EA02025

TEXAS INSTRUMENTS, INC.'S

9/10/03 ATTACHMENT TO ODI

BOX 4, PARTS A - N

PART B

SG M#= 0015 FR=ZARN TO=SBD1 SENT=04/08/92 04:51 PM
R#=146 ST=D DIV=0050 CC=00101 BY=ZARN AT=04/08/92 04:51 PM

RIL 8, 1992

STEVE OFFILER	SBD1	**********
BILL SWEET	WS4	PLEASE HAND DELIVER MSG.
MATT SELLERS	MUS2	THANK YOU!
JIM WATT	PCQA	**********
DICK GARIEPY	MFPC	
DALE SUGGE	FFUN	
TED BALLARD	ETS	
MIKE DEMATTIA	MD3	
NORM FREDA	WHLZ	
RUSTY STRUBLE	RCS2	
CHARLIE DOUGLAS	CMP1	
TOM CHARBONEAU	TC	
RAY TOURANGEAU	RGT2	
ANDY McGUIRK	PCQA	
BILL CONGDON	MFPC	
JOHN KOURTESIS	MDES	
JIM KERN	MLDG	
STEVE WALTERS	MLDG	
JEFF DIDOMENICO	ELB	
GARY SNYDER	CPPC	
STEVE MAJOR	SMFH	
DICK MULHERN	PCTL	
DAVE CZARN	ZARN	

COPS QUIET SWITCH

etings will be held daily at 3:30 in the cafeteria.

****
XT MEETING:
****

DATE: THURSDAY 4/09
TIME: 3:30
PLACE: CAFETERIA CUBE

SCRIPTION	TI P/N	FORD P/N
B1) LOW DIFF'L W/[illegible]ER		
B2) ULTRA-LOW DIFF'L	77PSL3-1	F2AC-9F924-AA
B3) U-LOW DIFF'L W/SNUBBER	77PSL5-2	T-B-D

PSL3-1 : CN53 - CROWN VIC/GRAND MARQUIS (IN PROD'N)
PSL5-2 : SHO TAURUS (MY93)

SCUSSION:
1ST PILOT LOTS COMPLETED; SOME SHOWED CREEP READINGS
P-TESTER, PERHAPS BECAUSE NOISE WAS DETECTED. DALE
S EVALUATED HYPOT AT 200 PSIG - ALL AT 500 V OR HIGHER.
RTS WILL BE HI AND LO TEMP TESTED THURSDAY.

TI-NHTSA 005389

*****
TIONS
*****
* PRIORITY ITEM

[illegible]
[illegible] STRUBLE
[illegible] BEFORE ACC. FREDA,
[illegible] new item
NO REGRIND ALLOWED ON FIRST NORYL LOT KERN new item
CONFIRM BASE STABIL. THRU TEMP TESTS SOGGE
BY END OF DAY 4/9.
BUILD [illegible] AB3's FOR AIR SHIP FRI 4/10 GARRITY/ STRUBLE → DANA SHIP SAT. [illegible]
SHIP ADDRESS FOR ABOVE FREDA
PROPOSED HS TESTS FOR PART'L ISR; → OFFILER → COMPLETE
GIVE TO MIKE D. 4/7
PARTIAL ISR BY FRIDAY 4/10 DEMATTIA
PROD'N INTENT SNUB. HEXP. BY 4/27 KOTCH new item

MARKETING/FIELD SALES

UPDATED GANTT CHART BY WED. 4/8 DOUGLAS COMP.
GET P/N's FOR SHO SWITCHES FREDA
LETTER OUTLINING QUIET SW. RISKS SNYDER
PRELIMINARY QUOTE FOR AB3's DOUGLAS COMP.
BY WED. 4/8

DESIGN ENG.

OUTLINE PROPOSED BUILD PROCEDURE SOGGE COMP.
DEFINE BASE MATERIAL TEAM COMP.
(NORYL GTX830 - COLOR:NATURAL)
DEFINE DISC TEAM COMP.
(3-5 PSIG DIFF'L @ 500F H.T., FLWD.
BY 600F H.T.)
SNUBBER DESIGN SOGGE COMP.
20 AB3 SWITCHES FOR HAND DELIV. OFFILER → ON HOLD (ALSO, 10 AB3's W/[illegible] TO REPLACE [illegible])
MON. 4/13 - W/MOD. SHOP SNUB HEXPORTS
PRINTS:
P BASE (ADD -3 AS NAT'L NORYL/OFFSET) OFFILER ← DAVE C. DONE
hand marked print complete
P DISC (NEW ~~[illegible]~~ DASH # 76656) SOGGE
- ENVELOPE DRAWINGS (WHEN REQUESTED) CZARN
PARTS LISTS (UPDATE) → OFFILER → PLAN TO DO THIS
(START W/ HAND MARKED COPY)
THERMAL TESTING - NORYL SOGGE
THERMAL TESTING - NORYL(USING CYCLER) OFFILER → CHK W/ J.D. REVIEW W/ DAVE
WEIBULL TESTING FOR M. SPEARS OFFILER ← PLAN
EVALUATE PILOT RUN DEVICES SOGGE
- HYPOT CHECK, DI[illegible]IONAL, ETC.
L/T QUIET SWITCH[illegible]B3'S) BY 4/13 OFFILER new item ← BUILD W/ PILOT [illegible] TBD IN [illegible] 1 WEEK
TAKEAPART SW'S W/[illegible]D, LOW, U-L DISCS OFFILER new item
SHIP TO NORM 4/9
~~[illegible]~~ CHK W/ NORM, MON. [illegible]

MANUFACTURING ENG./MECHANIZATION

PROCESS FLOW SELLERS/ SWEET
PROCESS SPECS SELLERS
PILOT RUNS BEGINNING 4/7 SWEET/ BALTHAZAR COMP.
SET-UP SPC FILES SELLERS
DEVELOP FIXTURING, ETC. SELLERS
REVIEW PFMEA SELLERS
IDENTIFY REQ'D MECHANIZATION WORK SELLERS
PRIORITIZE MECH. WORK KOURTESIS
- SOFTWARE CHANGES TO B.A.M.
(Read Wayne's response to B. Sweet's msg.)

TI-NHTSA 005370

[illegible]

[illegible]

ISC MFG. INC.

DIF DISCS IN LAB 3000# COMP.

MANUFACTURING

REVIEW PROCESS FLOW TO ID ANY AREAS THAT NEED FURTHER WORK — GARIEPY

MECHANISM TO AVOID MIXING PARTS — GARIEPY

IDEAS:
- IDENTIFY QUIET SENSORS W/ MARK MADE AT PRE-CRIMP ?
- DIFF. COLOR CHROMATES ON HEXPORT ?
- ID MARK IN HEXPORT HEADING TOOL ?
- ID MARK ON NORYL BASES ?

QUALITY

Partial ISR to be shipped to Norm Friday.

PARTIAL ISR FOR EN53 PROD'N, NEEDS TO BE SUBMITTED BY MON. 4/13 — DEMATTIA

FAI - SW. W/NORYL BASE - ENV. DWG. — DEMATTIA COMP.
FAI results looked good; two minor issues that are inconsequential.

PURCHASING

HAVE ELCO QUOTE SNUBBER W/2nd OPS — KOTCH

DRAFTING

PRIORITIZE DWG AND P/L CHANGES AS THEY COME THROUGH — MULHERN

MISC. ACTIONS FROM HI-TEMP MTGS.

ADD CONTINUITY CHK AT 0 PSIG TO P-TESTER — SELLERS

MEASURE OFFSET ON SWITCHES FROM 45 TO 54 MIL OFFSET LOT (SEE DISCUSSION NOTE ABOVE) — OFFILER

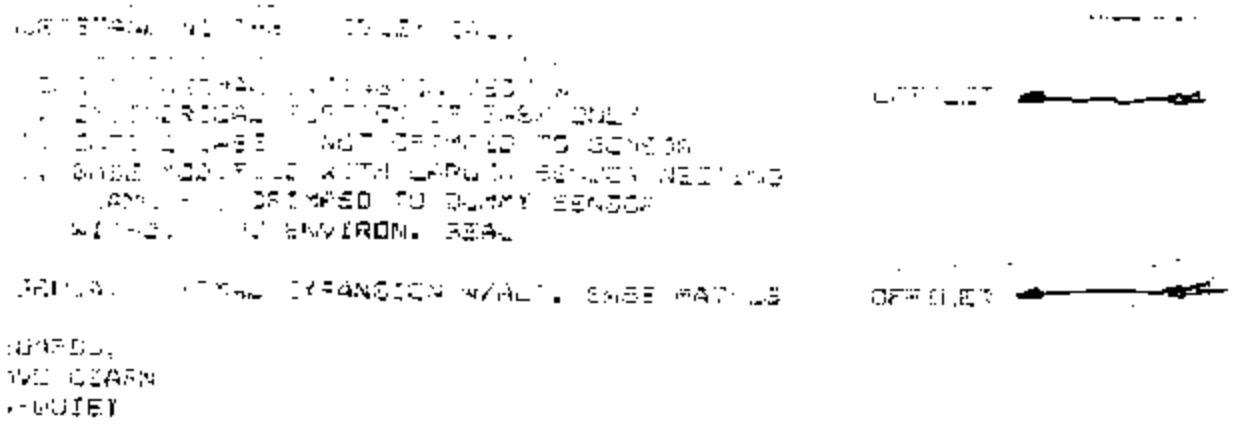
250K CYCLE IMPULSE TEST 45 TO 54 MIL OFFSET LOT — OFFILER

UNDERSTANDING THE PROBLEM CAUSE

REPEAT THERMAL EXPANSION TEST W/ — OFFILER
1. CYLINDRICAL PORTION OF BASE ONLY
2. ENTIRE BASE - NOT CRIMPED TO SENSOR
3. BASE MODIFIED WITH LARGER SENSOR NESTING DIAMETER, CRIMPED TO DUMMY SENSOR WITHOUT THE ENVIRON. SEAL

REPEAT THERMAL EXPANSION W/ALT. BASE MAT'LS — OFFILER

BOARDS,
DAVE CZARN
X-QUIET



PRESSURE SWITCH DATA Form 21605 TEST NO. 233-01-09

DEVICE	DATE REQUESTED	REQUESTED BY	REQUIRED COMPL. DATE
77 CS A83			
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Lee's	4-7-92	4-7-92	

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Samples

PROCEDURE: "F" discs
Brown product on hoses
Press-fit Snubber

Code: F2VC-9F924-AB3 2098

Device #	ACT REL
01	154-149
02	147-142
03	138-130
04	130-131
05	163-155
06	150-137
07	168-160
08	146-139
09	142-136

PRESSURE SWITCH DATA Form 21605 TEST NO. 240-15-24

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
CCPS	920407	Steve Officer	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey D. Decenzo	920708		

PROJECT TITLE: Speed Control PS

CUSTOMER:

PURPOSE OF TEST: Thermal shift evaluation of devices built with Noryl buses

PROCEDURE: Acquire devices over a range of offsets (offset = pin length − bus bar) Rest on next page

Device #	offset	PSI Act/Rel	T-T-P Actual	Events Counting at				
240-15-01	.046"	No Continuity		R.T.				
-02	.046	73/53	Grease/0.4	R.T.				
-03	.047	54/53	Grease/0.6	R.T.				
-04	.047	116/48	Grease/0.6	100°C				
-05	.049	116/50	Grease/0.7	110°C				
-06	.046	116/53	Grease/0.6	100°C				
-07	.049	107/53	Grease/0.7	110°C				
-08	.049	134/55	Creep/0.7	130°C				
-09	.050	133/57	Creep/0.7	170°C				
-10	.050	132/35	Creep/0.7	R.T.				
-11	.051	130/61	Creep/0.2	140°C				
-12	.050	134/57	Creep/0.7					
-13	.052	129/47	1.4/0.9					
-14	.052	129/51	1.6/0.8					
-15	.053	141/50	1.7/0.7					
-16	.053	141/63	1.3/0.9					
-17	.054	145/67	1.2/1.4					
-18	.051	126/63	1.2/1.3		Ok to	150°C		
-19	.055	141/54	1.2/1.0					
-20	.055	142/72	1.2/1.0					
-21	.056	141/52	1.3/1.2					
-22	.058	142/56	1.3/1.1					
-23	.057	126/59	1.1/Creep					
-24	.057	126/63	1.0/Creep					

TI-NHTSA 005374

(OVER)

E SWITCH DATA Form 21605 TEST NO

	DATE REQUESTED	REQUESTED BY
BY	DATE STARTED	DATE COMPLETED / APPROVED

INTERIM

TEST

PRE-TEST POST-TEST

	ACT REL	ACT REL	DIFF FROM		ACT REL	ACT REL	DIFF FROM		
01	410 234	1.5 1.2	2	✓	409 237	1.5 2.4	2	✓	✓
02	421 244	1.6 2.3	2	✓	423 245	1.5 2.3	2	✓	✓
03	410 243	1.6 1.3	2	✓	414 241	1.6 2.3	2	✓	✓
04	421 252	1.6 2.3	2	✓	422 249	1.6 2.4	2	✓	✓
05	422 240	1.6 1.7	2	✓	426 238	1.6 2.4	2	✓	✓
06	423 244	1.6 1.4	2	✓	428 242	1.5 2.4	2	✓	✓

NOTES: ALL UNITS PASSED POST-TEST REQUIREMENTS

CUT-IN/CUT-OUT SET POINT CHANGES AT 1%.

PRESSURE SWITCH DATA Form 21605 TEST NO. 240-15-24

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
CCPS	92 0407	Steve Officer	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey D. Dennerick	920409		

PROJECT TITLE: Speed Control PS

CUSTOMER:

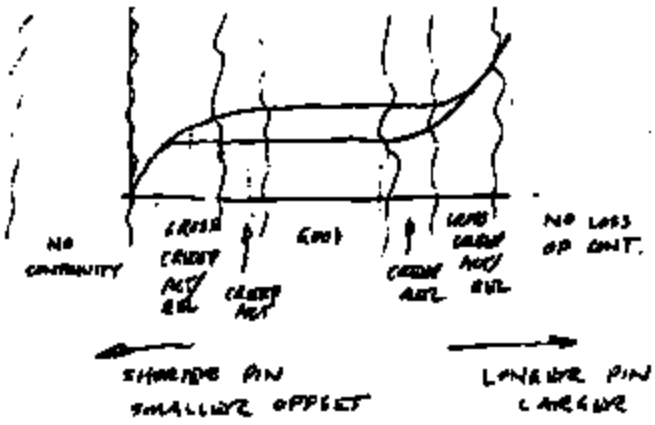
PURPOSE OF TEST: Thermal shift evaluation of devices built with Noryl bases

PROCEDURE: Acquire devices over a range of offsets (offset = pin height - base pin)
Rest on next page

Device #	offset	PPS Act / Req	T-Time Act / Req	Remarks (including set)					
240-15-01	.046"	No contact	Open / ∞	R.T.					
-02	.046	72 / 53	Open / 0.9	R.T.					
-03	.047	69 / 53	Open / 0.6	R.T.					
-04	.047	106 / 90	Open / 0.6	100°C					
-05	.048	116 / 98	Open / 0.7	110°C					
-06	.048	116 / 97	Open / 0.6	100°C					
-07	.049	117 / 93	Open / 0.7	110°C					
-08	.049	124 / 95	Open / 0.7	130°C					
-09	.050	133 / 97	Open / 0.7	140°C					
-10	.050	128 / 95	Open / 0.7	R.T.					
-11	.051	138 / 101	Open / 0.7	140°C					
-12	.052	134 / 97	Open / 0.7						
-13	.052	137 / 97	1.9 / 0.7						
-14	.053	139 / 97	1.6 / 0.7						
-15	.053	141 / 98	1.7 / 0.7						
-16	.053	141 / 98	1.3 / 0.7						
-17	.054	144 / 97	1.2 / 1.4						
-18	.054	146 / 98	1.2 / 1.3		Ok to 150°C				
-19	.055	141 / 94	1.1 / 1.0						
-20	.055	139 / 97	1.3 / 0.9						
-21	.056	141 / 97	1.3 / 1.2						
-22	.056	143 / 96	1.2 / 1.1						
-23	.057	146 / 99	1.1 / temp						
-24	.057	144 / 97	1.0 / temp						

NORYL THERMAL TESTING

→ WORKING WITH PARTS MADE OF NORYL (BLACK BASES, PULL IN COLOR JUST LIKE 4300 R.D.T. BUT WITH OFFSET KEYS) WHICH HAVE BEEN BUILT TO A VARIETY OF "OFFSETS"



→ CHARACTERIZE THIS GROUP, RECORDING ACT, REL (IF THERE IS ONE, OF COURSE) AND CREEP TIME

→ CHOOSE 2 DEVICES AT EACH OFFSET, STARTING W/ THE GROUP THAT HAS NO CONTINUITY, THRU TO THE OTHER SIDE OF THE HATCHET (ABOVE)

→ RUN THE THERMAL CHARACTERIZATION AS USUAL :
- PICTURE ON CCAS CYCLER W/ LED'S ATTACHED
- SOAK @ 10°C INCREMENTS, FROM 30 – 150 °C
- OBSERVE LED'S FOR LOSS OF CONTINUITY @ EACH TEMP INCREMENT
- WORK BACK FROM 150 → 30°C ; THIS IS 1 CYCLE
- RUN 30 → 150 → 30 3 MORE TIMES (NO SOAKS OR OBSERVATIONS, JUST CYCLE)
- ON FIFTH, REPEAT FIRST

JO 92/97

PRESSURE SWITCH DATA Form 21605 TEST NO. 241-11-12

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PS	920409	Steve Offinger	

PERFORMED BY	DATE STARTED	DATE COMPLETED	APPROVED BY
Rich Demers	920409	920410	

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Part of Noryl base/silent disc validation

PROCEDURE: Production build 77PS with natural Noryl bases and 1st "P" silent discs. Characterize in pressure tester. Run standard terminal strength tests per Ford ES and recharacterize.

Device #	Init Act/Rel	Final Act/Rel
241-11-01	124 - 102	119 - 103
-02	127 - 98	110 - 98
-03	117 - 96	123 - 90
-04	124 - 100	126 - 101
-05	124 - 95	126 - 97
-06	131 - 101	131 - 113
-07	132 - 101	132 - 103
-08	130 - 93	129 - 96
-09	132 - 102	129 - 117
-10	124 - 97	129 - 131
-11	129 - 95	128 - 100
-12	131 - 101	131 - 109

(OVER)

PRESSURE SWITCH DATA Form 21605 TEST NO. 242-03-24

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PSL3-1	920410	Steve Offiler	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey D. Domenico	920410	920413	

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Partial ISR of 77PSL3-1

PROCEDURE: Impulse test, per Ford ES, of 24 production devices.

Device #	Init Act - Rel		Post Act - Rel	Mu drop					
242-03-01	139 - 103	I	137 - 109	10.3 ✓					
-02	122 - 119		116 - 110	3.6					
-03	136 - 101	M	134 - 102	5.6					
-04	135 - 114	P	133 - 110	2.6					
-05	139 - 116	4	133 - 107	25.9					
-06	132 - 103	1	129 - 102	3.9					
-07	116 - 116		127 - 109	6.9					
-08	137 - 113	5	136 - 110	23.5					
-09	141 - 119	C	139 - 107	0.5					
-10	134 - 112		133 - 105	4.7					
-11	140 - 121	T	140 - 114	2.9					
-12	132 - 105	5	129 - 105	4.2					
-13	138 - 115		136 - 105	3.2					
-14	141 - 117	7	135 - 107	10.3					
-15	129 - 109		135 - 108	9.7					
-16	129 - 112		132 - 111	3.8					
-17	129 - 115		139 - 111	9.7					
-18	135 - 116		137 - 109	4.9					
-19	138 - 102		135 - 107	5.6					
-20	135 - 103		135 - 107	7.8					
-21	128 - 113		130 - 113	6.4					
-22	135 - 103		133 - 103	15.1					
-23	112 - 103		130 - 103	6.6					
-24	129 - 101		129 - 107	6.1					

(OVER)

4/9/92

B.A.M. CHECK STATION SORTING CHANGES
HIGH TEMP SHIFT/SILENT DISC

CURRENT SYSTEM:

1.) SORT TO +/-.002 @ CHECK STATION.
2.) UNLOAD SORTED +/- .002 RANGE ON UNLOAD STATION # 1, "GOOD CAL".
3.) UNLOAD ASSY'S OUTSIDE +/-.002 RANGE IN UNLOAD STATION # 2, "BAD CAL".
4.) UNLOAD ASSY'S WITH MISSING OR BAD PARTS IN ON UN-LOAD # 3, "BAD PARTS".

EFFECTIVE OUTPUT TO F.A.M. = +/-.002 WINDOW OF CAPABILITY.

PROPOSED SYSTEM:

1.) SORT TO TWO +/-.002 WINDOWS @ CHECK STATION, 0/+.002 AND 0/-.002. HI & LO GAGE.
2.) UNLOAD HIGH GAGE, 0/+.002, ON "GOOD UNLOAD".
3.) UNLOAD LO GAGE, 0/-.002, ON "BAD CAL." ALSO UNLOAD ASSY'S OUTSIDE 0 +/-.002 ON "BAD CAL." DIVERTER CHUTE SHOULD THEN SERPARATE ASSY'S OUTSIDE 0 +/-.002 FROM LO GAGE RANGE, 0/-.002. LO GAGE ASSY'S WILL THEN BE FINAL ASSEMBLED WITH A PIN SELECTION .002 LESS THAN HI GAGE ASSY'S.
6.) UNLOAD ASSY'S WITH MISSING OR BAD PARTS IN ON "BAD PARTS".

EFFECTIVE OUTPUT TO F.A.M. = +/-.001 WINDOW OF CAPABILITY.

PROBABLE CHANGES TO SEPARATE AND DIVERT.

1. SOFTWARE MODIFICATIONS. INCLUDING CHECK STATION OVERRIDE OF CALIB. DESIGNATION AS "BAD". CHECK STATION HAS FINAL SAY ON ACCEPTABILITY.
2. ADDITION OF A DIVERTER. HARDWARE AND SOFTWARE.

PROPOSED SYSTEM, LONG TERM:

SAME AS ABOVE BUT THE CALIBARTOR WILL ULTIMATELY BE CONTROLLED BY THE CHECK STATION. THE CHECK STATION WILL PERIODICALLY MAKE AN ASSESSMENT OF THE CALIBRATOR DISTRIBUTION AND DETERMINE IF NOMINAL SHIFTING IS REQUIRED TO OPTIMIZE YIELDS. ADDITIONALLY, THE CALIBRATOR TARGET RANGE WILL BE REDUCED TO FURTHER IMPROVE CALIB. SIGMA.

TESTING MUST ALSO BE CARRIED OUT THAT TRIES TO DEFINE VARIABLES IN THE CALIBRATOR THAT CAUSE THE PRESENT REPEATABILITY ISSUES. SOFTWARE AND HARDWARE ON THE EQUIPMENT AS WELL AS PRODUCT VARIABLES.

ADDITIONAL PROCESS CONTROLS REQUIRED:

1.) SPC ON PIN HEIGHT AS REFERENCED FROM SENSOR SEAT.
2.) POSSIBLE 100% LVDT MEASUREMENT OF PIN HEIGHT.
3.) HIGH TEMP CONTINUITY TEST ON SAMPLES FROM EACH SENSOR LOT TO DETERMINE IF PINNING IS TOO SHORT LEADING TO LOSS OF CONTINUITY AT HIGH TEMP.
4.) HYPOT TEST 100% TO DETERMINE IF PINNING IS TOO LONG LEADING TO CONSTANT CONTINUITY AT LOW TEMP.

3-4 MOS

I. PASS-CAR, 57PS MY 92 MRD 6/91

ACT 125 PSI ± 35 → NEW CUP
REL 20 MIN

OFFSET POLARITY KEY → 46412 MOLD MOD

COLOR - GRAY

ALUMINUM CR

HEXPART - SAE J512 INVERTED FLARE

3-4 MOS

II. LITE TRUCK 57PS MY 91.75 MRD 4/91

ACT 250 ± 50 → STD 57 SENSOR
REL 40 MIN

CTR POLARITY, BLACK

ALUMINUM CR

HEX - J512

III. PASS CAR 77PS PERM. PROD DESIGN

NEW SWITCH ASS'Y (ANDY McKENNIA)
SENSOR SAME AS I. ABOVE
→ FULLY AUTOMATED ASM'Y
POLARITY KEY, COLOR, AS I ABOVE

IV LITE TRK 77PS PERM. PROD. DESIGN

AUTOMATED SW ASS'Y III ABOVE
SAME COLOR, POLARITY KEY AS II ABOVE

SENSOR STD 57PS

MSG #= 00292264 FR=MCME TO=SBD1 SENT=04/09/92 09:47 PM
R#=151 ST=C DIV=0050 CC=00101 BY=MCNE AT=04/09/92 03:45 PM

TO:	DAVE CZARN	ZARN		
CC:	DALE BOGGS	FFUN	SHELLEY WHITE	SSW
	STEVE OFFILER	SBOL	BILL SWEET	W34
	DAVE VARNEY	VRNY		
FROM:	TED BALLARD	ETB		

SUBJECT: CRUISE CONTROL QUIET DISC

I BELIEVE THAT THE PROPOSED SPEC - ie. MINIMUM DIFFERENTIAL DISC, MAY GIVE US REDUCED THROW AT TEMPERATURE.

THE CHARACTERISTICS, NOTED IN OUR TESTING OF THE 52 PS DISC 36656-1 (62/48) AT 125C, SHOWED A DROP IN THE PEAK FORCE OF 10%, AND AN INCREASE IN CREEP OPEN. THE SLOPE OF THE CREEP OPEN CURVE SHIFTED TO THE RIGHT (FALL OFF IN MODULUS). THE TESTING WAS DONE BY FRED MAY IN ADV. DEVEL.

SIMILAR TESTING ON 455 STAINLESS SHOWED MINIMAL SHIFT.

REGARDS,

TED
tap

STEVE O.

