EA02-025

TEXAS INSTRUMENTS, INC.'S

9/10/03 ATTACHMENT TO ODI

REQUEST #3

BOX 5

PARTS A - P

PART N

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

NOTE: MARKED PRINT DENOTES CAVITY # 1A

	BLUEPRINT SPEC	CAVITY # 2A ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4C ACTUAL	CAVITY # 5B ACTUAL	CAVITY # 6C ACTUAL	COMMENTS
1	11.92 - 11.68	11.68	11.69	11.69	11.78	11.69	
2	1.45 - 1.24	1.42	1.29	1.33	1.26	1.31	
3	19.81 - 19.45	19.62	19.64	19.64	19.68	19.66	
4	16.76 - 16.56	16.62	16.64	16.64	16.64	16.65	
5	3.05 - 2.84	2.91	2.91	2.91	2.91	2.90	
6	11.90 - 11.40	11.78	11.79	11.78	11.77	11.78	
7	3.10 - 2.79	2.84 2.85	2.83 2.84	2.84 2.85	2.86 2.86	2.89 2.85	
8	8.38 - 8.12	8.43 8.36	8.54 8.57	8.45 8.31	8.31 8.35	8.30 8.34	
9	COLOR : BROWN	OK	OK	OK	OK	OK	
10	2.06 - 1.85	2.695	2.685	2.660	2.785	2.685	TOOL TO BE CORRECTED

THE PASS CAR (F2VC-[redacted]LIGHTNING (FT3A-9F924-AA)SWITCHES ARE PRODUCED OFF OF THE SAME PRODUCTION[redacted]

THE (FT3A-9F924-AA) FULL DIMENSIONAL ANALYSIS FOLLOWS. DIMENSIONS # 1-10 LISTED ABOVE PERTAIN TO THE POLARITY KEY FEATURE WHICH IS DIFFERENT ON THE(F2VC-9F924-AB) SWITCH.

TEXAS INSTRUMENTS INCORPORATED • 34 FOREST STREET • ATTLEBORO, MA 02703
508-699-2800 • TELEX 95-7709 TWX 710-348-0696 • CABLE TEXINS

FINAL INSPECTION 77PSL3-1

DATE:

CUSTOMER P/N F2AC-9F92A-AA

DISC LOT		MAT.I.D.		DISC LOT		MAT.I.D.
REEL #		CUP LOT #		REEL #		CUP LOT #
LOT #		CONV.LOT		LOT #		CONV. LOT
WASHER LOT		QTY.		WASHER LOT		QTY.

	TEST	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
A	ACTUATION																		
	RELEASE																		
2	VISUAL																		
3	DIMENSION	---	---	---	---	---					---	---	---	---	---				
4B	VOLT DROP	---	---	---	---	---					---	---	---	---	---				
5C	CUR.LEAK	---	---	---	---	---					---	---	---	---	---				
6D	PROOF	---	---	---	---	---					---	---	---	---	---				
7	IMPULSE						---	---	---	---						---	---	---	---
A	ACTUATION																		
	RELEASE																		
B	VOLT-DROP						---	---	---	---						---	---	---	---
C	CUR.LEAK						---	---	---	---						---	---	---	---
D	PROOF						---	---	---	---						---	---	---	---
9J	TERM. STR	---	---	---	---	---					---	---	---	---	---				
A	ACTUATION	---	---	---	---	---					---	---	---	---	---				
	RELEASE	---	---	---	---	---					---	---	---	---	---				
B	VOLT DROP	---	---	---	---	---					---	---	---	---	---				
C	CUR.LEAK	---	---	---	---	---					---	---	---	---	---				
D	PROOF	---	---	---	---	---					---	---	---	---	---				
9	BURST	---	---	---	---	---					---	---	---	---	---				

INSPECTION TEST SUMMARY

TEXAS INSTRUMENTS

34 FOREST STREET, ATTLEBORO, MA 02703

PART NO. 77PS — 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: Michael DiMatteo — DATE: 4/13/92

LOT NO.	DATE	SUB NO.	LOT SIZE	SAMPLE SIZE	DISP. AC.	DISP. RE.	REA. NO.	INSP. NO.
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

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 Tst	Terminal Strength	Dimensional	
AQL	00Z	5/	5/	5/					9	4	5	4	4	4	4	4	

TI-NHTSA 7998

FORM 22426

DRAWINGS AVAILABLE UPON REQUEST

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

ENVELOPE DIMENSIONS TO BASE ONLY

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
1	11.40 - 11.90	11.806	11.817	11.817	11.794
2	~~12.90 - 13.21~~	13.043	13.043	13.072	13.094
3	16.56 - 16.76	16.638	16.652	16.671	16.673
		16.661	----	16.680	16.668
3	19.45 - 19.81	19.752	19.754	19.787	19.799
4	2.84 - 3.05	2.930	2.99	2.944	2.951
	⌖ 0.1 Ⓜ A	1.697 0.003	1.923 0.023	1.945 0.045	1.885 0.015
6	31DEG +/- 2DEG	29DEG 29MIN	29DEG 38MIN	29DEG 58MIN	29DEG 34MIN
5	1.85 - 2.06	1.927	1.966	1.969	1.978
6	1.24 - 1.55	1.365	1.387	1.423	1.400
7	1.24 - 1.45	1.269	1.268	1.275	1.308
8	11.60 - 11.92	11.768	11.768	11.753	11.777
		11.729	11.740	11.789	11.747
11	13.43 - 13.85	13.010	13.769	13.786	13.647
9	0.25 - 0.75	0.490 0.475	0.519 0.529	0.573 0.635	0.618 0.593
10	2.79 - 3.10	2.900	2.909	2.912	2.908
	2 PL	2.903	2.915	2.913	2.911

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
11	0.05 - 0.26	0.151	0.153	0.124	0.076
	2 PL	0.113	0.142	0.163	0.147
12	19.05 MAX	18.667	18.709	18.671	18.704
		18.701	18.748	18.565	18.757
10	12.59 - 13.11	12.800	12.829	12.802	12.819
		12.829	12.800	12.842	12.824
13	0.69 - 1.30	1.095	1.105	1.122	1.175
14	2.79 - 3.41	3.076	3.0612	3.152	3.109
19	7.20 - 7.75	7.579	7.501	7.514	7.545
15	6.60 - 6.81	6.701	6.679	6.715	6.677
21	29DEG +/- 2DEG	MEASURED	29DEG 24MIN	ON CROSS	SECTIONED
	4 X	PART	30DEG 06MIN	----	----
		----	29DEG 58MIN	----	----
		----	29DEG 47MIN	----	----
16	NO FLASH/BURRS	SLIGHT	FLASH ON	EDGES	@ 10X

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TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
19	8.30-8.72 2X	8.535	8.553	8.484	8.578
		8.726	8.512	8.570	8.519
24	2.15-2.42 2X	2.162	2.171	2.282	2.271
		2.212	2.236	2.237	----
18	25DEG +/- 2DEG	24DEG 25MIN	24DEG 56MIN	24DEG 47MIN	24DEG 06MIN
	2 X	24DEG 10MIN	24DEG 14MIN	24DEG 06MIN	24DEG 43MIN
26	45DEG +/- 2DEG	46DEG 10MIN	42DEG 44MIN	43DEG 44MIN	45DEG 03MIN
	4PL	44DEG 35MIN	43DEG 47MIN	44DEG 47MIN	45DEG 01MIN
		45DEG 22MIN	44DEG 47MIN	45DEG 49MIN	46DEG 11MIN
		44DEG 08MIN	45DEG 37MIN	46DEG 38MIN	43DEG 50MIN
17	(71.5DEG) 2X	72DEG --	71DEG 31MIN	71DEG 20MIN	72DEG 01MIN
		71DEG 07MIN	72DEG --	72DEG 10MIN	71DEG 12MIN
28	1.42-1.63 2X	1.538	1.538	1.582	1.603
		1.539	1.612	1.602	1.596
29	0.35-0.66 4X	0.546 0.547	0.570 0.590	0.598 0.580	0.581 0.556
		0.592 0.614	0.561 0.574	0.576 0.603	0.558 0.575
30	0.35-0.66 4X	0.501 0.471	0.467 0.502	0.459 0.520	0.477 0.443
		0.378 0.417	0.320 0.344	0.357 0.382	0.388 0.398
		0.493 0.506	0.494 0.539	0.436 0.482	0.486 0.518
		0.382 0.395	0.450 0.484	0.384 0.393	0.373 0.409

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
31	0.86 - 1.17	1.023	1.012	1.026	1.021
	4 X	0.988	0.998	0.988	1.041
		1.023	0.992	1.026	1.014
		0.976	0.978	0.991	0.984
32	TERM. HOUSING	BLACK ONLY	AVAILABLE	TO QUALIFY	MOLD
	NATURAL:				

A 1.. L46

A 50.. L94

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[illegible] • TWX 910-[illegible] • CABLE: TEXINS

TEXAS INSTRUMENTS

ATTLEBORO, MASSACHUSETTS 02703

PAGE 1 OF

SAMPLE REPORT

(77PSL3-1)

REASON FOR REPORT		VENDOR	P.O.	PART NO.	REV.
NEW PART				77PSL2-1	G
REPLACEMENT TOOL.		REPORT REQ. BY: E. Rosa	DATE: 4/02/92	INSPECTED BY: Elaine Gravel	DATE: 4/7
CORRECTED TOOL.					
REPAIRED TOOL.					
REVIEW					
OTHER Dimensional Analysis	X				

THE DIMENSIONS INDICATED BELOW REPRESENT TEXAS INSTRUMENTS' FINDINGS REGARDING ACTUAL VALUES FOR ALL CHARACTERISTICS MEASURED. IN CASES WHERE ACTUAL VALUES DEVIATE FROM THE SPECIFIED DIMENSIONS, THE DISPOSITION MUST INDICATE THE REQUIRED ACTION FOR EACH NON-CONFORMANCE IN THE APPROPRIATE COLUMN.

(CIRCLE ALL OUT OF TOLERANCE DIMENSIONS)

		A	B	C	D	Inspect Method	DISPOSITION	
1	11.40 - 11.90	11.806	11.797	11.817	11.794	TM		
2	12.80 - 13.21	13.043	13.043	13.072	13.084	TM		
3	16.56 - 16.96	[illegible]	16.658	[illegible]	[illegible]	MIC		
4	19.45 - 19.81	19.752	19.754	19.787	19.799	MIC		
5	2.84 - 3.05	2.930	2.93	2.944	2.951	MIC		
	⌖ 0.1 Ⓜ A	[illegible]	[illegible]	[illegible]	[illegible]	TM		
6	31° ± 2°	29° 09'	29° 38'	29° 57'	29° 34'			
7	1.85 - 2.06	1.927	1.966	1.969	1.978			
8	1.24 - 1.55	1.365	1.387	1.423	1.400			
9	1.24 - 1.45	1.369	[illegible]	1.275	1.308	↓		
10	11.60 - 11.92	[illegible]	[illegible]	[illegible]	[illegible]	MIC		
11	13.43 - 13.85	13.010	13.769	13.786	13.447	TM		
12	0.25 - 0.75	[illegible]	[illegible]	[illegible]	[illegible]			
13	2.79 - 3.10 4X 1	2.900	2.909	2.912	2.908	↓		
~~14~~	2	[illegible]	2.915	2.913	2.911	MIC		
14	0.05 - 0.26 4X	[illegible]	[illegible]	[illegible]	[illegible]	TM		
15	⌀ 19.05 MAX.	[illegible]	[illegible]	[illegible]	[illegible]	TM		
16	12.59 - 13.11	[illegible]	[illegible]	[illegible]	[illegible]	IND		
N/A ~~17~~	11.65 - 12.17	N/A NO TERMINALS →						
17 ~~18~~	0.60 - 1.30	1.025	1.105	1.132	1.135	TM		
18 ~~19~~	2.79 - 3.41	3.076	3.061	3.152	3.109			
19 ~~20~~	7.23 - 7.75	7.579	7.501	7.514	7.535			
20 ~~21~~	6.60 - 6.81	6.701	6.673	6.715	6.677			
21 ~~22~~	29° ± 8° 4X 1 2	—	[illegible]	—	—			
	3 4	—	[illegible]	—	—			
22 ~~23~~	No flash or burrs [illegible]	Slight flash on edges				↓	② 10X	

REMARKS AND/OR INSTRUCTIONS:

– Abryl GTX 830 –

for 77PSL3-1 (NEW MATERIAL)

DISPOSITION: TOOL APPROVED FOR PROD. | RESUBMISSION REQ'D

MFG. ENG.: | QRA ENG.:

PURCH. AGENT:

FORM NO. 2079A

TI-NHTSA 8005

TEXAS INSTRUMENTS

ATTLEBORO, MASSACHUSETTS 02703

PAGE 2 O

SAMPLE REPORT

(77PSL3-1)

