

**EA02-025**

**FORD 10/27/03**

**APPENDIX N**

**BOOK 25 OF 61**

**PART 1 OF 5**

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
137	UBC GAS LH	975.8	376.9 @14:00:20 @ 149.5 m	1446.7 @11:58:20 @ 27.5 m	351.4	DEG F
138	UBC GAS RH	970.3	368.9 @14:00:20 @ 149.5 m	1435.3 @11:58:20 @ 27.5 m	346.8	DEG F
139	UBC SKIN BTM LH	607.1	235.9 @14:00:20 @ 149.5 m	882.3 @11:58:20 @ 27.5 m	191.9	DEG F
140	UBC SKIN BTM RH	580.6	231.0 @14:00:20 @ 149.5 m	815.8 @11:58:20 @ 27.5 m	170.4	DEG F
141	EXH PIPE 1ST BEND LH	584.6	188.8 @14:00:20 @ 149.5 m	877.2 @11:58:20 @ 27.5 m	202.5	DEG F
142	EXH PIPE 1ST BEND RH	630.8	197.3 @14:00:20 @ 149.5 m	953.7 @11:58:20 @ 27.5 m	227.7	DEG F
143	EXH PIPE 6"RR UBC LH	521.9	146.5 @14:00:20 @ 149.5 m	831.3 @11:58:20 @ 27.5 m	212.8	DEG F
144	EXH PIPE 6"RR UBC RH	549.3	153.0 @14:00:20 @ 149.5 m	864.8 @11:58:20 @ 27.5 m	223.6	DEG F
145	EXH PIPE AT Y-JT	467.4	126.2 @14:00:20 @ 149.5 m	749.4 @11:58:20 @ 27.5 m	191.2	DEG F
146	EXH PIPE 6"PWD MUFF	462.6	124.6 @14:00:20 @ 149.5 m	800.5 @11:58:20 @ 27.5 m	219.1	DEG F
147	MUFFLER BTM CENTER	429.4	129.0 @14:00:20 @ 149.5 m	758.7 @11:58:20 @ 27.5 m	204.7	DEG F
148	EXH TOP OF KICKUP	432.1	142.8 @14:00:20 @ 149.5 m	770.8 @11:58:20 @ 27.5 m	216.1	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 306W838W :  
 TEST ID : w838wt  
 TEST DESC: trailer tow(CI)  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
149	EXH 12" FWD OUTFLET	354.5	125.4 @14:00:20 @ 149.5 m	647.6 @11:58:20 @ 27.5 m	177.5	DEG F
150	STARTER GEAR	229.7	161.0 @11:30:50 @ 0.0 m	250.6 @12:42:20 @ 71.5 m	25.2	DEG F
151	ABS MODULE #1	136.0	105.4 @11:50:20 @ 19.5 m	170.6 @13:56:20 @ 145.5 m	26.8	DEG F
152	RR EXH. HANGER	147.7	117.7 @11:30:50 @ 0.0 m	168.5 @12:40:20 @ 69.5 m	14.0	DEG F
153	FRT U-JT AMB	180.5	114.0 @14:00:20 @ 149.5 m	247.0 @12:34:20 @ 63.5 m	35.7	DEG F
154	ENG MNT LH	221.3	149.0 @11:30:50 @ 0.0 m	250.3 @12:56:20 @ 85.5 m	29.1	DEG F
155	ENG MNT RH	204.2	161.1 @11:30:50 @ 0.0 m	235.4 @13:02:20 @ 91.5 m	24.3	DEG F
156	ENG MNT RR	188.1	129.4 @11:30:50 @ 0.0 m	220.4 @12:52:20 @ 81.5 m	28.7	DEG F
157	TRANS PAN GASKET LH	209.1	127.7 @11:30:50 @ 0.0 m	253.9 @12:44:20 @ 73.5 m	36.4	DEG F
158	TRANS PAN GASKET RH	215.1	130.9 @11:30:50 @ 0.0 m	259.3 @12:42:20 @ 71.5 m	35.9	DEG F
159	SPEED SENSOR	204.0	149.4 @14:00:20 @ 149.5 m	234.8 @12:50:20 @ 79.5 m	29.5	DEG F
160	STARTER SOLENOID CAP	231.1	181.5 @11:30:50 @ 0.0 m	258.4 @12:36:20 @ 65.5 m	24.4	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
161	TRANS EXTEN HSG SEAL	219.8	173.1 @14:00:20 @ 149.5 m	246.5 @12:34:20 @ 63.5 m	22.8	DEG F
162	TRAN ELEC CONN LH RR	201.1	143.8 @11:30:50 @ 0.0 m	241.8 @12:54:20 @ 83.5 m	33.8	DEG F
163	TRANS BELLHSG LH	219.8	153.7 @11:30:50 @ 0.0 m	253.8 @12:44:20 @ 73.5 m	28.8	DEG F
164	TRANS BELLHSG RH	220.1	148.4 @11:30:50 @ 0.0 m	256.9 @12:42:20 @ 71.5 m	30.2	DEG F
165	TRAN EXT HSG GASKET	222.8	164.7 @11:30:50 @ 0.0 m	249.5 @12:34:20 @ 63.5 m	24.5	DEG F
166	TRAN EXT HSG BUSHING	223.1	177.9 @14:00:20 @ 149.5 m	248.3 @12:40:20 @ 69.5 m	22.2	DEG F
167	TRAN FILL TUBE SKIN	225.6	155.2 @11:30:50 @ 0.0 m	262.9 @12:42:20 @ 71.5 m	28.6	DEG F
168	TRAN FILL TUBE SEAL	218.8	151.7 @11:30:50 @ 0.0 m	262.1 @12:38:20 @ 67.5 m	31.4	DEG F
169	TRAN CASE @MAN LEV	222.6	152.7 @11:30:50 @ 0.0 m	256.8 @12:44:20 @ 73.5 m	28.8	DEG F
170	ABS SENS WIRE RR RH	174.0	138.4 @11:30:50 @ 0.0 m	212.7 @12:26:20 @ 55.5 m	23.8	DEG F
171	TRAN MLPS	221.9	165.4 @14:00:20 @ 149.5 m	248.1 @13:16:20 @ 105.5 m	28.8	DEG F
172	TRAN BULKHEAD CONN	180.4	128.6 @11:30:50 @ 0.0 m	208.9 @13:12:20 @ 101.5 m	24.0	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
173	ABS MODULE #2	136.8	105.0 @11:50:20 @ 19.5 m	172.0 @13:54:20 @ 143.5 m	27.5	DEG F
174	SHIFT CABLE @ EXHMAN	230.9	149.8 @13:58:20 @ 147.5 m	287.9 @12:52:20 @ 81.5 m	49.2	DEG F
175	SHIFT CABLE @ LOC	212.7	141.5 @14:00:20 @ 149.5 m	273.9 @12:38:20 @ 67.5 m	48.0	DEG F
176	SHIFT CABLE @ UBC	203.4	141.2 @11:30:50 @ 0.0 m	246.8 @12:54:20 @ 83.5 m	35.0	DEG F
177	SHIFT CABLE SLEEVE	215.0	130.7 @14:00:20 @ 149.5 m	280.3 @12:34:20 @ 63.5 m	41.0	DEG F
178	SHIFT CABL UNDER SLV	197.2	128.2 @14:00:20 @ 149.5 m	238.0 @12:36:20 @ 65.5 m	33.1	DEG F
179	SHIFT CABL ADJ @TRAN	192.8	135.8 @14:00:20 @ 149.5 m	232.7 @12:40:20 @ 69.5 m	33.7	DEG F
180	FUEL FILTER	131.5	107.2 @11:30:50 @ 0.0 m	141.5 @13:10:20 @ 99.5 m	10.5	DEG F
181	FUEL LINE AT FILTER	129.3	104.5 @11:30:50 @ 0.0 m	140.5 @13:10:20 @ 99.5 m	10.9	DEG F
182	FUEL RET LINE @ TANK	140.3	112.0 @11:30:50 @ 0.0 m	149.9 @13:12:20 @ 101.5 m	11.3	DEG F
183	FUEL SUP LINE @ TANK	136.5	103.8 @11:30:50 @ 0.0 m	147.9 @13:40:20 @ 129.5 m	12.6	DEG F
184	FUEL TANK SKIN FKT	134.2	105.8 @11:30:50 @ 0.0 m	148.9 @12:28:20 @ 57.5 m	10.1	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
185	FUEL TANK SKIN FRT	134.7	105.7 @11:30:50 @ 0.0 m	144.6 @12:24:20 @ 53.5 m	10.2	DEG F
186	FUEL TANK SKIN FRT	144.6	100.8 @11:30:50 @ 0.0 m	167.1 @12:32:20 @ 61.5 m	17.1	DEG F
187	FUEL PUMP FLANGE	133.7	105.1 @11:30:50 @ 0.0 m	141.4 @13:20:20 @ 109.5 m	10.5	DEG F
188	FUEL LINE AT SENDER	134.9	103.9 @11:30:50 @ 0.0 m	144.7 @13:34:20 @ 123.5 m	11.6	DEG F
189	FUEL LINE PLAS. CONN	156.2	124.7 @11:30:50 @ 0.0 m	176.7 @12:34:20 @ 63.5 m	14.6	DEG F
190	FUEL IN TANK	129.6	96.4 @11:30:50 @ 0.0 m	140.7 @13:30:20 @ 119.5 m	12.9	DEG F
191	PARK BRK CABLE @ MUP	158.9	39.8 @12:42:20 @ 71.5 m	206.3 @12:26:20 @ 55.5 m	35.6	DEG F
192	AIR SPRING UP CAP RH	162.5	115.1 @11:30:50 @ 0.0 m	183.1 @12:38:20 @ 67.5 m	19.7	DEG F
193	AIR SPRING SLV RH RR	161.3	124.7 @11:30:50 @ 0.0 m	185.4 @12:32:20 @ 61.5 m	17.1	DEG F
194	AIR SPRING SOLE. RH	160.9	115.2 @11:30:50 @ 0.0 m	183.0 @12:50:20 @ 79.5 m	20.4	DEG F
195	AIR SPRING PRES LINE	162.1	117.7 @11:30:50 @ 0.0 m	193.7 @12:42:20 @ 71.5 m	21.1	DEG F
196	AIR SUSP RT SENS SKT	144.9	118.0 @11:30:50 @ 0.0 m	163.5 @12:36:20 @ 65.5 m	12.5	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306W938W  
 TEST ID : W838WST  
 TEST DESC: trailer tow(CI)  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
197	AIR SUSP HT SENS ELE	156.3	119.8 @11:30:50 @ 0.0 m	180.1 @12:38:20 @ 67.5 m	16.9	DEG F
198	ABS MODULE #3	134.4	101.6 @11:50:20 @ 19.5 m	172.4 @13:54:20 @ 143.5 m	28.6	DEG F
199	ABS MODULE #4	134.2	101.9 @11:50:20 @ 19.5 m	172.5 @13:56:20 @ 145.5 m	28.4	DEG F

TABULAR DATA SUMMARY REPORT

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

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
11	AMBIENT	125.1	99.6 @15:06:37 @ 18.0 m	152.1 @17:06:37 @ 138.0 m	21.5	DEG F
12	TOP WATER	219.7	201.7 @16:50:37 @ 122.0 m	247.7 @16:00:37 @ 72.0 m	12.2	DEG F
13	ENGINE OIL	222.1	175.8 @17:22:37 @ 154.0 m	251.4 @16:08:37 @ 80.0 m	21.8	DEG F
14	TRANSMISSION FLUID	236.5	192.1 @14:48:37 @ 0.0 m	269.6 @15:40:37 @ 52.0 m	22.4	DEG F
15	POWER STEERING FLUID	220.6	177.6 @14:48:37 @ 0.0 m	242.3 @16:10:37 @ 82.0 m	14.3	DEG F
16	UHOOD AMB X LF/RR	185.8	138.5 @14:48:37 @ 0.0 m	220.2 @16:00:37 @ 72.0 m	21.3	DEG F
18	ACT CONNECTOR	177.3	114.2 @14:50:37 @ 2.0 m	211.7 @16:08:37 @ 80.0 m	28.8	DEG F
19	ECT CONNECTOR	191.6	152.9 @14:48:37 @ 0.0 m	224.8 @16:06:37 @ 78.0 m	17.4	DEG F
20	TP SENSOR	179.4	142.3 @14:48:37 @ 0.0 m	201.3 @16:16:37 @ 88.0 m	17.8	DEG F
21	CRANK POSITION SEN.	192.7	150.6 @14:48:37 @ 0.0 m	226.1 @16:06:37 @ 78.0 m	17.2	DEG F
22	CAM POSITION SEN.	191.5	148.7 @14:48:37 @ 0.0 m	224.9 @16:06:37 @ 78.0 m	18.5	DEG F
23	EDIS MODULE (1)	173.6	119.7 @15:06:37 @ 18.0 m	207.7 @16:24:37 @ 96.0 m	30.7	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 306N838W  
 TEST ID : W838W3M  
 TEST DESC: malfunction  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
24	BDIS MODULE (2)	170.9	117.3 @15:06:37 @ 18.0 m	203.7 @16:26:37 @ 98.0 m	30.6	DEG F
25	LH IGNITION COIL AMB	185.5	153.5 @14:48:37 @ 0.0 m	220.3 @16:00:37 @ 72.0 m	17.1	DEG F
26	RH IGNITION COIL AMB	183.6	150.6 @14:48:37 @ 0.0 m	218.6 @16:06:37 @ 78.0 m	17.1	DEG F
27	OIL PRESSURE SENDER	191.9	142.6 @14:48:37 @ 0.0 m	232.6 @16:08:37 @ 80.0 m	23.6	DEG F
28	H2O TEMP SENDER	211.3	187.9 @14:48:37 @ 0.0 m	241.4 @16:00:37 @ 72.0 m	12.6	DEG F
29	MAF SENSOR	179.9	109.0 @14:50:37 @ 2.0 m	215.9 @16:08:37 @ 80.0 m	29.8	DEG F
30	EBC POWER RELAY	201.4	138.7 @15:04:37 @ 16.0 m	237.8 @16:42:37 @ 114.0 m	32.8	DEG F
31	FUEL PUMP RELAY	209.8	155.5 @15:04:37 @ 16.0 m	247.5 @16:44:37 @ 116.0 m	30.6	DEG F
32	ISC MOTOR	204.5	161.6 @14:48:37 @ 0.0 m	231.6 @16:08:37 @ 80.0 m	16.2	DEG F
33	EVR SOLENOID	185.2	143.1 @14:48:37 @ 0.0 m	209.5 @16:08:37 @ 80.0 m	16.2	DEG F
34	EVR REGULATOR	181.1	137.7 @14:48:37 @ 0.0 m	204.6 @16:16:37 @ 88.0 m	18.9	DEG F
35	VAC HOSE FORE EVR	192.8	164.0 @14:48:37 @ 0.0 m	211.5 @16:08:37 @ 80.0 m	12.3	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
36	VAC ROSE AFT OF EVR	192.0	165.3 @14:48:37 @ 0.0 m	208.9 @16:14:37 @ 86.0 m	11.7	DEG F
38	SPEED CONTROL SERVO	176.6	122.4 @15:04:37 @ 16.0 m	202.1 @16:34:37 @ 106.0 m	27.5	DEG F
39	THROTTLE BODY @TPS	172.9	126.1 @14:48:37 @ 0.0 m	203.4 @16:12:37 @ 84.0 m	25.9	DEG F
40	ACCELERATOR CABLE	186.4	148.9 @14:48:37 @ 0.0 m	223.1 @16:06:37 @ 78.0 m	17.5	DEG F
41	SPEED CONTROL CABLE	191.9	153.5 @14:48:37 @ 0.0 m	224.6 @16:06:37 @ 78.0 m	16.3	DEG F
42	DAYLIGHT RUN MODULE	143.8	98.2 @15:06:37 @ 18.0 m	183.0 @16:58:37 @ 130.0 m	37.0	DEG F
43	FURGE CONTROL SOLE.	177.3	117.2 @14:48:37 @ 0.0 m	204.2 @16:08:37 @ 80.0 m	23.6	DEG F
44	ALTERNATOR INLET AIR	183.9	141.0 @14:48:37 @ 0.0 m	210.2 @16:08:37 @ 80.0 m	17.0	DEG F
48	WIRING @ MLPS	203.9	142.3 @14:48:37 @ 0.0 m	249.2 @16:06:37 @ 78.0 m	35.0	DEG F
49	WIRING @ VSS	193.6	133.9 @17:22:37 @ 154.0 m	242.9 @15:56:37 @ 68.0 m	36.7	DEG F
50	WIRING@NEOTRL SWITCH	203.2	148.7 @14:48:37 @ 0.0 m	246.8 @16:08:37 @ 80.0 m	32.4	DEG F
51	A/C EVAP CASE BTM	187.2	133.4 @14:48:37 @ 0.0 m	246.8 @15:52:37 @ 64.0 m	25.2	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB38W  
 TEST ID : WB38W3M  
 TEST DESC: malfunction  
 TEST DATE: 22 FEB 00  
 DATAFILE : WB38W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
52	A/C EVAP CASE BTM	125.2	92.0 @15:06:37 @ 18.0 m	168.3 @16:54:37 @ 126.0 m	27.0	DEG F
53	A/C EVAP CASE BTM	143.3	90.4 @14:48:37 @ 0.0 m	211.9 @16:52:37 @ 124.0 m	36.3	DEG F
54	A/C COMPRESS MANIFOLD	218.1	186.3 @17:22:37 @ 154.0 m	245.4 @15:28:37 @ 40.0 m	18.3	DEG F
55	A/C COMPRESS DISC TUBE	221.2	173.8 @17:22:37 @ 154.0 m	257.2 @15:28:37 @ 40.0 m	28.3	DEG F
56	FUEL PRESSURE REG	164.6	137.6 @14:48:37 @ 0.0 m	193.2 @17:22:37 @ 154.0 m	14.3	DEG F
57	FUEL RAIL SUPPLY	159.7	129.2 @14:48:37 @ 0.0 m	191.3 @17:14:37 @ 146.0 m	17.5	DEG F
58	FUEL RAIL RETURN	160.1	130.0 @14:48:37 @ 0.0 m	191.5 @17:14:37 @ 146.0 m	17.2	DEG F
60	WIRING NR RH COIL	184.0	146.0 @14:48:37 @ 0.0 m	218.8 @16:06:37 @ 78.0 m	17.5	DEG F
61	ACT WIRING@CNTRL ARM	191.0	172.5 @15:10:37 @ 22.0 m	231.3 @16:06:37 @ 78.0 m	15.2	DEG F
62	BLOWER RESIST HARNES	188.2	148.0 @14:48:37 @ 0.0 m	218.2 @16:06:37 @ 78.0 m	15.8	DEG F
63	MAFS WIRING NR PFE	180.2	139.2 @14:48:37 @ 0.0 m	206.8 @16:08:37 @ 80.0 m	18.5	DEG F
64	WIRING NR THERM HSG	189.5	148.5 @14:48:37 @ 0.0 m	223.0 @16:06:37 @ 78.0 m	18.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WS38W  
 TEST ID : w838w3M  
 TEST DESC: malfunction  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
65	WIRING @ ABS PUMP	188.8	147.3 @14:48:37 @ 0.0 m	223.0 @16:00:37 @ 72.0 m	20.0	DEG F
66	WIRING@LH VLV CVR RR	185.4	144.7 @14:48:37 @ 0.0 m	206.3 @16:12:37 @ 84.0 m	19.4	DEG F
67	STARTER CABLE @MAN	186.7	129.4 @14:48:37 @ 0.0 m	216.2 @16:08:37 @ 80.0 m	24.2	DEG F
68	STARTER CABLE @HEAD	193.9	140.7 @14:48:37 @ 0.0 m	215.7 @16:18:37 @ 90.0 m	19.3	DEG F
69	STARTER CABLE @START	218.8	160.1 @14:48:37 @ 0.0 m	241.1 @15:58:37 @ 70.0 m	20.7	DEG F
70	STARTER MAGNET	215.3	164.6 @14:48:37 @ 0.0 m	239.6 @16:14:37 @ 86.0 m	20.7	DEG F
72	BRK MASTER CYL	184.8	142.4 @14:48:37 @ 0.0 m	205.4 @16:56:37 @ 128.0 m	20.3	DEG F
73	BRK VAC BOOSTER	194.1	144.8 @14:48:37 @ 0.0 m	214.5 @16:52:37 @ 124.0 m	18.8	DEG F
74	POWER DIST BOX AMB I	178.0	110.4 @14:52:37 @ 4.0 m	217.9 @16:06:37 @ 78.0 m	28.6	DEG F
75	AIR CLEANER CASE	177.1	126.7 @14:48:37 @ 0.0 m	213.2 @16:08:37 @ 80.0 m	24.6	DEG F
76	AIR CLEANER INLET	159.4	100.4 @14:52:37 @ 4.0 m	199.1 @16:06:37 @ 78.0 m	34.4	DEG F
77	A/C-RESONATOR HOSE	175.4	113.0 @14:50:37 @ 2.0 m	213.1 @16:08:37 @ 80.0 m	29.8	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306N838W  
 TEST ID : W838W3M  
 TEST DESC: malfunction  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
78	AIR INTAKE RESONATOR	187.7	145.5 @14:48:37 @ 0.0 m	222.7 @16:06:37 @ 78.0 m	18.6	DEG F
79	AIR INTAKE RESONATOR	178.7	132.5 @14:48:37 @ 0.0 m	212.7 @16:08:37 @ 80.0 m	24.0	DEG F
80	CARBON CANNISTER	146.3	99.6 @15:06:37 @ 18.0 m	165.5 @16:54:37 @ 126.0 m	21.7	DEG F
81	HEATER/AC BLOWER MTR	171.5	135.5 @14:48:37 @ 0.0 m	193.5 @16:16:37 @ 88.0 m	17.7	DEG F
82	SUSP BSHG FRT UP LH	198.4	147.4 @14:48:37 @ 0.0 m	220.5 @15:58:37 @ 70.0 m	19.3	DEG F
83	SUSP BSHG FRT UP RH	181.9	128.5 @14:48:37 @ 0.0 m	201.6 @16:52:37 @ 124.0 m	19.9	DEG F
84	VALVE COVER LH	232.1	181.1 @14:48:37 @ 0.0 m	262.6 @15:54:37 @ 66.0 m	19.8	DEG F
85	VALVE COVER RH	224.8	180.1 @14:48:37 @ 0.0 m	242.7 @15:18:37 @ 30.0 m	15.3	DEG F
86	STEERING FLEX COUPL.	196.9	158.2 @14:48:37 @ 0.0 m	224.9 @16:08:37 @ 80.0 m	17.4	DEG F
87	POWER STEERING PUMP	214.2	172.0 @14:48:37 @ 0.0 m	239.3 @16:08:37 @ 80.0 m	16.0	DEG F
88	POWER STEERING HOSE	205.3	160.6 @14:48:37 @ 0.0 m	236.3 @16:06:37 @ 78.0 m	18.7	DEG F
89	AIR SUSP CMRSS AIR	165.9	118.3 @15:04:37 @ 16.0 m	191.7 @16:08:37 @ 80.0 m	22.5	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 306WB3BW  
 TEST ID : W838W3M  
 TEST DESC: malfunction  
 TEST DATE: 22 FEB 00  
 DATAFILE : W838W3M

