PE14-030

FORD

12/19/2014

APPENDIX B

APPENDIX E PAGE 6

APPENDIX PAGE 21

APPENDIX PAGE 29

APPENDIX PAGE 32

APPENDIX PAGE 50

APPENDIX PAGE 56

APPENDIX PAGE 65

APPENDIX L PAGE 65

APPENDIX PAGE 66

PE14-030

FORD

12/19/2014

APPENDIX B

2010 thru 2012 Model Year Ford Fusion, Lincoln MKZ,
2010 thru 2011 Model Year Mercury Milan
Alleged EPAS failure while driving, resulting in increased steering effort

OWNER REPORTS

As the agency is aware, within FCSD's North American Customer Service Operations, there is a Customer Relationship Center (CRC) that is responsible for facilitating communication between customers, dealerships and Ford Motor Company. Among other things, the CRC handles telephonic, electronic, and written inquiries, suggestions, informational requests, and concerns ("contacts") from Ford and Lincoln-Mercury vehicle owners about their vehicles or sales and service experience. The contacts are handled by CRC customer service representatives who enter a summary of the customer contact into a database known as FMC360.

The CRC assigns to each vehicle-related contact report a "symptom code" or category that generally characterizes the nature of the customer contact or vehicle concern, as described by the owner. The CRC does not undertake to confirm the accuracy of the description provided by the owner; they simply record what is reported. Therefore, given the complexity of the modern motor vehicle, it is Ford's experience that a significant percentage of owner contacts do not contain sufficient information to make a technical assessment of the condition of the vehicle or the cause of the event reported. Accordingly, although owner contact reports contact reports may be useful in identifying potential problems and trends, the records are not the empirical equivalent of confirmed incidents and/or dealership's diagnosis. In the interest of responding promptly to this inquiry, Ford has not undertaken to gather the electronic images related to these contacts because of the largely duplicative nature of the information contained in the images, as well as the time and the burden associated with locating and producing those documents. The pertinent information related to those contacts generally would be included in the contact reports obtained from the FMC360-system. To the extent that those documents exist, they are characterized in the comments of FMC360 contact reports. Upon request, Ford will attempt to locate any specific items that are of interest to the agency.

In responding to this information request, Ford electronically searched the FMC360 database using the following criteria:

Model Year: 2010 thru 2012

Subject Vehicle: Ford Fusion, Lincoln MKZ, and Mercury Milan vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2009 through November 22, 2014 (the date of this inquiry).

Types of Contacts: All, including suspended data, canceled contacts and inquiries

FMC360 Symptom Code(s):

Symptom Category	Symptom Code	Symptom Description
Stop/Steer/Ride	662xxx	Steering/Steering Wheel

FMC360 Case Classifications:

Level 1	Level 2	Level 3	Level 4
Dealer – Vehicle Concern	Legal		
Vehicle Concern	Legal		
Feedback	Product	Negative	Vehicle Safety/Quality

LEGAL CONTACTS

Beginning in early 2008, most consumer complaints and all legal claim processing has been centralized in OGC within the Consumer Litigation team. A transition has occurred such that all legal contacts (including those formerly handled by "Litigation Prevention") are coordinated through this team.

Prior to the transition, there was a Consumer Affairs Department within FCSD that managed customer concerns, which could not be resolved by the Customer Relationship Center (CRC). Among other things, the Consumer Affairs Department had a section, known as "Litigation Prevention," that handled a variety of informal (i.e., non-litigation) claims, such as property damage claims or attorney demand claims.

The Litigation Prevention section had been centralized in the Consumer Affairs Department since 1995, in Dearborn, Michigan. Prior to that time, Litigation Prevention personnel operated on a regional basis. For matters that the Litigation Prevention section handled, there were typically paper files that reflected the handling, investigation and resolution of property damage claims.

The claims, known as "Legal Contacts" are entered into the FMC360 database that the CRC uses to enter other customer communications. When a customer contact is designated as a Legal Contact, it is so indicated near the top of the contact report.

FIELD REPORTS

Within FCSD, there is a Vehicle Service & Programs Office that has overall responsibility for vehicle service and technical support activities, including the administration of field actions. That Office is the primary source within Ford of vehicle concern information originating from Ford and Lincoln-Mercury dealerships, field personnel, and other sources. The information is maintained in a database known as the Common Quality Indicator System (CQIS). The CQIS database includes reports compiled from more than 40 Company sources (e.g., Company-owned vehicle surveys, service technicians, field service and quality engineers, and technical hot line reports, etc.) providing what is intended to be a comprehensive concern identification resource. As with FMC360 contact reports, CQIS reports are assigned a "symptom code" or category that generally reflects the nature of the concern.

In responding to this information request, Ford electronically searched CQIS using the following criteria:

Model Year: 2010 thru 2012

Subject Vehicle: Ford Fusion, Lincoln MKZ, and Mercury Milan vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2009 through November 22, 2014 (the date of this inquiry).

Symptom Code(s):

Symptom Category	Symptom Code	Symptom Description
Stop/Steer/Ride	662xxx	Steering/Steering Wheel

OASIS MESSAGES

FCSD is responsible for communicating a variety of vehicle and service information, such as warranty information for up to the past 360 days, Extended Service Plan part coverage information, and technical repair information, to North American Ford and Lincoln dealers. This information is communicated primarily through OASIS, which serves as an electronic link between Ford Motor Company and the dealers. OASIS covers all North American Ford and Lincoln-Mercury cars and light trucks, and medium and heavy-duty Ford trucks, for the ten most current model years. Technical diagnostic and repair information on OASIS is contained in Special Service Messages (SSMs) and Technical Service Bulletin (TSBs) titles and brief summaries. It should be noted that dealers cannot access brief summaries.

SSMs and TSB titles are coded in OASIS by model year and vehicle line, and may be coded to other specific vehicle attributes (body style, engine code, or vehicle identification number) and one or more OASIS Service Code(s). The dealers with access to OASIS usually search for information on the database by entering a VIN and the applicable Service Codes. SSMs and TSB titles that become inactive or superseded continue to be accessible by Ford employees, but no longer are accessible by the dealers. Dealers also are able to determine the recalls applicable to a particular vehicle by searching a particular VIN in OASIS. Recall information available on OASIS cannot be searched by Service Codes.

In responding to this information request, Ford searched Global OASIS for active, inactive, and superseded TSB titles and SSMs using the following search criteria:

Model Year: 2010 thru 2012

Subject Vehicle: Ford Fusion, Lincoln MKZ, and Mercury Milan vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2009 through November 22, 2014 (the date of this inquiry).

OASIS Service Code(s):

Symptom Category	Symptom Code	Symptom Description
Stop/Steer/Ride	6620xx	Steering/Steering Wheel - Other
Stop/Steer/Ride	6623xx	Steering/Steering Wheel - Feel/Wander/Pull
Stop/Steer/Ride	6624xx	Steering/Steering Wheel - Performance
Stop/Steer/Ride	662Zxx	Steering/Steering Wheel - Not Listed

OASIS 2 and Global OASIS are not capable of performing electronic word searches, so the search results are reviewed manually to determine their applicability to the alleged defect in the subject vehicles.

The OASIS database also contains Broadcast Messages. Typically, these messages are directed to all dealerships and either are notifications of new SSMs/TSBs, or announcements with non-technical information (for example, "the Dealer Hotline will be closed today"). Broadcast Messages cannot be searched by OASIS service codes, and can be retrieved only while active (approximately 2 to 4 days). Ford has not undertaken to search for Broadcast Messages because Ford expects that any responsive information obtained with such a search generally would be non-substantive in nature or duplicative of the information obtained with the TSB title and SSM search described above.

INTERNAL SERVICE MESSAGES

FCSD, as part of its technical support activities, maintains fleet and technical telephone "hotlines." During the early stages of Ford's efforts to identify and resolve potential vehicle concerns, hotline personnel may draft Internal Service Messages (ISMs) on CQIS for their internal use. The ISMs are assigned a CQIS "symptom code" or category that generally reflects the nature of the concern. An ISM can form the basis for an oral response over the technical hotline to an inquiry from an individual dealer or fleet technician. The ISMs, however, are not made available electronically to fleets and dealers. Therefore, although ISMs are not "issued" to dealers like OASIS messages, Ford is construing this request broadly to include ISMs that may be related to the alleged defect in the subject vehicles.

In responding to this information request, Ford searched CQIS for active ISMs using the following search criteria:

Model Year: 2010 thru 2012

Subject Vehicle: Ford Fusion, Lincoln MKZ, and Mercury Milan vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2009 through November 22, 2014 (the date of this inquiry).

CQIS Symptom Code(s):

Symptom Category	Symptom Code	Symptom Description
Stop/Steer/Ride	6620xx	Steering/Steering Wheel - Other
Stop/Steer/Ride	6623xx	Steering/Steering Wheel - Feel/Wander/Pull
Stop/Steer/Ride	6624xx	Steering/Steering Wheel - Performance
Stop/Steer/Ride	662Zxx	Steering/Steering Wheel - Not Listed

The CQIS database in which the ISMs reside is not capable of performing word searches, so the search results were reviewed manually to determine their applicability to the alleged defect in the subject vehicles.

FIELD REVIEW COMMITTEE

Ford's Field Review Committee reviews all potential field service actions, including safety recalls and customer satisfaction programs, and recommends appropriate actions to corporate management. A Vehicle Service & Programs representative serves as Secretary to the Field Review Committee. Following approval of a field service action, the Vehicle Service & Programs Office prepares and launches the action. A representative copy of the communication to Ford's dealers, fleets, and Regional offices announcing the field service action is maintained in the Field Review Committee files.

WARRANTY

Ford's Analytical Warranty System (AWS) contains warranty claims and vehicle information for model years 1991 and forward for North America, and model years 1992 and forward for Europe.

Ford performed a search of AWS for potentially responsive reports using the following search criteria:

Model Year: 2010 thru 2012

Subject Vehicle: Ford Fusion, Lincoln MKZ, and Mercury Milan vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Base Part Number(s):

3504 Gear Asy – Steering

Customer Concern Code(s):

CCC	Description
H22	STEERING REQUIRES EXTRA OR UNEVEN EFFORT
H50	POWER STEERING TROUBLES

PE14-030

FORD

12/19/2014

APPENDIX E

MY	MODEL	VIN	Report_Date	Mileage	Cat	Source
2010	FUSION	3FAHP0JG6AR[redacted]	21-Oct-11	20000	A3	Claim FMC360
2010	FUSION	3FAHP0HA2AR[redacted]	30-May-12	46000	A3	FMC360
2010	FUSION	3FAHP0HA1AR[redacted]	08-Nov-12	29530	A3	CQIS
2010	FUSION	3FAHP0HA1AR[redacted]	19-Feb-13	32000	A3	FMC360
2010	FUSION	3FAHP0HA7AR[redacted]	03-Dec-13	74000	A3	FMC360
2010	FUSION	3FAHP0HA2AR[redacted]	08-Jan-14	28000	A3	FMC360
2010	FUSION	3FAHP0HAXAR[redacted]	02-Jun-14	140000	A3	FMC360
2010	FUSION	3FAHP0HG2AR[redacted]	07-Oct-14	95000	A3	FMC360

2011	FUSION	3FAHP0JG1BR[redacted]	14-Jan-11	4860	A2	Claim FMC360
2011	FUSION	3FAHP0HA9BR[redacted]	17-May-11	1501	A4	CQIS
2011	FUSION	3FAHP0JG3BR[redacted]	04-May-12	5398	A3	FMC360
2011	FUSION	3FAHP0HG8BR[redacted]	06-Sep-12	22000	A3	FMC360
2011	FUSION	3FAHP0HA3BR[redacted]	18-Jun-13	15248	A3	Claim CQIS

2011	FUSION	3FAHP0HA9BR[redacted]	11-Sep-13	0	A4	FMC360
2011	FUSION	3FAHP0HA4BR[redacted]	22-Oct-13	52000	A3	FMC360
2011	FUSION	3FAHP0HA0BR[redacted]	11-Apr-14	51000	A4	FMC360
2011	FUSION	3FAHP0HA0BR[redacted]	07-Aug-14	43000	A3	FMC360
2011	FUSION	3FAHP0GA7BR[redacted]	10-Sep-14	58806	A3	FMC360
2012	FUSION	3FAHP0HA2CR[redacted]	09-Aug-12	10000	A3	Claim FMC360

2012	FUSION	3FAHP0HAXCR[redacted]	15-Oct-12	15000	A1	FMC360
2012	FUSION	3FAHP0HA5CR[redacted]	08-Mar-13	0	A3	Claim FMC360
2012	FUSION	3FAHP0CG2CR[redacted]	12-Jun-13	6155	A3	Claim CQIS
2012	FUSION	3FAHP0GA5CR[redacted]	12-Jun-13	20000	A4	Claim FMC360
2012	FUSION	3FAHP0JA1CR[redacted]	22-Aug-13	62000	A3	Claim FMC360
2012	FUSION	3FAHP0JA7CR[redacted]	18-Oct-13	23000	A3	Claim FMC360
2012	FUSION	3FAHP0JG8CR[redacted]	22-Nov-13	35816	A3	CQIS

2012	FUSION	3FAHP0JGXCR[redacted]	04-Jun-14	5675	A4	FMC360
2012	FUSION	3FAHP0HA5CR[redacted]	07-Oct-14	70000	A3	FMC360
2011	Fusion	3FAHP0JA2BR[redacted]	11/4/2013		A3	Claim
2011	Fusion	3FAHP0JA2BR[redacted]	12/2/2013		A4	Claim
2010	Fusion	3FAHP0HA6AR[redacted]			A1	Lawsuit
2011	Fusion	3FAHP0JG1BR[redacted]	10/24/2011		A3	Claim
2012	FUSION	3FAHP0JA6CR[redacted]	1/8/2013		A4	Claim
2010	FUSION	3FAHP0HA5AR[redacted]	7/21/2014		A4	Claim

Inquiry	Alleged_Accident	Alleged_Fire	Alleged_Injury	Alleged_Fatality
PE14-030	Y			
PE14-030	Y			
PE14-030	Y		0	0
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030			1	
PE14-030	Y			

PE14-030	Y		1	
PE14-030	Y		0	0
PE14-030		Y		
PE14-030	Y			
PE14-030	Y		0	0

PE14-030	Y			
PE14-030	Y		1	
PE14-030	Y			
PE14-030			1	
PE14-030	Y			
PE14-030	Y		1	

PE14-030	Y			
PE14-030	Y			
PE14-030	Y		0	0
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y		0	0

PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			
PE14-030	Y			

Comments
Claim: Alleged loss of assist while driving, undefined accident. No injury. Wheels damaged. VERFIED THE CONCERN WITH THE WHEELS, SEEKING ASSISTANCE =CUST WANTS TO HAVE THIS COVERED AS WAS UNAVOIDABLE =ADVISED CUST THAT DAMAGE IS NORMALLY NOT COVERED BY FORD AS OUTLINED UNDER THE WARRANTY MANUAL=ADVISED CUST LEGAL QUESTIONS AND WOULD ESCALATE TO THE OGC, WOULD RECEIVE CONTACT BY MAIL WITHIN 15 BUSINESS DAYS1. DATE OF THE ACCIDENT=NOT SURE, AROUND 9-16-11 WHEN THE POWER STEERING WENT OUT--2. WHAT THE CUSTOMER IS ALLEGING THE PRODUCT DEFECT IS THAT CAUSED ACCIDENT=CUST FEELS THAT STEERING PUMP WENT OUT AND CAUSED HER TO BE UNABLE TO AVOID ROAD HAZARDS
CUST'S DAUGHTER WAS DRIVING THE VEH - WENT TO A FILLING STATION FROM HER HOME**SHE TOPPED OFF THE GAS - ON THE WAY BACK HOME, SHE WAS ABOUT 3 BLOCKS FROM HOME WHEN THE POWER STEERING WENT OUT ON IT**SHE WENT OVER A CURB BECAUSE SHE COULDN'T CONTROL THE VEH AND A RIM BENT ON THE VEH**DLRSHP SAID THAT IF YOU HIT A POT HOLE HARD ENOUGH, IT CAN CAUSE THE POWER STEERING TO GO OUT**TO CUST, THAT DOESN'T SOUND RIGHT - THIS COULD BE A DANGEROUS SITUATION**THE DRIVE TENSIONER WAS SQUEALNG**LOW TIRE PRESSURE SENSOR CAME ON - DLRSHP COULDN'T FIND ANY PROBLEM WITH IT - LOW TIRE PRESSURE WOULD NOT CLEAR**VEH HAS HAD PREVIOUS CONCERNS**CUST WOULD LIKE TO BE REIMBURSED FOR THIS EXPENSE BECAUSE IT WAS NOT HIS FAULT
CONCERN:CUSTOMER STATES VEHICLE LOST POWER STEERING WHEN DRIVING CAUSING VEHICLE TO HIT BUILDING. DIAGNOSTICS: CHECKED OASIS,EEC TEST NO CODES,ROAD TEST AND POWER STEERING WORKS FINE.SELF TEST PSCM,PID MONITOR AND CHECKED FUSES WIRING AND CONNECTORS.PARTS REPLACED:NONETECH QUESTION: I HAVE SEEN BAD ELECTRIC POWER STEERING RACKS ON SOME FUSIONS BUT ALWAYS HAVE CODES.THIS VEHICLE HAS NO CODES.HAVE YOU SEEN ANY CASES WHERE THE POWER STEERING IS INOP WITH NO CODES?IF NOT
CUS VEH DROVE OVER ICE PATCH..--STEERING ASSIST FAILED..--STEERING TURNED VEH TO RIGHT WHEN CUS WAS TRYING TO TURN VEH TO LEFT..--BROKEN AUTO STEERING ASSIST..--VEH HIT GUARDRAIL..--CUS PAID TOWING TO NON-FORD MECHANIC, OVER $900..--CUS WAS MADE AWARE OF ROADSIDE ASSISTANCE..--ROADSIDE TOWED TO DLR..--VEH AT DLR..--
..***CUST STATES ***..- POWER STEERING WENT OUT ON VEH ..- UNABLE TO MAKE A TURN ..- HAD TO MAKE A DANGEROUS TURN AND ALMOST GOT INTO ACCIDENT WITH HIS FAMILY IN THE CAR ..- BOTTOM OF THE FRONT END OF HIS VEH IS SCRAPED ..- VEH HAS NOT BEEN TO THE DLR
CUST SAYS:..-CUST WAS UNABLE TO STEER THE VEH CORRECTLY ..-POWER STEERING WOULD NOT WORK..-DLRSHP HAS VEH..-SLIGHT 3 1/2 INCH BUMP ON THE HUB ..-DLRSHP STATES THAT CUST RAN OVER A CURB OR SOMETHING THAT KNOCKED THE STEERING OUT
CUSTOMER SAYS:..The power steering in her veh has gone out like the SUV's that have been recalled. she was driving down the highway and then the power steering was gone. She has hurt her shoulder trying to drive the veh, she is unemployed and cannot pay to have the veh repaired.
His car was towed to the dealer with power steering problems. He was told his Rack and Pinion is gone. Everything he has seen shows the new electric power steering is faulty. He was driving down the road and it locked up. He was unable to turn or anything and he ended up hitting a curb causing the rim to be bent. Dealer said there is nothing he can do as it was in an accident. But the cause of the accident was power steering locking up. ....Ongoing problem with these types of vehicles per his research. Wants his car fixed

