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** MARTY MITCHAM **Phone:** 502 695-1990 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 04/21/2011 10:08AM LYLE MILLARD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER SAYS WHILE LEAVING A RESTURANT YESTERDAY, HE HAD NO POWER STEERING ALL THE WAY HOME. ALSO THE TRAC CONTROL LIGHT CAME ON TWICE AND WENT OFF. EVERY THING OK THIS MORNING DIAGNOSTICS: IDS DIAG. PSCM-PINPOINT TEST B. CHECKED CONNECTIONS AT GEAR-OK CODES C1B00:86-28 ABS, U0182:87-0A BCM, U0212:87-0A BCM, U0253:00-28 IPC, C200D:49-08 PSCM ALL OK AT THIS TIME PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONCERNS WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **04/21/2011 10:08AM LYLE MILLARD MSS - FCSD - TECH SVC HOTLINE**
MARTY, PLEASE ENSURE THAT THE CONCERN CAN BE VERIFIED BEFORE ANY REPAIRS ARE TO BE PERFORMED. IF THE CONCERN CAN BE DUPLICATED AND

VERIFIED, THIS CONCERN CAN BE ADDRESSED BY CONSULTING SSM 21737. THIS SSM ADDRESSES COMMUNICATION ISSUES THAT WOULD SET THESE CODES. DTC U0253 DOES NOT PERTAIN TO THE CONCERN AND SHOULD BE DISREGARDED. IF COMMUNICATION IS RESTORED PLEASE RETEST, AND EVALUATE. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 02, 2011 4:31 PM
**To:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: 2011 Exp - BG[redacted] - Lost power steering assist while driving, 540 mi, BD 3/29/11

We'll need to discuss in detail in our Mon warranty mtg. I need to get the background on what was done.

---

**From:** Anderson, Eric (H.)
**Sent:** Thursday, June 02, 2011 10:30 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Lost power steering assist while driving, 540 mi, BD 3/29/11

Hi Laura and Eric:

C200D is a known issue, but do we have a fix for it?

Thanks,

Eric

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, June 02, 2011 9:23 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Chones, Marvin (M.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Lux, Tracie (T.L.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Lost power steering assist while driving, 540 mi, BD 3/29/11

*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com

"Quality means doing it right when no one is looking." - Henry Ford

---

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, June 02, 2011 8:44 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Lost power steering assist while driving, 540 mi, BD 3/29/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFADJ010 NHL | | | **Received:** | 06/01/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F82BG[redacted] | | | **Build Date:** | 03/29/2011 |
| **Odometer :** | 540 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08556 Ford and Lincoln of Bellevue | | | **Phone#:** | (877) 374-3931 |
| **City:** | Bellevue | **State:** | Washington | **Country :** | USA |
| **Originator:** | HOWARD WOLF | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | POWER ASSIST INOP | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** HOWARD WOLF **Phone:** 425 454-2454 **Title Cde:** T

**DTCs:**
KOEO:C200D
KOEC:

KOER:

**Comments:**

REPAIR 06/01/2011 03:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES THAT WHILE DRIVING STEERING
GOT STIFF AND HAD NO ASSIST POWER STEERING FAULT DISPLAYED IN MESSAGE
CENTER DIAGNOSTICS: ROADTEST VERIFIED CONCERN C200D IS THE CODE
WHEN DOING THE PINPOINT TEST IT HAS ME CLEAR THEN TURN LKOCK TO LOCK A
FEW TIMES THEN RETEST IT WILL BE OK THEN NSAYS TO RELEASE TO CUSTOMER
BUT IF I GO DRIVE FOR ALITTLE BIT IT WILL LOOSE ALL POWER
ASSIST PARTS REPLACED:: NONE TECH QUESTION: ANY LIKE CONCERNS OR
DAIG HELP TO TRACK DOWN THIS PROBLEM ALL CONNECTORS LOOK GOOD AND
EVERYTHING WILL PASS THEN DRIVE AND IT WILL FAIL AGAIN WERE YOU
ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT
TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST
FOLLOWED? YES

**RECOMM 06/01/2011 03:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
HOWARD, IF YOU HAVE NOT DONE SO ALREADY, REFER TO THE ONLINE WORKSHOP
MANUAL SECTION 211-00 AND ENTER INTERACTIVE DIAGNOSTICS AND PERFORM
DIAGNOSTIC ROUTINE B TO DIAGNOSE DTC C200D. PLEASE REVIEW DIAGNOSTIC
ROUTINE I ALSO TO VERIFY IF IT CORRESPONDS WITH THE PRESENT CONCERN.
IF FURTHER ASSISTANCE IS REQUIRED, PLEASE UPDATE THE FORM WITH YOUR
LATEST RESULTS.

**From:** Napoli, Laura (L.)
**Sent:** Friday, May 20, 2011 8:26 AM
**To:** Perri, Ron (R.J.); Mrozek, Robert (R.M.); Pascarella, Michael (M.)
**Cc:** Menz, Kenneth (K.C.); Surella, Matthew (M.M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

Ron,

We are actively following up on all claims and getting gears back.

The process we follow for EPAS claims is to get gears back from dealers through the warranty 700 tag process and have them analyzed at 26mile or Marion. We also contact dealers that we see in CQIS who either seem to need help or who are being told to change a gear unnecessarily. Eric Estes is the TRW warranty lead who sits at the Ford Diagnostic Service Center (DSC1) and has been working on the Ford programs since the beginning of CD3. He builds paretos for each program and follows up with dealers and the WHQ garage for claims that need our immediate attention. He's also in direct contact with the PVT as necessary.

Please let me know if you'd like more detail or have any suggestions on our current process.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Perri, Ron (R.J.)
**Sent:** Thursday, May 19, 2011 3:04 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.); Pascarella, Michael (M.)
**Cc:** Menz, Kenneth (K.C.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

Please get into. Get part back, etc.
Thanks.

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

**From:** Menz, Kenneth (K.C.)
**Sent:** Thursday, May 19, 2011 1:14 PM
**To:** Perri, Ron (R.J.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

Ron - Bill Gubing just sent this over; 2 warranty claims in 1 day for EPAS loss of assist. How shall I respond? I am not aware of any warranty spike for EPAS on U502 nor aware of any recent quality issues.


**Kenneth C. Menz**
Chassis Integration Mgr for
Med/Large Family & CUV
313-805-3156
PDC 2B-G80


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**From:** Gubing, William (Bill.)
**Sent:** Thursday, May 19, 2011 11:59 AM
**To:** Menz, Kenneth (K.C.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

2 of these in the same day hit warranty. And ideas?

Thanks

Bill

---

**From:** Buelow, Steve (S.E.)
**Sent:** Thursday, May 19, 2011 11:42 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.);

Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

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*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Thursday, May 19, 2011 9:26 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 256 mi, BD 5/3/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BERDT010 NHL | | | **Received:** | 05/18/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 05/03/2011 |
| **Odometer :** | 256 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00838 Lynch Ford-Mt. Vernon, Inc. | | | **Phone#:** | (319) 895-8500 |
| **City:** | Mount Vernon | **State:** | Iowa | **Country :** | USA |
| **Originator:** | CHAD HONKOMP | | | | |
| **Symptom:** | 6 98 2 98 DRVABL,INDICATOR,CHECK ENGINE,MIL ONLY | | | | |
| **Status:** | | | | | |
| **VFG:** | V29 CHECK ENGINE LIGHT | | | | |
| **Additional Symptom:** | LOSS OF ASSIST U0131 | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** FSHEPHE2 **Phone:** 000 317-6305 **Regn Cd:** G1 Chicago

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** CHAD HONKOMP **Phone:** 319 895-8500 **Title Cde:** T

**DTCs:**

KOEO:U0131

KOEC:

KOER:

**Comments:**

REPAIR 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STERRING IS ACTING ERRATTIC DURING PARKING GARAGE DRIVING. DIAGNOSTICS: ROADTEST FOR CONERNS , NOT PRESENT , CHECK DTCS CONT U0131 PSCM KOEO- PASS PARTS REPLACED:: NONE TECH QUESTION: WSM IS INCOMPLETE. CHEKCING FOR REPORTS OR KNOWN CONCERNS. ANY FURTHER DIAG?

**RECOMM 05/18/2011 06:43PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**
HI CHAD. WE ARE NOT AWARE OF ANY COMMON TRENDS OR CONCERNS FOR THIS
ISSUE OTHER THEN SSM 21737. PLEASE DUPLICATE THE CONCERN PRIOR TO ANY REPAIR AND WHEN PRESENT, REFER TO THE SSM AND CHECK FOR CONCERNS AT C139 AND REPAIR AS NEEDED. IF OK, LOAD TEST ALL PSCM POWERS AND GROUNDS AND REPAIR IF NECESSARY AND RETEST. IF YOU NEED ADDITIONAL ASSISTANCE, PLEASE LET US KNOW. THANKS. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF
THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, May 25, 2011 10:01 AM
**To:** Anderson, Eric (H.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 3 mi, BD 5/9/11

Ok, thanks for trying. It'll be interesting to know if a new gear fixes the problem.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, May 24, 2011 6:10 PM
**To:** Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 3 mi, BD 5/9/11

Hi Laura:

I called this tech again. He said he followed the DTC symptom chart to look at section 418-00 but was not able to solve the communication/no assist problem. I told him I could not authorize a gear swap and to work with hotline for the rest of the repair.

Looks like we're getting this gear back. We'll just have to wait to find out what the real problem is.

Thanks,

Eric

---

**From:** Buelow, Steve (S.E.)
**Sent:** Friday, May 20, 2011 11:07 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 3 mi, BD 5/9/11

*-The Customer Defines Quality-*


**Steve Buelow - Ford Motor Company**

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Friday, May 20, 2011 9:52 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 3 mi, BD 5/9/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BESD7009 NHL | | | **Received:** | 05/19/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D85BG[redacted] | | | **Build Date:** | 05/09/2011 |
| **Odometer :** | 3 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02459 Sam Pack's Five Star Ford | | | **Phone#:** | (972) 242-6415 |
| **City:** | Carrollton | **State:** | Texas | **Country :** | USA |
| **Originator:** | BRIAN MCKEVITT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | NO STEERING ASSIST | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** JTAYL466 **Phone:** 000 000-0000 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** BRIAN MCKEVITT **Phone:** 972 446-5000 **Title Cde:** T

**DTCs:**
KOEO:C1B00:86 C1B00:41 U0131:00
KOEC:
KOER:

**Comments**
**:**

REPAIR 05/19/2011 04:27PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: VEHICLE HAS NO STEERING
ASSIST DIAGNOSTICS: SELF TEST NO COMUNICATION WITH PSCM. ABS MODULE
STORED CODES CONTINOUS: C1B00:86-68, C1B00:41-68, U0131:00-AB. TESTED
BOTH POWERS TO PSCM: PIN 1 C1463B 12.6V, PIN 3 C1463A 12.6V. TESTED
GROUND PIN 2 C1463B .8 OHMS CONTINUITY TO GROUND. TESTED HIGH SPEED
CAN CIRCUITS FROM DLC TO PSCM BOTH .8 OHMS. CONNECTOR PINS AND PINS AT
PSCM APPER IN CORRECT LOCATION NOT PUSHED OUT AND ARE IN GOOD
CONDITION. RECONNECTED AND TESTED CONCERN STILL PRESENT PARTS
REPLACED:: NONE TECH QUESTION: LOOKING FOR KNOWN CONCERNS BEFORE
REPLACING PSCM GEAR ASSEMBLY

**RECOMM 05/19/2011 04:27PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE**
BRIAN, SUGGEST YOU USE <>
HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/S
SM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THIS
CONDITION. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR
U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN,
BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK
TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

**REPAIR 05/19/2011 06:39PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE**
TECHNICIAN REPLY: WIGGLE TESTED NO CHANGE IN CONDITION INSPECTED PIN
FIT APPEARED OK. BYPASSED CONNECTOR AND HARD WIRED CIRCUITS PER SSM.
NO CHANGED IN CONCERN. STILL NO COMUNICATION WITH PSCM WHEN ATEMPTING
A SELF TEST. THE PSCM DOES PASS THE NETWORK TEST

**RECOMM 05/19/2011 06:39PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE**
BRIAN, IF THE PSCM PASSES NETWORK BUT FAILS SELF TEST, CHECK ALL
POWER AND GROUND TO THE MODULE. IF ALL APPEARS GOOD, REPLACE THE PSCM
AND RE-EVALUATE THE CONCERN. IF YOU WOULD LIKE ANY ADDITIONAL
INFORMATION OR ASSISTANCE, PLEASE UPDATE THIS FORM IN THE SPACE
PROVIDED BELOW.

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, August 02, 2011 1:51 PM
**To:** Anderson, Eric (H.); Pasquarella, Michael (M.S.); 'Gregory Sheets'
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of power steering assist, 829 mi, BD 6/17/11

The TS failures we've gotten back are not related to Bent Finger.

Eric E, can you confirm if we have this one back yet? I know we had 2 that were Hella electrical issues.

---

**From:** Anderson, Eric (H.)
**Sent:** Tuesday, August 02, 2011 12:43 PM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Gregory Sheets
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering assist, 829 mi, BD 6/17/11

Hi Laura, Mike and Greg:

This is a C200B/ C200C torque sensor CQIS claim for a unit built 6/17/2011. According to the BSAQ project, the problem is supposed to have been permanently fixed on 5/12/2011. Could this unit have received an older gear? What is the pipeline between Marion and ZF Chicago?

Mike,
Will the finger ring improvement solve this problem? Please remind me when that change became permanent.

Thanks,

Eric

---

**From:** Buelow, Steve (S.E.)
**Sent:** Tuesday, August 02, 2011 10:40 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Chones, Marvin (M.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Lux, Tracie (T.L.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Baldwin, Mark (M.E.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Stephen (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Sridhara, Raghu (R.); Trygar, Mike (M.); Urbina, Christopher (C.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.);

Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of power steering assist, 829 mi, BD 6/17/11


*-The Customer Defines Quality-*

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

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**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Tuesday, August 02, 2011 8:57 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of power steering assist, 829 mi, BD 6/17/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BHACJ011 NHL | | | **Received:** | 08/01/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7B88BG[redacted] | | | **Build Date:** | 06/17/2011 |
| **Odometer :** | 829 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 07868 Lilliston Ford Mercury | | | **Phone#:** | (912) 510-3673 |
| **City:** | Kingsland | **State:** | Georgia | **Country :** | USA |
| **Originator:** | TERRY STATON | | | | |
| **Symptom:** | 2 27 Z 00 AID/INFO,WNG IND/MESS/C,NOT LISTED,UNKNOWN | | | | |
| **Status:** | | | | | |
| **VFG:** | V83 INSTRUMENTATION FUNCTION | | | | |
| **Additional Symptom:** | EPAS INOP | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** APINKER3 **Phone:** 000 317-7066 **Regn Cd:** S3 Orlando

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** TERRY STATON **Phone:** 000 000-0000 **Title Cde:** OT

**DTCs:**

KOEO:

KOEC:C200C C200B

KOER:

**Comments :**

REPAIR 08/01/2011 02:53PM ADAM PINKERTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING ASST., MESSAGE CENTER HAS
P/S LIGHT ON DIAGNOSTICS: CHECK WIRING AND CONNECTOR OK, HOOK UP IDS. CHECK FOR CODES, PARTS REPLACED:: N/A TECH QUESTION: I DID THE PPT.B-3, AFTER DRIVING , RE CHECK FOR CODES NONE, BUT WHAT SHOULD BE DONE NEXT?, ARE THERE ANY KNOWN PROBLEMS WITH THIS SYSTEM?

**RECOMM 08/01/2011 02:53PM ADAM PINKERTON MSS - FCSD - TECH SVC HOTLINE**
TERRY, THERE ARE NO COMMON TRENDS OR SIMILAR REPORTS OF THIS CONCERN. IT IS RECOMMENDED TO FOLLOW PINPOINT TEST I FROM SECTION 211-00 OF THE ON-LINE WSM UNDER INTERACTIVE DIAGNOSTICS. THIS PINPOINT TEST WILL HELP ISOLATE THE CAUSE OF THIS CONCERN.

**From:** Napoli, Laura (L.)
**Sent:** Monday, July 11, 2011 3:46 PM
**To:** Rochna, Jeffery (J.P.); Carter, James (J.W.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Yeah, that's fine. No point if you guys are almost done.

James,
What's the plan for 2013 TT build? Any updates already scheduled once the cars hit DEMS, etc?

---

**From:** Rochna, Jeffery (J.P.)
**Sent:** Monday, July 11, 2011 3:43 PM
**To:** Napoli, Laura (L.)
**Cc:** Sims, Steven (S.W.); Carter, James (J.W.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Laura,

The two vehicles are fixed. Both wiring issues.

We only have 4 more vehicles that need to be updated w/ PUMA. I know you said new EPAS software is now available, but can you or supplier re-flash the EPAS? Not sure if it is worth updating PUMA for the last 4 vehicles. Thanks.

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Regards,
Jeff Rochna
2011 U502 E/E Systems
Phone: (313) 805-4155
E-mail: jrochna@ford.com, PDC Cube 2H-E35
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**From:** Napoli, Laura (L.)
**Sent:** Monday, July 11, 2011 2:17 PM
**To:** Rochna, Jeffery (J.P.); Sims, Steven (S.W.); Carter, James (J.W.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

See warranty list below for EPAS no comm troubleshooting...

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**From:** Anderson, Eric (H.)
**Sent:** Wednesday, June 15, 2011 11:18 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Hi Laura and Eric:

By my count, the Diagnostic Routine S for DTC U0131 in the SSM covers all but one of the recently learned electrical issues:

| | |
|---|---|
| GD108 circuit | covered |
| VDB04 circuit | covered |
| VDB05 circuit | covered |
| Fuse #89 | covered |
| Pushed out connectors | covered |
| C139 connector | covered |
| Battery junction box fasteners | NOT COVERED |

Adding the BJB fastener check could go right before or after the fuse #89 check.

Maybe it takes practice to read the workshop manuals. I found it very confusing. I'm not surprised techs call hotline to solve issues.

Thanks,

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 15, 2011 9:08 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric E found that this has a B3A and a C69. The service manual tells these guys to change out a gear with these codes. Not sure why FSCD is instructing them to do all these electrical checks for a C69. We're paying them to do all these checks for no reason.

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 15, 2011 9:30 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric E, can you call the dealer to see if there are any codes in this gear? None are reported.

Eric A, does the SSM cover all the recently learned electrical issues?

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Wednesday, June 15, 2011 4:55 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 5 report summary(s).

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**Attachments :** 0

**Report# :** BFNC5004 NHL **Received:** 06/14/2011

| | | | | | |
|---|---|---|---|---|---|
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B88BG[redacted] | | | **Build Date:** | 12/02/2010 |
| **Odometer :** | 5,016 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02199 Bob Gillingham Ford, Inc. | | | **Phone#:** | (216) 398-1300 |
| **City:** | Parma | **State:** | Ohio | **Country :** | USA |

**Originator:** DINO MICELI

**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** NO STEERING ASSIST

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** JTAYL466 **Phone:** 000 000-0000 **Regn Cd:** G4 Pittsburgh

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** DINO MICELI **Phone:** 216 398-1300 **Title Cde:** T

**DTCs:**

KOEO:C1B00 U3000 U2011

KOEC:

KOER:

**Comments :**

REPAIR 06/14/2011 12:25PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: VISUAL, PINPOINT TEST B. LEAD TO RWEPLACED RACK PARTS REPLACED::
NONE TECH QUESTION: PINPOINT TEST LEAD TO REPLACE RACK. NEVER HAD U CHECK POWERS AND GROUNDS TO RACK JUST VISUAL ON WIRES AND CONNECTORS.
ANY KNOWN CONCERNS. ALSO SHOULD SSM 21737 BE PERFORMED. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **06/14/2011 12:25PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE**
DINO, THE SSM 21737 IS ADDRESSING AN INTERMITTENT COMMUNICATION CONCERN WITH THE PSCM AND IS SPECIFIC TO THE CODES LISTED IN THE SSM. THIS VEHICLE DOES FALL WITHIN THE BUILD DATE OF THE SSM SO I WOULD

SUGGEST INSPECTING THESE PINS FOR ANY LOOSENESS OR DAMAGE. IF ANY PIN FIT ISSUES ARE FOUND, THEN I WOULD SUGGEST PERFORMING THE SSM 21737. IF NO PIN FIT ISSUES ARE FOUND OR THE CONCERN IS STILL PRESENT AFTER PERFORMING THE SSM, THEN SUGGEST PERFORMING A LOAD TEST ON THE POWER AND GROUND TO PSCM. IF THE POWERS AND GROUND CIRCUITS PROVE OUT, THEN SUGGEST REPLACING THE RACK FOR THIS CONCERN. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 09, 2011 1:18 PM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Thank you Eric E!!

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**From:** Estes, Eric (E.E.)
**Sent:** Thursday, June 09, 2011 11:53 AM
**To:** Napoli, Laura (L.); Anderson, Eric (H.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Talked to the tech below and this loss of assist would always occur in low speed parking lot manuevers similar to the Focus issue and had him check the HC BJB main feed and the 100a fuse connections and the tech found the main battery feed loose to high current battery junction box, he tightened the nut 1 1/2 turns to torque it properly, road test now the vehicle is fixed.

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 09, 2011 8:40 AM
**To:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Can one of you follow up with this dealer and make sure they are running all the electrical checks and have them look for any of our newly known issues? There are no codes from EPAS and it seems to be intermittent. Sounds like a wiring issue again...

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Thursday, June 09, 2011 4:33 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 7 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFHBT004 NHL | | | **Received:** | 06/08/2011 |
| **CCRG/EPRC:** | S | **Reviewed Status:** | | **Date:** | 06/08/2011 |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7B84BG[redacted] | | | **Build Date:** | 03/03/2011 |
| **Odometer :** | 6,672 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 05017 Friendly Ford, Inc. | | | **Phone#:** | (417) 883-4330 |
| **City:** | Springfield | **State:** | Missouri | **Country :** | USA |
| **Originator:** | JEFFREY WHILES | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | TRAC LIGHT AND LOSS OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** DWEST90 **Phone:** 313 248-9291 **Regn Cd:** C4 Kansas City

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JEFFREY WHILES **Phone:** 417 883-4330 **Title Cde:** SW

**DTCs:**

KOEO:C1B00:86

KOEC:

KOER:

**Comments :**

REPAIR 06/08/2011 10:02AM DEVIN WEST MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: C/S STEERING WILL LOCK AND LOOSE ELT ASSIST, TRAC LIGHTS COME ON AND HAS MESSAGE COME UP IN MESSAGE CENTER. DIAGNOSTICS: UNABLE TO VERIFY CONCERN, CUST HAS BROUGHT IN TWICE FOR CONCERN PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWNS WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? NO WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM 06/08/2011 10:02AM DEVIN WEST MSS - FCSD - TECH SVC HOTLINE**
JEFFREY, MORE INFORMATION WILL BE NEEDED TO EFFECTIVELY ASSIST YOU. RECOMMEND TO RUN ALL CMDTCS BEFORE CONTINUING TO ENSURE THAT NO MODULES ARE SETTING CODES. TALK TO THE CUSTOMER TO DETERMINE WHAT THE MESSAGE ACTUALLY SAID AND ASK IF THE FAULT OCCURS UNDER ANY SPECIFIC DRIVING CONDITIONS OR IF IT IS AFFECTED BY THE WEATHER CONDITIONS. UPDATE THE FORM OR CONTACT THE TECHNICAL HOTLINE BY TELEPHONE WITH AS MUCH DETAIL AS POSSIBLE SO THAT WE CAN ASSIST YOU WITH THIS REQUEST. THANK YOU.

**REPAIR** **06/08/2011 05:50PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE**

TECHNICIAN REPLY: CODES RETRIEVED LAST TIME IN C1B0086-68 AND C1B0086-28, ITS BEEN AFTERNOON WHEN SHE IS LEAVING WORK 90+ DEGREES. PARKING LOT SPEEDS

**RECOMM** **06/08/2011 05:50PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE**

JEFFREY, STEERING ANGLE ON THIS VEHICLE IS CALCULATED BY THE PSCM AND SENT TO THE ABS MODULE VIA HS CAN. A LOSS OF HS CAN COMMUNICATION OR AN INTERNAL PSCM/STEERING RACK FAULT IS LIKELY TO BE THE CAUSE OF THIS CONCERN. WE WOULD RECOMMEND ALLOWING THE VEHICLE TO SIT IN HOT AMBIENT TEMPERATURES AND ATTEMPTING TO DUPLICATE A DTC. IF AN ON DEMAND CODE CAN BE DUPLICATED, NOTE IF ANY DTC'S SET IN THE PSCM, AND REFER TO THE EPAS INTERACTIVE DIAGNOSTICS IN WORKSHOP MANUAL SECTION 211-00 TO ADDRESS ANY NOTED CODES. IF NO DTC'S ARE PRESENT IN THE PSCM, DIAGNOSE THE CONCERN BY SYMPTOM USING THE LACK OF ASSIST OR INCONSISTENT ASSIST TEST IN THE INTERACTIVE DIAGNOSTICS' SYMPTOM CHART.

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**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, June 07, 2011 11:54 AM
**To:** Napoli, Laura (L.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Looking at interactive diagnosis I do see a PSCM code U2011-61 which is a motor signal calculation fault most likely a B92 but could also have other codes associated with a B95.

Eric

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**From:** Napoli, Laura (L.)
**Sent:** Tuesday, June 07, 2011 8:35 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Another loss of assist for U502. It was a C69, so there's nothing we can do til we get the gear back.

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**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Tuesday, June 07, 2011 8:31 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 4 report summary(s).

**Attachments :** 0

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFFDK013 NHL | | | **Received:** | 06/06/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D80BG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 2,707 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00210 Sunny King Ford | | | **Phone#:** | (256) 831-5300 |
| **City:** | Anniston | **State:** | Alabama | **Country :** | USA |
| **Originator:** | JAMIE FORD | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | HIGH STEERING EFFORT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JELLERH2 **Phone:** 313 317-9374 **Regn Cd:** S1 Atlanta

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMIE FORD **Phone:** 256 831-5300 **Title Cde:** T

**DTCs:**

KOEO:U3000:96

KOEC:

KOER:

**Comments**
**:**

REPAIR 06/06/2011 02:34PM JAMES ELLERHOLZ MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWERSTEERING HARD TO TURN DIAGNOSTICS:
CK. CODES AND VERIFY CONCERN PARTS REPLACED:: CLOCKSPRING TECH
QUESTION: ALL CODES FOR SCCM WENT AWAY AFTER CLOKSPRING REPLACEMENT
NOW HAVE CODE FOR PSCM CODE IS U3000:96-C8 NEED HELP IN DIAG

**RECOMM 06/06/2011 02:34PM JAMES ELLERHOLZ MSS - FCSD - TECH SVC HOTLINE**
JAMIE, BE SURE THAT THE CORRECT CLOCK SPRING WAS INSTALLED. THE
INTERACTIVE DIAGNOSIS IN THE WORK SHOP MANUAL WILL NEED TO BE FOLLOWED
BASED ON THE CODE IN THIS FORM. THE DIAGNOSIS CAN BE FOUND IN THE WORK
SHOP MANUAL SECTION 211-00 AND CLICK ON THE DTC AND SYMPTOM CHART AND
THE INTERACTIVE DIAGNOSIS WILL BE ON THE RIGHT SIDE OF THE PAGE.
FOLLOW THE DIAGNOSIS AS INSTRUCTED AND REPAIR AS THE TEST INDICATES.

**REPAIR 06/06/2011 03:32PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE**
TECHNICIAN REPLY: PERFORMED TEST PER WORKSHOP MANUAL- TEST INDICATES
STEERING GEAR.

**RECOMM 06/06/2011 03:32PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE**
JAMIE, DTC U3000:96 IS LIKELY TO INDICATE AN INTERNAL PSCM FAULT.
THE PSCM IS SERVICED WITH THE STEERING GEAR. PLEASE REPLACE THE
STEERING GEAR AS NEEDED TO ADDRESS THIS CONDITION.

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, June 02, 2011 10:43 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Cc:** Snider, Tim (T.O.); Kingstrom, Mark (M.D.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

REDACTED FOR RELEVANCE

Eric

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**From:** Napoli, Laura (L.)
**Sent:** Thursday, June 02, 2011 9:47 AM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Cc:** Snider, Tim (T.O.); Kingstrom, Mark (M.D.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Thanks Eric. Looks like we're going to need to follow up on where we're at with B9A since this is emerging again on U502

REDACTED FOR RELEVANCE

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**From:** Estes, Eric (E.E.)
**Sent:** Thursday, June 02, 2011 9:35 AM
**To:** Mrozek, Robert (R.M.)
**Cc:** Napoli, Laura (L.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

The U502 claim below VIN# 1FMHK7D8XBG[redacted] with the intermittent C200D(B9A) code I have seen 2-3 times( see interactive attachment), not sure what is causing this B9A issue will need to get the gear back and hopefully be able to duplicate the issue. With an intermittent condition it will be hard to reset this code. The claim from yesterday(s REDACTED FOR below also looking at interactive diagnosis had an intermittent C200B not sure if the dealer replaced the gear.

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

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**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, June 02, 2011 8:11 AM
**To:** Estes, Eric (E.E.)

**Cc:** Napoli, Laura (L.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Please catch up with these dealers to see if there is something new going on. Let me know what you find out. Thank you.

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Thursday, June 02, 2011 4:56 AM
**To:** RMROZEK
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 6 report summary(s).

**Attachments :** 0

REDACTED FOR RELEVANCE

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFABO004 NHL | | | **Received:** | 06/01/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7D8XBG[redacted] | | | **Build Date:** | 12/08/2010 |
| **Odometer :** | 4,625 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04161 Eddie Yaklin Ford Lincoln Merc | | | **Phone#:** | (361) 592-2661 |
| **City:** | Kingsville | **State:** | Texas | **Country :** | USA |
| **Originator:** | NATHAN CINOLLO | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | HIGH EFFORT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** MABELA3 **Phone:** 000 248-9263 **Regn Cd:** C2 Houston

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** NATHAN CINOLLO **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C1B00 U3000:96 U0291

KOER:

**Comments :**

REPAIR 06/01/2011 09:51AM MATT ABELA MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: POWER STERRING INOP DIAGNOSTICS: NONE PARTS REPLACED:: NONE TECH QUESTION: PINPOINT TEST C1 ASKS IF CODE U3000.96 IS PRESENT AND IF SO REPLACED EPAS, I DO HAVE THIS CODE PRESENT BUT IT IS AND MEMORY CODE NOT ON DEMAND BUT POWER

STERRING ASSIST INACTIVE MESSAGE ALWAYS ON, DO I REPALCE EPAS IF THE CODE IS IN MEMORY .[ WERE YOU ABLE TO VERIFY THE CONCERN?
YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **06/01/2011 09:51AM MATT ABELA MSS - FCSD - TECH SVC HOTLINE**
NATHAN, IF THE U3000:96 IS RETURNING CMDTC AFTER BEING CLEARED, THE EPAS SHOULD BE REPLACED. PLEASE ENSURE POWER AND GROUND TO THE EPAS MODULE CAN CARRY A LOAD AND THAT THERE ARE NO TERMINAL (PIN) FIT CONCERNS AT THE EPAS. IF THIS IS OK, REPLACE THE EPAS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BFADJ010 NHL | | | **Received:** | 06/01/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F82BG[redacted] | | | **Build Date:** | 03/29/2011 |
| **Odometer :** | 540 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08556 Ford and Lincoln of Bellevue | | | **Phone#:** | (877) 374-3931 |
| **City:** | Bellevue | **State:** | Washington | **Country :** | USA |
| **Originator:** | HOWARD WOLF | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | POWER ASSIST INOP | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** BWRIGH77 **Phone:** 313 317-7040 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** HOWARD WOLF **Phone:** 425 454-2454 **Title Cde:** T

**DTCs:**
KOEO:C200D
KOEC:
KOER:

**Comments**

:

REPAIR 06/01/2011 03:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUSTOMER STATES THAT WHILE DRIVING STEERING
GOT STIFF AND HAD NO ASSIST POWER STEERING FAULT DISPLAYED IN MESSAGE
CENTER DIAGNOSTICS: ROADTEST VERIFIED CONCERN C200D IS THE CODE
WHEN DOING THE PINPOINT TEST IT HAS ME CLEAR THEN TURN LKOCK TO LOCK A
FEW TIMES THEN RETEST IT WILL BE OK THEN NSAYS TO RELEASE TO CUSTOMER
BUT IF I GO DRIVE FOR ALITTLE BIT IT WILL LOOSE ALL POWER
ASSIST PARTS REPLACED:: NONE TECH QUESTION: ANY LIKE CONCERNS OR
DAIG HELP TO TRACK DOWN THIS PROBLEM ALL CONNECTORS LOOK GOOD AND
EVERYTHING WILL PASS THEN DRIVE AND IT WILL FAIL AGAIN WERE YOU
ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT
TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST
FOLLOWED? YES

**RECOMM 06/01/2011 03:28PM BRANDON WRIGHT MSS - FCSD - TECH SVC HOTLINE**
HOWARD, IF YOU HAVE NOT DONE SO ALREADY, REFER TO THE ONLINE WORKSHOP
MANUAL SECTION 211-00 AND ENTER INTERACTIVE DIAGNOSTICS AND PERFORM
DIAGNOSTIC ROUTINE B TO DIAGNOSE DTC C200D. PLEASE REVIEW DIAGNOSTIC
ROUTINE I ALSO TO VERIFY IF IT CORRESPONDS WITH THE PRESENT CONCERN.
IF FURTHER ASSISTANCE IS REQUIRED, PLEASE UPDATE THE FORM WITH YOUR
LATEST RESULTS.