P1 OF

DALE SOGGE 4-30-92

PROPOSED SPEC FOR QUIET DISC 36656-35

VALUES ARE FOR DISC AFTER FINAL HEAT TREATMENT

MATERIAL PART # 75525-2
BLANK STRIP # 7438-2

ACTUATION MEAN : AS REQUIRED BY MFG ENGINEERING (NOMINAL TARGET : 22 psi)

ACT MEAN TOLERANCE: ±1.0psi

ACT SIGMA MAX: 1.0 psi

MAXIMUM MEAN DIFFERENTIAL: 5.5psi

DIFFERENTIAL SIGMA MAX : 1.0 psi

MINIMUM MEAN TRAVEL TO 14psi ON ACTUATION : 0.0035 inches

MAX SIGMA, TRAVEL TO 14psi ON ACTUATION : TO BE DETERMINED

MINIMUM MEAN TRAVEL TO 32 psi ON ACTUATION : 0.0240 inches

MAXIMUM SIGMA, TRAVEL TO 32 psi ON ACTUATION : TO BE DETERMINED

ADDED 5/1/92 D.S. — MIN MEAN TRAVEL BETWEEN 14 AND 32 PSI: 0.020"

PRESSURE CALIBRATION

1) METHOD

MEASUREMENT TO BE TAKEN IN A STANDARD FIXTURE PRINT # XXX, USING THE FOLLOWING MEASUREMENT PROCEDURE;

A. CYCLE DISC THREE TIMES ACTUATION TO RELEASE

B. FROM RELEASE INCREASE PRESSURE TO 14psi ± 0.5 psi AND RECORD DISC TRAVEL.

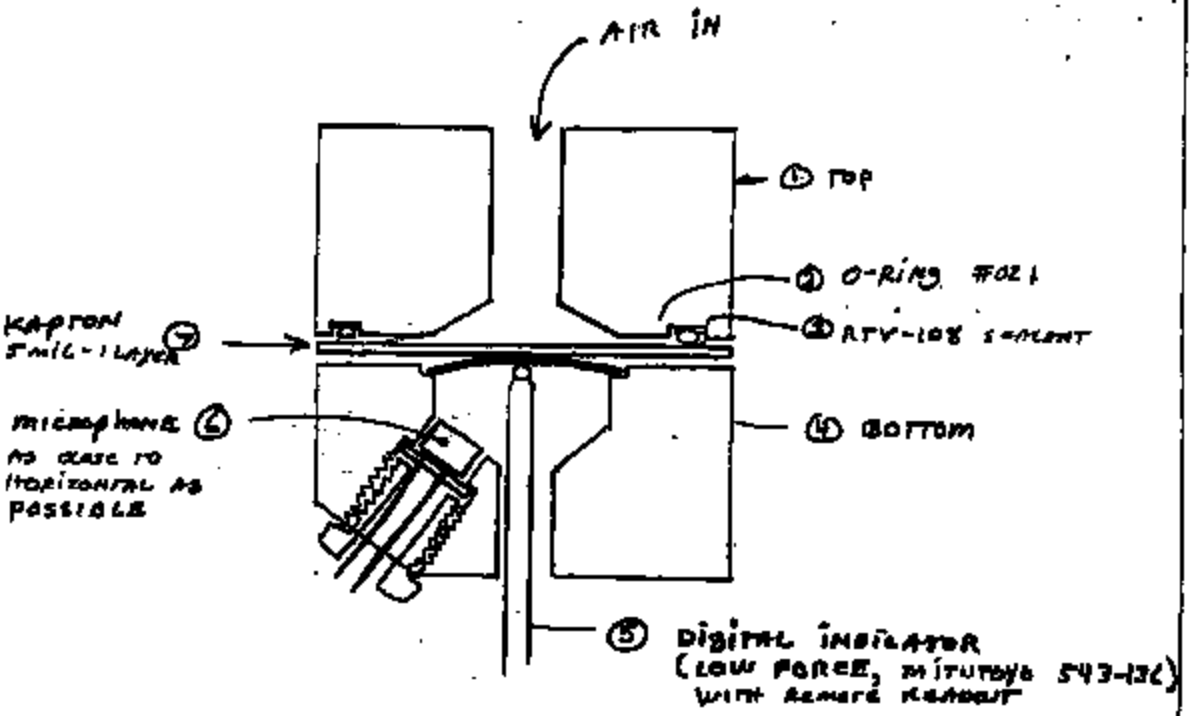
C. CONTINUE PRESSURE INCREASE UNTIL ACTUATION. RECORD ACTUATION PRESSURE.

D. INCREASE PRESSURE TO 32 psi ± 0.5 psi AND RECORD DISC TRAVEL.

E. DECREASE PRESSURE TO RELEASE AND RECORD RELEASE PRESSURE

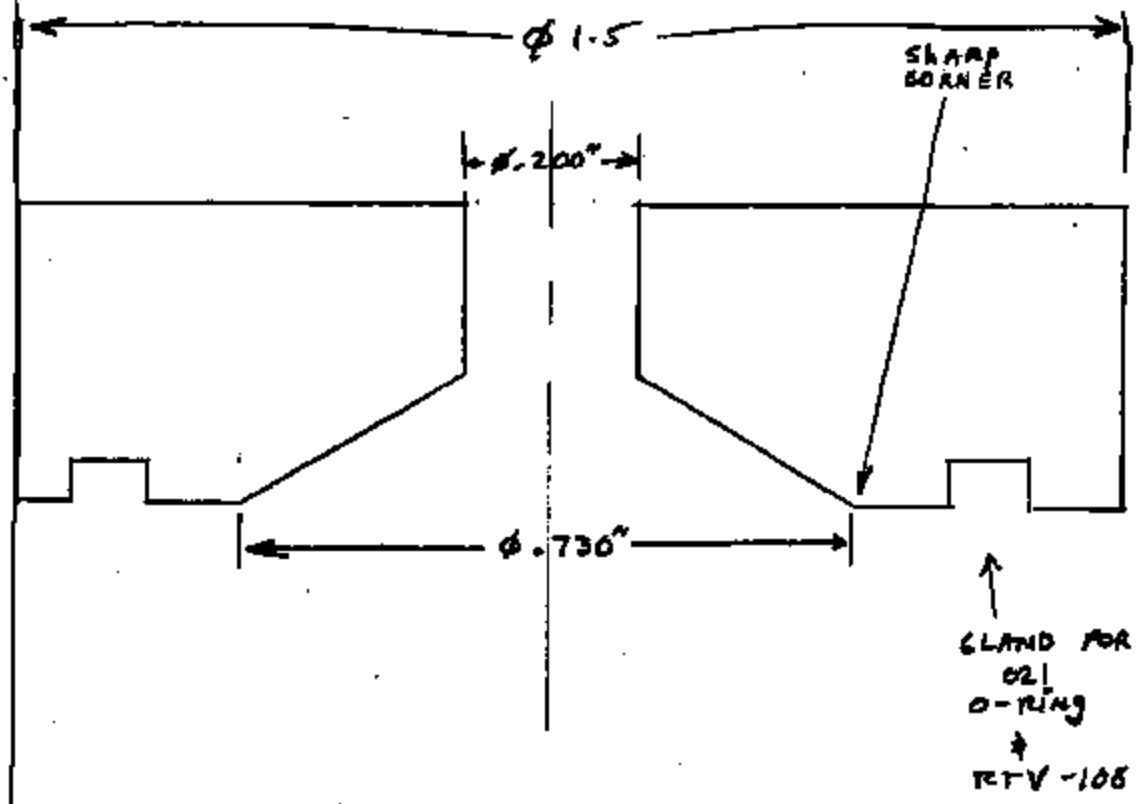
ALL RAMP RATES SHALL BE LESS THAN 0.5 psi/SEC.

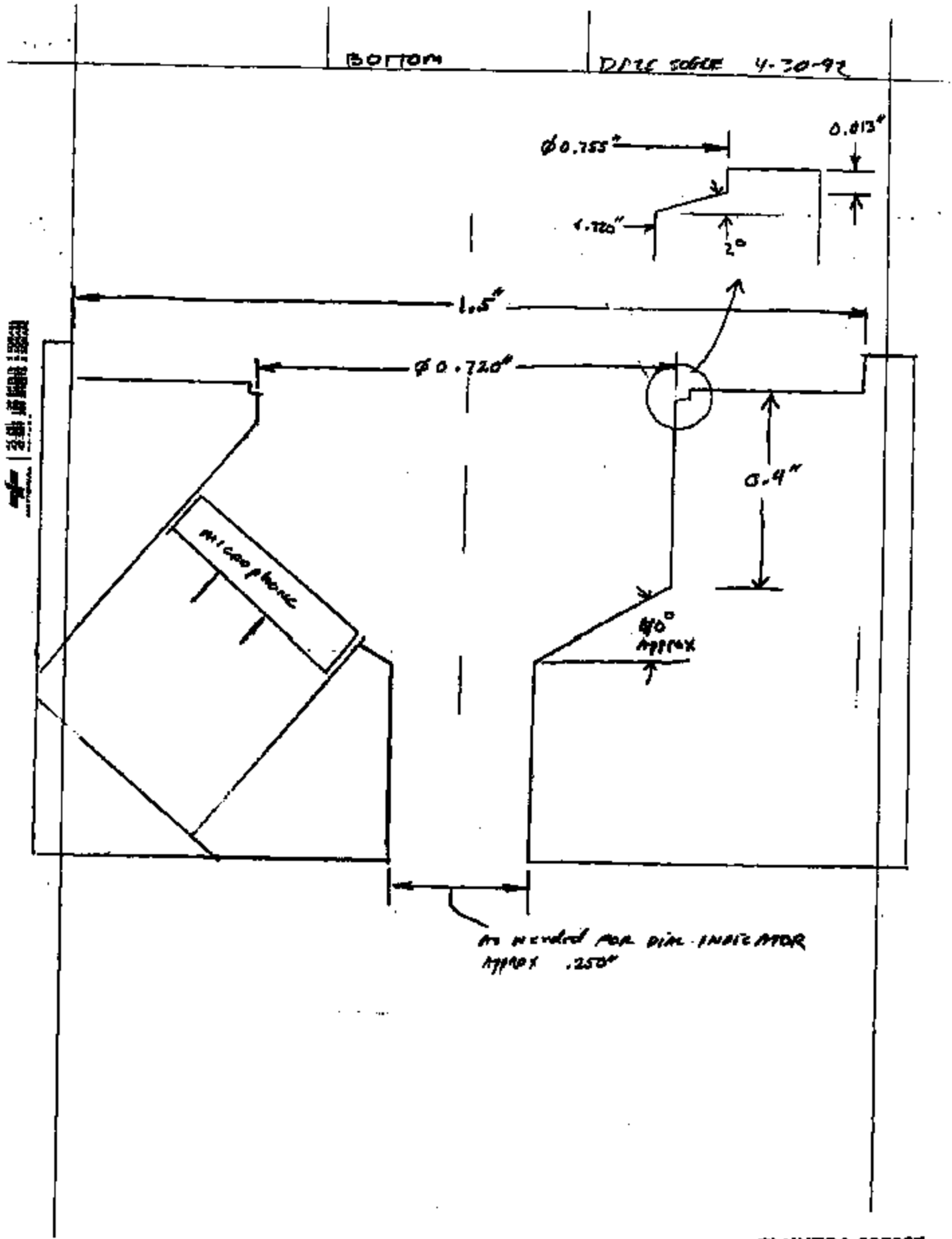
DISC FIXTURE | DATE SCALE 4-30-92



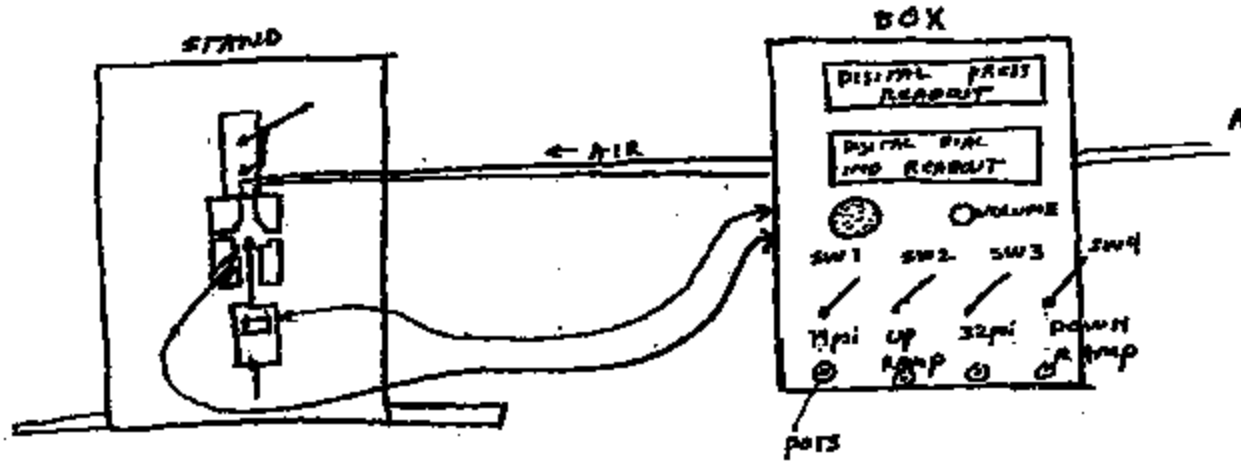
TOP

DALE SOUVE 4-30-92





LOW DIFFERENTIAL DISC CHECK SYSTEM



STAND
- strap clamp
- FIXTURE
- MITUTUYO DIGITAL LOW FORCE INDICATOR (# 543-136 with output)
- STANDARD MICROPHONE OR SMALLER

PORTS TO SET PRESSURE POINTS (MAKES STAND USABLE FOR ALL 3/4" DISCS)

BUD BOX OR PORTABLE CABINET

BOX
- HOUSE DIGITAL PRESSURE READOUT MITUTUYO REMOTE DIGITAL READOUT (# 572-011)
- FEEDBACK PRESSURE REGULATOR FOR CONTROLLED RAMPS
- SWITCHES & RESISTORS TO CONTROL REGULATOR
- OPERATOR MUST BE ABLE TO USE SWITCH 2 & 4 TO STOP PRESSURE AT ANY POINT WHEN SHE SEES OR HEARS SNAP.
- SPEAKER & AMPLIFIER
- POSSIBLE CIRCUIT TO STOP UP & DOWN RAMPS BASED ON SOUND SNAP

DATE SCOPE 1-30-92

TI-NHTSA 00539

77 PS SENSOR TESTER

DETAILS!

STAND - 6
LVDT MNT - 2
REF, SURF. 2
SEAL MOUNT 2
CYL MOUNT 2
SETUP
BLOCKS 3
GUARD 4
STAND (TABLE) 4

25 deb.

Purch.

LVDT .5
CYL .1
Sensors (3) .5
Valve, etc .2
Table 1.0

$ 2.3 K
Pneumatics 6.0
$ 8.3 — 8.3

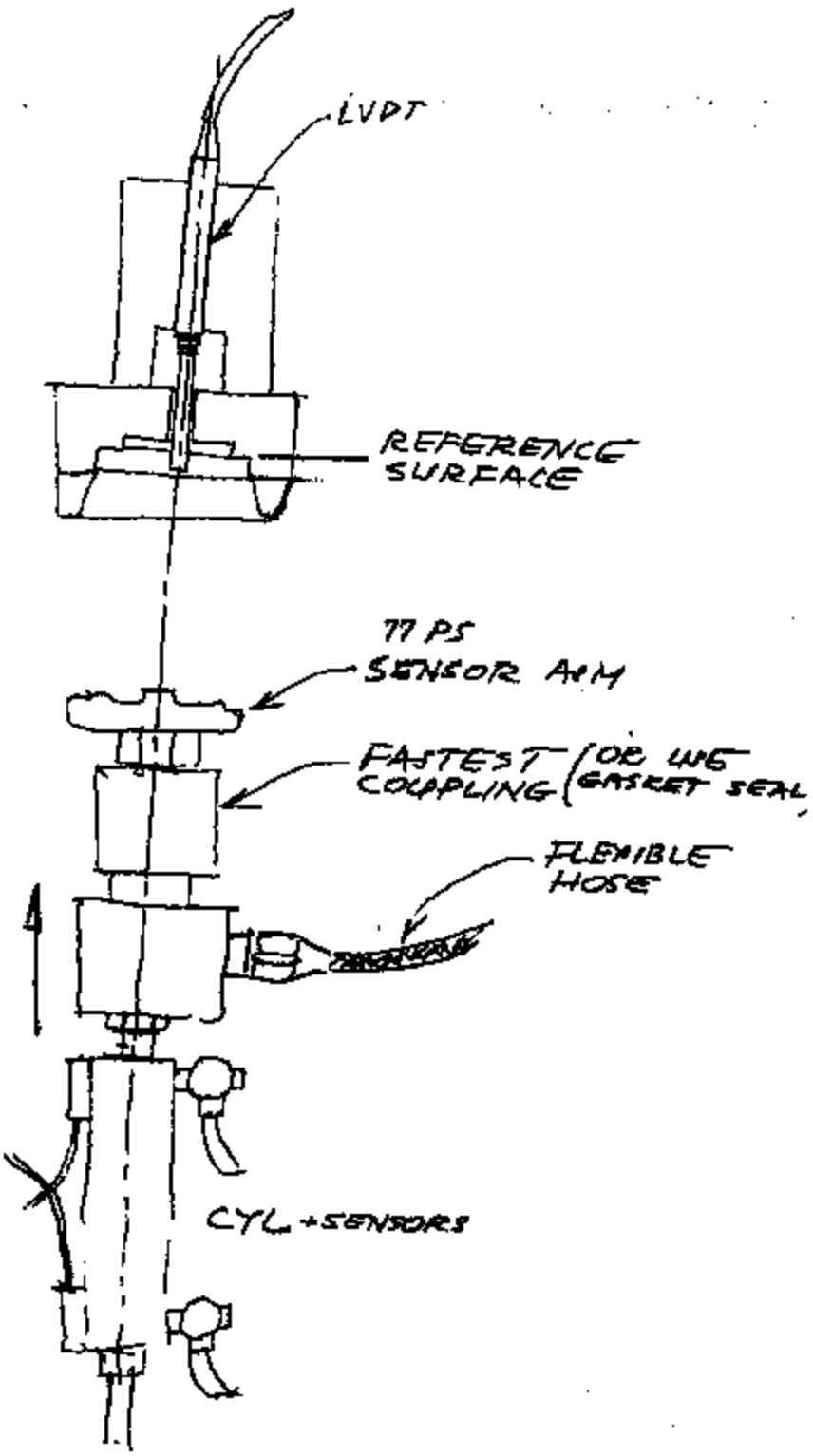
ENG. 40 — 2.2
DES 200 — 9.0
BUILD 300 — 10.5
DEBUG 20 — 1.1

TOTAL MECH $11.2 $19.9

MECHANICAL $ 31.1 K
ELEC ENG 18 K
ELEC BUILD/DEB 38 K

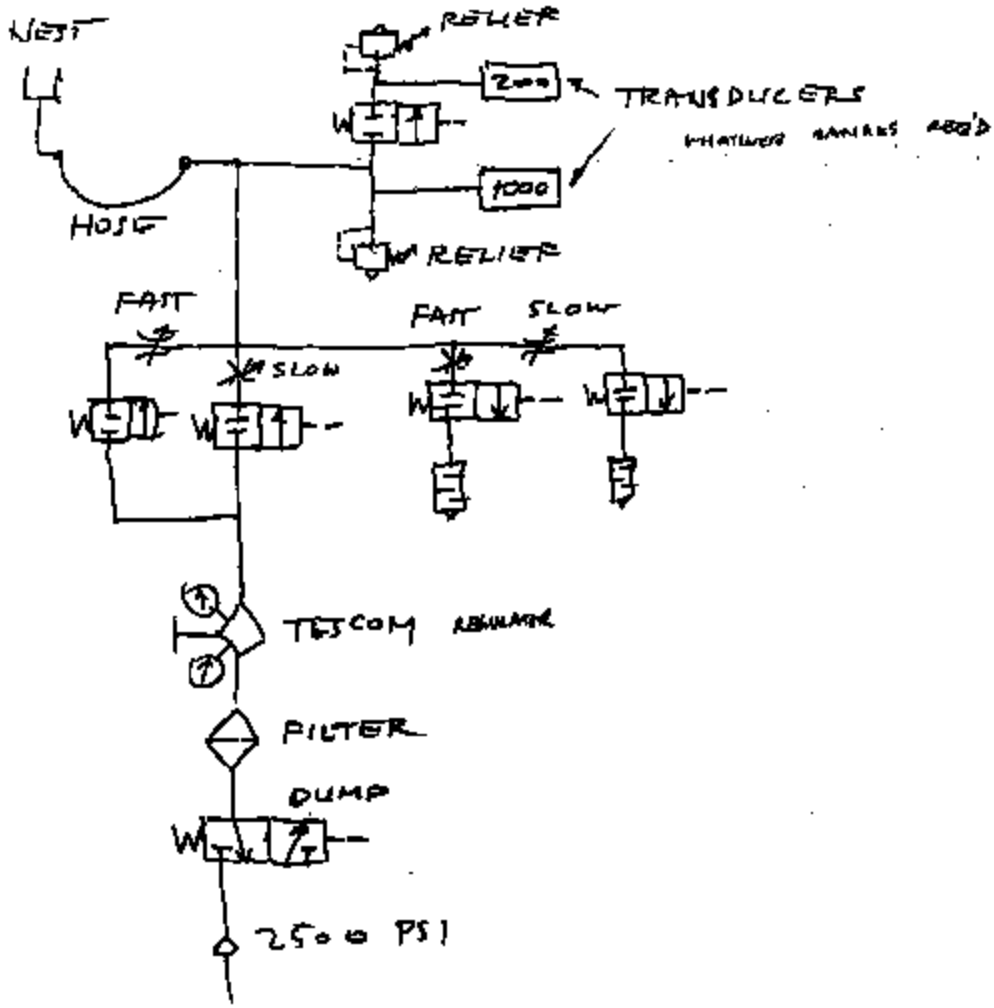
$ 86 K

CONSERVATIVE; CAN DRAW IF ANYONE FROM "GOOD" BUILDER



77 PS SENSOR TESTER

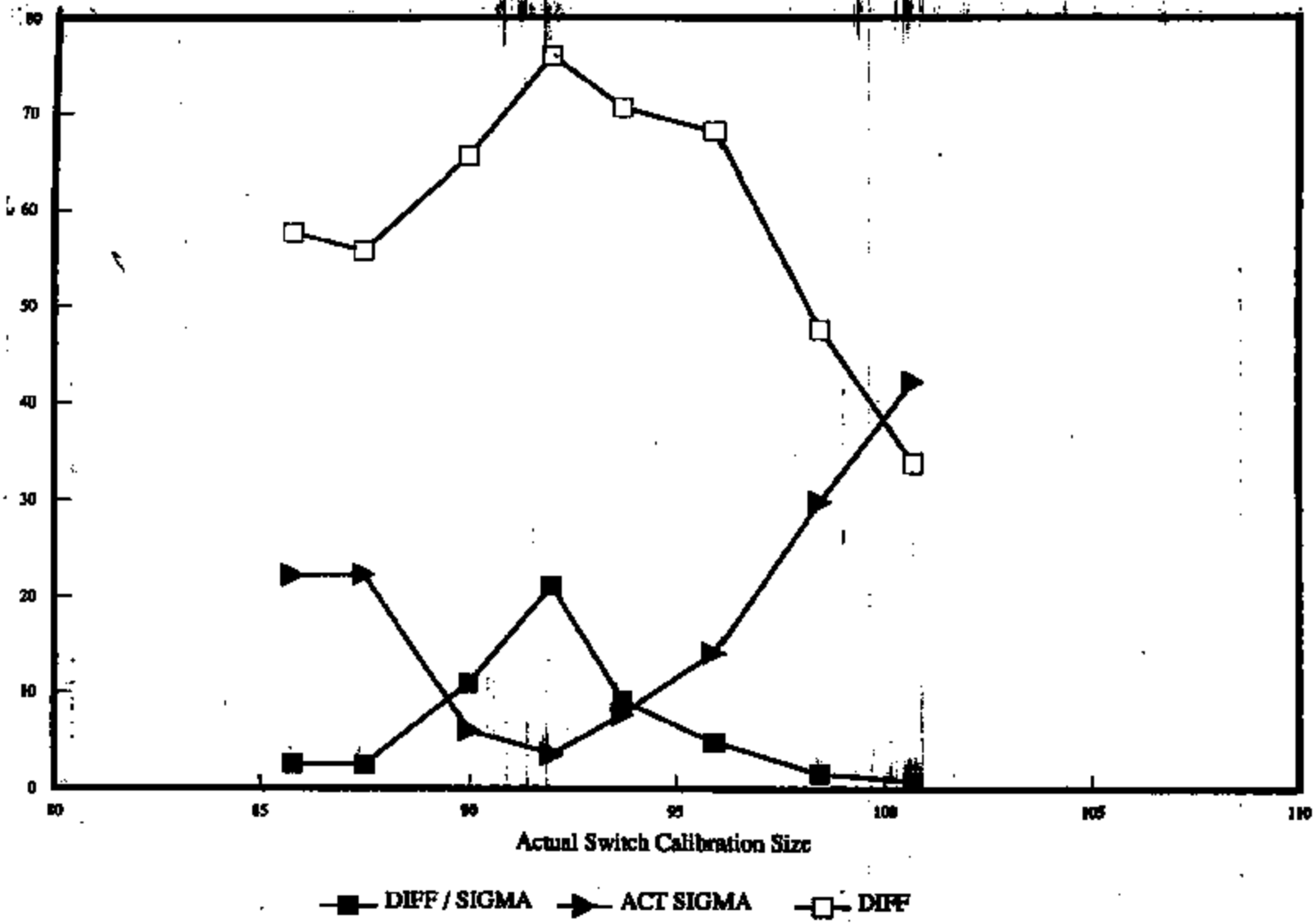
TEST PNEUMATICS



COST

TRANSDUCERS	1.6
VALVES	2.7
6 @ $450	
6 @ $ 75	
TESCOM	.4
+ GAGES	.4
FILTER	.1
HOSE	.1
FITTINGS	.2
	$5.9K

PRODUCTION CALIBRATION TECHNIQUE



BASE DIMENSION PILOT EXPERIMENT TEST 150-15-64 JAN 7/15/91

	(85.8) LOT 1: .080"			(87.5) LOT 2: .082"			(90.0) LOT 3: .084"			(92) LOT 4: .086"		
DEVICE	ACT	REL	DIFF	ACT	REL	DIFF	ACT	REL	DIFF	ACT	REL	DIFF
1	362	300	62	306	244	62	261	200	61	263	182	81
2	350	303	47	278	222	56	263	182	81	268	192	76
3	323	270	53	301	252	49	272	194	78	264	184	80
4	366	311	55	314	266	48	255	179	76	262	198	64
5	320	262	58	304	247	57	259	196	63	266	200	66
6	374	314	60	297	242	55	265	205	60	261	176	85
7	320	258	62	288	237	51	264	203	61	265	187	78
8	320	253	67	358	289	69	251	206	45	273	195	78
AVG.	342	284	57.7	306	250	55.8	261	196	65.6	265	189	76
STD.	22.2	23.8	6.87	22.3	18.8	6.56	6.01	9.57	11.2	3.59	7.85	6.83

3.84 4-1

	(93.7) LOT 5: .088"			(95.4) LOT 6: .090"			(98.4) LOT 7: .092"			(100.7) LOT 8: .094"		
DEVICE	ACT	REL	DIFF	ACT	REL	DIFF	ACT	REL	DIFF	ACT	REL	DIFF
1	265	186	79	244	175	69	165	127	38	NO GOOD		
2	240	181	59	239	168	71	192	146	46	159	118	41
3	257	184	73	213	167	46	127	92	35	78	58	20
4	252	180	72	209	159	50	202	148	54	66	48	18
5	260	177	83	240	158	82	187	143	44	121	78	43
6	250	187	63	234	172	62	171	129	42	55	34	21
7	247	181	66	238	156	82	234	173	61	171	114	57
8	245	175	70	253	170	83	206	145	61	127	90	37
AVG.	252	181	70.6	234	166	68.1	186	138	47.6	131	77	33.8
STD.	7.74	3.90	7.46	14.1	6.61	13.5	29.8	21.7	9.33	42.2	29.9	13.5

FILE: A\LOTS\IRODPIN

	.080		.082		.084		.086		.088		.090		.092		.094	
	INCH	JEFF	INCH	JEFF	INCH	JEFF	INCH	JEFF	INCH	JEFF	INCH	JEFF	INCH	JEFF	INCH	JEFF
1	80.2	85.1	81.1	88	83.2	89	85.9	92.8	88.1	94.2	89.9	96.3	91.9	98	94.6	100
2	79.6	85.5	81.1	88	83.2	88.4	85.3	92.7	87.8	93.6	90.6	95.1	92.7	99.1	93.8	100.5
3	79.7	85.4	81.5	88.3	83.5	86.2	85.9	92.3	88.4	93.1	89.6	94.6	92.6	99.5	94.3	101
4	79.3	86.9	81.3	87.6	83.2	89.8	85	90.7	88	95.1	90	95.7	92.6	98.5	94.6	100.9
5	79.2	85.9	81.8	87.4	83.1	90.6	85.4	93	88.3	91.5	89.5	95.1	92.5	98.4	94.4	103
6	80.4	86.1	81.1	86.9	83.5	90.4	85.8	92	88.1	93.9	90.2	96.3	92.1	98	94.9	101.4
7	79.3	85.5	81.5	88	83.2	91	85.6	92.9	87.9	93.4	90.7	97.8	92.6	99.2	93.8	100.9
8	80.2	85.5	81.8	87.6	84.7	90.6	86	92.3	87.5	94	90.3	95.7	92.2	98.5	94.6	100
9	79.9	85.2	81.5	87.2	83.8	89	85.7	90.8	87.9	93.8	89.4	96	92	99.5	94.7	100
10	79.6	85.5	81.7	88.5	84.9	91.7	86.4	91.7	87.2	94.5	90.6	95.9	92.5	98.7	94.5	102.1
11	79.6	85.9	81.6	87.5	84.2	89.5	86.5	92.5	87.3	94.5	89.3	93.8	92.7	99	94.8	101
12	79.4	85.6	81.3	87.5	83.4	90	85.2	90.9	87.6	93.8	91	96.5	92.8	97.2	93.8	100.5
13	79.7	85.7	81.8	87.3	83.5	89.9	85.6	92.1	88.2	93.5	90.6	96	92.9	97.8	94.6	100.2
14	79.8	85.5	81.5	87.3	84	90	86.4	93	88.1	93.7	90	96	91.7	98.8	94.6	101
15	79.6	87.4	81.7	87.5	83.8	90	85.8	91.3	88.7	93.5	90	97	92.7	98.5	94.5	100.5
16	80	86	81.6	88	83.3	91.2	86	92.2	88.8	90.3	90.4	96.7	91.3	97.9	94.5	100.3
17	80.4	85.2	81.6	87.9	83.9	90	86	92.2	88.6	94.3	90.2	95.5	92	99.1	93.5	99.2
18	79.8	86.6	81.7	87			85.1	91.6	88	89.2	89	95.1	93	99.2	94.3	100.9
19	79.7	85.7	81.4	87.8			86	91.8	88.4	89.5	89.7	95.5			93.6	101.3
20	80	86.7	81.8	86.9			85.5	91.7			89.9	95.5			93.1	99.9
21	79.9	85.5	82.4	87.4							89.8	97				
22			81	87												
23			81.8	86.6												
	79.79	85.89	81.53	87.53	83.67	89.96	85.75	92.03	88.05	92.8	90.03	95.86	92.38	98.44	94.29	100.73
	0.334	0.591	0.303	0.471	0.519	0.917	0.413	0.695	0.431	2.033	0.502	0.871	0.445	0.945	0.485	0.8174

93.74
0.774

δ 6.1 δ 6.0 δ 6.3 δ 6.3 δ 5.7 δ 5.8 δ 6.1 δ 6.4

JEFF AVG σ ~~> 0.76

85.8 ~~> 100.7 RANGE 14.9 OR 93.3 MILS

PIN LENGTH IS $\frac{+47}{5}$ 146 (FOR PRODUCTION MID-WINDOW EXP.)

