

ENERGY INDUSTRIES OF OHIO

Purchase Order Number:

S005242-F

Part Number:

SE141-103-1

Part Name:

MCWF C-1

MTM Work Order Number:

65707/1.0

Data Package Revision: 1



Major

Tool & Machine, Inc.

Table of Contents
 Quality Assurance Documents For
 Workorder: 65707/1.0

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 User ID: GRIFFIT#

Customer: 8909 - ENERGY INDUSTRIES OF OHIO
Customer P.O.: S005242-F
Customer Part ID: SE141-116 - MCWF C-1

Item#	Document Description / Material Description / File Name / Heat Lot
1	CERTIFICATE OF CONFORMANCE
2	COMPLETED SHOP TRAVELERS: - 65707-1 completed shop travelers.xls
3	NC17399: - 17399 dispositioned.pdf
4	NC17452: - 17452 dispositioned.pdf
5	NC17746: - 17746 dispositioned.pdf
6	NC18236: - 18236 dispositioned.pdf
7	NC18237: - 18237 dispositioned.pdf
8	NC18238: - 18238 dispositioned.pdf
9	NC18297: - 18297 dispositioned.pdf
10	NC18315: - 18315 dispositioned.pdf
11	NC18588: - 18588 dispositioned.pdf
12	NC18830: - 18830 dispositioned.pdf
13	NC18831: - 18831 dispositioned.pdf

DS141-036 - STUD

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
14	4	10	30	Material Certification: TEST REPORTS / DS141-036 - STUD - mc108260.tif / 8969595

DS141-060 - NUT

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
15	4	10	50	Material Certification: / DS141-060 - NUT - mc108258.tif / 8977349

DS141-079 - FLAT WASHER

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
16	4	10	60	Material Certification: / DS141-079 - FLAT WASHER - mc108259.tif / 8990135

SE141-078 - POLOIDAL BREAK SHIM ASSEMBLY

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
17	2	30	20	Certificate of Conformance: C OF C / LOCTITE 411 - LOCKING COMPOUND - mc106141.tif / CERTIFIED

SE141-078-03 - INSULATING SLEEVE

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
18	3	10	10	Certificate of Conformance: / G11CR_1 - ROUND, BAR, 1.75 DIA - mc108545.tif / CERTIFIED

SE141-103-1 - MOD COIL WINDING FORM ASSEMBLY TYPE-C

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
19	0	10	40	Material Certification: TRACE ID: 116255 / ER316MNNF_093_GTAW - WELD WIRE,GTAW .093 DIA - MC106579.TIF / W020132 / WO20132
20	0	10	40	Material Certification: TRACE ID: 113686 / ER316MNNF_093_GTAW - WELD WIRE,GTAW .093 DIA - MC106164.PDF / W020132 / WO20132

SE141-103-4 - INSULATING SHEET



Customer: 8909 - ENERGY INDUSTRIES OF OHIO
Customer P.O.: S005242-F
Customer Part ID: SE141-116 - MCWF C-1

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
21	7	10	10	Certificate of Conformance: G11CR / G11CR_3 - SHEET, FLAT - mc107081.tif / CERTIFIED

SE141-103-5 - INSULATING SLEEVE

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
22	5	10	10	Certificate of Conformance: / G11CR_1 - ROUND, BAR, 1.75 DIA - Same as Item #18 / CERTIFIED

SE141-116 - MODULAR COIL WINDING FORM TYPE-C

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
23	1	90		Inspection Data Checklist: 2 steps
24	1	100		Nondestructive Liquid Penetrant Test Certification #13726
25	1	120		Inspection Data Checklist: 137 steps
26	1	140		Inspection Data Checklist: 2 steps



TO: ENERGY INDUSTRIES OF OHIO

DATE: 10/25/2004

ATTENTION: Receiving Department

Seller certifies that:

Part Number: SE141-103-1

Purchase Order: S005242-F

Part Name: MCWF C-1

Workorder: 65707/1.0

Part Serial Number: C1

Quantity: 1

1. These materials and/or parts were produced in conformance with all contractually applicable Government and/or Customer specifications referred in, or furnished with, the above Purchase Order.
2. The materials and/or parts furnished under the above Purchase Order were produced:
 - From materials furnished by Customer for the production of such parts.
 - From materials for which the seller has available for examination chemical and/or physical test reports or other evidence of conformance to applicable specifications.
3. All processes required in the production of these part and/or materials are listed below and were performed by a facility or personnel approved or certified by the Seller and the customer when such approval or certification is required by contract.

Certifications are on file at this plant.

Other Requirements:

Signature: _____

Title: _____

Quality Man

Date: _____

10/25/05



Activity	Visual Mfg Ref.	Op Status	Close Date	Emp ID
Final Inspection----Prepare part for source inspection.----Review and complete QA data package per QAP and the requirements of the product specification NCSX-CSPEC-141-03.--Contact CFT to review data package prior to notifying source inspection.	65707/1.0 -Sub:0 Op#:20	Closed	9/29/2205	840-G.Masood
Source Inspection	65707/1.0 -Sub:0 Op#:30	Closed	9/29/2205	840-G.Masood
Package and Ship----Build a box/crate suitable for protecting the part from the environment.----Weigh the finished part and metal stamp the value in pounds on the casting in the area marked on the customer drawing.----Part must be protected and wrapped in plastic prior to inserting into the crate. Refer to PS583.----Part is to be shipped to PPPL in Princeton- NJ per QAP shipping address.----Crate must be marked/stenciled per the MTM drawing.	65707/1.0 -Sub:0 Op#:40	Closed	10/1/2005	131-W.Allen
Receive customer supplied material. --Verify the receipt of quality documentation for the casting.--Check off IDC noting receipt of material and receipt of quality documentation.----Part Number: SE141-116 Rev: 6--Part Description: PRODUCTION WINDING FORM TYPE-C	65707/1.0 -Sub:1 Op#:10	Closed	4/1/2005	825-B.Jarrett
Setup the machining fixture on the rotary table. Load casting into the machining fixture with the initial pickup pads facing up. Indicate the pickup pads and orient the casting for machining. ----Rough machine the top flange face and the outer periphery leaving .25- +.060/-.000-. The outside surfaces of the flange will serve as qualifiers for the next operation. Record the qualifier dimensions on the IDC.----Install the lifting holes per the MTM drawing.----Rough machine the top side of the -T- section leaving .25- +.060/-.000-.----Remove the casting from the machining fixture and flip over with the bottom flange facing up. Re-load into the machining fixture. Pickup the qualifiers and orient the casting for machining.----Rough machine the bottom flange face leaving .25- +.060/-.000-. ----Rough machine the poloidal break leaving a minimum of .25- of stock per side.----Install temporary shim filling in the poloidal break and hold together with temporary c-clamps. Tack weld in place.----Rough machine the bottom side of the -T- section leaving .25- +.060/-.000-.----Finish machine both sides of	65707/1.0 -Sub:1 Op#:20	Closed	7/20/2005	219-T.Laird



Activity	Visual Mfg Ref.	Op Status	Close Date	Emp ID
Perform an in-process inspection of the magnetic permeability of the material using the Severn Permeability Indicator Gage. Inspect a minimum of (8) points on the rough machined flange face and an additional (8) points on the rough machined -T- section. Record the upper and lower range values on the IDC's. Values that exceed 1.02 must be documented with a non-conformance record and dispositioned prior to continuing.	65707/1.0 -Sub:1 Op#:40	Closed	8/26/2005	744-P.Schumacher
Finish machine the -T- section and wings. Run a probe pass to inspect the surface for stock.----Remove the casting from the machining fixture and flip over with the bottom flange facing up. Re-load the casting into the machining fixture. Pickup the qualifiers and orient the casting for machining.----Finish machine the -T- section and wings. Run a probe pass to inspect the surface for stock.----Obtain sketches SE141-116 FLATNESS D and SE141-116 FLATNESS E from the team leader. Use this sketch as a map and record indicator readings at each tooling ball location and near each point. Record information on the IDC prior to moving the part to the next workcenter.	65707/1.0 -Sub:1 Op#:70	Closed	9/21/2005	274-M.Moorman
Setup the machining fixture with the casting installed. Machine the inspection fiducials per the MTM drawing. Finish machine the poloidal break to drawing requirements. Remove the casting from the machining fixture.----Install temporary shims in the poloidal break. Use the temporary shim 1.75 thick with additional shims as necessary and C-clamp before moving the part.	65707/1.0 -Sub:1 Op#:80	Closed	9/21/2005	274-M.Moorman
DEBURR ENTIRE PART- NO SHARP EDGES ALLOWED. HAND WORK THE TWO SIDE -L-'S OF THE .750 WIDE TWISTED SHAPE OR -T- SECTION TO YIELD A SURFACE FINISH OF 125 RMS OR BETTER. SEE ENGINEERING TO CLARIFY SURFACES NEEDING HANDWORK. INSPECT SURFACE FINISH AND RECORD ON IDC. SPRAY UP WITH BLUE AND HANDWORK UNTIL BLUE IS TOTALLY REMOVED. SURFACE PROFILE TOLERANCE IS CRITICAL SO ONLY REMOVE THE STOCK NECESSARY TO PRODUCE THE REQUIRED SURFACE FINISH.--ALL GRINDING WHEELS AND DISKS MUST BE VIRGIN MATERIAL NOT PREVIOUSLY USED ON ANY MATERIAL TO AVOID MATERIAL CONTAMINATION.	65707/1.0 -Sub:1 Op#:85	Closed	9/30/2005	219-T.Laird



Activity	Visual Mfg Ref.	Op Status	Close Date	Emp ID
Inspect the magnetic permeability of the entire casting using the Severn Permeability Indicator Gage. Refer to PS584. All as cast surfaces must be inspected on a 6- x 6- grid. Record range of actual values on IDC. All machined surfaces must be inspected on a 2- x 2- grid. Record range of actual values on IDC. Permeability measurements shall be per supplementary requirements S24 of ASTM A703/A703M and S1 of ASTM A800/800M except the results will be expressed as relative permeability (μ) rather than ferrite content (FN). Values that exceed 1.02 must be documented with a non-conformance record and dispositioned prior to continuing.	65707/1.0 -Sub:1 Op#:90	Closed	9/20/2005	212-J.Lehr
SOURCE FOR MAG PERMEABILITY----CONTACT ENGINEERING. DO NOT HOLD FOR CUSTOMER IF THEY ARE NOT PRESENT.	65707/1.0 -Sub:1 Op#:91	Closed	9/21/2005	840-G.Masood
PT 100% of the part as-cast surfaces as well as finished machine surfaces. See PS582 for processing instructions. During the inspection also perform a visual inspection of the casting surface per ASTM A802/A802M and accept per the same. Include reference to ASTM A802 on the certification.--Specification: ASTM A903/A903M----Method: ASTM E165----Acceptance Criteria: ASTM A903/A903M Level II for as cast surfaces----Acceptance Criteria: ASTM A903/A903M Level I for machined surfaces including the entire -T- section (high stress areas)----Certification: MTM certification to include the information per Supplementary Requirements S1 of ASTM A903/A903M--MTM NDT Cert: LPI CERTIFICATION	65707/1.0 -Sub:1 Op#:100	Closed	9/21/2005	840-G.Masood
SOURCE FOR PT----CONTACT ENGINEERING. DO NOT HOLD FOR CUSTOMER IF THEY ARE NOT PRESENT.	65707/1.0 -Sub:1 Op#:101	Closed	9/29/2005	840-G.Masood
Setup and inspect the part 100% per the drawing requirements. Refer to PS593.--Surface profile dimensions are to be taken on a 2- x 2- grid for machined surfaces and 4- x 4- grid for as cast surfaces.--Inspect fiducials that are located around the periphery of both flanges. --Record dimensions as required per the IDC's.--Forward and IGES file of the 2 x 2 and 4 x 4 grid points as well as points representing the locations of the inspection fiducials to Kevin Bowling for reporting to the customer.	65707/1.0 -Sub:1 Op#:120	Closed	9/29/2005	295-C.Weaver
SOURCE FOR DIMENSIONAL	65707/1.0 -Sub:1 Op#:121	Closed	9/29/2005	840-G.Masood



Activity	Visual Mfg Ref.	Op Status	Close Date	Emp ID
Clean the casting thoroughly to remove all coolant- oil- tapping fluid etc... Rinse the part thoroughly and wipe down with isopropyl alcohol to remove any residue or film. Refer to PS583.----Install the poloidal break shim assembly and accompanying hardware and insulation per the assembly drawing.----Stamp numbers near every fifth -T- hole per sketch. See engineering for sketch.	65707/1.0 -Sub:1 Op#:130	Closed	9/30/2005	219-T.Laird
Perform electrical resistance test.----Wire all of the bolts together. Set one jumper directly on casting flange and one on the bolts. Record resistance between the bolt and casting combination and the mid-plane shim in kohms on IDC.----Set a jumper between the poloidal joint midplane and the casting. Set one jumper on the poloidal joint midplane and one on each of the bolts. Record range of resistance in kohms on IDC.	65707/1.0 -Sub:1 Op#:140	Closed	9/29/2005	840-G.Masood
SOURCE FOR ELECTRICAL TEST	65707/1.0 -Sub:1 Op#:150	Closed	9/29/2005	840-G.Masood
WELD BUILD UP AREA PER NC17399.	65707/1.0 -Sub:8 Op#:10	Closed	5/31/2005	099-J.Velez
WELD BUILD UP AREA PER NC 17452	65707/1.0 -Sub:9 Op#:10	Closed	6/6/2005	465-J.Bever
RECEIVE CUSTOMER SUPPLIED CASTING	65707/1.0 -Sub:2 Op#:10	Closed	9/2/2005	883-S.Dulworth
MACHINE THE SHIM COMPLETE PER THE DRAWING AND CNC PROGRAMS.	65707/1.0 -Sub:2 Op#:20	Closed	9/8/2005	506-R.Liston
ASSEMBLE (5) OF THE INSULATING SLEEVES INTO THE SHIM AND BOND USING LOCTITE 411. DO NOT INSTALL THE BUSHINGS IN THE OUTSIDE HOLES. THEY WILL BE INSTALLED LATER.	65707/1.0 -Sub:2 Op#:30	Closed	9/12/2005	746-G.Davidson
SAW OFF 16- AND MOVE TO NEXT WORK CENTER.	65707/1.0 -Sub:3 Op#:10	Closed	6/1/2005	227-D.Bockover
MACHINE PER THE DRAWING FOR A SLIP FIT WITH MATING DETAIL. OBTAIN FINISHED MACHINED CASTING SHIM BEFORE FINAL SIZING THE O.D. OF THE SLEEVE.	65707/1.0 -Sub:3 Op#:20	Closed	7/18/2005	821-J.Leggins
RECEIVE MATERIAL--NOTIFY CFT AND FORWARD MATERIAL STORES.	65707/1.0 -Sub:4 Op#:10	Closed	5/19/2005	825-B.Jarrett
SAW OFF 30- LENGTH AND MOVE TO NEXT WORK CENTER.	65707/1.0 -Sub:5 Op#:10	Closed	6/1/2005	227-D.Bockover
MACHINE PER THE DRAWING FOR A SLIP FIT WITH MATING DETAIL. CHECK FINISHED MACHINED CASTING BEFORE FINAL SIZING THE O.D. OF THE SLEEVE.	65707/1.0 -Sub:5 Op#:20	Closed	9/21/2005	565-S.Woods
SAW 13- LENGTH AND MOVE TO NEXT WORK CENTER.	65707/1.0 -Sub:6 Op#:10	Closed	6/1/2005	227-D.Bockover



Activity	Visual Mfg Ref.	Op Status	Close Date	Emp ID
UNRELEASED DO NOT PERFORM THIS OPERATION DUE TO PRODUCT CHANGES THIS PART HAS BEEN ELIMINATED FROM THE ASSEMBLY.	65707/1.0 -Sub:6 Op#:20	Closed		276-B.Probst
RECEIVE MATERIAL	65707/1.0 -Sub:7 Op#:10	Closed	4/5/2005	131-W.Allen
MACHINE THE PROFILE LEAVING STOCK PER PROGRAM.----ALSO MACHINE OUT FLAT STOCK PIECES FOR SHIMS BEHIND THE OUTSIDE OF POLOIDAL BREAK FLANGE PER CNC PROGRAM.	65707/1.0 -Sub:7 Op#:20	Closed	9/2/2005	568-J.Kereszturi
OPEN UP THE OUTSIDE (2) HOLES ON BOTH SIDE PLASTIC SHIM PIECES TO 1.670- TO ALLOW FOR BUSHING ASSEMBLY. SEE ENGINEERING OR CHAD EASTMAN FOR SPECIFIC INSTRUCTIONS.	65707/1.0 -Sub:7 Op#:30	Closed	9/21/2005	361-M.Westerfield
HANDWORK AREAS AS DESCRIBED BY CUSTOMER DISPOSITION OF NC 18237. SEE ATTACHMENT SECTION OF NC FOR CUSTOMER DISPOSITION AND ASSOCIATED MAPS. DO NOT REMOVE MARKING WHILE REWORKING THESE AREAS. THE MARKING WILL REMAIN ON PART FOR REVIEW BY CUSTOMER AFTER SHIPMENT. DO NOT USE ANY FLUIDS OTHER THAN ISOPROPYL ALCOHOL ON THE G11 (PLASTIC) MATERIAL THAT IS LOCATED AT THE POLOIDAL BREAK (SPLIT LINE).	65707/1.0 -Sub:10 Op#:10	Closed	9/29/2005	164-L.Freeland

Major Tool &
Machine, Inc.
1458 East 19th Street
Indianapolis, IN
46218-4289

Page: 1

MTM N/C: 17399
User ID: BOWLINK

Date: 05/24/05

ENERGY INDUSTRIES OF OHIO Customer:

Contact: NANCY HORTON Telephone: 216-496-2314
NKHFlowen@aol.com E-Mail: 216-328-2001 Fax:

SE141-116 / MODULAR COIL WINDING FORM TYPE Part:

S005242-F/Ln:1 Customer P.O.: SE141-116 Drawing ID: 3 Revision: C1 Serial
No./Qty: Links: 1-Type:W: 65707/1.0 Sub: 1 Op: 20

KEVIN BOWLING Reported By: 317-636-6433 Telephone: E-Mail:
kBowling@MajorTool.com Fax: 317-634-9420

Problem: Part was gouged by an errant tool path.

