

EA02025

TEXAS INSTRUMENTS, INC.'S

09/10/03 LETTER TO ODI

REQUEST 9

BOX 12

PART A – 0

PART F

Epstein, Sally

From: Norman LaPointe [nlapointe@ford.com]
Sent: Monday, February 15, 1999 12:38 PM
To: Rahman, Aziz
Subject: Brake Pressure Switch Temp Test

*** Reply to note of 02/12/99 09:42

Aziz, Is it possible to seal the fluid in with a high temp. sealer?

Regards,

Norman LaPointe

PHONE 59-42685 FAX 313-337-8256

Epstein, Sally

From: Rahman, Aziz [arhman@email.mc.tl.com]
Sent: Monday, February 15, 1999 7:31 PM
To: Dague, Bryan; Baringhouse, Steven; McGuirk, Andy; Sharps, Robert; Baker, Gary; Baumann, Russ
Subject: FW: Brake Pressure Switch Log



Brake Pressure Switch

Received second wave of parts from Texas junkyards. All F2VC parts. Most of them with connector attached. Some of them with prop valves & servos. 2 from underhood fires. Analysis will start tomorrow PM. Please let me know if there are any specifics to look at, before we disassemble these. I was thinking of doing some quick voltage drops, insulation resistance checks. Obviously lots of pictures. Any quick way to test these parts for leaks, prior to disassembly?

By the way, Steve R. did mention that the Electrical System folks were looking into using a Brake Pedal Position Sensor as a replacement for the Brake Pressure Switch as a corrective /containment action. Have we determined what they use in the 99 Town Car?

From: Rahman, Aziz
Sent: Monday, February 15, 1999 8:22 PM
To: 'Fred Porter (Ford)'; 'Norm LaPointe (Ford)'; 'Steve LaRouche (Ford)'; 'Steve Reimars (Ford)'
Subject: Brake Pressure Switch Log

Attached is a log file with information on the devices under review. It also contains switches received today from John McInerney. In addition to Steve L's analysis summary file, I will be using this log to track incoming parts. Please advise if I have missed any data.

<<Brake Pressure Switch Log>>

Please let me know if you cannot open the file. Steve/Norm, can you please e-mail me the last update on your analysis summary file? Thanks.

Regards
Aziz,

Epstein, Sally

From: Steve Reimers (sreimers@ford.com)
Sent: Monday, February 15, 1999 8:20 PM
To: slarouch@ford.com
Cc: Rahman, Aziz; rlapoint@ford.com
Subject: NO SUBJECT

Whenever you are ready? Norm has sketched up a work plan for examining the return parts. I have some additional suggestions. Let's discuss it with tomorrow afternoon.

Steve Reimers building 3 3C043
AVT Chassis E/E System Applications mail drop 5011
39-03286 SREIMERS sreimers@ford.com fax 39-03286 ;>
*** Forwarding note from SLAROUCH--FORDMAIL 02/15/99 16:33 ***
To: SREIMERS--FORDMAIL Reimers, Steve (S).

From: LaRouche, Steve (S.)
Subject:

Steve: Aziz left a message that you received several switches and would like to bring them to Central Lab. I will not be in Tuesday morning. How about bringing them over Tuesday afternoon (after 1:30)?

Steve LaRouche (SLAROUCH)
Metallurgy Section, Central Laboratory, Room N410
(313) 845-4876 (313) 322-1614 FAX

**DRAWINGS AVAILABLE UPON
REQUEST**

Examine field returns:

Switch w/ harness (before disengagement);

Electrical properties, connector engagement, connector and harness damage wire corrosion, wicking, contaminants, contaminant sources, debris.

--- from work place have

Switch w/o harness ;

Electrical properties, Mechanical properties, terminal cavity contaminants, terminal cavity damage, terminal corrosion or damage.

Switch cavity terminal corrosion, contaminants, contaminant ingress site(s), wear / damage.

Pressure cavity components wear / damage, contaminants.