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
91	SPEED CNTRL SERVO	175.9	110.8 @15:04:37 @ 16.0 m	200.8 @16:58:37 @ 130.0 m	27.6	DEG F
92	A/C DISCHARGE AIR	92.5	55.6 @15:10:37 @ 22.0 m	147.3 @17:22:37 @ 154.0 m	35.6	DEG F
93	TOEBD TOP LH	238.1	149.5 @14:48:37 @ 0.0 m	276.9 @15:56:37 @ 68.0 m	36.1	DEG F
94	TOEBD TOP RH	203.8	138.6 @14:48:37 @ 0.0 m	239.7 @16:54:37 @ 126.0 m	26.3	DEG F
95	TOEBOARD BTM LH	232.1	146.0 @14:48:37 @ 0.0 m	272.8 @16:52:37 @ 124.0 m	35.9	DEG F
96	TOEBOARD BTM RH	222.1	140.9 @14:48:37 @ 0.0 m	270.8 @15:54:37 @ 66.0 m	35.1	DEG F
97	FLR OVER CAT LH	223.8	149.4 @14:48:37 @ 0.0 m	278.6 @15:54:37 @ 66.0 m	38.1	DEG F
98	FLR OVER CAT RH	237.1	148.9 @14:48:37 @ 0.0 m	307.8 @15:52:37 @ 64.0 m	42.0	DEG F
99	FLR OVER CAT OUT LH	232.2	150.4 @17:22:37 @ 154.0 m	303.5 @15:52:37 @ 64.0 m	43.3	DEG F
100	FLR OVER CAT OUT RH	241.1	166.7 @17:22:37 @ 154.0 m	302.2 @15:50:37 @ 62.0 m	36.6	DEG F
101	FLR 4" RR UBC LH	207.9	142.2 @17:22:37 @ 154.0 m	250.3 @15:50:37 @ 62.0 m	32.8	DEG F
102	FLR 4" RR UBC RH	221.1	160.6 @14:48:37 @ 0.0 m	250.7 @15:50:37 @ 62.0 m	26.7	DEG F

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

TEST VEHICLE DESCRIPTION

CARLINE: 1992 $\frac{1}{2}$  EX53

MODEL: 4 - Door Sedan

VEHICLE NUMBER: A2-213 (311W455)

POWERTRAIN: 4.6L, AODE, 2.73:1

ENGINE NO.: X2AE-4.6MG-B-25720

ENGINE REC STRATEGY: CABAO-04

CATALYST NO.: F1VC-5E212-GA (RH)  
F1VC-5E214-GA (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-AE BASE  
F2AH-AA CLASS III TRAILER TOW

W. C. Babble  
ISSUED BY: W. C. BABBLE

J. V. Kranig  
APPROVED BY: J. V. KRANIG

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

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

TEST INDEX

1. TEST CONDITIONS: W455W3

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

- 05-05-91

c) SITE

- WINDTUNNEL #3

d) AMBIENT TEMPERATURE

- 100 DEG F

e) DRAWBAR LOAD:

- 75MPH 150LBS
- 30MPH 360LBS

f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:

- 75RL: 7.0 IN. HG. / OVERDRIVE
- 30GL: 1.5 IN. HG. / 3RD GEAR
- IDLE: 15.4 IN. HG. / DRIVE
- IDLE: 18.0 IN. HG. / NEUTRAL

g) COMMENTS: SINGLE EXHAUST



## CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

## TEST INDEX

## 2. TEST CONDITIONS: W455W3ML

- 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
- 05-05-91
- c) SITE
- WINDTUNNEL #3
- d) AMBIENT TEMPERATURE
- 100 DEG F
- e) DRAWBAR LOAD:
- 75MPH 150LBS
  - 30MPH 360LBS
- f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:
- 75RL: 4.7 IN. HG. / OVERDRIVE
  - 30GL: 5.2 IN. HG. / 2RD GEAR
  - IDLE: 15.4 IN. HG. / DRIVE
  - IDLE: 17.5 IN. HG. / NEUTRAL
- g) COMMENTS: ENGINE MALFUNCTION #6 SPARK PLUG SHORTED  
SINGLE EXHAUST

CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

TEST INDEX

3. TEST CONDITIONS: W495WST

- a) PROCEDURE:
  - 75MPH ROAD LOAD (20 MILES)
  - 30MPH 3.5% GRADE LOAD (20 MILES)
  - IDLE IN DRIVE (10 MIN.)
  - IDLE IN NEUTRAL (50 MIN.)
  - ENGINE OFF SOAK (30 MIN.)
  
- b) DATE
  - 05-05-91
  
- c) SITE
  - WINDTUNNEL #3
  
- d) AMBIENT TEMPERATURE
  - 100 DEG F
  
- e) DRAWBAR LOAD:
  - 75MPH 150LBS
  - 30MPH 525LBS
  
- f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:
  - 75RL: 6.8 IN. HG. / OVERDRIVE
  - 30GL: 2.8 IN. HG. / 3RD GEAR
  - IDLE: 15.8 IN. HG. / DRIVE
  - IDLE: 20.0 IN. HG. (A/C OFF) / NEUTRAL
  
- g) COMMENTS: CLASS I TRAILER TOW (2500 LBS)  
SINGLE EXHAUST

## 4. TEST CONDITIONS: TEST#1

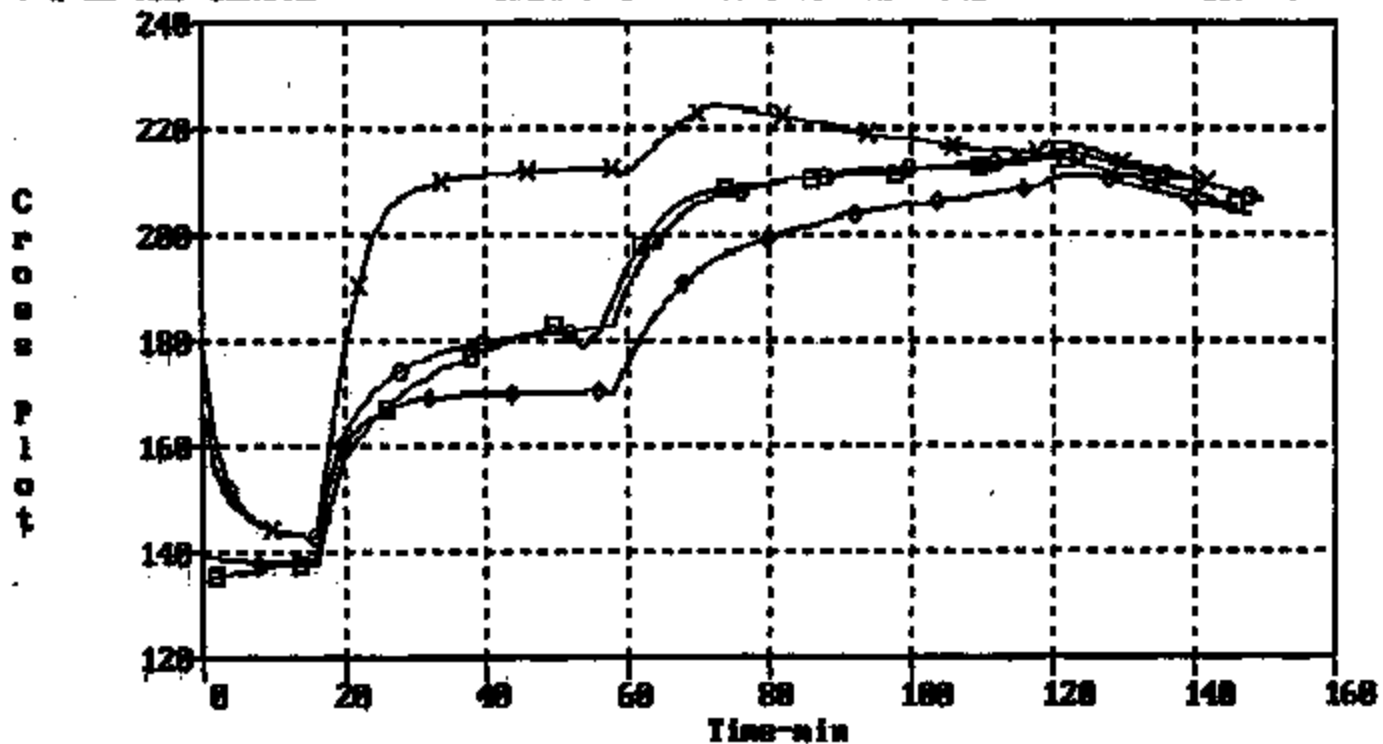
- a) PROCEDURE:
- 75MPH ROAD LOAD (20 MILES)
  - 30MPH 5.5% GRADE LOAD (20 MILES)
  - IDLE IN DRIVE (10 MIN.)
  - IDLE IN NEUTRAL (50 MIN.)
  - ENGINE OFF SOAK (30 MIN.)
- b) DATE
- 06-13-91
- c) SITE
- WINDTUNNEL #3
- d) AMBIENT TEMPERATURE
- 100 DEG F
- e) DRAWBAR LOAD:
- 75MPH 150LBS
  - 30MPH 690LBS
- f) AVG. MANIFOLD VACUUM / TRANSMISSION GEAR:
- 75RL: 7.9 IN. HG. / OVERDRIVE
  - 30GL: W.O.T. / 2ND GEAR
  - IDLE: 15.4 IN. HG. / DRIVE
  - IDLE: 20.0 IN. HG. (A/G OFF) / NEUTRAL
- g) COMMENTS: CLASS III TRAILER TOW (5000LBS)  
DUAL EXHAUST  
SIMULATED 3.55:1 AXLE

## CAR HEAT PROTECTION SIGNOFF DATA SUMMARY

## COMPONENT OVERTEMPERATURE SUMMARY - A2-213

<u>ITEM</u>	<u>RECOMMENDED TEMP LIMIT</u>	<u>TEMP</u>	<u>MODE</u>	<u>COMMENTS</u>
MASS AIRFLOW SENSOR	212° F.	224° F.	IDLE	CR C10092318 -CLOSED ELD NO ISSUE
EDIS MODULE	212 F.	218 F.	IDLE	CR C10075405 -CLOSED ELD NO ISSUE
FLOORPAN OVER MUFFLER	350 F.	375 F.	IDLE	CR C10075415 -CLOSED FIBERGLASS PAD RELEASED

1-311W455W:W455W3    2-311W455W:W455W8T    3-311W455W:W455W3ML    4-311W455:TEST2  
 □=1:29:MAF SENSOR    [DEC F ]    ○=2:29:MAF SENSOR    [DEC F ]  
 ◇=3:29:MAF SENSOR    [DEC F ]    X=4:29:MAF SENSOR    [DEC F ]



75 MPH  
ROAD  
LOAD

20 MI

30 MPH  
7% GRADE LOAD

20 MILES

IDLE

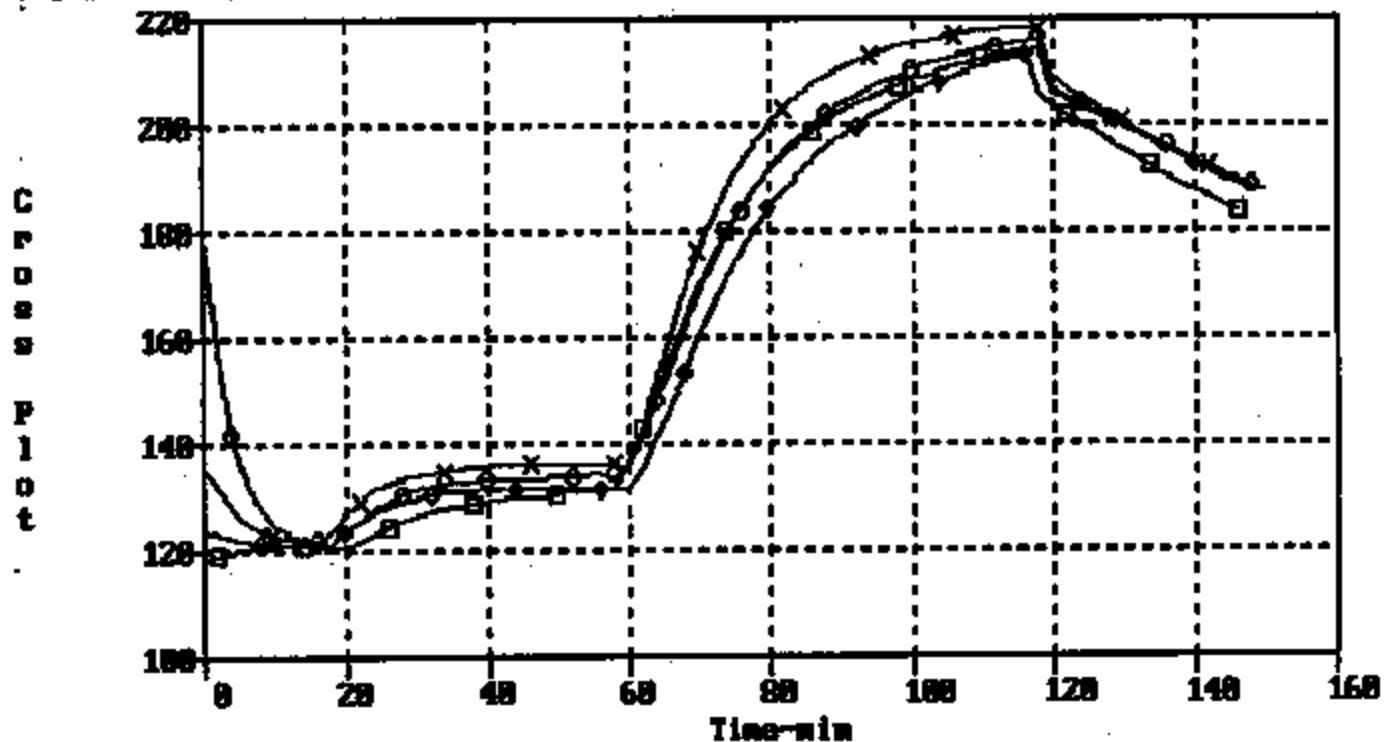
60 MINUTES

ENGINE OFF  
SOAK

30 MINUTES

3713 8327

1=311W455W:W455W3    2=311W455W:W455W8T    3=311W455W:W455W3PL    4=311W455:TEST2  
 □=1:23:EDIS MODULE (1)    [DEG F ]    ○=2:23:EDIS MODULE (1)    [DEG F ]  
 ◊=3:23:EDIS MODULE (1)    [DEG F ]    ×=4:23:EDIS MODULE (1)    [DEG F ]



75 MPH  
ROAD  
LOAD

20 MI

30 MPH  
7% GRADE LOAD

20 MILES

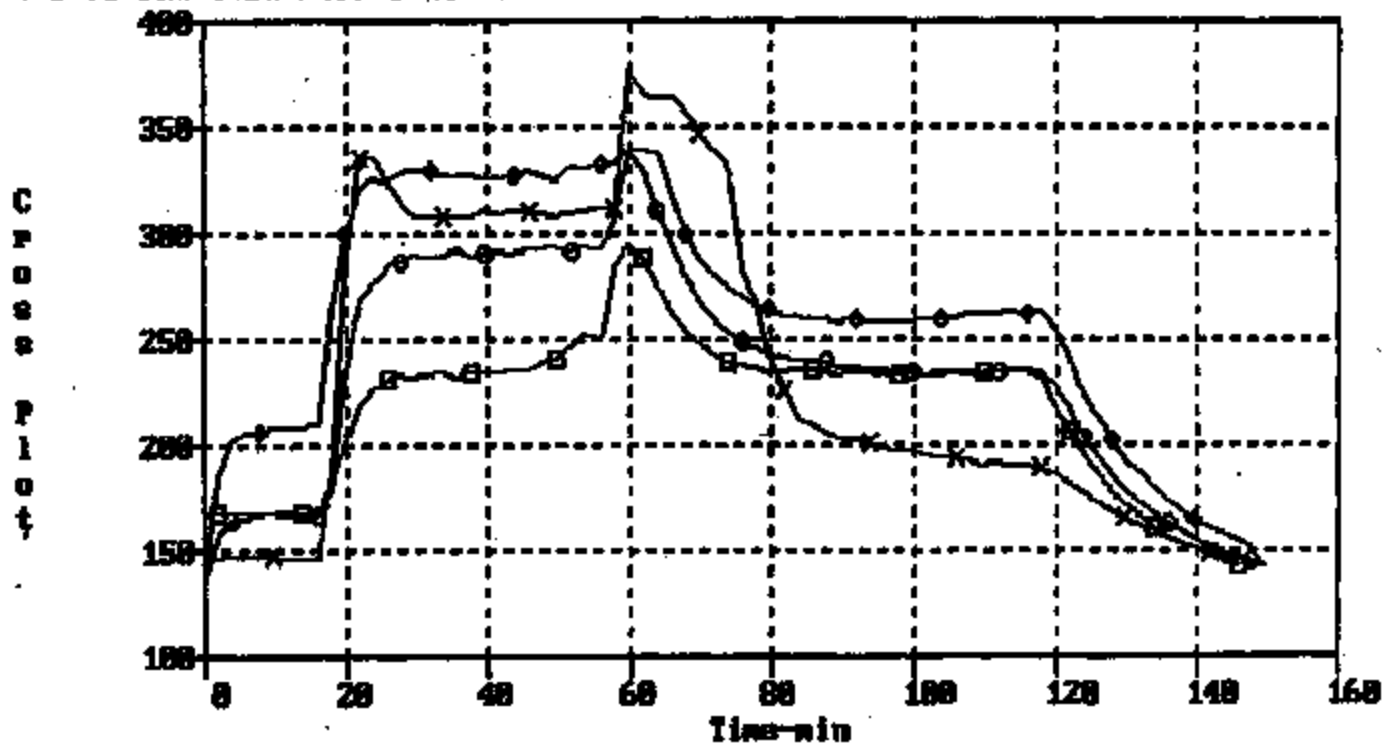
IDLE

60 MINUTES

ENGINE OFF  
SOAK

30 MINUTES

1-311M455W:W455W3 2-311M455W:W455WST 3-311M455W:W455WNL 4-311M455:TEST2  
 □=1:76:FLR OVER MUFF CENTER(DEC F 1    ○=2:76:FLR OVER MUFF CENTER(DEC F 1  
 ◊=3:76:FLR OVER MUFF CENTER(DEC F 1    ×=4:76:FLR OVER MUFF CEN RH(DEC F 1



75 MPH  
ROAD  
LOAD

20 MI

30 MPH  
7% GRADE LOAD

20 MILES

IDLE

60 MINUTES

ENGINE OFF  
SOAK

30 MINUTES

# EXHAUST SKIN TEMP VS GROUND COVER REQUIREMENT

1=CFC:CFC

2=311W455N:W455M3

□=1:11:G.F.C.