Gouge is approximately 2" wide by 10" long and at worst case 1/2" deep.

Proposed Disposition:

SUBMIT TO CUSTOMER REQUESTING WELD
REPAIR.

Number of additional pages:

Customer Disposition: Use As Is Rework X Repair Scrap Replace

PPPL
PPPL
MTM is authorized to ~~proceed with~~ repair *on Casting Cut based on the* as soon as MTM's weld repair procedure which was submitted by e-mail on 5/12/05 is formally approved by PPPL. Weld repair procedures are currently being reviewed at PPPL.

Submitted weld qualification procedures which lack some of the test results required in ASTM A488. Full qualification and re-submittal are required before ASAP and review to weld repair on any subsequent castings. *B.W. concurs*

Technical Contact Approval: Phil Heitzenroeder *PH* 2005/05.25.08:10:42 -04'00' PPPL Tech. Rep. *5/26/05*
Buyer Approval: *Jerry J. Sutton* Title: *SA* Date: *5/26/05*

Major Tool Implemented By: *Kevin Bowling* Title: *PROGRAM MANAGER* Date: *27-MAY-2005*

816-PROGRAMMING ERROR Root Cause 1:

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 17452

Page: 1
Date: 06/03/05
User ID: BOWLINK

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 3
Links: 1-Type:W: 65707/1.0 Sub: 1 Op: 20

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: 1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: THERE IS A TOOL GOUGE ON A CORNER OF THE FLANGE FACE.

Proposed Disposition:

SUBMITTED TO CUSTOMER REQUESTING PERMISSION TO WELD REPAIR.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

MTM is authorized to weld repair the gouge. Welding may proceed per N/C 17339, which authorizes repairs on the C1 casting based on the submitted weld qualification procedures which lack some of the test results required in ASTM A488.

Technical Contact Approval: Phil Heitzenroeder
2005.06.03 11:39:21 -04'00'

Title: _____ Date: _____

RLM Approval: Brad Nelson

Title: _____ Date: _____

Major Tool Implemented By: *Kevin Bowling*

Title: PROGRAM MGMT Date: 10-NOV-05

Root Cause 1: 806-PROCEDURE NONCOMPLIANCE

Resource: 40FT MITSU Equipment:
Description: MACHINIST TOUCHED OFF THE PART AND SET ZERO INCORRECTLY.

Corr Actn: 1: Action: By:
Description: N/A

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 17746

Page: 1
Date: 08/19/05
User ID: BOWLING

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 5

Customer P.O.: S005242-F/L1:1
Serial No./Qty: C-1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: Part has multiple gouges from tools and one dent. See attached sketches describing the non-conformances.

Proposed Disposition:

SUBMIT TO CUSTOMER FOR DISPOSITION.

Number of additional pages: 1

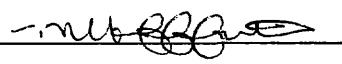
Customer Disposition: Use As Is Rework Repair Scrap Replace

NCSX reviewed the descriptions of the three tool gouges and one dent shown in the attached sketches. The gouges need to be blended to avoid sharp edges. The dent defect needs to be worked as necessary so the tapped hole can be used.

Phil Heitzenroeder
2005.08.25 16:13:48 -04'00'

Technical Representative: _____

RLM: Brad Nelson
* Digitally signed by Brad Nelson
DN: cn=Brad Nelson, ou=US, ou=ORNL,
ou=FED, email=brnelson@ornl.gov
Date: 2005.08.25 11:22:21 -04'00'

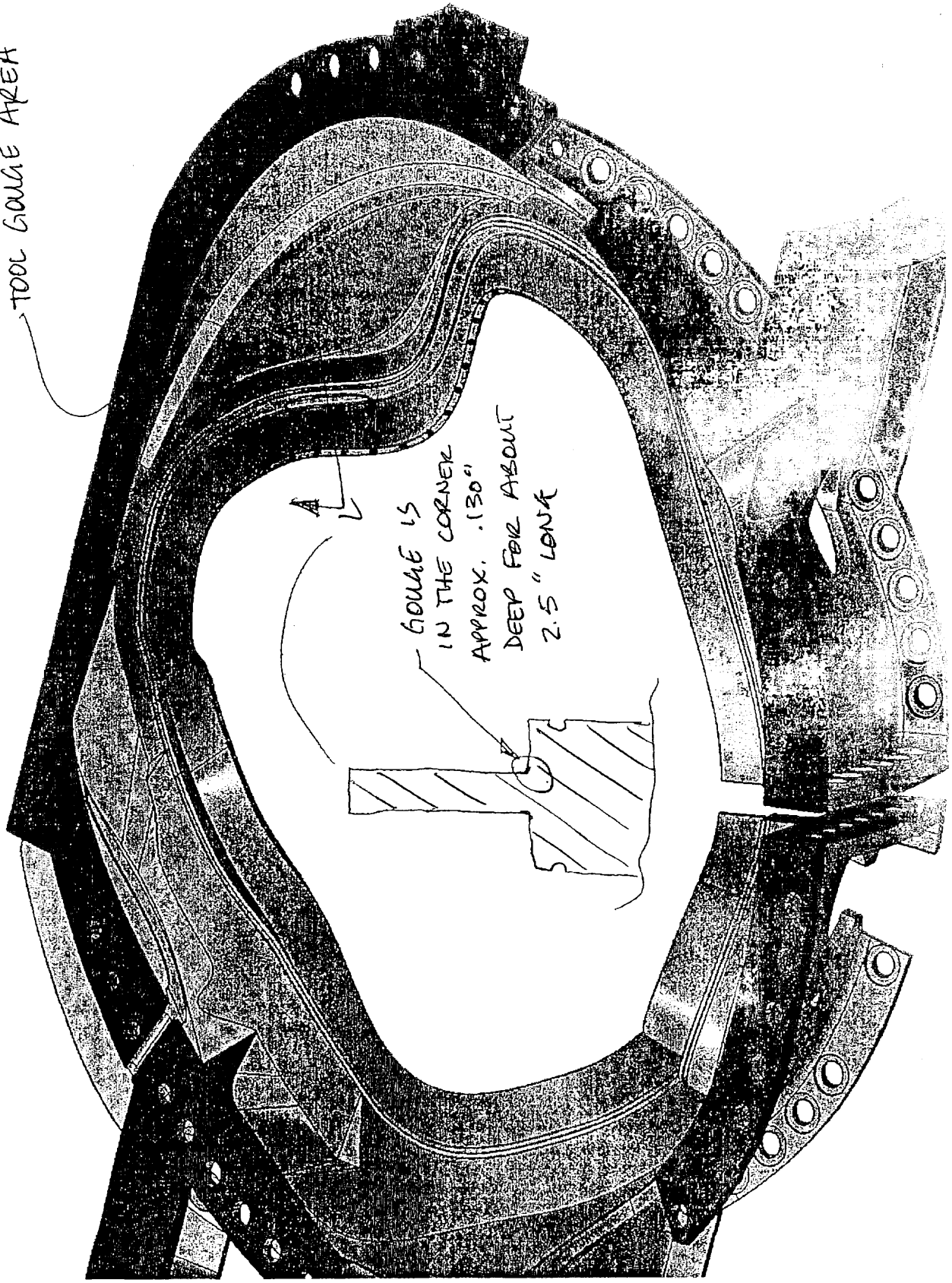
Major Tool Implemented By: 

Title: CST ENGINEER

Date: 1/16/2006

①

TOOL GOUGE AREA

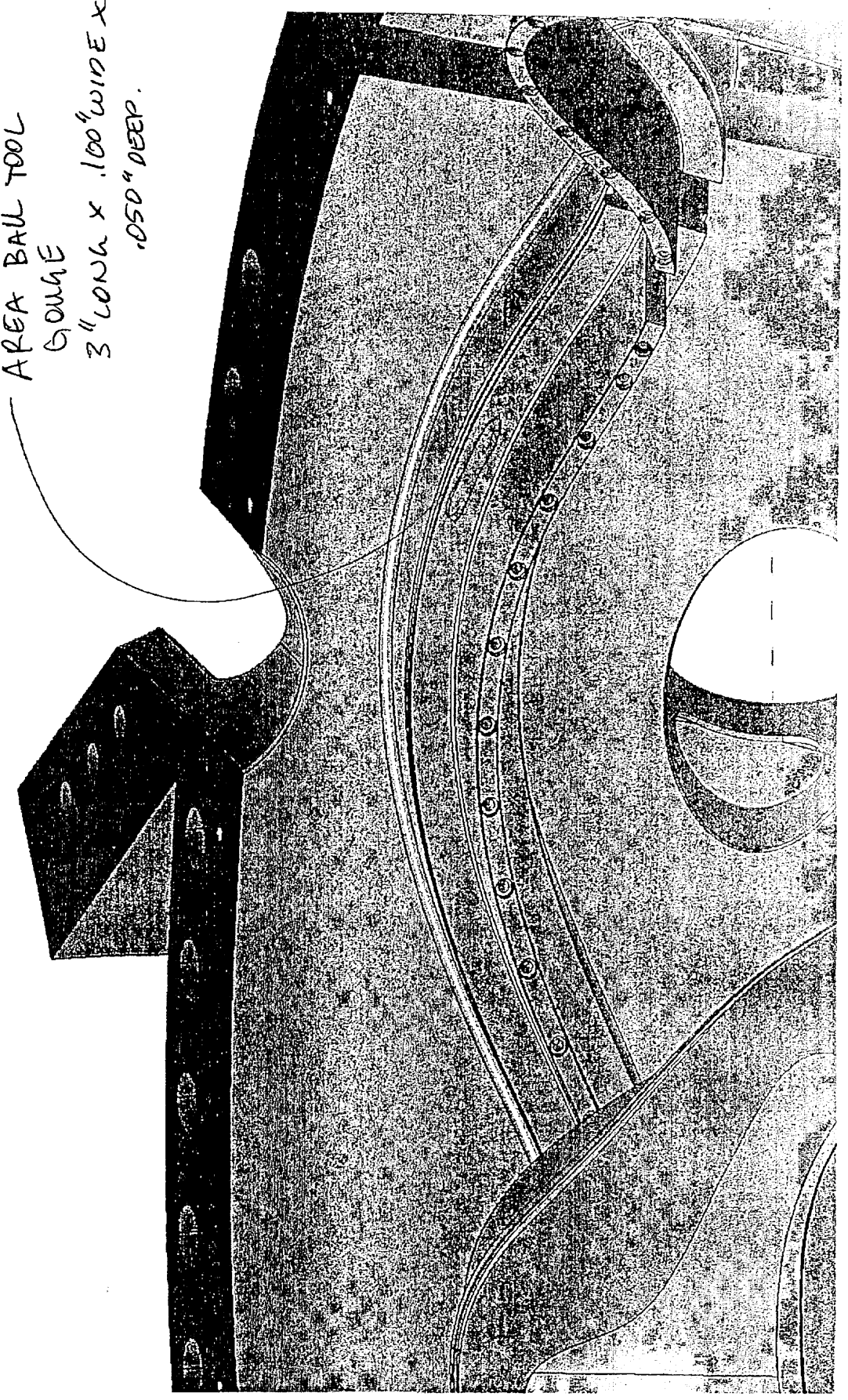


GOUGE IS
IN THE CORNER
APPROX. .130"
DEEP FOR ABOUT
2.5" LONG

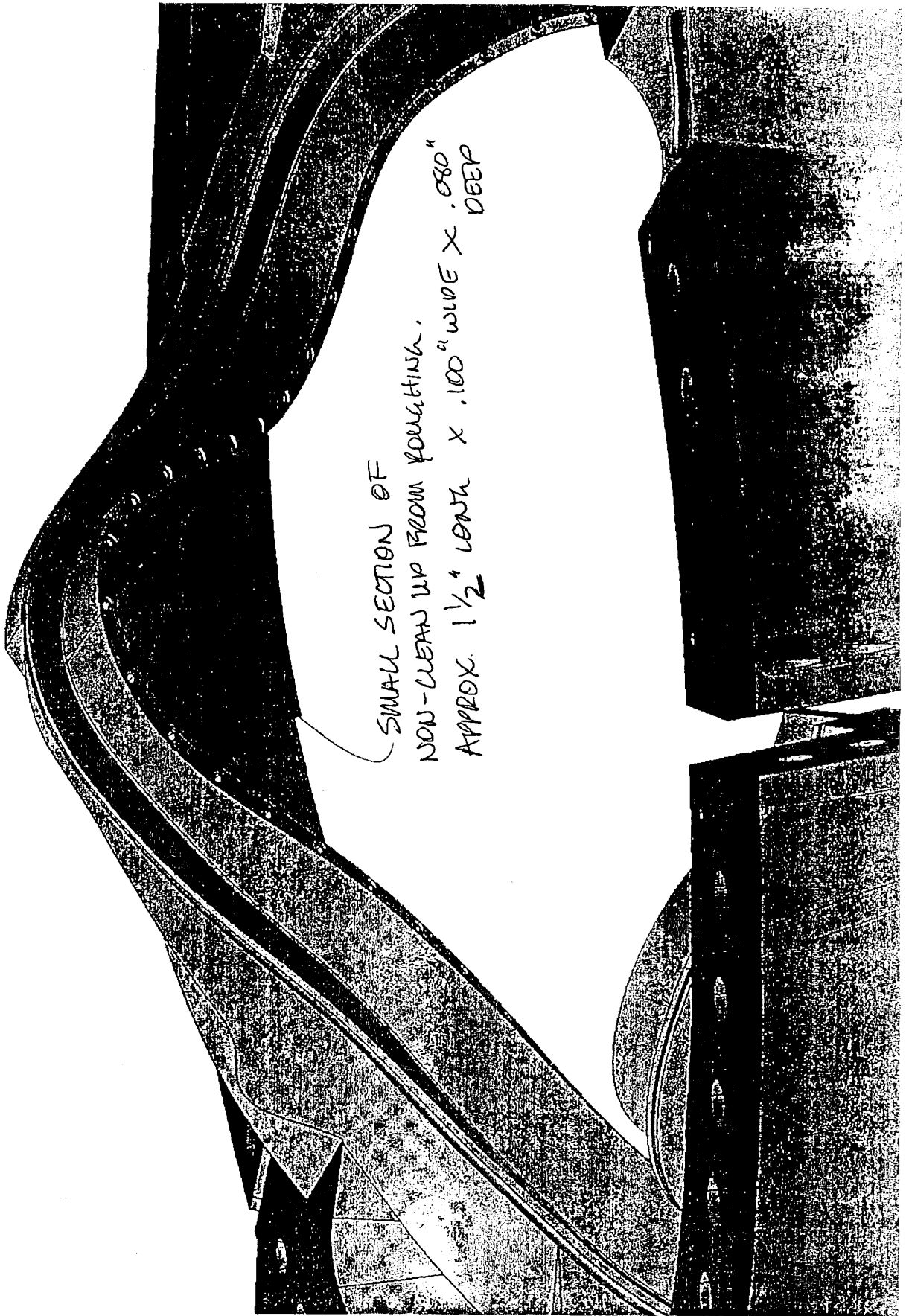
A

2.