Claim: Alleged while driving through snow, the PS light came on and steering locked up, hit curb. No injury. CUSTOMER SAID: 1. DATE OF THE ACCIDENT1/8/112. WHAT THE CUSTOMER IS ALLEGING THE PRODUCT DEFECT IS THAT CAUSED ACCIDENT-LAST WEEK AFTER DRIVING THROUGH THE SNOW A LIGHT CAME ON STATING SERVICE POWER STEERING SOON-AFTER THAT THE STEERING WHEEL LOCKED UP AND CUST ENDED UP HITTING INTO A CURB-DLR TOLD CUST THAT THE ISSUE HAPPENED BECAUSE HE HIT A CURB3. IF THERE WERE ANY INJURIES SUSTAINED-CUST IS HAVING SOME BACK ISSUES AFTER INCIDENT4. LOCATION OF THE VEHICLE WHEN THE ACCIDENT OCCURRED-CUST WAS DRIVING HWY 2065. WHETHER OR NOT THERE WAS A POLICE REPORT FILED.-NO6. IF A POLICE REPORT WAS FILED, WHAT THE FINDINGS WERE.-NA7. THE POLICE REPORT NUMBER AND THE CITY OR COUNTY IN WHICH THE REPORT WAS FILED.-NA8. WHETHER OR NOT THE CUSTOMER HAS FILED A CLAIM WITH THEIR INSURANCE COMPANY.-THE CUST OPENED A CLAIM WITH INSURANCE AND INSURANCE TOLD CUST TO CALL CRC9. IF A CLAIM HAS BEEN FILED WITH THE INSURANCE COMPANY, WHAT IS THE STATUS OF THE CLAIM.-TOLD CUST TO SPEAK WITH FORD ABOUT ISSUE BEFORE THEY WENT FURTHER INTO
CONCERN: CUSTOMER STATES STEARING LOCKED UP AND HE HITA POLE STEARING IS OFF CENTER GOT 2 CODES U2011:61 AND A C1277 THAT CODE IS BECAUSE STEARING WHEEL HAS CENTERD IT SELF BUT TIRES ARE OUT OFALIGNMENT DIAGNOSTICS: JUST RETRIVED CODESPARTS REPLACED:: NONETECH QUESTION: COULD STEARING LOCK UP AND TRIP THATCODE 2011 I HSVE NOT VERIFIED THAT BUT HE DID HIT SOMTHING IF I PUT A PART IN HES GOING TO BLAME IT ON THAT COULD THAT MOTOR CODE DO WHAT HEIS SAYING SHOULD I PUT A RACK ASSY IN WERE YOU ABLE TO VERIFY THE CONCERN? NOIS THERE AN APPROPRIATE PINPOINT TEST IN THE WSM FOR THIS CONCERN? NOWAS THE PINPOINT TEST FOLLOWED?SYMPTOM 3 03 1
HARD TO TURN STEERING2. SMOKE COMING FROM UNDER THE HOOD3. BURNING ODOR--HAPPENED LAST NIGHT--CUST TURNED OFF THE VEH 4. STABILTY CONTROL LIGHT CAME ON --CUST TOOK THE VEH TO THE DLR --THE S/M WAS RUDE --THE FIRST QUESTION THE DLR ASKED WAS WHICH DLR HE BOUGHT THE VEH--THE DLR HOOKED THE VEH UPTO THE DIAGNOSTIC MACHINE--THE DLR SAID THEY CANT FIND ANYTHING WRONG --CUST IS SEEKING FOR THE VEH TO BE REPAIRED --
POWER STEERING WENT OUT ON FRIDAY -TOOK VEH TO DEALER -DEALER IS GOING TO REPLACE THE WHOLE STEERING UNIT -CUST IS VERY CONCERNED BECAUSE HIS VEH IS STILL UNDER B2B -CUST WANTS TO GET RID OF VEH -CUST WENT INTO A DITCH BECAUSE HE COULD NOT STEER THE VEH -CUST WANTS AN EXTENDED WARRANTY
Claim: Cust states veh lost p/s and threw him into the guard rail damaging the vehicle. No injury noted. CONCERN: CUSTOMER STATES THAT VEHICLE LOST POWER STEERING WHICH RESULTED IN HAVING VEHICLE COLLIDE INTO GUARDRAIL.DIAGNOSTICS: NO DTCS, TSBS OR SSMS FOUND FOR CONCERN. PERFORMED PSCM SELF TEST WHICH PASSED WITH NO ISSUES. VISUAL INSPECTION OF STEERING AND SUSPENSION COMPONETS SHOW NO SIGNS OF DAMAGE THAT WOULD HAVE RESULTED IN A LOSS OF POWER STEERING. PERFORMEDPINPOINT TEST I:POOR RETURNABILITY/STICKY STEERING AND LACK OF ASSIST OR INCONSISTENT ASSIST. I1=YES; I2=NO. PERFORMED PINPOINT TEST D:THE PSCM DOES NOT RESPOND TO THE SCAN TOOL. D1=YES; D2=YES, D3=YES AND D4=NO. PINPOINT TEST I&D WERE SELECTED OUT OF THE SYMPTOM CHART TO ENSURE PROPER OPERATION OF EPAS SYSTEM EVEN THOUGH SYSTEM COMMUNICATESPROPERLY AND NO DTCS WERE PRESENT. NO ISSUES WERE FOUND WITH THE EPAS SYSTEM.PARTS REPLACED: NONE.TECH QUESTION: ARE THERE ANY OTHERDIAGNOSTIC STEPS I SHOULD PERFORM TO

Cust states her daughter was driving the vehicle on Sunday and when she went to change lanes from the left lane to the right lane, the steering system locked and would not allow her to turn. Cust states her daughter also said that the brakes got very hard and she could not brake either. Cust states her daughter hit a curb on the right side and blew out both right side tires. Vehicle towed to dealership for inspection. Dealer raised vehicle to inspect. No visible damage to steering or body. Damage is to both right side tires, both right side wheels, and 1 rt side hubcap. Damage is on sidewall of tires and outer edge of rims. Dealer connected scanner to vehicle and no codes stored. Dealer placed a loaner set of rims and tires on vehicle and drove for 30 miles with scanner to monitor if any failure of electric steering would occur. Vehicle drove fine. Dealer advised customer that no failure of steering was found . No codes and no defective parts. Dealer also reviewed for any bulletins . No bulletins based on the build date of this vehicle. Dealer discussed with customer that brakes and steering are independent of one another. Electric steering failure would not cause brakes to get hard and any brake issue would not causing steering to lock. In failure of electric steering, manual steering is still present. Cust insists that her daughter would not give her any incorrect information and she is not wanting to turn it into her insurance. She feels Ford should resolve her repairs under a warranty repair. Dealer has
CUCT SAID ..Accidents ..DRIVING AT 40-45 AND THE STEERING WENT OUT ..-CUST WENT INTO A DITCH AND ROAD THE DITCH AND HIT A TREE ..VEH IS AT A BODY SHOP COLLISION PLUS IN DRY RIDGE KY ....1. Were any injuries sustained? CUST HURT HIS NECK AND BACK AND BRUISES EVERYWHERE ..-THE RIGHT KNEE HAD HIT THE DASH AND WAS CUT OPEN
CUST. STATES:.. steering wheel got stuck, and caused the car and the customer caused accident. took to the chevy dealer to have body work done, problem has happened 3 or 4 times. cust is dropping the veh off to dealer tonight
CUST STATES POWER STEERING FAILED, REQUIRED A LOT OF EFFORT TO TURN AND..HE HURT HIS BACK, DISAPPOINTED WITH THE FAILURE OF THE RACK TOO, COST 1600 TO REPLACE DOESNT THINK FORD CARES, I ADVISED WE MOST CERTAINLY DO BUT HE IS DISENCHANTED
CUSTOMER SAYS..The customer has a Fleet of Fusions. There are 18 vehicles. 4 of the vehicles are experiencing concerns. There is a power steering concern. 2 vehicles have been in an accident due to the concern.
Claim: Alleged while coming to a stop, lost steering assist and brakes, hit curb. Injured elbow from force input into wheel. NEW FUSION-HAD A PROBLEM WITH***STEERING AND BRAKES WENT OUT***WORRIED ABOUT DRIVING THE VEHICLE STILL EVEN AFTER BEING FIXED***TRAC SYSTEM AND POWER STEERING-***THE CUSTOMER EXPRESSED HIS CONCERN OVER THE SAFETY OF THE VEHICLE. THE CUSTOMER STATES HE INJURED HIS RIGHT ARM WHEN THE STEERING FAILED. THE CUSTOMER SAID THEY HAVE A NEW BORN AND HIS WIFE PREGNANT. ADVISED THE CUSTOMER DUE TO HE IS ALLEGING AN INJURY THIS NEEDS TO BE REPORTED TO THE CORRECT DEPT AND I DO NOT HAVE THE ABILITY TO ESCALATE IT. PROVIDED THE NUMBER TO THE CRC AND ASKED HIM TO CALL AND REPORT HIS INJURY SO THE INFORMATION CAN BE SENT TO THE CORRECT DEPT.

CUST SAYS:-CUST LOST POWERSTEERING WHICH CAUSED HER TO HAVE AN ACCIDENT-VEH WAS IN AN ACCIDENT AROUND THE END OF AUGUST AND BEGINING OF SEPTEMBER -CUST HIT A POLE -THE RIGHT SIDE OF THE VEH WAS DAMAGED -HAS BEEN HAVING THE SAME ONGOING ISSUE FOR MONTHS -THE VEH WAS TOWED TO A COLLISION SHOP AND REPAIRED BY HER INSURANCE COMPANY-ABOUT 6 WEEKS LATER, CUST LOSSED POWERSTEERING AGAIN -TOOK THE VEH BACK TO BAKER THE FORD DLR -THEY RESET IT AND A FEW WEEKS LATER, THE POWERSTEERING WENT OUT AGAIN-CUST IS AT THE FORD DLR NOW -CUST FEELS THAT THE VEH IS UNSAFE AND -CUST IS SEEKING BUYBACK -CUST WANTS TO FEEL SAFE AND SECURE WHILE DRIVING ***DLR INFO:AUTOFAIR FORD, LP 1475 S WILLOW STREETMANCHESTER, NH 03103(866) 499-5616 ***CRC ADV:I HAVE DOCUMENTED YOUR CONCERNS AND AM SENDING YOUR INFORMATION TO OUR CUSTOMER CARE SOLUTIONS TEAM. YOU WILL BE CONTACTED BY A SPECIALIST TO DISCUSS YOUR ISSUE BY CLOSE OF BUSINESS TOMORROW. THIS DOES NOT GUARANTEE THAT FORD WILL BUYBACK YOUR VEHICLE. FORD'S COMMITMENT IS TO HONOR THE NEW VEHICLE LIMITED WARRANTY.===PER TL SANDUI, RUN CASE AS A BUYBACK AND NOT LEGAL SINCE THE CUST HAS HAD THE VEH REPAIRED AND IS NOT LOOKING FOR COMPENSATION FROM FMC Activity: SYS017 Date: 8/6/2013 5:23:33 PM THIS
Claim: Alleged power steering failed and when off road, causing damage to fender and suspension. NPF at dealer. No injury noted. CUST CALLED IN STATING HER POWER STEERING WENT OUT AND IT CAUSE HER TO TURN OPPOSITE AND HAD AN ACCIDENT CAUSING FENDER DAMAGE. ..CUST ALSO STATED DEALERSHIP HAD FELICIA FROM FORD COME OUT TO LOOK AT IT AND CLAIM WAS DENIED. CUST STATED THEY ORDERED PARTS FOR POWER STEERING AND WAITING ON FENDER.....CUST RECIEVED A CALL STATING CLAIM DENIED. CUST WAS MORE WORRIED ABOUT POWER
Claim: Cust lost all p/s assist, scraped a curb, damaged both right side rims and blew out a tire. No injury noted. CUSTOMERS CONCERN.CUSTOMER STATES WHILE DRIVING IN A PARKING LOT THE POWER STEERING LOST ALL ASSIST AND SHE HIT A CURB WITH BOTH RIGHT SIDE WHEELS - DAMAGED RT FRT TIRE AND DAMAGED BOTH RIMS2. WHAT IS THE INTENDED REPAIR, LIST ALL COMPONENTS NEEDED FOR REPAIR?REPLACE THE RACK AND PINION FOR U2011INTERNAL FAULT, REPLACE TWO DAMAGED RIMS ANDONE TIRE AND ALIGN VEHICLE3. PROVIDE ANY ADDITIONAL DETAILS NECESSARY. PLEASE INCLUDE ANY AVAILABLE TECHNICAL INFORMATION THATYOU BELIEVE WILL HELP PROCESS YOUR PRIOR APPROVAL REQUEST.CONCERN
Claim: Cust states advance trac light came on, lost all P/S and ran into a ditch. No injury noted. WHAT IS THE VEH DOING?.. A. STEERING COLUMN LOCKED UP AND ENDED UP IN A DITCH..2. WHERE IS THE VEH? AT THE DLRSHP ..3. HAS THE VEH BEEN TO THE DLRSHP? YES; BUT THEY WONT DO THE REPAIR BECAUSE STATEFARM WANTS THEM TO REIMBURSE FOR DAMAGES AND MEDICAL; APPARENTLY STATEFARM IS SUING..4. CUST IS SEEKING? WANTING A VEHICLE AND HELP WITH LOSS OF WAGES....****ACCIDENT QUESTIONS..1. Were any injuries
Claim: Cust lost p/s and hit a median. Lost assist light on. No injury noted. FOR REPAIR OF POWER STEERING AND NO EST FOR BODY WORK YET ..--cust lost power steering and hit median..1. Were any injuries sustained?..NO INJURY ..2. What are you seeking from Ford Motor Company? ..Financial Reimbursement-
Claim: p/s function ceased and cause veh to collide with side rail on road. No injuries. VEHICLE'S POWER STEERING FUNCTION CEASED AND CAUSED VEHICLE TO COLLIDE WITH SIDE RAIL ON ROAD..-CUSTOMER SEEKING COMPENSATION..-
CONCERN: CUST. STATES POWER STEERING QUIT WHILE DRIVING AND SHE HIT A CURB. CUST. STATED THAT POWER STEERING HAS QUIT A NUMBER OF TIMES BEFORE AND THEN RETURNED TO NORMAL.DIAGNOSTICS: RAN SELFTEST ON PSCM. GOT CODES U0415 AND P07AE IN MEMORY. HAD PASS CODE IN ODDTC. CLEARED MEMORY CODES AND POWER STEERING RETURNED TO NORMAL.PARTS REPLACED: NONE YETTECH QUESTION: LOOKED AT HAR TRACKER AND FOUND 7 OTHERSIMILAR CONCERNS. ALL WERE REPAIRED WITH GEAR REPLACEMENT. I FEEL GEAR SHOULD BE REPLACED ALSO, BUT IT IS

CUSTOMER SAYS:..Customer calling to let us know he was in an accident because the steering went dead and the wheel would not move. He is not seeking anything, just letting us know because his vehicle has two throttle body CSPs on it....
CUST SAYS:..I have a question, a concern and a complaint. I was rear ended in august of this year. They were insured by state farm. The power steering in the vehicle went out in the collision. They are saying that the power steering would have gone out anyway. They are denying the claim for the power steering to be repaired. Is there any recalls on my vehicles power steering. ....PER CUST DEALER SAYS:..n/a....CRC ADVISED:..creating a case documenting your concerns. Advised that there is no recalls on the vehicle regarding the power steering. Advised that he needs to stay in touch with state farm about
Loss of p/s due to faulty steering rack. Undefined accident. No evidence of a steering defect found on road test. Hotline said to replace rack. No injury
Power steering suddenly locked up causing insured to not have control of veh. Hit highway sign. Damaged grille, bumper, hood. Dealer replaced steering rack per hotline. No injury noted.
5 P/S defects. Was in accident for P/S going out. No details.
Alleged sudden loss of steering assist caused driver to hit curb. No injury noted. Per FSE: no DTC's found and PS works OK.
Alleged power steering went out, could not turn, hit curb. No injury noted.
Check eng and wrench light on - no throttle response, no steering control or brakes going 15-20 into a turn. Undefined crash damaging right side of veh.

PE14-030

FORD

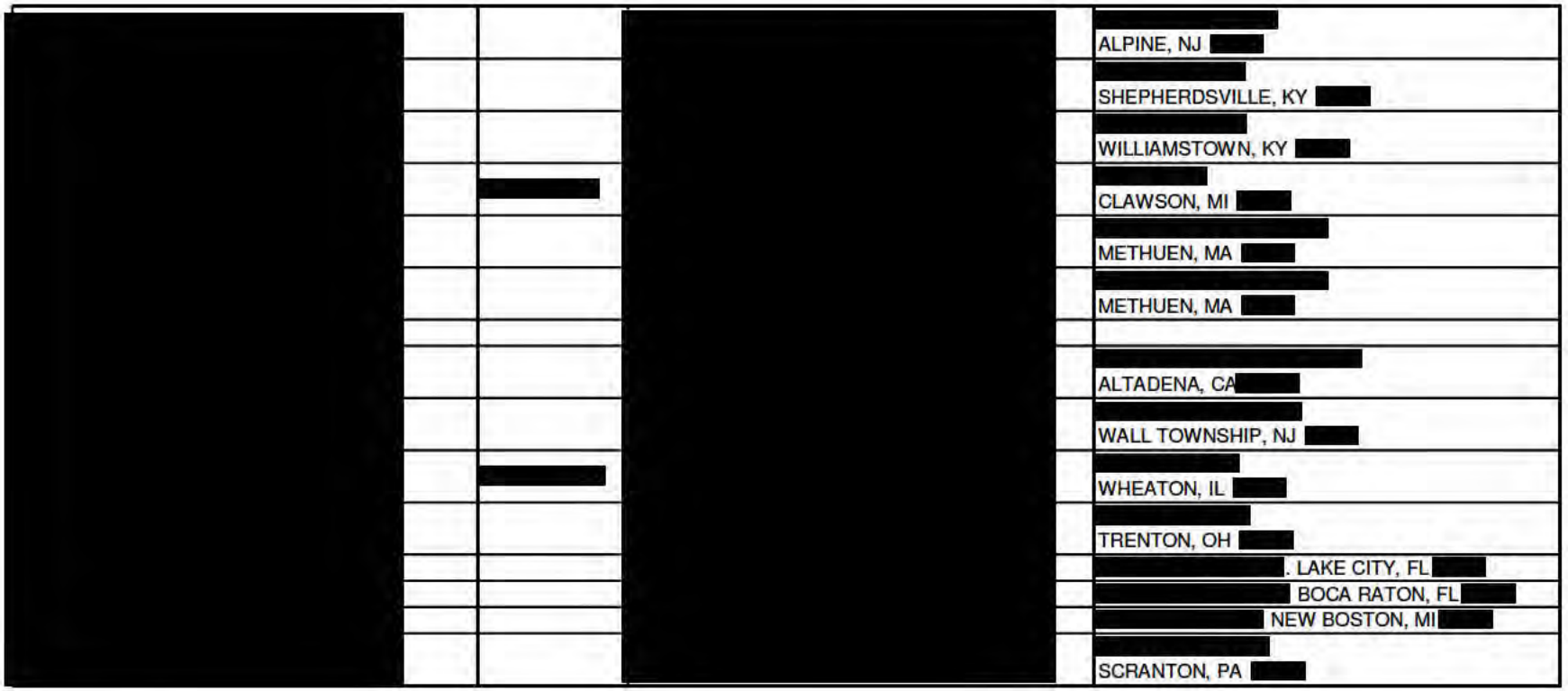
12/19/2014

APPENDIX F

Type	Practice_Area	Case_No	Vehicle_ID	Claimant_Name	Claimant_Address	Claimant_Phone
Claim	Product	D022580	2024648	[redacted]	[redacted] HAWTHORNE, CA [redacted]	
Claim	Product	D044597	2044686	[redacted]	[redacted] ORLANDO, FL [redacted]	
Claim	Product	D034707	2035174	[redacted]	[redacted] NEWTON, NJ [redacted]	
Claim	Consumer	D044636	2044718	[redacted]	[redacted] ATLANTA, GA [redacted]	[redacted]
Claim	Product	D044744	2044803	[redacted]	[redacted] CHAPMANVILLE, WV [redacted]	
Claim	Consumer	D059167	2052635	[redacted]	[redacted] ASHLAND CITY, TN [redacted]	
Claim	Product	D060405	2053605	[redacted]	[redacted] DIXON, CA [redacted]	
Claim	Product	D061100	2054088	[redacted]	[redacted] STEPHEN, MN [redacted]	
Claim	Product	D066092	2057779	[redacted]	[redacted] WESTLAND, MI [redacted]	
Claim	Consumer	D067548	2058809	[redacted]	[redacted] 1[redacted] BRONX, NY [redacted]	
Claim	Consumer	D067736	2058958	[redacted]	[redacted] BAXLEY, GA [redacted]	
Claim	Product	D067786	2058997	[redacted]	[redacted] OMAHA, NE [redacted]	
Claim	Product	D068432	2059433	[redacted]	[redacted] SOMMERVILLE, MA [redacted]	
Claim	Consumer	D078258	2067664	[redacted]	[redacted] ROCKVILLE, MD [redacted]	
Claim	Product	D080881	2069946	[redacted]	[redacted] PLUMERVILLE, AR [redacted]	
Claim	Product	D081282	2070477	[redacted]	[redacted] CONCORD, OH [redacted]	
Claim	Product	D081420	2070582	[redacted]	[redacted] BUTTE, MT [redacted]	
Claim	Product	D084367	2073794	[redacted]	[redacted] HILLSDALE, NJ [redacted]	
Claim	Product	D084921	2074469	[redacted]	[redacted] MANCHESTER, MO [redacted]	
Claim	Consumer	D085231	2074918	[redacted]	[redacted] BELLE PLAINE, IA [redacted]	

