

EA02-025

FORD 10/27/03

APPENDIX N

BOOK 24 OF 61

PART 5 OF 5

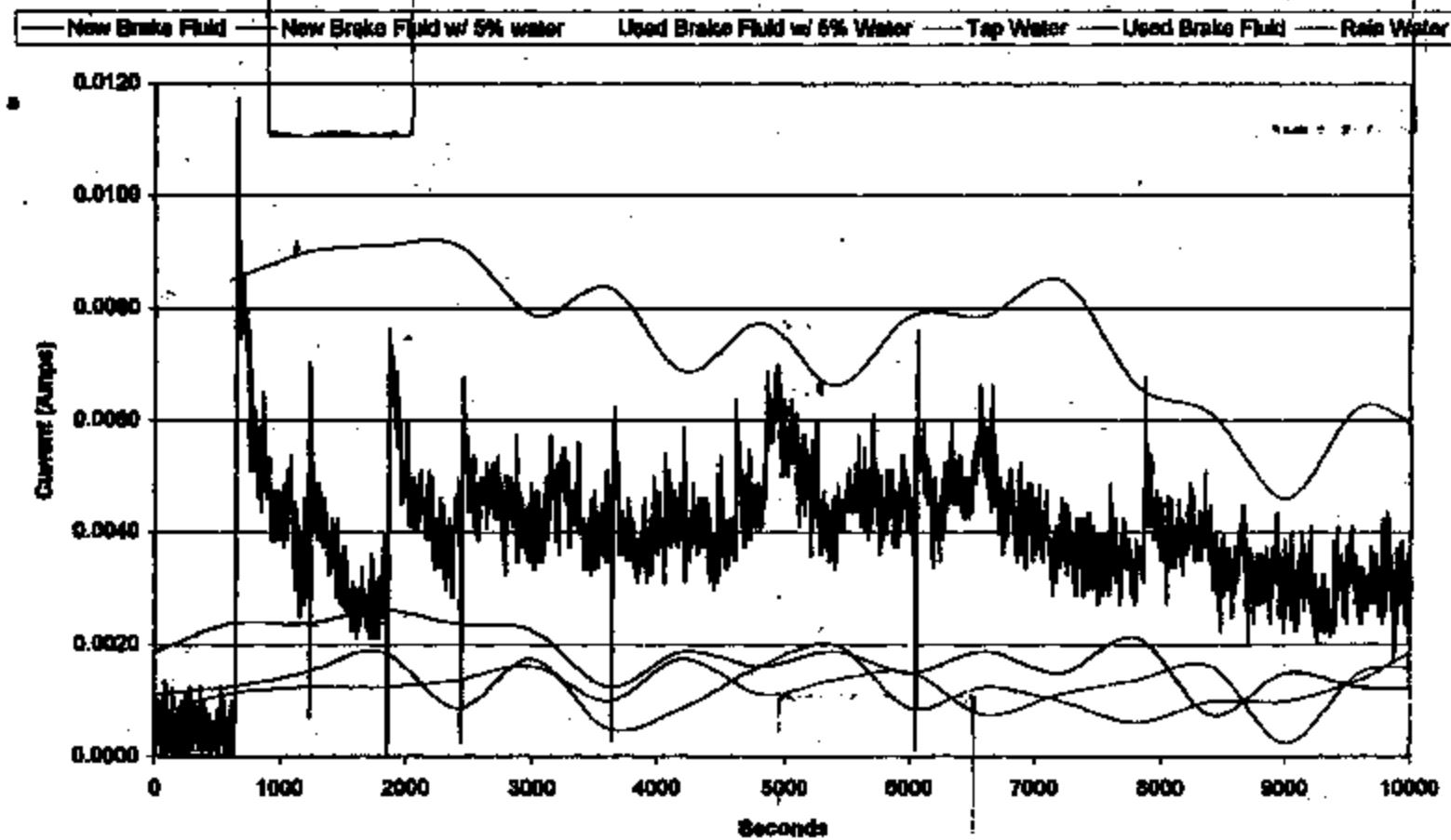
^aNote: For the TTPBL3-3 model and others all shipping locations = numbers for locations no longer on the data base.

Customer	Shipto Loc.	Part Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
DANA CORP. FIRESTONE		TTPBL3-1/P2AC SF824 AB TTPBL3-1/P2AC SF824 AA TTPBL3-2/P30A SF824 AA	31.88 0 0	67.11 0 0	62.38 0 0	0 0 0	0 22.84 0	0 0 0	0 74.75 0	0 30.08 0	0 0 0	0 0 0	0 0 0	0 0 0	
FIT CORP.		TTPBL3-1/P2AC SF824 AB TTPBL3-1/P30Z SF824 AA	0.95 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 4.28	0 4.28	0 104
		TTPBL3-2/P30Z SF824 AA	1.42	3.08	5.33	1.68	2.36	0.71	0	0	0.47	0.714	0	0.658	0
1004		TTPBL3-2/P30Z SF824 AA	1.42	0.714	1.9	1.42	1.42	0	0.71	0.71	0.714	0.476	0.476	1.16	0
1005		TTPBL3-2/P30Z SF824 AA	0.238	0.692	0.982	1.19	0	0	0	0	0	0	0	0	0
PITTS INDUST.		TTPBL3-1/P2AC SF824 AB TTPBL3-2/P30Z SF824 AA	40.86 0	40.31 0	0.47 0	31.89 0	22.96 0	3.33 0	35.32 0	63.78 2.78	21.42 0	45.78 0	44.74 0	10.08 0	
		TTPBL3-2/P30Z SF824 AA	11.47 0	18.23 0	23.68 0	22.81 0	14.81 0	22.61 0	20.7 0	30.48 0	28.58 0.05	16.88 0	24.75 0	20.7 1.39	
1004		TTPBL3-1/P2AC SF824 AB TTPBL3-1/P2AC SF824 AA TTPBL3-1/P30A SF824 CA	20.06 0 0	12.85 0 0	18.75 0 0	25.7 0 0	23.58 0.571 0	8.28 18.32 0	6.08 63.25 0	3.6 27.6 0	1.18 33.79 0	0.08 24.52 0	0.08 15.6 0	0 18.01 0.8	
1005		TTPBL3-1/P2AC SF824 AA TTPBL3-1/P30A SF824 CA TTPBL3-1/P2AC SF824 AB	27.84 0.478 0	30.08 0 0	29.32 0.236	25.94 0.714	16.7 0.478	11.18 0	10.47 0	7.14 0.714	14.04 0	9.04 0.714	2.85 0	5.95 4.04	
1006		TTPBL3-1/P2AC SF824 AA TTPBL3-1/P30A SF824 CA TTPBL3-1/P2AC SF824 AB	11.68 0	4.78 0	8.9 0	6.8 1.42	8 0	6 0	0 0	0 0	0 0	0 0	0 0	0	
PORD MOTOR		Service (Brownstownship) Laredo, Texas Brownstownship/Laredo Brownstownship	0 16.51 0 0	0 15.7 0 0	0 21.41 0 0	0 19.5 0 0	0 23.05 0 0	0 16.7 0 0	0 13.8 0 0	0 18.08 0 0	0 18.18 0 0	0 9.52 0 0	0 17.73 0 0		
		TTPBL3-1/P30A SF824 CA TTPBL3-2/P30A SF824 CA TTPBL3-3/P30A SF824 CA TTPBL3-2/P30Z SF824 AA	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0		
		TTPBL3-1/P30Z SF824 CA TTPBL3-2/P30A SF824 AA TTPBL3-2/P30Z SF824 AA TTPBL3-3/P30A SF824 CA TTPBL3-2/P30Z SF824 AA	0 1.87 0 35.26 0	0 0 0 41.68 0.71	0 0 0 63.75 0	0 0 0 44.58 0	0 0 0 55.31 0	0 0 0 42.84 0	0 0 0 23.98 0	0 0 0 32.45 0	0 0 0 0.47	0 0 0 0.714 0	0 0 0 0.033 0	0 0 0 0.714 0	
1004		Service (Brownstownship) Laredo, Texas Odalys/Brownstownship	0.238 0 1.42	0 0 0.33	0 0 11.42	0 0 17.61	0 0 25.04	0 0 16.88	0 0 10.04	0 0 26.4	0 0 24.27	0 0 30.7	0 0 28.94	0 0 10.94	

	Brown Township/Landover Ronatus Browntownship	77PGL3-3 / F3TA SP824 CA 77PGL3-1 / F3CZ SP824 AA	3.8	0.011	1.19	1.19	1.9	1.42	0.71	0.04	0.239	0	0	0
1883	Oakville	77PGL3-2 / F3BA SP824 AA	18.98	18.51	18.89	21.19	29.92	22.37	14.75	20.7	22.37	25.49	11.19	8.75
1884	Oakville/Clayton/Browntownshi P. Service (Brown Township) Browntownship/Landover Ronatus	77PGL3-2 / F3BA SP824 AA 77PGL3-1 / F2NC SP824 AB 77PGL3-3 / F3TA SP824 CA	14.04 0 0	11.89 0 0	21.85 0 0	29.41 0 0	21.85 0.239 0	10.51 0 0	14.62 0 0	27.37 0 0	16.09 0 0	16.04 0.479 0	14.81 0 0	13.47 0 0
1887	Oakville/Clayton/Browntownshi P. Service (Brown Township) Browntownship/Landover Ronatus	77PGL3-2 / F3BA SP824 AA 77PGL3-1 / F2NC SP824 AB 77PGL3-3 / F3TA SP824 CA	21.18 0 0	21.42 0 0	27.8 0 0	34.03 0 0.48	22.94 0.714 0	27.37 0 0	4.78 0 0.46	28.41 0 1.2	28.94 0 0	24.27 0 0.48	24.75 0.714 0.239	17.37 0 0
1888	Oakville/Clayton/Browntownshi P. Service (Brown Township) Browntownship/Landover Ronatus Pleasant Hill Austria	77PGL3-2 / F3BA SP824 AA 77PGL3-1 / F2NC SP824 AB 77PGL3-3 / F3TA SP824 CA 77PGL4-11 / MDA SP824 AA	14.73 0 2.4 4	28.75 0.932 0.48 0	25.48 0 0.72 11.9	22.84 0 1.8 0.239	23.58 0 0.72 14.29	21.89 0 1.82 8	1.19 0 0.86 0	71.8 0.479 1.82 2.88	19.47 0 2.19 2.79	22.84 0.385 2.39 0	26.17 0 2.66 3.39	18.18 0 1.2 0.239
ALLIED SIGNAL		77PGL2-1 / F3TA SP824 CA	4.99	4.04	6.29	2.8	2.6	3.87	0.95	0	0	0	0	0
1883		77PGL3-3 / F3TA SP824 CA	0	0	0.239	0	0	0.239	0	0	0	0	0	0.239
1884		77PGL3-3 / F3TA SP824 CA 77PGL3-1 / F2AC SP824 AA	0.626 0	0.239 0	0 0.18	0.479 0.18	0.89 0.18	0 0	0.932 0.05	0.95 0	1 0	2.67 0	20.39 0	33.36 4.5
1885		77PGL3-1 / F2AC SP824 AA 77PGL3-3 / F3TA SP824 CA	2.6 0.644	0 75.12	0 28.76	0 73.06	0.832 0.818	15.7 16.48	15.47 16.8	0 43.08	15.58 45.12	15.47 32.48	17.13 42.88	18.98 40.32
1886		77PGL3-1 / F2AC SP824 AA 77PGL3-3 / F3TA SP824 CA	18.89 57.12	22.84 27.12	21.42 33.76	17.13 38.69	19.89 47.04	18.26 33.78	12.85 30.24	0.99 23.5	17.13 40.48	14.28 37.2	14.42 37.2	14.42
TOKCO		77PGL3-3 / F3TA SP824 CA	0	0	0	1.8	0	2	30	20	0	0	0	40.18
1884		77PGL3-3 / F3TA SP824 CA	20.18	20.6	72.95	72.72	70.08	35.04	68.44	70	45.12	18.08	15.12	40.82
1885		77PGL3-3 / F3TA SP824 CA	74.86	65.04	30	54	49.68	56.46	92.98	78.2	46.94	61.2	46.32	47.52
1886		77PGL3-3 / F3TA SP824 CA 77PGL3-2 / F3BA SP824 AA	56.88 65.44	62.18 62.18	71.78 71.78	69.72 69.72	38.4 38.4	68.4 68.4	107.77 107.77	81.8	66.4	64.8	64.08 0.02	
1887		77PGL3-3 / F3TA SP824 CA 77PGL3-2 / F3BA SP824 AA	72	67.84	106.6	73.2	124.98	131.57	87.12	107.04	90	46	62.28	93.84
1888		77PGL3-3 / F3TA SP824 CA	86.18	111.84	133.92	79.02	65.82	85.9	101.70	98.58	72.88	65.04	65.12	46.4

77PBL3-2 / P80A 9P924 AA												
HAYES-DANA 1986	77PBL3-1/P80A 9P924 AA	0	0	0	0	0	0	0	0	0	0	20.24
	77PBL3-4/P80A 9P924 AA	0	0	0	0	0	0	0	50	50.23	428	14.39
1986	77PBL3-1/P2AC 9P924 AA	9.9	9.9	10.9	9.9	49	49	0	0	0	0	0
MECHANICAL CIRCUITS 1986	77PBL3-2 / P80A 9P924 AA	0	0	0	0	0	0.238	0	0	0.714	0	0
1987	77PBL3-2 / P80A 9P924 AA	0	0	0.238	0	0	0.238	0	0.238	0	0.408	0.238
1988	77PBL3-2 / P80A 9P924 AA	0	0	0	0	0	0	0	0.238	0.238	0	0
HELITE INDUSTRIES 1986	77PBL3-1/P2AC 9P924 AA	0	0	0	6.08	14.5	6.08	14.2	12.01	5.23	18.32	2.6
	77PBL3-3 / P3TA 9P924 CA				23			14.2	23	23	23	2.6
1987	77PBL3-3 / P2AC 9P924 CA	3.08	0	2.1	2.8	0	0	3.8	3.3	0	1.19	0
	77PBL3-1/P2AC 9P924 AA	0	0.52	0.52	16.8	0.57	5.7	0.56	14.78	7.37	0	0
	77PBL3-1 / P2VC 9P924 AB	0	0	0	0	0	0	0	0	0	0	1.19
1988	77PBL2-3 / P3TA 9P924 CA	0	1.18	2.14	0.238	0	0	0	0	0	0	0
	77PBL2-4 / P2AC 9P924 AA											0.238
	77PBL2-1 / P2VC 9P924 AB	0	0	0	0	0	0	0	0	0	0	0
BOSCH 9P924D93 1986	77PBL3-4/P2AC 9P924 AA	0	0	0	0	0	0	0	0	0	0	22.84
	77PBL3-3 / P3TA 9P924 CA	0	0	0	0	0	0	0	0	0	0	27.1
1987	77PBL3-1/P2AC 9P924 AA	15.7	19.9	18.5	18.58	15.7	21.4	18.8	4.28	4.28	0	0
	77PBL3-3 / P3TA 9P924 CA	52.4	43.6	57.12	63.76	50.4	43.68	25.52	36.9	50.4	57.1	52.76
1988	77PBL3-4 / P2AC 9P924 AA	60.4	50.4	57.12	63.8	47	57.8	47	50.4	63.84	60.64	68.7
	77PBL3-3 / P3TA 9P924 CA											70.5

Hegport Current vs. Time
Fluid Ingress Experiment



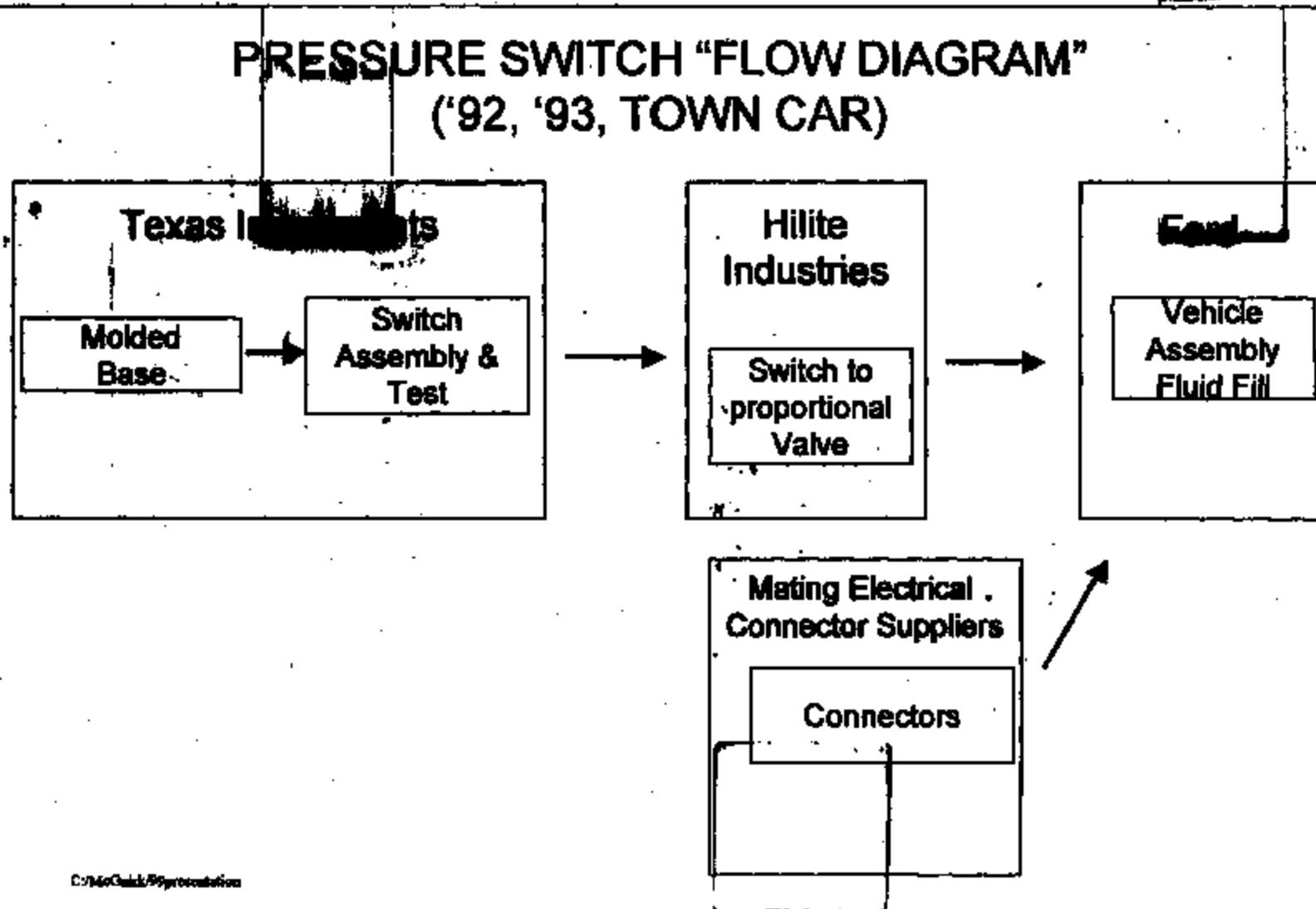
3719 6165



Brake Pressure Switch
Potential Thermal Event Theory Profile 4/26/99

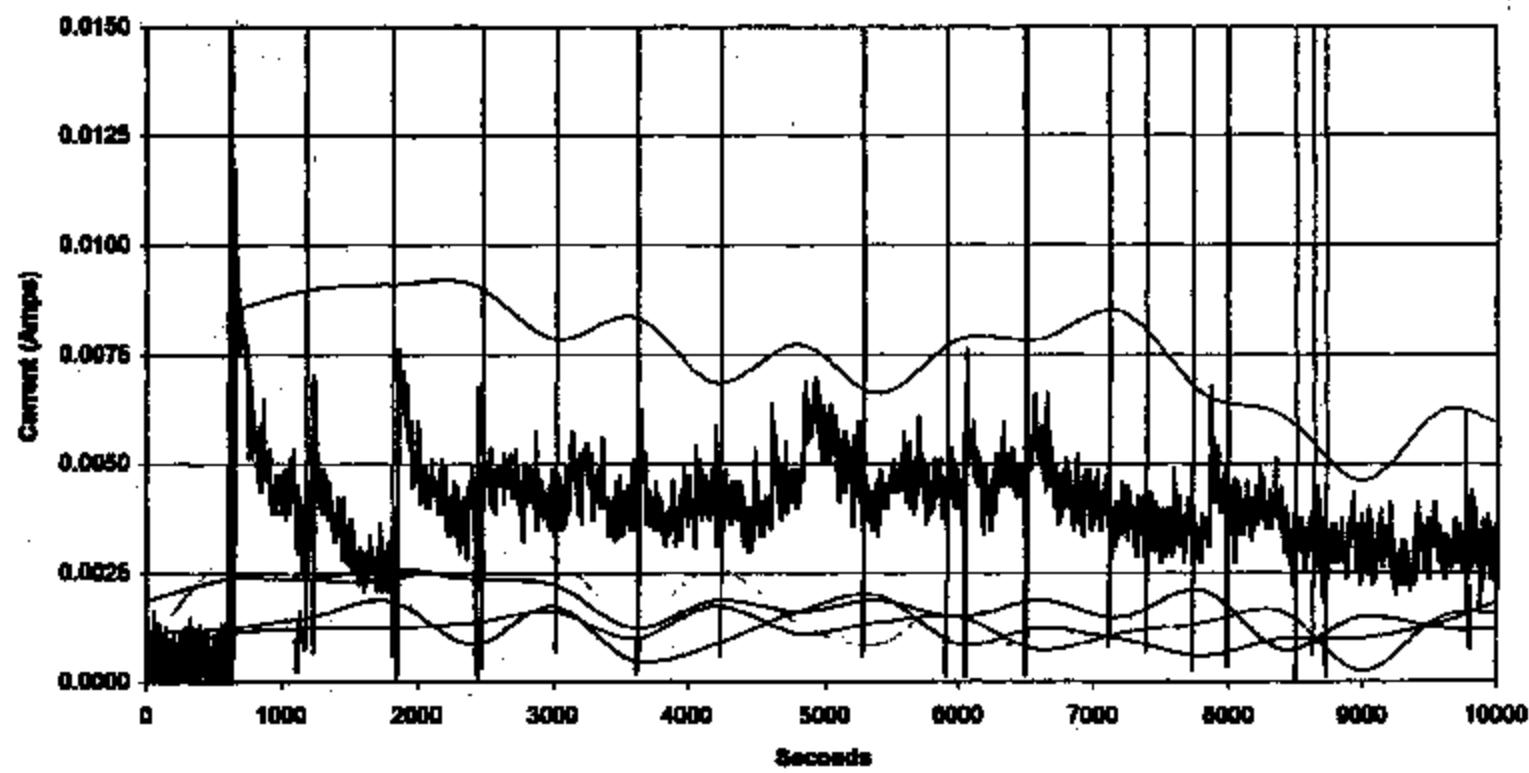


**PRESSURE SWITCH "FLOW DIAGRAM"
('92, '93, TOWN CAR)**



Hexport Current vs. Time
Fluid Ingress Experiment

New Brake Fluid	New Brake Fluid w/ 5% water	Used Brake Fluid w/ 5% Water
Tap Water	Used Brake Fluid	Rain Water
5% Salt Water	100 per. Mov. Avg. (5% Salt Water)	



37138167



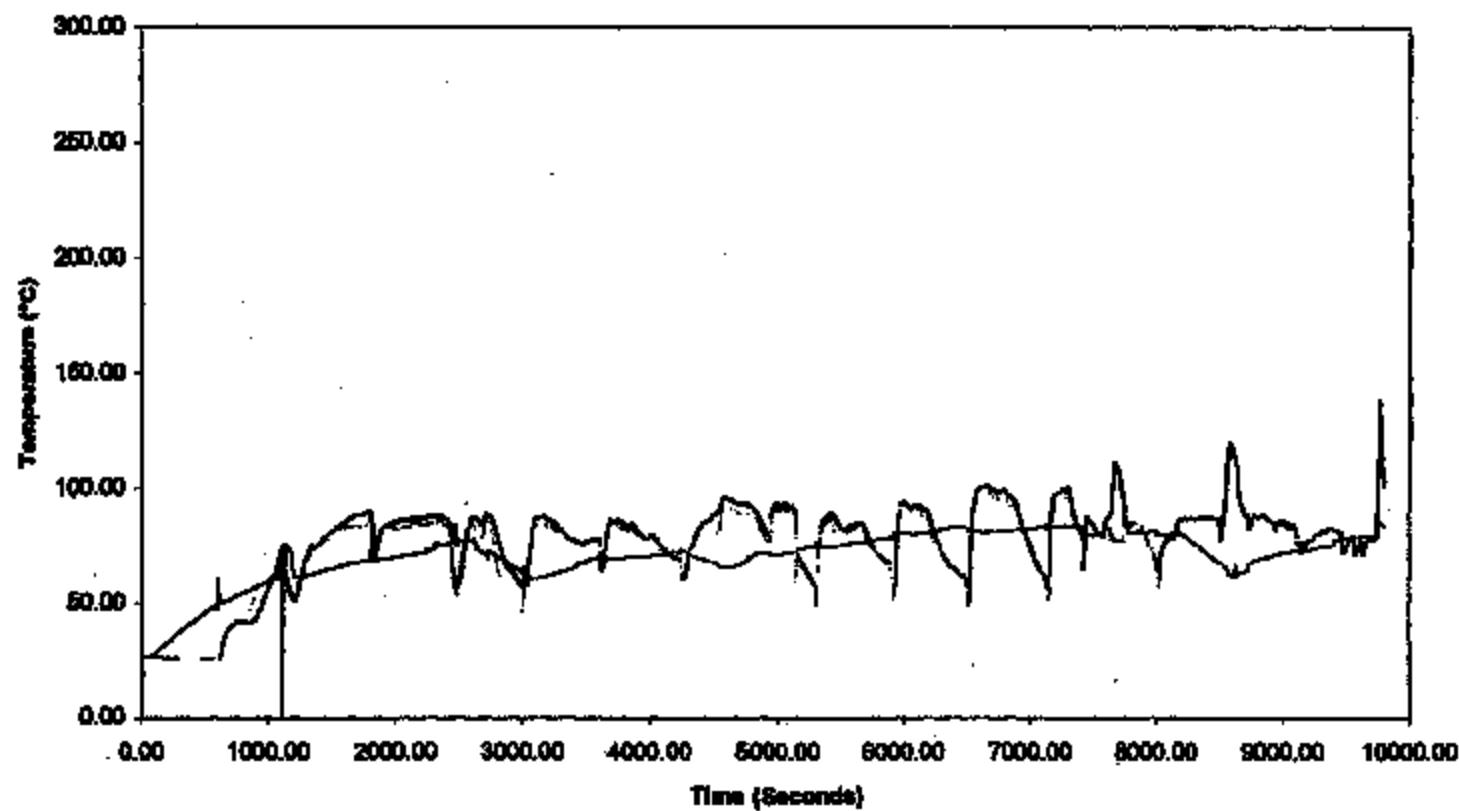
Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/26/99



5% Salt Water Ingress Experiment

Temperature vs. Time

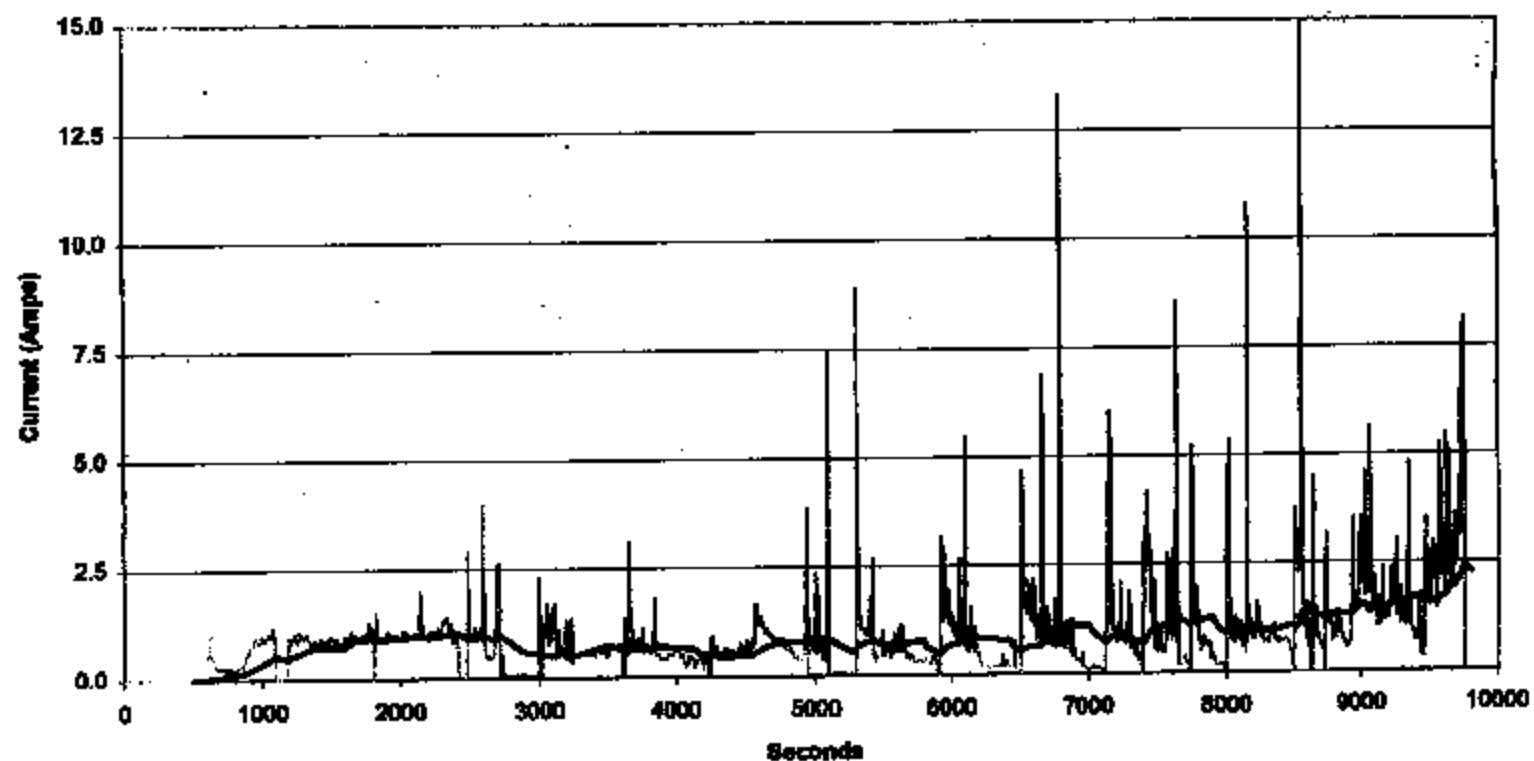
— Top Temp — Clutch Temp Bottom Temp



97136168

**Hexport Current vs. Time
Fluid Ingress Experiment**

— New Brake Fluid	— New Brake Fluid w/ 5% water	Used Brake Fluid w/ 5% Water
— Tap Water	— Used Brake Fluid	— Rain Water
- - 5% Salt Water	— 100 per. Mov. Avg. (5% Salt Water)	



3713-6169

**77PS-Molded Base 46615 UPDATE
(FOR REFERENCE ONLY)**

Entry No.	Rev No	DATE OF SCM	Type	VALVE IMPROVEMENT	Design Ref	FORD P.M.	TI-P. N.	P.N. 46615-2	Material
1	A	First issue 3-Nov-90	Asm	Replaced BX 3423-49 dated 06/28/90 Calnex 4300	Steve Officer	F2VC-9F824-AA F6LC-9F824-AA	77PSL2-1 77PSL2-3	-2(brown, #1) -1(black, #1)	Calnex 4300
2	B	8-Jan-91	Asm	Calnex 4300 CN 188887 Correspondent print view	Steve Officer	F2VC-9F824-AA F6LC-9F824-AA	77PSL2-1 77PSL2-3	-2(brown, #1) -1(black, #1)	Calnex 4300
3	C	4-May-92	Asm	Added (-3) Nord GTK 830 CRM 08888	Steve Officer	F2AC-9F824-AA F4DC-9F824-AA F3DC-9F824-AA	77PSL3-1 77PSL4-1 77PSL5-2	-3(blue, #1) -3(blue, #1) -3(blue, #1)	GE Noryl GTK 830
4	D	21-May-92	Asm	Added (-4 through -9) CRM 89125 (-4, -7) Nord GTK 830 (-5, -6, -8, -9) Calnex 4300	Steve Officer	F2AC-9F824-AA F4VC-9F824-AA F4DC-9F824-AA F3TA-9F824-AA F3TA-9N824-AA F3TP-9N824-AA	77PSL2-1 77PSL2-1 77PSL2-2 77PSL2-3 77PSL2-3 77PSL11-2	-3(blue, #1) -3(blue, #1) -3(blue, #1) -3(blue, #1) -3(blue, #1) -3(green, #1)	Calnex 4300 GE Noryl GTK 830
5	E	2-May-92	Asm	Added -10 (-5) Noryl GTK 830 CRM 18888	Steve Officer	F5A-9F824-AA	77PSL3-2	-10(dk gray, #1)	GE Noryl GTK 830
6	F	29-Dec-93	Asm	Clarified dimensions CRM 16919	Asst. Rethers				
7	G	1-May-95	Change	Dim added CCC note CRM 22807	Chris Wagner				
8	H	20-Nov-95	Change	Note 4 Revised note 50%	Chris Wagner				
9	J	18-Jun-97	CAD	Added 3 notch dim Added note CAD string CRM 32804	O/Ha				
10	K	16-Dec-97	CAD	Change dim string Revised 18-20 degrees chamber, CRM 32805	O/Ha				
11	L	28-Feb-98	CAD	Changes JNSP/046 Chamber to .020/.020 CRM 32817	O/Ha				
12	M	7-Apr-98	CAD	Added -11 Material GE Noryl GTK 830 CRM 38888	O/Ha	20403-3N824-AA	87PSL2-5	-11(brown, #1)	GE Noryl GTK 830
13	N	8-May-98	CAD	Added -12 Material Calnex 4300 EON M40638	O/Ha	A50880	87PSL2-6	-12(brown, #1)	Calnex 4300

**77PS-SREA-ALERT UPDATE
(FOR REFERENCE ONLY)**

Entry No.	SREA/ALERT No.	DATE SUBMITTED	VALUE IMPROVEMENT	FORD P.N.	P.N.
1	409846	27-Feb-95	Use of alternate pressure taper for cavity improvement. Scribe mark indicating "test pass" to be on crimp ring rather than on the plastic connector base.	F2AC-SP924-AA F2VC-SP924-AB F3DC-SP924-AA F3EA-SP924-AA F3TA-SP924-CA	77PSL3-1 77PSL2-1 77PSL3-2 77PSL3-2 77PSL3-3
2	409848	27-Feb-95	Use of 10L07 steel from cold headed supplier in lieu of 10L10 steel due to temporary material supply interruption. 10L07 steel made with same process.	F2AC-SP924-AA F2VC-SP924-AB F3DC-SP924-AA F3EA-SP924-AA F3TA-SP924-CA	77PSL3-1 77PSL3-1 77PSL3-2 77PSL3-2 77PSL3-3
3	409837	6-Sep-94	Change part from p.n. 9404-SP924AA to p.n. 9404-SP924AB	9404-SP924AB	77PSL4-1
4	409811	17-Mar-94	Use of color pigments in plastic base containing elements material in lieu of heavy metal per governmental regulations	F3TA-SP924-CA	77PSL3-3
5	280443	22-Jun-93	Use of part substitution of prior level "BA". Converting from snap to solid disc switch. Change is to internal disc cntr.	F3TA-SP924-CA	77PSL3-3
6	147694	2-Dec-92	Reduce internal cup dimension by .004" from .081" to .077" nominal. Address potential open circuit condition under vacuum, traced to disc envelope under stack- up conditions	F2VC-SP924-AB F2AC-SP924-AA F3DC-SP924-AA	77PSL3-1 77PSL3-1 77PSL5-2
7	147673	21-Nov-91	Change thread pitch specification from 2A to 3A per ring stage. Use of ANSI B1.1 Industry Standard for pitch thread allowance.	F3TA-SP924-CA	77PSL3-3
8	147671	5-Nov-91	Use blue colored environment wash in lieu of reddish color with black grime to help differentiate wash to reduce potential assembly errors.	F2VC-SP924-AB	77PSL3-1
9	140668	3-Apr-91	Change terminal position dimension from 0.80+/-0.35mm to 0.80+/-0.25mm	F3TA-SP924-AA	77PSL5-2
10	147666	3-Apr-91	Change terminal position dimension from 0.80+/-0.35mm to 0.80+/-0.25mm	F3TA-SP924-CA	77PSL3-3
11	Alert No. A10166183	11-Oct-91	Use of manually loaded jumper crimp machine vs auto in-line跳接机 Manual crimp process (5 steps).	F2VC-SP924-AB	77PSL3-1

"3rd ES-F2VC-9F924-AA" 9/5/99
PPAP Submittal 9/26/91 APPV
77PSL2-1 F2VC-9F924-AB
Alert # A10166193

10/2/91 ~ MANUAL SENSOR WIMPER vs. Auto in Line
= 70 days to resolve

A1

To Ford

12/4/91 ISW resubmitted against Alert

12/6/91 ISW "

1-14-

* * SREIA 11-5-91 change to enviro seal (red to blue)
147671 app'd 11-6-91
ISW for SREIA 1-9-92

A1-1 77PSL2-1 F2VC-9F924-AB 11-20-91
To Ford (9/16/91 1st eff & app'd
work)

K-H ECN #25136 8-20-91
= print rev - reg 1 from 57ASL5-3 to 77PSL2
- reflects base change all inclusive
- P/N "F2VC-9F924-BA" to F2VC-9F924-AA
K-H Supplier Mfg. Change Request 11-18-91
= update of change ECN #25136
- 108 is part
- 44 is ES spec.

A1-2 77PSL2-1 F2VC-9F924-AB ② 8-27-92

To Pitts "MedHot Habashi"
Ind.

<u>P/N</u>	<u>TI P/N</u>	<u>Cust P/N</u>	<u>Submitted</u>	<u>APPV'd</u>
BOOK 11L 2 = FORD	77PSL2-3 (light bndl)	F3TA-9F924-AA RES10 PSW - per Alert	9-19-91 11-25-91	
*	SREA # 147673		11-21-91	
		2A vs. 3A go gage ANSI Spec 145.		

A1-3 77PSL2-1 F21C-9F924-AA 1-9-92

ITV STEVES ISW # 360069 documentary charges to internal (cup)
11-25-92 component dimension change for
F3DC-9F924-AA (77LS-2)

* dim. changes made to correct switch
utilizing an open circuit condition
after applied vacuum.

92-1 77PSL2-3 F6LC-9F924-AA 12/16/94 Q1
Hilite

93 77PSL3-1 F2AC-9F924-AA 4-13-92 Q1
Ford ** Partial ISW to expedite "Quiet Switch"
to be complete 6-22-92

1 77PSL3-1 F2AC-9F924-AA 8-19-92
Dane
Ind. & Canada
ISW # 360068

<u>P#</u>	<u>TI P/N</u>	<u>CUST P/N</u>	<u>Submitted</u>	<u>Approved</u>
93-2	77PSL3-1	F3TA-9F924-BA	1-11-94 RECEIVED	1-2-94 4-1-96
	Lined			
	Initial			
also Cover letter to Topics PPAP copied by similar				
84 Ford	77PSL3-3	F3TA-9F924-BA	6-19-92 ISW # 112397	
* comments: fluid resistance test (portion M of ES-F3TA-9F924-BA) to be submitted for information purposes to John Pelley by end of August 1992.				
NIA			ISW # 245856	1-28-92
				F3TA-9F924-C4)
* comments: This submission (warrant only?) comprises the changes to the Quiet Switch for light truck Platforms (disc change only)				
** SREA # 282442 1-22-93				
~ request for change from snap to quiet de				
** SREA # 393198 3-14-94				
all Ford Hyd. (57, 87, 77)				
~ Change plastic base material from				
to resins containing heavy metals				
to resins containing alternate acceptable				
** ISW w/ SREA # 409911 3-17-94				
* Approval pending GE's concurrence on change: effect on TIR				
* Copy of Government Regulation + Compliance				

Pg.4 ~~TEP/N~~ Cost On Submitted Approved

AS. 77PSL5-2 F3DC 9F924-AB

EVES ES data to be forwarded

ISW # 360366 3/10/92

01 8745

*Shd
for* ISW # 360069 11/25/92
- interlocks in change

* * SREQ # 147693 12-2-92 12-2-92

(course 77L2-1
77L3-1
77L5-2)

= to eliminate loose disc connections
resulting in open circuit after
vacuum application.

nb. 77PSL6-1 94SA-9F924-AB 1-16-92

out of service ISW # 112387

ES data to follow 3/92

Capri ISW # 360070 w/ TESTS 2/19/93

3/19

AJ 77RSL3-2 F58A-9F924-AB 12/14/92

Ford
Wrie 88

Pg.5

TI P/N

Cust P/N

Submitted

App'd

-7-1

77PSL3-2 F58A-9F924-AA 7-12-93

7-7-93
pre-app.