AREA BALL TOOL
GOUGE
3" LONG X .100" WIDE X
.050" DEEP.

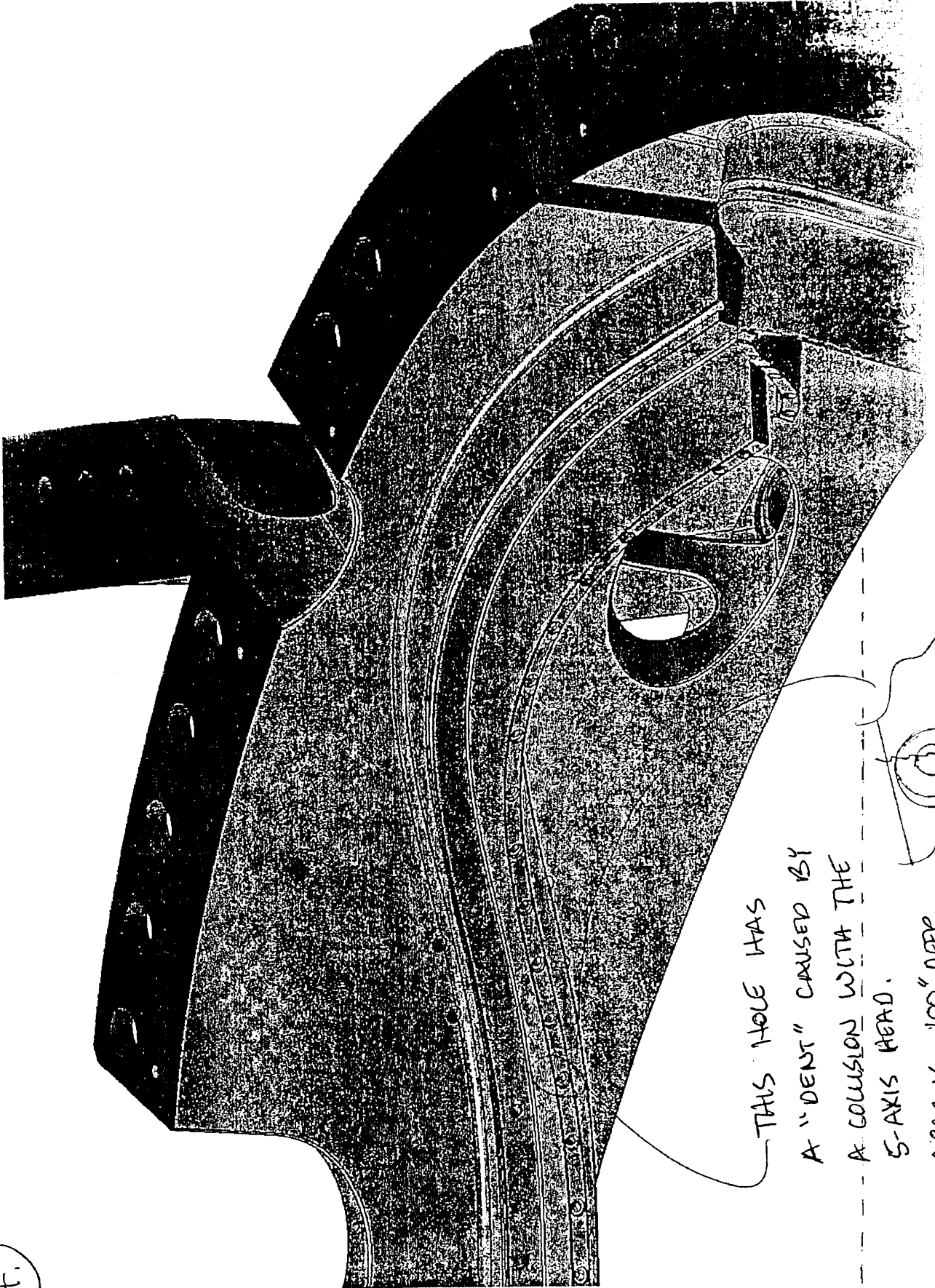


3.

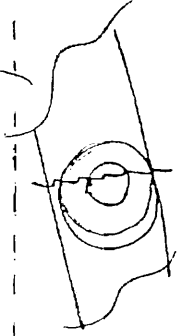


SMALL SECTION OF
NON-CLEAR UP FROM FORGETTING.
APPROX. $1\frac{1}{2}$ " LENGTH X .100" WIDE X .080" DEEP

4.



THIS HOLE HAS
A "DENT" CAUSED BY
A COLLISION WITH THE
S-AXIS HEAD.
APPROX. 100" DEEP



Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18236

Page: 1
Date: 09/21/05
User ID: BOWLINK

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 6

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: AFTER MACHINING SEVERAL MACHINING DEFECTS WERE DETECTED UPON VISUAL EXAMINATION. SEE ADDITIONAL DOCUMENTS FOR MAPS AND LISTS OF (16) SEPARATE NON-CONFORMING FEATURES.

Proposed Disposition:

SUBMIT TO CUSTOMER CONTINUE PROCESSING THE PART.

Customer Disposition: Use As Is Rework Repair Scrap Replace

PAPL WILL PATCH IMPERFECTIONS WITH
FILLED EPOXY MIXTURE

Technical Contact Approval:

P. Ritz
RLM Buyer Approval:

Title:

Tech Rep.

Date:

9/22/05

Title:

RLM

Date:

9/22/05

Major Tool Implemented By:

K. Bowling

Title:

PROG. MGR

Date:

23-SEP-05

NOTES:

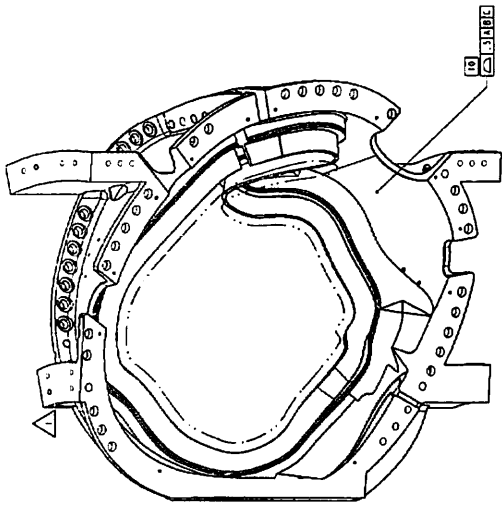
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.5M-1973.
2. INTERFERENCE FITS AND TOLERANCES PER ASME Y14.5M-1973.
3. DIMENSIONS ARE IN INCHES.
4. DRAWING DEVICES FINAL MACHINED STATE OF PARTS OBTAINED BY FIDUCIALS OF THE ELECTRIC PAIL.
5. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE RELATED TO DRAWING AS SHOWN (ELECTRIC PAIL, SIDE VIEW).
6. DIMENSIONS ARE AT TEMPERATURE OF 70-80°C (158-176°F).
7. DIMENSIONS AND TOLERANCES EXCLUDE PROCESS MATERIAL ALLOWANCES WHICH MAY EXCEED 6000 LBS.
8. APPROXIMATE WEIGHT IS 185 LBS.
9. PARTS OR DIMENSIONS SPECIFIED, AS-CAST SURFACE PROFILE HEIGHT OF 1 INCHES PART NOT TO EXCEED 6000 LBS.
10. UNLESS OTHERWISE SPECIFIED, ALL-CAST SURFACE PROFILE TOLERANCES SHALL BE 0.005 IN. MAX. PER INCH OF SURFACE AREA, WITH TOLERANCES FOR FORM AND FINISH AS SPECIFIED.
11. MIN. THICKNESS PER CUP GEOMETRY, TOLERANCE $\pm 0.25 \pm 0.001$.
12. PARTING LINE EDGES, FLASH, BATES, NUMBER, AND HOLE EXTENSIONS 0.25 IN MAX.
13. DIMENSIONS OF HOLE SPECS. MACHINED SURFACE PROFILE TOLERANCE ± 0.001 IN.
14. DRAW SURFACE ALL THE HOLE HOLE TO CLEAN UP.
15. SEE LATEST REVISION OF SPECIFICATION 8031-C551C-141-93 FOR ADDITIONAL REQUIREMENTS.

RELEASED FOR
FABRICATION / INSTALLATION
EPRD, Brandegee, Jerry Siegel

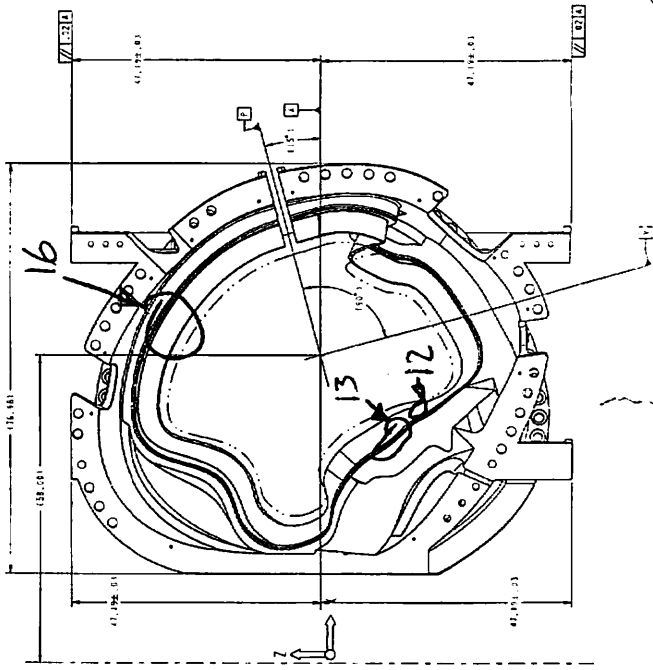
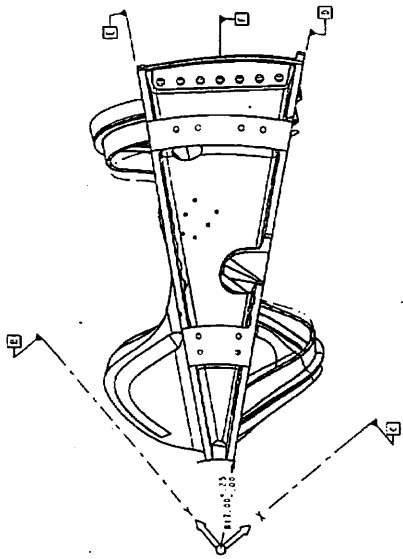
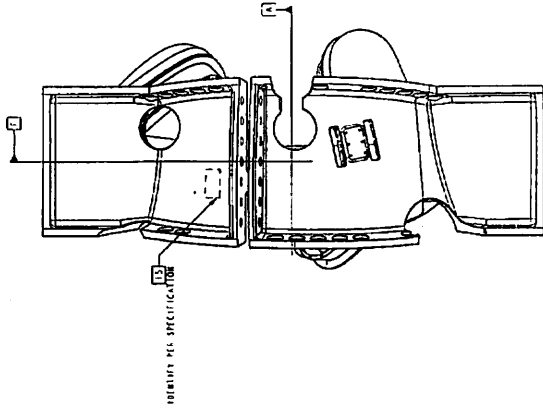
NO.	REV.	DESCRIPTION	DATE	BY
1		WINDING FOR DRUM		
2		REVISION NO. 40		
3		OF SPECIFICATION		
4				
5				
6				

SCALE		1/8" = 1"
NATIONAL COMPACT CONTAINER DIVISION PRODUCTION WINDING FORM TYPE C 11/71 11/71		

1	DRUM	1	1	1
2		1	1	1
3		1	1	1
4		1	1	1
5		1	1	1
6		1	1	1
7		1	1	1
8		1	1	1
9		1	1	1
10		1	1	1
11		1	1	1
12		1	1	1
13		1	1	1
14		1	1	1
15		1	1	1



