

EA02025

TEXAS INSTRUMENTS, INC.'S

9/10/03 ATTACHMENT TO ODI

BOX 4, PARTS A - N

PART C

**TEXAS
INSTRUMENTS**



PARTIAL ISIR SUBMISSION

**TO FORD MOTOR COMPANY
FOR PART NUMBER F2AC - 9F924 - AA
CRUISE CONTROL PRESSURE SWITCH
FOR EN53 PLATFORM**

APRIL 13, 1982

TEXAS INSTRUMENTS



April 14, 1992

Bruce J. Maeroff
Supervisor
Passenger Car Brake Systems
Engineering Department
Body and Chassis Engineering
Car Product Development
2000 Rotunda Drive
Building #5 - Chassis Engineering
Dearborn, MI 48121

Dear Bruce;

With your visit to Texas Instruments, Inc. (Precision Controls Department), on 4-13-92 and 4-14-92, we have reviewed the joint submission of both Ford and Texas Instruments to the switch noise issue for the Next Generation Speed Control Safety Switch for the EMS1 application. We have jointly reviewed this partial ISW submission for the purpose of releasing Texas Instrument's first pass at a quiet version of this Next Generation Speed Control Safety Switch.

Additionally, as a result of your visit the following work has been agreed to:

- Jointly reviewed and approved ES test plan for combined testing of F2AC and F3DC switches.....4/13/92.....Maeroff
Offiler
Benattia
- Begin ES testing for final 7/2/92 ISW submission.....4/13/92.....Offiler
- 20 switches (F3DC9F924AA) B. Maeroff.....4/14/92.....Offiler
- 1 box of F2AC9F924AA switches to B. Maeroff.....4/14/92.....Douglas
- 5 F3DC9F924AA switches with 500K impulse cycles to B. Maeroff for receipt by 4/21/92.....Offiler
- 5 F3DC9F924AA switches with 500K impulse cycles hand carried to Atlanta.....4/21/92.....Offiler
- Participation in the EMS 2MP build in Atlanta.....4/21/92.....Offiler

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- Proposal for "Test Buck" construction.....4/24/92.....Soggs
- Forward additional information on thermal testing done to date on Noryl base material.....4/24/92.....Offiler
Freda
- Coordinate final ISW submission for 7/2/92.....Matt

Our plan is to submit the complete ISW package on or before 7/2/92. this is an aggressive schedule designed to meet Ford's 7/18/92 JOB 1 release date.

If you have any further questions, please call me at 508-699-3090

Sincerely

Materials and Controls Group
Control Products Division

Michael De Mattia
Senior Quality Engineer
Precision Controls Department

CC: Charlie Douglas
Dale Soggs
Dave Csarn
Steve Offiler
Bill Sweet
Matt Sellers
Jim Watt

Ford: Bruce Maroff

WARRANTS

TI-NHTSA 005484

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 Nearoff Date _____

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

Reason for Initial Sample:

- | | | |
|-------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Initial Submission | <input type="checkbox"/> Change in Optional Construction or Material | <input type="checkbox"/> Process Change |
| <input type="checkbox"/> Engineering Change(s) | <input type="checkbox"/> Additional Replacement, or Refurbished Tooling | <input type="checkbox"/> Change in Subcontractor or Source |
| <input type="checkbox"/> Tooling Transfer | <input type="checkbox"/> Correction of Discrepancy (Resubmission No. _____) | <input type="checkbox"/> Parts Produced at Additional Location |
| <input type="checkbox"/> Other - Please Specify _____ | | |

SUPPLIER INFORMATION (Manufacturing Location)

Supplier Name Texas Instruments Street Address 34 Forest St.

City Attitboro State MA Postal Code 02703 Country USA

Supplier Mfg. Location Code - DUMB 10973/7325814 Customer Assigned _____

CUSTOMER INFORMATION

Customer Name Ford Motor Co. MA&O Buyer Fred Sandershot 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 *partial*

Submission Checklist

- | | | |
|---------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------|
| <input checked="" type="checkbox"/> Checked Print | <input type="checkbox"/> Material Test Results | <input checked="" type="checkbox"/> Control Plan |
| <input type="checkbox"/> Auxiliary Drawings/Markings | <input checked="" type="checkbox"/> Certifications | <input type="checkbox"/> Process Capability Results |
| <input type="checkbox"/> Correct Number of Samples | <input checked="" type="checkbox"/> Functional (ES) Test Results <i>Partial</i> | <input checked="" type="checkbox"/> Process Flow Diagram |
| <input checked="" type="checkbox"/> Dimensional Results | <input type="checkbox"/> Product Engineering Approval | <input checked="" type="checkbox"/> Gage (Measurement) Studies |

Supporting data for all requirements are available upon request.

COMMENTS:

Partial ISM to expedite use of "Quiet" Switch, full submission to be complete by 6/22/92. Bruce Nearoff 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 customer drawings and specifications from specified materials, on regular production tooling with no operations other than the regular production process.

Authorized Signature Michael DeMatia Date 4-13-92

Print Name Michael DeMatia Title SGA ENGINEER Phone No. (508) 699-3090

APPROVAL (when required by customer procedure) Approved Rejected

Signature _____ Date _____

Quantity 282c

INITIAL SAMPLE WARRANT

PAGE 002
No. 112384

PART INFORMATION

Part Name NEXT GENERATION SPEED CONTROL Part Number F2VC-9F924-AB
 Control Item Yes No Engineering Change Level G Date 4-11-91
 Engineering Change Authorization DRIVER-BRASE Date _____
 Shown on Drawing No. F2VC-9F924-AB Part Weight 062 kg

Reason for Initial Sample:

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

SUPPLIER INFORMATION (Manufacturing Location)

Supplier Name TEXAS INSTRUMENTS Street Address 34 FOREST STREET
 City ATTLEBORO State MA Postal Code 01703 Country USA
 Supplier Mfg. Location Code - OUNS TQ97K Customer Assigned FORD MOTOR CO - EED

CUSTOMER INFORMATION

Customer Name FORD MOTOR CO - EED Buyer FRED HENDERSHOT Buyer Code 165
 Purchase Order Number _____ Sample Acceptance Level 2
 Application NEXT GENERATION SPEED CONTROL

RESULTS

The results for dimensional measurements material tests and functional (ES) tests meet all drawing and specification requirements Yes No

Submission Checklist

- Checked Print Material Test Reports Control Plan
 Auxiliary Drawings/Revisions Certifications Process Capacity Report
 Correct Number of Samples Functional (ES) Test Results Process Flow Diagram
 Dimensional Results Product Engineering Approval Gage (Measurement) Studies

Supporting data for all requirements are available upon request.

COMMENTS:

ISR SUPPLEMENT WITH ADDITIONAL TESTING TO CLOSE OUT ALERT NO. A10166193;
ALSO, CORRECTED BASE MOLD DIMENSIONS. PART PREVIOUSLY APPROVED ON
ISN # 112384, DATED 9/17/91

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 all operations other than the regular production process.

Authorized Signature JIM WATT Date 12/20/91
 Title QA ENGINEER Phone No. 508-699-1719

APPROVAL (when required by customer or process) Approved Rejected
 Signature [Signature] Date 1/14/92
 Part No. 2920 VEHICLE OPERATIONS SOA

FAL/PRINT

TI-NHTSA 005486

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	11.804	11.817	11.817	11.794				
2	16.56 - 16.76	16.638	16.652	16.671	16.673				
		16.661	---	16.680	16.668				
3	19.45 - 19.9	19.752	19.754	19.787	19.799				
4	2.84 - 3.05	2.930	2.93	2.944	2.931				
5	1.65 - 2.06	1.927	1.966	1.969	1.976				
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	11.748	11.753	11.777				
		11.729	11.740	11.789	11.747				
9	0.25 - 0.75	0.490	0.475	0.519	0.523	0.573	0.638	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				
11	19.05 MAX	18.667	18.709	18.671	18.704				
		18.701	18.748	18.565	18.757				
12	12.59 - 13.11	12.800	12.829	12.802	12.819				
		12.829	12.800	12.842	12.824				

TEXAS INSTRUMENTS INCORPORATED • 34 FORBIST STREET • ARTLEBORO, MA 01765
603-888-2805 • TELEX 987705 TWX 710-348-0626 • CABLE TIKINS

TI-NHTSA 005489

TEXAS INSTRUMENTS



DIMENSIONAL ANALYSIS ON PART NUMBER

F2AC-9F924-AA

	BLUEPRINT SPEC	CAVITY # A ACTUAL	CAVITY # B ACTUAL	CAVITY # C ACTUAL	CAVITY # D ACTUAL
13	0.68 - 1.30	1.085	1.105	1.122	1.175
14	2.79 - 3.41	3.076	3.061	3.152	3.109
15	6.60 - 6.81	6.701	6.673	6.715	6.677
16	NO FLASH/BURRS	SLIGHT	FLASH ON	EDGES	Ø 10X
17	8.90-8.72 2X	8.535	8.553	8.484	8.578
		8.726	8.512	8.570	8.519
18	25DEG +/- 4DEG	24DEG 25MIN	24DEG 56MIN	24DEG 47MIN	24DEG 06MIN
		24DEG 10MIN	24DEG 14MIN	24DEG 06MIN	24DEG 43MIN
19	(71.5DEG) 2X	72DEG --	71DEG 31MIN	71DEG 20MIN	72DEG 01MIN
		71DEG 07MIN	72DEG --	72DEG 10MIN	71DEG 12MIN
20	TERM. HOUSING	BLACK ONLY	AVAILABLE	TO QUALIFY	MOLD
	NATURAL:				

**DRAWINGS AVAILABLE UPON
REQUEST**

PIPC/PIST DATA

TI-NHTSA 005492



PROCESS POTENTIAL AND QUALITY INDEXES SUMMARY DATA SHEET

PART #: F29C-9F924-AB SUPPLIER CONTACT: Jim Kerr
 SUPPLIER: Texas Instruments CONTACT PHONE: 1-508-499-1718
 CODE: T097K PART DESCRIPTION: Next Generation
Speed Control
 ADDRESS: 24 Forest St. SOA CODE: (Mark Schiller)
Attleboro, MA 02703 VEHICLE PROGRAM: Pass Car
 VEHICLE BULD: EP VP FB OTHER

CHARACTERISTIC TYPE

▽ = FORD CRITICAL CHARACTERISTICS S.C. = FORD OR SUPPLIER SIGNIFICANT CHARACTERISTICS

NUMBER OF CRITICAL AND SIGNIFICANT CHARACTERISTICS:

1:	2:	3:	4:	5:	6:	7:	8:	9:	10:	11:	12:	13:	14:	15:
<u>Actuation Pressure</u>	<u>Release Pressure</u>	<u>3/8-24UNF-2A Thread</u>												
TYPE: <u>SC</u>	TYPE: <u>SC</u>	TYPE: <u>SC</u>	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____	TYPE: _____
Cp = <u>1.00</u>	Cp = <u>1.00</u>	Cp = <u>1.00</u>	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____	Cp = _____
Cpk = <u>1.00</u>	Cpk = <u>1.00</u>	Cpk = <u>1.00</u>	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____	Cpk = _____

PIST = $\frac{1265}{1265} \times 100 = 100\%$

PIPC_{Cp} = N/A x 100 = _____ % PIPC_{Cpk} = N/A x 100 = _____ %

COMMENTS:

** Calibration check is done 100 percent, parts tested 300; defective 0 percent or defect 0.

* * * threads are checked on a Go/NoGo gage.