REASON FOR REPORT		VENDOR		P.O.	PART NO.	NE
NEW PART					77PSL2-1	6
REPLACEMENT TOOL.		REPORT REQ. BY	DATE	INSPECTED BY		DA
CORRECTED TOOL.		E. Rose	4/02/92			4/
REPAIRED TOOL.						
REVIEW		THE DIMENSIONS INDICATED BELOW REPRESENT TEXAS INSTRUMENTS' FINDINGS REGARDIN ACTUAL VALUES FOR ALL CHARACTERICS MEASURED. IN CASES WHERE ACTUAL VALUES DI FROM THE SPECIFIED DIMENSIONS, THE DISPOSITION MUST INDICATE THE REQUIRED ACTIO EACH NON-CONFORMANCE IN THE APPROPRIATE COLUMN.				
OTHER						

	(CIRCLE ALL OUT OF TOLERANCE DIMENSIONS)					DISPOSITION		
		A	B	C	D			
~~22~~	Load on surface					TM		
~~22A~~ 23A	1.80 - 2.218 2X 1	1.651	1.651	1.651	1.651			
	2	1.651	1.778	1.651	1.651			
23 ~~24~~	8.30 - 8.72 2X 1	8.535	8.553	8.484	8.578			
	2	8.786	8.612	8.570	8.519			
24 ~~25~~	2.15 - 2.42 2X 1	2.162	2.191	2.292				
	2	2.212	2.236	2.237	2.271			
25 ~~26~~	25° ± 2° 2X 1	24° 25'	24° 52'	24° 47'	24° 06'			
	2	24° 18'	24° 14'	24° 06'	24° 43'			
26 ~~27~~	45° ± 2° 4 places 1	[illegible]	[illegible]	[illegible]	[illegible]			
	2	44° 35'	45° 49'	44° 47'	45° 01'			
	3	[illegible]	[illegible]	[illegible]	[illegible]			
	4	44° 08'	45° 37'	46° 38'	45° 50'			
27 ~~28~~	(71.5°) 2X 1	72°	71° 31'	71° 20'	72° 01'			
	2	71° 07'	72°	72° 10'	71° 12'			
28 ~~29~~	1.42 - 1.63 2X 1	1.538	1.538	1.582	1.603			
	2	1.539	1.612	1.602	1.596			
29 ~~30~~	0.35 - 0.66 4X 1	0.586	0.570	0.581	0.581			
	2	0.547	0.534	0.580	0.556			
	3	0.572	0.561	0.576	0.558			
	4	0.614	0.574	0.565	0.575			
30 ~~31~~	0.35 - 0.66 4X 1	[illegible]	[illegible]	[illegible]	[illegible]			
	2	[illegible]	[illegible]	[illegible]	[illegible]			
	3	[illegible]	[illegible]	[illegible]	[illegible]			
	4	[illegible]	[illegible]	[illegible]	[illegible]			
31 ~~32~~	0.86 - 1.17 4X 1	1.023	1.078	1.046	1.021			
	2	0.955	0.992	0.988	1.041			
	3	1.023	0.978	1.036	1.014			
	4	0.998	0.977	0.991	0.984	↓		
32 ~~33~~	Term. housing Brown	black	ok per Elaine Rose.	Trying		new material		

REMARKS AND/OR INSTRUCTIONS:

DISPOSITION: TOOL APPROVED FOR PROD.		RESUBMISSION REQ'D
MFG. ENG.:	QRA ENG.:	
	PURCH. AGENT:	

FORM NO. [illegible]

Elaine - I'll be out

4/9 - begin assembling

ISR for Quiet Disc

CCPS — Get P/N

etc. See you Friday

MD

Do: Ford Format
Control Plan
Get: from Mike

Customer
visit for me
Mon. 4-13-92

-MSG M#= 206305 FR=ZARN TO=MD3 SENT=04/07/92 11:05 AM
R#=060 ST-C DIV-0050 CC-00101 SY=ZARN AT=04/07/92 11:05 AM

APRIL 7, 1992

TO:	STEVE OFFILER	SBO1	**********
	BILL SWEET	WS4	PLEASE HAND DELIVER MSG.
	MATT SELLERS	MJS2	THANK YOU!
	JIM WATT	PCQA	**********
	DICK GARIEPY	MFPC	
	DALE SOGGE	FFUN	
	TED BALLARD	ETB	
	MIKE DEMATTIA	MD3	
	NORM FREDA	WHLZ	
	RUSTY STRUBLE	RCS2	
	CHARLIE DOUGLAS	CMP1	
CC:	TOM CHARBONEAU	TC	
	RAY TOURANGEAU	RGT2	
	ANDY McGUIRK	PCQA	
	BILL CONGDON	MFPC	
	JOHN KOURTESIS	MDES	
	STEVE WALTERS	MLDG	
	JEFF DIDOMENICO	ELB	
	RICH TURNER	ELB	
	GARY SNYDER	CPPC	
	STEVE MAJOR	SMFH	
	DICK MULHERN	PCTL	
FR:	DAVE CZARN	ZARN	

RE: CCPS QUIET SWITCH

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

****
NEXT MEETING:
****

DATE: TUESDAY 4/07
TIME: 3:30
PLACE: CAFETERIA CUBE

TERMINOLOGY:
AB1 SWITCH = LOW DIFF'L W/SNUBBER
AB2 SWITCH = ULTRA-LOW DIFF'L - NO SNUBBER
AB3 SWITCH = ULTRA-LOW DIFF'L W/SNUBBER (TRUCK UL DISCS)
AB4 SWITCH = " " ("F" LOT DISCS)

DESIGN ASSUMPTIONS:

THERE WILL BE TWO TYPES OF P/C SWITCHES; ONE FOR EN53 PLATFORM @ -110K/YR (2K/WK) AND ONE FOR SHO TAURUS @ -20K/YR. BOTH WILL USE NORYL BASES; THE LATTER WILL INCLUDE A SNUBBER.

BASE: NORYL GTX 830 - COLOR:NATURAL
DISC: 3-5 PSIG DIFFERENTIAL @ 500F H.T. TO ESTABLISH SETTINGS
POST H.T. @ 600F
NEXPORT: NO SNUBBER FOR EN53 PLATFORM
SNUBBER FOR SHO TAURUS PLATFORM
(DEVICE P/N TO DIFFERENTIATE)

.PINNING RANGE TO BE ESTABLISHED TO ALLOW FOR AN
ESTIMATED (-)1 mil SHIFT AT -40C AND (+)3 mil SHIFT AT +150C
.P/N TO BE SUPPLIED BY FORD ON 4/9

MFG. ASSUMPTIONS:

.APPROXIMATE 6 MIL PINNING RANGE TOTAL
.SENSOR ASM W/PIN TO BE MEASURED TO ESTABLISH PIN TARGET
.HYPOT TEST FOR LONG PINS

****
ACTIONS
****
P = PRIORITY ITEM

MARKETING/FIELD SALES

P UPDATED GANTT CHART BY WED. 4/8 — DOUGLAS
. GET P/N's FOR EN53 AND SHO SWITCHES — FREDA
P LETTER OUTLINING QUIET SW. RISKS — SNYDER
P PRELIMINARY QUOTE FOR AB3's — DOUGLAS
BY WED. 4/8

DESIGN ENG.

. OUTLINE PROPOSED BUILD PROCEDURE — SOGGE
. 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.)
P SNUBBER DESIGN — SOGGE
(PER 4/7 DISCUSSION W/MAEROFF, FULLY MACHINED
HEXPORTS OK FOR MONDAY
P 20 AB3 SWITCHES FOR HAND DELIV. — OFFILER
MON. 4/13 - W/MOD. SHOP SNUB HEXPORTS

. PRINTS:
P BASE (ADD -3 AS NAT'L NORYL/OFFSET) — OFFILER
P DISC (NEW SET-UP) — SOGGE
- ENVELOPE DRAWINGS (WHEN REQUESTED) — CZARN
P PARTS LISTS (UPDATE) — OFFILER
(START W/ HAND MARKED COPY)
P THERMAL TESTING - NORYL — SOGGE
P THERMAL TESTING - NORYL(USING CYCLER) — OFFILER
. WEIBULL TESTING FOR M. SPEARS — OFFILER
P SHIP 9 AB3's TO NORM TUES. 4/7 — OFFILER
P SHIP POST-IMPULSE AB2'S TO NORM 4/7 — OFFILER
. EVALUATE PILOT RUN DEVICES — SOGGE
- HYPOT CHECK, DIMENSIONAL, ETC.

MANUFACTURING ENG./MECHANIZATION

P PROCESS FLOW — SELLERS/ SWEET
. PROCESS SPECS — SELLERS
P PILOT RUNS BEGINNING 4/7 — SWEET/ BALTHAZAR
. SET-UP SPC FILES — SELLERS
. DEVELOP FIXTURING, ETC. — SELLERS
. REVIEW PFMEA — SELLERS

. IDENTIFY REQ'D MECHANIZATION WORK	SELLERS	
P PRIORITIZE MECH. WORK - SOFTWARE CHANGES TO B.A.M. - FIXTURING ?	KOURTESIS	

DISC MFG. ENG.

P DEFINE PROCESS FOR QUIET DISC	BALLARD	
. DEVELOP FIXTURING, ETC.	BALLARD	
P PROVIDE PROD'N DISC LOTS AS NEEDED (BEGINNING 4/7)	BALLARD	
P COMMUNICATE COST IMPACT TO MKTG. BY 4/8 - IF ANY		

difference in Base L2-1/L3-1 disc
copy P/C plan!

MANUFACTURING

. REVIEW PROCESS FLOW TO ID ANY AREAS THAT NEED FURTHER WORK	GARIEPY	
. MECHANISM TO AVOID MIXING PARTS	GARIEPY	
P BUILD 1K AB2's FOR AIR SHIP FRI 4/10	GARIEPY/ STRUBLE	****CRITICAL ****ITEM
(MAY SHIP TO DANA OR ONTARIO; NEED ANSWER ASAP NORM)		

color
NATURAL / Quiet disc with warranty & paperwork ?

QUALITY

F8AC-9F924-AA → 77PSL3-1

P PARTIAL ISR FOR EN53 PROD'N NEEDS TO BE SUBMITTED BY MON. 4/13	DEMATTIA	. Basic Tests - ASAP
P FAI - SW. W/NORYL BASE - ENV. DWG.	DEMATTIA	Monday

(MIKE, I FIGURED JIM'S ACTION WOULD DEFAULT TO YOU (?))

MARK up Control plan: Add Hypot

PURCHASING

P HAVE ELCO QUOTE SNUBBER W/2nd OPS	KOTCH

PRODUCTION CONTROL

P ORDER BASES/DISCS FOR QUIET SW. (NEED TO BUILD 1K AB2"S BY 4/10)	STRUBLE

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
* 25K POWERED IMPULSE TEST 60 MIL OFFSET LOT	OFFILER comp.
. REPEAT THERMAL CHARACT. AFTER IMPULSE	OFFILER

ON ABOVE 2 LOTS

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

REGARDS,
DAVE CZARN
\1-QUIET

77PSL3-1

Info for Ford

EN53 platform

what is partial FPI

Norm, Freda

Thurs. 4-8-92 2:00pm

Bruce Macroff

Steve to add ES test results

Full ISIR due May 22, 1992

DRAWINGS AVAILABLE UPON REQUEST

Product Quality Documentation

CERTIFICATE OF COMPLIA

Customer Order Number	Customer Part Number	GE Requisition Number	Material, Grade and Color
SAMPLE/SCHEDULE		1291496/1	NORYL GTX830 111

Lot Number	Qty. Shipped	U.M.	Shipped From	Date Shipped	Shipper's Numb
[illegible]	100	LB	MASE SERVICE INC	04/06/92	01329195

It is hereby certified that the product indicated above conforms to our standard internal specifications for the designated material. This certification is subject to our standard conditions of sale applying to products sold by the General Electric Company.

Specification: 77PSL3-1 - NATURAL -

Specification Originator: Noryl GTX 830

Specification Comment: Base Mat.

TEST	REFERENCE	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA:				
HDT @264 PSI - 1/4"	ASTM D648	450.0 DEG F MINIMUM	460.0 DEG F	238 DEG C
NOTCHED IZOD IMPACT-1/8"	ASTM D256	1.5 FT-LB/IN MINIMUM	2.0 FT-LB/IN	107.0 J/M
% ELONGATION	ASTM D638	4 % MINIMUM	8 %	
TENSILE YIELD	ASTM D638	20,000 PSI MINIMUM	25,690 PSI	169.9 MPA
FLEXURAL MODULUS	ASTM D790	1,000,000 PSI MINIMUM	1,265,000 PSI	8,715.9 MPA
FLEXURAL STR @ YIELD	ASTM D790	29,000 PSI MINIMUM	37,930 PSI	261.6 MPA
SPECIFIC GRAVITY	ASTM D792	1.31-1.35 G/CC		1.33 G/CC
% MOISTURE CONTENT	KARL FISCHER	0.50 % MAXIMUM	0.09 %	
PRODUCT AUDIT DATA:			DATE OF LAST AUDIT: 05/91	
FLAMMABILITY,.100" THICK	UL94S5.302	4.00 IN/MIN MAXIMUM	SELF-EXTINGUISHING AND BURN RATE	

ELAINE

THESE ARE THE CERTS YOU REQUESTED FOR 46515-3

RE

If you have any questions o

RON BOTELHO

X 1559

GINNY G.....