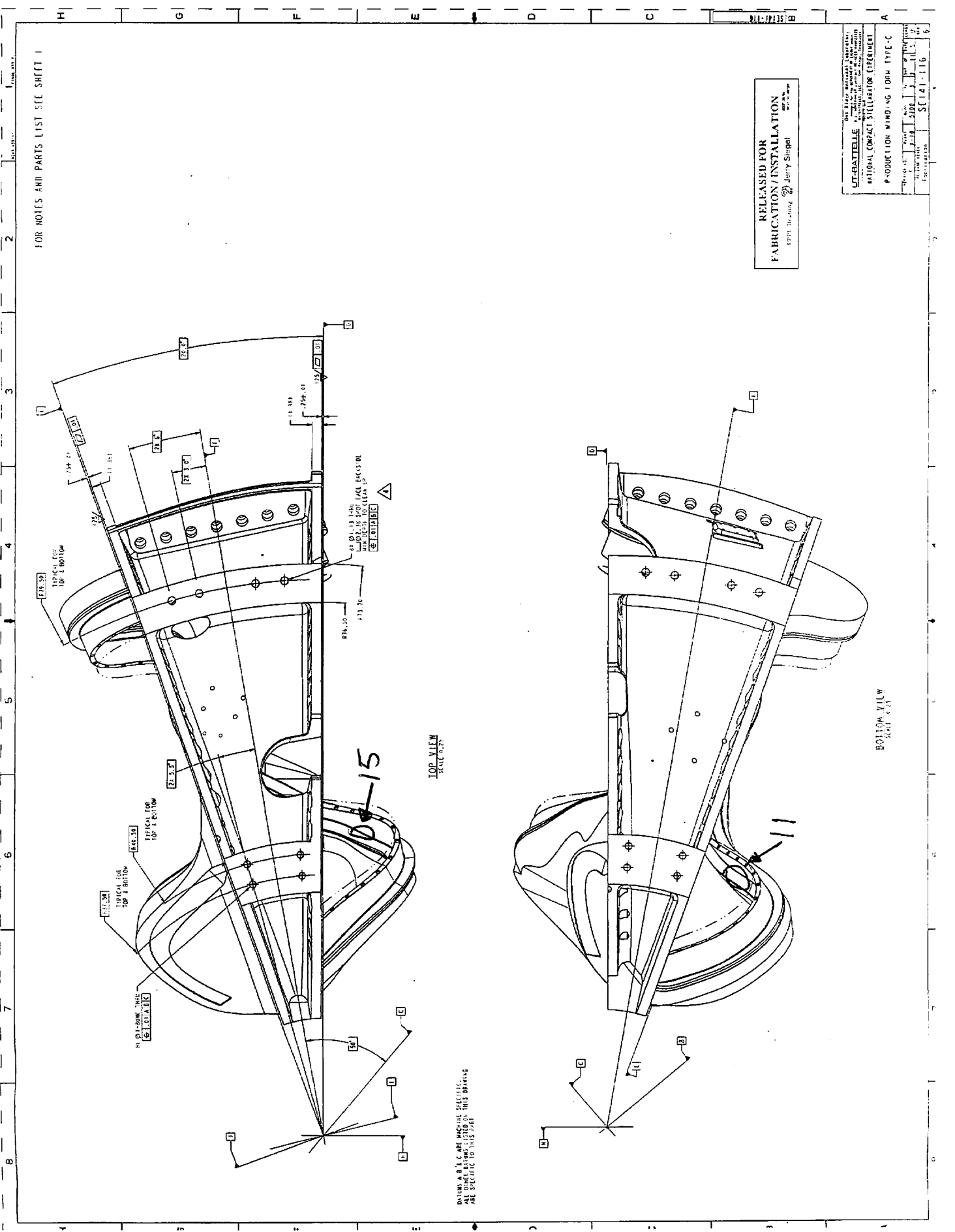
ISOMETRIC VIEW



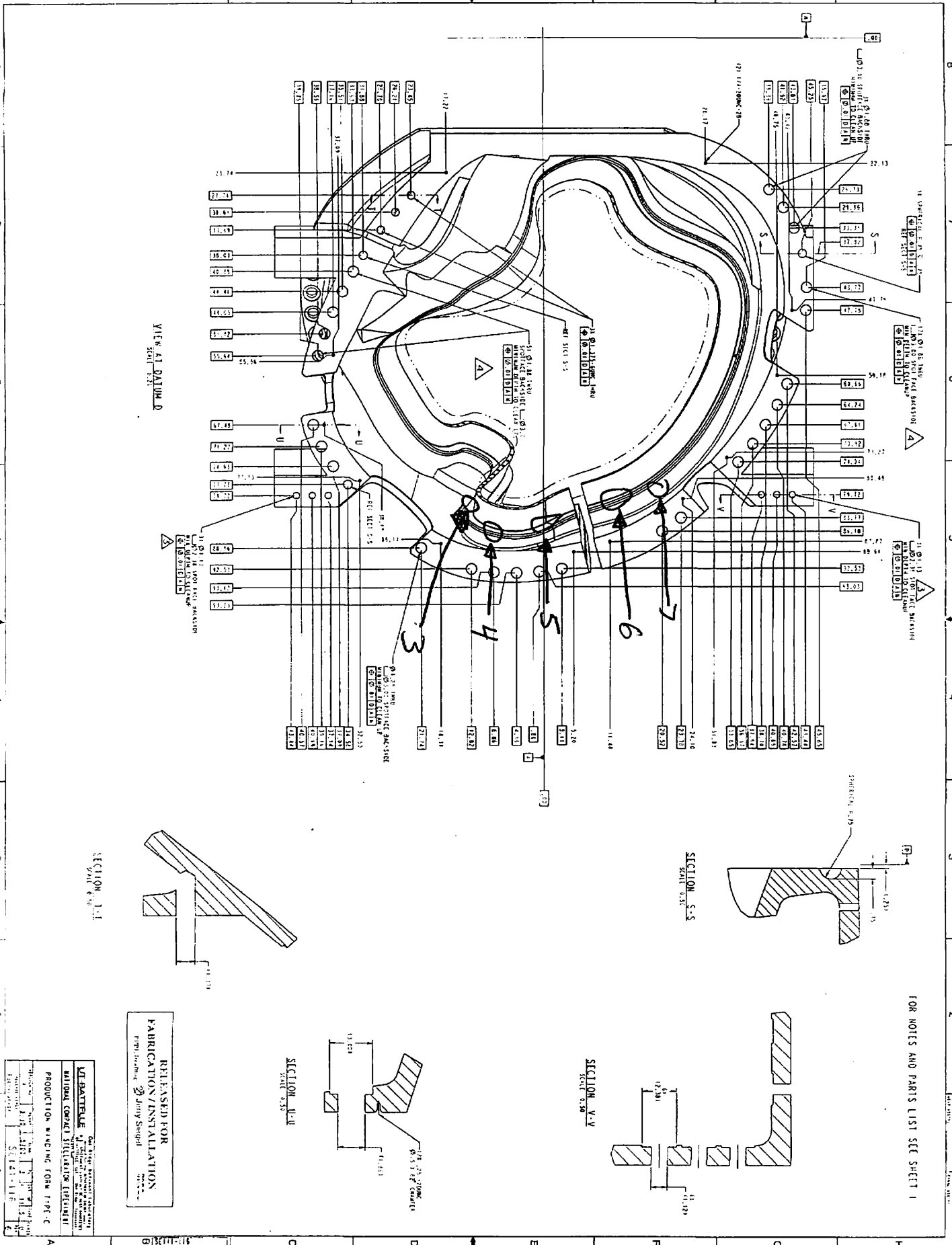
1/8" SCALE

P

EPRD, Brandegee, Jerry Siegel



Dimensions and notes are specific to this sheet.



FOR NOTES AND PARTS LIST SEE SHEET 1

RELEASED FOR
FABRICATION/INSTALLATION
From Drawing 21 Army Signal

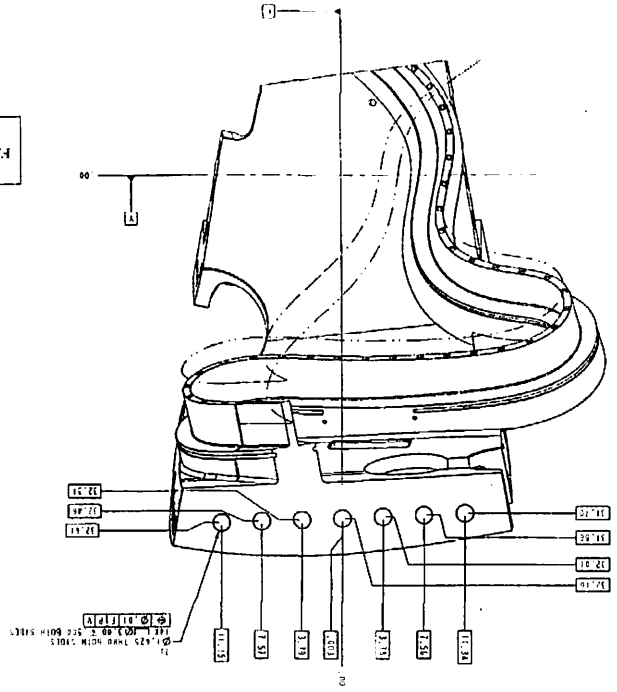
LIT. PARTS	
NATIONAL CONTACT STEELWORKERS (RESENER)	
PRODUCTION WASHINGTON FORM 1191-C	
DATE	7/1/50
REVISION	1
SECTION	111
SCALE	5/32

REV	DATE	BY	APP	DESCRIPTION
1	11-11-66			REVISIONS
2	11-11-66			REVISIONS
3	11-11-66			REVISIONS
4	11-11-66			REVISIONS
5	11-11-66			REVISIONS

UNIVERSITY OF CALIFORNIA
 ENGINEERING CENTER
 707 TOWER DRIVE
 BERKELEY, CALIF. 94720
 DRAWING NO. UC-1116
 TITLE: PRODUCTION WINDING FORM TYPE-C

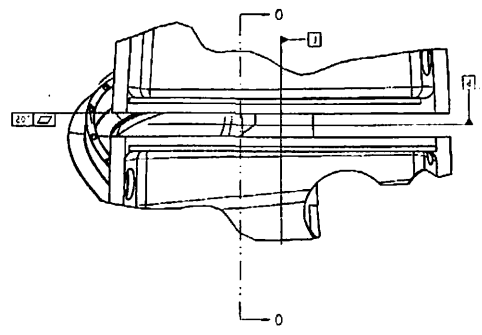
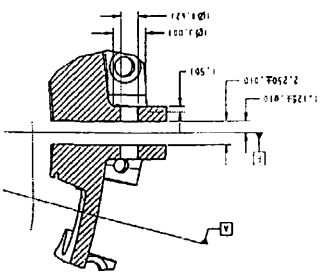
RELEASED FOR
 FABRICATION/INSTALLATION
 BY: JERRY SINGH

SECTION P-P

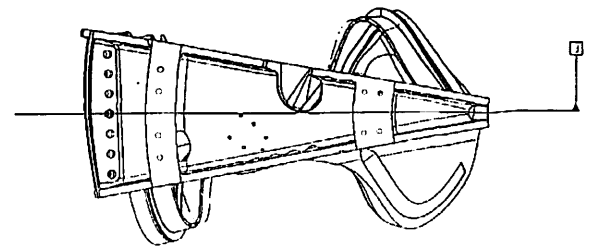
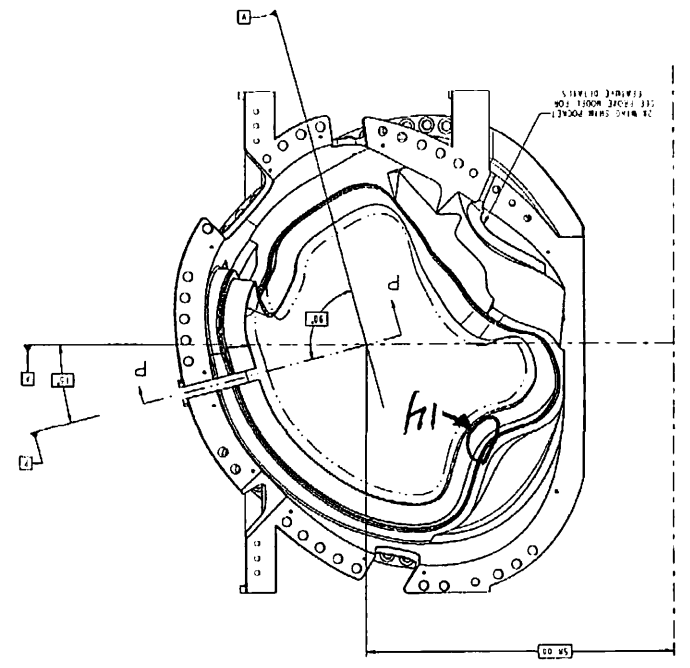


1. 1/2" DIA. 3/16" THICK STEEL BOLTS
 2. 1/2" DIA. 3/16" THICK STEEL BOLTS
 3. 1/2" DIA. 3/16" THICK STEEL BOLTS

SECTION Q-Q



LONGITUDINAL BEAM DETAIL



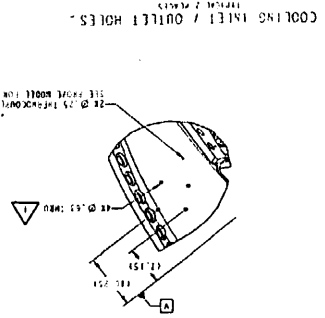
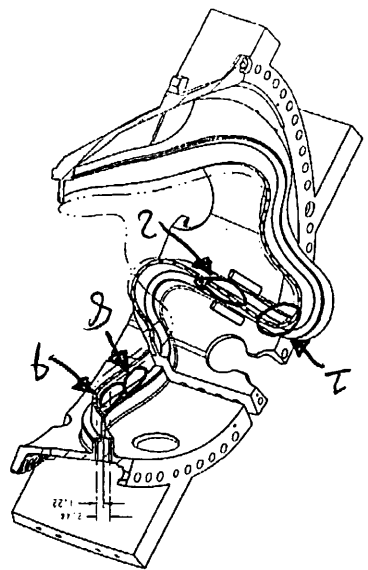
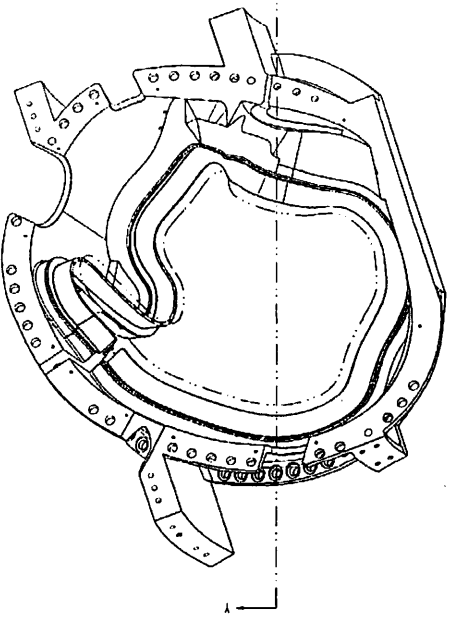
FOR NOTES AND PARTS LIST SEE SHEET 1

DATE	11/16
REV	1
BY	W. J. S.
CHECKED BY	W. J. S.
APPROVED BY	W. J. S.
DESIGNED BY	W. J. S.
PROJECT	PRODUCTION MINDING FORM TYPE C
NATIONAL COMPACT STEELIZATION PROJECT	
UNCLASSIFIED	

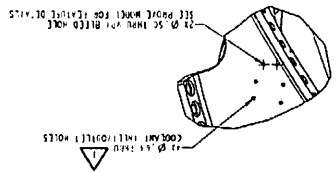
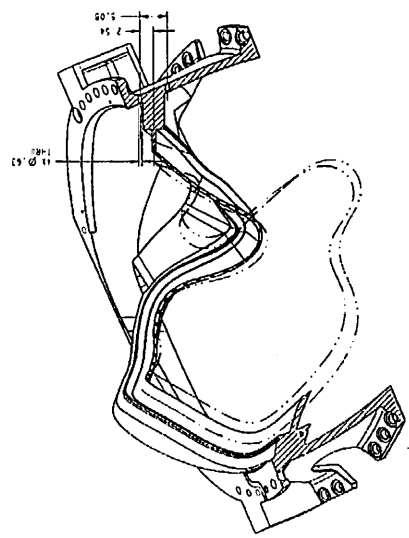
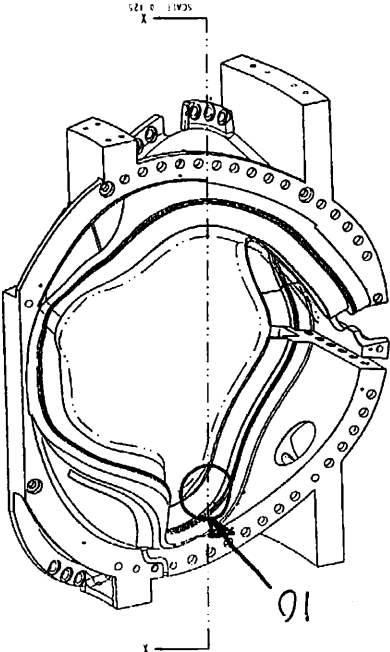
RELEASED FOR
FABRICATION/INSTALLATION
BY: Jerry Sengul

USE PROFILE MODEL ORIENTATION TO
DETERMINE SECTION ORIENTATION

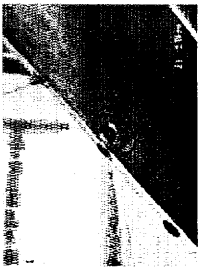
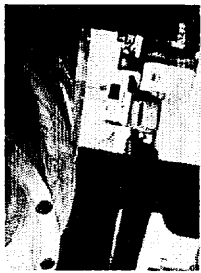
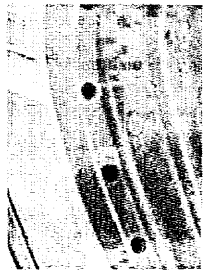
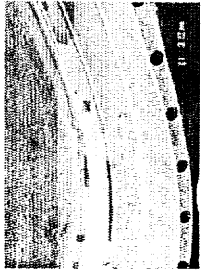
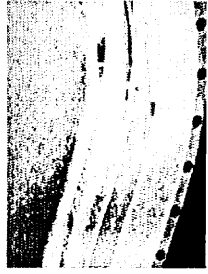
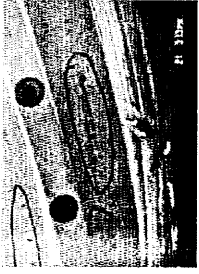
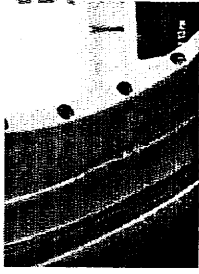
SECTION X-X
SCALE: 1:1



SECTION X-X
USE PROFILE MODEL ORIENTATION TO
DETERMINE SECTION ORIENTATION



FOR NOTES AND PARTS LIST SEE SHEET 1



C1 MCWF

Photos for NC18236

K. Bowling 21-Sep-05



Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18237

Page: 1
Date: 09/21/05
User ID: BOWLINK

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 6

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: AFTER MACHINING SEVERAL MACHINING DEFECTS ON THE OUTSIDE OF THE PART WERE
DETECTED UPON VISUAL EXAMINATION. SEE ADDITIONAL DOCUMENTS FOR MAPS AND LISTS OF
(9) SEPARATE NON-CONFORMING FEATURES.