PREPARED BY:

Elaine Ross

DATE: 12/20/91

**DRAWINGS AVAILABLE UPON
REQUEST**

R & R STUDIES

TI-NHTSA 005486

M GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD)

-Feb-92

77PS 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	0.35
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	104.0542	0.346666

MIN XBAR	103.7
MAX XBAR	104.325
XBAR DIFF	0.625

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE

REPEATABILITY:	1.674054	2.39%
REPRODUCIBILITY:	1.577854	2.25%
RPT & REPR (R&R):	2.300452	3.29%

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

TEST STUDY TITLES IN CELLS A8,A9,A10. MIN/MAX SPEC IN B12, B13
 77PS PRESSURE TESTER
 ACTUATION

MIN SPEC 90
 MAX SPEC 160
 TOLERANCE 70

DATA FOR OPERATOR 1

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
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 RANGE: 0.25
 UCL FOR INDIVIDUAL RANGES 1.1979

DATA FOR OPERATOR 2

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
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

GRAND AVG: 103.7 AVG RANGE: 0.35
 UCL FOR INDIVIDUAL RANGES 1.1979

TA FOR OPERATOR 3

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
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 RANGE: 0.5
 UCL FOR INDIVIDUAL RANGES 1.1979

1 GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD)
 -F#D-92
 1775 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
 K XBAR 46.075
 XBARDIFF 0.8125

	MEASUREMENT UNIT ANALYSIS	%TOLERANCE

REPEATABILITY:	2.168661	2.17%
REPRODUCIBILITY:	2.052217	2.05%
RPT & REPR (R&R):	2.985747	2.99%

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

ENTER STUDY TITLES IN CELLS A8,A9,A10. MIN/MAX SPEC IN B12, B13
 77PS PRESSURE TESTER
 RELEASE

MIN SPEC 20
 MAX SPEC 120
 TOLERANCE 100

DATA FOR OPERATOR 1

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
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

GRAND AVG: 46.075 AVG RANGE: 0.5
 UCL FOR INDIVIDUAL RANGES 1.551825

DATA FOR OPERATOR 2

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
1	43.7	43.2				43.45	0.5
2	49.4	47.6				48.5	1.9
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

ORND AVG: 45.2625 AVG RANGE: 0.775
 UCL FOR INDIVIDUAL RANGES 1.551825

TA FOR OPERATOR 3

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
1	42.6	42.5				42.55	0.1
2	50.7	50.4				50.55	0.3
3	49.8	49.7				49.75	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 RANGE: 0.15
 UCL FOR INDIVIDUAL RANGES 1.551625

GAGE STUDY FOR REPEATABILITY AND REPRODUCIBILITY (LONG METHOD)

Oct-65

DIAL INDICATOR

GAGE # 16070

TIPS

NUMBER OF OPERATORS 2
 NUMBER OF PARTS 10
 NUMBER OF TRIALS 2

MIN SPEC 0.459
 MAX SPEC 0.479
 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	0.470663	0.00041

N XBAR 0.470625
 L-X 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%)

(SEE STUDY TITLES IN CELLS A8,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					AVG	RANGE
	1	2	3	4	5		
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: 0.470705 AVG RANGE: 0.00019
 UCL FOR INDIVIDUAL RANGES 0.001339

DATA FOR OPERATOR 2

PART	TRIAL					AVG	RANGE
	1	2	3	4	5		
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	0.4703	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

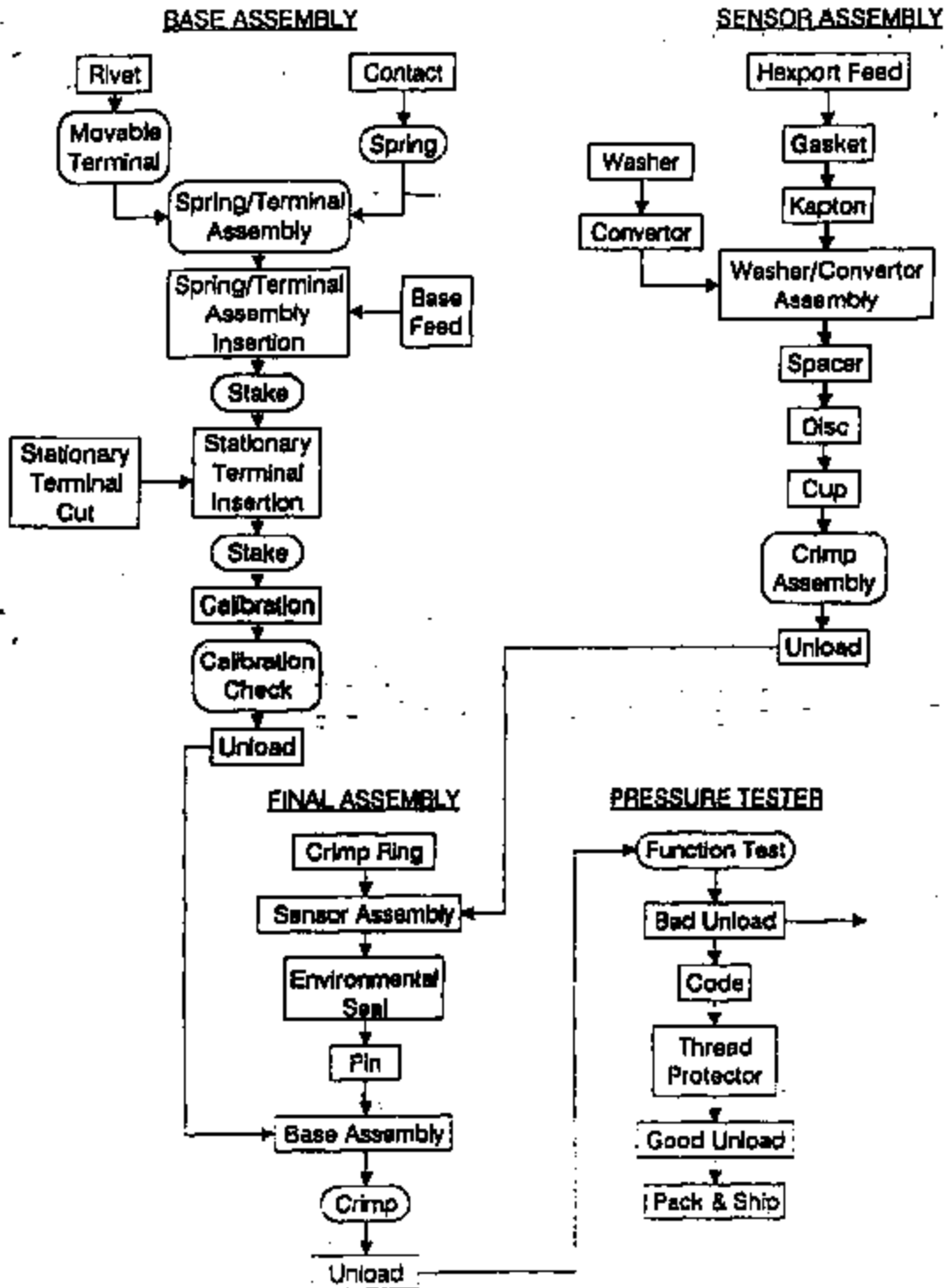
GRND AVG: 0.470625 AVG RANGE: 0.00063
 UCL FOR INDIVIDUAL RANGES 0.001339

**PROCESS FLOW &
CONTROL PLAN**

TI-NHTSA 005508

FORD NEXT GENERATION SPEED CONTROL

PROCESS FLOW CHART 77PSL2-1/2-3



SQC Operator

Supervisor

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

<u>PROCESS STEP DESCRIPTION</u>	<u>PRODUCT CHARACTERISTICS</u>	<u>EVALUATION METHOD</u>	<u>CONTROL METHOD</u>	<u>FREQUENCY OF TEST</u>	<u>REACTION PLAN</u>
BASE 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 1993 ML/Straja 060-0134

77-NTHTSA 005610

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

<u>PROCESS STEP DESCRIPTION</u>	<u>PRODUCT CHARACTERISTICS</u>	<u>EVALUATION METHOD</u>	<u>CONTROL METHOD</u>	<u>FREQUENCY OF TEST</u>	<u>REACTION PLAN</u>
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				

Revision: A

11 April 1992 MJS/mjs 050-0134

TI-NHTSA 005511

DEMEA

TI-NHTSA 005512

NO.	DESCRIPTION	CHECKED BY	STATUS	REMARKS	DATE	TIME	INITIALS	ACTION	
								INITIALS	DATE
1	Pre-flight inspection								
2	Engine start								
3	Engine operation								
4	Engine shutdown								
5	Engine start								
6	Engine operation								
7	Engine shutdown								
8	Engine start								
9	Engine operation								
10	Engine shutdown								
11	Engine start								
12	Engine operation								
13	Engine shutdown								
14	Engine start								
15	Engine operation								
16	Engine shutdown								
17	Engine start								
18	Engine operation								
19	Engine shutdown								
20	Engine start								
21	Engine operation								
22	Engine shutdown								
23	Engine start								
24	Engine operation								
25	Engine shutdown								
26	Engine start								
27	Engine operation								
28	Engine shutdown								
29	Engine start								
30	Engine operation								
31	Engine shutdown								
32	Engine start								
33	Engine operation								
34	Engine shutdown								
35	Engine start								
36	Engine operation								
37	Engine shutdown								
38	Engine start								
39	Engine operation								
40	Engine shutdown								