1-618-472-3800

[illegible] JIM KEARN

TI-NHTSA 8015

Initial Sample Report – Dimensional

No. 112389

Page ____ of ____

TO BE COMPLETED BY SUPPLIER

SUPPLIER	LOCATION	CODE	PART NUMBER
Texas Instruments	Attleboro, Ma.	T097K	F2AC-9F924-AA

BUYER	CODE	FORD CONSUMER DIV.	NO. OF SAMPLES	PRODUCT SAFETY 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 Safety Switch

SIP DATE	MODEL YEAR AND PRODUCT LINE

SE DISPOSITION PENDING ☐ | AUTHORIZING DEVIATION NO.

SAMPLE MADE ON PRODUCTION SET-UP AND TOOLS	YES ☐ NO ☐	ADDITIONAL HAND OR TOOL ROOM WORK PERFORMED	YES ☐ NO ☐	WE HEREBY CERTIFY THE INSPECTION RESULTS BELOW ARE CORRECT AND THAT OUR SAMPLE MEETS FORD MOTOR COMPANY SPECIFICATIONS
SAMPLE TO HAVE NO SIP DATED		DATE INSPECTED		SIGNATURE OF RESPONSIBLE OFFICIAL / TITLE / DATE

CHARACTERISTIC DESIGNATION OR SPECIFICATION	CLASS ▽		SUPPLIER INSPECTION RESULTS	CONSUMER VERIFICATION OF INSPECTION RESULTS	PROCESS CAPABILITY STUDY REQUIRED	PROCESS CAPABILITY STUDY COMPLETED
Partial			FAI results recorded on T.I. Format			

TO BE COMPLETED BY CONSUMER

DISPOSITION	SERIAL NO.	APPROVED	REJECTED	NOT APPL.	DRAWING AND TIMING DIAGRAMS APPROVED	SPECIAL GAGES APPROVED	CONTROL PLAN APPROVED	APPROVED BY STYLING	APPROVED BY
CONDITIONAL SIP DATED	2000				INITIAL SAMPLE APPROVAL MEETS ALL REQUIREMENTS OF PART SPECIFICATION STATEMENT				
MATERIAL TEST SAMPLE									
SE SAMPLE									

YES ☐ NO ☐ NOT REQ'D ☐ | DIVISION | AUTHORIZED SIGNATURE | DATE

FORM E-52 292a

*DESIGNATED CHARACTERISTIC CLASS
▽ – CONTROL ITEM

COPY 1

TI-NHTSA 8016

INITIAL SAMPLE WARRANT

No. 112389

PART INFORMATION

Part Name NEXT Generation Speed Control Deactivation Safety Switch Part Number F2AC-9F924-AB

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

Engineering Change Authorization Bauer Mueller Date _____

Shown on Drawing No. F2AC-9F924-AB Part Weight .062 kg

Reason for Initial Sample:

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

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 TQ77K/7325P14 Customer Assigned _____

CUSTOMER INFORMATION

Customer Name Ford Motor Co NAAO Buyer Fred Hemmerlein 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 specification requirements ☐ Yes ☐ No

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 ESW to explain use of "Direct" switch, Full Submiss. to be complete by 6/22/92. -Bauer Mueller verified TI on 4/13, Wa. to review passed in status.

DECLARATION

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

Authorized Signature _____ Date _____

Print Name _____ Title _____ Phone No. _____

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

Signature _____ Date _____

Daily 9024

TI-NHTSA 8017

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

ENVELOPE DIMENSIONS TO BASE ONLY

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
1	11.40 - 11.90	11.806	11.817	11.817	11.794
2	12.80 - 13.21	13.043	13.043	13.072	13.094
3	16.56 - 16.76	16.638	16.652	16.671	16.673
		16.661	----	16.680	16.668
4	19.45 - 19.81	19.752	19.754	19.787	19.799
5	2.80 - 3.05	2.930	2.93	2.944	2.951
	0.1 * A	1.897 0.009	1.923 0.023	1.945 0.045	1.885 0.015
6	31DEG +/- 2DEG	29DEG 29MIN	29DEG 38MIN	29DEG 58MIN	29DEG 34MIN
7	1.85 - 2.06	1.927	1.966	1.969	1.978
8	1.24 - 1.55	1.365	1.387	1.423	1.400
9	1.24 - 1.45	1.269	1.268	1.275	1.308
10	11.60 - 11.92	11.768	11.768	11.753	11.777
		11.729	11.740	11.789	11.747
11	13.43 - 13.85	13.010	13.769	13.786	13.647
12	0.25 - 0.75	0.490 0.475	0.519 0.523	0.573 0.635	0.618 0.593
13	2.79 - 3.10	2.900	2.909	2.912	2.908
	2 PL	2.909	2.915	2.913	2.911

TEXAS INSTRUMENTS INCORPORATED • 34 FOREST STREET • ATTLEBORO, MA 02703
[illegible] • TWX 710-348-0580 • CABLE TEXINS

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
14	0.05 - 0.26	0.151	0.153	0.124	0.076
	2 PL	0.113	0.142	0.163	0.147
15	19.05 MAX	18.667	18.709	18.671	18.704
		18.701	18.748	18.565	18.757
16	12.59 - 13.11	12.800	12.829	12.802	12.819
		12.829	12.800	12.842	12.824
17	0.68 - 1.30	1.085	1.105	1.122	1.175
18	2.79 - 3.41	3.076	3.0612	3.152	3.109
19	7.23 - 7.75	7.579	7.501	7.514	7.545
20	6.60 - 6.81	6.701	6.673	6.715	6.677
21	29DEG +/- 2DEG	MEASURED	29DEG 24MIN	ON CROSS	SECTIONED
	4 X	PART	30DEG 06MIN	----	----
		----	29DEG 58MIN	----	----
		----	29DEG 47MIN	----	----
22	NO FLASH/BURRS	SLIGHT	FLASH ON	EDGES	@ 10X
~~22A~~	~~1.80-2.21- 2X~~	~~1.651~~	~~1.651~~	~~1.651~~	~~1.651~~
		1.651	1.778	~~1.651~~	~~1.651~~

TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
23	8.30-8.72 2X	8.535	8.559	8.484	8.578
		8.726	8.512	8.570	8.519
24	2.15-2.42 2X	2.162	2.171	2.282	2.271
		2.212	2.236	2.237	----
25	25DEG +/- 2DEG	24DEG 25MIN	24DEG 56MIN	24DEG 47MIN	24DEG 06MIN
	2 X	24DEG 10MIN	24DEG 14MIN	24DEG 06MIN	24DEG 43MIN
26	45DEG +/- 2DEG	46DEG 10MIN	42DEG 44MIN	43DEG 44MIN	45DEG 03MIN
	4PL	44DEG 35MIN	43DEG 47MIN	44DEG 47MIN	45DEG 01MIN
		45DEG 22MIN	44DEG 47MIN	45DEG 49MIN	46DEG 11MIN
		44DEG 08MIN	45DEG 37MIN	46DEG 38MIN	43DEG 50MIN
27	(71.5DEG) 2X	72DEG --	71DEG 31MIN	71DEG 20MIN	72DEG 01MIN
		71DEG 07MIN	72DEG --	72DEG 10MIN	71DEG 12MIN
28	1.42-1.63 2X	1.538	1.538	1.582	1.603
		1.539	1.612	1.602	1.596
29	0.35-0.66 4X	0.546 0.547	0.570 0.590	0.598 0.580	0.561 0.556
		0.592 0.614	0.561 0.574	0.576 0.603	0.558 0.575
30	0.35-0.66 4X	0.501 0.471	0.467 0.502	0.459 0.520	0.477 0.443
		0.378 0.417	0.320 0.344	0.357 0.382	0.338 0.398
		0.493 0.506	0.494 0.539	0.496 0.492	0.486 0.518
		0.382 0.395	0.450 0.484	0.384 0.393	0.373 0.409

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TEXAS INSTRUMENTS

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
31	0.86 - 1.17	1.023	1.012	1.026	1.021
	4 X	0.985	0.998	0.988	1.041
		1.023	0.992	1.026	1.014
		0.976	0.978	0.991	0.984
32	TERM. HOUSING	BLACK ONLY	AVAILABLE	TO QUALIFY	MOLD
	NATURAL:				

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

ENVELOPE DIMENSIONS TO BASE ONLY

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
1	11.40 - 11.90	11.806	11.817	11.817	11.794
2	12.80 - 13.21	13.043	13.049	13.072	13.094
3	16.56 - 16.76	16.638	16.652	16.671	16.673
		16.661	----	16.680	16.668
4	19.45 - 19.81	19.752	19.754	19.787	19.799
5	2.80 - 3.05	2.930	2.93	2.944	2.951
	0.1 ⊕ A	1.897 0.003	1.923 0.023	1.945 0.045	1.885 0.015
6	31DEG +/- 2DEG	29DEG 29MIN	29DEG 38MIN	29DEG 58MIN	29DEG 34MIN
7	1.85 - 2.06	1.927	1.966	1.969	1.978
8	1.24 - 1.55	1.365	1.387	1.423	1.400
9	1.24 - 1.45	1.269	1.268	1.275	1.308
10	11.60 - 11.92	11.768	11.768	11.753	11.777
		11.729	11.740	11.789	11.747
11	13.43 - 13.85	13.010	13.769	13.786	13.647
12	0.25 - 0.75	0.490 0.475	0.519 0.523	0.573 0.635	0.618 0.593
13	2.79 - 3.10	2.900	2.909	2.912	2.908
	2 PL	2.903	2.915	2.913	2.911

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
14	0.05 - 0.26	0.151	0.153	0.124	0.076
	2 PL	0.113	0.142	0.163	0.147
15	19.05 MAX	18.667	18.709	18.671	18.704
		18.701	18.748	18.565	18.757
16	12.59 - 13.11	12.800	12.829	12.802	12.819
		12.829	12.800	12.842	12.824
17	0.68 - 1.30	1.085	1.105	1.122	1.175
18	2.79 - 3.41	3.076	3.0612	3.152	3.109
19	7.23 - 7.75	7.579	7.501	7.514	7.545
20	6.60 - 6.81	6.701	6.673	6.715	6.677
21	29DEG +/- 2DEG	MEASURED	29DEG 24MIN	ON CROSS	SECTIONED
	4 X	PART	30DEG 06MIN	----	----
		----	29DEG 58MIN	----	----
		----	29DEG 47MIN	----	----
22	NO FLASH/BURRS	SLIGHT	FLASH ON	EDGES	@ 10X
22A	1.80-2.21r 2X	1.651	1.651	1.651	1.651
		1.651	1.778	1.651	1.651

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
23	8.30-8.72 2X	8.535	8.553	8.484	8.578
		8.726	8.512	8.570	8.519
24	2.15-2.42 2X	2.162	2.171	2.282	2.271
		2.212	2.236	2.287	----
25	25DEG +/- 2DEG	24DEG 25MIN	24DEG 56MIN	24DEG 47MIN	24DEG 06MIN
	2 X	24DEG 10MIN	24DEG 14MIN	24DEG 06MIN	24DEG 43MIN
26	45DEG +/- 2DEG	46DEG 10MIN	42DEG 44MIN	43DEG 44MIN	45DEG 03MIN
	4PL	44DEG 38MIN	43DEG 47MIN	44DEG 47MIN	45DEG 01MIN
		45DEG 22MIN	44DEG 47MIN	45DEG 49MIN	46DEG 11MIN
		44DEG 08MIN	45DEG 37MIN	46DEG 38MIN	43DEG 50MIN
27	(71.5DEG) 2X	72DEG --	71DEG 31MIN	71DEG 20MIN	72DEG 01MIN
		71DEG 07MIN	72DEG --	72DEG 10MIN	71DEG 12MIN
28	1.42-1.63 2X	1.538	1.538	1.582	1.603
		1.539	1.612	1.602	1.596
29	0.35-0.66 4X	0.546 0.547	0.570 0.590	0.598 0.580	0.591 0.556
		0.592 0.614	0.561 0.574	0.576 0.603	0.558 0.575
30	0.35-0.66 4X	0.501 0.471	0.467 0.502	0.459 0.520	0.477 0.443
		0.378 0.417	0.320 0.344	0.357 0.382	0.338 0.398
		0.493 0.506	0.494 0.539	0.436 0.482	0.486 0.518
		0.382 0.395	0.450 0.484	0.384 0.393	0.373 0.409