AUTO ANGLE ADJUST COMPLETE 11-JUL-1991 09:25:[illegible]

MOTOR HOME SETUP TIMEOUT .080 GT4/2 11-JUL-1991 09:26:40.72

SHAFT ENCODER ERROR - POS DIRECTION 11-JUL-1991 09:54:37.9[illegible]

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-96.52 CHK=--.-- DIFF=--.-- INIT LOW NO CHECK CAL TIME= 0.56 SEC
CAL INFO INIT=-96.52 # OF PASSES= 0

STA 19 PIECE GOOD
CAL=[illegible]24 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.17 SEC
CAL INFO INIT=-74.42 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.60 SPRINGBACK=-0.24 FINAL=-80.24

STA 19 PIECE GOOD
CAL=[illegible]64 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.15 SEC
CAL INFO INIT=-72.28 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.39 SPRINGBACK= 0.36 FINAL=-79.64

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-85.37 CHK=--.-- DIFF=--.-- INIT LOW NO CHECK CAL TIME= 0.54 SEC
CAL INFO INIT=-85.37 # OF PASSES= 0

STA 19 PIECE GOOD
CAL=-[illegible]71 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.14 SEC
CAL INFO INIT=-73.10 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.40 SPRINGBACK= 0.29 FINAL=-79.71

STA 19 PIECE GOOD
CAL=[illegible]3 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.12 SEC
CAL INFO INIT=-72.37 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.50 SPRINGBACK= 0.67 FINAL=-79.33

STA 19 PIECE GOOD
CAL=[illegible]19 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.15 SEC
CAL INFO INIT=-70.50 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-81.72 SPRINGBACK= 0.81 FINAL=-79.19

STA 19 PIECE GOOD
CAL=[illegible]38 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.70 SEC
CAL INFO INIT=-72.04 # OF PASSES= 2
PASS 1 RAM TARGET=-80.00 RAM MEAS=-81.74 SPRINGBACK= 1.13 FINAL=-78.87
PASS 2 RAM TARGET=-81.13 RAM MEAS=-83.48 SPRINGBACK= 0.76 FINAL=-80.38

STA 19 PIECE GOOD
CAL=[illegible]91 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-71.03 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.34 SPRINGBACK= 0.69 FINAL=-79.31

STA 19 PIECE GOOD
CAL=-[illegible]21 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-74.16 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.21 SPRINGBACK=-0.21 FINAL=-80.21

STA 19 PIECE GOOD
CAL=-[illegible]0 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.17 SEC
CAL INFO INIT=-70.86 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.10 SPRINGBACK= 0.10 FINAL=-79.90

STA 19 PIECE GOOD

PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.81 SPRINGBACK= 0.43 FINAL=-79.38

STA 19 PIECE GOOD
CAL=[redacted]62 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-70.07 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.65 SPRINGBACK= 0.38 FINAL=-79.62

STA 19 PIECE GOOD
CAL=-[redacted]43 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-71.04 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.30 SPRINGBACK= 0.57 FINAL=-79.43

STA 19 PIECE GOOD
CAL=-[redacted]67 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.15 SEC
CAL INFO INIT=-70.46 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-83.11 SPRINGBACK= 0.33 FINAL=-79.67

STA 19 PIECE GOOD
CAL=-[redacted]77 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.17 SEC
CAL INFO INIT=-71.72 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-83.07 SPRINGBACK= 0.23 FINAL=-79.77

STA 19 PIECE GOOD
CAL=-[redacted]63 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-71.68 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.40 SPRINGBACK= 0.37 FINAL=-79.63

STA 19 PIECE GOOD
CAL=[redacted]02 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-73.16 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-83.00 SPRINGBACK=-0.02 FINAL=-80.02

STA 19 PIECE GOOD
CAL=[redacted]6 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.69 SEC
CAL INFO INIT=-69.87 # OF PASSES= 2
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.42 SPRINGBACK= 1.09 FINAL=-78.91
PASS 2 RAM TARGET=-81.09 RAM MEAS=-84.89 SPRINGBACK= 0.72 FINAL=-80.36

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-74.39 CHK=--.-- DIFF=--.-- MAX CYCLE NO CHECK CAL TIME= 1.87 SEC
CAL INFO INIT=-63.14 # OF PASSES= 2
PASS 1 RAM TARGET=-80.00 RAM MEAS=-72.95 SPRINGBACK= 6.98 FINAL=-73.02
PASS 2 RAM TARGET=-86.98 RAM MEAS=-73.91 SPRINGBACK=12.60 FINAL=-74.39

STA 19 PIECE BAD FAILED CALIBRATION
CAL=--.-- CHK=--.-- DIFF=--.-- CAL LVDT ERR NO CHECK CAL TIME= 0.57 E
CAL INFO INIT=--.-- # OF PASSES= 0

STA 19 PIECE GOOD
CAL=-[redacted]5 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.67 SEC
CAL INFO INIT=-72.47 # OF PASSES= 2
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.27 SPRINGBACK= 1.04 FINAL=-78.96
PASS 2 RAM TARGET=-81.04 RAM MEAS=-82.55 SPRINGBACK= 1.29 FINAL=-79.75

STA 19 PIECE GOOD
CAL=-[redacted]9 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.15 SEC
CAL INFO INIT=-72.17 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.50 SPRINGBACK= 0.35 FINAL=-79.65

STA 19 PIECE GOOD
CAL[redacted]02 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.16 SEC
CAL INFO INIT=-73.86 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.75 SPRINGBACK=-0.02 FINAL=-80.02

CAL INFO INIT=-74.15 # OF PASSES= 1
PASS 1 RAM TARGET=-80.00 RAM MEAS=-82.43 SPRINGBACK= 0.11 FINAL=-79.89

.082 QTY 23

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STA 19     PIECE GOOD
     CAL=[redacted]4 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO      INIT=-74.50    # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.13  SPRINGBACK= 0.86  FINAL=-81.14

STA 19     PIECE GOOD
     CAL=-[redacted]6 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO      INIT=-73.11    # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-83.78  SPRINGBACK= 0.94  FINAL=-81.06

STA 19     PIECE GOOD
     CAL=[redacted]0 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.14 SEC
    CAL INFO      INIT=-74.63    # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.33  SPRINGBACK= 0.47  FINAL=-81.53

STA 19     PIECE GOOD
     CAL=[redacted]1 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.17 SEC
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STA 19      PIECE GOOD
     CAL=[redacted]75 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.17 SEC
    CAL INFO       INIT=-74.13     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.55  SPRINGBACK= 0.25  FINAL=-81.75

STA 19      PIECE GOOD
     CAL=[redacted]05 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-72.98     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-85.41  SPRINGBACK= 0.95  FINAL=-81.05

STA 19      PIECE GOOD
     CAL=[redacted]45 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.11 SEC
    CAL INFO       INIT=-75.21     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.02  SPRINGBACK= 0.55  FINAL=-81.45

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--      # OF PASSES= 0

STA 19      PIECE GOOD
     CAL=[redacted]81 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.14 SEC
    CAL INFO       INIT=-73.19     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.51  SPRINGBACK= 0.19  FINAL=-81.81

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.56 S
    CAL INFO       INIT=--.--      # OF PASSES= 0

STA 19      PIECE GOOD
     CAL=[redacted] CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-75.50     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.29  SPRINGBACK= 0.53  FINAL=-81.47

STA 19      PIECE GOOD
     CAL=-[redacted] CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO       INIT=-75.34     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-83.84  SPRINGBACK= 0.32  FINAL=-81.68

STA 19      PIECE GOOD
     CAL=-[redacted]1 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-75.94     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-83.87  SPRINGBACK= 0.39  FINAL=-81.61

STA 19      PIECE GOOD
     CAL=-[redacted]27 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-75.12     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.20  SPRINGBACK= 0.73  FINAL=-81.27

STA 19      PIECE GOOD
     CAL=-[redacted]7 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-76.16     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.21  SPRINGBACK= 0.23  FINAL=-81.77

STA 19      PIECE GOOD
     CAL=-[redacted]45 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.11 SEC
    CAL INFO       INIT=-74.28     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.35  SPRINGBACK= 0.55  FINAL=-81.45

STA 19      PIECE GOOD
     CAL=[redacted]70 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.14 SEC
    CAL INFO       INIT=-74.57     # OF PASSES= 1
   PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.89  SPRINGBACK= 0.30  FINAL=-81.70
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   CAL INFO      INIT=-75.24     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-83.99  SPRINGBACK= 0.40  FINAL=-81.60

STA 19      PIECE GOOD
     CAL=[redacted]55 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO      INIT=-73.20     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-85.01  SPRINGBACK= 0.45  FINAL=-81.55

STA 19      PIECE GOOD
     CAL=[redacted]73 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO      INIT=-72.83     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.69  SPRINGBACK= 0.27  FINAL=-81.73

STA 19      PIECE GOOD
     CAL=[redacted]40 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO      INIT=-74.47     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.09  SPRINGBACK= 0.60  FINAL=-81.40

STA 19      PIECE GOOD
     CAL=[redacted]75 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO      INIT=-74.27     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.16  SPRINGBACK= 0.25  FINAL=-81.75

STA 19      PIECE GOOD
     CAL=[redacted]6 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
    CAL INFO      INIT=-71.75     # OF PASSES= 2
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-83.58  SPRINGBACK= 1.42  FINAL=-80.58
  PASS 2  RAM TARGET=-83.42  RAM MEAS=-86.50  SPRINGBACK= 1.06  FINAL=-82.36

STA 19      PIECE GOOD
     CAL=[redacted]0 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO      INIT=-70.45     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-85.06  SPRINGBACK= 0.97  FINAL=-81.03

STA 19      PIECE GOOD
     CAL=[redacted] CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO      INIT=-72.24     # OF PASSES= 1
  PASS 1  RAM TARGET=-82.00  RAM MEAS=-84.96  SPRINGBACK= 0.47  FINAL=-81.53

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
    CAL INFO      INIT=--.--     # OF PASSES= 0
```

.094 QTY 17

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STA 19      PIECE GOOD
     CAL=[redacted]21 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO       INIT=-73.51     # OF PASSES= 1
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.53  SPRINGBACK= 0.79  FINAL=-83.21

STA 19      PIECE GOOD
     CAL=-[redacted]21 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-75.50     # OF PASSES= 1
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.07  SPRINGBACK= 0.79  FINAL=-83.21

STA 19      PIECE BAD     FAILED CALIBRATION
     CAL=-85.00 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-73.47     # OF PASSES= 2
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.37  SPRINGBACK= 1.16  FINAL=-82.84
   PASS 2  RAM TARGET=-85.16  RAM MEAS=-89.48  SPRINGBACK= 0.15  FINAL=-85.00

STA 19      PIECE GOOD
     CAL=[redacted]8 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
    CAL INFO       INIT=-69.78     # OF PASSES= 2
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.55  SPRINGBACK= 1.70  FINAL=-82.30
   PASS 2  RAM TARGET=-85.70  RAM MEAS=-87.45  SPRINGBACK= 2.22  FINAL=-83.48

STA 19      PIECE GOOD
     CAL=[redacted]16 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO       INIT=-72.00     # OF PASSES= 1
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.62  SPRINGBACK= 0.84  FINAL=-83.16

STA 19      PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--      # OF PASSES= 0

STA 19      PIECE GOOD
     CAL=-[redacted]13 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.17 SEC
    CAL INFO       INIT=-73.08     # OF PASSES= 1
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.55  SPRINGBACK= 0.87  FINAL=-83.13

STA 19      PIECE GOOD
     CAL=[redacted]51 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-71.48     # OF PASSES= 2
   PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.55  SPRINGBACK= 1.57  FINAL=-82.43
   PASS 2  RAM TARGET=-85.57  RAM MEAS=-87.53  SPRINGBACK= 2.06  FINAL=-83.51

STA 19      PIECE GOOD
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PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.08  SPRINGBACK= 0.79  FINAL=-83.21

STA 19      PIECE GOOD
     CAL=[redacted]71 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
   CAL INFO       INIT=-72.19     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.09  SPRINGBACK= 1.33  FINAL=-82.67
  PASS 2  RAM TARGET=-85.33  RAM MEAS=-89.07  SPRINGBACK= 0.62  FINAL=-84.71

STA 19      PIECE GOOD
     CAL=[redacted]8.77 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
   CAL INFO       INIT=-73.90     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.32  SPRINGBACK= 1.01  FINAL=-82.99
  PASS 2  RAM TARGET=-85.01  RAM MEAS=-87.66  SPRINGBACK= 1.24  FINAL=-83.77

STA 19      PIECE GOOD
     CAL=[redacted].94 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
   CAL INFO       INIT=-75.04     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.09  SPRINGBACK= 1.27  FINAL=-82.73
  PASS 2  RAM TARGET=-85.27  RAM MEAS=-88.90  SPRINGBACK= 0.34  FINAL=-84.94

STA 19      PIECE GOOD
     CAL=[redacted]16 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
   CAL INFO       INIT=-74.14     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.96  SPRINGBACK= 1.17  FINAL=-82.83
  PASS 2  RAM TARGET=-85.17  RAM MEAS=-88.95  SPRINGBACK= 1.01  FINAL=-84.16

STA 19      PIECE BAD     FAILED CALIBRATION
     CAL=-86.90 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.58 SEC
   CAL INFO       INIT=-72.00     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.87  SPRINGBACK= 1.23  FINAL=-82.77
  PASS 2  RAM TARGET=-85.23  RAM MEAS=-82.77  SPRINGBACK=-1.67  FINAL=-86.90

STA 19      PIECE GOOD
     CAL=[redacted]5 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
   CAL INFO       INIT=-71.36     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.31  SPRINGBACK= 1.15  FINAL=-82.85
  PASS 2  RAM TARGET=-85.15  RAM MEAS=-88.11  SPRINGBACK= 1.79  FINAL=-83.36

STA 19      PIECE GOOD
     CAL=-[redacted]48 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
   CAL INFO       INIT=-73.70     # OF PASSES= 1
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.47  SPRINGBACK= 0.52  FINAL=-83.48

STA 19      PIECE GOOD
     CAL=-[redacted]96 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.14 SEC
   CAL INFO       INIT=-73.69     # OF PASSES= 1
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-87.52  SPRINGBACK= 0.04  FINAL=-83.96

STA 19      PIECE GOOD
     CAL=-[redacted]94 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
   CAL INFO       INIT=-74.51     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-85.50  SPRINGBACK= 1.50  FINAL=-82.50
  PASS 2  RAM TARGET=-85.50  RAM MEAS=-88.47  SPRINGBACK= 1.66  FINAL=-83.84

STA 19      PIECE GOOD
     CAL=-[redacted]27 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.17 SEC
   CAL INFO       INIT=-73.96     # OF PASSES= 1
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.00  SPRINGBACK= 0.73  FINAL=-83.27

STA 19      PIECE GOOD
     CAL=-[redacted]4 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
   CAL INFO       INIT=-70.84     # OF PASSES= 2
  PASS 1  RAM TARGET=-84.00  RAM MEAS=-86.78  SPRINGBACK= 1.67  FINAL=-82.33
  PASS 2  RAM TARGET=-85.67  RAM MEAS=-88.58  SPRINGBACK= 1.72  FINAL=-83.94
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CAL=-86.00 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.67 SEC

STA 19     PIECE GOOD
     CAL=-86.16 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC

STA 19     PIECE GOOD
     CAL=-85.79 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC

STA 19     PIECE GOOD
     CAL=-85.57 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
```

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STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-88.82 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.06 SEC
    CAL INFO       INIT=-72.85     # OF PASSES= 1
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-89.01  SPRINGBACK=-2.82  FINAL=-88.82

STA 19     PIECE GOOD
     CAL=-85.75 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
    CAL INFO       INIT=-73.06     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-87.75  SPRINGBACK= 2.38  FINAL=-83.62
   PASS 2  RAM TARGET=-88.38  RAM MEAS=-90.44  SPRINGBACK= 2.63  FINAL=-85.75

STA 19     PIECE GOOD
     CAL=-85.29 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-70.38     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.91  SPRINGBACK= 2.67  FINAL=-83.33
   PASS 2  RAM TARGET=-88.67  RAM MEAS=-90.75  SPRINGBACK= 3.38  FINAL=-85.29
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 CAL INFO      INIT=-73.18     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.51  SPRINGBACK= 1.87  FINAL=-84.13
PASS 2  RAM TARGET=-87.87  RAM MEAS=-90.39  SPRINGBACK= 1.99  FINAL=-85.88

STA 19     PIECE GOOD
    CAL=-85.01 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.18 SEC
 CAL INFO      INIT=-74.87     # OF PASSES= 1
PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.53  SPRINGBACK= 0.99  FINAL=-85.01

STA 19     PIECE GOOD
    CAL=-85.41 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
 CAL INFO      INIT=-69.46     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-89.35  SPRINGBACK= 1.89  FINAL=-84.11
PASS 2  RAM TARGET=-87.89  RAM MEAS=-90.79  SPRINGBACK= 2.48  FINAL=-85.41

STA 19     PIECE GOOD
    CAL=-85.77 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
 CAL INFO      INIT=-71.28     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.38  SPRINGBACK= 2.22  FINAL=-83.78
PASS 2  RAM TARGET=-88.22  RAM MEAS=-90.53  SPRINGBACK= 2.45  FINAL=-85.77

STA 19     PIECE GOOD
    CAL=-85.64 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
 CAL INFO      INIT=-73.82     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-89.05  SPRINGBACK= 1.03  FINAL=-84.97
PASS 2  RAM TARGET=-87.03  RAM MEAS=-89.46  SPRINGBACK= 1.39  FINAL=-85.64

STA 19     PIECE GOOD
    CAL=-85.97 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
 CAL INFO      INIT=-70.88     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.68  SPRINGBACK= 2.70  FINAL=-83.30
PASS 2  RAM TARGET=-88.70  RAM MEAS=-91.21  SPRINGBACK= 2.73  FINAL=-85.97

STA 19     PIECE GOOD
    CAL=-85.36 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.13 SEC
 CAL INFO      INIT=-83.95     # OF PASSES= 1
PASS 1  RAM TARGET=-86.00  RAM MEAS=-86.06  SPRINGBACK= 0.64  FINAL=-85.36

STA 19     PIECE GOOD
    CAL=-85.73 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.66 SEC
 CAL INFO      INIT=-74.25     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-89.20  SPRINGBACK= 1.16  FINAL=-84.84
PASS 2  RAM TARGET=-87.16  RAM MEAS=-91.07  SPRINGBACK= 1.43  FINAL=-85.73

STA 19     PIECE BAD    FAILED CALIBRATION
    CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
 CAL INFO      INIT=--.--     # OF PASSES= 0

STA 19     PIECE GOOD
    CAL=-86.40 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
 CAL INFO      INIT=-73.28     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-87.83  SPRINGBACK= 2.86  FINAL=-83.14
PASS 2  RAM TARGET=-88.86  RAM MEAS=-91.31  SPRINGBACK= 2.46  FINAL=-86.40

STA 19     PIECE GOOD
    CAL=-86.45 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
 CAL INFO      INIT=-71.43     # OF PASSES= 2
PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.05  SPRINGBACK= 2.03  FINAL=-83.97
PASS 2  RAM TARGET=-88.03  RAM MEAS=-90.54  SPRINGBACK= 1.58  FINAL=-86.45

STA 19     PIECE BAD    FAILED CALIBRATION
    CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
 CAL INFO      INIT=--.--     # OF PASSES= 0
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    CAL INFO      INIT=-74.92     # OF PASSES= 1
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.77  SPRINGBACK= 0.78  FINAL=-85.22

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-89.31 CHK=--.-- DIFF=--.--      INIT LOW  NO CHECK  CAL TIME= 0.54 SEC
     CAL INFO      INIT=-89.31     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-85.56 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
     CAL INFO      INIT=-74.46     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.84  SPRINGBACK= 1.21  FINAL=-84.79
   PASS 2  RAM TARGET=-87.21  RAM MEAS=-90.07  SPRINGBACK= 1.64  FINAL=-85.56

STA 19     PIECE GOOD
     CAL=-86.39 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
     CAL INFO      INIT=-71.89     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.78  SPRINGBACK= 1.87  FINAL=-84.13
   PASS 2  RAM TARGET=-87.87  RAM MEAS=-90.55  SPRINGBACK= 1.48  FINAL=-86.39

STA 19     PIECE GOOD
     CAL=-85.76 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
     CAL INFO      INIT=-72.02     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.34  SPRINGBACK= 2.52  FINAL=-83.48
   PASS 2  RAM TARGET=-88.52  RAM MEAS=-91.02  SPRINGBACK= 2.76  FINAL=-85.76

STA 19     PIECE GOOD
     CAL=-86.04 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
     CAL INFO      INIT=-74.59     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.91  SPRINGBACK= 1.28  FINAL=-84.72
   PASS 2  RAM TARGET=-87.28  RAM MEAS=-90.79  SPRINGBACK= 1.25  FINAL=-86.04

STA 19     PIECE GOOD
     CAL=-86.01 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
     CAL INFO      INIT=-73.34     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-88.74  SPRINGBACK= 1.99  FINAL=-84.01
   PASS 2  RAM TARGET=-87.99  RAM MEAS=-91.01  SPRINGBACK= 1.98  FINAL=-86.01

STA 19     PIECE GOOD
     CAL=-85.08 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
     CAL INFO      INIT=-72.69     # OF PASSES= 1
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-89.86  SPRINGBACK= 0.92  FINAL=-85.08

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-90.06 CHK=--.-- DIFF=--.--      INIT LOW  NO CHECK  CAL TIME= 0.54 SEC
     CAL INFO      INIT=-90.06     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-89.20 CHK=--.-- DIFF=--.--      INIT LOW  NO CHECK  CAL TIME= 0.54 SEC
     CAL INFO      INIT=-89.20     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-86.02 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
     CAL INFO      INIT=-69.84     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-87.40  SPRINGBACK= 3.00  FINAL=-83.00
   PASS 2  RAM TARGET=-89.00  RAM MEAS=-90.32  SPRINGBACK= 2.98  FINAL=-86.02

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-87.39 CHK=--.-- DIFF=--.--      INIT LOW  NO CHECK  CAL TIME= 0.56 SEC
     CAL INFO      INIT=-87.39     # OF PASSES= 0

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STA 19     PIECE GOOD
     CAL=-85.54 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
     CAL INFO      INIT=-72.64     # OF PASSES= 2
   PASS 1  RAM TARGET=-86.00  RAM MEAS=-87.68  SPRINGBACK= 2.45  FINAL=-83.55
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.088 QTY 20 19

19 PC DATA - CHK BAG FOR COUNT, PARTS W/O CONTACT, ETC.

OKAY- FOUND 1 PC IN BAG W/ NO CONTACT .... WAS REMOVED & TOSSED

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STA 19     PIECE BAD     FAILED CALIBRATION
   CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
   CAL INFO      INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
    CAL=-90.19 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.70 SEC
   CAL INFO      INIT=-86.97     # OF PASSES= 2
  PASS 1  RAM TARGET=-88.00  RAM MEAS=-87.93  SPRINGBACK= 1.19  FINAL=-86.81
  PASS 2  RAM TARGET=-89.19  RAM MEAS=-91.84  SPRINGBACK=-1.00  FINAL=-90.19

STA 19     PIECE GOOD
    CAL=-88.11 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
   CAL INFO      INIT=-73.73     # OF PASSES= 2
  PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.82  SPRINGBACK= 1.70  FINAL=-86.30
  PASS 2  RAM TARGET=-89.70  RAM MEAS=-93.52  SPRINGBACK= 1.59  FINAL=-88.11

STA 19     PIECE GOOD
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PASS 1  RAM TARGET=-88.00  RAM MEAS=-91.42  SPRINGBACK= 1.80  FINAL=-89.20
PASS 2  RAM TARGET=-89.80  RAM MEAS=-93.05  SPRINGBACK= 1.96  FINAL=-87.83

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-88.94 CHK=--.-- DIFF=--.--      MAX CYCLE  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-72.78     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-91.27  SPRINGBACK= 1.83  FINAL=-86.17
   PASS 2  RAM TARGET=-89.83  RAM MEAS=-92.60  SPRINGBACK= 2.89  FINAL=-86.94

STA 19     PIECE GOOD
     CAL=-88.43 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
    CAL INFO       INIT=-81.00     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.02  SPRINGBACK= 1.07  FINAL=-86.93
   PASS 2  RAM TARGET=-89.07  RAM MEAS=-90.96  SPRINGBACK= 0.64  FINAL=-88.43

STA 19     PIECE GOOD
     CAL=-87.97 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-73.05     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.82  SPRINGBACK= 1.78  FINAL=-86.22
   PASS 2  RAM TARGET=-89.78  RAM MEAS=-92.30  SPRINGBACK= 1.81  FINAL=-87.97

STA 19     PIECE GOOD
     CAL=-88.34 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-74.06     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.87  SPRINGBACK= 1.76  FINAL=-86.24
   PASS 2  RAM TARGET=-89.76  RAM MEAS=-93.08  SPRINGBACK= 1.42  FINAL=-88.34

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-86.94 CHK=--.-- DIFF=--.--      MAX CYCLE  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-73.13     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.56  SPRINGBACK= 1.43  FINAL=-86.57
   PASS 2  RAM TARGET=-89.43  RAM MEAS=-90.54  SPRINGBACK= 2.49  FINAL=-86.94

STA 19     PIECE GOOD
     CAL=-88.07 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.41     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.90  SPRINGBACK= 2.42  FINAL=-85.58
   PASS 2  RAM TARGET=-90.42  RAM MEAS=-93.42  SPRINGBACK= 2.35  FINAL=-88.07