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**From:** Anderson, Eric (H.)
**Sent:** Monday, April 04, 2011 6:07 PM
**To:** Jackson, Bradley (B.G.); Sridhara, Raghu (R.); Napoli, Laura (L.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

What would it take to reverse the connector? The female side would become male and we could use pogo test pins like
REDACT How much would this design and tooling change cost? Is it worth it?

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Monday, April 04, 2011 3:52 PM
**To:** Estes, Eric (E.E.); Janiunas, Vince (V.J.); Buelow, Steve (S.E.); Anderson, Eric (H.); 'James Rucker'
**Cc:** Napoli, Laura (L.); Sridhara, Raghu (R.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

REDACTED FOR RELEVANCE

Brad

---

**From:** Estes, Eric (E.E.)
**Sent:** Monday, April 04, 2011 3:42 PM
**To:** Janiunas, Vince (V.J.); Jackson, Bradley (B.G.); Buelow, Steve (S.E.); Anderson, Eric (H.); 'James Rucker'
**Cc:** Napoli, Laura (L.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

REDACTED FOR RELEVANCE

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5EH004 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/02/2011 |
| **Odometer :** | 33 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02561 Sewell Ford, Inc. | | | **Phone#:** | (432) 498-0421 |

**City:** Odessa **State:** Texas **Country :** USA
**Originator:** STEFAN DROUI
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** LOSS OF ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEFAN DROUI **Phone:** 432 432-3320 **Title Cde:** T

**DTCs:**
KOEO:C1B00:29 C1B00:41 U0131
KOEC:
KOER:

**Comments :**

REPAIR 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: LOST ALL POWER STEERING ,TOWED IN,POWER STEERING NOW. ADVANCE TRACK LIGHT ON ABS LIGHT ON DIAGNOSTICS: IDS TEST,MONITERED PIDS STEERING ANGLE PI WAS 49150.95. INSPECTED CONNECTIONS ON EPAS,ABS MODULE,SJB,BJB ALL OK,INSPECTED GRONDS PARTS REPLACED:: NO PARTS REPLACED TECH QUESTION: POWER STEERING LOCKED,ADVANCED TRACK LIGHT ON,SOMETIMES STEERING FUNCTIONS,OTHER TIMES IT DOESNT,CANT COMMUNICATE WITH PSCM AT TIMES,OTHER TIMES CAN. CODES C1B00:29-68 AND C1B00:41-68. CANNOT FIND CORRECT PIN POINT TEST. I FEEL LIKE IT IS THE PSCM,EPAS RAC-N-PINION. DO HAVE ANY REPAIR IDEAS NOT SURE WHERE TO GO.

**RECOMM 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
STEFAN, THE READING OF THE STEERING ANGLE SENSOR IS NORMAL. THE STEERING ANGLE SENSOR LEARNS A ZERO POINT AFTER DRIVING STRAIGHT. REFER TO <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THE FAULTS PRESENT. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

Eric J Estes
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, April 01, 2011 12:52 PM
**To:** Janiunas, Vince (V.J.); Jackson, Bradley (B.G.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

FYI- 2011 U502 BJB poor connection at C1617A causing no assist and no communication to PSCM. New issue first one at this time. See note below

Vince I did add the comments to the CQIS report.

Eric J Estes
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 11:09 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** 'James Rucker'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Thanks Eric. Too bad we didn't catch them before they changed it. I'm working with ABS service manual updates now. Not sure what direction those guys have since the ABS service manual isn't posted in our system yet.

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, April 01, 2011 11:07 AM

**To:** Napoli, Laura (L.); Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** James Rucker
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

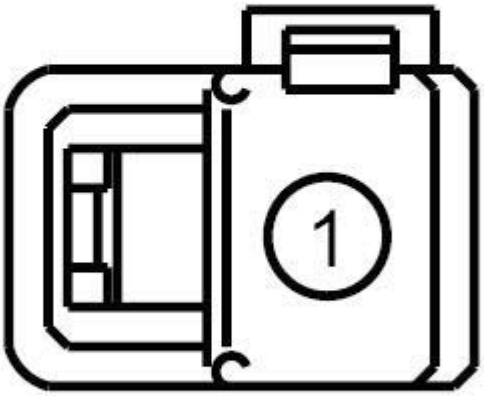
This gear at Capital Ford below has no communication the tech already replaced the gear and it did not fix the issue. Tech did load test the power & ground at the 2-pin and had 12volts, not sure if he performed that properly like the hotline suggested. tech found a poor connection to the 100amp fuse in the high current BJB C1617A pin 1(see below). Tech told me he thought it was corroded but it was more burn't like it was arcing and had some greenish color to the terminal. tech cleaned and tighten the blade of the terminal to fix this no communication issue.

Connector Viewer - 2011 Explorer - C1617A - Windows Internet Explorer

Back Forward C1617A

| Connector: C1617A | Description | Color | Harness | Base Part # | Service Pi |
|---|---|---|---|---|---|
| | HIGH CURRENT BATTERY JUNCTION BOX (BJB) | | 14B060 | part# N/A | Not Availa |

| Pin | Circuit | Gauge | Circuit Function |
|---|---|---|---|
| 1 | SBF05 (GY-RD) | 08 | FUSE - E (HIGH CURRENT BATTERY JUNCTION BOX) |



Eric

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**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 9:34 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

2 wiring issues below causing loss of assist. Did either of you talk to these dealers already? If not, I'll call to make sure they don't pull the gears. Please let me know.

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, April 01, 2011 4:47 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5AL007 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F82BG[redacted] | | | **Build Date:** | 02/23/2011 |
| **Odometer :** | 13 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00978 Capital Ford, Inc. | | | **Phone#:** | (919) 790-4700 |
| **City:** | Raleigh | **State:** | North Caroli | **Country :** | USA |

**Originator:** RYAN WALLACE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** NO POWER STEERING ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** WHOUST13 **Phone:** 313 317-7044 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** RYAN WALLACE **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:

KOEC:
KOER:

**Comments :**

REPAIR 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING INOP DIAGNOSTICS: NETWORK TEST NO COMMUNICATION WITH PSCM, PINPIONT TEST AC1-12VOLTS AT C1463A PIN 3, PINPIONT AC2- .2 OHMS C1463B PIN2, PINPIONT TEST AC3- C1463A PIN 1 TO DLC PIN6 1.2 OHMS, C1463A PIN 2 TO DLC PIN14 1 OHM, PINPIONT TEST AC4 NO PUSHED OUT PINS OR CORROSION OR BENT OR DAMAGED PINS PARTS REPLACED:: STEERING GEAR TECH QUESTION: ANY KNOWN PROBLEMS WITH REPROGRAM OR COMMUNICATION WITH THE PSCM, ANY OTHER
PINPIONT TEST? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE**
RYAN, THE EPAS SYSTEM THAT THIS VEHICLE HAS IS TOTALLY SELF CONTAINED. THE GEAR REQUIRES POWER AND GROUND AND NETWORK CIRCUITS FOR
COMMUNICATION. IF THE EPAS GEAR HAS BEEN REPLACED, AND THERE IS NO ASSIST OR COMMUNICATION WITH THE MODULE, LOAD TEST THE POWERS AND GROUNDS TO THE EPAS USING A HEADLAMP BULB TO VERIFY THAT THEY ARE CAPABLE OF CARRYING SUFFICIENT AMPERAGE AND PERFORM WIGGLE TESTS DURING THIS LOAD TEST. IF OKAY, VERIFY THAT THE NETWORK VOLTAGES AT THE PSCM CONNECTOR CORRESPOND WITH THE VOLTAGES AT PINS 6 AND 14 OF THE DLC WITH THE VEHICLE IN A KOEO STATE. CLOSELY INSPECT FOR LOOSE/DAMAGE OR OTHER PINFIT ISSUES AT THE PSCM AND BJB. REFERENCE PAGE 43-1 OF THE ONLINE EVTM FOR CIRCUIT DETAILS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5EH004 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/02/2011 |
| **Odometer :** | 33 M | **Engine:** | 3.5L | **Calibration:** | |

CYCLO

| | | | | | |
|---|---|---|---|---|---|
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02561 Sewell Ford, Inc. | | | **Phone#:** | (432) 498-0421 |
| **City:** | Odessa | **State:** | Texas | **Country :** | USA |
| **Originator:** | STEFAN DROUI | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEFAN DROUI **Phone:** 432 432-3320 **Title Cde:** T

**DTCs:**

KOEO:C1B00:29 C1B00:41 U0131

KOEC:

KOER:

**Comments :**

REPAIR 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: LOST ALL POWER STEERING ,TOWED IN,POWER STEERING NOW. ADVANCE TRACK LIGHT ON ABS LIGHT ON DIAGNOSTICS: IDS TEST,MONITERED PIDS STEERING ANGLE PI WAS 49150.95. INSPECTED CONNECTIONS ON EPAS,ABS MODULE,SJB,BJB ALL OK,INSPECTED GRONDS PARTS REPLACED:: NO PARTS REPLACED TECH QUESTION: POWER STEERING LOCKED,ADVANCED TRACK LIGHT ON,SOMETIMES STEERING FUNCTIONS,OTHER TIMES IT DOESNT,CANT COMMUNICATE WITH PSCM AT TIMES,OTHER TIMES CAN. CODES C1B00:29-68 AND C1B00:41-68. CANNOT FIND CORRECT PIN POINT TEST. I FEEL LIKE IT IS THE PSCM,EPAS RAC-N-PINION. DO HAVE ANY REPAIR IDEAS NOT SURE WHERE TO GO.

**RECOMM 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
STEFAN, THE READING OF THE STEERING ANGLE SENSOR IS NORMAL. THE STEERING ANGLE SENSOR LEARNS A ZERO POINT AFTER DRIVING STRAIGHT. REFER TO <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THE FAULTS PRESENT. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR

U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, April 01, 2011 11:19 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.); Anderson, Eric (H.)
**Cc:** 'James Rucker'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

the load test is not suggested in the manual only a voltage check of 12v, so we cannot charge the dealer back but the wiring connector should be the causal repair not the steering gear so we should not get nicked on warranty.

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, April 01, 2011 11:15 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Anderson, Eric (H.)
**Cc:** 'James Rucker'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Did the dealer follow the diagnostics? Can we charge them back on this claim?

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

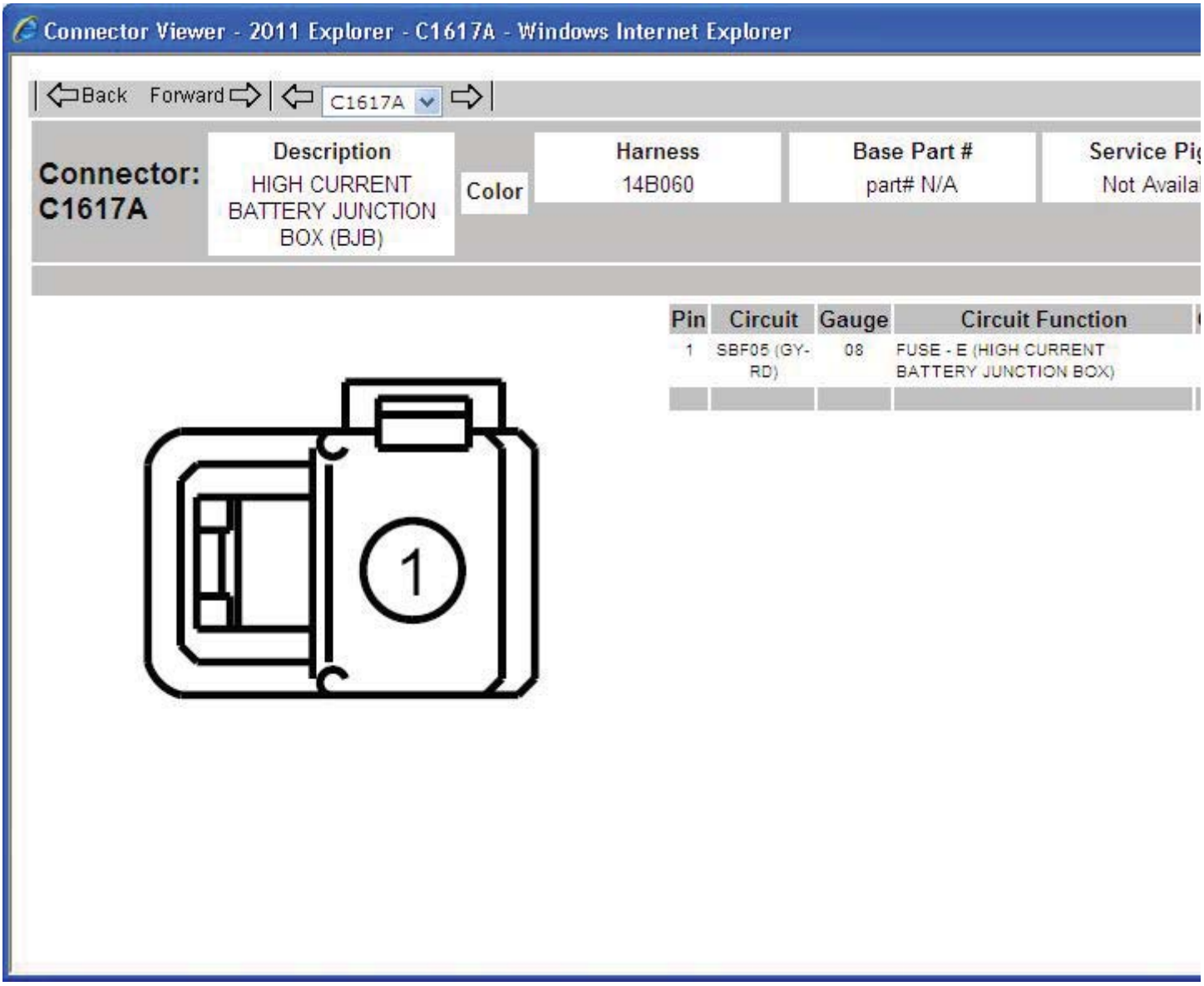
**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 11:09 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** 'James Rucker'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Thanks Eric. Too bad we didn't catch them before they changed it. I'm working with ABS service manual updates now. Not sure what direction those guys have since the ABS service manual isn't posted in our system yet.

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, April 01, 2011 11:07 AM
**To:** Napoli, Laura (L.); Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Cc:** James Rucker
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This gear at Capital Ford below has no communication the tech already replaced the gear and it did not fix the issue. Tech did load test the power & ground at the 2-pin and had 12volts, not sure if he performed that properly like the hotline suggested. tech found a poor connection to the 100amp fuse in the high current BJB C1617A pin 1(see below). Tech told me he thought it was corroded but it was more burn't like it was arcing and had some greenish color to the terminal. tech cleaned and tighten the blade of the terminal to fix this no communication issue.




Eric

**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 9:34 AM
**To:** Estes, Eric (E.E.); Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

2 wiring issues below causing loss of assist. Did either of you talk to these dealers already? If not, I'll call to make sure they don't pull the gears. Please let me know.

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, April 01, 2011 4:47 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5AL007 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F82BG[redacted] | | | **Build Date:** | 02/23/2011 |
| **Odometer :** | 13 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00978 Capital Ford, Inc. | | | **Phone#:** | (919) 790-4700 |
| **City:** | Raleigh | **State:** | North Caroli | **Country :** | USA |

**Originator:** RYAN WALLACE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** NO POWER STEERING ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** WHOUST13 **Phone:** 313 317-7044 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** RYAN WALLACE **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments**

:

REPAIR 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING INOP DIAGNOSTICS: NETWORK TEST NO COMMUNICATION WITH PSCM, PINPIONT TEST AC1-12VOLTS AT C1463A PIN 3, PINPIONT AC2- .2 OHMS C1463B PIN2, PINPIONT TEST AC3- C1463A PIN 1 TO DLC PIN6 1.2 OHMS, C1463A PIN 2 TO DLC PIN14 1 OHM, PINPIONT TEST AC4 NO PUSHED OUT PINS OR CORROSION OR BENT OR DAMAGED PINS PARTS REPLACED:: STEERING GEAR TECH QUESTION: ANY KNOWN PROBLEMS WITH REPROGRAM OR COMMUNICATION WITH THE PSCM, ANY OTHER
PINPIONT TEST? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE**
RYAN, THE EPAS SYSTEM THAT THIS VEHICLE HAS IS TOTALLY SELF CONTAINED. THE GEAR REQUIRES POWER AND GROUND AND NETWORK CIRCUITS FOR
COMMUNICATION. IF THE EPAS GEAR HAS BEEN REPLACED, AND THERE IS NO ASSIST OR COMMUNICATION WITH THE MODULE, LOAD TEST THE POWERS AND GROUNDS TO THE EPAS USING A HEADLAMP BULB TO VERIFY THAT THEY ARE CAPABLE OF CARRYING SUFFICIENT AMPERAGE AND PERFORM WIGGLE TESTS DURING THIS LOAD TEST. IF OKAY, VERIFY THAT THE NETWORK VOLTAGES AT THE PSCM CONNECTOR CORRESPOND WITH THE VOLTAGES AT PINS 6 AND 14 OF THE DLC WITH THE VEHICLE IN A KOEO STATE. CLOSELY INSPECT FOR LOOSE/DAMAGE OR OTHER PINFIT ISSUES AT THE PSCM AND BJB. REFERENCE PAGE 43-1 OF THE ONLINE EVTM FOR CIRCUIT DETAILS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5EH004 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/02/2011 |
| **Odometer :** | 33 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02561 Sewell Ford, Inc. | | | **Phone#:** | (432) 498- |

0421

**City:** Odessa **State:** Texas **Country :** USA

**Originator:** STEFAN DROUI

**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** LOSS OF ASSIST

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEFAN DROUI **Phone:** 432 432-3320 **Title Cde:** T

**DTCs:**

KOEO:C1B00:29 C1B00:41 U0131

KOEC:

KOER:

**Comments :**

REPAIR 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: LOST ALL POWER STEERING ,TOWED IN,POWER STEERING NOW. ADVANCE TRACK LIGHT ON ABS LIGHT ON DIAGNOSTICS: IDS TEST,MONITERED PIDS STEERING ANGLE PI WAS 49150.95. INSPECTED CONNECTIONS ON EPAS,ABS MODULE,SJB,BJB ALL OK,INSPECTED GRONDS PARTS REPLACED:: NO PARTS REPLACED TECH QUESTION: POWER STEERING LOCKED,ADVANCED TRACK LIGHT ON,SOMETIMES STEERING FUNCTIONS,OTHER TIMES IT DOESNT,CANT COMMUNICATE WITH PSCM AT TIMES,OTHER TIMES CAN. CODES C1B00:29-68 AND C1B00:41-68. CANNOT FIND CORRECT PIN POINT TEST. I FEEL LIKE IT IS THE PSCM,EPAS RAC-N-PINION. DO HAVE ANY REPAIR IDEAS NOT SURE WHERE TO GO.

**RECOMM 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
STEFAN, THE READING OF THE STEERING ANGLE SENSOR IS NORMAL. THE STEERING ANGLE SENSOR LEARNS A ZERO POINT AFTER DRIVING STRAIGHT. REFER TO <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THE FAULTS PRESENT. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 24, 2011 10:11 AM
**To:** Jackson, Bradley (B.G.); Logli, Michael (M.A.); Issa, Ibrahim (I.M.); Estes, Eric (E.E.)
**Cc:** Anderson, Eric (H.); Mrozek, Robert (R.M.); Docimo, Tony (A.F.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

The question would be whether the veh has an SCCM or not. If it's not Autopark, it has no SCCM, so then I'd direct them to the pinout/wiggle test. The only codes they show are referring to the relative steering angle. There's no reason that you'd lose assist for those DTC's.

Eric Estes, can you get snapshot data from the dealer on the C1B00?

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, March 24, 2011 7:49 AM
**To:** Logli, Michael (M.A.); Issa, Ibrahim (I.M.)
**Cc:** Anderson, Eric (H.); Napoli, Laura (L.); Mrozek, Robert (R.M.); Docimo, Tony (A.F.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Mike / Ibrahim, i am out of the office this morning. Can you contact the dealer and see if this is SCCM related before they swap the gear?

Brad

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Thursday, March 24, 2011 2:37 AM
**To:** BJACKSON
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 3 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BCWFW001 NHL | | | **Received:** | 03/23/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D89BG[redacted] | | | **Build Date:** | 02/15/2011 |
| **Odometer :** | 611 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 07737 Serramonte Ford, Inc. | | | **Phone#:** | (650) 301-7065 |
| **City:** | Colma | **State:** | California | **Country :** | USA |
| **Originator:** | OMAR NAVARRO | | | | |
| **Symptom:** | 3 03 0 00 CHASS.,STRG/HANDLING ,OTHER-CODE NA,OTHER-CODE NA | | | | |

**Status:**

**VFG:** V89 RIDE & HANDLING

**Additional Symptom:** LOSS OF STEERING ASSIST

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** MHINDERE **Phone:** 313 337-9292 **Regn Cd:** W2 San Francisco

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** OMAR NAVARRO **Phone:** 650 577-0577 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C1B00 U0131

KOER:

**Comments :**

REPAIR 03/23/2011 06:19PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING ASSIST DIAGNOSTICS:
INSPECTED THE STEERING GEAR AND CONNECTOR AND FOUND OK. RAN THE SELF
TEST AND THE POWER STEERING MODULE PASSED. THE ABS MODULE HAD CODES
C1B00 AND U0131. FOUND THE STEERING ASSIT STARTED WORKING MOMENTARELY
AFTER THE SELF TES AND THE STOPED WORKING. MONITORED THE STEERING
ANGLE PID AND FOUND IT DOES NOT MATCH THE ACTUAL STEERING ANGLE.
PARTS REPLACED:: NONE TECH QUESTION: DOES THE STEERING GEAR
ASSEMBLY NEED TO HAVE APPROVAL FOR REPLACEMENT WERE YOU ABLE TO
VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN
THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/23/2011 06:19PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**
TO BETTER ASSIST YOU ON THIS WARRANTY RELATED QUESTION, THE TECHNICAL
SERVICE HOTLINE RECOMMENDS THAT YOU REFER TO THE DEALERSHIP WARRANTY
ADMINISTRATOR, THE WARRANTY AND POLICY MANUAL, OR YOU MAY CONTACT THE
WARRANTY ASSISTANCE CENTER DIRECTLY AT 1-800-423-8851

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, March 03, 2011 1:48 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.); Pasquarella, Michael (M.S.)
**Cc:** Anderson, Eric (H.); jason.johnson; Gregory Sheets; 'Greg Austin'; Sergio Alvarez; anthony.fleenor@trw.com
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Called the dealer tech and Ken is going to get more code/vehicle information, the code he pulled U0253 is not our code so he will re-check for any PSCM codes, does sound like a friction issue steering very hard to turn at all times, even on a hoist. Tech states he did not see any holes/slices in the boot. Also advised to check the PS message center for a PS message. TC lamp & TC active lamps on all the time and symptom never goes away and code(s) will not clear.

Will let you know as soon as the tech calls back.

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, March 03, 2011 9:07 AM
**To:** Napoli, Laura (L.); Pasquarella, Michael (M.S.); Estes, Eric (E.E.)
**Cc:** Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Laura/Mike/Eric E -

See U502 call. Sounds like corrosion in the gear due to a leak somewhere. Please call the dealer to see if they can inspect corrosion in the gear by removing the boots and looking at the rack. It normally is a boot puncture the leads to this type of call. But if it is something else, we need to know asap. Also see if friction detection went off or not. The noise is a good customer indicator as well.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

**Attachments :** 0

| | | | |
|---|---|---|---|
| **Report# :** | BCBAW023 NHL | **Received:** | 03/02/2011 |
| **CCRG/EPRC:** | **Reviewed Status:** | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F86BG[redacted] | **Build Date:** | 01/31/2011 |

| | | | | | |
|---|---|---|---|---|---|
| **Odometer :** | 18 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08398 Don Aadsen Ford | | | **Phone#:** | (406) 676-4400 |
| **City:** | Ronan | **State:** | Montana | **Country :** | USA |

**Originator:** KEN LOZEAU

**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT

**Status:**

**VFG:** V87 STEERING

**Additional Symptom:** LACK OF ASSIST, GROWL NOISE

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** TFUMEROL **Phone:** 000 317-9383 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** KEN LOZEAU **Phone:** 406 676-4420 **Title Cde:** T

**DTCs:**

KOEO:U0253

KOEC:

KOER:

**Comments :**

REPAIR 03/02/2011 04:10PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: STEERING ASSIST IS INOP, LOUD GROWLING NOISE WHEN ATTEMPTING TO TURN THE STEERING WHEEL DIAGNOSTICS: VISUAL INSPECTION IS OK, NO VISIBLE SIGNS OF CAUSE, GROWLING NOISE APPEARS TO BE COMING FROM ELECTRIC MOTOR ON STEERING RACK. HOOKED UP IDS AND RETRIEVED CONT CODE U0253, TRACTION CONTROL LIGHT IS ON PARTS REPLACED:: NONE TECH QUESTION: ANY DIAG ASSISTANCE WOULD BE GREATLY APPRECIATED, POWER STEERING WORKED NORMAL UNTIL IT WAS DRIVEN INTO WASH BAY THEN QUIT WORKING WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? NO WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM** **03/02/2011 04:10PM TOM FUMEROLA MSS - FCSD - TECH SVC HOTLINE**
KENNETH, IT IS RECOMMENDED TO PERFORM THE INTERACTIVE VEHICLE DIAGNOSTICS AVAILABLE THROUGH THE ONLINE WORKSHOP MANUAL 211-00, DTC
AND SYMPTOM CHART. THIS WILL AID IN DIAGNOSING THE SYSTEM. SINCE THE MOTOR IS MAKING NOISE THERE MAY BE AN INTERNAL FAULT. SERVICE AS

NEEDED.

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, March 01, 2011 11:23 AM
**To:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

We now have 2 gears that came from Warranty. They both show up in CQIS, so that's what CAP will see. There's a 3rd one out of NMPDC on a 2013 gear, but CAP won't see that one. But I think it only takes 2 for them to start yelling. And now we have 2.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, March 01, 2011 10:44 AM
**To:** Napoli, Laura (L.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

what do you mean by "2 out of CAP"?

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Napoli, Laura (L.)
**Sent:** Tuesday, March 01, 2011 10:38 AM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Thanks for jumping on this one. I've alerted the 26mile team (since I'm here) to make them aware that this now means we have 2 out of CAP and I expect lots of attention from PVT.

Can we get the EPP number from the dealer off the sticker so we can trace the IPA build date quickly? Just ask him to read you the first number below the barcode on the EPP cover sticker.

What's UR0004 from Virginia? Is that the C69 with the disconnected power connector?

---

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, March 01, 2011 9:00 AM
**To:** Napoli, Laura (L.)

**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Already put in a hot process request yesterday for this gear, also still waiting on gear UR0004 to comeback from Virginia. That gear in Quebec did not have any snap shot data from interactive diagnostic's because dealer cleared the codes prior to diagnostic's but it does list a U3000-96 code in history data, so as soon as FCSD gets these auto park gears available we should get some gears back for analysis.

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, March 01, 2011 8:19 AM
**To:** Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

See TS loss of assist claim. It's in French, but please see if you can call the dealer and get this gear back quickly. Or at least let's get the EPP number from them so we can get the info to Rogersville and understand IPA build date.

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Tuesday, March 01, 2011 3:36 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 10 report summary(s).

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

1/S

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

KOEO:

KOEC:

KOER:

**Comments**

**:** REDACTED FOR RELEVANCE

R

**R**

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BB2AO007 NHL | | | **Received:** | 02/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F82BG[redacted] | | | **Build Date:** | 11/30/2010 |
| **Odometer :** | 2,294 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | CAN B2515 Jacques Olivier Ford Inc. | | | **Phone#:** | (450) 445-3673 |
| **City:** | St-Hubert | **Province** | Quebec | **Country :** | CAN |
| **Originator:** | VINCENT ROY | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LACK OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |

**Condition Code:**

**Hotliner:** MGIRARD1 **Phone:** 313 317-7064 **Regn Cd:** 02 02 FCSD REGION-CANADA

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** VINCENT ROY **Phone:** 514 927-6404 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C200B C200C

KOER:

**Comments :**

REPAIR 02/28/2011 11:34AM MARIO GIRARD MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: PAS DASSISTANCE
SERVODIRECTION. DIAGNOSTICS: CMDTC C200B ET C200C PRESENT EFFACE CODES.LES CODES NE REVIENNENT PAS MAIS LE POWER STEERING NE FONCTIONNE
PAS.VERIFIE FUSES ET CONNEXIONS OK.FAIT PINPOINT TESTS.VERIFIE EN PIDS LA POSITION DU VOLANT PID SW ANGLE EST TOUJOURS A 5553.5 DEGRES.NE PEUT POURSUIVRE LE DIAGNOSTIQUE PARCEQUE EFFACE CODES. PARTS REPLACED:: AUCUNE TECH QUESTION: Y A T IL DES SUGGESTIONS DE DIAGNOSTIQUE

**RECOMM 02/28/2011 11:34AM MARIO GIRARD MSS - FCSD - TECH SVC HOTLINE**
VINCENT LE PROBLME EST INTERNE AU SYSTME DE DIRECTION , REMPLACE LE EPAS ASSEMBLE

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 16, 2011 3:39 PM
**To:** Napoli, Laura (L.); Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.); Diez, Timothy (T.P.); Rossi, Roberto (R.A.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

BGA17285 had all the classic pin fit issue codes: C1B00, U0131.

BGA17032 only had U3000:96

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, February 16, 2011 2:31 PM
**To:** Snider, Tim (T.O.); Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.); Anderson, Eric (H.); Diez, Timothy (T.P.); Rossi, Roberto (R.A.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This has a C69 which means the gear is locked out and must be replaced due to at least 3 B level faults which I'm sure were caused by the loose connector.

Last one sounds like the pinout issue. Only code shown is the ABS lost comm with PSCM code. Need to know if there are more.

---

**From:** Snider, Tim (T.O.)
**Sent:** Wednesday, February 16, 2011 3:19 PM
**To:** Mrozek, Robert (R.M.)
**Cc:** Estes, Eric (E.E.); Anderson, Eric (H.); Napoli, Laura (L.); Diez, Timothy (T.P.); Rossi, Roberto (R.A.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

First one could be an issue besides the loose connector, and the third one could be a loose / damaged EPAS or ABS connector or loose / damaged EPAS or battery ground.

Regards,
Tim Snider (tsnider1@ford.com)
***CD3/C489 Steering Engineering***
***Ford Motor Company***
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

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**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, February 15, 2011 9:49 AM
**To:** Snider, Tim (T.O.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Any thoughts?

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Tuesday, February 15, 2011 7:59 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.)
**Cc:** Anderson, Eric (H.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Any clues about the first report from Maryland? If a loose connector was found and re-connected, any ideas on why there would still be no assist?

Also, have a look at the 3rd report from North Carolina.

Brad

This email contains 3 report summary(s).

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBLAA025 NHL | | | **Received:** | 02/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F8XBG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 303 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00089 Koons Ford of Annapolis, Inc. | | | **Phone#:** | (410) 266-3087 |
| **City:** | Annapolis | **State:** | Maryland | **Country :** | USA |
| **Originator:** | JAMES MORELAND | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | U3000:96 | | | | |

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** CBISHO41 **Phone:** 313 317-9359 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMES MORELAND **Phone:** 410 266-3087 **Title Cde:** T

**DTCs:**

KOEO:U3000:96

KOEC:

KOER:

**Comments :**

REPAIR 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: SELF TEST VISUAL INSPECTION FOUND CONNECTOR ON GEAR DISCONNECTED PARTS REPLACED:: NONE TECH QUESTION: CODE U3000 96 LEADS TO REPLACEMENT OF EPAS GEAR W/NO PINPOINT TESTS IS THIS CORRECT, VEHICLE WAS DX TO OUR DEALER SAID P/S WENT OUT IN OUR PARKING LOT, TESTED AND FOUND CONNECTOR 1453A DISCONNECTED. PLUGGED BACK IN BUT NO P/S AND CODE AND
MESSAGE CENTER WILL NOT CLEAR OUT. WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE**
JAMES, YOU ARE CORRECT. IF THE U3000:96 IS PRESENT AS A HARD FAULT THEN STEERING GEAR REPLACEMENT IS REQUIRED. THIS CODE INDICATES THAT THE ELECTRONIC STEERING GEAR HAS EXPERIENCED AN INTERNAL FAULT. RECOMMEND REPLACING THE GEAR AS NEEDED THEN RETESTING FOR NORMAL OPERATION.

---

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBND7002 NHL | | | **Received:** | 02/14/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7B86BG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 519 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1NN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 09151 Huntersville Ford | | | **Phone#:** | (704) 875-6547 |
| **City:** | Huntersville | **State:** | North | **Country :** | USA |

Caroli

**Originator:** TIM BARRON
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** INTERMIT NO STR ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** JTAYL466 **Phone:** 000 000-0000 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** TIM BARRON **Phone:** 704 400-9384 **Title Cde:** T

**DTCs:**
KOEO:U0131
KOEC:
KOER:

**Comments :**

REPAIR 02/14/2011 04:13PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE
THE CUSTOMER STATES THAT INTERMITTENTLY THERE IS NO STEERING ASSIST. THE TECH HAS ONLY BEEN ABLE TO DUPLICATE THIS CONCERN ONCE. THE TECH STATES THAT HE LET THE VEHICLE IDLE FOR TWENTY MINUTES IN HIS BAY AND WHEN HE RETURNED THE CONCERN WAS PRESENT. THE PSCM DOES FAIL THE NETWORK TEST. THERE ARE CODES U0131 IN THE ABS AND IC MODULES. WHEN THE VEHICLE CAME IN THERE WAS A CONTINUOUS CODE U3000 IN THE PSCM, BUT
THAT CODE CLEARED AND DID NOT RETURN.

