

EA02-025

TEXAS INSTRUMENTS, INC.'S

9/10/03 ATTACHMENT TO ODI

REQUEST #3

BOX 5

PARTS A - P

PART H

**RECERTIFICATION
SUBMISSION**

**ALLIED SIGNAL
P/N 2234330
FORD P/N F2AC-8F824-AA**

DEC. 1995

TI-NHTSA 7628

TO: **77002-1**
 FROM: **77002-1**
 DATE: **11/11/88**
 TIME: **10:00 AM**
 BY: **...**
 UNIT: **...**
 DIVISION: **...**
 PROJECT: **...**
 ORDER NO.: **...**
 QUANTITY: **...**
 UNIT PRICE: **...**
 TOTAL: **...**

SHIPPED VIA: **...**
 USE (CHECK ONE)
 SCRAP SALE
 SALE OF ASSETS
 OUTSIDE PROCESSING
 TRANSFERS BETWEEN TI LOCATIONS
 EXPENSE MATERIAL
 OTHER, EXPLAIN: **...**
 DIVISION: **...** CO: **...**

QUANTITY	DESCRIPTION PART (P/C)	UNIT PRICE	TOTAL
1	77002-1	n/a	
2	77002-1		

GROSS WEIGHT 4	NO. OF CONTAINERS 1	ORIGINATOR'S NAME (TYPED) ...	ORIGINATOR'S SIGNATURE <i>Elaine Rose</i>
--------------------------	-------------------------------	---	--



Product Quality Documentation **CERTIFICATE OF COMPLIANCE**

Customer Order Number 00732281	Customer Part Number	SE Acquisition Number 433873771	Material Grade and Color NEMA	Q12880 111
Lot Number N88880	Qty. Shipped 1,000	U.M. LB	Shipped Date 11/01/85	Shipment Number 0256461

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
NEMA
Specification Comments
P/N 46515-3

TEST	REFERENCE	REQUIREMENT	46515(3)	(NEMA)
LOT DATA:				
HOT 800M PSI - 1/4"	ASTM D648	450.0 DEG F MINIMUM	450.0 DEG F	280 DEG C
NOTCHED 1200 IMPACT-1/8"	ASTM D256	1.5 FT-LB/IN MINIMUM	1.7 FT-LB/IN	90.9 J/M
% ELONGATION	ASTM D638	4 % MINIMUM	8 %	
TENSILE YIELD	ASTM D638	20,000 PSI MINIMUM	20,000 PSI	143.0 MPa
FLEXURAL MODULUS	ASTM D790	1,000,000 PSI MINIMUM	1,230,000 PSI	8,629.8 MPa
FLEXURAL STR & YIELD	ASTM D790	20,000 PSI MINIMUM	34,100 PSI	235.6 MPa
FILTERED BRAGG ANALYSIS	ASTM D887	27.00-33.00 %	28.70 %	
SPECIFIC GRAVITY	ASTM D282	1.32-1.35 G/CC		1.32 G/CC
% MOISTURE CONTENT	ISOIL FISHER	0.50 % MAXIMUM	0.30 %	

PRODUCT AUDIT DATA:

FLAMMABILITY, 1/64" THICK FRASER 4.00 DASH MAXIMUM

DATE OF LAST AUDIT: 08/75

SELF-EXTINGUISHING AND BURN RATE

BLENN HANSON
Quality Manager

STEPHEN R. GROVER
Manufacturing Manager

If you have any questions concerning this, please contact:

GINNY CHICHESTER

1-618-475-5584

RON HOTELMO
TEXAS INSTRUMENTS
34 FOREST ST. NS 1-24
ATTLEBORO MA 01705

METALION™

1-4-96
36981
36688-7
TI

Quality Assurance Manager
A.J. Knott Tool & Mfg.
P.O. Box 368
Milford, MA 01757

Date Shipped: 1-3-96

Weight Shipped: 1113.41#

We do hereby certify that, to the best of our knowledge and beliefs, this material conforms to the requirements of your purchase order.

PURCHASE ORDER: 4821

PART NO.: 35608-1

REV: 3 (2/3/87)

SPEC. NO.:

REV.

MATERIAL CONTROL NO.: 5114-3742)

MATERIAL: C26000 with Fine Au Inlay

SIZE: .025" +/- .00075" x 1.500" +/- .003"

TEMPER: Half Hard

ROTT: 59.8-65.3

SCND TEST: Passes, 90 BW .005 Radius without Fracture

INLAY COMPOSITION: 99.992% Au

THICKNESS: .00115"

METHOD: Average by X-Ray

Kristen O'Connor

Kristen O'Connor
Quality Assurance Engineer

Post-It Fax Note	7571	Date	1/3/96	Page	2
To	J. L. L...	From	C. Loman		
On Behalf Of	T. J.	Co.	A. J. Knott		
Phone #		Phone #	508-473-1234		
Fax #	508-236-2131	Fax #			

A.J. OSTER CO.

Steel Mill Products - Steel - Aluminum Mill Products

A J OSTER - MANUFACTURER
465 INDUSTRIAL DRIVE
WARWICK, RI 02886

11-9-95
36689
36689

LEARNER TER

CERTIFICATE OF CONFORMANCE

ORDER NO:
11925

CUSTOMER:
6140

Q-2396

11-9-95

CUSTOMER NAME:
LEARNER & MFG. CORP.

ORDER NUMBER:
60000000000000000000

SHIP TO ADDRESS:

DESCRIPTION:
100 200 COIL

QUANTITY:
.02500

TEMPERATURE:
30

WARRANTY:
1.00000

CHEMICAL ANALYSIS

IRON	98.625
CUI	0.1552 A
CU	0.42000
IN	30.55000
PH	.00100
PP	.01200
SP	.00500
SL	.00500

PHYSICAL TEST RESULTS

TENSILE	830T 58.9-
ELONGATION	61.6-
	27 %

P/N 36689-1

NOTES:

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE TO CONFORM TO SPECIFICATION/ OR REQUIREMENT OF YOUR ORDER.

11-9-95
DATE

Sam D. Smith
LAB SUPERVISOR

CERTIFICATION

January 2, 1996

PAGE 1 OF 9

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

Justin Pombro

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. This certification and accompanying documents may not be reproduced, except in full, without written approval of Elco Textron Inc.

MATERIAL CERTIFICATION, FINAL INSPECTION SHEET ATTACHED
REV LEVEL: D.

Records covering material used and the tests and inspection conducted are on file, subject to examination. This is an original certification and has not been amended unless stated below.

Purchase Order No.	500205082
Register No.	57242
Part No.	36900-1
Description	3/8-24 X .81
Elco Textron Part No.	304-057-637270
Mfg. Lot No.(s)	20726 & 20727
Quantity	63,250

CERTIFICATION

Julie A. Banks

Authorized Signature
Quality Coordinator

ELCO TEXTRON
See / Secretary of Textron Inc.

Elco Textron Inc.
Precision Automotive Division
111 Spruceleaf Road • P.O. Box 7089
Needham, E. 01945-7089
019.287.2100 • Fax 019.287.2704

F41-7

TI-NHTSA 7639

MATERIAL CERTIFICATION

DATE OF CERTIFICATION PRINTING: 01/02/96

ELCO PART NUMBER: 304-057-637270
ELCO SHOP ORDER LOT NUMBER: 20727

DATE OF MATERIAL APPROVAL: 07/26/95
FINAL SUPPLIER: SHINSHO
MELT SUPPLIER: O & K
MATERIAL GRADE: SAE 10L10
HEAT NUMBER: C65016

CHEMICAL PROPERTIES

CARBON:	.110	BORON:		MOLYBDENUM:	
MANGANESE:	0.42	NITROGEN:		COPPER:	00.01
PHOSPHORUS:	.006	ALUMINUM:	.028	LEAD:	00.2000
SULFUR:	.019	CHROMIUM:	00.03		
SILICON:	0.03	NICKEL:	00.01		

COMMENTS:



Marc Crankshaw
Chief Metallurgist

This is to certify that parts from the above lot number have been produced from the raw material shown above in accordance with specifications listed on your purchase order and/or blueprint. This certification and accompanying documents may not be reproduced, except in full, without written approval of Elco Textron Inc.

Original certification from supplier
on file at Elco Textron Inc.

ELCO TEXTRON
Steel Subsidiary of Textron Inc.

Elco Textron Inc.
1111 Sawtooth Road • P.O. Box 7000
Rockford, IL 61125-7000
815.397.5155 • Fax 815.397.4529

F-4820-1

TI-NHTSA 7034

MATERIAL CERTIFICATION

DATE OF CERTIFICATION PRINTING: 01/02/96

ELCO PART NUMBER: 304-057-637270
ELCO SHOP ORDER LOT NUMBER: 20726

DATE OF MATERIAL APPROVAL: 07/26/95
FINAL SUPPLIER: SHINSHO
MELT SUPPLIER: O & K
MATERIAL GRADE: SAE 10L10
HEAT NUMBER: C65016

CHEMICAL PROPERTIES

CARBON:	.110	BORON:		MOLYBDENUM:	
MANGANESE:	0.42	NITROGEN:		COPPER:	00.01
PHOSPHORUS:	.006	ALUMINUM:	.028	LEAD:	00.2000
SULFUR:	.019	CHROMIUM:	00.03		
SILICON:	0.03	NICKEL:	00.01		

COMMENTS:



Marc Cranshaw
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on file at Elco Textron Inc.

ELCO TEXTRON
Div of Subsidiary of Textron Inc.

Elco Textron Inc.
1111 Genuelson Road • P.O. Box 7009
Rockford, IL 61125-7009
815.397.5150 • Fax 815.397.4029

F-4880-1

TI-NHTSA 7635

CHECK LIST: 116222

FINAL INSPECTION CHECK LIST

01/02/96
10:30:30
PAGE: 1

SHOP ORDER: 20726

Q.C. NUMBER: A9341-8

PART NUMBER: 304-057-637270

MFG OPTION: 000

CUSTOMER: TEXAS INSTRUMENTS

CUSTOMER PART: 36900-1

PART DESC: 3/8-24X.81 REF FL FIL HEX SHLD MCH S

OPTION DESC: .00030 MIN ZINC/YELLOW CHROMATE

WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM	TEST TO BE PERFORMED	RESULTS
01	CHARACTERISTIC: OVERALL LENGTH SPECIFICATIONS: .900 - .916 TEST METHOD: CALIPERS	LOW: 0.9070 IN HIGH: 0.9110 IN STATUS: PASSED SPC: NO
02	CHARACTERISTIC: THREAD LENGTH SPECIFICATIONS: .370 - .380 TEST METHOD: CALIPERS	LOW: 0.3710 IN HIGH: 0.3790 IN STATUS: PASSED SPC: NO
03	CHARACTERISTIC: SHOULDER DIAMETER SPECIFICATIONS: .552 - .562 TEST METHOD: MICROMETER	LOW: 0.5590 IN HIGH: 0.5620 IN STATUS: PASSED SPC: NO
04	CHARACTERISTIC: ACROSS CORNERS SPECIFICATIONS: .620 MIN. TEST METHOD: CALIPERS	LOW: 0.6350 IN HIGH: 0.6400 IN STATUS: PASSED SPC: NO
05	CHARACTERISTIC: HEAD DIAMETER SPECIFICATIONS: 1.054 - 1.064 TEST METHOD: 2" MIC.	LOW: 1.0590 IN HIGH: 1.0610 IN STATUS: PASSED SPC: NO
06	CHARACTERISTIC: HEAD HEIGHT SPECIFICATIONS: .096 - .101 TEST METHOD: MICROMETER	LOW: 0.0970 IN HIGH: 0.1010 IN STATUS: PASSED SPC: NO
07	CHARACTERISTIC: GROOVE WIDTH SPECIFICATIONS: .063 - .078 TEST METHOD: COMPARATOR	LOW: 0.0660 IN HIGH: 0.0750 IN STATUS: PASSED SPC: NO
08	CHARACTERISTIC: GROOVE DIAMETER SPECIFICATIONS: .310 - .315 TEST METHOD: MICROMETER	LOW: 0.3110 IN HIGH: 0.3130 IN STATUS: PASSED SPC: NO
09	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .597 - .603 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
10	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .309 - .315 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
11	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .132 - .140 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
12	CHARACTERISTIC: PITCH DIAMETER ** SPECIFICATIONS: .3430 - .3479 TEST METHOD: FUNCT TRI-ROLL	LOW: 0.3462 IN HIGH: 0.3468 IN STATUS: PASSED SPC: NO