STA 19     PIECE GOOD
     CAL=-87.92 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.53     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-91.68  SPRINGBACK= 1.66  FINAL=-86.34
   PASS 2  RAM TARGET=-89.66  RAM MEAS=-92.74  SPRINGBACK= 1.74  FINAL=-87.92

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-89.49 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.66 SEC
    CAL INFO       INIT=-86.72     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-87.34  SPRINGBACK= 1.45  FINAL=-86.55
   PASS 2  RAM TARGET=-89.45  RAM MEAS=-91.02  SPRINGBACK=-0.04  FINAL=-89.49

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-82.81 CHK=--.-- DIFF=--.--      MAX CYCLE  NO CHECK  CAL TIME= 1.88 SEC
    CAL INFO       INIT=-58.94     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-81.61  SPRINGBACK= 6.67  FINAL=-81.33
   PASS 2  RAM TARGET=-94.67  RAM MEAS=-82.92  SPRINGBACK=11.86  FINAL=-82.81

STA 19     PIECE GOOD
     CAL=-87.50 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-80.62     # OF PASSES= 1
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.44  SPRINGBACK= 0.50  FINAL=-87.50

STA 19     PIECE GOOD
     CAL=-87.87 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.13 SEC
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STA 19     PIECE GOOD
     CAL=-87.24 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-76.65     # OF PASSES= 1
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-91.21  SPRINGBACK= 0.76  FINAL=-87.24

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-93.31 CHK=--.-- DIFF=--.--     INIT LOW  NO CHECK  CAL TIME= 0.53 SEC
    CAL INFO       INIT=-93.31     # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-97.18 CHK=--.-- DIFF=--.--     INIT LOW  NO CHECK  CAL TIME= 0.54 SEC
    CAL INFO       INIT=-97.18     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-87.30 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-75.69     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.22  SPRINGBACK= 2.06  FINAL=-85.94
   PASS 2  RAM TARGET=-90.06  RAM MEAS=-91.64  SPRINGBACK= 2.76  FINAL=-87.30

STA 19     PIECE GOOD
     CAL=-88.16 CHK=--.-- DIFF=--.--     INIT OK  NO CHECK  CAL TIME= 0.54 SEC
    CAL INFO       INIT=-88.16     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-87.64 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO       INIT=-78.23     # OF PASSES= 1
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.21  SPRINGBACK= 0.36  FINAL=-87.64

STA 19     PIECE GOOD
     CAL=-88.33 CHK=--.-- DIFF=--.--     INIT OK  NO CHECK  CAL TIME= 0.54 SEC
    CAL INFO       INIT=-88.33     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-88.17 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-72.57     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-91.14  SPRINGBACK= 2.10  FINAL=-85.90
   PASS 2  RAM TARGET=-90.10  RAM MEAS=-93.00  SPRINGBACK= 1.92  FINAL=-88.17

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-88.06 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.38     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.31  SPRINGBACK= 1.66  FINAL=-86.34
   PASS 2  RAM TARGET=-89.66  RAM MEAS=-92.42  SPRINGBACK= 1.60  FINAL=-88.06

STA 19     PIECE GOOD
     CAL=-88.67 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-69.45     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.66  SPRINGBACK= 2.15  FINAL=-85.85
   PASS 2  RAM TARGET=-90.15  RAM MEAS=-93.59  SPRINGBACK= 1.48  FINAL=-88.67

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-89.55 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.32     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.12  SPRINGBACK= 2.73  FINAL=-85.27
   PASS 2  RAM TARGET=-90.73  RAM MEAS=-94.04  SPRINGBACK= 1.19  FINAL=-89.55

STA 19     PIECE GOOD
     CAL=-88.78 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.00     # OF PASSES= 2
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STA 19      PIECE GOOD
     CAL=-88.57 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SE
    CAL INFO       INIT=-71.09     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.71  SPRINGBACK= 2.56  FINAL=-85.44
   PASS 2  RAM TARGET=-90.56  RAM MEAS=-93.18  SPRINGBACK= 2.00  FINAL=-88.57

STA 19      PIECE GOOD
     CAL=-88.04 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SE
    CAL INFO       INIT=-72.10     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.64  SPRINGBACK= 1.78  FINAL=-86.22
   PASS 2  RAM TARGET=-89.78  RAM MEAS=-92.53  SPRINGBACK= 1.74  FINAL=-88.04

STA 19      PIECE GOOD
     CAL=-88.06 CHK=--.-- DIFF=--.--      INIT OK  NO CHECK  CAL TIME=.0.54 SEC
    CAL INFO       INIT=-88.06     # OF PASSES= 0

STA 19      PIECE GOOD
     CAL=-88.37 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SE
    CAL INFO       INIT=-75.14     # OF PASSES= 2
   PASS 1  RAM TARGET=-88.00  RAM MEAS=-90.53  SPRINGBACK= 1.95  FINAL=-86.05
   PASS 2  RAM TARGET=-89.95  RAM MEAS=-92.79  SPRINGBACK= 1.58  FINAL=-88.37
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TA 19     PIECE GOOD
    CAL=-89.87 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
   CAL INFO      INIT=-75.45    # OF PASSES= 2
  PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.16  SPRINGBACK= 1.66  FINAL=-88.34
  PASS 2  RAM TARGET=-91.66  RAM MEAS=-93.99  SPRINGBACK= 1.79  FINAL=-89.87

TA 19     PIECE GOOD
    CAL=-90.58 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
   CAL INFO      INIT=-72.92    # OF PASSES= 2
  PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.57  SPRINGBACK= 2.23  FINAL=-87.77
  PASS 2  RAM TARGET=-92.23  RAM MEAS=-94.89  SPRINGBACK= 1.66  FINAL=-90.58

TA 19     PIECE GOOD
    CAL=-89.61 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
   CAL INFO      INIT=-73.05    # OF PASSES= 2
  PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.85  SPRINGBACK= 2.57  FINAL=-87.43
  PASS 2  RAM TARGET=-92.57  RAM MEAS=-95.05  SPRINGBACK= 2.97  FINAL=-89.61

TA 19     PIECE GOOD
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     CAL=-89.95 CHK=--.-- DIFF=--.--       CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO        INIT=-74.63     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.39  SPRINGBACK= 2.06  FINAL=-87.94
   PASS 2  RAM TARGET=-92.06  RAM MEAS=-94.66  SPRINGBACK= 2.11  FINAL=-89.95

STA 19     PIECE GOOD
     CAL=-89.51 CHK=--.-- DIFF=--.--       CAL GOOD  NO CHECK  CAL TIME= 1.67 SEC
    CAL INFO        INIT=-74.52     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.80  SPRINGBACK= 2.37  FINAL=-87.63
   PASS 2  RAM TARGET=-92.37  RAM MEAS=-94.04  SPRINGBACK= 2.86  FINAL=-89.51

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--        CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO        INIT=--.--      # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-92.38 CHK=--.-- DIFF=--.--       CAL LOW  NO CHECK  CAL TIME= 1.08 SEC
    CAL INFO        INIT=-68.91     # OF PASSES= 1
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.47  SPRINGBACK=-2.38  FINAL=-92.38

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--       CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO        INIT=--.--      # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--        CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO        INIT=--.--      # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--        CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO        INIT=--.--      # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-79.70 CHK=--.-- DIFF=--.--        MAX CYCLE  NO CHECK  CAL TIME= 1.87 SEC
    CAL INFO        INIT=-59.17     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-78.44  SPRINGBACK=11.12  FINAL=-78.88
   PASS 2  RAM TARGET=-101.12  RAM MEAS=-79.77  SPRINGBACK=21.42  FINAL=-79.70

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-91.96 CHK=--.-- DIFF=--.--        CAL LOW  NO CHECK  CAL TIME= 1.22 SEC
    CAL INFO        INIT=-71.20     # OF PASSES= 1
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-91.82  SPRINGBACK=-1.96  FINAL=-91.96

STA 19     PIECE GOOD
     CAL=-90.37 CHK=--.-- DIFF=--.--        CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO        INIT=-86.79     # OF PASSES= 1
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.02  SPRINGBACK=-0.37  FINAL=-90.37

STA 19     PIECE GOOD
     CAL=-90.23 CHK=--.-- DIFF=--.--        CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO        INIT=-74.29     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.63  SPRINGBACK= 1.96  FINAL=-88.04
   PASS 2  RAM TARGET=-91.96  RAM MEAS=-95.53  SPRINGBACK= 1.73  FINAL=-90.23

STA 19     PIECE GOOD
     CAL=-90.69 CHK=--.-- DIFF=--.--        CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
    CAL INFO        INIT=-73.57     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.50  SPRINGBACK= 2.38  FINAL=-87.62
   PASS 2  RAM TARGET=-92.38  RAM MEAS=-95.63  SPRINGBACK= 1.69  FINAL=-90.69

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-92.64 CHK=--.-- DIFF=--.--        CAL LOW  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO        INIT=-73.13     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.41  SPRINGBACK= 3.11  FINAL=-86.89
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STA 19     PIECE GOOD
     CAL=-90.31 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-70.30     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.28  SPRINGBACK= 1.96  FINAL=-88.04
   PASS 2  RAM TARGET=-91.96  RAM MEAS=-94.45  SPRINGBACK= 1.65  FINAL=-90.31

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE GOOD
     CAL=-89.42 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-73.23     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-93.25  SPRINGBACK= 2.53  FINAL=-87.47
   PASS 2  RAM TARGET=-92.53  RAM MEAS=-95.81  SPRINGBACK= 3.11  FINAL=-89.42

STA 19     PIECE GOOD
     CAL=-90.58 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.70     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.43  SPRINGBACK= 2.52  FINAL=-87.48
   PASS 2  RAM TARGET=-92.52  RAM MEAS=-95.17  SPRINGBACK= 1.94  FINAL=-90.58

STA 19     PIECE GOOD
     CAL=-89.28 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-71.49     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.59  SPRINGBACK= 1.58  FINAL=-88.42
   PASS 2  RAM TARGET=-91.58  RAM MEAS=-93.36  SPRINGBACK= 2.30  FINAL=-89.28

STA 19     PIECE GOOD
     CAL=-90.97 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-71.72     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-91.81  SPRINGBACK= 2.45  FINAL=-87.55
   PASS 2  RAM TARGET=-92.45  RAM MEAS=-94.82  SPRINGBACK= 1.48  FINAL=-90.97

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.55 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--      CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
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STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-91.25 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-70.19     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-91.99  SPRINGBACK= 3.12  FINAL=-86.88
   PASS 2  RAM TARGET=-93.12  RAM MEAS=-95.43  SPRINGBACK= 1.87  FINAL=-91.25

STA 19     PIECE GOOD
     CAL=-90.59 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-69.57     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.66  SPRINGBACK= 2.27  FINAL=-87.73
   PASS 2  RAM TARGET=-92.27  RAM MEAS=-95.16  SPRINGBACK= 1.68  FINAL=-90.59

STA 19     PIECE BAD     FAILED CALIBRATION
     CAL=-92.80 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.08 SEC
    CAL INFO       INIT=-71.38     # OF PASSES= 1
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.83  SPRINGBACK=-2.80  FINAL=-92.80

STA 19     PIECE GOOD
     CAL=-89.95 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-74.34     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.83  SPRINGBACK= 1.48  FINAL=-88.52
   PASS 2  RAM TARGET=-91.48  RAM MEAS=-93.43  SPRINGBACK= 1.53  FINAL=-89.95

STA 19     PIECE GOOD
     CAL=-90.01 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.29     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.28  SPRINGBACK= 1.77  FINAL=-88.23
   PASS 2  RAM TARGET=-91.77  RAM MEAS=-93.84  SPRINGBACK= 1.76  FINAL=-90.01

STA 19     PIECE GOOD
     CAL=-90.38 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-69.86     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-93.33  SPRINGBACK= 1.70  FINAL=-88.30
   PASS 2  RAM TARGET=-91.70  RAM MEAS=-94.82  SPRINGBACK= 1.31  FINAL=-90.38

STA 19     PIECE GOOD
     CAL=-90.20 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.68 SEC
    CAL INFO       INIT=-71.42     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-93.25  SPRINGBACK= 2.30  FINAL=-87.70
   PASS 2  RAM TARGET=-92.30  RAM MEAS=-95.07  SPRINGBACK= 2.10  FINAL=-90.20

STA 19     PIECE GOOD
     CAL=-89.03 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-73.07     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.61  SPRINGBACK= 1.74  FINAL=-88.26
   PASS 2  RAM TARGET=-91.74  RAM MEAS=-93.19  SPRINGBACK= 2.71  FINAL=-89.03

STA 19     PIECE GOOD
     CAL=-89.67 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-73.32     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.80  SPRINGBACK= 2.95  FINAL=-87.05
   PASS 2  RAM TARGET=-92.95  RAM MEAS=-95.02  SPRINGBACK= 3.28  FINAL=-89.67

STA 19     PIECE GOOD
     CAL=-89.93 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-73.17     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.60  SPRINGBACK= 2.28  FINAL=-87.72
   PASS 2  RAM TARGET=-92.28  RAM MEAS=-94.87  SPRINGBACK= 2.35  FINAL=-89.93

STA 19     PIECE GOOD
     CAL=-89.80 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-75.82     # OF PASSES= 2
   PASS 1  RAM TARGET=-90.00  RAM MEAS=-92.94  SPRINGBACK= 2.27  FINAL=-87.73
   PASS 2  RAM TARGET=-92.27  RAM MEAS=-95.51  SPRINGBACK= 2.47  FINAL=-89.80
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STA 19     PIECE GOOD
     CAL=-91.86 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-77.76     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.86  SPRINGBACK= 1.23  FINAL=-90.77
   PASS 2  RAM TARGET=-93.23  RAM MEAS=-95.73  SPRINGBACK= 1.37  FINAL=-91.86

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-93.01 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-74.08     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.85  SPRINGBACK= 2.40  FINAL=-89.60
   PASS 2  RAM TARGET=-94.40  RAM MEAS=-96.45  SPRINGBACK= 1.38  FINAL=-93.01

STA 19     PIECE GOOD
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PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.47  SPRINGBACK= 2.23  FINAL=-89.77
PASS 2  RAM TARGET=-94.23  RAM MEAS=-96.96  SPRINGBACK= 1.55  FINAL=-92.68

STA 19     PIECE GOOD
     CAL=-92.56 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.26     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.73  SPRINGBACK= 2.62  FINAL=-89.38
   PASS 2  RAM TARGET=-94.62  RAM MEAS=-97.81  SPRINGBACK= 2.06  FINAL=-92.56

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-94.10 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-69.92     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.88  SPRINGBACK= 2.83  FINAL=-89.17
   PASS 2  RAM TARGET=-94.83  RAM MEAS=-97.43  SPRINGBACK= 0.73  FINAL=-94.10

STA 19     PIECE GOOD
     CAL=-92.55 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-72.77     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.59  SPRINGBACK= 2.10  FINAL=-89.90
   PASS 2  RAM TARGET=-94.10  RAM MEAS=-97.22  SPRINGBACK= 1.55  FINAL=-92.55

STA 19     PIECE GOOD
     CAL=-92.50 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-73.52     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.99  SPRINGBACK= 1.95  FINAL=-90.05
   PASS 2  RAM TARGET=-93.95  RAM MEAS=-97.64  SPRINGBACK= 1.44  FINAL=-92.50

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-86.96 CHK=--.-- DIFF=--.--     MAX CYCLE  NO CHECK  CAL TIME= 1.98 SEC
    CAL INFO       INIT=-68.50     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-85.26  SPRINGBACK= 6.16  FINAL=-85.84
   PASS 2  RAM TARGET=-98.16  RAM MEAS=-87.05  SPRINGBACK=11.20  FINAL=-86.96

STA 19     PIECE GOOD
     CAL=-91.64 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.16 SEC
    CAL INFO       INIT=-87.17     # OF PASSES= 1
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.50  SPRINGBACK= 0.36  FINAL=-91.64

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-90.71 CHK=--.-- DIFF=--.--     MAX CYCLE  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.78     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.96  SPRINGBACK= 1.97  FINAL=-90.03
   PASS 2  RAM TARGET=-93.97  RAM MEAS=-95.18  SPRINGBACK= 3.27  FINAL=-90.71

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO       INIT=--.--     # OF PASSES= 0
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STA 19     PIECE GOOD
     CAL=-92.10 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-70.62     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.56  SPRINGBACK= 2.14  FINAL=-89.86
   PASS 2  RAM TARGET=-94.14  RAM MEAS=-96.43  SPRINGBACK= 2.04  FINAL=-92.10

STA 19     PIECE GOOD
     CAL=-92.59 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-71.37     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.20  SPRINGBACK= 2.78  FINAL=-89.22
   PASS 2  RAM TARGET=-94.78  RAM MEAS=-97.53  SPRINGBACK= 2.19  FINAL=-92.59

STA 19     PIECE GOOD
     CAL=-91.99 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.15 SEC
    CAL INFO       INIT=-84.10     # OF PASSES= 1
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.70  SPRINGBACK= 0.01  FINAL=-91.99
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     CAL=-92.16 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-71.23     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.74  SPRINGBACK= 1.82  FINAL=-90.18
   PASS 2  RAM TARGET=-93.82  RAM MEAS=-95.88  SPRINGBACK= 1.67  FINAL=-92.16

STA 19      PIECE BAD     FAILED CALIBRATION
     CAL=-89.72 CHK=--.-- DIFF=--.--      MAX CYCLE  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-66.17     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-88.72  SPRINGBACK= 3.01  FINAL=-88.99
   PASS 2  RAM TARGET=-95.01  RAM MEAS=-89.88  SPRINGBACK= 5.29  FINAL=-89.72

STA 19      PIECE GOOD
     CAL=-91.98 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.59     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.82  SPRINGBACK= 2.66  FINAL=-89.34
   PASS 2  RAM TARGET=-94.66  RAM MEAS=-97.38  SPRINGBACK= 2.68  FINAL=-91.98

STA 19      PIECE GOOD
     CAL=-92.49 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-72.26     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.60  SPRINGBACK= 1.68  FINAL=-90.32
   PASS 2  RAM TARGET=-93.68  RAM MEAS=-96.44  SPRINGBACK= 1.20  FINAL=-92.49

STA 19      PIECE GOOD
     CAL=-92.68 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.73 SEC
    CAL INFO       INIT=-71.58     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.23  SPRINGBACK= 2.14  FINAL=-89.86
   PASS 2  RAM TARGET=-94.14  RAM MEAS=-96.83  SPRINGBACK= 1.46  FINAL=-92.68

STA 19      PIECE BAD     FAILED CALIBRATION
     CAL=-93.12 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-73.06     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.70  SPRINGBACK= 2.16  FINAL=-89.84
   PASS 2  RAM TARGET=-94.16  RAM MEAS=-96.73  SPRINGBACK= 1.04  FINAL=-93.12

STA 19      PIECE GOOD
     CAL=-92.81 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.74 SEC
    CAL INFO       INIT=-71.14     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.60  SPRINGBACK= 2.34  FINAL=-89.66
   PASS 2  RAM TARGET=-94.34  RAM MEAS=-97.19  SPRINGBACK= 1.53  FINAL=-92.81

STA 19      PIECE GOOD
     CAL=-92.88 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-73.13     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.52  SPRINGBACK= 2.41  FINAL=-89.59
   PASS 2  RAM TARGET=-94.41  RAM MEAS=-97.09  SPRINGBACK= 1.53  FINAL=-92.88

STA 19      PIECE GOOD
     CAL=-91.72 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-70.26     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-93.88  SPRINGBACK= 3.00  FINAL=-89.00
   PASS 2  RAM TARGET=-95.00  RAM MEAS=-96.78  SPRINGBACK= 3.28  FINAL=-91.72

STA 19      PIECE GOOD
     CAL=-92.71 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-72.34     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.35  SPRINGBACK= 2.70  FINAL=-89.30
   PASS 2  RAM TARGET=-94.70  RAM MEAS=-96.77  SPRINGBACK= 1.99  FINAL=-92.71

STA 19      PIECE GOOD
     CAL=-91.31 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-72.68     # OF PASSES= 2
   PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.41  SPRINGBACK= 2.38  FINAL=-89.62
   PASS 2  RAM TARGET=-94.38  RAM MEAS=-95.97  SPRINGBACK= 3.07  FINAL=-91.31
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   CAL=-92.02 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
  CAL INFO       INIT=-73.93     # OF PASSES= 2
 PASS 1  RAM TARGET=-92.00  RAM MEAS=-94.15  SPRINGBACK= 1.58  FINAL=-90.42
 PASS 2  RAM TARGET=-93.58  RAM MEAS=-95.95  SPRINGBACK= 1.56  FINAL=-92.02

STA 19     PIECE GOOD
   CAL=-92.97 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
  CAL INFO       INIT=-72.68     # OF PASSES= 2
 PASS 1  RAM TARGET=-92.00  RAM MEAS=-95.32  SPRINGBACK= 2.40  FINAL=-89.40
 PASS 2  RAM TARGET=-94.60  RAM MEAS=-97.67  SPRINGBACK= 1.63  FINAL=-92.97

STA 19     PIECE BAD    FAILED CALIBRATION
   CAL=-93.30 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.64 SEC
  CAL INFO       INIT=-82.47     # OF PASSES= 2
 PASS 1  RAM TARGET=-92.00  RAM MEAS=-91.10  SPRINGBACK= 4.91  FINAL=-87.09
 PASS 2  RAM TARGET=-96.91  RAM MEAS=-93.43  SPRINGBACK= 3.61  FINAL=-93.30
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STA 19     PIECE BAD    FAILED CALIBRATION
    CAL=-91.44 CHK=--.-- DIFF=--.--     MAX CYCLE  NO CHECK  CAL TIME= 1.88 SEC
  CAL INFO      INIT=-69.71    # OF PASSES= 2
  PASS 1  RAM TARGET=-94.00  RAM MEAS=-91.45  SPRINGBACK= 2.90  FINAL=-91.10
  PASS 2  RAM TARGET=-96.90  RAM MEAS=-91.50  SPRINGBACK= 5.46  FINAL=-91.44

STA 19     PIECE BAD    FAILED CALIBRATION
    CAL=-89.63 CHK=--.-- DIFF=--.--     MAX CYCLE  NO CHECK  CAL TIME= 1.87 SEC
  CAL INFO      INIT=-67.78    # OF PASSES= 2
  PASS 1  RAM TARGET=-94.00  RAM MEAS=-89.09  SPRINGBACK= 5.09  FINAL=-88.91
  PASS 2  RAM TARGET=-99.09  RAM MEAS=-89.73  SPRINGBACK= 9.46  FINAL=-89.63

STA 19     PIECE GOOD
    CAL=-94.57 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
  CAL INFO      INIT=-72.71    # OF PASSES= 2
  PASS 1  RAM TARGET=-94.00  RAM MEAS=-95.70  SPRINGBACK= 2.13  FINAL=-91.87
  PASS 2  RAM TARGET=-96.13  RAM MEAS=-98.77  SPRINGBACK= 1.56  FINAL=-94.57

STA 19     PIECE GOOD
```

CAL=-93.76 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.71 SEC
CAL INFO INIT=-73.33 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.91 SPRINGBACK= 2.15 FINAL=-91.85
PASS 2 RAM TARGET=-96.15 RAM MEAS=-98.23 SPRINGBACK= 2.38 FINAL=-93.76

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-95.16 CHK=--.-- DIFF=--.-- CAL LOW NO CHECK CAL TIME= 1.71 SEC
CAL INFO INIT=-71.97 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.47 SPRINGBACK= 2.31 FINAL=-91.69
PASS 2 RAM TARGET=-96.31 RAM MEAS=-99.30 SPRINGBACK= 1.15 FINAL=-95.16

STA 19 PIECE GOOD
CAL=-94.51 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.71 SEC
CAL INFO INIT=-73.90 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-97.46 SPRINGBACK= 3.01 FINAL=-90.99
PASS 2 RAM TARGET=-97.01 RAM MEAS=-99.85 SPRINGBACK= 2.50 FINAL=-94.51

STA 19 PIECE GOOD
CAL=-94.60 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.71 SEC
CAL INFO INIT=-72.19 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.18 SPRINGBACK= 3.11 FINAL=-90.89
PASS 2 RAM TARGET=-97.11 RAM MEAS=-99.10 SPRINGBACK= 2.51 FINAL=-94.60

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-96.00 CHK=--.-- DIFF=--.-- CAL LOW NO CHECK CAL TIME= 1.60 SEC
CAL INFO INIT=-73.44 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-95.94 SPRINGBACK= 2.23 FINAL=-91.77
PASS 2 RAM TARGET=-96.23 RAM MEAS=-91.85 SPRINGBACK= 0.23 FINAL=-96.00

STA 19 PIECE GOOD
CAL=-94.37 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.70 SEC
CAL INFO INIT=-73.81 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.65 SPRINGBACK= 1.85 FINAL=-92.15
PASS 2 RAM TARGET=-95.85 RAM MEAS=-98.48 SPRINGBACK= 1.48 FINAL=-94.37

STA 19 PIECE GOOD
CAL=-94.93 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.72 SEC
CAL INFO INIT=-73.97 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.37 SPRINGBACK= 2.09 FINAL=-91.91
PASS 2 RAM TARGET=-96.09 RAM MEAS=-99.03 SPRINGBACK= 1.15 FINAL=-94.93

STA 19 PIECE GOOD
CAL=-93.81 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.72 SEC
CAL INFO INIT=-70.03 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-95.27 SPRINGBACK= 2.15 FINAL=-91.85
PASS 2 RAM TARGET=-96.15 RAM MEAS=-96.35 SPRINGBACK= 2.34 FINAL=-93.81

STA 19 PIECE GOOD
CAL=-94.60 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.72 SEC
CAL INFO INIT=-71.06 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-95.65 SPRINGBACK= 2.03 FINAL=-91.97
PASS 2 RAM TARGET=-96.03 RAM MEAS=-98.03 SPRINGBACK= 1.43 FINAL=-94.60

STA 19 PIECE BAD FAILED CALIBRATION
CAL=-90.81 CHK=--.-- DIFF=--.-- MAX CYCLE NO CHECK CAL TIME= 1.72 SEC
CAL INFO INIT=-69.21 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-95.50 SPRINGBACK= 3.84 FINAL=-90.16
PASS 2 RAM TARGET=-97.84 RAM MEAS=-96.19 SPRINGBACK= 7.03 FINAL=-90.81

STA 19 PIECE GOOD
CAL=-94.69 CHK=--.-- DIFF=--.-- CAL GOOD NO CHECK CAL TIME= 1.71 SEC
CAL INFO INIT=-71.41 # OF PASSES= 2
PASS 1 RAM TARGET=-94.00 RAM MEAS=-96.66 SPRINGBACK= 3.32 FINAL=-90.68
PASS 2 RAM TARGET=-97.32 RAM MEAS=-100.21 SPRINGBACK= 2.63 FINAL=-94.68

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     CAL=-94.52 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-72.41     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-94.94  SPRINGBACK= 3.58  FINAL=-90.42
   PASS 2  RAM TARGET=-97.58  RAM MEAS=-98.74  SPRINGBACK= 3.06  FINAL=-94.52

STA 19     PIECE GOOD
     CAL=-94.84 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-72.55     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.29  SPRINGBACK= 2.59  FINAL=-91.41
   PASS 2  RAM TARGET=-96.59  RAM MEAS=-99.16  SPRINGBACK= 1.75  FINAL=-94.84

STA 19     PIECE GOOD
     CAL=-93.84 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-72.15     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-95.88  SPRINGBACK= 1.74  FINAL=-92.26
   PASS 2  RAM TARGET=-95.74  RAM MEAS=-97.68  SPRINGBACK= 1.90  FINAL=-93.84

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-91.87 CHK=--.-- DIFF=--.--     MAX CYCLE  NO CHECK  CAL TIME= 1.89 SEC
    CAL INFO       INIT=-67.33     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-91.04  SPRINGBACK= 2.79  FINAL=-91.21
   PASS 2  RAM TARGET=-96.79  RAM MEAS=-92.30  SPRINGBACK= 4.90  FINAL=-91.89

STA 19     PIECE GOOD
     CAL=-94.57 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-70.87     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-95.78  SPRINGBACK= 2.64  FINAL=-91.36
   PASS 2  RAM TARGET=-96.64  RAM MEAS=-98.78  SPRINGBACK= 2.08  FINAL=-94.57

STA 19     PIECE GOOD
     CAL=-94.56 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-72.29     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.22  SPRINGBACK= 2.44  FINAL=-91.56
   PASS 2  RAM TARGET=-96.44  RAM MEAS=-99.31  SPRINGBACK= 1.88  FINAL=-94.56

STA 19     PIECE BAD    FAILED CALIBRATION
     CAL=-95.23 CHK=--.-- DIFF=--.--     CAL LOW  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO       INIT=-74.65     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-95.77  SPRINGBACK= 2.57  FINAL=-91.43
   PASS 2  RAM TARGET=-96.57  RAM MEAS=-99.21  SPRINGBACK= 1.34  FINAL=-95.23

STA 19     PIECE GOOD
     CAL=-94.47 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.72 SEC
    CAL INFO       INIT=-74.61     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.49  SPRINGBACK= 2.98  FINAL=-91.02
   PASS 2  RAM TARGET=-96.98  RAM MEAS=-99.87  SPRINGBACK= 2.51  FINAL=-94.47

STA 19     PIECE GOOD
     CAL=-94.49 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-71.11     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.09  SPRINGBACK= 3.10  FINAL=-90.90
   PASS 2  RAM TARGET=-97.10  RAM MEAS=-99.60  SPRINGBACK= 2.61  FINAL=-94.49

STA 19     PIECE GOOD
     CAL=-93.51 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO       INIT=-74.35     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-95.70  SPRINGBACK= 1.96  FINAL=-92.04
   PASS 2  RAM TARGET=-95.96  RAM MEAS=-97.77  SPRINGBACK= 2.44  FINAL=-93.51

STA 19     PIECE GOOD
     CAL=-94.30 CHK=--.-- DIFF=--.--     CAL GOOD  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO       INIT=-71.85     # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.69  SPRINGBACK= 2.17  FINAL=-91.83
   PASS 2  RAM TARGET=-96.17  RAM MEAS=-99.33  SPRINGBACK= 1.87  FINAL=-94.30
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     CAL=-93.58 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.71 SEC
    CAL INFO      INIT=-72.33    # OF PASSES= 3
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-97.06  SPRINGBACK= 1.48  FINAL=-92.52
   PASS 2  RAM TARGET=-95.48  RAM MEAS=-97.82  SPRINGBACK= 1.90  FINAL=-93.58

STA 19      PIECE GOOD
     CAL=-93.10 CHK=--.-- DIFF=--.--      CAL GOOD  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO      INIT=-70.07    # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.35  SPRINGBACK= 2.25  FINAL=-91.75
   PASS 2  RAM TARGET=-96.25  RAM MEAS=-97.01  SPRINGBACK= 3.15  FINAL=-93.10

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=-95.02 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.70 SEC
    CAL INFO      INIT=-71.80    # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.66  SPRINGBACK= 3.00  FINAL=-91.00
   PASS 2  RAM TARGET=-97.00  RAM MEAS=-100.03  SPRINGBACK= 1.98  FINAL=-95.02

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

1RSE *500_DISABLED_BY_____#60_OFF_COMMAND___#20_ST 10-JUL-1991 11:23:14.77


STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL CYCLE ERR NO CHECK  CAL TIME= 0.80 S
    CAL INFO      INIT=-74.56    # OF PASSES= 1
   PASS 1  RAM TARGET=-94.00  RAM MEAS=  0.00  SPRINGBACK= 0.00  FINAL=  0.00

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=-81.15 CHK=--.-- DIFF=--.--      MAX CYCLE  NO CHECK  CAL TIME= 1.87 SEC
    CAL INFO      INIT=-68.40    # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-79.08  SPRINGBACK=14.10  FINAL=-79.90
   PASS 2  RAM TARGET=-108.10  RAM MEAS=-80.81  SPRINGBACK=26.95  FINAL=-81.15

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=-95.28 CHK=--.-- DIFF=--.--      CAL LOW  NO CHECK  CAL TIME= 1.69 SEC
    CAL INFO      INIT=-74.36    # OF PASSES= 2
   PASS 1  RAM TARGET=-94.00  RAM MEAS=-96.10  SPRINGBACK= 2.08  FINAL=-91.92
   PASS 2  RAM TARGET=-96.08  RAM MEAS=-99.03  SPRINGBACK= 0.79  FINAL=-95.28

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0

STA 19      PIECE BAD    FAILED CALIBRATION
     CAL=--.-- CHK=--.-- DIFF=--.--     CAL LVDT ERR  NO CHECK  CAL TIME= 0.54 S
    CAL INFO      INIT=--.--    # OF PASSES= 0
```