Electrical properties:

Switch w/ harness (before disengagement)

@ 0 psid

**Wire 1 to Wire 1 resistance
Wire 1 to Hex Port resistance
Wire 2 to Hex Port resistance**

@ 180 psid

**Wire 1 to Wire 1 resistance
Wire 1 to Hex Port resistance
Wire 2 to Hex Port resistance**

Harness w/o switch

**Wire 1 to Wire 1 resistance
Wire 1 to Hex Port resistance
Wire 2 to Hex Port resistance
Current Leakage Terminal 1 to 2**

Electrical properties:

Switch w/ harness (before disengagement)

	0 psid	180 psid
Wire 1 -> Wire 2 resistance		
Wire 1 -> Hex Port resistance		
Wire 2 -> Hex Port resistance		

Harness w/o switch ²

Wire 1 -> Wire 2 resistance

Wire 1 -> Hex Port resistance

Wire 2 -> Hex Port resistance

Current Leakage Terminal 1 to 2

Switch w/o harness

Terminal 1 to Terminal 2 resistance

Terminal 1 to Hex Port resistance

Terminal 2 to Hex Port resistance

Voltage drop @ 700 millamps

Current Leakage Terminal 1 to Hex Port

Current Leakage Terminal 2 to Hex Port

Current Leakage Terminal 1 to 2

Hex Port to Cap resistance

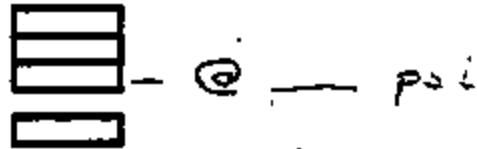
Mechanical properties:

Switch opening pressure

Switch closing pressure

Proof Test for fluid leakage

missage



KAPTON

PROFILE

equivalent cycles (mils)

Mini-FAX Transmittal		Date <u>2/16</u>	Page <u>4</u>
TO <u>STAVE BEARING.</u>		FROM <u>ARL 2</u>	RE
CLASS	SEC	CLASS	SEC
UNCLASSIFIED		TOP SECRET	
EXC 100		EXC 100	
TYPE UNIT			

Work Plan for Field Returned Brake Pressure Switch & Connector Assy.

- 1 Set up a spread sheet to record all observations vs VIN. & field notes.
- 2 Do not separate wire connector from switch until step 3. Check for short to ground between both terminal wires and switch housing. Separate into two groupings for short measurements, i.e. open vs resistance.
- 3 Check for correct engagement of connector to switch base; if NOT correct, conduct X ray to determine fit-up between base lip and red seal.
- 4 Separate connector from switch. Verify that connector had made a good seal with base. Visual check of red seal inside connector; determine dirt lines and indentation marks, should be 360 degrees. (The indentation marks on the red seal may start to re-grow & may disappear over time...so check the seal first.) Check lip on switch base for breaks or loss of edge.
- 5 Check for evidence of less than full engagement by dirt witness lines on metal rings.
- 6 Check for terminal wire insulation for cuts or openings that would permit contamination to enter wires. Check gey seal for contamination leakage paths.
- 7 Cut wire insulation longitudinally and check for corrosion due to wicking along wires. If present determine FROM / TO direction. Identify color and morphology. Take samples if feasible.
- 8 Visual check of base terminal cavity for corrosion or debris or discoloration on base terminals. Save samples of corrosion for chemical id.
- 9 Isolate 100 connectors that show contamination based upon above inspection procedure to be at UTA.
- 10 coninsp_wj.nrl

Order For New	YES	205-99-1111
3135 PDRP		H.E. LAHART
3135 PDRP		DOE 4076
3135 PDRP		42286
3135 PDRP		

Epstein, Gail

From: Sharpe, Robert [rsharpe@emell.mc.ti.com]
Sent: Tuesday, February 16, 1999 8:13 AM
To: McGuirk, Andy; Rowland, Thomas
CC: Dodd, Bob; Pechonis, John; Baker, Gary; Beringhouse, Steve; Bartosh, Bob; Douglas, Charles
Subject: RE: Brake Pressure Switch Log

Last spring I reported to Marketing that the TI brake switch application on the Town Car had been converted to a "plunger type" switch (normally closed) application, mounted on the brake pedal, sometime in MY98. This is why you do not see the Town Car, Crown Vic, and Gran Marq in Charlie's application listing for MY98, sent to Fred Fortar. In fact, my predecessor (Norm Freda) also indicated this in his forecasts from June '97.

I have a call into Ford, Mr. Dale Stolstiner (sp?) for further confirmation. However, his voice mail is full. Dale is the Core/AVT Engineer for switches within the Ford Chassis Group.