TI-NHTSA 005513

Task No.	Task Name	Priority	Start Date	End Date	Duration	Resources	Notes	Dependencies	Completion %
1	Project Kick-off	High	2023-01-01	2023-01-05	5	Project Manager, Team Lead	Initial meeting with stakeholders		100%
2	Requirement Gathering	High	2023-01-06	2023-01-15	10	Business Analysts	Interviews and workshops	1	80%
3	System Architecture	High	2023-01-16	2023-01-25	10	System Architects	Designing high-level architecture	2	60%
4	Detailed Design	High	2023-01-26	2023-02-15	20	Software Engineers	Creating detailed design documents	3	40%
5	Development	High	2023-02-16	2023-03-15	30	Software Engineers	Writing code and implementing features	4	20%
6	Testing	High	2023-03-16	2023-04-15	30	QA Engineers	Unit testing and integration testing	5	10%
7	Deployment	High	2023-04-16	2023-04-20	5	Operations Team	Rolling out the system to production	6	5%
8	Post-launch Support	Medium	2023-04-21	2023-05-31	41	Support Team	Monitoring system performance and user feedback	7	0%

TI-NHTSA 006514

Task ID	Task Name	Description	Start Date	End Date	Duration	Status	Priority	Dependencies	Action Item	Assignee	Notes	
											Actual Start	Actual End
1	Task 1	Description 1	01/01/2024	01/05/2024	5	Not Started	High	None	Action 1	John Doe	...	
2	Task 2	Description 2	01/05/2024	01/10/2024	5	Not Started	Medium	1	Action 2	Jane Smith	...	
3	Task 3	Description 3	01/10/2024	01/15/2024	5	Not Started	Low	1, 2	Action 3	Bob Johnson	...	
4	Task 4	Description 4	01/15/2024	01/20/2024	5	Not Started	Medium	3	Action 4	Alice Brown	...	
5	Task 5	Description 5	01/20/2024	01/25/2024	5	Not Started	High	4	Action 5	Charlie White	...	
6	Task 6	Description 6	01/25/2024	02/01/2024	7	Not Started	Medium	5	Action 6	Diana Green	...	
7	Task 7	Description 7	02/01/2024	02/05/2024	5	Not Started	Low	6	Action 7	Ethan Black	...	
8	Task 8	Description 8	02/05/2024	02/10/2024	5	Not Started	Medium	7	Action 8	Fiona Grey	...	
9	Task 9	Description 9	02/10/2024	02/15/2024	5	Not Started	High	8	Action 9	George Blue	...	
10	Task 10	Description 10	02/15/2024	02/20/2024	5	Not Started	Medium	9	Action 10	Hannah Purple	...	
11	Task 11	Description 11	02/20/2024	02/25/2024	5	Not Started	Low	10	Action 11	Ivan Gold	...	
12	Task 12	Description 12	02/25/2024	03/01/2024	7	Not Started	Medium	11	Action 12	Jessica Silver	...	
13	Task 13	Description 13	03/01/2024	03/05/2024	5	Not Started	High	12	Action 13	Kyle Bronze	...	
14	Task 14	Description 14	03/05/2024	03/10/2024	5	Not Started	Medium	13	Action 14	Laura Platinum	...	
15	Task 15	Description 15	03/10/2024	03/15/2024	5	Not Started	Low	14	Action 15	Mark Diamond	...	

TI-NHTSA 009515

State, District, or Territory	Project Number	Project Name	Project Type	Project Status	Project Start Date	Project End Date	Project Budget	Project Progress	Project Completion	Project Notes	ACTION	
											Start	End
California	100-1-1	San Francisco Bay Area	Urban	Completed	1968	1971	\$100,000,000	100%	100%			
	100-1-2	San Diego	Urban	Completed	1968	1971	\$50,000,000	100%	100%			
	100-1-3	Los Angeles	Urban	Completed	1968	1971	\$150,000,000	100%	100%			
	100-1-4	San Jose	Urban	Completed	1968	1971	\$30,000,000	100%	100%			
	100-1-5	San Francisco	Urban	Completed	1968	1971	\$80,000,000	100%	100%			
	100-1-6	San Francisco	Urban	Completed	1968	1971	\$70,000,000	100%	100%			
	100-1-7	San Francisco	Urban	Completed	1968	1971	\$60,000,000	100%	100%			
	100-1-8	San Francisco	Urban	Completed	1968	1971	\$50,000,000	100%	100%			
	100-1-9	San Francisco	Urban	Completed	1968	1971	\$40,000,000	100%	100%			
	100-1-10	San Francisco	Urban	Completed	1968	1971	\$30,000,000	100%	100%			
	100-1-11	San Francisco	Urban	Completed	1968	1971	\$20,000,000	100%	100%			
	100-1-12	San Francisco	Urban	Completed	1968	1971	\$10,000,000	100%	100%			
	100-1-13	San Francisco	Urban	Completed	1968	1971	\$5,000,000	100%	100%			
	100-1-14	San Francisco	Urban	Completed	1968	1971	\$2,000,000	100%	100%			

TI-NHTSA 005518

Task ID	Task Name	Description	Start Date	End Date	Duration	Predecessors	Resources	Notes
1	Task 1	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
2	Task 2	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
3	Task 3	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
4	Task 4	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
5	Task 5	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
6	Task 6	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
7	Task 7	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
8	Task 8	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
9	Task 9	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
10	Task 10	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
11	Task 11	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
12	Task 12	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
13	Task 13	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
14	Task 14	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
15	Task 15	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
16	Task 16	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
17	Task 17	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
18	Task 18	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
19	Task 19	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]
20	Task 20	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]	[Blank]

PFMEA

TI-NHTSA 005518

Function Description	Failure Mode	Severity of Effect	FMEA No.	Failure Mode	Cause	FMEA No.	FMEA No.	Preventive Action	Responsible Department	ACTION #	Status	Date	By
ASAP FOLLOWUP	NO CHECK	LOW	1	FAILURE MODE	NO CHECKING THE	1	1						
	NO CHECK	LOW	2	FAILURE MODE	NO CHECKING THE	2	2						
	NO CHECK	LOW	3	FAILURE MODE	NO CHECKING THE	3	3						
	NO CHECK	LOW	4	FAILURE MODE	NO CHECKING THE	4	4						
	NO CHECK	LOW	5	FAILURE MODE	NO CHECKING THE	5	5						
	NO CHECK	LOW	6	FAILURE MODE	NO CHECKING THE	6	6						
	NO CHECK	LOW	7	FAILURE MODE	NO CHECKING THE	7	7						
	NO CHECK	LOW	8	FAILURE MODE	NO CHECKING THE	8	8						
	NO CHECK	LOW	9	FAILURE MODE	NO CHECKING THE	9	9						
	NO CHECK	LOW	10	FAILURE MODE	NO CHECKING THE	10	10						

TI-NHTSA 00519

Priority	Description	Status	Date	Action	Priority	Status	Date	Action	Priority	Status	Date	Action	ACTION			
													Priority	Status	Date	
1
2
3
4
5
6
7
8
9
10

TI-NHTSA 005522

**MATERIAL
ANALYSIS**

TI-NHTSA 005525

F2AC-9F924-AA

MATERIAL ANALYSIS

PARTS LIST

	PART NAME	PART #	CERTIFIED
1	BASE	46515-3	YES
2	STA. TERM.	36888-1	YES
3	MOVE. CONTACT	74408-1	YES
4	RIVET	74171-1	YES
5	MOVE. TERM.	36887-1	YES
6	SPRING ARM	36889-1	YES
7	U312 HEXPORT	36900-1	YES
8	GASKET	74353-1	YES
9	CUP	27713-1	YES
10	SEAL	74176-1	YES
11	KAPTON STRIP	27225-1	YES
12	WASHER	27639-1	YES
13	CONVERTER	27406-1	YES
14	KAPTON TAPE	74224-1	YES
15	SPACER	73958-2/-3	YES
16	CRIMP RING	74797-1	YES
17	TRANSFER PIN	74078-SEL	YES
18	ENVID. SEAL	74247-4	YES

TI-NHTSA.005526



Product Quality Documentation

CERTIFICATE OF COMPLIANCE

Customer Order Number WILE/WH/ET/2E	Customer Part Number	GE Request Number 1281495/1	Material Grade and Color N751	872500 111
Lot Number N52311	Qty. Shipped 100	U.M. LB	Shipped From WUSE SERVICE, INC.	Date Shipped 04/06/93
			Shipped Number 01328195	

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 _____
 Specification Originator _____
 Specification Comments _____

TEST	REFERENCE	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA:				
HOT TENSILE STRENGTH - 1/8"	ASTM D648	460.0 DEG F MINIMUM	460.0 DEG F	238 DEG C
NOTCHED 1200 IMPACT-1/8"	ASTM D256	1.5 FT-LB/IN MINIMUM	2.0 FT LB/IN	107.0 J/IN
% ELONGATION	ASTM D638	4 % MINIMUM	8 %	
TENSILE YIELD	ASTM D638	20,000 PSI MINIMUM	26,890 PSI	183.9 MPa
FLEXURAL MODULUS	ASTM D790	1,000,000 PSI MINIMUM	1,266,000 PSI	8,715.3 MPa
FLEXURAL STR @ YIELD	ASTM D790	25,000 PSI MINIMUM	37,890 PSI	261.8 MPa
SPECIFIC GRAVITY	ASTM D792	1.31-1.35 G/CC		1.33 G/CC
MOISTURE CONTENT	KF1, FISCHER	0.50 % MAXIMUM	0.09 %	

PRODUCT AUDIT DATA: **DATE OF LAST AUDIT: 08/91**
FLAMMABILITY, .105" THICK P/MS-302 **SELF-EXTINGUISHING 16-MIN BURN DATE**
 4.00 IN/IN MAXIMUM