**RECOMM 02/14/2011 04:13PM JASON TAYLOR MSS - FCSD - TECH SVC HOTLINE**
TIM, SUGGEST INSPECTING THE VEHICLE FOR ANY AFTER MARKET EQUIPMENT. IF THERE IS ANY AFTER MARKET EQUIPMENT PRESENT THEN REMOVE IT FROM THE
VEHICLE. IF THERE IS NO AFTER MARKET EQUIPMENT PRESENT AND THE PSCM IS NOT COMMUNICATING, THEN SUGGEST PERFORMING A LOAD TEST ON THE POWER
AND GROUND TO THE PSCM. IF THE POWER AND GROUND PROVE OUT THEN CHECK
THE COMMUNICATION CIRCUITS BETWEEN THE PSCM AND DLC FOR ANY OPEN OR
HIGH RESISTANCE ISSUES. INSPECT THE PIN FITS AT THE PSCM FOR ANY LOOSE OR DAMAGED PINS.

**From:** Anderson, Eric (H.)
**Sent:** Monday, January 31, 2011 2:09 PM
**To:** Napoli, Laura (L.); Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Estes, Eric (E.E.); 'Michael Fontana'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Hi All:

CAP needs to better understand this inoperative power steering claim from West Virigina. What is a U3000-96 code and how does it occur? A fishbone explaining the failure parameters would be helpful.

Thanks,

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, January 31, 2011 7:57 AM
**To:** Anderson, Eric (H.); Jackson, Bradley (B.G.); Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

The gear is being pulled today and they hope to get it overnighted today as well. I will let 26mile know once we have a tracking number.

---

**From:** Anderson, Eric (H.)
**Sent:** Saturday, January 29, 2011 1:09 PM
**To:** Jackson, Bradley (B.G.); Napoli, Laura (L.); Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Hi All:

The dealership did attempt to clear the codes but the problem persists. A service tech is attempting to get the snapshot data for us. I asked them to please hold on to the gear and explained that Eric Estes will be calling them to arrange shipping the faulty gear and receiving a new one.

Eric,
Could you please arrange for this dealership to get a new gear and send the faulty one to

TRW Automotive East Building
Attn: John Burnett
4505 W 26 mile Rd
Washington, MI 48094

Thank you everyone!

Eric

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Saturday, January 29, 2011 11:36 AM
**To:** Anderson, Eric (H.); Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

note p/s inop claim from w. virginia dealer below.....1st report.

brad

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Saturday, January 29, 2011 11:29 AM
**To:** BJACKSON
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 2 report summary(s).

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |
| **Originator:** | JOHNATHAN FRYE | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | POWER STEERING INOP | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**
KOEO:U3000
KOEC:
KOER:

**Comments :**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING IS INOP DIAGNOSTICS: KOEO KOER PINPOINT TEST C1 PARTS REPLACED:: NO AT THIS TIME TECH QUESTION: ANY KNOWN CONCERNS WITH STEERING RACK WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

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JONATHAN. INSPECT CONNECTOR PIN FITS TO THE PSCM. WE HAVE SEEN SOME CONCERNS DUE TO SPREAD PINS AT CONNECTOR C139. INSPECT THIS CONNECTION
USING A FLEX PROBE AND REPAIR/REPLACE ANY LOOSE PINS. PERFORM THE INTERACTIVE DIAGNOSTICS FOR FURTHER ASSISTANCE DIAGNOSING THIS CONCERN. TO PERFORM THE DIAGNOSTICS. CONNECT IDS TO VEHICLE AND GO TO
THE PTS WEB PAGE. OPEN THE ONLINE WORKSHOP MANUAL OPEN SECTION 211-00
AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

---

**Attachments :** 0

REDACTED FOR RELEVANCE

**Engineering:** **Phone:** **TAR:**

REDACTED FOR RELEVANCE

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Thank you everyone!

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| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304) 372-2480 |
| **City:** | Ripley | **State:** | West Virgini | **Country :** | USA |

**Originator:** JOHNATHAN FRYE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** POWER STEERING INOP
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**
KOEO:U3000
KOEC:
KOER:

**Comments :**

REPAIR 01/28/2011 08:35AM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
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|---|---|---|---|---|---|
| **Report# :** | BA2AK005 NHL | | | **Received:** | 01/28/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D83BG[redacted] | | | **Build Date:** | 01/12/2011 |
| **Odometer :** | 12 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 02071 I77 Ford Mercury | | | **Phone#:** | (304) 372-2480 |
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**Originator:** JOHNATHAN FRYE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** POWER STEERING INOP
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JOHNATHAN FRYE **Phone:** 304 372-3673 **Title Cde:** SM

**DTCs:**
KOEO:U3000
KOEC:
KOER:

**Comments :**

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AND SELECT DTC CHART INTERACTIVE DIAGNOSTICS.

**Attachments :** 0

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Year = MY11**
**Model = U502**
**Engine = 3.5L**
**VIN = 1FMHK8D87BG[redacted]**
**IDS Version = Not Available**

### Current DTCs {retrieved 02 February 2011 11:14:34}

| DTC | Snap Shot Data | Source |
|---|---|---|
| C1B00:86 | N/A | ABS |
| C200B:62 | 0A33010E330221E03306003B0000000000000000000330C94D1118FD1173DD118FFADF40C01E4F40D14FDAAD4 | PSCM |

### Historic DTCs {retrieved 02 February 2011 11:14:34}

| DTC | Snap Shot Data | Source |
|---|---|---|
| U0402:68 | N/A | ABS |
| U0253:00 | N/A | IC |

### DTCs cleared since initial read:

| DTC | Snap Shot Data | Source |
|---|---|---|
| (ABS) | N/A | ABS |
| Pass | N/A | ACM |
| Pass | N/A | APIM |
| Pass | N/A | ATCM |
| Pass | N/A | FCIM |
| Pass | N/A | FLM |
| Pass | N/A | GPSM |
| Pass | N/A | HVAC |
| Pass | N/A | PAM |
| Pass | N/A | PCM |
| C200B:2F | 0A330103330223203306004A0000000000000000000330C94D1118DD11742D118FF8DF40C03F6F40D0FFDAAD2 | PSCM |
| Pass | N/A | RCM |
| Pass | N/A | SCCM |
| Pass | N/A | TPM |

**Start: Wed Feb 2 10:43:46 EST 2011**

**Menu Selection: Inspection and Verification**

**IV1: VISUAL INSPECTION**

- Verify the customer concern.
- Visually inspect the electronic power assist steering (EPAS) system for obvious signs of mechanical or electrical damage.
  **NOTE**: When inspecting the bellows boots make sure to use a strong light source and an inspection mirror.

**VISUAL INSPECTION CHART**

| Mechanical | Electrical |
|---|---|
| Binding or misaligned steering column. | High-current battery junction box (BJB) fuse E (100A), attached to the battery positive terminal |
| Loose steering column shaft bolts. | Battery Junction Box (BJB) fuse 89 (5A) |
| Steering column shaft couplings/U-joints | Wiring, terminals or connectors. |
| Steering gear | |
| Steering gear bellows boots | |
| Inner tie rod ends | |
| Outer tie rod ends | |
| Tire pressure | |

| | |
|---|---|
| Tires | |

- **Is an obvious cause for an observed or reported concern found?**

| |
|---|
| **No** |
| **Go to Known Concerns** |

**undefined: undefined**

**DTC C200B:2F (PSCM) - Steering Shaft Torque Sensor 1: Signal Erratic**

**B: DTCs C1B00, C200B, C200C, C200D, U2011, U2200 and U3000: Steering Angle Sensor, Steering Shaft Torque Sensor 1, Steering Shaft Torque Sensor 2, Motor and Control Module - Failure or Erratic**

**Normal Operation**

The power steering control module (PSCM) monitors various inputs and outputs of the electronic power assist steering (EPAS) system in order to keep the system operating at peak capacity. Information provided by sensors (steering torque, vehicle speed, vehicle travel distance, etc.) are all compared to programmed and learned information. Likewise, outputs like the motor and steering rack (travel) are tested against programmed and learned information.

**Note:**

If a damaged bellows boot(s) was discovered during Inspection and Verification and this pinpoint test DOES NOT lead to the installation of a new EPAS gear or bellows boot(s), then go to Pinpoint Test K to address the damaged boot(s) before returning the vehicle to the customer.

**B1: CHECK FOR PREVIOUSLY SET DTCS**

- Go to KNOWN CONCERNS.
  Check for DTCs listed in the section: System Related CMDTCs cleared since initial read.
- **Are any of the following DTCs present?**

**PSCM DTCs C1B00:2F, C1B00:62, C200B:2F, C200B:61, C200B:62, U2011:49, U2011:61, U2200:54, U3000:41, U3000:46, U3000:49.**

| |
|---|
| **Yes** |
| **Go to B2.** |

**B2: INSPECT EPAS GEAR WIRING HARNESS**

- With the vehicle in NEUTRAL, position it on a hoist. Refer to Section 100-02.
- Ignition OFF.
- Thoroughly inspect the wire harness along the top of the EPAS gear for cuts, breaks and pinched wires.
- Disconnect all 3 EPAS gear electrical connectors and inspect them for corrosion, pushed-out pins, bent pins and spread terminals.
- **Is the wire harness undamaged and are all 3 connectors in good condition?**

| |
|---|
| **Yes** |
| **CONNECT all 3 EPAS gear electrical connectors.<br>Go to B3.** |

**B3: TEST DRIVE TO CHECK FOR RETURNING DTCS. - Fault outcome**

NOTE: Always drive the vehicle in a safe manner according to driving conditions and obey all traffic laws.

- Clear the PSCM DTCs.**Complete**
- Cycle the ignition to OFF and then back to RUN.
- Test drive the vehicle in the following manner:
  —With the engine running/ready, stop the vehicle on an unsealed concrete or asphalt surface (in order to provide adequate friction for a thorough test).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —Return the steering wheel to the center position and move the vehicle forward approximately 32 cm (1 ft).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —Return the steering wheel to the center position and move the vehicle forward approximately 32 cm (1 ft).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —The test drive is complete.
- Press Read Vehicle Information button to retrieve DTC s from the vehicle. NOTE: DTCs may be displayed from previous diagnostic actions.

**Vehicle Information:**

VIN 1FMHK8D87BG[redacted]

**System Related CMDTCs Active {retrieved 02 February 2011 11:14:34**

| DTC | Description | Type | Source | Status |
|---|---|---|---|---|
| C200B:2F | Steering Shaft Torque Sensor 1 : Signal Erratic | KOEC | PSCM | Historic |
| C200B:62 | Steering Shaft Torque Sensor 1 : Signal Compare Failure | KOEC | PSCM | Current |
| C200B:62 | Steering Shaft Torque Sensor 1 : Signal Compare Failure | ODDTCs | PSCM | Unknown |

**System Related CMDTCs cleared since initial read:**

- **Does DTC C1B00:62, C200B:2F, C200B:61, C200C:2F, C200D:49, U2011:49, U2011:61, U3000:41, U3000:46 and/or U3000:49 return?**

| Yes |
|---|
| **INSTALL a new EPAS gear.<br>Refer to Section 211-02.** |

**Exit: Wed Feb 2 11:18:57 EST 2011**

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 1:45 PM
**To:** Estes, Eric (E.E.)
**Cc:** Napoli, Laura (L.); Bahena, Miguel (Mike.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

3 and 4 sound like electrical issues to me.....when interior lights go on an off and low batt voltage come up then you gotta believe it is not an EPAS issue. Right?

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 10:14 AM
**To:** Napoli, Laura (L.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Talked to all tech's for all three No Com gears they will replace EPAS gears. I have two int. no com's similar with Bradley's plant vehicle road test and I have one No Com that is their all the time

Laura see if we can install one of the int. No Com's for on-vehicle testing and we will take the other two in for analysis at 26-mile.

The attachment is my updated warranty tracking report with the new U502 gears, and I added the tech comments.

Laura did you talk to Brad and find out about the U502 B3A if you wanted to wait for the Tyco relay workshop in Feb?

Let me know

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Friday, January 21, 2011 9:28 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric,

Can you verify that none of these codes indicate that the rack should be pulled?  Thanks!

I'm off today, so call my cell if you need me...313-805-0482

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, January 21, 2011 4:46 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BATDZ004 NHL | | | **Received:** | 01/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F83BG[redacted] | | | **Build Date:** | 11/22/2010 |
| **Odometer :** | 289 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02058 BEECHMONT FORD INC | | | **Phone#:** | (513) 752-7474 |
| **City:** | Cincinnati | **State:** | Ohio | **Country :** | USA |
| **Originator:** | SHANE JONES | | | | |
| **Symptom:** | 3 03 A 99 CHASS.,STRG/HANDLING ,STEERING WHEEL ,NOT LISTED | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD INTERMITTENT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JSAVOY1 **Phone:** 313 317-9352 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHANE JONES **Phone:** 513 752-7474 **Title Cde:** T

**DTCs:**

KOEO:U0121 U2011:49-08 U0126 U0159 U0428

KOEC:

KOER:

**Comments :**

REPAIR 01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUST STATES THAT THE MESSAGE CENTER HAD A MESSAGE THAT SAID POWER STEERING ASSIST FAULT AND THE STEERING WAS VERY HARD DIAGNOSTICS: TEST DROVE VEH AND NORMAL OPERATION AT THIS

TIME 0 WARNINGS IN THE MESSAGE CENTER IDS TESTED AND FOLLOWED PINPOINT TEST PER WORK SHOP MANUAL AND IT LED ME TO THE CONSERN IS NOT PRESENT AND TO RETURN THE VEH BACK TO THE CUST DTC U2011:49-08,U0121,U0126,U0159,U0428 THE WORK SHOP MANUAL TOLD ME TO CLEAR THE DTC AND TEST DRIVE VEH AND RETEST I CLEARD THE DTC AND THE SYSTEM PASSED PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONSERNS SHOULD I RETURN THE VEH TO THE CUST WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE**

SHANE, THIS CONCERN IS LIKELY CAUSED BY A LOOSE CONNECTION WITHIN THE MAIN ENGINE OR BODY WIRING HARNESS. THIS WOULD RESULT IN INTERMITTENT COMMUNICATION CODES AND POSSIBLE INOPERATIVE ACCESSORIES.

IN ORDER TO HELP ISOLATE THE ROOT CAUSE OF THIS CONCERN, PLEASE START THE VEHICLE AND WIGGLE TEST THE MAIN ENGINE AND BODY WIRING HARNESS. THIS MAY HELP TO INDUCE THE CONCERN. PLEASE ALSO INSPECT FOR LOOSE OR UNSEATED CONNECTORS. THE HOTLINE HAS NOT SEEN TRENDS OF THIS CONCERN AT THIS TIME. IF THE CONCERN CANNOT BE DUPLICATED, NO REPAIRS SHOULD BE PERFORMED. IF ADDITIONAL ASSISTANCE IS NEEDED, PLEASE UPDATE YOUR FORM WITH ANY ADDITIONAL DETAILS OF THIS CONCERN.

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REDACTED FOR RELEVANCE

REDACTED FOR RELEVANCE

**Attachments :** 0

REDACTED FOR RELEVANCE

**Dlr Contact:** JAMES BUCHANAN **Phone:** 000 000-0000 **Title Cde:** T

REDACTED FOR RELEVANCE

**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 12:46 PM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Michael Fontana'; Diez, Timothy (T.P.)
**Cc:** Pasquarella, Michael (M.S.); Bahena, Miguel (Mike.); 'John Burnett'
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Mike any way you can do that relay testing Geoff wanted you to do before Mike takes the EPP in for xray?

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 12:39 PM
**To:** Estes, Eric (E.E.); Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Michael Fontana'; Diez, Timothy (T.P.)
**Cc:** Pasquarella, Michael (M.S.); Bahena, Miguel (Mike.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition
**Importance:** High

Eric -

Please talk to Brad about how to expedite these parts back to us. Also, since the intermittent code maps to an A19 or A29, A19 might be related to a missing soft stop. Please have Fontana run the ANY gear without soft stops and see if that code is raised. Even check with the dealer to see if he can test the gear or car for equal travel left to right. We had a missing soft stop issue at MP1.

B3A
Please be prepared to have the EPP analysis by Monday at our weekly meeting even if it means someone needs to work on it tomorrow.

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 11:02 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Rob all three of the No Com's will be returned, I cannot say 100% that the gear is the issue. most of the testing has been confirmed by the book and some have load tested the circuits. it is possible it could be a ground or ign. feed but I have one hard No Com that will be returned and two intermittent No Com similar to Brad's road test description at the plant.

I'm giving Blood to the Red Cross and will return in one hour

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 10:50 AM
**To:** Jackson, Bradley (B.G.); Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

We had a similar launch issue and it was a bad ground of the wire to the EPAS.

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, January 21, 2011 10:47 AM
**To:** Mrozek, Robert (R.M.); Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Rob, I agree. If the word gets out that gear replacements are fixing the concern, we are in trouble. Need to deep dive these gears when they come back.

Just an fyi to this team, my M10 from 2 weeks ago was found to be a NPF....even though there were stored DTC's and was reproducible after several key off/key on cycles. That being said, we now have another vehicle with the exact same tell tale signs of terrain mgmt inop and traction control inop here at CAP that was found in a FCPA audit. This vehicle has stored DTC's and is now not showing the faults either. We are going to be deep diving this vehicle at some point today to try to root cause. I want to start with wiring connection to gear and work backwards. Something is happening intermittently and we need to figure this out.

Please call with any questions.

Brad

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 9:27 AM
**To:** Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.); Jackson, Bradley (B.G.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition
**Importance:** High

1) Why are we replacing these gears? How do you know it is not a wiring issue? Do not replace an intermittent gear until we know 100% for sure it is not wiring. Are these dealers nearby where we can go there to look?
2) WARNING: The world will shit a brick with 4 EPAS claims on U502 and our lives will be hell. ALL these gears need root cause within 48 hours or less.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

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**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 10:14 AM
**To:** Napoli, Laura (L.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Talked to all tech's for all three No Com gears they will replace EPAS gears. I have two int. no com's similar with Bradley's plant vehicle road test and I have one No Com that is their all the time

Laura see if we can install one of the int. No Com's for on-vehicle testing and we will take the other two in for analysis at 26-mile.

The attachment is my updated warranty tracking report with the new U502 gears, and I added the tech comments.

Laura did you talk to Brad and find out about the U502 B3A if you wanted to wait for the Tyco relay workshop in Feb?

Let me know

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Friday, January 21, 2011 9:28 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric,

Can you verify that none of these codes indicate that the rack should be pulled?  Thanks!

I'm off today, so call my cell if you need me...313-805-0482

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, January 21, 2011 4:46 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BATDZ004 NHL | | | **Received:** | 01/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F83BG[redacted] | | | **Build Date:** | 11/22/2010 |
| **Odometer :** | 289 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02058 BEECHMONT FORD INC | | | **Phone#:** | (513) 752-7474 |
| **City:** | Cincinnati | **State:** | Ohio | **Country :** | USA |
| **Originator:** | SHANE JONES | | | | |
| **Symptom:** | 3 03 A 99 CHASS.,STRG/HANDLING ,STEERING WHEEL ,NOT LISTED | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD INTERMITTENT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JSAVOY1 **Phone:** 313 317-9352 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHANE JONES **Phone:** 513 752-7474 **Title Cde:** T

**DTCs:**

KOEO:U0121 U2011:49-08 U0126 U0159 U0428

KOEC:

KOER:

**Comments :**

REPAIR 01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUST STATES THAT THE MESSAGE CENTER HAD A MESSAGE THAT SAID POWER STEERING ASSIST FAULT AND THE STEERING WAS VERY HARD DIAGNOSTICS: TEST DROVE VEH AND NORMAL OPERATION AT THIS TIME 0 WARNINGS IN THE MESSAGE CENTER IDS TESTED AND FOLLOWED PINPOINT TEST PER WORK SHOP MANUAL AND IT LED ME TO THE CONSERN IS NOT PRESENT AND TO RETURN THE VEH BACK TO THE CUST DTC U2011:49-08,U0121,U0126,U0159,U0428 THE WORK SHOP MANUAL TOLD ME TO CLEAR THE DTC AND TEST DRIVE VEH AND RETEST I CLEARD THE DTC AND THE

SYSTEM PASSED PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONSERNS SHOULD I RETURN THE VEH TO THE CUST WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE**

SHANE, THIS CONCERN IS LIKELY CAUSED BY A LOOSE CONNECTION WITHIN THE MAIN ENGINE OR BODY WIRING HARNESS. THIS WOULD RESULT IN INTERMITTENT COMMUNICATION CODES AND POSSIBLE INOPERATIVE ACCESSORIES.

IN ORDER TO HELP ISOLATE THE ROOT CAUSE OF THIS CONCERN, PLEASE START THE VEHICLE AND WIGGLE TEST THE MAIN ENGINE AND BODY WIRING HARNESS. THIS MAY HELP TO INDUCE THE CONCERN. PLEASE ALSO INSPECT FOR LOOSE OR UNSEATED CONNECTORS. THE HOTLINE HAS NOT SEEN TRENDS OF THIS CONCERN AT THIS TIME. IF THE CONCERN CANNOT BE DUPLICATED, NO REPAIRS SHOULD BE PERFORMED. IF ADDITIONAL ASSISTANCE IS NEEDED, PLEASE UPDATE YOUR FORM WITH ANY ADDITIONAL DETAILS OF THIS CONCERN.

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REDACTED FOR RELEVANCE

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**From:** Napoli, Laura (L.)
**Sent:** Tuesday, April 17, 2012 5:49 PM
**To:** Flanagan, Thomas (T.P.)
**Subject:** RE: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

We need to know the gear part number for the U3000-61. We fixed B91 with our R7 SW which went in last Nov/Dec for MP1. That part number was DG13-3D070-AF. We'll see when we get the gear back. I'd be shocked if it didn't have this level SW in it because we flashed most of the fleet with this update.

---

**From:** Flanagan, Thomas (T.P.)
**Sent:** Monday, April 16, 2012 9:34 AM
**To:** Napoli, Laura (L.)
**Subject:** FW: 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Tom Flanagan
Ford Motor Company
CD3, D3 EPAS Steering Engineering
PDC 2B-K24
(313) 845-4062
Cell (313) 815-6885

**From:** SBUELOW
**Sent:** Saturday, April 14, 2012 8:30 AM
**To:** TFLANAG1
**Subject:** 2011 EXP/TAU/MKS CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 6 report summary(s).

**Attachments :** 0

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDMDT020 NHL | | | **Received:** | 04/13/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK8F87BG[redacted] | | | **Build Date:** | 03/30/2011 |
| **Odometer :** | 28,272 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |

| | | | | | |
|---|---|---|---|---|---|
| **Dealer:** | USA 02707 Brighton Ford, Inc. | | | **Phone#:** | (810) 227-1171 |
| **City:** | Brighton | **State:** | Michigan | **Country :** | USA |
| **Originator:** | WALTER GAWEL | | | | |
| **Symptom:** | 2 27 2 68 AID/INFO,WNG IND/MESS/C,ADV TRAC,STAYS ON | | | | |
| **Status:** | | | | | |
| **VFG:** | V21 BRAKING | | | | |
| **Additional Symptom:** | TRAC AND HILL ASSIST ON START | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** G2 Detroit

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** WALTER GAWEL **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

REPAIR 04/13/2012 04:14PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:HILL DESENT AND STABILTIY WARNING LIGHTS ARE
ON. DIAGNOSTICS: PERFORM IDS CHECK AND CLEAR CODES AND NO CODES
FOUND. PERFORM NETWORN TEST AND PASSES. PARTS REPLACED:NONE TECH
QUESTION:VEHICLE CAME BACK WITH THE HILL DESENT AND STABILTY LIGHTS
ON. JUST HAD THE SYNC UPDATE PERFORMED. THE WARNING LIGHTS COME ON FOR
ABOUT 30SECONDS AFTER STARTING VEHICLE AND THEN THEY GO OFF. SHUT
VEHICLE OFF AND THE LIGHTS COME BACK ON. IS THIS RELATED TO THE SYNC
REFLASH OR IS THERE SOMETHING ELSE GOING ON. CUST STATES WAS NOT
HAPPENING BEFORE SERVICE WAS PERFORM.

**RECOMM 04/13/2012 04:14PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**
WALTER, THIS IS NOT LIKELY RELATED TO THE MYTOUCH
UPDATE. COMPARE THIS TO A LIKE VEHICLE TO ENSURE THAT THIS IS NOT
NORMAL INDICATOR PROVE-OUT. IF A LIKE VEHICLE HAS THE SAME CONDITION
NO FURTHER REPAIRS SHOULD BE MADE. IF THIS DOES NOT COMPARE TO A
LIKE VEHICLE, PERFORM A ON DEMAND SELF TEST OF THE IC AND ABS MODULE
TO ENSURE NO FAULTS ARE SET. IF NO DTCS ARE SET THIS MAY BE DUE TO LOW

CRANKING VOLTAGE. MONITOR CRANKING VOLTAGE. IF IT IS BELOW 11 VOLTS REPLACE/RECHARGE THE BATTERY AS NEEDED.

**REPAIR** **04/13/2012 04:53PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**

ALL READY PERFORM SELFTEST ON SAID MODULES AND PASSED. AFTER PUTTING

IN THIS REPORT I WAITED ABOUT 10MINS AND WENT TO RESTART VEHICLE AND CONCERN CORRECTED IT SELF. ROAD TEST AND SHUT ENGINE OFF AND RESTARTED

10 DIIFERENT TIMES AND IS FINE NOW. CUST WAS WAITING AND TOOK VEHICLE WHILE I WS WAITING FOR A RESPONSE FROM HOTLINE.

**RECOMM** **04/13/2012 04:53PM FRED SHEPHERD MSS - FCSD - TECH SVC HOTLINE**

THANKS FOR THE UPDATE WALT. IF THE VEHICLE RETURNS WITH THIS ISSUE, I WOULD RECOMMEND TO VERIFY THERE IS NO LOSS OF MODULE COMMUNICATION.

VERIFY ALL ABS POWERS AND GROUNDS. ROAD TEST THE VEHICLE AND ATTEMPT

TO DUPLICATE THE CONCERN. MONITOR THE WSS, SWA, LAT, YAW AND ROLL PIDS

AND CHECK FOR POSSIBLE INCORRECT OR ERRATIC READINGS AND SERVICE AS NEEDED.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | CDMFP003 NHL | | | **Received:** | 04/13/2012 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502) ,LIMITED,4 DOOR ,MPV ,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/14/2011 |
| **Odometer :** | 12,404 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08686 Courtesy Ford Lincoln | | | **Phone#:** | (337) 332-2145 |
| **City:** | Breaux Bridge | **State:** | Louisiana | **Country :** | USA |
| **Originator:** | SHERILL LATIOLAIS | | | | |
| **Symptom:** | 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | HIGH EFFORT, TRAC LIGHT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** AROGER59 **Phone:** 000 317-9295 **Regn Cd:** C3 Memphis

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHERILL LATIOLAIS **Phone:** 000 000-0000 **Title Cde:** OT

**DTCs:**

KOEO:C1B00:86 C200D:49

KOEC:

KOER:

**Comments :**

REPAIR 04/13/2012 05:51PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN:CUST SAID THAT SHE LOST POWER STEERING AND TRACTION CONTROL LIGHT CAME ON DIAGNOSTICS: CK FOR DTC,S AND CK ALL RELATED CONNECTIONS PARTS REPLACED:NONE TECH QUESTION:ANY KNOWN CONCERNS,

**RECOMM** **04/13/2012 05:51PM ALEXANDER ROGERS MSS - FCSD - TECH SVC HOTLINE** SHERRILL, IF DTC C200D:49 IS PRESENT IN THE PSCM, AN INTERNAL STEERING RACK FAULT IS PRESENT, AND THE RACK SHOULD BE REPLACED. A STEERING RACK FAULT IS LIKELY TO HAVE CAUSED THE ILLUMINATED

ADVANCE
TRAC LIGHT AS WELL AS THE HIGH STEERING EFFORT. THE PSCM THAT IS SERVICED WITH THE STEERING RACK DETERMINES STEERING WHEEL ANGLE. THE
STEERING RACK FAULT THAT CAUSED DTC C200D:49 TO SET LIKELY CAUSED DTC C1B00:86 TO SET IN THE ABS MODULE. PLEASE REPLACE THE VEHICLE'S STEERING RACK, AND RE EVALUATE BOTH CONCERNS. ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM

---

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, February 09, 2011 12:47 PM
**To:** Anderson, Eric (H.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; Jim Loria; Don Blandino-contr; Engelbert Lu; Mathew Alder
**Subject:** RE: BG[redacted] power steering intermittently inoperative

This is the third U502 warranty return on have on my warranty chart with torque sensor codes(BD2 & BD4), I put in a hot request last week for this return, still no 700 tag on this part today, if the claim is closed we should have a 700 tag tomorrow and I have the part overnighted to WPAC where I will perform the level 1 diagnosis and then ship to 26mile for further analysis.

See interactive diagnosis below


*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 09, 2011 12:15 PM
**To:** 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Estes, Eric (E.E.); Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'
**Subject:** BG[redacted] power steering intermittently inoperative

Hi All:

Please see the ECB claim below. I am collecting more information from the dealer. So far, his story is:

Power steering became inoperative while maneuvering vehicle during slow speed turns in dealer lot.
Key cycling would sometimes bring power steering back for 30 seconds to a minute, then steering would become inoperative.
A day after symptoms started, power steering worked fine. Vehicle was driven into repair garage with full assist.
These codes were pulled, cleared and returned:

C1B00
U0253-00
C200B
2F
C200B-62

The traction control light turned on.
The dealership has a bumpy parking lot and has experienced temperature swings from mid 30's to high 50's lately.

I will request the gear back.

Server: **AWS Prod**
Claims loaded through: **08-FEB-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 214167

**Vehicle Information**

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [2011]

Warranty Start Date:

Production Date: 24-JAN-11

VIN: 1FMHK8D87BG[redacted]

**Claim Information**

Document Number: 168057A

Repair Date: 02-FEB-11

Distance: 15

TIS: -1

**Dealer Information:**

Dealer Name RON DUPRATT FORD

Dealer Code: 07955 - *

Address: 1320 N FIRST ST

City: DIXON

State: CA Zip Code: 95620

Country: USA Region Code: NA

Phone: (707)678-5555

**Expense Information**

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 608.85 |
| Misc. Expense Amount: | .00 |
| Part Markup Amount: | 292.57 |
| Material Cost: | 1024.00 |
| Total Cost Gross: | 1632.85 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: 15 (381) RELACED EPAS GEAR SYSTEM, WAS NOT ABLE TO INHALE PSCM, SO PERFORMED AS BUILT DATA ON PSCM. CHECKED ALIGNMENT FOUND TOE TO BE OUT OF SPECS ADJUSTED TOE AND TEST DROVE VEHICLE VEHICLE DRIVES STRAIGN AND POWER STEERING ASSIST OPERATES PROPERLY. NO CODES PRESENT AT THIS TIME.

Customer Comment: FOUND DURING DEMO DRIVE, P S LOST ASST. TRACTION CONTOL LIGHT CAME ON. CONCERN CORRECTED AFTER DRIVING 2 MILES

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 22.14 |
| 3504E45 | | 33.21 |
| 3504E47 | | 33.21 |
| MT3504 | | 387.45 |
| MT3001 | | 66.42 |
| 3504E8 | | 11.07 |
| MTPSCM | | 55.35 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | BE | GEAR ASY-STEERING | 110101 | 1 | 1024.00 |

**DTC Sections:** **Mil. Light On =*

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

36845

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**Year = MY11**
**Model = U502**
**Engine = 3.5L**
**VIN = 1FMHK8D87BG[redacted]**
**IDS Version = Not Available**

### Current DTCs {retrieved 02 February 2011 11:14:34}

| DTC | Snap Shot Data | Source |
|---|---|---|
| C1B00:86 | N/A | ABS |
| C200B:62 | 0A33010E330221E03306003B0000000000000000000330C94D1118FD1173DD118FFADF40C01E4F40D14FDAAD4 | PSCM |

### Historic DTCs {retrieved 02 February 2011 11:14:34}

| DTC | Snap Shot Data | Source |
|---|---|---|
| U0402:68 | N/A | ABS |
| U0253:00 | N/A | IC |

### DTCs cleared since initial read:

| DTC | Snap Shot Data | Source |
|---|---|---|
| (ABS) | N/A | ABS |
| Pass | N/A | ACM |
| Pass | N/A | APIM |
| Pass | N/A | ATCM |
| Pass | N/A | FCIM |
| Pass | N/A | FLM |
| Pass | N/A | GPSM |
| Pass | N/A | HVAC |
| Pass | N/A | PAM |
| Pass | N/A | PCM |
| C200B:2F | 0A330103330223203306004A0000000000000000000330C94D1118DD11742D118FF8DF40C03F6F40D0FFDAAD2 | PSCM |
| Pass | N/A | RCM |
| Pass | N/A | SCCM |
| Pass | N/A | TPM |

**Start: Wed Feb 2 10:43:46 EST 2011**

**Menu Selection: Inspection and Verification**

**IV1: VISUAL INSPECTION**

- Verify the customer concern.
- Visually inspect the electronic power assist steering (EPAS) system for obvious signs of mechanical or electrical damage.
  **NOTE**: When inspecting the bellows boots make sure to use a strong light source and an inspection mirror.