Claim	Consumer	D085927	2075435	[redacted]	[redacted] ALPINE, NJ [redacted]	
Claim	Product	D086302	2075725	[redacted]	[redacted] SHEPHERDSVILLE, KY [redacted]	
Claim	Product	D086399	2075788	[redacted]	[redacted] WILLIAMSTOWN, KY [redacted]	
Claim	Consumer	D086407	2075796	[redacted]	[redacted] CLAWSON, MI [redacted]	[redacted]
Claim	Product	D086895	2076112	[redacted]	[redacted] METHUEN, MA [redacted]	
Claim	Product	D087730	2076765	[redacted]	[redacted] METHUEN, MA [redacted]	
Claim	Product	D095404		[redacted]		
Claim	Product	D096059	2083434	[redacted]	[redacted] ALTADENA, CA [redacted]	
Suit	Consumer	D033566	2034152	[redacted]	[redacted] WALL TOWNSHIP, NJ [redacted]	
Suit	Consumer	D039132	2039880	[redacted]	[redacted] WHEATON, IL [redacted]	[redacted]
Suit	Consumer	D046443	2046378	[redacted]	[redacted] TRENTON, OH [redacted]	
Suit	Consumer	D065203	2057093	[redacted]	[redacted]. LAKE CITY, FL [redacted]	
Suit	Consumer	D082486	2071880	[redacted]	[redacted] BOCA RATON, FL [redacted]	
Suit	Consumer	D088777	2077530	[redacted]	[redacted] NEW BOSTON, MI [redacted]	
Suit	Consumer	D091200	2079419	[redacted]	[redacted] SCRANTON, PA [redacted]	

Rep_Name	Rep_Phone	Owner_Name	Owner_Address
			HAWTHORNE, CA
			DR ORLANDO, FL
			NEWTON, NJ
			ATLANTA, GA
			CHAPMANVILLE, WV
			ASHLAND CITY, TN
			DIXON, CA
			STEPHEN, MN
			WESTLAND, MI
			BRONX, NY
			BAXLEY, GA
			OMAHA, NE
			SOMMERVILLE, MA
			ROCKVILLE, MD
			PLUMERVILLE, AR
			CONCORD, OH
			BUTTE, MT
			HILLSDALE, NJ
			MANCHESTER, MO
			BELLE PLAINE, IA


ALPINE, NJ
SHEPHERDSVILLE, KY
WILLIAMSTOWN, KY
CLAWSON, MI
METHUEN, MA
METHUEN, MA
ALTADENA, CA
WALL TOWNSHIP, NJ
WHEATON, IL
TRENTON, OH
. LAKE CITY, FL
BOCA RATON, FL
NEW BOSTON, MI
SCRANTON, PA

Owner_Phone	Incident_State	Litigation	Jurisdiction	Docket_No	Incident_Date	Notice_Date	Make	Model	MY	VIN	Mileage
	CA				2/27/2010	3/1/2010	Ford	Fusion	2010	3FAHP0HA8AR	
	FL				10/15/2011	10/24/2011	Ford	Fusion	2011	3FAHP0JG1BR	
					1/8/2011	1/18/2011	Ford	Fusion	2011	3FAHP0JG1BR	
	VA					10/27/2011	Ford	Fusion	2011	3FAHP0JA4BR	
	WV					10/24/2011	Ford	Fusion	2010	3FAHP0JG6AR	
	TN					7/23/2012	Ford	Fusion	2011	3FAHP0GA9BR	
	CA				8/8/2012	8/15/2012	Ford	Fusion	2012	3FAHP0HA2CR	
	MN				8/29/2012	9/4/2012	Ford	Fusion	2011	3FAHP0DC9BR	
	MI				12/26/2012	1/8/2013	Ford	Fusion	2012	3FAHP0JA6CR	
						2/14/2013	Ford	Fusion	2010	3FAHP0HA0AR	
	GA					2/19/2013	Ford	Fusion	2011	3FAHP0HA1BR	
	NE				2/15/2013	2/21/2013	Ford	Fusion	2012	3FAHP0HA5CR	
	CT				10/27/2012	10/4/2013	Ford	Fusion	2012	3FAHP0JGXCR	
	MD					3/21/2013	Ford	Fusion	2011	3FAHP0GA9BR	
	AR				5/29/2013	5/31/2013	Ford	Fusion	2012	3FAHP0GA5CR	
	OH				6/11/2013	6/12/2013	Ford	Fusion	2012	3FAHP0CG2CR	
	MT				6/18/2013	6/19/2013	Ford	Fusion	2011	3FAHP0HA3BR	
	NJ				8/7/2013	8/23/2013	Ford	Fusion	2012	3FAHP0JA1CR	
	MO				8/25/2013	9/11/2013	Mercury	Milan Hybrid	2010	3MEDM0L32AR	
						9/20/2013	Ford	Fusion	2011	3FAHP0JG4BR	

	NJ					10/8/2013	Ford	Fusion	2011	3FAHP0JA9BR	
	KY				10/13/2013	10/21/2013	Ford	Fusion	2012	3FAHP0JA7CR	
	KY				9/25/2013	10/23/2013	Ford	Fusion	2011	3FAHP0HA4BR	
	MI					10/23/2013	Ford	Fusion	2012	3FAHP0JA6CR	
	MA				10/17/2013	11/4/2013	Ford	Fusion	2011	3FAHP0JA2BR	
	MA				10/17/2013	12/2/2013	Ford	Fusion	2011	3FAHP0JA2BR	
						7/2/2014	Ford	Fusion			
	CA				7/20/2014	7/21/2014	Ford	Fusion	2010	3FAHP0HA5AR	
	NJ					12/16/2010	Ford	Fusion	2010	3FAHP0HGXA	
	IL					2/8/2012	Ford	Fusion	2010	3FAHP0HA8AR	
	OH					12/23/2011	Ford	Fusion	2010	3FAHP0JGXAR	
	IL					2/25/2013	Ford	Fusion	2011	3FAHP0HA3BR	
	FL					10/22/2013	Ford	Fusion	2011	3FAHP0JA1BR	
	MI					2/14/2014	Ford	Fusion	2010	3FAHP0HA6AR	
	PA					3/19/2014	Ford	Fusion	2010	3FAHP0HA3AR	

Allegations	Ford_View	Disposition	Alleged_Crash	Alleged_Rollover	Alleged_Property_Damage	Alleged_Fire	Alleged_Injuries	Alleged_Fatalities	OGC_Category
AC06		CLSD	Y	N	N	N	0	0	B
ST00		CLSD	Y	N	N	N	0	0	A3
ST11		CLSD	Y	N	N	N	1	0	A2
303000		CLSD	N	N	N	N	0	0	A2
ST16		CLSD	Y	N	N	N	0	0	A3
303000		CLSD	N	N	N	N	0	0	A3
ST00		CLSD	Y	N	N	N	1	0	A3
ST00		CLSD	Y	N	N	N	0	0	A4
ST00		CLSD	Y	N	N	N	0	0	A4
303000		CLSD	N	N	N	N	0	0	A1
303000		CLSD	N	N	N	N	0	0	A3
ST06		CLSD	Y	N	N	N	0	0	A3
ST00		CLSD	Y	Y	N	N	1	0	B
303100		CLSD	N	N	N	N	0	0	A4
ST06		CLSD	Y	N	N	N	0	0	A1
ST06		CLSD	N	N	N	N	0	0	A3
ST06		CLSD	Y	N	N	N	0	0	A3
ST06		CLSD	Y	N	N	N	0	0	A1
ST06		CLSD	Y	N	N	N	0	0	B
303000		CLSD	N	N	N	N	0	0	A4

303000		OPEN	N	N	N	N	0	0	A4
ST06		CLSD	Y	N	N	N	0	0	A3
ST00		CLSD	Y	N	N	N	1	0	B
303000		CLSD	N	N	N	N	0	0	A3
ST11		CLSD	Y	N	N	N	0	0	A3
ST11		CLSD	Y	N	N	N	0	0	A3
		OPEN	N	N	N	N			A3
AC00		CLSD	Y	N	N	N	0	0	A4
303100		CLSD	N	N	N	N	0	0	A3
303000		CLSD	N	N	N	N	0	0	A4
303100		CLSD	N	N	N	N	0	0	A3
303100		CLSD	N	N	N	N	0	0	A1
303000		CLSD	N	N	N	N	0	0	A1
303000		OPEN	N	N	N	N	0	0	A1
303500		OPEN	N	N	N	N	0	0	A2

PE14-030

FORD

12/19/2014

APPENDIX G

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
BASECARE	3 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	4 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	5 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	6 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	7 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
BASECARE	3 Years	48000	13	7	40	1	1	0
		60000	1	2	6	1	0	0
		75000	90	3	2	2	0	0
		100000	2	4	1	2	1	0
		125000	0	2	1	1	0	0
	4 Years	48000	4	3	8	1	4	1
		60000	4	5	35	4	2	0
		75000	1	2	2	2	0	0
		100000	19	14	9	4	2	0
		125000	0	3	4	1	1	0
	5 Years	36000	12	8	138	10	3	0
		48000	2	1	3	2	2	0
		60000	24	27	24	13	9	0
		75000	28	17	28	14	11	1
		100000	314	183	231	12	6	0
		125000	0	5	9	3	1	0
	6 Years	36000	0	1	2	2	0	1
		48000	1	1	2	1	3	0
		60000	3	10	11	7	10	1
		75000	13	26	36	18	15	0
		100000	22	18	39	16	18	1
		125000	0	12	7	3	1	1
	7 Years	36000	2	1	2	2	0	0
		48000	2	1	1	3	3	0
		60000	2	3	4	5	5	0
		75000	8	5	18	11	5	0
		100000	13	23	33	16	11	1
		125000	0	8	15	4	3	0

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
EXTRACARE	3 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	4 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	5 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	6 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	7 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	8 Years	48000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
EXTRACARE	3 Years	48000	6	2	8	5	0	0
		60000	2	4	3	1	3	0
		75000	1	5	2	1	0	0
		100000	8	6	1	0	0	0
		125000	0	4	2	0	0	0
	4 Years	48000	9	3	8	3	6	0
		60000	7	8	12	6	4	0
		75000	9	13	20	9	6	0
		100000	55	69	76	12	0	0
		125000	0	9	12	3	0	0
	5 Years	36000	1	7	9	7	2	0
		48000	8	7	13	7	7	0
		60000	113	125	160	31	32	2
		75000	137	150	179	67	27	3
		100000	172	229	216	66	14	1
		125000	0	26	24	6	0	0
	6 Years	36000	1	6	8	9	10	0
		48000	13	6	16	15	6	1
		60000	58	71	93	33	38	5
		75000	193	214	240	83	61	5
		100000	165	213	229	93	59	4
		125000	0	33	28	11	3	0
	7 Years	36000	7	8	9	6	4	0
		48000	5	10	20	8	5	0
		60000	36	22	41	18	18	2
		75000	405	766	542	155	22	1
		100000	120	109	128	64	45	3
		125000	0	24	37	24	11	1
	8 Years	48000	0	0	0	0	0	2
		75000	0	0	0	0	0	1
		100000	0	0	0	0	1	0

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
	3 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
		48000	X	X	X	X	X	X

			New Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
	3 Years	48000	74	54	82	10	11	2
		60000	110	647	168	15	9	0
		75000	70	86	92	21	5	0
		100000	208	105	100	15	1	0
		125000	0	64	78	11	1	0
		48000	86	93	84	47	16	3

PREMIUMCARE	4 Years	60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	5 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	6 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	7 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	8 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X
		100000	X	X	X	X	X	X
		125000	X	X	X	X	X	X
	10 Years	100000	X	X	X	X	X	X

PREMIUMCARE	4 Years	60000	140	175	178	63	29	2
		75000	142	205	260	110	37	1
		100000	711	529	455	84	14	1
		125000	0	287	327	56	12	0
	5 Years	36000	145	157	196	102	64	7
		48000	173	167	238	112	68	7
		60000	2545	2673	2904	672	313	30
		75000	2649	2939	3088	808	378	25
		100000	3340	3570	3352	666	222	11
		125000	0	798	759	175	56	6
	6 Years	36000	314	305	437	267	223	22
		48000	502	489	637	292	211	19
		60000	3154	3240	3399	1063	650	60
		75000	6373	7413	7881	2169	1105	94
		100000	3974	5409	6163	1925	975	75
		125000	0	755	933	308	144	21
	7 Years	36000	479	511	750	454	324	14
		48000	658	705	900	449	359	18
		60000	1491	1606	1931	982	729	48
		75000	1786	2208	2699	1153	875	50
		100000	2564	2779	3545	1926	1489	88
		125000		576	708	351	247	14
	8 Years	36000	0	0	0	0	0	12
		48000	0	0	0	0	0	12
		60000	0	0	0	0	0	20
		75000	0	0	0	0	0	31
		100000	0	0	0	0	1	52
		125000	0	0	0	0	0	6
	10 Years	100000	0	0	0	0	0	1

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
BASECARE	6 Months	6000	X	X	X	X	X	X
	1 Year	12000	X	X	X	X	X	X
	2 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
	3 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
	4 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
	5 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
BASECARE	6 Months	6000	0	1	6	0	2	0
	1 Year	12000	0	1	4	7	8	2
	2 Years	24000	4	13	51	78	186	27
		36000	0	0	0	12	7	2
	3 Years	24000	0	0	12	20	31	4
		36000	1	44	106	194	213	31
		48000	0	0	24	16	29	8
		60000	0	0	0	8	13	2
	4 Years	36000	0	0	12	10	20	3
		48000	0	17	46	46	66	4
		60000	0	0	12	13	8	0
	5 Years	48000	0	0	0	23	20	2
		60000	0	16	22	12	20	1
		75000	0	0	0	11	9	0

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
EXTRACARE	1 Year	12000	X	X	X	X	X	X
	2 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
	3 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
	4 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
	5 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
EXTRACARE	1 Year	12000	0	0	1	5	4	0
	2 Years	24000	2	15	84	118	153	14
		36000	0	0	0	10	17	2
	3 Years	24000	0	0	19	31	33	4
		36000	3	126	290	452	468	56
		48000	0	0	28	20	38	2
		60000	0	0	0	27	29	2
	4 Years	36000	0	0	20	21	40	8
		48000	5	68	111	105	121	13
		60000	0	0	18	28	22	3
	5 Years	48000	0	0	0	23	37	1
		60000	0	24	57	41	52	3
		75000	0	0	0	26	11	1

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
UMCARE	1 Year	12000	X	X	X	X	X	X
	2 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
	3 Years	24000	X	X	X	X	X	X
		36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X

			Used Vehicle Counts 2010-2012 Model Year Fusion/Milan/MKZ Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
UMCARE	1 Year	12000	0	2	12	17	17	3
	2 Years	24000	2	36	171	340	443	45
		36000	0	0	0	47	46	4
	3 Years	24000	0	0	85	188	262	38
		36000	16	260	809	1350	1601	160
		48000	0	0	138	223	218	25
		60000	0	0	0	166	163	24

PREMI	4 Years	36000	X	X	X	X	X	X
		48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
	5 Years	48000	X	X	X	X	X	X
		60000	X	X	X	X	X	X
		75000	X	X	X	X	X	X

PREMI	4 Years	36000	0	0	116	205	290	30
		48000	22	194	411	741	747	89
		60000	0	0	133	190	255	26
	5 Years	48000	0	0	0	309	457	56
		60000	0	139	382	439	450	48
		75000	0	0	0	256	270	25

			Used Vehicle Counts					
			2010-2012 Model Year Fusion/Milan/MKZ					
			Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
RoyalSHIELD	2 Months	3000	X	X	X	X	X	X
	3 Months	4000	X	X	X	X	X	X
	6 Months	6000	X	X	X	X	X	X
	1 Year	12000	X	X	X	X	X	X
	2 Years	24000	X	X	X	X	X	X

			Used Vehicle Counts					
			2010-2012 Model Year Fusion/Milan/MKZ					
			Plan Years					
Plan	Time	Mileage	2010	2011	2012	2013	2014	2015
RoyalSHIELD	2 Months	3000	0	2	0	0	0	0
	3 Months	4000	0	13	75	225	316	39
	6 Months	6000	0	0	14	78	73	12
	1 Year	12000	0	0	50	115	121	22
	2 Years	24000	0	0	0	3	0	0

PE14-030

FORD

12/19/2014

APPENDIX H1

11-11-03

REARWARD FRONT LOWER CONTROL ARMS HIGH FRICTION—INSTRUMENT CLUSTER LIGHT ILLUMINATED—DTC CODES P07AE AND U0415—BUILT BETWEEN 2/1/2011-8/16/2011

TSB 11-11-3

FORD:
2011-2012 Fusion

LINCOLN:
2011-2012 MKZ

ISSUE

Some 2011-2012 Fusion vehicles equipped with 2.5L, 2.5L Atkinson or 3.0L engine and MKZ vehicles equipped 2.5L Atkinson engine and built between 2/1/2011 through 8/16/2011 may experience higher than expected friction in the rearward/half front lower control arms. The steering system senses the high friction condition and may illuminate the instrument cluster stability/traction control light, or the message center may display Steering Fault/Service Steering Soon, accompanied by diagnostic trouble codes (DTCs) P07AE and U0415.

ACTION

Follow the Service Procedure steps to correct the condition.

SERVICE PROCEDURE

1. Verify the vehicle build date:
   a. If the vehicle build date is prior to 2/1/2011 or after 8/16/2011, do not continue with this article. Refer to Workshop Manual (WSM), Section 204-01, for normal diagnostics.
   b. If the vehicle build date is 2/1/2011 to 8/16/2011, proceed to Step 2.
2. Retrieve DTC codes:
   a. If P07AE and U0415 are not present and were not retrieved. Do not continue with this article. Refer to WSM, Section 204-01, for normal diagnostics.
   b. If P07AE and U0415 are present, proceed to Step 3.
3. Raise the vehicle on a hoist. Refer to WSM, Section 100-02. In order to obtain accurate measurement, the suspension must be in full rebound with the weight of the vehicle supported by the frame. Raise and support the vehicle by the frame to allow the wheels to hang in the rebound position.
4. Check both bellows at the steering gear housing/inner tie rod interface externally for signs of cuts or abrasions which may allow water intrusion into the gear assembly.
   a. If damage to the bellows exists or water intrusion is evident, replace the electronic power assist steering (EPAS) gear assembly. Refer to WSM, Section 211-02.
   b. If no damage exists, proceed to Step 5.
5. Replace both the left and right rearward/haft front lower control arms (FLCA). Refer to WSM, Section 204-01.

PART NUMBER	PART NAME
BE5Z-3078-B	Front Suspension Arm - Right Hand Side
BE5Z-3079-A	Front Suspension Arm - Left Hand Side
W500752-S439	Rear Lower Arm-To-Subframe Bolt (2 Req)
99958-1222	Rear Lower Arm-To-Subframe Washer (2 Req)
W302123-S300	Lower Ball Joint Nut (Rear) (4 Req)
W520416-S441	Subframe Bracket-To-Subframe Nut (2 Req)
W302281-S300	Subframe Bracket-To-Subframe Washer (2 Req)
W302120-S300	Subframe Bracket-To-Body Bolt (4 Req)
W705443-S900	Catalytic Converter Manifold-To-Exhaust Flexible Pipe Nut (4 Req)
W302420-S300	Tie Rod Cotter Pin (2 Req)
6E5Z-3R827-AA	Shaft-to-Gear Bolt
AE5Z-3504-CE	Steering Gear

WARRANTY STATUS: Eligible Under Provisions Of New Vehicle Limited Warranty Coverage
IMPORTANT: Warranty/ESP coverage limits/policies are not altered by a TSB. Warranty/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

OPERATION	DESCRIPTION	TIME
111103A	2011-2012 Fusion 2.5L DOHC, 2.5L Atkinson, 3.0L And MKZ 2.5L Atkinson: Check DTCs, Inspect Bellows, Replace Both The Left And Right Rearward Half Lower Control Arms Can Be Claimed With Operation C	1.6 Hrs.
111103B	2011-2012 Fusion 2.5L DOHC: Check DTCs, Inspect Bellows, Replace Steering Gear Assembly Can Be Claimed With Operation C	2.0 Hrs.
111103B	2011-2012 Fusion And MKZ 2.5L Atkinson, 2011-2012 Fusion 3.0L FWD: Check DTCs, Inspect Bellows, Replace Steering Gear Assembly Can Be Claimed With Operation C	2.2 Hrs.
111103B	2011-2012 Fusion 3.0L AWD: Check DTCs, Inspect Bellows, Replace Steering Gear Assembly Can Be Claimed With Operation C	2.3 Hrs.
111103C	Additional time to Check And Adjust Front Toe Can Be Claimed With Operations A Or B	0.6 Hr.