ROBERT O. MATTHEWS
Quality Manager

THOMAS HELPS
Manufacturing Manager

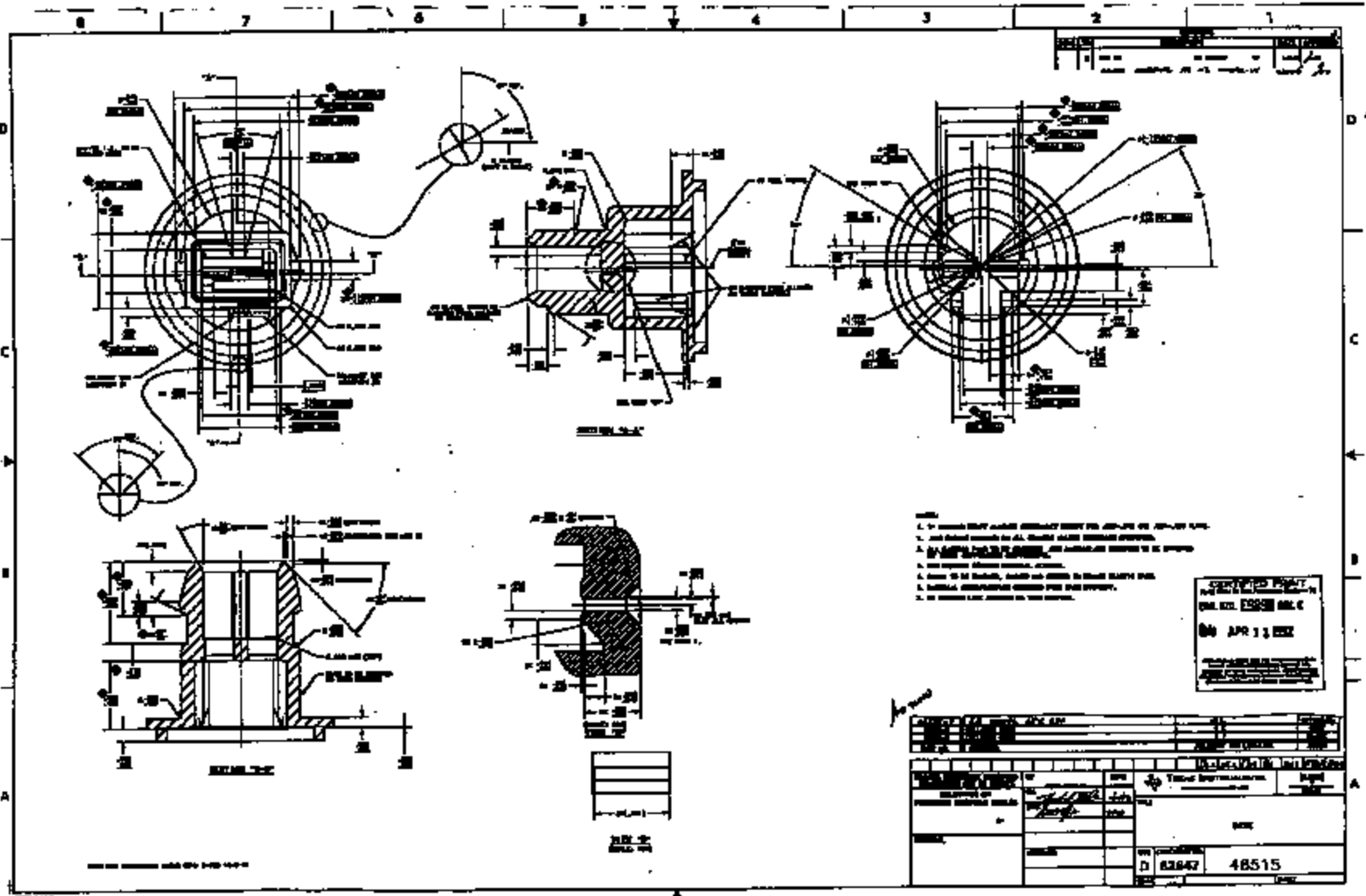
If you have any questions concerning this, please contact:

TEXAS INSTRUMENTS INC.
ACCOUNTS PAYABLE DEPT
PO BOX 686
ATLEBORO, MA 02716-0686
Attn: JIM KEANE

DANN SHREVE

1-516-473-5003

TI-NHTSA 005528



NOTES:
 1. TO ORDER THIS ASSEMBLY CONTACT BENTON FOR APPROVAL OF APPROVAL FORM.
 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 5. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.

REV	DATE	BY	CHKD	APP'D	DESCRIPTION
01	04 APR 13 1982				

48515

August 20, 1991

To: Donna Moynihan 12-27

From: Beth Kill 10-16

Subject: GP-3 Material Confirmation
TSL Request # 110823

Sample Description:

P/N 36888-1 Stationary Terminal CDA 260 Brass
1/2 Hard

Results:

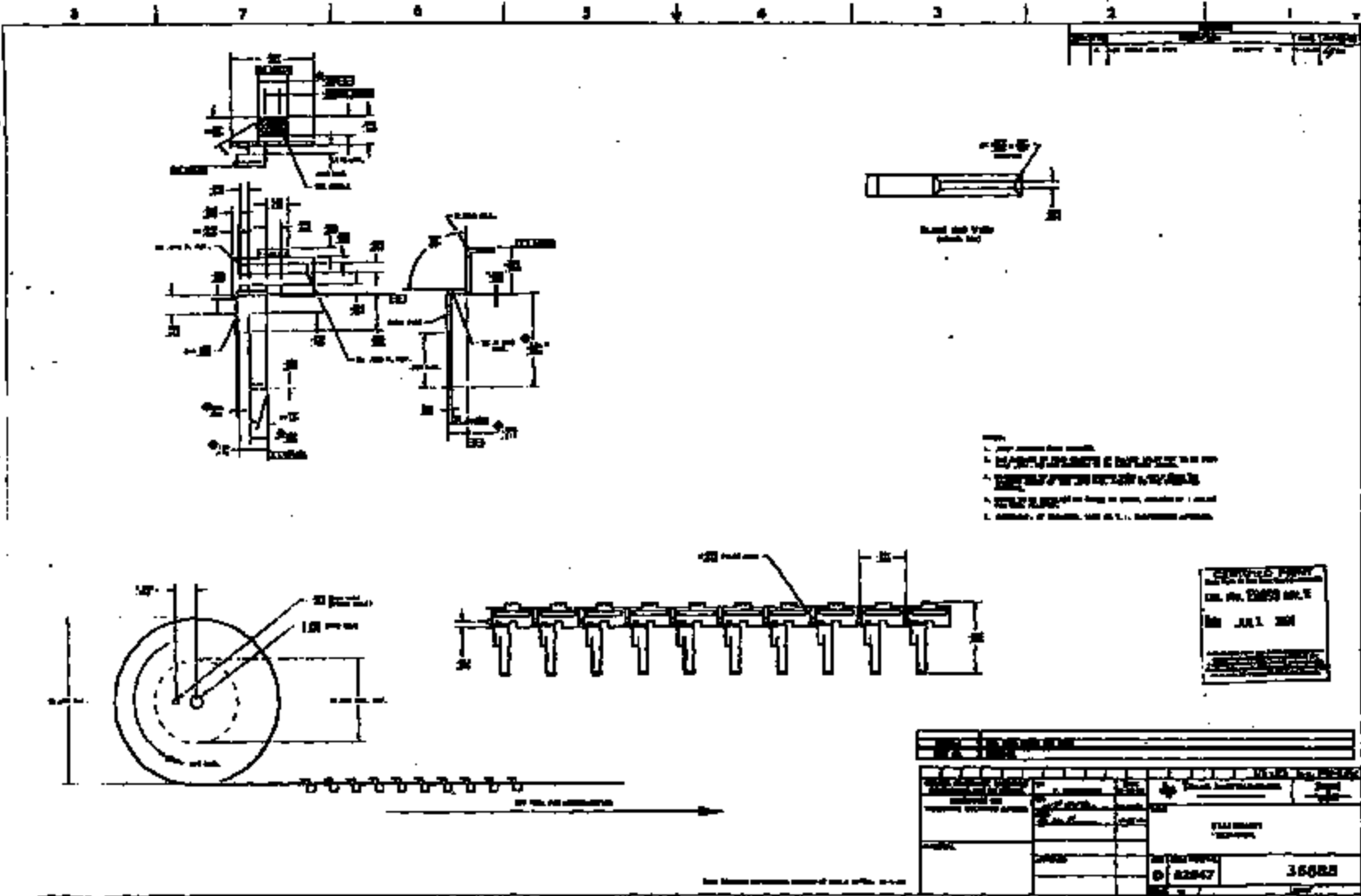
	P/N 36888-1	Spec. CDA 260
Cu (wt%)	68.5%	68.5 - 71.5%
Fe	0.030	0.05 max
Pb	0.010	0.07 max
Zn	balance	balance
Hardness	73 RB	60 - 77 RB

Results confirm the terminal is made of CDA 260 brass,
1/2 hard.

Regards,

Beth X3069

TI-NHTSA 005629



TI-NHTSA 005530

ACME MILFORD
857 BRIDGEPORT AVE.
MILFORD, CONNECTICUT 06460

TEL: 203-878-4631 + FAX: 203-878-3071

TO: TEXAS INSTRUMENTS

CERTIFICATE OF COMPLIANCE

ACME MILFORD CERTIFIES THAT:

P.O. NUMBER: 500011076
ACME/MILFORD CONTROL NUMBER: 17642
ACME/MILFORD P/N: 6254-A
QUANTITY: 915425

WAS PROCESSED TO CONFORM TO THE FOLLOWING:

PART NUMBER: 74406-1
PART REVISION: D
MATERIAL: COPPER CDA 102

HEAT NUMBER:
TENSILE AFTER LIGHT DRAW:
FINISH: .0001-.0024 SILVER PLATE
1.0007 MIN OVER VENT.

SIGNED:

DATE: 09-06-91

JOHN STEWART
TITLE: QUALITY CONTROL MANAGER

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY _____ MONTH _____ YEAR

NOTARY PUBLIC _____

TI-NHTSA 005531

RADCLIFF WIRE INC.

FLAT, SQUARE AND ROUND WIRE
Plastic Coated • Steel • Inconel Steel

RONZO ROAD • P.O. BOX 603 • BRISTOL, CONNECTICUT 06010
TELEPHONE: 203 / 583-1305 • FAX: 203 / 583-6553

ORDER NO.
532

MATERIAL CERTIFICATE

SOLE TO
ACME HILFORD
857 BRIDGEPORT AVENUE
HILFORD, CT 06460

SHIP TO

WA BUNTINGS

YOUR ORDER NO. 347-2	DATE ENTERED 6/28/91	DATE WANTED 7/29/91	DATE PROMISED	F.S.E. Bristol
QTY/WEIGHT ORDERED 300 lbs.	SIZE/TOLERANCE .0575 p/w .0005 Dia.			SHAPE Round
TEMPER	MATERIAL KTP 110 Copper		EDGE	FINISH
SPCS	TENSILE 45-55,000 PSI			SP-001-COM
SPECIAL CONDITIONS				
CERTS/MATL.				

SHIPPING RECORD

DATE	QUANTITY	PACKAGING	TEST
7/16/91	323#	1 Barrel	46,000 PSI

HEAT	C	MN	Si	S	P	Cr	Ni	Cu	B	Fe
HARDNESS	TI	CB - TA	Co	MO	V	Mg	Ca	N	Zn	W
TENSILE STR. 46,000 PSI	ZA	CB	TA	Sn	Bi					

*This is to certify that the above wire was proceed from raw material and was found to be in compliance with the specifications of your po#347-2.