**VISUAL INSPECTION CHART**

| Mechanical | Electrical |
|---|---|
| Binding or misaligned steering column. | High-current battery junction box (BJB) fuse E (100A), attached to the battery positive terminal |
| Loose steering column shaft bolts. | Battery Junction Box (BJB) fuse 89 (5A) |
| Steering column shaft couplings/U-joints | Wiring, terminals or connectors. |
| Steering gear | |
| Steering gear bellows boots | |
| Inner tie rod ends | |
| Outer tie rod ends | |
| Tire pressure | |

| | |
|---|---|
| Tires | |

- **Is an obvious cause for an observed or reported concern found?**

| |
|---|
| **No** |
| **Go to Known Concerns** |

**undefined: undefined**

**DTC C200B:2F (PSCM) - Steering Shaft Torque Sensor 1: Signal Erratic**

**B: DTCs C1B00, C200B, C200C, C200D, U2011, U2200 and U3000: Steering Angle Sensor, Steering Shaft Torque Sensor 1, Steering Shaft Torque Sensor 2, Motor and Control Module - Failure or Erratic**

**Normal Operation**

The power steering control module (PSCM) monitors various inputs and outputs of the electronic power assist steering (EPAS) system in order to keep the system operating at peak capacity. Information provided by sensors (steering torque, vehicle speed, vehicle travel distance, etc.) are all compared to programmed and learned information. Likewise, outputs like the motor and steering rack (travel) are tested against programmed and learned information.

**Note:**

If a damaged bellows boot(s) was discovered during Inspection and Verification and this pinpoint test DOES NOT lead to the installation of a new EPAS gear or bellows boot(s), then go to Pinpoint Test K to address the damaged boot(s) before returning the vehicle to the customer.

**B1: CHECK FOR PREVIOUSLY SET DTCS**

- Go to KNOWN CONCERNS.
  Check for DTCs listed in the section: System Related CMDTCs cleared since initial read.
- **Are any of the following DTCs present?**

**PSCM DTCs C1B00:2F, C1B00:62, C200B:2F, C200B:61, C200B:62, U2011:49, U2011:61, U2200:54, U3000:41, U3000:46, U3000:49.**

| |
|---|
| **Yes** |
| **Go to B2.** |

**B2: INSPECT EPAS GEAR WIRING HARNESS**

- With the vehicle in NEUTRAL, position it on a hoist. Refer to Section 100-02.
- Ignition OFF.
- Thoroughly inspect the wire harness along the top of the EPAS gear for cuts, breaks and pinched wires.
- Disconnect all 3 EPAS gear electrical connectors and inspect them for corrosion, pushed-out pins, bent pins and spread terminals.
- **Is the wire harness undamaged and are all 3 connectors in good condition?**

| |
|---|
| **Yes** |
| **CONNECT all 3 EPAS gear electrical connectors.<br>Go to B3.** |

**B3: TEST DRIVE TO CHECK FOR RETURNING DTCS. - Fault outcome**

NOTE: Always drive the vehicle in a safe manner according to driving conditions and obey all traffic laws.

- Clear the PSCM DTCs.**Complete**
- Cycle the ignition to OFF and then back to RUN.
- Test drive the vehicle in the following manner:
  —With the engine running/ready, stop the vehicle on an unsealed concrete or asphalt surface (in order to provide adequate friction for a thorough test).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —Return the steering wheel to the center position and move the vehicle forward approximately 32 cm (1 ft).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —Return the steering wheel to the center position and move the vehicle forward approximately 32 cm (1 ft).
  —With the vehicle in gear and the brakes applied, turn the steering wheel lock-to-lock.
  —The test drive is complete.
- Press Read Vehicle Information button to retrieve DTC s from the vehicle. NOTE: DTCs may be displayed from previous diagnostic actions.

**Vehicle Information:**

VIN 1FMHK8D87BG[redacted]

**System Related CMDTCs Active {retrieved 02 February 2011 11:14:34**

| DTC | Description | Type | Source | Status |
|---|---|---|---|---|
| C200B:2F | Steering Shaft Torque Sensor 1 : Signal Erratic | KOEC | PSCM | Historic |
| C200B:62 | Steering Shaft Torque Sensor 1 : Signal Compare Failure | KOEC | PSCM | Current |
| C200B:62 | Steering Shaft Torque Sensor 1 : Signal Compare Failure | ODDTCs | PSCM | Unknown |

**System Related CMDTCs cleared since initial read:**

- **Does DTC C1B00:62, C200B:2F, C200B:61, C200C:2F, C200D:49, U2011:49, U2011:61, U3000:41, U3000:46 and/or U3000:49 return?**

| Yes |
|---|
| **INSTALL a new EPAS gear.<br>Refer to Section 211-02.** |

**Exit: Wed Feb 2 11:18:57 EST 2011**

**From:** Napoli, Laura (L.)
**Sent:** Friday, February 18, 2011 10:35 AM
**To:** Estes, Eric (E.E.)
**Subject:** RE: BG[redacted] power steering intermittently inoperative

What's the status on this gear?

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, February 10, 2011 1:06 PM
**To:** Anderson, Eric (H.)
**Cc:** Napoli, Laura (L.)
**Subject:** RE: BG[redacted] power steering intermittently inoperative

Eric just called Ron Dupratt Ford today and found out the dealer closed the repair order yesterday, so we should have a 700 tag generated tomorrow.
So we should have the gear back to WPAC by this Monday or Tuesday.

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 09, 2011 12:52 PM
**To:** Estes, Eric (E.E.)
**Subject:** RE: BG[redacted] power steering intermittently inoperative

Hi Eric:

I just requested this to go back to John Burnett at TRW. Should I edit the request to go to you?

Thanks,

Eric

---

**From:** Estes, Eric (E.E.)
**Sent:** Wednesday, February 09, 2011 11:47 AM
**To:** Anderson, Eric (H.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; Jim Loria; Don Blandino-contr; Engelbert Lu; Mathew Alder
**Subject:** RE: BG[redacted] power steering intermittently inoperative

This is the third U502 warranty return on have on my warranty chart with torque sensor codes(BD2 & BD4), I put in a hot request last week for this return, still no 700 tag on this part today, if the claim is closed we should have a 700 tag tomorrow and I have the part overnighted to WPAC where I will perform the level 1 diagnosis and then ship to 26mile for further analysis.

See interactive diagnosis below

<< File: UR0003 interactive diag.pdf >>

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 09, 2011 12:15 PM
**To:** 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Estes, Eric (E.E.); Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'
**Subject:** BG[redacted] power steering intermittently inoperative

Hi All:

Please see the ECB claim below. I am collecting more information from the dealer. So far, his story is:

Power steering became inoperative while maneuvering vehicle during slow speed turns in dealer lot.
Key cycling would sometimes bring power steering back for 30 seconds to a minute, then steering would become inoperative.
A day after symptoms started, power steering worked fine. Vehicle was driven into repair garage with full assist.
These codes were pulled, cleared and returned:

C1B00
U0253-00
C200B
2F
C200B-62

The traction control light turned on.
The dealership has a bumpy parking lot and has experienced temperature swings from mid 30's to high 50's lately.

I will request the gear back.

Server: **AWS Prod**
Claims loaded through: **08-FEB-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 214167

| **Vehicle Information** | | **Claim Information** | |
|---|---|---|---|
| Model Year: | 2011 | Document Number: | 168057A |
| Market Derived: | F - FORD | Repair Date: | 02-FEB-11 |
| Body/Cab Type: | T/WD - 4 DOOR WAGON | Distance: | 15 |
| Version/Series: | T/EF-FORD SERIES | TIS: | -1 |

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [2011]

Warranty Start Date:

Production Date: 24-JAN-11

VIN: 1FMHK8D87BG[redacted]

**Expense Information**

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | RON DUPRATT FORD | Deductible Amount: | .00 |
| Dealer Code: | 07955 - * | Dealer Paid Amount: | .00 |
| Address: | 1320 N FIRST ST | Labor Cost: | 608.85 |
| City: | DIXON | Misc. Expense Amount: | .00 |
| State: | CA Zip Code: 95620 | Part Markup Amount: | 292.57 |
| Country: | USA Region Code: NA | Material Cost: | 1024.00 |
| Phone: | (707)678-5555 | Total Cost Gross: | 1632.85 |

Cust. Concern Code: H22 - STEERING REQUIRES EXTRA OR UNEVEN EFFORT

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: 15 (381) RELACED EPAS GEAR SYSTEM, WAS NOT ABLE TO INHALE PSCM, SO PERFORMED AS BUILT DATA ON PSCM. CHECKED ALIGNMENT FOUND TOE TO BE OUT OF SPECS ADJUSTED TOE AND TEST DROVE VEHICLE VEHICLE DRIVES STRAIGN AND POWER STEERING ASSIST OPERATES PROPERLY. NO CODES PRESENT AT THIS TIME.

Customer Comment: FOUND DURING DEMO DRIVE, P S LOST ASST. TRACTION CONTOL LIGHT CAME ON. CONCERN CORRECTED AFTER DRIVING 2 MILES

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 22.14 |

| | |
|---|---|
| 3504E45 | 33.21 |
| 3504E47 | 33.21 |
| MT3504 | 387.45 |
| MT3001 | 66.42 |
| 3504E8 | 11.07 |
| MTPSCM | 55.35 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | BE | GEAR ASY-STEERING | 110101 | 1 | 1024.00 |

**DTC Sections:** **Mil. Light On =***

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

36845

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk

773.729.0337 cell
eande181@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 17, 2011 3:44 PM
**To:** Anderson, Eric (H.); Mrozek, Robert (R.M.)
**Subject:** RE: BG[redacted] EPAS inop

Anyway you can get snapshot data for the U3000-49?

---

**From:** Anderson, Eric (H.)
**Sent:** Thursday, March 17, 2011 3:27 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** BG[redacted] EPAS inop

Hi Rob and Laura:

FYI. Another EPAS with an internal fault. U3000:49-48, U3000:96-C8 and U2011:49-48 present. The technician was friendly and helpful. Gear has been requested to go to John Burnett at TRW.

Server: **AWS Prod**
Claims loaded through: **16-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 293056

## Vehicle Information

Model Year: 2011

Market Derived: F - FORD

Body/Cab Type: T/WD - 4 DOOR WAGON

Version/Series: T/EF-FORD SERIES

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date:

Production Date: 16-FEB-11

VIN: 1FMHK8D80BG[redacted]

## Claim Information

Document Number: 012123A

Repair Date: 08-MAR-11

Distance: 5

TIS: -1

## Expense Information

**Dealer Information:**

| | | | |
|---|---|---|---|
| | | Customer Paid Amount: | .00 |
| Dealer Name | PERFORMANCE FORD | Deductible Amount: | .00 |
| Dealer Code: | 07530 - * | Dealer Paid Amount: | .00 |
| Address: | 906 ROUTE 10 WEST | Labor Cost: | 405.69 |
| City: | RANDOLPH | Misc. Expense Amount: | .00 |
| State: | NJ Zip Code: 07869 | Part Markup Amount: | 476.89 |
| Country: | USA Region Code: NA | Material Cost: | 1208.32 |
| Phone: | (973)927-6700 | Total Cost Gross: | 1614.01 |

Cust. Concern Code: C50 - OTHER STEERING/HANDLING AND RIDE TROUBLES

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: INSPECTED,FOUND NO POWER STEERING. HOOK UP IDS,U2011.PP TEST IN SHOP MANUAL.REPLACED RACK AND PINION. MT NO LOPS AVAILABLE

Customer Comment: UPON PERFORMING VEHICLE PREP FOR DELIVERY FOUND PWR STEERING ASSIST FAILURE ON DISPLAY

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 21.35 |
| 3504E8 | | 10.68 |
| 3504E45 | | 32.03 |
| 3504E47 | | 32.03 |
| MT3504 | | 213.52 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 96.08 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | BE | GEAR ASY-STEERING | 110101 | 1 | 1208.32 |

**DTC Sections:** **Mil. Light On =**N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| N | UNDF | U2011 | MODULE TRANSMITTED INVALID DATA (NON SCP) | 24 | CCM VEHICLE |

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

22982

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, March 17, 2011 3:54 PM
**To:** Mrozek, Robert (R.M.)
**Cc:** Napoli, Laura (L.); Anderson, Eric (H.)
**Subject:** RE: BG[redacted] EPAS inop

I was just going to call this dealer to get the gear back, I will talk to the tech

That's Mr. Estes to you Rob

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, March 17, 2011 3:51 PM
**To:** Estes, Eric (E.E.)
**Cc:** Napoli, Laura (L.); Anderson, Eric (H.)
**Subject:** FW: BG[redacted] EPAS inop

ESTES - What can you find out?


Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


---

**From:** Anderson, Eric (H.)
**Sent:** Thursday, March 17, 2011 3:27 PM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Subject:** BG[redacted] EPAS inop

Hi Rob and Laura:

FYI. Another EPAS with an internal fault. U3000:49-48, U3000:96-C8 and U2011:49-48 present. The technician was friendly and helpful. Gear has been requested to go to John Burnett at TRW.

Server: **AWS Prod**
Claims loaded through: **16-MAR-2011**

# Claim Detail Report

*Note: All costs are in US dollars*
**Model Year** = 2011; **Claim Key** = 293056

**Vehicle Information** **Claim Information**

Model Year: 2011

Document Number: 012123A

Market Derived: F - FORD

Repair Date: 08-MAR-11

Body/Cab Type: T/WD - 4 DOOR WAGON

Distance: 5

Version/Series: T/EF-FORD SERIES

TIS: -1

Drive Type: T/F-4 WHL L/H FULL TIME DRIVE

Vehicle Line: T/UB-EXPLORER [11-12]

Warranty Start Date:

Production Date: 16-FEB-11

VIN: 1FMHK8D80BG[redacted]

**Dealer Information:**

Dealer Name PERFORMANCE FORD

Dealer Code: 07530 - *

Address: 906 ROUTE 10 WEST

City: RANDOLPH

State: NJ Zip Code: 07869

Country: USA Region Code: NA

Phone: (973)927-6700

**Expense Information**

| | |
|---|---|
| Customer Paid Amount: | .00 |
| Deductible Amount: | .00 |
| Dealer Paid Amount: | .00 |
| Labor Cost: | 405.69 |
| Misc. Expense Amount: | .00 |
| Part Markup Amount: | 476.89 |
| Material Cost: | 1208.32 |
| Total Cost Gross: | 1614.01 |

Cust. Concern Code: C50 - OTHER STEERING/HANDLING AND RIDE TROUBLES

Condition Code: 42 - DOES NOT OPERATE PROPERLY

Technician Comment: INSPECTED,FOUND NO POWER STEERING. HOOK UP IDS,U2011.PP TEST IN SHOP MANUAL.REPLACED RACK AND PINION. MT NO LOPS AVAILABLE

Customer Comment: UPON PERFORMING VEHICLE PREP FOR DELIVERY FOUND PWR STEERING ASSIST FAILURE ON DISPLAY

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | | 21.35 |
| 3504E8 | | 10.68 |
| 3504E45 | | 32.03 |
| 3504E47 | | 32.03 |
| MT3504 | | 213.52 |
| 3001A1T | CASTER, CAMBER AND TOE-IN CORRECT | 96.08 |

| Causal Flag | Full Part Number PREF | BASE | SUFF | Part Description | CPSC | Part Quantity | Extended Amount |
|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | BE | GEAR ASY-STEERING | 110101 | 1 | 1208.32 |

**DTC Sections:** **Mil. Light On =**N

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| N | UNDF | U2011 | MODULE TRANSMITTED INVALID DATA (NON SCP) | 24 | CCM VEHICLE |

Any comments? You can contact

<< OLE Object: Picture (Metafile) >> *webmaster*

22982

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Friday, February 18, 2011 10:34 AM
**To:** Mrozek, Robert (R.M.)
**Subject:** RE: Explorers with inoperative steering

Will do. It bothers me that Eric is sending these notes out and including his management. I think he's just trying to put the pressure on TRW, and I don't want to reply to that and defend TRW. So I'm going to call him to discuss these notes with him. He has been invited to the B91 meetings. I can update him weekly on our warranty meetings.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Wednesday, February 16, 2011 3:38 PM
**To:** Napoli, Laura (L.)
**Subject:** RE: Explorers with inoperative steering
**Importance:** High

We need to figure out how to contain these type of notes by communicating to the PVT of what we are doing to fix these issues. You need to lead this please. Let's talk when you get back.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 16, 2011 2:58 PM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Cc:** Docimo, Tony (A.F.); Cantrell, David (D.D.)
**Subject:** RE: Explorers with inoperative steering

Hi All:

Please see the latest power steering inoperative claim. It is the fifth suspected internal gear fault known to CAP. The list to date is:

BGA14928: U3000:96
BGA10846: U0253:00-28, U2011:49-08
BGA14928: U3000:96
BGA22399: U3000:61 discovered in plant
BGA18724: C200B:2F

CAP is working toward 50R per 1000 units for the Explorer as a whole vehicle. Five inverted delta parts that stop functioning within weeks of vehicle launch is unacceptable. What is TRW doing to fix these problems? What can CAP do to detect faulty gears before our customers experience steering assist loss? Please explain your fixes as soon as possible.

Thanks,

Eric

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BBLAA025 NHL | | | **Received:** | 02/12/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F8XBG[redacted] | | | **Build Date:** | 01/20/2011 |
| **Odometer :** | 303 M | **Engine:** | 3.5L CYCLO | **Calibration :** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00089 Koons Ford of Annapolis, Inc. | | | **Phone#:** | (41! ! 0) 266-3087 |
| **City:** | Annapolis | **State:** | Maryland | **Country :** | USA |
| **Originator:** | JAMES MORELAND | | | | |
| **Symptom:** | 3 03 1 55 CHASS.,STRG/HANDLING ,FUNCTION,LOSS OF STRG | | | | |
| **Status:** | | | | | |
| **VFG:** | V89 RIDE & HANDLING | | | | |
| **Additional Symptom:** | U3000:96 | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** C! ! BISHO41 **Phone:** 313 317-9359 **Regn Cd:** N4 Washington

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMES MORELAND **Phone:** 410 266-3087 **Title Cde:** T

**DTCs:**

KOEO:U3000:96

KOEC:

KOER:

**Comments :**

REPAIR 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE

WEB FORM DATA - CONCERN: NO POWER STEERING DIAGNOSTICS: SELF TEST

VISUAL INSPECTION FOUND CONNECTOR ON GEAR DISCONNECTED PARTS

REPLACED:: NONE TECH QUESTION: CODE U3000 96 LEADS TO REPLACEMENT

OF EPAS GEAR W/NO PINPOINT TESTS IS THIS CORRECT, VEHICLE WAS DX TO

OUR DEALER SAID P/S WENT OUT IN OUR PARKING LOT, TESTED AND FOUND

CONNECTOR 1453A DISCONNECTED. PLUGGED BACK IN BUT NO P/S AND CODE AND

MESSAGE CENTER WILL NOT CLEAR OUT. WERE YOU ABLE TO VERIFY THE

CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR

THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 02/12/2011 01:58PM CHRIS BISHOP MSS - FCSD - TECH SVC HOTLINE**

JAMES, YOU ARE CORRECT. IF THE U3000:96 IS PRESENT AS A HARD FAULT

THEN STEERING GEAR REPLACEMENT IS REQUIRED. THIS CODE INDICATES THAT

THE ELECTRONIC STEERING GEAR HAS EXPERIENCED AN INTERNAL FAULT.

RECOMMEND REPLACING THE GEAR AS NEEDED THEN RETESTING FOR NORMAL

OPERATION.

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, February 09, 2011 3:23 PM
**To:** Anderson, Eric (H.); Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Subject:** RE: Explorers with inoperative steering

Please see my comments below...

---

**From:** Anderson, Eric (H.)
**Sent:** Wednesday, February 09, 2011 4:14 PM
**To:** Estes, Eric (E.E.); 'Michael Fontana'; 'Simon Malsbury'; 'Robert Kostadina'; 'Hemang Mehta'; 'Nick turovich'; Mrozek, Robert (R.M.); Diez, Timothy (T.P.); Napoli, Laura (L.); 'Geoff Jacks'; 'Phil Browne'; 'Michele Marion'; 'Jim Loria'; 'Don Blandino-contr'; 'Engelbert Lu'; 'Mathew Alder'
**Subject:** Explorers with inoperative steering

Hi All:

Please give me an update on root cause for these U502 units that experienced steering assist loss, if you have one. If the part has yet to be returned for analysis and root cause is unknown, please note it.

BG[redacted]: Petoskey, MI. Inoperative because of contamination in B3A motor relay.
B3A caused by contamination on motor relay. Source of contamination at Tyco unknown.

BG[redacted]: Ripley, WV. Root cause unknown.
B3A. Part shipped to Tyco but not yet received. Cause of B3A will be known by COB tomorrow once relay is analyzed by Tyco.

BG[redacted] Chicago Assembly Plant. Gear hand carried to TRW for analysis. Root cause unknown.
B91. Unable to duplicate. Root cause not yet known. Suspect gear was installed into a 2011 U502 and TRW is trying to duplicate issue before HW is sent out for analysis.

BG[redacted] Dixon, CA. Intermittently inoperative. Root cause unknown.
BD2 & BD4. Torque Sensor Faults. Gear not yet returned to TRW. Root cause unknown.

Thanks,

Eric Anderson
PVT Engineer
Ford Chicago Assembly
773.646.7236 desk
773.729.0337 cell
eande181@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 10, 2011 2:26 PM
**To:** 'Michael Fontana'; Estes, Eric (E.E.); John Burnett; Robert Kostadina
**Subject:** RE: FW: 2011 Explorer Management Lease Vehicle

Loss of assist twice when he started his car in the morning.

-----Original Message-----
From: Michael Fontana [mailto:Michael.Fontana@TRW.COM]
Sent: Thursday, March 10, 2011 2:22 PM
To: Estes, Eric (E.E.); Napoli, Laura (L.); John Burnett; Robert Kostadina
Subject: RE: FW: 2011 Explorer Management Lease Vehicle

Not sure. Why was this vehicle initially suspected for a PSCM issue if there were no DTCs?

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/10/2011 2:10 PM >>>

Data on Doug's car with 2 B3A's and 2 E66's. Confused as to how he had
2 B3A's in the fault store and no Ford DTCs. See powerpoint...

-----Original Message-----
From: Napoli, Laura (L.)
Sent: Thursday, March 10, 2011 12:35 PM
To: 'Michael Fontana'; Estes, Eric (E.E.); John Burnett; Robert Kostadina
Subject: RE: FW: 2011 Explorer Management Lease Vehicle

How many E66 did he have?

-----Original Message-----
From: Michael Fontana [mailto:Michael.Fontana@TRW.COM]
Sent: Thursday, March 10, 2011 10:02 AM
To: Estes, Eric (E.E.); Napoli, Laura (L.); John Burnett; Robert Kostadina
Subject: Re: FW: 2011 Explorer Management Lease Vehicle

Laura,

I checked out Steve Baker's U502 vehicle this morning and confirmed that there were (x3) B3a. There is no C69 because there were many journey's between the two. Please let the team know if you choose to change out this gear.

Best Regards,

Michael Fontana
Product Engineer - TRW Electronics
Electric Power Steering
C: (586) 337-6343

D: (586) 232-8533

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/9/2011 1:42 PM >>>
Mike, Rob, John,

I have a loss of assist vehicle in the management lease fleet that's with the vehicle owner in Sterling Heights (Mound and 17mi). It has assist now, but is a suspect B3A. I'd like to know what codes are inside the gear. Can one of you go to Sterling Axle and visit Steve Baker to pull codes out of his vehicle this week? I don't want to have to wait til I go up there on Tuesday.

Please let me know who can go and when. His contact info and hours are below.

> _____
> From: Baker, Steven (S.W.)
> Sent: Wednesday, March 09, 2011 12:01 PM
> To: Napoli, Laura (L.)
> Subject: RE: 2011 Explorer Management Lease Vehicle
>
> I am here every day, 6am - 4:30pm (at the earliest). Just give me a
> little heads up and I will be available.
>
> Steve Baker
> Production Control Team Manager
> Sterling Axle Plant
> (586) 826-5290
>
>
> _____
> From: Napoli, Laura (L.)
> Sent: Wednesday, March 09, 2011 12:00 PM
> To: Baker, Steven (S.W.)
> Subject: RE: 2011 Explorer Management Lease Vehicle
>
> Are you ok with me sending someone from TRW out there this week? Do
> any days/times not work for you?
>
>
> _____
> From: Baker, Steven (S.W.)
> Sent: Wednesday, March 09, 2011 9:57 AM
> To: Napoli, Laura (L.)
> Subject: RE: 2011 Explorer Management Lease Vehicle
>
> Not a problem.
>
> My cell is (248) 885-0391. Just let me know when you are close and
> I'll be ready.
>
> Steve Baker

> Production Control Team Manager
> Sterling Axle Plant
> (586) 826-5290
>
>
> _____
> From: Napoli, Laura (L.)
> Sent: Wednesday, March 09, 2011 9:29 AM
> To: Baker, Steven (S.W.)
> Subject: 2011 Explorer Management Lease Vehicle
>
> Steve,
>
> I am the EPAS engineer for the 2011 Explorer. I was reading the 1MIS
> verbatims and see that you experienced a loss of assist on your new
> Explorer. Would you be available on Tuesday next week for me to come
> by and pull data off of your steering gear? It would take about
> 10min. I'll be up in the Sterling Heights area on Tuesday driving up
> Mound to 26mile. If there's a time that works for you, I can make it
> work with my drive.
>
>
> Regards,
>
> Laura Napoli
> U502 EPAS
> Ford Motor Company
> Cube: 2B-G66 PDC
> Phone: 313.323.0634
> Mobile: 313.805.0482
>

**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:54 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition
**Attachments:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

Steve Beulow.

Pl read stapled note. Thanks.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, May 24, 2011 7:47 AM
**To:** Annadi, Hari (H.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Who is the plant FCSD person?

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:45 AM
**To:** Mrozek, Robert (R.M.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

Understood. I did have a conversation with Laura about this yesterday. We need to communicate this to the FCSD rep in the plant so he does not open an Emerging concern with Chassis as the lead function. I am sure your team will be supporting Electrical to root cause.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Tuesday, May 24, 2011 7:40 AM
**To:** Annadi, Hari (H.); Napoli, Laura (L.)
**Cc:** Anderson, Eric (H.); Estes, Eric (E.E.)
**Subject:** RE: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

We get all these CQIS reports. Intermittent is typically an electrical issue and not related to EPAS. We design EPAS not to deliver assist intermittently. Due to severity of intermittent assist, we will completely pull assist. So this is likely a wiring/connection/grounding issue.

Laura is working with PVT on this one.


Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com


---

**From:** Annadi, Hari (H.)
**Sent:** Tuesday, May 24, 2011 7:34 AM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.)
**Subject:** FW: STEERING V87 ALL 09-10 - Report Summary(s) from a GCQIS Query Disposition

CQIS for intermittent loss of assist.

---

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BETBK025 NHL | | | **Received:** | 05/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B8XBG[redacted] | | | **Build Date:** | 03/03/2011 |
| **Odometer :** | 2,947 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08305 Evergreen Ford | | | **Phone#:** | (425) 392-6900 |
| **City:** | Issaquah | **State:** | Washington | **Country :** | USA |
| **Originator:** | JASON DESCHAMBAULT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | INT. LOSS OF STEERING | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** MHINDERE **Phone:** 000 337-9292 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JASON DESCHAMBAULT **Phone:** 425 392-6900 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments:**

REPAIR 05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUSTOMER LOST STEERING ASSIST AT 35 MPH, DIDNT RETURN UNTILL ENGINE SHUT OFF AND RETSTARTED. DIAGNOSTICS: CHECKED OASIS, CHECKED FOR DTCS PASS. PARTS REPLACED:: NONE TECH QUESTION: ROAD TESTED, UNABLE TO VERIFY CONCERN. ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM 05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**
JASON, TO ACTIVATE THE EPAS SYSTEM, A 12-VOLT HOT AT ALL TIMES AND A 12-VOLT IGNITION/RUN INPUT TO THE PSCM IS REQUIRED. THE PSCM THEN MONITORS THE HS-CAN TO DETERMINE IF THE VEHICLE IS OPERATING IN A MANNER CAPABLE OF SUPPORTING THE EPAS SYSTEM. THE PSCM USES INPUTS FROM VARIOUS MODULES OVER THE HS-CAN, THE STEERING TORQUE SENSOR AND
THE MOTOR TO DETERMINE THE AMOUNT OR LEVEL OF ASSIST PROVIDED BY THE
EPAS SYSTEM. INSPECT PINFIT AND CONNECTION AT THE PSCM. VERIFY THERE ARE NO CONCERNS WITH A LOSS OF POWER TO THE PSCM. GIVEN THE CONCERN IS INTERMITTENT, A CONNECTION CONCERN IS POSSIBLE.

---

**From:** Perri, Ron (R.J.)
**Sent:** Monday, May 23, 2011 3:19 PM
**To:** Napoli, Laura (L.); Annadi, Hari (H.); Mrozek, Robert (R.M.); Pascarella, Michael (M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

Hari, should a SSM be communicated to reduce incorrect gear replacements?
Thanks.

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

---

**From:** Napoli, Laura (L.)
**Sent:** Monday, May 23, 2011 2:03 PM
**To:** Annadi, Hari (H.); Perri, Ron (R.J.); Mrozek, Robert (R.M.); Pascarella, Michael (M.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

No. The gear was not changed out on this one. It sounds like a wiring issue to me. PVT said they lost assist and it came back on the next key cycle with no DTC's. There's a new wiring issue popping up that the PVT is invetigating with the electrical team. We need to start directing dealers to look for this wiring problem when they have no communication with the gear or intermittent assist with no EPAS DTC's.

---

**From:** Annadi, Hari (H.)
**Sent:** Monday, May 23, 2011 12:12 PM
**To:** Perri, Ron (R.J.); Mrozek, Robert (R.M.); Pascarella, Michael (M.); Napoli, Laura (L.)
**Subject:** RE: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

Do we have any of these parts back?

---

**From:** Perri, Ron (R.J.)
**Sent:** Monday, May 23, 2011 10:12 AM
**To:** Annadi, Hari (H.); Mrozek, Robert (R.M.); Pascarella, Michael (M.); Napoli, Laura (L.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

This concern is being added to the emerging issues list

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680

rperri@ford.com

---

**From:** Gubing, William (Bill.)
**Sent:** Monday, May 23, 2011 10:10 AM
**To:** Menz, Kenneth (K.C.); Perri, Ron (R.J.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

FYI

Bill

---

**From:** Buelow, Steve (S.E.)
**Sent:** Monday, May 23, 2011 10:02 AM
**To:** Adamczyk, David (D.W.); Bollwahn, Bryce (B.A.); Centlivre, James (J.C.); Cheatham, Sandy (.); Cittadino, Lisa (L.C.); Collins, Kevin (K.E.); Gagnier, Kathryn (K.A.); Gilewski, David (D.); Gillanders, Eric (E.S.); Gray, Carl (C.L.); Gubing, William (Bill.); Hays, Andy (A.R.); Krochmalny, Kevin (K.); Mann, Mickey (N.S.); McClain, Shawn (S.M.); Pogorzelski, John (J.M.); Rodgers, Chuck (.); Saleh, Salim (S.A.); Sellers, Gary (G.T.); Shaukat, Nadeem (N.S.); Simkus, Walter (W.A.); Sokolowski, Todd (T.M.); Thornsberry, Joel (J.A.); Willis, Mark (M.E.); Wong, Vicki (V.A.); Acuna, Aaron (A.A.); Allman, Jan (J.E.); Bell, Tim (.); Bergeron, Matthew (M.C.); Bisaga, Richard (R.); Boykin, George (G.); Boykins, Michael (M.); Bustamante, Chris (C.T.); Cantrell, David (D.D.); Carter, Tracy (T.); Ciotti, Steven (S.R.); Davis, Charlene (C.); Devine, Robert (R.M.); Docimo, Tony (A.F.); Ferguson, Hugh (H.); Gagnier, Scott (S.W.); Greenwell, R (R.); Guyton, MzJenny (J.); Hernandez, Thomas (T.); Herron, Micheal (M.C.); Inglis, Steve (S.D.); Iqbal, Khurram (K.); Jones, Frederick (F.L.); Little, Janie (J.); Martin, Kenneth (K.A.); Matlock, Douglas (D.); McElroy, Darin (D.L.); McKernan, Patrick (P.J.); Miller, Melinda (M.S.); Moore, Chikynda (D.); Moskwa, Larry (L.M.); Perkins, John (J.E.); Russell, David (D.A.); Rutovic, Nick (N.); Sarkisian, Mark (Z.); Talbott, Larry (J.L.); Turner, Bridgette (B.); Turner, Patrice (P.T.); Vandergroef, Cornelius (C.); Washington, Kellie (K.S.); Wertman, David Brian (D.B.); Westbrook, Dori (D.); Williams, Erik (E.C.); Williams, Gregory (G.M.); Wyatt, Kimberly (K.D.); Zroback, David (D.P.); Armstrong, Miya (M.); Buerger, Robert (R.G.); Evans, Kayekethia (K.); Gibson, Renelda (R.); Lakomek, Scott (S.); Napier, S (S.); Ornelas, Demetrio (D.); Ratliff, Kathy (K.); Scheldberg, Gary (G.D.); Stonewall, Wendy (M.); Svetich, Chris (C.); Torian, Jason (J.B.); Anderson, Eric (H.); Berzeri, Marcello (M.); Cassata, Joe (J.); Chamberlain, Steve (J.); Edwards, Monty (M.R.); Farmer, Marty (M.F.); Feder, Andrew (A.); Gerrard, Ryan (R.P.); Iannotti, Jason (JRI.); Ickes, Walt (W.D.); Issa, Ibrahim (I.M.); Jackson, Bradley (B.G.); Logli, Michael (M.A.); Morgan, Anthony (A.); Olsson, Paul (P.C.); Polaski, Mike (M.S.); Porter, Alan (A.T.); Rapiz, Noreen (N.G.); Santilli, Rennie (R.); Smith, Erin (E.); Sridhara, Raghu (R.); Trygar, Mike (M.); Vargo, Rebecca (R.L.); Widrick, Brad (B.A.); Young, Richard (R.C.); Yu, Eric (E.); Buelow, Steve (S.E.)
**Subject:** FW: 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

This is the 5th report in the last 3 weeks. This concern is being added to the emerging issues list.