Reading #	.096	.084	.090	.092	.094
1	92.8	94.2	96.3	99.0	100.0
2	92.7	93.6	95.1	99.1	100.5
3	92.3	93.1	94.6	99.5	101.0
4	90.7	95.1	95.7	99.5	100.9
5	93.0	94.5	95.1	99.4	103.6
6	92.0	93.9	96.3	99.0	104.4
7	92.9	93.4	97.8	99.2	100.9
8	92.3	94.0	95.7	99.5	100.0
9	90.8	93.8	96.0	99.5	100.0
10	91.7	94.5	95.9	99.7	102.1
11	92.5	94.5	93.8	99.0	101.0
12	90.9	93.8	96.5	97.2	100.5
13	92.1	90.3	96.0	99.8	100.2
14	93.0	93.5	96.0	99.8	101.0
15	91.3	92.7	99.0	98.5	100.5
16	92.2	94.3	96.7	97.9	100.3
17	92.2	89.2	95.5	99.1	99.2
19	91.6	91.5	95.1	99.2	100.9
19	91.8	93.5	95.5		101.3
20	91.7		95.5		99.9
21			92.0		

Look untouched

M E M O R A N D U M
9 April 1992 - Page 1 of 3

To: Bruce Maeroff — Ford Motor Co. Fax: 313-323-1924

CC: Dave Czarn — TI Design Eng. Supv.
Norm Freda — TI Field Sales Fax: 313-553-1673
Elaine Rose — TI QRA

Fr: Steve Offiler — TI Design Eng.

RE: EN53 PARTIAL ISR / VALIDATION PLAN FOR F2AC-9F924-AA

Bruce, it is my understanding that we'll be pulling together an ISR package for your perusal during your visit to our plant on Monday, 13 April. This package will be essentially based upon similarity to the F2VC-9F924-AB ISR, since only two components will be changing. Those two components are the pressure-sensing disc and the molded plastic base (switch housing). The base will undergo a First Article Inspection (FAI) which is a detailed study of all print dimensions, and material certifications from the manufacturer will be included. Below you will find detail of the ES tests which will/will not be completed for the Partial ISR (from ES F2VC-9F924-AA):

III. A. Calibration, B. Voltage Drop, C. Current Leak, D. Proof.

Only the Calibration test will be performed on the 24 devices undergoing the Impulse test (E.) below.

III. E. Impulse.

A complete 500,000 cycle Impulse test will be performed per the ES, with the exception that no devices will undergo the Fluid Resistance Test (M.) beforehand. The Impulse test is an excellent test of the ability of the entire device to withstand mechanical (pressure) cycles combined with electrical loads at elevated temperatures, and is a key test to validate the pressure-sensing disc.

III. F. Burst.

Changes to the base and disc should have no effect on burst performance.

III. G. Humidity, M. Fluid Resistance.

The new base material, General Electric Noryl GTX 830, has been tested previously by TI per Ford ES F3AH-19D594-AA along with a host of other engineering plastics. This CCD ES includes Humidity, and Fluid Resistance tests which are similar to the tests called out in ES F2VC-9F924-AA. Noryl was found to pass all tests.

III. H. Salt Spray.

It has been deemed unlikely that changes to the base and disc would have any effect on salt spray performance. Bear in mind that the Fluid Resistance test invoked above included a saturated salt solution, helping to prove that chemical attack will not be an issue; furthermore the environmental sealing system has not been changed in any way providing confidence that salt ingress during salt spray testing will not be an issue either.

III. I. Vibration.

Changes to the base and disc should have no effect on vibration performance.

III. J. Terminal Strength.

The terminal strength test will be performed per the ES, with the exception that no devices will undergo the Fluid Resistance Test (M.) beforehand.

III. K. Vacuum.

Changes to the base and disc should have no effect on vacuum performance.

III. L. Temperature Cycle.

Extensive thermal characterizations have been performed on several materials recently, including the Celanex 4300 PBT material presently used on F2VC-9F924-AB, as well as Ultem, Noryl, and Fortron. While these results are presently undocumented officially, the consistently higher performance of Noryl in terms of dimensional stability relative to Celanex during these tests gives high confidence that changes to the base should have no effect on Thermal Cycle performance.

920409

-MSG M#= 310378 FR=SBO1 TO=CMP1 SENT=04/10/92 09:05 AM
R#=024 ST=C DIV=0050 CC=00101 BY=SBO1 AT=04/10/92 09:05 AM

TO:	Ted Ballard	ETB	Paul Kotch	PRK1
	Tom Burke	MFPC	Steve Major	SMFH
	Jeff DiDomenico	ELB	Dale Sogge	FFUN
	Charlie Douglas	CMP1	Matt Sellers	PCME
	Norm Freda	WHLZ	Rusty Struble	RCS2
	Dick Gariepy	MFPC	Jim Watt	PCQA
CC:	Tom Charboneau	(delivered separately)		
	Dave Czarn			
FR:	Steve Offiler	SBO1		

SJ: Weekly Highlights

FORD MY'92 ELECTRONIC SPEED CONTROL DEACTIVATE PS

SHO TAURUS: The last test lot we were able to ship to Florida before the evaluation ended used old ultra-low-diff truck discs with snubbers. Warren Pierce rated these as 8-9's, very acceptable. This is what Ford thinks they'll be getting in volume for SHO. Per Ted Ballard, we don't know how to build these discs in production, however. We are assuming that the "Lot F" Pass Car discs (which we do know how to build) will suffice.

EN53 (CROWN VIC & GRAND MARQUIS): We are moving ahead very rapidly to meet the extreme schedule Ford is requiring. Production switches, with "Lot F" discs and Noryl bases, will ship on Saturday to Dana-Weatherhead. In parallel, we are throwing together a Partial ISR package, primarily using similarity to 77PSL2-1. For RS testing, we are doing only Impulse and Terminal Strength. This package will be ready Monday for review by Bruce Maeroff (Supv. Brake Eng.) during his visit here. Our plan for full ISR will consolidate the SHO switch and the EN53 switch into one test procedure and report. This has been mistakenly promised to Ford for May 22, which is physically impossible to meet due to the Fluid Resistance test. Mid-June is more likely; we need to close with Ford on this.

THERMAL SHIFT: At this point, Noryl parts have been characterized only; no therm shift testing has been accomplished yet. We are expediting the completion of this test now, because the cycler will also be needed ASAP for Impulse on EN53 parts. As soon as we complete an initial pass at thermal shift, we will immediately put Impulse parts in, and adjust the cycle rate to ensure they are complete by Monday.

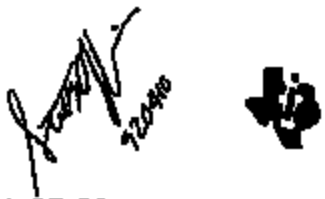
VALIDATION: Final characterization of the two highest-priority lots (57PSF3-3 and 57PSL11-3) is in progress now. We need burst, current leak, and final act/rel on all devices, about 120. Loris will be continuing to work on this today and into tomorrow as needed. The report writeups, which are due to Ford on 4/15, have not begun as yet. These will need to be accomplished in a compressed timeframe over the weekend.

FIRST CYCLE SYNDROME: Nothing to report.

HIGHLIGHTS

Stephen B. Offiler

Week Ending 92-04-10



FORD MY'92 ELECTRONIC SPEED CONTROL DEACTIVATE PS

SHO TAURUS: The last test lot we were able to ship to Florida before the evaluation ended used old ultra-low-diff truck discs with snubbers. Warren Pierce rated these as 8-9's, very acceptable. This is what Ford thinks they'll be getting in volume for SHO. Per Ted Ballard, we don't know how to build these discs in production, however. We are assuming that the "Lot F" Pass Car discs (which we do know how to build) will suffice.

EN53 (CROWN VIC & GRAND MARQUIS): We are moving ahead very rapidly to meet the extreme schedule Ford is requiring. Production switches, with "Lot F" discs and Noryl bases, will ship on Saturday to Dana-Weatherhead. In parallel, we are throwing together a Partial ISR package, primarily using similarity to 77PSL2-1. For ES testing, we are doing only Impulse and Terminal Strength. This package will be ready Monday for review by Bruce Mazroff (Supv. Brake Eng.) during his visit here. Our plan for full ISR will consolidate the SHO switch and the EN53 switch into one test procedure and report. This has been mistakenly promised to Ford for May 22, which is physically impossible to meet due to the Fluid Resistance test. Mid-June is more likely; we need to close with Ford on this.

THERMAL SHIFT: At this point, Noryl parts have been characterized only; no therm shift testing has been accomplished yet. We are expediting the completion of this test now, because the cycler will also be needed ASAP for Impulse on EN53 parts. As soon as we complete an initial pass at thermal shift, we will immediately put Impulse parts in, and adjust the cycle rate to ensure they are complete by Monday.

VALIDATION: Final characterization of the two highest-priority lots (57PSF3-3 and 57PSL11-3) is in progress now. We need burst, current leak, and final act/rel on all devices, about 120. Loris will be continuing to work on this today and into tomorrow as needed. The report writeups, which are due to Ford on 4/15, have not begun as yet. These will need to be accomplished in a compressed timeframe over the weekend.

FIRST CYCLE SYNDROME: Nothing to report.

QUIET SWITCH - PRELIMINARY STUDIES

TI CONFIDENTIAL
TI STRICLY PRIVATE

I) Plastic connector stability

Purpose: To determine the acceptable pin lengths for quiet switch production given that the quiet disc has a smaller pin window. Also to evaluate the effects of a connector material change to increase the pin window so the device could be manufactured cost effectively.

Procedure: Devices were assembled at various contact preloads (pin lengths) using both celenax and noryl connectors. If the material changes dimensional with temperature it can result in an increased or decreased actuation pressure. The actuation and release pressures were measured at low and high temps.

Results: The results for Celenax are shown in Figure 1. Norly results are shown in Fig 2. The Noryl provided stable actuation and release pressure over a greater pin range. This matches other test results showing greater dimensional stability with noryl. During the test the parts were exposed to temps from -40 to +150, one cycle and there was no visual impact on the material.

II) Plastic connector stability

Purpose: Understand the ability of Noryl material to survive the typical underhood automotive environment.

Procedure: Connectors were fully qualified in Norly material for an underhood Automotive Pressure Transducer (APT). This includes thermal cycling, chemical resistance, dimensional stability, impulse testing, impact strength, etc.

Results: The Norly is fully qualified as a connector to 135C. Long term storage has been acceptable at 150C.

III) Quiet Disc development

Purpose: A lower differential disc was needed to reduce the sound generated when the disc snapped.

Procedure: Various discs were developed. The differential was measured by building the disc into a sensor assembly and then measuring the disc deflection vs pressure with an lvdt(linear variable differential transformer).

Results: Figure 3 shows both a noisy production disc and a quiet disc. Note that the differential has been reduced from 100psi to approx 30psi. Correspondingly the available pin window has been reduce from 14.5 mils to 10 mils.

IV) Switch sound evaluation

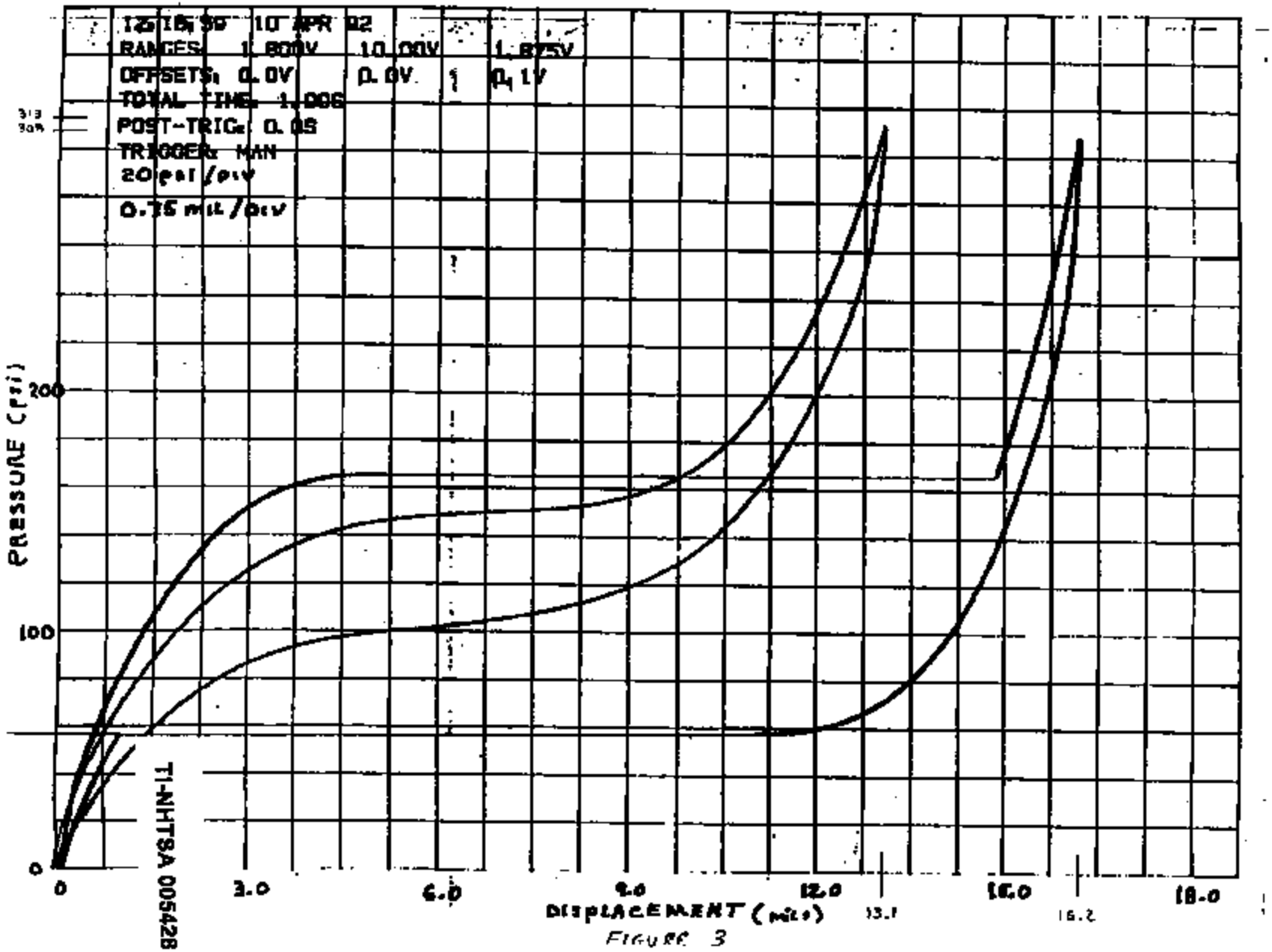

12:18:30 10 APR 92
RANGES: 1.800V 10.00V 1.875V
OFFSETS: 0.0V 0.0V 0.1V
TOTAL TIME: 1.006
POST-TRIG: 0.05
TRIGGER: MAN
20 psi/div
0.75 mil/div
PRESSURE (psi)
200
100
0
0
3.0
6.0
9.0
12.0
15.0
18.0
DISPLACEMENT (mils)
13.1
16.2
TI-NHTSA 005428

FIGURE 3

PRESSURE SWITCH DATA Form 21605 TEST NO. 242-03-24

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PSL3-1	9/20/10	Steve Offner	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey D. Domenico	9/20/10	9/20/13	

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Partial ISR of 77PSL3-1

PROCEDURE: Impulse test, per Ford ES, of 24 production devices.

Device #	Unit Act - Rel		Port Act - Rel	mv drop
242-03-01	119 - 102	I	87 - 85	10.7 mV
-02	132 - 119		116 - 110	5.6
-03	136 - 121	H	114 - 108	5.6
-04	125 - 114	P	117 - 110	3.8
-05	129 - 116	4	123 - 107	25.9
-06	133 - 163	1	109 - 102	3.2
-07	126 - 116		119 - 109	6.3
-08	127 - 113	J	136 - 110	27.5
-09	121 - 118	E	114 - 112	0.5
-10	134 - 122		122 - 105	4.7
-11	140 - 121	T	118 - 114	2.5
-12	132 - 103	S	129 - 125	4.2
-13	128 - 115		116 - 105	3.2
-14	121 - 117	F	125 - 107	10.3
-15	124 - 109		128 - 108	9.7
-16	129 - 123		117 - 111	3.8
-17	129 - 118		119 - 111	9.7
-18	125 - 116		117 - 109	4.8
-19	122 - 102		115 - 107	5.6
-20	126 - 103		115 - 107	7.0
-21	125 - 113		120 - 113	6.4
-22	115 - 101		132 - 103	15.1
-23	112 - 101		120 - 105	8.6
-24	117 - 101		129 - 101	6.1

ALERT DETAIL

PRINT DATE/TIME: 92/04/14 15:27
PAGE: 1

ALERT NUMBER
A102076A3

ORIGIN ACTIVITY: MC00 CHASSIS PED (LHDC)
ORIGINATOR: SIMMONS, J.L.
EPSC:

TYPE: (M) USE PPR
DATE: 92/04/10
PHONE: 52-37976
NOTICE NO:

STATUS: A
LOCATION:
RESOLVING NOTICE:

ALERT DESC: TO ELIMINATE BRAKE PEDAL CLICK ON NON-ABS EQUI VEHICLES WITH SPEED CONTROL ADD P1-F2AC-2C320-CB ADAPTER ASSEMBLY IN PLACE OF P8-F2AC-2C320-CB. THIS ALERT WILL ALSO COVER CASES

PRODUCTS AFFECTED: CROWN VIC/GRAND MARQUIS - NON-ABS WITH ELECTRONIC SPEED CONTROL.

MODEL CODES: CVEB CVTP
TO BE AFFECTED: BA32
CONCERN CNTRL:
ASSY:

MODEL YEAR: 92

ENG CONCERN CNTRL:
EFFECTIVE IN:
EMISSION CODE: 000

INVALID:
OBS:
DISP:

WITH
EST INCRM VAR COST:
EST INCRM VEH COST:
HOUR ALLOWANCE:
SUPP DOCS:

TIME:
EST INCRM TOOL COST:
EST INCRM FAC COST:
APPEARANCE:

EST INCRM LAB COST:
OF EFFECT:

AFFECTED PARTS

AFF PART NO:
CPSC:
ACI: ENTER:

AFF PART DESC:
NOTICE:
SUPPLY/LOCAL: AVAIL:
SUPPLIER:

REL QTY:
PROC MENU:

FURTHER DESCRIPTION/ALERT RESOLUTION/REASON FOR REJECTION ETC.

USERID: JL61BZ4 ACTIVITY: MC00 ENTRY DATE: 92/04/10

ALERT DESC:
RECEIVED AT ST THOMAS ASSEMBLY PLANT WHILE TRANSPORTING STOCK TO THE VENDOR FOR REWORK. ST THOMAS ASSEMBLY PLANT IS TO SHIP P8-F2AC-2C320-CB ASSEMBLIES TO THE SUPPLIER'S CHARLOTTE(NORTH CAROLINA) ST THOMAS FACILITY WHERE THEY WILL BE REWORKED, CONTAINERS MARKED AS RWK, AND RETURNED TO ST THOMAS ASSY PLANT. REWORKED PIECES AND P1 PIECES WILL BE IDENTIFIABLE AS SUCH BY THE CREAM/PALE COLOR OF THE SWITCH AS OPPOSED TO THE BROWN COLOR OF THE SWITCH ON THE CURRENT ASSEMBLIES.

ANY TESTING OF THE SWITCH WILL BE LIMITED TO CALIBRATION, IMPULSE TESTING, AND A MODIFIED TERMINAL STRENGTH TEST IN ADDITION, MATERIAL CERTIFICATION AND DIMENSIONAL CERTIFI-

USERID: JL61BZ4 ACTIVITY: MC00 ENTRY DATE: 92/04/10

ALERT DESC:
CATION OF THE RUNS WILL BE COMPLETED.

P1-F2AC-2C320-CB ASSEMBLIES NEED NOT BE ESTA TESTED. TESTS AS SWITCH ABOVE WILL SUFFICE.

JUDY SIMMONS 52-37976

- NONE -

TL-NHTSA 005430

ALERT DETAIL

PRINT DATE/TIME: 92/04/14 15:27
PAGE: 2

ALERT NUMBER
A102207665

ORIGIN ACTIVITY: MCRD CHASSIS PED (EMCR)
ORIGINATOR: SIMMONS, J.E.
CFSC:

TYPE: (U) USE PPM
DATE: 92/04/10
PHONE: 32-37976
NOTICE NO:

STATUS: A
LOCATION:
RESOLVING NOTICE:

---------- FURTHER DESCRIPTION/ALERT RESOLUTION/REASON FOR REJECTION ETC. ----------

USERID: JLS1824 ACTIVITY: MCRD ENTRY DATE: 92/04/10
ALERT DESC:

USERID: RJH5360 ACTIVITY: MCRD ENTRY DATE: 92/04/10
ALERT DESC:
APPROVED BJH.