RADCLIFF WIRE, INC.

Claire Souther
AUTHORIZED SIGNATURE
Claire Souther Quality Control Manager

TI-NHTSA 005532



AMERICAN ELECTRO PRODUCTS INC.
 1358 THOMASTON AVENUE
 WATERBURY, CT 06704
 (203) 756-7051

Certificate of Compliance

NO. 21494327
 REL 1

MILFORD RIVET & BUSH
 897 BRIDGEPORT AVE

DATE 08/30/71

MILFORD CT 06460

YOUR ORDER NO. 13323
 SHIPPED VIA UNITED P. B.

This is to verify that parts and/or your material furnished against your purchase order number shown above, have been manufactured in accordance with requirements and specification as required.

PART NO.	DESCRIPTION	QUANTITY
4254A	SILVER 0.001100-0.002400 NAI	725,825.0

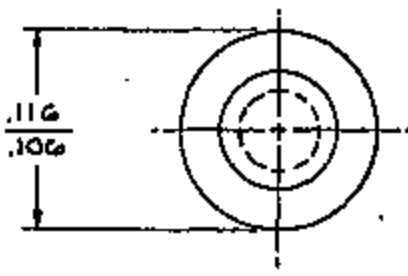
Tests to substantiate this have been performed in our plant (or have been performed by our suppliers) and are available upon request from us/or our suppliers.

Very truly yours,
 AMERICAN ELECTRO PRODUCTS, INC.
 Signed by: *Judy Sullivan*
 Q.C. Inspector

74408

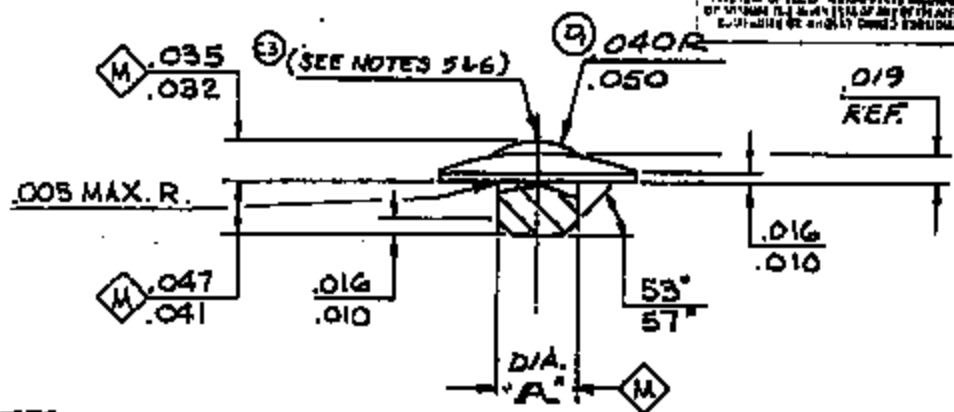
MOVABLE CONTACT

REV. **D** 74408



CERTIFIED PRINT
 Parts Made To This Print Must Conform To
ENG. STD. E9898 REV. E
 Date **JUL 1 1981**

NEVER USE THIS PRINT FOR THE INFORMATION CONTAINED THEREIN IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF TEXAS INSTRUMENTS INCORPORATED. IT IS THE POLICY OF THIS COMPANY TO PROVIDE THE HIGHEST QUALITY OF PRODUCTS AVAILABLE AT ALL TIMES.



- NOTES:**
1. PARTS MUST BE STORED IN PLASTIC BAGS THROUGH ALL SHIPPING AND HANDLING PROCESSES.
 2. MATERIAL & PLATING THICKNESS CERTIFICATION REQUIRED WITH EACH SHIPMENT.
 3. DIMENSIONS APPLY AFTER PLATING.
 4. MEASURE PLATING THICKNESS BY MOUNTING & CROSS-SECTIONING PART.
 5. PLATING THICKNESS APPLIES AT THE INDICATED LOCATION ONLY.
 6. TOOL VENT MARK ON .040-.050 ALLOWED. DIMENSIONS MAY NOT EXCEED .001 IN HEIGHT AND .003 IN WIDTH. THERE MUST BE NO VOID IN PLATING IN THIS AREA. .032-.035 DIMENSION MAY MEASURE .036 OVER THIS MARK.
 7. PLATING THICKNESS OF .0007 MINIMUM ALLOWED ABOVE TOOL VENT MARK ONLY. ADJACENT AREAS MUST MEET "FINISH" REQUIREMENTS.

36PSLA-1
 1ST ISSUING 1-6-85
 2ND ISSUING 1-6-85
 3RD ISSUING 1-6-85
 4TH ISSUING 1-6-85
 5TH ISSUING 1-6-85
 6TH ISSUING 1-6-85
 7TH ISSUING 1-6-85
 8TH ISSUING 1-6-85
 9TH ISSUING 1-6-85
 10TH ISSUING 1-6-85

74408-1	COPPER	SILVER PLT. .001/.0024 THK. (SEE NOTE # 5)	.0605-.062
B PART NO.	MATERIAL	(3) FINISH	(M) DIA. "A"
REV.		D.C. 3 Q23	1-6-85
BY <i>T. Dail</i> 1-6-85	TEXAS INSTRUMENTS INCORPORATED ATTLEBORO, MASS., U.S.A.	KLIXON CONTACT PRODUCTS	AND SIZE A
CH. <i>R. Parker</i> 1-15-86			74408
ENG. <i>R. Parker</i>			

ACME MILFORD
857 BRIDGEPORT AVE.
MILFORD, CONNECTICUT 06460

TEL: 203-878-4631 * FAX 203-878-5071

TO: TEXAS INSTRUMENTS

CERTIFICATE OF COMPLIANCE

ACME MILFORD CERTIFIES THAT:

P.O. NUMBER: 800011502
ACME/MILFORD CONTROL NUMBER: 19095
ACME/MILFORD P/N: 6051-A
QUANTITY: 99,995

WAS PROCESSED TO CONFORM TO THE FOLLOWING

PART NUMBER: 74171-1
PART REVISION: B
MATERIAL: BRASS CDA 260

HEAT NUMBER:
TENSILE AFTER LIGHT DRAM:
FINISH: PLAIN FINISH

SIGNED: John Michaud 
JOHN MICHAUD
TITLE: QUALITY CONTROL MANAGER

DATE: 05-30-91

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY _____ MONTH _____ YEAR

NOTARY PUBLIC _____

TI-NHTSA 005535



SEYMOUR SPECIALTY WIRE COMPANY

An Employee Owned Company

15 Franklin Street

Seymour, Connecticut 06483

(203) 833-8773

ANALYSIS REPORT

Customer	Milford Rivet & Machine Co.	Date	December 21, 1967
Address	P.O. Box 4016	Customer P.O.	37109
City	Milford, OH 43005	Seymour	S-34738-1
Material	QSA 250 Wire	Date Shipped	12-15-67
Size	.060" Rd.	Weight	55.5 lbs.
Specification	A.S. 56/63,000 PSI GR ALJ Heavy Seag Coat Conforms to UNS# Q2600		

CHEMICAL ANALYSIS:

COPPER	70.03
CAD	*.01
IRON	*.01
ZINC	32.1
TIN	
SILICON	
MANGANESE	
PHOSPHORUS	
NICKEL	
ALUMINUM	* LESS THAN

PHYSICAL ANALYSIS:

TENSILE STRENGTH PSI	65,000
YIELD STRENGTH PSI	
ELONGATION, % in.	20%
ROCKWELL	
BRINELL	
GRAIN SIZE, AVERAGE	
RESISTIVITY ohm-cm	
INDUCTIVITY	

State of Connecticut
County of New Haven

Sworn and subscribed to before me this 21 day of Dec. 1967

TI-NHTSA 005538

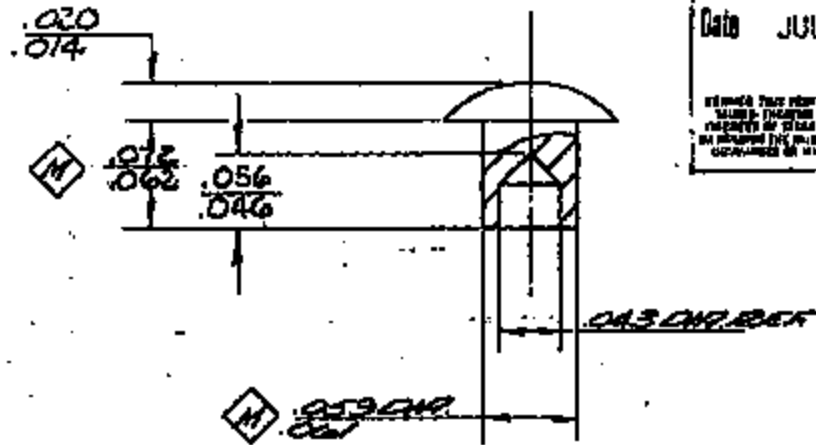
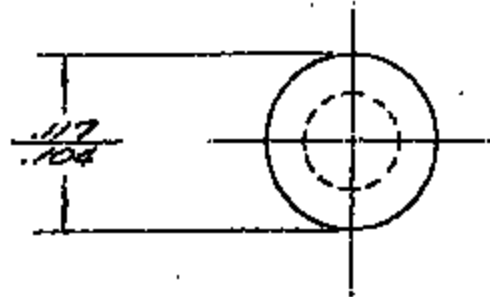
74171

STYLE

RIVET

REV. B

74171



CERTIFIED PRINT
 Parts Made To This Print Shall Conform To
 ENG. STD. E9898 REV. E
 Date JUL 1 1991

REMARK: THIS PRINT AND THE INFORMATION CONTAINED THEREIN IS TO BE USED ONLY FOR THE PURPOSES OF THIS ONE PROJECT AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

NOTE:
 1. PARTS MUST BE STORED IN PLASTIC BAGS THROUGH ALL SHIPPING AND HANDLING PROCESSES

REV. ISSUE 5/1981
 2-1-84
 2-23-84

74171-1 CDR # 2608955

PART NO. MATERIAL

173-103-101-1 M2H M22 P381 P372 P351 P91

BY SA 2-1-84
 CH. K.H. W...
 ENG. D. ...

TEXAS INSTRUMENTS
 INCORPORATED
 ATTLEBORO, MASS., U.S.A.