Proposed Disposition:
SUBMIT TO CUSTOMER CONTINUE MANUFACTURING.

Customer Disposition: Use As Is Rework Repair Scrap Replace

ITEM 3 - BLEND TROUGH SMOOTHLY
ITEMS 1, 2, 4, 5, 6, 7, 8, 9 - REMOVE SHARP EDGES, GRIND
FLUSH

Technical Contact Approval: *Rob Hutzman*
RLM ~~Repa~~ Approval: *[Signature]*

Title: Tech. Repa Date: 9/22/05
Title: RLM Date: 9/22/05

Major Tool Implemented By: *K. Bowling*

Title: PROG. MGR. Date: 26-SEP-05

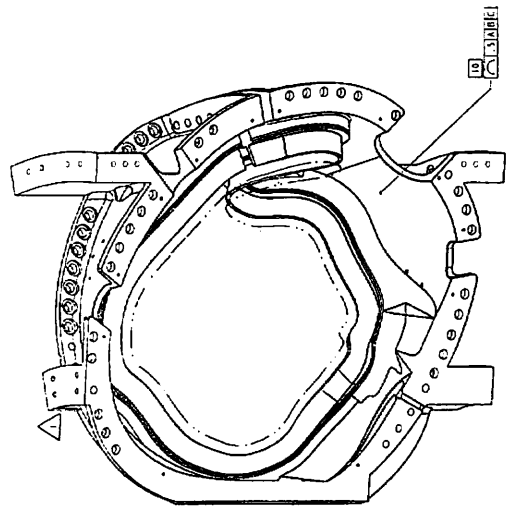
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NOTES:

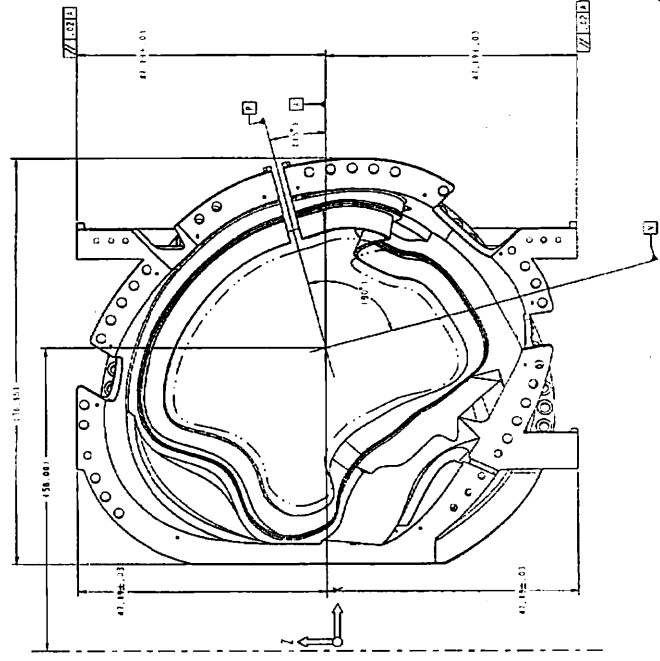
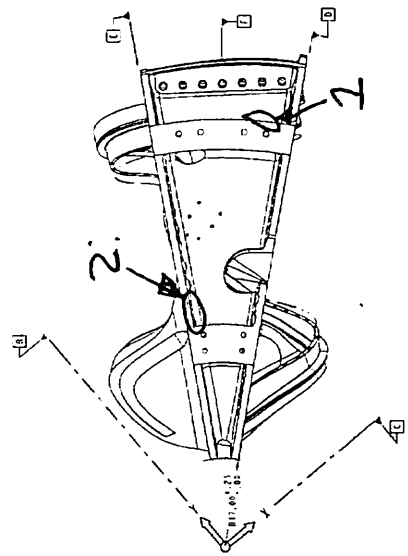
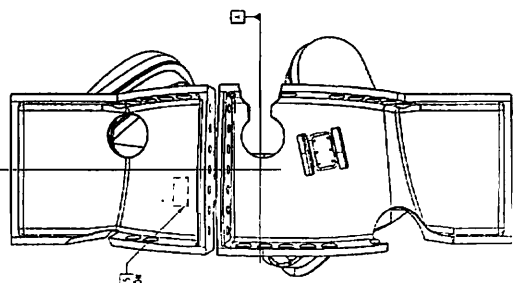
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RELEASED FOR FABRICATION/INSTALLATION
 PPL Drawing Jerry Siegel

DATE	DESCRIPTION	BY	CHKD	SCALE	UNIT	SYMBOL	NOTES
10/10/68	DESIGNED	JERRY SIEGEL		1:1	IN		
10/10/68	CHECKED	JERRY SIEGEL		1:1	IN		
10/10/68	APPROVED	JERRY SIEGEL		1:1	IN		



ISOMETRIC VIEW



SCALE: 1:1

NO.	DESCRIPTION	QTY.	UNIT	SYMBOL	NOTES
1	HELMET SHELL	1	EA		
2	CHIN STRAP	1	EA		
3	FOAM LINING	1	EA		
4	ADJUSTER	1	EA		
5	BUCKLE	1	EA		
6	STRAP END	1	EA		
7	STRAP END	1	EA		
8	STRAP END	1	EA		
9	STRAP END	1	EA		
10	STRAP END	1	EA		

P

SCALE: 1:1

DATE: 10/10/68

DESIGNED BY: JERRY SIEGEL

CHECKED BY: JERRY SIEGEL

APPROVED BY: JERRY SIEGEL

PROJECT NO.: 116

REV. 1

REV. 2

REV. 3

REV. 4

REV. 5

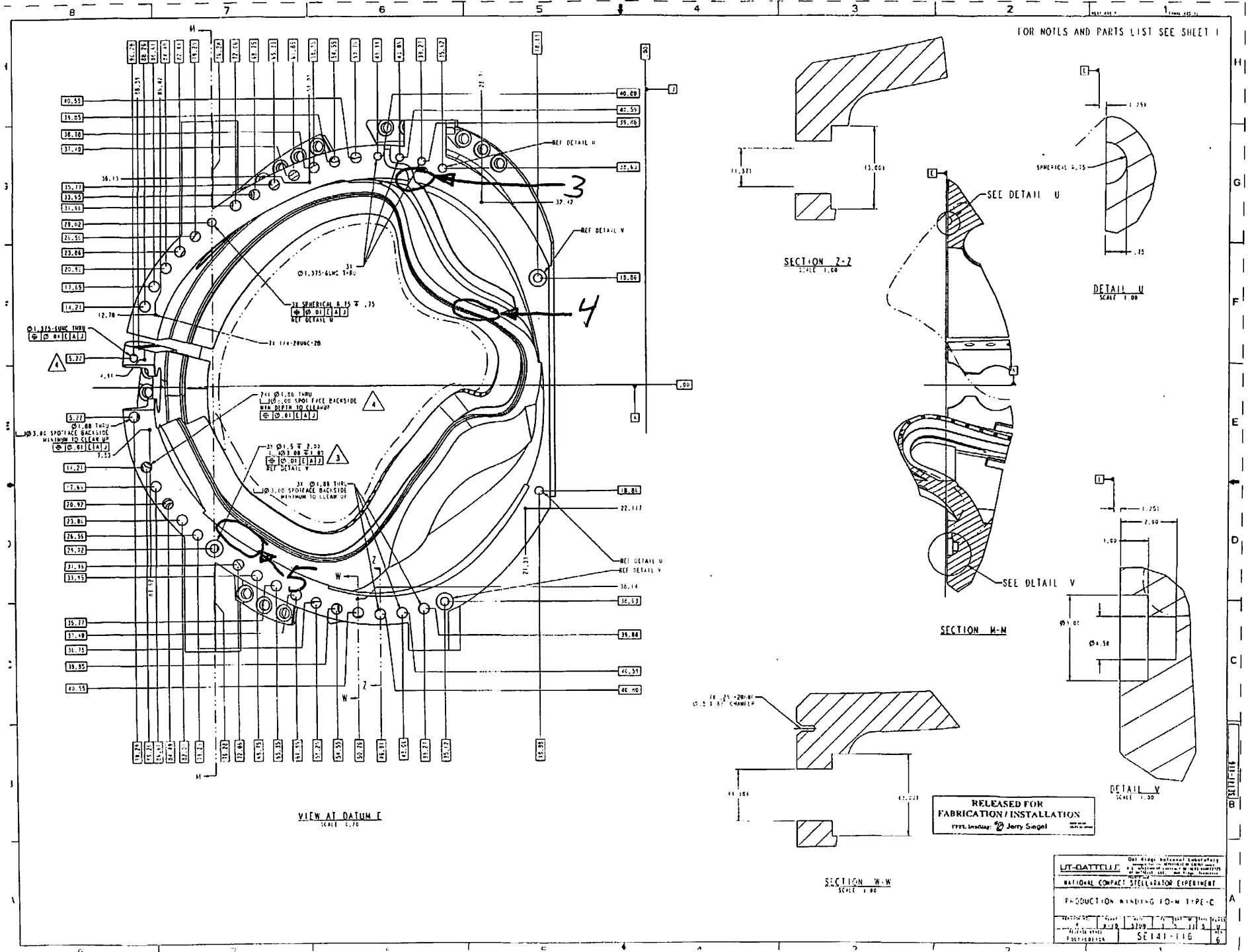
REV. 6

REV. 7

REV. 8

REV. 9

REV. 10



FOR NOTES AND PARTS LIST SEE SHEET 1

SECTION 2-2
SCALE 1:00

DETAIL U
SCALE 1:00

SECTION M-M

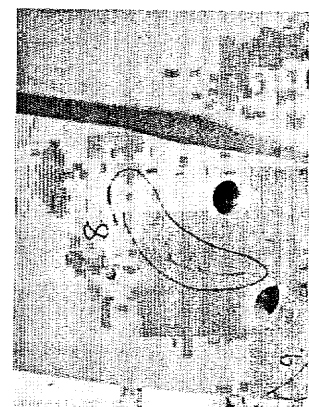
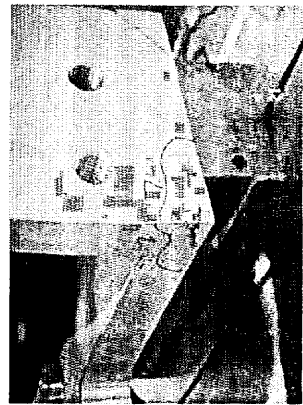
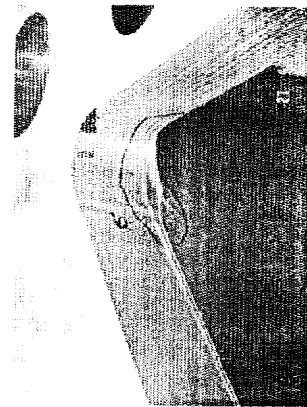
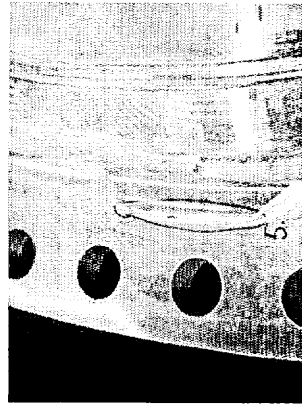
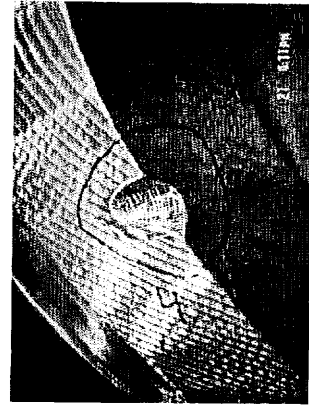
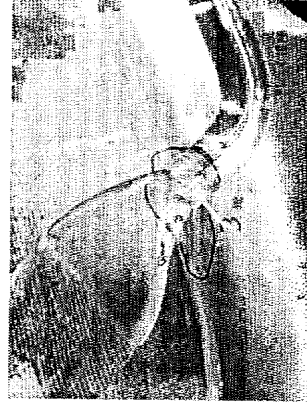
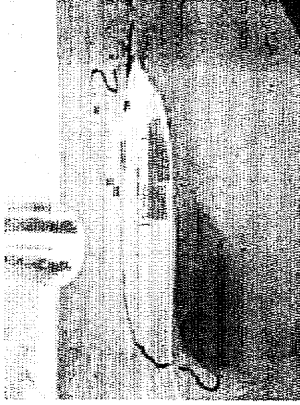
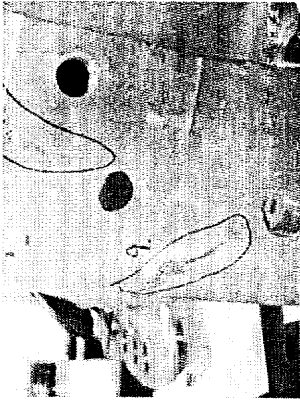
DETAIL V
SCALE 1:30

SECTION W-W
SCALE 1:00

VIEW AT DATUM I
SCALE 0.75

RELEASED FOR
FABRICATION/INSTALLATION
1978 Inventory Jerry Siegel

UT-BATTELLE NATIONAL COMPACT STELLATOR EXPERIMENT PRODUCTION WINDING FO-W TYPE-C JUL 5 1978 SECTION 1-116	DR. ERIC BARNETT UNIVERSITY OF CALIFORNIA NATIONAL COMPACT STELLATOR EXPERIMENT PRODUCTION WINDING FO-W TYPE-C JUL 5 1978 SECTION 1-116
---	---



C1 MCWF

Photos for NC18237

K. Bowling 21-Sep-05



Major

Tool & Machine, Inc.

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18238

Page: 1
Date: 09/21/05
User ID: BOWLINK

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 6

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: VIEWING PART FROM THE OUTSIDE LOOKING TOWARD THE POLOIDAL BREAK WITH DATUM E
SIDE FACING UP THE (2) LEADBLOCK POCKETS ARE MACHINED OVERSIZE.

THE LEFT POCKET CHECKS 1.754
THE RIGHT POCKET CHECKS 1.625

PRINT DIMENSION IS 1.56" +/- .01

Proposed Disposition:

SUBMIT TO CUSTOMER CONTINUE MANUFACTURING.