USERID: RJH5360 ACTIVITY: MCRD ENTRY DATE: 92/04/10
ALERT DESC:
PRESS NOT APPECIED.BJH

USERID: JLS1824 ACTIVITY: MCRD ENTRY DATE: 92/04/11
ALERT DESC:
THIS ALERT WILL REMAIN IN EFFECT UNTIL INCORPORATION OF
ENGINEERING CHANGE MCRD C 90204101 000.
J SIMMONS 32-37976

USERID: JLS1824 ACTIVITY: MCRD ENTRY DATE: 92/04/14
ALERT DESC:
CORRECTION TO ABOVE: PART NUMBERS WILL REMAIN IN AFFECT

USERID: JLS1824 ACTIVITY: MCRD ENTRY DATE: 92/04/14
ALERT DESC:
UNTIL MCRD C 90204101 000 IS IN EFFECT.
J SIMMONS 32-37976

---------- APPROVALS ----------

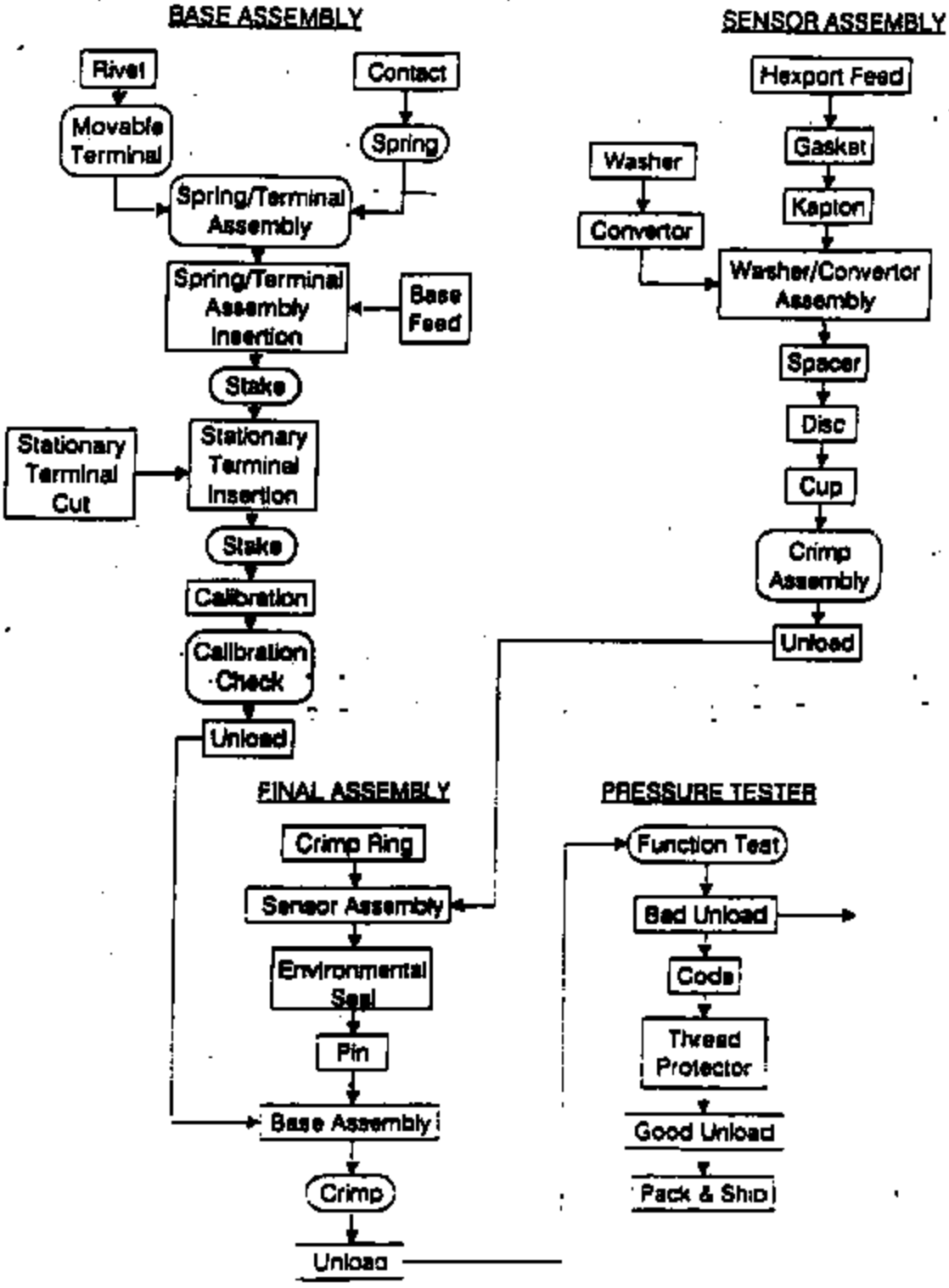
REGION	DEPARTMENT	USERID	ACTIVITY	APPROVER'S NAME	DATE APPROVED	APPROVAL
	[illegible]	JLS1824	MCRD	SIMMONS, J.E.	92/04/10	
	[illegible]	[illegible]	MCRD	ZIELINSKI, L.A.	92/04/13	1
	[illegible]	[illegible]	MCRD	[illegible]	92/04/10	
	[illegible]	[illegible]	MCRD	[illegible]	92/04/13	1
	[illegible]	[illegible]	MCRD	[illegible]	92/04/14	
	[illegible]	[illegible]	MCRD	[illegible]	92/04/00	
	[illegible]	[illegible]	MCRD	CHASSIS DATA GATEKEEP	00/00/00	
	[illegible]	[illegible]	MCRD	PPM GATEKEEPER-EMCR	92/04/14	1
	[illegible]	JLS1824	MCRD	SIMMONS, J.E.	92/04/00	
	[illegible]	JLS1824	MCRD	DUFFY	92/04/04	1

-END-

TI-NHTSA 005431

FORD NEXT GENERATION SPEED CONTROL

PROCESS FLOW CHART 77PSL2-1/2-3



FORD NEXT GENERATION SPEED CONTROL (77PS)
MANUFACTURING CONTROL PLAN
77PSL QUIET SWITCH

PROCESS STEP DESCRIPTION	PRODUCT CHARACTERISTICS	EVALUATION METHOD	CONTROL METHOD	FREQUENCY OF TEST	REACTION PLAN
GAGE ASSEMBLY (AMI AUTOMATION)	TERMINAL HEIGHT	DIAL INDICATOR	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	TERMINAL PUSHOUT	FORCE GAGE/ DIAL INDICATOR	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	TERMINAL SEPERATION/ ALIGNMENT	PLUG GAGE	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	SPRING ANGLE	COMPARATOR	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	SPRING CONTACT WIDTH	CALIPERS	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	SPRING TORQUE	FORCE GAGE	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	SPRING BUMP HEIGHT	CALIPERS	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	RIVET HEIGHT	DIAL INDICATOR	X/ R	5Pc/ Hr.	SORT SINCE LAST CHECK
	CALIBRATION DEFORMATION	CUSTOM CONTINUITY SYSTEM	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	VISUAL QUALITY	VISUAL	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
SENSOR ASSEMBLY	CRIMP DIAMETER	CALIPERS	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	CRIMP HEIGHT	CALIPERS	X/ R	5pc/ Hr.	SORT SINCE LAST CHECK
	VISUAL QUALITY	VISUAL	P	5pc/ Hr.	SORT SINCE LAST CHECK

Revision: A

11 April 1992 MJS/sjs 559-6134

TL-NHTSA 005433

FORD NEXT GENERATION SPEED CONTROL (77PS)
MANUFACTURING CONTROL PLAN
77PSL QUIET SWITCH

PROCESS STEP DESCRIPTION	PRODUCT CHARACTERISTICS	EVALUATION METHOD	CONTROL METHOD	FREQUENCY OF TEST	REACTION PLAN
FINAL ASSEMBLY (AMI AUTOMATION)	CRIMP DIAMETER	CALIPER	X/R	5pc/Hr.	SORT SINCE LAST CHECK
	CRIMP HEIGHT	CALIPER	X/R	5pc/Hr.	SORT SINCE LAST CHECK
	BASE TORQUE	TORQUE GAGE	X/R	5pc/Hr.	SORT SINCE LAST CHECK
	CODE CRIMP RING/ DIAMETER-LEGIBILITY	PLUG-VISUAL	P	5pc/Hr.	SORT SINCE LAST CHECK
	PIN HEIGHT	DIAL INDICATOR	X/R	5pc/Hr.	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
FUNCTION TESTER (CUSTOM)	ACTUATION/ RELEASE POINTS (Ford Significant Char.)	MASTERS	X/R	EACH SHIFT	TOOL ROOM / ENGINEERING EVALUATIONS
	ACTUATION/ RELEASE POINTS	RAMP THROUGH PRESSURE RANGE	X/R	100%	YIELD TRACKING/ SCRAP CONTROL
PRODUCT AUDITS * (PRODUCTION)	HIGH PINNING	CUSTOM HYPOT SYSTEM/	P	100%	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
	HIGH TEMP CONTINUITY	OVEN/ CONTINUITY METER	P	10pc/ Lot	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
Q.C. AUDITS	OUTLINED IN DETAIL IN TEXAS INSTRUMENTS (QAS 208), FMC				

11 April 1992 [illegible] 888-0134

Revision: A

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 77PS REV. L2 /

PART NAME: Cruise Control Pressure Switch

CAS NO. 208 REV. | SR | TI ORDER NO./DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 4/13/92

TI-NHTSA 005435

LOT NO.	MFG DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	INSP. NO.
AQL					00%	51	51	51
1	4/27	L2-1	3792	5	✓			[illegible]
2	4/27	L2-1	432	5	✓			H
3								
4	5/05	L2-1	14	5	✓			"
5	5/05	"	512	5	✓			"
6	5/05	"	1140	5	✓			"
7	5/07	"	12	5	✓			"
8	5/07	"	1654	5	✓			"
9	5/08	"	734	5	✓			"
10	5/08	"	1404	5	✓			"
11	5/11	L2-1	1666	5	✓			[illegible]
12	5/11	"						
13	5/20	L2-1	2856	5	✓			[illegible]
14	5/21	"	3332	5	✓			"
15	5/21	"	952	5	✓			"
16	5/27	"	2142	5	✓			"
17	5/28	"	714	5	✓			"

INSPECTION METHOD	FINAL INSPECTION							LOT AUDIT INSPECTION							
CHARACTERISTIC	Calibration Voltage Drop	Terminal Location	Threads	Workmanship/Coding				Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Test	Terminal Strength	Dimensional
AQL	00%	51	51	51				0	A	5	4	4	4	4	4
1	✓	✓	✓	✓	21	14		✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	21	15		✓	✓	✓	✓	✓	✓	✓	✓
3															
4	✓	✓	✓	✓	21	14		✓	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	21	15		✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	21	26		✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	21	07		✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	21	26		✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	21	26		✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	21	28		✓	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	21	28		✓	✓	✓	✓	✓	✓	✓	✓
12															
13	✓	✓	✓	✓	[illegible]		O/C	✓	✓	✓	✓	✓	✓	✓	✓
14	✓	✓	✓	✓	MIXED		O/C	✓	✓	✓	✓	✓	✓	✓	✓
15	✓	✓	✓	✓	MIXED		O/C	✓	✓	✓	✓	✓	✓	✓	✓
16	✓	✓	✓	✓	MIXED		O/C	✓	✓	✓	✓	✓	✓	✓	✓
17	✓	✓	✓	✓	MIXED		O/C	✓	✓	✓	✓	✓	✓	✓	✓

FORM 22424

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 11[illegible] L2-1 REV.

PART NAME Cruise [illegible]ol Pressure Switch

GAS NO.	REV.	SR	TI DRAWING NO./DATE CODE
208			

CUSTOMER: Ford

CUSTOMER P.O. NO.:

CUSTOMER PART NO.: Various

APPROVED BY: [illegible] DATE: 4/15/92

LOT NO.	1992 DATE	BUR NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	INSP. INIT.
1	5/29	L2-1	3570	5	✓	✓		[illegible]
2	6/05	L2-1	21 896	5	✓	✓		"
3	6/08	L2-1	3094	5	✓	✓		"
4	6/10	L2-1	952	5	✓	✓		"
5	6/11	L2-1	714	5	✓	✓		"
6	6/16	L2-1	2618	5	✓	✓		"
7	6/18	L2-1	95	5	✓	✓		"
8	7/7	L2-1	4522	5	✓	✓		"
9	7/20	L2-1	838	5	✓	✓		"
10	7/28	L2-1	476	5	✓	✓		"
11	7/28	L2-1	714	5	✓	✓		"
12	7/31	L2-1	4522	5	✓	✓		"
13	8/6	L2-1	1704	5	✓	✓		"
14	9/24	L2-1	172	5	✓	✓		"
15								
16	9/24	L2-1	309	5	✓	✓		"
17								

INSPECTION METHOD	FINAL INSPECTION						LOT AUDIT INSPECTION								
CHARACTERISTIC	Calibration Voltage Drop	A.P.I. Terminal Location	Connector Threads	Co/MoCo Cases	Workmanship/Coding Visual			Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Test	Terminal Strength	Dimensional
AQL	DBE	S1	S1	S1				9	4	5	4	4	4	4	4
1	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	-	✓
5	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
12	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
13	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
14	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
15	~~✓~~	✓	✓	✓	~~MIXED~~	~~DATE~~	~~CODES~~	✓	✓	✓	✓	✓	✓	✓	✓
16	✓	✓	✓	✓	MIXED	DATE	CODES	✓	✓	✓	✓	✓	✓	✓	✓
17															

TI-NHTSA 005436

SPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 77FS REV. L2-1

PART NAME: Cruise Control Pressure Switch

QAS NO. REV.: 208 | SR: | TI ORDER NO./DATE CODE:

CUSTOMER: Ford | CUSTOMER P.O. NO.:

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 9/15/92

TI-NHTSA 005437

LOT NO.	1992 DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	PREV. NO.	INSPECTION METHOD	FINAL INSPECTION: A.P.T.	FINAL INSPECTION: Connector	FINAL INSPECTION: Go/NoGo Gages	FINAL INSPECTION: Visual					LOT AUDIT INSPECTION: Calibracon	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Pivot Pot	Terminal Strength	Dimensional	
CHARACTERISTIC										Calibration Voltage Drop	Terminal Location	Threads	Workmanship/Coding													
ACCEPTANCE										00%	5/1	5/1	5/1					9	4	5	4	4	4	4	4	
1	9/24	L2-1	981	5	✓			[illegible]		✓	✓	✓	✓	22	55			✓	✓	✓	✓	✓	✓	✓	✓	
2	9/24	"	209	5	✓			"		✓	✓	✓	✓	22	66			✓	✓	✓	✓	✓	—	✓	✓	
3	9/24	"	156	5	✓			"		✓	✓	—	✓	22	55			—	✓	✓	✓	✓	✓	✓	✓	
4	9/25	"	91	5	✓			"		✓	✓	✓	✓	22	61			✓	✓	✓	✓	✓	✓	✓	✓	
5	9/25	"	233	5	✓			"		✓	✓	✓	✓	N/	OK			✓	✓	✓	✓	—	—	—	—	
6	9/25	"	1324	5	✓			"		✓	✓	✓	✓	22	66			✓	✓	✓	✓	✓	✓	✓	✓	
7	10/2	"	2257	5	✓			"		✓	✓	✓	✓	22	76			✓	✓	✓	✓	✓	✓	✓	✓	
8	10/2	"	183	5	✓			"		✓	✓	✓	✓	22	67			✓	✓	✓	✓	✓	✓	✓	✓	
9	10/2	"	178	5	✓			"		✓	✓	✓	✓	22	66			✓	✓	✓	✓	✓	✓	✓	✓	
10	10/6	"	238	5	✓			"		✓	✓	✓	✓	22	76			✓	✓	✓	✓	✓	✓	✓	✓	
11	10-9	"	476	5	✓			[illegible]		✓	✓	✓	✓	22	81			✓	✓	✓	✓	✓	✓	✓	✓	
12	10-7	"	1436	5	✓			[illegible]		✓	✓	✓	—	22	87			✓	✓	✓	✓	✓	✓	✓	✓	
13	10-7	"	2862	5	✓			"		✓	✓	✓	✓	22	81			✓	✓	✓	✓	✓	✓	✓	✓	
14	10T3	"	226	5	✓			"		✓	✓	✓	✓	22	76			✓	✓	✓	✓	✓	✓	✓	✓	
15	10/5	"	104	5	✓					✓	✓	✓	✓	22	87			✓	✓	✓	✓	✓	✓		✓	
16	10/5	"	179	5	✓			!		✓	✓	✓	✓	22	88			✓	✓	✓	✓	✓	✓	✓		
17	10/5	"	193	5	✓			"		✓	✓	✓	✓	22	90			✓	✓	✓	✓	✓	✓	✓	✓	

FORM 22678

CTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO.: 77PS REV.: 22-1

PART NAME: Cruise Control Pressure Switch

DWG NO.: 208 REV.: SR:

TI ORDER NO./DATE CODE:

CUSTOMER: Ford

CUSTOMER P.O. NO.:

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 9/15/92

LOT NO.	DATE (92)	SUB NO.	DISC LOT	SAMPLE SIZE (9)	DISP. AC.	DISP. RE.	REL. NO.	INSP. NO.	AGL.	FINAL INSPECTION: A.P.T. – Calibration Voltage Drop (100%)	Connector – Terminal Location (S/)	Go/NoGo Gages – Threads (S/)	Visual – Workmanship/Coding (S/)				LOT AUDIT INSPECTION: Calibration (9)	Voltage Drop (4)	Impulse Test (5)	Current Leakage (4)	Proof Test (4)	Burst Tst (4)	Terminal Strength (4)	Dimensional (4)	
1	10-16	22-1	230	9	✓			P.G.J.		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
2	10-16	|	231		✓			R.G.J.		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
3	10/19		241		✓			[illegible]		OK	TO	ACCEPT	LOT	PER			E ROSE	✓	✓	✓	[illegible]	[illegible]	✓	✓	
4	10/19		242		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
5	10-19		243		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
6	10-19		244		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
7	10/20		247		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
8	10/20		254		✓			R.L.O.		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
9	10/20		253		✓			R.L.O.		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
10	10/21		252		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
11	10/21		255		✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓			✓	
12	[illegible]		268		✓			[illegible]		✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓	
14	[illegible]		269		✓			[illegible]		✓	✓	✓	✓				[illegible]	[illegible]	[illegible]	✓	[illegible]	✓	✓	✓	
15	[illegible]		270		✓			[illegible]		✓	✓	✓	✓				[illegible]	[illegible]	[illegible]	✓	[illegible]	[illegible]	✓	✓	
16	11/10	|	271	|	✓			[illegible]		✓	✓	✓	✓				[illegible]	✓	✓	✓	✓	✓	✓	✓	
17	11/11	✓	272	✓	✓			[illegible]		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	

FORM [illegible]

TI-NHTSA 005438

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 17PS 12-1 REV.

PART NAME: Cruise Control Pressure Switch

QAR NO. 206 REV. BR

TI ORDER NO./DATE CODE

CUSTOMER: Ford

CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 9/13/92

TI-NHTSA 005439

									INSPECTION METHOD	FINAL INSPECTION										LOT AUDIT INSPECTION								
					DISP.					A.P.T.	Connector	Go/NoGo Gages	Visual															
LOT NO.	1992 DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	AC.	RE.	REJ. NO.	INSP. NO.	CHARACTERISTIC	Calibration Voltage Drop	Terminal Location	Threads	Workmanship/Coding							Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Tst	Terminal Strength	Dimensional	
									ACCEPT	002	51	51	51							9	4	5	4	4	4	4	4	
1	9/12	12-1	465	5	✓			367343		✓	✓	✓	✓	22	88					✓	✓	✓	✓	✓	✓	✓	✓	
2	"	"	1726	5	✓			"		✓	✓	✓	✓	22	90					✓	✓	✓	✓	✓	✓	✓	✓	
3	10-21	12-1	952	5	✓			367343		✓	✓	✓	✓	22	96					✓	✓	✓	✓	✓	✓	✓	✓	
4	10-21	12-1	615	5	✓			"		✓	✓	✓	✓	23	94					✓	✓	✓	✓	✓	✓	✓	✓	
5	10-21	12-1	2482	5	✓			"		✓	✓	✓	✓	23	94					✓	✓	✓	✓	✓	✓	✓	✓	
6	10-21	12-1	952	5	✓			"		✓	✓	✓	✓	23	94					✓	✓	✓	✓	✓	✓	✓	✓	
7	10/27	12-1	2956	5	✓			"		✓	✓	✓	✓	22	97					✓	✓	✓	✓	✓	✓	✓	✓	
8	10/27	12-1	153	5	✓			"		✓	✓	✓	✓	23	96					✓	✓	✓	✓	✓	✓	✓	✓	
9	10/27	12-1	2067	5	✓			"		✓	✓	✓	✓	23	01					✓	✓	✓	✓	✓	✓	✓	✓	
10	10/25	12-1	379	5	✓			"		✓	✓	✓	✓	22	97					✓	✓	✓	✓	✓	✓	✓	✓	
11	10/25	12-1	56	5	✓			"		✓	✓	✓	✓	22	90					✓	✓	✓	✓	✓	✓	✓	✓	
12	10/28	12-1	63	5	✓			"		✓	✓	✓	✓	22	99					✓	✓	✓	✓	✓	✓	✓	✓	
13	10/28	12-1	1382	5	✓			"		✓	✓	✓	✓	23	01					✓	✓	✓	✓	✓	✓	✓	✓	
14	10/29	"	281	5	✓			"		✓	✓	✓	✓	23	01					✓	✓	✓	✓	✓	✓	✓	✓	
15	10/29	"	1385	5	✓			"		✓	✓	✓	✓	23	02					✓	✓	✓	✓	✓	✓	✓	✓	
16	10/30	"	1785	5	✓			"		✓	✓	✓	✓	23	03					✓	✓	✓	✓	✓	✓	✓	✓	
17	10/30	"	356	5	✓			"		✓	✓	✓	✓	23	02					✓	✓	✓	✓	✓	✓	✓	✓	

FORM 22426

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 7725 REV. J-1

PART NAME: Cruise Control Pressure Switch

GAS NO. 208 REV. | SR | TI ORDER NO./DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 4/13/92

TI-NHTSA 005440

LOT NO.	1992 DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REL. NO.	INSP. NO.
AQL								
1	1/04	12-1	11	5	✓			607123
2	"	"	703	5	✓			"
3	1/03	"	406	5	✓			"
4	1/03	"	1d	5	✓			"
5	1/05	"	3150	5	✓			"
6	1/06	"	311	5	✓			"
7	1/07	"	1055	5	✓			"
8	1/09	"	2527	5	✓			"
9	1/10	"	XX	5	✓			"
10	1/11	"	66	5	✓			"
11	1/11	"	1600	5	✓			"
12	1/12	"	1504	5	✓			"
13	1/13	"	595	5	✓			"
14	1/14	"	119	5	✓			"
15	1/20	"	1104	5	✓			"
16	1/20	"	41	5	✓			"
17	1/20	"	45	5	✓			"

INSPECTION METHOD	FINAL INSPECTION							LOT AUDIT INSPECTION							
CHARACTERISTIC	Calibration Voltage Drop	Terminal Location A.P.I.	Connector	Threads Go/Hole Gauge	Workmanship/Coding Visual			Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Test	Terminal Strength	Dimensional
AQL	1.0	5.1	6.1	5.1				4	4	5	4	4	4	4	4
1	✓	✓	✓	✓	22	81		✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	23	03		✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	23	03		✓	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	23	01		✓	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	23	09		✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	23	09		✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	23	10		✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	23	10		✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	23	10		✓	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
12	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
13	✓	✓	✓	✓	23	17		✓	✓	✓	✓	✓	✓	✓	✓
14	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
15	✓	✓	✓	✓	23	17		✓	✓	✓	✓	✓	✓	✓	✓
16	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
17	✓	✓	✓	✓	23	10		✓	✓	✓	✓	✓	✓	✓	✓

FORM 22426

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 7775 REV. A2-1

PART NAME: Cruise Control Pressure Switch

ORD NO. 206 REV. | SR | TI ORDER REL/DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: Richard Whittle DATE: 4/15/92

TI-NHTSA 0053441

									INSPECTION METHOD	FINAL INSPECTION												LOT ACCEPT INSPECTION								
	92 DATE CODE	SUB PART-1	DISC LOT	9 SAMPLE SIZE	DISP. AC.	DISP. REJ.	REJ. NO.	INSP. INIT.	CHARACTERISTIC	Calibration Voltage Drop	A.P.T. Terminal Location	Connector	Go/NoGo Check	Threads	Workmanship/Coding	Visual				Calibration	Voltage Drop	Impulse Test	Circuit Leakage	Proof Test	Burst Tst	Terminal Strength	Dimensional	
																				9	4	5	4	4	4	4	4	
1	11/11		275	9	✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
2	11/11		276		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
3	11/17		2768		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
4	11/8		177							✓	✓	✓	✓										✓	✓				
5	11/19		286		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
6	11/19		289		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
7	12-01		307		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
8	12-01		310		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
9	12/11		318		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
10	12/11		319		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
11	12/11		323		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
12	12/11		330		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
13	12/11		331		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
14	12/11		332		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
15	12/11		334		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
16	12/11		336		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	
17	12/11		336		✓					✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	

Printed 22426

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 7TPS 12-1 REV.

PART NAME: Cruise Control Pressure Switch

GAS NO. 296 REV. | SR | TI ORDER NO./DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: Richard Hilliard DATE: 4/15/92

TI-NHTSA 005442

LOT NO.	1992 DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	INSP. NO.
1	11/24	12-1	1703	5	✓			301783
2	"	"	3650	5	✓			"
3	"	"	1535	5	✓			"
4	"	"	48	5	✓			"
5	11-25	12-1	1131	5	✓			44700
6	11-25	12-1	297	5	✓			"
7	12/7	12-1	21	5	✓			301785
8	12/7	12-1	1455	5	✓			"
9	12/7	12-1	238	5	✓			"
10	12/10	12-1	1190	5	✓			"
11	1/15	13-1	9385	5	✓			
12	Jan	13-1	16978	5	✓			"
13	"	13-1	935	5	✓			"
14	12-17	13-1	19	5	✓			"
15	1	13-1	225	5	✓			"
16	12/9		541	5	✓			301793
17	12/15		1560	5	✓			"

INSPECTION METHOD	FINAL INSPECTION							LOT AUDIT INSPECTION							
CHARACTERISTIC	Calibration Voltage Drop	Terminal Location	Threads	Workmanship/Coding				Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Test	Terminal Strength	Dimensional
AQL	001	51	51	51				9	4	5	4	4	4	4	4
1	✓	✓	✓	✓	23	25		✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	23	24		✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	23	17		✓	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	23	15		✓	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	23	25		✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	23	24		✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	23	25		✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	23	25		✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	23	28		✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	23	29		✓	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	29	49		✓	✓	✓	✓	✓	✓	✓	✓
12	✓	✓	✓	✓	29	44		✓	✓	✓	✓	✓	✓	✓	✓
13	✓	✓	✓	✓	29	50	1	✓	✓	✓	✓	✓	✓	✓	✓
14	✓	✓	✓	✓	29	41		✓	✓	✓	✓	✓	✓	✓	✓
15	✓	✓	✓	✓	29	49		✓	✓	✓	✓	✓	✓	✓	✓
16	✓	✓	✓	✓	23	49		✓	✓	✓	✓	✓	✓	✓	✓
17	✓	✓	✓	✓	23	51		✓	✓	✓	✓	✓	✓	✓	✓

FORM 22626

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS
34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 77PS 42-1 REV.

PART NAME: Cruise Control Pressure Switch

CAGE NO. 208 REV. | SR | TI ORDER NO./DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: [signature] DATE: 4/13/92

LOT NO.	DATE CODE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	INSP. NO.
1	12/5	42-1	21	5	✓			[illegible]
2	12/5	42-1	22	5	✓			"
3	12/5	42-1	1921	5	✓			"
4	12/9	42-1	1347	5	✓			"
5	12/22	42-1	1	1	✓			"
6	12/22	42-1	5	5	✓			"
7	12/22	42-1	1663	5	✓			"
8	12/22	42-1	0125	5	✓			"
9	12/22	42-1	966	5	✓			"
10								
11								
12								
13								
14								
15								
16								
17								

INSPECTION METHOD	FINAL INSPECTION								LOT AUDIT INSPECTION							
CHARACTERISTIC	Calibration Voltage Drop	A.F.T. Terminal Location	Connector Threads	Go/NoGo Gages Performance/Coding	Visual				Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Test	Terminal Strength	Dimensional
AQL	.002	51	51	51					9	4	5	4	4	4	4	4
1	✓	✓	✓	✓	23	46			✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	23	25			✓	✓	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	23	52			✓	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	23	52	A		✓	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	23	49			✓	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	23	51			✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	23	52			✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	23	52	A		✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	23	53			✓	✓	✓	✓	✓	✓	✓	✓
10																
11																
12																
13																
14																
15																
16																
17																

TI-NHTSA 005443

FORM 33426

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS
34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 77PS X2-1 REV.

PART NAME: Cruise Control Pressure Switch

QAS NO. 208 REV. | SR | TI ORDER NO./DATE CODE

CUSTOMER: Ford | CUSTOMER P.O. NO.