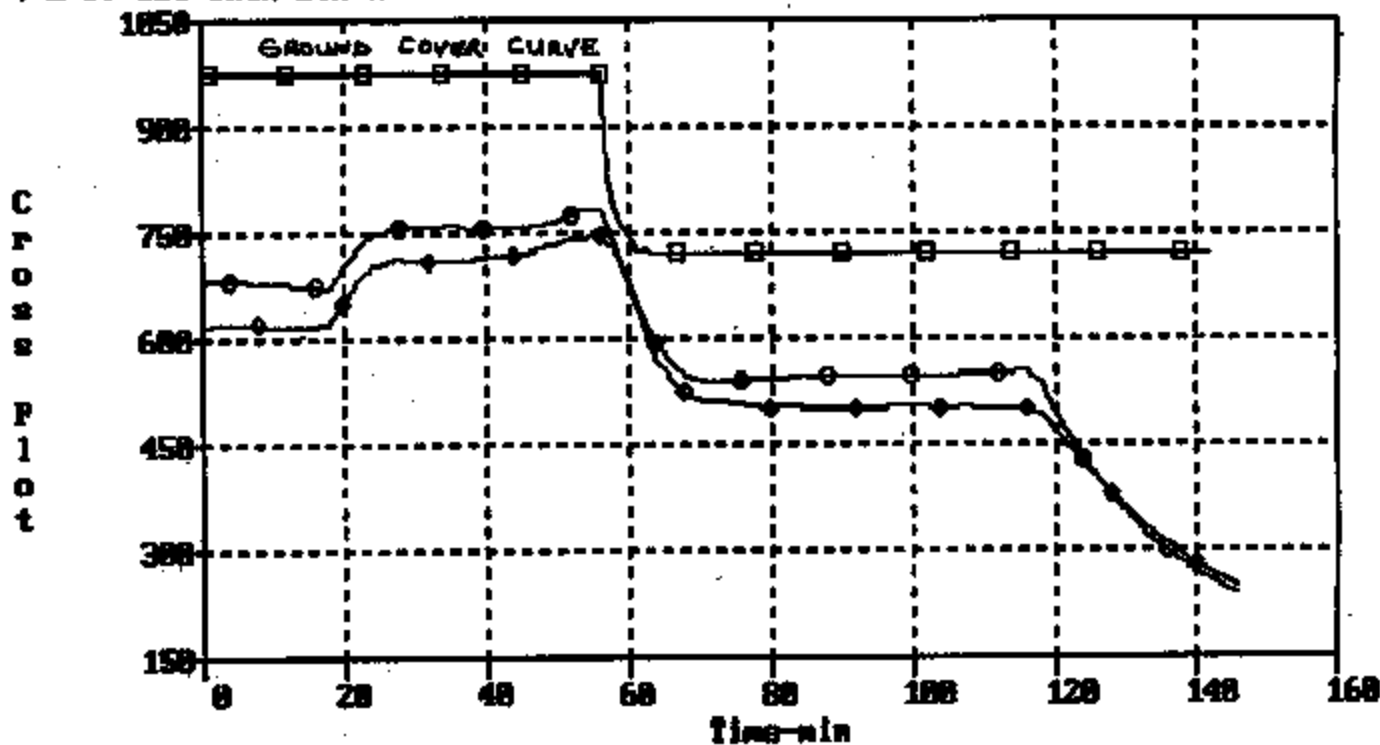
[DEC F ]

○=2:96:UBC SKIN BTM LH

[DEC F ]

◇=2:97:UBC SKIN BTM RH

[DEC F ]