Customer Disposition: Use As Is Rework Repair Scrap Replace

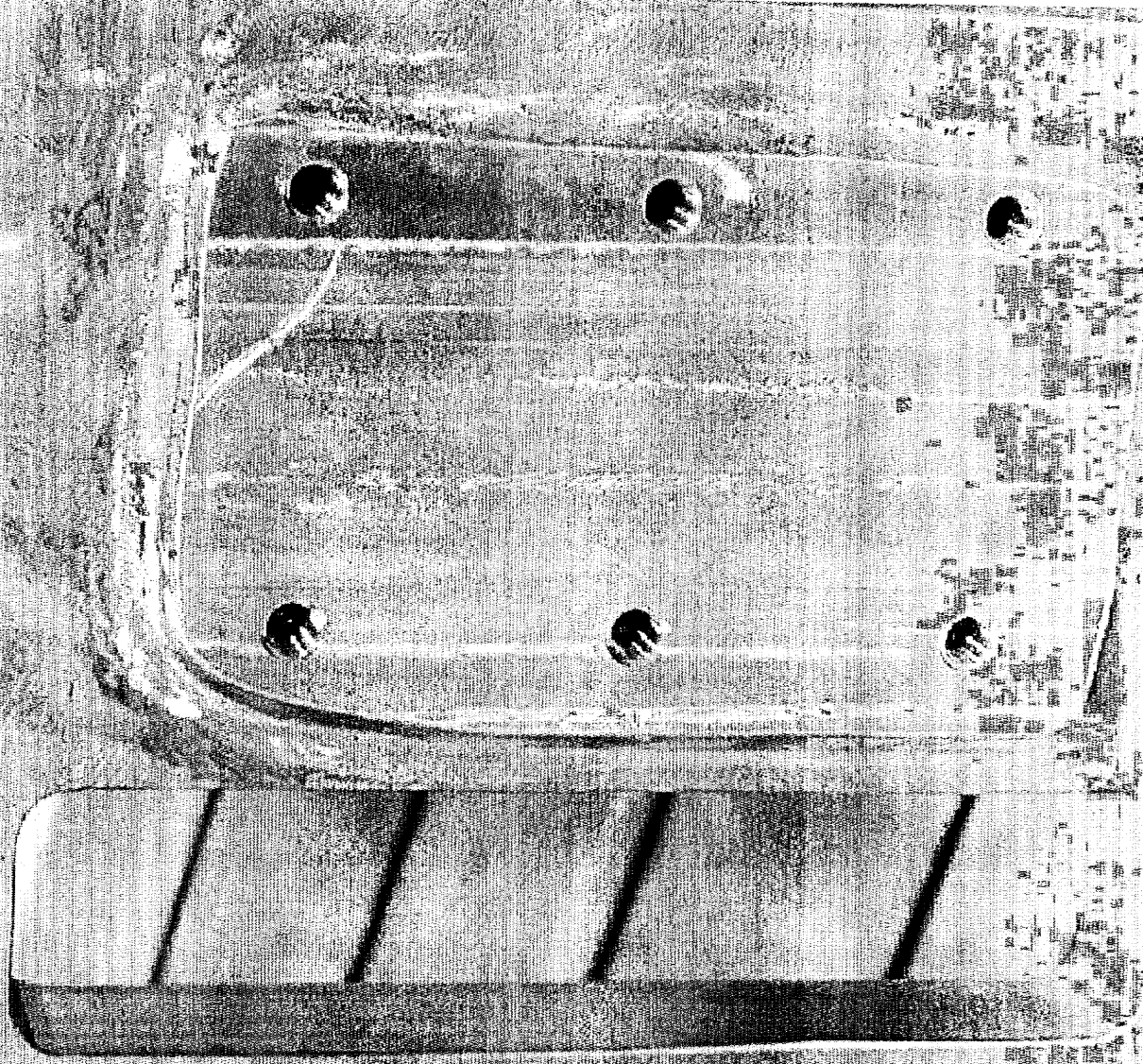
PPPL WILL FIT APPROPRIATE G-11 CR STIMS
TO FILL GAPS WITH LEAD BLOCKS

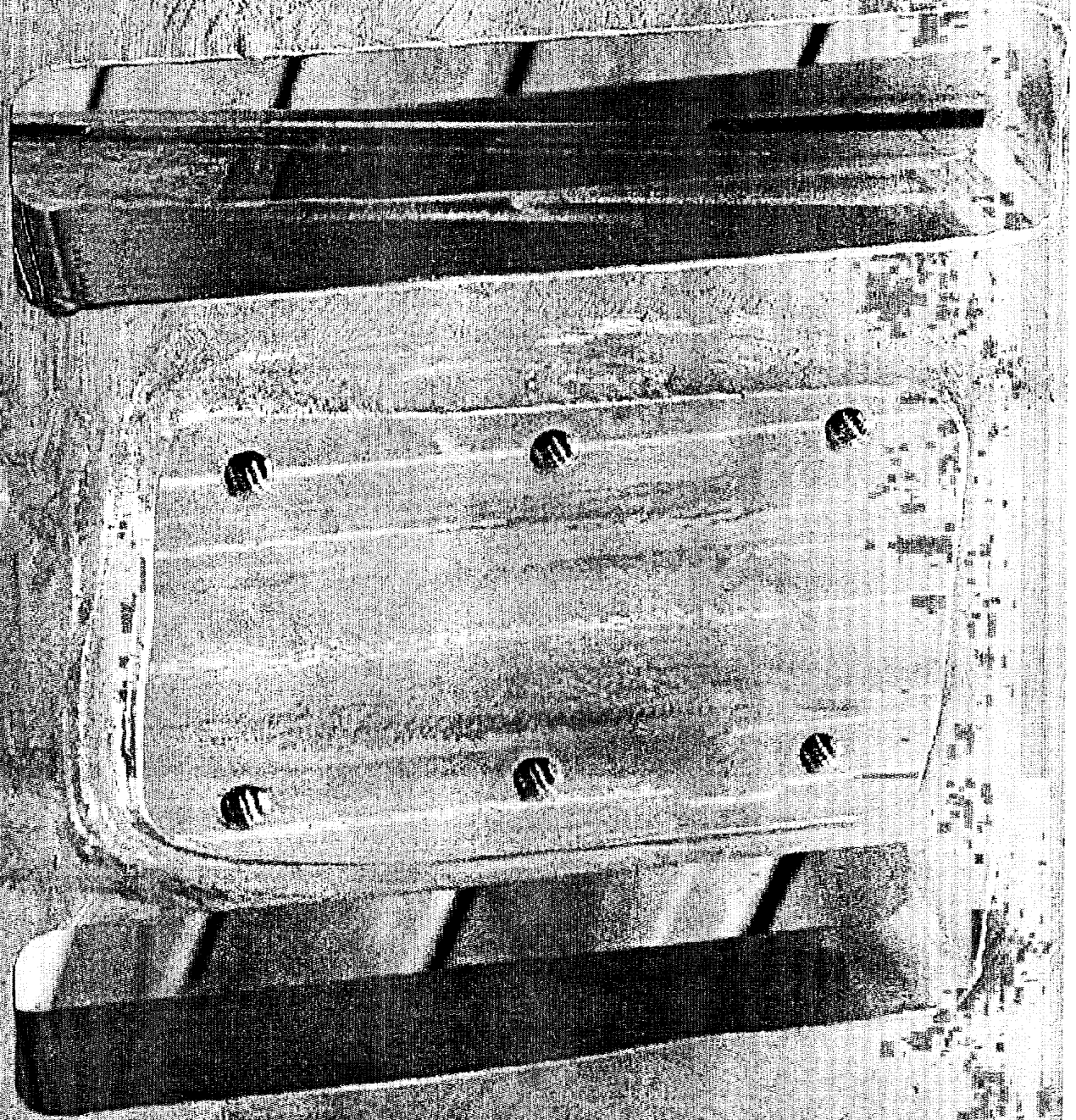
Technical Contact Approval: Rep Ditz
RLM Buyer Approval: RLM

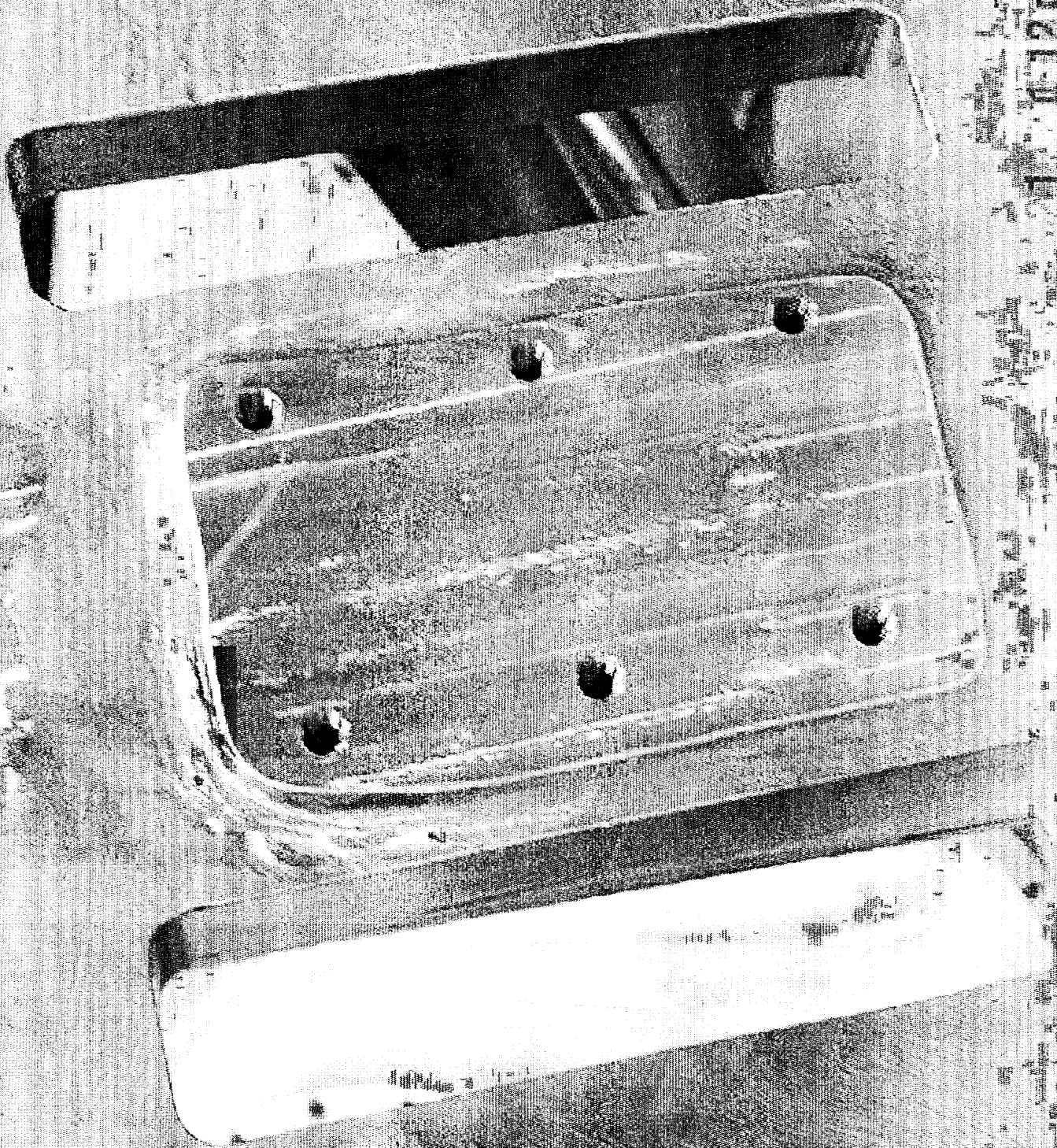
Title: Tech. Rep. Date: 9/22/05
Title: RLM Date: 9/22/05

Major Tool Implemented By: K. Bowling

Title: PROG. MGR. Date: 23-SEP-05







11 4.72 PM

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE

Drawing ID: SE141-116 Revision: 6

Customer P.C.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: Workorder: 65707/1.0 Sub:1 Op:120

Inspection Test #: 70 rejected: : {g|.5|A|B|C}: REFERENCE IGES INFORMATION
Inspection Test #: 140 rejected: P TO M: {g|.1|R|S|T}: REFERENCE IGES INFORMATION
Inspection Test #: 160 rejected: Q TO N: {g|.1|R|S|T}: REFERENCE IGES INFORMATION
Inspection Test #: 180 rejected: M TO N: {g|.02|R|S|T}: REFERENCE IGES INFORMATION
Inspection Test #: 250 rejected: : {f|.01}: .032
Inspection Test #: 260 rejected: : R76.00: REFERENCE IGES INFORMATION
Inspection Test #: 270 rejected: : R73.70: REFERENCE IGES INFORMATION
Inspection Test #: 280 rejected: 8X

Ø1.13 THRU

BACK SPOT FACE Ø2.38

MIN DEPTH FOR C'UP: {#|.01|A|B|C}: .010 - .031

Inspection Test #: 290 rejected: 3X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP:
{#|.010|D|A|N}: .0304 - .0442, >3.00 SPOT, 1.87 - 1.88 DIA.

Inspection Test #: 300 rejected: 3X SPH R.75 TO .75 DEEP: {#|d|.01|D|A|N}: .019 - .020, R .74 - .745

Inspection Test #: 310 rejected: 17X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP:
{#|d|.01|D|A|N}: .009 - .059, >3.00 SPOT, 1.87 - 1.88

Inspection Test #: 320 rejected: 3X Ø1.13

Ø2.38 BACK SPOTFACE

MIN TO CLEANUP: {#|d|.01|D|A|N}: .047 - .054, 1.126 - 1.127

Inspection Test #: 340 rejected: 3X Ø1.375-6 UNC THRU: {#|d|.01|D|A|N}: .022 - .039

Inspection Test #: 350 rejected: 5X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP:
{#|d|.01|D|A|N}: .0019 - .0182, >3.00 SPOT

Inspection Test #: 360 rejected: Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP: {#|d|.01|D|A|N}:
.018, >3.00 SPOT, 1.879 DIA.

Inspection Test #: 380 rejected: Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP: {#|d|.01|E|A|J}:
0.77, >3.00 SPOT.

Inspection Test #: 410 rejected: 3X SPH R.75 TO .75 DEEP
{#|d|.01|E|A|J}: .020 - .021

Inspection Test #: 430 rejected: 24X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP:
{#|d|.01|E|A|J}: .008 - .040, >3.00 SPOT.

Inspection Test #: 440 rejected: 3X Ø1.5 TO 2.00 DEEP Ø3.00 TO 1.00 DEEP: {#|d|.01|E|A|J}: .013 - .037

Inspection Test #: 550 rejected: : R7.00: REFERENCE IGES INFORMATION

Inspection Test #: 560 rejected: : 2X R1.50: REFERENCE IGES INFORMATION

Inspection Test #: 580 rejected: : 90°: 87.92

Inspection Test #: 610 rejected: : 6.50 ~ .010: 6.486

Inspection Test #: 620 rejected: : 3.06 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 630 rejected: : R4.00 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 640 rejected: : 2.10 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 650 rejected: : 4.00 ~ .010: 3.98

Inspection Test #: 670 rejected: : R4.00 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 690 rejected: : 9.38 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 700 rejected: : 6.0°: REFERENCE IGES INFORMATION

Inspection Test #: 710 rejected: : d8.00 ~ .010: REFERENCE IGES INFORMATION

Inspection Test #: 720 rejected: : 5.9°: REFERENCE IGES INFORMATION

Inspection Test #: 730 rejected: : 7.81 ~ .010: REFERENCE IGES INFORMATION

n3:mappsmine14.qfp

Inspection Test #: 740 rejected: : 7.25 ~ .010: REFERENCE IGES INFORMATION
Inspection Test #: 750 rejected: : 6X d..375-16 UNC TO .75 DEEP
.03 X 45° CHAMFER: ACCEPT THREAD/CHAMFER, .53 - 1.32 DEPTH
Inspection Test #: 780 rejected: : 2.19 ~ .010: 2.172 - 2.198
Inspection Test #: 790 rejected: : 2.19 ~ .010: 2.176 - 2.191
Inspection Test #: 830 rejected: : 2X 1.56 ~ .010 THRU: 1.) 1.56 2.) 1.79
Inspection Test #: 840 rejected: : 3.75 ~ .010: 3.90
Inspection Test #: 850 rejected: : 2X 7.50 ~ .010 THRU: 1.) 7.53 2.) 7.63
Inspection Test #: 860 rejected: : 8X R.25: .25 - .28
Inspection Test #: 870 rejected: : 2X 2.52 ~ .010: 2.04 - 2.08 , 2.65 - 2.66
Inspection Test #: 900 rejected: : 2.54 ~ .010: REFERENCE IGES INFORMATION
Inspection Test #: 910 rejected: : 5.08 ~ .010: REFERENCE IGES INFORMATION
Inspection Test #: 940 rejected: : 2.44 ~ .010: REFERENCE IGES INFORMATION
Inspection Test #: 950 rejected: : 1.22 ~ .010: REFERENCE IGES INFORMATION
Inspection Test #: 980 rejected: : {g|.125|A|B|C}: REFERENCE IGES INFORMATION
Inspection Test #: 990 rejected: : {g|.5|A|B|C}: REFERENCE IGES INFORMATION
Inspection Test #: 1000 rejected: : {g|.02|R|T|S}: REFERENCE IGES INFORMATION
Inspection Test #: 1010 rejected: : {g|.125|A|B|C}: REFERENCE IGES INFORMATION
Inspection Test #: 1020 rejected: : {g|.02|R|T|S}: REFERENCE IGES INFORMATION
Inspection Test #: 1030 rejected: : {g|.5|A|B|C}: REFERENCE IGES INFORMATION
Inspection Test #: 1040 rejected: UOS ALL MACHINED SURFACES TO BE 250 RMS SURFACE FINISH
RECORD RANGE: : 31 - 500
Inspection Test #: 1060 rejected: : 22.13 ~ .010: TAP
Inspection Test #: 1070 rejected: : 47.79 ~ .010: 47.76
Inspection Test #: 1080 rejected: : 59.18 ~ .010: 59.16
Inspection Test #: 1090 rejected: : 73.27 ~ .010: TAP
Inspection Test #: 1100 rejected: : 80.49: 80.46
Inspection Test #: 1110 rejected: : 87.87 ~ .010: 87.84
Inspection Test #: 1130 rejected: : 31.83 ~ .010: TAP
Inspection Test #: 1150 rejected: : 11.48 ~ .010: 11.46
Inspection Test #: 1240 rejected: : 28.17 ~ .010: TAP
Inspection Test #: 1270 rejected: : 43.42 ~ .010: TAP
Inspection Test #: 1300 rejected: : 86.42 ~ .010: 86.40
Inspection Test #: 1320 rejected: : 28.71 ~ .010: 28.69
Inspection Test #: 1390 rejected: : 4.91 ~ .010: 4.88
Inspection Test #: 1410 rejected: : 2.1: REFERENCE IGES INFORMATION
Inspection Test #: 1420 rejected: : 2.63 ~ .010: 2.63 - 2.65