***-The Customer Defines Quality-***

*Steve Buelow - Ford Motor Company*

FCSD Program Manager-
Taurus/Taurus SHO/Lincoln MKS/Explorer
Chicago Assembly PVT Office, COE
773-646-7495 DialNet 686-7495
Cell 773-726-0808 sbuelow@ford.com


"Quality means doing it right when no one is looking." - Henry Ford

**From:** SBUELOW@ford.com [mailto:SBUELOW@ford.com]
**Sent:** Monday, May 23, 2011 8:59 AM
**To:** Buelow, Steve (S.E.)
**Subject:** 2011 Exp - BG[redacted] - Loss of steering assist, 2947 mi, BD 3/3/11

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BETBK025 NHL | | | **Received:** | 05/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8B8XBG[redacted] | | | **Build Date:** | 03/03/2011 |
| **Odometer :** | 2,947 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 08305 Evergreen Ford | | | **Phone#:** | (425) 392-6900 |
| **City:** | Issaquah | **State:** | Washington | **Country :** | USA |
| **Originator:** | JASON DESCHAMBAULT | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | INT. LOSS OF STEERING | | | | |
| **Fix:** | **Causal Component :** | | | | |
| **Condition Code:** | | | | | |

**Hotliner:** MHINDERE **Phone:** 000 337-9292 **Regn Cd:** W5 Seattle

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JASON DESCHAMBAULT **Phone:** 425 392-6900 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

REPAIR 05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE WEB FORM DATA - CONCERN: CUSTOMER LOST STEERING ASSIST AT 35 MPH, DIDNT RETURN UNTILL ENGINE SHUT OFF AND RETSTARTED. DIAGNOSTICS: CHECKED OASIS, CHECKED FOR DTCS PASS. PARTS REPLACED:: NONE TECH

QUESTION: ROAD TESTED, UNABLE TO VERIFY CONCERN. ANY KNOWN CONCERNS? WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? NO

**RECOMM** **05/20/2011 03:11PM MICHAEL HINDERER MSS - FCSD - TECH SVC HOTLINE**

JASON, TO ACTIVATE THE EPAS SYSTEM, A 12-VOLT HOT AT ALL TIMES AND A 12-VOLT IGNITION/RUN INPUT TO THE PSCM IS REQUIRED. THE PSCM THEN MONITORS THE HS-CAN TO DETERMINE IF THE VEHICLE IS OPERATING IN A MANNER CAPABLE OF SUPPORTING THE EPAS SYSTEM. THE PSCM USES INPUTS FROM VARIOUS MODULES OVER THE HS-CAN, THE STEERING TORQUE SENSOR AND

THE MOTOR TO DETERMINE THE AMOUNT OR LEVEL OF ASSIST PROVIDED BY THE

EPAS SYSTEM. INSPECT PINFIT AND CONNECTION AT THE PSCM. VERIFY THERE ARE NO CONCERNS WITH A LOSS OF POWER TO THE PSCM. GIVEN THE CONCERN IS INTERMITTENT, A CONNECTION CONCERN IS POSSIBLE.

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 17, 2011 10:23 AM
**To:** Mrozek, Robert (R.M.)
**Subject:** RE: U502 TS Warranty Bent Rotor

Ok, I'll talk to them about it. and I agree...the gage would haev to be at Marion because there's no evidence at this time that the bent finger is coming out of Rogersville. I'll talk to Greg Austin to come up with something at the station.

We are setting up the rabbit now to verify that visual inspection catches it.

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Thursday, March 17, 2011 10:19 AM
**To:** Napoli, Laura (L.)
**Subject:** RE: U502 TS Warranty Bent Rotor

Good progress still a few open items. Need PCA that is not visual inspection. Some type of gage at MAO for bent finger would be acceptable.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, March 17, 2011 9:59 AM
**To:** Mrozek, Robert (R.M.)
**Subject:** FW: U502 TS Warranty Bent Rotor

Updated TS 8D and answer on if it's possible for a bent finger to pass the MP tooling station with the half moon tooling design. Answer is basically no. Looks like gap is smaller than width of finger. See below...

---

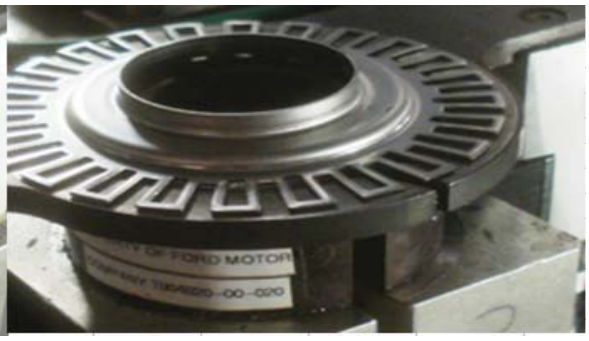
**From:** Angie Caudill [mailto:Angie.Caudill@TRW.COM]
**Sent:** Thursday, March 17, 2011 9:45 AM
**To:** Ausband, Andy; Austin, Greg; Craig, Carl; Estes, Eric (E.E.); Fleenor, Anthony; Napoli, Laura (L.); Williams, Todd
**Subject:** RE: U502 TS Warranty Bent Rotor

Laura,
The requested action was added to the 8D. Please find it attached below.

1. Is it possible to rotate the part in a way that the bent finger is located in the gap of the half moon and a bad part would pass?

Yes, but it would take a specially bent vane (in the shape of an "L") for this to happen.

Are you saying the half moon closes so the only way a finger can be bent and pass the MP tooling station is if the finger is bent so it is verticle and sits inside the ID of the tool parallel to the shaft? Yes, the only way that a bent finger could actually fit into the gap of the half moon is to be bent so that it is vertical and sitting inside the ID of the tool. Please see the pictures below. We will take a look at the tooling and see if we can reduce the gap to eliminate this possibility.



Thanks,
Angie

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/16/2011 3:37 PM >>>
Angie,

Please add the following action to the 8D...
Rogersville to meet with MAO quality team at Marion plant to investigate possible source of bent finger at full MAO facility. This will include incoming IPAs once a shipment is received all the way until IPA is assembled into gear and TS cover is secured. This should be the same type of deep dive already done at Rogersville.

Also, regarding my first question from yesterday...
1. Is it possible to rotate the part in a way that the bent finger is located in the gap of the half moon and a bad part would pass?
Yes, but it would take a specially bent vane (in the shape of an "L") for this to happen.
Are you saying the half moon closes so the only way a finger can be bent and pass the MP tooling station is if the finger is bent so it is verticle and sits inside the ID of the tool parallel to the shaft?

Thanks Angie.

---

**From:** Angie Caudill [mailto:Angie.Caudill@TRW.COM]
**Sent:** Wednesday, March 16, 2011 12:50 PM
**To:** Estes, Eric (E.E.); Napoli, Laura (L.); Andy Ausband; Anthony Fleenor; Carl Craig; Greg Austin; Todd Williams
**Subject:** RE: U502 TS Warranty Bent Rotor

All,
Please find attached the latest 8D updated with actions from today's meeting. Please let me know if there are any corrections required.

Thank you,

Angie Caudill
TRW Pinion and IPA Department Quality Engineer
423.272.4118 (Office)

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/15/2011 8:47 AM >>>
Angie,

Need the following questions answered in the 10am meeting tomorrow...
1. Is it possible to rotate the part in a way that the bent finger is located in the gap of the half moon and a bad part would pass?
2. I see that the bent finger is near the weld spot on the picture you sent. Is this true in all parts?
3. Can you see a bent rotor when setting the gap measurement during assy? I'm assuming no. Why not?
4. Can we build a rabbit and run it through Marion to see if the visual inspectors catch it? We can discuss details on how to do this tomorrow.

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Angie Caudill [mailto:Angie.Caudill@TRW.COM]
**Sent:** Wednesday, March 09, 2011 9:47 AM
**To:** Napoli, Laura (L.); Todd Williams
**Cc:** Estes, Eric (E.E.); Andy Ausband; Carl Craig; Greg Austin
**Subject:** RE: U502 TS Warranty Bent Rotor

Todd,
Can you please answer Laura's question?

Thanks,
Angie

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/9/2011 9:11 AM >>>
Angie,

Is it possible to rotate the part in a way that the bent finger is located in the gap of the half moon and a bad part would pass?

---

**From:** Angie Caudill [mailto:Angie.Caudill@TRW.COM]
**Sent:** Wednesday, March 09, 2011 9:01 AM

**To:** Napoli, Laura (L.)
**Cc:** Estes, Eric (E.E.); Greg Austin
**Subject:** Re: U502 TS Warranty Bent Rotor

Laura,
Please find the requested 8D attached. Both failed IPA's were rejected on our pre assembly MP check.

Thank you,

Angie Caudill
TRW Pinion and IPA Department Quality Engineer
423.272.4118 (Office)

>>> "Napoli, Laura (L.)" <lnapoli@ford.com> 3/8/2011 4:08 PM >>>

Angie,

1. Can you send me an updated 8D?
2. What are the results at Rogersville from running the failed IPA's on the attached poke-yoke tool?
<<Line 1.JPG>>

Regards,

*Laura Napoli*
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, September 14, 2011 5:16 PM
**To:** Pienta, Alan (A.)
**Subject:** RE: U502 with C200B/C200C

Welcome to EPAS :)

---

**From:** Pienta, Alan (A.)
**Sent:** Thursday, September 01, 2011 1:55 PM
**To:** Napoli, Laura (L.)
**Subject:** RE: U502 with C200B/C200C

Thanks Laura, I forgot you sent that to me. Why is everything so complex?
Al

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, September 01, 2011 11:26 AM
**To:** Pienta, Alan (A.); Diez, Timothy (T.P.)
**Subject:** RE: U502 with C200B/C200C

You have to find C200B and C200C in the Part 2 I sent you. That will give you the hex version so you can use the spreadsheet to find the TRW code.

C200B is probably BD0 and/or BD2 and possibly a BD4.
C200C is probably BD1 and/or BD3.

---

**From:** Pienta, Alan (A.)
**Sent:** Thursday, September 01, 2011 11:04 AM
**To:** Diez, Timothy (T.P.); Napoli, Laura (L.)
**Subject:** FW: U502 with C200B/C200C

Tim, Laura,
If you have the fault code descriptions, please send them to me. In my opinion, the grease would potentially make a better connection if someone had probed and spread the terminals during diagnosis.
Al

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, September 01, 2011 9:23 AM
**To:** 'Jim Loria'; Pienta, Alan (A.); Michael Fontana; Simon Malsbury; Engelbert Lu; joel.rabideau@trw.com; Diez, Timothy (T.P.)
**Cc:** Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** FW: U502 with C200B/C200C

TRW TS Team,

We have a car in warranty that had C200B and C200C TS Faults. The dealer unplugged ALL 3 connectors and put di-electric grease on the pins and said it fixed the issue. This is not in the service procedure. Do you have any concerns that they did this, or do you think the car will just come back with another TS fault and we can replace the gear then?

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company

Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, September 01, 2011 8:43 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.); Logli, Michael (M.A.); Brucker, Eric (.)
**Subject:** U502 with C200B/C200C

Laura / Eric E., what is the C200B/C DTC? This dealer is claiming they put di-electric grease in the connector to the gear and fixed this problem. This does not sound correct.

# Claim Detail Report

**Model Year =** 2011; **Claim Key =** 918856

**Vehicle Information** **Claim Information**

Model Year: 2011 Document Number: 00410801
Market Derived: F - FORD Repair Date: 24-AUG-11
Body/Cab Type: T/WD - 4 DOOR WAGON Distance: 1619
Version/Series: T/EF-FORD SERIES TIS: 2
Drive Type: T/A-2 WHL L/H FRONT DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 16-JUL-11
Production Date: 17-JUN-11
VIN: 1FMHK7B88BG[redacted]

**Expense Information**

**Dealer Information:**

Customer Paid Amount: .00
Dealer Name DUVAL FORD Deductible Amount: .00
Dealer Code: 04863 - * Dealer Paid Amount: .00
Address: 1616 CASSAT AVE Labor Cost: 87.66
City: JACKSONVILLE Misc. Expense Amount: .00
State: FL Zip Code:32210 Part Markup Amount: .00
Country: USA Region Code: NA Material Cost: .00
Phone: (904)387-6541 Total Cost Gross: 87.66

---

Cust. Concern Code: H39 - TRACTION CONTROL/ADVANCE TRAC WARNING LIGHT TRBLS
Condition Code: 28 - OPEN CIRCUIT
Technician Comment: VERIFY CONCERN,PERFORM SELF TEST TO ABS & PSCM, RECEIVE U0001:88,C1BOO:86,C200B:62,C200C:2F,PERFORM PINPOINT B PER INTERACTIVE DYNAMICS,FOUND HIGH RESISTANCE IN ELECTRONIC STEERING GEAR CONNECTORS,INSTALL DIELECTRIC GREASE IN ALL 3 CONNECTORS,PER FORM TEST DRIVE TO VERIFY DTC'S DID NOT RETURN, OPERATING AS DESIGNED. CC 42 1621
Customer Comment: SVC ADVANCE TRAC & PWR STEERING ASSIST FAULT COMES ON INTERMITTANTLY WHILE DRIVING. WHEN THIS OCCURS, POWER STEERING IS INOP...ADVISE

| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| MTWIRING | 87.66 | |

| Causal Flag | PREF | Full Part Number BASE | SUFF | Part Description | Part CPSC | Extended Quantity | Amount |
|---|---|---|---|---|---|---|---|
| Y | * | 14401 | * | WIRE ASY MAIN LOOM | 180102 | 0 | .00 |

Regards,

Brad Jackson

Chassis Resident Engineer
Chicago Assembly Plant
Ford Motor Company
Phone: +1.313.805.4798
bjackson@ford.com

**From:** Napoli, Laura (L.)
**Sent:** Friday, April 01, 2011 9:36 AM
**To:** Estes, Eric (E.E.); Mrozek, Robert (R.M.)
**Cc:** Anderson, Eric (H.); Diez, Timothy (T.P.)
**Subject:** RE: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

They're definitely wiring issues. Seems like these are all of a sudden popping up again. We need to make sure they don't pull the gears on these, and should get information from them once they find out the electrical problem to see if we have another build issue.

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, April 01, 2011 9:00 AM
**To:** Mrozek, Robert (R.M.)
**Cc:** Napoli, Laura (L.); Anderson, Eric (H.); Diez, Timothy (T.P.)
**Subject:** RE: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

I will check these out as soon as I get out of our internal meeting, thanks

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, April 01, 2011 8:58 AM
**To:** Estes, Eric (E.E.)
**Cc:** Napoli, Laura (L.); Anderson, Eric (H.); Mrozek, Robert (R.M.); Diez, Timothy (T.P.)
**Subject:** FW: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Mr. Estes -

Can you check with these please to see if you can offer some guidance? There are two Explorer EPAS concerns in the list. Let us know what you find?

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, April 01, 2011 4:47 AM

**To:** RMROZEK
**Subject:** 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 6 report summary(s).

Redacted for Relevance

Redacted for Relevance

**Attachments :** 2

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5E5524 NHLDIG--or-- HD 201100431245 | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8D86BG[redacted] | | | **Build Date:** | 12/07/2010 |
| **Odometer :** | 9,579 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02848 Holman Ford Lincoln Mercury - | | | **Phone#:** | (856) 728-7800 |
| **City:** | Turnersville | **State:** | New Jersey | **Country :** | USA |

**Originator:** Rob Barbarino
**Symptom:** 3 03 A 01 CHASS.,STRG/HANDLING ,STEERING WHEEL ,APPEARANCE
**Status:**
**VFG:** V71 I.P. & COUNSOL FUNCTION
**Additional Symptom:** Processed
**Fix:** **Causal Component :** --
**Condition Code:**

**Region Code:** N3 **Region Name:** Philadelphia

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**
CONCER 03/31/2011 11:05AM
cust sts steering is loose. tech verified and found that steering wheel just needs to be tighten. nut came loose. thanks, rob

**RECOMM** **03/31/2011 11:05AM**
No parts are being replaced no need for DI approval code. Thanks Sean
contact id: 104468995

Please click on the link below to view the attachments associated with this report
https://www.gcqis.dealerconnection.com/gcqis/asp/DIViewAttachment_Mainx.asp?ReportNumber=BC5E5524

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5AL007 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F82BG[redacted] | | | **Build Date:** | 02/23/2011 |
| **Odometer :** | 13 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 00978 Capital Ford, Inc. | | | **Phone#:** | (919) 790-4700 |
| **City:** | Raleigh | **State:** | North Caroli | **Country :** | USA |

**Originator:** RYAN WALLACE
**Symptom:** 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT
**Status:**
**VFG:** V87 STEERING
**Additional Symptom:** NO POWER STEERING ASSIST
**Fix:** **Causal Component :** --
**Condition Code:**

**Hotliner:** WHOUST13 **Phone:** 313 317-7044 **Regn Cd:** S2 Charlotte

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** RYAN WALLACE **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**
KOEO:
KOEC:
KOER:

**Comments :**

REPAIR 03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POWER STEERING INOP DIAGNOSTICS: NETWORK

TEST NO COMMUNICATION WITH PSCM, PINPIONT TEST AC1-12VOLTS AT C1463A PIN 3, PINPIONT AC2- .2 OHMS C1463B PIN2, PINPIONT TEST AC3- C1463A PIN 1 TO DLC PIN6 1.2 OHMS, C1463A PIN 2 TO DLC PIN14 1 OHM, PINPIONT TEST AC4 NO PUSHED OUT PINS OR CORROSION OR BENT OR DAMAGED PINS PARTS REPLACED:: STEERING GEAR TECH QUESTION: ANY KNOWN PROBLEMS WITH REPROGRAM OR COMMUNICATION WITH THE PSCM, ANY OTHER
PINPIONT TEST? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM** **03/31/2011 12:22PM WILLIE HOUSTON MSS - FCSD - TECH SVC HOTLINE**
RYAN, THE EPAS SYSTEM THAT THIS VEHICLE HAS IS TOTALLY SELF CONTAINED. THE GEAR REQUIRES POWER AND GROUND AND NETWORK CIRCUITS FOR
COMMUNICATION. IF THE EPAS GEAR HAS BEEN REPLACED, AND THERE IS NO ASSIST OR COMMUNICATION WITH THE MODULE, LOAD TEST THE POWERS AND GROUNDS TO THE EPAS USING A HEADLAMP BULB TO VERIFY THAT THEY ARE CAPABLE OF CARRYING SUFFICIENT AMPERAGE AND PERFORM WIGGLE TESTS DURING THIS LOAD TEST. IF OKAY, VERIFY THAT THE NETWORK VOLTAGES AT THE PSCM CONNECTOR CORRESPOND WITH THE VOLTAGES AT PINS 6 AND 14 OF THE DLC WITH THE VEHICLE IN A KOEO STATE. CLOSELY INSPECT FOR LOOSE/DAMAGE OR OTHER PINFIT ISSUES AT THE PSCM AND BJB. REFERENCE PAGE 43-1 OF THE ONLINE EVTM FOR CIRCUIT DETAILS.

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Redacted for Relevance

Redacted for Relevance

**Attachments :** 0

| | | | |
|---|---|---|---|
| **Report# :** | BC5E3001 NHL | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | **Reviewed Status:** | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F88BG[redacted] | **Build Date:** | 02/22/2011 |

| | | | | | |
|---|---|---|---|---|---|
| **Odometer :** | 401 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 05739 Ted Russell Ford Lincoln Mercu | | | **Phone#:** | (865) 693-7707 |
| **City:** | Knoxville | **State:** | Tennessee | **Country :** | USA |

**Originator:** SAM NELSON

**Symptom:** 3 01 A 03 CHASS.,SERVICE BRAKE ,INDICATOR,RED/AMBER ONLY

**Status:**

**VFG:** V21 BRAKING

**Additional Symptom:** RED & YELLOW BRAKE & T/C LIGHT

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** GBARTOS **Phone:** 313 317-6301 **Regn Cd:** S1 Atlanta

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SAM NELSON **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:C0020:12 C0020:13 U0131

KOER:

**Comments :**

REPAIR 03/31/2011 04:45PM GREG BARTOS MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: RED BRAKE LIGHT ON , YELLOW BRAKE LIGHT ON , TRAC LIGHT ON AND TRACK LIGHT OFF IS ON . DIAGNOSTICS: EEC TEST HAS C0020:12-AB, C0020:13-AB,U0131:00-AB CODES CLEAR CODES AND RETEST ABS PASS OD, PASS CON., BUT STILL HAS ALL LIGHTS ON ON THE DASH? PARTS REPLACED:: NONE TECH QUESTION: C0020:12 PINPOINT TEST SAID FAILED INTERNALLY, IN HCU TO REPLACE? C0020:13 COULD BE IN ECU MODULE DO I REPLACE BOTH? I DO HAVE COMP. WITH THE MODULE? WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 03/31/2011 04:45PM GREG BARTOS MSS - FCSD - TECH SVC HOTLINE**
SAM, IT IS RECOMMENDED TO REPLACE BOTH THE HCU AND ABS MODULE FOR THE
C0020 DTCS THAT HAVE BEEN SET ON THIS VEHICLE. ALSO REFERENCE TO SSM 21737 TO ADDRESS THE U0131 DTC THAT HAS BEEN SET. CLEAR THE DTCS AND WIGGLE TEST C139 AND VERIFY IF THE U0131 DTC

RETURNS. ----------
---------- REPORT #: BAKFD002 REPLACE ABS ECU SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF
THE WIRING DIAGRAMS.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BC5EH004 NHL | | | **Received:** | 03/31/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X2 (U502),4 DOOR ,MP,1FMHK7F86BG[redacted] | | | **Build Date:** | 03/02/2011 |
| **Odometer :** | 33 M | **Engine:** | 3.5L CYCLO | **Calibration:** | |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02561 Sewell Ford, Inc. | | | **Phone#:** | (432) 498-0421 |
| **City:** | Odessa | **State:** | Texas | **Country :** | USA |
| **Originator:** | STEFAN DROUI | | | | |
| **Symptom:** | 3 03 1 50 CHASS.,STRG/HANDLING ,FUNCTION,HIGH EFFORT | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | LOSS OF ASSIST | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** IWRIGH24 **Phone:** 313 317-4284 **Regn Cd:** C1 Dallas

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** STEFAN DROUI **Phone:** 432 432-3320 **Title Cde:** T

**DTCs:**
KOEO:C1B00:29 C1B00:41 U0131
KOEC:
KOER:

**Comments :**

REPAIR 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE

WEB FORM DATA - CONCERN: LOST ALL POWER STEERING ,TOWED IN,POWER STEERING NOW. ADVANCE TRACK LIGHT ON ABS LIGHT ON DIAGNOSTICS: IDS TEST,MONITERED PIDS STEERING ANGLE PI WAS 49150.95. INSPECTED CONNECTIONS ON EPAS,ABS MODULE,SJB,BJB ALL OK,INSPECTED GRONDS PARTS REPLACED:: NO PARTS REPLACED TECH QUESTION: POWER STEERING LOCKED,ADVANCED TRACK LIGHT ON,SOMETIMES STEERING FUNCTIONS,OTHER TIMES IT DOESNT,CANT COMMUNICATE WITH PSCM AT TIMES,OTHER TIMES CAN. CODES C1B00:29-68 AND C1B00:41-68. CANNOT FIND CORRECT PIN POINT TEST. I FEEL LIKE IT IS THE PSCM,EPAS RAC-N-PINION. DO HAVE ANY REPAIR IDEAS NOT SURE WHERE TO GO.

**RECOMM 03/31/2011 03:28PM IAN WRIGHT MSS - FCSD - TECH SVC HOTLINE**

STEFAN, THE READING OF THE STEERING ANGLE SENSOR IS NORMAL. THE STEERING ANGLE SENSOR LEARNS A ZERO POINT AFTER DRIVING STRAIGHT. REFER TO <> HREF='HTTP://WWW.VREP.FORDTECHSERVICE.DEALERCONNECTION.COM/VDIRS/SSM/SSM.ASP?SSM=21737' TARGET='_BLANK'>SSM 21737 TO ADDRESS THE FAULTS PRESENT. SSM 21737 CODES C1B00, U0131, U0100, U0001, U0121, AND/OR U0151- CLEAR CODES AND WIGGLE TEST CONNECTER C139. IFCODES RETURN, BYPASS C139 FOR CIRCUITS VDB04 AND VDB05 USING THE SOLDER AND SHRINK TUBING METHOD FOUND IN SECTION 5 OF THE WIRING DIAGRAMS.

---

**From:** Bahena, Miguel (Mike.)
**Sent:** Friday, January 21, 2011 6:01 PM
**To:** Mrozek, Robert (R.M.); Estes, Eric (E.E.); Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Michael Fontana'; Diez, Timothy (T.P.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric,

UR002 and UR003 technician comments indicate that Service Power Steering Now was in the cluster. This text would be associated with the friction detection fault.

Also how do you know these are No comms? Is it based on technicians telling you? I would expect CAN communication is working if cluster messages are being displayed. Make sure the techs follow workshop manuel procedure 418 pinpoint D if it is truly a no com.

Sincerely,

**Mike Bahena**
**D3 Electric Power Steering Systems**
**Ford Motor Co.**
Ph: (313) 805-3680
mbahena1@ford.com

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 12:39 PM
**To:** Estes, Eric (E.E.); Jackson, Bradley (B.G.); Napoli, Laura (L.); 'Michael Fontana'; Diez, Timothy (T.P.)
**Cc:** Pasquarella, Michael (M.S.); Bahena, Miguel (Mike.)
**Subject:** RE: 2011 EXP CHASSIS - Report Summary(s) from a GCQIS Query Disposition
**Importance:** High

Eric -

Please talk to Brad about how to expedite these parts back to us. Also, since the intermittent code maps to an A19 or A29, A19 might be related to a missing soft stop. Please have Fontana run the ANY gear without soft stops and see if that code is raised. Even check with the dealer to see if he can test the gear or car for equal travel left to right. We had a missing soft stop issue at MP1.

B3A
Please be prepared to have the EPP analysis by Monday at our weekly meeting even if it means someone needs to work on it tomorrow.

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company

Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 11:02 AM
**To:** Mrozek, Robert (R.M.); Jackson, Bradley (B.G.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Rob all three of the No Com's will be returned, I cannot say 100% that the gear is the issue. most of the testing has been confirmed by the book and some have load tested the circuits. it is possible it could be a ground or ign. feed but I have one hard No Com that will be returned and two intermittent No Com similar to Brad's road test description at the plant.

I'm giving Blood to the Red Cross and will return in one hour

Eric

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 10:50 AM
**To:** Jackson, Bradley (B.G.); Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

We had a similar launch issue and it was a bad ground of the wire to the EPAS.

*Rob Mrozek*

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Jackson, Bradley (B.G.)
**Sent:** Friday, January 21, 2011 10:47 AM
**To:** Mrozek, Robert (R.M.); Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.)
**Subject:** RE: 2011 EXP/[redacted] CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Rob, I agree. If the word gets out that gear replacements are fixing the concern, we are in trouble. Need to deep dive these gears when they come back.

Just an fyi to this team, my M10 from 2 weeks ago was found to be a NPF....even though there were stored DTC's and was reproducible after several key off/key on cycles. That being said, we now have another vehicle with the exact same tell tale signs of terrain mgmt inop and traction control inop here at CAP that was found in a FCPA audit. This vehicle has

stored DTC's and is now not showing the faults either. We are going to be deep diving this vehicle at some point today to try to root cause. I want to start with wiring connection to gear and work backwards. Something is happening intermittently and we need to figure this out.

Please call with any questions.

Brad

---

**From:** Mrozek, Robert (R.M.)
**Sent:** Friday, January 21, 2011 9:27 AM
**To:** Estes, Eric (E.E.); Napoli, Laura (L.)
**Cc:** Pasquarella, Michael (M.S.); Jackson, Bradley (B.G.)
**Subject:** RE: 2011 EXP/[redacted]CHASSIS - Report Summary(s) from a GCQIS Query Disposition
**Importance:** High

1) Why are we replacing these gears? How do you know it is not a wiring issue? Do not replace an intermittent gear until we know 100% for sure it is not wiring. Are these dealers nearby where we can go there to look?
2) WARNING: The world will shit a brick with 4 EPAS claims on U502 and our lives will be hell. ALL these gears need root cause within 48 hours or less.

Rob Mrozek

Electric Power Steering Supervisor
CD3/D3/D4/U502/Police/Limo EPAS Programs +
Active Front Steering Applications Engineering
Ford Motor Company
Phone: (313) 805-5947
e-mail: rmrozek@ford.com

---

**From:** Estes, Eric (E.E.)
**Sent:** Friday, January 21, 2011 10:14 AM
**To:** Napoli, Laura (L.)
**Cc:** Mrozek, Robert (R.M.)
**Subject:** RE: 2011 EXP/[redacted]CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Talked to all tech's for all three No Com gears they will replace EPAS gears. I have two int. no com's similar with Bradley's plant vehicle road test and I have one No Com that is their all the time

Laura see if we can install one of the int. No Com's for on-vehicle testing and we will take the other two in for analysis at 26-mile.

The attachment is my updated warranty tracking report with the new U502 gears, and I added the tech comments.

Laura did you talk to Brad and find out about the U502 B3A if you wanted to wait for the Tyco relay workshop in Feb?

Let me know

Eric

**From:** Napoli, Laura (L.)
**Sent:** Friday, January 21, 2011 9:28 AM
**To:** Estes, Eric (E.E.)
**Subject:** FW: 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

Eric,

Can you verify that none of these codes indicate that the rack should be pulled? Thanks!

I'm off today, so call my cell if you need me...313-805-0482

---

**From:** SBUELOW [mailto:SBUELOW]
**Sent:** Friday, January 21, 2011 4:46 AM
**To:** LNAPOLI
**Subject:** 2011 EXP/ CHASSIS - Report Summary(s) from a GCQIS Query Disposition

This email contains 4 report summary(s).

Redacted for Relevance

Redacted for Relevance

**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BATDZ004 NHL | | | **Received:** | 01/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F83BG[redacted] | | | **Build Date:** | 11/22/2010 |
| **Odometer :** | 289 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1ST0A |
| **Transmission:** | 6F55 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 02058 BEECHMONT FORD INC | | | **Phone#:** | (513) 752-7474 |
| **City:** | Cincinnati | **State:** | Ohio | **Country :** | USA |
| **Originator:** | SHANE JONES | | | | |
| **Symptom:** | 3 03 A 99 CHASS.,STRG/HANDLING ,STEERING WHEEL ,NOT LISTED | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional Symptom:** | STEERING HARD INTERMITTENT | | | | |
| **Fix:** | **Causal Component :** | | -- | | |
| **Condition Code:** | | | | | |

**Hotliner:** JSAVOY1 **Phone:** 313 317-9352 **Regn Cd:** G3 Cincinnati

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** SHANE JONES **Phone:** 513 752-7474 **Title Cde:** T

**DTCs:**

KOEO:U0121 U2011:49-08 U0126 U0159 U0428

KOEC:

KOER:

**Comments**
**:**

REPAIR 01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: CUST STATES THAT THE MESSAGE CENTER HAD A MESSAGE THAT SAID POWER STEERING ASSIST FAULT AND THE STEERING WAS VERY HARD DIAGNOSTICS: TEST DROVE VEH AND NORMAL OPERATION AT THIS TIME 0 WARNINGS IN THE MESSAGE CENTER IDS TESTED AND FOLLOWED PINPOINT TEST PER WORK SHOP MANUAL AND IT LED ME TO THE CONSERN IS NOT PRESENT AND TO RETURN THE VEH BACK TO THE CUST DTC U2011:49-08,U0121,U0126,U0159,U0428 THE WORK SHOP MANUAL TOLD ME TO CLEAR THE DTC AND TEST DRIVE VEH AND RETEST I CLEARD THE DTC AND THE SYSTEM PASSED PARTS REPLACED:: NONE TECH QUESTION: ANY KNOWN CONSERNS SHOULD I RETURN THE VEH TO THE CUST WERE YOU ABLE TO VERIFY THE CONCERN? NO IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 01/20/2011 02:47PM JONATHAN SAVOY MSS - FCSD - TECH SVC HOTLINE**
SHANE, THIS CONCERN IS LIKELY CAUSED BY A LOOSE CONNECTION WITHIN THE MAIN ENGINE OR BODY WIRING HARNESS. THIS WOULD RESULT IN INTERMITTENT COMMUNICATION CODES AND POSSIBLE INOPERATIVE ACCESSORIES.
IN ORDER TO HELP ISOLATE THE ROOT CAUSE OF THIS CONCERN, PLEASE START THE VEHICLE AND WIGGLE TEST THE MAIN ENGINE AND BODY WIRING HARNESS. THIS MAY HELP TO INDUCE THE CONCERN. PLEASE ALSO INSPECT FOR LOOSE OR UNSEATED CONNECTORS. THE HOTLINE HAS NOT SEEN TRENDS OF THIS CONCERN AT THIS TIME. IF THE CONCERN CANNOT BE DUPLICATED, NO REPAIRS SHOULD BE PERFORMED. IF ADDITIONAL ASSISTANCE IS NEEDED, PLEASE UPDATE YOUR FORM WITH ANY ADDITIONAL DETAILS OF THIS CONCERN.