Ford

? "no numbers"

J. Habboote ISU # 360079

A8

*** 77PSL3-3 F3TA-9F924-CA 5-3-93

TOKCO

ISU # 360071

* SREA # 147673 (copy)

24 to 30 page

AR-1

77PSL3-3 F3TA-9F924-CA 1-13-94 2-28-

Allied Signal

* SREA # 409911 eye for base color change

A9

(2 books)

77PSL4-1 94D9-9F924-AA 6-3-93

Ford

SREA # 409937 9-8-94 change P/N suffix from -AA to -
per. letter changed back to -AA 3/12/95

Australia

9/2

Pg TIPN Cust. P/N Submitted Approved

- 77L3-1 ^{Page 9 of 24} 4/92
(ENS3 platform) ^{partial}



**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/21/99**

*Analys for
Ford
Aler*

AGENDA

- CONTRIBUTING FACTORS AND ROBUST DESIGN DIALOGUE
- OVERVIEW TIME LINE
- SYSTEM OVERVIEW
 - SWITCH AND CONNECTOR
 - IS / IS NOT TABLE
 - CAUSE AND EFFECT DIAGRAMS
 - THEORIES
 - BRAKE FLUID IGNITION
 - PLASTIC IGNITION
 - TEST RESULTS
- CONTRIBUTING FACTORS AND ROBUST DESIGN DIALOGUE
- ROBUST DESIGN ALTERNATIVES



**Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/21/99**



1. Connector Seal to P/S
2. Power continuously available
 - A. Operator notifications
3. Switch orientation/location
4. Current limit / fuse
5. Hexport isolation
6. Plastic ignition robustness
 - A. Nearby fuels
7. Kapton seal of P/S
8. Environmental seal of P/S

3710 6178

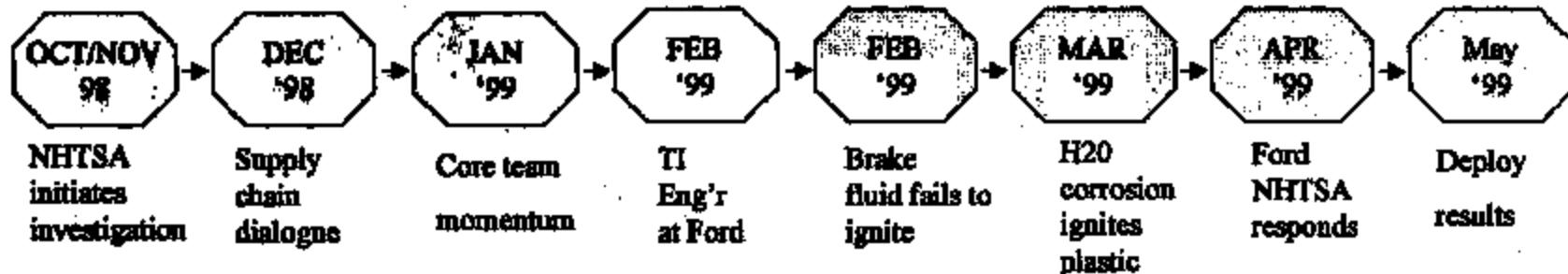
Attachment 3



Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/21/99

Cont'd

OVERVIEW OF CONCERN TIME LINE



Attachment

3713 6180

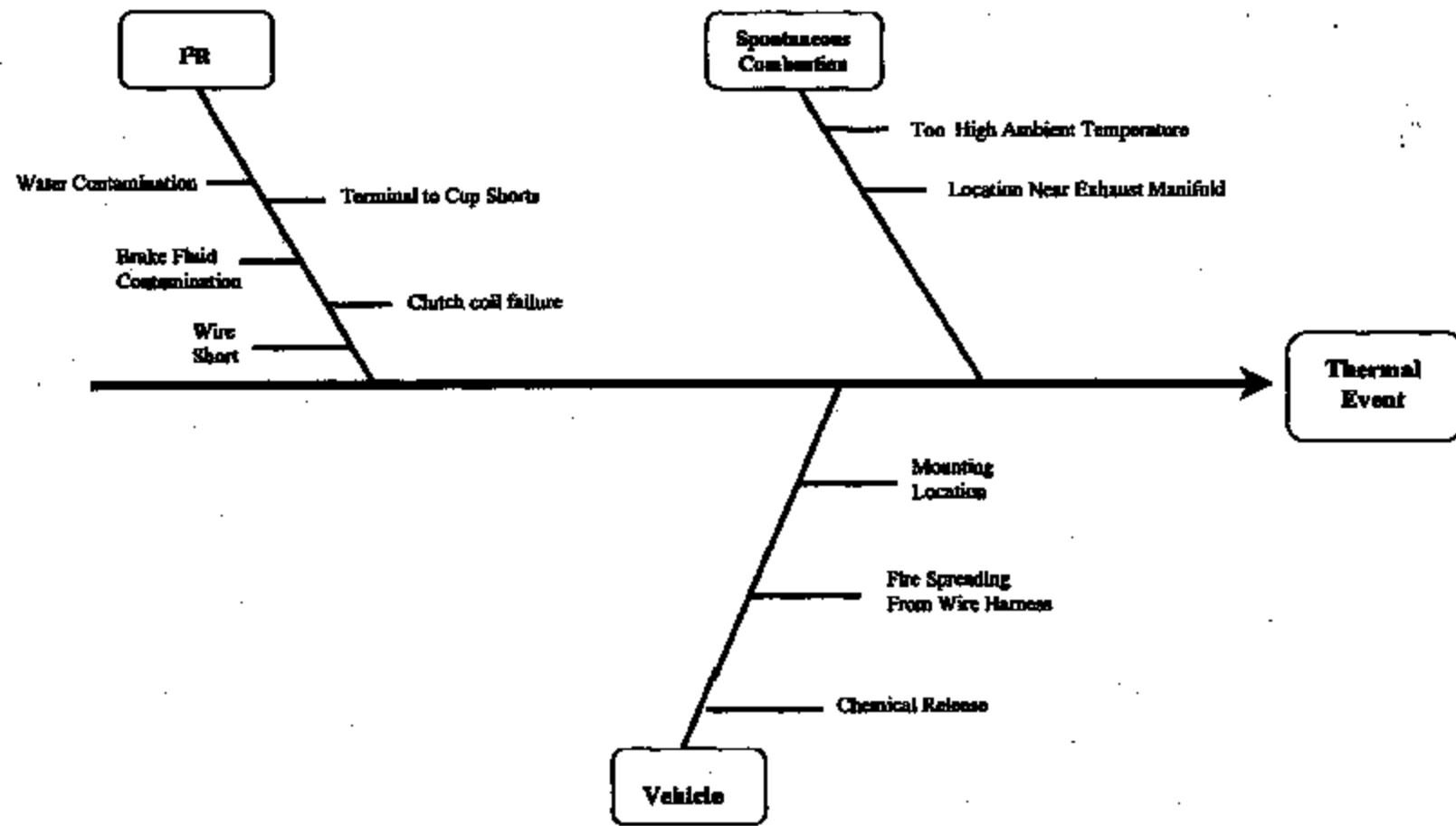


Brake Switch Overview

- Mounted under hood... 14 inches under master cylinder
- Mounted on proportional valve at frame of vehicle
- Switch oriented approximately 25 degrees off vertical (connector up)
- Switch controls speed control... normally closed, opens at 130 psi
- Continuously powered by battery 15 amp connection

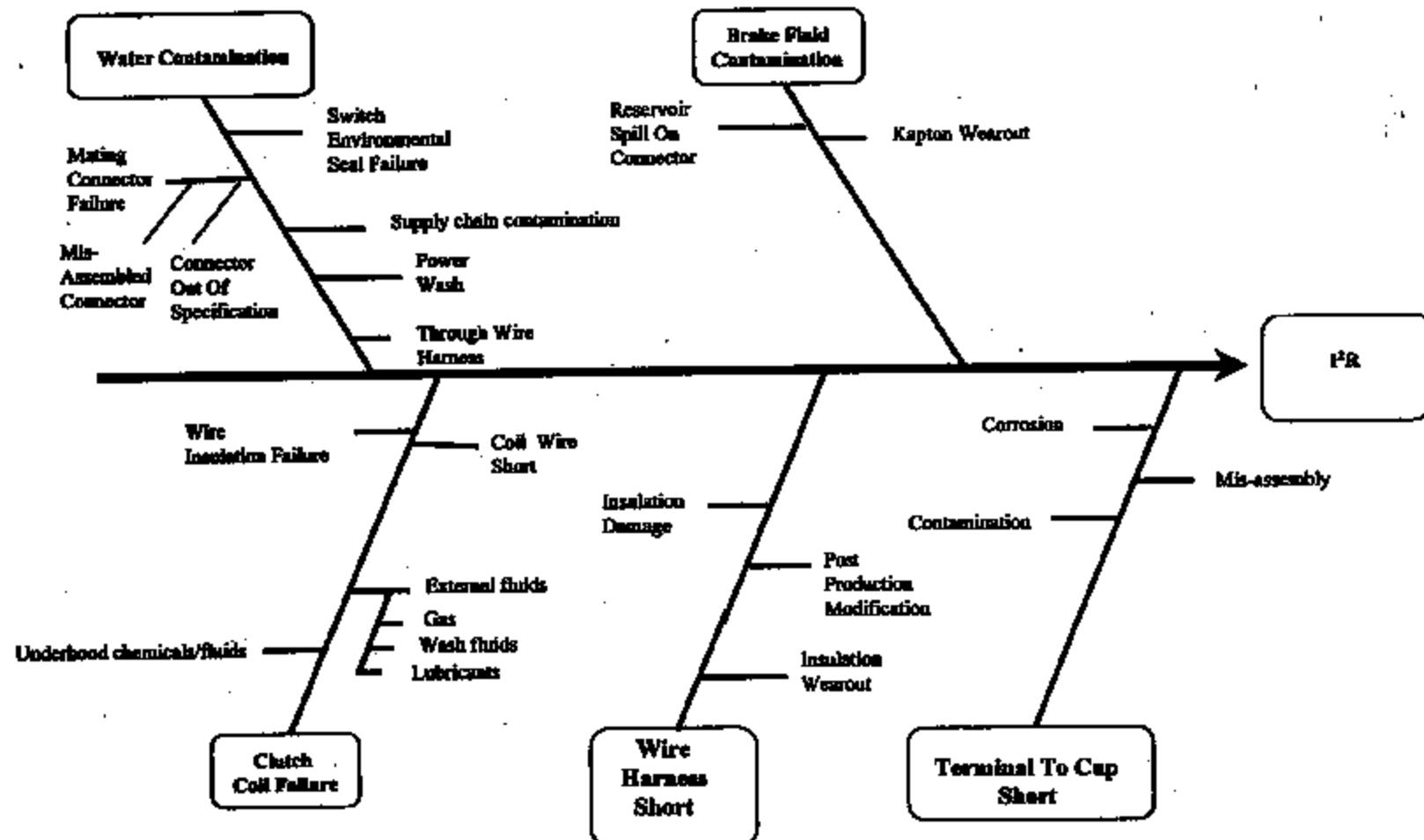


Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99





Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99

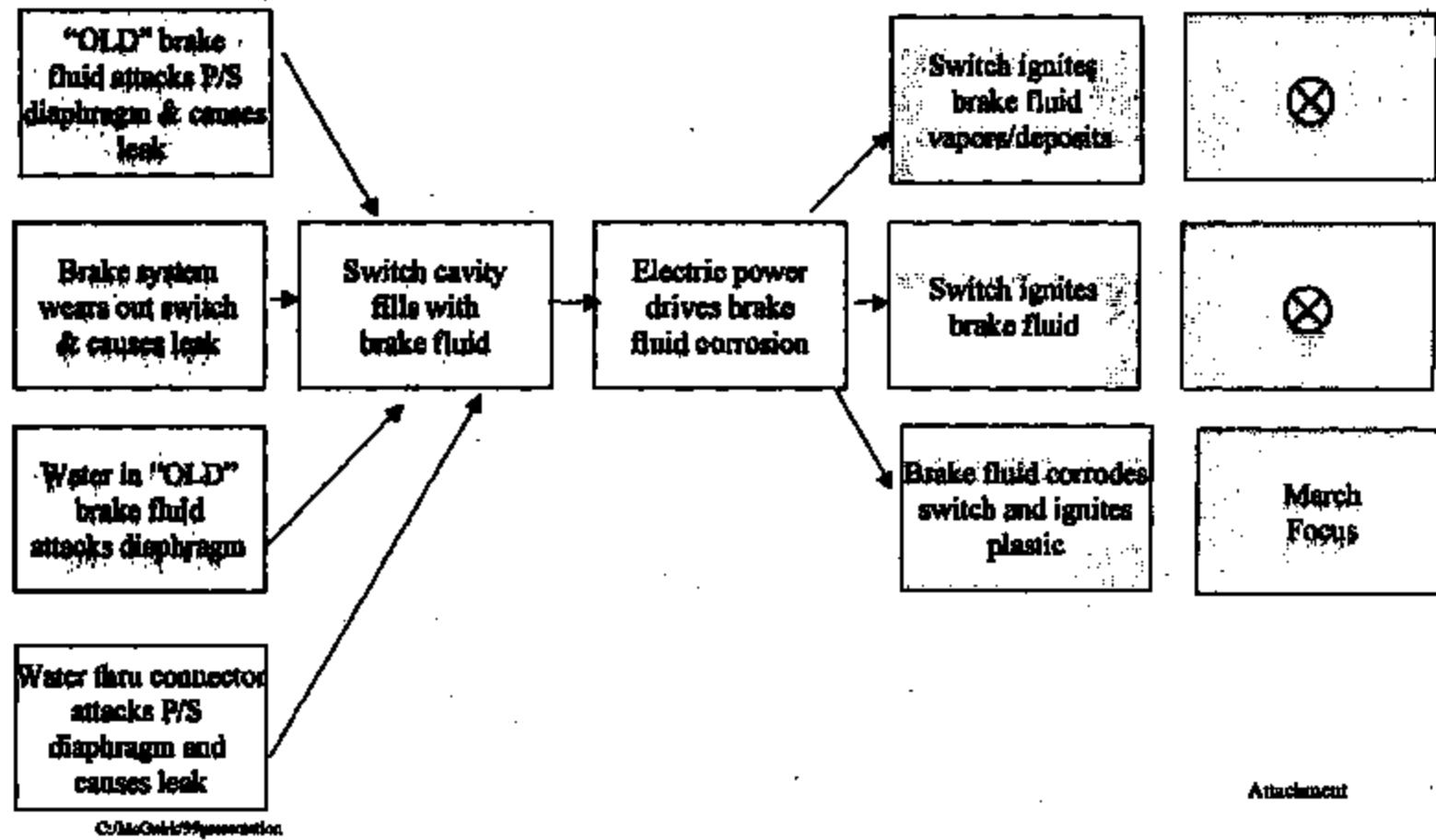




Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



REFINED BRAKE FLUID IGNITION THEORY POSSIBLE CAUSE THEORIES "FEB '99 FOCUS"



Excell

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TEXAS
INSTRUMENTS

Brake Pressure Switch

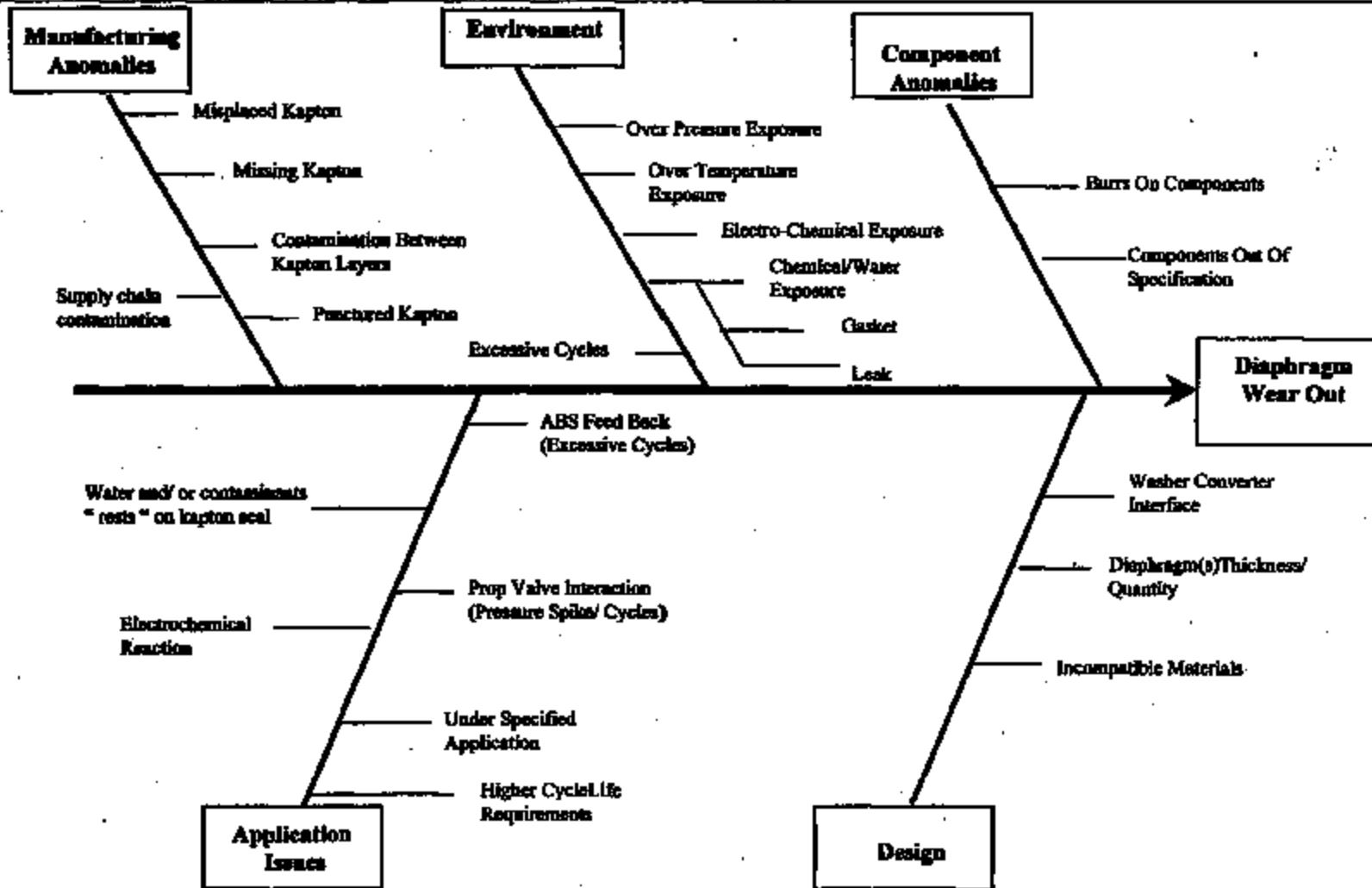
Potential Thermal Event Theory Profile 4/21/99



- TI and Ford not successful in creating ignition with "new" brake fluids



Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99





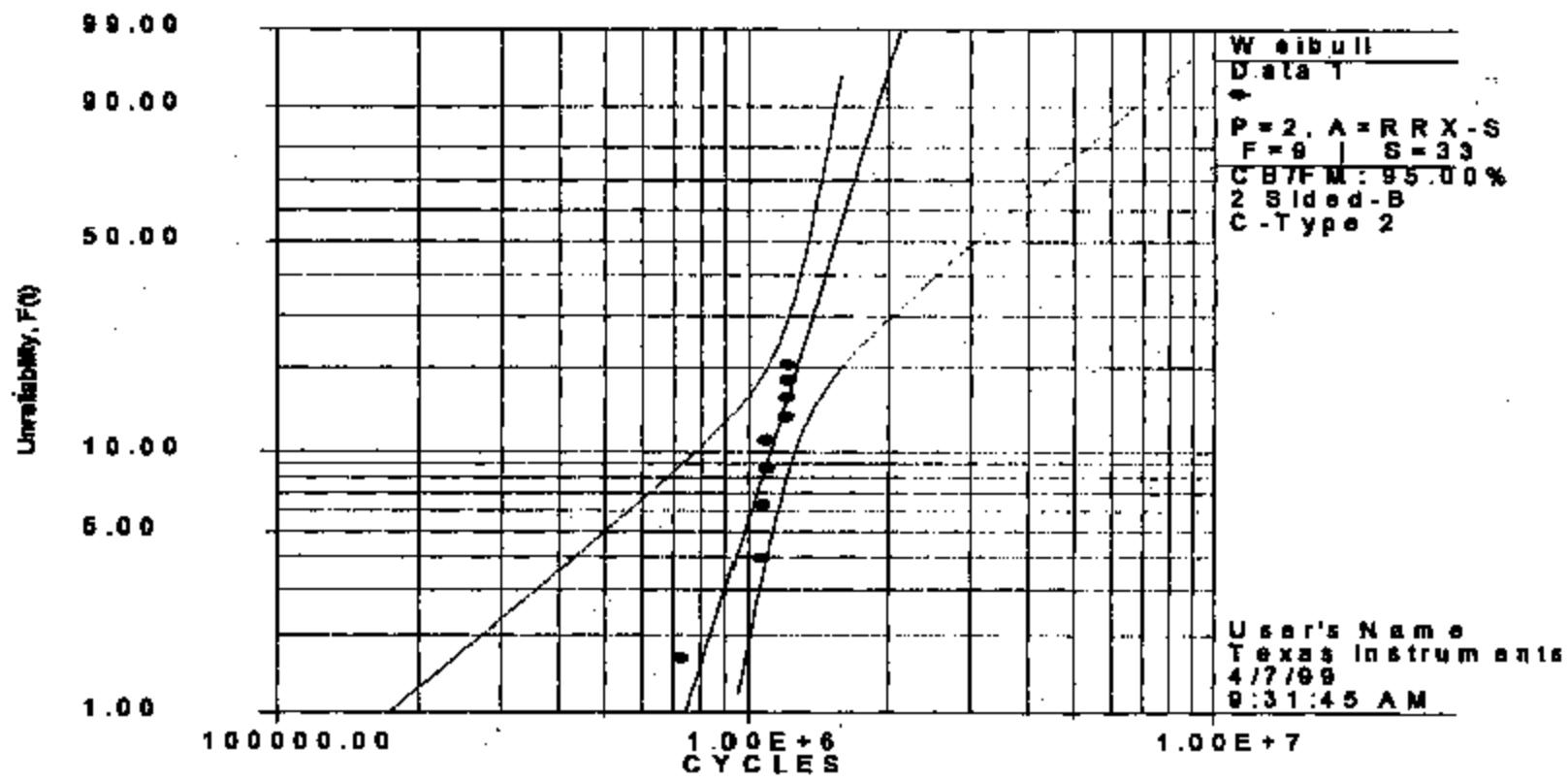
Brake Pressure Switch

Texas Instruments Potential Thermal Event Theory Profile 4/21/99



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77PSL2-1 COMBINED DATA



$$\beta = 5.83, \eta = 1.64 \times 10^6, p = 0.91$$



Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



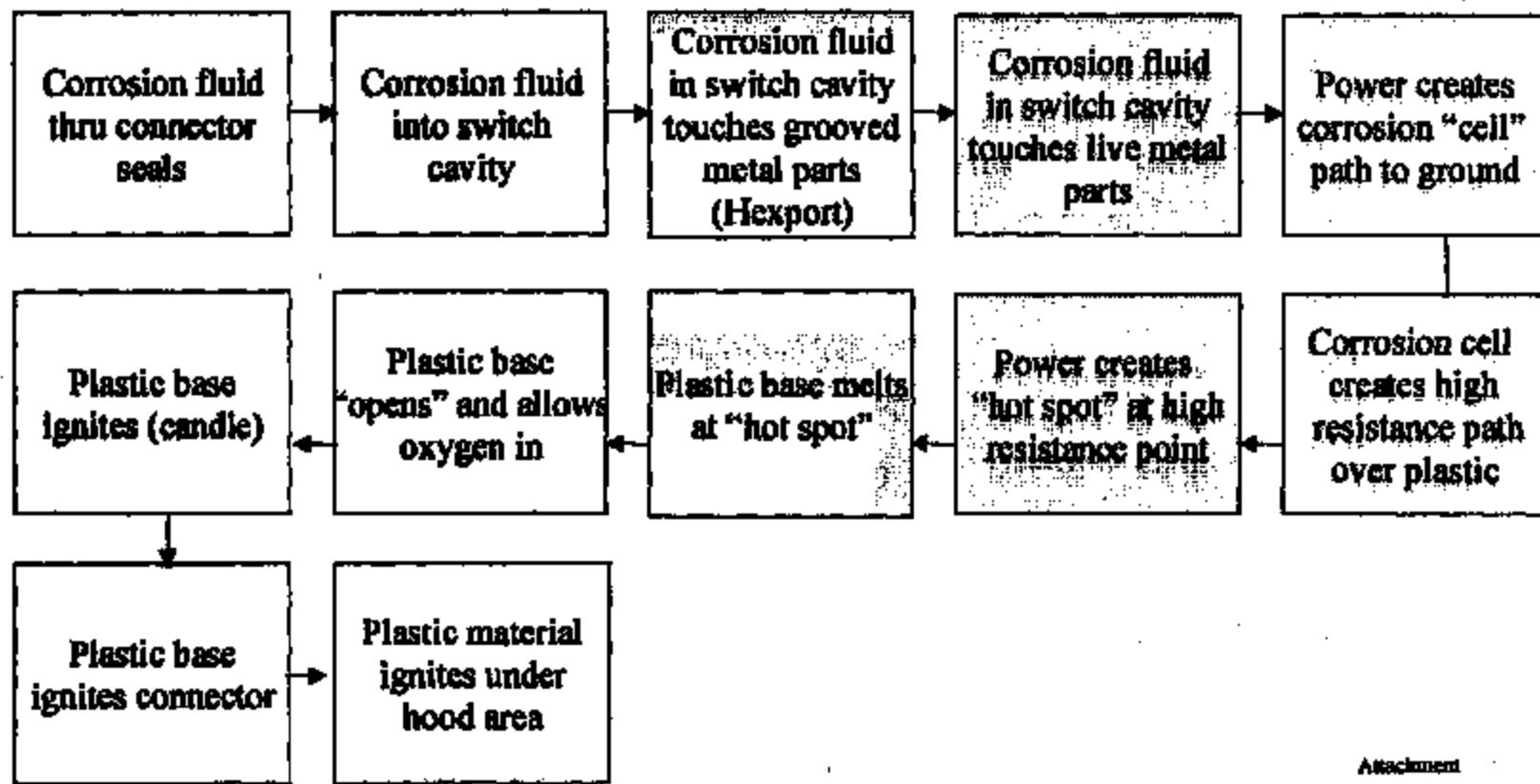
- “Town Car” switch meets accelerated/simulated life cycle specification shown by “success” and “end-of-life” testing



Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/21/99

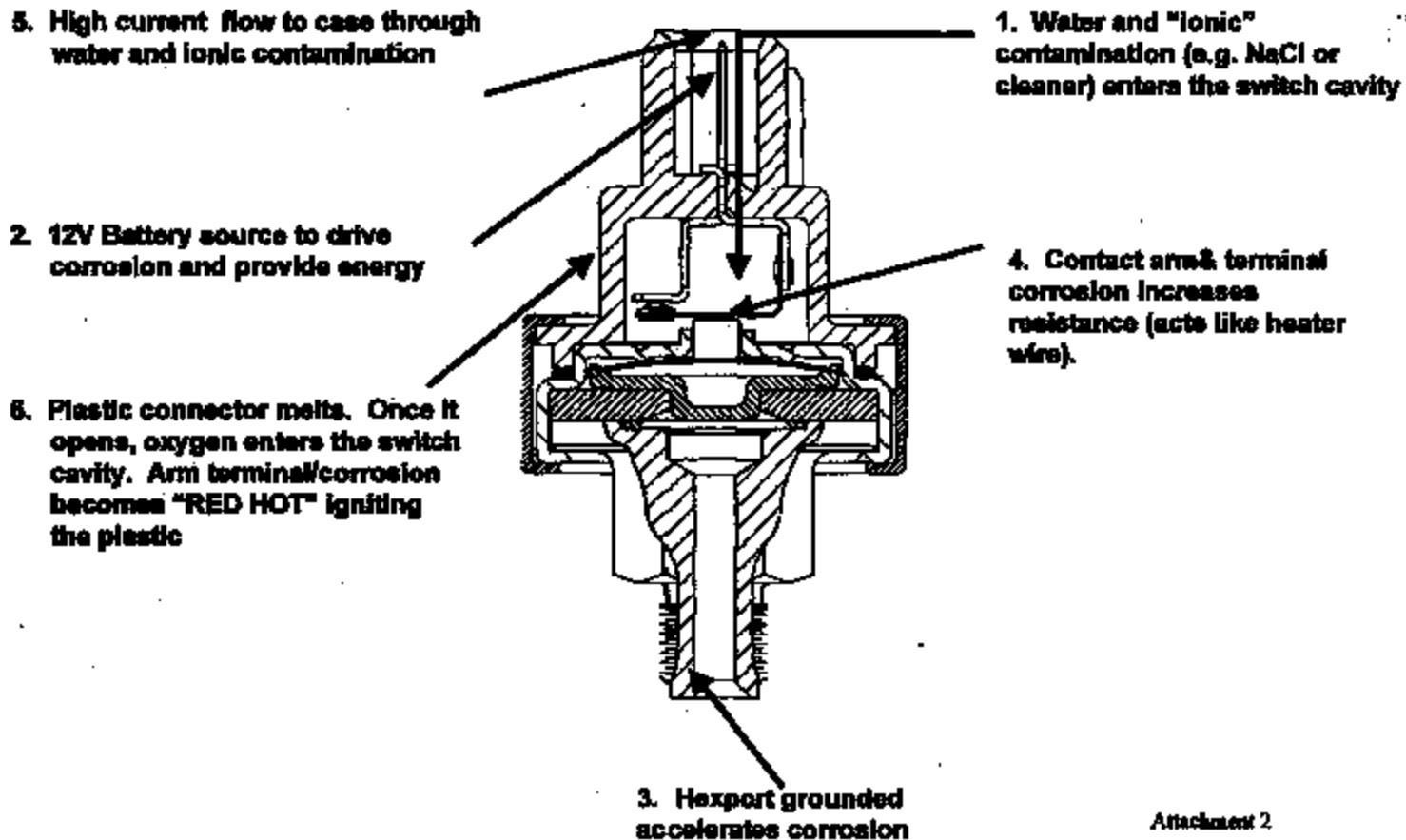


PROCESS FLOW DIAGRAM "CORROSION" POTENTIAL CAUSE FLOW ANALYSIS





Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99

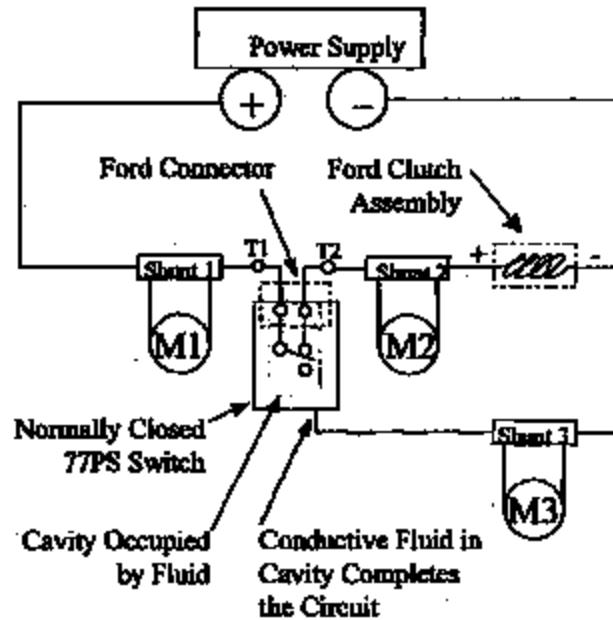
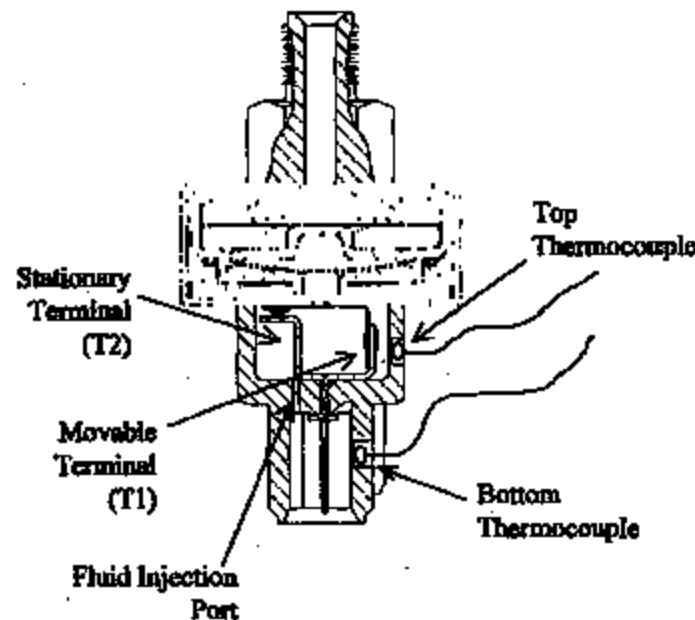


Attachment 2



**Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99**

**5% Salt Water Ingress Experiment
Test 1**



TI Report PS/99/12
03/15/99

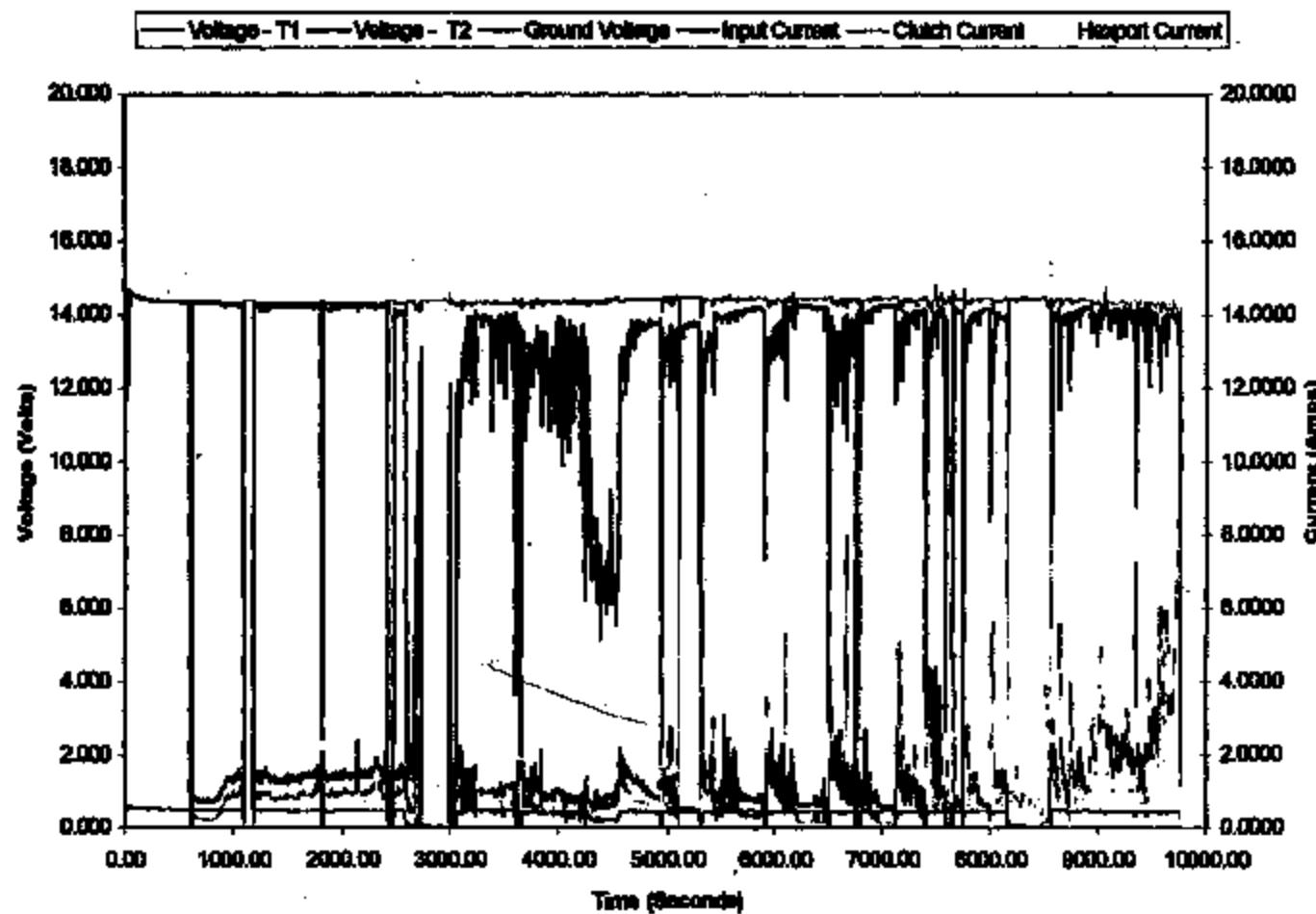
Test 1: Figure 1 and Figure 2.



Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/21/99

Ford

5% Salt Water Ingress Experiment



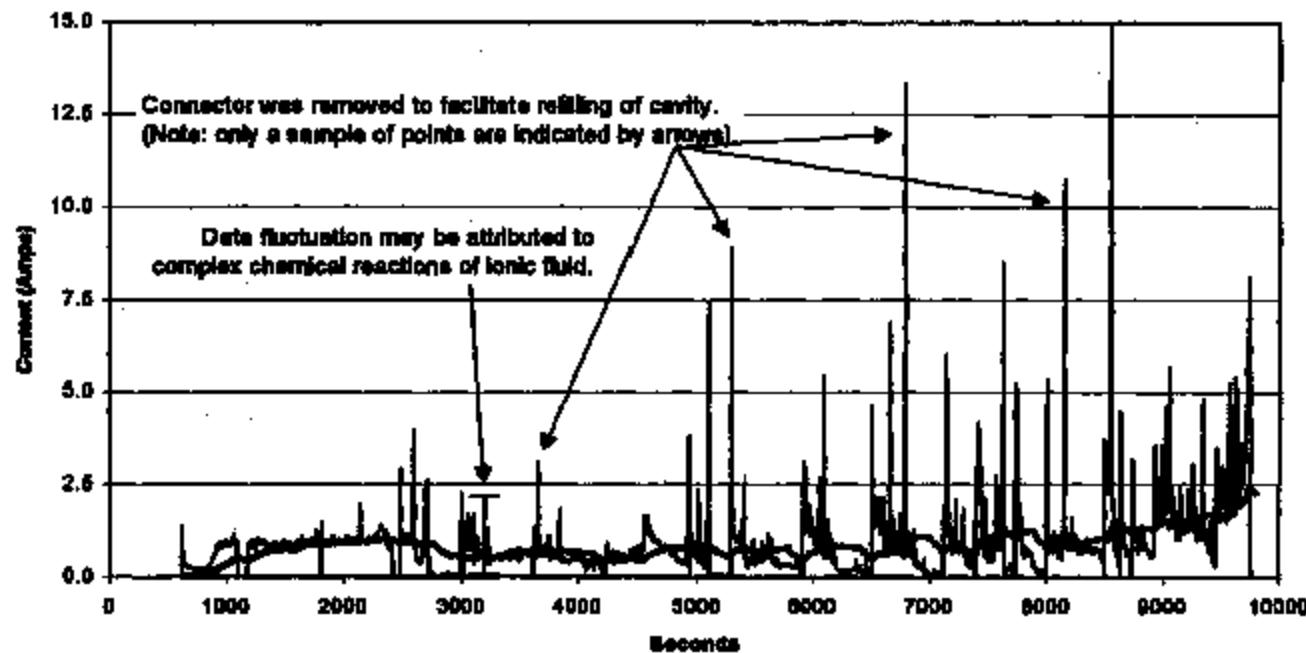


Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



Export Current vs. Time
(3) Hour Fluid Ingress Experiment
(15 Amps Full Scale)

New Brake Fluid	New Brake Fluid w/ 5% water	Used Brake Fluid w/ 5% Water
Tap Water	Used Brake Fluid	Rain Water
5% Salt Water	100 per. Mov. Avg. (5% Salt Water)	



'Intentional ignition created thru TI fluid ingress lab test PS/99/13'

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**Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99**

Good

**77PS
45° Orientation in 15 Amp Circuit
5% Salt Water Ingress**

Cellanex 4309 Base



Cellanex 3316 Base



'Intentional ignition created thru TI fluid ingress lab test PS/99/13'

C/McGraw-Hill

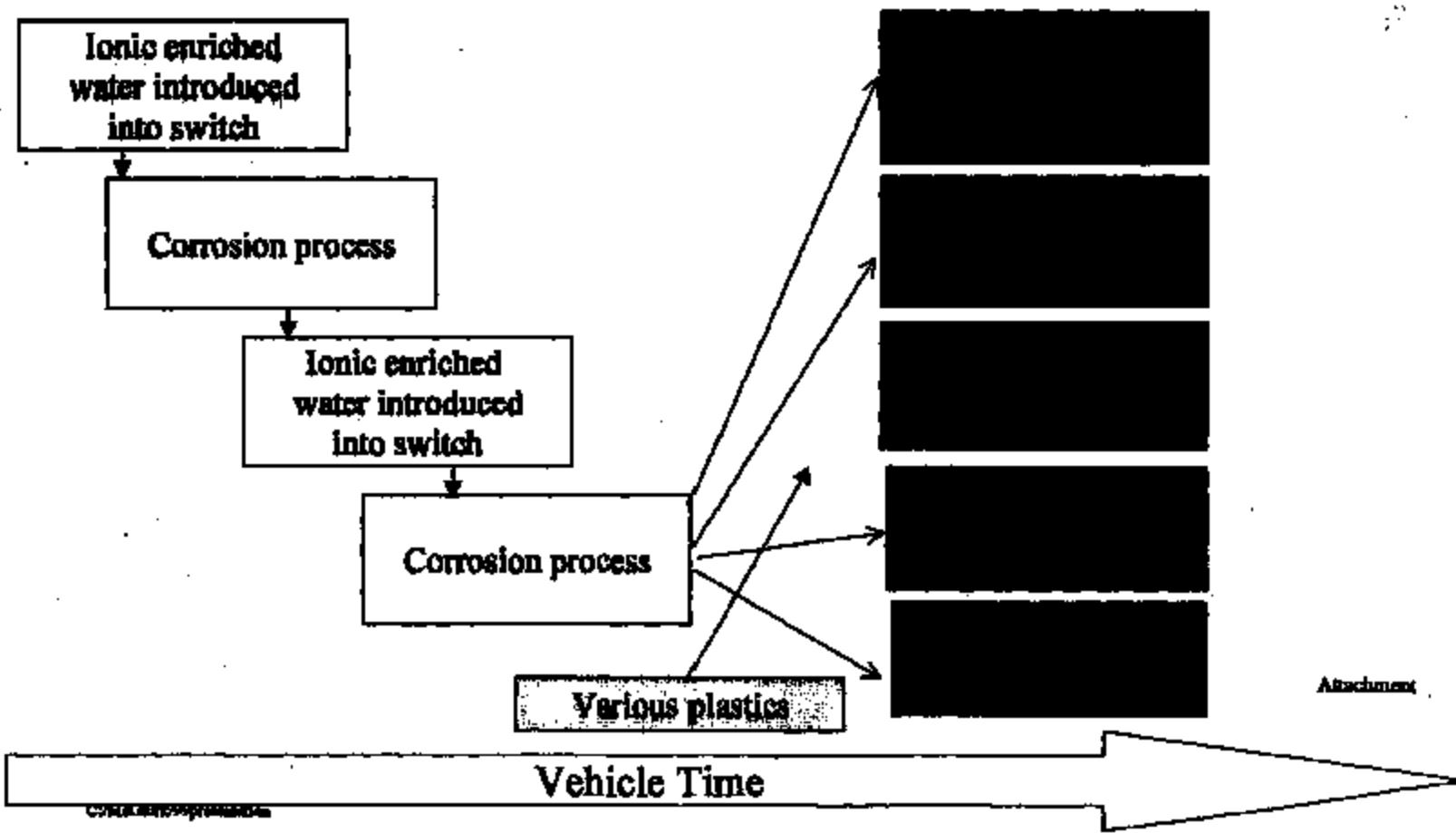
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Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/21/99

Jord

**"Corrosion" potential cause time line
Theory Time Line**





Brake Pressure Switch
Potential Thermal Event Theory Profile 4/21/99



77PS
45° Orientation in 15 Amp Circuit
5% Salt Water Ingress

Cellanex 4300 Base



Cellanex 3316 Base

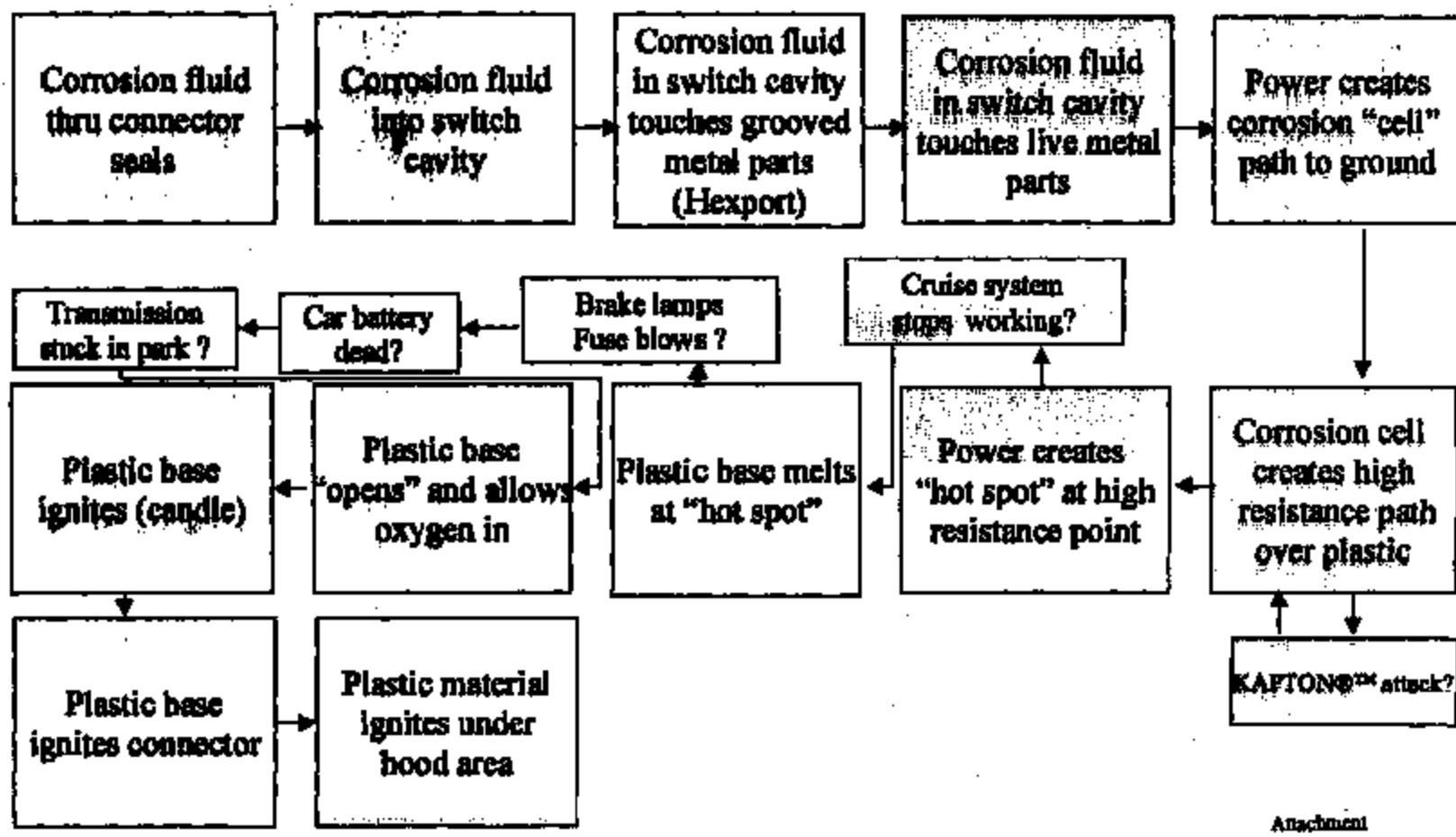




Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/21/99

Ford

PROCESS FLOW DIAGRAM "CORROSION" POTENTIAL CAUSE FLOW ANALYSIS

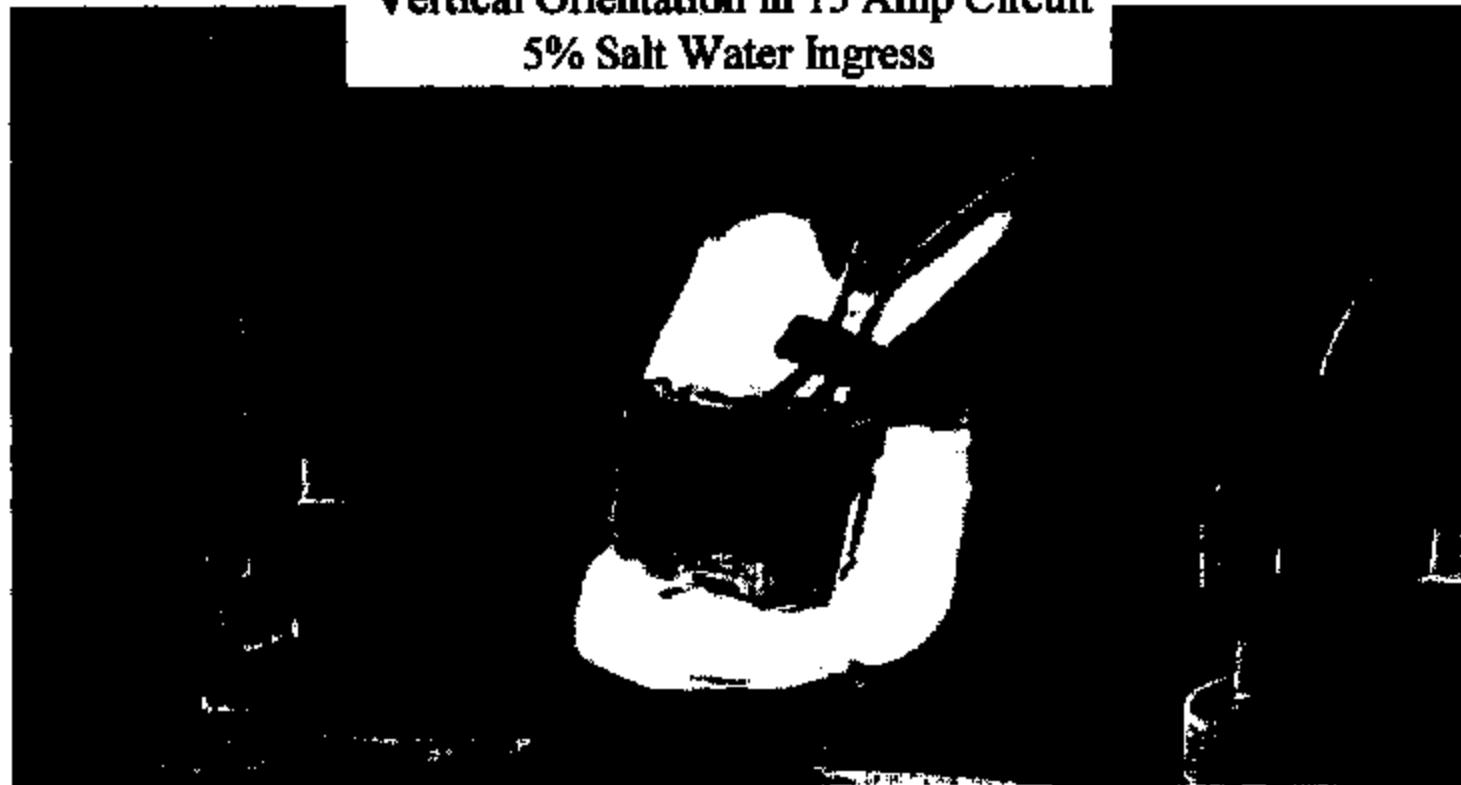




**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/21/99**

Final

**77PS Cellanex 4300 Base
Vertical Orientation in 15 Amp Circuit
5% Salt Water Ingress**



Not Enough Printer Memory - See User's Guide

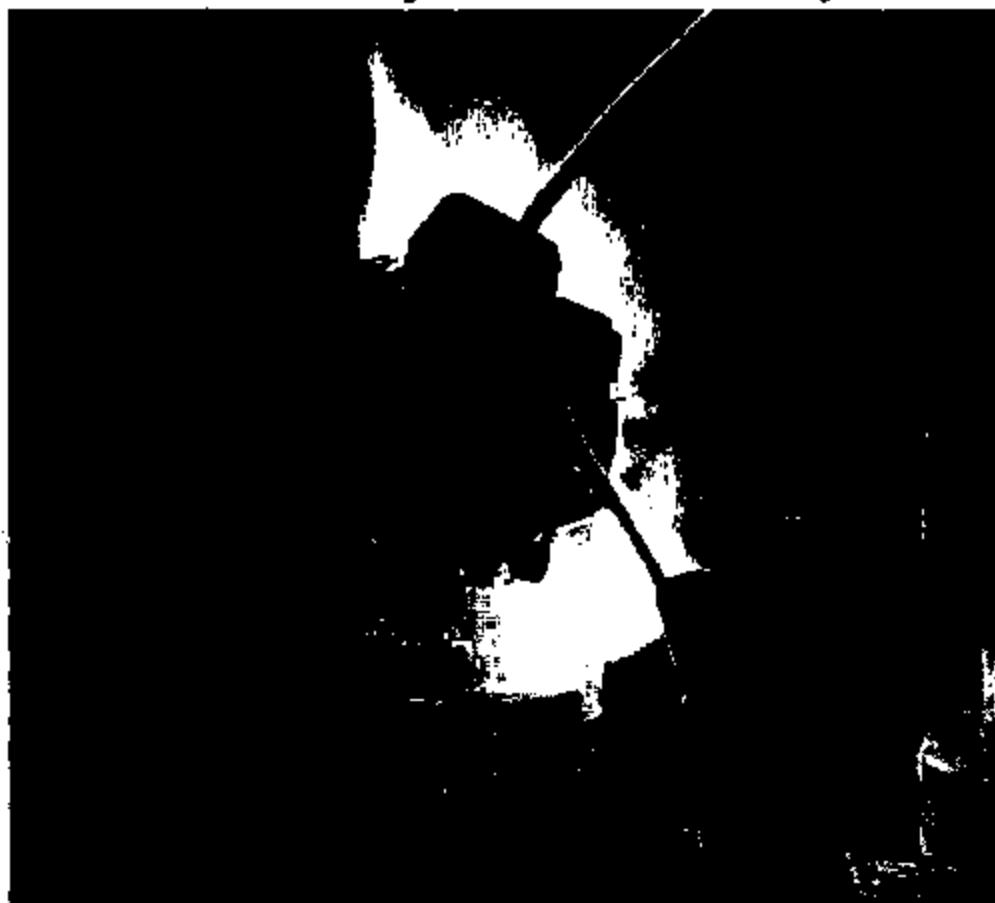
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**Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99**



5% Salt Water - 15 Amp Circuit - Vertical - Zytel



3713 6200

PS/99/13

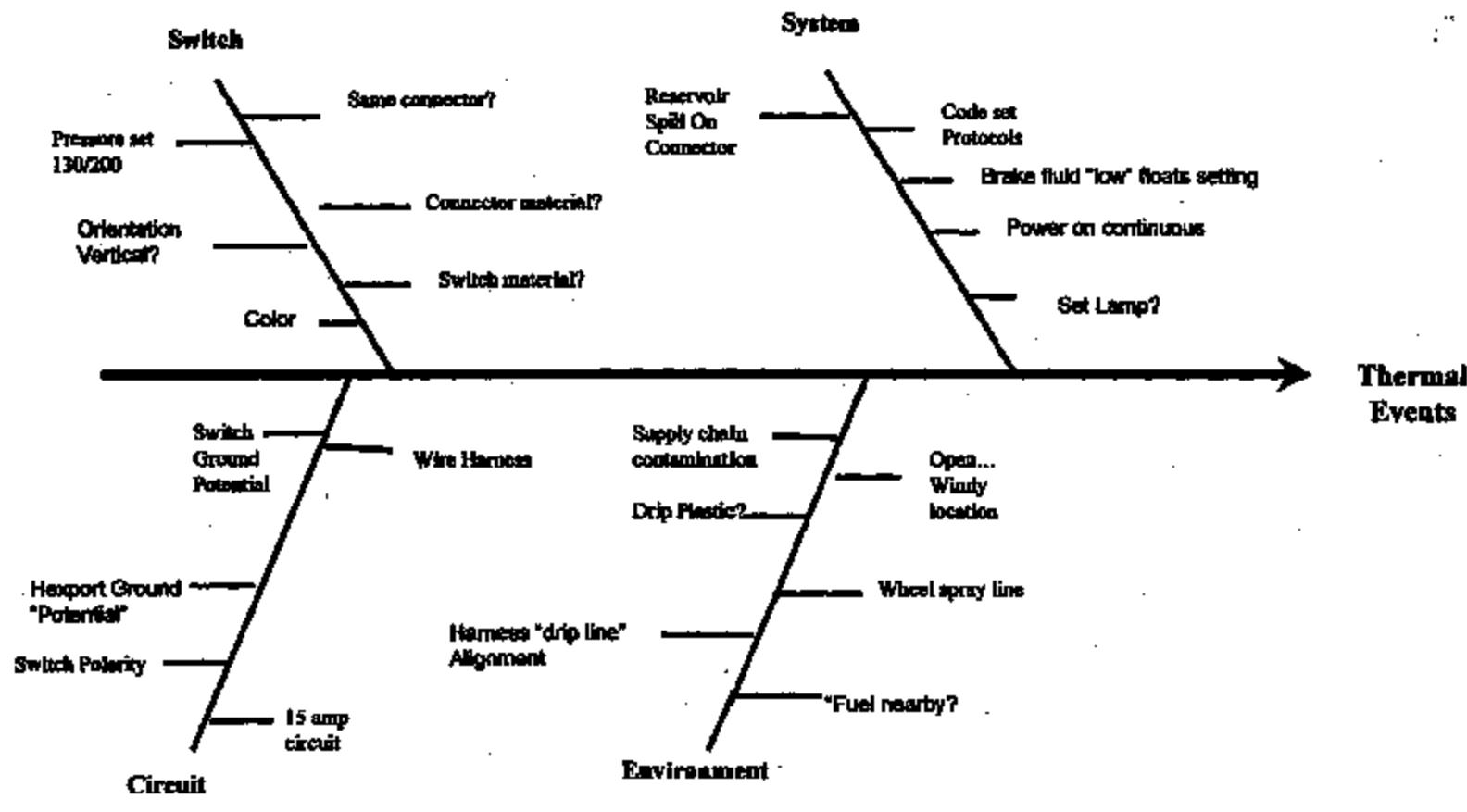
'Intentional ignition created thru TI fluid ingress lab test PS/99/13'



Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



ECONOLINE VS. TOWN CAR P/S





**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/21/99**



5% Salt Water - 15 Amp Circuit - Vertical - Zytel



Not Enough Printer Memory – See User's Guide

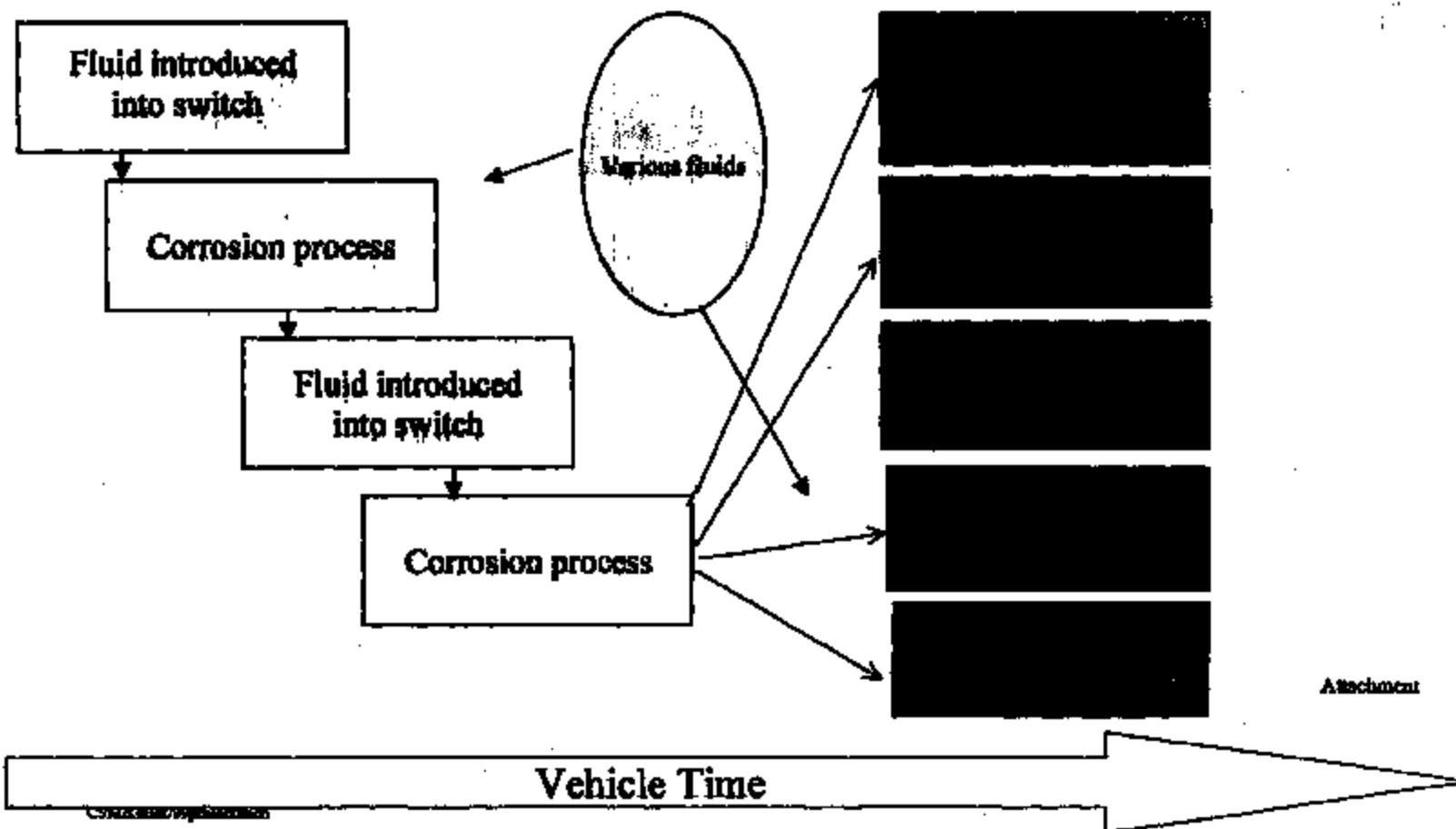
3713 6202



Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/21/99

Send

"Corrosion" potential cause time line
Theory Time Line



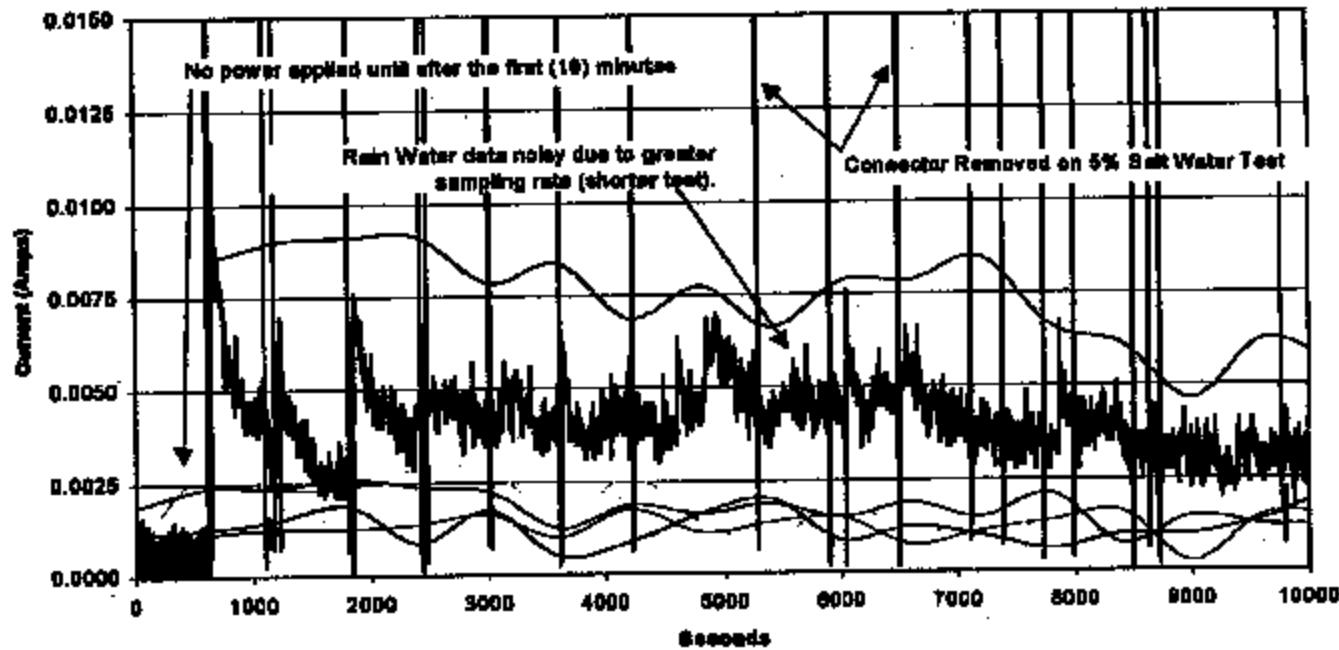


Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99

22nd

Export Current vs. Time
(3) Hour Fluid Ingress Experiment
(0.015 Amp Full Scale)

New Brake Fluid	New Brake Fluid w/ 5% water	Used Brake Fluid w/ 5% Water
Tap Water	Used Brake Fluid	Rain Water
5% Salt Water	100 per. Mov. Avg. (5% Salt Water)	



'Intentional ignition created thru TI fluid ingress lab test PS/99/13'

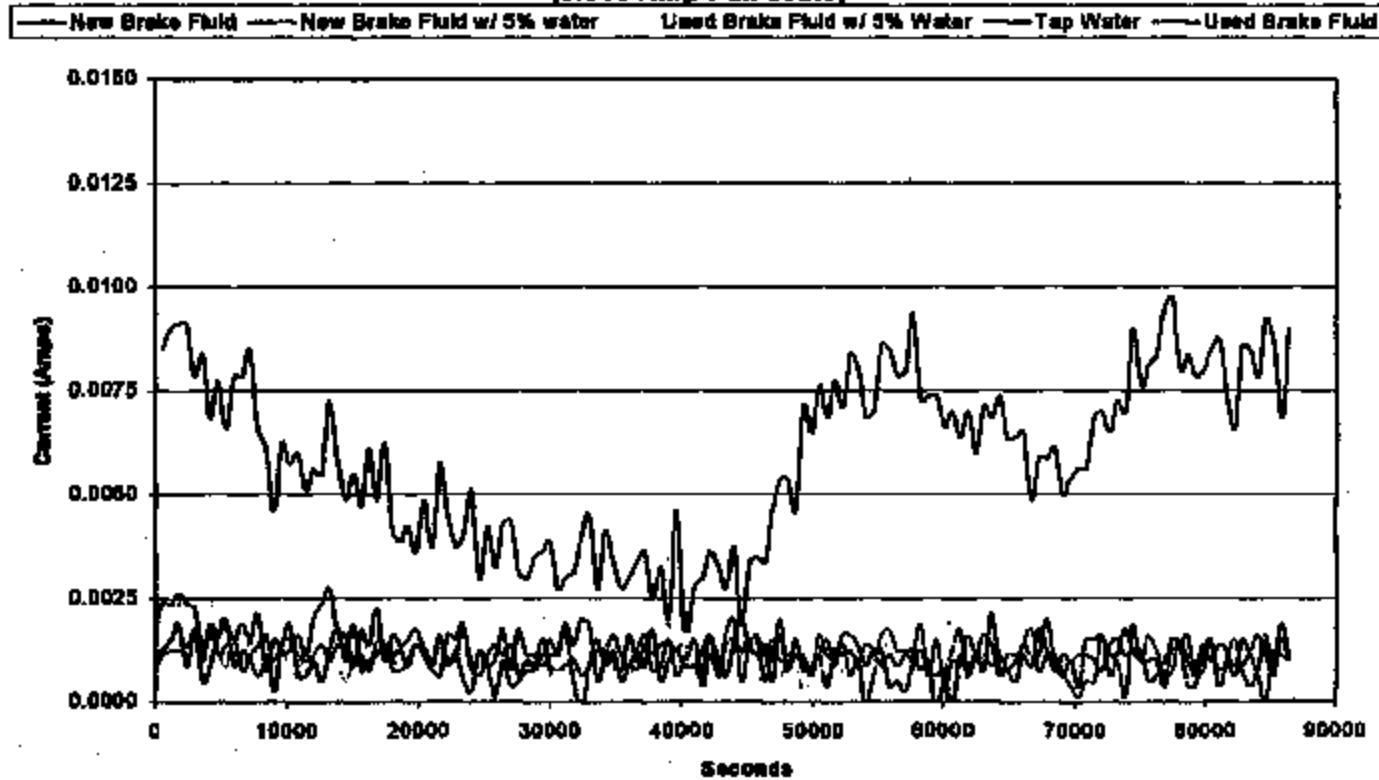


Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



Export Current vs. Time

(24) Hour Fluid Ingress Experiment
(0.015 Amp Full Scale)

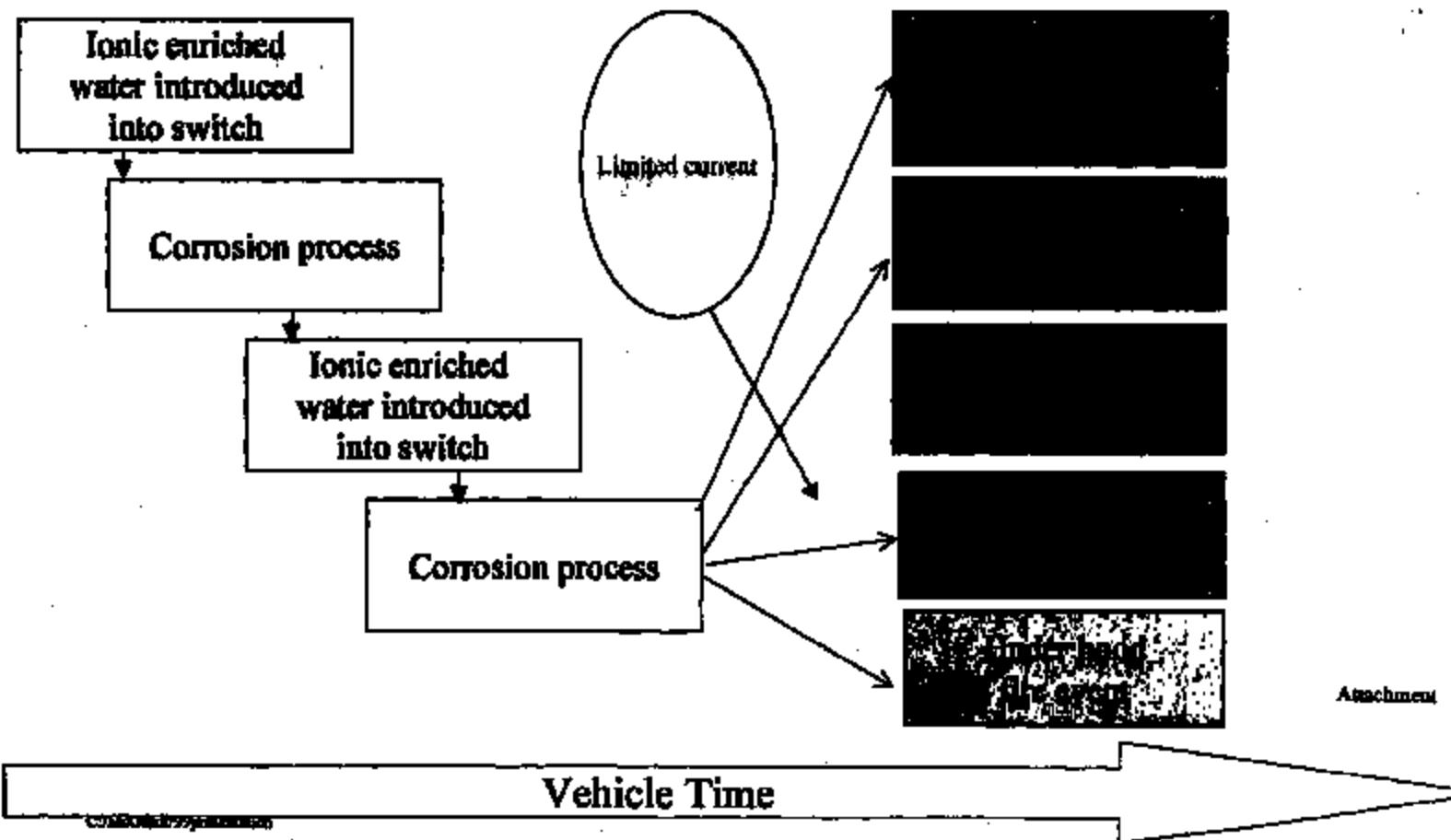




Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



“Corrosion” potential cause time line Theory Time Line

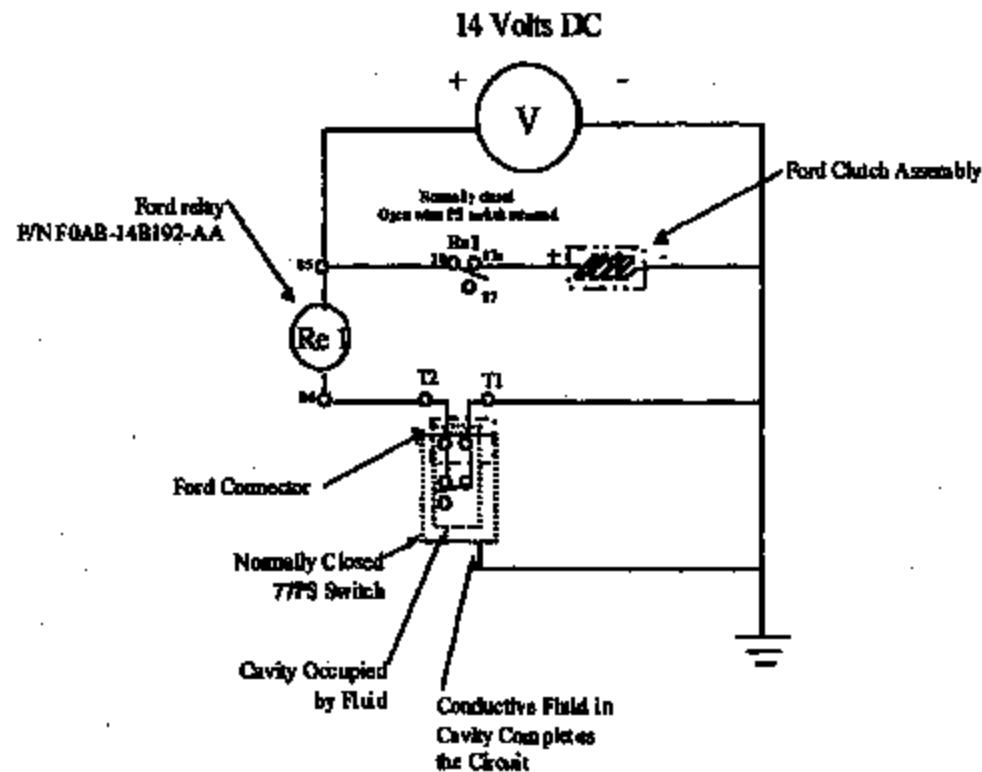




Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



77PS Proposed Wiring Schematic



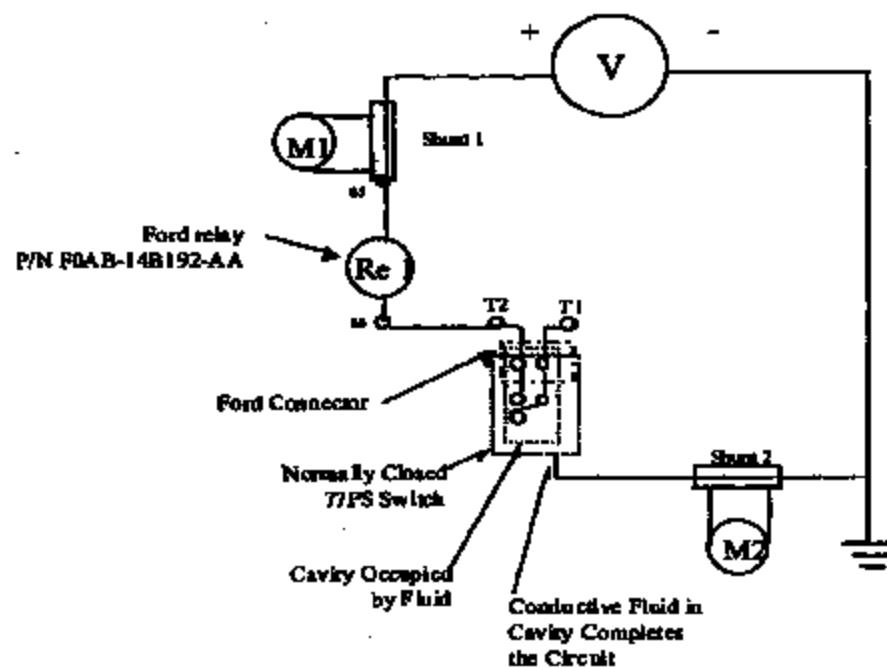


Brake Pressure Switch Potential Thermal Event Theory Profile 4/21/99



200 mAmp Current Limit Circuit Test Setup

14.5 Volts DC



Worst case scenario is when the switch is actuated, which puts T2 at full voltage.
To facilitate testing, T1 is floating which keeps T1 and T2 at full voltage but limits current draw to .2 Amps
(This test is harsher than worst case scenario).