KILKIN
 CONTROL PRODUCTS
 DIVISION

REV. A

74171

August 20, 1991

To: Donna Moynihan 12-27

From: Beth Kill 10-16

Subject: GP-3 Material Confirmation
TSL Request # 110824

Sample Description:

P/N 36887-1 Moving Terminal · CDA 260 Brass
1/2 Hard

Results:

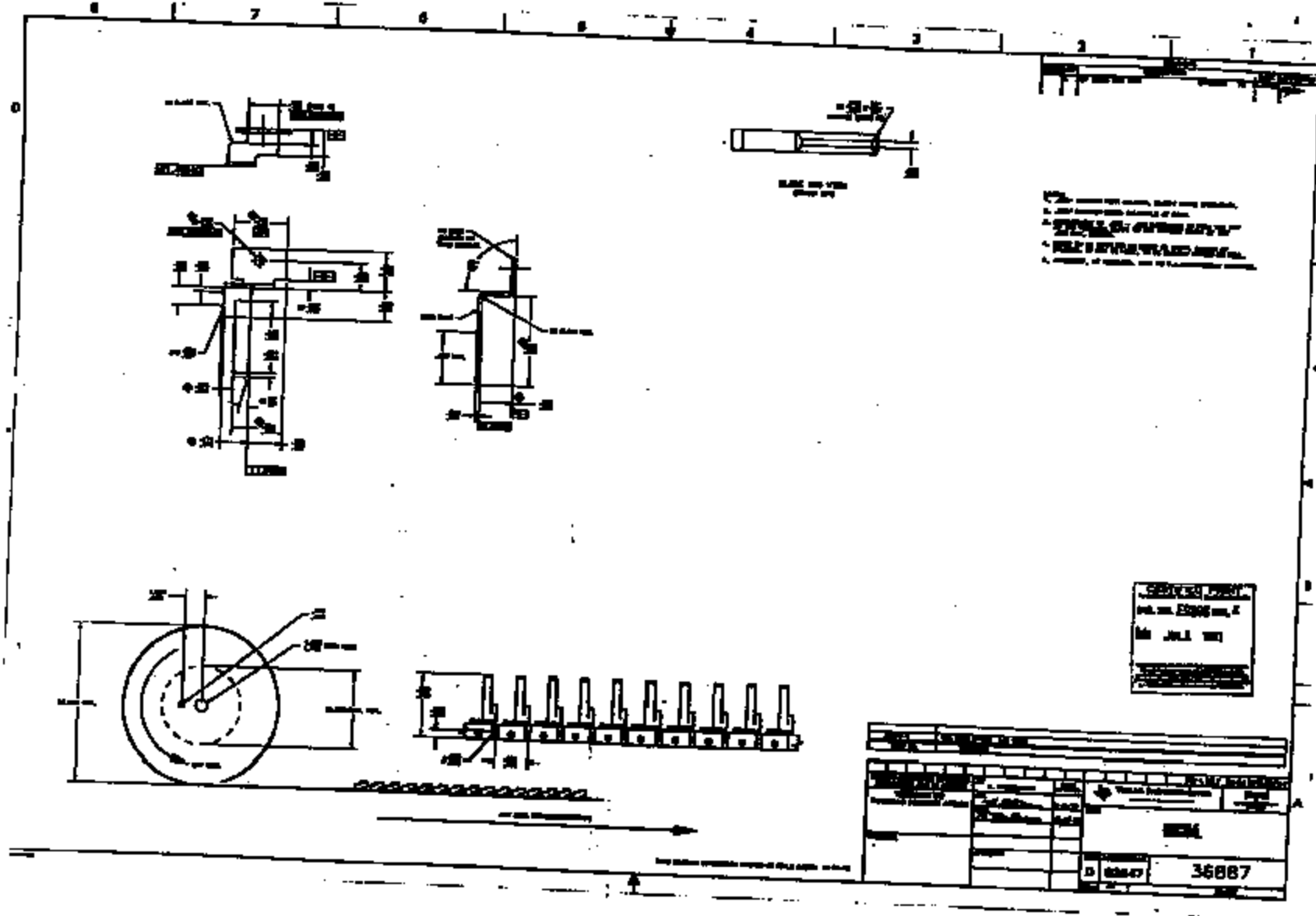
	P/N 36887-1	Spec. CDA 260
Cu (wt%)	68.7%	68.5 - 71.5%
Fe	0.020	0.05 max
Pb	0.010	0.07 max
Zn	balance	balance
Hardness	80.5 RB	60 - 77 RB

Results confirm the terminal is made of CDA 260 brass,
and slightly above 1/2 hard.

Regards,

Beth X3069

TI-NHTSA 005538



SCALE 1:1

1. ALL DIMENSIONS ARE IN MILLIMETERS.
 2. UNLESS OTHERWISE SPECIFIED.
 3. SURFACE FINISH SHALL BE AS SHOWN.
 4. MATERIALS SHALL BE AS SPECIFIED IN THE DRAWING.

CHECKED BY: [Signature]
 DATE: 10/11/87

REVISIONS		APPROVALS	
NO.	DESCRIPTION	DATE	SIGNATURE
1	INITIAL DESIGN		
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		

D 00047 36887	36887
------------------	-------

TI-NHTSA 006839

August 20, 1991

To: Donna Moynihan 12-27

From: Beth Kill 10-16

Subject: GP-3 Material Confirmation
TSL Request # 110825

Sample Description:

P/N 36889-1 Spring C17200 Beryllium Copper

Results:

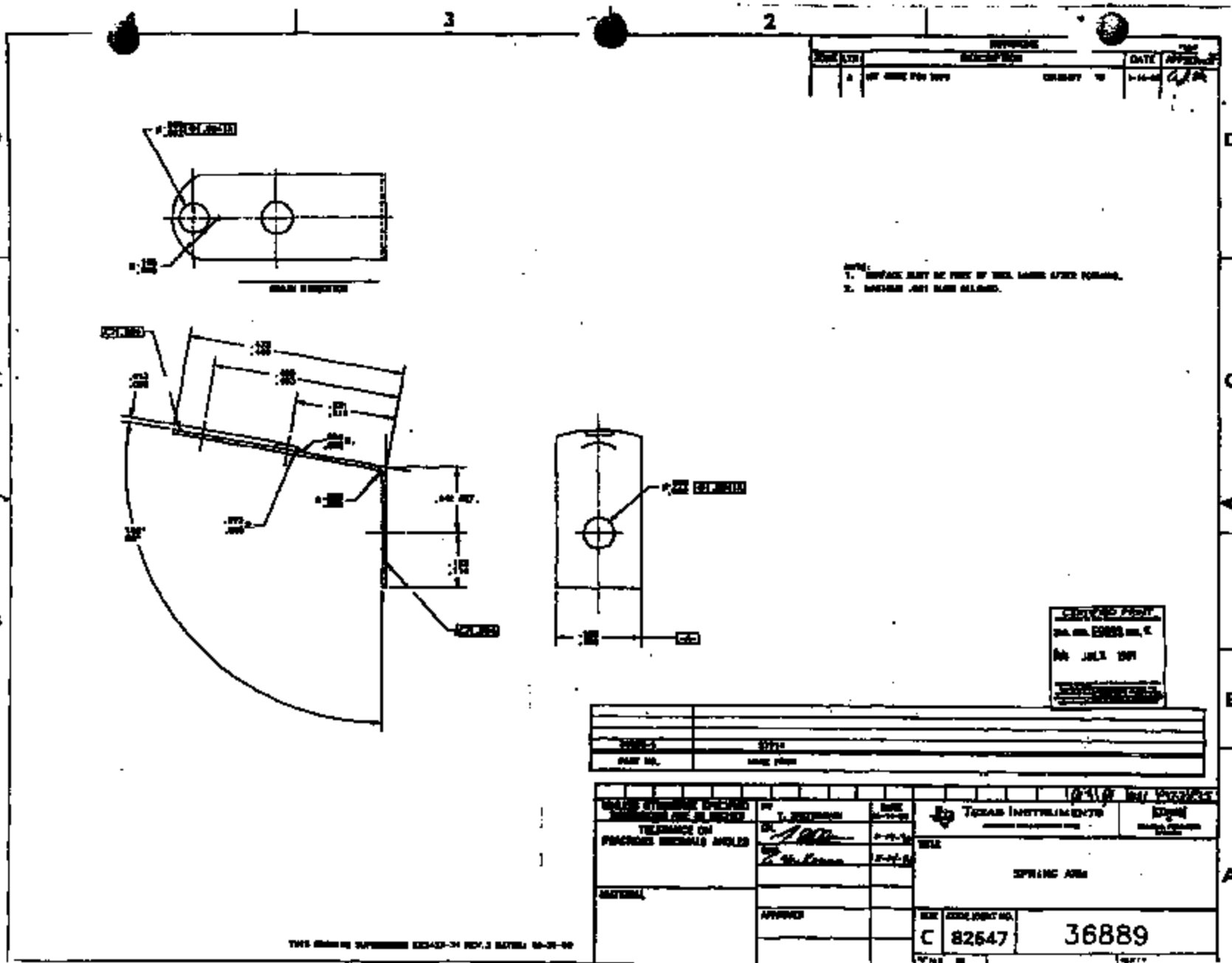
	P/N 36889-1	Spec. C17200
Be (wt%)	1.87%	1.80 - 2.00%
Fe	0.089	
Ni	0.068	[Fe + Ni + Co <0.6%]
Co	0.220	[Ni + Co ->0.2%]
Hardness	300 DPH	285 - 343 DPH

Results confirm the spring is made of C17200 beryllium copper at the specified hardness.