CUSTOMER PART NO.: Various

APPROVED BY: Richard McMullin DATE: 4/15/92

TI-NHTSA 005444

LOT NO.	DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REJ. NO.	REP. NO.
	92							
1	4/21		337	9	✓			Remic
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17		↓		↓				

	FINAL INSPECTION								LOT AUDIT INSPECTION							
INSPECTION METHOD	A.F.I.	Connector	Go/NoGo Gages	Visual					Calibration	Voltage Drop	Impulse Test	Current Leakage	Proof Test	Burst Tes	Terminal Strength	Dimensional
CHARACTERISTIC	Calibration Voltage Drop	Terminal Location	Threads	Workmanship/Coding												
AQL	0.65	5I	5I	5I					9	4	5	4	4	4	4	4
1	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓

FORM 22426

PRESSURE SWITCH DATA Form 21605 TEST NO. 245-15-129

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PSL3-1, 77PSL3-2	920413	Steve Offiler	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey DiLorenzo	920417		

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Production Validation

PROCEDURE: ▽ ES-F1VC-9F924-AA ; Full ESR

Natural Noryl Bases
ultra-low diff discr.
Act 90-160
Rel 20 min

77PSL3-1
INITIAL characterization

Device #	Act	Rel	Hy Grp	Current look	Boost Proof	Act	Rel	Test	Complete	Test	Complete
245-15-01	118	107	4.1	✓	✓	140	107	Fluid Res	✓	Impulse	✓
-02	127	105	3.1	✓	✓	138	113		✓		✓
-03	138	111	8.8	✓	✓	140	115		✓		✓
-04	131	115	5.7	✓	✓	131	117		✓		✓
-05	133	117	6.1	✓	✓	126	113		✓		✓
-06	124	103	4.7	✓	✓	123	105		✓		✓
-07	125	111	4.6	✓	✓	131	111		✓		✓
-08	123	107	4.3	✓	✓	119	103		✓		✓
-09	121	103	4.5	✓	✓	128	111		✓		✓
-10	131	115	5.2	✓	✓	129	116		✓		✓
-11	130	114	5.3	✓	✓	135	117		✓		✓
-12	126	111	5.3	✓	✓	139	121		✓		✓
-13	126	116	3.3	✓	✓	133	120		✓	Term. Strength	✓
-14	103	92	4.0	✓	✓	119	104		✓		✓
-15	129	116	3.4	✓	✓	125	105		✓		✓
-16	124	111	4.1	✓	✓	121	111		✓		✓
-17	125	108	3.9	✓	✓	133	103		✓		✓
-18	126	116	3.0	✓	✓	128	116		✓		✓
-19	128	116	5.3	✓	✓	125	112		✓		✓
-20	122	111	3.1	✓	✓	127	109		✓		✓
-21	134	121	3.9	✓	✓	141	128		✓		✓
-22	121	105	3.8	✓	✓	132	115		✓		✓
-23	126	110	2.9	✓	✓	134	120		✓		✓
-24	119	98	3.6	✓	✓	123	107		✓		✓
-25	124	110	3.1	✓	✓	122	110		✓	Humidity	✓
-26	119	108	3	✓	✓	125	111		✓		✓
-27	131	117	3	✓	✓	137	125		✓		✓
28	131	120	2.7	✓	✓	[illegible]	[illegible]		✓		

Device #	Act	Rel	Mu Drop	Current Leak	3000 PSI Proof	Act	Rel	Test	Complete	Test	Complete
215-15-29	124	114	3.3	✓	✓	120	118	Fluid Res	✓	Humidity	✓
-30	114	106	2.8	✓	✓	128	116		✓		✓
-31	129	114	2.9	✓	✓	121	117		✓	Salt Spray	✓
-32	128	115	2.6	✓	✓	133	120		✓		✓
-33	116	104	2.8	✓	✓	115	108		✓		✓
-34	132	119	2.8	✓	✓	138	123		✓		✓
-35	118	109	2.9	✓	✓	125	115		✓		✓
-36	123	117	2.9	✓	✓	127	115		✓		✓
-37	131	119	3.1	✓	✓	132	118	Torque	✓	NHRE	✓
-38	132	118	2.6	✓	✓	136	125		✓		✓
-39	134	125	2.6	✓	✓	125	126		✓		✓
-40	124	112	2.7	✓	✓	129	120		✓		
-41	125	112	2.8	✓	✓	127	118		✓		
-42	116	106	2.7	✓	✓	130	118		✓		
-43	117	106	2.7	✓	✓	127	117		✓		
-44	120	101	2.7	✓	✓	131	125		✓		
-45	124	126	3.7	✓	✓	140	131		✓		
-46	122	114	3.4	✓	✓	130	120		✓		
-47	129	117	2.7	✓	✓	133	118		✓		
-48	116	107	2.7	✓	✓	129	120		✓		
-49	124	112	3.7	✓	✓	137	115	T-Cycle	✓	noise	✓
-50	132	121	2.9	✓	✓	135	124		✓		✓
-51	112	101	3.0	✓	✓	130	124		✓		✓
-52	127	121	3.2	✓	✓	136	125		✓		
-53	127	121	3.0	✓	✓	129	122		✓		
-54	121	112	3.2	✓	✓	135	114		✓		
-55	128	115	3.0	✓	✓	120	117	Vacuum	✓		
-56	126	114	2.8	✓	✓	128	117		✓		
-57	127	117	2.9	✓	✓	130	129		✓		
-58	122	111	3.2	✓	✓	130	126		✓		
-59	123	112	3.1	✓	✓	145	129		✓		
-60	131	117	3.4	✓	✓	135	121		✓		
-61	124	119	3.2	✓	✓	134	120	Vibration	✓		
-62	127	117	2.7	✓	✓	131	124		✓		
-63	129	113	2.6	✓	✓	126	135		✓		
-64	128	117	3.3	✓	✓	136	125		✓		
-65	121	112	2.8	✓	✓	141	118		✓		
-66	118	107	2.7	✓	✓	127	115		✓		
-67	132	123	2.9	✓	✓	134	123	Burst	Pass		
-68	126	117	2.9	✓	✓	123	123		Pass		
-69	123	123	2.7	✓	✓	130	124		Pass		
-70	119	109	2.9	✓	✓	129	121		Burst 7600		
-71	121	120	3.7	✓	✓	132	124		Pass		
-72	125	119	2.8	✓	✓	136	126		Pass		
-73	125	120	2.5	✓	✓	139	129	Hot Acid			
-74	124	113	2.4	✓	✓	138	122				
-75	119	112	3.4	✓	✓	126	117				
-76	113	107	2.4	✓	✓	121	118				
-77	120	105	2.1	✓	✓	126	112				
-78	111	101	2.4	✓	✓	125	115				
-79	112	105	2.5	✓	✓	121	117				
-80	129	124	2.7	✓	✓	136	120				

TI-NHTSA 005446

PRESSURE SWITCH DATA Form 21605 TEST NO. ____

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE

PERFORMED BY	DATE STARTED	DATE COMPLETED	APPROVED BY

PROJECT TITLE:

CUSTOMER:

PURPOSE OF TEST:

PROCEDURE:

77/5LJ-1

Final Characterization

Device #	act	rel	Av Amp	Current test	300 psi [illegible]	act - rel
145-15-01	131	104	39.6	✓	✓	128-110
-02	128	97	29.4	✓	✓	128-105
-03	130	102	26.6	✓	✓	129-108
-04	128	101	39.0	✓	✓	129-104
-05	135	108	25.2	✓	✓	132-110
-06	117	95	24.1	✓	✓	117-97
-07	130	103	25.6	✓	✓	128-105
-08	124	99	[illegible]	✓	✓	122-105
-09	124	96	[illegible]	✓	✓	125-105
-10	122	100	[illegible]	✓	✓	120-101
-11	127	99	[illegible]	✓	✓	126-105
-12	125	101	[illegible]	✓	✓	125-105
-13	138	109	4.3	✓	✓	138-118
-14	124	92	3.7	✓	✓	119-95
-15	135	109	2.2	✓	✓	134-115
-16	136	111	2.1	✓	✓	136-110
-17	134	102	3.6	✓	✓	132-116
-18	131	99	2.2	✓	✓	132-105
-19	133	99	2.7	✓	✓	133-115
-20	132	97	3.5	✓	✓	130-111
-21	142	90	4.7	✓	✓	140-122
-22	132	109	5.1	✓	✓	132-112
-23	133	108	3.0	✓	✓	135-110
-24	135	103	3.5	✓	✓	136-114
-25	134	105	2.1	✓	✓	131 116
-26	124	112	5.0	✓	✓	125 108
-27	138	112	3.1	✓	✓	137 114
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TI-NHTSA 005447

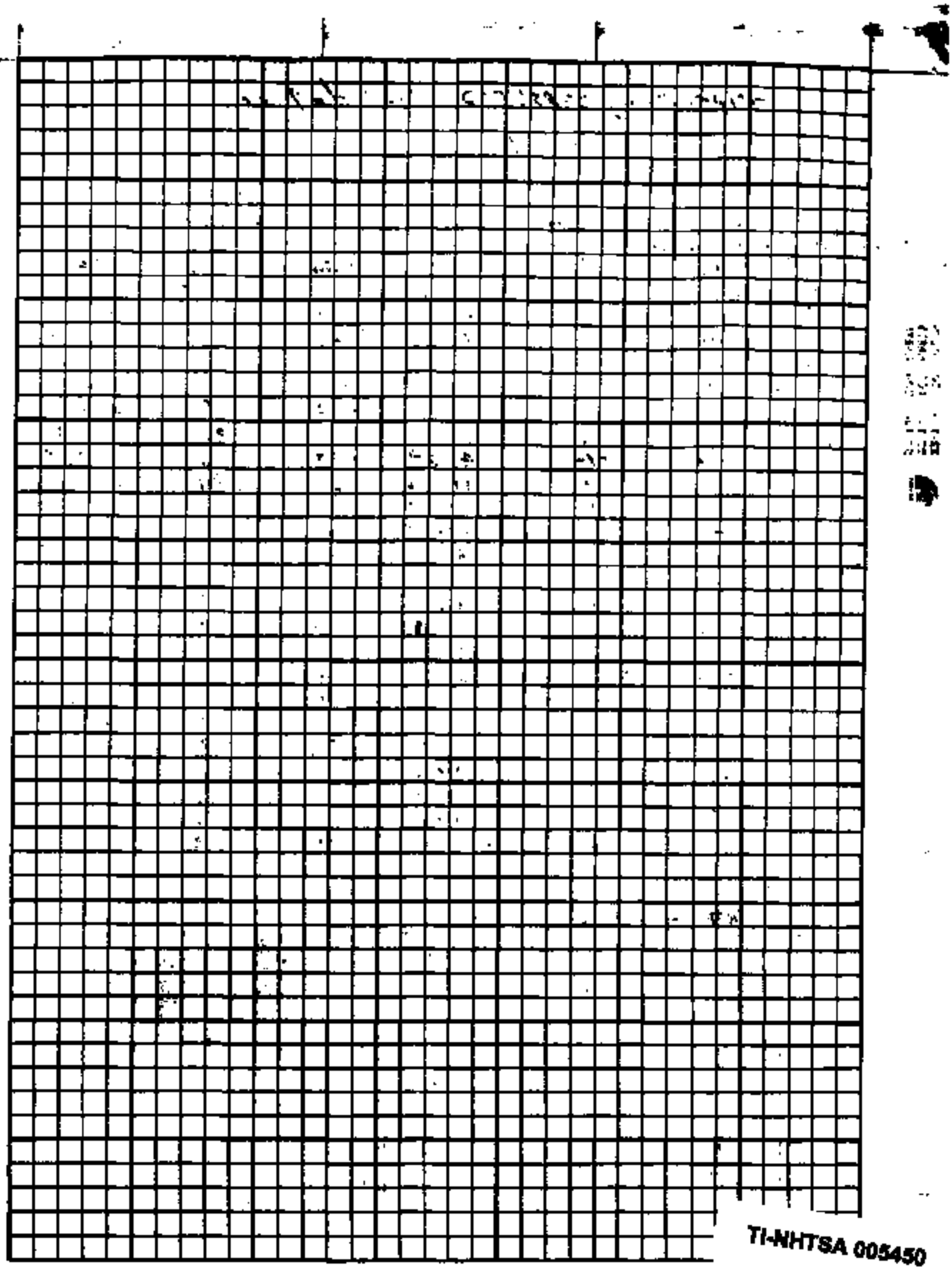
Device #	act	rel	Mu Amp	Current leak	2000 MΩ Proof	act	rel
DUT-# 09	124	107	2.7	✓	✓	131	111
- 10	129	97	3.9	✓	✓	121	110
- 51	133	113	2.9	✓	✓	130	113
- 12	121	101	2.0	✓	✓	123	104
- 72	115	98	6.6	✓	✓	120	99
- 74	131	115	3.3	✓	✓	138	119
- 75	120	106	2.8	✓	✓	130	105
- 16	130	101	3.1	✓	✓	128	100
- 17	125 - 112		9.6	✓	✓	123 - 102	
- 18	130 - 114		6.8	✓	✓	127 - 105	
- 19	124 - 112		8.9	✓	✓	126 - 108	
- 20	131 - 113		8.0	✓	✓	129 - 110	
- 21	125 - 111		7.2	✓	✓	122 - 106	
- 22	124 - 112		5.6	✓	✓	126 - 107	
- 23	127 - 113		5.7	✓	✓	124 - 108	
- 24	126 - 111		5.5	✓	✓	122 - 99	
- 25	138 - 123		7.7	✓	✓	135 - 115	
- 26	133 - 116		7.0	✓	✓	132 - 108	
- 27	131 - 117		8.0	✓	✓	127 - 105	
- 28	126 - 112		4.8	✓	✓	128 - 105	
- 29	127 - 98		2	✓	✓	111 98	
- 30	129 - 100		5.6	✓	✓	129 100	
- 31	126 - 109		2.6	✓	✓	127 98	
- 32	130 - 105		1.7	✓	✓	128 101	
- 33	130 - 108		2.9	✓	✓	128 104	
- 34	125 - 108		1.1	✓	✓	125 99	
- 35	130 - 117		1.3	✓	✓	136 - 116	
- 36	132 - 120		1.2	✓	✓	130 - 115	
- 37	136 - 123		1.2	✓	✓	134 - 108	
- 38	135 - 121		1.7	✓	✓	131 - 113	
- 39	130 - 110		2.7	✓	✓	127 - 114	
- 40	140 - 125		1.7	✓	✓	136 - 120	
- 41	134 - 117		1.5	✓	✓	134 - 120	
- 42	130 - 107		2.8	✓	✓	120 - 104	
- 43	137 - 115		2.6	✓	✓	135 - 116	
- 44	135 - 109		2.6	✓	✓	131 - 113	
- 45	127 - 107		2.8	✓	✓	120 - 104	
- 46	121 - 105		3.1	✓	✓	128 - 110	

7.7PSL 3-1, 22PSL 5-2 Validation

T-Cycle test

Cycle	Cold Fl. Temp	Cold Date	Cold Time	Hot Fl. Temp	Hot Date	Hot Time
1	-43	8/6	4:25 P	+44	8/6	4:45 P
2	-43	↓	9:35 P	+38	8/7	6:00 A
3	-40	8/7	7:50 A	+40		8:30 A
4	-44		10:30 A	+41		11:00 A
5	-43		12:40 P	+41		1:10 P
6	-40		2:20 P	+4		2:50 P
7	-43		4:15 P	+44	↓	4:40 P
8	-42	↓	6:00 P	+38	8/8	10:20 A
9	-44	8/8	4:00 P	+43	↓	4:25 P
10	-44	8/9	11:50 A	+40	8/9	11:50 A
11	-43		2:05 P	+37		1:05 P
12	-41		4:40 P	+45		5:00 P
13	-42	↓	6:55 P	+45	↓	7:15 P
14	-43	8/10	6:35 A	+41	8/10	6:55 A
15	-40		8:45 A	+44		8:25 A
16	-41		9:46 A	+43		10:15 A
17	-40		11:25 A	+43		11:45 A
18	-40		12:50 P	+40		1:10 P
19	-40		3:15 P	+39		2:50 P
20	-40		4:00 P	+42		4:20 P
21	-41	↓	5:30 P	+39	↓	10:15 P
22	-42	8/11	7:50 A	+45	8/11	8:10 A
23	-40		9:20 A	+41		9:45 A
24	-40		10:55 A	+44		11:15 A
25	-40	↓	12:45 P	+40		1:15 P

NOTE: #8 SLOWER TO CHANGE THAN OTHERS ON COLD CYCLE



[illegible] PRESSURE TESTER LOT REPORT

[illegible]
LOT ID: [illegible]
LOT [illegible]: [illegible]-APR-19[illegible] [illegible]:10:16.42
[illegible]: [illegible]-APR-19[illegible] [illegible]:13:46.09

SETUP DATA:

DISC LOT ID: [illegible].00
DISC MEAN ACT: [illegible] MEAN REL: 0.0
LIMIT (NC)

ACTUATION:	[illegible]	TO	1[illegible]0.0 PSI	
RELEASE:	[illegible]	TO	1[illegible]0.0 PSI	
DIFFERENTIAL:	[illegible]	TO	[illegible]0.0 PSI	
[illegible]:	[illegible] PSI			
[illegible]:	2[illegible] PSI			
[illegible]:	[illegible] PSI			
[illegible]:	[illegible] PSI			
[illegible]:	2			

NUMBER OF [illegible] TESTED: [illegible]
NUMBER OF [illegible]: [illegible]
[illegible]: [illegible].[illegible]9 %

[illegible]

[illegible]	COUNT	% OF [illegible]
[illegible]	[illegible]	[illegible] %
[illegible]T	8	44.44 %
[illegible]	[illegible]	[illegible] %
[illegible]	[illegible]	[illegible] %
[illegible]	[illegible]	5.56 %
[illegible]	9	[illegible].[illegible]0 %
[illegible]	[illegible]	[illegible] %
[illegible]	0	[illegible].00 %
[illegible]	0	[illegible].00 %
[illegible]	0	[illegible] %

STATISTICS	MEAN	SIGMA	CPK
ACTUATION:	[illegible]	8.75	0.34
RELEASE:	1[illegible]	8.74	-0.[illegible]
MILLIVOLTS:	0.0	0.00	0.00
DIFFERENTIAL:	[illegible]	[illegible].20	2.[illegible]

HISTOGRAM OF ACTUATION PRESSURE

	5	10	15	20	25	30	35	40	45	50

[illegible]

TI-NHTSA 005451

77PS PRESSURE TESTER LOT REPORT

[illegible]:77PS[illegible]-1
LOT ID:TEST
LOT STARTED:14-APR-1992 12:43:26.29
LOT FINISHED:14-APR-1992 12:40:19.40

SETUP DATA:
[illegible] LOT ID: [illegible]
[illegible] MEAN [illegible] [illegible] MEAN [illegible] [illegible]
LIMIT (%):
ACTUATION: [illegible] TO [illegible] PSI
RELEASE: 20.0 TO [illegible] PSI
DIFFERENTIAL: 0.0 TO 150.0 PSI
[illegible] MILLIVOLTS: [illegible] PSI
ACT CREEP TIME: 25.0 PSI
REL CREEP TIME: [illegible] PSI
PRECYCLE PRESS: 600.0 PSI
PRECYCLE COUNT: 2

NOT ENOUGH PARTS FOR REPORT ON FIXTURE 0

TIPS PRESSURE TESTER LOT REPORT

MACHINE:77PSL2-1
LOT ID:TEST
LOT STARTED:14-APR-1992 11:42:17.44
LOT FINISHED:14-APR-1992 12:49:12.05

SETUP DATA:
DISC LOT ID: 0.00
[illegible] MEAN ACT: [illegible] MEAN REL: [illegible]
LIMIT (ACT)
ACTUATION: 90.0 TO 180.0 PSI
RELEASE: 10.0 TO 120.0 PSI
DIFFERENTIAL: [illegible] TO 150.0 PSI
MAX [illegible]: 200.0 PSI
ACT CREEP TIME: 25.0 PSI
REL CREEP TIME: 150.0 PSI
PRECYCLE PRESS: 600.0 PSI
PRECYCLE COUNT: 2

NUMBER OF PIECES TESTED: 24
NUMBER OF PIECES GOOD: 10
YIELD: 41.67 %

REJECT COUNTS

BIN	COUNT	% OF DEFECTS
[illegible]	[illegible]	[illegible] %
ICNT	6	42.86 %
[illegible]	0	10.67 %
[illegible]	[illegible]	0.00 %
[illegible]	1	7.14 %
[illegible]	7	50.00 %
[illegible]	0	0.00 %
[illegible]	0	0.00 %
[illegible]	0	0.00 %
DFHI	0	0.00 %

STATISTICS	MEAN	SIGMA	CPK
ACTUATION:	140.0	12.24	0.54
RELEASE:	118.3	13.15	0.04
[illegible]	[illegible]	0.50	[illegible]
DIFFERENTIAL:	[illegible]	2.1	[illegible]

TI-NHTSA 005453

PRESSURE SWITCH DATA Form 21605 TEST NO. 245-15-129

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PSL 3-1, 77PSL 3-2	920413	Steve Offiler	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey DiBenedetto	920417		

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Production Validation

PROCEDURE: ▽ ES-F2VC-9F924-AA : Full ISR

Natural Noryl Bases
ultra-low diff discs.
Act 90-160
Rel 20 Min

77PSL 3-1
INITIAL Characterizations

Device #	Act	Rel	Mv Drop	Current leak	Pressure Proof	Act	Rel	Test	Complete	Test	Complete
245-15-01	138	107	4.1	✓	✓	140	107	Fluid Res	✓	Impulse	✓
-02	127	103	3.1	✓	✓	130	113		✓		✓
-03	132	111	3.8	✓	✓	130	115		✓		✓
-04	131	115	5.7	✓	✓	131	117		✓		✓
-05	133	117	4.1	✓	✓	136	115		✓		✓
-06	124	103	4.7	✓	✓	129	115		✓		✓
-07	125	111	4.5	✓	✓	134	113		✓		✓
-08	123	107	4.8	✓	✓	118	103		✓		✓
-09	124	103	4.5	✓	✓	128	111		✓		✓
-10	131	115	3.8	✓	✓	129	116		✓		✓
-11	130	114	4.9	✓	✓	135	118		✓		✓
-12	136	117	4.2	✓	✓	138	124		✓		✓
-13	126	116	3.5	✓	✓	133	120		✓	Term Strength	✓
-14	107	92	4.0	✓	✓	118	104		✓		✓
-15	129	116	3.4	✓	✓	135	125		✓		✓
-16	129	111	4.1	✓	✓	124	111		✓		✓
-17	125	108	3.9	✓	✓	133	116		✓		✓
-18	126	116	3.7	✓	✓	128	116		✓		✓
-19	128	116	5.3	✓	✓	133	118		✓		✓
-20	122	111	3.1	✓	✓	127	111		✓		✓
-21	134	121	3.9	✓	✓	141	126		✓		✓
-22	121	105	3.2	✓	✓	128	115		✓		✓
-23	126	114	2.7	✓	✓	133	120		✓		✓
-24	119	98	3.6	✓	✓	123	107		✓		✓
-25	124	110	3.1	✓	✓	127	113		✓	Humidity	✓
-26	119	103	3	✓	✓	125	113		✓		✓
-27	131	117	3	✓	✓	137	125		✓		✓
-28	131	120	3.2	✓	✓	136	119		✓		✓

(OVER)

Device #	Act	Act	Mv Drop	Current Leak	[illegible]	Act	Act	Test	Complete	Test	Complete
245-15-29	124	114	3.3	✓	✓	120	110	Fluid Acc	✓	Humidity	✓
-30	114	106	2.8	✓	✓	126	116	↓	✓	↓	–
-31	129	114	2.9	✓	✓	127	115	↓	✓	Salt Spray	✓
-32	128	115	2.6	✓	✓	133	126	↓	✓	↓	✓
-33	116	104	2.8	✓	✓	115	105	↓	✓	↓	✓
-34	126	119	2.8	✓	✓	138	122	↓	✓	↓	✓
-35	118	109	2.9	✓	✓	125	115	↓	✓	↓	✓
-36	122	117	2.9	✓	✓	127	115	↓	✓	↓	✓
-37	131	119	3.1	✓	✓	132	118	Impulse	✓	None	✓
-38	132	118	2.6	✓	✓	136	125	↓	✓	↓	✓
-39	134	125	2.6	✓	✓	135	126	↓	✓	↓	✓
-40	124	112	2.7	✓	✓	129	120	↓	✓		
-41	125	112	2.8	✓	✓	127	118	↓	✓		
-42	116	106	2.7	✓	✓	130	118	↓	✓		
-43	117	106	2.7	✓	✓	127	117	↓	✓		
-44	120	101	2.7	✓	✓	131	105	↓	✓		
-45	134	126	3.7	✓	✓	140	131	↓	✓		
-46	122	114	3.4	✓	✓	130	120	↓	✓		
-47	129	117	2.7	✓	✓	133	118	↓	✓		
-48	116	107	2.7	✓	✓	129	120	↓	✓		
-49	124	112	3.7	✓	✓	137	115	T-Cycle	✓	Noise	✓
-50	132	121	2.9	✓	✓	135	124	↓	✓	↓	✓
-51	112	101	3.0	✓	✓	130	124	↓	✓	↓	✓
-52	137	121	3.2	✓	✓	136	125	↓	✓		
-53	127	121	3.0	✓	✓	129	122	↓	✓		
-54	121	102	3.8	✓	✓	125	114	↓	✓		
-55	128	115	3.0	✓	✓	130	119	Vacuum	✓		
-56	126	114	2.8	✓	✓	128	118	↓	✓		
-57	127	118	2.9	✓	✓	130	119	↓	✓		
-58	122	111	3.2	✓	✓	130	126	↓	✓		
-59	123	112	3.1	✓	✓	125	109	↓	✓		
-60	131	117	3.4	✓	✓	133	121	↓	✓		
-61	127	119	3.2	✓	✓	134	130	Vibration	✓		
-62	127	117	2.7	✓	✓	131	124	↓	✓		
-63	129	118	2.6	✓	✓	122	125	↓	✓		
-64	129	117	3.5	✓	✓	136	125	↓	✓		
-65	121	112	2.8	✓	✓	136	118	↓	✓		
-66	118	107	2.7	✓	✓	127	115	↓	✓		
-67	132	123	2.9	✓	✓	139	122	Burst	Pass		
-68	126	117	2.9	✓	✓	132	122	↓	Pass		
-69	128	129	2.7	✓	✓	130	124	↓	Pass		
-70	119	109	2.9	✓	✓	129	121	↓	Burst [illegible]		
-71	128	120	3.7	✓	✓	132	124	↓	Pass		
-72	125	119	2.8	✓	✓	136	126	↓	Pass		
-73	135	130	2.8	✓	✓	139	124	Not used			
-74	124	118	2.4	✓	✓	138	120	↓			
-75	119	112	3.4	✓	✓	126	117	↓			
-76	118	108	2.4	✓	✓	121	119	↓			
-77	120	109	3.1	✓	✓	126	118	↓			
-78	111	101	2.4	✓	✓	125	113	↓			
-79	112	103	2.9	✓	✓	127	117	↓			
-80	131	124	2.7	✓	✓	130	120	↓			

PRESSURE SWITCH DATA Form 21605 **TEST NO.** _____

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
PERFORMED BY	DATE STARTED	DATE COMPLETED	APPROVED BY

PROJECT TITLE:

CUSTOMER:

PURPOSE OF TEST: Production Validation

PROCEDURE: Snubber Devices

77PSL5-2

Initial Characterizations

Device #	Act	Rel	No Prof	Current Leak	1000 PSI proof	Act	Rel	Test	complete	TEST	compl.
245-15-91	136	100	1.8	OK	OK	128	100	Bypass	✓	NOISE	✓
-91	130	100	5.2			116	100		✓		✓
-93	130	103	5.4			129	102		✓	↓	✓
-93	121	103	5.1			121	104		✓		
-95	136	118	1.9			134	110		✓		
-96	134	110	2.5			130	105		-		
-97	129	106	2.8			130	105				
-98	130	115	2.8			125	110		✓		
-99	130	108	3.1			125	105		✓		
-90	119	101	3.2			115	103		✓		
-91	126	111	2.8			120	114		✓		
-92	114	99	3.0			113	102		✓		
-93	117	99	3.2			122	124		✓		
-94	126	109	2.1			129	114		✓		
-95	130	109	2.4			121	112		✓		
-96	118	101	2.2			118	97		✓		
-97	129	106	1.9			125	106		✓		
-98	120	110	1.5			130	108		✓		
-99	136	110	3.3			137	120		✓		
-100	128	102	3.2			124	101		✓		
-101	128	115	1.6			124	118		✓		
-102	125	109	1.5			126	99		✓		
-103	121	110	2.2			130	116		✓		
-104	130	104	1.7			134	105		✓		
-105	129	104	2.9			126	109	T-cycle	✓	NOISE	✓
-106	125	108	3.4			127	107		✓	↓	✓
-107	130	109	2.0	↓	↓	139	107	↓	✓		
-108	130	114	3.7			129	114		✓		