Asis, let's try to confirm/qualify Ford's potential containment action. Would this be across the board as a replacement for all TI brake switch applications, or only for the Town Car. Also, I would like to confirm if Ford is looking at using the same "plunger" type switch or are they looking at a different "position" sensor in regards to their potential containment action. Any feedback regarding our proposal to rewire (remove battery feed) the switch for containment action?? I will see you later this afternoon.

Best Regards,

Rob Sharpe
Texas Instruments
Phone (248) 305-5729
Fax (248) 305-5734
rsharpe@ti.com

-----Original Message-----

From: McGuirk, Andy
Sent: Tuesday, February 16, 1999 8:13 AM
To: Rowland, Thomas
CC: Sharpe, Robert; Dodd, Bob; Pechonis, John; Baker, Gary; Beringhouse, Steve; Bartosh, Bob
Subject: FW: Brake Pressure Switch Log
Importance: High

tom, by copy of this note we will look to gary baker and bob dodd and steve beringhouse for information about the '99 town car today which reportedly was launched without a p/s in the brake system for cruise system.

we will also determine our analysis protocols for these texas return units before noon today, tuesday.

a

AUTOMOTIVE SENSORS AND CONTROLS QRA MANGER

1

TI-NHTSA 016473

34 FOREST ST M/S 23-05
ATTLEBORO, MA 01703
TEL : (508) 236-3080
FAX : (508) 236-3745
PAGE: (800) 447-3700 PIN 604-2044

From: Rahman, Aziz
Sent: Monday, February 15, 1999 8:30 PM
To: Dagne, Bryan; Beringhause, Steven; McGuirk, Andy; Sharpe, Robert;
Baker, Gary; Saumann, Russ
Subject: FW: Brake Pressure Switch Log

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From: Rahman, Aziz
Sent: Monday, February 15, 1999 8:22 PM
To: 'Fred Potter (Ford)'; 'Norm LaPointe (Ford)'; 'Steve LaRouche (Ford)'; 'Steve Reiners (Ford)'
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i disabled file to conserve space and e-mail time.....

Please let me know if you cannot open the file. Steve/Norm, can you please e-mail me the last update on your analysis summary file? Thanks.

Regards
Aziz,

Morris, Irene

From: McGuirk, Andy
Sent: Tuesday, February 16, 1999 9:17 AM
To: Rowland, Thomas
Cc: Sharpe, Robert; Dodd, Bob; Pechonis, John; Baker, Gary; Beringhaus, Steven; Bartosh, Bob
Subject: FW: Brake Pressure Switch Log
Importance: High

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8

AUTOMOTIVE SENSORS AND CONTROLS QA MANAGER
34 FOREST ST N/S 23-06
ATLINCRO, MA 02763
TEL : (508) 236-3000
FAX : (508) 236-3745
PAGE: (900) 457-2700 P2H 624-2044

From: Rahman, Aziz
Sent: Monday, February 16, 1999 8:30 PM
To: Dague, Bryan; Beringhaus, Steven; McGuirk, Andy; Sharpe, Robert; Baker, Gary; Baumann, Russ
Subject: FW: Brake Pressure Switch Log

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Regards
Aziz.

Morris, Irene

From: Sharpe, Robert
Sent: Tuesday, February 18, 1999 10:13 AM
To: McGuirk, Andy; Rowland, Thomas
Cc: Dodd, Bob; Pechonis, John; Baker, Gary; Beringhouse, Steven; Bartosh, Bob; Douglas, Charles
Subject: RE: Brake Pressure Switch Log

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Fax (248) 305-5734
rsharpe@ti.com

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Cc: Sharpe, Robert; Dodd, Bob; Pechonis, John; Baker, Gary; Beringhouse, Steven; Bartosh, Bob
Subject: FW: Brake Pressure Switch Log
Importance: High

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■

AUTOMOTIVE ELECTRICS AND CONTROLS QA MANAGER
14 FOREST ST R/S 21-88
ATTLEBORO, MA 01733
TEL : (508) 235-2000
FAX : (508) 235-2748

From: Rahman, Aziz
Sent: Monday, February 15, 1999 8:30 PM
To: Dugas, Bryan; Beringhouse, Steven; McGurt, Andy; Sharpe, Robert; Baker, Gary; Baumann, Russ
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Regards
Aziz.