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
31	0.86 - 1.17	1.023	1.012	1.026	1.021
	4 X	0.985	0.998	0.988	1.041
		1.023	0.992	1.026	1.014
		0.976	0.978	0.991	0.984
32	TERM.HOUSING	BLACK ONLY	AVAILABLE	TO QUALIFY	MOLD
	BROWN:				

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

ENVELOPE DIMENSIONS TO BASE ONLY

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
1	11.40 - 11.90	11.806	11.817	11.817	11.794
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3	16.56 - 16.76	16.638	16.652	16.671	16.673
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5	2.80 - 3.05	2.930	2.93	2.944	2.951
	0.1 @ A	1.897 0.003	1.929 0.029	1.945 0.045	1.885 0.015
6	31DEG +/- 2DEG	29DEG 29MIN	29DEG 38MIN	29DEG 58MIN	29DEG 34MIN
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DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

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		12.829	12.800	12.842	12.824
17	0.69 - 1.30	1.085	1.105	1.122	1.175
18	2.79 - 3.41	3.076	3.0612	3.152	3.109
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21	29DEG +/- 2DEG	MEASURED	29DEG 24MIN	ON CROSS	SECTIONED
	4 X	PART	30DEG 06MIN	----	----
		----	29DEG 58MIN	----	----
		----	29DEG 47MIN	----	----
22	NO FLASH/BURRS	SLIGHT	FLASH ON	EDGES	@ 10X
22A	1.90-2.21 2X	1.651	1.651	1.651	1.651
		1.651	1.778	1.651	1.651

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
23	8.30-8.72 2X	8.535	8.553	8.484	8.578
		8.726	8.512	8.570	8.519
24	2.15-2.42 2X	2.162	2.171	2.282	2.271
		2.212	2.236	2.237	----
25	25DEG +/- 2DEG	24DEG 25MIN	24DEG 56MIN	24DEG 47MIN	24DEG 06MIN
	2 X	24DEG 10MIN	24DEG 14MIN	24DEG 06MIN	24DEG 43MIN
26	45DEG +/- 2DEG	46DEG 10MIN	42DEG 44MIN	43DEG 44MIN	45DEG 03MIN
	4PL	44DEG 35MIN	43DEG 47MIN	44DEG 47MIN	45DEG 01MIN
		45DEG 22MIN	44DEG 47MIN	45DEG 49MIN	46DEG 11MIN
		44DEG 08MIN	45DEG 37MIN	46DEG 38MIN	43DEG 50MIN
27	(71.5DEG) 2X	72DEG --	71DEG 31MIN	71DEG 20MIN	72DEG 01MIN
		71DEG 07MIN	72DEG --	72DEG 10MIN	71DEG 12MIN
28	1.42-1.63 2X	1.538	1.538	1.582	1.603
		1.539	1.612	1.602	1.596
29	0.35-0.66 4X	0.546 0.547	0.570 0.590	0.598 0.580	0.581 0.556
		0.592 0.614	0.561 0.574	0.576 0.603	0.558 0.575
30	0.35-0.66 4X	0.501 0.471	0.467 0.502	0.459 0.520	0.477 0.443
		0.378 0.417	0.320 0.344	0.357 0.362	0.338 0.398
		0.493 0.506	0.494 0.539	0.436 0.482	0.486 0.518
		0.382 0.395	0.450 0.484	0.384 0.393	0.373 0.409

DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
31	0.96 - 1.17	1.023	1.012	1.026	1.021
	4 X	0.985	0.998	0.988	1.041
		1.023	0.992	1.026	1.014
		0.976	0.978	0.991	0.984
32	TERM.HOUSING	BLACK ONLY	AVAILABLE	TO QUALIFY	MOLD
	BROWN:				

P/C L21

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

	BLUEPRINT SPEC	CAVITY # 1B ACTUAL	CAVITY # 2C ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4D ACTUAL	CAVITY # 5D ACTUAL	CAVITY # 6D ACTUAL	COMMENTS
1	19.45 - 19.81	19.55	19.61	19.58	19.56	19.57	19.57	
2	16.56 - 16.76	16.59/16.58	16.62/16.64	16.62/16.63	16.58/16.59	16.54/16.56	16.59/16.59	
3	13.50 - 13.21	12.974	13.051	13.039	13.043	13.079	12.946	
4	11.40 - 11.90	11.798	11.809	11.775	11.773	11.758	11.755	
5	2.84 - 3.05	2.93	2.92	2.92	2.92	2.93	2.93	
	0.1 A	1.859/0.041	1.920/0.020	1.933/0.033	1.869/0.031	1.885/0.015	1.887/0.013	
6	11.60 - 11.92	11.69/11.71	11.67/11.71	11.72/11.68	11.60/11.63	11.63/11.67	11.68/11.65	
7	1.24 - 1.45	1.252	1.250	1.280	1.280	1.290	1.265	
8	1.24 - 1.55	1.402	1.397	1.400	1.389	1.397	1.397	
9	1.85 - 2.06	2.004	1.974	1.996	1.984	1.994	1.986	
10	13.43 - 13.85	13.772	13.693	13.800	13.686	13.686	13.556	
11	31DEG +/- 2DEG	30DEG 34MIN	29DEG 58MIN	31DEG	29DEG 04MIN	29DEG 03MIN	30DEG 08MIN	
12	2.79 - 3.10 2X	2.90/2.89	2.90/2.90	2.90/2.90	2.90/2.90	2.89/2.89	2.90/2.94	
13	0.25 - 0.75	0.508/0.661	0.480/0.900	0.442/0.673	0.498/0.671	0.490/0.744	0.460/0.757	OUT OF SPEC.
14	0.03 - 0.26 2X	0.051/0.069	0.074/0.127	0.140/0.076	0.127/0.135	0.153/0.169	0.071/0.036	
		0.140/0.147	0.092/0.089	0.086/0.114	0.048/0.091	0.038/0.013	0.137/0.165	
15	0 19.05 MAX	18.64 18.56	18.57 18.66	18.54 18.66	18.60 18.77	18.63 18.71	18.61 18.67	

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

	BLUEPRINT SPEC	CAVITY # 1B ACTUAL	CAVITY # 2C ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4D ACTUAL	CAVITY # 5D ACTUAL	CAVITY # 6B ACTUAL	COMMENTS
16	57.15 MAX	55.65	55.70	55.71	55.70	55.69	55.68	
17	12.99 - 13.11	12.74/12.86	12.72/12.84	12.77/12.76	12.76/12.77	12.75/12.81	12.73/12.80	
18	11.65 - 12.17	11.68/11.79	11.85/11.84	11.73/11.79	11.88/11.84	11.78/11.86	11.73/11.88	
19	14.23 MAX	13.66	13.65	13.67	13.65	13.65	13.66	
20	9.39 - 9.66	9.59/9.63	9.61/9.66	9.57/9.64	9.49/9.62	9.58/9.74	9.59/9.67	OUT OF SPEC.
21	8.12 MIN	8.98/9.29	9.13/9.54	9.12/9.18	8.98/9.56	9.14/9.22	9.11/9.14	
22	1.52 - 2.04	2.040	1.732	1.783	1.727	1.781	1.796	
23	Ø 7.82-8.03	7.94/7.50	7.94	7.97/7.99	7.97	7.98	7.96	
24	6.60 - 6.81	6.640	6.698	6.693	6.647	6.665	6.642	
24A	290ED+/-20D 4X	298ED 54MIN 300ED 57MIN	300ED 24MIN 280ED 46MIN	MEASURED	ON A CROSS	SECTIONED	PART	
25	1.80-2.21R 2X	1.84-1.84	1.84-1.84	1.84-1.84	1.84-1.84	1.84-1.84	1.84-1.84	
26	7.23-7.75	7.74	7.52	7.53	7.54	7.55	7.53	
26A	NO FLASH OR BURRS ALLOWED ON SURFACE	OK	OK	FLASH	OK	OK	FLASH	
27	2.79-3.41	3.145	3.093	3.160	3.150	3.119	3.107	
28	0.68-1.30	1.115	1.168	1.179	1.148	1.141	1.153	

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

	BLUEPRINT SPEC	CAVITY # 1B ACTUAL	CAVITY # 2C ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4D ACTUAL	CAVITY # 5D ACTUAL	CAVITY # 6D ACTUAL	COMMENTS
28A	STAMP DATE	INVERTED	DELTA	OMITTED,	HAS SINCE	BEEN	INCLUDED	
	CODE & PART#	IN CODING	OPERATION.					
29	0.25MIN X 40 -	N/A THREADS	HAVE BEEN	ADDED				
	500EG CHAMFER							
30	13/8-24UNF-2A	OK	OK	OK	OK	OK	OK	
31	1.10-1.40	1.316	MEASURED	ON A CROSS	SECTIONED	PART		
32	0.16 D	0.051	0.046	0.046	0.008	0.030	0.056	
33	2.5 c	OK	MEASURED	ON A CROSS	SECTIONED	PART		
34	41DEG - 43DEG	41DEG 21MIN	MEASURED	ON A CROSS	SECTIONED	PART		
35	40-50DEG CHAMF	N/A THREADS	HAVE BEEN	ADDED				
36	32.51 MAX	31.64 31.62	31.46 31.48	31.45 31.46	31.50 31.47	31.46 31.48	31.39 31.50	
37	14.02-14.53HEX	14.11	14.11	14.11/14.13	14.11/14.13	14.12/14.13	14.11/14.12	
38	3.30-3.60	3.45 - 3.46	3.45 - 3.43	3.43 - 3.42	3.45 - 3.46	3.44 - 3.47	3.45 - 3.45	
39	7.23-7.37	7.27 7.28	7.35 7.32	7.33 7.33	7.31 7.37	7.32 7.30	7.37 7.37	
40	5.58-5.85	5.61 5.60	5.72-5.60	5.64-5.66	5.67-5.70	5.60-5.66	5.61-5.63	
41	71.5DEG +/-	72DEG 30MIN	72DEG 11MIN	72DEG 12MIN	72DEG 26MIN	71DEG 56MIN	72DEG 10MIN	
	20EG 2X	72DEG 30MIN	72DEG 14MIN	72DEG 50MIN	72DEG 37MIN	72DEG 11MIN	72DEG 36MIN	

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

	BLUEPRINT SPEC	CAVITY # 1B ACTUAL	CAVITY # 2C ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4D ACTUAL	CAVITY # 5D ACTUAL	CAVITY # 6D ACTUAL	COMMENTS
42	1.42-1.63 2X	1.62-1.62	1.63-1.63	1.58-1.63	1.63-1.60	1.60-1.59	1.60-1.57	
43	0.35-0.66 4X	1.66-0.65	0.57-0.59	0.57-0.60	0.58-0.58	0.58-0.57	0.57-0.59	
		0.57-0.59	0.59-0.55	0.59-0.57	0.59-0.56	0.56-0.55	0.55-0.56	
44	8.30-8.72 2X	8.43-8.46	8.51-8.44	8.41-8.44	8.42-8.42	8.59-8.43	8.42-8.56	
45	2.15-2.42 2X	2.13-2.21	2.18-2.22	2.30-2.15	2.20-2.16	2.16-2.18	2.23-2.16	#1 OUT OF SPEC
46	25DEG+/-2 2X	24DEG 36MIN	24DEG 41MIN	23DEG 14MIN	23DEG 35MIN	23DEG 09MIN	23DEG 34MIN	
		23DEG 06MIN	23DEG 45MIN	24DEG 31MIN	23DEG 53MIN	23DEG 58MIN	24DEG 24MIN	
47	HOUSING BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	
48	45DEG+/-2 4X	44DEG 36MIN	46DEG 47MIN	46DEG 09MIN	45DEG 08MIN	45DEG 37MIN	43DEG	
		45DEG 46MIN	45DEG 15MIN	43DEG 20MIN	45DEG 04MIN	44DEG 11MIN	46DEG 09MIN	
		44DEG 43MIN	45DEG 44MIN	46DEG 44MIN	43DEG 16MIN	44DEG 07MIN	44DEG 01MIN	
		45DEG 12MIN	45DEG 23MIN	45DEG 39MIN	44DEG 48MIN	45DEG 34MIN	44DEG 39MIN	
49	0.86-1.17 4X	0.96-0.95	0.98-1.03	0.97-1.02	0.98-1.02	0.99-1.03	0.99-1.03	
		0.95-0.93	0.96-0.97	0.96-1.00	0.93-1.00	0.97-0.97	0.95-0.96	
50	0.35-0.66 4X	0.54-0.54	0.45-0.44	0.46-0.48	0.46-0.50	0.45-0.54	0.51-0.49	
		0.49-0.51	0.49-0.52	0.54-0.53	0.52-0.52	0.50-0.54	0.51-0.44	