Brake Pressure Switch

Potential Thermal Event Theory Profile 4/21/99



See low current stuff from sean



**Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99**

Today's Date: UPDATED 04/21/99

Scope or Effect Description

L Operational Definition (Problem Statement): TOWN CAR UNDERHOOD THERM

L Operational Definition (Problem Statement): TOWN CAR UNDERHOOD THERM			
2 Description	IS	IS NOT	Get Information
WHAT	Town Car MY '92, '93, '94	Crown Victoria? Grand Marquis? TB Super Coupe? MY '91, '95, '96 ? '92, '93 Econoline?	COMPARE PLATFORMS
	PRESS... - Electrical pressure switch - Connector - Serve system - Electrical Distribution	Not only pressure switches	COLLECT/TEST OTHER SYSTEM COMPONENTS FOR 'SYNERGY'
	SYSTEM ISSUES... - Cruise Inoperative - Locked in park - Horn Inoperative - Brake lights Inoperative - Discharged battery - Door locks? - Headlight lamp?	Other circuits	COMPARE VEHICLE OPTIONS FOR SYNERGY
WHERE	Driver side hood	Passenger side hood Dash - passenger compartment	EVALUATE HEAT SOURCES
	Medium height in engine compartment	Not Mid in engine comp	
WHEN	1-24 hours after parking Ignition off	Not while driving Not while ignition on	EVALUATE POWER AND HEAT AND WIND SOURCES
	After 4-5 years After XXX miles	Not before 3 years ? Not before YYY miles	REVIEW MILES
	After AAA switch cycles	Not Before HHS cycles	
HOW BIG	149 mm / 2200 mils "candle size" flame	Not all sizes? Not "explosion"	COMPARE PLATFORMS READ FIRE RPT
	Several pressure switches	Not all undamaged fuses Not all pressure switches	PARETO UNDERHOOD



Texas Instruments Potential Thermal Event Theory Profile 4/21/99

Texas Instruments
Automotive Sensors & Controls
ID Report

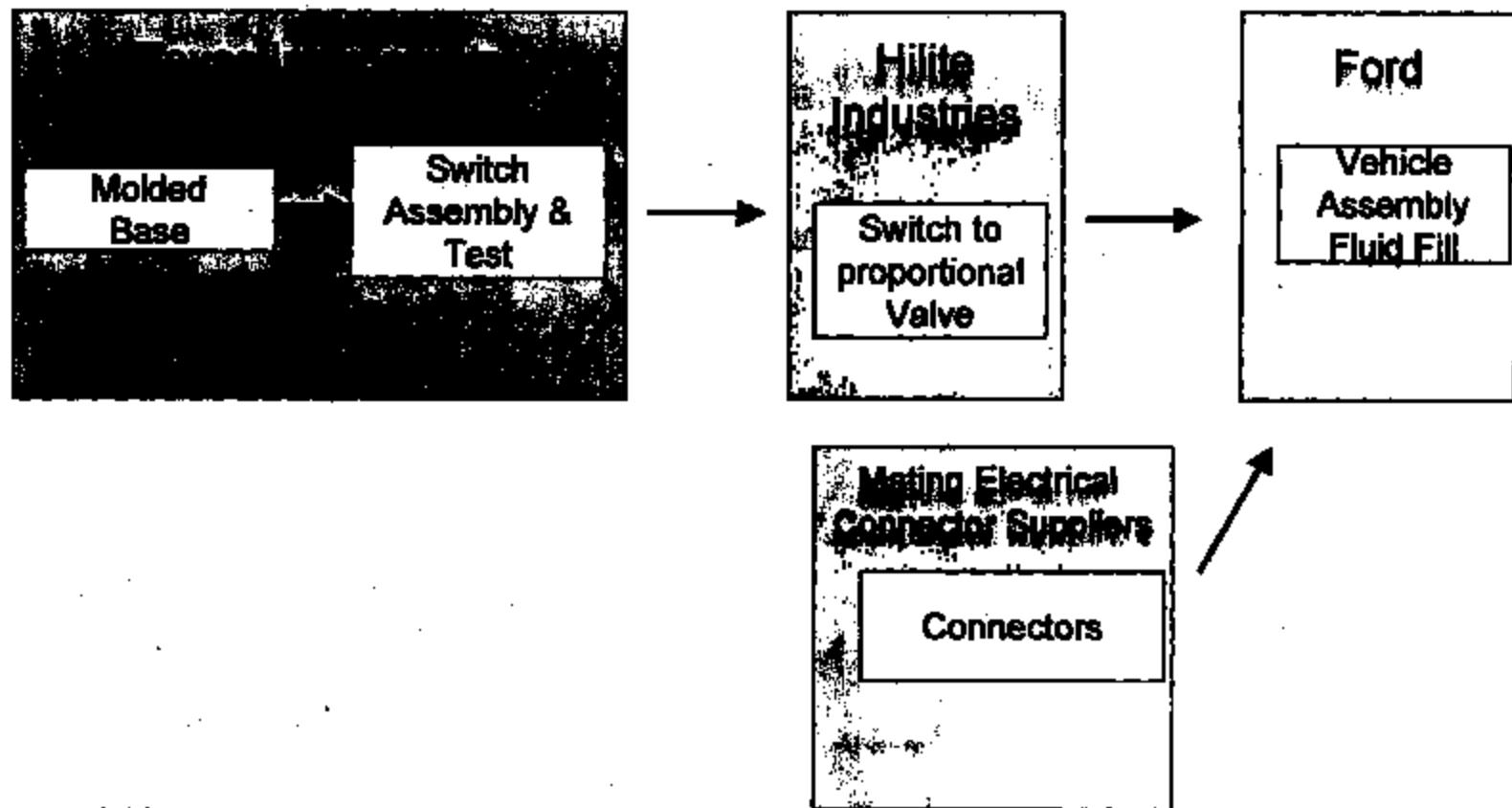
Customer Name	77 PS Thermal Events	Open Date	3/9/99	
1.1. CAR Report Number	CAR 99-26	Updated:	4/20/99	
State Name	Vehicle	Part Name	Electric Speed Control Deceleration Power Switch	
	Model	Part No.	77PS 02-1	
	Plant	1. Problem Description: Under certain conditions, the brake pressure switch can fail.		
1. Team:	2. Participants:	3. Corrective Actions: Under review, considering disabling speed control system.		
2. Root Cause (See attachment 1, 25 - IS NOT Table, (Version of 3/25/99))	4. Implemented Preventative Actions: See attachments 1,3,4 Under Review: <ul style="list-style-type: none">- Raise thermal performance switch from connector- Continuous power draw on connector- Connector creates high resistance- Resistance creates local heating- Serial exposures over time (?)- Local heating ignites pressure switch and connector plastic- Operator procedural modification			% Corrective Action: Unknown
5. Choose Permanent Corrective Action: See attachments 1,3,4	Verification: TBD by lab experiments			% Effectiveness: Unknown
6. Implemented Permanent Corrective Actions:				Implemented
7. Actions to Prevent Recurrence:	 Reduce constant power, reduce power to function until, at end after "high" electrical function			Implemented
8. Completion Date	Close Date:	Reported By:	A. McGaugh	
		Dept. Name:	QA Manager	
		Telephone No.:	(800) 224-3486	



Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/21/99



PRESSURE SWITCH "FLOW DIAGRAM"
('92, '93, TOWN CAR)

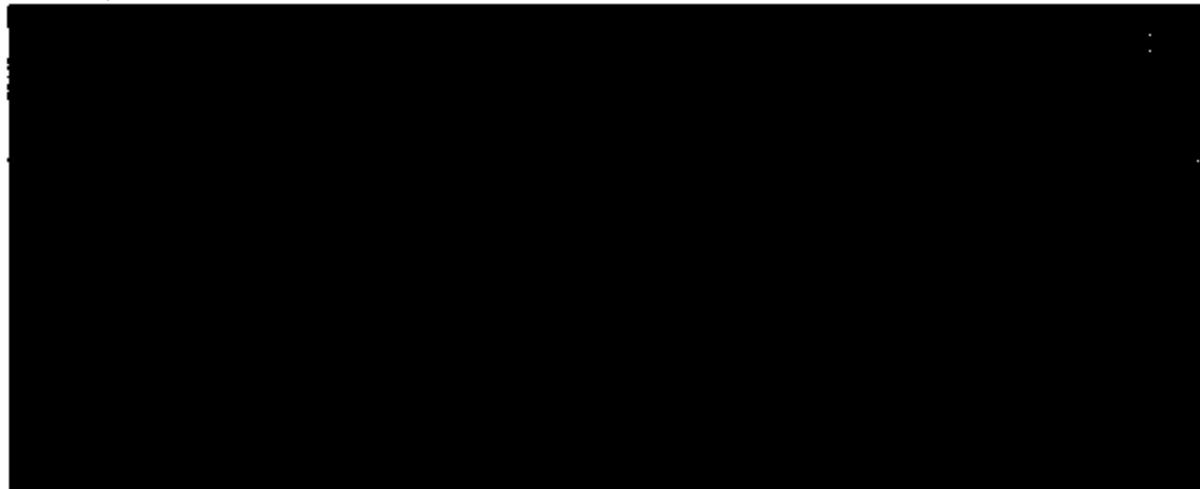




**Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99**

Scanned

SUMMARY OF 4/21/99



- Try to compare connection drawings of planes after testing,
→ 1/2 - Fins 1/2 - TI
→ Show Director, no airports before Andy
→ 020 BRAKE FLUID

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Comments
- send references Priority

Andy



Brake Pressure Switch
Texas Instruments Potential Thermal Event Theory Profile 4/21/99



77PS2-1		GROSS QTY		COMPLETE	COMPLETE	BEGIN	IMPACT	COMMENTS/CONCERNS
COMPONENT	DESCRIPTION	REQUIRED	SUPPLIER	110K	240K	PARTIAL	TO T1	
27408-1	CONVERTER	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY
27639-1	WASHER / A	2,040,000	DIEMASTER	10 WKS	18 WKS	2 WKS	NONE	MATERIAL AVAILABILITY
27713-1	CUP 77PS	2,040,000	VALENTINE	8 WKS	10 WKS	1 WK	NONE	RAW MATERIAL AVAILABILITY
36866-27	57PS	2,040,000	DISC DEPT	12+ WKS	24 WKS	3 WKS	TOOL \$?	POSSIBLE CAPACITY ISSUE
36800-1	HEXPORT 71	2,040,000	ELCO	10 WKS	25 WKS	3 WKS	NONE	RAW MATERIAL AVAILABILITY
74224-1	KAPTON	204	EI DUPONT	2 WKS	2 WKS	2 WKS	NONE	
27225-1	KAPTON ST	1,102	EI DUPONT	3 WKS	3 WKS	2 WKS	NONE	
74353-1	GASKET	2,040,000	JBL PARKER	6 WKS	18 WKS	3 WKS	NONE	ELIMINATE CORES WILL INCREASE DEL. BY 10%
36868-1	STATIONARY	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY/REELS
26744-1	CONTACT-S	2,040,000	DERRINGER	4 WKS	8 WKS	1 WK	NONE	MATERIAL AVAILABILITY
36887-1	MOVABLE T	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY/REELS
27718-1	SECU ISSUE	449	BRUSHWELL	1 WK	2 WKS	1 WK	NONE	NONE
74918-1	RIVET	2,040,000	JOHN HASS	8 WKS	11 WKS	4 WKS	NONE	RAW MATERIAL AVAILABILITY
46515-2	PRESSURE:	2,040,000	IMM MOLDIN	16 WKS	32 WKS	4 WKS	NONE	RAW MATERIAL CHANGEOVER/PRESS CAPACITY
74076-143	CERAMIN PI	2,040,000	PARATECH	7 WKS	15 WKS	2 WKS	NONE	
74247-4	BLUE ORING	2,040,000	JBL PARKER	6 WKS	10 WKS	2 WKS	NONE	ELIMINATE CORES WILL INCREASE DEL. BY 10%
74787-1	CRIMP RING	2,040,000	VALENTINE	8 WKS	10 WKS	1 WK	NONE	RAW MATERIAL AVAILABILITY
74688-1	RED THREA	2,040,000	MARK IV CA	3 WKS	8 WKS	1 WK	NONE	

77PS SWITCH

T1

7/15,8/1,8/15 250K/MONTH

7 day weeks, thru summer vacations, 'std' plastic mold

S713 2314



AGENDA

- CONTRIBUTING FACTORS AND ROBUST DESIGN DIALOGUE
- OVERVIEW TIME LINE
- SYSTEM OVERVIEW
 - SWITCH AND CONNECTOR
 - IS / IS NOT TABLE
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 - BRAKE FLUID IGNITION
 - PLASTIC IGNITION
 - TEST RESULTS
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 - ROBUST DESIGN ALTERNATIVES



**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/14/99**



1. Connector Seal to P/S
2. Power continuously available
 - A. Operator notifications
3. Switch orientation/location
4. Current limit / fuse
5. Hexport isolation
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 - A. Nearby fuels
7. Kapton seal of P/S
8. Environmental seal of P/S

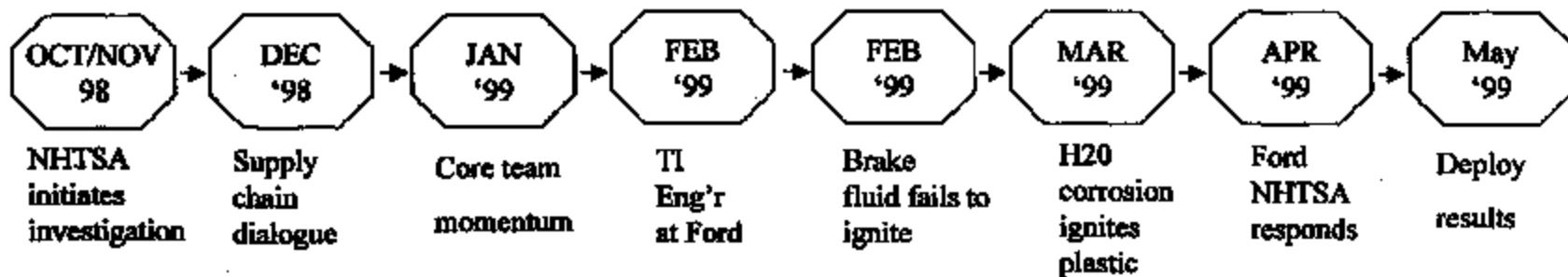
Attachment 3



Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



OVERVIEW OF CONCERN TIME LINE



Attachment

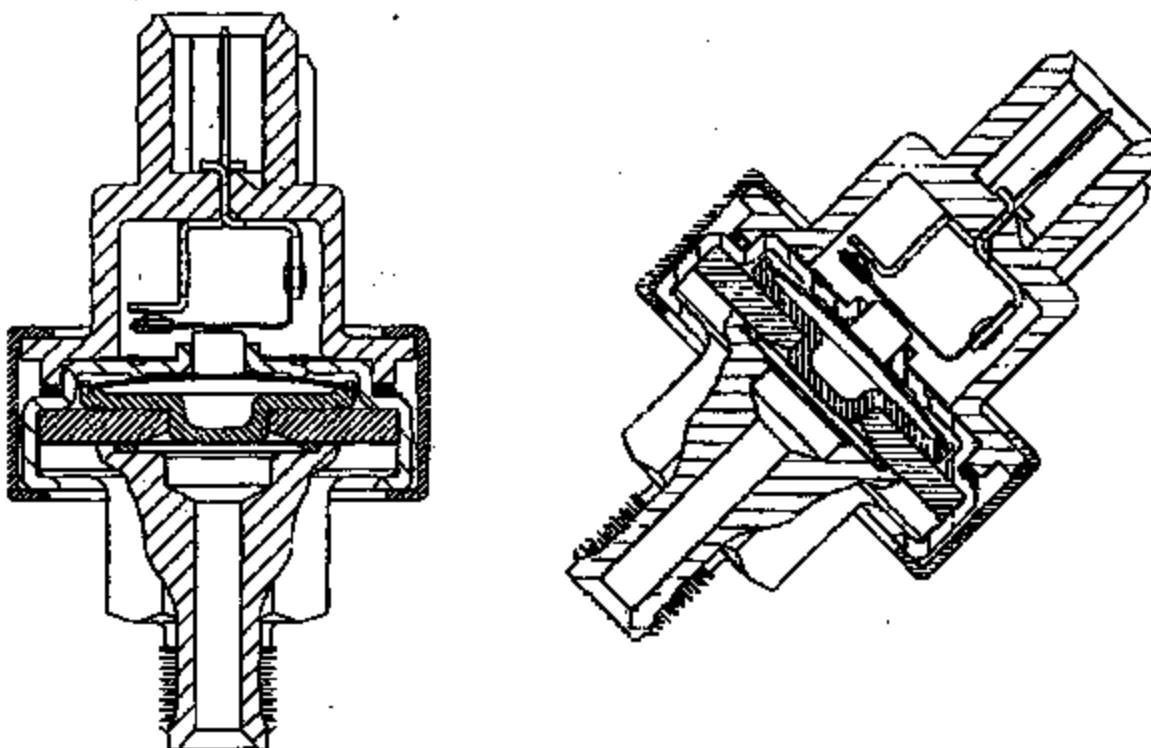
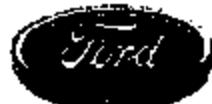


Brake Switch Overview

- Mounted under hood...14 inches under master cylinder
- Mounted on proportional valve at frame of vehicle
- Switch oriented approximately 25 degrees off vertical
(connector up)
- Switch controls speed control...normally closed, opens at
130 psi
- Continuously powered by battery 15 amp connection



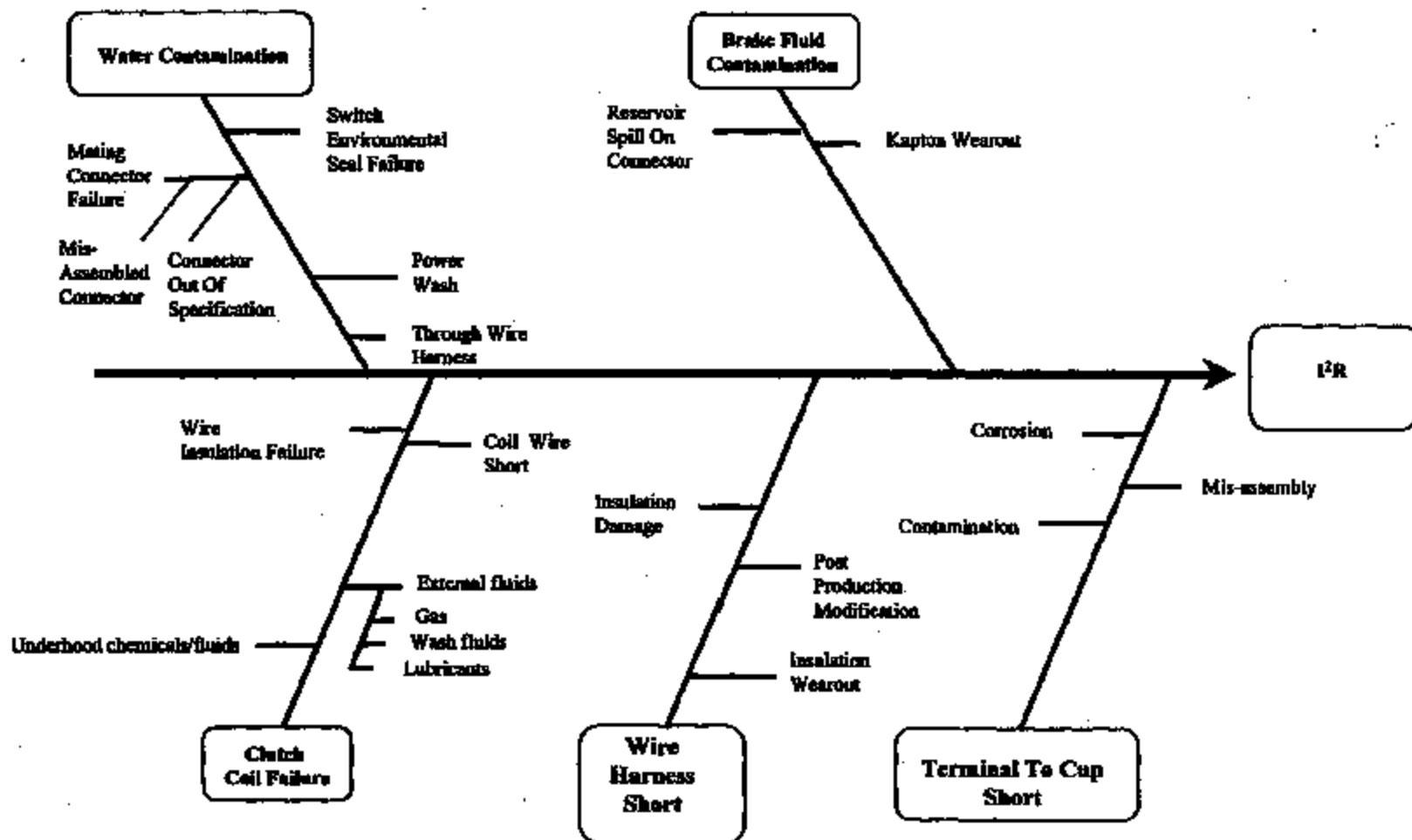
Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



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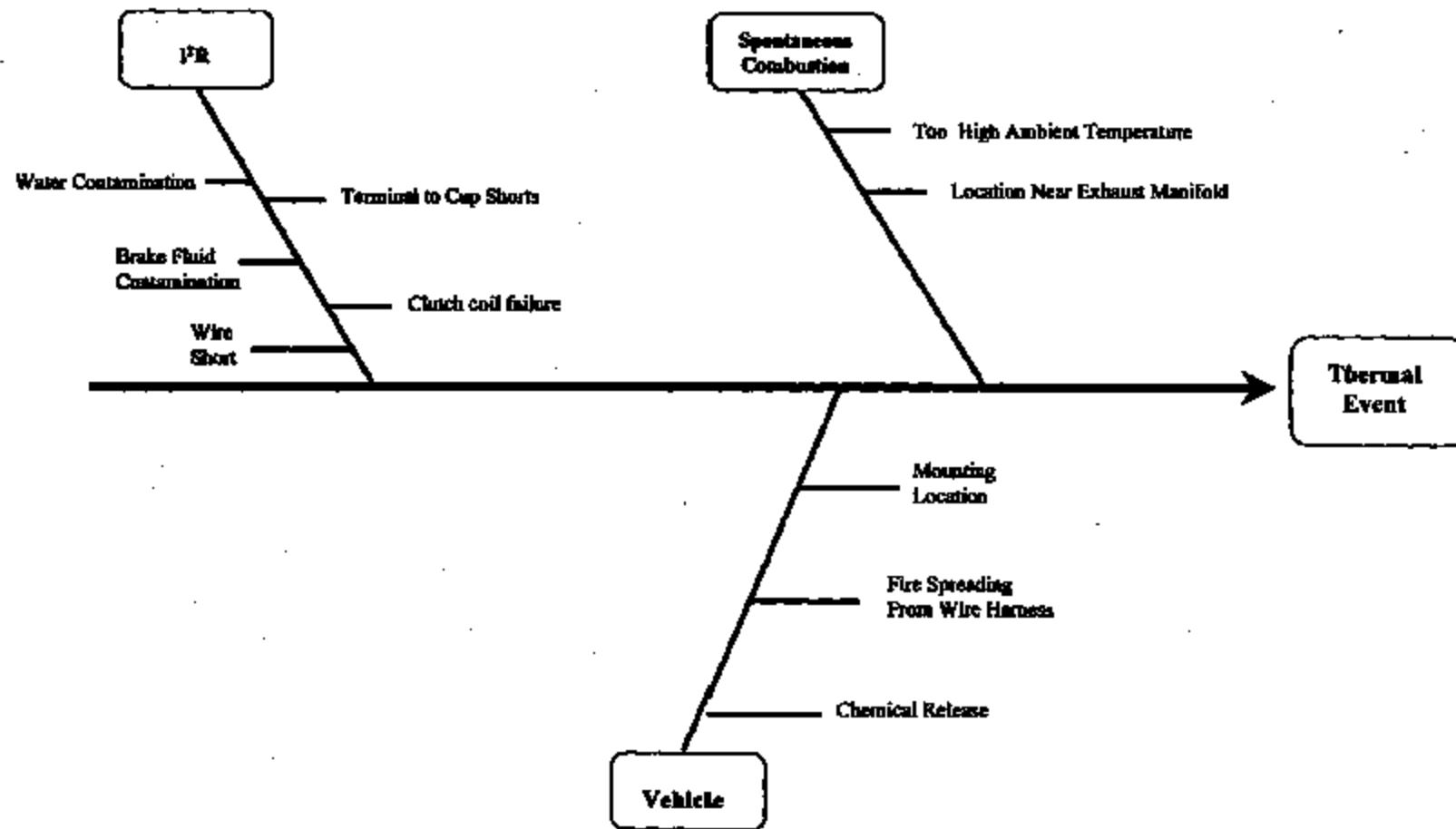


Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99





Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



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Brake Pressure Switch
Potential Thermal Event Theory Profile 4/14/99



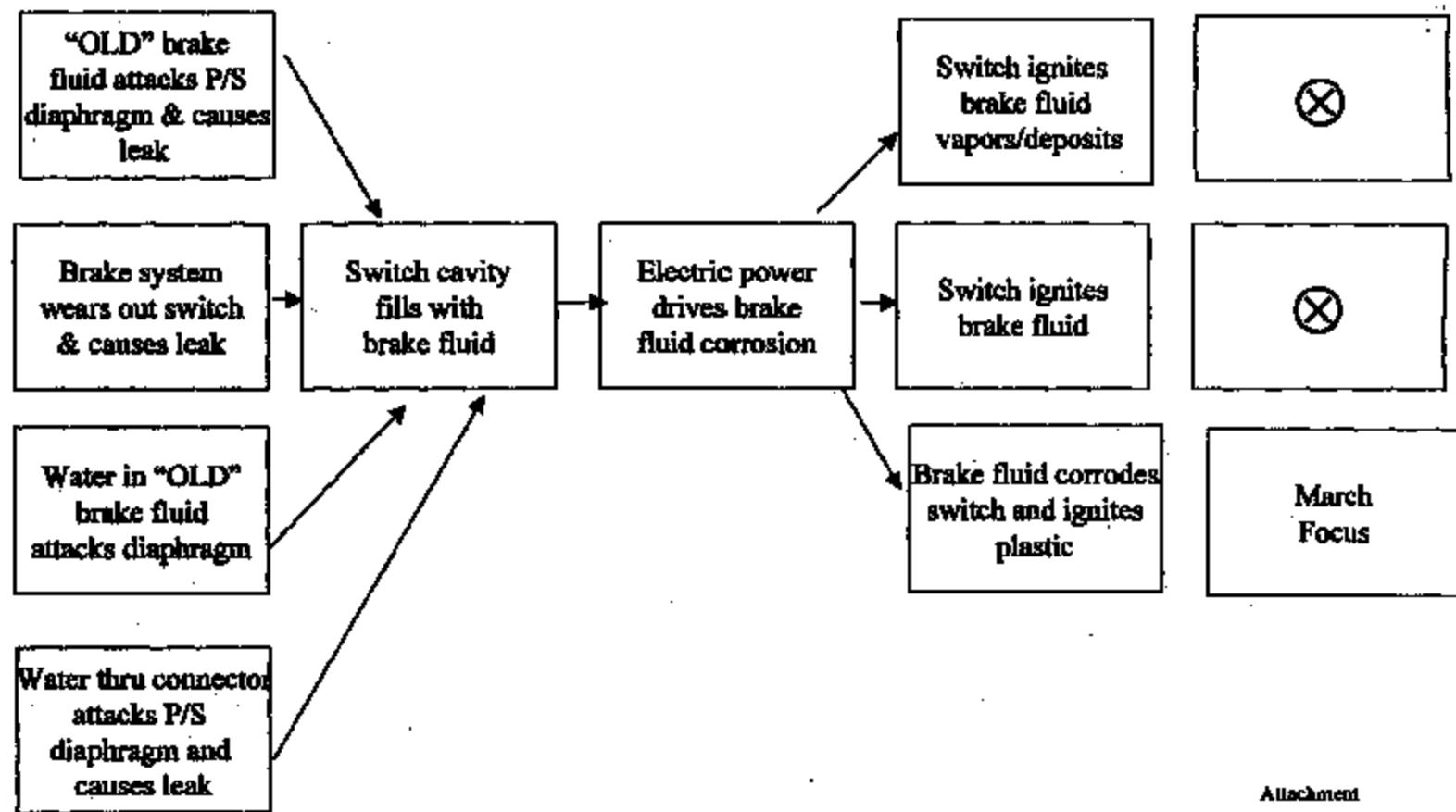
SEE EXCEL SPREADSHEET



Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



REFINED BRAKE FLUID IGNITION THEORY POSSIBLE CAUSE THEORIES "FEB '99 FOCUS"





Brake Pressure Switch

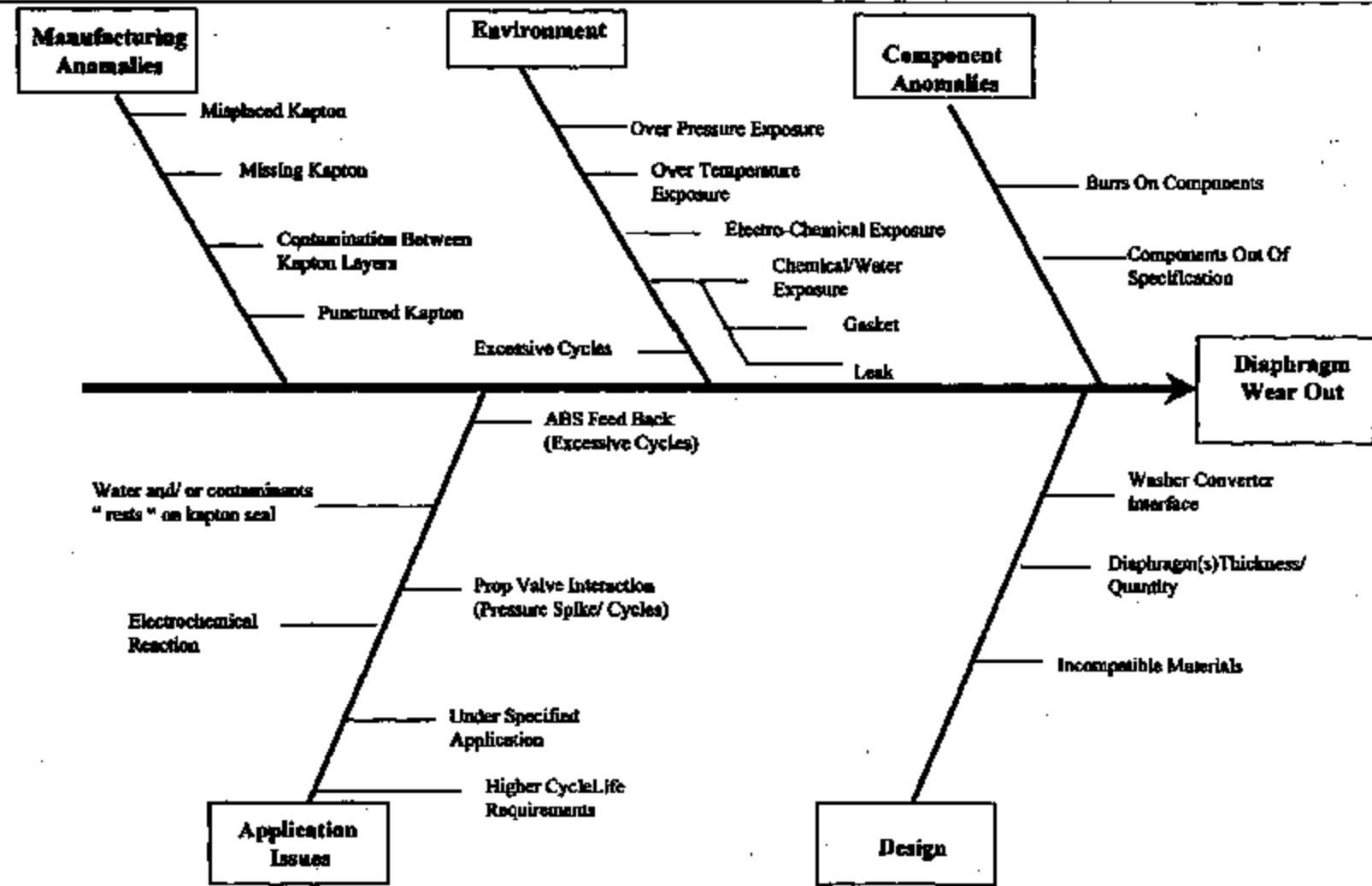
Potential Thermal Event Theory Profile 4/14/99



- TI and Ford not successful in creating ignition with “new”
brake fluids



Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



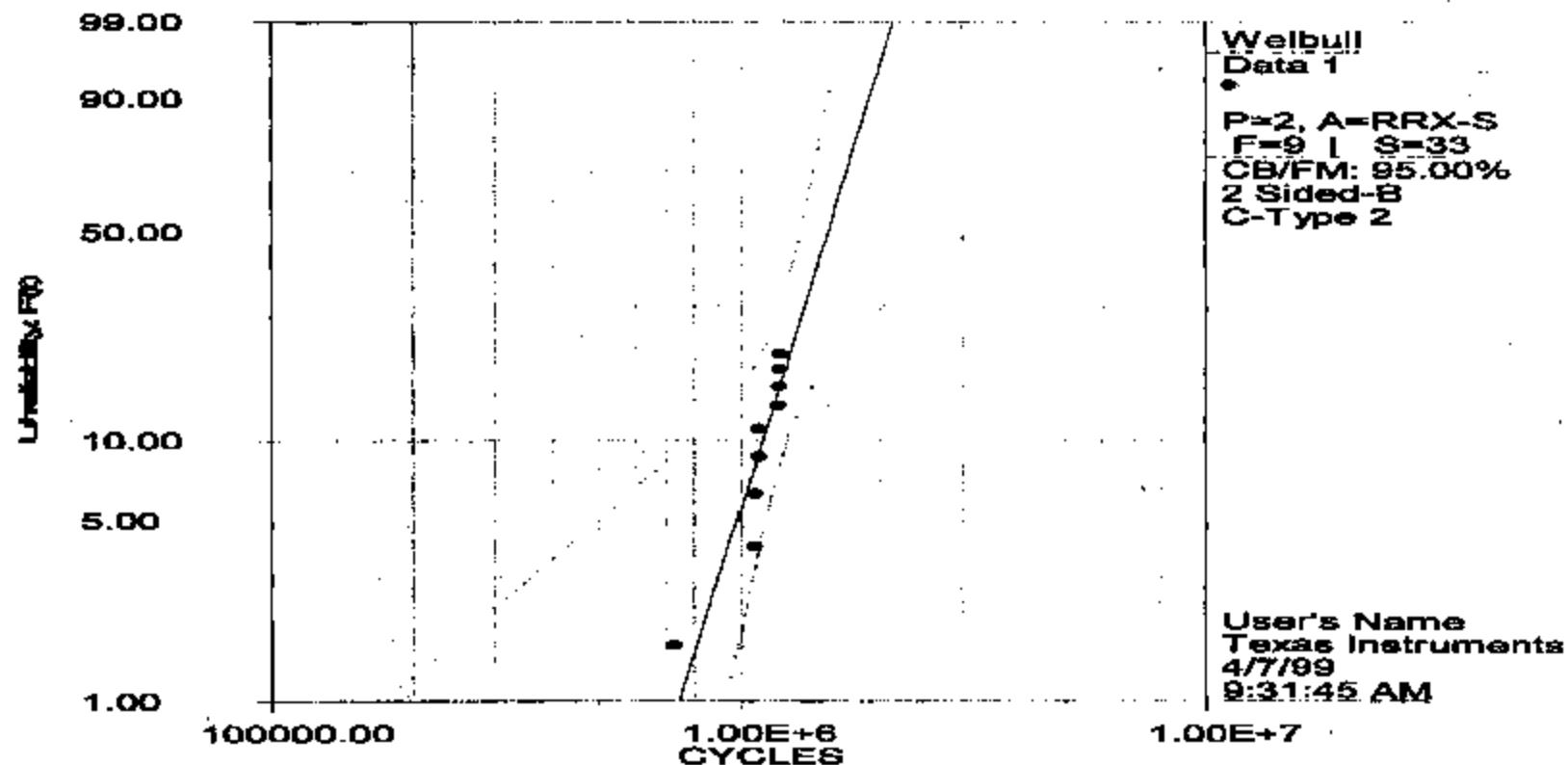


Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



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77PSL2-1 COMBINED DATA



$\beta=5.83$, $\eta=1.64E+6$, $P=0.91$

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Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



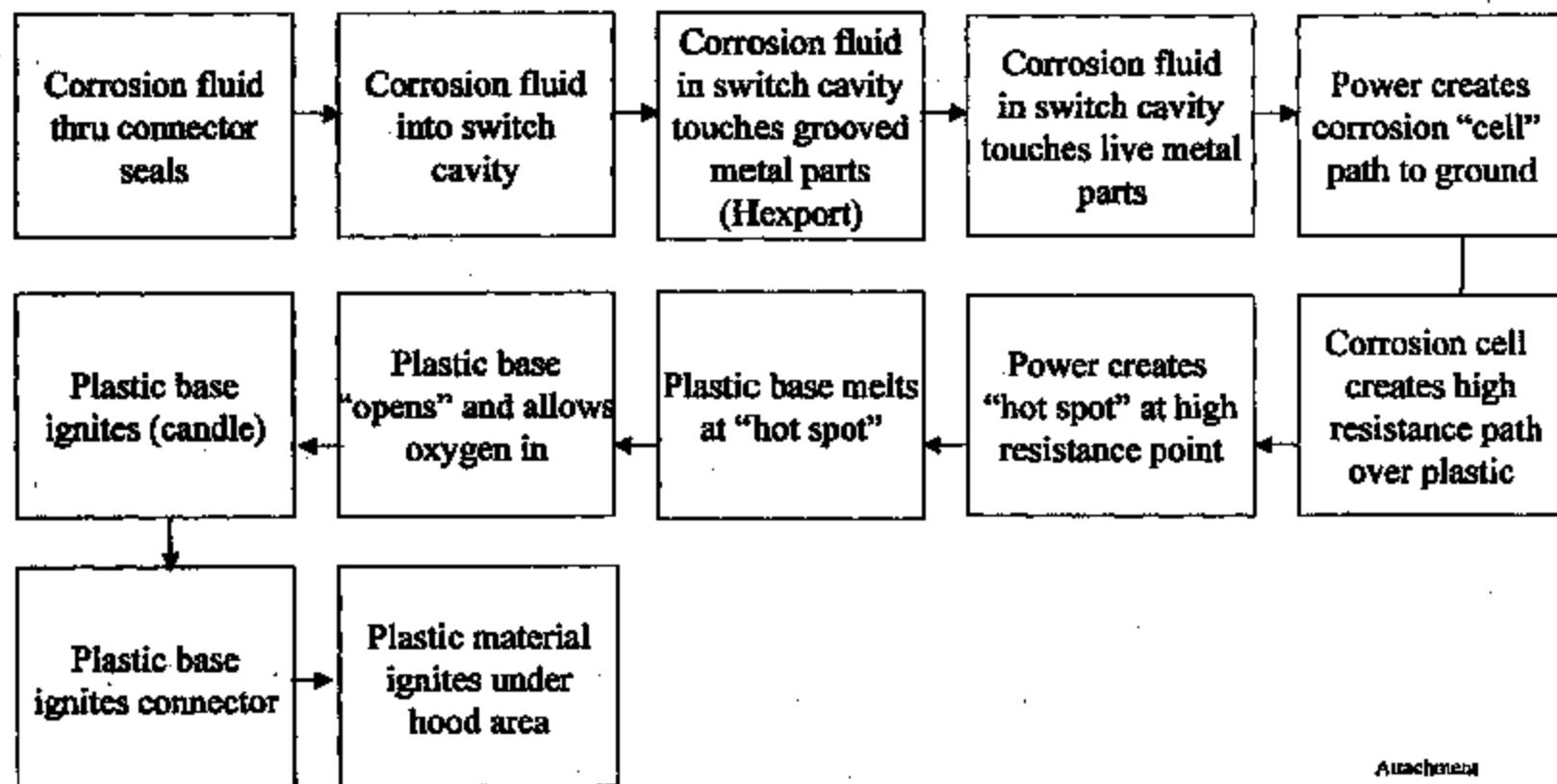
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Brake Pressure Switch INSTRUMENTS Potential Thermal Event Theory Profile 4/14/99



PROCESS FLOW DIAGRAM "CORROSION" POTENTIAL CAUSE FLOW ANALYSIS



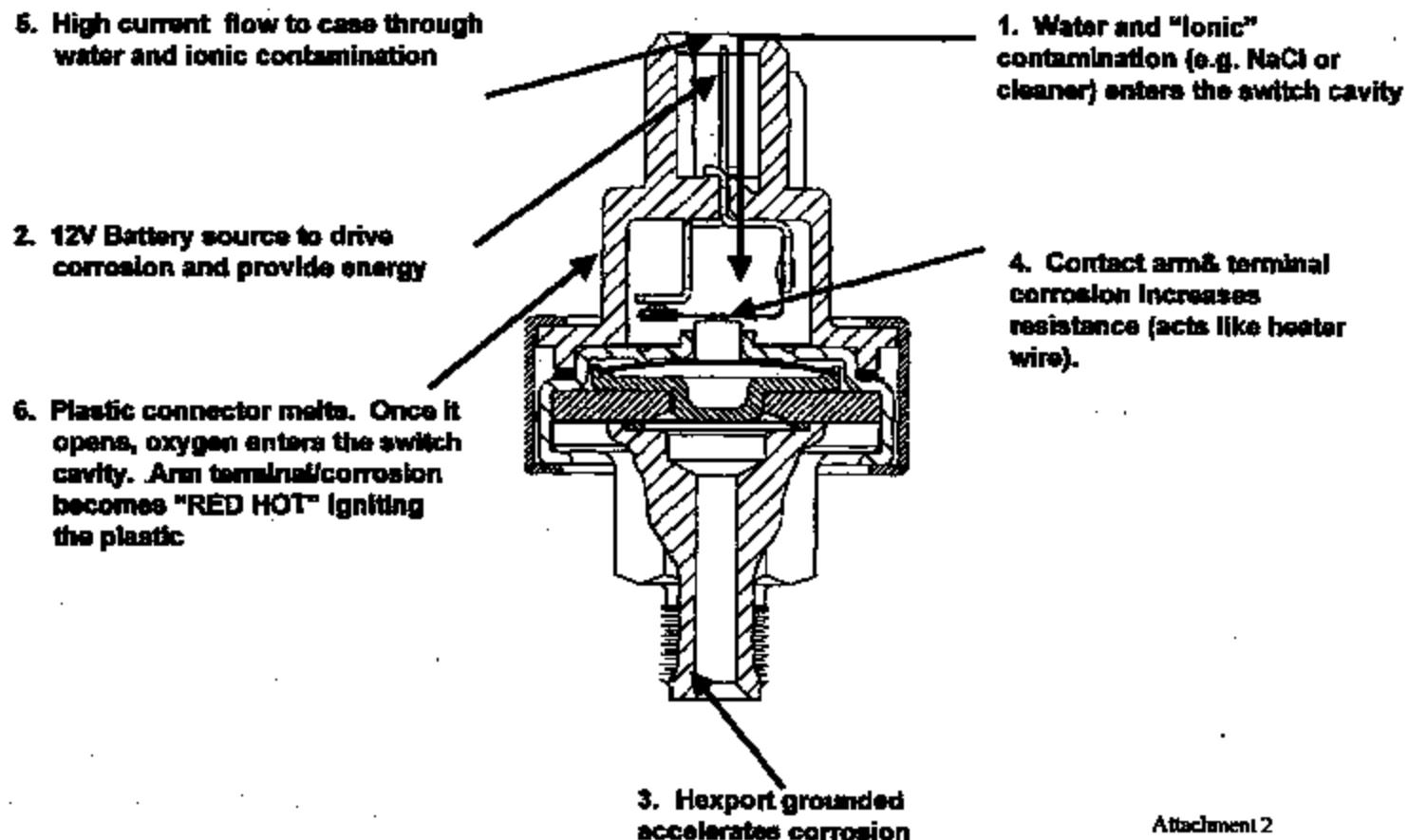
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C:\MC\Qdrive\99\presumisic

Attachment



Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



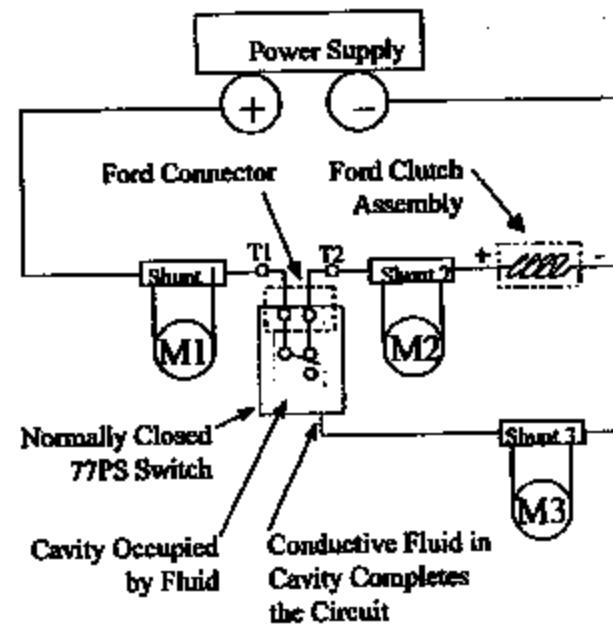
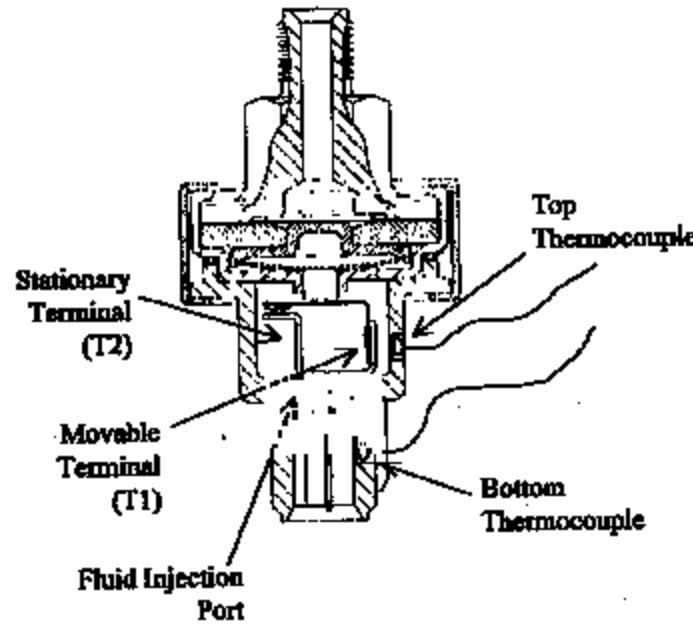
Attachment 2



**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/14/99**



**5% Salt Water Ingress Experiment
Test 1**



TI Report PS/99/12
03/15/99

Test 1: Figure 1 and Figure 2.