REDACTED

Baumann, Russ
From: Rahman, Aziz
Sent: Tuesday, February 16, 1999 10:48 PM
To: Baringhaus, Steven; McGuirk, Andy; Dague, Bryan; Baumann, Russ; Sharpe, Robert
Subject: FW: Brake Pressure Switch Evaluation Plans.xls

fyi,

Bryan/Steve, please forward AJ Hopkins' protocol for dissecting switches. Thanks.

From: Rahman, Aziz
Sent: Tuesday, February 16, 1999 10:44 PM
To: 'Fred Porter (Ford)'; 'Marc LaPointe (Ford)'; 'Steve LaPointe (Ford)'; 'Steve Rahman (Ford)'
Subject: Brake Pressure Switch Evaluation Plans.xls

 ✓
Brake Pressure Switch
Evaluation Plans.xls

Team, please review evaluation plan. I will add the switch dissection section tomorrow. The pressure calibration station from TI is expected to arrive on Thursday and will probably reside at Central Lab due to availability of high pressure air.

Steve R, will Allen be available to perform the electrical characterizations/ data collection? I can definitely help with data analysis and maintenance of the database.

Please review the attachment and let's discuss tomorrow.

Thanks
Aziz

TI-NHTSA 016479

Morris, Irene

From: Rahman, Aziz
Sent: Tuesday, February 16, 1999 11:47 PM
To: Beringhaus, Steven; McGuirk, Andy; Degue, Bryan; Baumann, Russ; Sharps, Robert
Subject: FW: Brake Pressure Switch Evaluation Plan.xls

fyi.

Bryan/Steve, please forward Al Hopkins' protocol for dissecting switches. Thanks.

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Subject: Brake Pressure Switch Evaluation Plan.xls



Brake Pressure Switch
Evaluation Plan.xls

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Thanks
Aziz.

Brake Pressure Switch
 Evaluation Plan for Field Returns

Category	Step #	Action	Notes/Data
	Sw #		Date of update
	Mileage		
Field Info	1	Log Field Info into Switch Log.xls	
	2	Photograph Switch	
	3	Record any unusual external visual observations	
	4	Check for Connector engagement	
Switch + Connector	5	Wire 1 to Wire 2 Resistance	
	6	Wire 1 to Hexport Resistance	
	7	Wire 2 to Hexport Resistance	
	8	Separate Harness from Switch	
Connector	9	Verify Connector Seal	
	10	Wire 1 to Wire 2 resistance	
	11	Current Leakage Wire 1 to Wire 2	
	12	Check for full engagement of connector	
	13	Check wire insulation	
	14	Check wire gny seals	
	15	Cut wire insulation to check for corrosion	
Switch External Unpressurized	16	Assemble Switch to Calibration Stand	
	17	Terminal 1 to Terminal 2 Resistance	
	18	Terminal 1 to Hexport Resistance	
	19	Terminal 2 to Hexport resistance	
	20	Base to Hexport Resistance	
	21	Current Leakage Terminal 1 to Hexport	
	22	Current Leakage Terminal 2 to Hexport	
	23	Voltage drop at 750 mA	
Switch External Pressurized	24	Switch Opening Pressure	
	25	Switch Closing Pressure	
	26	Proof Test for Leakage	
	27	Repeat Steps 17 through 23 at 180 psig	
Switch Internal		Refer to Protocol Established By Norm LaPointe & Steve LaRouche and Al Hopkins (T) for the Memphis Part	
		Norm/Steve, please e-mail Aziz a copy of the protocol. Aziz will frame it in a flow chart format and insert here.	

Data Entry

**Log All data from this sheet into Switch Log
Aziz will revise Switch Log to include calls for this
data.**

**Photographs, Elemental maps etc must be retained and
referenced by Switch #**

[Redacted]

[Redacted]

Comments

[Redacted]

See note below

If not correct conduct X-Ray to determine fit-up between base lip and red seal

[Redacted]

[Redacted]

[Redacted]

Visual check of Red Seal, Dirt lines, Indentation mark.
Indentation mark must be 360 degrees.

Visual check of dirt lines on mated switch base

Cut insulation longitudinally to check for wicking along wires.
If signs of corrosion, identify color, save samples for chem I.d.

[Redacted]

[Redacted]

Do not perform on parts from underhood fires, as may disturb diaphragm/other condition
Do not perform on parts from underhood fires, as may disturb diaphragm/other condition
Do not perform on parts from underhood fires, as may disturb diaphragm/other condition

[Redacted]

[Redacted]