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**Attachments :** 0

| | | | | | |
|---|---|---|---|---|---|
| **Report# :** | BATBL002 NHL | | | **Received:** | 01/20/2011 |
| **CCRG/EPRC:** | | **Reviewed Status:** | | **Date:** | |
| **Vehicle:** | 2011,EXPLORER 4X4 (U502),4 DOOR ,MP,1FMHK8F89BG[redacted] | | | **Build Date:** | 12/13/2010 |
| **Odometer :** | 51 M | **Engine:** | 3.5L CYCLO | **Calibration:** | BUB1SN0A |
| **Transmission:** | 6F50 | **Axle:** | | **A/C:** | YES |
| **Dealer:** | USA 04963 BRANDON FORD | | | **Phone#:** | (813) 246-3673 |
| **City:** | Tampa | **State:** | Florida | **Country :** | USA |
| **Originator:** | JAMES BUCHANAN | | | | |
| **Symptom:** | 3 03 4 54 CHASS.,STRG/HANDLING ,NOISE,WHEN TURNING | | | | |
| **Status:** | | | | | |
| **VFG:** | V87 STEERING | | | | |
| **Additional** | RT FRONT STRUT BEARING NOISE | | | | |

**Symptom:**

**Fix:** **Causal Component :** --

**Condition Code:**

**Hotliner:** STEKKO **Phone:** 313 317-9351 **Regn Cd:** S3 Orlando

**Engineering:** **Phone:** **TAR:**

**Dlr Contact:** JAMES BUCHANAN **Phone:** 000 000-0000 **Title Cde:** T

**DTCs:**

KOEO:

KOEC:

KOER:

**Comments :**

REPAIR 01/20/2011 09:03AM SALAH TEKKO MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN: POPPING, CRUNCHING NOISE IN FRONT END WHEN TURNING. DIAGNOSTICS: INSPECT PARTS REPLACED:: INSPECTED FOUND RIGHT STRUT BEARING NOISEY, REPLACE BEARING NOISE IS GONE. TECH QUESTION: JUST REPORTING THIS SINCE THIS A NEW MODEL CONCERN WERE YOU ABLE TO VERIFY THE CONCERN? YES IS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? YES WAS THE PINPOINT TEST FOLLOWED? YES

**RECOMM 01/20/2011 09:03AM SALAH TEKKO MSS - FCSD - TECH SVC HOTLINE**
JAMES, THANK YOU FOR THE VEHICLE REPAIR INFORMATION. IF ANY FURTHER ASSISTANCE IS NEEDED UPDATE THIS ONLINE FORM AS NECESSARY.

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, October 27, 2011 9:42 AM
**To:** Napoli, Laura (L.); Brezee, Shane (S.B.)
**Cc:** Dukkipati, Srini (S.); Flanagan, Thomas (T.P.); Surella, Matthew (M.M.)
**Subject:** RE: 2011 U502 B9A Buy Back vehicle

Laura this vehicle is ready for buy back, John did clear the B9A code and no codes reset after a short road test. Apparently this vehicle was towed into the dealer for an in/op cooling fan issue and the tech notice the power steering was not working. John has all the data on the vehicle and sent to Geoff and Sergio to pull the EFF data.

This was a strange B9A setting because it looks like it only had one B9A that tripped then set C69 so not sure what happened with the fault store.

Let me know if you need more vehicle information before John comes back today, thanks

Eric

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, October 25, 2011 4:56 PM
**To:** Brezee, Shane (S.B.); Estes, Eric (E.E.)
**Cc:** Dukkipati, Srini (S.)
**Subject:** RE: 2011 U502 B9A Buy Back vehicle

Eric,

Please reply to all with the VIN of this potential buy back vehicle. Thanks!

---

**From:** Brezee, Shane (S.B.)
**Sent:** Tuesday, October 25, 2011 3:49 PM
**To:** Napoli, Laura (L.)
**Cc:** Dukkipati, Srini (S.)
**Subject:** RE: 2011 U502 B9A Buy Back vehicle

If you can gete us the VIN we can start the paperwork ahead of any decision.

*Regards,*
*Shane B. Brezee*

**PD Quality Supervisor**
**Steering, Wheels & Tires**
**Ford Motor Company**
**2BJ70 PDC 20901 Oakwood Blvd, Dearborn, MI 48124**
**PH: (313) 805-8590**
**e-mail : sbrezee@ford.com**

---

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, October 25, 2011 3:46 PM
**To:** Moody, Sandra (S.L.); Perri, Ron (R.J.); Surella, Matthew (M.M.); Dukkipati, Srini (S.); Brezee, Shane (S.B.)
**Subject:** FW: 2011 U502 B9A Buy Back vehicle

TRW has a potential buy back. Good news is that it is at a rental company, so we are not holding up a customer. The gear is locked out, so there is no way of knowing if the failure is a hard failure. There's no reason to buy the car back if it is a hard failure because the gear will not be testable. TRW is going out to the dealer tomorrow in San Fran to pull codes and verify if the gear has a complete failure or just a temporary lock out. They will also take data and try to duplicate the failure.

If it is a permanent failure, we should not buy back the car, but just have the gear returned.
If it's not a permanent failure and they duplicate it while taking data, we may not need to buy the car back.
If neither of the above happens, this would be a good buy back car and we should move quickly.

On another note, I have a couple responses from the 6-sigma study of management lease cars that would be potential cars to test instead of buying one back. I should have more info on that this week.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, October 25, 2011 1:30 PM
**To:** Napoli, Laura (L.)
**Cc:** Salim Semssar; Anthony.Fleenor@TRW.COM; John Burnett
**Subject:** FW: 2011 U502 B9A Buy Back vehicle

John Burnett is all set to arrive at Future Ford tomorrow afternoon to pull the data on the 2011 Explorer then clearing the data to see if the B9A code resets.
I did let the service manager know our intentions of buying back the vehicle if it fits our criteria.

The dealer information is below: Tracy is the Service Manager that I talked to.

FUTURE FORD OF CLOVIS
920 West Shaw Avenue, Clovis, CA 93612

- Call Us Now: (866) 875-7137

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

**From:** Estes, Eric (E.E.)
**Sent:** Tuesday, October 25, 2011 11:37 AM
**To:** Napoli, Laura (L.)
**Subject:** 2011 U502 B9A Buy Back vehicle

Laura I found this vehicle in Clovis, California and this vehicle is a AVIS RAC so it might be easy to buy back, the problem with this vehicle is that it set B9A three times then set U3000-96(C69) not the exact issues with the other B9A returns but we can get the tech to perform the proper snap shot data below and look at the freeze frame data for the B9A.

Let me know the tech will not replace the gear until I call him back.

**Year = MY11**
**Model = U502**
**Engine = 3.5L**
**VIN = 1FMHK8D87BG[redacted]**
**IDS Version = 73.03A (IDS-73.03A)**

**PCM = BB5A-14C204-NJ**
**ABS = BB53-2C219-AF**
**ACM = BB5T-19C107-BS**
**APIM = BT4T-14D212-BM**
**ATCM = N\A**
**BCM = BC3T-14B476-DH**
**C-CM = N\A**
**CLM = N\A**
**DCSM = N\A**
**DSM = N\A**
**DSP = N\A**
**FCDIM = N\A**
**FCIM = N\A**
**FLM = N\A**
**GPSM = N\A**
**HSWM = N\A**
**HUD = N\A**
**HVAC = BB5T-18C612-BG**
**IPC = BB5T-10849-GG**
**LTM = N\A**
**OCSM = N\A**
**PAM = BB5T-15K866-AC**
**PSCM = BB53-3F964-BG**
**RCM = BB5T-14B321-AF**
**RFA = N\A**
**RLCM-A = N\A**
**SCCM = BB5T-3F944-AJ**
**SOD-L = N\A**

**SOD-R = N\A**
**TPM = N\A**

**Current DTCs {retrieved 19 October 2011 15:14:25}**

| DTC | Snap Shot Data | Source |
|---|---|---|

**Historic DTCs {retrieved 19 October 2011 15:14:25}**

| DTC | Snap Shot Data | Source |
|---|---|---|

**DTCs cleared since initial read:**

| DTC | Snap Shot Data | Source |
|---|---|---|
| U0402:68 | N/A | ABS |
| C1B00:86 | N/A | ABS |
| (ABS) | N/A | ABS |
| P1285:00 | N/A | PCM |
| P1299:00 | N/A | PCM |
| U3000:96 | N/A | PSCM |
| C200D:49 | N/A | PSCM |

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

**From:** Schondorf, Steven (S.)
**Sent:** Wednesday, August 11, 2010 4:54 PM
**To:** Diez, Timothy (T.P.)
**Subject:** RE: 2011MY U502 TRW Rack EPAS Loss of Assist Issue

Ok. Thanks.

---

**From:** Diez, Timothy (T.P.)
**Sent:** Wednesday, August 11, 2010 3:47 PM
**To:** Schondorf, Steven (S.); Rossi, Roberto (R.A.)
**Subject:** 2011MY U502 TRW Rack EPAS Loss of Assist Issue

Steve, Rob,

This note pertains to the 2011MY U502 TRW Rack EPAS Loss of Assist Issue discovered at CAP this week. The wiring team has determined the root cause to be a crimp issue. The EPAS ground wire is crimped to the same eyelet as the vehicle ground wire. That eyelet is then fastened to sheet metal.

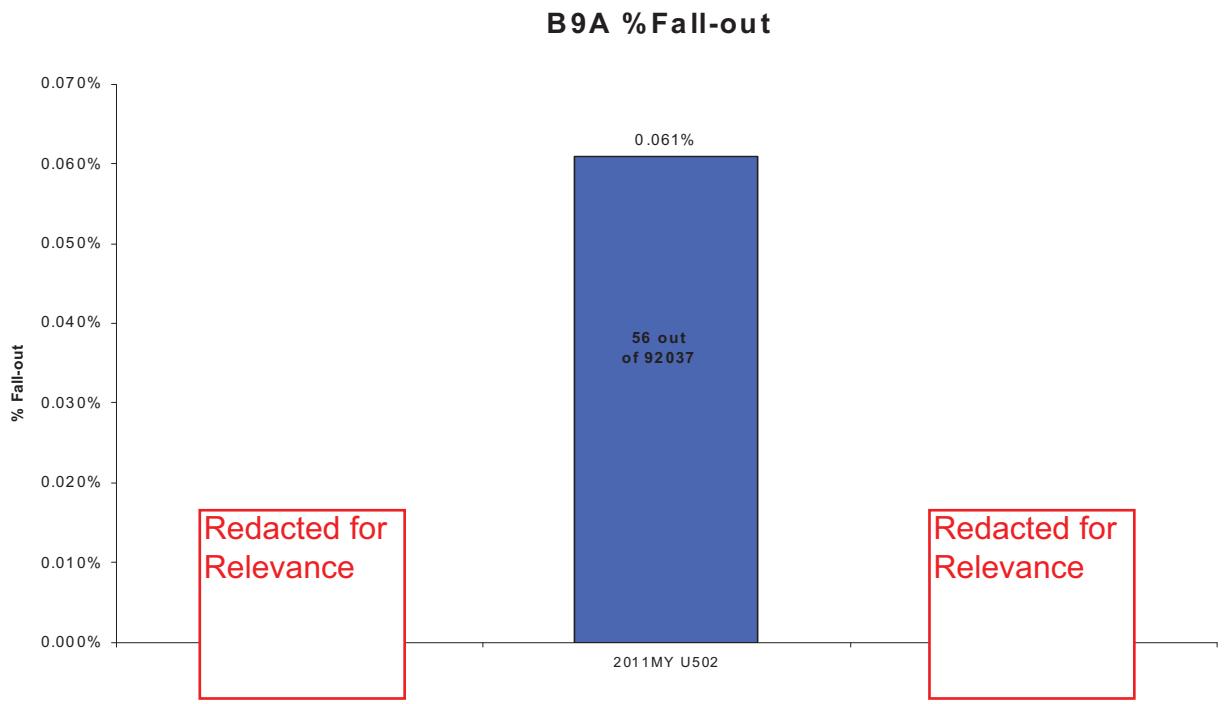
The harness is being removed from the vehicle for further analysis, and an 8D is forthcoming.

Please let me know if you have any additional questions.

Sincerely,
Tim Diez
Ford Electric Power Steering, EESE
313-805-1060; Fax: 313-317-4387
e-mail: tdiez@ford.com
cube 3C071, Building 5

**From:** Surella, Matthew (M.M.)
**Sent:** Friday, January 06, 2012 1:00 PM
**To:** Perri, Ron (R.J.)
**Subject:** RE: B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

Here's the update:




Matthew (Matt) Surella
Steering EPAS Supervisor / MBB
313-805-3997

---

**From:** Perri, Ron (R.J.)
**Sent:** Thursday, January 05, 2012 3:25 PM
**To:** Surella, Matthew (M.M.)
**Subject:** FW: B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

Please update this….

<< OLE Object: Picture (Metafile) >>

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

---

**From:** Napoli, Laura (L.)
**Sent:** Thursday, December 22, 2011 10:25 AM
**To:** Perri, Ron (R.J.)

**Cc:** Surella, Matthew (M.M.)
**Subject:** B9A Fallout at Tyco, Nidec, Anting/Shalke/Nove Mesto

Ron,

I have the most recent numbers for fallout at Tyco, Nidec, and Anting/Shalke/Nove Mesto for the visual inspections they're doing for misalignment and concoat.

Tyco:
Since Nov 12, Tyco is finding 0 misalignment on ribbon cables at EOL with 5x magnification.

Nidec:
For batches of ribbon cables that were built before PCAs were put in place at Tyco, Nidec found 22 out of 14,800 with misalignment.
Since Nov 12, Nidec has 0 fallout at IQ for ribbon cable misalignment when inspected with 5x magnification.
Nidec inspected 69,122 motor assys that were already built before the ribbon cable visual inspections went into place on Nov 12. They found 638 suspect parts. They x-rayed 42 of them and found 9 to be misaligned. They are going through the rest and visually re-checking them with 30x magnification to find which parts are truly misaligned.
Since Nov 11, Nidec has been inspecting motor assys at EOL for conformal coat running from the relay. This is the same day they fixed the conveyor. They have 0 fall out for concoat since this date.
For conformal coat inspections on finished stock, they have quarantined 11k parts. These are parts with any amount of conformal coat at the connector from the relay.

Anting:
From 11/11-11/21, Anting found 15 out of 25,783 assys with protruding wires (misalignment) and rejected these parts.
Anting initially reported that they had 30% fallout for conformal coat at the connector. Since 11/24, they have 0 fallout.

Shalke and Nove Mesto:
Shalke and Nove Mesto have been inspecting for misalignment since Nov 15 with 0 fallout.

Next Steps:
TRW is going through each and every return to determine root cause of B9A and B3A/B43.
There is a study going on between TRW and Nidec with help from Tyco to confirm that conformal coat is the root cause of the high resistance measured on parts that do not have misaligned cables. This is to confirm that there is no other root cause of failure.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

**From:** Napoli, Laura (L.)
**Sent:** Thursday, October 13, 2011 5:00 PM
**To:** Estes, Eric (E.E.)
**Cc:** Surella, Matthew (M.M.); Perri, Ron (R.J.)
**Subject:** RE: Buyback U502 Vehicle with B9A

Eric, thanks for getting me in touch with the FCSD rep. He contacted me and told me that all Engineering Buy Backs need to go through DST. Since this could take a while, Ron Perri agreed that we can let this car go. So I called Jeff and told him to replace the gear on this car and give it back to the customer. Once we get the DST process in place, I will let you know to start your search again. Hopefully in the meantime we will find a Ford employee or Management Lease car we can use instead.

Please keep your search going for cars that are repeatable and let me know if you find one. At the very least, we still want to send John out to take data on any vehicle with a repeatable B9A.

---

**From:** Estes, Eric (E.E.)
**Sent:** Thursday, October 13, 2011 4:11 PM
**To:** Napoli, Laura (L.)
**Cc:** Surella, Matthew (M.M.)
**Subject:** Buyback U502 Vehicle with B9A
**Importance:** High

Laura I talked to Jeff the service manager at this dealer to hold the vehicle, this problem only happened once to the customer and the dealer could not duplicate the code after clearing. Good chance the customer would release this vehicle since they state they almost got into an accident with the steering locked up

Let me know

Eric

Top of Form

| | | | | | |
|---|---|---|---|---|---|
| Vehicle: | 2011,EXPLORER 4X4 (U502) ,XLT ,4 DOOR ,MPV ,1FMHK8D86BG[redacted] | | | Build Date: | 03/20/2011 |
| Odometer : | 10,258 M | Engine: | 3.5L CYCLO | Calibration: | BUB1SN0A |
| Transmission: | 6F50 | Axle: | | A/C: | YES |
| Dealer: | USA 03605 Sunshine Ford-Lincoln, Inc. | | | Phone#: | (845) 561-3900 |
| City: | Newburgh | State: | New York | Country : | USA |
| Originator: | BRIAN WARREN | | | | |
| Symptom: | 6 62 4 28 SP/ST/RD,STEER/STER WHL,PERFORMANCE,EXCESS EFFORT | | | | |
| Status: | | | | | |
| VFG: | V87 STEERING | | | | |
| Additional Symptom: | STEERING FAULT | | | | |
| Fix: | Causal Component : | | | | |

Condition Code:
Hotliner: JREDDMAN Phone: 000 248-9292 Regn Cd: N1 New York
Engineering: Phone: TAR:
Dlr Contact: BRIAN WARREN Phone: 000 000-0000 Title Cde: T

Bottom of Form

**KOEO:** C1B00:86 C200D:49
**KOEC:**
**KOER:**
Comments:

REPAIR 10/11/2011 01:30PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE
WEB FORM DATA - CONCERN:C/S STEERING LOCKED UP, ALMOST CAUSED COLLISION. DIAGNOSTICS: CK. DTCS,ROAD TEST, PERFORMED PINPOINT TESTS PARTS REPLACED:NONE TECH QUESTION:CONCERN WAS NOT VERFIED, AFTER PERFORMING PINPOINT TEST B3 NO DTCS WERE RECORDED. DUE TO THE NATURE OF THIS CONCERN PLEASE ADVISE.

RECOMM 10/11/2011 01:30PM JOSEPH REDDMANN MSS - FCSD - TECH SVC HOTLINE
BRIAN, BASED ON THE DESCRIPTION OF THE CONCERN, THE DTCS THAT ARE PRESENT AND PRIOR HOTLINE REPORTS, WE RECOMMEND THAT YOU REPLACE THE STEERING RACK AND RE-EVALUATE THE CONCERN. IF YOU NEED ANY ADDITIONAL ASSISTANCE, PLEASE UPDATE THIS FORM IN THE SPACE PROVIDED. ISM 11-08-019 LOSS OF POWER STEERING ASSIST WITH C200D IN PSCM

Bottom of Form

*Eric J Estes*
TRW EPAS Steering Systems
Quality Specialist
Hotline ph# 313-317-9358
Cell ph# 734-560-3493

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, November 30, 2011 11:47 AM
**To:** Surella, Matthew (M.M.); Perri, Ron (R.J.)
**Subject:** RE: Pareto for B9A confirmed root causes

**Attachments:** B9A serial numbers all belt drive 11-30-11.xlsx

I've added the quantity of parts under analysis to the Pareto…

B9A serial numbers all belt dr...

---

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, November 30, 2011 11:43 AM
**To:** Surella, Matthew (M.M.); Perri, Ron (R.J.)
**Subject:** Pareto for B9A confirmed root causes

Attached is the updated spreadsheet for B9A root cause analysis on each warranty return. I've created an updated Pareto for all confirmed and removed the ones still under analysis.
<< File: B9A serial numbers all belt drive 11-30-11.xlsx >>

There have been NO B9A failures at any assy plant. I'm waiting for the updated data on the total number of parts returned to update what you have in the 6-panel. The only recent failure is 1 for . I'll send that over once I have it done.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

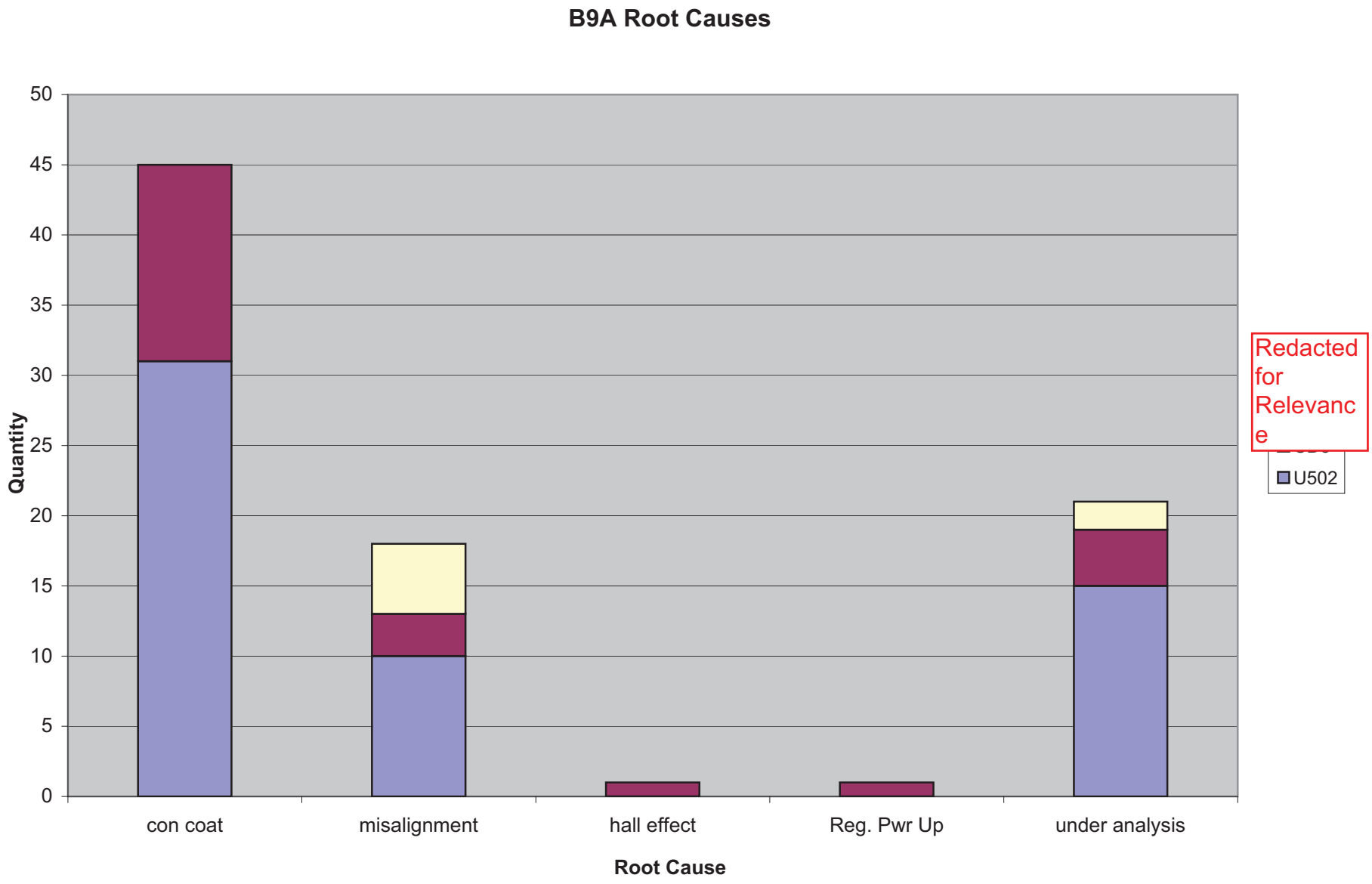
| Case Number | U502 B9A EPP s/n | Motor Build date | Ribbon Cable Date | Root Cause |
|---|---|---|---|---|
| UR0048 | 103601919G30367 | 2010-12-04 | | conformal coat |
| UR0059 | 110291919G31227 | 2010-12-28 | 2010-11-15 | misalignment |
| UR0060 | 110771919J30898 | 2011-01-25 | 2010-11-16 | misalignment |
| UR0061 | 110291919G30593 | 2010-12-27 | 2010-11-16 | conformal coat |
| UR0062 | 110291919G30862 | 2010-12-28 | 2010-11-17 | conformal coat |
| UR0063 | 103631920G30133 | 2010-12-06 | 2010-10-25 | conformal coat |
| UR0064 | 110261919G30786 | 2010-12-24 | 2010-11-17 | misalignment |
| UR0065 | 103591919G30091 | 2010-12-24 | 2010-10-12 | conformal coat |
| UR0070 | 110281919G30095 | 2010-12-28 | 2010-11-26 | misalignment |
| UR0071 | 110621919J30710 | 2011-01-20 | | conformal coat |
| UR0073 | 110761919J31074 | 2011-01-24 | | conformal coat |
| UR0075 | 110451919G30577 | 2010-12-30 | | conformal coat |
| UR0076 | 110291919G30300 | 2010-12-27 | 2010-11-16 | misalignment |
| UR0077 | 110071919G30749 | 2010-12-24 | | conformal coat |
| UR0079 | 110481919G30125 | 2010-12-30 | 2010-11-16 | misalignment |
| UR0080 | 110491919J30546 | 2010-12-30 | | conformal coat |
| UR0081 | 110151919G30544 | 2010-12-23 | | conformal coat |
| UR0082 | 110071919G30887 | 2010-12-24 | | conformal coat |
| UR0083 | 103181919F31151 | 2010-10-27 | | conformal coat |
| UR0084 | 103601919G30305 | 2010-12-04 | | conformal coat |
| UR0085 | 103381919G30931 | 2010-11-08 | | conformal coat |
| UR0086 | 110631920J30819 | 2011-01-03 | | conformal coat |
| UR0087 | 110291919G30215 | 2011-12-27 | 2010-11-16 | misalignment |
| UR0088 | 103521919G31407 | 2010-11-11 | | conformal coat |
| UR0089 | 110141919G30775 | 2011-12-23 | | conformal coat |
| UR0092 | 103561919G30991 | 2010-11-12 | | conformal coat |
| UR0095 | 110271919G30664 | 2010-12-25 | 2010-11-15 | misalignment |
| UR0098 | 103521919G31407 | 2010-11-11 | | conformal coat |
| UR0099 | 103451919G30811 | 2010-11-10 | | conformal coat |
| UR0100 | 110901919J35745 | 2011-02-12 | | conformal coat |
| UR0101 | 110761919J30756 | 2011-01-24 | | conformal coat |
| UR0104 | 110151919G30511 | 2011-12-23 | | conformal coat |
| UR0105 | 110421919G30598 | 2011-12-29 | | conformal coat |
| UR0108 | 110081919G30406 | 2011-12-24 | | conformal coat |
| UR0109 | 103031919F30809 | 2010-10-25 | | conformal coat |
| UR0111 | 110151919G30342 | 2010-12-23 | | conformal coat |
| UR0113 | 110161919G30045 | 2011-12-23 | | conformal coat |
| UR0114 | 110261919G30136 | 2010-12-27 | | conformal coat |
| UR0115 | 110291919G30096 | 2010-12-27 | | conformal coat |
| UR0117 | 110281919G30762 | 2011-12-28 | 2010-11-15 | misalignment |
| UR0120 | 110911919J35411 | 2011-02-15 | 2010-12-21 | misalignment |

Redacted for Relevance

Redacted for Relevance

| | U502 |
|---|---|
| con coat | 31 |
| misalignment | 10 |
| hall effect | 0 |
| Reg. Pwr Up | 0 |
| under analysis | 15 |

Redacted for Relevance


B9A Root Causes
50
45
40
35
30
25
20
15
10
5
0
Quantity
con coat
misalignment
hall effect
Reg. Pwr Up
under analysis
Root Cause
Redacted for Relevance
U502

Redacted for Relevance

Redacted for Relevance

Redacted for Relevance

**From:** Anthony Fleenor <Anthony.Fleenor@TRW.COM>
**Sent:** Friday, May 04, 2012 9:57 AM
**To:** Jawed, Afaq (.)
**Cc:** Estes, Eric (E.E.); Andrew Ellison; Bobby Supel; Salim Semssar
**Subject:** RE: RE: 12 04 Warranty Review Ford Only.pptx
**Attachments:** BSAQ Status rev3.xlsx

Per your request to change any issue that is awaiting a design change to "Design".

As I explained, some of these were initially a quality processing issue but we found that a design change would help to prevent it from occurring again, such as the silver contact and the piston ring damage.

>>> "Jawed, Afaq (.)" <ajawed@ford.com> 5/4/2012 9:46 AM >>>

Please call me at 313-805-2381. Thanks


Afaq Jawed
STA, Ford Chassis Commodity
Phone: 313 805 2381 (Work/Cell)
Cube; C156 Fairlane Business Park II,
17425 Federal Drive Allen Park MI 48101, USA
E-mail; ajawed@ford.com
Text Pager:http://messaging.sprintpcs.com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**From:** Anthony Fleenor [mailto:Anthony.Fleenor@TRW.COM]
**Sent:** Friday, May 04, 2012 9:32 AM
**To:** Jawed, Afaq (.)
**Cc:** Estes, Eric (E.E.); Andrew Ellison; Bobby Supel
**Subject:** RE: RE: 12 04 Warranty Review Ford Only.pptx

Hello AJ,

Please see attached.

Sorry, I did not answer your first question in the response.

It means that I am waiting for information from Ford PD regarding the status of closure but, so far, the containment dates are clean which means we do not have a part returned confirmed with that issue after the containment date was established.

>>> "Jawed, Afaq (.)" <ajawed@ford.com> 5/3/2012 9:55 PM >>>

Hi Tony;

What does it means by " Waiting response-but no current continainment or PCA dates have been broken". Please explain.

Further I need to know the containment actions as summary, the next step. I would like to know how many issues are related to design and or quality. Thanks

Afaq Jawed
STA, Ford Chassis Commodity
Phone: 313 805 2381 (Work/Cell)
Cube; C156 Fairlane Business Park II,
17425 Federal Drive Allen Park MI 48101, USA
E-mail; ajawed@ford.com
Text Pager:http://messaging.sprintpcs.com

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**From:** Anthony Fleenor [mailto:Anthony.Fleenor@TRW.COM]
**Sent:** Thursday, May 03, 2012 3:55 PM
**To:** Jawed, Afaq (.); Bobby Supel
**Subject:** Fwd: RE: 12 04 Warranty Review Ford Only.pptx

Please see attached for what we have to date relative to the BSAQ's we discussed.

>>> "Jawed, Afaq (.)" <ajawed@ford.com> 4/26/2012 10:33 AM >>>

Please review the attached file, and the following; Let me know the correct number of issues open and please get it closed if you feel it should be closed. Thanks

Afaq Jawed
STA, Ford Chassis Commodity
Phone: 313 805 2381 (Work/Cell)
Cube; C156 Fairlane Business Park II,
17425 Federal Drive Allen Park MI 48101, USA
E-mail; ajawed@ford.com
Text Pager:http://messaging.sprintpcs.com

Redacted for Relevance

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Open | Open | SP | SP | Chicago | EXPLORER (NA-CAP) | Chassis | FNVCC | T210R | TRW INC |
| Open | Open | SP | SP | Chicago | EXPLORER (NA-CAP) | Chassis | FNVCC | T210R | TRW INC |

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**From:** Anthony Fleenor [mailto:Anthony.Fleenor@TRW.COM]
**Sent:** Wednesday, April 25, 2012 6:52 AM
**To:** Jawed, Afaq (.); Flanagan, Thomas (T.P.)
**Cc:** Estes, Eric (E.E.); Salim Semssar
**Subject:** 12 04 Warranty Review Ford Only.pptx

A.J., Tom,

Attached is the file we reviewed yesterday in Rogersville.

It was a pleasure to meet both of you.

Tony Fleenor
TRW Steering Warranty
423-272-4221

TRW Steering Open BSAQ Status

Redacted for Relevance

| BSAQ | Veh | Concern Title | Author | Active | Type | Status | Open Date | ICA Date | PCA Date | Description | ICA/PCA Summary | Status/What is needed to close(from Ford PD)? | Quality/Design |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAQ2011187769 | U502 | EPAS gears with C200D DTC (B9A)-ribbon misalignment | BJACKSON | Y | CHRONIC | TWO | 17-Aug-11 | 12-Jan-12 | | Loss of assist due to ribbon cable cutting misalignment causing wire protrusion | 1.400% inspection. 2. New tooling to reduce clearance around part when cutting ribbon cable. | No containment broken but we are rebuilding ribbon cable tools at Tyco so remain open and monitor until that is complete | Quality |
| SAQ2012206614 | U502 | EPAS gears with C200D DTC (B9A)-conformal coating | MFARMER2 | Y | CHRONIC | CMR | 17-Aug-11 | | 26-Dec-11 | Loss of assist due to conformal coating on PCB running over onto contacts, circuits | 200% UV light inspection at supplier for conformal coat running over. | per plant PVT: "the subject BSAQ project is already in "complete - monitor" mode. This is where a project stays, when no further acrtions are going to be done." Based on this, PD has said we could consider it closed | Quality |
| SAQ2012208065 | U502 | EPAS B3A and B43 relay failures | MFARMER2 | Y | CHRONIC | TWO | 1-Jun-11 | 17-Jan-12 | Sep-12 | Loss of assist due to CuS contamination of relay contacts (bi-metal) in cracks | Scrap 1st 1,000 pieces at each machine stop. Inpsect 1st ten pieces under microscope for cracks. Change to solid silver contacts and implement deburr process | Although no containment is broken to date, we will keep open until silver relay is implemented in Aug 2012 since that is the permanent corrective action | Design |
| SAQ2012214003 | U22X | Steering Rack Defective Piston Ring | SGARRE16 | Y | CHRONIC | CMR | 1-Nov-11 | 28-Feb-12 | Oct-12 | Piston ring damage due to overstretching, sizing issues and snagging the piston ring at assembly | Additional operator training, improved assy tools, increased dwell time at assy and improved scrap/reject handling im0plemented. Investigating a design change to the piston ring/piston material/dimensions to ease assy. | Keep open until design change is implemented planned for Oct 2012 | Design |

Rows 3, 4 and 7 are the same issue

**From:** Napoli, Laura (L.)
**Sent:** Wednesday, June 06, 2012 2:04 PM
**To:** Farmer, Marty (M.F.)
**Cc:** Brown, Jude (J.); Surella, Matthew (M.M.)
**Subject:** RE: U502/ "New" Clean dates

Here are the clean dates for CAP programs for CuS on relays and misaligned ribbon cables…

CuS fix on motor and link relays:

- Redacted for Relevance
- U502 48mm: 2/10/2012
- U502 58mm: 2/23/2012

Ribbon Cable Misalignment:

- Redacted for Relevance
- U502 48mm: 6/30/2012
- U502 58mm: 8/8/2012

Redacted for Relevance

Redacted for Relevance We know U502 is already shipping a mix of parts before and after the clean date. Not sure what the ratio is. It's the best I have for you now. If they ask why each program is so different, you should tell them that high volume (like U502 48mm) gets clean quicker because they build more often. The lower volume programs get built in large batches and stored until requested by TRW. For example, for U502 58mm, Nidec only builds once every 1-2 months based on the orders. Therefore they're holding old stock and not using it at TRW until now.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

---

**From:** Farmer, Marty (M.F.)
**Sent:** Wednesday, June 06, 2012 9:55 AM
**To:** Napoli, Laura (L.)
**Cc:** Brown, Jude (J.)
**Subject:** U502/ "New" Clean dates

Laura,

Please send Jude and I clean dates for the misaligned ribbon cable and relay contamination.