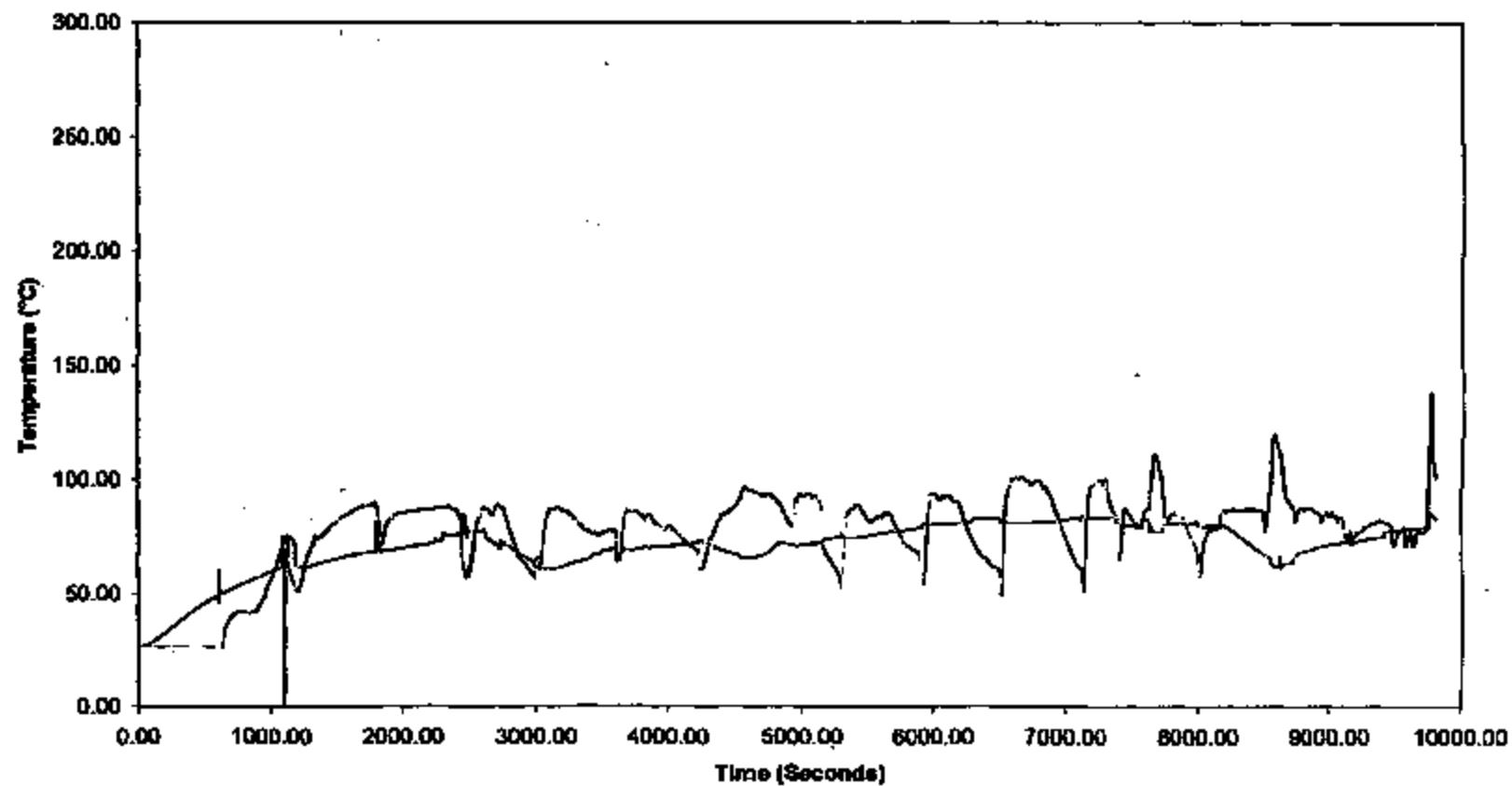


Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



5% Salt Water Ingress Experiment
Temperature vs. Time

— Top Temp — Clutch Temp — Bottom Temp

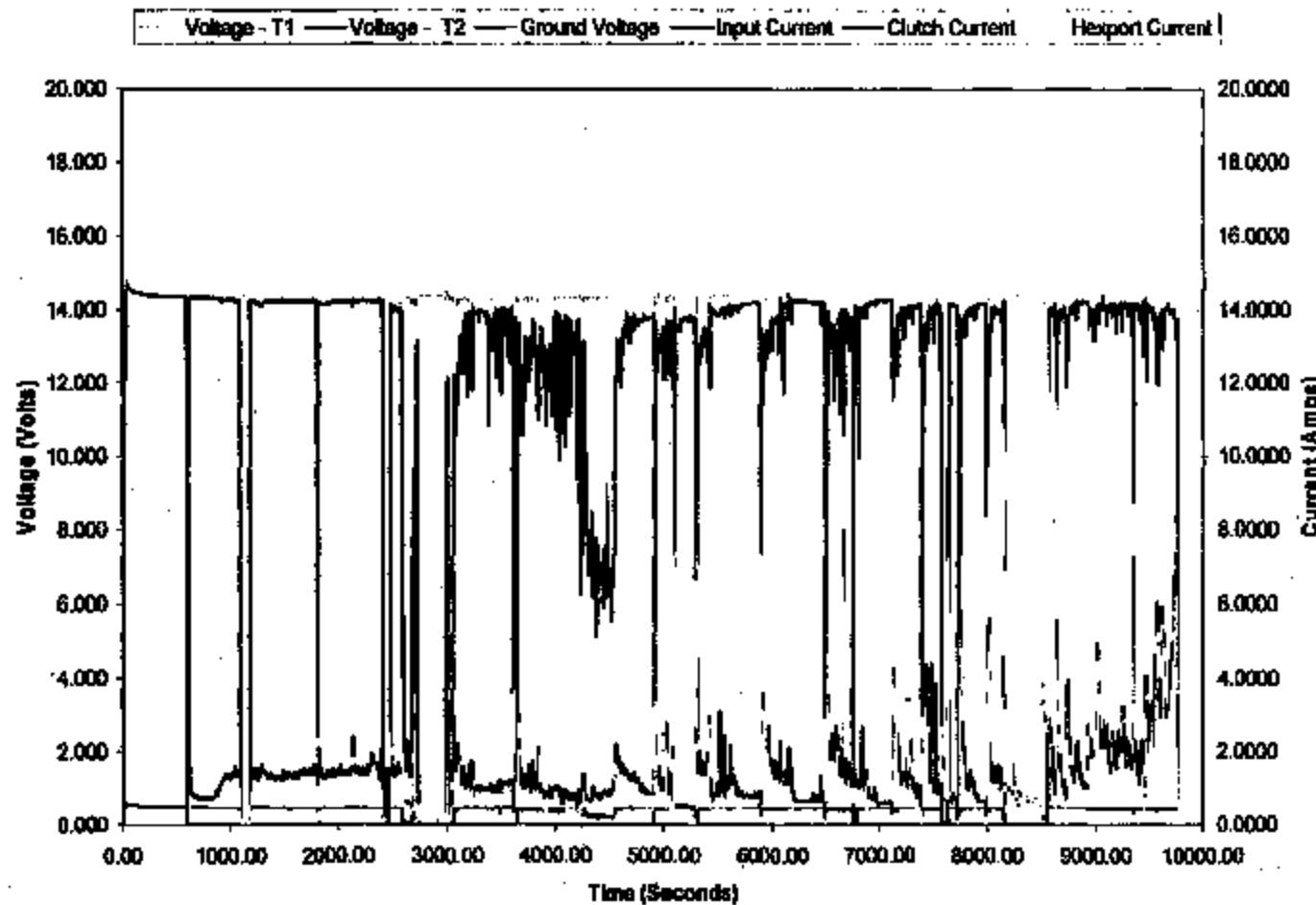




Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



6% Salt Water Ingress Experiment





Brake Pressure Switch

Potential Thermal Event Theory Profile 4/14/99



77PS

45° Orientation in 15 Amp Circuit

5% Salt Water Ingress

Cellanex 4300 Base



Cellanex 3316 Base

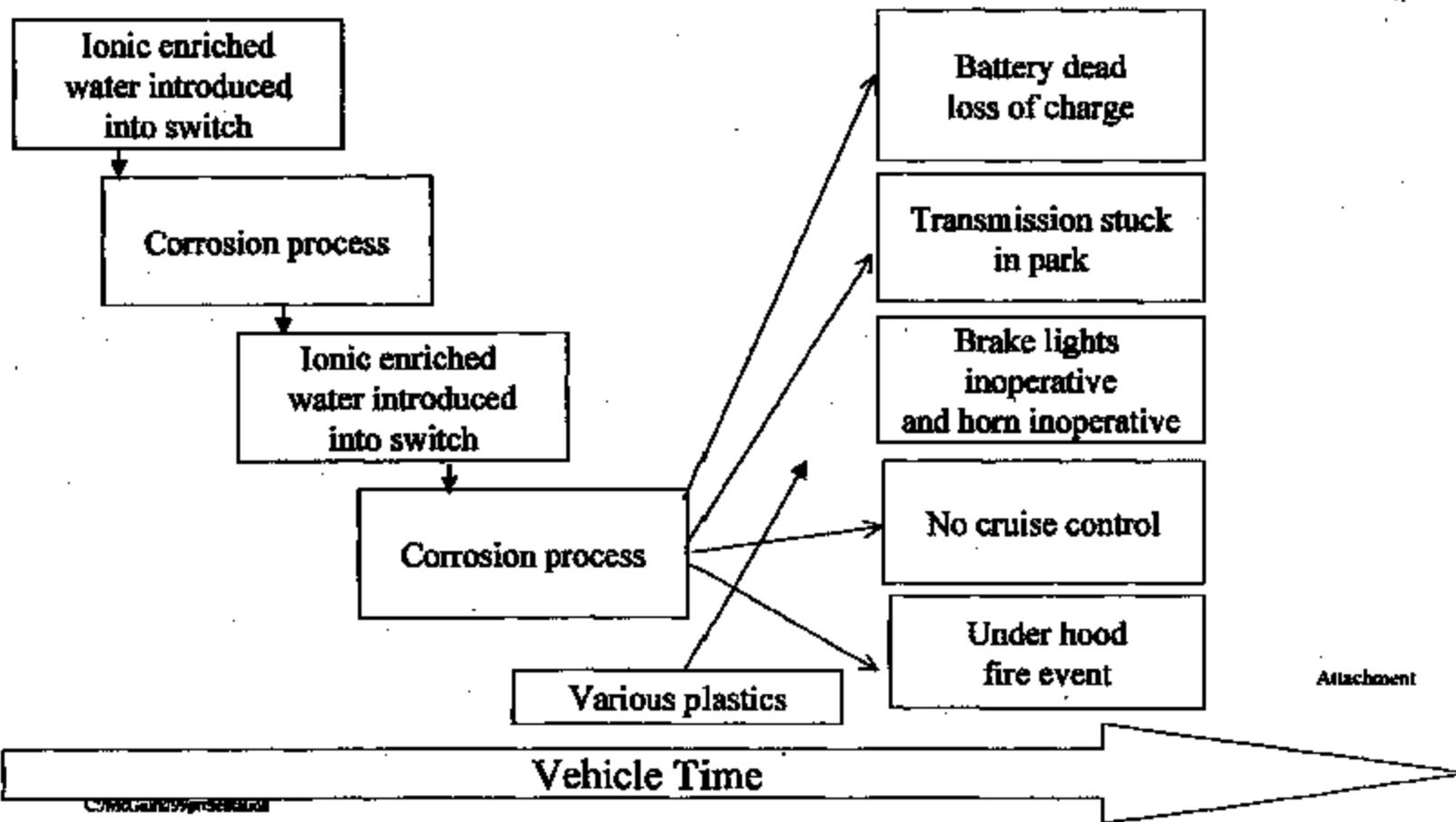




Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



"Corrosion" potential cause time line Theory Time Line

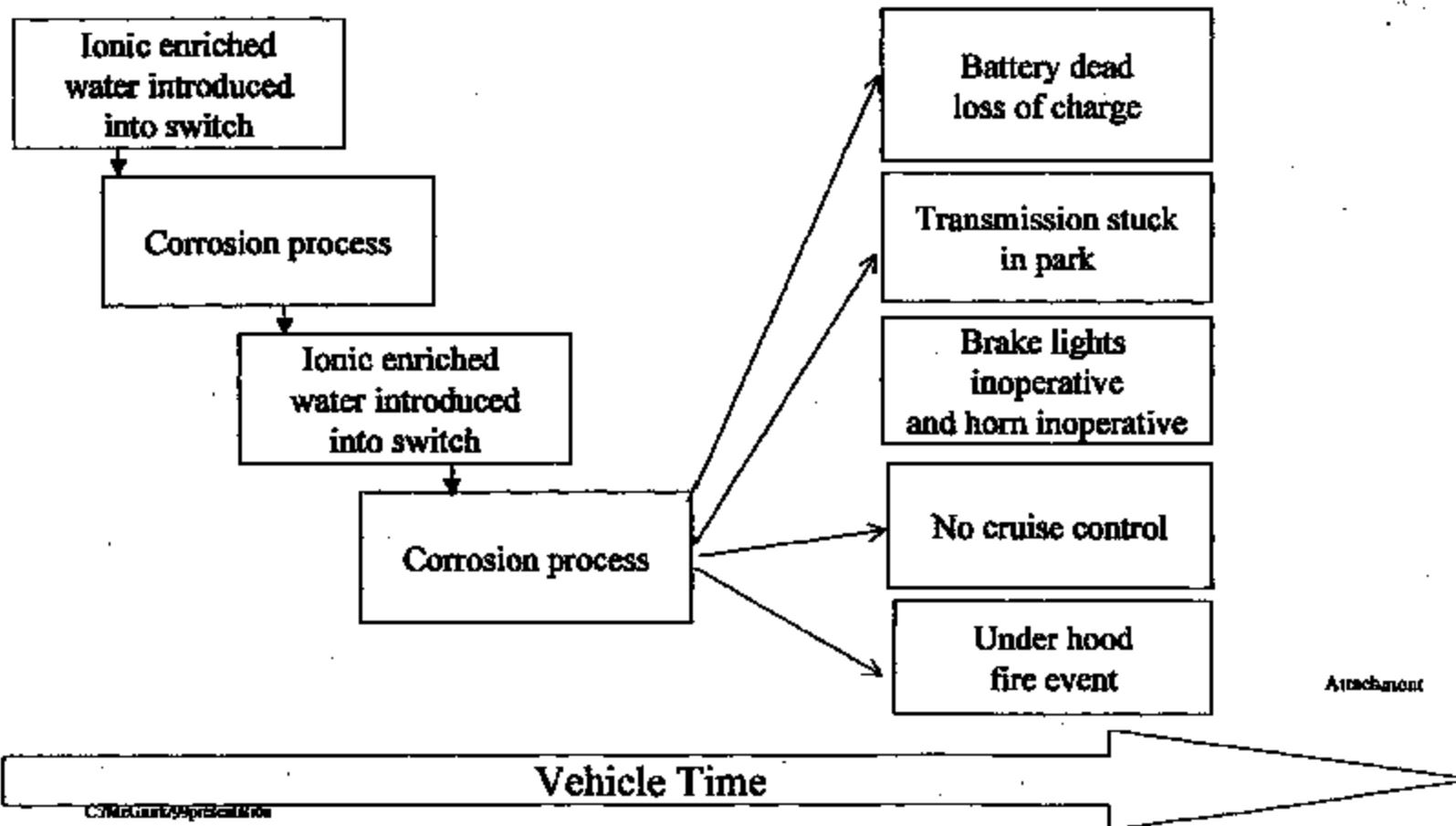




Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



“Corrosion” potential cause time line Theory Time Line

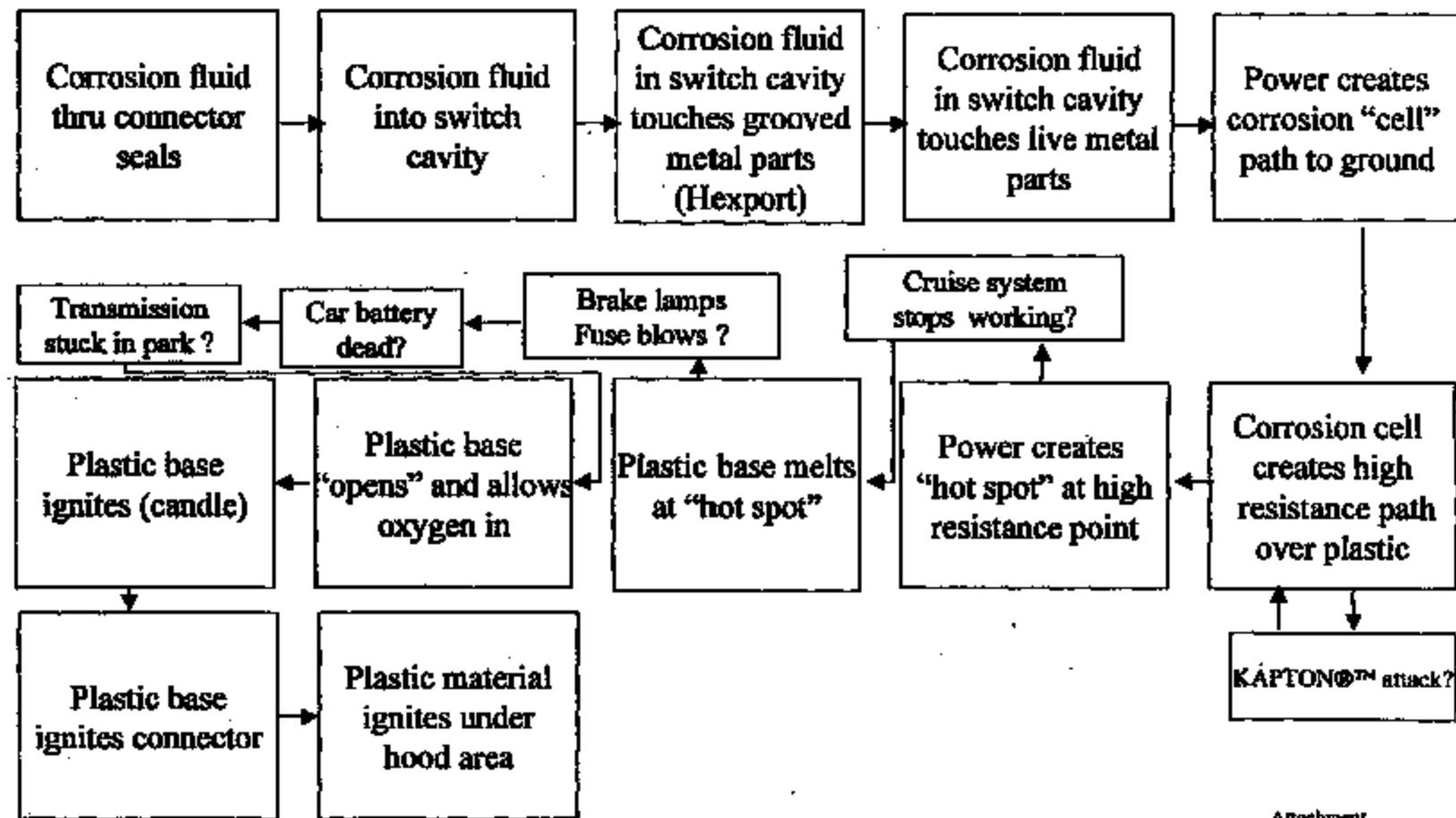




Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



PROCESS FLOW DIAGRAM "CORROSION" POTENTIAL CAUSE FLOW ANALYSIS

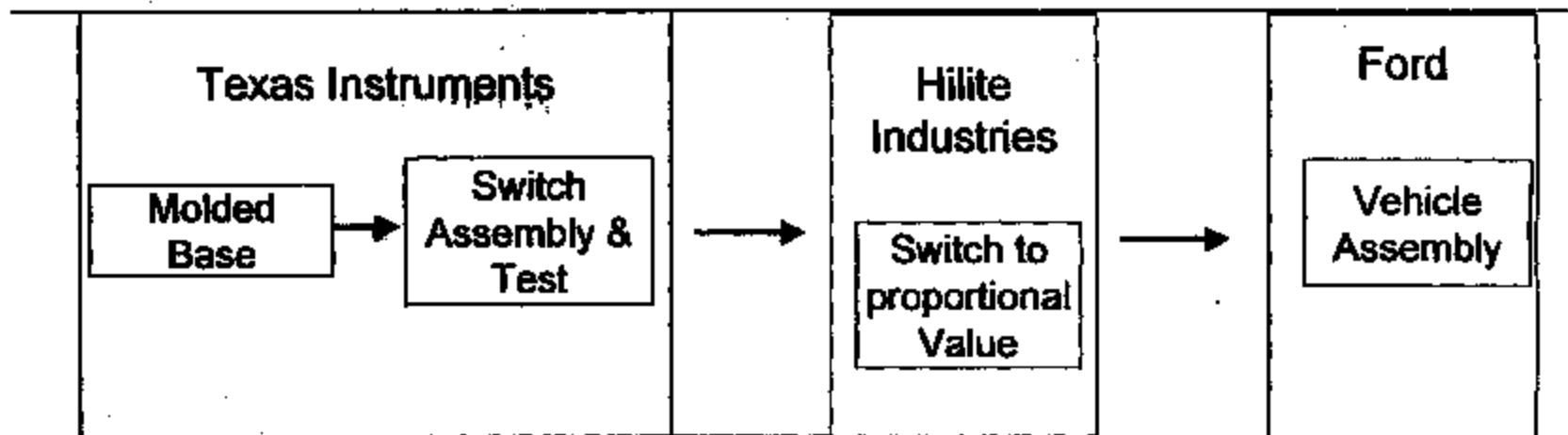




Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/14/99



PRESSURE SWITCH "FLOW DIAGRAM"
('92, '93, '94 TOWN CAR)

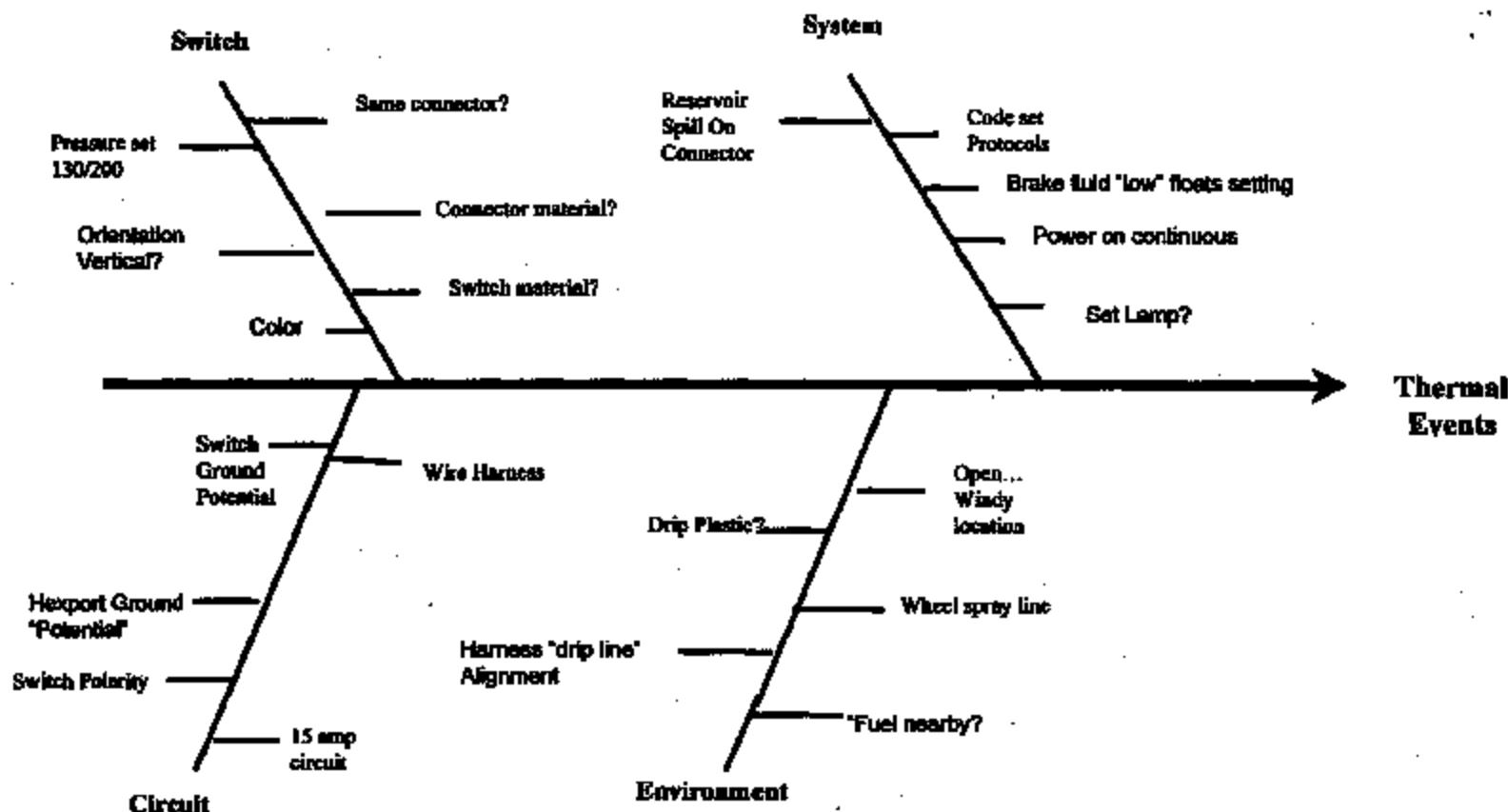




Brake Pressure Switch Texas Instruments Potential Thermal Event Theory Profile 4/14/99



ECONOLINE VS. TOWN CAR P/S



b. For the TTPGL3-3 could see other air shipping locations - indicate by location no longer on the data

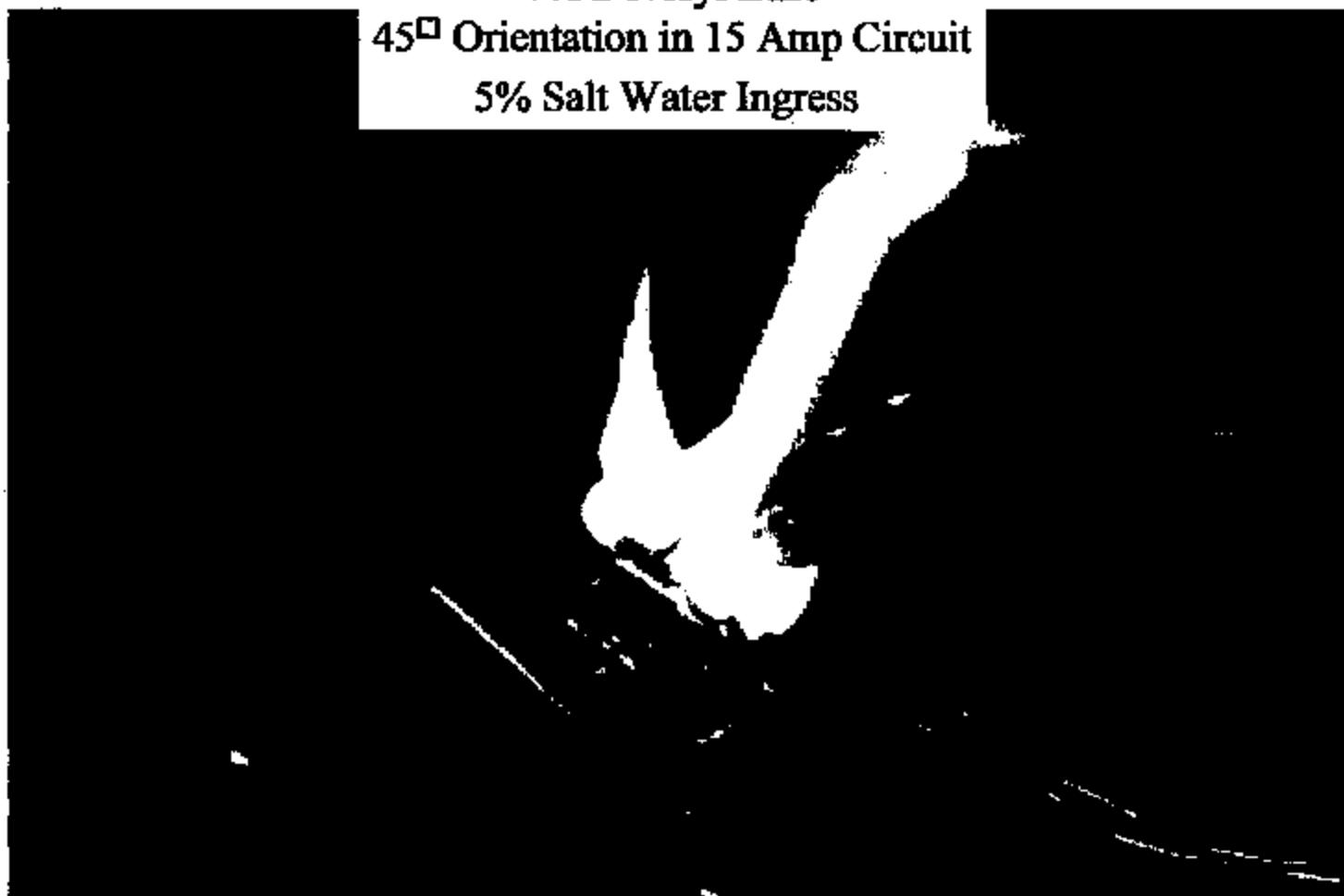
Customer	Ship To Loc.	Part Number	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	January	Annual	
DATA CORP. 1002		TTPGL3-1/F2VC-BF824 AA	31.00	47.11	53.20	0	0	0	0	0	0	0	0	0	2 (miss, #2)	Orion 4300	
		TTPGL3-3/F2AC-BF824 AA	0	0	0	0	32.00	0	74.7	38.00	0	0	0	0	0	GE Mux GTx 4300	
		TTPGL3-2/F58A-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	10 (miss, #2)	GE Mux GTx 4300	
DATA CORP. 1002		TTPGL3-1/F2VC-BF824 AA	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0	0	0	0	0	4.20	5.00	1.04	3 (miss, #2)	Orion 4300	
1002		TTPGL3-2/F302-BF824 AA	1.42	3.00	3.20	1.05	2.00	4.71	0	0	0.42	0.74	0	0.02	2 (miss, #2)	GE Mux GTx 4300	
1004		TTPGL3-2/F302-BF824 AA	1.42	3.74	1.05	1.42	1.42	0.71	0.71	0.74	0.42	0.42	0.19	0.19	3 (miss, #2)	GE Mux GTx 4300	
1004		TTPGL3-2/F302-BF824 AA	0.20	0.92	0.92	1.10	0	0	0	0	0	0	0	0	0 (miss, #2)	GE Mux GTx 4300	
DATA INSTRUMENTS 1002		TTPGL3-1/F2VC-BF824 AA	40.00	43.31	0.07	31.00	32.30	3.30	26.2	0.70	29.42	43.70	44.74	10.00	2 (miss, #2)	Orion 4300	
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0	0	0	0	2.70	0	0	0	0	3 (miss, #2)	GE Mux GTx 4300
1002		TTPGL3-1/F2VC-BF824 AA	15.47	18.29	20.00	22.61	14.04	22.00	20.7	20.46	21.58	16.00	24.75	20.7	2 (miss, #2)	Orion 4300	
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0	0	0	0	0.05	0	0	0.33	3 (miss, #2)	GE Mux GTx 4300	
1004		TTPGL3-1/F2VC-BF824 AA	23.00	22.00	18.70	20.7	23.00	0.25	6.00	0.3	1.10	0.00	0	0	0	2 (miss, #2)	Orion 4300
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0.71	10.32	0.23	27.0	23.70	34.00	0.00	15.01	2 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-2/F58A-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0.0	0 (miss, #2)	Orion 4300	
1004		TTPGL3-1/F2VC-BF824 AA	27.04	30.00	29.22	26.00	16.7	11.10	10.0	7.14	34.00	0.00	2.00	0.00	2 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-2/F58A-BF824 AA	0.00	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	Orion 4300	
		TTPGL3-2/F302-BF824 AA	0	0	0.200	0.230	0.400	0	0	0	0	0	0	0	2 (miss, #2)	Orion 4300	
1004		TTPGL3-2/F2AC-BF824 AA	11.00	4.70	6.0	4.5	0	0	0	0	0	0	0	0	2 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-2/F304-BF824 AA	0	0	0	1.00	0	0	0	0	0	0	0	0	0 (miss, #2)	Orion 4300	
		TTPGL3-1/F2VC-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	2 (miss, #2)	Orion 4300	
FORD MOTOR 1002	Service (Groundouting)	TTPGL3-1/F2VC-BF824 AA	0	0	0	0	0	0	0	0	0.47	0	0	0	0 (miss, #2)	Orion 4300	
Lanita, Texas		TTPGL3-2/F304-BF824 AA	30.34	15.7	31.41	19.3	24.00	16.7	12.0	19.00	16.10	1.00	17.70	15.23	1 (miss, #1)	Orion 4300	
		TTPGL3-2/F58A-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	2 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-1/F2VC-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-2/F58A-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	2 (miss, #2)	GE Mux GTx 4300	
1002	Service (Groundouting)	TTPGL3-1/F2VC-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	Orion 4300	
Lanita, Texas Dallas/FtWorth/Plano		TTPGL3-2/F304-BF824 AA	1.00	0	0	0	0	0	0	0	0	0	0	0	1 (miss, #1)	GE Mux GTx 4300	
		TTPGL3-2/F58A-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	2 (miss, #2)	GE Mux GTx 4300	
		TTPGL3-1/F2VC-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	0 (miss, #2)	Orion 4300	
		TTPGL3-2/F58A-BF824 AA	1.00	0	0	0	0	0	0	0	0	0	0	0	1 (miss, #1)	GE Mux GTx 4300	
		TTPGL3-2/F302-BF824 AA	0	0	0	0	0	0	0	0	0	0	0	0	2 (miss, #2)	GE Mux GTx 4300	



**Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/14/99**



77PS Noryl Base
45° Orientation in 15 Amp Circuit
5% Salt Water Ingress

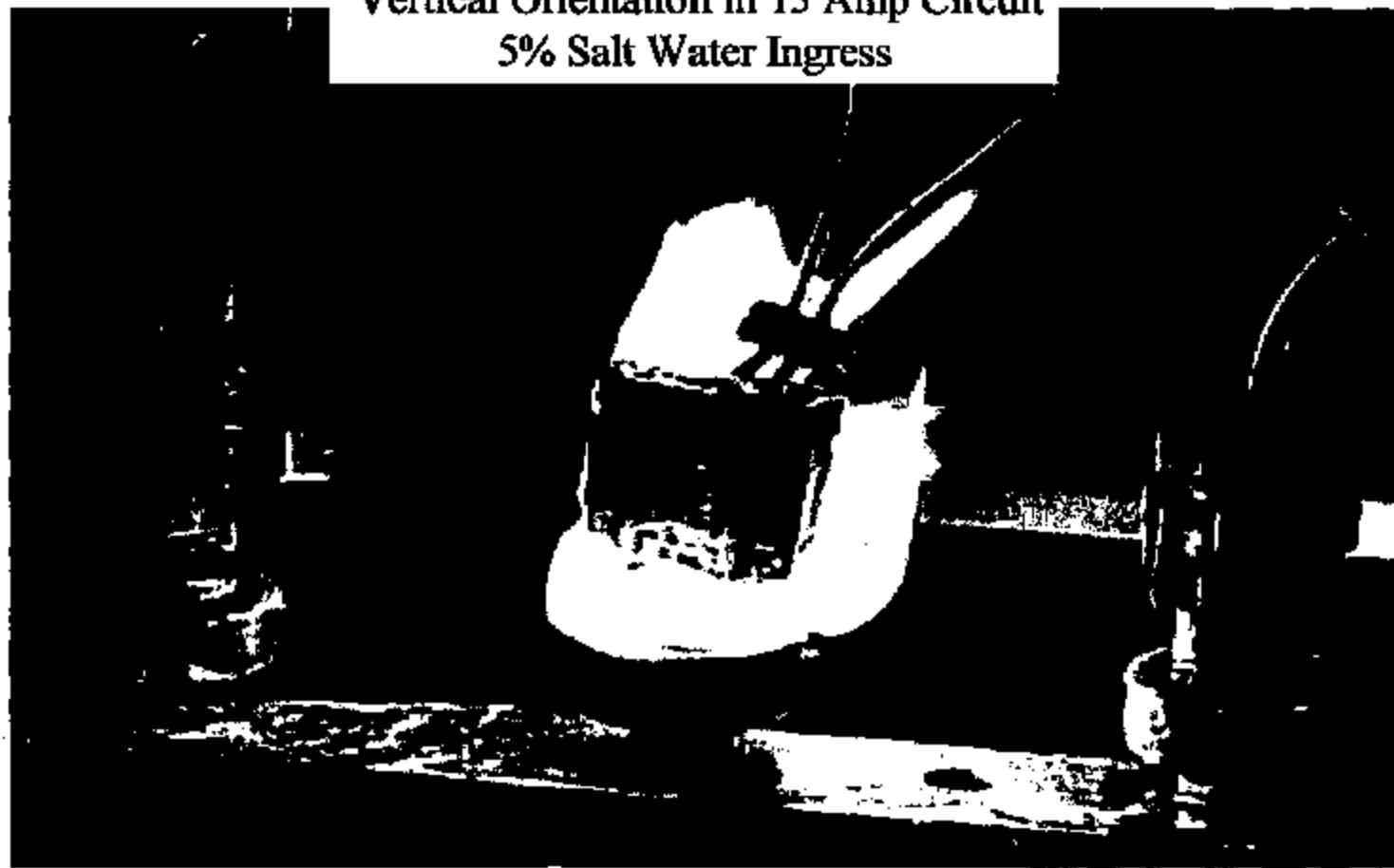




**Brake Pressure Switch
Potential Thermal Event Theory Profile 4/14/99**



**77PS Cellanex 4300 Base
Vertical Orientation in 15 Amp Circuit
5% Salt Water Ingress**



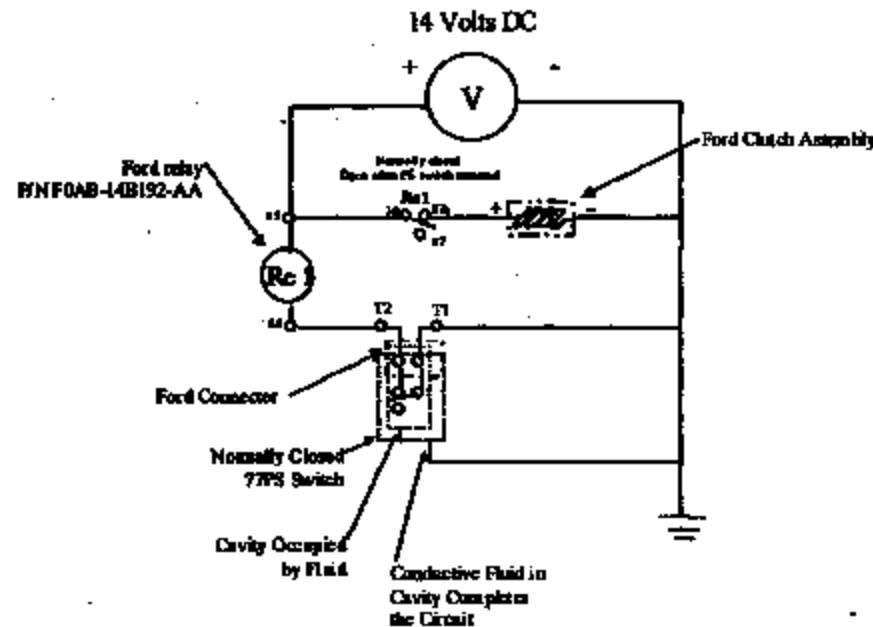
C:\McQuirk\99\presentations



Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



77PS Proposed Wiring Schematic





**Brake Pressure Switch
INSTRUMENTS Potential Thermal Event Theory Profile 4/14/99**



- 1. Connector Seal to P/S**
- 2. Power continuously available**
 - A. Operator notifications**
- 3. Switch orientation/location**
- 4. Current limit / fuse**
- 5. Hexport isolation**
- 6. Plastic ignition robustness**
 - A. Nearby fuels**
- 7. Kapton seal of P/S**
- 8. Environmental seal of P/S**

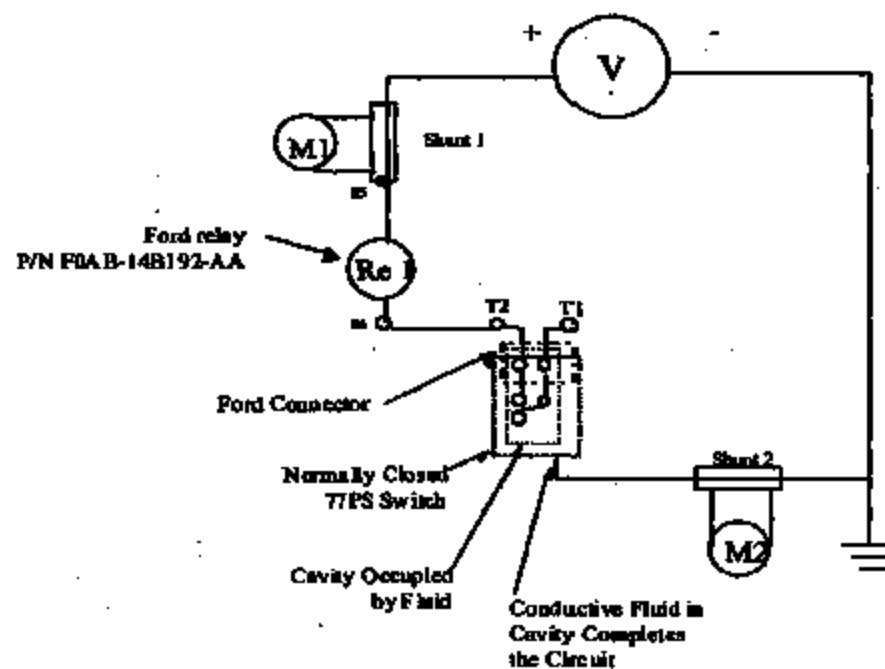


Brake Pressure Switch Potential Thermal Event Theory Profile 4/14/99



200 mAmp Current Limit Circuit Test Setup

14.5 Volts DC



Worst case scenario is when the switch is actuated, which puts T2 at full voltage. To facilitate testing, T1 is floating which keeps T1 and T2 at full voltage but limits current draw to .2 Amps (This test is harsher than worst case scenario).