(OVER)

Device #	Act	Rel	Δ Resp	current leak	sample proof	Act	Rel	Test	complete
345-15-109	124	106	2.1	OK	OK	128	108	T-Cycle	✓
-110	115	108	4.2			134	106	↓	✓
-111	120	107	2.6			130	109	NOT used	
-112	130	114	2.0			135	116		
-113	128	124	2.1			130	107		
-114	131	112	2.0			134	115		
-115	128	105	2.3			125	111		
-116	125	107	2.5			127	108		
-117	120	105	2.3			125	109		
-118	127	109	3.0			128	101		
-119	121	115	3.9			135	115		
-120	125	104	3.0			125	103		
-121	127	98	2.6			120	98		
-122	124	106	3.0			125	108		
-123	124	103	2.3			126	109		
-124	130	103	2.2			137	105		
-125	130	108	2.7			138	104		
-126	128	111	3.0			134	114		
-127	129	114	3.5			137	114		
-128	121	100	3.2			129	101		
-129	131	107	1.9	↓	↓	133	103	↓	

PRESSURE SWITCH DATA Form 21605 TEST NO. _____

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
PERFORMED BY	DATE STARTED	DATE COMPLETED	APPROVED BY

PROJECT TITLE:

CUSTOMER:

PURPOSE OF TEST:

PROCEDURE:

7715L3-1

Final Characterizations

Device #	set	rel	Hy Drop	Current test	300 cycle test	set rel				
145-15-01	131	104	38.6	✓	✓	128-110				
-02	122	97	29.4	✓	✓	122-105				
-03	130	102	20.6	✓	✓	129-108				
-04	129	102	27.0	✓	✓	127-104				
-05	135	109	25.2	✓	✓	132-110				
-06	117	95	22.1	✓	✓	117-99				
-07	130	103	25.6	✓	✓	128-105				
-08	124	99	22.2	✓	✓	122-103				
-09	124	96	24.3	✓	✓	123-105				
-10	122	100	18.5	✓	✓	120-101				
-11	127	99	25.8	✓	✓	126-105				
-12	125	102	16.8	✓	✓	125-105				
-13	138	109	4.3	✓	✓	138-115				
-14	124	92	2.7	✓	✓	119-95				
-15	135	109	2.8	✓	✓	136-115				
-16	136	111	2.1	✓	✓	136-120				
-17	134	107	3.6	✓	✓	132-116				
-18	131	99	2.2	✓	✓	132-105				
-19	133	99	2.7	✓	✓	132-115				
-20	132	97	5.5	✓	✓	130-111				
-21	142	110	4.7	✓	✓	140-122				
-22	132	104	5.1	✓	✓	132-112				
-23	133	109	3.0	✓	✓	135-112				
-24	135	103	2.5	✓	✓	136-114				
-25	134	105	2.1	✓	✓	130	106			
-26	124	112	5.0	✓	✓	125	108			
-27	138	118	3.1	✓	✓	137	114			
-28	133	113	3.4	✓	✓	133	101			

(OVER)

Device #	act	rel	Mv Drop	Current leak	3000 PSI proof	act	rel				
245-15-29	129	107	2.7	✓	✓	131	111				
-30	129	97	3.9	✓	✓	131	110				
-31	133	113	2.9	✓	✓	130	113				
-32	131	109	2.2	✓	✓	133	106				
-33	115	98	6.6	✓	✓	120	99				
-34	131	113	3.8	✓	✓	138	118				
-35	127	106	2.8	✓	✓	130	105				
-36	132	101	3.1	✓	✓	128	100				
-37	125-112		8.6	✓	✓	123-102					
-38	130-114		6.8	✓	✓	127-105					
-39	124-112		9.7	✓	✓	126-108					
-40	131-113		8.0	✓	✓	128-110					
-41	125-111		7.2	✓	✓	122-106					
-42	124-112		5.6	✓	✓	126-107					
-43	127-113		5.7	✓	✓	124-108					
-44	125-111		5.5	✓	✓	122-99					
-45	138-123		7.7	✓	✓	135-115					
-46	133-116		7.0	✓	✓	132-105					
-47	131-117		8.0	✓	✓	127-105					
-48	126-112		4.5	✓	✓	122-105					
-49	127-98		8	✓	✓	126 98					
-50	129-100		5.6	✓	✓	129 100					
-51	126-108		2.6	✓	✓	127 98					
-52	130-105		1.7	✓	✓	130 101					
-53	130-102		2.8	✓	✓	128 102					
-54	125-108		1.1	✓	✓	125 97					
-55	138-117		1.3	✓	✓	135-100					
-56	135-120		1.2	✓	✓	130-115					
-57	136-123		1.2	✓	✓	134-108					
-58	135-121		1.7	✓	✓	131-113					
-59	130-118		2.7	✓	✓	127-114					
-60	140-128		1.7	✓	✓	136-120					
-61	134-117		1.5	✓	✓	134-120					
-62	131-104		2.8	✓	✓	130-114					
-63	127-115		2.6	✓	✓	125-100					
-64	135-109		2.6	✓	✓	138-113					
-65	127-107		2.8	✓	✓	130-104					
-66	128-105		3.1	✓	✓	128-110					

PRESSURE SWITCH DATA Form 21605 TEST NO. _____

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
PERFORMED BY	DATE STARTED	DATE COMPLETED	APPROVED BY

PROJECT TITLE:

CUSTOMER:

PURPOSE OF TEST:

PROCEDURE:

77P5L5-2

Final Characterizations

Device #	act rel		MuDap	Current leak	500 PSI Proof	act rel				
245-15-91	171	106	13.3	✓	✓	130	102			
-92	185	98	22.7	✓	✓	121	95			
-93	138	102	22.4	✓	✓	129	102			
-94	130	102	19.5	✓	✓	127	100			
-95	134	104	26.5	✓	✓	131	102			
-96	132	105	16.8	✓	✓	131	102			
-97	169	102	24.0	✓	✓	116	96			
-98	138	105	31.4	✓	✓	132	102			
-99	138	106	23.2	✓	✓	136	108			
-76	131	103	13.9	✓	✓	125	99			
-91	135	104	17.3	✓	✓	131	-111			
-92	114	86	16.1	✓	✓	110	-101			
-93	126	99	21.6	✓	✓	133	-106			
-94	136	106	18.9	✓	✓	131	-118			
-95	138	108	18.7	✓	✓	133	-116			
-96	120	94	22.5	✓	✓	117	-104			
-97	131	104	15.8	✓	✓	131	-112			
-98	138	106	5.6	✓	✓	131	-115			
-99	126	103	19.2	✓	✓	132	-112			
-100	131	103	25.2	✓	✓	128	-113			
-101	140	112	17.5	✓	✓	136	-121			
-102	131	104	18.2	✓	✓	124	-112			
-103	135	109	25.0	✓	✓	133	-116			
-104	127	103	8.2	✓	✓	133	-114			
-105	128	-104	1.0	✓	✓	127	102			
-106	124	-100	.2	✓	✓	123	98			
-107	132	-105	.2	✓	✓	132	99			
-108	132	-119	.8	✓	✓	133	107			

(OVER)

Device #	ref vel	NV Disp	current leak	200% Proof	act vel				
2XT-R-107	126-102	.8	✓	✓	127 102				
-110	127-110	.5	✓	✓	126 101				

77PSL3-1, 77PSL5-2 Validation

T-Cycle test

Cycle	Cold Fl. Temp	Cold Date	Cold Time	Hot Fl. Temp	Hot Date	Hot Time
1	-43	8/6	4:25 P	+44	8/6	4:45 P
2	-43	↓	9:35 P	+38	8/7	1:40 A
3	-40	8/7	7:50 A	+40		8:30 A
4	-44		10:30 A	+41		11:00 A
5	-43		12:40 P	+41		1:10 P
6	-40		2:00 P	+4		5:30 P
7	-43		4:15 P	+44		4:40 P
8	-42		6:00 P	+38	8/8	10:20 A
9	-44	8/8	4:00 P	+43	↓	4:25 P
10	-44	8/9	11:30 A	+40	8/9	11:50 A
11	-43		2:05 P	+37		2:05 P
12	-41		4:40 P	+45		5:00 P
13	-42		6:55 P	+45		7:15 P
14	-43	8/10	6:35 A	+41	8/10	6:35 A
15	-40		8:05 A	+44		8:25 A
16	-41		9:45 A	+40		10:10 A
17	-40		11:25 A	+43		11:45 A
18	-40		12:50 P	+40		[illegible] P
19	-40		2:15 P	+39		[illegible] P
20	-42		4:00 P	+42		5:20 P
21	-41	↓	5:30 P	+39	↓	10:15 P
22	-42	8/11	7:50 A	+45	8/11	8:00 A
23	-41		9:20 A	+41		9:45 A
24	-40		10:55 A	+44		12:15 A
25	-43	↓	12:45 P	+40	↓	1:10 P

NOTE: [illegible] CHANGE THAN CHANGES ON HOT AND COLD CYCLE

INITIAL SAMPLE WARRANT

No. 112389

PART INFORMATION

Part Name: Next Generation Speed Control Deactivation Safety Switch — Part Number: F2AC-9F924-AA

Control Item: ☐ Yes ☐ No — Engineering Change Level: _____ Date: _____

Engineering Change Authorization: Bruce Maeroff — Date: _____

Shown on Drawing No.: F2AC-9F924-AA — Part Weight: .062

Reason for Initial Sample:

- ☐ Initial Submission
- ☐ Engineering Change(s)
- ☐ Tooling Transfer
- ☐ Change in Optional Construction or Material
- ☐ Additional, Replacement, or Refurbished Tooling
- ☐ Correction of Discrepancy (Resubmission No. _____)
- ☐ Process Change
- ☐ Change in Subcontractor or Sourc
- ☐ Parts Produced at Additional Locati
- ☐ Other — Please Specify _____

SUPPLIER INFORMATION (Manufacturing Location)

Supplier Name: Texas Instruments — Street Address: 34 Forest St.

City: Attleboro — State: MA — Postal Code: 02703 — Country: USA

Supplier Mfg. Location Code — DUNS: T097K/7325814 — Customer Assigned: _____

CUSTOMER INFORMATION

Customer Name: Ford Motor Co. NAAO — Buyer: Fred Hendershot — Buyer Code: 165

Purchase Order Number: _____ — Sample Acceptance Level: _____

Application: Next GEneration Speed Control Deactivation Safety Switch

RESULTS

The results for dimensional measurements ☒, material tests ☒, and functional (ES) tests ☒ meet all drawing and specificat requirements ☒ Yes ☐ No — PARTIAL

Submission Checklist

- ☒ Checked Print
- ☐ Auxiliary Drawings/Sketches
- ☐ Correct Number of Samples
- ☒ Dimensional Results
- ☐ Material Test Results
- ☒ Certifications
- ☒ Functional (ES) Test Results Partial
- ☐ Product Engineering Approval
- ☒ Control Plan
- ☐ Process Capability Results
- ☒ Process Flow Diagram
- ☒ Gage (Measurement) Studies

Supporting data for all requirements are available upon request.

COMMENTS:

Partial ISW to expedite use of "Quiet"Switch, full submission to be complete by 6/22/92. Bruce Maeroff visited TI on 4/13, 4/14 to review program status.

DECLARATION

I affirm that the samples represented by this warrant are representative of our parts and have been made to the applicable custom drawings and specifications from specified materials, on regular production tooling with no operations other than the regular productio process.

Authorized Signature: Michael DeMattia — Date: 4-13-92

Print Name: MICHAEL DEMATTIA — Title: SQA ENGINEER — Phone No. (508) 699-30

APPROVAL (when required by customer procedure) ☐ Approved ☐ Rejected

Signature _____ — Date _____

Quality 2926

TI-NHTSA 005464

Ford Initial Sample Report – Dimensional

No. 112389

Page ____ of ____

TO BE COMPLETED BY SUPPLIER

SUPPLIER	LOCATION	CODE	PART NUMBER
Texas Instruments Incorporated	Attleboro, MA	T097K	F2AC-9F926-AA

BUYER	CODE	FORD CONSUMER DIV.	NO. OF SAMPLES	PRODUCT ENGRG. DESIGNATED CONTROL ITEM (▽)
				YES ☐ NO ☒

REASON FOR SAMPLES

NEW PART ☐ CHANGED PART ☐ NEW LOCATION ☐ NEW TOOLS ☐ MULTIPLE CAVITY DIES ☐

PART NAME: Next Generation Speed Control Deactivation Switch

BP DATE	MODEL YEAR AND PRODUCT LINE
Pending	92.5 EN53

ES DISPOSITION PENDING	AUTHORIZING DEVIATION NO.
☐	

SAMPLE MADE ON PRODUCTION SET-UP AND TOOLS	ADDITIONAL HAND OR TOOL ROOM WORK PERFORMED	WE HEREBY CERTIFY THE INSPECTION RESULTS BELOW ARE CORRECT AND THAT OUR SAMPLE MEETS FORD MOTOR COMPANY SPECIFICATIONS
YES ☐ NO ☐	YES ☐ NO ☐	

SAMPLE MADE TO BP DATED	DATE INSPECTED	SIGNATURE OF RESPONSIBLE PERSON	TITLE	DATE
		Richard D Watts	Srvc Dlr Eng	4/18/92

CHARACTERISTIC DIMENSION OR SPECIFICATION	CLASS ▽		SUPPLIER INSPECTION RESULTS	CONSUMER VERIFICATION OF INSPECTION RESULTS	PROCESS CAPABILITY STUDY REQUIRED	PROCESS CAPABILITY STUDY COMPLETED
Partial			FAI Results recorded on TI Format			

TO BE COMPLETED BY CONSUMER

DISPOSITION	SERIAL NO.	APPROVED	REJECTED	NOT REQ'D.				
					INSPECTION AND TESTING INSTRUCTIONS APPROVED	YES ☐ NO ☐	SPECIAL BANDS APPROVED	YES ☐ NO ☐ NOT REQ'D ☐
DIMENSIONAL BP DATED	XXXX				INITIAL SAMPLE APPROVAL MUST BE SUPPLEMENTED BY APPROVAL OF FIRST PRODUCTION SHIPMENT	YES ☐ NO ☐	CONTROL PLAN APPROVED	YES ☐ NO ☐ NOT REQ'D ☐
MATERIAL TEST 378b FORM					APPROVED BY STYLING	YES ☐ NO ☐ NOT REQ'D ☐	APPROVED BY FORD ENGINEERING	YES ☐ NO ☐ NOT REQ'D ☐
ES TEST 544 FORM					DIVISION		AUTHORIZED SIGNATURE	DATE

Prod Qual Sp 292a

*DESIGNATED CHARACTERISTIC CLASS

Form 4

ROME STRIP STEEL COMPANY, INC.

530 HENRY ST. BOX 189
ROME, NEW YORK 13440

COMPLIANCE 71

SALES CODE
8050201G

0 1 0 0 0 0 0 0

DATE	INVOICE NO
04/01/92	15355

INVOICE TO: VALENTINE TOOL & STAMPING, INC.
171 W MAIN ST
NORTON, MA 02760

SHIP TO: VALENTINE TOOL & STAMPING, INC.
171 W MAIN ST
NORTON, MA

QUANTITY (LBS)	NO. CLS.	NO. SKID OR COILS	PARTIAL COMPLETE	SHIPPED BY	RT. NO.	C	RN	P	S	SI	MI	CR NO
15,834	034	00	COMP	CAV REX	R42735	04	28	008	013	01	01	03 01

AL VN CO CA

SPECIFICATIONS OF:
CUST. ORDER NO. 13425

COLOR CODE

		HEAT NO	PREPAID COLLECT	STRAPPING	PAPER WRAP	ROLLS	CRATES	BOX
SIZE	.02MM X 50.80MM	72007	PREPAID					
		TEMPER	COILS OR CUT	SKIDS	SKID SIZE	PKG. HT	WASTERS	CORES
	.04000 X 2.0000	H 50 MAX	LOIL	440 LBS	3000			
TOLERANCE		EDGE	LENGTH SPEC	BANDERS	SPACERS	SHROUD	BOARDS	CAPS
+.001 -.001	+.005 -.005	NO3 SLIT	220 PIN 16 30		3/4"			
				BURR	CAMBER	FLATNESS	OIL	T-PCS
+.025 -.025MM	+.127 -.127MM							

CLASS	ASM NO.
ALUM KILD	C-1006

[redacted]

TEST REPORT (7,182 KG) 15,834

Certificate of Compliance

ATTEST: [redacted]
Notary Public, Oneida County
My commission expires 5/31/92

DATE 4/2/92

I certify that the above figures are a true and correct copy of those contained in the records of this corporation.

A. Sinagustino
ROME STRIP STEEL CO., INC.

TI-NHTSA 005486

#3773

9738

REPORT OF PARTIAL ISR TESTING
FORD PASSENGER CAR
ELECTRONIC SPEED CONTROL
DEACTIVATION PRESSURE SWITCH
PS/92/62

TEXAS INSTRUMENTS INCORPORATED
CONTROL PRODUCTS DIVISION
PRECISION CONTROLS DEPARTMENT
34 FOREST STREET
ATTLEBORO, MA 02703

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS — MATERIALS & CONTROLS GROUP, ATTLEBORO, MA 02703	DOC.
DATE 92-04-13		PAGE 1

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1.0 GENERAL

1.1 Customer: Ford Motor Company, Passenger Car Brake Systems Engineering

1.2 TI Part Number: 77PSL3-1

1.3 Customer Part Number: F2AC-9F924-AA

1.4 Specifications: Ford Engineering Specification number (delta) ES-F2VC-9F924-AA

1.5 Date of Completion : 920413

1.6 Quantity of Units Tested: 36

1.7 Disposition of Tested Units:

1.7.1 All devices are retained under quarantine.

1.8 TI test number: 241-11-12
242-03-24

1.9 TI Pressure Switch test report number: PS/92/62

2.0 OBJECTIVE

See Memorandum in Appendix 4.1 which explains the scope, extent, and intention of this partial ISR. A full battery of ES tests is planned in the near future to complete a full ISR submission.

3.0 TEST PROCEDURES AND RESULTS

All switches were tested to Ford Engineering Specification (delta) ES-F2VC-9F924-AA, sections III. E. and J., with initial and final characterizations consisting of III. A. Raw data is included in Appendix 4.2 and 4.3.

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 92-04-13		PAGE 1

3.1 CALIBRATION

3.1.1 Procedure: Calibration is checked at room temperature using ambient air as the pressure medium. Calibration settings, as specified on the part drawing, are actuation (electrical contacts opening) at 90 - 160 psig, and release (contacts reclosing) at 20 psig minimum. For the purpose of stabilization, actuation values are recorded on the sixth cycle, after subjecting the switch to two (2) pressure cycles to 800 psig minimum and back to zero, followed by three (3) cycles to 1.1 times actuation pressure minimum and back to zero. The change in continuity is measured while conducting 750 +/- 50 milliamps at 13.0 +/- 1.0 volts DC.

3.1.2 Equipment: Custom TI designed and built pressure check station, using Heise Model CM96365 pressure gage calibrated on a regular quarterly schedule. Continuity change measured on custom TI designed and built equipment meeting the above electrical parameters.

3.1.3 Initial Results: All 36 devices tested were found to be within specification.

3.1.4 Final Results: All 36 devices tested were found to be within specification.

3.2 VOLTAGE DROP

3.2.1 Equipment: Fluke Model 8020B Digital Multimeter, calibrated quarterly, used in conjunction with the continuity equipment in 3.1.2.

3.2.3 Final results: Performed on the Impulse devices only, as a check of degradation of the electrical contacts during the powered portion of the Impulse cycles. All values are significantly below the specification of 200 millivolts maximum.

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 92-08-11		PAGE

3.3 IMPULSE

3.3.1 Devices tested: 242-03-01 thru -24

3.3.2 Procedure: Twenty four devices were run on the Impulse test as specified in the ES, with the exception that no devices were run on the Fluid Resistance test due to time constraints. The cycle rate used was actually 163 cycles per minute, again due to time constraints. All other parameters were as specified in the ES.

3.3.3 Equipment: Thermotron model S-4 Mini-Max environmental chamber capable of -55 C to +200 C, humidity uncontrolled. Custom TI designed and built cycler, utilizing Enerpak integrated hydraulic pressure source, TI315 Programmable Logic Controller, Moog servovalve and controller, Simpson signal generator, and opposing-piston fluid isolators, to produce a hydraulic-fluid flow-type primary with a brake-fluid dead-end-type secondary terminated with a 24-station manifold equipped with internal heaters. Capability to 5 Hz at 0-1450 psig cycle. Custom TI designed and built 24 station Switch Monitor Circuit which automatically stops the cycler in the event of abnormal switch action, defined as continuity change which does not track the signal from the signal generator. Thermocouple readouts calibrated quarterly. 12-station inductive load bank, per the schematic found in the ES (frame 18 of 18; figure 4.) used in the last 25K cycles.

3.3.4 Results: All devices passed.

3.4 TERMINAL STRENGTH

3.4.1 Devices tested: 241-11-01 thru -12

3.4.2 Equipment: Custom TI designed and built fixtures for gaging terminal movement after force application and for application of impact via a pendulum. This equipment is regularly used on the 57PS/77PS assembly lines in testing to TI Quality Assurance Specifications.

3.4.3 Results: All twelve devices passed the acceptance criteria found in the ES.

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 92-04-13		PAGE 4

Appendix. 4.1
Memorandum

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 82-06-13		PAGE 1

M E M O R A N D U M
9 April 1992 - Page 1 of 3

To: Bruce Maeroff — Ford Motor Co. Fax: 313-323-1924

CC: Dave Czarn — TI Design Eng. Supv.
Norm Freda — TI Field Sales Fax: 313-553-1673
Elaine Rose — TI QRA

Fr: Steve Offiler — TI Design Eng.

RE: EN53 PARTIAL ISR / VALIDATION PLAN FOR F2AC-9F924-AA

Bruce, it is my understanding that we'll be pulling together an ISR package for your perusal during your visit to our plant on Monday, 13 April. This package will be essentially based upon similarity to the F2VC-9F924-AB ISR, since only two components will be changing. Those two components are the pressure-sensing disc and the molded plastic base (switch housing). The base will undergo a First Article Inspection (FAI) which is a detailed study of all print dimensions, and material certifications from the manufacturer will be included. Below you will find detail of the ES tests which will/will not be completed for the Partial ISR (from ES F2VC-9F924-AA):

III. A. Calibration, B. Voltage Drop, C. Current Leak, D. Proof.

Only the Calibration test will be performed on the 24 devices undergoing the Impulse test (E.) below.

III. E. Impulse.

A complete 500,000 cycle Impulse test will be performed per the ES, with the exception that no devices will undergo the Fluid Resistance Test (M.) beforehand. The Impulse test is an excellent test of the ability of the entire device to withstand mechanical (pressure) cycles combined with electrical loads at elevated temperatures, and is a key test to validate the pressure-sensing disc.

III. F. Burst.

Changes to the base and disc should have no effect on burst performance.

III. G. Humidity, M. Fluid Resistance.

The new base material, General Electric Noryl GTX 830, has been tested previously by TI per Ford ES F3AH-19D594-AA along with a host of other engineering plastics. This CCD ES includes Humidity, and Fluid Resistance tests which are similar to the tests called out in ES F2VC-9F924-AA. Noryl was found to pass all tests.

III. H. Salt Spray.

It has been deemed unlikely that changes to the base and disc would have any effect on salt spray performance. Bear in mind that the Fluid Resistance test invoked above included a saturated salt solution, helping to prove that chemical attack will not be an issue; furthermore the environmental sealing system has not been changed in any way providing confidence that salt ingress during salt spray testing will not be an issue either.

III. I. Vibration.

Changes to the base and disc should have no effect on vibration performance.

III. J. Terminal Strength.

The terminal strength test will be performed per the ES, with the exception that no devices will undergo the Fluid Resistance Test (M.) beforehand.

III. K. Vacuum.

Changes to the base and disc should have no effect on vacuum performance.

III. L. Temperature Cycle.

Extensive thermal characterizations have been performed on several materials recently, including the Celanex 4300 PBT material presently used on F2VC-9F924-AB, as well as Ultem, Noryl, and Fortron. While these results are presently undocumented officially, the consistently higher performance of Noryl in terms of dimensional stability relative to Celanex during these tests gives high confidence that changes to the base should have no effect on Thermal Cycle performance.

920409

Appendix 4.2
Data # 242

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 91/04/13		PAGE 11

PRESSURE SWITCH DATA Form 21605 TEST NO. 242-03-24

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL. DATE
77PSL3-1	920410	Steve Official	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
Jeffrey D. Domenico	920410	920413	

PROJECT TITLE Speed Control

CUSTOMER

PURPOSE OF TEST Partial ISA of 77PSL3-1

PROCEDURE: Impulse test, per Ford ES, of 24 production devices.

Device #	Init Act - Rel		Post Act - Rel	Mv drop					
242-03-01	119 - 103	I	93 - 109	10 3 ✓					
-02	122 - 119		116 - 110	3.6					
-03	136 - 101	M	134 - 102	5.6					
-04	135 - 114	P	127 - 110	2.6					
-05	139 - 115	U	132 - 107	25.7					
-06	133 - 103	L	129 - 102	3.3					
-07	136 - 116		129 - 109	6.3					
-08	127 - 113	S	126 - 110	23.5					
-09	141 - 118	C	141 - 113	0.5					
-10	134 - 122		132 - 105	4.7					
-11	140 - 121	T	140 - 114	7.8					
-12	132 - 109	E	129 - 105	4.2					
-13	139 - 119	S	126 - 105	3.2					
-14	141 - 117	T	135 - 107	10.3					
-15	134 - 109		135 - 108	9.7					
-16	129 - 113		127 - 111	5.8					
-17	128 - 118		128 - 111	9.7					
-18	135 - 116		137 - 109	4.8					
-19	129 - 102		125 - 107	5.6					
-20	128 - 103		125 - 107	7.0					
-21	128 - 113		140 - 113	6.9					
-22	135 - 101		133 - 101	15.1					
-23	112 - 101		130 - 101	6.6					
-24	114 - 101		128 - 101	6.1					

Appendix 4.3
Data # 241

TI-NHTSA 005479

TEST LOT NO.	TEST	DEVICE
TESTED BY		
APPROVED BY	TEXAS INSTRUMENTS MATERIALS & CONTROLS GROUP ATTLEBORO, MA 02703	DOC.
DATE 92-04-13		PAGE 11

PRESSURE SWITCH DATA Form 21605 TEST NO. 241-11-12

DEVICE	DATE REQUESTED	REQUESTED BY	REQUESTED COMPL DATE
7 PS	920409	STAFF OFFICER	
PERFORMED BY	**DATE STARTED**	**DATE COMPLETED**	**APPROVED BY**
J. Ch Divers	920409	920410	

PROJECT TITLE: Speed Control

CUSTOMER:

PURPOSE OF TEST: Part of Noryl base/silent disc validation

PROCEDURE: Production build 7PS with natural Noryl bases and 1st "F" silent discs. Characterize in pressure tester. Run standard terminal strength tests per Ford ES and recharacterize.

Device #	20 psi Act/Pol	40 psi Act/Pol
241-11-01	124 - 102	119 - 103
-02	127 - 95	110 - 95
-03	114 - 96	121 - 96
-04	114 - 100	126 - 101
-05	114 - 95	126 - 97
-06	131 - 101	132 - 103
-07	132 - 101	132 - 103
-08	120 - 93	129 - 96
-09	132 - 102	134 - 107
-10	114 - 93	119 - 101
-11	121 - 95	129 - 100
-12	131 - 101	131 - 108