CHECK LIST: 116222

FINAL INSPECTION CHECK LIST

01/02/96

SHOP ORDER: 20726

Q.C. NUMBER: A9341-S

10:30:30

PART NUMBER: 304-057-637270

MFG OPTION: 000

PAGE: 2

CUSTOMER: TEXAS INSTRUMENTS

CUSTOMER PART: 36900-1

PART DESC: 3/8-24X.81 REF FL FIL HEK SHLD MCH S

OPTION DESC: .00030 MIN ZINC/YELLOW CHROMATE

WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM -----TEST TO BE PERFORMED-----RESULTS-----

ITEM	TEST TO BE PERFORMED	RESULTS
13	CHARACTERISTIC: MAJOR DIAMETER SPECIFICATIONS: .3667 - .3739 TEST METHOD: MICROMETER	LOW: 0.3672 IN HIGH: 0.3690 IN STATUS: PASSED
14	CHARACTERISTIC: GO GAGE SPECIFICATIONS: 3/8-24 TEST METHOD: CLASS 2A	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED
15	CHARACTERISTIC: NO GO GAGE SPECIFICATIONS: 3/8-24 TEST METHOD: CLASS 2A	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED
16	CHARACTERISTIC: HOLE DEPTH * SPECIFICATIONS: .022 - .028 TEST METHOD: HEIGHT STAND	LOW: 0.0240 IN HIGH: 0.0280 IN STATUS: PASSED
17	CHARACTERISTIC: HOLE DEPTH SPECIFICATIONS: .120 - .130 TEST METHOD: HEIGHT STAND	LOW: 0.1210 IN HIGH: 0.1270 IN STATUS: PASSED
18	CHARACTERISTIC: POINT LENGTH SPECIFICATIONS: .044 - .054 TEST METHOD: COMPARATOR	LOW: 0.0490 IN HIGH: 0.0530 IN STATUS: PASSED
19	CHARACTERISTIC: POINT DIAMETER SPECIFICATIONS: .285 - .290 TEST METHOD: BLADE MIKE	LOW: 0.2870 IN HIGH: 0.2890 IN STATUS: PASSED
20	CHARACTERISTIC: C SINK DIAMETER SPECIFICATIONS: .220 - .230 TEST METHOD: SPL BALL GAGE	LOW: 0.2241 IN HIGH: 0.2250 IN STATUS: PASSED
21	CHARACTERISTIC: C SINK ANGLE SPECIFICATIONS: 41-43 DEGREES TEST METHOD: SPL BALL GAGE	LOW: 41.3800 IN HIGH: 41.3800 IN STATUS: PASSED
22	CHARACTERISTIC: IDENTIFICATION MARKS SPECIFICATIONS: TEST METHOD:	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED
23	CHARACTERISTIC: VISUAL SPECIFICATIONS: NO THRD SLIVERS TEST METHOD: VISUAL	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED

----- REMARKS FOR THIS PART -----
*-CUSTOMER BLUEPRINT TOLERANCE

CHECK LIST: 116222

FINAL INSPECTION CHECK LIST

01/02/96
10:30:30
PAGE: 3

SHOP ORDER: 20726

Q.C. NUMBER: A9341-S

PART NUMBER: 304-057-637270

MFG OPTION: 000

CUSTOMER: TEXAS INSTRUMENTS

CUSTOMER PART: 36900-1

PART DESC: 3/8-24X.81 REF FL FIL HEX SHLD MCH 8

OPTION DESC: .00030 MIN ZINC/YELLOW CHROMATE

WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM -----TEST TO BE PERFORMED----- RESULTS-----

**RE-ROLLED PARTS CAN BE .3430 - .3468
30 PC CAPABILITY STUDIES ON PITCH DIAMETER(FUNCTIONAL TRI-ROLL)

COMPLAINT 03393 (6-10-91) PARTS DO NOT ACCEPT GO GAGE SBY
COMPLAINT 03878 (1-30-92) CHIPS & SHAVINGS IN HOLE

-----> FINAL INSPECTION NOTE:
-----> SHOP ORDERS NEED TO BE SORTED FOR DRILL SHAVINGS IN THE
-----> HOLE !! STEVE YOUNGBERG 1-30-92

NOTE WHEN S/O # 18520 REACHES FINAL INSPECTION, CONTACT G.REE.
60 PIECES MUST BE HELD FOR SPECIAL SPC CHARTING. SHOULD REACH FINAL
INSPECTION IN LATE SEPTEMBER 1993 OR EARLY OCT. 1993. G.S.REE 09/22/93
NOTE: >>>>NO GREASY, OILY RESIDUE ALLOWED ON HEADPORTS!!!!<<<< PER
CUSTOMER COMPLAINT 06/28/94 C. BRIDGES
NO SLIVERED THREADS ALLOWED!!!!!! C. BRIDGES 09/13/94

COMPLAINT ON 04/26/95 FOR HEX CROSS CORNER DIM. DOWN TO .602 IN VOID AREA.
MIN. REQUIREMENT ON PRINT IS .617 G.S.REE 04/27/95

CHECK LIST STATUS: ACCEPTED DISPOSITION: INSPECTION DONE ACCEPTED BY FINA
HEAT: C65016 MILL: PO: 10468

TI-NHTSA 7638

CHECK LIST: 116264

FINAL INSPECTION CHECK LIST

01/02/96

SHOP ORDER: 20727

Q.C. NUMBER: A9341-B

10:30:33

PART NUMBER: 304-057-637270

MFG OPTION: 002

PAGE: 1

CUSTOMER: ELCO SPECIAL

CUSTOMER PART: NONE

PART DESC: 3/8-24X.81 REF FL FIL HEX SHLD MCH S

OPTION DESC: PLATE PER CUSTOMER ORDER

WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM	TEST TO BE PERFORMED	RESULTS
01	CHARACTERISTIC: OVERALL LENGTH SPECIFICATIONS: .900 - .916 TEST METHOD: CALIPERS	LOW: 0.9040 IN HIGH: 0.9090 IN STATUS: PASSED SPC: NO
02	CHARACTERISTIC: THREAD LENGTH SPECIFICATIONS: .370 - .380 TEST METHOD: CALIPERS	LOW: 0.3720 IN HIGH: 0.3770 IN STATUS: PASSED SPC: NO
03	CHARACTERISTIC: SHOULDER DIAMETER SPECIFICATIONS: .552 - .562 TEST METHOD: MICROMETER	LOW: 0.5600 IN HIGH: 0.5620 IN STATUS: PASSED SPC: NO
04	CHARACTERISTIC: ACROSS CORNERS SPECIFICATIONS: .620 MIN. TEST METHOD: CALIPERS	LOW: 0.6380 IN HIGH: 0.6420 IN STATUS: PASSED SPC: NO
05	CHARACTERISTIC: HEAD DIAMETER SPECIFICATIONS: 1.054 - 1.054 TEST METHOD: 2" MIC.	LOW: 1.0580 IN HIGH: 1.0610 IN STATUS: PASSED SPC: NO
06	CHARACTERISTIC: HEAD HEIGHT SPECIFICATIONS: .096 - .101 TEST METHOD: MICROMETER	LOW: 0.0970 IN HIGH: 0.0990 IN STATUS: PASSED SPC: NO
07	CHARACTERISTIC: GROOVE WIDTH SPECIFICATIONS: .063 - .078 TEST METHOD: COMPARATOR	LOW: 0.0700 IN HIGH: 0.0740 IN STATUS: PASSED SPC: NO
08	CHARACTERISTIC: GROOVE DIAMETER SPECIFICATIONS: .310 - .315 TEST METHOD: MICROMETER	LOW: 0.3100 IN HIGH: 0.3130 IN STATUS: PASSED SPC: NO
09	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .597 - .603 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
10	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .309 - .315 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
11	CHARACTERISTIC: HOLE DIAMETER SPECIFICATIONS: .132 - .140 TEST METHOD: PINS	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
12	CHARACTERISTIC: PITCH DIAMETER ** SPECIFICATIONS: .3430 - .3479 TEST METHOD: FUNCT TRI-ROLL	LOW: 0.3470 IN HIGH: 0.3478 IN STATUS: ****FAILED**** SPC: NO

CHECK LIST: 116264

FINAL INSPECTION CHECK LIST

01/02/96
10:30:33
PAGE: 2

SHOP ORDER: 20727
PART NUMBER: 304-057-637270
CUSTOMER: ELCO SPECIAL

Q.C. NUMBER: A9341-S
MFG OPTION: 002
CUSTOMER PART: NONE

PART DESC: 3/8-24X.81 REF FL FIL HBK SHLD MCH S
OPTION DESC: PLATE PER CUSTOMER ORDER
WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM	TEST TO BE PERFORMED	RESULTS
	PARTS DON'T MEET CPK LEVEL OF 1.33 PARTS ARE WITH IN SPEC WILL BE OK	
13	CHARACTERISTIC: MAJOR DIAMETER SPECIFICATIONS: .3667 - .3739 TEST METHOD: MICROMETER	LOW: 0.3693 IN HIGH: 0.3702 IN STATUS: PASSED SPC: NO
14	CHARACTERISTIC: GO GAGE SPECIFICATIONS: 3/8-24 TEST METHOD: CLASS 2A	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
15	CHARACTERISTIC: NO GO GAGE SPECIFICATIONS: 3/8-24 TEST METHOD: CLASS 2A	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO
16	CHARACTERISTIC: HOLE DEPTH * SPECIFICATIONS: .022 - .028 TEST METHOD: HEIGHT STAND	LOW: 0.0220 IN HIGH: 0.0280 IN STATUS: PASSED SPC: NO
17	CHARACTERISTIC: HOLE DEPTH SPECIFICATIONS: .120 - .130 TEST METHOD: HEIGHT STAND	LOW: 0.1200 IN HIGH: 0.1230 IN STATUS: PASSED SPC: NO
18	CHARACTERISTIC: POINT LENGTH SPECIFICATIONS: .044 - .054 TEST METHOD: COMPARATOR	LOW: 0.0480 IN HIGH: 0.0500 IN STATUS: PASSED SPC: NO
19	CHARACTERISTIC: POINT DIAMETER SPECIFICATIONS: .285 - .290 TEST METHOD: BLADE MIKE	LOW: 0.2870 IN HIGH: 0.2890 IN STATUS: PASSED SPC: NO
20	CHARACTERISTIC: C'SINK DIAMETER SPECIFICATIONS: .220 - .230 TEST METHOD: SPL BALL GAGE	LOW: 0.2251 IN HIGH: 0.2264 IN STATUS: PASSED SPC: NO
21	CHARACTERISTIC: C'SINK ANGLE SPECIFICATIONS: 41-43 DEGREES TEST METHOD: SPL BALL GAGE	LOW: 41.0000 IN HIGH: 42.0000 IN STATUS: PASSED SPC: NO
22	CHARACTERISTIC: IDENTIFICATION MARKS SPECIFICATIONS: TEST METHOD:	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: SPC: NO
23	CHARACTERISTIC: VISUAL SPECIFICATIONS: NO THRD SLIVERS TEST METHOD: VISUAL	LOW: 0.0000 IN HIGH: 0.0000 IN STATUS: PASSED SPC: NO