77psd2-1		GROSS QTY	SUPPLIER	COMPLETE	COMPLETE	BEGIN	IMPACT	COMMENTS/CONCERNs
COMPONENT	DESCRIPTION	REQUIRED	SUPPLIER	1KK	2KK	PARTIAL	TO TI	
27406-1	CONVERTER	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY
27639-1	WASHER / ARA	2,040,000	DIEMASTER	10 WKS	18 WKS	2 WKS	NONE	MATERIAL AVAILABILITY
27713-1	CUP 77PS	2,040,000	VALENTINE	6 WKS	10 WKS	1 WK	NONE	RAW MATERIAL AVAILABILITY
36656-27	57PS	2,040,000	DISC DEPT	12+ WKS	24 WKS	3 WKS	TOOL \$?	POSSIBLE CAPACITY ISSUE
36900-1	HEXPORT 77PS	2,040,000	ELCO	10 WKS	25 WKS	3 WKS	NONE	RAW MATERIAL AVAILABILITY
74224-1	KAPTON	204	EI DUPONT	2 WKS	2 WKS	2 WKS	NONE	
27225-1	KAPTON STRIP	1,102	EI DUPONT	3 WKS	3 WKS	2 WKS	NONE	
74353-1	GASKET	2,040,000	JBL PARKER	6 WKS	18 WKS	3 WKS	NONE	ELIMINATE CORES WILL INCREASE DEL. BY 10%
36888-1	STATIONARY T	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY/ REELS
28744-1	CONTACT-SILV	2,040,000	DERRINGER	4 WKS	8 WKS	1 WK	NONE	MATERIAL AVAILABILITY
36887-1	MOVABLE TERM	2,040,000	KF BASSLER	10 WKS	18 WKS	2 WKS	NONE	ADD OVERTIME/MATERIAL AVAILABILITY/REELS
27716-1	BE/CU ISSUE	449	BRUSHWELLMAN	1 WK	2 WKS	1 WK	NONE	NONE
74936-1	RIVET	2,040,000	JOHN HASSAL	18 WKS	21 WKS	4 WKS	NONE	RAW MATERIAL AVAILABILITY
46515-2	PRESSURE SWI	2,040,000	IMT/HOLDING	16 WKS	32 WKS	4 WKS	NONE	RAW MATERIAL CHANGEOVER/PRESS CAPACITY
74078-143	CERAMIN PINS	2,040,000	PARATECH	7 WKS	15 WKS	2 WKS	NONE	
74247-4	BLUE O'RINGS	2,040,000	JBL PARKER	6 WKS	10 WKS	2 WKS	NONE	ELIMINATE CORES WILL INCREASE DEL. BY 10%
74797-1	CRIMP RING	2,040,000	VALENTINE	6 WKS	10 WKS	1 WK	NONE	RAW MATERIAL AVAILABILITY
74888-1	RED THREAD C	2,040,000	MARK IV CAPLUG	3 WKS	6 WKS	1 WK	NONE	

77PS

SWITCH

TI

7/15,8/1,B/V) 250K/MONTH

7 day weeks, thru summer vacations, 'std' plastic mold

9713 8245

*****
FACSIMILE LEAD SHEET

TO: Ford Motor Co. FROM: Ron Reinke
FAX#: 1-313-390-4145 FAX#: (972) 242-3432
ATTN: Mr. Joe Evans DATE: April 21, 1999
TOTAL PAGES: Lead + 1 REFERENCE #: '92 Town Car

MESSAGE/INSTRUCTIONS:

Dear Mr. Evans:

Our sales records show the following:

Part number F2VC-2B091-AA (Hilite # 5893): No sales during the three year time frame of 7-1-90 to 6-30-93.

Part number F2VC-2B091-BA (Hilite # 5945): Sales of only 87 pieces during the year 7-1-90 to 6-30-91. No sales during the following two years.

Part number PM-F2AC-2B091-8A (Hilite # 6072): No sales during 7-1-90 to 6-30-91. Sales during 7-1-91 to 6-30-92 were: Aug - 14, Sep - 10, Oct - 3140, Nov - 5390, Dec - 8924, Jan - 5842, and Feb - 1656 for a total of 24,976. No sales following Feb '92 are recorded thru 6-30-93.

do not release 7-7-91

Part number F2AC-2B091-BA (Hilite # 6076): No sales during 7-1-90 to 6-30-91. Sales during 7-1-91 to 6-30-92 were: Feb - 14352, Mar - 19596, Apr - 12558, May - 13294, Jun - 13938 for a total of

Hilite # 6076 FAX

(see next page)

*USES F2VC-2B091-8A
-AB*

APR 21 '99 10:49AM HILITE INDUSTRIES

73,738. Sales during 7-1-92 to 6-30-93 were: Jul
19182, Sep - 8280, Oct - 7841, Nov - 7130, Dec -
4462, Feb - 5750, Mar - 8779, Apr - 9292, May - 993.
for a total of 107,332. There were also some small q.
shipped under the service number [REDACTED]

As you can see from the above info, the PM-F2AC-28091-BA was
for a few months until the F2AC-28091-BA became available for
shipment in February 1992.

I hope this is the information you were interested in. If I can
be of further assistance please advise.

Sincerely,

Ron Reinke

Ronald E. Reinke
VP Engineering

cc: Mike Thomas

File: HILL1981.FAX

5/27/99 Ron is going to
get dates & quantity
& shipped-to- location
for these service parts
by 3/4/99.

Steve

F2AC-2⁸⁹¹-BA 260 - LIVONIA 5/92
SVC 60 " 3/92
SVC 3 " " 3/92
5 Dbn 5/92

APR 21 '99 12:56

ONSR

3713 6247

POSTNET FAX NO#	7871	Date 24APR 99 23:48 8
To:	MIKE THOMAS	Name MIKE THOMAS
CarFax	CDL	Ext H.L. 17
Phone#		Phone 248 543 6520
Fax#	313 390 4145	Fax 248 543 0743

Divisions

PITTS 713
MF 390
4145TAX LEAD SHEET

TO: MIKE THOMAS FROM: RON REINKE
FAX#: 1-248-543-0743 FAX#: (972)242-3432
ATTN: _____ DATE: 4-15-99
TOTAL PAGES: Lead Sheet #: 7 SUBJECT: 92 Towncar memo

MESSAGE/INSTRUCTIONS: YOUR 4-13-99 Memo

Dear Mike, or have used
The only fluid we use for
remote valves is Ucon. Ucon
is a standard assembly fluid
for brake valves. Attached
is the MSDS info on Ucon.
I'll also send this by mail so
you can read it better. If
you need anything else let me
know. Ron

P.O. Box 814649 Dallas, TX 75261-4649 • 1871 S. Broadway, Carrollton, TX 75006

Phone: (972) 242-2118 • Fax: (972) 242-6902

PITT'S • MAFCO • SURFACES



EFFECTIVE DATE 06/02/87

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in health physics, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) study its employees, agents, contractors and others whom it knows or believes will see this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product and (3) require its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: UCON Coating Fluid LB-285-Y24

CHEMICAL NAME: Mixture

CHEMICAL FAMILY: Polyalkylene Glycol

FORMULA: Trade Secret

MOLECULAR WEIGHT: Mixture

SYNONYMS: None

CAS # AND NAME: See Section II, "Ingredients"

II. PHYSICAL DATA(Determined on Typical Material)BOILING POINT, 760 mm Hg: Decomposes
> 200 °C (> 392 °F)SPECIFIC GRAVITY(H₂O = 1): 0.991 at 20/20 °CFREEZING POINT: Pour point
-40 °C (-40 °F)

VAPOR PRESSURE AT 20°C: <0.01 mmHg

Copyright 1997 Union Carbide.
UCON is a registered trademark of Union Carbide.
EMERGENCY PHONE NUMBER: 1-800-UCG-HELP (NUMBER AVAILABLE AT ALL TIMES OR (203) 744-3487)

UNION CARBIDE CORPORATION
39 Old Saybrook Road, Danbury, CT 06811-0001

VAPOR DENSITY (AIR = 1): >1

EVAPORATION RATE (Butyl Acetate = 1):

SOLUBILITY IN WATER by wt.: <0.1%

APPEARANCE: Transparent colorless to yellowish liquid

0008 **Current placement**

PHYSICAL STATE: Liquid

III. INGREDIENTS

<u>%</u>	<u>MATERIAL</u>	<u>CAS#</u>	<u>EXPOSURE LIMIT</u>
>95	Polyisopropylene Glycol Monobutyl Ether	9003-13-6	None established
< 5	Trade Secret Additive	None	None established

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (closed cup) 31°F (-15.6°C)
Penalty-Merritts Closed Cup ASTM D 93

4PP T 1287°C
Cleveland Open Cup ASTM D 92

FLAMMABLE LIMITS IN AIR LOWER: Net Determined
% by volume UPPER: Net Determined

SPECIAL FIRE FIGHTING PROCEDURES:

Do not direct a solid stream of water or foam onto hot, burning gasoline; this may cause fracturing and increase fire intensity.

Use self-contained breathing apparatus and protective clothing.

EXTINGUISHING MEDIA: Apply washer-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS: The material may produce a flaming fire hazard in extreme fire conditions. See "Chemical Hazards section" in Section 2.

V. HEALTH HAZARD DATA**EXPOSURE LIMIT(S):** None established by OSHA or ACGIH.**EFFECTS OF SINGLE OVEREXPOSURE:****SWALLOWING:** No evidence of harmful effects from available information.**SKIN ABSORPTION:** No evidence of harmful effects from available information.**INHALATION:** Short-term harmful health effects are not expected from vapor generated at ambient temperature.**SKIN CONTACT:** Brief contact is not irritating.
Prolonged contact may cause reddening, itchiness, a burning sensation, and possible drying and flaking of the skin.**EYE CONTACT:** May cause irritation, experienced as stinging, with excess blinking and tear production.
Excessive redness of the conjunctiva may occur.**EFFECTS OF REPEATED OVEREXPOSURE:**

No adverse effects anticipated from available information.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Skin contact may aggravate an existing dermatitis.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE:

Overexposure to vapor, aerosol or mist generated at high temperatures may result in eye and respiratory tract irritation, dizziness, nausea and the inhalation of harmful amounts of material.
Skin contact may cause sensitization and an allergic skin reaction in a small proportion of individuals.

EMERGENCY AND FIRST AID PROCEDURES:**SWALLOWING:** No emergency care anticipated.**SKIN** Wash skin with soap and water.**INHALATION:** Remove to fresh air.

EYES: Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (materials to avoid):

Normally unreactive; however, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Combustion may produce the following products:
Carbon monoxide and/or carbon dioxide.
See Section V, "Other Effects of Overexposure."
Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Wear suitable protective equipment, especially eye protection.
See Section VII.
Small spills can be flushed with large amounts of water; larger spills should be collected for disposal.
See Section IX, "Other Precautions."

WASTE DISPOSAL METHOD:

Inertize in a furnace or otherwise dispose of in accordance with applicable Federal, State and local requirements.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type):

None required for use at low temperatures.

VENTILATION:

General (mechanical) room ventilation is satisfactory for use at low temperatures. If used at high temperatures, special local ventilation is recommended at points where vapor can be expected to escape to the workplace air.

PROTECTIVE GLOVES: Polyvinyl chloride coated

EYE PROTECTION: Monogoggles

OTHER PROTECTIVE EQUIPMENT: Eye Bath, Safety Shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

WARNING!

CAUSES EYE AND SKIN IRRITATION.

MAY CAUSE ALLERGIC SKIN REACTION.

VAPOR, AEROSOL OR MIST OF THE PRODUCT AND THERMAL DEGRADATION PRODUCTS GENERATED AT HIGH TEMPERATURE CAN BE IRRITATING AND HARMFUL IF INHALED.

Avoid contact with eyes, skin and clothing.

Avoid breathing vapor, aerosol and mist.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS:

SPILLS: This product has very low solubility in water and will float on the surface. Avoid drainage of large spills to sewerage or to natural waters.

ADDITIONAL INFORMATION: Additional product safety information on this product may be obtained by calling your Union Carbide Corporation Sales or Customer Service contact.

Ask for the brochure:

UCON Fluids and Lubricants (Family Brochure).

Ask about the availability of specific product end end-use bulletins.

PROCESS HAZARD: Sudden release of hot organic entrained vapors or mists from process equipment operating at elevated temperatures and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignition without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

FEDERAL EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) required notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title IV requires submission of annual reports of releases of toxic chemicals that appear in 40 CFR 372 (or SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:

UPPER BOUND

CHEMICAL	CAS NUMBER	CONCENTRATION %
----------	------------	-----------------

This product does not contain toxic chemicals at levels which require reporting under the statute.

Toxic Substances Control Act (TSCA) STATUS:

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

STATE RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

MASSACHUSETTS Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

PENNSYLVANIA Right-to-Know, Hazardous Substances List Hazardous Substances and Special Hazardous Substances on the LHS must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

*** NONE ***

248-543-8743 THE COMPONENT GROUP

443 PGS APR 20 '99 08:36

CALIFORNIA SCAVENGE RULE 443.1 VOC'S:
****NOT DETERMINED****

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: Immediate Health, Delayed Health

NOTE ---

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of the use of the product are not under the control of Union Carbide, it is the user's obligation to determine conditions of safe use of the product.

REVISED SECTION(S):

Section IX - Special Precautions

PRODUCT: 94406

F NUMBER: 808748

Speed Control Installation Rates

6/21/15

CAR	ID	PPV	INSTALL	CAR	LINE	RATE	1982						1983						1984						1985							
							PPV	INSTALL	CAR	LINE	RATE	PPV	INSTALL	CAR	LINE	RATE	PPV	INSTALL	CAR	LINE	RATE	PPV	INSTALL	CAR	LINE	RATE	PPV	INSTALL	CAR	LINE	RATE	
MUSTANG	49735	87106	88.7%	MUSTANG	78002	74.7%			MUSTANG	78003	88.7%			MUSTANG	100000	93.7%																
TEMPO	12281	100000	76.2%	TEMPO	14024	88.4%			TEMPO	14040	88.4%	84.2%		TEMPO	90000	100.0%			TEMPO	90000	100.0%			TEMPO	100000	98.7%			TEMPO	100000	98.7%	
TOPAZ	24073	84047	89.1%	TOPAZ	88005	81.1%			TOPAZ	20042	84047	77.3%	82.1%	TOPAZ	20000	88.0%			TOPAZ	20000	88.0%			TOPAZ	20000	88.0%			TOPAZ	20000	88.0%	
T-BIRD	72281	77004	88.2%	T-BIRD	73005	88.2%			T-BIRD	117174	117072	88.0%		T-BIRD	120000	88.0%																
COUGAR	40041	88001	88.7%	COUGAR	88001	88.7%			COUGAR	88001	88775	88.0%	88.7%	COUGAR	91010	78.0%			COUGAR	91010	78.0%			COUGAR	91010	78.0%			COUGAR	91010	78.0%	
TAURUS	28007	281142	88.7%	TAURUS	281142	88.7%			TAURUS	281142	280081	88.0%		TAURUS	320000	88.0%																
TAURUS	28007	281142	88.7%	TAURUS	281142	88.7%			TAURUS	281142	281142	88.0%		TAURUS	320000	88.0%																
TAURUS	28007	281142	88.7%	TAURUS	281142	88.7%			TAURUS	281142	281142	88.0%		TAURUS	320000	88.0%																
FORD	116000	100000	78.2%	FORD	116000	100.0%			FORD	116000	116000	88.0%		FORD	116000	116000	88.0%		FORD	116000	116000	88.0%		FORD	116000	116000	88.0%		FORD	116000	116000	88.0%
MERCURY	140414	140000	88.0%	MERCURY	140000	140000			MERCURY	140000	140000	88.0%		MERCURY	140000	140000	88.0%		MERCURY	140000	140000	88.0%		MERCURY	140000	140000	88.0%		MERCURY	140000	140000	88.0%
TOWN CAR	140000	140000	88.0%	TOWN CAR	140041	140041	88.0%		TOWN CAR	140041	140041	88.0%		TOWN CAR	140000	140000	88.0%		TOWN CAR	140000	140000	88.0%		TOWN CAR	140000	140000	88.0%		TOWN CAR	140000	140000	88.0%
CONTINENTAL	22071	22071	88.0%	CONTINENTAL	22072	22072	88.0%		CONTINENTAL	22072	22072	88.0%		CONTINENTAL	22072	22072	88.0%		CONTINENTAL	22072	22072	88.0%		CONTINENTAL	22072	22072	88.0%		CONTINENTAL	22072	22072	88.0%
MARK VII	28007	28007	88.0%	MARK VII	28008	28008			MARK VII	28008	28008	88.0%		MARK VII	28008	28008	88.0%		MARK VII	28008	28008	88.0%		MARK VII	28008	28008	88.0%		MARK VII	28008	28008	88.0%
EDCORT	28006	28006	88.0%	EDCORT	28006	28006			EDCORT	28006	28006	88.0%		EDCORT	28006	28006	88.0%		EDCORT	28006	28006	88.0%		EDCORT	28006	28006	88.0%		EDCORT	28006	28006	88.0%
TRACER	27000	27000	88.7%	TRACER	27000	27000			TRACER	27000	27000	88.7%		TRACER	27000	27000	88.7%		TRACER	27000	27000	88.7%		TRACER	27000	27000	88.7%		TRACER	27000	27000	88.7%
PROBE	28006	28006	88.0%	PROBE	28007	28007			PROBE	28007	28007	88.0%		PROBE	28007	28007	88.0%		PROBE	28007	28007	88.0%		PROBE	28007	28007	88.0%		PROBE	28007	28007	88.0%
TTL CAR	140000	140000	88.0%	TTL CAR	140000	140000	88.0%		TTL CAR	140000	140000	88.0%		TTL CAR	140000	140000	88.0%		TTL CAR	140000	140000	88.0%		TTL CAR	140000	140000	88.0%		TTL CAR	140000	140000	88.0%
LINER	120002	120002	88.0%	LINER	120002	120002	88.0%		LINER	120002	120002	88.0%		LINER	120002	120002	88.0%		LINER	120002	120002	88.0%		LINER	120002	120002	88.0%		LINER	120002	120002	88.0%
EDCORT	28006	28006	88.0%	EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%
EDCORT	28006	28006	88.0%	EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%
EDCORT	28006	28006	88.0%	EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%		EDCORT	28007	28007	88.0%
EXPLORER	28006	28006	88.0%	EXPLORER	28006	28006	88.0%		EXPLORER	28006	28006	88.0%		EXPLORER	28006	28006	88.0%		EXPLORER	28006	28006	88.0%		EXPLORER	28006	28006	88.0%		EXPLORER	28006	28006	88.0%
AEROSTAR	120002	120007	88.0%	AEROSTAR	120002	120002	88.0%		AEROSTAR	120002	120002	88.0%		AEROSTAR	120002	120002	88.0%		AEROSTAR	120002	120002	88.0%		AEROSTAR	120002	120002	88.0%		AEROSTAR	120002	120002	88.0%
TTL TRUCK	204120	204120	88.0%	TTL TRUCK	204120	204120	88.0%		TTL TRUCK	204120	204120	88.0%		TTL TRUCK	204120	204120	88.0%		TTL TRUCK	204120	204120	88.0%		TTL TRUCK	204120	204120	88.0%		TTL TRUCK	204120	204120	88.0%
LS VAN	220002	220120	78.7%	LS VAN	220120	220120	78.7%		LS VAN	220120	220120	78.7%		LS VAN	220120	220120	78.7%		LS VAN	220120	220120	78.7%		LS VAN	220120	220120	78.7%		LS VAN	220120	220120	78.7%
LS TOTAL	220110	220110	78.7%	LS TOTAL	220110	220110	78.7%		LS TOTAL	220110	220110	78.7%		LS TOTAL	220110	220110	78.7%		LS TOTAL	220110	220110	78.7%		LS TOTAL	220110	220110	78.7%		LS TOTAL	220110	220110	78.7%

Speed Control Deactivation Switch Rationale

- 1) WCR - Automatic Vehicle Speed Control 10.03-D01-1

4.1 DEACTIVATION REDUNDANCY:

Backup system for deactivation shall be provided.

- 1) SDS Requirement SC-0005 REDUNDANT BRAKE DEACTIVATION REQUIRED

A redundant method for sensing brake application independent of the primary system deactivation mode must be provided to the speed control system.

One Interpretation of this requirement: Brake Pedal cancellation of speed control operation shall be done using dual brake detection systems; speed control operation shall be canceled if a malfunction occurs at the microcomputer or at the brake switch.

- 2) Primary Redundant Safety Feature

(Most important the Deactivation Switch is INDEPENDENT of Servo electronics)

- 3) All major speed control system has a similar switch

- 4) Used to avoid liability

- 5) Introduction with the vacuum system; estimate 1979

Being INDEPENDENT of Servo electronics, Deactivation Switch provides system cancellation for:

- Stuck motor phase after engagement
- Shorted motor phase after engagement
- Normal brake (stop Lamp) malfunction
- Seized motor
- Software malfunction

COMMUNICATIONS

Name / Project

Bill BABLE

Company / Department

Heat Thermal Management

Address

EVB

Phones 47426

DATE TIME REQ.	SAY PLANT / I SAID NEEDS EXPRESSED / FEEDBACK REQUESTED	THEY SAID / FOLLOW-UP NEEDS EXPRESSED / FEEDBACK GIVEN	WHEN DATE
7/26/99 10:30A	WHAT ARE TEMP PEAK FOR FOLLOWING LOCATIONS. on 92 & 93 Town Car & CV/GM.	That locations was not monitored during the R405 tests.	
	Brake Pressure Switch on Prop. Valve	Closet monitored locations are Master Cylinder, Brake Booster, Shift Cable @ exhaust manifold	
		Will copy the test data for CV 92 & Town Car 92 and deliver to me.	
	What does data show for high Temp	Crown Vic. CLASS III Trailer Tow	
	Master Cyl	215°F	
	Booster	236°F	
	shift Cable	330°F	
	Speed Control	208°F	
		end	



Central Laboratory
15000 Century Drive
Dearborn, MI 48120-1287
FAX (313) 322-1814

RECORD COPY
SCHEDULE NO. 7-4-2
DATE, UNTIL 2003

Report 9901010
March 31, 1999

To: Greg Stevens X36868 X36868 FAX
From: B. Slevin (313) 84-54890
Subject: Brake Pressure Switch Components Testing
Part Number: F2V4-8F924-A
Specification: Not provided
Supplier: Not provided
Received: Four samples were received on March 26, 1999:
1. Celenex 3315 Gray Tensile Bar 2. Celenex 4300 Black Tensile Bar
3. Connector 4. Switch
Object: Soak the four components in used brake fluid (from three 1998 Tauruses) per SAE J1703 Paragraph 5.12.4 for 70 hr at 120°C. Run PDSC on as received samples and on soaked samples.

Data and Analysis:

Discussion: The samples were visually examined after testing. Some particles were seen in the used brake fluid, but no discoloration or degradation of the four components was observed. No autoignition was observed by PDSC (at 800 psi oxygen from room temperature to 450°C) with either the black or gray plastic bars before or after soaking in the brake fluid.

Concur:

A. Terimanian
A. Terimanian, Supervisor
Polymers Section

By:

Brent Slevin
Brent Slevin (bslevin)
Laboratory Specialist

9901610

Request for Central Laboratory Service

All shaded areas must be filled in to process your request.

Administrative Use Only

15000 Century Dr., Dearborn MI 48120-1267 Phone (313) 32-21676 FAX (313) 32-21614

Year Name (Send report to)	Telephone	PROFS ID	FAX
3665 STEVENS	36685	GSTEVEN1	36685
Secondary Contact	Telephone	PROFS ID	FAX

Spec Report To:	Room No/Mail Drop/PO Box	Department/Activity	Building	Location Code	Date:	Work Task # (For \$100 Fee Only)
	26065/5206	RVT MAT. L	105	5100	7/13	XQ602

Total # of Samples	Sample Handling	TOX/CASH	Source	Supplier Code
4	<input checked="" type="checkbox"/> Serum after test <input type="checkbox"/> Dispose after test <input type="checkbox"/> Dispose after 10 days			
Part/Material Name	Sample Identification (Continue below if needed)	Part Number (If any)	Material Specification (If any)	CPSC Code
Brake Pressure	A⁺ (N/A)	F2VY-9F93T-A	N/A	06.06.05
Switch Components	As Below			

Nature of Investigation/Specific Tests Required (Check all that apply)		Requester Info. Box (For requester use)
<input type="checkbox"/> Production/Plant problem	<input type="checkbox"/> Perform Test at Lab No _____	
<input type="checkbox"/> Failure Analysis	<input type="checkbox"/> Photograph (Describe below)	
<input checked="" type="checkbox"/> Legal	<input type="checkbox"/> Use Specification _____ or I guide	
<input type="checkbox"/> Specification Compliance	<input type="checkbox"/> Other (Describe below)	
Stop testing upon failure?	Dose this support CAB testing? (If "Yes", what is the expected outcome?)	Do you need to know your CL contact and timing? _____ Yes
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	

Additional Sample Information/Testing Requirements

* SOAK 4 COMPONENTS IN USED BRAKE FLUID (from 3 1988 Taurus),
per SAE J1703 PAR 5.12.4 AS FOLLOWS:

~~SOAK 4 COMPONENTS IN USED BRAKE FLUID~~

Tensile Rod	AS-RECEIVED	AFTER 70HR @ 120°C
#1 Celanex 3316 (Gray Color)	P.D.S.C	P.D.S.C
#2 4300 (Black)	P.D.S.C	P.O.S.C.

CONNECTOR	—	VISUAL EXAM
------------------	----------	--------------------

SWITCH	—	VISUAL EXAM
---------------	----------	--------------------

Report		
Date you would like report	3/3/97 AM	Report (Check all that apply)
as you must have report		<input type="checkbox"/> FAX preliminary results <input type="checkbox"/> FAX hand written
		<input type="checkbox"/> FAX typed report <input type="checkbox"/> Mail hand written
		<input checked="" type="checkbox"/> Mail typed report
		<input type="checkbox"/> Electronically transfer report
		<input checked="" type="checkbox"/> Phone preliminary results

Information about services or assistance in completing this form please refer to the Central Laboratory WEB page. (www.gldwd.com/clcentral/home.htm)
Inventory number and date cannot be assigned without receipt of sample.
Samples will be disposed of after 30 days unless otherwise indicated above.

PITTS

P.1/2

SURFACES.

MAPCO

Divisions

of



FAX LEAD SHEET

TO: FORD

FROM: RON REINKE

FAX #: 313-390-4145

FAX #: (972) 242-3432

ATTN: STEVE REIMERS

DATE: _____

TOTAL PAGES: Lead Sheet #: 1

SUBJECT: _____

MESSAGE/INSTRUCTIONS:

Dear Steve,

SHIPMENTS PER ATTACHED SHEET

P.O. Box 614640 Dallas, TX 75261-4640 • 1671 S. Broadway, Carrollton, TX 75006

Phone: (972) 242-2116 • Fax: (972) 242-2902

PITTS • MAPCO • SURFACES

JUN 03 '99 11:22

PAGE .01

3713 6261

HILITE SHIPMENTS

HILITE SHIPMENTS JUN 23 '98															
PN	SHIPTO	J	A	S	O	N	D	J	F	M	A	M	J	TOTAL	
PMF2AC-2B091-BA	Dearborn		14	10	3,140	5,390	8,924	5,842	1,656					24,976	
WMP2AC-2B091-BA	Livonia							2	2					4	
R2AC-2B091-BA	Dearborn									14,352	19,596	12,558	13,294	13,938	73,714
F2AC-2B091-BA	Dearborn											5		5	
F2AC-2B091-BA	Livonia											200		200	
92AZ-2B091-B	Livonia									60				60	
92AZ-2B091-B	Livonia									0				0	

HILITE SHIPMENTS JUN 23 '98														
PN	SHIPTO	J	A	S	O	N	D	J	F	M	A	M	J	TOTAL
F2AC-2B091-BA	Dearborn	12,830	19,182	8,720	10,900	7,440	1,162	6,160	5,700	8,130	9,292	12,400	9,962	104,216
F2AC-2B091-BA	Livonia										40			40
F2AC-2B091-BA	Allied Signal													
12AZ-2B091-BA	Livonia					941		1,258	92			146		3,057
12AZ-2B091-B	Dearborn									414				414

V

01/4
C.J.A.M.
30-JUN-98

Vehicle Four-Cyl MY 1992

Vehicle Location R+VT - EEESE - Cypress St.

Observer F. PORTER

VIN 1LNLM81W3N [REDACTED]

Description of Switch Location
LR PROP VALVE $\odot 45^\circ$ ~1-3" BELOW BRAKE MASTER CYLINDER

Wire Seal Material Sponge Silicon

Connector Seal Material Sponge Silicon

Picture of Overall Layout

2-3 Near Pictures from MPG

Observations:

Contamination around Switch

RELATIVELY CLEAN. VEHICLE HAD BEEN USED
FOR BRAKE PRESSURE TEST

Contamination from Switch

None observed

Proximity to other plastic and rubber

MANY HOSES, TUBES AND WIRES IN THE
AREA

Miscellaneous

Brake Fluid reservoir was
leaking on several occasions
during testing at MPG.

BPS | Team Mtg

5/26/99

GREG Stevens, Joe Kefati, Fred Kahl,
Fred Porter, Me, Andy McGuirk*,
Steve Beringhaus*(sp?)

* @ TI.

12/20/91 ~ PASSED IMPULSE TEST WITH
AUTOMATED CRIMPER USING
MANUAL DIE GEOMETRY.

- Process used for 72xx & 82xx
Series parts.
 - Crimper is dedicated this product.
 - Volume is high enough to use the
capacity.
 - Crimp occurs in two steps
- | | | | |
|-----------|----|----------|-----------|
| Sample BB | 13 | 12/91 | 1500 |
| BB | 65 | 12/26/91 | 1440 6:15 |
| | | | 1447 4:10 |

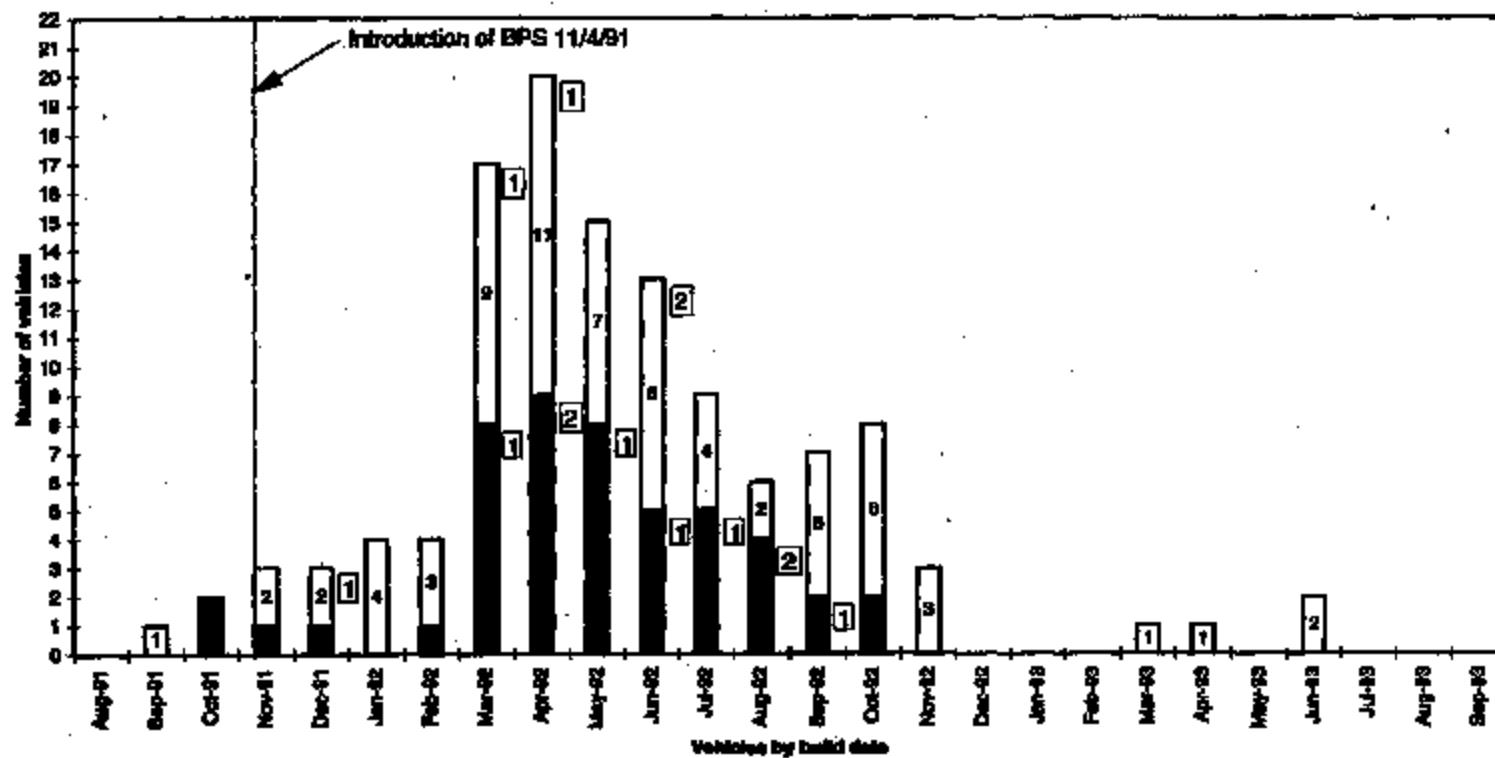
470 F2VC Service parts 9/92

- Field Return Proto. (TI thoughts)
 - DATA = Mileage, VIN, Date Code, Region on
BOX
 - VISUAL EXAM; DAMAGE, FLUID(ACCESS/EGRESS)
 - ISOLATION RESISTANCE
 - TRI-AGE
 - WHO DOES WHAT?
 - 12-15 UNITS EXHAUSTIVE ANALYSIS
 - 100 CURSORY EXAM

Service Parts Delivery - still looking
Recall Parts delivered for delivery date.
0.85 - 1.90K to date

should be DONE by Friday @ 225K parts.

Pareto of 92/93 Town Car Underhood Fire Allegations With Engine On/Off/Unknown



Notes:

- The shaded region represents vehicles with engine off/unknown.
- The unshaded region represents vehicles with engine on.
- (1) Represents BPS symptoms

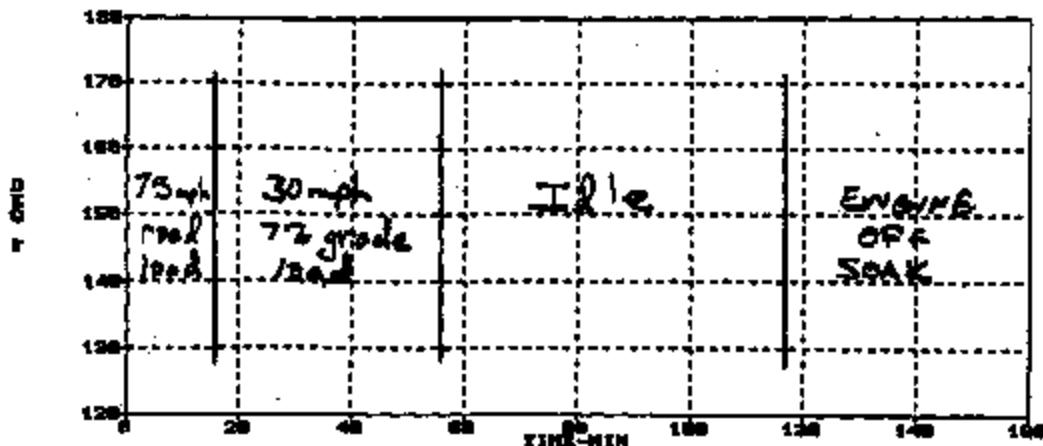
There were 11 vehicles in the unknown category.