DIMENSIONAL ANALYSIS ON PART NUMBER

F2VC-9F924-AB

	BLUEPRINT SPEC	CAVITY # 1B ACTUAL	CAVITY # 2C ACTUAL	CAVITY # 3C ACTUAL	CAVITY # 4D ACTUAL	CAVITY # 5D ACTUAL	CAVITY # 6D ACTUAL	COMMENTS
51	2.59-2.80 2X	2.725	2.710	2.703	2.713	2.710	2.739	
	0.2 M A C	2.393	2.499	2.578	2.482	2.457	2.515	
	D	0.072	0.034	0.113	0.017	0.008	0.050	
	2.59-2.80 2X	2.695	2.703	2.715	2.703	2.695	2.710	
	0.2 M A C	2.499	2.522	2.380	2.377	2.427	2.443	
	D	0.034	0.057	0.085	0.088	0.039	0.022	
52	13-19DEG 2X	17DEG 29MIN	MEASURED	ON A CROSS	SECTIONED	PART		
		19DEG 45MIN	MEASURED	ON A CROSS	SECTIONED	PART		OUT OF SPEC +45MIN
53	0.66-0.87	0.765	MEASURED	ON A CROSS	SECTIONED	PART		
54	0.10-0.31	0.262	MEASURED	ON A CROSS	SECTIONED	PART		
55	0.58-0.68	0.632	MEASURED	ON A CROSS	SECTIONED	PART		

DRAWINGS AVAILABLE UPON REQUEST

[illegible] Printed at [illegible]

Supplier: [illegible]
Model Year: [illegible]
Other: [illegible]

Prepared by: [illegible]

Part Name, Number & Description	Potential Failure Mode	Potential Effect(s) of Failure	Sev	Class	Potential Cause(s) of Failure	Occur	Design Verification	Detec	R.P.N.	Recommended Actions	Area/Individual Responsible & Completion Date	ACTION RESULTS: Actions Taken	S	O	D	R.P.N.
	High resistance at spring interface	Apparent open circuit Intermittent continuity			Silver/contamination		Mat'l certification									
	Loose spring	Erratic operation shift/drift in setpoint	7		Rivet hole oversize	1	Supplier process controls and II Receiving Inspection	3	21							
	Rivet hole size/location bad	Will not assemble to spring properly	3		Stamping tool worn or broken	3	Supplier process controls and II Receiving Inspection	3	27							
[illegible] CONTACT [illegible] contact force [illegible] continuity between [illegible] [illegible] to interface [illegible] [illegible] [illegible]	Low contact force	High millivolt drop across contacts	3		Incorrect geometry Incorrect material	7	CMC check on [illegible] Mat'l certification	1	21							
	High contact force	Change in setpoint [illegible]	3		Incorrect geometry Incorrect material	7	CMC Mat'l certification	1	21							
	High resistance at [illegible] terminal [illegible]	Apparent open circuit	7		Silver/contamination	1	Mat'l certification	1	7							
	Rivet hole size/location bad	Will not assemble to terminal properly	[illegible]		Stamping tool worn or broken	[illegible]	Assembly equipment [illegible]	1	7							
	Terminal pin [illegible] out of position [illegible]	Spring failure over life	7		Broken stamping tool	3	[illegible] check	1	21							
(TI[illegible]) spring and assembly [illegible]	Length undersize	Spring falls off assembly [illegible]	3		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	27							
	Length oversize	Loose spring	7		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	63							
	Diameter undersize	Loose spring	7		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	63							
	Plunger oversize	Assembly difficulty	3		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	27							
	Head undersize	Loose spring	5		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	45							
	Head oversize	Assembly difficulty	3		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	27							
	Hollow point oversz.	Weak rivet - spring falls off	7		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	63							
	Hollow point undersz	Difficult to rivet - loose spr	3		Supplier tooling	3	Supplier process controls and II Receiving Inspection	3	27							
[illegible] CONTACT (TI[illegible]) [illegible] electrical [illegible] with [illegible]	High contact resistance [illegible]	[illegible] open circuit [illegible] Intermittent continuity	5		Silver too thin Silver/contamination	3	Supplier process controls and II Receiving Inspection Mat'l certification	3	45							
	Resistance increase over life	Degradation of electrical parameters over time	7		Silver too thin	3	CMC and material certification	1	21							
	Corrosion weld	[illegible]	7		[illegible]	1	[illegible]	1	7							
	Weak [illegible]	Contact does not assemble to spring, or falls off	1		[illegible]	3	Supplier process controls and II Receiving Inspection [illegible]	[illegible]	9							
[illegible] [illegible] sealing [illegible] [illegible] thread for [illegible]	Leakage [illegible] of [illegible] surface	Leakage of brake fluid	7		[illegible] Mishandling	3	Supplier process controls and II Receiving Inspection	3	63							
	Incorrect thread	Will not install properly in mating part Damages threads in mating [illegible]	7		[illegible] Mishandling	7	Supplier process controls and II Receiving Inspection	3	147							

[illegible]

Potential Failure Mode and Effects Analysis

Sensor: [illegible] Pressure Switch

Prepared by: [illegible]

Part Name, Number & Description	Potential Failure Mode	Potential Effect(s) of Failure	Sev	Class	Potential Cause(s) of Failure	Occur	Design Verification	Det	R.P.N.	Recommended Actions	Area/Individual Responsible & Completion Date	Action Results: Actions Taken	Sev	Occ	Det	R.P.N.
...w fluid passage to ...sensing elements; ...n gland for internal; ...n flange which interacts with other components to ...sensor structure		...part during installation														
	Incorrect hex size	Damage to hex flats during assembling; [illegible] wrench does not fit	5		Broken or worn cold-header tooling; Incorrect tooling procedures	1	Supplier process controls and TI Receiving Inspection	3	15							
	Fluid passage is blocked	Switch will not actuate; Blockage loosens, damaging [illegible] or other brake system components	7		Broken drill; Improper machine set-up; Worn drill	2	Supplier process controls	3	42							
	Fluid passage too large	Thin section results in breakage of hexport and system leak	7		Wrong drill size	1	SPC/Supplier process controls	1	7							
	Gasket gland geometry is incorrect	Excessive gasket squeeze distorts gasket, results in leak; Excessive squeeze results in improper assembly and reduced life of gasket leading to leak; Insufficient squeeze results in leak; Gland diameter too small, results in assembly difficulty; Gland diameter too large, results in leak	7		Broken, worn, or improperly set-up tooling	3	Supplier process controls and TI Receiving Inspection	3	63							
	Gasket gland surface is irregular	Immediate leak path; Damage to gasket results in reduced life leading to leak	7		Broken, worn, or improperly set-up tooling; Mishandling	3	Supplier process controls and TI Receiving Inspection	3	63							
	Flange geometry is incorrect	Dia. too large results in assembly difficulty; Dia. too small results in improper alignment leading to leak; Too thick or thin results in [illegible], leads to reduced diaphragm life or reduced [illegible] capacity	7		Broken, worn, or improperly set-up tooling	3	Supplier process controls and TI Receiving Inspection	3	63							
	Wrong material	High pressure cycles leads to reduced proof/burst capacity	5		Supplier error	3	Mat'l certification	1	15							
[GASKET] ...s fluid seal between ...g and diaphragm	Wrong size	Excessive gasket squeeze distorts gasket, results in leak; Excessive squeeze results in improper assembly and reduced life of gasket leading to leak; Insufficient squeeze results in leak; Gasket diameter too large, results in assembly difficulty; Gasket diameter too small, results in leak	7		Improperly set-up extruder tools; Wrong extrusion tool	3	Supplier process controls and TI Receiving Inspection	3	63							
	Wrong material	Reduced gasket life, leading to leak; Permanent set after temperature exposure leads to leak	7		Supplier error	1	Mat'l certification	1	7							
[DIAPHRAGM] Flexible element of containment cavity; ...s pressure from fluid ...element	Insufficient material properties	Reduced life leading to leak	7		Supplier error	1	Mat'l certification	1	7							
[illegible] ...a portion of the surface for diaphragm	Surface roughness	Reduced diaphragm life leading to leakage	9		Improper heat-treat; Chips in tool	1	Supplier process controls and TI Receiving Inspection	3	27							
...ge support for compression of gasket; ...m convector and disc ...respect to ...	Incorrect chamfer	Shift in setpoint; Reduced diaphragm life leading to leakage	9		Broken/worn tool	1	Supplier process controls and TI Receiving Inspection	3	27							

TI-NHTSA 8041

TL-NHTSA 8042

[illegible] Design Failure Mode and Effects Analysis

[illegible] Pressure Switch [illegible] — Prepared by: [illegible]

Item Name, Number & Description	Potential Failure Mode	Potential Effect(s) of Failure	Sev	Class	Potential Cause(s) of Failure	Occur	Design Verification	Detec	R.P.N.	Recommended Actions	Area/Individual Responsible & Completion Date	Action Results: Actions Taken	Sev	Occ	Det	R.P.N.
		device Too large causes interference [illegible] operation or inoperable device			[illegible]		[illegible] inspection									
[illegible] between disc [illegible]	OD too large	[illegible] shift in setpoint or inoperable	[illegible]		Wrong punch	[illegible]	TI process controls	[illegible]	[illegible]							
	OD too small	[illegible] shift in setpoint over life	[illegible]		Wrong punch	[illegible]	TI process controls	[illegible]	[illegible]							
	Improper thickness	[illegible] inoperable device Too thin leads to early [illegible] and shift in setpoint	[illegible]		Supplier error	[illegible]	Supplier process controls and TI [illegible] inspection	[illegible]	[illegible]							
	Improper Teflon coating	Too thin leads to early [illegible] and shift in setpoint	[illegible]		Supplier error	[illegible]	Mat'l certification	[illegible]	[illegible]							
[illegible]	Incorrect diameter	[illegible] Inoperative device Incorrect calibration	[illegible]		[illegible] [illegible]	[illegible]	SPC	[illegible]	[illegible]							
	Uncertain coating	[illegible] Inoperative device Incorrect calibration	[illegible]		[illegible]	[illegible]	SPC	[illegible]	[illegible]							
	Material composition	Shift in setpoint over life Reduced proof capability [illegible] failure	[illegible]		Supplier error Improper heat-treat	[illegible]	Mat'l certification TI [illegible] controls	[illegible]	[illegible]							
	[illegible]	Shift in setpoint over life	[illegible]		[illegible]	[illegible]	SPC	[illegible]	[illegible]							
	Wrong thickness	Too thin [illegible] reduced life Too thick [illegible]	[illegible]		Supplier error	[illegible]	SPC	[illegible]	[illegible]							
[illegible] [illegible] support for disc [illegible] [illegible] guide for transfer	[illegible] incorrect	[illegible] reduced [illegible] life	[illegible]		Incorrect [illegible] [illegible]	[illegible]	Supplier process controls and TI [illegible] inspection	[illegible]	[illegible]							
	Wrong material thickness	[illegible] Too thin leads to reduced [illegible] life	[illegible]		Supplier error	[illegible]	Supplier process controls and TI [illegible] inspection	[illegible]	[illegible]							
	Wrong material	[illegible] reduced [illegible] life	[illegible]		Supplier error	[illegible]	Mat'l certification	[illegible]	[illegible]							
	[illegible]	Incorrect calibration [illegible] Inoperative device	[illegible]		[illegible]	[illegible]	Supplier process controls and TI [illegible] inspection	[illegible]	[illegible]							
	Geometry of washer [illegible]	Too high [illegible] Too low [illegible] [illegible] small results in difficult [illegible] [illegible] large results in [illegible]	[illegible]		[illegible]	[illegible]	Supplier process controls and TI [illegible] inspection	[illegible]	[illegible]							

Printed at [illegible] on [illegible] -1991 — Design Failure Mode and Effects Analysis