CHECK LIST: 116264 FINAL INSPECTION CHECK LIST

01/02/96
10:30:33
PAGE: 3

SHOP ORDER: 20727 Q.C. NUMBER: A9341-S
PART NUMBER: 304-057-637270 MFG OPTION: 002
CUSTOMER: ELCO SPECIAL CUSTOMER PART: NONE

PART DESC: 3/8-24X.81 REF FL FIL HEX SHLD MCH S
OPTION DESC: PLATE PER CUSTOMER ORDER
WIRE DESC: DIAMETER: 0.000 PRINT REVISION:

ITEM -----TEST TO BE PERFORMED-----RESULTS-----

-----REMARKS FOR THIS PART-----

*-CUSTOMER BLUEPRINT TOLERANCE

**-RE-ROLLED PARTS CAN BE .3430 - .3468
30 PC CAPABILITY STUDIES ON PITCH DIAMETER (FUNCTIONAL TRI-ROLL)

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-----> FINAL INSPECTION NOTE:
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-----> HOLE !! STEVE YOUNGBERG 1-30-92

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INSPECTION IN LATE SEPTEMBER 1993 OR EARLY OCT. 1993. G.S.REE 09/22/93
NOTE: >>>>NO GREASY, OILY RESIDUE ALLOWED ON HEXPORTS!!!!<<<< PER
CUSTOMER COMPLAINT 06/28/94 C. BRIDGES
NO SLIVERED THREADS ALLOWED!!!!!! C. BRIDGES 09/13/94

COMPLAINT ON 04/26/95 FOR HEX CROSS CORNER DIM. DOWN TO .602 IN VOID AREA.
MIN. REQUIREMENT ON PRINT IS .617 G.S.REE 04/27/95

CHECK LIST STATUS: ACCEPTED DISPOSITION: INSPECTION DONE ACCEPTED BY FINA
HEAT: C65016 MILL: PO: 10468

TI-NHTSA 7641

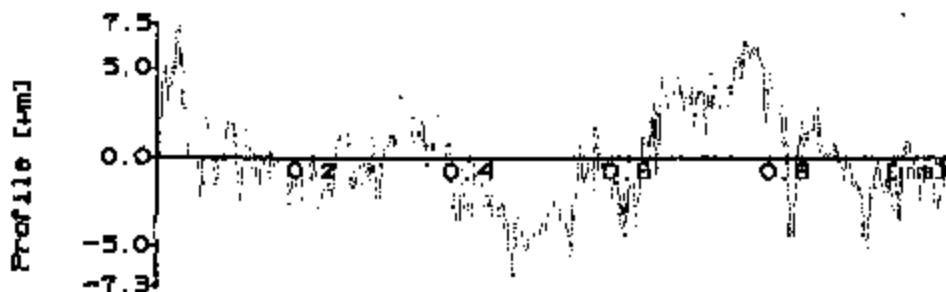
Texas Instrumen CC157

23.12.95

Stupfile



RS	1	1	10	140
RS	1	17	115	140
RS	1	41	20	140
RS	1	6	16	140
RS	1	12	17	140
RS	1	11	18	140
RS	1	1	1	140



Coordinate: 1.000000 0.000000 0.000000
Scale: 1.000000 1.000000 1.000000

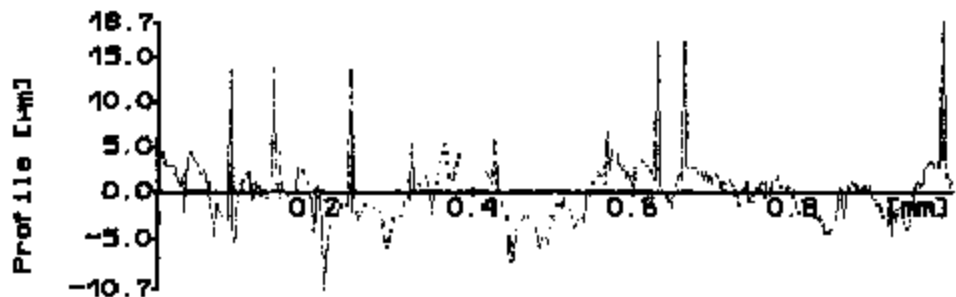
PRS R Z(0.1) of

Texas Instruments CC167

23.12.93
GLNDZ

UBM

20	0	25	25
20.5	0.5	24	19
21	1	25	18
21.5	1.5	23	15
22	2	19	10
22.5	2.5	15	5
23	3	10	0
23.5	3.5	5	-5
24	4	0	-10



Measured at 2 mm Focus plane 1.411 mm
Calc. Deviation 1.411 mm Surface 1.411 mm

210.2.5

12/27/95

Keith to do
Laser surface
analysis on
sectioned keypost

#26 25/c



AlliedSignal Inc.
Teaching Systems Americas
401 N. Bendix Drive
P.O. Box 4001
South Bend, IN 46634-4001

219 237 2100

Part Submission Warrant Request

Date Initiated: 11/03/95 Warrant No: SBD53162 Initiated By: SOI
Submission Level 4: Warrant & Documents Only Delivered to ASBS Location
Deliver To Attention: Tom Lange, 401 N. Bendix Drive, South Bend, Indiana 46620
Number of Samples: 0
Date Required: 12/22/95 Date Received:

PART #: <u>2224330</u> REV: <u>A</u> DATED: <u>09/14/94</u> DESCRIPTION: <u>Assy - Pressure Switch</u> SUPPLIER: <u>Texas Instruments</u> CODE: <u>88070</u> SURVEY SCORE: <u>82 (05/31/91)</u> REASON FOR SUBMISSION: <u>Recertification</u>	NMR NO: <u>GP-0258 & 60</u> EN-114/EN-118 P.B. PRODUCT: <u>Master Cylinder (90)</u> CUSTOMER: <u>Ford Motor Company</u> ASBS USING PLANTS: <u>Gallatin</u>
---	--

SOI Contact: Shawn Murdoch 219-237-2438

Buyer:

Expect. Meet Date:	Req'd Yes/No	Approved Date	By	Rejected Date	By
I. SUPPLIER INFORMATION REQUIRED					
A. Part Submission Warrant (AIAG - PPAP)	No				
B. Process Flow Chart	Yes				
C. Process FMEA (RPN 60-100: RPN >100:) Last Rev. Date:	Yes				
D. Control Plan Last Rev. Date:	Yes				
E. Dimensional Layout with Numbered Print	Yes				
F. Process Potential Study (Design, Change.)	Yes				
G. Material and Other Eng Spec Certification Spec: Compound #:	Yes				
H. Supplier Functional Testing	Yes				
J. Other (See Remarks in Section V.)	No				
II. ASBS FUNCTIONAL TESTING Last Test Date:	No				
III. CFT APPROVING AUTHORITIES					
A. Product Engineering	No				
B. Plant Quality Engineering	No				
C. Plant Manufacturing Engineering	No				
IV. ASBS CUSTOMER APPROVAL (Other than ISW i.e. SREA, Black Box, etc.)	No				
V. REMARKS/SPECIAL INSTRUCTIONS (Design FMEA, Special Gages, Special Samples, Packages, Etc.)					

Final Approval on This Form by ASBS Supply Base Management Authorizes Release of Purchased Parts.
APPROVED: _____ **DATE:** _____
 For Recertification, Current Approval to be Reviewed prior to

On time delivery? Approved 1st time?

PPM: 0



Supplier Warrants - By Part Number

11/03/95

AlliedSignal Inc.
Braking Systems-Americas
401 N. Bendix Drive
P.O. Box 4001
South Bend, IN 46634-4001

219 237 2100

November 3, 1995

Texas Instruments
34 Forest Street
Andover, Massachusetts 02703

ATTENTION: Michael J. Lapointe
Tel #: 508-236-3885 Fax #: 508-236-1064

SUBJECT: Sample Submission Requirements, Dates, and Quantities
Recertification on PSWR # SBD53169
778563-1 — Part No. 2234330 - Revision A - Dated 09/14/94
Description: Assy - Pressure Switch

This letter is your notification that a sample submission is required on the subject part number. As an ASBS supplier you have been given AS2000 Supplier Quality Requirements Manual, which identifies the supplier's responsibilities. The specific sample requirements for the subject part are identified on the attached Part Submission Warrant Request. These requirements should be submitted in accordance with Attachment A.

Submission requirements are as follows.

Submission Level 4: Warrant & Documents Only Delivered to ASBS Location.

Number of sample parts required: 0.

Submission date: On or before 12/22/95.

If delivered to ASBS, clearly identify all sample submissions and related documentation. If piece parts are required please label the container with the enclosed orange sample labels and deliver to:

ATTENTION: Tom Lange
AlliedSignal Braking Systems
401 North Bendix Drive
South Bend, Indiana 46620

Should you have any questions, please call me at 219-237-2142, or you may call the responsible SQI engineer whose name and extension appear on the Part Submission Warrant Request. If you wish to contact me via fax, you may do so on 219-237-2086.

Sincerely,

Debra Moore
Sample Administrator

cc: File

TI-NHTSA 7648



AlliedSignal Inc.
Braking Systems-North America
401 N. Bendix Drive
P.O. Box 4001
South Bend, IN 46634-4001

219 237 2100

CHANGE OF PROCEDURE **NOTIFICATION**

Effective immediately **ALL** supplier Warrant Submissions must include an **UPDATED** Process Flow, PFMEA, and Control Plan. This includes recertifications, process & design changes, tooling refurbishes as well as Initial Warrants. **UPDATED** means that the documents must display the **LAST DATE** the documents were **REVISED** and/or **REVIEWED**. For these documents **TO BE APPROVED** this last date must be **WITHIN THREE (3) MONTHS** of the **SUBMISSION DATE**.