Marty Farmer CHICAGO ASSEMBLY PLANT | CHASSIS PVT | FORD MOTOR COMPANY | mfarmer2@ford.com | 313.805.5605

**From:** Napoli, Laura (L.)
**Sent:** Tuesday, February 08, 2011 2:57 PM
**To:** 'Andy Partridge'; Bahena, Miguel (Mike.); Snider, Tim (T.O.)
**Cc:** Estes, Eric (E.E.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.); Diez, Timothy (T.P.); Geoff Jacks; Michael Fontana
**Subject:** RE: UR-0001 B3A Motor Relay Contamination Pictures

Thanks Andy. Please send an update later today with the material analysis on the first relay.

Another request for you that we can discuss on Wed:
Can you start putting together the finished relay wash audit results from the period that the two failed U502 relays were built (include build month +\- 2mo)? I know the 1st relay was Aug 3, 2010. Once we confirm the failure mode of the 2nd relay, we'll need that build date along with it's wash audit data assuming contamination is found. Please include the results from the quarterly contamination wash audit over the last year.

Regards,

Laura Napoli
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

-----Original Message-----
From: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Sent: Tuesday, February 08, 2011 4:30 AM
To: Napoli, Laura (L.); Bahena, Miguel (Mike.); Snider, Tim (T.O.)
Cc: Estes, Eric (E.E.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.); Diez, Timothy (T.P.); Geoff Jacks; Michael Fontana
Subject: RE: UR-0001 B3A Motor Relay Contamination Pictures

Hello Laura.

Tyco have carried out 2 actions:
1) The dampers of the ruler that removes the coil bodies from the axis of the winding machine, occasionally creates burrs, a new concept to stabilize the movement of the ruler was studied. (Module 2). Implemented :10-12-2010

2) Implement a preventive maintenance plan for all critical points in production line related with possible origin of particles. 07-01-2011

I will verify both of these actions and we shall have a fresh eyes approach to contamination on the line during the audit today.

The first B3A is now back in the UK and will undergo EDX analysis to confirm the composition of the contamination. Tyco do not currently believe this is plastic contamination. I will confirm as soon as we have some results.

I believe the second B3A has arrived in Portugal and is due at the plant late today. We shall start analysis as soon as it gets here.

I will send an update on the workshop at around 9pm UK time

Regards
Andy

>>> "Napoli, Laura (L.)" 02/04/11 9:18 PM >>>
Andy,

Since we've had issues with plastic in the past, can you get Tyco to immediately review that process with you and get actions in place for interim containment we can put in place first thing Monday?

Please let me know when the U502 part has confirmation on the type of contaminant. There is a second U502 part at 26mile that is being x-rayed with a B3A if you are not aware. If no problem is found in the x-ray, the part needs immediate analysis for contamination.

Regards,

Laura Napoli
U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

-----Original Message-----
From: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Sent: Friday, February 04, 2011 9:15 AM
To: Bahena, Miguel (Mike.); Snider, Tim (T.O.)
Cc: Estes, Eric (E.E.); Napoli, Laura (L.); Mrozek, Robert (R.M.); Rossi, Roberto (R.A.); Diez, Timothy (T.P.); Geoff Jacks; Michael Fontana
Subject: RE: UR-0001 B3A Motor Relay Contamination Pictures

Hi Mike.

Tyco did not indicate what the contamination was or where they thought it had come from. The contamination is small so we believe that EDX analysis is the best way to find the composition of it. I shall do a thorough line walk audit looking at any causes of contamination and looking at their containments on Tuesday.

Regards
Andy

>>> "Bahena, Miguel (Mike.)" 02/04/11 1:19 PM >>>
Andy,

Any indication if the contamination is plastic or do we need to wait and

see what the SEM/EDX analysis shows.

Sincerely,

Mike Bahena
D3 Electric Power Steering Systems
Ford Motor Co.
Ph: (313) 805-3680
mbahena1@ford.com

-----Original Message-----
From: Andy Partridge [mailto:Andy.Partridge@TRW.COM]
Sent: Friday, February 04, 2011 4:02 AM
To: Snider, Tim (T.O.)

Cc: Estes, Eric (E.E.); Napoli, Laura (L.); Bahena, Miguel (Mike.);
Mrozek, Robert (R.M.); Rossi, Roberto (R.A.); Diez, Timothy (T.P.);
Geoff Jacks; Michael Fontana
Subject: Re: UR-0001 B3A Motor Relay Contamination Pictures

Hello Tim.

Please find enclosed the report from Tyco as requested. The circular
mark on contact 3 is from the rivetting machine and is not an issue that

would cause this failure.
In discussion with Tyco we have decided that it will be quicker to
return this relay to TRW for SEM and EDX analysis rather than utilise
the laboratory in Germany. Assuming we receive the relay by Tuesday, we
shall be able to report back the composition of the contamination in the

call on Wednesday.

If you need any further information, I'm available at Tyco via e-mail or

on my mobile number listed below.

Regards
Andy

Quality and Product Support
TRW Electronic Engineering
Technical Centre
Stratford Road
Shirley
B90 4GW

Tel: +44 (0)121 627 3143
Mob: +44 (0)7920 134912

>>> "Snider, Tim (T.O.)" 2/3/2011 7:54 pm >>>
Andy,

Please forward the pictures of the UR-0001 motor relay contamination you

showed Wednesday. Thanks.

Regards,
Tim Snider (tsnider1@ford.com)
CD3/C489 Steering Engineering
Ford Motor Company
Cell 313-805-3201
2B-L18 Product Development Center
Dearborn, MI 48124 USA

**From:** Surella, Matthew (M.M.)
**To:** Flanagan, Thomas (T.P.)
**Subject:** RE: Ford Explorer IN: 1FMHK8F83CGA06603 Kms: 17005 - Steering gets hard intermittently
**Date:** Friday, March 23, 2012 8:35:51 AM

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C200D (B9A) was not completely clean until January. Eric's chart shows 1/16 but in Bennie F meetings we have been using 1/30 so please use 1/30 as clean date. This is the date for clean parts starting to be used at Fusion assembly plant (HSAP). This is the same date we are using for U502 in Chicago and [redacted] in MAP. I don't know where they got November???

Please see typo in your note below. 1/17 is clean date for B3A on Fusion. Thanks.

Matthew (Matt) Surella
Steering EPAS Supervisor / MBB
313-805-3997

---

**From:** Flanagan, Thomas (T.P.)
**Sent:** Friday, March 23, 2012 7:40 AM
**To:** Surella, Matthew (M.M.)
**Subject:** FW: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittently

Matt,

See note below.

I do not want to respond until I have a good understanding. Laura is out today. Do you know what the clean dates and corrective actions were for the C200D and B3A issues? I know the clean date for B3A is 11/17/11. The email below shows C200D. There were 2, 2012 U502 units.

Tom Flanagan
Ford Motor Company
CD3, D3 EPAS Steering Engineering
PDC 2B-K24
(313) 845-4062
Cell (313) 815-6885

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**From:** Robinson, Mark (.)
**Sent:** Thursday, March 22, 2012 12:20 PM
**To:** Flanagan, Thomas (T.P.)
**Cc:** Allie, Abdul (A.D.)
**Subject:** FW: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittently

Hi Thomas,

I need your help. You may have this information at your fingertips. Can you tell if the EPAS ribbon cable concern on the Fusion is linked to the Explorer U502? This concern I believe was resolved at the end of Nov. 2011 for the Fusion vehicle line. We are seeing concerns on the Explorer U502 EPAS hard to turn intermittently.

**From:** Allie, Abdul (A.D.)
**Sent:** Thursday, March 22, 2012 10:57 AM
**To:** Dallalah, Ziyad (Z.F.); Mueller, John (F.); Robinson, Mark (.)
**Cc:** Hansen, Thayne (T.); Noel, Chris (C.R.)
**Subject:** FW: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittently

I checked NA data base and no EPAS concern is listed for the U502. Mark will need to check GCQIS for further analysis.

I was able to locate similar concern (submit in AEQ) on the [redacted] in NA which was closed on March 20, 2012. But will need to confirm.

REDACTED FOR RELEVANCE

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**From:** Dallalah, Ziyad (Z.F.)
**Sent:** Thursday, March 22, 2012 10:32 AM
**To:** Mueller, John (F.); Allie, Abdul (A.D.)
**Cc:** Hansen, Thayne (T.); Noel, Chris (C.R.)
**Subject:** RE: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittantly

Abdul
Details on UAE vehicle:
The Loss of assist happened under the following conditions:

1) Turning inside a parking lot (garage)
2) U-turn

Upon engine shut down and restart by customer the issue went away and returned.

Regards,

Ziyad Dallalah "Z"
Ford Motor Company
Product Development & Vehicle Engineering
Middle East (Levant & Gulf) Markets
**UAE MoBile: +971-50-4543647**
Email: zdallala@ford.com

---

**From:** Mueller, John (F.)
**Sent:** Thursday, March 22, 2012 6:11 PM
**To:** Allie, Abdul (A.D.)
**Cc:** Dallalah, Ziyad (Z.F.); Hansen, Thayne (T.); Noel, Chris (C.R.)
**Subject:** FW: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittantly

Abdul

We have two 2012 Explorers in the region where the steering system loses power assist. The one below is from Altayer and second is Qatar. In both cases the powersteering lost assist. Can you look into this to see if this is a known issue in the U.S. We need to include this in our Monday meeting as part of our escalation process.

I will provide the second vehicle with its details shortly once I recieve them from Qatar

*Regards*

*John Mueller*
*Technical Service Operations Manager*
*Service Engineering Operations*
*Ford Middle East*
*Mobile: 971 50 640 4053*

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**From:** Noel, Chris (C.R.)
**Sent:** 22 March 2012 15:05
**To:** Mueller, John (F.)
**Subject:** FW: Ford Explorer IN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittantly

Please investigate and let me know if this is a wider concern

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**From:** Ravindran S [mailto:sravindran@altayer-motors.com]
**Sent:** Thursday, March 22, 2012 2:52 PM
**To:** Noel, Chris (C.R.)
**Cc:** Viji Baby
**Subject:** Ford Explorer VIN: 1FMHK8F83CG[redacted] Kms: 17005 - Steering gets hard intermittantly

Hi Chris,

We had checked the subject vehicle and the details are as below:-
**Customer complaint**: Steering wheel got extremely hard as if it got locked and making it difficult to steer. Power steering system fault message appeared in the Message Center. The problem occurred 9 days back and again it appeared yesterday.
**Diagnosis**: Power Steering fluid level and quality are ok.
There were 2 DTCs in Continuous memory.
1st DTC – C200D-49-08-PSCM – Motor rotation angle sensor failure
2nd DTC – C1A02-23-08-ATCM – Rotor encode start in intermediate position
We did the pin point test and could not find any abnormalities. As per the last step in pin point test we have to test the vehicle and check for codes again. If the code appears again the rack has to be replaced. In this case there is no code after test drive. The matter was discussed with Mr. John Mueller also. Since the problem has appeared 2 times to the customer, the possibility of getting the problem again is high. Being a safety related issue, we do not want to take any chance and John Mueller also recommended replacement of the rack. As of now, rack assly is not available in PDC. We do not have any vehicle for cannibalization. Request your assistance in getting the part faster.

Regards

Ravindran S
Area Service Manager

**Al Tayer Motors**
PO Box 7310, Dubai,UAE
Tel: +971 4 3037704
Fax: +971 4 3401924
sravindran@altayer-motors.com
www.altayermotors.com

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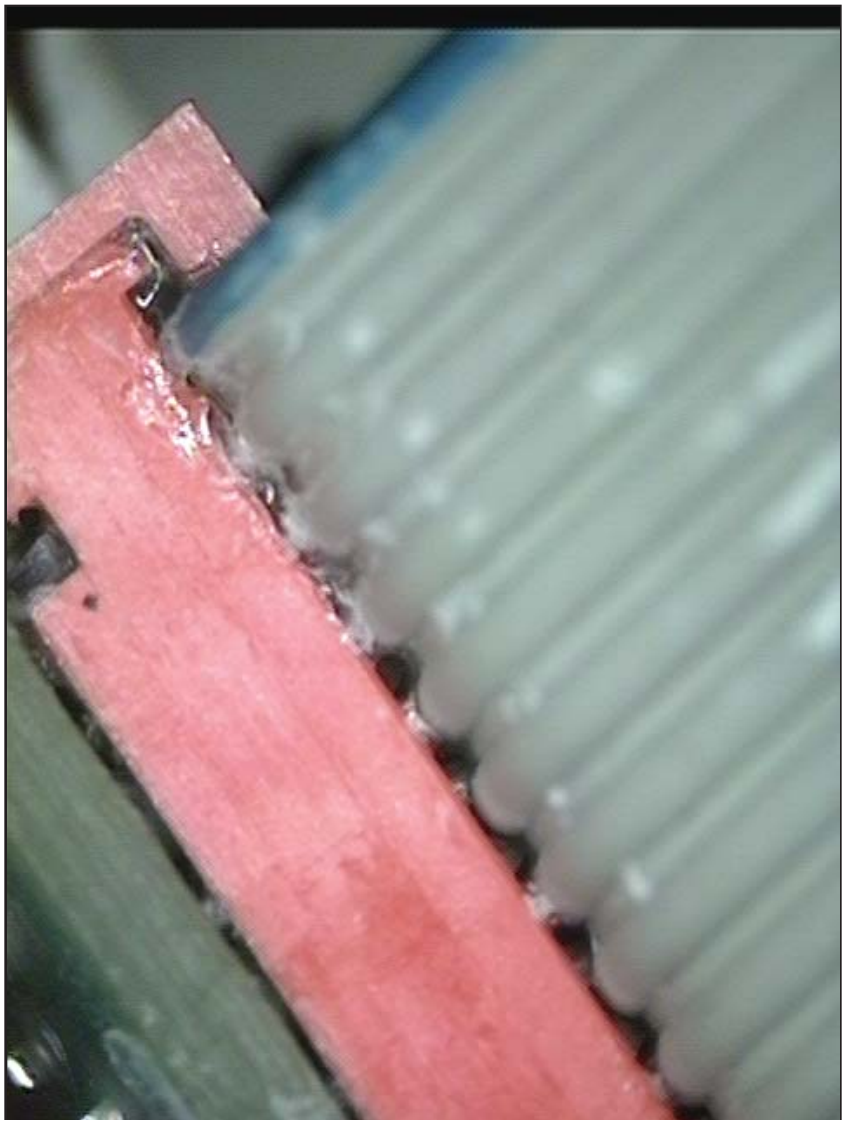

**From:** Annadi, Hari (H.)
**Sent:** Wednesday, August 24, 2011 6:17 PM
**To:** Napoli, Laura (L.); Mrozek, Robert (R.M.); Perri, Ron (R.J.)
**Cc:** Flanagan, Thomas (T.P.); Jackson, Bradley (B.G.)
**Subject:** RE: U502 C200D (B9A)

Thanks for the update Laura.

Ron - This item is RED for the form 4 and will come up at the PDQR tomorrow.

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**From:** Napoli, Laura (L.)
**Sent:** Wednesday, August 24, 2011 4:12 PM
**To:** Mrozek, Robert (R.M.); Annadi, Hari (H.)
**Cc:** Flanagan, Thomas (T.P.)
**Subject:** U502 C200D (B9A)

Hari, Rob,

The C200D-49 Ford DTC is a TRW B9A Fault Code. We have 5 gears that have been returned to the WPRC that are in TRW's hands and are being tested on the Marion, 26mile, and UK test stands. There are more parts out there that haven't been shipped back since the gears were on back order. I expect to get approx 5 more once the release issue with Service is cleared up. CAP knows the exact total since Brad Jackson has been tracking the ECB claims.

TRW was never able to duplicate the first B9A failure. We tried in every possible way at Marion and in the UK and it would not trip. We then tore down the HW and measured individual components and found nothing wrong with the part.

There is a second gear on the test stand at 26mile which has been repeatedly duplicated. The B9A will trip when Vehicle Tune 4 (3.5L AWD) is selected with the J1+90 SW. They then switched the Veh Tune to the TRW End Of Line Veh Tune and the B9A did not trip. They also tested this EPP with old SW and could not get the B9A to trip with either Veh Tune 4 or EOL Tune.

They think that the B9A is linked to SW and/or Calibration. They just don't know what in the SW or Cal is causing it to trip. All they know right now is that the Hall Effect and the Encoder are getting out of sync. An offset emerges and starts to creep which moves the standard diagnostic towards the threshold.

I have 26mile running the EPP with J1 SW to all 4 Veh Tunes and J1+90 SW with the other 3 they didn't run yet. Eric Estes is tracking the claims to see if all are 3.5L AWD vehicles and to see if they all have J1+90 SW on them. I've also asked TRW if there is a standard offset we can enter into the Cal file as an ICA and they said no. The offset is usually low and increases on occasion.

I will have more on Monday from 26mile and Wed from the UK.

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

# U502 EPAS TGW's

Laura Napoli
Rob Mrozek
5/2/2011

# U502 V87 TGW's

| Count of VIN | | | Production Year Production Month | | | |
|---|---|---|---|---|---|---|
| | | | 2010 | | 2011 | Grand Total |
| Model | VFG | Checkbox | 11 | 12 | 1 | |
| EXPLORER | V87-STEERING | H21A -Steering - Response - Too quick/sensitive | 1 | 1 | 1 | 3 |
| | | H22B -Steering - Effort - Too soft/light | | | 1 | 1 |
| | | H50 -STEERING GEAR/PUMP TRBLS ** | | 1 | | 1 |
| | | N58 -STEERING - UNUSUAL NOISE - WHILE TURNING | | | 1 | 1 |
| | V87-STEERING Total | | 1 | 2 | 3 | 6 |
| EXPLORER Total | | | 1 | 2 | 3 | 6 |
| Grand Total | | | 1 | 2 | 3 | 6 |

| Checkbox | VIN | Model Yea | Plant | Model | VerbEnglish |
|---|---|---|---|---|---|
| H50 -STEERING GEAR/PUMP TRBLS ** Veh 1 | 1FMHK8D87BG[redacted] | 2011 | CHICAGO | EXPLORER | Power steering warning light came on, then steering went out. |
| H21A -Steering - Response - Too quick/sensitive | 1FMHK7B8XBG[redacted] Veh 2 | 2011 | CHICAGO | EXPLORER | Every car I have owned has been a Ford. I have had 3 Explorers in the past and I am still getting used to the sensitive steering. When I speed up and change lanes the vehicle has a tendency to swerve a bit. Nothing major, just not used to the steering yet. |
| H21A -Steering - Response - Too quick/sensitive Veh 3 | 1FMHK7F85BG[redacted] | 2011 | CHICAGO | EXPLORER | Does not seem to hug the road. |
| N58 -STEERING - UNUSUAL NOISE - WHILE TURNING | 1FMHK8F84BG[redacted] | 2011 | CHICAGO | EXPLORER | |
| H21A -Steering - Response - Too quick/sensitive | 1FMHK8F84BG[redacted] Veh 4 | 2011 | CHICAGO | EXPLORER | Unexplainable going in for service. After/during kick start steering is very wobbly and erratic. Almost uncontrollable. |
| H22B -Steering - Effort - Too soft/light | 1FMHK8F84BG[redacted] | 2011 | CHICAGO | EXPLORER | Unexplainable going in for service. After/during kick start steering is very wobbly and erratic. Almost uncontrollable. |

**Note: These vehicles have not been brought to dealers for service.**

# H50 – Steering Gear/Pump Troubles

"Power steering warning light came on, then steering went out."

- Loss of Assist is the safe-state for EPAS when the electronics are suspected to be faulty.

**There are 3 general root causes for loss of assist:**

1) **EPP or TS HW Failure:** ECU, PFS, Motor, and TS HW failures set a B-level fault. POWER STEERING FAULT appears in the msg center and assist is removed. DTC will be stored. On the next key cycle, if the issue does not return, assist will return and the message will go away. If the HW failure is still present, B-level code will continue to be raised and gear will eventually lock out, removing assist permanently.

   Current known EPP and TS faults:

   - Relay Icing: SW robustness action implemented 4/4/2011 (Veh sold in Fenton, MI on 12/30/10.)
   - B3A: motor relay contamination (contamination improvements in place)
   - BD0-BD4: Torque Sensor bent finger (400% visual inspection in place)

2) **SW monitor faults:** SW Monitors track torque loop calculations by running similar calculations as the main torque loop. If the monitor calculation differs by more than the allowable value from the main calculation, a B-level fault will raise, POWER STEERING FAULT appears in msg center, and assist will be removed. Once the key is cycled, assist will return and the message will go away. DTC will be stored.

3) **High Friction:** If the Friction Detection Algorithm senses high friction in the rack, SERVICE POWER STEERING appears in msg center and assist efforts increase. On the next key cycle, SERVICE POWER STEERING NOW appears in msg center and assist is removed until codes are cleared. DTC will be stored.

# V87 Claims related to Ride and Handling

H21A—Steering Response too quick/sensitive

H22B—Steering Efforts too soft/light

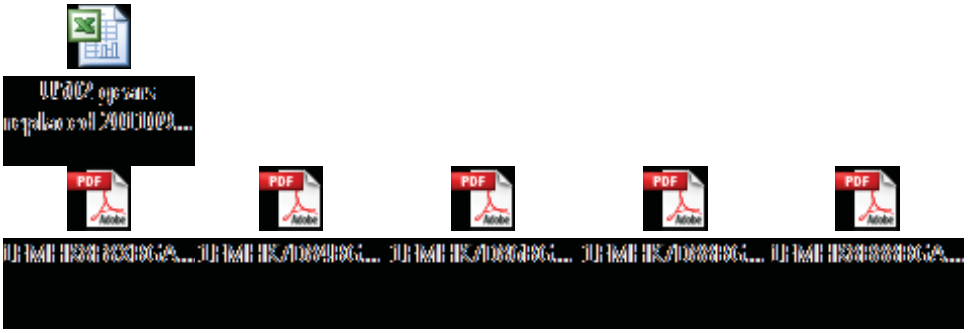
- "After/during kick start steering is very wobbly and erratic. Almost uncontrollable."
  - This complaint is related to torque steer which is inherent to the Explorer and is seen in Veh Dyn CQIS claims binned to V89 (H28). Torque steer is a function of front suspension geometry, half shaft angles, and CG. Core Veh Dyn is working closely with CAP VE PVT on all torque steer claims. 2013MY U502 is getting the benefit of TSC (torque steer compensation) which will improve the number of these claims, but does not eliminate the issue.

H21A—Steering Response too quick/sensitive

- "I have had 3 Explorers in the past and I am still getting used to the sensitive steering. When I speed up and change lanes the vehicle has a tendency to swerve a bit. Nothing major, just not used to the steering yet."
  - Could be experiencing torque steer. Driver seems to be getting familiar with sensitivity of the vehicle and EPAS steering feel.
- "Does not seem to hug the road"
  - Veh Dyn/Chassis Systems issue. Vehicle initially released with rubber mounts. TRW started shipping all gears with urethane mounts on April 4th. Solid mounts planned for 2013.5MY which will help Veh Dyn achieve the finest level of tuning.

**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, September 15, 2011 10:19 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Flanagan, Thomas (T.P.)
**Cc:** Surella, Matthew (M.M.); Mrozek, Robert (R.M.)
**Subject:** U502 gears replaced 20110914 for C200D

Here are the gears that were replaced yesterday (14 September) at dealers. 4 of the 5 were C200D DTC. 1 gear I am going to guess will come back as a NPF, as it looks like the vehicle had a wiring issue (BGA72610). Attached are the IDS files confirming the (4) C200D calls.



At what point will we have enough gears returned back from the field for analysis that we can stop asking for them?

Brad

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**From:** Jackson, Bradley (B.G.)
**Sent:** Wednesday, September 14, 2011 9:24 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Flanagan, Thomas (T.P.)
**Cc:** Surella, Matthew (M.M.); Mrozek, Robert (R.M.)
**Subject:** RE: U502 gears replaced 20110913 for C200D

Here are the gears that were replaced yesterday. 3 claims for C200D, along with IDS session files on 2 of the 3 vehicles. The third vehicle did not have a valid session.

<< File: U502 gears replaced 20110914.csv >> << File: 1FMHK7F84BG[redacted].pdf >> << File: 1FMHK7D85BG[redacted]pdf >>

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**From:** Jackson, Bradley (B.G.)
**Sent:** Tuesday, September 13, 2011 9:48 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Flanagan, Thomas (T.P.)
**Cc:** Surella, Matthew (M.M.); Mrozek, Robert (R.M.)
**Subject:** U502 gears replaced 20110913 for C200D

There were four U502 gears replaced yesterday alone for C200D DTC. These gears are being requested back to Eric.

<< File: U502 gears replaced 20110913.csv >>
Brad

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**From:** Jackson, Bradley (B.G.)
**Sent:** Tuesday, September 13, 2011 9:45 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.); Flanagan, Thomas (T.P.)
**Cc:** Surella, Matthew (M.M.); Mrozek, Robert (R.M.)
**Subject:** U502 gear replaced 20110913

This U502 gear was replaced for the C1B00/U0131 DTC codes, but I have a feeling this may come back as a NPF. PEARS 144028 was submitted this morning for this gear. Also attached is the IDS session file which points to a host of electrical codes being set.

# Claim Detail Report

**Vehicle Information** **Claim Information**

Model Year: 2011 Document Number: 311425A
Market Derived: F - FORD Repair Date: 24-AUG-11
Body/Cab Type: T/WD - 4 DOOR WAGON Distance: 85
Version/Series: T/EF-FORD SERIES TIS: 1
Drive Type: T/F-4 WHL L/H FULL TIME DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 01-AUG-11
Production Date: 12-JUL-11
VIN: 1FMHK8D83BG[redacted]

**Expense Information**

**Dealer Information:**

Customer Paid Amount: .00
Dealer Name MATHEWS FORD SANDUSKY, INC. Deductible Amount: .00
Dealer Code: 02265 - * Dealer Paid Amount: .00
Address: 610 EAST PERKINS AVENUE Labor Cost: 327.13
City: SANDUSKY Misc. Expense Amount: .00
State: OH Zip Code:44870 Part Markup Amount: 299.10
Country: USA Region Code: NA Material Cost: 1046.86
Phone: (419)626-4721 Total Cost Gross: 1373.99

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Cust. Concern Code: H39 - TRACTION CONTROL/ADVANCE TRAC WARNING LIGHT TRBLS
Condition Code: 42 - DOES NOT OPERATE PROPERLY
Technician Comment: PERFORM ROAD TEST, PERFORM SELF TEST ON ABS, OR TRAC CONTROL, CODES U0131.00 AND C1B00.29. PERFORM DIAG ON LINE PER MANUAL, SENDS ME TO STEERING GEARING, PERFORM NETWORK TEST, WILL NOT COMMUNICATE, PERFORM DIAG FURTER, ORDER STEERING GEAR, TRY TO DOWN LOAD INFO, WILL NOT, CANTACT HOT LINE, DID NOT HAVE NEW GEAR PLUGED IN ALL THE WAY, MY MISTAKE, DOWN LOAD INFO, NOW FINE, CLEAR
Customer Comment: ADVANCE TRAC LIGHT IS ON

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| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| 3504E | 16.78 | |
| 3504E8 | 8.39 | |
| 3504E45 | 25.16 | |
| MT3504 | 251.64 | |
| 3504E47 | 25.16 | |

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| Causal | Full Part Number | Part | Part | Extended |
|---|---|---|---|---|

| Flag | PREF | BASE | | SUFF | Description | CPSC | Quantity | Amount |
|---|---|---|---|---|---|---|---|---|
| Y | BB5Z | 3504 | HE | | GEAR ASY-STEERING | 110101 | 1 | 1046.86 |

**DTC Sections:** **Mil. Light On =** Y

| Flag | Test Type | Malfunction Cd | Malfunction Cd Description | Monitor Cd | Monitor Cd Description |
|---|---|---|---|---|---|
| | CHAS | C1B0029 | | | |
| | UNDF | U013100 | | | |

Regards,

Brad Jackson

Chassis Resident Engineer
Chicago Assembly Plant
Ford Motor Company
Phone: +1.313.805.4798
bjackson@ford.com

| Model Yea | Part Num F | Part Num E | Part Num S | VIN | Repair Dea | Vehicle Ty | Vehicle Lir | Plant Descr | Repair Dea | Repair Dea | Repair Dea | Country Re | ECB Flag | Claim Key | Part Num F | Part Num E | Vehicle Lir | Part Quanti | Material Co | Customer C | Technician TIS | | Production Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | BB5Z | 3504 | HE | 1FMHK7D84BC[redacted] | 11325 | T | T/UB | CHICAGO | DORAL LI | 786 | 8450900 | USA | N | 1054999 | BB5Z-350 | GEAR AS | EXPLORE | 1 | 1046.86 | CUSTOMI | VERIFY C | 5 | 7-Apr-11 |
| 2011 | BB5Z | 3504 | HE | 1FMHK7D88BC[redacted] | 4910 | T | T/UB | CHICAGO | COOK-WI | 850 | 7840400 | USA | N | 1052642 | BB5Z-350 | GEAR AS | EXPLORE | 1 | 997.01 | ADVANCI | HAD COD | 4 | 5-Apr-11 |
| 2011 | BB5Z | 3504 | HE | 1FMHK8B88BC[redacted] | 8190 | T | T/UB | CHICAGO | ALL AME | 201 | 2624900 | USA | N | 1054060 | BB5Z-350 | GEAR AS | EXPLORE | 1 | 1325.78 | CUSTOMI | VERIFY C | 5 | 9-Mar-11 |
| 2011 | BB5Z | 3504 | HE | 1FMHK8F8XBC[redacted] | 2645 | T | T/UB | CHICAGO | PRICE-GN | 636 | 3569000 | USA | N | 1051500 | BB5Z-350 | GEAR AS | EXPLORE | 1 | 1046.86 | CUST STA | VERIFIED | 5 | 12-Apr-11 |
| 2011 | BB5Z | 3504 | HE | 1FMHK7D86BC[redacted] | 4450 | T | T/UB | CHICAGO | RODRIGU | 956 | 6892452 | USA | N | 1052345 | BB5Z-350 | GEAR AS | EXPLORE | 1 | 1046.86 | POWER S | UNIT CAN | 4 | 21-May-11 |

| Load Date | Mileage | Repair Date | Warranty Start | Transactior | VFG | Customer Concern Code |
|---|---|---|---|---|---|---|
| 14-Sep-11 | 7027 | 25-Aug-11 | 27-Apr-11 | 2 | V21 | H39 |
| 14-Sep-11 | 6008 | 25-Aug-11 | 30-Apr-11 | 2 | V21 | H39 |
| 14-Sep-11 | 11798 | 18-Aug-11 | 31-Mar-11 | 2 | V87 | H22 |
| 14-Sep-11 | 4583 | 2-Sep-11 | 28-Apr-11 | 1 | V87 | H22 |
| 14-Sep-11 | 6288 | 13-Sep-11 | 14-Jun-11 | 1 | V87 | H22 |

# One Warranty Reporting Solution

Details for Session File Number 17282262

Report Created: 09/15/2011

**Session Header Information**

| | |
|---|---|
| Session Open Date | 2011/09/08 |
| Session Upload Date | 2011/09/09 09:33:22 |
| Dealer GEO Sales Code | USA |
| Dealer PA Code | 02645 |
| Dealer Sub Code | |
| Previous Version of Session File | . |
| Odometer Reading | 4583 miles |