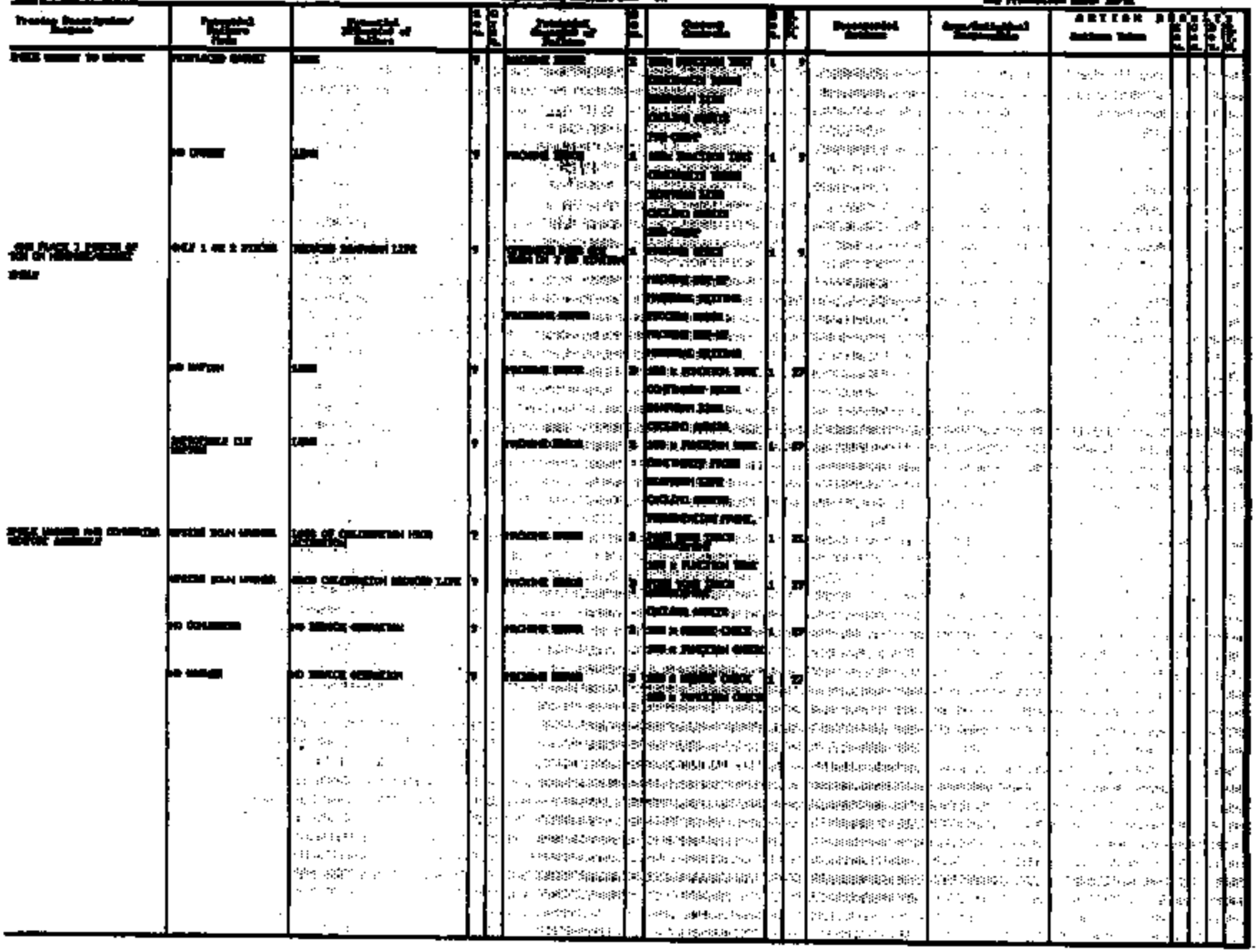
System [illegible] Fuel Control Regulator Pressure Switch
Subsystem [illegible]
Component [illegible]

Suppliers and Plants Affected: [illegible] Engineering [illegible]

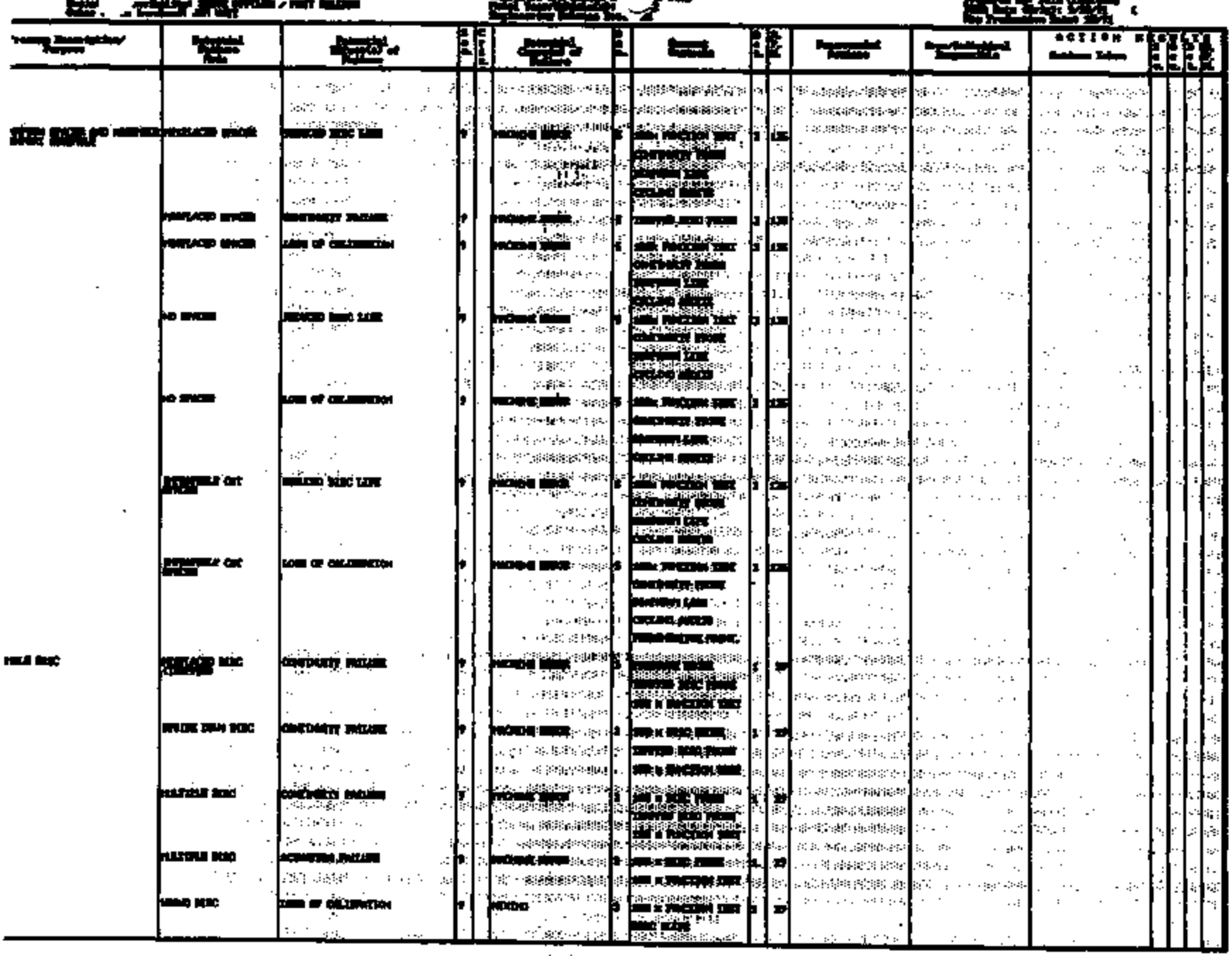
Prepared by: [illegible]
FMEA Date [illegible]

Item Name, Number & Description	Potential Failure Mode	Potential Effect(s) of Failure	S E V	C L A S S	Potential Cause(s) of Failure	O C C	Design Verification	D E T	R P N	Recommended Actions	Area/Individual Responsible & Completion Date	ACTION RESULTS Actions Taken	S E V	O C C	D E T	R P N
		[illegible] of connector, shift in [illegible] or temperature														
	Geometry of [illegible] incorrect	Too small results in [illegible] – may [illegible] at temperature extremes Too large results in shift in [illegible] characteristics Too short [illegible] Too long [illegible]	7		[illegible]	3	Supplier process controls and TI [illegible] Inspection	2	42							
[illegible] (F[illegible]) [illegible]	Thickness incorrect	Too thin results in [illegible] leakage of materials from [illegible] Too thick [illegible] difficulty [illegible]	7		Tooling set-up error	1	Supplier process controls and TI [illegible] Inspection	3	21							
	ID incorrect	Too large – [illegible] Too small – can't assemble	8		[illegible] or wrong [illegible]	2	Supplier process controls and TI [illegible] Inspection	3	48							
	OD incorrect	Too small – insufficient seal area	5		[illegible] or wrong [illegible]	3	Supplier process controls and TI [illegible] Inspection	3	45							
	Wrong material	[illegible] results in leakage	7		Supplier error	3	Mat'l certification	1	21							
	Porosity in material	[illegible] results in leakage [illegible]	3		Supplier error	3	Supplier process controls and TI [illegible] Inspection	3	27							
[illegible] (F[illegible]) [illegible]	Diameter incorrect	Too large results in [illegible] – may [illegible] at temperature extremes Too small results in shift in [illegible] characteristics	7		[illegible] or worn tool	3	Supplier process controls and TI [illegible] Inspection	3	63							
	Length incorrect	Too short – [illegible] Too long – [illegible]	3		[illegible] / [illegible] error	5	[illegible]	1	15							
	Material incorrect	Shift in [illegible] [illegible] leakage to [illegible] [illegible]	7		Supplier error	1	Mat'l certification	4	28							
[illegible] (F[illegible]) [illegible]	ID incorrect	Too large results in poor [illegible] Too small [illegible] assembly	3		[illegible], worn, or [illegible] tooling	3	Supplier process controls and TI [illegible] Inspection On-Line SPC	4	9							
	Length incorrect	Too long or short causes poor [illegible]	5		[illegible], worn, or [illegible] tooling	3	Supplier process controls and TI [illegible] Inspection On-Line SPC	1	15							
	Material incorrect	Difficult or [illegible] [illegible]	5		Supplier error	2	Mat'l certification	1	10							
	Thickness incorrect	Too thin results in poor [illegible] Too thick results in difficulty [illegible]	3		Supplier error	3	TI Rec. Inspection	3	27							