D. Moore
Supplier Quality Improvement
219-237-2142
08/18/94

TI-NHTSA 7647

Part Name _____		Part Number _____	
Detail under Government Regulation <input type="checkbox"/> Yes <input type="checkbox"/> No		Engineering Drawing change level _____ Dated _____	
Additional Engineering Changes _____ Dated _____			
Drawn on Drawing No. _____		Purchase Order No. _____ Weight _____ lbs	
Changing Ref No. _____		Engineering Change level _____ Dated _____	
SUPPLIER MANUFACTURING INFORMATION		SUBMISSION INFORMATION	
Supplier Name _____ Supplier Code _____		<input type="checkbox"/> Dimensional <input type="checkbox"/> Material/Functional <input type="checkbox"/> Appearance	
Street Address _____		Customer Name/Division _____	
City/State/Postal Code _____		Buyer/Buyer Code _____	
		Application _____	
REASON FOR SUBMISSION			
<input type="checkbox"/> Initial submission		<input type="checkbox"/> Change in Customer Construction or Material	
<input type="checkbox"/> Engineering Change(s)		<input type="checkbox"/> Sub-Supplier or Material Source Change	
<input type="checkbox"/> Buying Transfer, Reassignment, Relinquishment, or additional		<input type="checkbox"/> Change in Part Packaging	
<input type="checkbox"/> Detection of Discrepancy		<input type="checkbox"/> Parts Produced at Additional Location	
<input type="checkbox"/> Other - please specify _____			
REQUESTED SUBMISSION LEVEL (Check one)			
<input type="checkbox"/> Level 1 - Warrant, Appearance Approval Report (for designated appearance items only).			
<input type="checkbox"/> Level 2 - Warrant, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report			
<input type="checkbox"/> Level 3 - All Customer Location - Warrant, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan, Gage Study, FMEA			
<input type="checkbox"/> Level 4 - Per Level 3, but without parts.			
<input type="checkbox"/> Level 5 - All Supplier Location - Warrant, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan, Gage Study, FMEA			
SUBMISSION RESULTS			
The results for <input type="checkbox"/> dimensional measurements <input type="checkbox"/> material and functional tests and <input type="checkbox"/> appearance criteria and <input type="checkbox"/> statistical process package meet all drawing and specification requirements: <input type="checkbox"/> Yes <input type="checkbox"/> No (if "No" - Explanation Required)			
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 and in the case of production samples, are made from specified materials on regular production tooling with no operations other than the regular production process. I have noted any deviations from this declaration below:			
EXPLANATION/COMMENTS: _____			
Part Name _____ Title _____		Part No. _____	
Supplier Authorized Signature _____		Date _____	
FOR CUSTOMER USE ONLY			
Part Disposition <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Other _____			
Customer Name _____		Customer Signature _____ Date _____	

ASBS - Part Submission Warrant Requirements

A. Part Submission Warrant

1. A component of the Production Part Approval Process (PPAP) which is published by AIAG as an industry standard. This procedure along with the PFMEA procedure may be obtained by calling AIAG at 313-358-3003.

B. Process Flow Chart

1. A graphical chart representing the complete sequence of operation and check points used to manufacture and inspect the part.
2. Include a listing of machines, fixtures, tooling, computer equipment, material handling, gages and SPC. The Tool Inventory Sheet needs to list all ASBS owned tooling in numeric sequence.

C. Process Failure Modes and Effects Analysis (PFMEA)

1. A technique utilized to assure that, to the best possible extent, potential manufacturing/processing concerns have been identified and addressed.
2. The PFMEA needs to identify potential product related process failure modes, assess the potential customer effects of the failures, identify the potential manufacturing or assembly process causes, and identify significant process variables to focus controls for Process Control Plan development.
3. All designated Characteristics must be addressed and noted. All RPNs ≥ 100 must have an approved corrective action plan.

D. Control Plan

1. A written description of the total system required for controlling ongoing quality of parts.
2. The plan must address all Designated Characteristics and include the method of verification, the sample size, the frequency of inspection and the supplier's reaction program on detection of nonconformance.

E. Dimensional Layout with Numbered Print

1. A complete layout inspection report listing all measurements, characteristics, notes, the tolerance limits, and the actual findings of each measurement.
2. A marked blueprint showing the number of each dimension, specification, etc. as it appears on the sample layout report.

F. Process Potential Study (PPS) of Design Characteristics

1. PPS are accomplished using variable data gathered from a 300 unit minimum production validation run, generated from production tools, processes, and at production rate. To determine stability, data must be gathered in 25 rational subgroups (3 to 5 samples each) spaced randomly throughout the production run and is analyzed using average/range charts. To determine normality, an appropriate histogram of individual values is required.

G. Material and Other Engineering Specification Certification

1. Document that reports the results of a physical and/or chemical quantitative analysis on the material that is used to produce the sample parts.
2. All subcontracted services such as plating, heat treating, lubrication, protective coatings, etc., must have material certification.

H. Supplier Functional Testing

1. An evaluation performed on samples to assure proper performance, assembly, and conformance to engineering specification. The functional test should be indicated on the engineering drawing, via a note, and/or on an engineering specification.

January 1, 1994

**AlliedSignal Braking Systems - North America
Additional Requirements**

- 1.2.12.1 The supplier is responsible for providing a permanent identification on all tooling, fixtures, gaging, and test equipment paid for by AlliedSignal Braking Systems - North America (ASBS-NA). This identification must include part number, revision level, and property of ASBS-NA (or ASBS-NA customer as appropriate).
- 1.2.12.2 Quality system records (quality plan, inspection instructions) must be maintained for five (5) years after the last shipment of items affected by these documents. Quality performance records (SPC data, inspection results) must be retained for one (1) year after the last parts shipment. Suppliers shall immediately present all quality records when requested by ASBS-NA.
- 1.2.12.3 When test equipment is used for 100% functional testing, the equipment must comply with ASBS-NA procedure Q178.8 (to be provided by ASBS-NA Supply Base Management representative when required).
- 1.2.12.4 Quality control guidelines for designated characteristics are specified in ASBS-NA procedure Q151.1 (see page 8-13-1).
- 1.2.12.5 Suppliers will be informed of production part approval process (PPAP) requirements via the ASBS-NA part submission warrant request form (see page 8-0).

QUALITY CONTROL GUIDELINES FOR DESIGNATED CHARACTERISTICS Q151.1

CHARACTERISTIC		KEY 	SIGNIFICANT 	CUSTOMER 	SCHEMATIC
PROCESS POTENTIAL GUIDELINES	VARIABLES <i>Process Potential Studies are accomplished using variable data gathered from a three hundred (300) unit minimum production validation run, generated from production tools, processes, and of production rate. To determine stability, the data is gathered in 25 rational subgroups spaced randomly throughout the production run and is analyzed using Average-Range Charts (or other appropriate charts). To determine normality, an appropriate Histogram of individual values is applied.</i>	Ppk > 2.00	Ppk > 1.67	Ppk > 1.67	Ppk > 1.67
	ATTRIBUTES <i>Although attribute data for dimensional characteristics provides some useful information for process analysis and corrective action studies, it should not be used for the purpose of fulfilling Process Potential Study requirements without AlfredSignal approval.</i>	NOT ALLOWED	ATTRIBUTE STUDIES ON EXCEPTION ONLY		

X INDICATES ALLOWABLE CONTROL

ONGOING CONTROL GUIDELINES	S.P.C. (VARIABLE DATA)		X	SPC on Exception	X	X
	CAPABILITY REQUIREMENTS (VARIABLE DATA ONLY)		Cpk > 1.33	Cpk > 1.33	Cpk > 1.33	Cpk > 1.33
	100% VERIFICATION (LOCK TEST STAND, ETC.)			X	X	X
	ATTRIBUTE SAMPLING PLAN					
	CONDITION	I	II			
	Minimum Sample per lot	200	50		X	X
Permission to switch to the other condition:	Allowed to switch to Condition II, if within all consecutive lots, no output has any nonconforming units.	Required to switch to Condition I, if any sample group has any nonconforming units.				

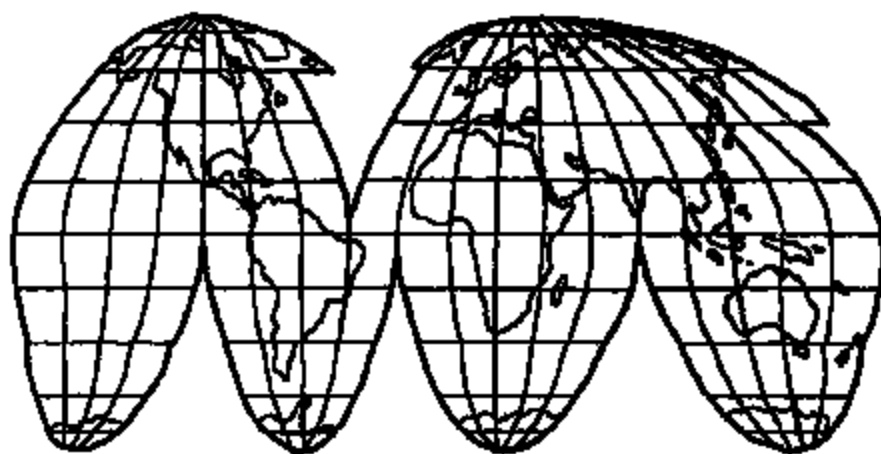
On an exception basis alternate control methods may be approved based on knowledge of the application, process, process FMEA, and the control plan. These exceptions must be documented in writing and approved by ABB-NA.

ABB-NA Supply Base Management is authorized to approve exceptions in the Supply Base and ABB-NA Quality is authorized to approve exceptions in ABB-NA plants.

B-13-1

TI-NHTSA 7052

**ALLIEDSIGNAL
AUTOMOTIVE**



**SUPPLIER
QUALITY
REQUIREMENTS**

AS 2000

TI-NHTSA 7653

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ISO 9001 REQUIREMENTS ARE REFERENCED IN PARENTHESES AT THE END OF EACH APPLICABLE PARAGRAPH



**POTENTIAL
FAILURE MODE AND EFFECTS ANALYSIS
(PROCESS FMEA)**

FMEA Number _____

Page _____ of _____

Item _____ Process Responsibility _____

Prepared By _____

Model Year(s)/Vehicle(s) _____ Key Date _____

FMEA Date (Orig.) _____ (Rev.) _____

Core Team _____

8-9

Process Function Requirements	Potential Failure Mode	Potential Effects of Failure	S e v	C l a s s	Potential Cause(s)/Mechanism(s) of Failure	O c c u r	Current Process Controls	D e t e c t	P l a n	Recommended Action(s)	Responsibility & Target Completion Date	Action Priority							
												Action Taken	S e v	C l a s s	O c c u r	D e t e c t			

TI-NHTSA 7855



AlliedSignal Inc.
Braking Systems-Americas
401 N. Bendix Drive
P.O. Box 4001
South Bend, IN 46634-4001

219 237 2100

Part Submission Warrant Request

Date Initiated: 11/03/95 Warrant No: SBD63189 Initiated By: SOI
 Submission Level: 4: Warrant & Documents Only Delivered to ABS Location
 Deliver To Attention: Tom Langa: 401 N. Bendix Drive: South Bend, Indiana 46620
 Number of Samples: 0
 Date Required: 12/22/95 Date Received:

PART #: <u>2234330</u> REV: <u>A</u> DATED: <u>09/14/94</u> DESCRIPTION: <u>Asay - Pressure Switch</u> SUPPLIER: <u>Texas Instruments</u> CODE: <u>89070</u> SURVEY SCORE: <u>82 (05/31/91)</u> REASON FOR SUBMISSION: <u>Recertification</u>	NMR NO: <u>GP-0259 & 60:</u> <u>EN-114/EN-116 P.E.</u> PRODUCT: <u>Master Cylinder (90)</u> CUSTOMER: <u>Ford Motor Company</u> ABS USING PLANT#: <u>Gallatin</u>
---	--

SOI Contact: Shawn Murdoch 219-237-2439

Buyer:

Expect. Meet Date:	Req'd Yes/No	Approved Date	Ex	Rejected Date	By
I. SUPPLIER INFORMATION REQUIRED					
A. Part Submission Warrant (AIAG - PPAP)	No				
B. Process Flow Chart	Yes				
C. Process FMEA (RPN 50-100: RPN > 100:) Last Rev. Date:	Yes				
D. Control Plan Last Rev. Date:	Yes				
E. Dimensional Layout with Numbered Print	Yes				
F. Process Potential Study (Design Charac.)	Yes				
G. Material and Other Eng Spec Certification Spec. Compound #:	Yes				
H. Supplier Functional Testing	Yes				
J. Other (See Remarks in Section V.)	No				
II. ABS FUNCTIONAL TESTING					
Last Test Date:	No				
III. CFT APPROVING AUTHORITIES					
A. Product Engineering	No				
B. Plant Quality Engineering	No				
C. Plant Manufacturing Engineering	No				
IV. ABS CUSTOMER APPROVAL					
(Other than ISW i.e. SREA, Black Box, etc.)	No				
V. REMARKS/SPECIAL INSTRUCTIONS (Design FMEA, Special Gages, Special Samples, Packages, Etc.)					