DEALER CODING

BASIC PART NO.	CONDITION CODE
3079	12

PE14-030

FORD

12/19/2014

APPENDIX H1

20831

Article Number: 20831

Article Type: S

Author: JCHACON3

Global Concern Number:

Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
NA	***	06/06/2009	11/24/2009
WD	***	06/06/2009	11/24/2009

Title:

2010 FUSION/MILAN ELECTRONIC POWER ASSIST SYSTEM (EPAS) - INTERACTIVE DIAGNOSIS

Text:

THE 2010 FUSION/MILAN WORKSHOP MANUAL SECTION 211-00A HAS BEEN UPDATED WITH INTERACTIVE DIAGNOSTICS. THIS SECTION PROVIDES NEW INFORMATION ABOUT DIAGNOSTIC TOOLS FOR THE ELECTRONIC POWER ASSIST STEERING (EPAS) AND THE POWER STEERING CONTROL MODULE (PSCM). THIS NEXT GENERATION OF VEHICLE DIAGNOSTIC SOFTWARE IS DESIGNED TO AID TECHNICIANS IN IDENTIFYING VEHICLE CONCERNS BY ALLOWING PINPOINTTEST DIAGNOSTICS TO DIRECTLY ACCESS THE VEHICLE THROUGH A VEHICLE COMMUNICATIONSMODULE (VCM), DISPLAY TEST MEASUREMENTS IN REAL TIME AND PROVIDE LOGICAL DIAGNOSTIC PROGRESSION BASED ON TECHNICIAN INPUT. NOTE: IF DIAGNOSTIC TROUBLE CODES ARE PRESENT, DO NOT CLEAR THE CODES UNTIL USING INTERACTIVE DIAGNOSIS, THIS WILL HELP CAPTURE 'FREEZE FRAME' DATA DURING THE DIAGNOSTICS OF ANY DTC.

Vehicles:

2010	FUSION (00170)
2010	MILAN (00171)

Symptom Code:

300000	CHASSIS
303000	CHASSIS STEERING/HANDLING
390000	CHASSIS PUBLICATION REVISIONS/UPDATES
800000	GENERAL-PREDELIVERY RUNNING CHANGES
804000	PRE-DELIVERY
890000	PUBLICATION CHANGES

Audit Comments:

Area Code	Geo Sales Area	Comment	Old Date of Deactivation	New Date of Deactivation	CDSID
NA	***	THIS MESSAGE WAS SUPERCEDED BY 21110	06/05/2013	11/24/2009	GSMITH53
WD	***	THIS MESSAGE WAS SUPERCEDED BY 21110	06/05/2013	11/24/2009	GSMITH53

PE14-030

FORD

12/19/2014

APPENDIX H1

21110

Article Number: 21110

Article Type: S

Author: JCHACON3

Global Concern Number:

Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
NA	***	11/25/2009	03/27/2012
WD	***	11/25/2009	03/27/2012

Title:

2010 FUSION/MILAN, TAURUS/MKS, FLEX/MKT - UPDATED ELECTRONIC POWER ASSIST SYSTEM(EPAS) - INTERACTIVE DIAGNOSIS -

Text:

THE 2010 FUSION/MILAN/TAURUS/MKT WORKSHOP MANUAL SECTION 211-00A HAS BEEN UPDATED WITH INTERACTIVE DIAGNOSTICS. THIS SECTION PROVIDES NEW INFORMATION ABOUT DIAGNOSTIC TOOLS FOR THE ELECTRONIC POWER ASSIST STEERING (EPAS) AND THE POWER STEERING CONTROL MODULE (PSCM). THIS NEXT GENERATION OF VEHICLE DIAGNOSTICSOFTWARE IS DESIGNED TO AID TECHNICIANS IN IDENTIFYING VEHICLE CONCERNS BY ALLOWING PINPOINT TEST DIAGNOSTICS TO DIRECTLY ACCESS THE VEHICLE THROUGH A VEHICLE COMMUNICATIONS MODULE (VCM), DISPLAY TEST MEASUREMENTS IN REAL TIME AND PROVIDE LOGICAL DIAGNOSTIC PROGRESSION BASED ON TECHNICIAN INPUT. NOTE: IF DIAGNOSTIC TROUBLE CODES ARE PRESENT, DO NOT CLEAR THE CODES UNTIL USING INTERACTIVE DIAGNOSIS, THIS WILL HELP CAPTURE 'FREEZE FRAME' DATA DURING THE DIAGNOSTICS OF ANY DTC.

Vehicles:

2010	FLEX (00189)
2010	FUSION (00170)
2010	MILAN (00171)
2010	MKS (00190)
2010	MKT (00194)
2010	TAURUS (00117)

Symptom Code:

200000	ELECTRICAL
206000	ELECTRICAL WARNING INDICATORS
300000	CHASSIS
303000	CHASSIS STEERING/HANDLING
390000	CHASSIS PUBLICATION REVISIONS/UPDATES
800000	GENERAL-PREDELIVERY RUNNING CHANGES
804000	PRE-DELIVERY
890000	PUBLICATION CHANGES

Global Customer Symptom Codes:

Category	Q1	Q2	Q3	Full Code
Driver Aides & Information				2*****
Driver Aides & Information	Warning Indicators/Messages/Chimes			227***
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction		2272**
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Stays On	227268
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System		2276**
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System	Stays On	227668
Driver Aides & Information	Warning Indicators/Messages/Chimes	Brake System Warning Light		2277**
Driver Aides & Information	Warning Indicators/Messages/Chimes	Brake System Warning Light	Stays On	227768
Stop/Steer/Ride				6*****
Stop/Steer/Ride	Steering/Steering Wheel			662***
Stop/Steer/Ride	Steering/Steering Wheel	Performance		6624**
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Always	662402

Stop/Steer/Ride	Steering/Steering Wheel	Performance	Cold	662412
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Excessive Effort	662428
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Hot	662434
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Inoperative	662438
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Intermittent	662439
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Sticks/Binds	662471

Audit Comments:

Area Code	Geo Sales Area	Comment	Old Date of Deactivation	New Date of Deactivation	CDSID
NA	***	MESSAGE NO LONGER CURRENT/OUTDATED PER [redacted]	11/24/2013	03/27/2012	GSMITH
WD	***	MESSAGE NO LONGER CURRENT/OUTDATED PER [redacted]	11/24/2013	03/27/2012	GSMITH

PE14-030

FORD

12/19/2014

APPENDIX H1

21802

Article Number: 21802

Article Type: S

Author: JCHACON3

Global Concern Number:

Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
NA	***	03/23/2011	03/23/2021
WD	***	03/23/2011	03/23/2021

Title:

SOME 2010-2011 FUSION/MILAN/MKZ EQUIPPED WITH ELECTRONIC POWER STEERING SYSTEM (EPAS) - STEERING/SUSPENSION SERVICE TIP - DEPOWER EPAS

Text:

SOME 2010 FUSION/MILAN, 2011 FUSION/MILAN AND FUSION/MILAN/MKZ HYBRID VEHICLES EQUIPPED WITH EPAS (ELECTRONIC POWER ASSIST STEERING) SERVICE TIP. THE EPAS STEERING GEAR ASSEMBLY MAY BE DAMAGED IF ANY STEERING/SUSPENSION COMPONENTS/FASTENERS ARE SUBJECTED TO A HAMMER BLOW OR AN IMPACT WRENCH DUE TO ARCING OF THE CONTACTS IN AN INTERNAL POWER RELAY EVEN WHEN THE IGNITION IS OFF.DISCONNECT THE ELECTRICAL POWER TO THE EPAS MODULE BEFORE PERFORMING ANY STEERING/SUSPENSION SERVICE. POWER CAN BE INTERRUPTED BY DISCONNECTING THE POWERSTEERING CONTROL MODULE CONNECTOR C1467A. IF THE SYSTEM IS NOT DEPOWERED PRIOR TO SERVICE, AN EPAS WARNING MAY BE DISPLAYED IN THE MESSAGE CENTER ALONG WITH DTC U3000:49 WHICH REQUIRES REPLACEMENT OF THE EPAS ASSEMBLY.

Vehicles:

2010-2011 FUSION (00170)
2010-2011 MILAN (00171)

Symptom Code:

200000 ELECTRICAL
206000 ELECTRICAL WARNING INDICATORS
300000 CHASSIS
303000 CHASSIS STEERING/HANDLING
304000 CHASSIS SUSPENSION SYSTEM
305000 CHASSIS FRAME CONCERNS
306000 CHASSIS TIRES/WHEELS
307000 CHASSIS JACK/TOOLS & SPARE
500000 DRIVELINE
510000 DRIVELINE FLUID CONCERNS
597997 DRIVELINE NOISE CONCERNS
700000 NOISE AND VIBRATION
702000 NVH OTHER NOISE CONCERNS
702100 NVH NOISE CONCERN -- FRONT
702300 NVH NOISE CONCERN -- PASSENGER COMPARTMENT
703000 NVH VIBRATION CONCERNS
703100 NVH VIBRATION AT IDLE/NEUTRAL
703200 NVH VIBRATION - ACCELERATION
703300 NVH VIBRATION - CRUISE
703400 NVH VIBRATION - DECELERATION

Global Customer Symptom Codes:

Category	Q1	Q2	Q3	Full Code
Driver Aides & Information				2*****
Driver Aides & Information	Warning Indicators/Messages/Chimes			227***
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction		2272**
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Flashes	227230
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Inoperative	227238
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Stays On	227268

Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System		2276**
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System	Flashes	227630
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System	Stays On	227668
Driver Aides & Information	Warning Indicators/Messages/Chimes	Traction Control		227R**
Driver Aides & Information	Warning Indicators/Messages/Chimes	Traction Control	Flashes	227R30
Driver Aides & Information	Warning Indicators/Messages/Chimes	Traction Control	Stays On	227R68
Fit/Finish/Body				3*****
Fit/Finish/Body	Noise			338***
Fit/Finish/Body	Noise	Instrument Panel		3381**
Fit/Finish/Body	Noise	Instrument Panel	Intermittent	338139
Start/Run/Move				4*****
Start/Run/Move	Starting			440***
Start/Run/Move	Starting	Ignition Switch/Key		4404**
Start/Run/Move	Starting	Ignition Switch/Key	Sticks/Binds	440471
Stop/Steer/Ride				6*****
Stop/Steer/Ride	Steering/Steering Wheel			662***
Stop/Steer/Ride	Steering/Steering Wheel	Performance		6624**
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Excessive Effort	662428
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Inoperative	662438
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Intermittent	662439
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Sticks/Binds	662471
Safe & Secure				8*****
Safe & Secure	Anti-Theft			880***
Safe & Secure	Anti-Theft	Performance		8802**
Safe & Secure	Anti-Theft	Performance	Inoperative	880238

PE14-030

FORD

12/19/2014

APPENDIX H1

21971

Article Number: 21971

Article Type: S

Author: JCHACON3

Global Concern Number:

Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
NA	***	07/28/2011	03/28/2012
WD	***	07/28/2011	03/28/2012

Title:

UPDATED ONLINE DIAGNOSTICS FOR DTC'S C200B/C200C ON 2010-2011 FUSION/MILAN,2011 MKZ HYBRID BUILT ON OR BEFORE 1/10/11 WITH ELECTRONIC POWER ASSIST STEERING

Text:

SOME 2010-11 FUSION/MILAN, 2011 MKZ HYBRID BUILT ON OR BEFORE 1/10/11 EQUIPPED WITH ELECTRONIC POWER ASSIST STEERING (EPAS) REFER TO ON-LINE WORKSHOP MANUAL SECTION 211-00A FOR UPDATED INTERACTIVE DIAGNOSTICS FOR DIAGNOSTIC TROUBLE CODES(DTC'S)C200B AND C200C IN THE PSCM MODULE AND STABILITY/TRACTION LIGHT ON IN THE INSTRUMENT CLUSTER. NOTE: IF DTC'S PRESENT, DO NOT CLEAR CODES UNTIL USING ON-LINE DIAGNOSTICS, THIS HELPS CAPTURE 'FREEZE FRAME' DATA OF DTC'S. NOTE: IF DIAGNOSIS LEADS TO EPAS GEAR REPLACEMENT, THE NEW GEARS NO LONGER REQUIRE A PROTECTIVE HEAT SHIELD OVER THE PSCM EPAS MODULE. A PRODUCTION CHANGE WAS INCORPORATED 1/10/11 TO NO LONGER USE THE SHIELD. MONITOR DOES II FOR PART AVAILABILITY AND SERVICE LABOR TIME STANDARDS FOR DIAGNOSIS AND REPAIRS.

Vehicles:

2010-2011	FUSION (00170)
2010-2011	MILAN (00171)
2011	MKZ (00179)

Symptom Code:

200000	ELECTRICAL
204000	ELECTRICAL INSTRUMENTATION
204100	ELECTRICAL ELECTRONIC DISPLAY
204200	ELECTRICAL CONVENTIONAL/ANALOG
205000	ELECTRICAL ACCESSORIES
206000	ELECTRICAL WARNING INDICATORS
300000	CHASSIS
303000	CHASSIS STEERING/HANDLING
304000	CHASSIS SUSPENSION SYSTEM
C200B	
C200C	

Global Customer Symptom Codes:

Category	Q1	Q2	Q3	Full Code
Driver Aides & Information				2*****
Driver Aides & Information	Warning Indicators/Messages/Chimes			227***
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction		2272**
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Flashes	227230
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Stays On	227268
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System		2276**
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System	Flashes	227630
Driver Aides & Information	Warning Indicators/Messages/Chimes	Anti-Lock Brake System	Stays On	227668
Driver Aides & Information	Instrumentation/Display			228***
Driver Aides & Information	Instrumentation/Display	Entire Cluster		228H**
Driver Aides & Information	Instrumentation/Display	Entire Cluster	Inaccurate	228H36
Stop/Steer/Ride				6*****

Stop/Steer/Ride	Steering/Steering Wheel			662***
Stop/Steer/Ride	Steering/Steering Wheel	Performance		6624**
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Excessive Effort	662428
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Inoperative	662438
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Intermittent	662439
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Sticks/Binds	662471

Audit Comments:

Area Code	Geo Sales Area	Comment	Old Date of Deactivation	New Date of Deactivation	CDSID
NA	***	MESSAGE NO LONGER CURRENT/OUTDATED PER [redacted]	07/28/2021	03/28/2012	GSMITH
WD	***	MESSAGE NO LONGER CURRENT/OUTDATED PER [redacted]	07/28/2021	03/28/2012	GSMITH

PE14-030

FORD

12/19/2014

APPENDIX H1

22026

Article Number: 22026
Article Type: S
Author: PNAGAITI
Global Concern Number: 029-2011-0001
Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
NA	***	08/31/2011	11/07/2011
WD	***	08/31/2011	11/07/2011

Title:
2011-2012 FUSION/FUSION HYBRID/MKZ HYBRID - STABILITY/TRACTION CONTROL LIGHT ON OR 'STEERING FAULT/SERVICE STEERING SOON' MESSAGE WITH P07AE AND U0415
Text:
SOME 2011-2012 FUSION, FUSION HYBRID AND MKZ HYBRID VEHICLES EQUIPPED WITH A 2.5L/2.5L ATKINSON/3.0L ENGINE AND ELECTRONIC POWER ASSIST STEERING (EPAS) BUILTBETWEEN 01/31/2011 AND 08/16/2011 MAY EXHIBIT AN INSTRUMENT CLUSTER STABILITY/TRACTION CONTROL LIGHT OR THE MESSAGE CENTER MAY DISPLAY 'STEERING FAULT/SERVICE STEERING SOON', ACCOMPANIED BY P07AE AND U0415 DTC CODES. THIS MAYBE DUE TO HIGH TORQUE AT THE REARWARD/AFT FRONT LOWER CONTROL ARM (FLCA) BALL JOINTS. ENGINEERING IS CURRENTLY INVESTIGATING THIS CONDITION THROUGH THE QUICKER SERVICE FIX (QSF) PROCESS. INSPECT THE INNER TIE ROD BELLOWS FOR DAMAGE.IF DAMAGE EXISTS, REPLACE THE EPAS GEAR. IF NO DAMAGE EXISTS, REPLACE THE TWO REARWARD/AFT FRONT LOWER CONTROL ARMS. MONITOR OASIS FOR FURTHER UPDATES.
Vehicles:

2011-2012	FUSION (00170)
2011-2012	MKZ (00179)

Symptom Code:

300000	CHASSIS
303000	CHASSIS STEERING/HANDLING
304000	CHASSIS SUSPENSION SYSTEM
698298	DRIVEABILITY MALFUNCTION INDICATOR LAMP - MIL
C1277	
C1963	
P07AE	
U0415	

Global Customer Symptom Codes:

Category	Q1	Q2	Q3	Full Code
Driver Aides & Information				2*****
Driver Aides & Information	Warning Indicators/Messages/Chimes			227***
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction		2272**
Driver Aides & Information	Warning Indicators/Messages/Chimes	AdvanceTrac/Traction	Stays On	227268

Audit Comments:

Area Code	Geo Sales Area	Comment	Old Date of Deactivation	New Date of Deactivation	CDSID
NA	***	SUPERSEDED BY TSB 11-11-03	02/29/2012	11/07/2011	GSMITH
WD	***	SUPERSEDED BY TSB 11-11-03	02/29/2012	11/07/2011	GSMITH

PE14-030

FORD

12/19/2014

APPENDIX H1

22383

Article Number: 22383
Article Type: S
Author: DGARANT1
Global Concern Number: 029-2012-0002
Market(s):

Area Code	Geo Sales Area	Date of Activation	Date of Deactivation
EU	RUS	07/26/2013	08/07/2013
NA	***	05/31/2012	05/31/2013

Title:
UPDATED ELECTRONIC POWER ASSIST STEERING (EPAS) WORKSHOP MANUAL DIAGNOSTICS FOR DIAGNOSTIC TROUBLE CODES U2011:49 AND C200D
Text:
THE WORKSHOP MANUAL SECTION 211-00A HAS BEEN UPDATED WITH REVISED DIAGNOSIS FOR POWER STEERING CONTROL MODULE DTCS U2011:49 AND C200D. FOR DIAGNOSTIC AND REPAIRINFORMATION, REFER TO WORKSHOP MANUAL SECTION 211-00A.
Vehicles:

2011-2013	EXPLORER 4DR (00134)
2011-2013	FLEX (00189)
2010-2012	FUSION (00170)
2010-2011	MILAN (00171)
2011-2013	MKS (00190)
2011-2013	MKT (00194)
2011-2013	TAURUS (00117)

Symptom Code:

200000	ELECTRICAL
204000	ELECTRICAL INSTRUMENTATION
204100	ELECTRICAL ELECTRONIC DISPLAY
206000	ELECTRICAL WARNING INDICATORS
300000	CHASSIS
303000	CHASSIS STEERING/HANDLING
C200D	
U2011	

Global Customer Symptom Codes:

Category	Q1	Q2	Q3	Full Code
Stop/Steer/Ride				6*****
Stop/Steer/Ride	Steering/Steering Wheel			662***
Stop/Steer/Ride	Steering/Steering Wheel	Feel/Wander/Pull		6623**
Stop/Steer/Ride	Steering/Steering Wheel	Feel/Wander/Pull	Intermittent	662339
Stop/Steer/Ride	Steering/Steering Wheel	Performance		6624**
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Always	662402
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Excessive Effort	662428
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Inoperative	662438
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Intermittent	662439
Stop/Steer/Ride	Steering/Steering Wheel	Performance	Sticks/Binds	662471

Audit Comments:

Area Code	Geo Sales Area	Comment	Old Date of Deactivation	New Date of Deactivation	CDSID
EU	RUS	GSMITH EDITED THIS MESSAGE ON: 07-AUG-2013::CHANGE	12/31/9999	08/07/2013	GSMITH

PE14-030

FORD

12/19/2014

APPENDIX H2

09-06-014

GCQIS Report Entry/Maintenance

GCQIS Technical Service Detail

Close Print Help

ArticleType : ISM **ArticleNumber :** 09-06-014 **Entered Date :** 06/29/2009 **Times Recommended :** 72

Date is displayed in **MM/DD/CCYY format**

ELECTRONIC POWER ASSIST STEERING (EPAS) - SERVICE TIPS :

SOME 2010 FUSION/MILAN, TAURUS/MKS, FLEX/MKT, VEHICLES EQUIPPED WITH ELECTRONIC POWER ASSIST STEERING (EPAS) THAT EXHIBIT EPAS CONDITIONS OR TROUBLE CODES, REFER THE TECHNICIAN TO WORKSHOP MANUAL SECTION 211-00A. IT IS CRITICAL THE TECHNICIAN USES THE VEHICLE COMMUNICATIONS MODULE (VCM) AND IDS TO PROPERLY DIAGNOSE DTC'S.