TI-NHTSA 8044



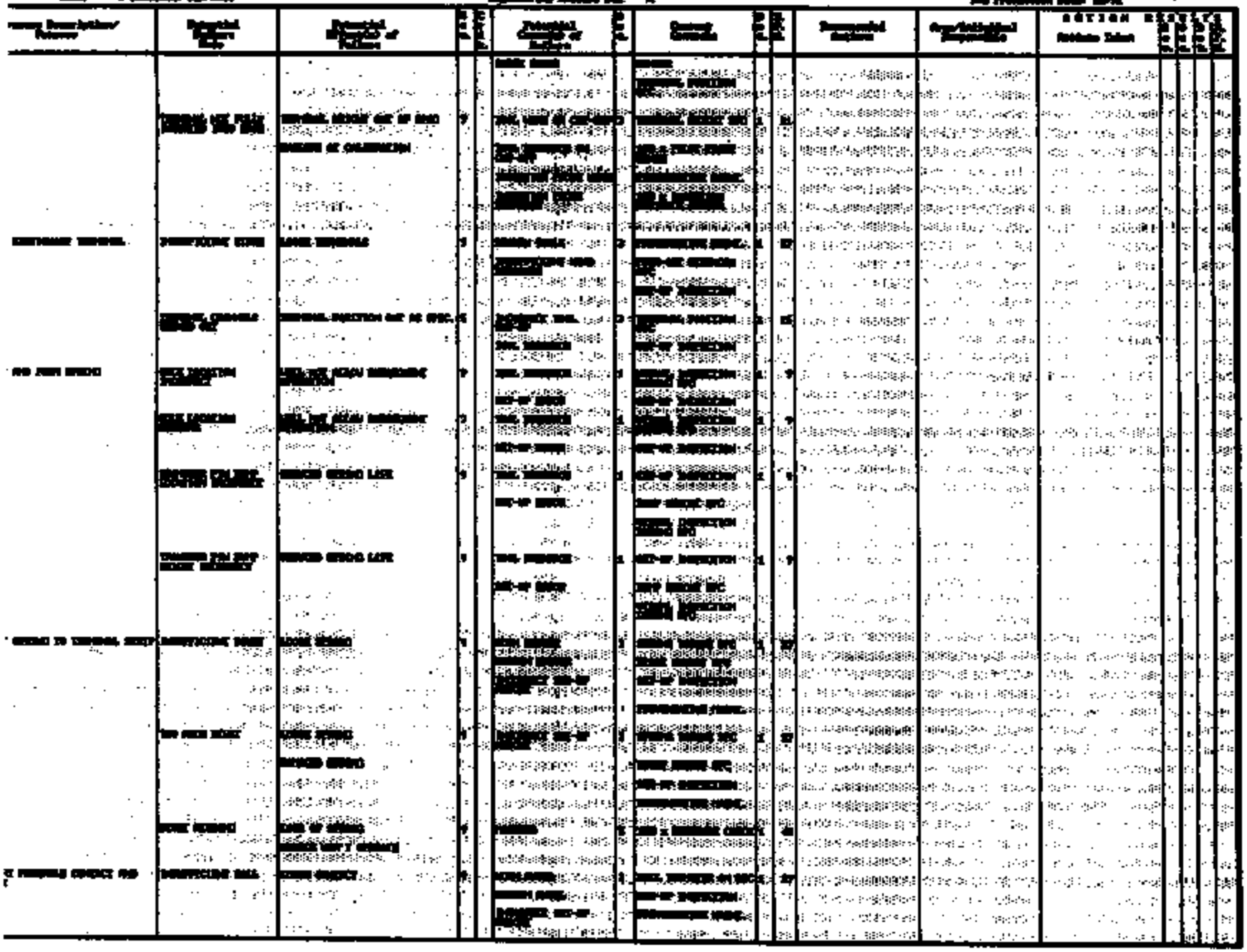
TI-NHTSA 8046



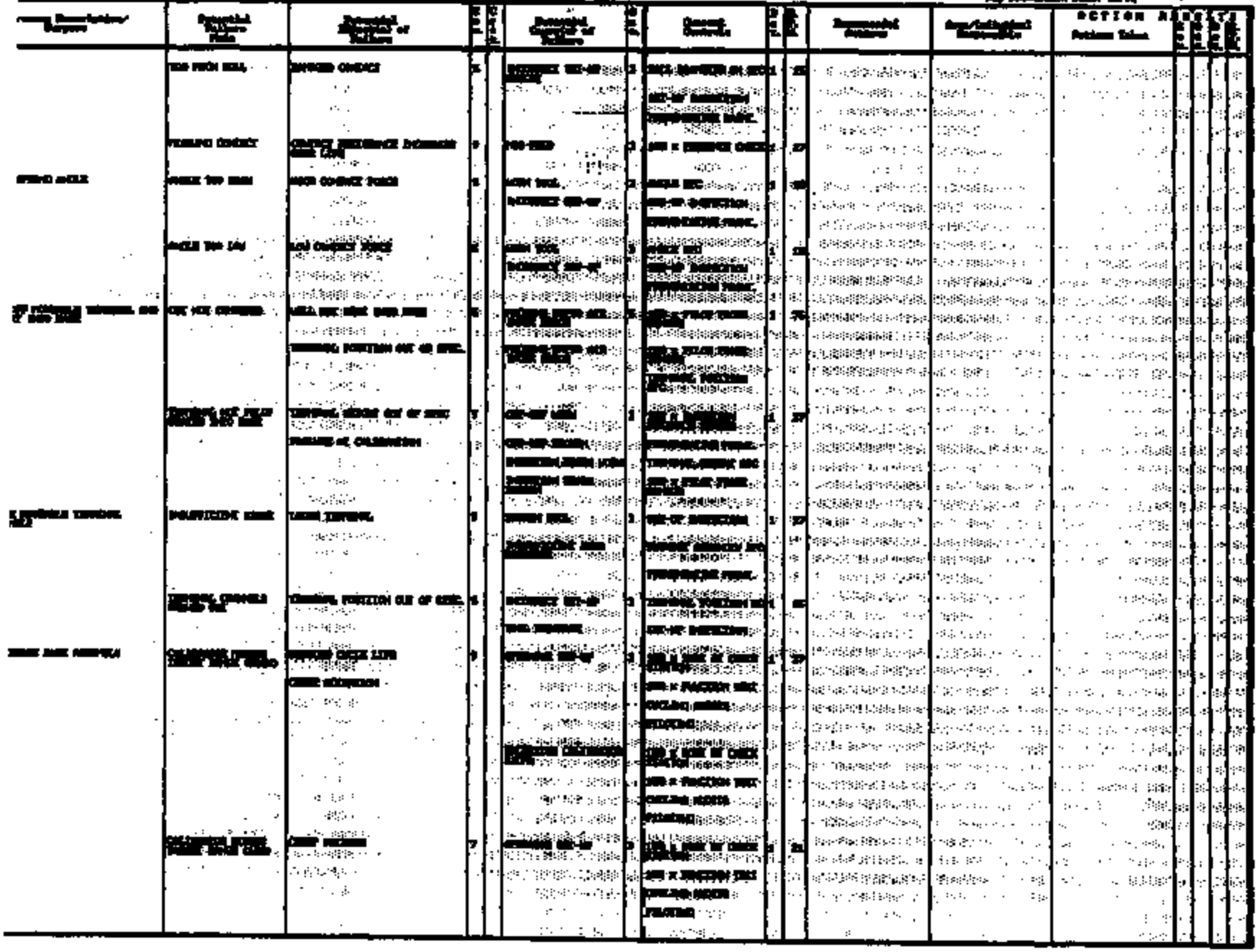
TI-NHTSA 8047

ACTION RESULTS

Actions Taken



TI-NHTSA 8049



TI-NHTSA 8050

Process Description/ Purpose	Potential Failure Mode	Potential Effect(s) of Failure	S E V	C L A S S	Potential Cause(s) of Failure	O C C	Current Controls	D E T	R P N	Recommended Actions	Responsible Engineering Activity	ACTION RESULTS Actions Taken	S E V	O C C	D E T	R P N
	[illegible]	CHIP BRAKE	7		[illegible]	3	[illegible]	1	21							
							[illegible]									
							[illegible]									
							[illegible]									
[illegible]	CHECK STATION SHIFT	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
					[illegible]		[illegible]									
							[illegible]									
							[illegible]									
[illegible]							[illegible]									
[illegible]	[illegible]	[illegible]	7		[illegible]	3	[illegible]	2	42							
		[illegible]			[illegible]		[illegible]									
							[illegible]									
[illegible]	[illegible]	[illegible]	7		[illegible]	5	[illegible]	3	105							
							[illegible]									
							[illegible]									
	[illegible]	[illegible]	7		[illegible]	5	[illegible]	3	105							
							[illegible]									
							[illegible]									
	[illegible]	[illegible]	7		[illegible]	4	[illegible]	2	56							
[illegible]	[illegible]	[illegible]	5		[illegible]	4	[illegible]	4	80							
					[illegible]		[illegible]									
							[illegible]									
	[illegible]	[illegible]	9		[illegible]	4	[illegible]	1	36							
							[illegible]									
[illegible]	[illegible]	[illegible]	7		[illegible]	4	[illegible]	1	28							
					[illegible]		[illegible]									
							[illegible]									
							[illegible]									
	[illegible]	[illegible]	7		[illegible]	1	[illegible]	1	7							
	[illegible]	[illegible]	7		[illegible]	2	[illegible]	1	14							
					[illegible]		[illegible]									
							[illegible]									
[illegible]	[illegible]	[illegible]	7		[illegible]	4	[illegible]	1	28							
							[illegible]									
							[illegible]									
	[illegible]	[illegible]	7		[illegible]	4	[illegible]	1	28							
					[illegible]		[illegible]									
							[illegible]									
							[illegible]									
	[illegible]	[illegible]	7		[illegible]	4	[illegible]	1	28							
					[illegible]		[illegible]									
							[illegible]									
							[illegible]									
[illegible]	[illegible]	[illegible]	7		[illegible]	3	[illegible]	1	21							
					[illegible]		[illegible]									
							[illegible]									
							[illegible]									

[illegible]

Process Description/ Purpose	Potential Failure Mode	Potential Effect(s) of Failure	Sev	Class	Potential Cause(s) of Failure	Occur	Current Controls	Detec	R.P.N.	Recommended Actions	Area/Individual Responsible	ACTION RESULTS Actions Taken	S	O	D	R
	[illegible]	[illegible]			[illegible]		[illegible]									
	[illegible]	[illegible]			[illegible]		[illegible]									
[illegible]	[illegible]	[illegible]			[illegible]		[illegible]									

GAGE STUDY FOR REPEATABILITY AND REPRODUCTIBILITY (LONG METHOD

DIAL INDICATOR
Gage # 1-0070

TIPS

NUMBER OF OPERATORS	2	MIN SPEC	0.459
NUMBER OF PARTS	10	MAX SPEC	0.479
NUMBER OF TRIALS	2	TOLERANCE	0.02

DATA SUMMARY

OPERATOR	AVERAGE	RANGE
1	0.470705	0.00019
2	0.470625	0.00063
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
7	NA	NA
8	NA	NA
9	NA	NA
10	NA	NA
AVERAGE	0.470665	0.00041

N XBAR	0.470625
MAX XBAR	0.470705
XBARDIFF	0.00008

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE
REPEATABILITY	0.001871	9.36%
REPRODUCIBILITY	0	0.00%
RPT & REPR (R&R)	0.001871	9.36%

NOTE: ALL CALCULATIONS BASED ON 5.15 SIGMA (99%)

GR&R STUDY TITLES IN CELLS A6, A9, A10. MIN/MAX SPEC IN B12, B13
DIAL INDICATOR
GAGE # 16070

MIN SPEC 0.459
MAX SPEC 0.479
TOLERANCE 0.02

DATA FOR OPERATOR 1

	TRIAL						
PART	1	2	3	4	5	AVG	RANGE
1	0.4693	0.4694				0.46935	0.0001
2	0.4697	0.4696				0.46965	0.0001
3	0.471	0.4715				0.47125	0.0005
4	0.4715	0.4715				0.4715	0
5	0.472	0.472				0.472	0
6	0.4715	0.4716				0.47155	0.0001
7	0.4707	0.471				0.47085	0.0003
8	0.4694	0.4693				0.46935	0.0001
9	0.4718	0.4713				0.47155	0.0005
10	0.4696	0.4698				0.4697	0.0002
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRAND AVG: 0.470705 AVG RANGE: 0.00019
MAX OF INDIVIDUAL RANGES: 0.00038

TI-NHTSA 8054

TA -GR OPERATOR 2

TRIAL

PART	1	2	3	4	5	AVG	RANGE
1	0.4695	0.4696				0.46955	0.0001
2	0.4693	0.4698				0.46955	0.0005
3	0.4718	0.4705				0.47135	0.0013
4	0.4719	0.4706				0.47125	0.0013
5	0.4715	0.4718				0.47165	0.0003
6	0.4715	0.4717				0.4716	0.0002
7	0.471	0.4715				0.47125	0.0005
8	0.4705	0.4716				0.47105	0.0011
9	0.4694	0.4702				0.4698	0.0008
10	0.4689	0.4695				0.4692	0.0006
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 0.470625 AVG RNGE: 0.00063
UCL FOR INDIVIDUAL RANGES 0.001339

GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD
-Rep-92
TIPS PRESSURE TESTER
ACTUATION

NUMBER OF OPERATORS	3	MIN SPEC	90
NUMBER OF PARTS	4	MAX SPEC	160
NUMBER OF TRIALS	2	TOLERANCE	70

DATA SUMMARY

OPERATOR	AVERAGE	RANGE
1	104.325	0.25
2	103.7	0.85
3	104.15	0.5
4	NA	NA
5	NA	NA
6	NA	NA
7	NA	NA
8	NA	NA
9	NA	NA
10	NA	NA
AVERAGE	104.0583	0.366666

N XBAR	103.7
X DBAR	104.325
XBARDIFF	0.625

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE
REPEATABILITY!	1.674054	2.39%
REPRODUCIBILITY!	1.577654	2.25%
RPT & REPR (R&R)!	2.300452	3.29%

NOTE! ALL CALCULATIONS BASED ON 5.15 SIGMA (99%)

TER STUDY TITLES IN CELLS A8,A9,A10. MIN/MAX SPEC IN B12, B13
//PA PRESSURE TESTER
ANALYSIS

MIN SPEC	90
MAX SPEC	160
TOLERANCE	70

DATA FOR OPERATOR 1

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	107.3	106.8				107.05	0.5
2	106.7	106.8				106.75	0.1
3	102.9	102.5				102.7	0.4
4	100.8	100.8				100.8	0
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 104.325 AVG RNGE: 0.25
UCL FOR INDIVIDUAL RANGES 1.1979

Y4 FOR OPERATOR 2

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	105.6	105.5				105.55	0.1
2	106.3	106.3				106.3	0
3	103.1	102.1				102.6	1
4	100.5	100.2				100.35	0.3
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 103.7 AVG RNGE: 0.35
UCL FOR INDIVIDUAL RANGES 1.1979

TA FOR OPERATOR 3

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	104.4	104.4				104.4	0
2	108.4	107.6				108	0.8
3	103	101.8				102.4	1.2
4	101.8	101.8				101.8	0
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 104.15 AVG RNGE: 0.5
UCL FOR INDIVIDUAL RANGES 1.1979

GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD
-Fun-92
TPS PRESSURE TESTER
RELEASE

NUMBER OF OPERATORS	3	MIN SPEC	20
NUMBER OF PARTS	4	MAX SPEC	120
NUMBER OF TRIALS	2	TOLERANCE	100

DATA SUMMARY

OPERATOR	AVERAGE	RANGE
1	46.075	0.5
2	45.2625	0.775
3	45.825	0.15
4	NA	NA
5	NA	NA
6	NA	NA
7	NA	NA
8	NA	NA
9	NA	NA
10	NA	NA
AVERAGE	45.72083	0.475

N XBAR	45.2625
X XBAR	46.075
XBARDIFF	0.8125

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE
REPEATABILITY:	2.169661	2.17%
REPRODUCIBILITY:	2.052217	2.05%
RPT & REPR (R&R):	2.985747	2.99%