Final Approval on This Form by ABS Supply Base Management Authorizes Release of Purchased Parts.

APPROVED: _____ DATE: _____

For Recertification, Current Approval to be Replaced prior to:

On time delivery? Approved 1st time?

PPM: 0

WARRANT

TI-NHTSA 7660

Part Submission Warrant

Part Name ASSEMBLY PRESSURE SWITCH Part Number 2294330

Safety and/or Government Regulation Yes No Engineering Drawing Change Level A Dated 8/14/94
 Additional Engineering Changes N/A Dated N/A
 Shown on Drawing No. 2294330 Purchase Order No. N/A Weight .062 kg
 Checking Aid No. N/A Engineering Change Level N/A Dated N/A

SUPPLIER MANUFACTURING INFORMATION

Precision Controls Department
 Texas Instruments, Inc.
 34 Forest Street ma 12-33
 PO BOX 2884
 Attleboro, Massachusetts 02703-0884

SUPPLIER CODE T085A

SUBMISSION INFORMATION

Dimensional Material/Functional Appearance

Customer Name/Division ALLIED SIGNAL BRAKING SYSTEMS

Buyer/Buyer Code N/A

Application MASTER CYLINDER

REASON FOR SUBMISSION

- | | |
|---|---|
| <input type="checkbox"/> Initial Submission | <input type="checkbox"/> Change to Optical Construction or Material |
| <input type="checkbox"/> Engineering Change(s) | <input type="checkbox"/> Sub-Supplier or Material Source Change |
| <input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional | <input type="checkbox"/> Change in Part Processing |
| <input type="checkbox"/> Correction of Discrepancy | <input type="checkbox"/> Parts Produced at Additional Location |
| <input checked="" type="checkbox"/> Other-Please Specify <u>CUSTOMER REQUESTED RESUBMISSION</u> | |

REQUIRED SUBMISSION LEVEL (Check One)

- Level 1 - Warrant, Appearance Approval Report (for designated appearance items only).
- Level 2 - Warrant, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report.
- Level 3 - At Customer Location-Warrant, Parts Drawings, Inspection, Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan, Gage Study, FMEA.
- Level 4 - Per Level 3, but without parts.
- Level 5 - At Supplier Location-Warrant, Parts Drawings, Inspection, Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan, Gage Study, FMEA.

SUBMISSION RESULTS

The results for dimensional measurements material and functional tests and appearance criteria and statistical process package meet all drawing and specification requirements: Yes No (If "No" - Explanation is Required).

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 and in the case of production samples, are made from specified materials on regular production tooling with no operations other than the regular production process. I have noted any deviations from this declaration below:

EXPLANATION/COMMENTS: NO SAMPLES REQUIRED

Print Name: ELAINE ROSE Title: QA TECHNICIAN Phone: (508) 236-1907

Supplier Authorized Signatory: *Elaine Rose* Date: 12/27/95

FOR CUSTOMER USE ONLY

Part Disposition: Approved Rejected Other _____
 Customer Name: _____ Customer Signature: _____ Date: _____

PROCESS FLOW

TI-NHTSA 7062

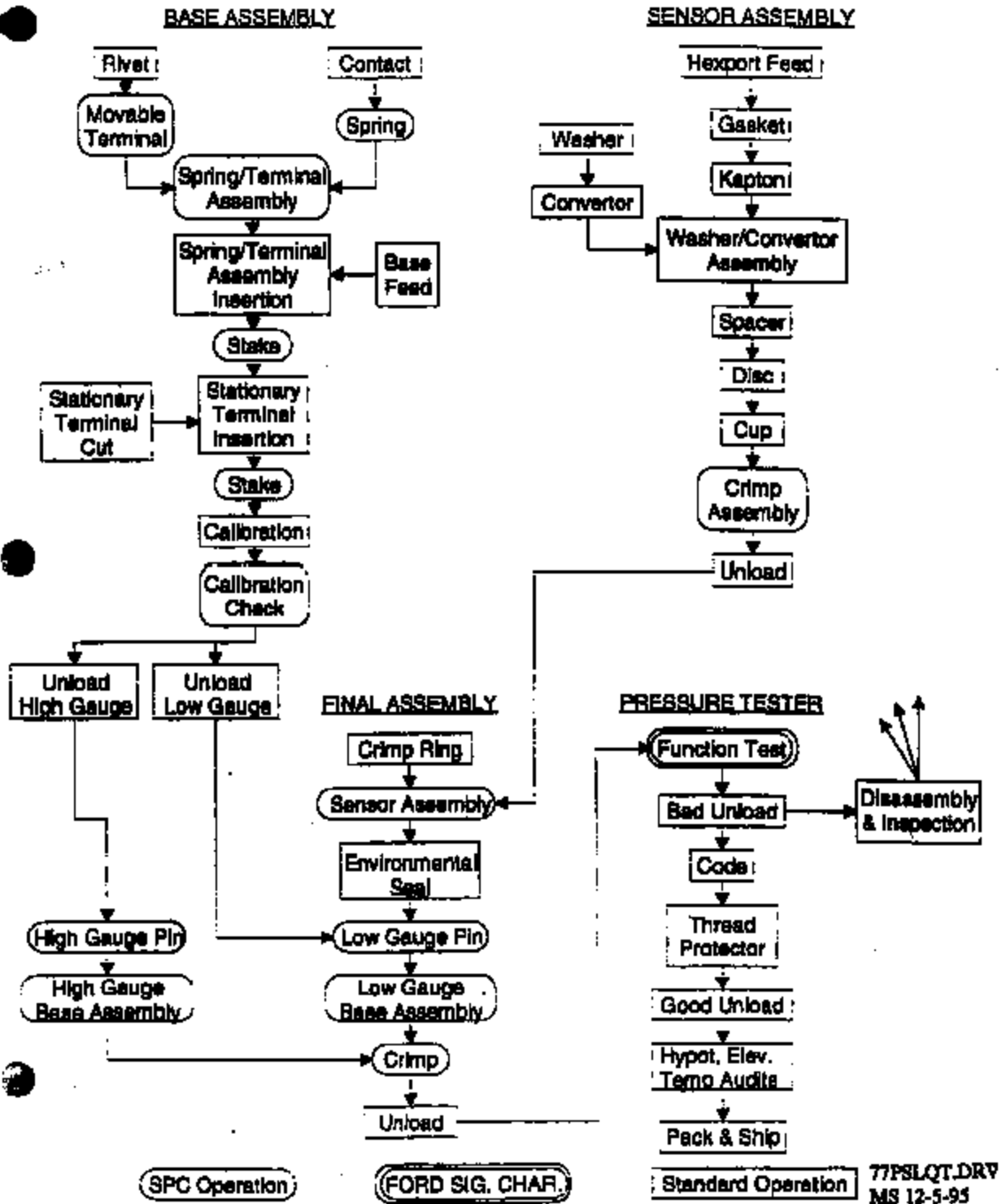
PFMEA

TI-NHTSA 7063

CONTROL PLAN

TI-NHTSA 7884

**FORD NEXT GENERATION SPEED CONTROL (77PS)
 QUIET SWITCH PROCESS FLOW CHART**



**FORD CRUISE CONTROL PRESSURE SWITCH
MANUFACTURING CONTROL PLAN
77PS QUIET SWITCH**

PROCESS STEP DESCRIPTION	PRODUCT CHARACTERISTIC	EVALUATION METHOD	CONTROL METHOD	FREQUENCY OF TEST	REACTION PLAN
BASE ASSEMBLY (AMM AUTOMATION)	TERMINAL HEIGHT	DIAL INDICATOR	X/R	5po/Hr.	SORT SINCE LAST CHECK
	TERMINAL PUSHOUT	FORCE GAGE/ DIAL INDICATOR	X/R	5po/Hr.	SORT SINCE LAST CHECK
	TERMINAL SEPARATION/ ALIGNMENT	PLUG GAGE	X/R	5po/Hr.	SORT SINCE LAST CHECK
	SPRING ANGLE (B)	COMPARATOR	X/R	5po/4Hr.	SORT SINCE LAST CHECK
	SPRING CONTACT WIDTH	CALIPERS	X/R	5po/Hr.	SORT SINCE LAST CHECK
	SPRING TORQUE	FORCE GAGE	X/R	5po/Hr.	SORT SINCE LAST CHECK
	SPRING BUMP HIGHT (B)	CALIPERS	X/R	5po/4Hr.	SORT SINCE LAST CHECK
	RIVET HEIGHT	DIAL INDICATOR	X/R	5Po/Hr.	SORT SINCE LAST CHECK
	CALIBRATION DEFORMATION	CUSTOM CONTINUITY SYSTEM	X/R	5po/Hr.	SORT SINCE LAST CHECK
	VISUAL QUALITY (C)	VISUAL	P	5po/Hr.	SORT SINCE LAST CHECK
SENSOR ASSEMBLY	CRIMP DIAMETER	CALIPERS	X/R	5po/Hr.	SORT SINCE LAST CHECK
	CRIMP HEIGHT	CALIPERS	X/R	5po/Hr.	SORT SINCE LAST CHECK
	VISUAL QUALITY	VISUAL	P	5po/Hr.	SORT SINCE LAST CHECK
	GASKET PRESENCE	NO-CONTACT PROBE	100%	100%	NO SUBSEQUENT ASSEMBLY

5 December 1995 MJS/rjjs 77QTMODL.XLS 880-0495

TI-NHTSA 7666

**FORD CRUISE CONTROL PRESSURE SWITCH
MANUFACTURING CONTROL PLAN
77PS QUIET SWITCH**

PROCESS STEP DESCRIPTION	PRODUCT CHARACTERISTIC	EVALUATION METHOD	CONTROL METHOD	FREQUENCY OF TEST	REACTION PLAN
SENSOR ASSEMBLY CONTINUED	KAPTON PRESENCE	CONTINUITY	100%	100%	NO SUBSEQUENT ASSEMBLY
	WASHER PRESENCE	HEIGHT PROBE	100%	100%	NO SUBSEQUENT ASSEMBLY
	WASHER ORIENTATION	ORIENT. ESCAPE. FUNCTION TEST	100%	100%	FAILS ACTUATION
	NON-CENTRIC WASH- CONVERTER PLACEMENT	CUP PLACEMENT OP.	100%	100%	NO SUBSEQUENT ASSEMBLY
	CLUT & ASSEM SPACER	CONTINUITY PROBE ANTI-STATIC STATION	100%	100%	NO SUBSEQUENT ASSEMBLY
	ASSEMBLE CUP	HEIGHT PROBE	100%	100%	NO SUBSEQUENT ASSEMBLY
	XFER SENSOR TO PUCK CONVEYOR	GROSS LEAKER @ FUNCTION TEST	100%	100%	NO SUBSEQUENT ASSEMBLY