DURING THE DIAGNOSTIC PROCEDURE, THE EPAS INTERACTIVE DIAGNOSIS CAN RETRIEVE THE FREEZE FRAME DATA AUTOMATICALLY AND/OR AID IN THE DIAGNOSIS. TO AID IN THE RESOLUTION OF FIELD CONCERNS, PLEASE NOTE WHEN DOCUMENTING THE REPORTS, THE SYMPTOM, ISSUE, TROUBLE CODES (IF ANY) AND/OR THE WHAT SPECIFIC MESSAGE IS PRESENT/DISPLAYED IN THE INSTRUMENT PANEL MESSAGE CENTER WHEN A STEERING FAULT OCCURS.

NOTE: AN ABS T/C LAMP MAY BE ON DUE TO NO CAN BUS SIGNAL FROM THE STEERING ANGLE SENSOR FROM THE EPAS POWER STEERING CONTROL MODULE (PSCM). ON MKS, MKT, & FLEX VEHICLES EQUIPPED WITH ACTIVE PARK ASSIST THE CAN BUS SIGNALS ARE TRANSMITTED BY THE STEERING ANGLE SENSOR MODULE AND NOT FROM THE EPAS POWER STEERING CONTROL MODULE.

NOTE: IN THE EVENT THE DEALER CONTACTS THE HOTLINE, PLEASE ADVISE THE DEALER TO NOT ERASE ANY CODES USING THE IDS SCAN TOOL UNTIL THEY ENTER "INTERACTIVE DIAGNOSTICS" IN SECTION 211-00A AND FOLLOW THE ONLINE DIAGNOSIS UNTIL THE DIAGNOSTICS DIRECTS THEM TO CLEAR CODES. THIS PROCEDURE IS CRITICAL WHEN DIAGNOSING EPAS SYSTEMS AND CAPTURES SNAPSHOT OR FREEZE FRAME DATA READINGS OUTLINED IN THE WSM SECTION 211-00A. NO ADDITIONAL SERVICE ACTION IS NEEDED IF THIS FOLLOWED.

NOTE: IF THE EPAS SYSTEM FLAGS AN STEERING ANGLE SENSOR DTC, THE ANGLE SENSOR IS INTERNAL TO THE EPAS ASSEMBLY. ON MKS, MKT, & FLEX VEHICLES EQUIPPED WITH ACTIVE PARK ASSIST THERE IS A SEPARATE ANGLE SENSOR IN THE STEERING ANGLE SENSOR MODULE THAT TRANSMITTS STEERING ANGLE DATA ON THE CAN BUS. FOLLOW SECTION 211-00A FOR DIAGNOSIS. ONLY MKZ UNITS WITH HYDRAULIC POWER ASSIST STEERING (HPAS) HAVE ANGLE STEERING SENSOR, THIS IS FOUND IN WSM SECTION 206- 09-1.

ADDITIONAL ITEMS ARE LIKELY TO DISPLAY IN THE INSTRUMENT PANEL, IF A FAULT IS PRESENT:

MESSAGE CENTER DISPLAYS "POWER STEERING ASSIST FAULT"
THIS MESSAGE WILL APPEAR WHEN A CONDITION HAS BEEN DETECTED IN THE ELECTRONIC POWER ASSIST STEERING (EPAS) SYSTEM THAT REQUIRES THE POWER STEERING CONTROL MODULE (PSCM) TO DISABLE THE SYSTEM (REMOVE ASSIST) TO HELP PREVENT THE SYSTEM FROM SUSTAINING ANY POSSIBLE

DAMAGE. THIS MESSAGE (AND RELATED SYMPTOM) MAY BE CLEARED WHEN THE IGNITION KEY IS CYCLED AND MAY NOT BE PRESENT AT THE TIME OF DIAGNOSTICS. REFER TO WSM 211-00A FOR DIAGNOSIS.

MESSAGE CENTER DISPLAYS "SERVICE POWER STEERING"
THIS MESSAGE WILL APPEAR IF A CONDITION EXISTS (HIGH FRICTION FOR EXAMPLE) THAT PUTS EXTRA LOAD ON THE EPAS GEAR. STEERING ASSIST WILL REMAIN FOR THE CURRENT IGNITION CYCLE. IF THE IGNITION IS TURNED OFF AND THEN BACK ON, SERVICE POWER STEERING NOW WILL APPEAR ON THE MESSAGE CENTER AND STEERING ASSIST WILL BE REMOVED UNTIL THE CONDITION THAT CAUSED THE MESSAGE TO APPEAR IS REPAIRED. REFER TO WSM 211-00A FOR DIAGNOSIS.

MESSAGE CENTER DISPLAYS "SERVICE POWER STEERING NOW"
THIS MESSAGE WILL APPEAR WHEN A CONDITION HAS BEEN DETECTED IN THE EPAS SYSTEM THAT REQUIRES THE PSCM TO DISABLE THE SYSTEM (REMOVE ASSIST) TO HELP PREVENT THE SYSTEM FROM SUSTAINING ANY POSSIBLE DAMAGE. THIS MESSAGE (AND RELATED SYMPTOM) WILL NOT CLEAR UNTIL THE CONDITION THAT CAUSED THE MESSAGE TO APPEAR HAS BEEN REPAIRED. REFER TO WSM 211-00A FOR DIAGNOSIS.

NOTE THE EPAS SYSTEM ON THIS VEHICLE'S FUSION/MILAN, TAURUS/MKS, FLEX/MKT IS A NEW SYSTEM AND IT IS NOT THE SAME SYSTEM AS THE ESCAPE/MARINER EPAS SYSTEM. BOTH SYSTEMS ARE DIFFERENT. FOLLOW NORMAL WSM DIAGNOSIS FOR THE SPECIFIC VEHICLE.

PE14-030

FORD

12/19/2014

APPENDIX H2

11-08-005

GCQIS Report Entry/Maintenance

GCQIS Technical Service Detail

Close Print Help

ArticleType : ISM **ArticleNumber :** 11-08-005 **Entered Date :** 08/09/2011 **Times Recommended :** 88

Date is displayed in **MM/DD/CCYY format**

2010-12 FUSION/MILAN-EPAS DTCS: C1277- C1963 - U0415 - P07AE :

SOME 2010-12 FUSION/MILAN, EQUIPPED WITH 2.5L/3.0L GAS ENGINE, AND ELECTRONIC POWER ASSIST STEERING (EPAS) MAY EXHIBIT AN INSTRUMENT CLUSTER STABILITY/TRACTION LIGHT ON OR THE MESSAGE CENTER MAY DISPLAY "STEERING FAULT/SERVICE STEERING SOON." SERVICE TOOL MAY DISPLAY DIAGNOSTIC TROUBLE CODES IN ABS/PSCM MODULE C1277, C1963, U0415 & P07AE. CURRENTLY CHASSIS ENGINEERING TEAM IS INVESTIGATING THIS CONDITION THAT AFFECTS THE ABS/EPAS SYSTEM AND FRONT SUSPENSION COMPONENTS. FOR SHORT TERM SERVICE DIRECTION, ADVISED THE TECHNICIAN THE FOLLOWING:

1. REFER TO ON-LINE WORKSHOP MANUAL SECTION 211-00A FOR UPDATED INTERACTIVE DIAGNOSTICS. DO NOT CLEAR THE CODES. IF DTC'S C1277-C1963-U0415-P07AE PRESENT, PROCEED TO STEP 2.

2. RAISE THE VEHICLE ON A HOIST PER WORKSHOP MANUAL SECTION 100-02. NOTE: IN ORDER TO OBTAIN ACCURATE MEASUREMENT, THE SUSPENSION MUST BE IN FULL REBOUND WITH THE WEIGHT OF THE VEHICLE SUPPORTED BY FRAME.

RAISE AND SUPPORT THE VEHICLE BY THE FRAME TO ALLOW THE WHEELS TO HANG IN THE REBOUND POSITION.

3. WITH THE ENGINE OFF, TURN THE WHEEL FULL RIGHT, FULL LEFT SLOWLY AND/OR DETERMINE IF ANY BINDING IS FELT. PROCEED TO STEP 4.

4. CHECK BOTH BELLOWS AT THE STEERING GEAR HOUSING/INNER TIE ROD INTERFACE EXTERNALLY FOR SIGNS OF CUTS OR ABRASIONS WHICH MAY ALLOW WATER INTRUSION INTO THE GEAR ASSEMBLY. IF DAMAGE TO THE BELLOWS EXISTS OR WATER INTRUSION IS EVIDENT, REPLACE THE EPAS GEAR ASSEMBLY. CHECK VEHICLE BUILT DATES:

A. IF VEHICLE IS BUILT ON OR BEFORE 01/31/2011 AND NO DAMAGE IS APPARENT, PROCEED TO NORMAL WSM SECTION 211-00A FOR ADDITIONAL DIAGNOSTICS.

B. IF THE VEHICLE IS BUILT ON OR AFTER 02/01/2011 PROCEED TO STEP 5.

5. REPLACE THE REARWARD FRONT LOWER CONTROL ARM & BALL JOINT ASSEMBLIES ON BOTH SIDES OF THE VEHICLE PER WSM 204-00. CLEAR THE CODES PER WSM 211- 00A.

PART NUMBERS & DESCRIPTION:

RIGHT FRONT REAR CONTROL ARM: SERVICE # BE5Z-3078-B 3078A MCF9 RH, CONTROL ARMS AND CROSS MEMBER, FROM: 02/01/2010 2011/

BE5Z-3079-A 3078A MCF10 LH, CONTROL ARMS AND CROSS MEMBER, FROM: 02/01/2011/ 2011/

CURRENTLY, CHASSIS ENGINEERING TEAM IS WORKING ON A PERMANENT SERVICE SOLUTION, MONITOR OASIS FOR UPDATES.

NOTE: IF THE DEALER ALREADY REPLACED THE REAR CONTROL ARMS AND THE DTC'S REPEAT, PLEASE EMAIL THE GCQIS REPORT TO PNAGAITI@FORD.COM, TFLANAG1@FORD.COM, AHOLMES2@FORD.COM, TRINKE@FORD.COM.

PE14-030

FORD

12/19/2014

APPENDIX K

Design Change Log

2010-2012 Fusion / Milan / MKZ EPAS - Loss of assist while driving
Part Change Log

	A		C	D	E		F		G		H	
					Original		Modified		Disposition of Original Parts			
Change number	Date Incorporated Into Vehicle Production	Model and Model Year	Description of Change	Reasons for Change	Ford Engineering Part Number	Ford Engineering "Short Gear" Part Number/ Ford Service Part Number	Ford Engineering Part Number	Ford Engineering "Short Gear" Part Number/ Ford Service Part Number	Withdrawn from Ford Production Inventory (Scrap/ Consume/ Rework)	Effective Date#a (TRW Ship Date)	New Component Service Part Availability Date#a (TRW Ship Dates)	New Component Interchangeable With Old (Y/N - Intended versus Possible)
1	J1	2010 Fusion/Milan	**R6.1 Software update**	**"- Relay De-icing Strategy implementation. This involves motor and link relay drive strategy during power up and power down of the EPS system. No change during normal operation. - During power-up, the strategy consists of relay re-tries, wood-peckering up to 4 tries if a relay closure is not detected. - During power-down, the strategy consists of providing a "cleaning" current cycle if the "drive stage temperature" was below a threshold through the entire journey and no B-codes were set.**	AE5C-3200-BH	AE5C-3504-BA	AE5C-3200-BJ	AE5C-3504-BA AE5Z-3504-B	Rework	Nov-08	Feb-09	N
2	J2	2010 Fusion/Milan	1. Delete protector brkt, use D3 torque sensor, and INA input shaft bearing. 2. **Software robustness improvements and calibration updates.**	1. Cost reduction 2. **Software Updates Refinements to the motor relay B3A diagnostics. - B3A motor relay diagnostic was revised to raise an A3A code (A code will not pull assist) until current is passed through each of the phases or a vehicle speed limit is reached. - To the aid power up de-icing strategy "auto-fritting" added.**	AE5C-3200-BJ	AE5C-3504-BA AE5Z-3504-B	AE5C-3200-BK	AE5C-3504-BA AE5Z-3504-B	Consume	Apr-09	Jun-09	Y
3	J2	2010 Fusion/Milan	000 - Revise pulley, pinion bushing, BNA assembly, bellow, EPP, OTR, and ITR. **001 - SW update**	000 - TVM/Robustness **001 - Implement a MAP (Current and Vehicle Speed based) to the B3A/A3A diagnostics as opposed to a single value of current. Allows higher current to be used at lower speeds.** 274 - Print update 278 - Print update	AE5C-3200-BK	AE5C-3504-BA AE5Z-3504-B	AE5C-3200-CA	AE5C-3504-BB AE5Z-3504-BE	Consume	Jul-09	Oct-09	Y
4	2011 J2	2011 Fusion/Milan/MkZ Hybrid	1. Belt price reduction 2. Delete PSCM thermal paste 3. Torque damping torque SW change **4. Increase motor PCB clearance** 5. Increase length of finger ring in TS houseing 6. Shorter PSCM and motor screw.	1. TVM 2. TVM 3. V'yne tuning, stg vib improvement. **4. Quality action, Pins on motor PCB connector in certain circumstances could short circuit to the ground plane. The motor PCB design was changed to increase the insulation around the connector pins.** 5. NVH quality 6. TRW process improvement.	AE5C-3200-CD	AE5C-3504-BD	AE5C-3200-CE	AE5C-3504-BE AE5Z-3504-CE	Consume	No shipping record	No Shipping record	Y

2010-2012 Fusion / Milan / MKZ EPAS - Loss of assist while driving
Part Change Log

	A		C	D	E		F		G		H	
					Original		Modified		Disposition of Original Parts			
Change number	Date Incorporated Into Vehicle Production	Model and Model Year	Description of Change	Reasons for Change	Ford Engineering Part Number	Ford Engineering "Short Gear" Part Number/ Ford Service Part Number	Ford Engineering Part Number	Ford Engineering "Short Gear" Part Number/ Ford Service Part Number	Withdrawn from Ford Production Inventory (Scrap/ Consume/ Rework)	Effective Date#a (TRW Ship Date)	New Component Service Part Availability Date#a (TRW Ship Dates)	New Component Interchangeable With Old (Y/N - Intended versus Possible)
5	2011 J2 RC	2011 Fusion/Milan/MkZ Hybrid	**1. Fix EPAS motor position B9A. Re-initialize PSCM voltage regulator before start of diagnostics** 2. Optimized dummy rotor for torque sensor.	**1. Warranty issue. Static LOA at startup.The voltage regulator responds to erroneous signals transmitted by the Main Micro at the time immediately after ignition on. In certain conditions the voltage regulator can shut off power to either the motor encoders or the torque sensor. This would result in a C200D or C200B/C DTC. Software change set voltage regulator to a default state prior to software diagnostics starting.** 2.TRW process improvement	AE5C-3200-CF	AE5C-3504-BF	AE5C-3200-CG	AE5C-3504-BG AE5Z-3504-CE	Consume	Jan-11	Mar-11	Y
6	2012 RC	2012 Fusion/Milan/MkZ Hybrid	**1. Implement "tight terminals"** 2. VAVE 1 a. single side PM plating b. eliminate compression limitors in power module c. resource direct bond copper supplier in power module d. silver signal pads inlo of Al in power module e. change type of adhesive tape to hold PCB to Al substrate. f. change type thermal paste and supplier for link relay.	**1. Robustness. The tight terminal change was adding potting material to the header side of the connection system. This provides an improved seal around the header terminals preventing water entry into the ECU/EPP. This is a secondary seal as the vehicle side connector provides the primary seal.** 2. TVM	AE5C-3200-CH	AE5C-3504-BH AE5Z-3504-CE	AE5C-3200-DA	AE5C-3504-CA AE5Z-3504-CE	Consume	Mar-12	May-12	Y
7	Service Action	2010 - 2012 Fusion/Milan/MkZ Hybrid	**Release loss of assist limp home software strategy for CD3 service gears**	**The updated PSCM software provides steering assist for the remainder of the drive cycle if a motor position sensor encoder fault occurs, and a cluster warning and chime will be provided.**	AE5C-3200-DA	AE5C-3504-CA AE5Z-3504-CE	AE5C-3200-DA	AE5C-3504-CB AE5Z-3504-CF	NA	NA	January 2015 Estimate	Y

Note a/ Date is actually date supplier first shipped new part #. Not sure exact date Ford plant switched over.

PE14-030

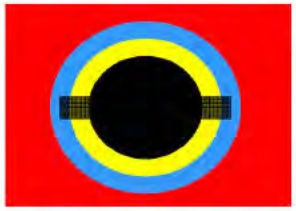
FORD

12/19/2014

APPENDIX K

Photos for change 4

Motor PCB connect pin with sectioned to show pins



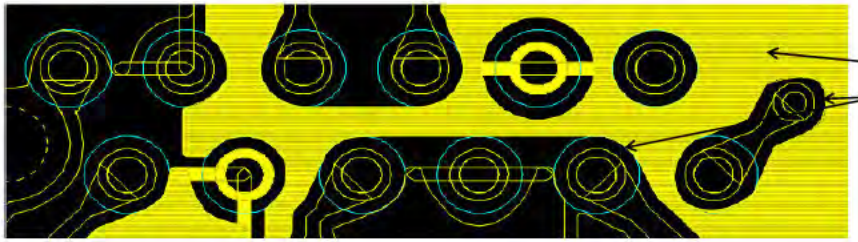
Centred Pin

Off Centre Pin

PCB track for connecting to pin
Ground Plane
Clearance around pin

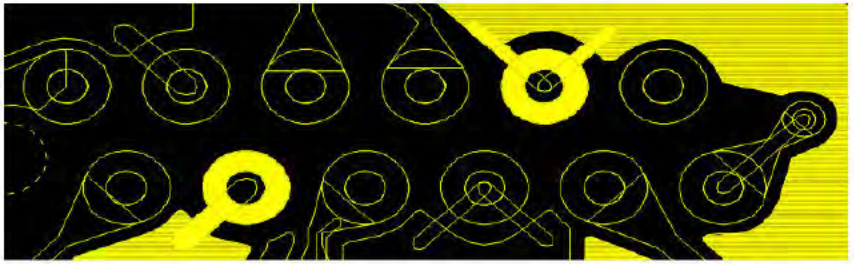
Misaligned pin could short circuit to the ground plane. Resulting in a motor position fault.