75 MPH  
ROAD  
LOAD

20 MI

30 MPH  
7% GRADE LOAD

20 MILES

IDLE

60 MINUTES

ENGINE OFF  
SOAK

30 MINUTES



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
2	MANIFOLD VACUUM	8.2	-0.1 @05:42:36 @ 122.0 m	18.0 @04:54:36 @ 74.0 m	7.9	IN HG
5	ENGINE SPEED	846.9	-9.0 @05:40:36 @ 120.0 m	1774.0 @03:40:36 @ 0.0 m	535.8	RPM
6	VEHICLE SPEED	17.2	0.0 @04:38:36 @ 58.0 m	75.0 @03:40:36 @ 0.0 m	25.3	MPH
11	AMBIENT	118.7	100.0 @03:40:36 @ 0.0 m	147.0 @05:58:36 @ 138.0 m	15.6	DEG F
12	TOP WATER	236.8	210.1 @03:40:36 @ 0.0 m	250.4 @04:30:36 @ 50.0 m	10.6	DEG F
13	ENGINE OIL	241.9	199.8 @06:06:36 @ 146.0 m	271.1 @04:32:36 @ 52.0 m	17.0	DEG F
14	TRANSMISSION FLUID	231.4	171.5 @03:40:36 @ 0.0 m	263.0 @04:40:36 @ 60.0 m	23.7	DEG F
15	POWER STEERING FLUID	219.2	175.4 @03:40:36 @ 0.0 m	241.6 @05:36:36 @ 116.0 m	20.2	DEG F
16	HOOD AMB X LF/RR	193.1	143.0 @03:40:36 @ 0.0 m	218.7 @05:42:36 @ 122.0 m	24.9	DEG F
17	HOOD AMB X RF/LR	184.0	137.6 @03:40:36 @ 0.0 m	211.9 @05:40:36 @ 120.0 m	27.0	DEG F
18	ACT CONNECTOR	182.4	112.2 @03:40:36 @ 0.0 m	214.4 @05:42:36 @ 122.0 m	34.2	DEG F
19	ECT CONNECTOR	202.6	160.8 @03:40:36 @ 0.0 m	231.7 @05:52:36 @ 132.0 m	21.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
20	TP SENSOR	189.5	148.5 @03:40:36 @ 0.0 m	211.4 @05:36:36 @ 116.0 m	20.5	DEG F
21	CRANK POSITION SEN.	194.2	157.9 @03:40:36 @ 0.0 m	213.3 @05:36:36 @ 116.0 m	17.7	DEG F
22	CAM POSITION SEN.	210.4	172.0 @03:40:36 @ 0.0 m	231.5 @05:46:36 @ 126.0 m	16.6	DEG F
23	EDIS MODULE (1)	165.4	118.4 @03:40:36 @ 0.0 m	214.1 @05:36:36 @ 116.0 m	36.4	DEG F
24	EDIS MODULE (2)	165.0	119.3 @03:58:36 @ 18.0 m	212.7 @05:36:36 @ 116.0 m	35.8	DEG F
25	LH IGNITION COIL AMB	194.5	141.2 @03:40:36 @ 0.0 m	217.8 @05:40:36 @ 120.0 m	23.3	DEG F
26	RH IGNITION COIL AMB	191.5	146.1 @03:40:36 @ 0.0 m	213.3 @05:44:36 @ 124.0 m	22.9	DEG F
27	OIL PRESSURE SENDER	215.2	177.3 @03:40:36 @ 0.0 m	237.2 @04:40:36 @ 60.0 m	17.4	DEG F
28	H2O TEMP SENDER	228.6	201.0 @03:40:36 @ 0.0 m	240.2 @05:46:36 @ 126.0 m	11.2	DEG F
29	MAF SENSOR	190.9	134.1 @03:40:36 @ 0.0 m	214.6 @05:40:36 @ 120.0 m	26.4	DEG F
30	EEC POWER RELAY	175.8	112.1 @03:40:36 @ 0.0 m	216.6 @05:38:36 @ 118.0 m	38.5	DEG F
31	FUEL PUMP RELAY	180.2	115.8 @03:40:36 @ 0.0 m	233.8 @05:36:36 @ 116.0 m	44.2	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
32	ISC MOTOR	186.1	130.0 @03:40:36 @ 0.0 m	218.0 @05:42:36 @ 122.0 m	29.6	DEG F
33	EVR SOLENOID	188.9	150.3 @03:40:36 @ 0.0 m	207.6 @05:36:36 @ 116.0 m	16.4	DEG F
34	EVR REGULATOR	184.0	141.4 @03:40:36 @ 0.0 m	207.9 @05:36:36 @ 116.0 m	21.3	DEG F
35	THROTTLE BODY @TPS	182.7	127.8 @03:40:36 @ 0.0 m	211.4 @05:46:36 @ 126.0 m	30.4	DEG F
36	PURGE CONTROL SOLE.	179.8	127.0 @03:40:36 @ 0.0 m	202.6 @05:36:36 @ 116.0 m	21.7	DEG F
37	ALTERNATOR INLET AIR	209.0	171.3 @03:48:36 @ 8.0 m	236.2 @05:44:36 @ 124.0 m	19.6	DEG F
38	A/C EVAP CASE BTM	154.3	131.7 @03:50:36 @ 10.0 m	189.9 @04:36:36 @ 56.0 m	18.4	DEG F
39	FUEL PRESSURE REG	155.3	122.5 @03:40:36 @ 0.0 m	199.5 @06:02:36 @ 142.0 m	20.3	DEG F
40	FUEL RAIL SUPPLY	150.3	117.2 @03:40:36 @ 0.0 m	196.5 @06:02:36 @ 142.0 m	22.3	DEG F
41	FUEL RAIL RETURN	146.8	110.0 @03:40:36 @ 0.0 m	198.8 @06:04:36 @ 144.0 m	24.1	DEG F
42	STARTER CABLE @MAN	275.7	185.1 @06:06:36 @ 146.0 m	346.2 @04:38:36 @ 58.0 m	36.9	DEG F
43	STARTER MAGNET	227.5	165.1 @03:40:36 @ 0.0 m	272.9 @04:56:36 @ 76.0 m	37.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W435W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W435W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
44	STARTER COIL	208.9	149.9 @03:40:36 @ 0.0 m	237.9 @05:14:36 @ 94.0 m	27.5	DEG F
45	BRK MASTER CYL	174.6	119.0 @03:40:36 @ 0.0 m	210.5 @05:40:36 @ 120.0 m	29.6	DEG F
46	BRK VAC BOOSTER	195.7	140.4 @03:40:36 @ 0.0 m	232.8 @05:36:36 @ 116.0 m	29.0	DEG F
47	POWER DIST BOX AMB I	185.6	120.8 @03:40:36 @ 0.0 m	209.9 @05:38:36 @ 118.0 m	28.2	DEG F
48	AIR CLEANER CASE	179.8	115.7 @03:40:36 @ 0.0 m	209.3 @05:36:36 @ 116.0 m	31.9	DEG F
49	AIR CLEANER INLET	164.2	100.5 @03:40:36 @ 0.0 m	208.0 @05:36:36 @ 116.0 m	44.3	DEG F
50	A/C-RESONATOR HOSE	197.7	156.6 @03:40:36 @ 0.0 m	225.1 @05:58:36 @ 138.0 m	21.2	DEG F
51	CARBON CANNISTER	131.4	97.9 @03:40:36 @ 0.0 m	152.8 @05:28:36 @ 108.0 m	19.6	DEG F
52	STEERING FLEX COUPL.	198.1	147.7 @03:40:36 @ 0.0 m	226.5 @05:36:36 @ 116.0 m	25.1	DEG F
53	POWER STEERING PUMP	207.6	168.2 @03:40:36 @ 0.0 m	231.3 @05:36:36 @ 116.0 m	18.6	DEG F
54	POWER STEERING HOSE	206.4	168.8 @03:40:36 @ 0.0 m	232.7 @05:36:36 @ 116.0 m	20.1	DEG F
57	EDIS MODULE EXT SKIN	159.8	105.0 @03:40:36 @ 0.0 m	210.0 @05:36:36 @ 118.0 m	42.9	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
61	A/C DISCHARGE AIR	60.9	30.9 @03:44:36 @ 4.0 m	123.1 @06:06:36 @ 146.0 m	26.4	DEG F
62	TOEBOARD TOP LH	247.2	170.5 @06:06:36 @ 146.0 m	311.1 @05:34:36 @ 114.0 m	47.4	DEG F
63	TOEBOARD TOP RH	202.1	166.0 @06:06:36 @ 146.0 m	236.2 @04:30:36 @ 50.0 m	17.7	DEG F
64	TOEBOARD BTM LH	223.2	153.6 @04:52:36 @ 72.0 m	276.4 @04:42:36 @ 62.0 m	39.6	DEG F
65	TOEBOARD BTM RH	211.8	164.0 @03:40:36 @ 0.0 m	242.5 @04:40:36 @ 60.0 m	23.9	DEG F
66	FLR OVER CAT LH	226.9	160.2 @03:40:36 @ 0.0 m	292.9 @04:42:36 @ 62.0 m	40.2	DEG F
67	FLR OVER CAT RH	194.6	153.1 @03:40:36 @ 0.0 m	230.3 @04:40:36 @ 60.0 m	19.7	DEG F
68	FLR OVER CAT OUT LH	227.2	150.4 @06:06:36 @ 146.0 m	286.7 @04:40:36 @ 60.0 m	35.8	DEG F
69	FLR OVER CAT OUT RH	204.0	163.6 @03:40:36 @ 0.0 m	240.3 @04:38:36 @ 58.0 m	20.0	DEG F
70	FLR 4" RR UBC LH	207.7	143.4 @06:06:36 @ 146.0 m	253.3 @04:42:36 @ 62.0 m	31.6	DEG F
71	FLR 4" RR UBC RH	196.3	156.6 @03:40:36 @ 0.0 m	219.1 @04:38:36 @ 58.0 m	17.0	DEG F
72	FLR OVER Y JT	190.4	134.6 @06:06:36 @ 146.0 m	249.0 @04:40:36 @ 60.0 m	30.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
73	FLR OVER MUFF INLET	149.7	122.8 @06:06:36 @ 146.0 m	172.5 @04:38:36 @ 58.0 m	13.1	DEG F
74	FLR VERT FWD OF MUFF	172.1	132.0 @06:06:36 @ 146.0 m	209.5 @04:42:36 @ 62.0 m	20.9	DEG F
75	FLR OVER MUFF FRT	179.2	138.5 @03:40:36 @ 0.0 m	217.1 @04:42:36 @ 62.0 m	22.0	DEG F
76	FLR OVER MUFF CENTER	216.6	142.4 @06:06:36 @ 146.0 m	294.7 @04:40:36 @ 60.0 m	37.1	DEG F
77	FLR OVER MUFF RR	176.6	133.2 @03:40:36 @ 0.0 m	214.5 @04:42:36 @ 62.0 m	22.0	DEG F
78	FLR IN KICKUP	150.5	119.8 @03:40:36 @ 0.0 m	166.4 @04:44:36 @ 64.0 m	13.6	DEG F
79	FLR IN TRUNK	142.8	117.9 @03:40:36 @ 0.0 m	163.5 @04:42:36 @ 62.0 m	11.6	DEG F
80	HEGO TIP LH	1036.1	244.6 @06:06:36 @ 146.0 m	1347.4 @03:56:36 @ 16.0 m	355.2	DEG F
81	HEGO TIP RH	979.5	220.6 @06:06:36 @ 146.0 m	1317.3 @03:56:36 @ 16.0 m	359.2	DEG F
82	HEGO GROMMET LH	274.1	180.3 @03:40:36 @ 0.0 m	349.2 @05:36:36 @ 116.0 m	61.5	DEG F
83	HEGO GROMMET RH	246.9	179.4 @03:40:36 @ 0.0 m	301.5 @04:40:36 @ 60.0 m	32.6	DEG F
84	HEGO HEX LH	555.4	237.9 @06:06:36 @ 146.0 m	689.8 @04:32:36 @ 52.0 m	123.9	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
85	HEGO HEX RH	529.2	218.2 @06:06:36 @ 146.0 m	721.7 @04:32:36 @ 52.0 m	148.8	DEG F
86	HEGO CONNECTOR LH	205.0	150.2 @03:40:36 @ 0.0 m	244.1 @05:34:36 @ 114.0 m	32.8	DEG F
87	HEGO CONNECTOR RH	193.3	146.4 @03:40:36 @ 0.0 m	213.2 @05:42:36 @ 122.0 m	20.4	DEG F
88	EXHAUST MANIFOLD LH	589.0	222.6 @06:06:36 @ 146.0 m	847.9 @04:36:36 @ 56.0 m	207.0	DEG F
89	EXHAUST MANIFOLD RH	554.1	214.6 @06:06:36 @ 146.0 m	776.4 @04:36:36 @ 56.0 m	174.1	DEG F
90	LOC GAS LH	986.3	380.5 @06:06:36 @ 146.0 m	1322.3 @03:40:36 @ 0.0 m	263.7	DEG F
91	LOC GAS RH	962.1	301.6 @06:06:36 @ 146.0 m	1287.2 @03:40:36 @ 0.0 m	274.6	DEG F
92	LOC SKIN OUTBD LH	465.7	250.5 @06:06:36 @ 146.0 m	587.3 @04:40:36 @ 60.0 m	103.9	DEG F
93	LOC SKIN OUTBD RH	428.9	236.8 @06:06:36 @ 146.0 m	567.3 @04:40:36 @ 60.0 m	109.2	DEG F
94	UBC GAS LH	889.7	393.2 @06:06:36 @ 146.0 m	1190.0 @03:40:36 @ 0.0 m	236.6	DEG F
95	UBC GAS RH	879.3	359.9 @06:06:36 @ 146.0 m	1184.4 @04:36:36 @ 56.0 m	244.9	DEG F
96	UBC SKIN BTM LH	590.9	245.4 @06:06:36 @ 146.0 m	789.0 @04:34:36 @ 54.0 m	150.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
97	UBC SKIN BTM RH	556.9	254.4 @06:06:36 @ 146.0 m	751.0 @04:36:36 @ 56.0 m	135.5	DEG F
98	EXH PIPE 1ST BEND LH	469.7	165.2 @06:06:36 @ 146.0 m	663.4 @04:36:36 @ 56.0 m	138.8	DEG F
99	EXH PIPE 1ST BEND RH	488.7	198.9 @06:06:36 @ 146.0 m	690.6 @04:36:36 @ 56.0 m	141.0	DEG F
100	EXH PIPE 6"RR UBC LH	465.0	158.3 @06:06:36 @ 146.0 m	665.4 @04:36:36 @ 56.0 m	143.2	DEG F
101	EXH PIPE 6"RR UBC RH	466.5	179.6 @06:06:36 @ 146.0 m	676.7 @04:32:36 @ 52.0 m	143.6	DEG F
102	EXH PIPE AT Y-JT	473.9	148.2 @06:06:36 @ 146.0 m	679.3 @04:36:36 @ 56.0 m	151.9	DEG F
103	EXH PIPE 6"FWD MUFF	411.9	137.0 @06:06:36 @ 146.0 m	613.8 @04:36:36 @ 56.0 m	140.0	DEG F
104	MUFFLER BTM CENTER	370.6	137.5 @06:06:36 @ 146.0 m	544.2 @04:36:36 @ 56.0 m	115.5	DEG F
105	EXH TOP OF KICKUP	380.8	145.1 @06:06:36 @ 146.0 m	576.6 @04:32:36 @ 52.0 m	130.6	DEG F
106	EXH 12" FWD OUTLET	284.8	122.1 @06:06:36 @ 146.0 m	441.7 @04:32:36 @ 52.0 m	94.3	DEG F
107	INTERMED EXH HGR IN	212.6	136.3 @06:06:36 @ 146.0 m	281.0 @04:40:36 @ 60.0 m	35.4	DEG F
108	INTERMED EXH HGR OUT	213.2	139.0 @06:06:36 @ 146.0 m	277.6 @04:40:36 @ 60.0 m	33.5	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
109	RR EXH. HANGER	188.1	123.7 @06:06:36 @ 145.0 m	248.3 @04:38:36 @ 58.0 m	32.6	DEG F
110	FRT U-JT AMB	186.9	146.9 @06:02:36 @ 142.0 m	227.0 @04:42:36 @ 62.0 m	27.2	DEG F
111	ENG MNT LH	211.2	157.4 @03:40:36 @ 0.0 m	248.4 @05:26:36 @ 106.0 m	28.0	DEG F
112	ENG MNT RH	195.3	132.2 @03:40:36 @ 0.0 m	229.2 @05:36:36 @ 116.0 m	29.3	DEG F
113	ENG MNT RR	190.8	130.5 @03:40:36 @ 0.0 m	224.0 @04:56:36 @ 76.0 m	28.9	DEG F
114	TRANS PAN GASKET LH	227.4	155.1 @03:40:36 @ 0.0 m	269.4 @04:46:36 @ 66.0 m	30.3	DEG F
116	SPEED SENSOR	204.3	148.2 @03:40:36 @ 0.0 m	238.2 @04:50:36 @ 70.0 m	26.0	DEG F
118	TRAN ELEC CONN LH RR	199.2	151.9 @03:40:36 @ 0.0 m	226.7 @04:54:36 @ 74.0 m	24.4	DEG F
119	TRANS BELLSHG LH	222.6	153.1 @03:40:36 @ 0.0 m	260.4 @04:50:36 @ 70.0 m	31.2	DEG F
120	TRANS BELLSHG RH	226.1	161.3 @03:40:36 @ 0.0 m	258.6 @04:46:36 @ 66.0 m	27.4	DEG F
121	TRAN EXT HSG GASKET	225.0	160.4 @03:40:36 @ 0.0 m	262.0 @04:48:36 @ 68.0 m	26.6	DEG F
122	TRAN EXT HSG BUSHING	216.5	162.5 @03:40:36 @ 0.0 m	251.1 @04:46:36 @ 66.0 m	22.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
123	TRAN FILL TUBE SKIN	226.2	150.7 @03:40:36 @ 0.0 m	276.0 @04:42:36 @ 62.0 m	32.5	DEG F
124	TRAN FILL TUBE SEAL	216.9	136.5 @03:40:36 @ 0.0 m	268.7 @04:42:36 @ 62.0 m	37.0	DEG F
125	TRAN CASE @MAN LEV	225.1	157.0 @03:40:36 @ 0.0 m	266.6 @04:46:36 @ 66.0 m	28.8	DEG F
126	TRAN NLPS	209.3	159.9 @03:40:36 @ 0.0 m	243.1 @05:36:36 @ 116.0 m	26.0	DEG F
127	TRAN BULKHEAD CONN	207.7	159.0 @03:40:36 @ 0.0 m	240.2 @04:44:36 @ 64.0 m	25.7	DEG F
128	SHIFT CABLE @EXH MAN	243.3	154.2 @06:06:36 @ 146.0 m	306.7 @05:36:36 @ 116.0 m	50.8	DEG F
129	SHIFT CABLE @ LOC	181.9	126.9 @03:40:36 @ 0.0 m	228.8 @05:36:36 @ 116.0 m	35.9	DEG F
130	SHIFT CABLE @MAN LEV	190.8	131.1 @03:40:36 @ 0.0 m	237.2 @05:26:36 @ 106.0 m	36.9	DEG F
131	SHIFT CABLE SLEEVE	205.5	139.5 @06:06:36 @ 146.0 m	247.7 @04:42:36 @ 62.0 m	33.5	DEG F
132	SHIFT CABL UNDER SLV	196.1	141.7 @06:06:36 @ 146.0 m	227.0 @05:28:36 @ 108.0 m	29.9	DEG F
133	SHIFT CABL @ END FIT	194.3	142.8 @03:40:36 @ 0.0 m	229.2 @05:20:36 @ 100.0 m	30.7	DEG F
135	FUEL FILTER	126.5	99.6 @03:40:36 @ 0.0 m	139.3 @05:34:36 @ 114.0 m	11.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
136	FUEL LINE AT FILTER	123.1	104.6 @03:40:36 @ 0.0 m	132.1 @05:22:36 @ 102.0 m	7.9	DEG F
137	FUEL RET LINE @ TANK	133.4	101.7 @03:40:36 @ 0.0 m	147.6 @05:44:36 @ 124.0 m	12.3	DEG F
138	FUEL SUP LINE @ TANK	137.5	114.2 @03:40:36 @ 0.0 m	148.3 @05:36:36 @ 116.0 m	9.6	DEG F
139	FUEL TANK SKIN FRT	131.7	108.4 @03:40:36 @ 0.0 m	141.3 @04:36:36 @ 56.0 m	8.6	DEG F
140	FUEL PUMP FLANGE	128.0	96.4 @03:40:36 @ 0.0 m	139.3 @05:38:36 @ 118.0 m	12.1	DEG F
141	FUEL LINE AT SENDER	134.2	108.8 @03:40:36 @ 0.0 m	146.8 @05:34:36 @ 114.0 m	10.1	DEG F
142	FUEL LINE PLAS. CONN	144.3	118.6 @03:40:36 @ 0.0 m	157.8 @04:36:36 @ 56.0 m	10.5	DEG F
143	FUEL IN TANK	122.3	85.0 @03:40:36 @ 0.0 m	138.1 @05:36:36 @ 116.0 m	14.4	DEG F
144	PARK BRK CABLE @AXLE	150.5	124.5 @06:06:36 @ 146.0 m	181.6 @04:38:36 @ 58.0 m	15.8	DEG F
145	AIR SPRING UP CAP RH	151.3	112.4 @03:40:36 @ 0.0 m	166.7 @05:34:36 @ 114.0 m	16.0	DEG F
146	AIR SPRING SLV RH RR	154.9	123.8 @03:40:36 @ 0.0 m	171.9 @04:42:36 @ 62.0 m	13.1	DEG F
147	AIR SPRING SOLE. RH	155.1	115.0 @03:40:36 @ 0.0 m	174.5 @04:42:36 @ 62.0 m	18.2	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3  
 TEST DESC: SIGNOFF  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
148	ABS SENS WIRE RH RR	149.8	121.8 @06:06:36 @ 146.0 m	179.6 @04:36:36 @ 56.0 m	16.3	DEG F
149	A/CLEAN ELEMENT SEAL	189.6	133.2 @03:40:36 @ 0.0 m	210.7 @05:38:36 @ 118.0 m	24.8	DEG F
150	A/C CYCLING SWITCH	187.1	152.3 @03:40:36 @ 0.0 m	205.3 @05:36:36 @ 116.0 m	16.7	DEG F
151	SHIFT CABLE BRACKET	202.1	148.5 @03:40:36 @ 0.0 m	239.6 @04:46:36 @ 66.0 m	30.8	DEG F
152	SHIFT CABLE @ UBC	205.0	154.7 @06:06:36 @ 146.0 m	243.6 @04:44:36 @ 64.0 m	32.2	DEG F
153	SFT CABLE 10"RR BRKT	48.0	-7.1 @04:40:36 @ 60.0 m	147.1 @06:06:36 @ 146.0 m	40.9	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
2	MANIFOLD VACUUM	8.7	-0.1 @11:12:28 @ 122.0 m	17.5 @10:20:28 @ 70.0 m	7.0	IN HG
5	ENGINE SPEED	941.2	-9.0 @11:12:28 @ 122.0 m	1774.0 @09:10:28 @ 0.0 m	632.2	RPM
6	VEHICLE SPEED	17.4	0.0 @10:10:28 @ 60.0 m	75.0 @09:10:28 @ 0.0 m	25.2	MPH
11	AMBIENT	122.7	100.1 @09:22:28 @ 12.0 m	153.7 @11:38:28 @ 148.0 m	19.2	DEG F
12	TOP WATER	226.4	206.5 @09:10:28 @ 0.0 m	238.1 @11:18:28 @ 128.0 m	7.5	DEG F
13	ENGINE OIL	231.7	196.7 @11:38:28 @ 148.0 m	245.8 @10:04:28 @ 54.0 m	12.5	DEG F
14	TRANSMISSION FLUID	221.1	203.7 @09:10:28 @ 0.0 m	230.4 @10:22:28 @ 72.0 m	8.3	DEG F
15	POWER STEERING FLUID	216.7	173.0 @09:10:28 @ 0.0 m	236.5 @11:08:28 @ 118.0 m	15.1	DEG F
16	UHOOD AMB X LF/RR	187.2	140.4 @09:10:28 @ 0.0 m	215.4 @11:14:28 @ 124.0 m	23.4	DEG F
17	UHOOD AMB X RF/LR	181.2	136.9 @09:10:28 @ 0.0 m	211.3 @11:14:28 @ 124.0 m	25.7	DEG F
18	ACT CONNECTOR	178.0	114.9 @09:24:28 @ 14.0 m	210.9 @11:16:28 @ 126.0 m	30.7	DEG F
19	ECT CONNECTOR	196.1	156.0 @09:10:28 @ 0.0 m	227.1 @11:26:28 @ 136.0 m	20.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
20	TP SENSOR	185.0	144.2 @09:10:28 @ 0.0 m	207.4 @11:08:28 @ 118.0 m	19.3	DEG F
21	CRANK POSITION SEN.	189.4	153.3 @09:10:28 @ 0.0 m	209.5 @11:08:28 @ 118.0 m	16.0	DEG F
22	CAM POSITION SEN.	202.9	167.1 @09:10:28 @ 0.0 m	226.3 @11:18:28 @ 128.0 m	15.8	DEG F
23	EDIS MODULE (1)	165.5	121.1 @09:26:28 @ 16.0 m	214.5 @11:08:28 @ 118.0 m	35.4	DEG F
24	EDIS MODULE (2)	165.0	121.7 @09:28:28 @ 18.0 m	212.9 @11:08:28 @ 118.0 m	34.7	DEG F
25	LH IGNITION COIL AMB	188.6	143.7 @09:10:28 @ 0.0 m	214.5 @11:14:28 @ 124.0 m	21.3	DEG F
26	RH IGNITION COIL AMB	187.1	144.2 @09:10:28 @ 0.0 m	210.2 @11:18:28 @ 128.0 m	20.7	DEG F
27	OIL PRESSURE SENDER	206.4	165.7 @09:10:28 @ 0.0 m	226.3 @11:08:28 @ 118.0 m	14.2	DEG F
28	H2O TEMP SENDER	220.0	197.4 @09:10:28 @ 0.0 m	234.3 @11:18:28 @ 128.0 m	9.4	DEG F
29	MAP SENSOR	185.4	138.0 @09:18:28 @ 8.0 m	211.3 @11:14:28 @ 124.0 m	24.1	DEG F
30	EEC POWER RELAY	173.1	113.9 @09:26:28 @ 16.0 m	216.6 @11:10:28 @ 120.0 m	35.6	DEG F
31	FUEL PUMP RELAY	178.6	122.2 @09:26:28 @ 16.0 m	229.9 @11:08:28 @ 118.0 m	40.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
32	ISC MOTOR	183.0	133.2 @09:12:28 @ 2.0 m	214.9 @11:14:28 @ 124.0 m	26.7	DEG F
33	EVR SOLENOID	187.2	143.9 @09:10:28 @ 0.0 m	206.0 @11:10:28 @ 120.0 m	14.8	DEG F
34	EVR REGULATOR	182.4	139.4 @09:10:28 @ 0.0 m	206.4 @11:12:28 @ 122.0 m	19.6	DEG F
35	THROTTLE BODY @TPS	178.9	131.1 @09:26:28 @ 16.0 m	208.8 @11:20:28 @ 130.0 m	28.1	DEG F
36	PURGE CONTROL SOLE.	179.4	128.7 @09:10:28 @ 0.0 m	199.2 @11:08:28 @ 118.0 m	18.6	DEG F
37	ALTERNATOR INLET AIR	201.1	163.9 @09:10:28 @ 0.0 m	231.2 @11:16:28 @ 126.0 m	19.6	DEG F
38	A/C EVAP CASE BTM	149.4	125.9 @10:26:28 @ 76.0 m	181.3 @09:40:28 @ 30.0 m	19.0	DEG F
39	FUEL PRESSURE REG	158.5	132.9 @09:10:28 @ 0.0 m	199.7 @11:38:28 @ 148.0 m	17.3	DEG F
40	FUEL RAIL SUPPLY	155.3	127.5 @09:10:28 @ 0.0 m	195.5 @11:34:28 @ 144.0 m	18.8	DEG F
41	FUEL RAIL RETURN	152.8	123.4 @09:10:28 @ 0.0 m	198.6 @12:38:28 @ 148.0 m	20.7	DEG F
42	STARTER CABLE @MAN	275.2	184.8 @11:38:28 @ 148.0 m	384.6 @10:10:28 @ 60.0 m	39.8	DEG F
43	STARTER MAGNET	241.4	162.3 @09:10:28 @ 0.0 m	268.5 @10:14:28 @ 64.0 m	26.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
44	STARTER COIL	202.7	149.9 @09:10:28 @ 0.0 m	229.1 @11:08:28 @ 118.0 m	21.7	DEG F
45	BRK MASTER CYL	182.7	156.5 @09:26:28 @ 16.0 m	210.9 @11:14:28 @ 124.0 m	20.4	DEG F
46	BRK VAC BOOSTER	194.1	147.0 @09:10:28 @ 0.0 m	235.2 @11:08:28 @ 118.0 m	29.1	DEG F
47	POWER DIST BOX AMB I	181.5	125.9 @09:26:28 @ 16.0 m	206.4 @11:10:28 @ 120.0 m	25.0	DEG F
48	AIR CLEANER CASE	175.8	122.2 @09:14:28 @ 4.0 m	205.3 @11:10:28 @ 120.0 m	28.4	DEG F
49	AIR CLEANER INLET	161.5	100.6 @09:16:28 @ 6.0 m	204.7 @11:08:28 @ 118.0 m	41.5	DEG F
50	A/C-RESONATOR HOSE	191.6	150.3 @09:10:28 @ 0.0 m	221.0 @11:30:28 @ 140.0 m	20.5	DEG F
51	CARBON CANNISTER	125.8	98.8 @09:16:28 @ 6.0 m	152.7 @11:30:28 @ 140.0 m	15.9	DEG F
52	STEERING FLEX COUPL.	192.7	146.4 @09:10:28 @ 0.0 m	221.3 @11:08:28 @ 118.0 m	21.7	DEG F
53	POWER STEERING PUMP	204.1	163.9 @09:10:28 @ 0.0 m	226.8 @11:08:28 @ 118.0 m	15.0	DEG F
54	POWER STEERING HOSE	202.7	164.3 @09:10:28 @ 0.0 m	228.2 @11:08:28 @ 118.0 m	16.5	DEG F
57	REDIS MODULE EXT SKIN	158.7	106.6 @09:22:28 @ 12.0 m	209.5 @11:12:28 @ 122.0 m	42.1	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
61	A/C DISCHARGE AIR	61.3	37.4 @09:58:28 @ 48.0 m	126.8 @11:38:28 @ 148.0 m	27.0	DEG F
62	TOEBOARD TOP LH	249.7	152.3 @09:10:28 @ 0.0 m	329.3 @11:08:28 @ 118.0 m	59.2	DEG F
63	TOEBOARD TOP RH	200.8	159.0 @09:10:28 @ 0.0 m	229.5 @09:50:28 @ 40.0 m	19.5	DEG F
64	TOEBOARD BTM LH	279.8	156.8 @09:10:28 @ 0.0 m	341.0 @11:08:28 @ 118.0 m	51.2	DEG F
65	TOEBOARD BTM RH	206.3	150.2 @09:10:28 @ 0.0 m	239.3 @10:12:28 @ 62.0 m	20.7	DEG F
66	FLR OVER CAT LH	270.3	145.7 @09:10:28 @ 0.0 m	338.7 @11:08:28 @ 118.0 m	55.0	DEG F
67	FLR OVER CAT RH	191.0	144.7 @09:10:28 @ 0.0 m	232.1 @10:12:28 @ 62.0 m	17.9	DEG F
68	FLR OVER CAT OUT LH	293.6	157.0 @09:10:28 @ 0.0 m	349.2 @10:18:28 @ 68.0 m	60.3	DEG F
69	FLR OVER CAT OUT RH	201.9	154.9 @09:10:28 @ 0.0 m	246.5 @10:10:28 @ 60.0 m	20.2	DEG F
70	FLR 4" RR UBC LH	249.9	145.8 @09:10:28 @ 0.0 m	311.9 @10:14:28 @ 64.0 m	51.1	DEG F
71	FLR 4" RR UBC RH	195.4	152.5 @09:10:28 @ 0.0 m	228.3 @10:10:28 @ 60.0 m	17.3	DEG F
72	FLR OVER Y JT	206.2	138.2 @09:10:28 @ 0.0 m	278.8 @10:12:28 @ 62.0 m	34.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
73	FLR OVER MUFF INLET	165.2	127.7 @09:10:28 @ 0.0 m	198.3 @10:10:28 @ 60.0 m	19.6	DEG F
74	FLR VERT FWD OF MUFF	196.2	125.5 @09:10:28 @ 0.0 m	249.5 @10:12:28 @ 62.0 m	29.4	DEG F
75	FLR OVER MUFF FRT	207.4	128.3 @09:10:28 @ 0.0 m	263.0 @10:12:28 @ 62.0 m	30.0	DEG F
76	FLR OVER MUFF CENTER	261.0	142.3 @09:10:28 @ 0.0 m	338.8 @10:12:28 @ 62.0 m	57.5	DEG F
77	FLR OVER MUFF RR	205.4	122.2 @09:10:28 @ 0.0 m	260.5 @10:14:28 @ 64.0 m	32.5	DEG F
78	FLR IN KICKUP	165.1	123.1 @09:10:28 @ 0.0 m	186.3 @10:16:28 @ 66.0 m	16.6	DEG F
79	FLR IN TRUNK	155.2	116.1 @09:10:28 @ 0.0 m	181.2 @10:12:28 @ 62.0 m	14.6	DEG F
80	HEGO TIP LH	927.8	248.7 @11:38:28 @ 148.0 m	1175.2 @09:18:28 @ 8.0 m	304.7	DEG F
81	HEGO TIP RH	1001.6	226.6 @11:38:28 @ 148.0 m	1353.7 @09:22:28 @ 12.0 m	374.2	DEG F
82	HEGO GROMMET LH	260.2	153.8 @09:10:28 @ 0.0 m	337.0 @11:08:28 @ 118.0 m	62.1	DEG F
83	HEGO GROMMET RH	243.7	153.6 @09:10:28 @ 0.0 m	296.0 @10:12:28 @ 62.0 m	30.5	DEG F
84	HEGO HEX LH	452.2	239.3 @11:38:28 @ 148.0 m	545.8 @10:08:28 @ 58.0 m	85.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
85	HEGO HEX RH	538.2	222.2 @11:38:28 @ 148.0 m	743.6 @09:34:28 @ 24.0 m	165.8	DEG F
86	HEGO CONNECTOR LH	199.4	151.7 @09:10:28 @ 0.0 m	242.3 @11:08:28 @ 118.0 m	31.9	DEG F
87	HEGO CONNECTOR RH	188.4	145.9 @09:10:28 @ 0.0 m	209.8 @11:16:28 @ 126.0 m	18.0	DEG F
88	EXHAUST MANIFOLD LH	540.5	219.0 @11:38:28 @ 148.0 m	781.7 @09:30:28 @ 20.0 m	197.9	DEG F
89	EXHAUST MANIFOLD RH	567.3	217.6 @11:38:28 @ 148.0 m	810.8 @09:30:28 @ 20.0 m	196.3	DEG F
90	LOC GAS LH	1462.7	472.2 @11:38:28 @ 148.0 m	1836.3 @09:18:28 @ 8.0 m	383.3	DEG F
91	LOC GAS RH	977.4	414.4 @11:38:28 @ 148.0 m	1318.8 @09:16:28 @ 6.0 m	287.6	DEG F
92	LOC SKIN OUTBD LH	640.1	275.1 @09:10:28 @ 0.0 m	800.9 @10:14:28 @ 64.0 m	166.8	DEG F
93	LOC SKIN OUTBD RH	425.3	193.6 @09:10:28 @ 0.0 m	584.0 @10:12:28 @ 62.0 m	102.1	DEG F
94	UBC GAS LH	1260.9	505.6 @11:38:28 @ 148.0 m	1619.5 @10:08:28 @ 58.0 m	331.0	DEG F
95	UBC GAS RH	887.1	381.8 @11:38:28 @ 148.0 m	1215.4 @09:30:28 @ 20.0 m	280.7	DEG F
96	UBC SKIN BTM LH	822.7	295.0 @11:38:28 @ 148.0 m	1094.2 @09:38:28 @ 28.0 m	233.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
97	UBC SKIN BTM RH	550.1	237.9 @11:38:28 @ 148.0 m	765.1 @09:36:28 @ 26.0 m	166.8	DEG F
98	EXH PIPE 1ST BEND LH	613.9	184.1 @11:38:28 @ 148.0 m	855.5 @09:34:28 @ 24.0 m	203.2	DEG F
99	EXH PIPE 1ST BEND RH	487.9	172.9 @11:38:28 @ 148.0 m	694.3 @09:38:28 @ 28.0 m	164.4	DEG F
100	EXH PIPE 6"RR UBC LH	606.3	174.3 @11:38:28 @ 148.0 m	851.8 @09:38:28 @ 28.0 m	205.6	DEG F
101	EXH PIPE 6"RR UBC RH	467.5	158.7 @11:38:28 @ 148.0 m	676.2 @09:36:28 @ 26.0 m	164.4	DEG F
102	EXH PIPE AT Y-JT	553.4	141.7 @11:38:28 @ 148.0 m	794.9 @09:32:28 @ 22.0 m	201.4	DEG F
103	EXH PIPE 6"PWD MUFF	493.5	139.7 @11:38:28 @ 148.0 m	747.0 @09:32:28 @ 22.0 m	198.3	DEG F
104	MUFFLER BTM CENTER	440.7	145.9 @11:38:28 @ 148.0 m	666.6 @09:36:28 @ 26.0 m	165.7	DEG F
105	EXH TOP OF KICKUP	455.0	152.2 @11:38:28 @ 148.0 m	700.2 @09:36:28 @ 26.0 m	187.9	DEG F
106	EXH 12" FWD OUTLET	336.6	127.0 @11:38:28 @ 148.0 m	530.2 @09:42:28 @ 32.0 m	137.6	DEG F
107	INTERMED EXH EGR IN	239.1	130.0 @09:10:28 @ 0.0 m	323.9 @10:10:28 @ 60.0 m	51.1	DEG F
108	INTERMED EXH EGR OUT	243.6	126.9 @09:10:28 @ 0.0 m	326.3 @10:12:28 @ 62.0 m	49.8	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
109	RR EXH. HANGER	210.1	119.9 @09:10:28 @ 0.0 m	284.9 @10:10:28 @ 60.0 m	45.1	DEG F
110	FRT U-JT ANB	193.9	138.9 @09:10:28 @ 0.0 m	240.9 @11:08:28 @ 118.0 m	35.5	DEG F
111	ENG MNT LH	170.1	150.2 @09:10:28 @ 0.0 m	192.8 @09:38:28 @ 28.0 m	13.4	DEG F
112	ENG MNT RH	192.2	133.0 @09:10:28 @ 0.0 m	223.2 @11:08:28 @ 118.0 m	25.6	DEG F
113	ENG MNT RR	187.9	146.6 @09:12:28 @ 2.0 m	212.9 @11:08:28 @ 118.0 m	21.1	DEG F
114	TRANS PAN GASKET LH	218.1	183.6 @09:10:28 @ 0.0 m	236.6 @11:08:28 @ 118.0 m	16.7	DEG F
116	SPRED SENSOR	209.5	80.2 @09:14:28 @ 4.0 m	411.9 @09:26:28 @ 16.0 m	35.4	DEG F
118	TRAN ELEC CONN LH RR	202.9	153.3 @09:10:28 @ 0.0 m	236.2 @11:10:28 @ 120.0 m	24.9	DEG F
119	TRANS BELLHSG LH	213.3	167.3 @09:14:28 @ 4.0 m	240.3 @11:08:28 @ 118.0 m	22.9	DEG F
120	TRANS BELLHSG RH	217.2	177.3 @09:12:28 @ 2.0 m	235.4 @11:08:28 @ 118.0 m	16.8	DEG F
121	TRAN EXT HSG GASKET	215.6	185.3 @09:10:28 @ 0.0 m	227.9 @11:08:28 @ 118.0 m	11.7	DEG F
122	TRAN EXT HSG BUSHING	212.0	179.6 @09:10:28 @ 0.0 m	226.4 @11:08:28 @ 118.0 m	11.8	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
123	TRAN FILL TUBE SKIN	214.5	175.6 @09:12:28 @ 2.0 m	232.5 @10:20:28 @ 70.0 m	17.3	DEG F
124	TRAN FILL TUBE SEAL	206.3	145.7 @09:12:28 @ 2.0 m	231.3 @11:06:28 @ 116.0 m	25.7	DEG F
125	TRAN CASE @MAN LEV	217.3	180.8 @09:10:28 @ 0.0 m	235.2 @11:08:28 @ 118.0 m	16.1	DEG F
126	TRAN MLPS	218.6	150.8 @09:10:28 @ 0.0 m	250.8 @10:32:28 @ 82.0 m	28.9	DEG F
127	TRAN BULKHEAD CONN	201.3	159.8 @09:10:28 @ 0.0 m	230.4 @10:12:28 @ 82.0 m	18.8	DEG F
128	SHIFT CABLE @EXH MAN	222.6	145.3 @09:10:28 @ 0.0 m	284.7 @11:08:28 @ 118.0 m	43.1	DEG F
129	SHIFT CABLE @ LOC	191.1	125.2 @09:10:28 @ 0.0 m	252.2 @11:08:28 @ 118.0 m	43.2	DEG F
130	SHIFT CABLE @MAN LEV	214.7	132.1 @09:10:28 @ 0.0 m	287.6 @11:08:28 @ 118.0 m	52.4	DEG F
131	SHIFT CABLE SLEEVE	241.2	147.1 @09:10:28 @ 0.0 m	303.7 @10:12:28 @ 82.0 m	51.2	DEG F
132	SHIFT CABL UNDER SLV	218.9	138.1 @09:10:28 @ 0.0 m	269.2 @11:08:28 @ 118.0 m	40.0	DEG F
133	SHIFT CABL @ END FIT	211.9	137.6 @09:10:28 @ 0.0 m	266.2 @11:08:28 @ 118.0 m	40.7	DEG F
135	FUEL FILTER	134.8	111.4 @09:10:28 @ 0.0 m	145.9 @11:06:28 @ 116.0 m	10.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
136	FUEL LINE AT FILTER	129.3	110.3 @09:10:28 @ 0.0 m	139.3 @11:06:28 @ 116.0 m	8.5	DEG F
137	FUEL RET LINE @ TANK	144.6	114.9 @09:10:28 @ 0.0 m	158.2 @11:16:28 @ 128.0 m	10.9	DEG F
138	FUEL SUP LINE @ TANK	146.2	116.6 @09:10:28 @ 0.0 m	156.5 @11:12:28 @ 122.0 m	10.8	DEG F
139	FUEL TANK SKIN FRT	143.2	117.8 @09:10:28 @ 0.0 m	156.0 @10:08:28 @ 58.0 m	7.2	DEG F
140	FUEL PUMP FLANGE	139.9	112.8 @09:10:28 @ 0.0 m	149.7 @11:10:28 @ 120.0 m	9.2	DEG F
141	FUEL LINE AT SENDER	143.4	117.5 @09:10:28 @ 0.0 m	153.2 @11:06:28 @ 116.0 m	9.2	DEG F
142	FUEL LINE PLAS. CONN	158.0	117.6 @09:10:28 @ 0.0 m	174.7 @10:14:28 @ 64.0 m	14.1	DEG F
143	FUEL IN TANK	133.7	109.1 @09:10:28 @ 0.0 m	144.3 @11:08:28 @ 118.0 m	10.4	DEG F
144	PARK BRK CABLE @AXLE	165.7	120.1 @09:10:28 @ 0.0 m	204.6 @10:10:28 @ 60.0 m	23.5	DEG F
145	AIR SPRING UP CAP RH	168.1	126.0 @09:10:28 @ 0.0 m	184.9 @10:14:28 @ 64.0 m	18.2	DEG F
146	AIR SPRING SLV RH RR	173.3	120.8 @09:10:28 @ 0.0 m	199.0 @10:12:28 @ 62.0 m	19.1	DEG F
147	AIR SPRING SOLE. RH	171.9	125.2 @09:10:28 @ 0.0 m	198.5 @10:14:28 @ 64.0 m	21.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455W3ML  
 TEST DESC: MALFUNCTION  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455W3ML