71-NHTSA 7887

**FORD CRUISE CONTROL PRESSURE SWITCH
MANUFACTURING CONTROL PLAN
77PS QUIET SWITCH**

PROCESS STEP DESCRIPTION	PRODUCT CHARACTERISTICS	EVALUATION METHOD	CONTROL METHOD	FREQUENCY OF TEST	REACTION PLAN
FINAL ASSEMBLY (AMH AUTOMATION)	CRIMP DIAMETER (B)	GO/NO-GO GAGE	P	5pc/Hr.	SORT SINCE LAST CHECK
	CRIMP HEIGHT (B)	GO/NO-GO GAGE	P	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 (B)	DIAL INDICATOR	P	100%	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
	ASSEMBLE ENVIR. SEAL TO CUP GLAND	HEIGHT PROBE	100%	100%	NO SUBSEQUENT ASSEMBLY
	ASSEMBLE TRANSFER PIN TO SENSOR	HEIGHT PROBE	100%	100%	NO SUBSEQUENT ASSEMBLY
FUNCTION TESTER	ACTUATION/RELEASE POINTS (Ford Significant Char.)	MASTERS	X/R	EACH SHIFT	ENGINEERING EVALUATIONS
	ACTUATION/RELEASE POINTS (C) (Ford Significant Char.)	RAMP THROUGH PRESSURE RANGE	P	100%	YIELD TRACKING/ SCRAP CONTROL
PRODUCT AUDITS (PRODUCTION)	HIGH PINNING (B)	HYPOT SYSTEM	P	20PC/LOT	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
	LOW PINNING (B)	OVEN/CONT METER	P	10pc/Lot	SEPARATE FAILED LOT. PRODUCT TEAM REVIEW.
Q.C. AUDITS (C)	<ul style="list-style-type: none"> * OUTLINED IN DETAIL IN TEXAS INSTRUMENTS (QAS 208), FMC (THREADS / Ford Significant Char.) * ELEVATED TEMP IMPULSE CYCLING AUDITS. FREQUENCY TBD. PER DELTA ES-F2VC-8F924-AA SEC.III-E 				

6 December 1998 MJG/mjs 77QTM00A.XLS 050-0436

TI-NHTSA 7688

Reporting Agency/Officer	Telephone No.	Address of Subject	City	State	Zip	Source	Category	Priority	Disposition	Administrative Remarks	Section	Sub-section	File No.	Page
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

TI-NHTSA 7689

Program Description/Project	Program Title	Approved by	Approved Date	Current Status	Responsible Agency	Approved Date	Approved Amount	Actual Amount	Actual Date	Actual Status	Actual Date
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET CONTACT	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
PROGRAM BUDGET	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							
	PROGRAM BUDGET	CHIEF FINANCIAL OFFICER		PROGRAM BUDGET							

TI-NHTSA 7673

Budget Description	Account Code	Project or Activity	F.Y.	Project Code	Activity Code	F.Y.	F.Y.	F.Y.	F.Y.	F.Y.	F.Y.	ACTION					
												1	2	3	4		
[Faint text]	100-100-100-100	[Faint text]	7	100-100-100	100-100-100	7	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
	100-100-100-100	[Faint text]	8	100-100-100	100-100-100	8	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
	100-100-100-100	[Faint text]	9	100-100-100	100-100-100	9	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	1	100-100-100	100-100-100	1	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	7	100-100-100	100-100-100	7	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
	100-100-100-100	[Faint text]	8	100-100-100	100-100-100	8	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
	100-100-100-100	[Faint text]	9	100-100-100	100-100-100	9	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	7	100-100-100	100-100-100	7	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	1	100-100-100	100-100-100	1	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
	100-100-100-100	[Faint text]	5	100-100-100	100-100-100	5	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	5	100-100-100	100-100-100	5	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						
[Faint text]	100-100-100-100	[Faint text]	5	100-100-100	100-100-100	5	100-100-100	100-100-100	100-100-100	100-100-100	100-100-100						

TI-NHTSA 7674

Design Description/Section	Functional Req.	Physical Req. of System	Physical Req. of Software	Code	Code	Physical Req.	Physical Req.	Section Name	Req. ID	Req. ID	Req. ID	Req. ID
...
...
...
...
...

TI-NHTSA 7675

DIM. ANAL/PRINT

TI-NHTSA 7676

PIPC

TI-NHTSA 7678

**DRAWINGS AVAILABLE UPON
REQUEST**

MAT. CERTS

TI-NHTSA 7694

TEXAS INSTRUMENTS



CERTIFICATION OF COMPLIANCE TEST

CUSTOMER: ALLIED SIGNAL

N/A
CUSTOMER ORDER NO.:

N/A
TI ORDER NO.:

2234330
CUSTOMER PART NO.:

778813-1
TI PART NO.:

CUSTOMER SPEC: EE-F2VC-97924-AA

TI SR: N/A

QUANTITY: 3

DATE SHIPPED: 1/17/96

IT IS HEREBY CERTIFIED THAT THE GOODS SPECIFIED ABOVE CONFORM TO THE TI ORDER SHOWN ABOVE, AS REVISED BY MUTUALLY AGREED WRITTEN AMENDMENTS, IF ANY. Further, component parts utilized have been scrutinized and do not violate Ford Engineering Materials Specifications WSS-1199P9999-A1/A2/A3 restrictions.

Cherie Rose
PRECISION CONTROLS QUALITY CONTROL

DATED: 1/17/96

MATERIAL ANALYSIS
P/N F2AC-9F824-AA

PART NAME	PART NUMBER	CERTIFIED
BASE	45315-9	YES
STATIONARY TERM.	38888-1	YES
MOVABLE TERM.	88887-1	YES
RIVET	74810-1	YES
SPRING MATERIAL	27718-1	YES
MOVABLE CONTACT	74408-1	YES
HEXPORT	88800-1	YES
GASKET	74358-1	YES
CLIP	27719-1	YES
KAPTON STRIP	27225-1	YES
WASHER	27638-1	YES
CONVERTER	27406-1	YES
KAPTON TAPE	74224-1	YES
CRIMP RING	74787-1	YES
TRANSFER PIN	74078-8/EL	YES
ENVIRO. SEAL	74247-4	YES

REV - 1/00

TI-NHTSA 7686



Product Quality Documentation CERTIFICATE OF COMPLIANCE

Order Order Number 00000001	Customer Part Number	GE Regulation Number 4308737/1	Material, Grade and Color NYLON	Quantity 111
Lot Number N00000	Qty. Shipped 1,000	UOM LB	Shipped From NET SELKOR	Date Shipped 11/01/85
				Shipper's Number 00000001

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 NETS
Specification Comments P/N 46515 3

TEST	REFERENCE	REQUIREMENT	(ENGLISH)	(METRIC)
LOT DATA:				
HOT TENSILE PSI - 1/4"	ASTM D618	450.0 DEG F MINIMUM	450.0 DEG F	230 DEG C
NOTCHED 1000 IMPACT-LB"	ASTM D256	1.5 FT-LB/IN MINIMUM	1.7 FT-LB/IN	90.8 J/M
% ELONGATION	ASTM D638	4 % MINIMUM	4 %	
TENSILE YIELD	ASTM D638	20,000 PSI MINIMUM	20,000 PSI	143.0 MPA
FLEXURAL MODULUS	ASTM D790	1,000,000 PSI MINIMUM	1,200,000 PSI	6,897.0 MPA
FLEXURAL STR @ YIELD	ASTM D790	20,000 PSI MINIMUM	34,180 PSI	235.0 MPA
FILTERED BRASS ANALYSIS	ASH-X-104	27.00-33.00 %	28.70 %	
SPECIFIC GRAVITY	ASTM D792	1.31-1.35 G/CC		1.32 G/CC
MOISTURE CONTENT	WAL FISCHER	0.50 % MAXIMUM	0.20 %	

PRODUCT AUDIT DATA: DATE OF LAST AUDIT: 06/95
 FLAMMABILITY, .100" THICK FRAGS.302 4.00 INCHEN MAXIMUM SELF-EXTINGUISHING WIND BLUN RATE

ALEX HANSON
Quality Manager

SICPHEN B. GROVER
Manufacturing Manager

If you have any questions concerning this, please contact:

GINNY CHELSESTER

1-818-476-5000

RON BOTELHO
TEXAS INSTRUMENTS
34 FOREST ST. RM 1-24
ATTLEBORO MA 01703

CERTIFICATION

January 2, 1996

PAGE 1 OF 9

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. This certification and accompanying documents may not be reproduced, except in full, without written approval of Elco Textron Inc.

MATERIAL CERTIFICATION, FINAL INSPECTION SHEET ATTACHED
REV LEVEL: D.

Records covering material used and the tests and inspection conducted are on file, subject to examination. This is an original certification and has not been amended unless stated below.

Purchase Order No.	500205082
Register No.	57242
Part No.	36900-1
Description	3/8-24 X .81
Elco Textron Part No.	304-057-637270
Mfg. Lot No.(s)	20726 & 20727
Quantity	63,250

CERTIFICATION

Julie A. Banks

Authorized Signature
Quality Coordinator

ELCO TETRON
Div / Subsidiary of Textron Inc.

Elco Textron Inc.
Precision Automotive Division
1111 East Jackson Road • P.O. Box 7000
Peoria, IL 61629-7000
815.387.8166 • Fax 815.387.8784

F-51-7

TI-NHTSA 7685

MATERIAL CERTIFICATION

DATE OF CERTIFICATION PRINTING: 01/02/96

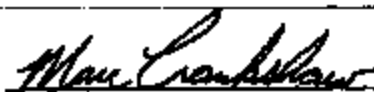
ELCO PART NUMBER: 304-057-637270
ELCO SHOP ORDER LOT NUMBER: 20727

DATE OF MATERIAL APPROVAL: 07/26/95
FINAL SUPPLIER: SHINSHO
MELT SUPPLIER: O & K
MATERIAL GRADE: SAE 10L10
HEAT NUMBER: C65016

CHEMICAL PROPERTIES

CARBON:	.110	BORON:		MOLYBDENUM:	
MANGANESE:	0.42	NITROGEN:		COPPER:	00.01
PHOSPHORUS:	.006	ALUMINUM:	.028	LEAD:	00.2000
SULFUR:	.019	CHROMIUM:	00.03		
SILICON:	0.03	NICKEL:	00.01		

COMMENTS:



Marc Crankshaw
Chief Metallurgist

This is to certify that parts from the above lot number have been produced from the raw material shown above in accordance with specifications listed on your purchase order and/or blueprint. This certification and accompanying documents may not be reproduced, except in full, without written approval of Elco Textron Inc.

Original certification from supplier
on file at Elco Textron Inc.

ELCO TEXTRON
Div / Subsidiary of Textron Inc.