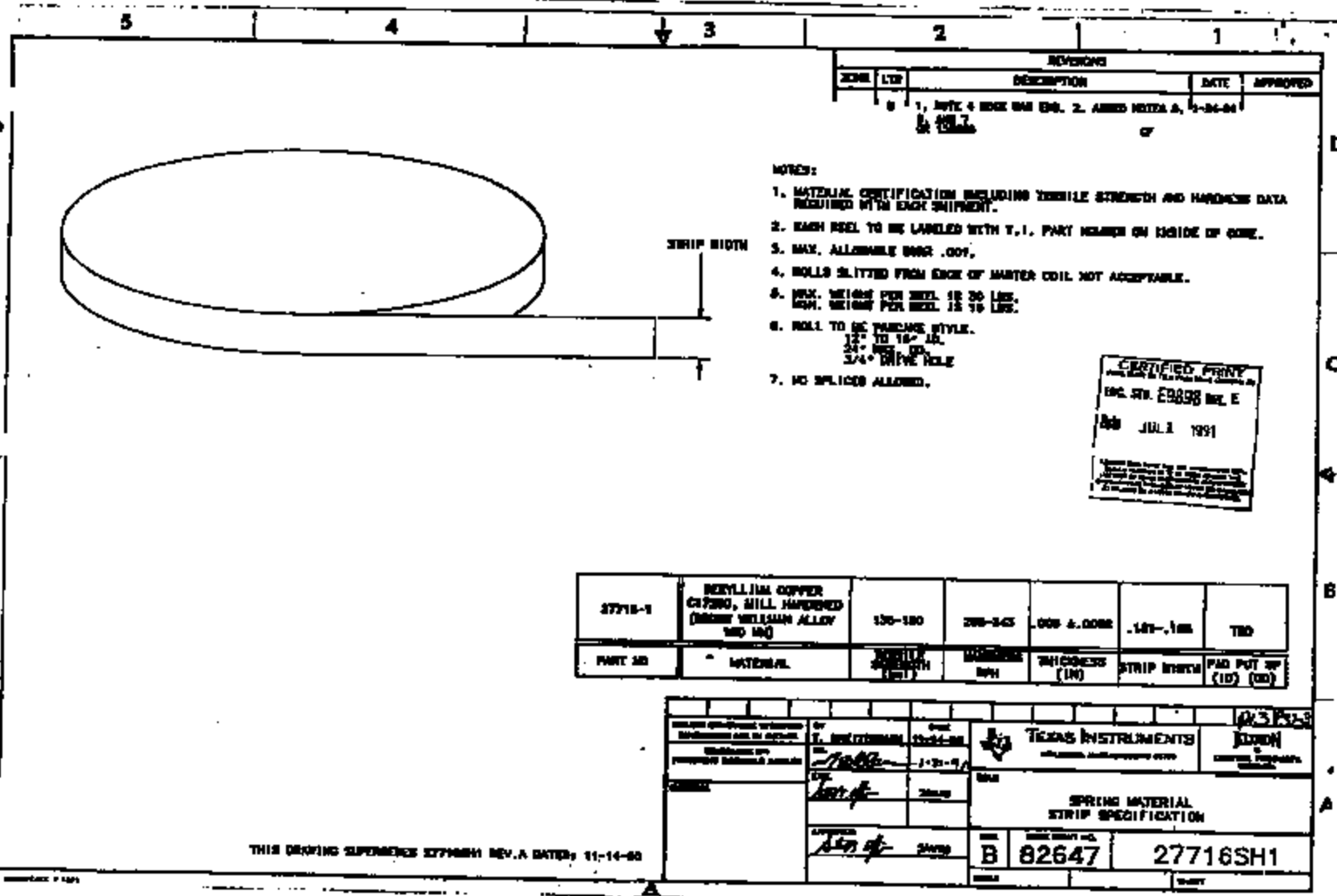
Regards,

Beth X3069

TI-NHTSA 005540



TI-NHT8A.005541



TI-NHTSA 005542



ELCO INDUSTRIES, INC.
PRECISION FORMING DIVISION
 1111 Southampton Road • P.O. Box 7000
 Westford, Mass 01186-9000
 Phone 617/227-5101 • Fax 617/227-5100 Ext. 748

CERTIFICATION

May 18, 1991

TEXAS INSTRUMENTS INC
 ACCTS PAYABLE DEPT
 P.O. BOX 666
 ATTLEBORO, MA 02703

This is to certify the parts furnished on your purchase order have been produced in accordance with specifications listed on your purchase order and/or blueprint.

MATERIAL CERTIFICATION, FINAL INSPECTION AND SAMPLES SENT

Records covering material used and the tests and inspection conducted are on file, subject to examination.

Purchase Order No.	600016587
Register No.	78825
Part No.	36800-1
Description	3/8-24 X .81
Quality Control No.	A9341-8
Quantity	8.735

36700-1

CERTIFICATION

The times call for quality. Elco quality.

Julie A. Stiger

Authorized Signature
 Quality Coordinator

F-27

TI-NHTSA 005543

12-14-90
P# 03762
40410#

STEEL COMPANY LIMITED

Type & Grade **SC-3896**

AISI10L10 SAF

30 100-1

Chemical Composition Of Steel	Heat No.	Coil No.	C	Mn	P	S	Si	Al	Cr	Ni	Mo	W	Other
	%	%	%	%	%	%	%	%	%	%	%	%	%
	C78314	0001 001B	10	41	5	5	21	1	1	3			
Physical Properties	Nominal Diameter		Tolerance of Diameter				Tensile Strength		Decarburization				
	in	mm	in	mm	1,000 psi	kg/cm ²	Da-T	Da-F					
	0.685	14.351	+ 0.0040	+ 0.1018	88.8 MAX	48.5 MAX							
Packaging	Coil Weight												
	NET. 2.272LBS (NET. 1.033KGS)												
WRAPPED WITH POLYPROPYLENE SHEET.													

Test Results

Sample No.	Diameter mm	Tensile Strength Kg/mm ²	Tensile Strength 1,000psi	Sample No.	Diameter mm	Tensile Strength Kg/mm ²	Tensile Strength 1,000psi
0001	14.38	33.7	47.9				
0002	14.38	33.7	47.9				
0003	14.37	32.7	46.5				
0004	14.41	33.7	47.9				
0005	14.36	32.3	45.9				
0006	14.36	32.9	46.8				
0007	14.37	33.3	47.4				
0008	14.37	32.8	46.1				
0009	14.36	33.1	47.1				
0010	14.38	34.7	49.4				
0011	14.36	33.1	47.1				
0012	14.38	32.7	46.5				
0013	14.38	34.3	48.8				
0014	14.38	33.8	48.1				
0015	14.37	34.2	48.8				
0016	14.36	35.5	50.5				
0017	14.36	35.5	50.5				
0018	14.36	34.2	48.8				

INSPECTION HARDNESS TESTING RESULTS

TESTED Rockwell SCALE USED B PART NO. 28700-1
1031010

SAMPLE NO. 1	RESULTS:
1	73.3
2	73.3
3	73.3
4	73.3
5	73.3
6	73.3
7	73.3
8	73.3
9	73.3
10	73.3

AVERAGE 72.9
MAXIMUM 73.9
MINIMUM 71.0

407

TECHNICAL SERVICE LABS

TEST NO. 109407

NO. 1	127	STATE YOUR PROBLEM SAMPLE DESCRIPTION	INFORMATION DESIRED: Please section and 1725 measure 410-430 per attached drawing. Thank you Sandy
NO. 2	146		
NO. 3	060		
DESCRIPTION	Sandy		
MAIL STATION	11-11		
EXTENSION	3021		
REQ. BY	AT&C		
DATE ORDERED	5/23/91		
DATE RECEIVED	5/24/91		
NO. OF SAMPLES	3		
COMPOSITION			36300-1

REPORT OF RESULTS:

2
 (1) 410-41
 (2) 42-41
 (3) 41-41

DATE RECEIVED

5/24/91

DATE OUT

5/29/91. SA. VAIN

TRENCIAN			
HOURS WORKED			
PROCEDURE USED			

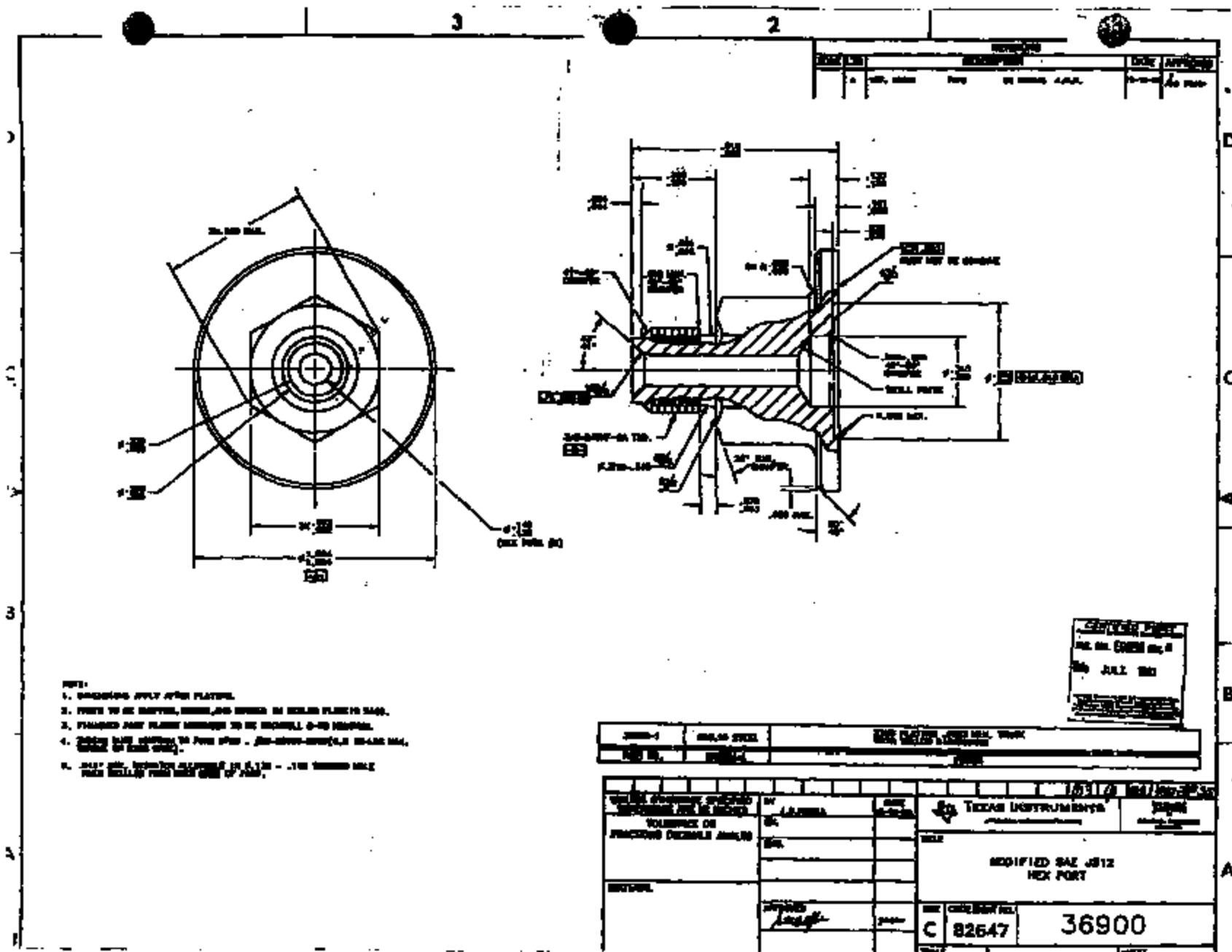
*PCC LD.