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
148	ABS SENS WIRE RH RR	165.6	124.5 @09:10:28 @ 0.0 m	202.2 @10:06:28 @ 56.0 m	23.8	DEG F
149	A/CLEAN ELEMENT SEAL	184.5	141.4 @09:10:28 @ 0.0 m	206.7 @11:10:28 @ 120.0 m	21.4	DEG F
150	A/C CYCLING SWITCH	181.6	143.3 @09:10:28 @ 0.0 m	201.3 @11:08:28 @ 118.0 m	15.9	DEG F
151	SHIFT CABLE BRACKET	214.7	143.3 @09:10:28 @ 0.0 m	262.9 @11:08:28 @ 118.0 m	36.9	DEG F
152	SHIFT CABLE @ UBC	225.7	147.2 @09:10:28 @ 0.0 m	278.5 @11:08:28 @ 118.0 m	42.0	DEG F
153	SFT CABLE 10"RR BRKT	25.0	-42.4 @10:12:28 @ 62.0 m	147.5 @11:38:28 @ 148.0 m	49.2	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
2	MANIFOLD VACUUM	8.7	-0.1 @08:18:50 @ 122.0 m	18.3 @07:28:50 @ 72.0 m	7.8	IN HG
5	ENGINE SPEED	976.5	-9.0 @08:16:50 @ 120.0 m	1774.0 @06:16:50 @ 0.0 m	639.6	RPM
6	VEHICLE SPEED	17.3	0.0 @07:16:50 @ 60.0 m	75.0 @06:16:50 @ 0.0 m	25.1	KPH
11	AMBIENT	121.6	100.2 @06:34:50 @ 18.0 m	150.4 @08:28:50 @ 132.0 m	17.9	DEG F
12	TOP WATER	236.0	212.1 @06:16:50 @ 0.0 m	247.1 @08:22:50 @ 126.0 m	8.9	DEG F
13	ENGINE OIL	243.5	201.4 @08:44:50 @ 148.0 m	268.2 @07:08:50 @ 52.0 m	16.6	DEG F
14	TRANSMISSION FLUID	237.0	210.9 @06:34:50 @ 18.0 m	258.0 @07:26:50 @ 70.0 m	14.8	DEG F
15	POWER STEERING FLUID	225.8	195.7 @06:34:50 @ 18.0 m	242.9 @08:14:50 @ 118.0 m	13.9	DEG F
16	HOOD AMB X LF/RR	194.8	146.5 @06:30:50 @ 14.0 m	220.1 @08:20:50 @ 124.0 m	23.1	DEG F
17	HOOD AMB X RF/LR	190.6	146.4 @06:30:50 @ 14.0 m	213.8 @08:18:50 @ 122.0 m	21.8	DEG F
18	ACT CONNECTOR	186.5	116.9 @06:32:50 @ 16.0 m	215.7 @08:20:50 @ 124.0 m	29.8	DEG F
19	ECT CONNECTOR	203.4	168.8 @06:32:50 @ 16.0 m	232.4 @08:30:50 @ 134.0 m	19.8	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455NST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455NST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
20	TP SENSOR	193.4	162.9 @06:32:50 @ 16.0 m	212.7 @08:14:50 @ 118.0 m	17.5	DEG F
21	CRANK POSITION SEN.	196.5	169.8 @06:32:50 @ 16.0 m	214.3 @08:14:50 @ 118.0 m	15.5	DEG F
22	CAM POSITION SEN.	210.9	182.5 @06:32:50 @ 16.0 m	232.4 @08:24:50 @ 128.0 m	15.5	DEG F
23	EDIS MODULE (1)	170.1	121.1 @06:34:50 @ 18.0 m	216.5 @08:14:50 @ 118.0 m	34.8	DEG F
24	EDIS MODULE (2)	169.7	120.9 @06:34:50 @ 18.0 m	214.9 @08:14:50 @ 118.0 m	34.1	DEG F
25	LH IGNITION COIL AMB	196.1	152.6 @06:28:50 @ 12.0 m	219.0 @08:18:50 @ 122.0 m	20.3	DEG F
26	RH IGNITION COIL AMB	194.3	153.2 @06:30:50 @ 14.0 m	214.5 @08:24:50 @ 128.0 m	20.2	DEG F
27	OIL PRESSURE SENDER	215.9	180.8 @06:16:50 @ 0.0 m	234.7 @07:18:50 @ 62.0 m	16.1	DEG F
28	H2O TEMP SENDER	228.2	205.2 @06:16:50 @ 0.0 m	240.9 @08:24:50 @ 128.0 m	10.1	DEG F
29	MAF SENSOR	193.6	143.2 @06:32:50 @ 16.0 m	215.9 @08:18:50 @ 122.0 m	22.8	DEG F
30	EEC POWER RELAY	181.7	117.3 @06:32:50 @ 16.0 m	221.2 @08:16:50 @ 120.0 m	33.1	DEG F
31	FUEL PUMP RELAY	186.2	126.0 @06:32:50 @ 16.0 m	235.6 @08:14:50 @ 118.0 m	39.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
32	ISC MOTOR	190.7	135.4 @06:32:50 @ 16.0 m	219.2 @08:18:50 @ 122.0 m	26.6	DEG F
33	EVR SOLENOID	193.4	167.3 @06:32:50 @ 16.0 m	209.1 @08:14:50 @ 118.0 m	13.0	DEG F
34	EVR REGULATOR	188.6	152.5 @06:32:50 @ 16.0 m	209.8 @08:14:50 @ 118.0 m	18.3	DEG F
35	THROTTLE BODY @TPS	186.2	132.3 @06:32:50 @ 16.0 m	212.7 @08:24:50 @ 128.0 m	27.9	DEG F
36	PURGE CONTROL SOLE.	185.0	130.9 @06:32:50 @ 16.0 m	204.3 @08:14:50 @ 118.0 m	20.6	DEG F
37	ALTERNATOR INLET AIR	208.3	174.4 @06:30:50 @ 14.0 m	236.7 @08:24:50 @ 128.0 m	19.1	DEG F
38	A/C EVAP CASE BTM	152.5	127.0 @06:32:50 @ 16.0 m	185.6 @07:10:50 @ 54.0 m	19.6	DEG F
39	FUEL PRESSURE REG	165.6	146.1 @06:34:50 @ 18.0 m	197.9 @08:44:50 @ 148.0 m	13.3	DEG F
40	FUEL RAIL SUPPLY	162.4	142.2 @06:34:50 @ 18.0 m	198.8 @08:40:50 @ 144.0 m	16.1	DEG F
41	FUEL RAIL RETURN	158.8	138.5 @06:34:50 @ 18.0 m	196.5 @08:44:50 @ 148.0 m	14.9	DEG F
42	STARTER CABLE @MAN	282.2	188.1 @08:44:50 @ 148.0 m	337.6 @07:16:50 @ 60.0 m	39.7	DEG F
43	STARTER MAGNET	240.4	178.4 @08:44:50 @ 148.0 m	268.3 @06:58:50 @ 42.0 m	22.4	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
44	STARTER COIL	215.6	170.7 @06:32:50 @ 16.0 m	238.2 @08:14:50 @ 118.0 m	22.3	DEG F
45	BRK MASTER CYL	192.4	168.6 @06:32:50 @ 16.0 m	215.0 @08:18:50 @ 122.0 m	15.5	DEG F
46	BRK VAC BOOSTER	203.5	162.5 @06:32:50 @ 16.0 m	236.0 @08:14:50 @ 118.0 m	23.0	DEG F
47	POWER DIST BOX AMB I	189.7	133.1 @06:32:50 @ 16.0 m	210.8 @08:16:50 @ 120.0 m	22.8	DEG F
48	AIR CLEANER CASE	183.5	125.6 @06:32:50 @ 16.0 m	210.4 @08:14:50 @ 118.0 m	27.9	DEG F
49	AIR CLEANER INLET	167.5	100.8 @06:28:50 @ 12.0 m	209.5 @08:14:50 @ 118.0 m	42.0	DEG F
50	A/C-RESONATOR HOSE	199.3	165.8 @06:32:50 @ 16.0 m	225.9 @08:36:50 @ 140.0 m	19.3	DEG F
51	CARBON CANNISTER	132.0	101.5 @06:34:50 @ 18.0 m	157.2 @08:26:50 @ 130.0 m	16.2	DEG F
52	STEERING FLEX COUPL.	200.8	157.6 @06:32:50 @ 16.0 m	227.6 @08:14:50 @ 118.0 m	22.9	DEG F
53	POWER STEERING PUMP	212.4	186.4 @06:16:50 @ 0.0 m	232.5 @08:14:50 @ 118.0 m	14.7	DEG F
54	POWER STEERING HOSE	210.2	181.6 @08:44:50 @ 148.0 m	233.8 @08:14:50 @ 118.0 m	17.3	DEG F
57	EDIS MODULE EXT SKIN	162.7	107.0 @06:32:50 @ 16.0 m	212.1 @08:16:50 @ 120.0 m	42.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
61	A/C DISCHARGE AIR	62.5	38.4 @06:42:50 @ 26.0 m	126.7 @08:44:50 @ 148.0 m	26.7	DEG F
62	TOEBOARD TOP LH	256.0	173.6 @08:44:50 @ 148.0 m	314.2 @07:18:50 @ 62.0 m	48.2	DEG F
63	TOEBOARD TOP RH	209.6	168.6 @08:44:50 @ 148.0 m	250.6 @07:10:50 @ 54.0 m	25.2	DEG F
64	TOEBOARD BTM LH	238.1	162.2 @06:16:50 @ 0.0 m	293.5 @07:18:50 @ 62.0 m	40.3	DEG F
65	TOEBOARD BTM RH	216.7	162.6 @06:32:50 @ 16.0 m	257.8 @07:16:50 @ 60.0 m	27.8	DEG F
66	FLR OVER CAT LH	236.3	161.2 @06:16:50 @ 0.0 m	310.2 @07:18:50 @ 62.0 m	42.4	DEG F
67	FLR OVER CAT RH	197.0	159.9 @06:32:50 @ 16.0 m	239.3 @07:18:50 @ 62.0 m	21.1	DEG F
68	FLR OVER CAT OUT LH	236.9	152.1 @08:44:50 @ 148.0 m	309.1 @07:16:50 @ 60.0 m	43.0	DEG F
69	FLR OVER CAT OUT RH	206.0	160.8 @08:44:50 @ 148.0 m	252.2 @07:16:50 @ 60.0 m	22.6	DEG F
70	FLR 4" RR UBC LH	215.3	144.1 @08:44:50 @ 148.0 m	273.1 @07:18:50 @ 62.0 m	35.7	DEG F
71	FLR 4" RR UBC RH	197.9	158.8 @08:44:50 @ 148.0 m	227.5 @07:16:50 @ 60.0 m	18.5	DEG F
72	FLR OVER Y JT	194.2	133.1 @08:44:50 @ 148.0 m	268.3 @07:16:50 @ 60.0 m	33.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
73	FLR OVER MUFF INLET	156.6	124.9 008:44:50 @ 148.0 m	189.1 007:16:50 @ 60.0 m	18.5	DEG F
74	FLR VERT FWD OF MUFF	181.0	127.9 006:16:50 @ 0.0 m	232.5 007:18:50 @ 62.0 m	27.6	DEG F
75	FLR OVER MUFF FRT	190.2	131.3 006:16:50 @ 0.0 m	243.4 007:18:50 @ 62.0 m	28.3	DEG F
76	FLR OVER MUFF CENTER	233.4	135.9 006:16:50 @ 0.0 m	337.7 007:16:50 @ 60.0 m	52.9	DEG F
77	FLR OVER MUFF RR	189.8	130.7 006:16:50 @ 0.0 m	241.8 007:20:50 @ 64.0 m	29.9	DEG F
78	FLR IN KICKUP	161.8	130.3 006:30:50 @ 14.0 m	183.5 007:20:50 @ 64.0 m	15.0	DEG F
79	FLR IN TRUNK	150.6	121.9 006:16:50 @ 0.0 m	177.7 007:18:50 @ 62.0 m	14.5	DEG F
80	HEGO TIP LH	1062.0	244.2 008:44:50 @ 148.0 m	1378.8 006:42:50 @ 26.0 m	373.1	DEG F
81	HEGO TIP RH	1006.7	232.0 008:44:50 @ 148.0 m	1351.8 006:42:50 @ 26.0 m	374.5	DEG F
82	HEGO GROMMET LH	279.8	175.1 006:16:50 @ 0.0 m	362.1 007:20:50 @ 64.0 m	63.6	DEG F
83	HEGO GROMMET RH	252.7	173.7 006:16:50 @ 0.0 m	309.7 007:16:50 @ 60.0 m	33.3	DEG F
84	HEGO HEX LH	572.6	237.9 008:44:50 @ 148.0 m	748.4 007:14:50 @ 58.0 m	144.5	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
85	HEGO HEX RH	550.0	227.1 @08:44:50 @ 148.0 m	780.0 @06:48:50 @ 32.0 m	171.9	DEG F
86	HEGO CONNECTOR LH	209.1	160.9 @06:32:50 @ 16.0 m	246.4 @08:14:50 @ 118.0 m	30.0	DEG F
87	HEGO CONNECTOR RH	197.3	161.9 @06:32:50 @ 16.0 m	214.2 @08:20:50 @ 124.0 m	16.2	DEG F
88	EXHAUST MANIFOLD LH	616.2	223.1 @08:44:50 @ 148.0 m	922.5 @06:44:50 @ 28.0 m	237.1	DEG F
89	EXHAUST MANIFOLD RH	580.6	221.4 @08:44:50 @ 148.0 m	848.6 @06:46:50 @ 30.0 m	202.2	DEG F
90	LOC GAS LH	993.8	372.8 @08:44:50 @ 148.0 m	1346.4 @06:42:50 @ 26.0 m	283.8	DEG F
91	LOC GAS RH	990.7	424.2 @08:44:50 @ 148.0 m	1348.0 @06:42:50 @ 26.0 m	272.8	DEG F
92	LOC SKIN OUTSD LH	476.0	212.2 @06:16:50 @ 0.0 m	633.8 @07:16:50 @ 60.0 m	116.1	DEG F
93	LOC SKIN OUTSD RH	435.2	186.0 @06:16:50 @ 0.0 m	601.6 @07:16:50 @ 60.0 m	111.7	DEG F
94	UBC GAS LH	902.3	384.1 @08:44:50 @ 148.0 m	1253.7 @06:50:50 @ 34.0 m	263.3	DEG F
95	UBC GAS RH	904.8	391.2 @08:44:50 @ 148.0 m	1271.7 @06:46:50 @ 30.0 m	272.1	DEG F
96	UBC SKIN BTM LH	604.4	242.1 @08:44:50 @ 148.0 m	865.3 @07:08:50 @ 52.0 m	185.2	DEG F