Elco Textron Inc.
1111 Saratoga Road - P.O. Box 7008
Rockford, IL 61120-7008
815.397.3135 - Fax 815.397.4588

F-4880-1

TI-NHTSA 7689

METALION™

1-4-96
36921
36682
TJ

Quality Assurance Manager
A.J. Knott Tool & Mfg.
P.O. Box 368
Milford, MA 01757

Date Shipped: **1-3-96**

Weight Shipped: **1113.41#**

We do hereby certify that, to the best of our knowledge and beliefs, this material conforms to the requirements of your purchase order.

PURCHASE ORDER: 4821

PART NO.: 36088-1

REV: 3 (2/28/87)

SPEC. NO.:

REV:

MATERIAL CONTROL NO.: 5114-3742 1

MATERIAL: C26000 with Fine Ag Inlay

SIZE: .025"±.00075" x 1.500"±.003"

TEMPER: Half Hard

ROTT: 59.8-65.7

BEND TEST: Passed, 20 GM .005 Radius without fracture

INLAY COMPOSITION: 99.992% Ag

THICKNESS: .00115"

METHOD: Average by X-Ray

Kristen O'Connor
Kristen O'Connor
Quality Assurance Engineer

Product Fax Note	7871	Date	1/3/96	Rev	2
To	Julie	From	C. Tamada		
Call Dept	T.I.	Co	A.J. Knott		
Phone #		Fax #	508-473-1234		
Fax #	508-236-3131				

Metalion Engineered Materials Corporation 690 Narragansett Park Drive Pawtucket, RI 02861 401-725-8440

A.J. OSTER CO.

Brass Mill Products • Steel • Aluminum Mill Products

H J OSTER - MANAGER
445 INDUSTRIAL DRIVE
WARREN, MI 48090

36689
36689
11-9-95

WARREN, MI 48090

CERTIFICATE OF ANALYSIS

ORDER NO.

CUSTOMER ORDER NO.

② 2396

11-9-95

ORDER NAME:

ALUMINUM & STEEL MFG. CORP.

CUSTOMER NAME:

ALUMINUM & STEEL MFG. CORP.

SHEET DESCRIPTION:

DESCRIPTION:
3003 COIL

GAUGE:
0.02500

TEMPER:
32

WIDTH:
1.32500

CHEMICAL ANALYSIS

Fe	0.00425
Si	0.01523 A
Cu	0.00200
Mn	0.00200
Pb	0.00100
Bi	0.01300
Se	0.00500
St	0.00500

PHYSICAL TEST RESULTS

TENSILE	80.5
ELONGATION	27 %

P/N 36689-1

NOTES

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE SPECIFICATIONS OR REQUIREMENTS OF YOUR ORDER.

11-9-95
DATE

James D. Knott
LAB SUPERVISOR

LANDRETH ENGINEERING CO.
MILFORD RIVET DIVISION
857 Bridgeport Avenue
Milford Connecticut 06460
Phone : 203-878-4631
Fax : 203-878-5071

ATTENTION QUALITY ASSURANCE

CERTIFICATE OF COMPLIANCE

The Milford Group Certifies that the Purchase Order referenced on the packing slip for the part number and quantity called out on the same packing slip was processed in accordance with, and to conform to; your part number, revision, material, and process specifications as called out by your Purchase Order.

LANDRETH ENGINEERING CO.

Customer : TEXAS INSTRUMENTS
Date : 12/18/95
PO # : 500205077
Cust Part# : 74408-1 REV F
Milford Order#: F85770
Milford Part# : 6254-A REV G
0577/059XD.044
Pieces : 64,470
Weight : 6.9
Material : COPPER
Finish : PLAIN

TI-NHTSA 7692

VALENTINE TOOL & STAMPING, INC.

171 WEST MAIN ST. MORTON, MASS. 02768
(508) 285-6911

MATERIAL CERTIFICATION

DATE : MONDAY DECEMBER 11, 1995

CUSTOMER : TEXAS INSTRUMENTS INC

CUSTOMER P.O. NO : 505296776

SUPPLIER INVOICE NO.: 90093

PART DESCRIPTION : 27713-1 CUP REV.D

SUPPLIER PJO NO. : 20265

QUANTITY SHIPPED : 44,000

SHIPMENT DATE : 12/11/95

PRODUCTION LOT NO: 9513

WE CERTIFY THAT THE MATERIAL USED
TO PRODUCE THE PRODUCT IN THIS
SHIPMENT, NAMELY
[C1006]
CONFORMS TO T.I. DRAWINGS AND
T.I. PURCHASE ORDER REQUIREMENTS.

SIGNED


(Supplier Representative)

Jeanne Laflamme Quality Assurance Manager

TI-NHTSA 7693

VALENTINE TOOL & STAMPING, INC.

171 WEST MAIN ST. NORTON, MASS. 02766
(508) 283-6911 226-0698

CERTIFICATE OF CONFORMANCE

DATE : MONDAY DECEMBER 11, 1995

CUSTOMER : TEXAS INSTRUMENTS, INC.

CUSTOMER P.O. NO : 505296776

SUPPLIER INVOICE NO.: 90093

PART DESCRIPTION : 27713-1 CUP REV.D

SUPPLIER FJD NO. : 20265

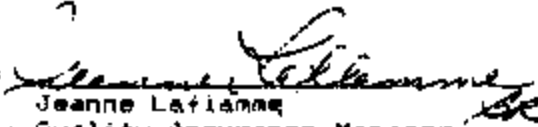
QUANTITY SHIPPED : 44,000

SHIPMENT DATE : 12/11/95

PRODUCTION LOT NO: 9513

WE CERTIFY THAT ALL ITEMS SHIPPED ON THIS ORDER MEET THE REQUIREMENTS OF THE PURCHASE ORDER AND APPLICABLE DRAWINGS/SPECIFICATIONS. RESULTS OF REQUIRED MECHANICAL, VISUAL, FUNCTIONAL AND CHEMICAL TESTS ARE ON FILE IN OUR QUALITY ASSURANCE DEPARTMENT.

SIGNED


Jeanne Lafianag
Quality Assurance Manager

TI-NHTSA 7694

Certificate of Compliance
 This certifies that material meets ordered specification

Valentino

P/N 27713-1

Specification
Size
2.00 X .040
PO Number
17558
Lot Number
25414

11217

685508				C-1006				Rockwell		
.06	.29	.11	.018					.015		
Tensile Strength (psi)				.2% Yield Strength (psi)				% Elongation in 2"		
Surface		Inclusions Rating		Grain Size						
Decarburization				Microstructure						
Cold Bend										
Parallel to the rolling direction over a						Radius Bend				
Perpendicular to the rolling direction over a						Radius Bend				
Hardenability					Miscellaneous					

I certify that the above information is correct
[Signature] Date 8/11/95
 Area: *[Signature]*
 Name: *[Signature]*
 My commission expires: *[Signature]*

ROME STRIP STEEL
 530 Henry St.
 Rome, NY 13440
 315-338-5500
 FAX 315-338-5510



ESTABLISHED 1802

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
CIRCLEVILLE, OHIO 43113

NO: KC-12
Effective Date: 07/14/93
Page 1 of 1

MATERIAL CERTIFICATION

DATE: _____

CUSTOMER: TEXAS INSTRUMENTS, ATTLEBORO

CUSTOMER ORDER NO. _____

CUSTOMER PART NO. & REV. 27225-2 (REV. R)

QUANTITY THIS SHIPMENT 57.20

SHIPMENT DATE 7-26-95

We certify that the material used to produce the product in this shipment, namely 500FN131 Kapton*, 31/32" wide, conforms to TI drawing and TI purchase order requirements on file with the HPF Group of the Dupont Company.

Jerrill C Holloway

SUPPLIER REPRESENTATIVE
ENGINEER - QUALITY CONTROL - TITLE



EST. 1948

K. F. BASSLER COMPANY, INC.
PRECISION TOOLING & METAL STAMPINGS

45 John William St. • Abbeboro, MA 02703 • (508) 222-1081 • Fax: (508) 228-1805

ELEMENT: 4.8 (Product Identification and Traceability)		Page 1 of 1
TITLE: Material Certification	FORM: 3.0	REVISION:

CUSTOMER: TEXAS INSTRUMENTS, INC.

CUSTOMER ORDER NO.: 505277139

CUSTOMER PART NO.: 27406-1

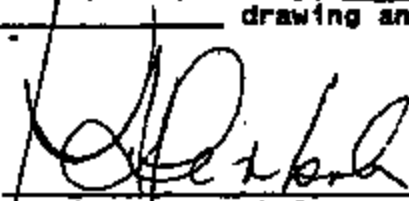
PART REVISION: F

QUANTITY THIS SHIPMENT: 40,250

LOT NO(S). THIS SHIPMENT: 329

SHIPMENT DATE: 12-11-95

K.F. Bassler Co., Inc. certifies that the material used to produce the product in this shipment; namely, AK 1008 CRS conforms to TI'S drawing and purchase order requirements.

AUTHORIZED SIGNATURE: 
 Kathleen A. Penkala
 Customer Service Manager



THOMPSON Steel Company Inc.

P/N 27406-1

RECEIVE OFFICE
120 BRIMMALL STREET, GARDNER, MA 01905 TEL. 857-854-0000

2000 ROAD 20
FRANKLIN FALLS, MA 01749
TEL. 781-875-0000

5000 WASHINGTON HIGHWAY
WINDHILL, MA 01890
TEL. 351-854-7110

100 WASHINGTON ST.
SPRINGFIELD, MA 01104
TEL. 417-833-0000

P.O. BOX 1770 ST. 1
BOLTON FALLS MA 01517
TEL. 413-853-0000

P.O. BOX 4
FRANKLIN FALLS, MA 01749
TEL. 781-875-0000

K.F. BASSLER
45 JOHN WILLIAM ST.
ATTLEBORO, MA 02703

*CONVERTED
REC'D
2/19/95*

ANALYSIS REPORT

Item No.	YOUR ORDER NO.	OUR ORDER NO.	GRADE	SIZE	WEIGHT	SPECIFICATION NO.	PART NO.
1	16078	31685	1008K	1.000 X .046	25.345		JOB# 1923-2
2							1950-1
3							1972-2
4							1929-1
5							
6							

Item No.	HEAT NO.	C	MN	P	S	SI	CR	NI	ROCKWELL	BEND TEST	OTHER
1	4118981	05	28	012	011			ci	B 46		
2											
3											
4											
5											
6											

9-19-95
CERTIFIED BY:
Steven J. [Signature]
Quality Control

INSULFAS PLASTICS, INC
PLASTIC FABRICATORS DIV.
155 NORTH MAIN STREET
FRANKLIN, NH 03235
(603) 934-2778

C E R T I F I C A T E O F C O N F O R M A N C E

TO: TEXAS INSTRUMENTS, INC

DATE: 12/13/95

AT: ATTLEBORO, MA

ATT: QUALITY CONTROL SUPV.

THIS CERTIFIES THAT:

SHIPMENT #181961

PART # 73958-1

REVISION J

QUANTITY: 250,000

MATERIAL DESCRIPTION:

KAPTON HN

IS IN CONFORMANCE WITH THE REQUIREMENTS, SPECIFICATIONS, AND DRAWINGS
ON YOUR ORDER # 585267699-1

BY: INSULFAS PLASTICS
FRANKLIN, NH 03235

Paul H. [Signature]
QUALITY ASSURANCE MANAGER

TI-NHTSA 7699

VALENTINE TOOL & STAMPING, INC.

211 WEST MAIN ST. NORTON, MASS. 02756
(508) 285-6911 326-0042

CERTIFICATE OF CONFORMANCE

DATE : MONDAY DECEMBER 18, 1995

CUSTOMER : TEXAS INSTRUMENTS, INC.