MC-385	TM-431	JOCY-125	FACL-314
PC-127	WIRE-432	CLKE-122	FACL-521
VERB-185	EPO-821	CAN-854	FACL-531
AFCC-483	PEP-822	AD DEV-285	STAFF-835
IMD-430	GBD-835	EMCD-877	

DISTRIBUTION: White and Yellow - Lab Pink - Requestor

TI-NHTSA 005546

TI-NHTSA 005547



July 29, 1991

To: Donna Moynihan 12-27
From: Beth K111 10-16
Subject: GP-3 Material Confirmation
TSL Request # 110831

Sample Description:

#110831 P/N 74353-1 Gasket Ethylene
propylene rubber

Results:

Akron Rubber Development Laboratory Inc. has analyzed the above component. The material conforms to specification. See the enclosed report.

Regards,

Beth X3069

TI-NHTSA 005548



AKRON RUBBER DEVELOPMENT LABORATORY, INC.

322 KENNEDY BOULEVARD • AKRON, OHIO 44301
Office (216) 434-6664 Telex (216) 434-8008

July 24, 1991

Ms. Elizabeth Hill
Texas Instruments
34 Forest St.
MS 10-14
Attleboro, MA 02703

SUBJECT: Chemical analysis on sample submitted by the above company.
PO# 500068978

RECEIVED: One sample identified as; #110831 Ethylene Propylene JEL compound
E-7104-70.

POLYMER IDENTIFICATION ASTM D 3677
Pyrolysis method

SAMPLE

#110831

POLYMER IDENTIFICATION

Ethylene-Propylene Rubber

Janis Seifert
Janis Seifert
Senior Chemical Technician
AKRON RUBBER DEVELOPMENT LABORATORY, INC.

Thomas M. Knowles
Thomas M. Knowles
Vice President, Chemical Services

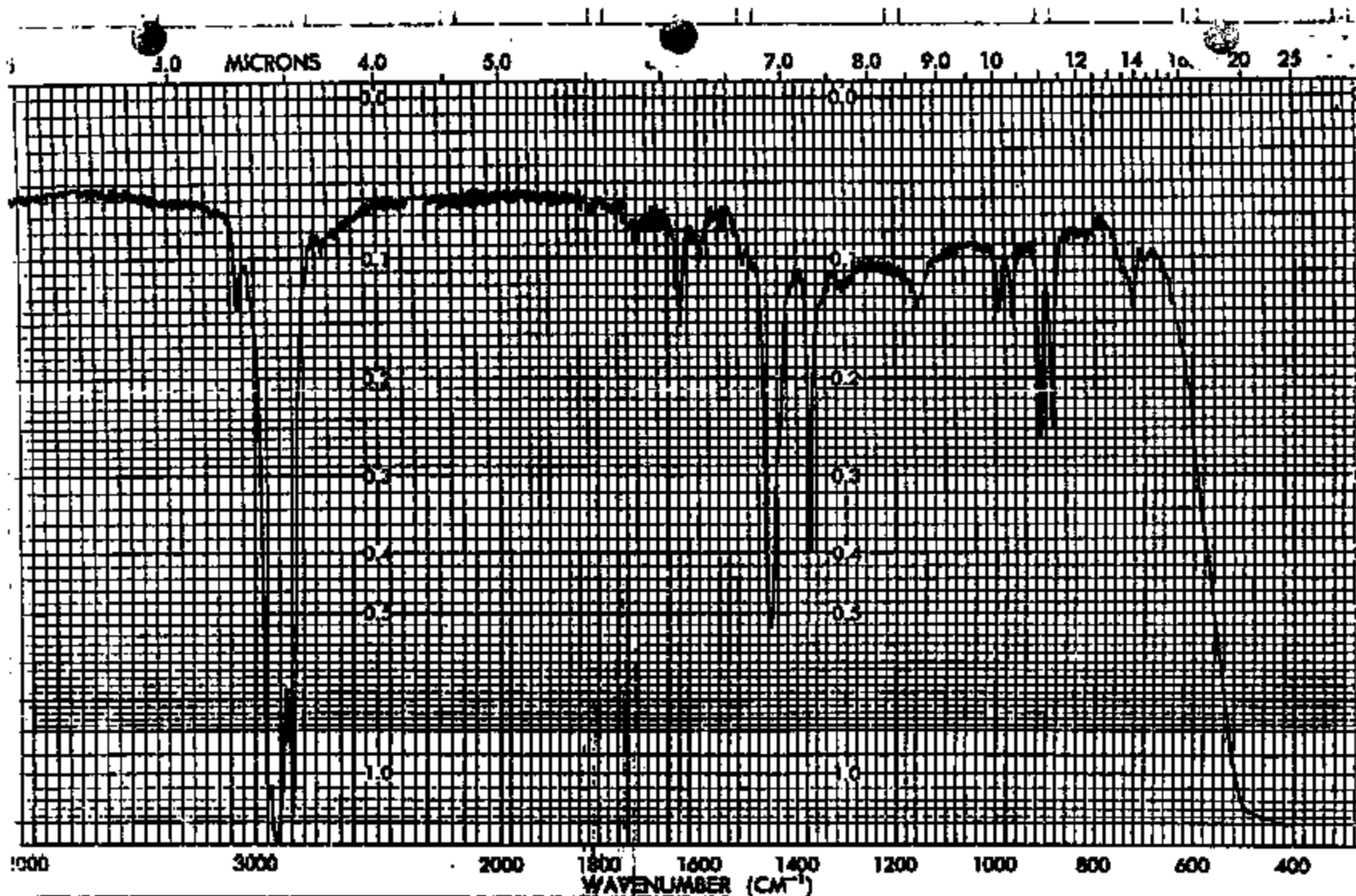
PN# 11726 INV# 31172601

ek

MEMBER OF AMERICAN COUNCIL OF INDEPENDENT LABORATORIES

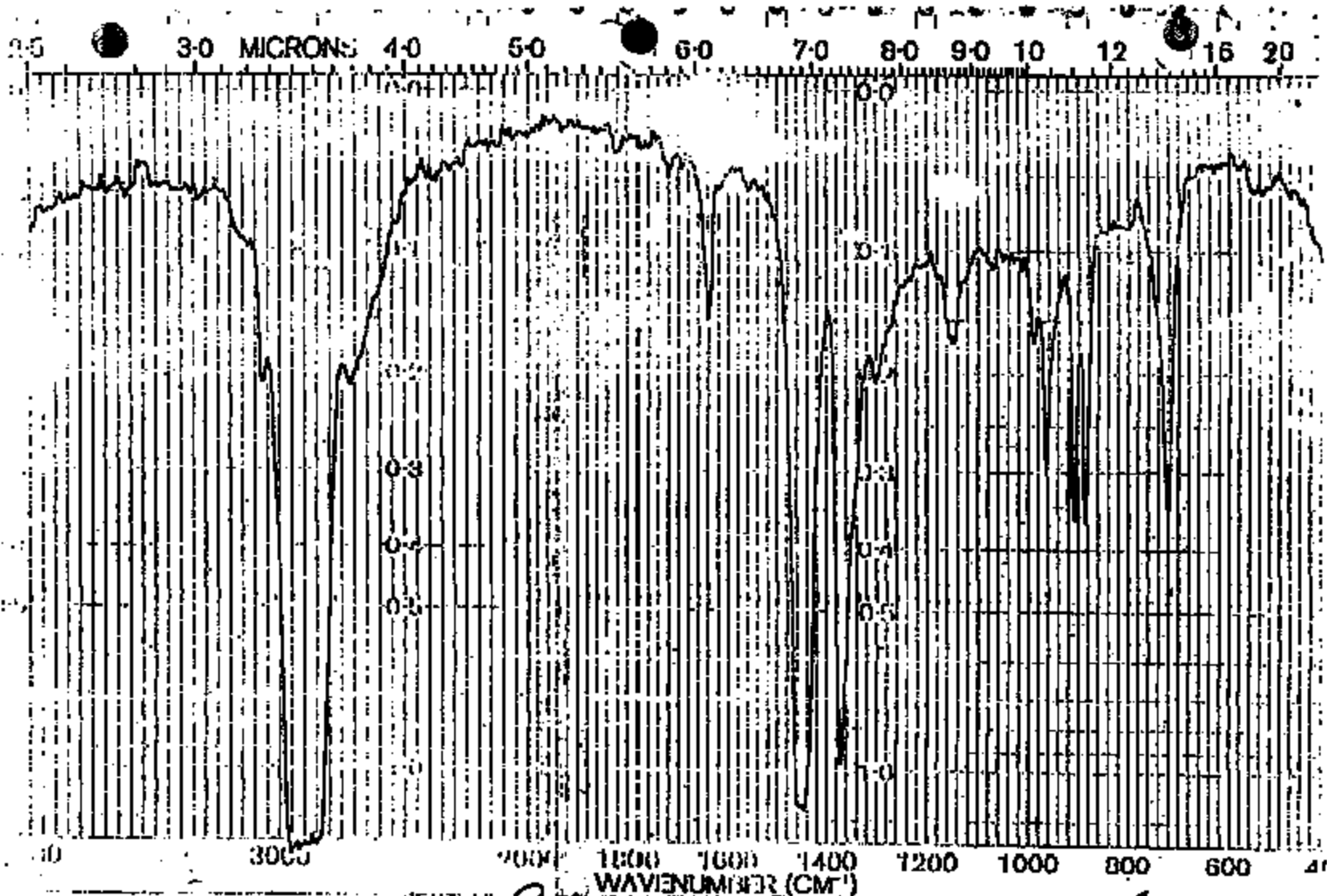


TI-NHTSA 005549



TI-NHTSA 005550

SAMPLE <i>Acetic acid</i>	SOLVENT <i>Acetic acid</i>	SCAN <i>1</i>	SINGLE B.	REMARKS <i>3.11</i>
	CONC.	SAT.	T. D. SPEED.	
CELL PATH	OPERATOR <i>J. H. ...</i>	ORD. EXP.		
REFERENCE	DATE	T. CONST.		
ORIGIN <i>Lab. ...</i>	No. <i>FE 5102-1001</i>	REF. No.		



TI-NHTSA 005551

SAMPLE
Ethylene Propylene Rubber

PREPARED BY
Poplysis
 DATE
 OPERATOR
 INSTRUMENT

SCAN 3
 RUN 2
 OPERATOR *Tone*
 DATE

SINGLE B.
 T.D. SILED
 ORD. EXP.
 LOCK SET
 FILE No.

ASDC
Control