NOTE: ALL CALCULATIONS BASED ON 5.15 SIGMA (99%)

(ER 87/07 TITLES IN CELLS A8,A9,A10, MIN/MAX SPEC IN B12, B13
//PS PRESSURE TESTER
RELEASE

MIN SPEC 20
MAX SPEC 120
TOLERANCE 100

DATA FOR OPERATOR 1

PART	1	2	TRIAL 3	4	5	AVG	RANGE
1	44.1	43.8				43.95	0.3
2	50.5	50.1				50.3	0.4
3	48.7	48.4				48.55	0.3
4	42	41				41.5	1
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 46.075 AVG RNGE: 0.5
UCL FOR INDIVIDUAL RANGES 1.551825

TA FOR OPERATOR 2

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	43.7	43.2				43.45	0.5
2	49.4	47.6				48.5	1.8
3	48.8	48.2				48.5	0.6
4	40.7	40.5				40.6	0.2
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 45.2625 AVG RNGE: 0.775
UCL FOR INDIVIDUAL RANGES 1.551825

A FOR OPERATOR 3

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	42.6	42.5				42.55	0.1
2	50.7	50.4				50.55	0.3
3	48.8	48.7				48.75	0.1
4	41.5	41.4				41.45	0.1
5						NA	0
6						NA	0
7						NA	0
8						NA	0
9						NA	0
10						NA	0
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 45.825 AVG RNGE: 0.15
UCL FOR INDIVIDUAL RANGES 1.551825

GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD

DIAL INDICATOR
GAGE # 13070
7195

NUMBER OF OPERATORS	2	MIN SPEC	0.459
NUMBER OF PARTS	10	MAX SPEC	0.479
NUMBER OF TRIALS	2	TOLERANCE	0.02

DATA SUMMARY

OPERATOR	AVERAGE	RANGE
1	0.470705	0.00019
2	0.470625	0.00063
3	NA	NA
4	NA	NA
5	NA	NA
6	NA	NA
7	NA	NA
8	NA	NA
9	NA	NA
10	NA	NA
AVERAGE	0.470665	0.00041

MIN XBAR	0.470625
MAX XBAR	0.470705
XBARDIFF	0.00008

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE
REPEATABILITY:	0.001871	9.36%
REPRODUCIBILITY:	0	0.00%
RPT & REPR (R&R):	0.001871	9.36%

NOTE: ALL CALCULATIONS BASED ON 5.15 SIGMA (99%)

GR&R STUDY TITLES IN CELLS A6,A9,A10, MIN/MAX SPEC IN B12, B13
DIAL INDICATOR
GAGE # 16070

MIN SPEC 0.459
MAX SPEC 0.479
TOLERANCE 0.02

DATA FOR OPERATOR 1

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	0.4693	0.4694				0.46935	0.0001
2	0.4697	0.4696				0.46965	0.0001
3	0.471	0.4715				0.47125	0.0005
4	0.4718	0.4718				0.4718	0
5	0.472	0.472				0.472	0
6	0.4715	0.4716				0.47155	0.0001
7	0.4707	0.471				0.47085	0.0003
8	0.4694	0.4693				0.46935	0.0001
9	0.4718	0.4713				0.47155	0.0005
10	0.4696	0.4698				0.4697	0.0002
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG:0.470708 AVG RNGE: 0.00019
UCL FOR INDIVIDUAL RANGES 0.001339

A FOR OPERATOR 2

PART	TRIAL 1	2	3	4	5	AVG	RANGE
1	0.4695	0.4696				0.46955	0.0001
2	0.4693	0.4698				0.46955	0.0005
3	0.4718	0.4709				0.47135	0.0009
4	0.4719	0.4706				0.47125	0.0013
5	0.4715	0.4718				0.47165	0.0003
6	0.4715	0.4717				0.4716	0.0002
7	0.471	0.4715				0.47125	0.0005
8	0.4705	0.4716				0.47105	0.0011
9	0.4694	0.4702				0.4698	0.0008
10	0.4689	0.4695				0.4692	0.0006
11						NA	0
12						NA	0
13						NA	0
14						NA	0
15						NA	0
16						NA	0
17						NA	0
18						NA	0
19						NA	0
20						NA	0
21						NA	0
22						NA	0
23						NA	0
24						NA	0
25						NA	0

GRND AVG: 0.470625 AVG RNGE: 0.00063
UCL FOR INDIVIDUAL RANGES 0.001339

Status Date	Total Shipped
Dec. 12	8089

.	UPDATE PRODUCTION PLANS FOR ALL SWITCHES	DOUGLAS	ONGOING
*	UPDATE PRODUCTION COMPONENT AND ASM. DRAWINGS TO CURRENT DESIGN LEVEL	OFFILER	2/13
*	CHANGE FREQUENCY OF RING GAGE CALIB. FROM ONCE/6 WEEKS TO ONCE/QTR; KEEP LOG TO DETERMINE IF GAGES ARE OUR OF CAL.	GARIEPY	1/09

Sensor Assembly Machine:

Automated washer/converter assembly tooling effectivity runs are underway. Attachment to AMI has been delayed to early next year.

*	INSTALL WASHER/CONV. STATION ON AMI	SELLERS	(DATE ?)
.	CALL MTG. TO REVIEW AMI#2 UPGRADE PLANS	SELLERS	12/19

Base Assembly Machine:

Final Assembly Machine:

Misc. Manufacturing/QC Equipment:

*	MAKE QC P-TESTER COMPAT. W/77'S	WATT/ ROCHA	COMP.
*	MAKE QC CURR. LEG. TESTER COMPAT. W/77'S	WATT/ ROCHA	COMP.

PV Testing/ISR:

Test report will be completed on Friday. Jim will prepare any additional information that is required and will ship out all information on Friday, 12/20.

*	SUBMIT ADDENDUM TO PC ISR W/CORRECTED BASE DIMENSION & PEAT/PIPC DATA	WATT	10/16	ORIG.
			[illegible]	REV.
*	STATUS OF L/T APPROVAL	DOUGLAS	11/28	ORIG.
			12/19	REV.
.	COMPLETE PV TESTING & REPORT	OFFILER	12/20	
*	SEND SECOND ISR SUBMISSION TO FORD AND TI	WATT	[illegible]	

Diaphragm Life:

.	IMPLEMENT SOLUTION TO DIAPHRAGM LIFE	OFFILER/ SELLERS	ONGOING
*	SET UP MTG TO REVIEW RESULTS OF CRIMP/ DIAPHRAGM LIFE STUDIES	OFFILER	1/09

TI 0024288

Miscellaneous:

.	57 TO 77 CONVERSION: PHASE 1 TESTING	OFFILER/ SELLERS	12/19
.	COMPLETE DESIGN FMEA	OFFILER	04/18 ORIG.
			02/14 REV.
.	DETERMINE APPROACH FOR 2A/3A THREAD GAGING ISSUE	CEARN/ MCGUIRK	10/03 ORIG.
			11/21 REV.

The team resolved this issue; Jim/Dave will draft a letter which will be sent to the appropriate Ford (and GM) personnel, along with

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 6.00
* CHARACTERISTIC LIFE : 1133.00

NO.	TIME	RELIABILITY(%)	
1	500	99.2641	③ RED CUP, HL CRIMP

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 7.00
* CHARACTERISTIC LIFE : 760.00

NO.	TIME	RELIABILITY(%)	
1	500	94.8053	④ MS CUP, AMI CRIMP

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 5.70
* CHARACTERISTIC LIFE : 446.00

NO.	TIME	RELIABILITY(%)	
1	500	14.6854	⑦ RED CUP, AMI CRIMP I

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 3.70
* CHARACTERISTIC LIFE : 1371.00

NO.	TIME	RELIABILITY(%)	
1	500	97.6343	④ MS CUP, HL CRIMP (YAL)

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 6.90
* CHARACTERISTIC LIFE : 1208.00

NO.	TIME	RELIABILITY(%)	
1	500	99.7729	② RED CUP, AMI CRIMP II

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : ~~3.00~~ 3.50
* CHARACTERISTIC LIFE : ~~1559.00~~ 1469

NO.	TIME	RELIABILITY(%)	
1	500	~~96.7849~~ 97.77	⑤ RED CUP, AMI CRIMP NO BACKCRIMP

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 9.30
* CHARACTERISTIC LIFE : 1005.00

NO.	TIME	RELIABILITY(%)	
1	500	99.8487	① RED CUP, HL CRIMP W/ AMI BACKCRIMP

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 6.90
* CHARACTERISTIC LIFE : 1208.00

NO.	TIME	RELIABILITY(%)
1	500	99.7729

(NO CHG)
HEAD WP, ANKLE CRUMP II

RELIABILITY LEVELS FOR SPECIFIED VALUES OF TIME
****
* WEIBULL SLOPE : 3.50
* CHARACTERISTIC LIFE : 1469.00

NO.	TIME	RELIABILITY(%)
1	500	97.7258

HEAD WP, ANKLE CRUMP W/O
(RECORDED PG 1)

ACTIVITY ID	ACTIVITY DESCRIPTION	[illegible]	EARLY START	EARLY FINISH
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
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[illegible]	[illegible]	[illegible]		[illegible]
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[illegible]	[illegible]			[illegible]
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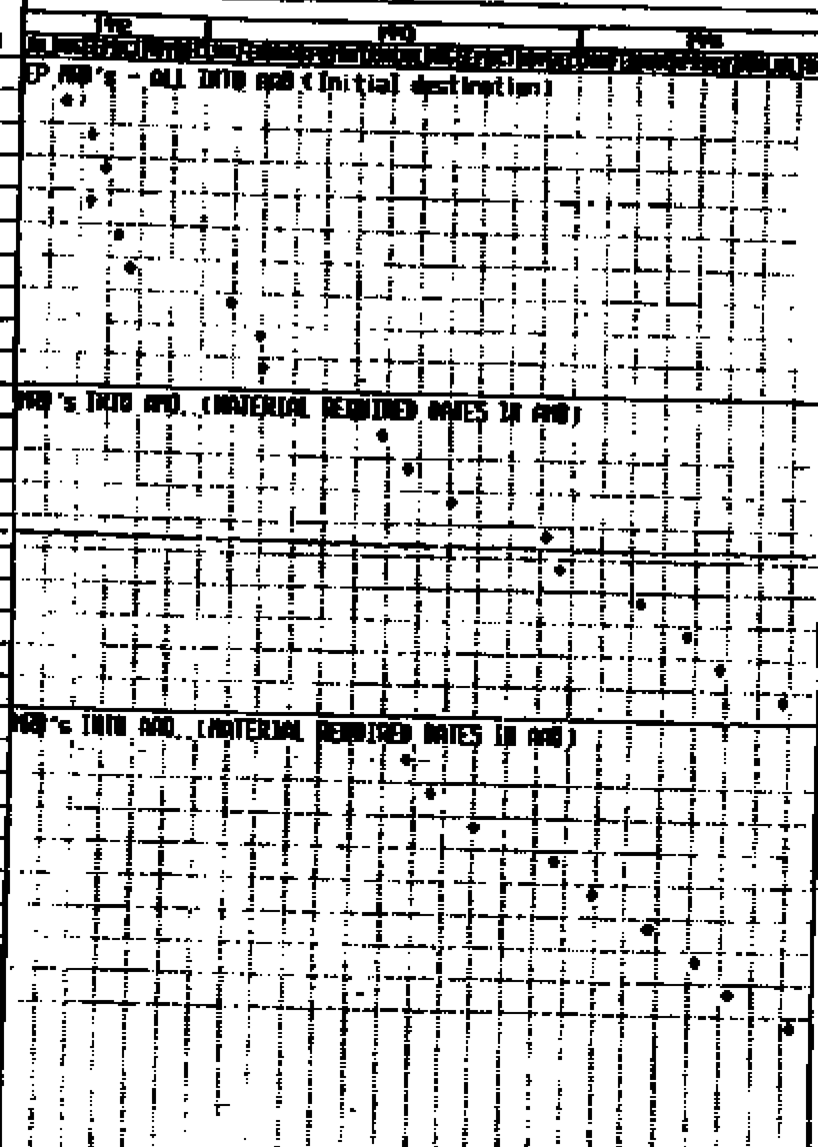
[illegible]	[illegible]	[illegible]		[illegible]



Add note on Vendor Releases versus PC MRD's

Target Date [illegible]
Plot Date [illegible]
Data Date [illegible]
Project Start [illegible]
Project Finish [illegible]

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"IBIS" "TPMP - DRAFT # for ISSUE #11

MRD's (MATERIAL REQUIRED DATES)

Page 1 of [illegible]

ENGINEERS- CALL & FENNEY-JONES ... Ph. 7756

Date	Revision	Checked	Approved

TI-NHTSA 8070