3 engine off/unknown, (1) relates to a BPS symptom. 8 engine on.

Originator: JK/akd
File: Bullock/akd
Date issued: 4/10/98
Date revised: 4/10/98

PLOT REPORT

PLOT SETTINGS: X-AXIS: MANUAL SCALE Y-AXIS: MANUAL SCALE

FIGURATION ID: 0100413 VERSION: 1 FILENAME: U419160
TEST DATE: 21 SEP 94
AT DESCRIPTION: TRAILER TOW

$0 - 16 \text{ min} = 75 \text{ mph road load for 20 miles}$
 $16 - 56 \text{ min} = 30 \text{ mph } 7\% \text{ grade for 20 miles}$
 $56 - 66 \text{ min} = \text{Idle in drive}$
 $66 - 116 \text{ min} = \text{Idle in neutral}$
 $116 - 146 \text{ min} = \text{ENGINE OFF SOAK}$

- This is the R405 test cycle.
- If test is a trailer tow, the 30mph portion changes to include trailer load & done at 5.5% grade instead of 7%
- If test is a "engine malfunction" a shorted spark plug is installed into 1 cylinder

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

TEST VEHICLE DESCRIPTION

CARLINE: 1992 FN36 TOWN CAR

MODEL: 4 - Door Sedan

VEHICLE NUMBER: V2-219 (306W838)

POWERTRAIN: 4.6L, ACDE, 3.08:1

ENGINE NO.: X2V8-4.6MC-B1-30081

ENGINE EEC STRATEGY: CAAKA-07K

CATALYST NO.: FLVC-SE212-E1 (RH)
FLVC-SE214-E1 (LH)

SHIELDS: LOC'S (RH & LH), UBC'S (RH & LH), EXH. PIPE IN KICKUP,
AIR SUSPENSION SOLENOID

GROUND COVER PROTECTION: UBC'S (LH & RH)

RADIATOR: F1VH-8005-A1

W.C.Bable 7/22/91

ISSUED BY: W. C. BABLE

J.W.Kranig
APPROVED BY: J. W. KRANIG

V.L.Polkus
CONCURRED BY: V. L. POLKUS

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

TEST INDEX

1. TEST CONDITIONS: W836W3

a) PROCEDURE:

- 75MPH ROAD LOAD (20 MILES)
- 30MPH 7% GRADE LOAD (20 MILES)
- IDLE IN DRIVE (10 MIN.)
- IDLE IN NEUTRAL (50 MIN.)
- ENGINE OFF SOAK (30 MIN.)

b) DATE

- 07-15-91

c) SITE

- WINDTUNNEL #3

d) AMBIENT TEMPERATURE

- 100 DEG F

e) DRAWBAR LOAD:

- 75MPH 170LBS
- 30MPH 390LBS

f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:

- 75RL: 7.9 IN. HG. / OVERDRIVE
- 30GL: W.O.T. / 2RD GEAR
- IDLE: 15.4 IN. HG. / DRIVE
- IDLE: 20.0 IN. HG. (A/C OFF) / NEUTRAL

g) COMMENTS: BASELINE

2. TEST CONDITIONS: W838WST

a) PROCEDURE:

- 75MPH ROAD LOAD (20 MILES)
- 30MPH 5.5% GRADE LOAD (20 MILES)
- IDLE IN DRIVE (10 MIN.)
- IDLE IN NEUTRAL (30 MIN.)
- ENGINE OFF BRAKE (30 MIN.)

b) DATE

- 07-13-91

c) SITE

- WINDTUNNEL #3

d) AMBIENT TEMPERATURE

- 100 DEG F

e) DRAWBAR LOAD:

- 75MPH 170LBS
- 30MPH 590LBS

f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:

- 75RL: 5.7 IN. HG. / OVERDRIVE
- 30GL: 2.4 IN. HG. / 3RD GEAR
- IDLE: 14.8 IN. HG. / DRIVE
- IDLE: 17.3 IN. HG. (A/C ON) / NEUTRAL

g) COMMENTS: CLASS I TRAILER TOW (2500 LBS)

3. TEST CONDITIONS: W838V3K

a) PROCEDURE:

- 75MPH ROAD LOAD (20 MILES)
- 30MPH 7% GRADE LOAD (20 MILES)
- IDLE IN DRIVE (10 MIN.)
- IDLE IN NEUTRAL (50 MIN.)
- ENGINE OFF SOAK (30 MIN.)

b) DATE

- 07-15-91

c) SITE

- WINDTUNNEL #3

d) AMBIENT TEMPERATURE

- 100 DEG F

e) DRAWBAR LOAD:

- 75MPH 170LBS
- 30MPH 390LBS

f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:

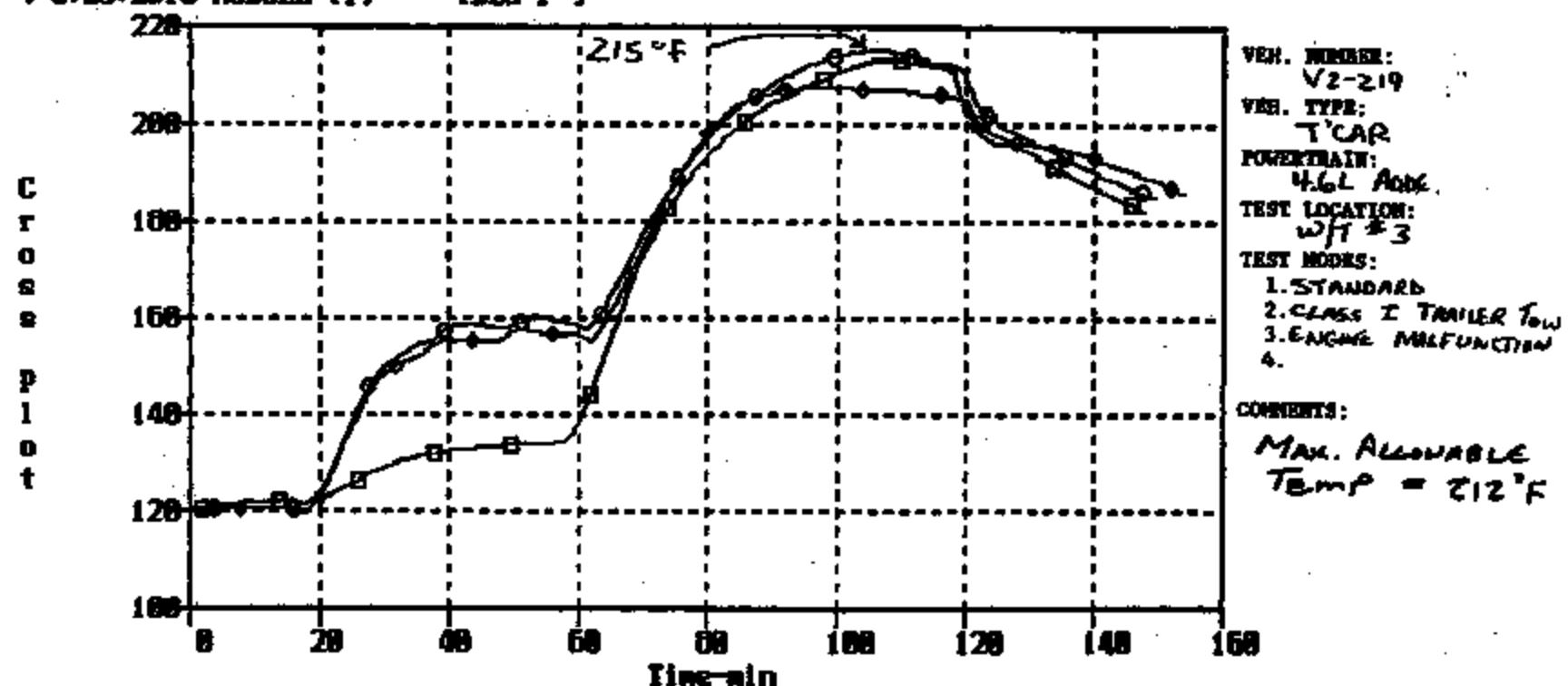
- 75RL: 4.0 IN. HG. / OVERDRIVE
- 30GL: 1.3 IN. HG. / 3RD GEAR
- IDLE: 13.6 IN. HG. / DRIVE
- IDLE: 16.3 IN. HG. (A/C ON) / NEUTRAL

g) COMMENTS: ENGINE MALFUNCTION (#3 SPARK PLUG SHORTED)

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY
COMPONENT OVERTEMPERATURE SUMMARY - V2-219

<u>ITEM</u>	<u>RECOMMENDED TEMP LIMIT</u>	<u>TEMP</u>	<u>MODE</u>	<u>COMMENTS</u>
MASS AIRFLOW SENSOR	212° F.	215°F.	IDLE	CR C10092251 -CLOSED ELD NO ISSUE
EDIS MODULE	212 F.	215 F.	IDLE	CR C10075405 -CLOSED ELD NO ISSUE

1=386M038M:W030H3 2=386M038M:W030H3ST 3=386M038M:W030H3M
 D=1:23:EDIS MODULE (1) (MEG F) O=2:23:EDIS MODULE (1) (MEG F)
 o=3:23:EDIS MODULE (1) (MEG F)



270 260 250

75 MPH
ROAD LOAD

20 MI

30 MPH
7% GRADE LOAD

20 MILES

IDLE

60 MINUTES

ENGINE OFF
SOAK

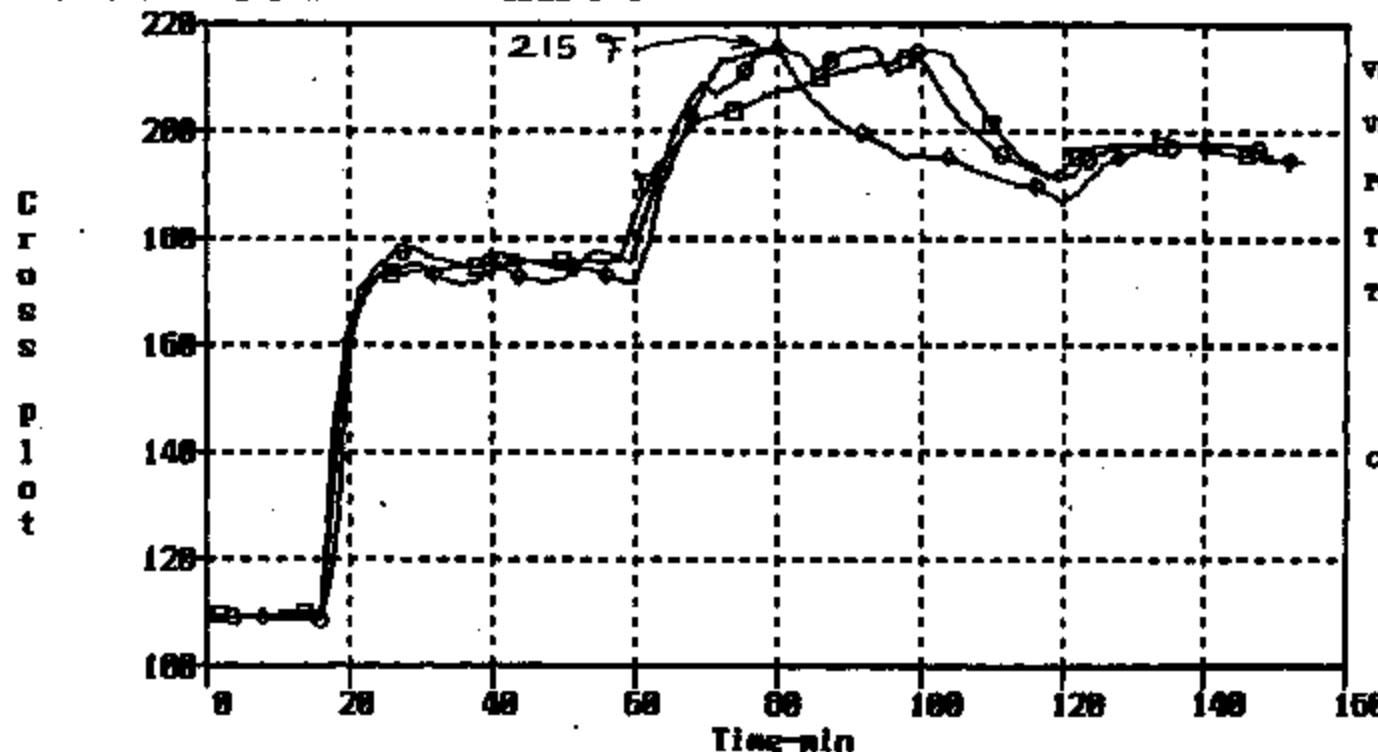
30 MINUTES

1=3864038M:W838M3
0=1:29:MF SENSOR
o=3:29:MF SENSOR

2=3864038M:W838MST
(DEG F)

3=3864038M:W838M3M
o=2:29:MF SENSOR

(DEG F)

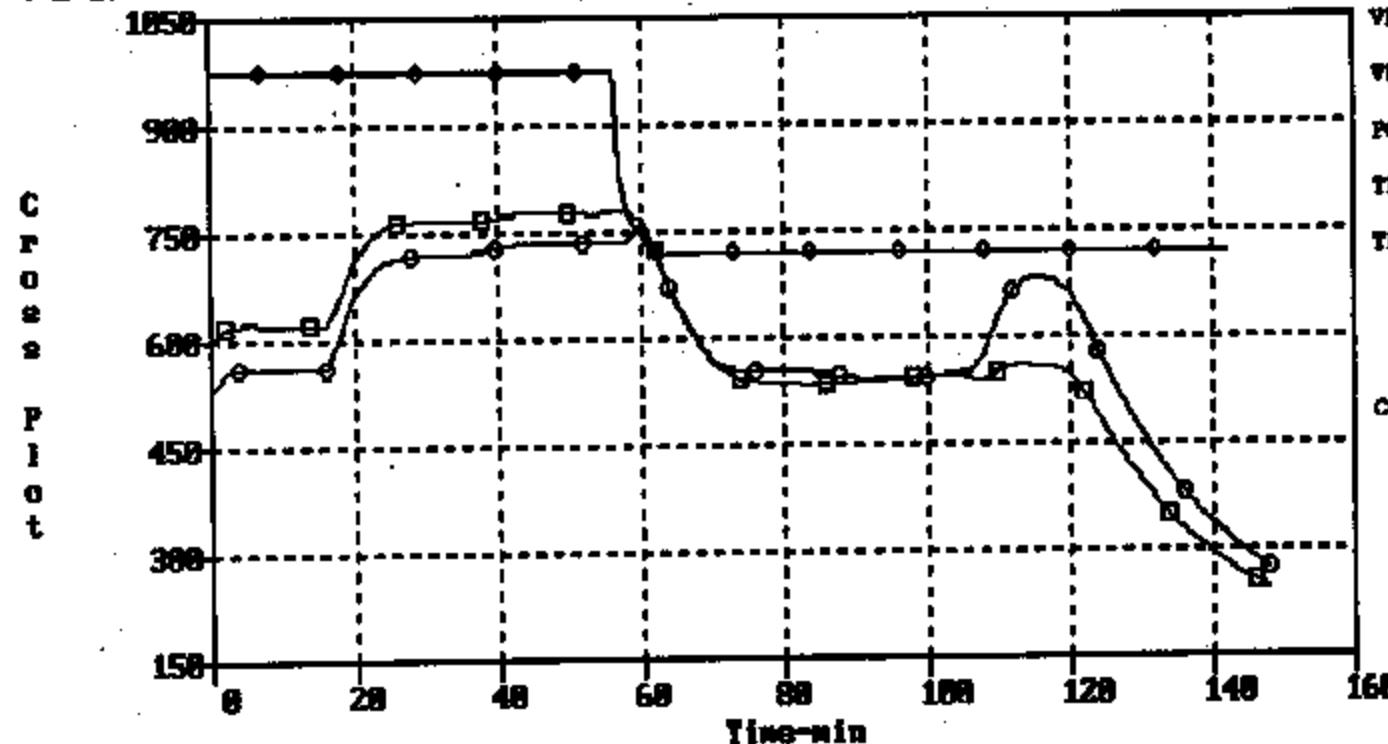


EXHAUST SKIN TEMP. VS GROUND COVER REQUIREMENT

1=306WB38W:WB38W3 Z=GFC:GFC

D=1:139:UBC SKIN BTM LH (DEG F) C=2:11:G.F.C. (DEG F)

O=1:140:UBC SKIN BTM RH (DEG F)



VEH. NUMBER
VZ-219
VEH. TYPE
T' CAR
POWERTRAIN:
4.6L V8
TEST LOCATION:
W/T 3
TEST MODES:
1. STANDARD
2.
3.
4.

COMMENTS:
Gross Shield Released

75 MPH
ROAD
LOAD

30 MPH
7% GRADE LOAD

IDLE

ENGINE OFF
SOAK

20 MI

20 MILES

60 MINUTES

30 MINUTES

9713 6274

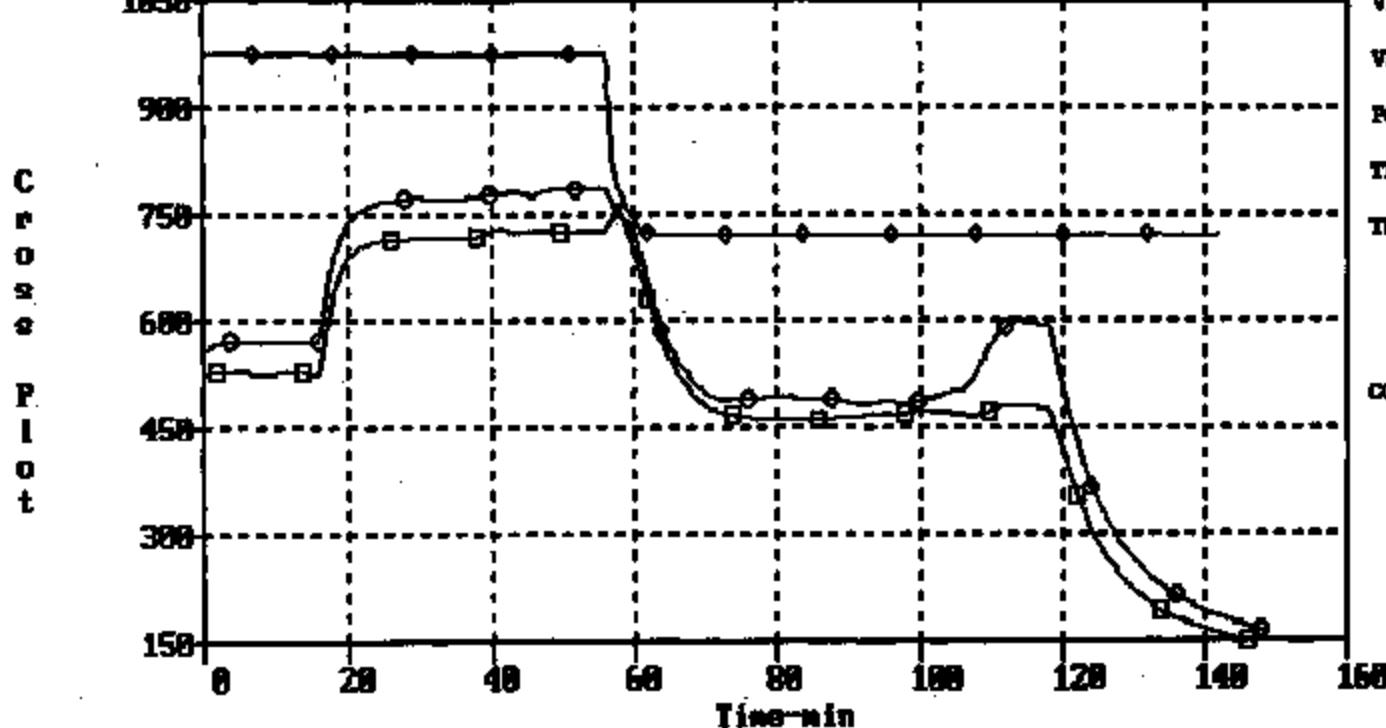
EXHAUST SKIN TEMP. VS GROUND COVER REQUIREMENT

1=306W838W:W838W3 2=GFC:GFC

3=1:143:EXH PIPE 6"RR UBC LHIDEG F]
o=2:11:G.F.C. [DEG F]

c=1:144:EXH PIPE 6"RR UBC RHIDEG F]

1950



VIN. NUMBER
V2-219
VIN. TYPE
T'CAR
POWERTRAIN:
4.6L AODE
TEST LOCATION:
W/T #3
TEST MODES:
1. STANDARD
2.
3.
4.
COMMENTS:

75 MPH
ROAD
LOAD

30 MPH
7% GRADE LOAD

IDLE

ENGINE OFF
SOAK

20 MI

20 MILES

60 MINUTES

30 MINUTES

3713 6276

TABULAR DATA SUMMARY REPORT

VER. ID : 306W83SW
 TEST ID : W83SW3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W83SW3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
11	AMBIENT	121.9	99.6 013:31:44 @ 20.0 m	148.2 015:29:44 @ 138.0 m	18.0	DEG F
12	TOP WATER	225.9	206.0 013:11:44 @ 0.0 m	244.8 014:53:44 @ 102.0 m	11.8	DEG F
13	ENGINE OIL	225.2	174.6 015:39:44 @ 148.0 m	249.4 014:55:44 @ 104.0 m	22.1	DEG F
14	TRANSMISSION FLUID	221.6	183.0 013:11:44 @ 0.0 m	240.8 014:55:44 @ 104.0 m	14.8	DEG F
15	POWER STEERING FLUID	221.2	184.3 013:11:44 @ 0.0 m	248.4 014:55:44 @ 104.0 m	15.8	DEG F
16	UHOOD AMB X LP/RR	188.4	139.0 013:11:44 @ 0.0 m	217.7 014:51:44 @ 100.0 m	22.4	DEG F
18	ACT CONNECTOR	177.3	109.3 013:11:44 @ 0.0 m	213.4 014:53:44 @ 102.0 m	31.6	DEG F
19	ECT CONNECTOR	195.8	152.2 013:11:44 @ 0.0 m	223.9 014:53:44 @ 102.0 m	19.8	DEG F
20	TP SENSOR	179.9	140.2 013:11:44 @ 0.0 m	207.9 014:55:44 @ 104.0 m	20.3	DEG F
21	CRANK POSITION SEN.	195.4	154.2 013:11:44 @ 0.0 m	224.2 014:53:44 @ 102.0 m	19.1	DEG F
22	CAM POSITION SEN.	196.4	150.6 013:11:44 @ 0.0 m	223.0 014:53:44 @ 102.0 m	19.8	DEG F
23	EDIS MODULE (1)	167.1	120.2 013:11:44 @ 0.0 m	213.7 014:59:44 @ 108.0 m	35.6	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306WB38W
 TEST ID : WB38W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : WB38W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
24	EDIS MODULE (2)	164.3	117.9 @13:11:44 @ 0.0 m	209.4 @14:57:44 @ 106.0 m	35.7	DEG F
25	LH IGNITION COIL AMB	189.3	152.3 @13:11:44 @ 0.0 m	218.2 @14:51:44 @ 100.0 m	18.4	DEG F
26	RH IGNITION COIL AMB	183.4	149.6 @13:11:44 @ 0.0 m	217.2 @14:53:44 @ 102.0 m	21.9	DEG F
27	OIL PRESSURE SENDER	194.1	146.6 @13:11:44 @ 0.0 m	233.0 @14:55:44 @ 104.0 m	26.5	DEG F
28	H2O TEMP SENDER	219.0	189.9 @13:11:44 @ 0.0 m	240.5 @14:53:44 @ 102.0 m	13.5	DEG F
29	MAF SENSOR	182.8	109.1 @13:11:44 @ 0.0 m	215.6 @14:53:44 @ 102.0 m	30.9	DEG F
30	EEC POWER RELAY	191.0	125.7 @13:11:44 @ 0.0 m	241.5 @15:09:44 @ 118.0 m	39.2	DEG F
31	FUEL PUMP RELAY	201.7	138.1 @13:11:44 @ 0.0 m	250.5 @15:09:44 @ 118.0 m	37.0	DEG F
32	ISC MOTOR	201.2	165.6 @13:11:44 @ 0.0 m	233.9 @14:53:44 @ 102.0 m	19.6	DEG F
33	EVR SOLENOID	184.8	144.1 @13:11:44 @ 0.0 m	211.6 @14:53:44 @ 102.0 m	18.6	DEG F
34	EVR REGULATOR	179.0	139.1 @13:11:44 @ 0.0 m	208.1 @14:55:44 @ 104.0 m	20.6	DEG F
35	VAC HOSE FORC EVR	168.7	163.5 @13:11:44 @ 0.0 m	210.0 @14:55:44 @ 104.0 m	13.0	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 26 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
36	VAC HOSE AFT OF EVR	187.7	166.4 @15:39:44 @ 148.0 m	208.5 @14:55:44 @ 104.0 m	12.5	DEG F
38	SPEED CONTROL SERVO	170.5	116.4 @13:11:44 @ 0.0 m	205.9 @15:05:44 @ 114.0 m	30.2	DEG F
39	THROTTLE BODY TPS	170.7	123.3 @13:11:44 @ 0.0 m	207.1 @14:53:44 @ 102.0 m	30.4	DEG F
40	ACCELERATOR CABLE	193.0	149.2 @13:11:44 @ 0.0 m	221.9 @14:53:44 @ 102.0 m	19.6	DEG F
41	SPEED CONTROL CABLE	195.3	153.2 @13:11:44 @ 0.0 m	221.8 @14:53:44 @ 102.0 m	18.3	DEG F
42	DAYLIGHT RUN MODULE	144.5	98.4 @13:33:44 @ 22.0 m	184.3 @14:53:44 @ 102.0 m	37.1	DEG F
43	PURGE CONTROL SOLE.	174.5	116.1 @13:11:44 @ 0.0 m	202.6 @14:53:44 @ 102.0 m	25.2	DEG F
44	ALTERNATOR INLET AIR	181.5	138.1 @13:11:44 @ 0.0 m	205.0 @14:55:44 @ 104.0 m	17.6	DEG F
48	WIRING @ MLPS	196.0	142.1 @13:11:44 @ 0.0 m	236.3 @14:53:44 @ 102.0 m	32.0	DEG F
49	WIRING @ VSS	185.5	127.4 @15:39:44 @ 148.0 m	227.4 @14:15:44 @ 64.0 m	31.8	DEG F
50	WIRING@NEUTRL SWITCH	187.6	149.5 @15:39:44 @ 148.0 m	218.9 @15:07:44 @ 116.0 m	22.8	DEG F
51	A/C EVAP CASE BTM	180.7	129.3 @13:11:44 @ 0.0 m	245.4 @14:11:44 @ 60.0 m	24.0	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W

TEST ID : W838W3

TEST DESC: SIGNOFF

TEST DATE: 25 JUN 91

DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
52	A/C EVAP CASE BTM	106.6	81.7 013:29:44 0 18.0 m	140.1 015:15:44 0 124.0 m	20.9	DEG F
53	A/C EVAP CASE BTM	123.3	92.9 013:11:44 0 0.0 m	174.1 015:13:44 0 122.0 m	22.6	DEG F
54	A/C COMPRESS MANIFOLD	188.0	166.7 013:57:44 0 46.0 m	210.0 014:53:44 0 102.0 m	14.0	DEG F
55	A/C CMPRSS DISC TUBE	195.6	171.2 015:39:44 0 148.0 m	225.5 014:53:44 0 102.0 m	16.3	DEG F
56	FUEL PRESSURE REG	154.6	128.7 013:11:44 0 0.0 m	191.1 015:39:44 0 148.0 m	16.0	DEG F
57	FUEL RAIL SUPPLY	145.9	117.3 013:11:44 0 0.0 m	188.2 015:37:44 0 146.0 m	19.7	DEG F
58	FUEL RAIL RETURN	147.5	118.5 013:11:44 0 0.0 m	188.0 015:37:44 0 146.0 m	19.0	DEG F
60	WIRING NR RH COIL	185.8	145.3 013:11:44 0 0.0 m	216.0 014:51:44 0 100.0 m	20.4	DEG F
61	ACT WIRING&CNTRL ARM	203.5	182.2 013:11:44 0 0.0 m	227.8 014:23:44 0 72.0 m	11.5	DEG F
62	BLOWER RESIST HARNESS	188.6	146.5 013:11:44 0 0.0 m	217.4 014:53:44 0 102.0 m	18.6	DEG F
63	NAPS WIRING NR PFE	177.9	142.3 013:11:44 0 0.0 m	207.1 014:53:44 0 102.0 m	19.6	DEG F
64	WIRING NR THERM HSG	192.6	147.3 013:11:44 0 0.0 m	221.5 014:53:44 0 102.0 m	20.9	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
65	WIRING @ ABS PUMP	191.8	147.1 @13:11:44 @ 0.0 m	232.3 @14:53:44 @ 102.0 m	21.8	DEG F
66	WIRING@LR VLV CVR RR	183.2	142.6 @13:11:44 @ 0.0 m	210.7 @14:55:44 @ 104.0 m	19.9	DEG F
67	STARTER CABLE @MAN	189.5	130.5 @13:11:44 @ 0.0 m	218.1 @14:55:44 @ 104.0 m	24.4	DEG F
68	STARTER CABLE @HEAD	188.4	139.9 @13:11:44 @ 0.0 m	211.8 @15:01:44 @ 110.0 m	17.5	DEG F
69	STARTER CABLE @START	222.9	169.3 @13:11:44 @ 0.0 m	248.1 @14:13:44 @ 62.0 m	20.2	DEG F
70	STARTER MAGNET	214.9	162.6 @13:11:44 @ 0.0 m	238.6 @14:57:44 @ 106.0 m	19.8	DEG F
72	BRK MASTER CYL	182.5	131.3 @13:11:44 @ 0.0 m	208.4 @14:55:44 @ 104.0 m	23.8	DEG F
73	BRK VAC BOOSTER	190.0	142.3 @13:11:44 @ 0.0 m	213.8 @14:55:44 @ 104.0 m	19.7	DEG F
74	POWER DIST BOX ABS I	178.0	108.7 @13:21:44 @ 10.0 m	215.7 @14:53:44 @ 102.0 m	31.5	DEG F
75	AIR CLEANER CASE	177.4	127.2 @13:11:44 @ 0.0 m	212.5 @14:53:44 @ 102.0 m	26.4	DEG F
76	AIR CLEANER INLET	155.9	100.7 @13:11:44 @ 0.0 m	199.4 @14:53:44 @ 102.0 m	37.9	DEG F
77	A/C-RESONATOR HOSE	175.6	112.1 @13:11:44 @ 0.0 m	212.9 @14:53:44 @ 102.0 m	31.9	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W