Original
PCB Design
CB Design



Ground Plan - Yellow
Insulator Surface - Black

New
PCB Design
CD Design



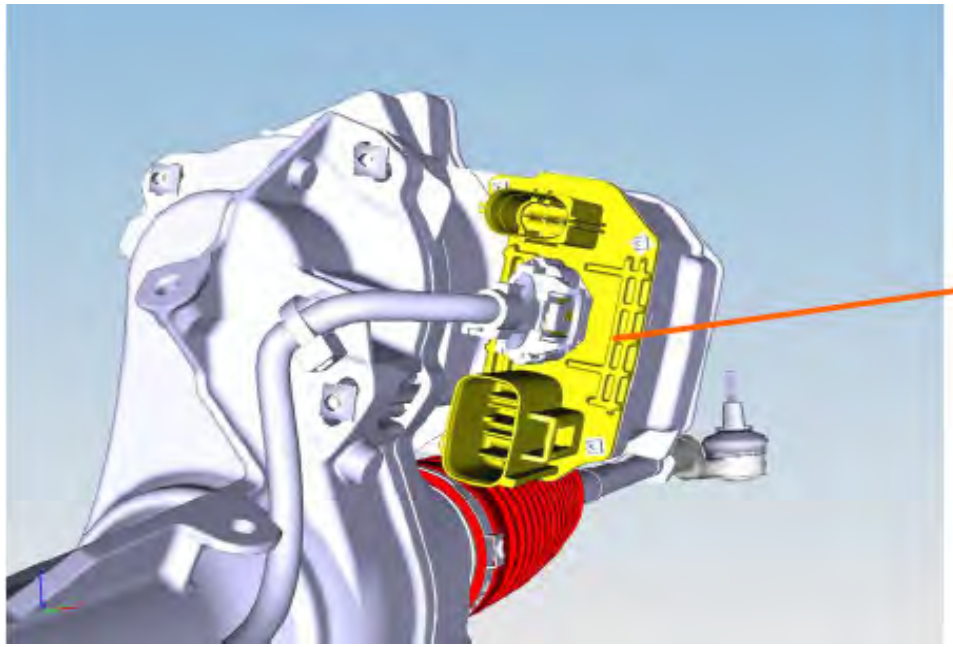
PE14-030

FORD

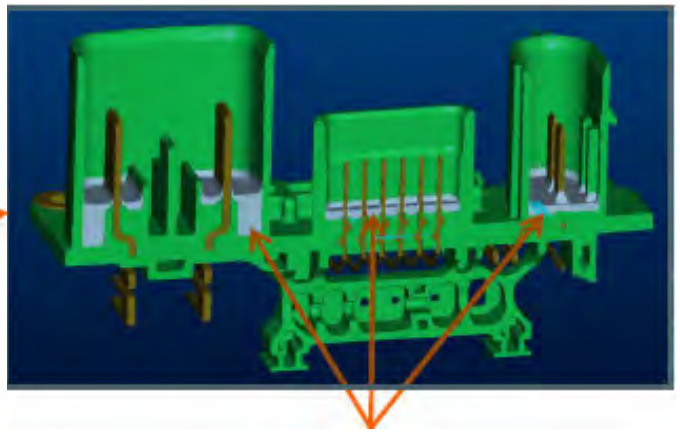
12/19/2014

APPENDIX K

Photos for change 6



EPP Header



Potting material added around terminals

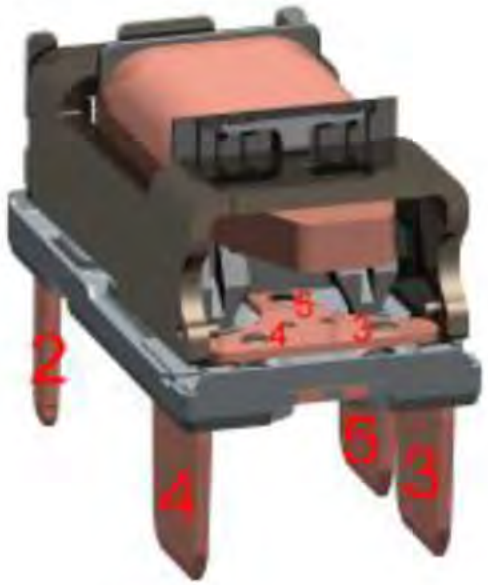
PE14-030

FORD

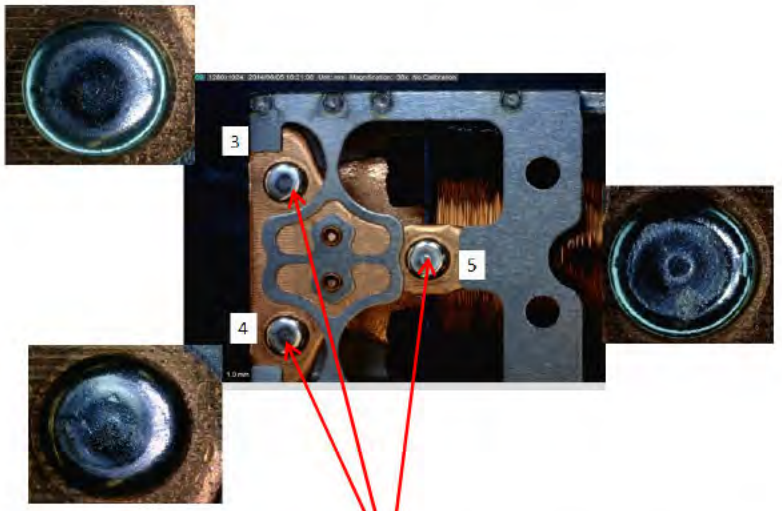
12/19/2014

APPENDIX K

Photos for changes 1, 2, and 3



Relay



Ice can be generated on contacts prevent contacts from closing at start up.

PE14-030

FORD

12/19/2014

APPENDIX L

Service Part Supplier Contact Information

TRW Chassis system
817 N. Taylor Rd.
Garrett, IN 46738

Julie Hadding	248-863-2426
Michael Brestik	248-863-2411

Service part Numbers

AE8Z 3504 B	2010 Fusion / Milan / MKZ
AE8Z 3504 BE	2011 Fusion / Milan / MKZ
AE8Z 3504 CE	2011 & 2012 Fusion / Milan / MKZ

Service Part Sales

Service Part Number: AE5Z-3504-CE
Engineering Part Number: AE5C-3504-BA

YR	Qty
2014	7538
2013	8751
2012	8858

Service Part Number: AE5Z-3504-BE
Engineering Part Number: AE5C-3504-BB

YR	Qty
2011	3237
2010	1279

Service Part Number: AE5Z-3504-B
Engineering Part Number: AE5C-3504-BD

YR	Qty
2009	335

PE14-030

FORD

12/19/2014

APPENDIX M

11a-1

Steering System

Electronic Power Assist Steering (EPAS) System

The Electronic Power Assist Steering (EPAS) system consists of the following components:

- Power Steering Control Module (PSCM) — the PSCM controls the functions of the EPAS system and communicates with other modules that are on the High Speed Controller Area Network (HS-CAN) bus. The PSCM is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Motor — the EPAS gear uses a 12-volt reversible motor to control the steering effort. The motor is connected to the steering rack by a toothed belt and a pulley/bearing assembly. The motor is used by the PSCM to move the rack inside the gear housing. Motor position is used to determine steering wheel angle/position instead of using a separate sensor. The motor is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Steering shaft torque sensor — the steering shaft torque sensor is used by the PSCM to determine how much force the steering wheel is being turned. The sensor sends out 2 signals, one for left and one for right. When the steering wheel is turned to the left, the left signal increases while the right signal decreases, likewise when the steering wheel is turned to the right, the right signal increases while the left signal decreases. This allows the PSCM to determine if the driver intends to go left or right in order to spin the motor in the appropriate direction. The sensor is mounted near the input shaft of the EPAS gear assembly and is not available separately for service.
- Inner tie rod — one inner tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- Outer tie rod — one outer tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- EPAS gear bellows boot — one bellows boot is located on each side of the EPAS gear assembly. Each boot is held in place with 2 boot clamps. The boots and clamps are available for service, refer to Section 211-02.
- +EPAS gear isolators — there are several rubber isolators (one at each attaching point) on the EPAS gear assembly. These isolators aid in reducing NVH concerns and not available separately for service.

The EPAS system utilizes a rack-and-pinion type steering gear. Power assist is provided by a motor that is connected to the steering rack by a belt and a pulley and bearing assembly. The steering gear and motor/module are serviced as an assembly. A new steering gear includes inner tie rods, however, the inner and outer tie rods can also be serviced separately. For information on tie-rod end service, refer to Section 211-02

Steering System

Electronic Power Assist Steering (EPAS) System

The Electronic Power Assist Steering (EPAS) system consists of the following components:

- Power Steering Control Module (PSCM) — the PSCM controls the functions of the EPAS system and communicates with other modules that are on the High Speed Controller Area Network (HS-CAN) bus. The PSCM is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Motor — the EPAS gear uses a 12-volt reversible motor to control the steering effort. The motor is connected to the steering rack by a toothed belt and a pulley/bearing assembly. The motor is used by the PSCM to move the rack inside the gear housing. Motor position is used to determine steering wheel angle/position instead of using a separate sensor. The motor is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Steering shaft torque sensor — the steering shaft torque sensor is used by the PSCM to determine how much force the steering wheel is being turned. The sensor sends out 2 signals, one for left and one for right. When the steering wheel is turned to the left, the left signal increases while the right signal decreases, likewise when the steering wheel is turned to the right, the right signal increases while the left signal decreases. This allows the PSCM to determine if the driver intends to go left or right in order to spin the motor in the appropriate direction. The sensor is mounted near the input shaft of the EPAS gear assembly and is not available separately for service.
- Inner tie rod — one inner tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- Outer tie rod — one outer tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- EPAS gear bellows boot — one bellows boot is located on each side of the EPAS gear assembly. Each boot is held in place with 2 boot clamps. The boots and clamps are available for service, refer to Section 211-02.
- EPAS gear isolators — there are several rubber isolators (one at each attaching point) on the EPAS gear assembly. These isolators aid in reducing NVH concerns and not available separately for service.

The EPAS system utilizes a rack-and-pinion type steering gear. Power assist is provided by a motor that is connected to the steering rack by a belt and a pulley and bearing assembly. The steering gear and motor/module are serviced as an assembly. A new steering gear includes inner tie rods, however, the inner and outer tie rods can also be serviced separately. For information on tie-rod end service, refer to Section 211-02.

Steering System

Electronic Power Assist Steering (EPAS) System

The Electronic Power Assist Steering (EPAS) system consists of the following components:

- Power Steering Control Module (PSCM) — the PSCM controls the functions of the EPAS system and communicates with other modules that are on the High Speed Controller Area Network (HS-CAN) bus. The PSCM is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Motor — the EPAS gear uses a 12-volt reversible motor to control the steering effort. The motor is connected to the steering rack by a toothed belt and a pulley/bearing assembly. The motor is used by the PSCM to move the rack inside the gear housing. Motor position is used to determine steering wheel angle/position instead of using a separate sensor. The motor is attached to the RH side of the EPAS gear assembly and is not available separately for service.
- Steering shaft torque sensor — the steering shaft torque sensor is used by the PSCM to determine how much force the steering wheel is being turned. The sensor sends out 2 signals, one for left and one for right. When the steering wheel is turned to the left, the left signal increases while the right signal decreases, likewise when the steering wheel is turned to the right, the right signal increases while the left signal decreases. This allows the PSCM to determine if the driver intends to go left or right in order to spin the motor in the appropriate direction. The sensor is mounted near the input shaft of the EPAS gear assembly and is not available separately for service.
- Inner tie rod — one inner tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- Outer tie rod — one outer tie rod is located at each end of the EPAS gear assembly and is available separately for service. Refer to Section 211-02.
- EPAS gear bellows boot — one bellows boot is located on each side of the EPAS gear assembly. Each boot is held in place with 2 boot clamps. The boots and clamps are available for service, refer to Section 211-02.
- EPAS gear isolators — there are several rubber isolators (one at each attaching point) on the EPAS gear assembly. These isolators aid in reducing NVH concerns and not available separately for service.

The EPAS system utilizes a rack-and-pinion type steering gear. Power assist is provided by a motor that is connected to the steering rack by a belt and a pulley and bearing assembly. The steering gear and motor/module are serviced as an assembly. A new steering gear includes inner tie rods, however, the inner and outer tie rods can also be serviced separately. For information on tie-rod end service, refer to Section 211-02.

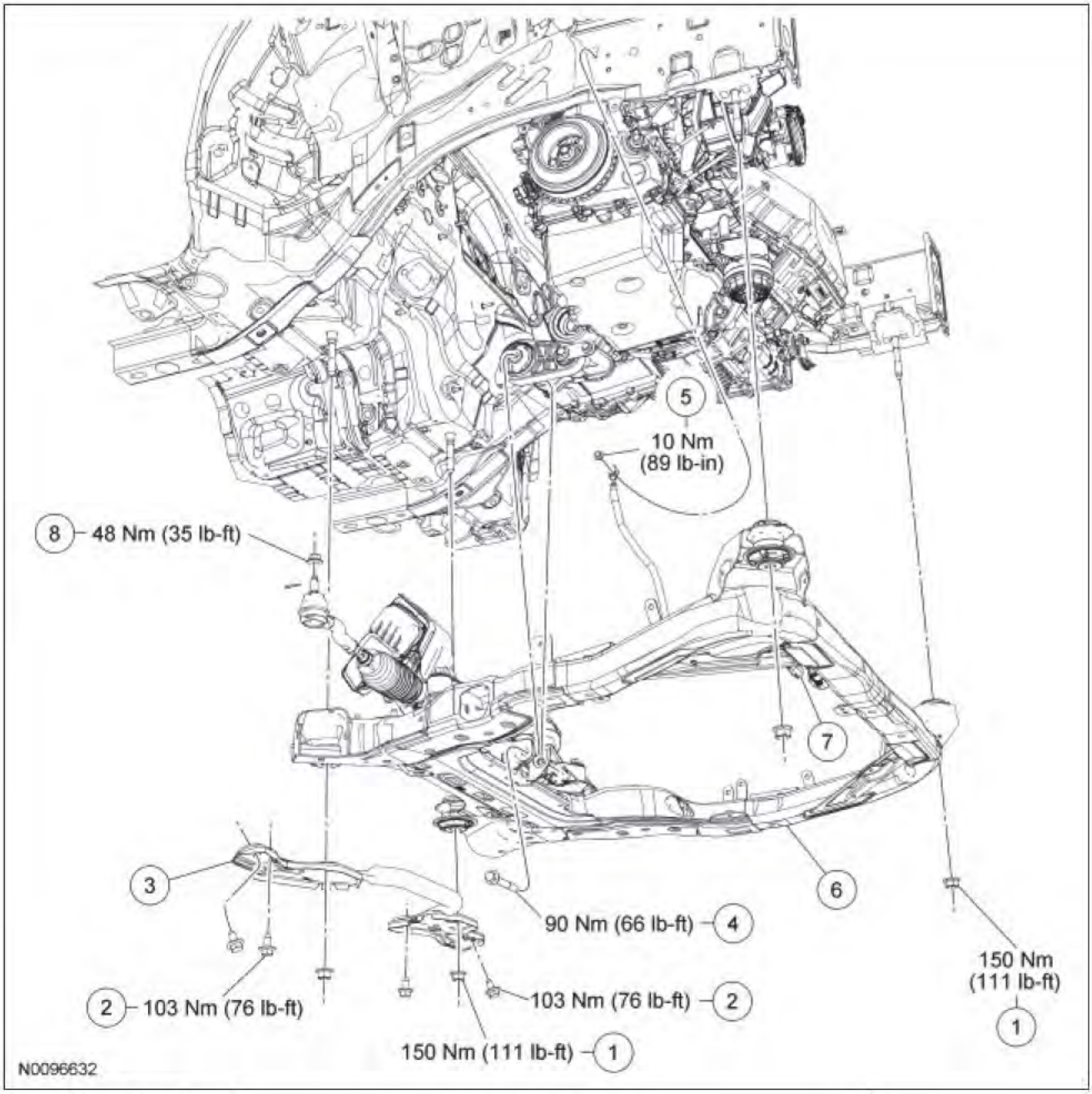
PE14-030

FORD

12/19/2014

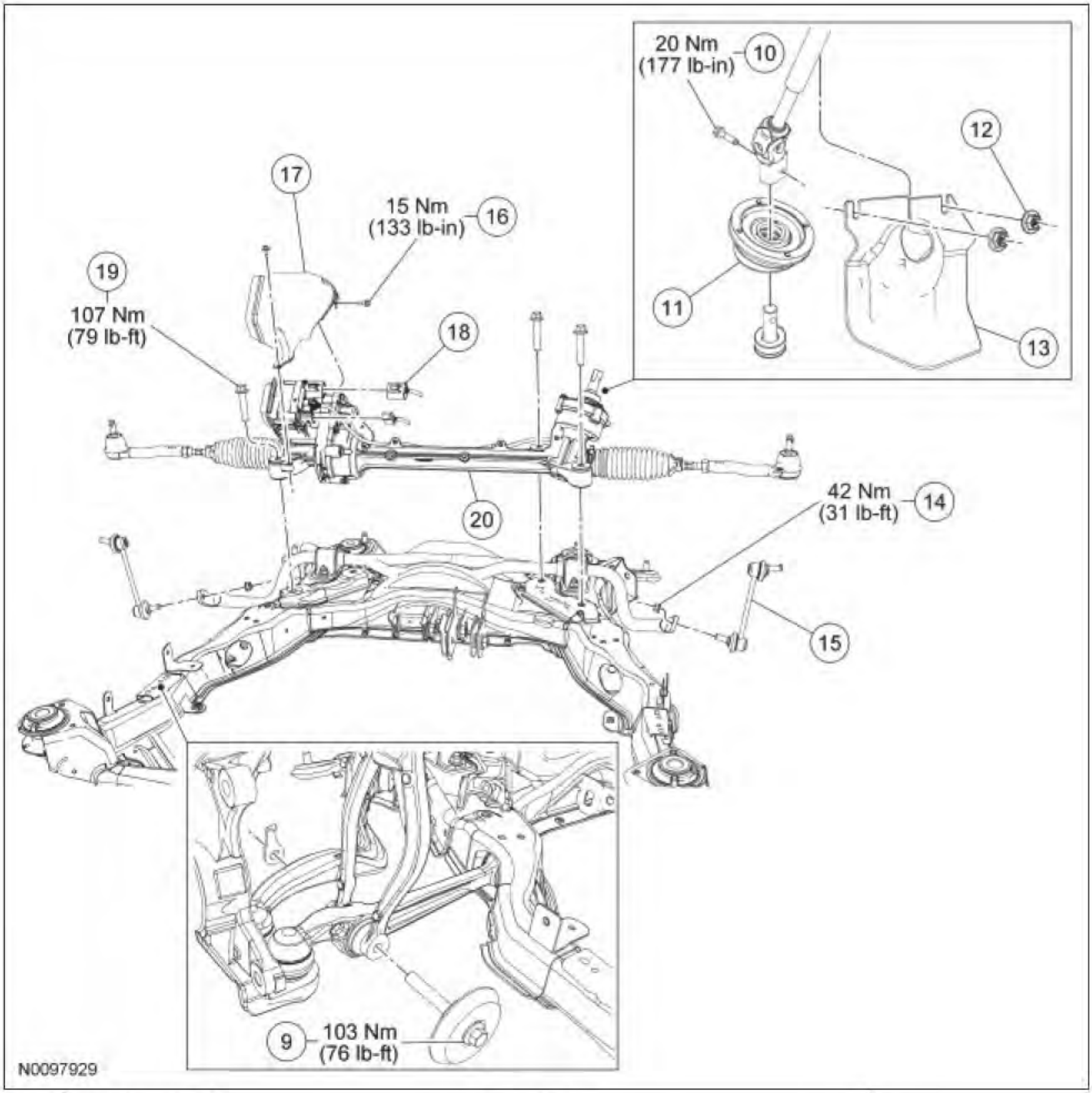
APPENDIX M

11a-2



Item	Part Number	Description
1	W520416	Front subframe nuts (4 required)
2	3C496	Front subframe support bracket bolts (4 required)
3	5884	Subframe support bracket
4	W500545	Roll restrictor bolt
5	W506410	Electronic Power Assist Steering (EPAS) ground wire bolt
6	5C145	Front subframe
7	—	EPAS jumper harness connector (2 required)
8	6E5C	Tie-rod end nut (2 required)

NOTE: *Early build vehicle shown, late build vehicle similar.*



Item	Part Number	Description
9	W500550	Damper fork-to-front lower arm bolt (2 required)
10	3R827	Steering column shaft-to-steering gear bolt
11	3611B	Steering gear/dash seal
12	W704904	Lower steering column shaft joint cover nut (2 required)
13	3611A	Lower steering column shaft joint cover
14	3C494	Lower stabilizer bar link nut (2 required)
15	3053 /3052	Stabilizer bar link (2 required)
16	W506410	EPAS connector shield bolt (2 required) (early build vehicles only)
17	3K721	EPAS connector shield (early build vehicles only)
18	—	EPAS electrical connector (part of 3F720) (2 required)
19	3C497	Steering gear bolt (3 required)
20	3504	Steering gear

PE14-030

FORD

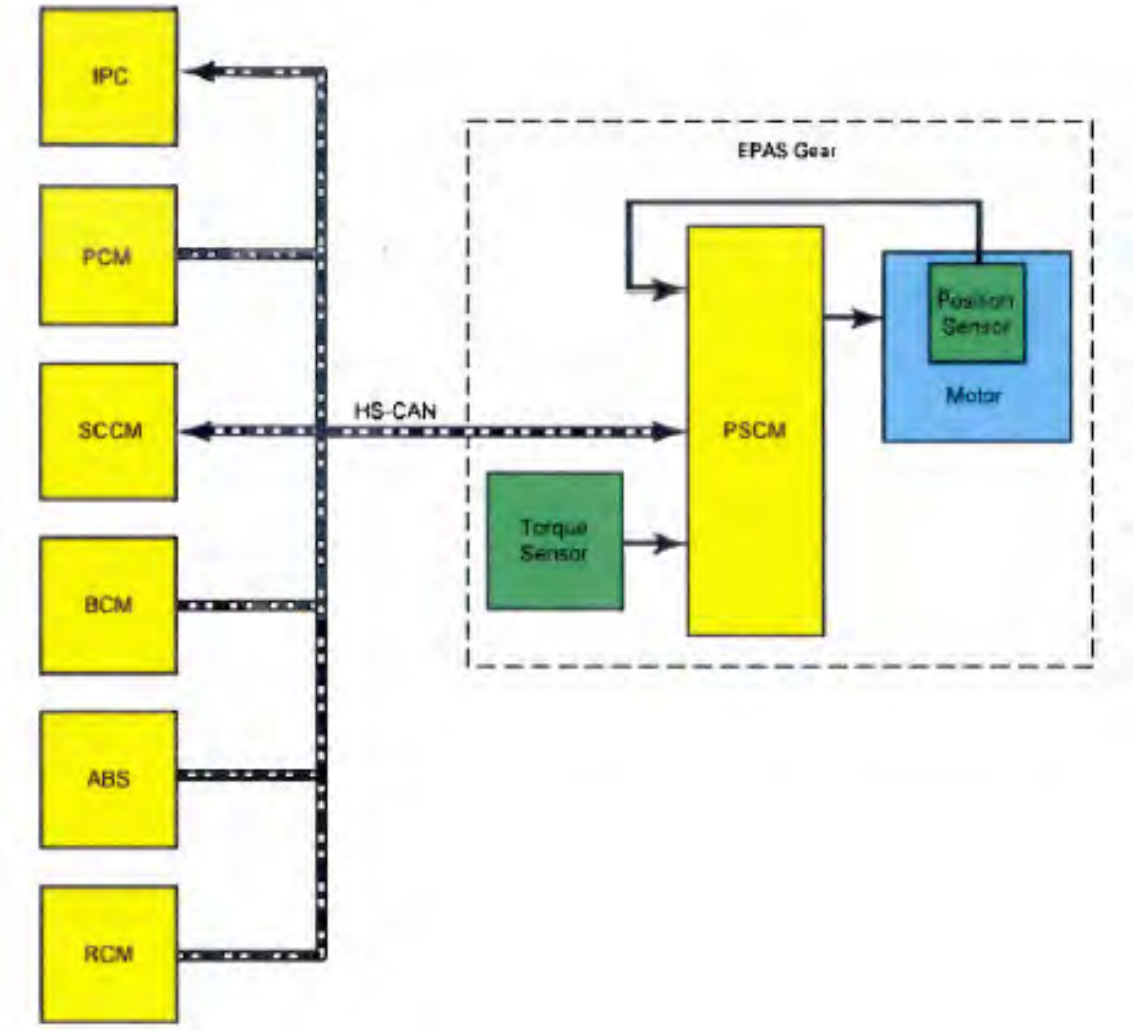
12/19/2014

APPENDIX M

11b

Electronic Power Assist Steering (EPAS) System

System Diagram



PE14-030

FORD

12/19/2014

APPENDIX M

11c and 11e

3.5. DTC and Related Information

This section documents all supported DTCs, extended data records, snapshot data records, and other DTC related information supported by the ECU.