**Module List**

| Module Name | Software Part Number | Responded |
|---|---|---|
| ABS - Antilock braking system | BB53-2C219-AF | Yes |
| ACM - Audio Control Module | BB5T-19C107-CS | Yes |
| APIM - Accessory Protocol Interface Module | BT4T-14D212-BS | Yes |
| ATCM - All Terrain Control Module | ???? | Yes |
| BdyCM - Body Control Module | BC3T-14B476-DH | Yes |
| C-CM - Cruise-Control Module | ???? | No |
| CLM - Column Lock Module | ???? | No |
| DCSM - Driver/Dual Climate-Control Seat Module | BU5T_14B663_AB | Yes |
| DSM - Driver's Seat Module | BB5T_14C708_AE | Yes |
| DSP - (Audio) Digital Signal Processing Module | BT4T-18B849-DE | Yes |
| FCDIM - Front Control/Display Interface Module | ???? | No |
| FCIM - Front Controls Interface Module | ???? | Yes |
| FLM - Front Lighting Control Module | ???? | Yes |
| GPSM - Global Positioning System Module | ???? | Yes |
| HSWM - Heated Steering Wheel Module | ???? | No |
| HUD - Head Up Display | ???? | No |
| HVAC - Heating Ventilation Air Conditioning | BB5T-18C612-CH | Yes |
| IPC - Instrument Panel Control Module | BB5T-10849-GH | Yes |
| LTM - Liftgate/Trunk Module | BB5T_14B673_AK | Yes |
| OCS - Occupant Classification System Module | ???? | Yes |
| PAM - Parking Aid Module | BB5T-15K866-AC | Yes |
| PCM - Powertrain Control Module | BB5AMJ | Yes |
| PSCM - Power Steering Control Module | BB53-3F964-BJ | Yes |
| RCM - Restraint Control Module | BB5T-14B321-AH | Yes |
| RFA - Remote Function Actuator | BB5T-19G481-AL | Yes |
| RLCMA - Rear Lighting Control Module A | ???? | No |
| SCCM - Steering Column Control Module | BB5T-3F944-BJ | Yes |
| SODL - Side Obstacle Detection Control Module - Left | ???? | No |
| SODR - Side Obstacle Detection Control Module - Right | ???? | No |
| TPM - Tire Pressure Monitor | ???? | Yes |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| CONTINUOUS DTC | ABS | C1B00 | GGDS | Steering angle sensor | . | 86 | Signal Invalid |
| CONTINUOUS DTC | ABS | U0131 | GGDS | Lost Communication With %%h(PSCM) | . | 00 | No Additional Failure Type infromation for this DTC |
| CONTINUOUS DTC | IPC | U0253 | GGDS | Lost Communication With Accessory Protocol Interface Module | . | 00 | No Additional Failure Type infromation for this DTC |
| CONTINUOUS DTC | PSCM | C200D | GGDS | Motor Rotation Angle Sensor | . | 49 | Internal Electronic Failure |
| Self Test - UNKNOWN | ABS | C1B00 | GGDS | Steering angle sensor | 68 | 86 | Signal Invalid |
| Self Test - UNKNOWN | ABS | U0131 | GGDS | Lost Communication With | 60 | 00 | No Additional Failure Type |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| Self Test - UNKNOWN | IPC | U0253 | GGDS | %%h(PSCM) Lost Communication With Accessory Protocol Interface Module | 28 | 00 | infromation for this DTC No Additional Failure Type infromation for this DTC |

**Freeze Frame (IDS Classic only)**

| Type | DTC | Parameter | Value | Description |
|---|---|---|---|---|

**Mode 6 Test Results (IDS Classic only)**

| Timestamp | Description | Test | Component | Limits | Value |
|---|---|---|---|---|---|

**PID Results in IDS Classic Self Test**

| Logical Address | Value | PID Description |
|---|---|---|

**Technician Selected Symptoms (ETIS IDS only)**

| Symptom |
|---|

**Diagnosed Modules / Components (ETIS IDS only)**

| Component | RVC | WCC | Diagnosed Method |
|---|---|---|---|

**Vehicle Information**

| | |
|---|---|
| VIN | 1FMHK8F8XBG[redacted] |
| Model Year | 2011 |
| Vehicle Line | EXPLORER |
| Engine | 3.5L V6 CYCLONE TIVCT |
| Engine Trace Number | E1600 080411L1304012211S 344 CA |
| Transmission | 6 SPD AUTO TRANS 6F |
| Transmission Trace Number | A4931 0604111096186438BA8P 7000 NB 38 |
| Build Date | 2011/04/12 |
| Warranty Start Date | 2011/04/28 |
| Production Plant | CHICAGO PLANT BUILD |

**Vehicle WERS Feature Codes**

SE EF - FORD SERIES
AC G - DUAL ZONE AUTO TEMP CONTROL AC
DR F - 4 WHL L/H FULL TIME DRIVE
CA WD - 4 DOOR WAGON

**Links to Other Session Files for this VIN**

**Vehicle Investigation Links**

**Warranty Claim (AWS)**
**GCQIS Reports**
**OWS Find a Vehicle Homepage**
**Native Session file Viewer**
**Additional Vehicle Information from SAVE**

# One Warranty Reporting Solution

Details for Session File Number 16863531

Report Created: 09/15/2011

**Session Header Information**

| | |
|---|---|
| Session Open Date | 2011/08/24 |
| Session Upload Date | 2011/08/26 11:51:37 |
| Dealer GEO Sales Code | USA |
| Dealer PA Code | 09497 |
| Dealer Sub Code | |
| Previous Version of Session File | . |
| Odometer Reading | 7018 miles |

**Module List**

| Module Name | Software Part Number | Responded |
|---|---|---|
| ABS - Antilock braking system | BB53-2C219-AF | Yes |
| ACM - Audio Control Module | BB5T-19C107-BS | Yes |
| APIM - Accessory Protocol Interface Module | BT4T-14D212-BS | Yes |
| ATCM - All Terrain Control Module | ???? | No |
| BdyCM - Body Control Module | BC3T-14B476-DH | Yes |
| C-CM - Cruise-Control Module | ???? | No |
| CLM - Column Lock Module | ???? | No |
| DCSM - Driver/Dual Climate-Control Seat Module | ???? | No |
| DSM - Driver's Seat Module | ???? | No |
| DSP - (Audio) Digital Signal Processing Module | ???? | No |
| FCDIM - Front Control/Display Interface Module | ???? | No |
| FCIM - Front Controls Interface Module | ???? | Yes |
| FLM - Front Lighting Control Module | ???? | Yes |
| GPSM - Global Positioning System Module | ???? | Yes |
| HSWM - Heated Steering Wheel Module | ???? | No |
| HUD - Head Up Display | ???? | No |
| HVAC - Heating Ventilation Air Conditioning | BB5T-18C612-BH | Yes |
| IPC - Instrument Panel Control Module | BB5T-10849-GH | Yes |
| LTM - Liftgate/Trunk Module | ???? | No |
| OCS - Occupant Classification System Module | ???? | Yes |
| PAM - Parking Aid Module | BB5T-15K866-AC | Yes |
| PCM - Powertrain Control Module | BB5AMJ | Yes |
| PSCM - Power Steering Control Module | BB53-3F964-BJ | Yes |
| RCM - Restraint Control Module | BB5T-14B321-AH | Yes |
| RFA - Remote Function Actuator | ???? | No |
| RLCMA - Rear Lighting Control Module A | ???? | No |
| SCCM - Steering Column Control Module | BB5T-3F944-AJ | Yes |
| SODL - Side Obstacle Detection Control Module - Left | ???? | No |
| SODR - Side Obstacle Detection Control Module - Right | ???? | No |
| TPM - Tire Pressure Monitor | ???? | Yes |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| CONTINUOUS DTC | ABS | C1B00 | GGDS | Steering angle sensor | . | 86 | Signal Invalid |
| CONTINUOUS DTC | PSCM | C200D | GGDS | Motor Rotation Angle Sensor | . | 49 | Internal Electronic Failure |
| Self Test - UNKNOWN | ABS | C1B00 | GGDS | Steering angle sensor | 28 | 86 | Signal Invalid |
| Self Test - UNKNOWN | PSCM | C200D | GGDS | Motor Rotation Angle Sensor | 08 | 49 | Internal Electronic Failure |

**Freeze Frame (IDS Classic only)**

| Type | DTC | Parameter | Value | Description |
|---|---|---|---|---|
| Snapshot | C200D:49-08 | RPM | 74RPM RPM | Revolutions per minute |
| Snapshot | C200D:49-08 | VS | 0MPH MPH | Vehicle Speed |

**Mode 6 Test Results (IDS Classic only)**

| Timestamp | Description | Test | Component | Limits | Value |
|---|---|---|---|---|---|

**PID Results in IDS Classic Self Test**

| Logical Address | Value | PID Description |
|---|---|---|

**Technician Selected Symptoms (ETIS IDS only)**

| Symptom |
|---|

**Diagnosed Modules / Components (ETIS IDS only)**

| Component | RVC | WCC | Diagnosed Method |
|---|---|---|---|

**Vehicle Information**

| | |
|---|---|
| VIN | 1FMHK7D84BG[redacted] |
| Model Year | 2011 |
| Vehicle Line | EXPLORER |
| Engine | 3.5L V6 CYCLONE TIVCT |
| Engine Trace Number | E1600 040411L1304000231S 344 CA |
| Transmission | 6 SPD AUTO TRANS 6F |
| Transmission Trace Number | A4931 0504111095163434BA8P 7000 MB 34 |
| Build Date | 2011/04/07 |
| Warranty Start Date | 2011/04/25 |
| Production Plant | CHICAGO PLANT BUILD |

**Vehicle WERS Feature Codes**

DR A - 2 WHL L/H FRONT DRIVE
SE EF - FORD SERIES
AC G - DUAL ZONE AUTO TEMP CONTROL AC
CA WD - 4 DOOR WAGON

**Links to Other Session Files for this VIN**

**Vehicle Investigation Links**

**Warranty Claim (AWS)**
**GCQIS Reports**
**OWS Find a Vehicle Homepage**
**Native Session file Viewer**
**Additional Vehicle Information from SAVE**

# One Warranty Reporting Solution

Details for Session File Number 17170205

Report Created: 09/15/2011

**Session Header Information**

| | |
|---|---|
| Session Open Date | 2011/07/11 |
| Session Upload Date | 2011/09/08 01:54:46 |
| Dealer GEO Sales Code | USA |
| Dealer PA Code | FACT1 |
| Dealer Sub Code | |
| Previous Version of Session File | . |
| Odometer Reading | 2911 miles |

**Module List**

| Module Name | Software Part Number | Responded |
|---|---|---|
| ABS - Antilock braking system | BB53-2C219-AF | Yes |
| ACM - Audio Control Module | BB5T-19C107-BS | Yes |
| APIM - Accessory Protocol Interface Module | BT4T-14D212-BS | Yes |
| ATCM - All Terrain Control Module | ???? | No |
| BdyCM - Body Control Module | BC3T-14B476-DH | Yes |
| C-CM - Cruise-Control Module | ???? | No |
| CLM - Column Lock Module | ???? | No |
| DCSM - Driver/Dual Climate-Control Seat Module | ???? | No |
| DSM - Driver's Seat Module | ???? | No |
| DSP - (Audio) Digital Signal Processing Module | ???? | No |
| FCDIM - Front Control/Display Interface Module | ???? | No |
| FCIM - Front Controls Interface Module | ???? | Yes |
| FLM - Front Lighting Control Module | ???? | Yes |
| GPSM - Global Positioning System Module | ???? | Yes |
| HSWM - Heated Steering Wheel Module | ???? | No |
| HUD - Head Up Display | ???? | No |
| HVAC - Heating Ventilation Air Conditioning | BB5T-18C612-BH | Yes |
| IPC - Instrument Panel Control Module | BB5T-10849-GH | Yes |
| LTM - Liftgate/Trunk Module | ???? | No |
| OCS - Occupant Classification System Module | ???? | Yes |
| PAM - Parking Aid Module | BB5T-15K866-AC | Yes |
| PCM - Powertrain Control Module | BB5AMJ | Yes |
| PSCM - Power Steering Control Module | BB53-3F964-BJ | Yes |
| RCM - Restraint Control Module | BB5T-14B321-AH | Yes |
| RFA - Remote Function Actuator | ???? | No |
| RLCMA - Rear Lighting Control Module A | ???? | No |
| SCCM - Steering Column Control Module | BB5T-3F944-FC | Yes |
| SODL - Side Obstacle Detection Control Module - Left | CT43-14C689-CA | Yes |
| SODR - Side Obstacle Detection Control Module - Right | CT43-14C689-CA | Yes |
| TPM - Tire Pressure Monitor | ???? | Yes |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| CONTINUOUS DTC | ABS | U0131 | GGDS | Lost Communication With %%h(PSCM) | . | 00 | No Additional Failure Type infromation for this DTC |
| CONTINUOUS DTC | ACM | U0253 | GGDS | Lost Communication With Accessory Protocol Interface Module | . | 00 | No Additional Failure Type infromation for this DTC |
| CONTINUOUS DTC | ACM | U0257 | GGDS | Lost Communication With Front Controls / Display Interface Module | . | 00 | No Additional Failure Type infromation for this DTC |
| CONTINUOUS DTC | FCIM | U0257 | GGDS | Lost Communication With | . | 00 | No Additional Failure Type |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| | | | | Front Controls / Display Interface Module | | | infromation for this DTC |
| CONTINUOUS DTC | IPC | U0253 | GGDS | Lost Communication With Accessory Protocol Interface Module | . | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | ABS | U0131 | GGDS | Lost Communication With %%h(PSCM) | AB | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | ACM | U0253 | GGDS | Lost Communication With Accessory Protocol Interface Module | 0A | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | ACM | U0257 | GGDS | Lost Communication With Front Controls / Display Interface Module | 0A | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | FCIM | U0257 | GGDS | Lost Communication With Front Controls / Display Interface Module | 08 | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | IPC | U0253 | GGDS | Lost Communication With Accessory Protocol Interface Module | 2E | 00 | No Additional Failure Type infromation for this DTC |

**Freeze Frame (IDS Classic only)**

| Type | DTC | Parameter | Value | Description |
|---|---|---|---|---|

**Mode 6 Test Results (IDS Classic only)**

| Timestamp | Description | Test | Component | Limits | Value |
|---|---|---|---|---|---|

**PID Results in IDS Classic Self Test**

| Logical Address | Value | PID Description |
|---|---|---|
| 16D3 | 0RPM | Engine (RPM) At Time Of Misfire |
| 16D4 | 0% | Engine Load At Time Of Misfire |
| 16D7 | 00:00 | Engine Off Soak Time Prior to Misfire |
| 16D8 | 00:00 | Engine Running Time At Time Of Misfire |
| 16DC | 1 | Number Of Trips Since The Time Of Misfire |

**Technician Selected Symptoms (ETIS IDS only)**

| Symptom |
|---|

**Diagnosed Modules / Components (ETIS IDS only)**

| Component | RVC | WCC | Diagnosed Method |
|---|---|---|---|

**Vehicle Information**

| | |
|---|---|
| VIN | 1FMHK7D86BG[redacted] |
| Model Year | 2011 |
| Vehicle Line | EXPLORER |
| Engine | 3.5L V6 CYCLONE TIVCT |
| Engine Trace Number | E1600 160511L1304015621S 344 CA |
| Transmission | 6 SPD AUTO TRANS 6F |
| Transmission Trace Number | A4931 1805111138161934BA8P 7000 MB 34 |
| Build Date | 2011/05/21 |
| Warranty Start Date | 2011/06/14 |
| Production Plant | CHICAGO PLANT BUILD |

**Vehicle WERS Feature Codes**

DR A - 2 WHL L/H FRONT DRIVE
SE EF - FORD SERIES
AC G - DUAL ZONE AUTO TEMP CONTROL AC
CA WD - 4 DOOR WAGON

**Links to Other Session Files for this VIN**

**Vehicle Investigation Links**

**Warranty Claim (AWS)**
**GCQIS Reports**
**OWS Find a Vehicle Homepage**
**Native Session file Viewer**
**Additional Vehicle Information from SAVE**

# One Warranty Reporting Solution

Details for Session File Number 16346534

Report Created: 09/15/2011

## Session Header Information

| | |
|---|---|
| Session Open Date | . |
| Session Upload Date | 2011/08/05 01:48:01 |
| Dealer GEO Sales Code | . |
| Dealer PA Code | . |
| Dealer Sub Code | . |
| Previous Version of Session File | . |
| Odometer Reading | 4692 miles |

## Module List

| Module Name | Software Part Number | Responded |
|---|---|---|
| ABS - ANTILOCK BRAKE SYSTEM (PRIORITY 7) | . | |
| APIM - TEST - APIM (NO PRIORITY) | . | |
| IC - INSTRUMENT CLUSTER (PRIORITY 10) | . | |
| OCS - Occupant Classification System Module | . | |
| PAM - Parking Aid Module | . | |
| PCM,ECM - POWERTRAIN CONTROL MODULE, ENGINE CONTROL MODULE (PRIORITY 3) | . | |
| RCM - RESTRAINT CONTROL MODULE (PRIORITY 1) | . | |
| SPDJB - SMART POWER DISTRIBUTION JUNCTION BOX (PRIORITY 6) | . | |
| TPMS - TIRE PRESSURE MONITOR SYSTEM (PRIORITY 5) | . | |
| UNKNOWN SYNC MODULE ADDRESS | . | |

## DTC Codes Present

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| Self Test - CONTINUOUS DTC | ABS | C1B00 | GGDS | Steering angle sensor | 20 | 86 | Signal Invalid |

## Freeze Frame (IDS Classic only)

| Type | DTC | Parameter | Value | Description |
|---|---|---|---|---|

## Mode 6 Test Results (IDS Classic only)

| Timestamp | Description | Test | Component | Limits | Value |
|---|---|---|---|---|---|

## PID Results in IDS Classic Self Test

| Logical Address | Value | PID Description |
|---|---|---|

## Technician Selected Symptoms (ETIS IDS only)

| Symptom |
|---|

## Diagnosed Modules / Components (ETIS IDS only)

| Component | RVC | WCC | Diagnosed Method |
|---|---|---|---|

**Vehicle Information**

| | |
|---|---|
| VIN | 1FMHK7D88BG[redacted] |
| Model Year | 2011 |
| Vehicle Line | EXPLORER |
| Engine | 3.5L V6 CYCLONE TIVCT |
| Engine Trace Number | E1600 300311L1302016231S 344 BA |
| Transmission | 6 SPD AUTO TRANS 6F |
| Transmission Trace Number | A4931 0104111091181734BA8P 7000 MB 34 |
| Build Date | 2011/04/05 |
| Warranty Start Date | 2011/04/30 |
| Production Plant | CHICAGO PLANT BUILD |

**Vehicle WERS Feature Codes**

DR A - 2 WHL L/H FRONT DRIVE
SE EF - FORD SERIES
AC G - DUAL ZONE AUTO TEMP CONTROL AC
CA WD - 4 DOOR WAGON

**Links to Other Session Files for this VIN**

**Vehicle Investigation Links**

**Warranty Claim (AWS)**
**GCQIS Reports**
**OWS Find a Vehicle Homepage**
**Additional Vehicle Information from SAVE**

# One Warranty Reporting Solution

Details for Session File Number 16692403

Report Created: 09/15/2011

**Session Header Information**

| | |
|---|---|
| Session Open Date | 2011/08/18 |
| Session Upload Date | 2011/08/29 13:57:09 |
| Dealer GEO Sales Code | USA |
| Dealer PA Code | 08190 |
| Dealer Sub Code | |
| Previous Version of Session File | . |
| Odometer Reading | 11799 miles |

**Module List**

| Module Name | Software Part Number | Responded |
|---|---|---|
| ABS - Antilock braking system | BB53-2C219-AF | Yes |
| ACM - Audio Control Module | BB5T-19C107-BS | Yes |
| APIM - Accessory Protocol Interface Module | ???? | No |
| ATCM - All Terrain Control Module | ???? | Yes |
| BdyCM - Body Control Module | BC3T-14B476-DH | Yes |
| C-CM - Cruise-Control Module | ???? | No |
| CLM - Column Lock Module | ???? | No |
| DCSM - Driver/Dual Climate-Control Seat Module | ???? | No |
| DSM - Driver's Seat Module | ???? | No |
| DSP - (Audio) Digital Signal Processing Module | ???? | No |
| FCDIM - Front Control/Display Interface Module | BB5T-19C116-CJ | Yes |
| FCIM - Front Controls Interface Module | ???? | Yes |
| FLM - Front Lighting Control Module | ???? | Yes |
| GPSM - Global Positioning System Module | ???? | No |
| HSWM - Heated Steering Wheel Module | ???? | No |
| HUD - Head Up Display | ???? | No |
| HVAC - Heating Ventilation Air Conditioning | BB5T-19980-AG | Yes |
| IPC - Instrument Panel Control Module | BB5T-10849-EF | Yes |
| LTM - Liftgate/Trunk Module | ???? | No |
| OCS - Occupant Classification System Module | ???? | Yes |
| PAM - Parking Aid Module | ???? | No |
| PCM - Powertrain Control Module | BB5ANJ | Yes |
| PSCM - Power Steering Control Module | BB53-3F964-BG | Yes |
| RCM - Restraint Control Module | BB5T-14B321-AF | Yes |
| RFA - Remote Function Actuator | ???? | No |
| RLCMA - Rear Lighting Control Module A | ???? | No |
| SCCM - Steering Column Control Module | BB5T-3F944-AJ | Yes |
| SODL - Side Obstacle Detection Control Module - Left | ???? | No |
| SODR - Side Obstacle Detection Control Module - Right | ???? | No |
| TPM - Tire Pressure Monitor | ???? | Yes |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| CONTINUOUS DTC | ABS | C1B00 | GGDS | Steering angle sensor | . | 86 | Signal Invalid |
| CONTINUOUS DTC | PSCM | C200D | GGDS | Motor Rotation Angle Sensor | . | 49 | Internal Electronic Failure |
| Self Test - UNKNOWN | ABS | C1B00 | GGDS | Steering angle sensor | 20 | 86 | Signal Invalid |
| Self Test - UNKNOWN | PSCM | C200D | GGDS | Motor Rotation Angle Sensor | 08 | 49 | Internal Electronic Failure |
| Self Test - KOEO TEST | PSCM | U0415 | GGDS | Invalid Data Received From %%h(ABS) Control Module | . | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | PSCM | U0415 | GGDS | Invalid Data Received From %%h(ABS) Control Module | 08 | 00 | No Additional Failure Type infromation for this DTC |
| Self Test - UNKNOWN | PSCM | U0415 | GGDS | Invalid Data Received From | 0A | 00 | No Additional Failure Type |

**DTC Codes Present**

| Type | Module | DTC Code | DTC Version | DTC Description | Status Byte | Failure Byte | Failure Byte Desc |
|---|---|---|---|---|---|---|---|
| | | | | %%h(ABS) Control Module | | | infromation for this DTC |

**Freeze Frame (IDS Classic only)**

| Type | DTC | Parameter | Value | Description |
|---|---|---|---|---|
| Snapshot | C200D:49-08 | RPM | 127RPM RPM | Revolutions per minute |
| Snapshot | C200D:49-08 | VS | 0MPH MPH | Vehicle Speed |
| Snapshot | U0415:00-08 | RPM | 83.25RPM RPM | Revolutions per minute |
| Snapshot | U0415:00-08 | VS | 0MPH MPH | Vehicle Speed |

**Mode 6 Test Results (IDS Classic only)**

| Timestamp | Description | Test | Component | Limits | Value |
|---|---|---|---|---|---|

**PID Results in IDS Classic Self Test**

| Logical Address | Value | PID Description |
|---|---|---|

**Technician Selected Symptoms (ETIS IDS only)**

| Symptom |
|---|

**Diagnosed Modules / Components (ETIS IDS only)**

| Component | RVC | WCC | Diagnosed Method |
|---|---|---|---|

**Vehicle Information**

| | |
|---|---|
| VIN | 1FMHK8B88BG[redacted] |
| Model Year | 2011 |
| Vehicle Line | EXPLORER |
| Engine | 3.5L V6 CYCLONE TIVCT |
| Engine Trace Number | E1600 050311L1301004431S 342 BA |
| Transmission | 6 SPD AUTO TRANS 6F55 |
| Transmission Trace Number | A4921 0103111060010211BA5P 7000 RC 11 |
| Build Date | 2011/03/09 |
| Warranty Start Date | 2011/03/31 |
| Production Plant | CHICAGO PLANT BUILD |

**Vehicle WERS Feature Codes**

SE EF - FORD SERIES
AC B - MANUAL AIR CONDITIONER
DR F - 4 WHL L/H FULL TIME DRIVE
CA WD - 4 DOOR WAGON

**Links to Other Session Files for this VIN**

**Vehicle Investigation Links**

**Warranty Claim (AWS)**
**GCQIS Reports**
**OWS Find a Vehicle Homepage**

Native Session file Viewer
Additional Vehicle Information from SAVE

**From:** Perri, Ron (R.J.)
**Sent:** Tuesday, November 15, 2011 11:29 AM
**To:** Collins, Ron (R.J.)
**Subject:** RE: U502 steering update
**Importance:** High

Yes, as far as we know, TYCO, ribbon cable supplier, is same Globally for REDACTED FOR RELEVANCE

Ron Perri
Manager, Chassis - EPAS and Upper Steering, Systems & Core
2B-F77, Product Development Center
cell 313-805-0680
rperri@ford.com

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**From:** Collins, Ron (R.J.)
**Sent:** Tuesday, November 15, 2011 7:17 AM
**To:** Perri, Ron (R.J.)
**Subject:** FW: U502 steering update

FYI. Have we done the same for Europe (ribbon cable actions)?

Ron Collins
Chief Engineer, North American Chassis Engineering
Ford Motor Company
email: rcollin4@ford.com

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**From:** Jammoul, Ali (A.)
**Sent:** Saturday, November 12, 2011 5:38 PM
**To:** Collins, Ron (R.J.)
**Cc:** Tetley, John (J.K.)
**Subject:** Re: U502 steering update

Ron,

Very good progress. Please make sure this is reflected in the six panel for the Bennie review and ask TRW to contain for the European C1 production immediately. Thanks.

Ali Jammoul
Director
Global Chassis Engineering

**From**: Collins, Ron (R.J.)
**Sent**: Saturday, November 12, 2011 11:03 AM
**To**: Fisher, Marcy (M.J.)
**Cc**: Jammoul, Ali (A.); Pittel, Kimberly (K.L.)
**Subject**: RE: U502 steering update

Update:

We've found root cause on the encoder failures, both associated with the ribbon cable.

1. Conformal coating insulating strand from pins, through capillary action. Containment 11/11/11: Parts are 100% checked for this issue by UV light (coating glows, and if present on strand ends, cable is scrapped).

2. Misalignment of connector on ribbon cable, allowing intermittent connection. Containment 11/11/11: 100% sort for misalignment. Bad parts scrapped.

These issues account for 8 failures of 8 analyzed returned parts. 3 more to tear down.

Thanks

Ron Collins
Chief Engineer, North American Chassis Engineering
Ford Motor Company
email: rcollin4@ford.com

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**From:** Collins, Ron (R.J.)
**Sent:** Wednesday, November 09, 2011 7:30 PM
**To:** Fisher, Marcy (M.J.)
**Cc:** Jammoul, Ali (A.); Pittel, Kimberly (K.L.)
**Subject:** RE: U502 steering update

Marcy:

To answer your question, Micronas (Hall supplier) was found to be in good condition. The summary of investigation is as follows:

- Failed part build date: 9/17/2010
- Exhaust system is controlled during weekly preventive maintenance

• Exhaust system is cleaned during monthly preventive maintenance
• **New manometers introduced in WW03/2011 for improved particle detection.**

- As part of the Micronas Continuous Improvement Plan at Wafer Fab, our Defect Engineering Team is performing further measures like particle monitoring, material analysis, source estimation and action definition on an ongoing basis.
- Micronas reports 0.12ppm on hall sensors to all customers

The bottom line here: Micronas has installed new particle detection equipment since the failed part was built. Further, the Hall failure appears to be a flier…the other failed units' fault have been isolated to the encoder rather

than the Hall.

Thanks

Ron Collins
Chief Engineer, North American Chassis Engineering
Ford Motor Company
email: rcollin4@ford.com

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**From:** Fisher, Marcy (M.J.)
**Sent:** Wednesday, November 09, 2011 11:53 AM
**To:** Collins, Ron (R.J.)
**Cc:** Jammoul, Ali (A.); Pittel, Kimberly (K.L.)
**Subject:** RE: U502 steering update

Ron, Thanks for the update. Please keep me in the loop on progress on the encoder signal root cause. Also, regarding the contamination, did they find something that they weren't doing regarding PM and/or find the potential cause of the contamination? I'm just trying to gain confidence that something has been improved to ensure the contamination is really cut-off. Thanks

---

**From:** Collins, Ron (R.J.)
**Sent:** Wednesday, November 09, 2011 9:15 AM
**To:** Fisher, Marcy (M.J.)
**Cc:** Jammoul, Ali (A.); Pittel, Kimberly (K.L.)
**Subject:** U502 steering update

Marcy:

Per your request, here is our latest status with the B9A fault code issue:

1) encoder - 2 vehicles now intermittently exhibit B9A related to encoder signal (Laura's focus and a Fusion at TRW-26 mile).

Allegro (encoder supplier) has received 4 suspect encoders from TRW-Marion (not necessarily in failed state).
Working to get an encoder to fail, keep it at that state, and have Allegro analyze it.
2) ribbon cable - TRW developing method to check ribbon cable resistance in-vehicle. 1st check the Fusion, then Laura's car. This looks less likely root cause now that both vehicles have shown failure in encoder.

3) hall effects => one sensor found with hard fault due to contamination. Supplier in Europe has been visited and PM has been verified to ensure no further contamination.

We know why we are getting B9A (encoder signal failure). We are working now to understand why that signal is failing intermittently. That is step one above: get the suspect sensors instrumented in lab and get them to fail so we can determine root cause.

Thanks

Ron Collins
Chief Engineer, North American Chassis Engineering
Ford Motor Company
email: rcollin4@ford.com

**From:** Pienta, Alan (A.)
**Sent:** Friday, September 02, 2011 5:35 PM
**To:** Napoli, Laura (L.); 'Jim Loria'; 'Michael Fontana'; 'Simon Malsbury'; Engelbert Lu; 'joel.rabideau@trw.com'
**Cc:** Mrozek, Robert (R.M.); Estes, Eric (E.E.); Diez, Timothy (T.P.); Rossi, Roberto (R.A.)
**Subject:** RE: U502 with C200B/C200C

Team,
Upon investigation, the dealership informed me that the di-electric grease solution lasted 24 hours and the unit was returned to the dealership with the same customer complaint. Furthermore, the dealership technician stated that upon visual inspection, he could find nothing wrong with the wire harness connectors or terminals. When questioned about the utilization of di-electric grease, the technician stated that he has experienced positive results in intermittent electrical connections by the insertion of di-electric grease.

The unit has just had a new rack installed as of 5:00 pm, September 2, 2011.

Alan Pienta
EPAS Electronics Engineer

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**From:** Napoli, Laura (L.)
**Sent:** Thursday, September 01, 2011 9:23 AM
**To:** 'Jim Loria'; Pienta, Alan (A.); Michael Fontana; Simon Malsbury; Engelbert Lu; joel.rabideau@trw.com; Diez, Timothy (T.P.)
**Cc:** Mrozek, Robert (R.M.); Estes, Eric (E.E.)
**Subject:** FW: U502 with C200B/C200C

TRW TS Team,

We have a car in warranty that had C200B and C200C TS Faults. The dealer unplugged ALL 3 connectors and put di-electric grease on the pins and said it fixed the issue. This is not in the service procedure. Do you have any concerns that they did this, or do you think the car will just come back with another TS fault and we can replace the gear then?

Regards,

*Laura Napoli*
D3 and U502 EPAS
Ford Motor Company
Cube: 2B-G66 PDC
Phone: 313.323.0634
Mobile: 313.805.0482

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**From:** Jackson, Bradley (B.G.)
**Sent:** Thursday, September 01, 2011 8:43 AM
**To:** Napoli, Laura (L.); Estes, Eric (E.E.)
**Cc:** Mrozek, Robert (R.M.); Logli, Michael (M.A.); Brucker, Eric (.)
**Subject:** U502 with C200B/C200C

Laura / Eric E., what is the C200B/C DTC? This dealer is claiming they put di-electric grease in the connector to the gear and fixed this problem. This does not sound correct.

# Claim Detail Report

**Model Year =** 2011; **Claim Key =** 918856

**Vehicle Information** **Claim Information**

Model Year: 2011 Document Number: 00410801
Market Derived: F - FORD Repair Date: 24-AUG-11
Body/Cab Type: T/WD - 4 DOOR WAGON Distance: 1619
Version/Series: T/EF-FORD SERIES TIS: 2
Drive Type: T/A-2 WHL L/H FRONT DRIVE
Vehicle Line: T/UB-EXPLORER [11-12]
Warranty Start Date: 16-JUL-11
Production Date: 17-JUN-11
VIN: 1FMHK7B88BG[redacted]

**Expense Information**

**Dealer Information:**

Customer Paid Amount: .00
Dealer Name DUVAL FORD Deductible Amount: .00
Dealer Code: 04863 - * Dealer Paid Amount: .00
Address: 1616 CASSAT AVE Labor Cost: 87.66
City: JACKSONVILLE Misc. Expense Amount: .00
State: FL Zip Code:32210 Part Markup Amount: .00
Country: USA Region Code: NA Material Cost: .00
Phone: (904)387-6541 Total Cost Gross: 87.66

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Cust. Concern Code: H39 - TRACTION CONTROL/ADVANCE TRAC WARNING LIGHT TRBLS
Condition Code: 28 - OPEN CIRCUIT
Technician Comment: VERIFY CONCERN,PERFORM SELF TEST TO ABS & PSCM, RECEIVE U0001:88,C1BOO:86,C200B:62,C200C:2F,PERFORM PINPOINT B PER INTERACTIVE DYNAMICS,FOUND HIGH RESISTANCE IN ELECTRONIC STEERING GEAR CONNECTORS,INSTALL DIELECTRIC GREASE IN ALL 3 CONNECTORS,PER FORM TEST DRIVE TO VERIFY DTC'S DID NOT RETURN, OPERATING AS DESIGNED. CC 42 1621
Customer Comment: SVC ADVANCE TRAC & PWR STEERING ASSIST FAULT COMES ON INTERMITTANTLY WHILE DRIVING. WHEN THIS OCCURS, POWER STEERING IS INOP...ADVISE

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| Labor Op Code | Labor Op Description | Labor Op Cost |
|---|---|---|
| MTWIRING | 87.66 | |

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| Causal Flag | PREF | Full Part Number BASE | SUFF | Part Description | Part CPSC | Extended Quantity | Amount |
|---|---|---|---|---|---|---|---|
| Y | * | 14401 | * | WIRE ASY MAIN LOOM | 180102 | 0 | .00 |

Regards,
Brad Jackson

Chassis Resident Engineer
Chicago Assembly Plant
Ford Motor Company
Phone: +1.313.805.4798
bjackson@ford.com