TEST ID : W838W3

TEST DESC: SIGNOFF

TEST DATE: 25 JUN 91

DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
78	AIR INTAKE RESONATOR	191.4	146.1 013:11:44 0 0.0 m	221.1 014:53:44 0 102.0 m	20.8	DEG F
79	AIR INTAKE RESONATOR	184.3	139.0 013:11:44 0 0.0 m	217.5 014:53:44 0 102.0 m	24.3	DEG F
80	CARBON CANNISTER	195.3	100.3 013:31:44 0 20.0 m	163.2 015:03:44 0 112.0 m	24.8	DEG F
81	HEATER/AC BLOWER MTR	157.5	121.3 013:11:44 0 0.0 m	187.4 015:01:44 0 110.0 m	20.4	DEG F
82	SUSP BSHG FRT UP LH	196.4	147.5 013:11:44 0 0.0 m	223.1 014:57:44 0 106.0 m	22.0	DEG F
83	SUSP BSHG FRT UP RH	178.9	126.1 013:11:44 0 0.0 m	204.0 014:57:44 0 106.0 m	21.2	DEG F
84	VALVE COVER LH	230.7	181.5 013:11:44 0 0.0 m	255.2 014:15:44 0 64.0 m	19.7	DEG F
85	VALVE COVER RH	227.2	185.1 013:11:44 0 0.0 m	243.4 014:11:44 0 60.0 m	16.0	DEG F
86	STEERING FLEX COUPL.	197.5	156.0 013:11:44 0 0.0 m	227.3 014:53:44 0 102.0 m	20.1	DEG F
87	POWER STEERING PUMP	215.1	179.0 013:11:44 0 0.0 m	244.6 014:53:44 0 102.0 m	17.1	DEG F
88	POWER STEERING HOSE	208.4	163.6 013:11:44 0 0.0 m	238.5 014:53:44 0 102.0 m	20.0	DEG F
89	AIR SUSP CMPRSS AIR	163.6	109.7 013:11:44 0 0.0 m	196.4 014:53:44 0 102.0 m	26.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB3BW
 TEST ID : WB3BW3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : WB3BW3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
91	SPEED CNTRL SERVO	166.3	110.4 @13:11:44 @ 0.0 m	202.8 @15:01:44 @ 110.0 m	32.9	DEG F
92	A/C DISCHARGE AIR	68.1	35.4 @13:13:44 @ 2.0 m	126.7 @15:39:44 @ 145.0 m	29.0	DEG F
93	TOEBOARD TOP LH	218.2	141.5 @13:11:44 @ 0.0 m	258.2 @14:57:44 @ 106.0 m	36.1	DEG F
94	TOEBOARD TOP RH	174.6	123.6 @13:11:44 @ 0.0 m	211.1 @15:13:44 @ 122.0 m	20.8	DEG F
95	TOEBOARD BTM LH	212.2	138.3 @13:11:44 @ 0.0 m	250.9 @15:07:44 @ 116.0 m	35.9	DEG F
96	TOEBOARD BTM RH	191.7	131.4 @13:11:44 @ 0.0 m	219.5 @15:11:44 @ 120.0 m	24.1	DEG F
97	FLR OVER CAT LH	208.8	146.6 @13:11:44 @ 0.0 m	260.5 @14:15:44 @ 64.0 m	36.2	DEG F
98	FLR OVER CAT RH	195.0	137.9 @13:11:44 @ 0.0 m	237.6 @15:09:44 @ 118.0 m	24.1	DEG F
99	FLR OVER CAT OUT LH	216.0	141.7 @15:39:44 @ 148.0 m	285.5 @14:13:44 @ 62.0 m	38.3	DEG F
100	FLR OVER CAT OUT RH	199.2	154.0 @13:11:44 @ 0.0 m	226.6 @14:11:44 @ 60.0 m	19.5	DEG F
101	FLR 4" RR UBC LH	195.7	134.1 @15:39:44 @ 148.0 m	237.2 @14:13:44 @ 62.0 m	29.6	DEG F
102	FLR 4" RR UBC RH	194.2	150.4 @13:11:44 @ 0.0 m	227.2 @14:11:44 @ 60.0 m	19.3	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W83SW
 TEST ID : W83SW3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W83SW3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
104	FLR OVER MUFF INLET	168.3	126.8 015:39:44 @ 148.0 m	210.8 014:19:44 @ 62.0 m	21.2	DEG F
106	FLR OVER MUFF FRT	214.0	134.5 015:39:44 @ 148.0 m	308.7 014:11:44 @ 60.0 m	40.6	DEG F
108	FLR OVER MUFF RR	194.4	141.9 013:11:44 @ 0.0 m	243.4 014:15:44 @ 64.0 m	27.5	DEG F
109	FLR IN KICKUP	152.6	120.3 013:11:44 @ 0.0 m	177.7 014:15:44 @ 64.0 m	15.1	DEG F
110	FLR IN TRUNK	141.1	116.6 013:11:44 @ 0.0 m	165.3 014:13:44 @ 62.0 m	11.3	DEG F
118	S.BELT TAB RR INB LH	128.6	107.6 013:11:44 @ 0.0 m	139.2 014:27:44 @ 76.0 m	9.5	DEG F
119	S.TRK FRT INB RH FRT	147.6	114.1 013:11:44 @ 0.0 m	168.2 015:11:44 @ 120.0 m	14.2	DEG F
120	S.TRK FRT INB RH RR	121.9	99.0 013:11:44 @ 0.0 m	132.1 015:11:44 @ 120.0 m	8.5	DEG F
121	S.TRK FRT INB LH FRT	144.0	109.9 013:11:44 @ 0.0 m	165.0 014:15:44 @ 64.0 m	14.8	DEG F
122	S.TRK FRT INB LH RR	111.6	95.9 013:11:44 @ 0.0 m	120.6 015:11:44 @ 120.0 m	6.0	DEG F
123	HEGO TIP LH	1092.8	231.8 015:39:44 @ 148.0 m	1464.7 014:09:44 @ 58.0 m	407.7	DEG F
124	HEGO TIP RH	1058.4	217.0 015:39:44 @ 148.0 m	1445.2 013:55:44 @ 44.0 m	418.4	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
125	HEGO GROMMET LH	250.2	166.4 013:11:44 @ 0.0 m	324.1 014:13:44 @ 62.0 m	46.3	DEG F
126	HEGO GROMMET RH	249.4	152.0 013:11:44 @ 0.0 m	368.1 014:13:44 @ 62.0 m	52.9	DEG F
127	HEGO HEX LH	563.2	223.2 015:39:44 @ 148.0 m	773.2 014:09:44 @ 58.0 m	153.9	DEG F
128	HEGO HEX RH	555.2	212.1 015:39:44 @ 148.0 m	799.5 014:09:44 @ 58.0 m	185.6	DEG F
129	HEGO CONNECTOR LH	186.2	138.8 013:11:44 @ 0.0 m	214.1 014:53:44 @ 102.0 m	21.7	DEG F
130	HEGO CONNECTOR RH	176.0	137.8 013:11:44 @ 0.0 m	191.4 014:53:44 @ 102.0 m	14.7	DEG F
131	EXHAUST MANIFOLD LH	649.5	220.0 015:39:44 @ 148.0 m	952.4 014:09:44 @ 58.0 m	233.1	DEG F
132	EXHAUST MANIFOLD RH	618.9	210.5 015:39:44 @ 148.0 m	939.0 014:03:44 @ 52.0 m	262.9	DEG F
133	LOC GAS LH	1090.5	420.6 015:39:44 @ 148.0 m	1461.9 013:59:44 @ 48.0 m	306.2	DEG F
134	LOC GAS RH	1081.2	433.1 015:39:44 @ 148.0 m	1409.5 014:03:44 @ 52.0 m	287.3	DEG F
135	LOC SKIN OUTBD LH	616.6	273.2 015:39:44 @ 148.0 m	795.3 014:11:44 @ 60.0 m	129.7	DEG F
136	LOC SKIN OUTBD RH	579.5	292.4 015:39:44 @ 148.0 m	795.5 015:03:44 @ 112.0 m	123.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 305W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
137	UBC GAS LH	988.2	421.1 015:39:44 @ 148.0 m	1353.7 014:09:44 @ 58.0 m	289.6	DEG F
138	UBC GAS RH	1031.3	503.8 015:39:44 @ 148.0 m	1334.3 014:01:44 @ 50.0 m	245.8	DEG F
139	UBC SKIN BTM LH	593.7	250.5 015:39:44 @ 148.0 m	784.7 014:09:44 @ 58.0 m	148.0	DEG F
140	UBC SKIN BTM RH	595.8	280.8 015:39:44 @ 148.0 m	763.6 014:11:44 @ 60.0 m	121.0	DEG F
141	EXH PIPE 1ST BEND LH	576.1	191.2 015:39:44 @ 148.0 m	776.6 013:59:44 @ 48.0 m	169.3	DEG F
142	EXH PIPE 1ST BEND RH	627.4	223.7 015:39:44 @ 148.0 m	840.4 014:03:44 @ 52.0 m	173.1	DEG F
143	EXH PIPE 6"RR UBC LH	509.0	151.2 015:39:44 @ 148.0 m	770.1 014:09:44 @ 58.0 m	177.6	DEG F
144	EXH PIPE 6"RR UBC RH	552.2	170.4 015:39:44 @ 148.0 m	790.7 014:03:44 @ 52.0 m	184.5	DEG F
145	EXH PIPE AT Y-JT	444.9	121.5 015:39:44 @ 148.0 m	743.2 014:09:44 @ 58.0 m	151.7	DEG F
146	EXH PIPE 6"FWD MUFF	434.3	122.1 015:39:44 @ 148.0 m	676.8 014:09:44 @ 58.0 m	156.2	DEG F
147	MUFFLER BTM CENTER	395.9	129.0 015:39:44 @ 148.0 m	615.7 014:09:44 @ 58.0 m	135.4	DEG F
148	EXH TOP OF KICKUP	391.5	139.0 015:39:44 @ 148.0 m	612.9 014:09:44 @ 58.0 m	150.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
149	EXH 12" FWD OUTLET	312.5	121.7 @15:39:44 @ 148.0 m	497.5 @14:09:44 @ 58.0 m	116.1	DEG F
150	STARTER GEAR	216.6	161.1 @13:11:44 @ 0.0 m	240.4 @14:57:44 @ 106.0 m	21.0	DEG F
151	ABS MODULE #1	136.5	105.3 @13:11:44 @ 0.0 m	170.6 @15:31:44 @ 140.0 m	27.5	DEG F
152	RR EXH. HANGER	142.2	113.1 @13:11:44 @ 0.0 m	160.1 @14:25:44 @ 74.0 m	12.8	DEG F
153	FRT U-JT ANB	173.1	108.3 @15:39:44 @ 148.0 m	239.5 @14:11:44 @ 60.0 m	34.4	DEG F
154	ENG MNT LH	214.7	144.0 @13:11:44 @ 0.0 m	250.6 @14:57:44 @ 106.0 m	29.7	DEG F
155	ENG MNT RH	194.6	152.2 @13:11:44 @ 0.0 m	231.7 @14:53:44 @ 102.0 m	25.5	DEG F
156	ENG MNT RR	178.4	127.6 @13:11:44 @ 0.0 m	210.9 @15:09:44 @ 118.0 m	26.1	DEG F
157	TRANS PAN GASKET LH	195.3	126.9 @13:11:44 @ 0.0 m	235.7 @14:55:44 @ 104.0 m	36.5	DEG F
158	TRANS PAN GASKET RH	199.9	129.6 @13:11:44 @ 0.0 m	236.9 @15:03:44 @ 112.0 m	34.7	DEG F
159	SPEED SENSOR	192.0	146.9 @13:11:44 @ 0.0 m	216.8 @14:55:44 @ 104.0 m	23.4	DEG F
160	STARTER SOLENOID CAP	217.8	166.3 @13:11:44 @ 0.0 m	242.6 @14:55:44 @ 104.0 m	22.3	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
161	TRANS EXTE HSG SEAL	203.1	170.8 013:11:44 @ 0.0 m	217.8 014:21:44 @ 70.0 m	14.1	DEG F
162	TRAN ELEC CONN LH RR	191.2	139.5 013:11:44 @ 0.0 m	229.8 014:55:44 @ 104.0 m	29.4	DEG F
163	TRANS BELLHSG LH	207.4	150.7 013:11:44 @ 0.0 m	241.6 014:57:44 @ 106.0 m	27.3	DEG F
164	TRANS BELLHSG RH	206.2	145.6 013:11:44 @ 0.0 m	239.7 014:53:44 @ 102.0 m	26.8	DEG F
165	TRAN EXT HSG GASKET	205.3	160.7 013:11:44 @ 0.0 m	226.2 015:01:44 @ 110.0 m	17.3	DEG F
166	TRAN EXT HSG BUSHING	205.6	174.4 013:11:44 @ 0.0 m	218.7 014:19:44 @ 68.0 m	12.7	DEG F
167	TRAN FILL TUBE SKIN	209.0	152.4 013:11:44 @ 0.0 m	237.6 014:55:44 @ 104.0 m	25.4	DEG F
168	TRAN FILL TUBE SEAL	204.2	145.0 013:11:44 @ 0.0 m	239.4 015:03:44 @ 112.0 m	29.8	DEG F
169	TRAN CASE SWAN LEV	208.6	149.7 013:11:44 @ 0.0 m	238.2 014:57:44 @ 106.0 m	25.0	DEG F
170	ABS SENS WIRE RR RH	163.1	135.1 013:11:44 @ 0.0 m	185.9 014:11:44 @ 60.0 m	14.9	DEG F
171	TRAN MLPS	219.2	157.5 013:11:44 @ 0.0 m	250.8 014:55:44 @ 104.0 m	30.4	DEG F
172	TRAN BULGEHEAD CONN	176.4	120.5 013:11:44 @ 0.0 m	211.2 014:55:44 @ 104.0 m	27.9	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
173	ABS MODULE #2	137.1	105.4 013:35:44 @ 24.0 m	171.8 015:29:44 @ 138.0 m	27.8	DEG F
174	SHIFT CABLE @ EXHMAN	226.7	143.8 015:39:44 @ 148.0 m	289.6 014:53:44 @ 102.0 m	51.6	DEG F
175	SHIFT CABLE @ LOC	206.6	137.2 013:11:44 @ 0.0 m	271.3 014:55:44 @ 104.0 m	51.2	DEG F
176	SHIFT CABLE @ UBC	196.6	137.5 013:11:44 @ 0.0 m	240.2 014:53:44 @ 102.0 m	32.4	DEG F
177	SHIFT CABLE SLEEVE	209.3	129.3 015:39:44 @ 148.0 m	269.3 014:15:44 @ 64.0 m	39.2	DEG F
178	SHIFT CABL UNDER SLV	191.3	126.8 015:39:44 @ 148.0 m	236.1 014:15:44 @ 64.0 m	31.5	DEG F
179	SHIFT CABL ADJ @TRAN	189.8	135.7 015:39:44 @ 148.0 m	234.4 015:09:44 @ 118.0 m	35.1	DEG F
180	FUEL FILTER	127.6	109.0 013:11:44 @ 0.0 m	137.2 015:09:44 @ 118.0 m	8.5	DEG F
181	FUEL LINE AT FILTER	126.7	108.8 013:11:44 @ 0.0 m	137.4 015:09:44 @ 118.0 m	8.8	DEG F
182	FUEL RET LINE @ TANK	137.3	115.4 013:11:44 @ 0.0 m	146.9 014:55:44 @ 104.0 m	9.4	DEG F
183	FUEL SUP LINE @ TANK	133.9	111.4 013:11:44 @ 0.0 m	145.5 015:19:44 @ 128.0 m	9.0	DEG F
184	FUEL TANK SKIN FRT	130.1	112.9 013:11:44 @ 0.0 m	136.3 013:55:44 @ 44.0 m	6.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3
 TEST DESC: SIGNOFF
 TEST DATE: 25 JUN 91
 DATAFILE : W838W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
185	FUEL TANK SKIN FRT	130.0	113.3 @13:11:44 @ 0.0 m	136.7 @15:11:44 @ 120.0 m	6.3	DEG F
186	FUEL TANK SKIN FRT	144.0	117.2 @13:11:44 @ 0.0 m	160.0 @14:11:44 @ 60.0 m	10.0	DEG F
187	FUEL PUMP FLANGE	129.7	111.5 @13:11:44 @ 0.0 m	137.3 @15:13:44 @ 122.0 m	7.3	DEG F
188	FUEL LINE AT SENDER	132.3	112.1 @13:11:44 @ 0.0 m	142.4 @15:13:44 @ 122.0 m	8.0	DEG F
189	FUEL LINE PLAS. CONN	149.6	126.6 @13:11:44 @ 0.0 m	166.2 @14:13:44 @ 62.0 m	10.0	DEG F
190	FUEL IN TANK	126.4	105.5 @13:11:44 @ 0.0 m	134.7 @15:09:44 @ 118.0 m	8.1	DEG F
191	PARK BRK CABLE @ NUF	81.2	-244.6 @13:27:44 @ 16.0 m	181.6 @14:11:44 @ 60.0 m	114.5	DEG F
192	AIR SPRING UP CAP RH	156.1	117.3 @13:11:44 @ 0.0 m	171.8 @14:43:44 @ 92.0 m	16.8	DEG F
193	AIR SPRING SLV RH RR	154.6	124.6 @13:11:44 @ 0.0 m	170.9 @14:13:44 @ 62.0 m	12.0	DEG F
194	AIR SPRING SOLE. RH	155.4	117.0 @13:11:44 @ 0.0 m	173.8 @14:43:44 @ 92.0 m	18.3	DEG F
195	AIR SPRING PRES LINE	156.3	117.1 @13:11:44 @ 0.0 m	182.0 @14:23:44 @ 72.0 m	18.9	DEG F
196	AIR SUSP HT SENS SET	138.9	117.2 @13:11:44 @ 0.0 m	151.0 @14:15:44 @ 64.0 m	10.8	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB38W
TEST ID : WB38W3
TEST DESC: SIGNOFF
TEST DATE: 25 JUN 91
DATAFILE : WB38W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
197	AIR SUSP HT SENS ELE	149.0	118.5 @13:11:44 0 0.0 m	168.5 @14:19:44 0 68.0 m	15.1	DEG F
198	ABS MODULE #3	134.7	101.6 @13:35:44 0 24.0 m	172.6 @15:31:44 0 140.0 m	29.2	DEG F
199	ABS MODULE #4	134.5	101.9 @13:11:44 0 0.0 m	172.5 @15:31:44 0 140.0 m	29.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838WST
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
11	AMBIENT	119.3	99.4 @11:30:20 @ 19.5 m	146.8 @13:04:20 @ 147.5 m	17.3	DEG F
12	TOP WATER	228.3	207.9 @11:30:50 @ 0.0 m	247.7 @12:40:20 @ 69.5 m	11.8	DEG F
13	ENGINE OIL	230.3	180.7 @14:00:20 @ 149.5 m	252.6 @13:04:20 @ 93.5 m	21.7	DEG F
14	TRANSMISSION FLUID	239.2	180.7 @11:30:50 @ 0.0 m	266.0 @12:24:20 @ 53.5 m	23.6	DEG F
15	POWER STEERING FLUID	226.7	187.7 @11:30:50 @ 0.0 m	247.6 @13:04:20 @ 93.5 m	14.7	DEG F
16	UNCOOD AMB X LF/RR	190.6	142.3 @11:36:50 @ 6.0 m	219.7 @12:48:20 @ 77.5 m	22.3	DEG F
18	ACT CONNECTOR	180.1	112.7 @11:30:50 @ 0.0 m	213.6 @13:04:20 @ 93.5 m	30.4	DEG F
19	ECT CONNECTOR	197.6	161.6 @11:30:50 @ 0.0 m	224.8 @12:52:20 @ 81.5 m	18.6	DEG F
20	TP SENSOR	183.7	150.0 @11:30:50 @ 0.0 m	209.1 @13:10:20 @ 99.5 m	18.2	DEG F
21	CRANK POSITION SEN.	198.9	161.8 @11:30:50 @ 0.0 m	225.9 @12:52:20 @ 81.5 m	18.4	DEG F
22	CAM POSITION SEN.	197.6	157.2 @11:30:50 @ 0.0 m	224.3 @12:52:20 @ 81.5 m	19.9	DEG F
23	EDIS MODULE (1)	175.7	120.0 @11:30:50 @ 0.0 m	215.5 @13:16:20 @ 105.5 m	31.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB38W
 TEST ID : W838WST
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
24	EDIS MODULE (2)	172.7	118.0 @11:30:50 @ 0.0 m	211.4 @13:16:20 @ 105.5 m	31.8	DEG F
25	LH IGNITION COIL AMB	190.0	157.4 @11:30:50 @ 0.0 m	219.2 @13:10:20 @ 99.5 m	18.4	DEG F
26	RH IGNITION COIL AMB	185.8	157.3 @11:30:50 @ 0.0 m	219.0 @13:00:20 @ 89.5 m	18.5	DEG F
27	OIL PRESSURE SENDER	199.0	154.9 @11:30:50 @ 0.0 m	234.8 @13:04:20 @ 93.5 m	24.8	DEG F
28	H2O TEMP SENDER	220.9	193.8 @11:30:50 @ 0.0 m	242.5 @12:52:20 @ 61.5 m	13.4	DEG F
29	MAF SENSOR	183.8	109.0 @11:46:50 @ 16.0 m	215.8 @13:04:20 @ 93.5 m	31.0	DEG F
30	BEC POWER RELAY	201.1	122.7 @11:30:50 @ 0.0 m	241.5 @13:26:20 @ 115.5 m	37.9	DEG F
31	FUEL PUMP RELAY	209.5	138.7 @11:30:50 @ 0.0 m	249.4 @13:30:20 @ 119.5 m	34.6	DEG F
32	ISC MOTOR	210.5	175.0 @11:30:50 @ 0.0 m	236.6 @13:04:20 @ 93.5 m	17.2	DEG F
33	EVR SOLENOID	189.9	153.6 @11:30:50 @ 0.0 m	213.6 @13:04:20 @ 93.5 m	16.6	DEG F
34	EVR REGULATOR	185.4	146.9 @11:30:50 @ 0.0 m	211.2 @13:10:20 @ 99.5 m	19.0	DEG F
35	VAC HOSE FOR EVR	203.1	173.5 @14:00:20 @ 149.5 m	223.5 @12:32:20 @ 61.5 m	14.2	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : w838wst
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
36	VAC HOSE AFT OF EVR	206.5	171.7 @14:00:20 @ 149.5 m	229.9 @12:00:20 @ 29.5 m	16.1	DEG F
38	SPEED CONTROL SERVO	176.8	113.8 @11:30:50 @ 0.0 m	208.3 @13:18:20 @ 107.5 m	30.4	DEG F
39	THROTTLE BODY @TPS	176.9	130.3 @11:44:50 @ 14.0 m	208.8 @13:04:20 @ 93.5 m	27.2	DEG F
40	ACCELERATOR CABLE	194.6	159.2 @11:30:50 @ 0.0 m	222.6 @12:52:20 @ 81.5 m	18.4	DEG F
41	SPEED CONTROL CABLE	198.7	165.5 @11:46:50 @ 16.0 m	223.7 @12:52:20 @ 81.5 m	16.6	DEG F
42	DAYLIGHT RUN MODULE	144.1	98.6 @11:50:20 @ 19.5 m	183.2 @13:00:20 @ 89.5 m	37.2	DEG F
43	PURGE CONTROL SOLE.	180.8	118.2 @11:30:50 @ 0.0 m	205.2 @13:04:20 @ 93.5 m	24.9	DEG F
44	ALTERNATOR INLET AIR	187.6	150.3 @11:30:50 @ 0.0 m	211.5 @13:02:20 @ 91.5 m	16.9	DEG F
48	WIRING @ MLPS	204.4	147.2 @11:30:50 @ 0.0 m	247.6 @13:04:20 @ 93.5 m	36.6	DEG F
49	WIRING @ VSS	192.7	130.0 @14:00:20 @ 149.5 m	235.8 @12:36:20 @ 65.5 m	35.2	DEG F
50	WIRING@NEUTRL SWITCH	198.2	150.4 @14:00:20 @ 149.5 m	231.2 @12:48:20 @ 77.5 m	27.4	DEG F
51	A/C EVAP CASE BTM	196.0	141.6 @11:30:50 @ 0.0 m	279.8 @12:34:20 @ 63.5 m	29.2	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306WB38W
 TEST ID : WB38WST
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : WB38WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
52	A/C EVAP CASE BTM	122.2	97.1 @11:50:20 @ 19.5 m	153.8 @13:34:20 @ 123.5 m	20.6	DEG F
53	A/C EVAP CASE BTM	136.1	94.7 @11:30:50 @ 0.0 m	182.1 @13:32:20 @ 121.5 m	26.5	DEG F
54	A/C COMPRESS MANIFOLD	220.5	186.3 @12:42:20 @ 71.5 m	246.8 @12:24:20 @ 53.5 m	18.1	DEG F
55	A/C COMPRESS DISC TUBE	226.9	177.7 @14:00:20 @ 149.5 m	257.1 @12:24:20 @ 53.5 m	25.5	DEG F
56	FUEL PRESSURE REG	155.8	129.5 @11:30:50 @ 0.0 m	195.0 @14:00:20 @ 149.5 m	16.1	DEG F
57	FUEL RAIL SUPPLY	148.5	113.3 @11:30:50 @ 0.0 m	192.6 @14:00:20 @ 149.5 m	20.8	DEG F
58	FUEL RAIL RETURN	148.9	113.6 @11:30:50 @ 0.0 m	192.3 @14:00:20 @ 149.5 m	20.5	DEG F
60	WIRING NR RH COIL	189.3	154.1 @11:30:50 @ 0.0 m	218.5 @12:52:20 @ 81.5 m	18.8	DEG F
61	ACT WIRING@CNTRL ARM	201.7	164.1 @11:52:20 @ 21.5 m	228.3 @13:02:20 @ 91.5 m	13.4	DEG F
62	BLOWER RESIST HARNESS	193.4	154.7 @11:30:50 @ 0.0 m	221.4 @13:02:20 @ 91.5 m	18.1	DEG F
63	MAPS WIRING NR PFE	183.2	148.4 @11:30:50 @ 0.0 m	210.0 @13:04:20 @ 93.5 m	18.3	DEG F
64	WIRING NR THERM HSG	195.0	155.6 @11:30:50 @ 0.0 m	223.0 @12:52:20 @ 81.5 m	20.0	DEG F

TABULAR DATA SUMMARY REPORT

VMR. ID : 306W838W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
104	FLR OVER MUFF INLET	201.0	140.5 017:22:37 @ 154.0 m	245.5 015:40:37 @ 52.0 m	33.9	DEG F
106	FLR OVER MUFF FRT	257.9	146.6 017:22:37 @ 154.0 m	349.2 015:54:37 @ 66.0 m	64.5	DEG F
108	FLR OVER MUFF RR	245.6	147.0 014:48:37 @ 0.0 m	342.8 015:52:37 @ 64.0 m	61.6	DEG F
109	FLR IN KICKUP	178.7	125.0 014:48:37 @ 0.0 m	220.9 015:52:37 @ 64.0 m	23.3	DEG F
110	FLR IN TRUNK	161.6	122.2 014:48:37 @ 0.0 m	198.4 015:50:37 @ 62.0 m	19.0	DEG F
118	S.BELT TAB RR INB LH	145.9	113.9 014:48:37 @ 0.0 m	167.8 016:02:37 @ 74.0 m	15.6	DEG F
119	S.TRK FRT INB RH FRT	189.4	131.5 014:48:37 @ 0.0 m	225.4 015:52:37 @ 64.0 m	27.4	DEG F
120	S.TRK FRT INB RH RR	157.5	120.0 014:48:37 @ 0.0 m	176.1 015:52:37 @ 64.0 m	15.4	DEG F
121	S.TRK FRT INB LH FRT	165.5	121.6 014:48:37 @ 0.0 m	188.4 015:56:37 @ 68.0 m	18.9	DEG F
122	S.TRK FRT INB LH RR	135.3	112.9 014:48:37 @ 0.0 m	146.6 016:52:37 @ 124.0 m	9.4	DEG F
123	HEGO TIP LH	1115.4	234.9 017:22:37 @ 154.0 m	1580.5 015:16:37 @ 28.0 m	449.8	DEG F
124	HEGO TIP RH	969.9	216.9 017:22:37 @ 154.0 m	1337.7 015:28:37 @ 40.0 m	381.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
125	HEGO GROMMET LH	265.1	162.9 @14:48:37 @ 0.0 m	393.3 @15:54:37 @ 66.0 m	55.8	DEG F
126	HEGO GROMMET RH	240.5	144.6 @14:48:37 @ 0.0 m	346.2 @15:52:37 @ 64.0 m	47.9	DEG F
127	HEGO HEX LH	592.1	224.9 @17:22:37 @ 154.0 m	860.7 @15:16:37 @ 28.0 m	194.5	DEG F
128	HEGO HEX RH	514.3	211.7 @17:22:37 @ 154.0 m	774.9 @15:16:37 @ 28.0 m	177.6	DEG F
129	HEGO CONNECTOR LH	188.1	140.2 @14:48:37 @ 0.0 m	212.5 @15:58:37 @ 70.0 m	21.3	DEG F
130	HEGO CONNECTOR RH	180.2	139.2 @14:48:37 @ 0.0 m	197.1 @16:58:37 @ 130.0 m	14.9	DEG F
131	EXHAUST MANIFOLD LH	695.4	221.3 @17:22:37 @ 154.0 m	1117.2 @15:16:37 @ 28.0 m	300.9	DEG F
132	EXHAUST MANIFOLD RH	570.9	209.1 @17:22:37 @ 154.0 m	928.9 @15:16:37 @ 28.0 m	253.5	DEG F
133	LOC GAS LH	1178.0	484.0 @17:22:37 @ 154.0 m	1689.3 @16:46:37 @ 118.0 m	343.0	DEG F
134	LOC GAS RH	1552.0	463.9 @17:22:37 @ 154.0 m	2036.5 @15:40:37 @ 52.0 m	448.8	DEG F
135	LOC SKIN OUTBD LH	675.6	318.0 @17:22:37 @ 154.0 m	909.0 @16:50:37 @ 122.0 m	154.2	DEG F
136	LOC SKIN OUTBD RH	826.2	319.4 @17:22:37 @ 154.0 m	1022.6 @15:50:37 @ 62.0 m	195.8	DEG F

TABULAR DATA SUMMARY REPORT

VEN. ID : 306W83BW
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
137	UBC GAS LH	1074.2	502.1 @17:22:37 @ 154.0 m	1490.3 @15:16:37 @ 28.0 m	329.2	DEG F
138	UBC GAS RH	1455.8	522.5 @17:22:37 @ 154.0 m	1978.9 @15:28:37 @ 40.0 m	427.6	DEG F
139	UBC SKIN BTM LH	648.6	294.3 @17:22:37 @ 154.0 m	914.5 @15:16:37 @ 28.0 m	181.0	DEG F
140	UBC SKIN BTM RH	831.8	306.5 @17:22:37 @ 154.0 m	1120.9 @15:16:37 @ 28.0 m	223.8	DEG F
141	EXH PIPE 1ST BEND LH	621.9	221.4 @17:22:37 @ 154.0 m	902.7 @15:16:37 @ 28.0 m	198.5	DEG F
142	EXH PIPE 1ST BEND RH	904.1	243.2 @17:22:37 @ 154.0 m	1281.3 @15:28:37 @ 40.0 m	308.7	DEG F
143	EXH PIPE 6"RR UBC LH	543.6	159.3 @17:22:37 @ 154.0 m	863.2 @15:16:37 @ 28.0 m	218.2	DEG F
144	EXH PIPE 6"RR UBC RH	745.4	177.1 @17:22:37 @ 154.0 m	1141.8 @15:16:37 @ 28.0 m	302.1	DEG F
145	EXH PIPE AT Y-JT	561.3	132.8 @17:22:37 @ 154.0 m	903.7 @15:38:37 @ 50.0 m	238.1	DEG F
146	EXH PIPE 6"FWD MUFF	559.7	133.6 @17:22:37 @ 154.0 m	971.9 @15:16:37 @ 28.0 m	272.7	DEG F
147	MUFFLER BTM CENTER	529.1	138.9 @17:22:37 @ 154.0 m	945.9 @15:16:37 @ 28.0 m	264.2	DEG F
148	EXH TOP OF KICKUP	516.5	150.9 @17:22:37 @ 154.0 m	937.6 @15:16:37 @ 28.0 m	273.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
149	EXH 12" FWD OUTLET	420.4	133.7 @17:22:37 @ 154.0 m	789.6 @15:16:37 @ 28.0 m	227.2	DEG F
150	STARTER GEAR	219.1	167.3 @14:48:37 @ 0.0 m	244.6 @16:10:37 @ 62.0 m	21.6	DEG F
151	ABS MODULE #1	137.7	105.1 @15:06:37 @ 18.0 m	173.6 @17:12:37 @ 144.0 m	28.2	DEG F
152	RR EXH. HANGER	159.4	116.4 @14:48:37 @ 0.0 m	181.3 @16:04:37 @ 76.0 m	17.1	DEG F
153	FRT U-JT AMB	184.4	119.6 @17:18:37 @ 150.0 m	247.1 @15:50:37 @ 62.0 m	38.3	DEG F
154	ENG MNT LH	217.1	146.6 @14:48:37 @ 0.0 m	250.6 @16:36:37 @ 108.0 m	28.2	DEG F
155	ENG MNT RH	192.9	147.4 @14:48:37 @ 0.0 m	229.9 @16:08:37 @ 80.0 m	24.0	DEG F
156	ENG MNT RR	193.8	131.3 @14:48:37 @ 0.0 m	233.4 @16:18:37 @ 90.0 m	32.2	DEG F
157	TRANS PAN GASKET LH	207.0	130.6 @14:48:37 @ 0.0 m	292.7 @16:04:37 @ 76.0 m	35.1	DEG F
158	TRANS PAN GASKET RH	217.7	134.9 @14:48:37 @ 0.0 m	266.6 @16:02:37 @ 74.0 m	36.1	DEG F
159	SPEED SENSOR	207.6	152.7 @14:48:37 @ 0.0 m	242.4 @16:08:37 @ 80.0 m	30.8	DEG F
160	STARTER SOENOID CAP	213.4	155.3 @14:48:37 @ 0.0 m	242.7 @16:08:37 @ 80.0 m	24.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W836W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
161	TRAN EXTEN HSG SEAL	224.0	176.5 @17:22:37 @ 154.0 m	249.1 @15:52:37 @ 64.0 m	23.9	DEG F
162	TRAN ELEC CONN LH RR	200.9	140.1 @14:48:37 @ 0.0 m	243.5 @16:08:37 @ 80.0 m	33.1	DEG F
163	TRAN BELLHSG LH	216.4	154.4 @14:48:37 @ 0.0 m	253.4 @16:06:37 @ 78.0 m	27.7	DEG F
164	TRAN BELLHSG RH	216.1	148.3 @14:48:37 @ 0.0 m	258.7 @16:02:37 @ 74.0 m	30.3	DEG F
165	TRAN EXT HSG GASKET	228.8	171.4 @14:48:37 @ 0.0 m	252.6 @16:02:37 @ 74.0 m	24.8	DEG F
166	TRAN EXT HSG BUSHING	227.3	180.6 @17:22:37 @ 154.0 m	250.3 @15:56:37 @ 68.0 m	23.0	DEG F
167	TRAN FILL TUBE SKIN	225.3	159.0 @14:48:37 @ 0.0 m	265.9 @16:02:37 @ 74.0 m	28.6	DEG F
168	TRAN FILL TUBE SEAL	221.2	148.9 @14:48:37 @ 0.0 m	273.2 @16:02:37 @ 74.0 m	34.3	DEG F
169	TRAN CASE @MAN LEV	220.6	155.4 @14:48:37 @ 0.0 m	256.1 @16:05:37 @ 78.0 m	27.4	DEG F
170	ABS SENS WIRE RR RH	195.5	137.0 @14:48:37 @ 0.0 m	249.6 @15:42:37 @ 54.0 m	32.4	DEG F
171	TRAN MLPS	218.2	160.3 @14:48:37 @ 0.0 m	248.8 @16:52:37 @ 124.0 m	25.6	DEG F
172	TRAN BULKHEAD CONN	177.9	121.2 @14:48:37 @ 0.0 m	203.8 @16:56:37 @ 128.0 m	25.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
173	ABS MODULE #2	138.1	105.0 @14:48:37 @ 0.0 m	174.5 @17:12:37 @ 144.0 m	28.6	DEG F
174	SHIFT CABLE @ EXHMAN	232.1	147.6 @14:48:37 @ 0.0 m	294.3 @16:08:37 @ 80.0 m	47.1	DEG F
175	SHIFT CABLE @ LOC	214.1	136.1 @14:48:37 @ 0.0 m	276.3 @15:56:37 @ 68.0 m	47.1	DEG F
176	SHIFT CABLE @ UBC	202.8	137.9 @14:48:37 @ 0.0 m	251.0 @16:08:37 @ 80.0 m	34.1	DEG F
177	SHIFT CABLE SLEEVE	223.2	135.6 @17:22:37 @ 154.0 m	291.5 @15:52:37 @ 64.0 m	43.8	DEG F
178	SHIFT CABL UNDER SLV	204.9	132.9 @17:22:37 @ 154.0 m	253.1 @15:54:37 @ 66.0 m	37.2	DEG F
179	SHIFT CABL ADJ @TRAN	197.3	137.4 @14:48:37 @ 0.0 m	245.9 @16:02:37 @ 74.0 m	36.4	DEG F
180	FUEL FILTER	143.1	119.8 @14:48:37 @ 0.0 m	156.8 @15:52:37 @ 64.0 m	11.3	DEG F
181	FUEL LINE AT FILTER	141.0	121.3 @14:48:37 @ 0.0 m	155.5 @15:54:37 @ 66.0 m	11.4	DEG F
182	FUEL RET LINE @ TANK	153.0	123.4 @14:48:37 @ 0.0 m	165.7 @15:56:37 @ 68.0 m	12.1	DEG F
183	FUEL SUP LINE @ TANK	152.8	125.8 @14:48:37 @ 0.0 m	166.7 @16:58:37 @ 130.0 m	11.3	DEG F
184	FUEL TANK SKIN FRT	151.2	131.6 @14:48:37 @ 0.0 m	166.5 @15:48:37 @ 60.0 m	8.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838W3M
 TEST DESC: malfunction
 TEST DATE: 22 FEB 00
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
185	FUEL TANK SKIN FRT	163.2	138.4 014:56:37 @ 8.0 m	212.4 015:48:37 @ 60.0 m	17.4	DEG F
186	FUEL TANK SKIN FRT	175.2	129.9 014:48:37 @ 0.0 m	211.6 015:50:37 @ 62.0 m	21.6	DEG F
187	FUEL PUMP FLANGE	166.6	134.0 014:48:37 @ 0.0 m	201.1 015:40:37 @ 52.0 m	17.6	DEG F
188	FUEL LINE AT SENDER	151.8	128.5 014:48:37 @ 0.0 m	166.3 016:54:37 @ 126.0 m	9.9	DEG F
189	FUEL LINE PLAS. CONN	173.9	126.6 014:48:37 @ 0.0 m	205.3 015:52:37 @ 64.0 m	21.4	DEG F
190	FUEL IN TANK	145.4	127.2 014:48:37 @ 0.0 m	152.9 016:30:37 @ 102.0 m	8.4	DEG F
191	PARK BRAKE CABLE & MUF	165.8	-45.3 015:54:37 @ 66.0 m	242.6 015:40:37 @ 52.0 m	62.9	DEG F
192	AIR SPRING UP CAP RH	182.0	125.0 014:48:37 @ 0.0 m	211.5 015:54:37 @ 66.0 m	25.3	DEG F
193	AIR SPRING SLV RH RR	182.5	125.9 014:48:37 @ 0.0 m	221.5 015:50:37 @ 62.0 m	25.6	DEG F
194	AIR SPRING SOLE. RH	179.3	124.3 014:48:37 @ 0.0 m	210.7 016:08:37 @ 80.0 m	26.2	DEG F
195	AIR SPRING PRES LINE	179.7	119.1 014:48:37 @ 0.0 m	223.8 016:00:37 @ 72.0 m	28.2	DEG F
196	AIR SUSP HT SENS SKT	152.9	117.1 014:48:37 @ 0.0 m	184.6 015:54:37 @ 66.0 m	16.7	DEG F

TABLEAR DATA SUMMARY REPORT

VME ID : 306W838W
TEST ID : W838W3M
TEST DESC: malfunction
TEST DATE: 22-FEB-00
DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
197	AIR SUSP HT SENS ELE	169.3	119.1 @14:46:37 @ 0.0 m	201.2 @16:00:37 @ 72.0 m	22.4	DEG F
198	ABS MODULE #3	135.7	101.5 @15:06:37 @ 18.0 m	175.0 @17:12:37 @ 144.0 m	29.8	DEG F
199	ABS MODULE #4	135.6	101.8 @15:06:37 @ 18.0 m	174.9 @17:12:37 @ 144.0 m	29.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W83SW
 TEST ID : W938WST
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W938WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
65	WIRING @ ABS PUMP	193.0	153.9 @11:30:50 0 0.0 m	221.7 @13:04:20 0 93.5 m	20.7	DEG F
66	WIRING@LH VLV CVR RR	184.9	148.1 @11:30:50 0 0.0 m	208.5 @13:12:20 0 101.5 m	19.5	DEG F
67	STARTER CABLE @MAN	196.6	136.6 @11:30:50 0 0.0 m	221.3 @13:04:20 0 93.5 m	24.4	DEG F
68	STARTER CABLE @HEAD	198.8	151.3 @11:30:50 0 0.0 m	215.5 @13:20:20 0 109.5 m	17.5	DEG F
69	STARTER CABLE @START	235.0	183.3 @11:30:50 0 0.0 m	270.7 @12:32:20 0 61.5 m	24.1	DEG F
70	STARTER MAGNET	228.9	169.8 @11:30:50 0 0.0 m	248.1 @13:04:20 0 93.5 m	22.2	DEG F
72	BRK MASTER CYL	184.2	126.4 @11:30:50 0 0.0 m	207.1 @13:14:20 0 103.5 m	23.5	DEG F
73	BRK VAC BOOSTER	193.4	141.9 @11:30:50 0 0.0 m	213.4 @13:10:20 0 99.5 m	20.3	DEG F
74	POWER DIST BOX AMB I	183.2	110.6 @11:46:50 0 16.0 m	217.9 @13:02:20 0 91.5 m	30.6	DEG F
75	AIR CLEANER CASE	180.3	129.5 @11:30:50 0 0.0 m	213.4 @13:04:20 0 93.5 m	25.6	DEG F
76	AIR CLEANER INLET	161.5	100.6 @11:46:50 0 16.0 m	202.2 @13:10:20 0 99.5 m	35.3	DEG F
77	A/C-RESONATOR HOSE	178.4	113.5 @11:46:50 0 16.0 m	214.0 @13:04:20 0 93.5 m	31.1	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : W838wst
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
78	AIR INTAKE RESONATOR	193.6	156.3 @11:30:50 @ 0.0 m	222.4 @12:52:20 @ 81.5 m	19.6	DEG F
79	AIR INTAKE RESONATOR	181.5	140.6 @11:30:50 @ 0.0 m	214.9 @13:04:20 @ 93.5 m	25.6	DEG F
80	CARBON CANNISTER	145.8	100.0 @11:42:50 @ 12.0 m	164.4 @13:34:20 @ 123.5 m	21.1	DEG F
81	HEATER/AC BLOWER MTR	170.4	134.2 @11:30:50 @ 0.0 m	193.6 @13:16:20 @ 105.5 m	17.1	DEG F
82	SUSP BSHG FRT UP LH	201.0	154.0 @11:30:50 @ 0.0 m	223.3 @13:10:20 @ 99.5 m	19.8	DEG F
83	SUSP BSHG FRT UP RH	192.1	141.1 @11:30:50 @ 0.0 m	208.5 @13:10:20 @ 99.5 m	19.6	DEG F
84	VALVE COVER LH	237.5	196.6 @11:30:50 @ 0.0 m	264.2 @12:36:20 @ 65.5 m	18.2	DEG F
85	VALVE COVER RH	234.7	195.6 @11:30:50 @ 0.0 m	251.9 @12:02:20 @ 31.5 m	16.3	DEG F
86	STEERING FLEX COUPL.	201.9	163.7 @11:30:50 @ 0.0 m	229.4 @13:10:20 @ 99.5 m	18.7	DEG F
87	POWER STEERING PUMP	221.3	182.8 @11:30:50 @ 0.0 m	244.7 @13:10:20 @ 99.5 m	16.1	DEG F
88	POWER STEERING HOSE	211.0	169.4 @11:30:50 @ 0.0 m	238.6 @13:10:20 @ 99.5 m	19.4	DEG F
89	AIR SUSP CMPRSS AIR	166.1	110.5 @11:30:50 @ 0.0 m	197.2 @13:10:20 @ 99.5 m	26.4	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W
 TEST ID : w838wst
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
91	SPEED CNTRL SERVO	175.8	110.9 @11:30:50 0 0.0 m	206.6 @13:10:20 0 99.5 m	30.8	DEG F
92	A/C DISCHARGE AIR	83.9	55.1 @11:30:50 0 0.0 m	137.2 @14:00:20 0 149.5 m	26.8	DEG F
93	TOEBOARD TOP LH	230.8	153.7 @11:30:50 0 0.0 m	269.9 @12:38:20 0 67.5 m	36.4	DEG F
94	TOEBOARD TOP RH	194.2	147.3 @11:30:50 0 0.0 m	216.9 @12:26:20 0 55.5 m	20.1	DEG F
95	TOEBOARD BTM LH	222.7	150.0 @11:30:50 0 0.0 m	263.6 @12:38:20 0 67.5 m	34.7	DEG F
96	TOEBOARD BTM RH	198.6	140.6 @11:30:50 0 0.0 m	233.4 @12:34:20 0 63.5 m	26.7	DEG F
97	FLR OVER CAT LH	218.4	150.8 @14:00:20 0 149.5 m	277.6 @12:36:20 0 65.5 m	38.3	DEG F
98	FLR OVER CAT RH	201.9	151.0 @11:30:50 0 0.0 m	237.8 @12:34:20 0 63.5 m	24.8	DEG F
99	FLR OVER CAT OUT LH	225.8	143.0 @14:00:20 0 149.5 m	297.4 @13:34:20 0 63.5 m	42.2	DEG F
100	FLR OVER CAT OUT RH	205.0	158.1 @14:00:20 0 149.5 m	237.4 @12:32:20 0 61.5 m	23.7	DEG F
101	FLR 4" RR UBC LH	206.5	136.2 @14:00:20 0 149.5 m	239.5 @12:46:20 0 75.5 m	34.1	DEG F
102	FLR 4" RR UBC RH	199.7	154.3 @14:00:20 0 149.5 m	234.7 @12:32:20 0 61.5 m	23.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W838W
 TEST ID : W838wst
 TEST DESC: trailer tow(CI)
 TEST DATE: 22-FEB-00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std. Dev.	Units
104	FLR OVER MUFF INLET	184.4	131.3 @14:00:20 @ 149.5 m	243.1 @12:32:20 @ 61.5 m	34.4	DEG F
106	FLR OVER MUFF FRT	231.0	138.5 @14:00:20 @ 149.5 m	332.9 @12:32:20 @ 61.5 m	58.7	DEG F
108	FLR OVER MUFF RR	203.6	144.0 @14:00:20 @ 149.5 m	266.0 @12:34:20 @ 63.5 m	38.6	DEG F
109	FLR IN KICKUP	169.1	121.0 @11:30:50 @ 0.0 m	189.1 @12:36:20 @ 65.5 m	17.5	DEG F
110	FLR IN TRUNK	147.9	121.3 @11:30:50 @ 0.0 m	176.3 @12:34:20 @ 63.5 m	13.9	DEG F
118	S.BELT TAB RR INB LH	138.0	112.4 @11:30:50 @ 0.0 m	151.2 @12:46:20 @ 75.5 m	11.7	DEG F
119	S.TRK FRT INB RH FRT	161.9	126.4 @11:30:50 @ 0.0 m	186.0 @12:36:20 @ 65.5 m	16.8	DEG F
120	S.TRK FRT INB RH RR	140.8	111.7 @11:30:50 @ 0.0 m	158.2 @12:28:20 @ 57.5 m	12.1	DEG F
121	S.TRK FRT INB LH FRT	156.6	122.7 @11:30:50 @ 0.0 m	178.7 @12:36:20 @ 65.5 m	16.1	DEG F
122	S.TRK FRT INB LH RR	127.9	109.4 @11:30:50 @ 0.0 m	136.6 @13:32:20 @ 121.5 m	7.1	DEG F
123	HEGO TIP LH	1119.3	233.4 @14:00:20 @ 149.5 m	1551.5 @11:58:20 @ 27.5 m	421.2	DEG F
124	HEGO TIP RH	1094.9	220.5 @14:00:20 @ 149.5 m	1535.9 @11:58:20 @ 27.5 m	428.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB38W
 TEST ID : W838WST
 TEST DESC: trailer tow(CI)
 TEST DATE: 22 FEB 00
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
125	HEGO GROMMET LH	266.8	175.8 @14:00:20 @ 149.5 m	392.0 @12:36:20 @ 65.5 m	55.7	DEG F
126	HEGO GROMMET RH	264.6	163.8 @11:30:50 @ 0.0 m	396.7 @12:34:20 @ 63.5 m	57.5	DEG F
127	HEGO HEX LH	593.4	225.4 @14:00:20 @ 149.5 m	826.5 @11:58:20 @ 27.5 m	173.7	DEG F
128	HEGO HEX RH	601.4	216.0 @14:00:20 @ 149.5 m	901.3 @11:58:20 @ 27.5 m	212.2	DEG F
129	HEGO CONNECTOR LH	189.2	145.8 @11:30:50 @ 0.0 m	212.3 @13:10:20 @ 99.5 m	20.5	DEG F
130	HEGO CONNECTOR RH	181.2	145.3 @11:30:50 @ 0.0 m	195.1 @13:16:20 @ 105.5 m	14.2	DEG F
131	EXHAUST MANIFOLD LH	692.8	222.7 @14:00:20 @ 149.5 m	1072.6 @11:58:20 @ 27.5 m	271.8	DEG F
132	EXHAUST MANIFOLD RH	680.3	214.6 @14:00:20 @ 149.5 m	1106.6 @11:58:20 @ 27.5 m	306.3	DEG F
133	LOC GAS LH	1076.1	388.8 @14:00:20 @ 149.5 m	1536.1 @11:58:20 @ 27.5 m	354.4	DEG F
134	LOC GAS RH	1013.5	349.8 @14:00:20 @ 149.5 m	1486.2 @11:58:20 @ 27.5 m	361.2	DEG F
135	LOC SKIN OUTBD LH	630.5	263.1 @14:00:20 @ 149.5 m	857.9 @11:58:20 @ 27.5 m	162.2	DEG F
136	LOC SKIN OUTBD RH	578.3	251.6 @14:00:20 @ 149.5 m	776.2 @12:32:20 @ 61.5 m	142.8	DEG F