TABULAR DATA SUMMARY REPORT

VER. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
97	UBC SKIN BTM RH	561.2	239.3 @08:44:50 @ 148.0 m	808.9 @06:48:50 @ 32.0 m	173.3	DEG F
98	EXH PIPE 1ST BEND LH	484.5	165.3 @08:44:50 @ 148.0 m	718.5 @07:10:50 @ 54.0 m	169.2	DEG F
99	EXH PIPE 1ST BEND RH	493.3	169.9 @08:44:50 @ 148.0 m	734.4 @06:46:50 @ 30.0 m	175.1	DEG F
100	EXH PIPE 6"RR UBC LH	479.3	157.9 @08:44:50 @ 148.0 m	720.3 @07:08:50 @ 52.0 m	172.9	DEG F
101	EXH PIPE 6"RR UBC RH	470.8	155.1 @08:44:50 @ 148.0 m	712.0 @06:46:50 @ 30.0 m	174.2	DEG F
102	EXH PIPE AT Y-JT	485.4	135.8 @08:44:50 @ 148.0 m	728.7 @06:52:50 @ 36.0 m	183.2	DEG F
103	EXH PIPE 6"FWD MUFF	435.8	134.7 @08:44:50 @ 148.0 m	695.9 @06:52:50 @ 36.0 m	180.7	DEG F
104	MUFFLER BTM CENTER	394.9	139.1 @08:44:50 @ 148.0 m	626.1 @06:52:50 @ 36.0 m	154.8	DEG F
105	EXH TOP OF KICKUP	406.2	147.4 @08:44:50 @ 148.0 m	656.6 @06:52:50 @ 36.0 m	168.9	DEG F
106	EXH 12" FWD OUTLET	308.6	125.3 @08:44:50 @ 148.0 m	513.3 @07:10:50 @ 54.0 m	130.0	DEG F
107	INTERMED EXH HGR IN	224.3	132.5 @06:16:50 @ 0.0 m	309.9 @07:16:50 @ 60.0 m	49.7	DEG F
108	INTERMED EXH HGR OUT	222.1	131.0 @06:16:50 @ 0.0 m	302.4 @07:18:50 @ 62.0 m	44.3	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
109	RR EXH. HANGER	198.5	121.5 @06:16:50 @ 0.0 m	277.6 @07:16:50 @ 60.0 m	44.3	DEG F
110	FRT U-JT ARM	188.7	137.8 @08:44:50 @ 148.0 m	234.4 @07:18:50 @ 62.0 m	26.2	DEG F
111	ENG MNT LH	197.7	170.2 @06:32:50 @ 15.0 m	237.9 @07:18:50 @ 62.0 m	20.0	DEG F
112	ENG MNT RH	198.7	138.4 @06:32:50 @ 15.0 m	230.3 @08:14:50 @ 118.0 m	27.2	DEG F
113	ENG MNT RR	192.4	149.9 @06:32:50 @ 16.0 m	220.2 @07:38:50 @ 82.0 m	22.4	DEG F
114	TRANS PAN GASKET LH	231.0	189.7 @06:32:50 @ 16.0 m	256.7 @07:26:50 @ 70.0 m	19.1	DEG F
116	SPEED SENSOR	208.9	172.7 @08:44:50 @ 148.0 m	234.5 @07:26:50 @ 70.0 m	20.4	DEG F
118	TRAN ELEC CONN LH RR	202.5	165.8 @06:32:50 @ 16.0 m	225.1 @08:14:50 @ 118.0 m	20.1	DEG F
119	TRANS BELLHSG LH	225.9	172.8 @06:32:50 @ 16.0 m	253.1 @07:28:50 @ 72.0 m	23.9	DEG F
120	TRANS BELLHSG RH	230.2	184.7 @06:32:50 @ 16.0 m	252.6 @07:26:50 @ 70.0 m	20.0	DEG F
121	TRAN EXT HSG GASKET	228.9	198.0 @06:32:50 @ 16.0 m	250.6 @07:16:50 @ 60.0 m	16.1	DEG F
122	TRAN EXT HSG BUSHING	220.7	191.7 @08:44:50 @ 148.0 m	244.4 @07:18:50 @ 62.0 m	15.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
123	TRAN FILL TUBE SKIN	229.0	181.8 @06:32:50 @ 16.0 m	261.5 @07:24:50 @ 68.0 m	21.7	DEG F
124	TRAN FILL TUBE SEAL	219.6	152.2 @06:30:50 @ 14.0 m	257.9 @07:26:50 @ 70.0 m	30.2	DEG F
125	TRAN CASE @MAN LEV	229.0	190.4 @06:32:50 @ 16.0 m	253.5 @07:26:50 @ 70.0 m	18.2	DEG F
126	TRAN HLPS	213.6	174.0 @06:32:50 @ 16.0 m	244.7 @08:14:50 @ 118.0 m	24.0	DEG F
127	TRAN BULKHEAD CONN	210.4	171.1 @08:44:50 @ 148.0 m	242.6 @07:18:50 @ 62.0 m	22.3	DEG F
128	SHIFT CABLE @EXH MAN	252.9	154.6 @08:44:50 @ 148.0 m	308.5 @08:08:50 @ 112.0 m	51.8	DEG F
129	SHIFT CABLE @ LOC	186.7	130.2 @06:30:50 @ 14.0 m	231.4 @08:12:50 @ 116.0 m	34.7	DEG F
130	SHIFT CABLE @MAN LEV	193.7	136.1 @06:30:50 @ 14.0 m	238.1 @08:12:50 @ 116.0 m	35.3	DEG F
131	SHIFT CABLE SLEEVE	209.9	141.0 @08:44:50 @ 148.0 m	261.3 @07:18:50 @ 62.0 m	35.1	DEG F
132	SHIFT CABL UNDER SLV	199.3	143.0 @08:44:50 @ 148.0 m	233.7 @07:20:50 @ 64.0 m	29.1	DEG F
133	SHIFT CABL @ END FIT	197.1	149.5 @06:30:50 @ 14.0 m	228.9 @08:14:50 @ 118.0 m	29.1	DEG F
135	FUEL FILTER	139.9	123.1 @06:32:50 @ 16.0 m	148.7 @08:14:50 @ 118.0 m	7.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W435W  
 TEST ID : W455WST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455WST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
136	FUEL LINE AT FILTER	131.5	115.8 #06:30:50 @ 14.0 m	140.3 #07:16:50 @ 60.0 m	7.6	DEG F
137	FUEL RET LINE @ TANK	148.9	130.8 #06:32:50 @ 16.0 m	156.5 #07:14:50 @ 58.0 m	7.5	DEG F
138	FUEL SUP LINE @ TANK	149.7	126.1 #06:32:50 @ 16.0 m	159.7 #07:20:50 @ 64.0 m	10.6	DEG F
139	FUEL TANK SKIN FRT	147.6	131.4 #06:16:50 @ 0.0 m	160.3 #07:10:50 @ 54.0 m	6.5	DEG F
140	FUEL PUMP FLANGE	149.9	133.1 #06:32:50 @ 16.0 m	161.5 #07:12:50 @ 56.0 m	7.5	DEG F
141	FUEL LINE AT SENDER	148.7	132.1 #06:32:50 @ 16.0 m	155.7 #08:14:50 @ 118.0 m	7.5	DEG F
142	FUEL LINE PLAS. CONN	159.3	127.1 #06:16:50 @ 0.0 m	179.6 #07:18:50 @ 62.0 m	15.6	DEG F
143	FUEL IN TANK	140.4	127.5 #06:32:50 @ 16.0 m	148.1 #08:14:50 @ 118.0 m	6.3	DEG F
144	PARK BRK CABLE @AXLE	161.1	124.2 #06:16:50 @ 0.0 m	199.7 #07:14:50 @ 58.0 m	22.1	DEG F
145	AIR SPRING UP CAP RH	161.4	128.8 #06:32:50 @ 16.0 m	177.4 #07:34:50 @ 78.0 m	16.0	DEG F
146	AIR SPRING SLV RH RR	164.8	129.4 #06:16:50 @ 0.0 m	198.7 #07:20:50 @ 64.0 m	17.1	DEG F
147	AIR SPRING SOLE. RH	165.8	129.3 #06:32:50 @ 16.0 m	192.5 #07:20:50 @ 64.0 m	19.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455W  
 TEST ID : W455NST  
 TEST DESC: CLASS I T.TOW  
 TEST DATE: 05 MAY 91  
 DATAFILE : W455NST

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
148	ABS SENS WIRE RH RR	160.7	127.1 @06:16:50 @ 0.0 m	203.6 @07:14:50 @ 58.0 m	22.9	DEG F
149	A/CLEAN ELEMENT SEAL	192.4	149.6 @06:32:50 @ 16.0 m	211.6 @08:18:50 @ 122.0 m	20.3	DEG F
150	A/C CYCLING SWITCH	189.1	161.0 @06:32:50 @ 16.0 m	206.2 @08:14:50 @ 118.0 m	14.6	DEG F
151	SHIFT CABLE BRACKET	204.0	155.1 @06:32:50 @ 16.0 m	237.9 @07:20:50 @ 64.0 m	28.6	DEG F
152	SHIFT CABLE @ UBC	207.2	155.0 @08:44:50 @ 148.0 m	247.5 @07:18:50 @ 62.0 m	31.5	DEG F
153	SFT CABLE 10"RR BRKT	48.2	-19.3 @07:18:50 @ 62.0 m	152.7 @08:44:50 @ 148.0 m	47.1	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
11	AMBIENT	125.5	100.3 @08:05:27 @ 4.0 m	154.3 @10:01:27 @ 120.0 m	20.8	DEG F
12	TOP WATER	232.2	201.6 @08:01:27 @ 0.0 m	249.2 @08:59:27 @ 58.0 m	13.8	DEG F
13	ENGINE OIL	245.5	188.0 @10:31:27 @ 150.0 m	290.7 @08:57:27 @ 56.0 m	30.6	DEG F
14	TRANSMISSION FLUID	236.3	197.9 @08:17:27 @ 16.0 m	270.2 @08:53:27 @ 52.0 m	25.1	DEG F
15	POWER STEERING FLUID	220.7	172.6 @08:17:27 @ 16.0 m	233.0 @09:21:27 @ 80.0 m	18.3	DEG F
16	HOOD AMB X LF/RR	207.7	151.3 @08:11:27 @ 10.0 m	229.2 @09:11:27 @ 70.0 m	21.8	DEG F
17	HOOD AMB X RF/LR	197.0	140.1 @08:17:27 @ 16.0 m	218.4 @09:11:27 @ 70.0 m	24.7	DEG F
18	ACT CONNECTOR	194.8	112.6 @08:17:27 @ 16.0 m	217.9 @09:23:27 @ 82.0 m	31.1	DEG F
19	ECT CONNECTOR	217.1	171.0 @08:17:27 @ 16.0 m	235.8 @09:05:27 @ 64.0 m	18.0	DEG F
20	TP SENSOR	198.7	153.7 @08:01:27 @ 0.0 m	214.0 @09:31:27 @ 90.0 m	19.4	DEG F
21	CRANK POSITION SEN.	215.4	164.8 @08:17:27 @ 16.0 m	239.8 @09:05:27 @ 64.0 m	21.0	DEG F
22	CAM POSITION SEN.	222.7	182.2 @08:17:27 @ 16.0 m	244.6 @09:03:27 @ 62.0 m	17.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
23	EDIS MODULE (1)	172.1	121.9 @08:17:27 @ 16.0 m	218.5 @09:59:27 @ 118.0 m	16.4	DEG F
24	EDIS MODULE (2)	172.7	123.8 @08:17:27 @ 16.0 m	216.6 @09:59:27 @ 118.0 m	34.5	DEG F
25	LH IGNITION COIL AMB	210.6	158.8 @08:17:27 @ 16.0 m	230.7 @09:11:27 @ 70.0 m	20.0	DEG F
26	RH IGNITION COIL AMB	207.7	142.3 @08:11:27 @ 10.0 m	230.7 @09:11:27 @ 70.0 m	24.2	DEG F
27	OIL PRESSURE SENDER	223.9	175.5 @08:17:27 @ 16.0 m	258.9 @09:01:27 @ 60.0 m	24.3	DEG F
28	H2O TEMP SENDER	228.4	196.0 @08:01:27 @ 0.0 m	243.9 @08:59:27 @ 58.0 m	13.7	DEG F
29	MAP SENSOR	205.7	143.3 @08:17:27 @ 16.0 m	224.4 @09:13:27 @ 72.0 m	23.0	DEG F
30	EBC POWER RELAY	197.9	134.0 @08:17:27 @ 16.0 m	251.2 @09:59:27 @ 118.0 m	41.9	DEG F
31	FUEL PUMP RELAY	194.7	127.4 @08:17:27 @ 16.0 m	252.7 @09:59:27 @ 118.0 m	44.9	DEG F
32	ISC MOTOR	196.7	132.6 @08:17:27 @ 16.0 m	217.1 @10:03:27 @ 122.0 m	25.8	DEG F
33	EVR SOLENOID	200.5	158.2 @08:01:27 @ 0.0 m	217.2 @09:25:27 @ 84.0 m	16.5	DEG F
34	EVR REGULATOR	199.1	154.7 @08:17:27 @ 16.0 m	217.0 @09:29:27 @ 88.0 m	20.0	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W453  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
35	THROTTLE BODY STPS	193.2	132.4 @08:17:27 @ 16.0 m	216.5 @09:23:27 @ 82.0 m	26.8	DEG F
36	PURGE CONTROL SOLR.	195.9	134.6 @08:17:27 @ 16.0 m	213.0 @09:15:27 @ 74.0 m	24.0	DEG F
37	ALTERNATOR INLET AIR	218.9	178.2 @08:17:27 @ 16.0 m	236.8 @09:03:27 @ 62.0 m	16.0	DEG F
38	A/C EVAP CASE BTM	223.3	122.2 @08:01:27 @ 0.0 m	265.4 @08:37:27 @ 36.0 m	43.6	DEG F
39	FUEL PRESS REG	176.2	143.6 @08:19:27 @ 18.0 m	211.8 @10:31:27 @ 150.0 m	16.6	DEG F
40	FUEL RAIL SUPPLY	171.9	141.7 @08:19:27 @ 18.0 m	207.6 @10:23:27 @ 142.0 m	18.0	DEG F
41	FUEL RAIL RETURN	169.3	137.9 @08:17:27 @ 16.0 m	207.7 @10:25:27 @ 144.0 m	19.5	DEG F
42	STARTER CABLE	267.3	240.6 @08:01:27 @ 0.0 m	345.2 @09:05:27 @ 64.0 m	21.9	DEG F
43	STARTER MAGNET	222.4	160.6 @08:01:27 @ 0.0 m	273.3 @09:01:27 @ 60.0 m	31.5	DEG F
44	STARTER BEARING	237.4	165.9 @08:01:27 @ 0.0 m	274.3 @09:01:27 @ 60.0 m	34.6	DEG F
45	BRK MASTER CYL	196.3	150.6 @08:17:27 @ 16.0 m	216.3 @10:01:27 @ 120.0 m	21.4	DEG F
46	BRK VAC BOOSTER	208.3	154.4 @08:17:27 @ 16.0 m	227.8 @09:59:27 @ 118.0 m	22.9	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
47	POWER DIST BOX AMB I	205.2	129.6 @08:17:27 @ 16.0 m	229.6 @09:03:27 @ 62.0 m	29.3	DEG F
48	AIR CLEANER CASE	198.4	128.5 @08:17:27 @ 16.0 m	220.4 @09:13:27 @ 72.0 m	27.3	DEG F
49	AIR CLEANER INLET	169.5	101.8 @08:13:27 @ 12.0 m	210.5 @09:13:27 @ 72.0 m	41.3	DEG F
50	AIR INTAKE RESONATOR	214.6	168.5 @08:17:27 @ 16.0 m	232.7 @09:07:27 @ 66.0 m	17.9	DEG F
51	CARBON CANNISTER	149.9	101.5 @08:17:27 @ 16.0 m	178.4 @09:21:27 @ 80.0 m	23.9	DEG F
52	STEERING FLEX COUPL.	215.6	157.3 @08:17:27 @ 16.0 m	242.8 @09:01:27 @ 60.0 m	24.1	DEG F
53	POWER STEERING PUMP	214.1	168.0 @08:17:27 @ 16.0 m	228.1 @09:19:27 @ 78.0 m	18.5	DEG F
54	POWER STEERING HOSE	215.1	169.4 @08:17:27 @ 16.0 m	233.5 @09:17:27 @ 76.0 m	20.7	DEG F
55	AIR SUSP PRES LINE	193.9	155.3 @08:17:27 @ 16.0 m	225.7 @09:09:27 @ 68.0 m	22.7	DEG F
61	A/C DISCHARGE AIR	94.9	37.9 @08:15:27 @ 14.0 m	181.5 @10:31:27 @ 150.0 m	39.2	DEG F
62	TOEBD TOP LH	265.0	163.5 @10:31:27 @ 150.0 m	340.7 @09:08:27 @ 64.0 m	56.6	DEG F
63	TOEBD TOP RH	261.5	164.7 @10:31:27 @ 150.0 m	336.9 @08:25:27 @ 24.0 m	57.6	DEG F



TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
64	TOEBOARD BTM LH	242.4	147.1 @10:31:27 @ 150.0 m	341.3 @09:03:27 @ 62.0 m	57.6	DEG F
65	TOEBOARD BTM RH	253.4	158.8 @10:31:27 @ 150.0 m	333.9 @09:03:27 @ 62.0 m	57.0	DEG F
66	FLR OVER CAT LH	228.4	139.9 @10:31:27 @ 150.0 m	332.8 @09:03:27 @ 62.0 m	55.5	DEG F
67	FLR OVER CAT RH	237.7	151.7 @10:31:27 @ 150.0 m	334.6 @09:03:27 @ 62.0 m	53.7	DEG F
68	FLR OVER CAT OUT LH	235.6	134.6 @10:31:27 @ 150.0 m	345.5 @08:25:27 @ 24.0 m	70.5	DEG F
69	FLR OVER CAT OUT RH	247.3	146.8 @10:31:27 @ 150.0 m	345.4 @09:03:27 @ 62.0 m	68.1	DEG F
70	FLR 4" RR UBC LH	203.8	130.8 @10:31:27 @ 150.0 m	281.3 @09:01:27 @ 60.0 m	49.0	DEG F
71	FLR 4" RR UBC RH	231.5	144.7 @10:31:27 @ 150.0 m	328.2 @09:01:27 @ 60.0 m	58.2	DEG F
72	FLR OVER H JT	175.4	132.7 @10:31:27 @ 150.0 m	231.7 @09:03:27 @ 62.0 m	27.2	DEG F
73	FLR @ MUFF INLET RH	157.3	126.1 @10:31:27 @ 150.0 m	198.3 @08:25:27 @ 24.0 m	26.1	DEG F
74	FLR VERT FWD MUFF RH	187.5	134.2 @08:17:27 @ 16.0 m	256.0 @09:03:27 @ 62.0 m	41.6	DEG F
75	FLR OVER MUFF FRT RH	196.5	136.7 @08:17:27 @ 16.0 m	271.9 @09:03:27 @ 62.0 m	42.8	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
76	FLR OVER MUFF CEN RH	232.8	141.8 @10:31:27 @ 150.0 m	375.7 @09:01:27 @ 60.0 m	75.8	DEG F
77	FLR OVER MUFF RR RH	191.6	133.7 @08:17:27 @ 16.0 m	259.0 @09:05:27 @ 64.0 m	35.7	DEG F
78	FLR IN KICKUP RH	164.9	127.1 @08:15:27 @ 14.0 m	195.8 @09:07:27 @ 66.0 m	18.1	DEG F
79	FLR IN TRUNK RH	140.6	116.2 @08:17:27 @ 16.0 m	165.4 @09:03:27 @ 62.0 m	12.4	DEG F
80	HEGO TIP LH	1111.9	226.3 @10:31:27 @ 150.0 m	1578.7 @08:21:27 @ 20.0 m	436.8	DEG F
81	HEGO TIP RH	1060.0	208.7 @10:31:27 @ 150.0 m	1574.3 @08:19:27 @ 18.0 m	444.3	DEG F
82	HEGO GROMMET LH	276.7	179.1 @10:31:27 @ 150.0 m	393.7 @09:03:27 @ 62.0 m	55.2	DEG F
83	HEGO GROMMET RH	300.4	180.9 @10:31:27 @ 150.0 m	446.8 @09:03:27 @ 62.0 m	59.0	DEG F
84	HEGO HEX LH	614.1	220.4 @10:31:27 @ 150.0 m	957.1 @08:25:27 @ 24.0 m	223.9	DEG F
85	HEGO HEX RH	617.0	206.5 @10:31:27 @ 150.0 m	1001.0 @08:23:27 @ 22.0 m	247.3	DEG F
86	HEGO CONNECTOR LH	210.3	171.1 @08:01:27 @ 0.0 m	230.6 @09:19:27 @ 78.0 m	20.0	DEG F
87	HEGO CONNECTOR RH	207.8	156.8 @08:17:27 @ 16.0 m	229.6 @09:13:27 @ 72.0 m	21.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
88	EXHAUST MANIFOLD LH	655.7	211.5 @10:31:27 @ 150.0 m	1162.9 @08:21:27 @ 20.0 m	309.4	DEG F
89	EXHAUST MANIFOLD RH	648.1	204.3 @10:31:27 @ 150.0 m	1129.2 @08:23:27 @ 22.0 m	301.9	
90	LOC GAS LH	1037.4	336.9 @10:31:27 @ 150.0 m	1662.3 @08:21:27 @ 20.0 m	365.9	DEG F
91	LOC GAS RH	1030.1	261.1 @10:31:27 @ 150.0 m	1669.6 @08:21:27 @ 20.0 m	379.4	DEG F
92	LOC SKIN OUTBD LH	466.6	232.3 @10:31:27 @ 150.0 m	686.9 @09:03:27 @ 62.0 m	126.2	DEG F
93	LOC SKIN OUTBD RH	458.0	212.6 @10:31:27 @ 150.0 m	702.2 @09:01:27 @ 60.0 m	127.9	DEG F
94	UBC GAS LH	935.5	323.8 @10:31:27 @ 150.0 m	1571.4 @08:21:27 @ 20.0 m	367.0	DEG F
95	UBC GAS RH	853.8	259.6 @10:31:27 @ 150.0 m	1522.2 @08:21:27 @ 20.0 m	380.5	DEG F
96	UBC SKIN BTM LH	602.6	200.3 @10:31:27 @ 150.0 m	1052.2 @08:23:27 @ 22.0 m	257.1	DEG F
97	UBC SKIN BTM RH	620.4	224.0 @10:31:27 @ 150.0 m	1059.2 @08:23:27 @ 22.0 m	251.7	DEG F
98	EXH PIPE 1ST BEND LH	507.8	147.1 @10:31:27 @ 150.0 m	939.6 @08:23:27 @ 22.0 m	238.4	DEG F
99	EXH PIPE 1ST BEND RH	544.2	182.1 @10:31:27 @ 150.0 m	984.0 @08:23:27 @ 22.0 m	242.7	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000ft.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
100	EXH PIPE 6"RR UBC LH	492.4	143.8 @10:31:27 @ 150.0 m	927.8 @08:23:27 @ 22.0 m	236.4	DEG F
101	EXH PIPE 6"RR UBC RH	469.6	166.2 @10:31:27 @ 130.0 m	850.3 @08:23:27 @ 22.0 m	203.6	DEG F
102	EXH PIPE @ H JOINT	454.2	136.3 @10:31:27 @ 150.0 m	821.5 @08:23:27 @ 22.0 m	206.9	DEG F
103	EXH PIPE 6"FWD MUF RH	437.8	138.4 @10:31:27 @ 150.0 m	892.7 @08:23:27 @ 22.0 m	236.1	DEG F
104	MUFF BTM CEN RH	346.7	136.2 @10:31:27 @ 150.0 m	732.1 @08:23:27 @ 22.0 m	191.3	DEG F
105	EXH PIPE KICKUP RH	372.3	144.7 @10:31:27 @ 150.0 m	766.5 @08:23:27 @ 22.0 m	204.7	DEG F
106	EXH PIPE 12"FOROUT RH	232.5	131.5 @10:31:27 @ 150.0 m	402.7 @08:27:27 @ 26.0 m	98.4	DEG F
107	EXH HANG INTER RH IN	187.0	139.3 @10:31:27 @ 150.0 m	245.8 @09:01:27 @ 60.0 m	38.3	DEG F
108	EXH HANG INTER RHOUT	173.8	131.1 @08:15:27 @ 14.0 m	220.0 @09:03:27 @ 62.0 m	29.1	DEG F
109	EXH HANG REAR RH	147.6	117.2 @08:17:27 @ 16.0 m	183.8 @09:09:27 @ 68.0 m	19.2	DEG F
110	FRT U-JOINT	175.1	133.1 @10:31:27 @ 150.0 m	232.5 @09:03:27 @ 62.0 m	27.4	DEG F
112	ENGINE MOUNT RH	211.7	139.6 @08:17:27 @ 16.0 m	250.3 @09:01:27 @ 60.0 m	33.6	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
113	ENGINE MOUNT REAR	192.4	145.6 @08:17:27 @ 16.0 m	227.4 @09:03:27 @ 62.0 m	23.6	DEG F
114	TRANS OILPAN GSXT LH	206.1	134.9 @08:17:27 @ 16.0 m	254.8 @09:03:27 @ 64.0 m	31.9	DEG F
115	TRANS OILPAN GSXT RH	212.6	135.0 @08:17:27 @ 16.0 m	262.9 @09:03:27 @ 62.0 m	33.1	DEG F
116	SPEED SNSR EXT HSG	226.6	181.5 @10:31:27 @ 150.0 m	267.0 @08:49:27 @ 48.0 m	29.6	DEG F
117	TRANS EXTHSG RR SEAL	224.5	179.3 @10:31:27 @ 150.0 m	260.6 @09:03:27 @ 62.0 m	26.4	DEG F
118	TRANS OUTSHAFT SNSR	208.2	161.7 @10:31:27 @ 150.0 m	245.4 @09:01:27 @ 60.0 m	27.8	DEG F
119	TRANS BELLHSG LH	230.1	171.6 @08:17:27 @ 16.0 m	265.9 @09:03:27 @ 62.0 m	27.6	DEG F
120	TRANS BELLHSG RH	256.7	175.8 @10:31:27 @ 150.0 m	327.9 @09:01:27 @ 60.0 m	49.6	DEG F
121	TRANS EXT HSG GSXT	229.7	184.5 @08:17:27 @ 16.0 m	267.8 @09:01:27 @ 60.0 m	27.8	DEG F
122	TRANS EXT HSG BUSH	224.2	177.6 @10:31:27 @ 150.0 m	261.8 @09:01:27 @ 60.0 m	27.4	DEG F
123	TRANS FILL TUBE SEAL	228.8	153.3 @08:17:27 @ 16.0 m	273.5 @09:03:27 @ 62.0 m	36.7	DEG F
124	TRANS FILL TUBE SKIN	248.4	162.6 @10:31:27 @ 150.0 m	313.1 @09:03:27 @ 62.0 m	46.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
125	TRANS CASE MAN LEVER	227.3	173.3 @08:17:27 @ 16.0 m	261.2 @09:03:27 @ 62.0 m	27.1	DEG F
126	TRANS MLP SENSOR	199.5	153.5 @10:31:27 @ 150.0 m	237.2 @09:07:27 @ 66.0 m	27.5	DEG F
127	TRANS BULK CONN.	218.1	158.6 @10:31:27 @ 150.0 m	249.6 @08:41:27 @ 40.0 m	31.1	DEG F
128	SHIFT CABLE @EXH MAN	249.9	156.4 @10:31:27 @ 150.0 m	333.1 @09:01:27 @ 60.0 m	59.1	DEG F
129	SHIFT CABLE AT LOC	176.0	127.6 @08:15:27 @ 14.0 m	210.1 @09:05:27 @ 64.0 m	26.6	DEG F
130	SHIFT CABLE @ ADJ	178.3	133.7 @08:17:27 @ 16.0 m	217.8 @09:05:27 @ 64.0 m	25.6	DEG F
131	SHIFT CABLE @ SLEEVE	200.6	129.1 @10:31:27 @ 150.0 m	279.5 @09:01:27 @ 60.0 m	47.5	DEG F
132	SHIFT CABLE UND SLV	190.6	130.1 @10:31:27 @ 150.0 m	252.0 @09:01:27 @ 60.0 m	38.4	DEG F
133	SHIFT CABLE END FIT	197.0	135.0 @10:31:27 @ 150.0 m	263.2 @09:01:27 @ 60.0 m	40.4	DEG F
135	FUEL FILTER SKIN	148.5	122.6 @08:17:27 @ 16.0 m	161.0 @09:03:27 @ 62.0 m	11.8	DEG F
136	FUEL TUBE SUP@FILTER	138.2	112.6 @08:17:27 @ 16.0 m	153.5 @09:01:27 @ 60.0 m	11.9	DEG F
137	FUEL VAP RET LINE	157.4	133.3 @08:17:27 @ 15.0 m	176.5 @09:01:27 @ 60.0 m	11.3	DEG F

TABULAR DATA SUMMARY REPORT

VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000#t.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
138	FUEL SUPPLY LINE@TNK	161.7	131.7 @08:17:27 @ 16.0 m	186.0 @09:03:27 @ 62.0 m	17.0	DEG F
139	FUEL TANK SKIN FRT	153.4	132.3 @08:17:27 @ 16.0 m	168.5 @08:59:27 @ 58.0 m	9.1	DEG F
140	FUEL TNK PUMP FLANGE	162.5	132.7 @08:17:27 @ 16.0 m	190.5 @08:59:27 @ 58.0 m	17.1	DEG F
141	FUEL TUBE AT SENDER	155.0	131.1 @08:17:27 @ 16.0 m	167.8 @09:01:27 @ 60.0 m	11.1	DEG F
142	FUEL PLAST CONN@SEND	170.8	133.0 @08:17:27 @ 16.0 m	213.8 @09:03:27 @ 62.0 m	24.9	DEG F
143	FUEL IN TANK	147.9	129.2 @08:17:27 @ 16.0 m	157.1 @09:23:27 @ 82.0 m	9.0	DEG F
144	PARK BRK CAB@AXLERH	160.7	133.2 @10:11:27 @ 130.0 m	211.4 @09:01:27 @ 60.0 m	30.2	DEG F
145	AIR SPRING UP CAP RH	167.3	125.1 @08:17:27 @ 16.0 m	200.7 @09:05:27 @ 64.0 m	21.1	DEG F
146	AIR SPRING SLV RH	168.1	127.9 @08:17:27 @ 16.0 m	206.1 @09:05:27 @ 64.0 m	23.9	DEG F
147	AIR SPRING SOLE. RH	169.9	125.5 @08:17:27 @ 16.0 m	211.9 @09:07:27 @ 66.0 m	22.9	DEG F
148	ABS SNSR WIRE RH KUP	154.8	126.0 @10:11:27 @ 130.0 m	210.6 @08:59:27 @ 58.0 m	31.9	DEG F
149	AIR CLEAVER ELM SEAL	206.2	149.8 @08:15:27 @ 14.0 m	224.2 @09:11:27 @ 70.0 m	20.9	DEG F

TABULAR DATA SUMMARY REPORT

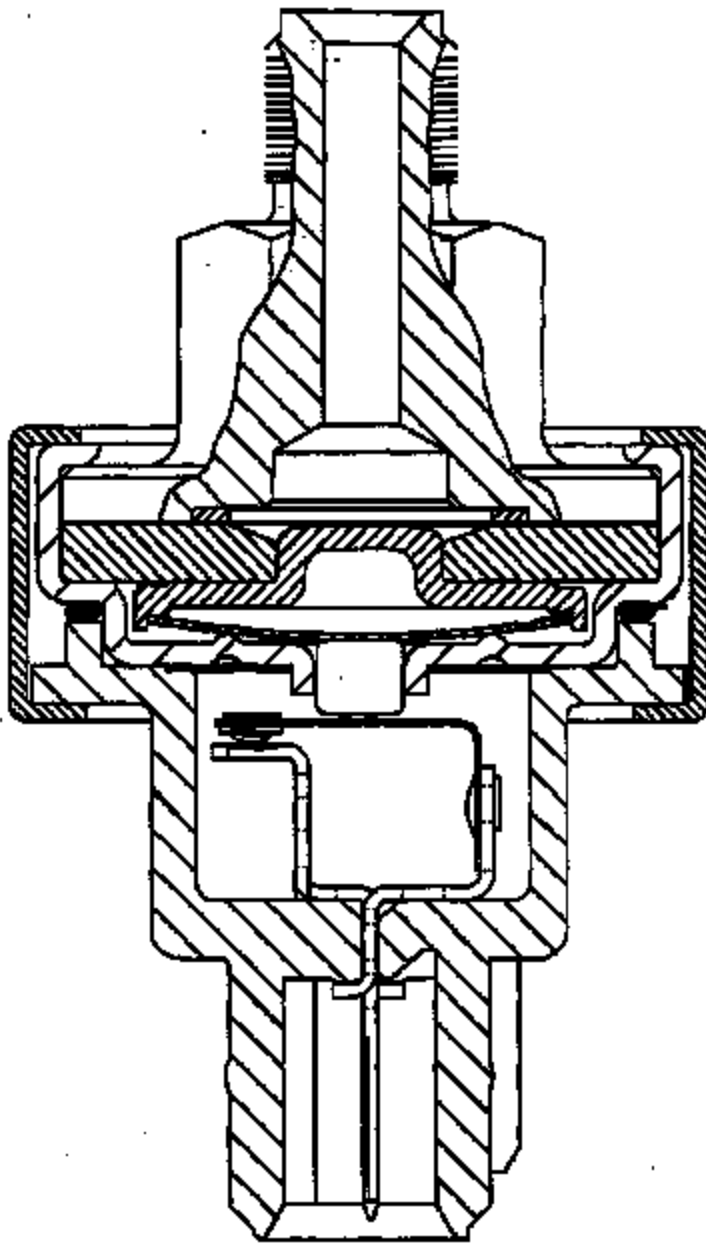
VEH. ID : 311W455  
 TEST ID : test2  
 TEST DESC: 5000ft.tow  
 TEST DATE: 13 JUN 91  
 DATAFILE : TEST2

Ch #	Label	Average	Minimum	Maximum	Std.Dev.	Units
150	A/C CYCLING SWITCH	204.7	158.8 @08:15:27 @ 14.0 m	223.3 @09:13:27 @ 72.0 m	18.9	DEG F
151	SHFT CABLE BRKT	178.4	129.4 @10:31:27 @ 150.0 m	224.8 @09:03:27 @ 62.0 m	28.9	DEG F
152	SHFT CABLE AT UBC	201.5	152.5 @08:15:27 @ 14.0 m	248.6 @09:03:27 @ 62.0 m	29.4	DEG F
153	SHFT CABLE10"RR CLIP	212.8	156.2 @08:17:27 @ 16.0 m	259.9 @09:05:27 @ 64.0 m	33.7	DEG F
154	EXHPIPE 6"FWD MUF LH	452.8	132.5 @10:31:27 @ 150.0 m	927.9 @08:23:27 @ 22.0 m	252.3	DEG F
155	MUFF BTM CENTER LH	452.5	128.3 @10:31:27 @ 150.0 m	983.4 @08:23:27 @ 22.0 m	282.2	DEG F
156	EXH PIPE KICKUP LH	372.8	130.0 @10:31:27 @ 150.0 m	782.1 @08:23:27 @ 22.0 m	215.9	DEG F
157	EXHPIPE12"FWD OUT LH	246.0	123.1 @10:31:27 @ 150.0 m	461.4 @08:27:27 @ 26.0 m	121.5	DEG F
158	EXH HANG INTER LHOUT	180.0	135.6 @10:31:27 @ 150.0 m	233.5 @09:05:27 @ 64.0 m	33.7	DEG F
159	EXH HANG INTER LH IN	163.4	120.8 @08:17:27 @ 16.0 m	205.8 @09:05:27 @ 64.0 m	26.2	DEG F