3.5.1. ReadDTCInformation Sub-Functions

SF	Name	0x01	0x02	0x03	0x60
0x01	reportNumberOfDTCByStatusMask	x		x	x
0x02	reportDTCByStatusMask	x		x	x
0x0A	reportSupportedDTC	x		x	x
0x04	reportDTCSnapshotRecordByDTCNumber	x		x	x
0x06	reportDTCExtendedDataRecordByDTCNumber	x		x	x

3.5.2. GroupOfDTC Parameters

GroupOfDTCParameter	Description
0xFFFFFF	All DTC's

3.5.3. Supported DTC Status Bits

Bit	Name
1	testFailedThisMonitoringCycle
3	confirmedDTC
6	testNotCompletedThisMonitoringCycle
7	warningIndicatorRequested

3.5.4. Supported Extended Data Records

Value (Hex)	Name	Type	Description
0x02	Monitoring cycle counter #2	unsigned	Number of monitoring cycles since the DTC fault detection counter last reached its maximum value of +127 (since DTC information was last cleared). The monitoring cycles during which the test was not completed are excluded.
0x10	DTC Fault Detection Counter	unsigned	The purpose of this counter is to provide a mechanism for filtering the results of a low-level fault detection process so that test results (pass and fail) can be qualified before setting any DTC status bits.

3.5.5. Supported Snapshot Data Records

Value (Hex)	Description
0x10	The first time since DTC information was cleared or the DTC was aged that the DTC fault detection counter reaches its maximum value of +127 (DTC status bit 3 is set to 1).

Refer to the specifics for each DTC to see the details of the snapshot data that is stored.

3.5.6. Freeze Frame Data Records

ECU supports 0 freeze frame data records

3.5.6.1. DTCs

The following table contains a summary of all DTCs supported by the ECU.

DTC (Hex)	DTC (display)	DTC Type	Root Description	Failure Type Byte Description
0x07AE09	P07AE-09	C	Transmission Friction Element "G" Performance/Stuck Off	Component Failure
0x5B002F	C1B00-2F	C	Steering Angle Sensor	Signal Erratic
0x5B0062	C1B00-62	C	Steering Angle Sensor	Signal Compare Failure
0x600B2F	C200B-2F	C	Steering Shaft Torque Sensor 1	Signal Erratic
0x600B61	C200B-61	C	Steering Shaft Torque Sensor 1	Signal Calculation Failure
0x600B62	C200B-62	C	Steering Shaft Torque Sensor 1	Signal Compare Failure
0x600C2F	C200C-2F	C	Steering Shaft Torque Sensor 2	Signal Erratic
0x600D49	C200D-49	C	Motor Rotation Angle Sensor	Internal Electronic Failure
0x9D2368	B1D23-68	C	Overheat Sensor	Event Information
0xC00188	U0001-88	C	High Speed CAN Communication Bus	Bus off
0xC10000	U0100-00	C	Lost Communication With ECM/PCM "A"	No Sub Type Information
0xC12100	U0121-00	C	Lost Communication With Anti-Lock Brake System (ABS) Control Module	No Sub Type Information
0xC30000	U0300-00	C	Internal Control Module Software Incompatibility	No Sub Type Information
0xC40100	U0401-00	C	Invalid Data Received from ECM/PCM A	No Sub Type Information
0xC41500	U0415-00	C	Invalid Data Received From Anti-Lock Brake System (ABS) Control Module	No Sub Type Information
0xC41522	U0415-22	C	Invalid Data Received From Anti-Lock Brake System (ABS) Control Module	Signal Amplitude > Maximum
0xE01149	U2011-49	C	Motor	Internal Electronic Failure
0xE01161	U2011-61	C	Motor	Signal Calculation Failure
0xE10000	U2100-00	C	Initial Configuration Not Complete	No Sub Type Information
0xE10100	U2101-00	C	Control Module Configuration Incompatible	No Sub Type Information
0xF00041	U3000-41	C	Control Module	General Checksum Failure
0xF00046	U3000-46	C	Control Module	Calibration / Parameter Memory Failure
0xF00049	U3000-49	C	Control Module	Internal Electronic Failure
0xF00061	U3000-61	C	Control Module	Signal Calculation Failure
0xF00072	U3000-72	C	Control Module	Actuator Stuck Open
0xF00096	U3000-96	C	Control Module	Component Internal Failure
0xF00316	U3003-16	C	Battery Voltage	Circuit Voltage Below Threshold
0xF00317	U3003-17	C	Battery Voltage	Circuit Voltage Above Threshold
0xF00368	U3003-68	C	Battery Voltage	Event Information

Legends
C = Continuous DTC
D = On-Demand DTC
CD = Continuous and On-Demand DTC

3.5.6.2. DTC 0x07AE09 - Transmission Friction Element "G" Performance/Stuck Off Component Failure

DTC Number	0x07AE09 (P07AE-09)
Root Description	Transmission Friction Element "G" Performance/Stuck Off
Failure Type Byte Description	Component Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is awake and assist is provided. 3. Steering wheel angle, torque, and vehicle speed meet test condition requirements.
Test Period	20 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if the ECU detects that Friction is above the friction threshold. Pass Criteria: If this fail criteria is not met (i.e the friction is below the friction threshold).
Action Taken By ECU in Response To Fault	A. For the current Journey: 1. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. Assist will be provided at the default Vehicle Speed 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x2 for friction detection code. 4. In CAN Message $80, RSP and ASP = INVALID 5. DTC will stay active every key cycle untill cleared by service technician. B. For subsequent journeys and provided that vehicle is confirmed not moving (below 2.7 kph): 1. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. The DTC will stay raised and assistance will stay permanently disabled unless cleared by a service technician after proper inspection 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x3 for friction detection code. 4. In CAN Message $80, RSP and ASP = INVALID
Fault Symptom Recognized by Vehicle Occupants	A. For the current Journey: 1. Assist will be provided at the default Vehicle Speed 2. Poor returnability 3. Increased Steering noise. Driver will be notified through change in EPAS failure signal (Message frame $82) . B. For subsequent journeys and provided that vehicle is confirmed not moving (below 2.7 kph): 1. Assistance will stay permanently disabled unless cleared by a service technician after proper inspection 2. Driver will be notified through change in EPAS failure signal (Message frame $82) .
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace the Gear

Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.3. DTC 0x5B002F - Steering Angle Sensor Signal Erratic

DTC Number	0x5B002F (C1B00-2F)
Root Description	Steering Angle Sensor
Failure Type Byte Description	Signal Erratic
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	4ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: The DTC is raised (testFailedThisMonitoringCycle = 1) if the ECU determines that designed Rack travel length is exceeded for 1 test periods. Pass Criteria: If fail criteria is not met (i.e. Rack Travel length is correct)
Action Taken By ECU in Response To Fault	1.ECU still provides Assist 2. This DTC is no longer monitored. 3. Requires ignition cycle or ECU reset to restart monitoring this DTC (5B002F) 4. ECU transmits INVALID RSP signal (msg $80) and INVALID ASP 5. PDC and Friction detection are turned off
Fault Symptom Recognized by Vehicle Occupants	Assist will NOT be removed
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Clear DTC. Cycle the ignition or issue ECU reset
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.4. DTC 0x5B0062 - Steering Angle Sensor Signal Compare Failure

DTC Number	0x5B0062 (C1B00-62)
Root Description	Steering Angle Sensor
Failure Type Byte Description	Signal Compare Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	4ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if ECU detects the integrity of Relative steering Offset or Relative Steering Position is Faulty for 4 consecutive test periods. Pass Criteria: If the fail criteria is not met (i.e. Integrity of Relative Steering Offset or RSP is not faulty)
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4.Requires ignition cycle or ECU reset to restart monitoring all DTCs. 5. 'Steering wheel Angle' is set to INVALID
Fault Symptom Recognized by Vehicle Occupants	For RSP fault Assist will be removed and WarnIngIndicator will be turned ON (DTC status bit 7 will be set to '1'). Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.5. DTC 0x600B2F - Steering Shaft Torque Sensor 1 Signal Erratic

DTC Number	0x600B2F (C200B-2F)
Root Description	Steering Shaft Torque Sensor 1
Failure Type Byte Description	Signal Erratic
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	1ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: The DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if Torque sensor 1 or Torque frequency 1 is out of range for 19 consecutive test periods. Pass Criteria: When fail criteria is not met (i.e. Torque sensor 1 or Torque frequency 1 will not be faulty).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. It is possible for this DTC to fail when power steering assist has already been removed. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) 4. Message $82 SteeringColumnTorque = INVALID. 5. Requires ignition cycle OR ECU reset to restart monitoring all the DTCs.
Fault Symptom Recognized by Vehicle Occupants	Assist is removed and WarnIngIndicator will be turned ON. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.6. DTC 0x600B61 - Steering Shaft Torque Sensor 1 Signal Calculation Failure

DTC Number	0x600B61 (C200B-61)
Root Description	Steering Shaft Torque Sensor 1
Failure Type Byte Description	Signal Calculation Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	2 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria : This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if the ECU detects that the Integrity of the Torque sensor signal is Faulty for 9 consecutive test periods. Pass Criteria: If this fault criteria is not met (i.e. Integrity of Torque sensor corect)
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. It is possible for this DTC to fail when power steering assist has already been removed. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) 4. Message $82 SteeringColumnTorque = INVALID. 5. Requires ignition cycle OR ECU reset to restart monitoring all the DTCs.
Fault Symptom Recognized by Vehicle Occupants	Assist is removed and WarnIngIndicator will be turned ON. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.7. DTC 0x600B62 - Steering Shaft Torque Sensor 1 Signal Compare Failure

DTC Number	0x600B62 (C200B-62)
Root Description	Steering Shaft Torque Sensor 1
Failure Type Byte Description	Signal Compare Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	1 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if different between Torque sensor 1 and Torque sensor 2 is greater than error threshold or Torque sensor 1 is overrange for 19 consecutive test periods. Pass Criteria: If the criterias for the above faults are not met.
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. It is possible for this DTC to fail when power steering assist has already been removed. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) 4. Message $82 SteeringColumnTorque = INVALID. 5. Requires ignition cycle OR ECU reset to restart monitoring all the DTCs.
Fault Symptom Recognized by Vehicle Occupants	Assist is removed and WarnIngIndicator will be turned ON. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.8. DTC 0x600C2F - Steering Shaft Torque Sensor 2 Signal Erratic

DTC Number	0x600C2F (C200C-2F)
Root Description	Steering Shaft Torque Sensor 2
Failure Type Byte Description	Signal Erratic
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	1 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: The DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if Torque sensor 2 or Torque frequency 2 is out of range for 19 consecutive test periods. Pass Criteria: When fail criteria is not met (i.e. Torque sensor 2 or Torque frequency 2 will not be faulty).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. It is possible for this DTC to fail when power steering assist has already been removed. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) 4. Message $82 SteeringColumnTorque = INVALID. 5. Requires ignition cycle OR ECU reset to restart monitoring all the DTCs.
Fault Symptom Recognized by Vehicle Occupants	Assist is removed and WarnIngIndicator will be turned ON. Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.9. DTC 0x600D49 - Motor Rotation Angle Sensor Internal Electronic Failure

DTC Number	0x600D49 (C200D-49)
Root Description	Motor Rotation Angle Sensor
Failure Type Byte Description	Internal Electronic Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V.
Test Period	4 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria : This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) If the ECU detects failed motor position angle sensor. Pass Criteria: If the fault is criteria is not met (i.e. Motor position angle sensor is NOT faulty)
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. 2. This DTC is not Monitored in manual steering. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4.Requires ignition cycle or ECU reset to restart monitoring all DTCs. 5. 'Steering Wheel angle' is set to INVALID
Fault Symptom Recognized by Vehicle Occupants	1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.10. DTC 0x9D2368 - Overheat Sensor Event Information

DTC Number	0x9D2368 (B1D23-68)
Root Description	Overheat Sensor
Failure Type Byte Description	Event Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V and system is not in manual steering mode.
Test Period	20 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) when the system is reducing assist due to thermal limiting. Pass Criteria: If this fail criteria is not met [i.e. thermal current limits is equal to OR above the rated current].
Action Taken By ECU in Response To Fault	1. Steering assist may be limited. 2. DTC is no longer be monitored once DTC is raised. 3. Requires ignition cycle or ECU reset to monitor the DTC
Fault Symptom Recognized by Vehicle Occupants	Heavier than usual steering efforts
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. This DTC may be raised under extreme temperature usage conditions. Check heat protection. 2. Clear the DTC and cycle the ignition.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.11. DTC 0xC00188 - High Speed CAN Communication Bus Bus off

DTC Number	0xC00188 (U0001-88)
Root Description	High Speed CAN Communication Bus
Failure Type Byte Description	Bus off
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V. 2. ECU is in Normal operation
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised(testFailedThisMonitoringCycle = 1) if the ECU detects that transmission of CAN frame from PSCM module is not acknowledged by other CAN bus modules for 400 msec. 2) if the CAN bus is deemed to have communication error for greater than 5 seconds. Pass Criteria: If this fail criteria is not met (i.e. the PSCM module transmitts all the CAN message frame in correct format to the CAN bus).
Action Taken By ECU in Response To Fault	1.ECU still provides Assist (Ramps assist to default vehicle speed).
Fault Symptom Recognized by Vehicle Occupants	1.Assist is not removed, but provided at default vehicle speed levels.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Check CAN connection, CAN interface, or CAN bus and fix the faulty one. 2. Clear DTC and cycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.12. DTC 0xC10000 - Lost Communication With ECM/PCM "A" No Sub Type Information

DTC Number	0xC10000 (U0100-00)
Root Description	Lost Communication With ECM/PCM "A"
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V. 2. ECU is in Normal operation. 3. No 'Bus Off' condition detected 4. Setting the DTCs after the message is missed for 5 seconds
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the ECU detects the ABSENT of CAN Message Frame from ECM/PCM module. Absent of the following messages/signals from the ECM/PCM module for more than 5000ms : Message frames 0x201 (Engine_Vehicle_Speed_Throttle) OR 0x420 (Powertrain_Driver_Info_1) for GAS Vehicle Message frames 0x400 (HEV_PCM_DRIVER_INTERFACE) OR 0x401 (HEV_DCDC_STATE_1) for HEV Vehicle Pass Criteria: If these fail criterias are not met (above messages are being recieved from PCM Module in correct format).
Action Taken By ECU in Response To Fault	1. ECU will provide steering assist at highway levels after 3 missing message frames
Fault Symptom Recognized by Vehicle Occupants	Assist will be provided at highway speed level.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Fix the CAN interface, and check the ECM/PCM module for correct CAN message transmission 2. Clear DTC and Cycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.13. DTC 0xC12100 - Lost Communication With Anti-Lock Brake System (ABS) Control Module No Sub Type Information

DTC Number	0xC12100 (U0121-00)
Root Description	Lost Communication With Anti-Lock Brake System (ABS) Control Module
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V. 2. ECU is in Normal operation 3. No 'Bus Off' condition detected 4. Setting the DTCs after the message is missed for 5 seconds
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the ECU detects the ABSENT of CAN message Frame from ABS module. Absent of the following CAN message/signal from ABS module for 5 seconds will cause raising this fault : Message frame 0x74 (Brake_Sensor_Data_2) OR Message frame 0x73 (Brake_Sensor_Data) for both GAS and HEV Vehicles Pass Criteria: If this fail criteria is not met (above message is being recieved in correct format from ABS Module).
Action Taken By ECU in Response To Fault	1. ECU still provides Assist 2. This DTC is no longer be monitored for this key cycle. 3. ASP = INVALID 4. ECU removes PDC/Friction detection
Fault Symptom Recognized by Vehicle Occupants	Assist will be provided.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Fix the CAN interface, and check the ABS module for correct CAN message transmission. 2. Clear DTC and cycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.14. DTC 0xC30000 - Internal Control Module Software Incompatibility No Sub Type Information

DTC Number	0xC30000 (U0300-00)
Root Description	Internal Control Module Software Incompatibility
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON ECU terminal voltage is above 6V.
Test Period	4 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised(testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if the ECU HW and SW are not compatible. Pass Criteria: If this fail criteria is not met (i.e. Software is compatible).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. Once in manual steering all DTCs are not monitored. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4. Requires ignition cycle or ECU reset to restart monitoring all DTCs.
Fault Symptom Recognized by Vehicle Occupants	1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Check HW and SW compatibilty.Re-flash with compatible SW if necessary
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.15. DTC 0xC40100 - Invalid Data Received from ECM/PCM A No Sub Type Information

DTC Number	0xC40100 (U0401-00)
Root Description	Invalid Data Received from ECM/PCM A
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V.] 2. ECU is in Normal operation 3. No 'Bus Off' condition detected 4. Setting the DTCs after receiving the INVALID signals, 'EngineSpeed' OR 'VEHICLE_SPEED' for 5 seconds
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the : 1. CAN Signal 'EngineSpeed' or 'Ready Light' is detected as 'INVALID' or 'UNKNOWN' for 5 seconds. 2. CAN Signal 'VEHICLE_SPEED' is detected as 'INVALID' or 'UNKNOWN' for 5 seconds. Pass Criteria: If these fail criterias are not met (receives VALID message/signal)
Action Taken By ECU in Response To Fault	1. ECU still provides Assist for Default Vehicle Speed. 2. DTC is no longer be monitored.
Fault Symptom Recognized by Vehicle Occupants	1. Assist will be provided at highway speed levels. 2. Higher steering efforts in parking situations.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Fix CAN interface and check the ECM/PCM module for correct CAN message transmission. 2. Clear the DTC and Cycle the ignition (or ECU reset).
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.16. DTC 0xC41500 - Invalid Data Received From Anti-Lock Brake System (ABS) Control Module No Sub Type Information

DTC Number	0xC41500 (U0415-00)
Root Description	Invalid Data Received From Anti-Lock Brake System (ABS) Control Module
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V] 2. ECU is in Normal operation 3. No 'Bus Off' condition detected 4. Setting the DTCs after receiving first INVALID/UNKNOWN message frame $74. 5. If CAN signal 'VEH LAT ACC' = INVALID for 5 Seconds
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the PSCM receives STEERING_WHEEL_ANGL_OFFSET 'INVALID' or 'UNKNOWN' Data (message frame $74) from ABS (Anti-Lock Brake) module after having received VALID and KNOWN data OR If VEH_LAT_ACC (Frame $73) = INVALID for 5 seconds Pass Criteria: If these fail criterias are not met (receives VALID message/signal)
Action Taken By ECU in Response To Fault	1. ECU still provides Assist If STEERING_WHEEL_ANGL_OFFSET is INVALID / UNKNOWN a.ASP signal = INVALID /UNKNOWN b.Friction Detection Function is inhibited for the journey c.PDC function is inhibited for the journey If VEH_LAT_ACC is INVALID -Friction Detection Function is inhibited
Fault Symptom Recognized by Vehicle Occupants	Driver may experience that the PDC function is inhibited
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Fix CAN interface and check the ABS module for correct CAN message transmission. 2. Clear the DTC and Cycle the ignition (or ECU reset).
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.17. DTC 0xC41522 - Invalid Data Received From Anti-Lock Brake System (ABS) Control Module Signal Amplitude > Maximum