CUSTOMER P.O. NO : 505279165

SUPPLIER INVOICE NO.: 90133

PART DESCRIPTION : 74797-1 CRIMP RING REV.B

SUPPLIER FJD NO. : 20191


QUANTITY SHIPPED : 25,200

SHIPMENT DATE : 12/18/95

PRODUCTION LOT NO: 9541

WE CERTIFY THAT ALL ITEMS SHIPPED ON THIS ORDER MEET THE REQUIREMENTS
OF THE PURCHASE ORDER AND APPLICABLE DRAWINGS/SPECIFICATIONS. RESULTS
OF REQUIRED MECHANICAL, VISUAL, FUNCTIONAL AND CHEMICAL TESTS ARE ON
FILE IN OUR QUALITY ASSURANCE DEPARTMENT.

SIGNED


Jeanne LaFramme
Quality Assurance Manager

TI-NHTSA 7700

VALENTINE TOOL & STAMPING, INC.

171 WEST MAIN ST., NORTON, MASS. 02760
(508) 235-6911

MATERIAL CERTIFICATION

DATE : MONDAY DECEMBER 18, 1995

CUSTOMER : TEXAS INSTRUMENTS INC

CUSTOMER P.O. NO : 505279165

SUPPLIER INVOICE NO.: 90133

PART DESCRIPTION : 74797-1 CRIMP RING REV.B

SUPPLIER FJO NO. : 20191

QUANTITY SHIPPED : 25,200

SHIPMENT DATE : 12/18/95

PRODUCTION LOT NO: 9541

WE CERTIFY THAT THE MATERIAL USED
TO PRODUCE THE PRODUCT IN THIS
SHIPMENT, NAMELY
[5052 AL]
CONFORMS TO T.I. DRAWINGS AND
T.I. PURCHASE ORDER REQUIREMENTS.

SIGNED

Jeanne Laflamme
Supplier Representative

Jeanne Laflamme Quality Assurance Manager

TI-NHTSA 7701

UNITED ALUMINUM CORPORATION
 100 United Drive, P.O. Box 215, North Haven, CT 06473
 Tel: (203) 239-5881 Fax: (203) 239-4441

SOLD TO: VA003
 ATTN: DICK WHITNEY

VALENTINE TOOL & STAMPING INC.
 PO BX 469, 171 W. MAIN
 NORTON, MA 02766-0469

DATE September 11, 1995
 CUST. PO# 18332
 ORDER SPECS 5052-O .03200 X 2.312
 UA ORDER# 19109GB
 SPECIFICATIONS ASTM B209-92a, QQA 250/8F

CHEMICAL COMPOSITION RESULTS

P/N 74722-1

This is to certify that the following are the results of a chemical composition analysis performed by an independent laboratory, based on a single sample for each master coil listed below:

SAMPLE ANALYSIS	
ACTUAL	
SILICON	0.10
IRON	0.30
COPPER	0.05
MANGANESE	0.06
MAGNESIUM	2.8
ZINC	0.005
OTHER (MAX) - MAX	0.15
OTHER (TOTAL) - MAX	0.15
ALUMINUM	REM

MECHANICAL PROPERTY RESULTS

This is to certify that the following are the results of the mechanical property test(s) performed by United Aluminum, based on a minimum of one sample for each master coil listed below:

HEATS 0419-86	
TENSILE STRENGTH (ksi)	30.2
ELONGATION (%)	21.0

Any test results reported above are subject to the limitations of the testing process. All sales are subject to United Aluminum's Terms and Conditions contained on the reverse of its Sales Order Acknowledgement.

FOR UNITED ALUMINUM CORP.

BY: *R. Campbell Buchanan*
 R. CAMPBELL BUCHANAN
 TECHNICAL MANAGER

copyright (c) 1991 United Aluminum Corp.
 WB SHIP SHIP QC 1

09/11/1995 11:44:16
 00124-00273 28953 0049686

TEXAS INSTRUMENTS, INC.
MATERIALS & CONTROLS COMP W/SE
SUFFOLK ROAD M & C DOOR 18
MANSFIELD, MA 02043-1106

42 10

PARKER HANNIFIN CORP.
JEL DIVISION
WEST CROFT CIRCLE
SPARTANBURG, S.C. 29302
TELEPHONE (803) 579-7332

J.B.L. Division of Parker Seal certifies that the material used to produce the product in this shipment, namely SILICONE 37519. Conforms to TI drawing and TI purchase order requirements.

PART TITLE... ENVIRONMENTAL SEAL

CUST P/N... 74247-4 REV K

DATE SHIPPED

P/O... 500205016

J.B.L. P/N... 317559

B/NL 500327

12/04/96

SILICONE COMPOUND... 37519

QUANTITY... 104,000

HAROLD C. SEGER, LAB MANAGER
PAUL METZGER, Q.A. MANAGER

J.B.L. Division

PREPARED BY

103
106
Martin Jellie

TI-NHT8A 7703

Paratech, Inc.

MINIATURE TECHNICAL SERVICES

12640 HIGHWAY 60 AVENUE • P.O. BOX 718 • PARADELT, CALIFORNIA 94723
TELEPHONE (415) 433-2248 • FAX (415) 433-2227

MATERIAL CERTIFICATION

DATE: 12-14-95

TEXAS INSTRUMENTS, INC.

ORDER NO.: 506317846

PART NO : 74078-139 REV. NO.: G

QUANTITY THIS SHIPMENT: 50,000

SHIPMENT DATE: 12-14-95

PART DESCRIPTION: PIB

WE CERTIFY THAT THE MATERIAL USED TO PRODUCE THE PRODUCT IN THIS SHIPMENT, NAMELY PIB / STRONG - 41, CONFORMS TO T.I. DRAWING AND T.I. PURCHASE ORDER REQUIREMENTS.


PRODUCTION MANAGER

TI-NHTSA 7704

DIEMASTERS MANUFACTURING, INC.

MATERIAL CERTIFICATION

DATE: 12-08-95

CUSTOMER : TEXAS INSTRUMENTS

SUPPLIER PURCHASE ORDER : BL-4762

CUSTOMER PURCHASE ORDER : SCSR79161

PART NO.: 27839-1 REV.: D

PART DESCRIPTION : WASHER

QUANTITY THIS SHIPMENT : 73,140

SHIPMENT DATE : 12-08-95

TRACEABLE LOT NUMBER : TX-427

HEAT NUMBER : D00817

TYPE OF MATERIAL : CRS 1050 SOFT

WE CERTIFY THAT THE MATERIAL USED TO PRODUCE THE PRODUCT IN THIS SHIPMENT. NAMELY (SPECIFIC NAME/NUMBER OF MATERIAL), CONFORMS TO TEXAS INSTRUMENTS DRAWING AND PURCHASE ORDER REQUIREMENTS.

SIGNED *Alil Amour*
QUALITY ASSURANCE REPRESENTATIVE

TITLE: *EPA INSPECTOR*

TI-NHTSA 7705

T7420218

TEXAS INSTRUMENTS, INC.
MATERIALS & CONTROLS COMP W/SE
SUFFOLF ROAD-M&C-DOOR 18
MANSFIELD MA 02048-1105

PARKER HANNIFIN CORPORATI
JEL DIVISION
WEST CROFT CIRCLE
SPARTANBURG, S.C. 29002
TELEPHONE (803) 573-7332

J.B.L. Division of Parker Seal certifies that the material used to produce the product in this shipment, namely EPDM/E7104. Conforms to TI drawing and TI purchase order requirements.

PART TITLE... GASKET

CUST P/N... 74389-1 REV H

DATE SHIPPED

P/O... 500205079

J.B.L. P/N... 20218E

B/N... 001292

12/11/95

COMPOUND... E7104

QUANTITY... 121,200

HAROLD O. GEGER LAB MANAGER
PAUL METZGER Q.A. MANAGER

J.B.L. Division
LAB TECHNICIAN



TI-NHTSA 7706

CERTIFICATION

November 30, 1995

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 your purchase order and/or blueprint. This certification and accompanying documents are not valid except in full, without written approval of Elco Industries, Inc.

MATERIAL CERTIFICATION, FINAL INSPECTION SHEET ATTACHED
REV LEVEL: D.

Records covering material used and the tests and inspection conducted are on file. This is original certification and has not been amended unless noted below.

Purchase Order No.	500205082
Register No.	57242
Part No.	36900-1
Description	3/8-24 X .511
Elco Part No.	304-057-837270
Mfg. Lot No.(s)	13642
Quantity	3,000

CERTIFICATION

TI-NHTSA 7707



ELCO INDUSTRIES, INC.
2112 S. UNIVERSITY BLVD.
DALLAS, TEXAS 75235
214-343-5151

ENGINEERED MATERIALS

BRUSHY HELLMAN INC. 180 PASSAIC AVE FAIRFIELD NJ 07004

2013 11 20

CERTIFICATE OF MATERIAL QUALITY

TEXAS INSTRUMENT
SUFFOLK ROAD
COMPONENT WHSE BLDG 16
MANASSAS MA 02045-1105

OUR ORDER NO: FA9785 CUSTOMER NO: 89785E
OUR ITEM NO: 01 DEPARTMENT NO: 011
YOUR P.O. NO: 500008999 11/20/95
YOUR SPEC NO:
YOUR PART NO: E7716-1 REV.D



ALLOY	STRIP	190	HM	1848E	0.005	+0.0002	-0.0002	THU
		17200	TM04		0.183	+0.002	-0.002	WED

SHIPMENT NBR 011 = 64.0 LBS
HEAT NUMBER 1848E = 64.0 LBS

***** CHEMICAL COMPOSITION (PERCENT) *****

1.870	RE	.22	CO	.06	NI	.05	FE	.08	SI	.04	AL
.005	SN	.01	ZN	.006	CR	.004	PS				

REMAINDER: CU

***** AS SHIPPED PROPERTIES *****

***** PC / LOT OR COIL NUMBER *****

TENSILE	(KSI)	142.6	-	143.4
YIELD	(KSI)	120.8	-	120.9
ELONGATION	% IN 2"	13.0	-	13.0
HARDNESS-1	HV	290.0	-	293.0
CONDUCTIVITY	% IACS	19.3		
GRAIN SIZE	(MM)	.015	-	.015

68- A

P = PASSED F = FAILED

TI-NHTSA 7708

PJF

QUALITY ASSURANCE MANAGER

11-20-95

DATE



SIGELOW COMPONENTS CORPORATION

74 DIAMOND ROAD

SPRINGFIELD, NEW JERSEY 07081-3190

201-467-2100 FAX: 201-912-8397

MATERIAL CERTIFICATION/CONFORMANCE

Texas Instruments, Inc.
Materials & Controls
34 Forest Street
Attleboro, MA 02703-2481

Your P.O. No.	-	500205031
Your Part No.	-	74B78-1
Rev. No.	-	F
Quantity Shipped	-	300,000
Shipment Date	-	11-13-95
Lot Number	-	1
Date Code	-	07-11-95

We certify that all the items shipped on this order meet the requirements of the Texas Instruments purchase order and Texas Instruments drawing specifications.

We certify that the parts shipped were made of ODA 260 brass material in accordance with Texas Instruments drawing specifications.

Sincerely,


G. Brett Harman

OBH:es

TI-NHTSA 7709

FUNCT. / TESTS

TI-NHTSA 7710