## **Brake Pressure Switch Function-**

- **Provide power to Speed Control Clutch circuit.**
  - **Clutch engages servo-motor to pull throttle cable.**
- **Provide redundant sensing of brake application independent of the primary system deactivation mode by disconnecting power to clutch circuit causing servo-motor to release throttle cable.**
  - **Under Hard Braking only**
  - **Stop lamp signal is primary ( normal braking)**



3713 6410

**Brake Pressure Switch**  
**F2VC-SF324-AB**  
 Material List for MY 9253

Gasket	Elastomer Ethylene Propylene	JBL Compound # E-7104-70
Diaphragm	Kapton, Polyimide	Dupont 500 FN131L, 3 Diaphragms per switch
Base	PBT, Plastic	Grade Celanex 4300
Crimp Ring	Aluminum	Grade # 5052
Spacer	Kapton, Polyimide	Dupont #200H, Friction Reducer on Disc
Rivet	Brass	CDA 260
Transfer Pin	Ceramic	Stactite , L-3 Grade
Environmental Seal	Silicone	JBL Compound # S7519
Converter	Cold Rolled Steel	Grade # 1008
Washer	Cold Rolled Steel, Zinc Plated	Grade # 1050
Cup	Cold Rolled Steel	Grade 1010
Spring Arm	Beryllium Copper	Grade # C17200
Movable Contact	Silver Plated Copper	Oxygen Free Cu, Fine Silver
Stationary Terminal	Brass + Silver Inlay	CDA 260
Movable Terminal	Brass	CDA 260
Disc	Stainless Steel	Grade 302
Hexport	Cold Rolled Steel, Zinc Plated	C10L10
Thread Cap	LDPE, Plastic	

3713 6411

## Work Plan- Brake Pressure Switch

### **Root Cause Investigation-**

**Identify the combustibles?**

**AVT EESE Materials Engineering**

**Identify the contaminants in returned parts?**

**Central Lab analysis**

**Identify source of contaminants?**

**Central Lab analysis**

**Identify causes of brake fluid leakage?**

**Central Lab and Texas Instrument**

**Identify heat source(s) start event?**

**AVT EESE Chassis Electronics**

**Create Event in Lab**

**AVT EESE Chassis Electronics**

**Collect Field Samples**

**LVC - Safety**

## Root Cause Investigation Tasks

### **What are the combustibles?**

#### **AVT EESE Materials Engineering**

Are the switch materials compatible with brake fluid?

by 2/18/99

Are the switch materials compatible with brake fluid in an electric field?

by 2/18/99

Are the switch materials compatible with brake fluid and contaminants?

by 2/18/99

Are the switch materials compatible with contaminated brake fluid in an electric field?

by 2/18/99

Flash points for all materials?

by *completed*

*TI provided to Norm LaPointe*

Get Dow assistance

by 2/16/99

How can a fire start with the switch given the constraints:

Continuous Battery voltage applied between switch electrical components and the hydraulic connection, circuit fused at 15 amps, inductive load current of 0.5 amps switched when speed control is turned off, the switch cavity contains a black material containing at least copper, zinc, sulfur, and brake fluid ( probably containing water), vehicle underhood temperatures.

By 2/22/99

What is the difference in the base materials that look different?

Texas Instruments by *complete*

*Color of plastic base identifies calibration. Also, plastic material change from Cellanex 4300 to Noryl GTX430 in MY 1995 when P/N changed from F2VC to F2AC*

What are the material call-outs for 1992 and 1993?

Texas Instruments by 2/15/99

Brake Pressure Switch  
F2VC-8P024-AB  
Material List for MY 92/93

Gasket	Elastomer Ethylene Propylene	JBL Compound # E-7104-70
Diaphragm	Kapton, Polyimide	Dupont 600 FN131L, 3 Diaphragms per switch
Base	PBT, Plastic	Grade Calanex 4300
Crimp Ring	Aluminum	Grade # 5052
Spacer	Kapton, Polyimide	Dupont #200H, Friction Reducer on Disc
Rivet	Brass	CDA 260
Transfer Pin	Ceramic	Steatite, L-3 Grade
Environmental Seal	Silicone	JBL Compound # 87519
Converter	Cold Rolled Steel	Grade # 1008
Washer	Cold Rolled Steel, Zinc Plated	Grade # 1050
Cup	Cold Rolled Steel	Grade 1010
Spring Arm	Beryllium Copper	Grade # C17200
Movable Contact	Silver Plated Copper	Oxygen Free Cu, Fine Silver
Stationary Terminal	Brass + Silver Inlay	CDA 260
Movable Terminal	Brass	CDA 260
Disc	Stainless Steel	Grade 302
Hexport	Cold Rolled Steel, Zinc Plated	C10L10
Thread Cap	LDPE, Plastic	

What are the contaminants in returned parts?

Central Lab analysis

Results of Memphis part analysis by 2/18/99

Results of testing with corrosion simulation?

AVT EESE Chassis Electronics by *complete*

*Black corrosion recreated in lab on virgin parts. Given to Lab for analysis*

TI analysis results of the Memphis parts (crease marks in diaphragm, etc) ?  
Texas Instruments by *complete*

*TI gave to Norm LaPointe on 2/10/99. Crease mark caused by degradation of Kapton. TI chemical analysis matches Ford analysis.*

**What is source of contaminants?**

Central Lab analysis by 2/18/99

**What causes brake fluid leakage? By 2/24/99**

Central Lab and Texas Instrument

What does TI DFEMA say about this failure mode?

Texas Instruments by 2/16/99

*TI identifies potential for leaks. Copy to Norm Lapointe.*

What are TI in-process test failures?

Texas Instruments by *completed*

*TI provided IP and Weibull test reports to Fred Porter and Norm Lapointe. First leaker observed at 994,000 cycles. Test suspended at 1.6 million cycles. Leaker was by Kapton diaphragm.*

Provide TI end-of-life lab test parts to Norm Lapointe.

TI by 2/18/99

Does the event occur only on vehicles with ABS?

LVC-Safety by 2/18/99

Characterize the real vehicle brake pressure seen at the switch.

AVT Chassis Brakes by

Characterize the real vehicle brake pressure during ABS and TC events seen at the switch.

AVT Chassis Brakes by

DOE work plan for TI activities.

TI by 2/16/99

Correlate Lab test cycle Kapton wear with field mileage Kapton wear.

TI and Central Lab by 2/29/99

**What heat source(s) start event?**

**AVT EESE Chassis Electronics**

Analysis of harness pig-tails

AVT EESE OPD by 2/18/99

Use thermocouple to record switch temperature during and after driving. AVT EESE OPD by 2/18/99

**Recreate Event in Lab**

**AVT EESE Chassis Electronics**

What does it take to start an event? by on-going

If a switch is contaminated can it start the event? by on-going

*Switch with clean Brake fluid inside is being monitored for increase in leakage current.*

If current is stopped does combustion stop?

**Collect Field Samples**

**LVC - Safety**

Collect Brake Pressure switches and speed control servos with harnesses attached. By 2/22/99



**Miscellaneous**

Can the switch act as a fuse?

Team

by complete

*No.*

*Could a fuse (e.g. 2 amp) be added in series between the stop lamp fuse and the brake pressure switch? Failure parameters would have to be known.*

What are descriptions from AWS and CQIS?

LVC-Safety

by 2/18/99

What are we seeing in returned Speed control modules (FRACAS)?

Visteon Speed Control

by 2/17/99

Provide color photos of Econoline?

Texas Instruments

by complete

*There are no color photos.*

## Containment / Corrective Action Tasks

### Competitive Vehicles

- How is switch packaged?
- Is it always Powered (HOT\_ALL\_TIME) ?
- Are the contacts opened when pressure applied?
- What is fuse limit?
- What is being switched?
- Is it a redundant switch?

AVT EESE Competitive Analysis by 2/24/99

### What does Speed control FMEA say about Brake Switch ?

Visteon Speed Control by completed

*The Brake Pressure Switch (Deactivation Switch) coupled with the Stop Lamp switch are categorized as "Automatic Deactivation". The FMEA lists "Automatic Deactivation" as current design control for 66 different potential cause/mechanical failures.*

*Brake Pressure Switch (Deactivator Switch) is one of the most important safety features.*

### When was non-Pressure actuated switched introduced?

AVT EESE Chassis Electronics by completed

*95 Continental and T/Bird were first to use it.*

### Is the Circuit drive hi-side or low-side?

Visteon Speed Control by completed

*Circuit is low side driven.*

### How does speed control use this switch?

Visteon Speed Control by completed

- 1. Brake Pressure Switch provides electrical power to the speed control servo clutch circuit. The clutch circuit needs to be energized for the servo motor to pull the cable.*
- 2. Switch provides a redundant method of sensing brake application independent of the primary system deactivation mode; this is a SDS (SC-0005) requirement.*



**What is SDS requirement number?**

**Visteon Speed Control** by *completed*  
*SDS (SC-0068) states: The stop lamp switch and redundant deactivator switch must be on the same fused circuit.*

**Is it feasible to disconnect the switch as immediate containment?**

*Yes. The customer will not have use of the speed control.*

**Is it acceptable to Jumper out the switch as immediate containment?**

**Visteon Speed Control** by *completed*  
*NO... Would eliminate an important safety feature of the speed control system. The Brake Pressure Switch provides the redundant method for sensing brake application independent of the primary system deactivation mode. This is an SDS (SC-0005) requirement.*

*Elimination of this feature requires the concurrence of the OGC.*

**Other recommendations for immediate containment?**

**All** by *on-going*  
*Add fuse between the stop lamp fuse and the brake pressure switch?*

**Recommendations for increased Life of switch.**

**TI** by *3/5/99*  
*TI suggested looking at an Automotive ceramic diaphragm pressure transducer ( not a switch) that is used for ABS.*

## TI Brake Pressure Switch Questions

Rob these are the questions I captured from our 2/4/99 meeting.

What does TI DFEMA say about this failure mode?

Rob Sharpe by 2/10/99

What are TI in-process test failures?

Rob Sharpe by 2/10/99

Provide color photos of Econoline?

Rob Sharpe by 2/8/99

What is the difference in the base materials that look different?

Rob Sharpe by 2/16/99

TI analysis results of the Memphis parts ( crease marks in diaphragm, etc) ?

Rob Sharpe by 2/9/99

What are the material call-outs for 1992 and 1993?

Rob Sharpe by 2/9/99



	F2AZ-8FB24-A	F3DZ-8FB24-A	F56Z-8FB24-A	F2VY-8FB24-A	F3TZ-8FB24-B	Total
96-1						
96-2	8	11	89	37	127	267
96-3	0	8	71	40	140	267
96-4	0	8	85	44	176	283
96-5	7	12	59	51	132	281
96-6	2	8	82	40	160	282
96-7	1	8	62	62	178	289
96-8	0	12	68	62	140	283
96-9	3	10	51	68	133	255
96-10	1	13	72	72	157	315
96-11	1	8	89	47	115	260
96-12	0	10	43	46	148	247
97-1	3	8	74	53	140	279
97-2	7	8	62	67	203	335
97-3	17	11	50	86	156	320
97-4	3	9	46	83	216	338
97-5	8	8	37	86	188	307
97-6	3	14	46	77	228	368
97-7	7	14	82	108	276	465
97-8	4	20	81	113	328	526
97-9	8	13	48	118	331	518
97-10	11	16	76	150	389	641
97-11	17	10	82	115	285	489
97-12	8	10	67	125	325	533
98-1	8	10	60	128	316	509
98-2	12	14	52	118	251	447
98-3	26	9	80	118	314	524
98-4	13	12	45	181	367	598
98-5	9	5	64	181	349	598
98-6	16	16	74	242	435	782
98-7	28	11	72	205	544	858
98-8	32	8	104	288	590	1000
98-9	40	18	85	301	522	877
98-10	29	16	129	250	582	1006
98-11	38	18	127	296	548	1028
98-12	38	10	158	238	571	1011
99-1	65	12	114	207	525	923
99-2	81	11	128	182	563	933
	538	415	2870	4538	11127	19289





<b>Brake Pressure Switch Usage</b>									
VL / MY	92	93	94	95	96	97	98	99	
town									
crown vic									
grand marquis									
econo									
club wagon									
f-series									
bronco									
explor									
ranger									
exped									
navi									
sho									
mark VIII									
windstar									

3713 6425

## Brake Pressure Switch Kit

<b>p/n</b>	<b>contents</b>	<b>Description</b>	<b>qty</b>
F2VC-9F924-AB		Deactivation Switch	1
F5VB-14A464-AA		Connector	1
E9EB-14A468-AD		Locking Wedge	1
SK-		Instruction Sheet	1

**Radio Processor Switch Test Log**  
Updated 2/26/88

Category	Test	Location	Test Parameters	Results Update
Lab Sign-out	1	TI	Verify Levels of Brake Fluid, Water Supply TANKS to satisfactory, amount expanded Water Conn: 05, 06, 08, 10A, 22B	200+ hours. Current closer to the 0.5hr to 1hr range. Fluid has decreased. No significant temperature rise. Test suspended Interest Available in Progress.
of Pressure Switch in Cabin	2	TI	Verify Levels of Brake Fluid, Water, 1 Amp through switch terminals	200+ hours. Current temperature. No significant temperature rise with flow. Test suspended. Test Suspended
	3	AVT	Brake Fluid in Switch, 24 VDC to one ground Resistor Observed	> 200 hours into test, some current flow. No significant change with flow. Test suspended
	4	AVT	Brake Fluid in Switch, 24 VDC to one ground Resistor Observed, Ambient at 100 C	10 hours into test some current flow. No significant temperature rise with flow. Test suspended.
	5	AVT	Brake Fluid in Switch, 24 Amps Through switch terminals	Temperature rise of 20 C above room temp. Data T recorded clearly stable at 20 C. Test suspended.
	5a	AVT	Brake Fluid in Switch appear. 40 Amps through Switch terminals	Temperature rise to approx. 270 F. No smoke. No ignition Test suspended.
	5b	AVT	Sparks Switch bare	Ignited switch base causes overvoltage to system but does not cause ignition to Test suspended.
	5c	AVT	Sparks Ignition	Sparks ignition ignited contractor and switch base.
	6	TI	24VDC battery supplied into Switch, 24V & 12V PLUG Heat at battery, include sparking Dry Pump motor 0.5M with water discharge 0% water 0.5M solution	24 tested. Smoke observed, ignition observed as part with heater wire Some arcing Test ongoing Brake fluid in switch above open heat limit up Smoke observed at 200 F, some smoke and lots of at 300 F
	6a	TI	Create heater by connecting spring gun Small water and dry, 14V between spring and heater	Test in progress
Life Cycle Reliability of Pressure Switch	7	TI	0-1000 psi pressure pulse at 120C wet test	1st test observed at 700,000 cycles. Test completed. More scheduled cycles of test.
Manufacture Cycle or Life Correlation	8	TI	0-1000 psi pressure pulse at 120C ambient	First wet test cycle 2000 cycles, characterized for wear
	9	Control Lab	Various Fluid systems, force cluster test, lubricants	Fluid in Control Lab, being processed
Range of Parameters Containing Theory Electrical Engineering View	10	TI	Various Levels of Brake Fluid, Water, 100C 12 amp voltage and 0.5 in center in the brake fluid 12 amp voltage and 0% water in the brake fluid 12 amp voltage 0% water in the brake fluid 12 amp voltage 5% water in the brake fluid With Switch Leads and Without Switch Leads	Expected modifications underway. More expected 200. Expected completion of test phase 5/1 Pressure and temperature will be added to 2000 series in the next month.
Characterization of Pressure & Temperature Pulse in Test Car	11	AVT	Pressure Pressure and Temperature of Switch Location for AME and non-AME Control room.	Logbook being updated out.
Spent 7/20 Study	12	Control Lab	Collection of sample items on switch collection using clean bags and high speed video. Use dry switches as well as switches with various brake fluid water stress.	Equipment setup in progress at Control Lab. Expected start 8/24
Characterization of switches relative to Leakage & other variables	13	Control Lab	Characterize electrical, mechanical and chemical aspects of related switches	Unit log and specific procedure set up complete. Availability of materials in progress.

3713 6A27



**Brake Pressure Switch  
On Vehicle Characterization**

Updated 2/26/99

**Vehicle: 1992 Town Car**

With ABS  
~~With Traction Control~~  
No Major Modifications  
No Issues with Brake System

**Parameters to be Measured**

Pressure Profile at Brake Pressure Switch Mounting Location on Proportioning Valve  
Brake Fluid Temperature at same location  
Ambient Temperature at same location  
Pressure Profile exiting ABS unit prior to entering Proportioning Valve  
Brake Pressure Switch circuit (orange wire) voltage.  
Vehicle Speed  
Brake Pedal ON/OFF switch Voltage  
Brake Pedal Effort  
    Pressure up to 250 Bar, sampling rate 1000 hz minimum.  
    Voltage up to 20 Vdc  
    Temperature -10 to 300 F  
    Effort 0 to 400 lbs

**Driving Conditions**

**DO NOT USE SPEED CONTROL**

Traction surface : Dry Asphalt

Loading = 2 Pass weight

	Speed mph	Pedal effort	decel G	repetitions	rate/ mile
Normal Braking (no ABS)	0	normal		5	
	30		< 0.3	5	1
	40		< 0.3	10	1
Normal Braking + ABS	30		0.7 - 0.85	5	1
	40		0.7 - 0.85	10	1
Panic Braking (No ABS)	40	agressive		10	1
Panic Braking + ABS	40	agressive		10	1
<del>Traction Control On</del> <del>Other combinations??</del>					

**Electrical properties:**

Switch w/ harness ( before disengagement)

	@ 0 psid	@ 160 psid
Wire 1 to Wire 2 resistance		
Wire 1 to Hex Port resistance		
Wire 2 to Hex Port resistance		

Harness w/o switch

Wire 1 to Wire 2 resistance	
Current Leakage Terminal 1 to 2	

Switch w/o harness

	@ 0 psid	@ 160 psid
Terminal 1 to Terminal 2 resistance		
Terminal 1 to Hex Port resistance		
Terminal 2 to Hex Port resistance		
Voltage drop @ 750 millamps		
Current Leakage Terminal 1 to Hex Port		
Current Leakage Terminal 2 to Hex Port		
Current Leakage Terminal 1 to 2		
Hex Port to Cap resistance		

**Mechanical properties:**

Switch opening pressure	
Switch closing pressure	
Proof Test for fluid leakage	

mileage	
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Kapton

**Examine field returns:**

**Switch w/ harness ( before disengagement);**

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

**Switch w/o harness ;**

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

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

**Pressure cavity components wear / damage, contaminants.**

**Electrical properties:**

**Switch w/ harness ( before disengagement)**

**@ 0 psid**

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

**@ 180 psid**

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

**Harness w/o switch**

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

**Switch w/o harness**

**@ 0 psid**

Terminal 1 to Terminal 2 resistance  
Terminal 1 to Hex Port resistance  
Terminal 2 to Hex Port resistance  
Voltage drop @ 750 milliamps  
Current Leakage Terminal 1 to Hex Port  
Current Leakage Terminal 2 to Hex Port  
Current Leakage Terminal 1 to 2  
Hex Port to Cap resistance

**@ 180 psid**

Terminal 1 to Terminal 2 resistance  
Terminal 1 to Hex Port resistance  
Terminal 2 to Hex Port resistance  
Voltage drop @ 750 milliamps  
Current Leakage Terminal 1 to Hex Port  
Current Leakage Terminal 2 to Hex Port

**Mechanical properties:**

Switch opening pressure  
Switch closing pressure  
Proof Test for fluid leakage