DTC Number	0xC41522 (U0415-22)
Root Description	Invalid Data Received From Anti-Lock Brake System (ABS) Control Module
Failure Type Byte Description	Signal Amplitude > Maximum
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON + 5 sec and ECU terminal voltage is greater than 9V.] 2. ECU is in Normal operation 3. No 'Bus Off' condition detected
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the CAN signal 'VEH_LAT_ACC' (message frame $73) is above 30 m/sec/sec Pass Criteria: If these fail criterias are not met (CAN signal 'VEH_LAT_ACC' is below 30 m/sec/sec)
Action Taken By ECU in Response To Fault	1. ECU still provides Assist 2. Friction detection algorithm is inhibited as long the CAN signal is INVALID
Fault Symptom Recognized by Vehicle Occupants	No effect
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	
Special Considerations	1. Fix CAN interface and check the ABS module for correct CAN message transmission. 2. Clear the DTC and Cycle the ignition (or ECU reset).
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.18. DTC 0xE01149 - Motor Internal Electronic Failure

DTC Number	0xE01149 (U2011-49)
Root Description	Motor
Failure Type Byte Description	Internal Electronic Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and the ECU terminal voltage is range [10V <= Vbatt <= 17V] 2. ECU is in Normal operation or running power up diagnostics.
Test Period	1 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if the ECU detects that motor phase voltage is greater than phase voltage threshold high OR less than the phase voltage threshold Low for the 19 consecutive test periods. Pass Criteria: If this fail criteria is not met (i.e the motor phase voltage is correct).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering.WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3.In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure 4. Requires ignition cycle or ECU reset to restart monitoring all DTCs. 5. Steering Wheel Angle may be INVALID 6. RSP and ASP = INVALID
Fault Symptom Recognized by Vehicle Occupants	1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.19. DTC 0xE01161 - Motor Signal Calculation Failure

DTC Number	0xE01161 (U2011-61)
Root Description	Motor
Failure Type Byte Description	Signal Calculation Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and the ECU terminal voltage is range [10V <= Vbatt <= 17V] 2. ECU is in Normal operation.
Test Period	2 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1AND warningIndicatorRequested = 1) if the ECU detects that the integrity of the motor Torque estimate or Motor velocity signal is faulty for 9 consecutive test periods. Pass Criteria: If this Fail criteria is not met (i.e. motor Torque estimate or Motor velocity signal is NOT faulty).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering.WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure 4.Requires ignition cycle or ECU reset to restart monitoring all DTCs. 5. 'Steering Wheel Angle' is set to INVALID
Fault Symptom Recognized by Vehicle Occupants	1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.20. DTC 0xE10000 - Initial Configuration Not Complete No Sub Type Information

DTC Number	0xE10000 (U2100-00)
Root Description	Initial Configuration Not Complete
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is greater than 6.0 V.
Test Period	Power Up
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC shall be set (testFailedThisMonitoringCycle = 1) for new ECUs executing their application that have not yet been configured with a valid initial configuration (e.g., default configuration still present) in DID 0xDE00. Pass Criteria: If the ECU configured with the valid configuration data.
Action Taken By ECU in Response To Fault	1 Assist will not be removed. 2. DTC is no longer be monitored. 3. Requires ignition cycle or ECU reset to restart monitoring the DTC is monitored.
Fault Symptom Recognized by Vehicle Occupants	Assist will not be removed.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Configure the module with the proper vehicle tune ID . 2. Clear DTC and cycle the Ignition (or ECU reset).
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.21. DTC 0xE10100 - Control Module Configuration Incompatible No Sub Type Information

DTC Number	0xE10100 (U2101-00)
Root Description	Control Module Configuration Incompatible
Failure Type Byte Description	No Sub Type Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON during Power Up 2. ECU is in Normal Operation
Test Period	Power Up
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC shall be set (testFailedThisMonitoringCycle = 1) if the ECU detects that it is receiving CAN message frame inconsistent with the expected CAN frame. Pass Criteria: If the ECU receives CAN frame consistent with the expected CAN frame.
Action Taken By ECU in Response To Fault	1 ECU will raise DTC 0xC10000 (Lost communication with ECM/PCM) and provide Assist at the safe speed 2. Requires ignition cycle or ECU reset to monitor the DTC.
Fault Symptom Recognized by Vehicle Occupants	Assist will be provided at the highway speed levels.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	DID 0xDE00 can be used to clear this DTC: 1. use DID 0xDE00 to select "No Tune Selected (0x99)" 2. Reset ECU or Cycle the ignition 3. use DID 0xDE00 to select the appropriate Vehicle Variant Tune slector 4) Reset ECU or recycle Ignition 5) Confirm that no DTC is raised
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.22. DTC 0xF00041 - Control Module General Checksum Failure

DTC Number	0xF00041 (U3000-41)
Root Description	Control Module
Failure Type Byte Description	General Checksum Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is in Normal Operation
Test Period	4 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised(testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) if the ECU detect either of the following : 1. Boot ROM CRC check fails 2. Application Program ROM CRC Check fails 3. Application Constants ROM CRC Check fails 4. data ROM in xFlash (Calibration Data) fails Pass Criteria: If this fail criteria is not met (i.e. ECU do not detect either of the above fails).
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. Requires ignition cycle or ECU reset to restart monitoring all DTCs. 4. RSP and ASP = INVALID
Fault Symptom Recognized by Vehicle Occupants	Assist will be removed and WarnIngIndicator will be turned ON (DTC status bit 7 will be set to '1'). Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.23. DTC 0xF00046 - Control Module Calibration / Parameter Memory Failure

DTC Number	0xF00046 (U3000-46)
Root Description	Control Module
Failure Type Byte Description	Calibration / Parameter Memory Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is in Normal Operation
Test Period	Power Up - Tune safe condition
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the ECU detect that CRC calculation does not match with the stored CRC for the associated calibration log OR if the ECU detect that Vehicle tune is not plausible. Pass criteria: if this fail criteria is not met (i.e. CRC calculation is correct Tune data is plausible)
Action Taken By ECU in Response To Fault	For faults that ECU can recover: 1. ECU logs this DTC, loads a default Tune or calibration, and remain in normal operation providing Assist 2.This DTC (F00046) is no longer be monitored. 3. Requires ignition cycle or ECU reset to restart monitoring this DTC (F00046) after it has been raised OR DTC E10000 may be raised on next ignition cycle. For faults that CU can not recover: 1. Power Steering Assist is removed and system operates with manual steering.WarnIngIndicator will be requested to turn ON (DTC status bit 7 will be set to '1'). 2. This DTC is not Monitored in manual steering. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure 4.Requires ignition cycle or ECU reset to restart monitoring all DTCs.
Fault Symptom Recognized by Vehicle Occupants	For faults that ECU can recover: Assist will not be removed and WarnIngIndicator will not be turned ON. Driver may feel a difference in steering feel For faults that ECU can not recover: 1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering

	system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.24. DTC 0xF00049 - Control Module Internal Electronic Failure

DTC Number	0xF00049 (U3000-49)
Root Description	Control Module
Failure Type Byte Description	Internal Electronic Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is in Normal Operation during Power up or Power down
Test Period	1 ms - 20ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	There are many internal Fault codes that map to this DTC: If this DTC is raised and Assist is still provided then potential fail criteria are: 1. ECU detected CRC faults associated with the different Tune or Calibration blocks 2. ECU detected Stuck bits in the CAN mailbox 3. CAN hardware not responding 4. Motor relay open circuit fault If this DTC is raised and Assist is removed then potential fail criteria are: 1. Motor phase voltage faults 2. Motor correct sense faults 3. 2nd Micro communication faults 4. General Micro failure such as watchdog reset Pass Criteria: If the above fail criterias are not met.
Action Taken By ECU in Response To Fault	For non loss of assist faults: 1. ECU logs this DTC and remain in normal operation providing Assist 2.This DTC (F00049) is no longer be monitored. 3. Requires ignition cycle or ECU reset to restart monitoring this DTC (F00049). For loss of assist fault: 1. . Power Steering Assist is permanately removed and system operates with manual steering. 2. Once in manual steering all DTCs are not monitored. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4. This fault cannot be cleared with a key cycle, or clear DTC request and requires replacing the gear.
Fault Symptom Recognized by Vehicle Occupants	For loss of assist fault: 1. Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) For non loss of assist faults: Assist will NOT be removed and WarnIngIndicator will NOT be ON.

Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Clear DTC, cycle the ignition (or ECU reset) . System should be in normal operation state (for non loss of Assist fault). Otherwise, Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive(for loss of Assist fault).
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.25. DTC 0xF00061 - Control Module Signal Calculation Failure

DTC Number	0xF00061 (U3000-61)
Root Description	Control Module
Failure Type Byte Description	Signal Calculation Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is in Normal Operation
Test Period	2 ms - 20ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria : This DTC is raised (testFailedThisMonitoringCycle = 1 AND warningIndicatorRequested = 1) If the ECU detects that: 1. integrity of assist Torque or current calculation is faulty (Assist will be removed) Pass Criteria: If the above fault criteria is not met..
Action Taken By ECU in Response To Fault	1. Power Steering Assist is removed and system operates with manual steering. 2. This DTC is not Monitored in manual steering. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4.Requires ignition cycle or ECU reset to restart monitoring all DTCs. 5.'Steering Wheel Angle' is set to INVALID
Fault Symptom Recognized by Vehicle Occupants	1.Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel)
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	Replace gear if DTC is reproduced after DTC cleared and IGN recycled (or ECU reset) following an evaluation of the steering system including a test drive.
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.26. DTC 0xF00072 - Control Module Actuator Stuck Open

DTC Number	0xF00072 (U3000-72)
Root Description	Control Module
Failure Type Byte Description	Actuator Stuck Open
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and Vbatt > 9 Volt 2. ECU is in Normal operation
Test Period	Power Up
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if Link relay fails to close. Pass Criteria: If this fail criteria is not met [i.e. Link relay is deemed to be 'closed' as expected].
Action Taken By ECU in Response To Fault	1. An 'A'-level fault is raised when the test fails and DTC 0xF000-72 (Control Module - Actuator stuck open) is confirmed. ECU logs this DTC and still capable of providing Assist. 2. Consequential B-level faults will be generated if the fault persists during the remaining power-up tests which will result in loss of assist AND In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure
Fault Symptom Recognized by Vehicle Occupants	DTC will not remove assist if raised by itself, but subsequent loss of assist DTCs will likely be logged.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.27. DTC 0xF00096 - Control Module Component Internal Failure

DTC Number	0xF00096 (U3000-96)
Root Description	Control Module
Failure Type Byte Description	Component Internal Failure
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and Battery Voltage is in operational range [11V <= Vbatt <= 16V] 2. ECU is in Normal operation
Test Period	4 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised if (testFailedThisMonitoringCycle = 1)ECU detects that Drive stage thermistor voltage is outside the upper and lower diagnostic thresholds. The ECU assumes a "default drive stage temperature" of 130 C Pass Criteria: If this fail criteria is not met.
Action Taken By ECU in Response To Fault	For non loss of assist faults: 1. ECU logs this DTC and remain in normal operation providing Assist 2.This DTC (F00096) is no longer monitored for the current key cycle, but the drive stage temp is used if valid. 3. Requires ignition cycle or ECU reset to restart monitoring this DTC (F00096). For loss of assist fault: 1. . Power Steering Assist is permanately removed and system operates with manual steering. 2. Once in manual steering all DTCs are not monitored. 3. In CAN message $82 (EPAS Info) the signal EPAS_FAILURE = 0x1 for loss of assist diagnostic failure. 4. This fault cannot be cleared with a key cycle, or clear DTC request and requires replacing the gear.
Fault Symptom Recognized by Vehicle Occupants	For loss of assist fault: 1. Assist is removed and WarnIngIndicator will be turned ON. 2.Driver will be notified through change in EPAS failure signal (Message frame $82) displayed on cluster (instrument panel) For non loss of assist faults: Assist will NOT be removed and WarnIngIndicator will NOT be ON.
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	For non loss of assist faults: Clear DTC, cycle the ignition (or ECU reset) . System should be in normal operation state else replace the gear. Evaluate if assist is present with the engine running.

Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.28. DTC 0xF00316 - Battery Voltage Circuit Voltage Below Threshold

DTC Number	0xF00316 (U3003-16)
Root Description	Battery Voltage
Failure Type Byte Description	Circuit Voltage Below Threshold
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is awake. 3. Engin is running above 500 rpm.
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if ECU detects that ECU terminal voltage is less than (9v). Pass Criteria: If this fail criteria is not met(i.e. If Battery voltage measured at the ECU terminals is not below the minimum threshold value).
Action Taken By ECU in Response To Fault	1. DTC is no longer be monitored once fault is detected. 2. Requires ignition cycle or ECU reset to monitor the DTC. 3. Assist may be reduced.
Fault Symptom Recognized by Vehicle Occupants	Heavier than usual steering efforts
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Check Battery connection 2. Check that Battery voltage is within the range of operating voltage 3. remove the DTC and recycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.29. DTC 0xF00317 - Battery Voltage Circuit Voltage Above Threshold

DTC Number	0xF00317 (U3003-17)
Root Description	Battery Voltage
Failure Type Byte Description	Circuit Voltage Above Threshold
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is awake.
Test Period	8 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the ECU detects that the ECU terminal voltage is higher than the (20v) threshold for 10 minutes. Pass Criteria: If the fail criteria is not met(i.e. battery voltage will not exceed the maximum threshold value).
Action Taken By ECU in Response To Fault	1. Steering assist is reduced above 17 V. 2. DTC is no longer be monitored once DTC is raised. 3. Requires ignition cycle or ECU reset to monitor the DTC
Fault Symptom Recognized by Vehicle Occupants	Heavier than usual steering efforts
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Check Battery connection 2. Check that Battery voltage is within the range of operating voltage 3. remove the DTC and recycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

3.5.6.30. DTC 0xF00368 - Battery Voltage Event Information

DTC Number	0xF00368 (U3003-68)
Root Description	Battery Voltage
Failure Type Byte Description	Event Information
ECU Connector Pin	
Continuous Monitoring Supported	yes
Monitoring Cycle	ECU Operation Cycle
Test Run Criteria	1. Ignition ON and ECU terminal voltage is above 6V. 2. ECU is awake.
Test Period	20 ms
Fault Detection Counter Increment Value	127
Fault Detection Counter Decrement Value	128
Pass / Fail Criteria	Fail Criteria: This DTC is raised (testFailedThisMonitoringCycle = 1) if the Engine has been deemed running (Engine Speed above 500 RPM on Gas or HEV_READY_TELTAL = 0x1) for at least 5 seconds AND ECU terminal voltage is less than 10.8 V AND CHARGING_SYS_TELTAL = 0x0 (message $420 on GAS or $401 on Hybrids) OR this DTC is raised if the Engine hs been deemed running (Engine Speed above 500 RPM on Gas or HEV_READY_TELTAL = 0x1) for at least 5 seconds AND ECU terminal voltage is less than 11.8V and CAN signal CHARGING_SYS_TELTAL = 0x1 (message $420 on GAS or $401 on Hybrids) Pass Criteria: If this fail criteria is not met [i.e. Battery voltage is above 10.8v for a non-failed charging system].
Action Taken By ECU in Response To Fault	Derates PSCM Assist per ESAE5C-3200-BA v4.
Fault Symptom Recognized by Vehicle Occupants	Heavier than usual steering efforts
Extended Data Record used for Aging Counter	0x02
Counter Value when Aged	40
Special Considerations	1. Check Battery that the Battery voltage is within the range of operating voltage 2. Check alternator or related wiring harness is not faulty. 3. remove the DTC and recycle the ignition (or ECU reset)
Extended Data Records Supported	0x02,0x10
Snapshot Records Supported	0x10
DIDs in Snapshot Record 0x10	0x3301,0x3302,0x3306,0x330C,0xD111,0xD117,0xD118,0xF40C, 0xF40D,0xFDAA
Samples in Snapshot Record 0x10	1
Reported via Control Routines	

PE14-030

FORD

12/19/2014

APPENDIX M

11d

Fusion EPAS cluster messages

EPAS_FAILURE 0x01

EPAS_FAILURE 0x01 cluster message.MOV

EPAS_FAILURE 0x02

EPAS_FAILURE 0x02 cluster message.MOV

EPAS_FAILURE 0x03

EPAS_FAILURE 0x03 cluster message.MOV

PE14-030

FORD

12/19/2014

APPENDIX M

11f

11f. Identify all vehicle design factors that Ford believes can influence steering effort in manual steering mode and provide the design information for the subject vehicles for each factor (e.g., steering ratio, front axle weight, etc);

Design information for factors that may influence steering effort in manual steering mode for the subject vehicles are:

- Steering ratio 16.6:1 on center
- KPI (Kingpin Inclination) 5.6 degrees
- Scrub radius -1.1 mm
- Ackermann angle 53% at 20 degrees
- Caster 3.75 degrees left, 4.25 degrees right
- Caster trail 17.6 mm
- Steer arm length 140.0 mm

Other factors that may influence steering efforts in manual steering mode for the subject vehicles are; front axle weight, tire rolling resistance, tire pressure, pneumatic trail, and suspension ball joint friction. The specific values of these factors may vary from vehicle to vehicle.

PE14-030

FORD

12/19/2014

APPENDIX M

11g

To the extent the information is available, and in conjunction with the data provided in our response to Request 11h, Ford believes the following can be expected for the subject vehicles in the following driving conditions/maneuvers:

Describe the range of speeds, lateral accelerations (LatAcc), steering angles, steering rates and steering efforts (normal and failsafe/manual modes)

(1) parking lot maneuvers (3m inside diameter)
   a. speed: 4 – 20 mph
   b. LatAcc below 0.5g
   c. Assisted: 9Nm, Unassisted: 33.7 Nm (approximately19kph)
   d. Dependent on corner, our testing is typically about 90 deg trigger for fault, 180 to complete corner.
   e. Lateral acceleration used as basis for analysis, not steering rates.
   f. Use tight and narrow corners, 90 deg, with different radius

(2) intersection turns (both right and left)
   a. speed: 4 – 20 mph
   b. LatAcc below 0.5g
   c. Assisted: 9Nm, Unassisted: 33.7 Nm (approximately19kph)
   d. Dependent on corner, our testing is typically about 90 deg trigger for fault, 180 to complete corner.
   e. Lateral acceleration used as basis for analysis, not steering rates.
   f. Use tight and narrow corners, 90 deg, with different radius

(3) highway exit ramps (state all assumptions for speed and radius)
   a. speed: < 36 mph
   b. LatAcc below 0.5g
   c. use 30m radius in testing

(4) curves in roads with speed limits 25 mph or less (we use two corners to evaluated these)
   a. speed: 4 – 20 mph
   b. LatAcc below 0.5g
   c. Assisted: 9Nm, Unassisted: 33.7 Nm (approximately19kph)
   d. Dependent on corner, our testing is typically about 90 deg trigger for fault, 180 to complete corner.
   e. Lateral acceleration used as basis for analysis, not steering rates.
   f. Use tight and narrow corners, 90 deg, with different radius

(5) curves in secondary roads with speed limits of 30 to 45 mph
   a. speed: 30-40 mph
   b. LatAcc below 0.5g
   c. Estimated based on lat acc in other testing maneuvers to be the same values as above.
   d. Lateral acceleration used as basis for analysis, not steering rates.

(6) highway driving with speed limits at or above 60 mph;
   a. speed > 68 mph
   b. LatAcc < 0.2 g
   c. Not really evaluated since most highway driving is so low in lateral acceleration it does not cause significant torque to the driver.

PE14-030

FORD

12/19/2014

APPENDIX M

11h

11h)
Provide a table showing steering hand wheel forces for both normal and manual modes under the following conditions: (1) lock-to-lock static turning, (2) 0.1 g turn at 5 mph, (3) 0.25 g turn at 20 mph, and (4) 0.4 g turn at 30 mph;

	Handwheel torque (Nm)			
	Static	**0.1 g**	**0.25 g**	**0.4 g**
With assist	4.5	7.0	8.5	10.0
Without assist	52.5	18.2	25.1	32.0

Note: A 30 meter constant radius circle was used to collect vehicle data .