Proposed Disposition:

SUBMIT TO CUSTOMER CONTINUE MANUFACTURING AND QA ACTIVITY.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18297

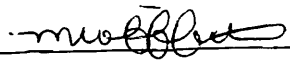
Page: 3
Date: 09/30/05
User ID: BOWLINK

Technical Contact Approval: _____

Title: _____ Date: _____

Buyer Approval: _____

Title: _____ Date: _____

Major Tool Implemented By: 

Title: CFT ENGINEER Date: 1/16/2005

Nonconformance Report: 18297

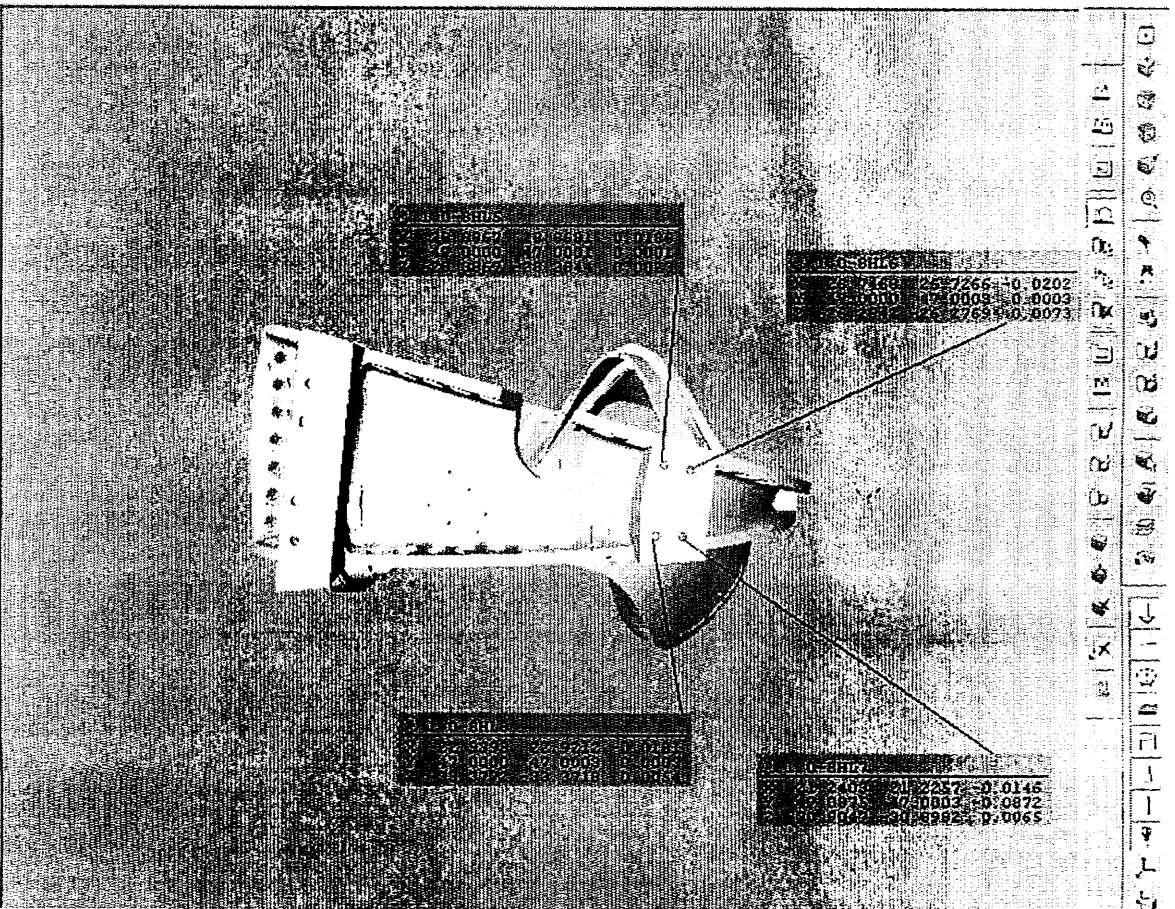
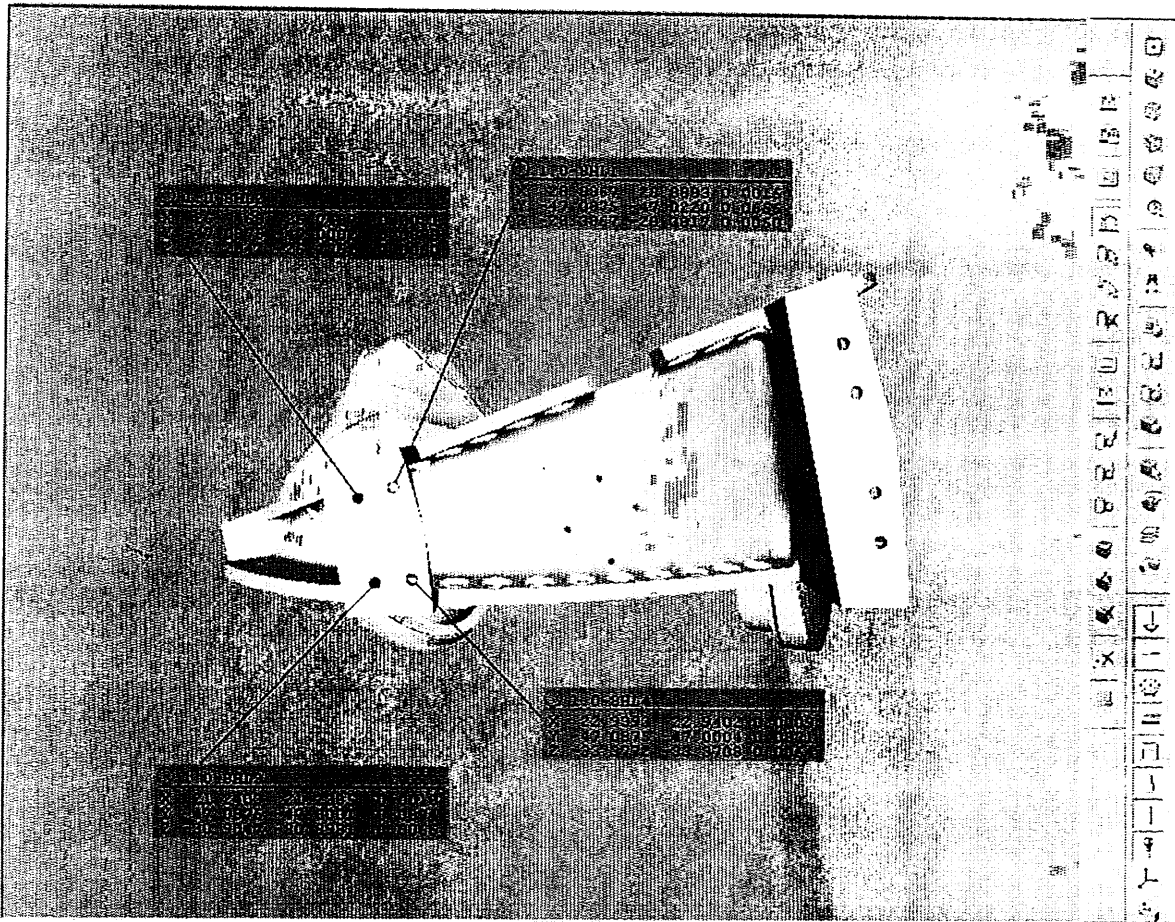
Project Disposition:

MCWF C-1 has been accepted "as is". However, this does not relieve EIO from any of the requirements of NCSX-CSPEC-141-03 (latest revision) on future castings, for which full compliance with the Specification is expected unless otherwise agreed to in writing.

Approvals: Phil Heitzenroeder
Digitally signed by Phil Heitzenroeder
DN: cn = Phil Heitzenroeder, c = US, o = PPPL, ou = Mech. Eng. Division
Reason: I am approving this document
Date: 2005.11.07 11:47:52 -05'00'

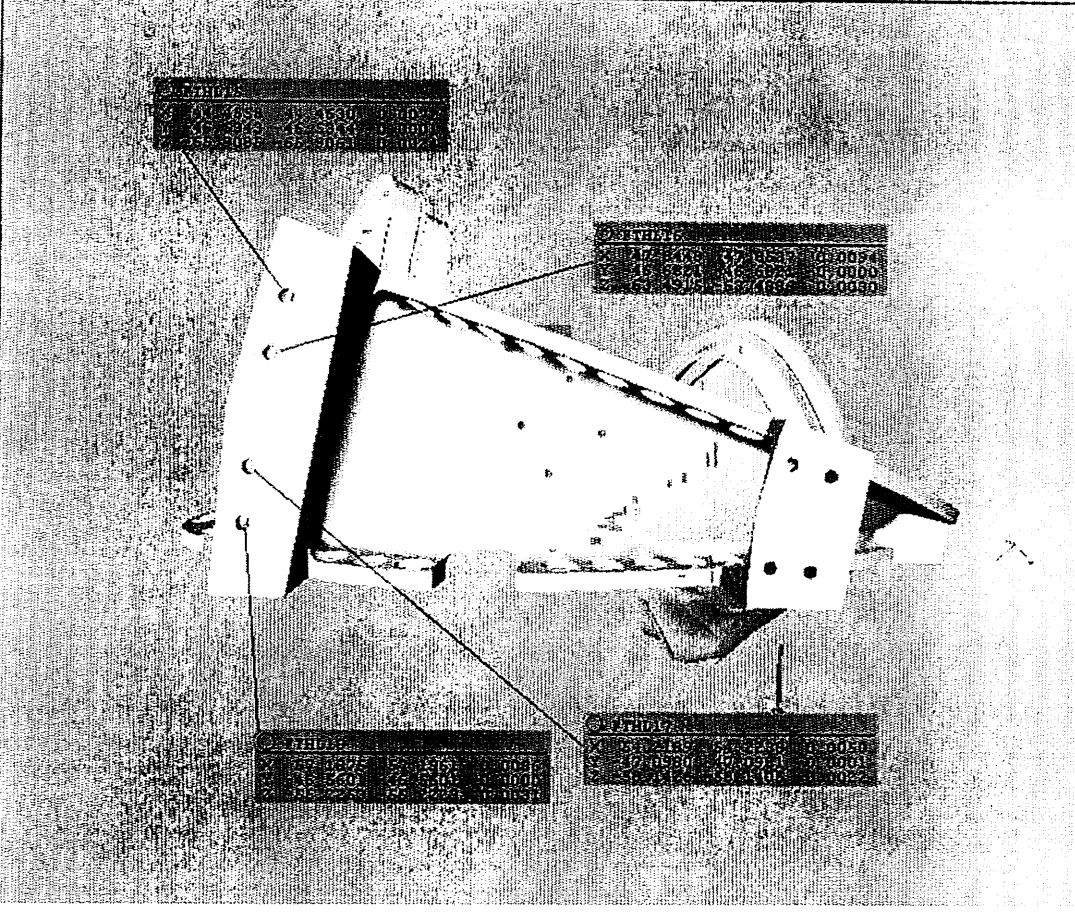
Procurement Technical Representative
Brad Nelson
Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US, o=ORNL,
ou=FED, email=nelsonbe@ornl.gov
Date: 2005.11.07 13:20:40 -05'00'

Responsible Line Manager:



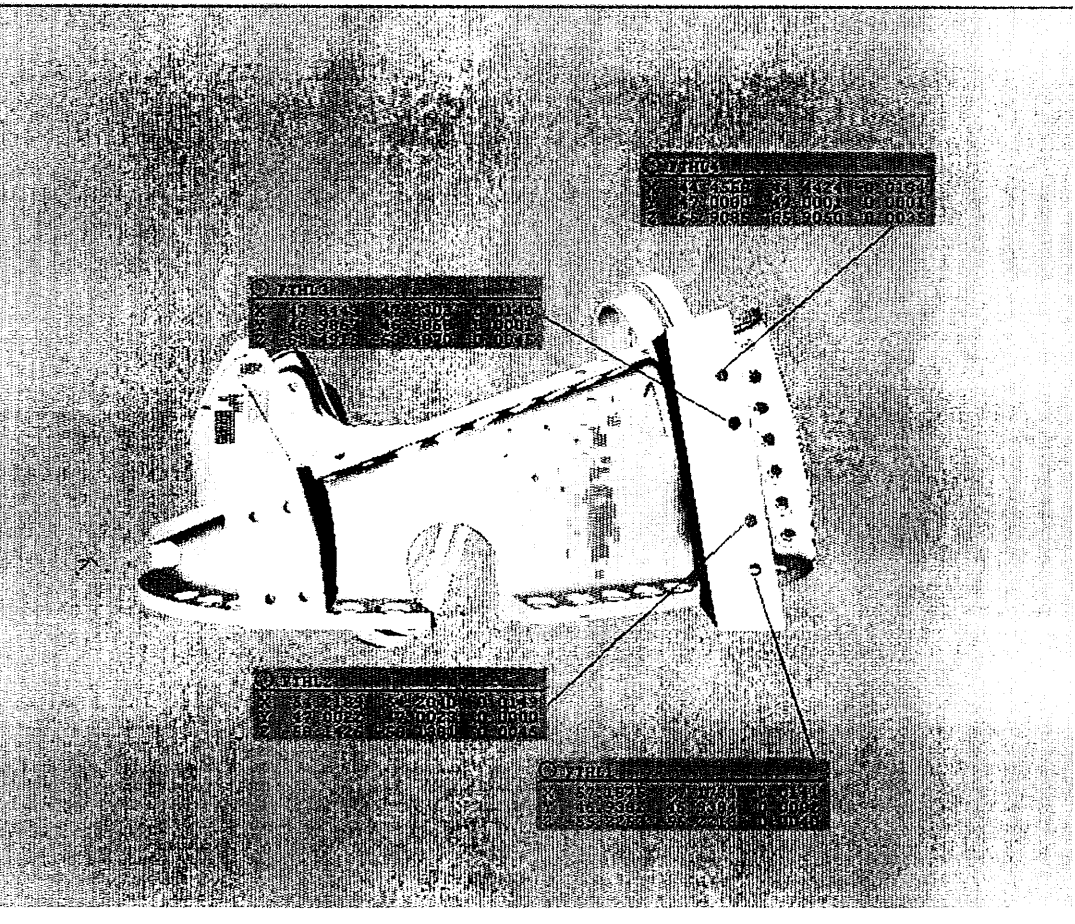
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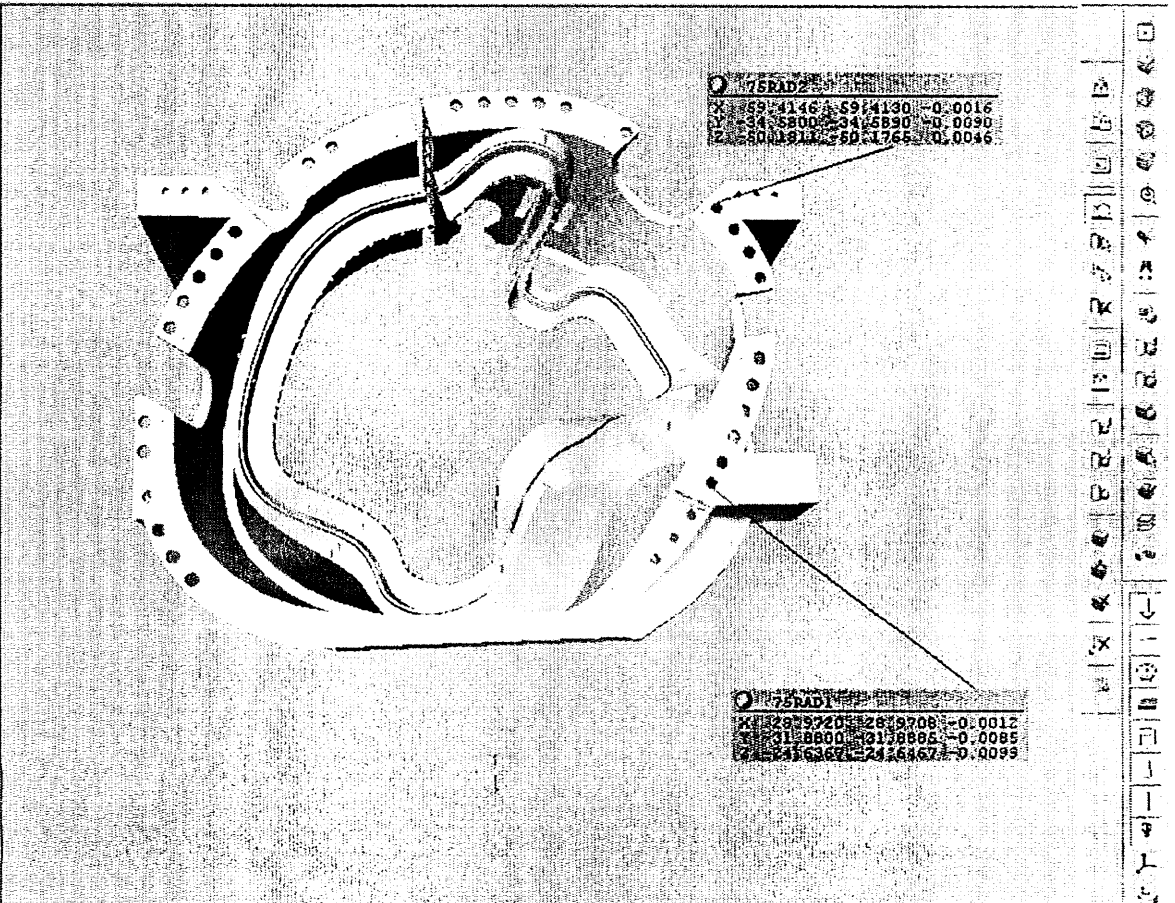
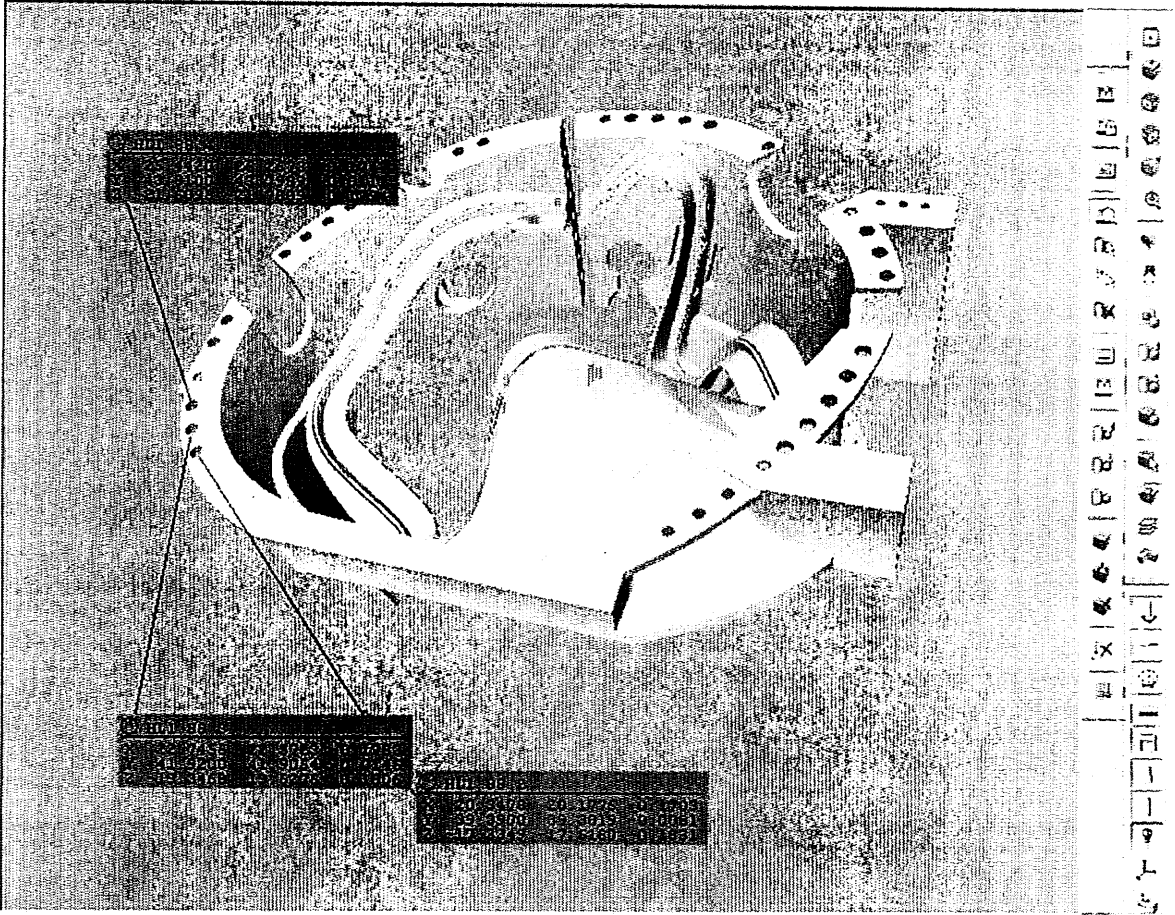
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செலினியம்	100 கிராம்	1000	1000
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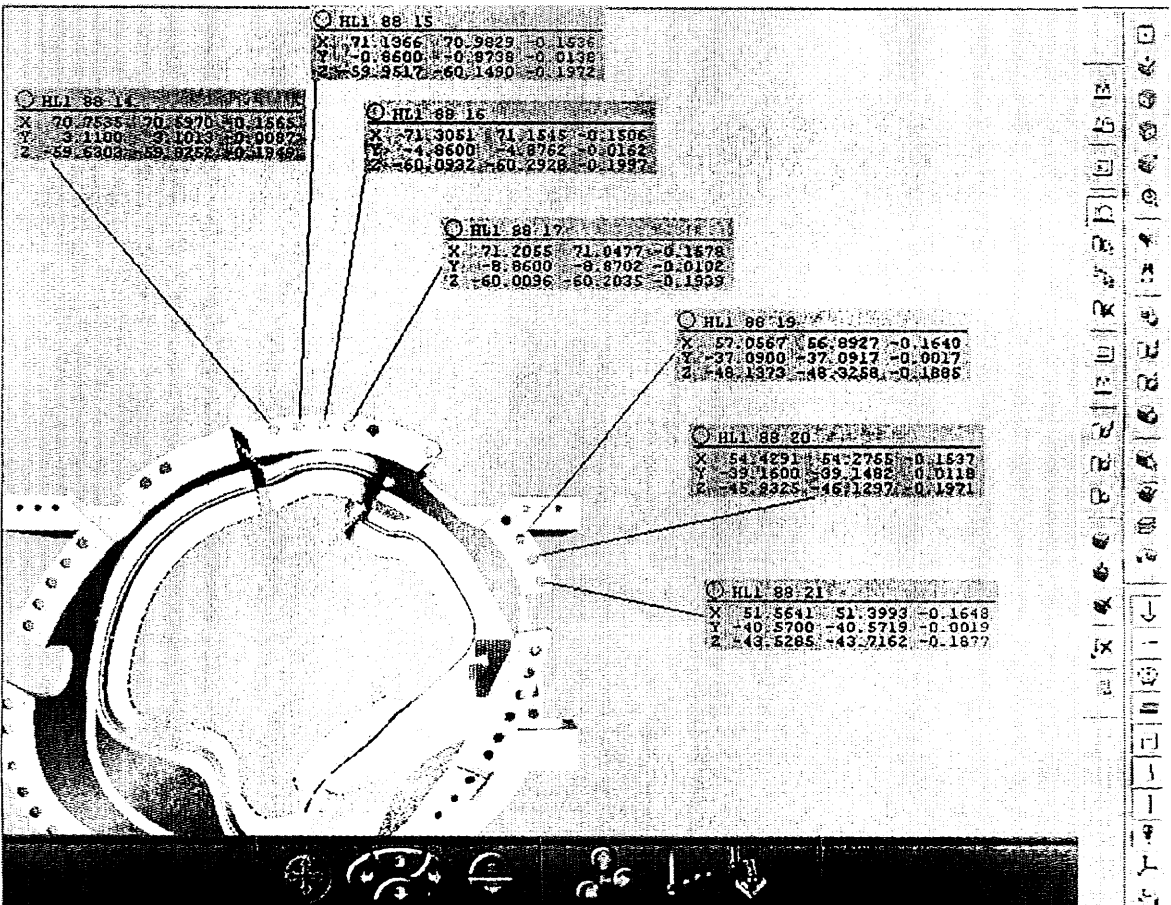
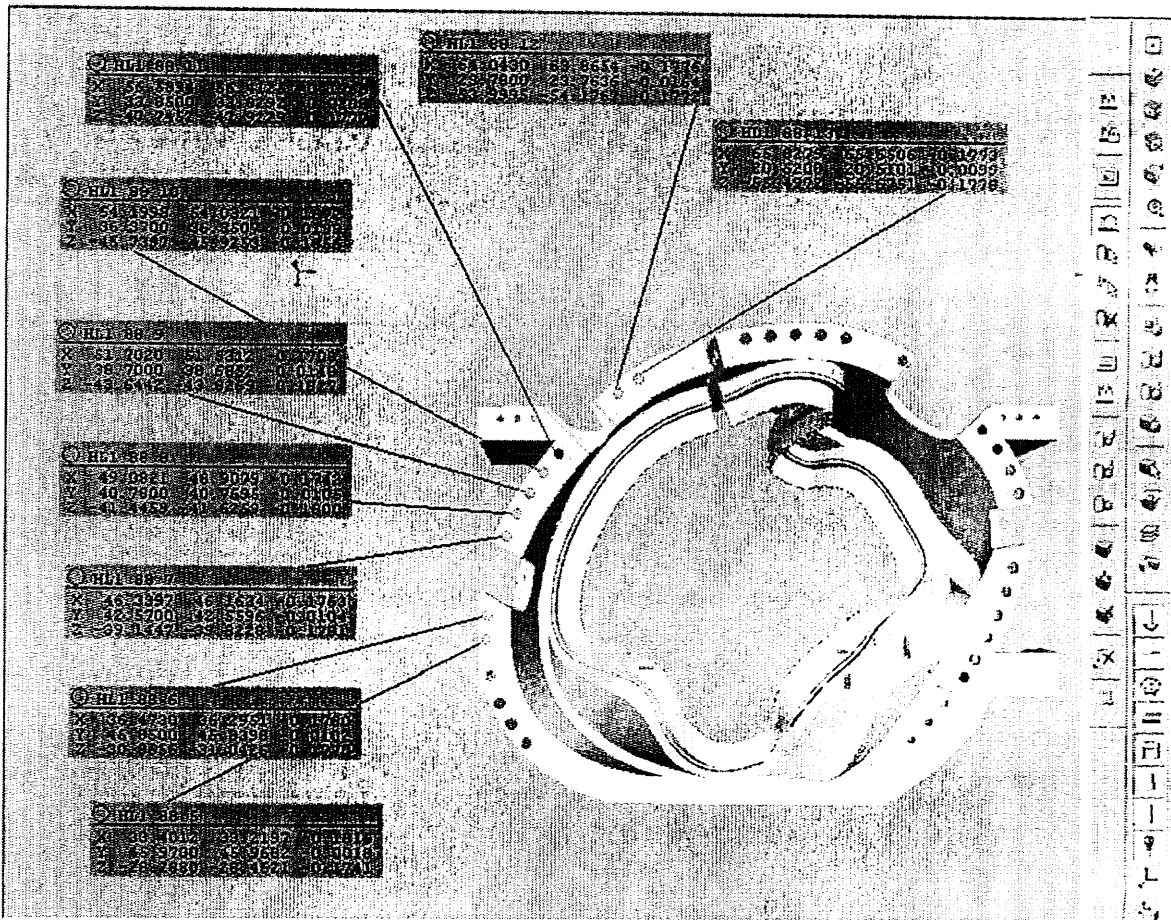


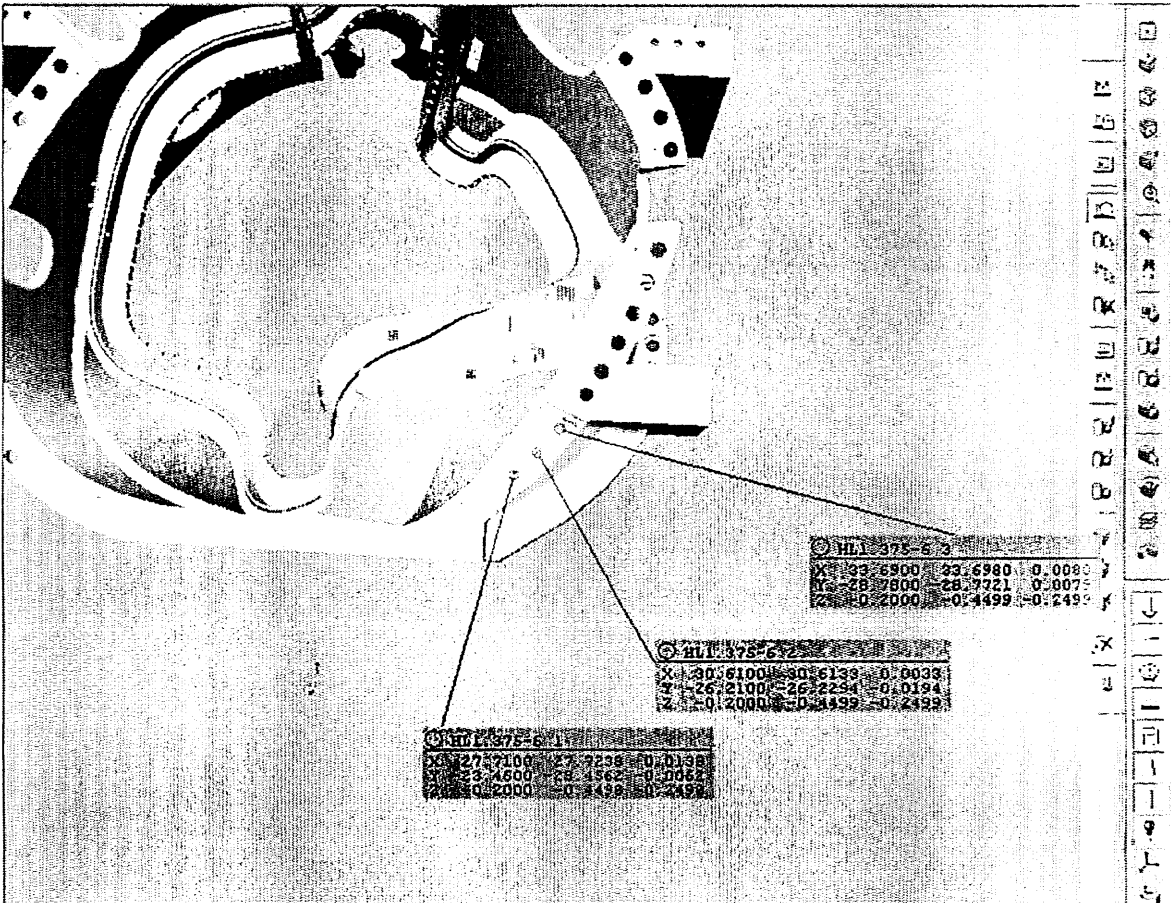
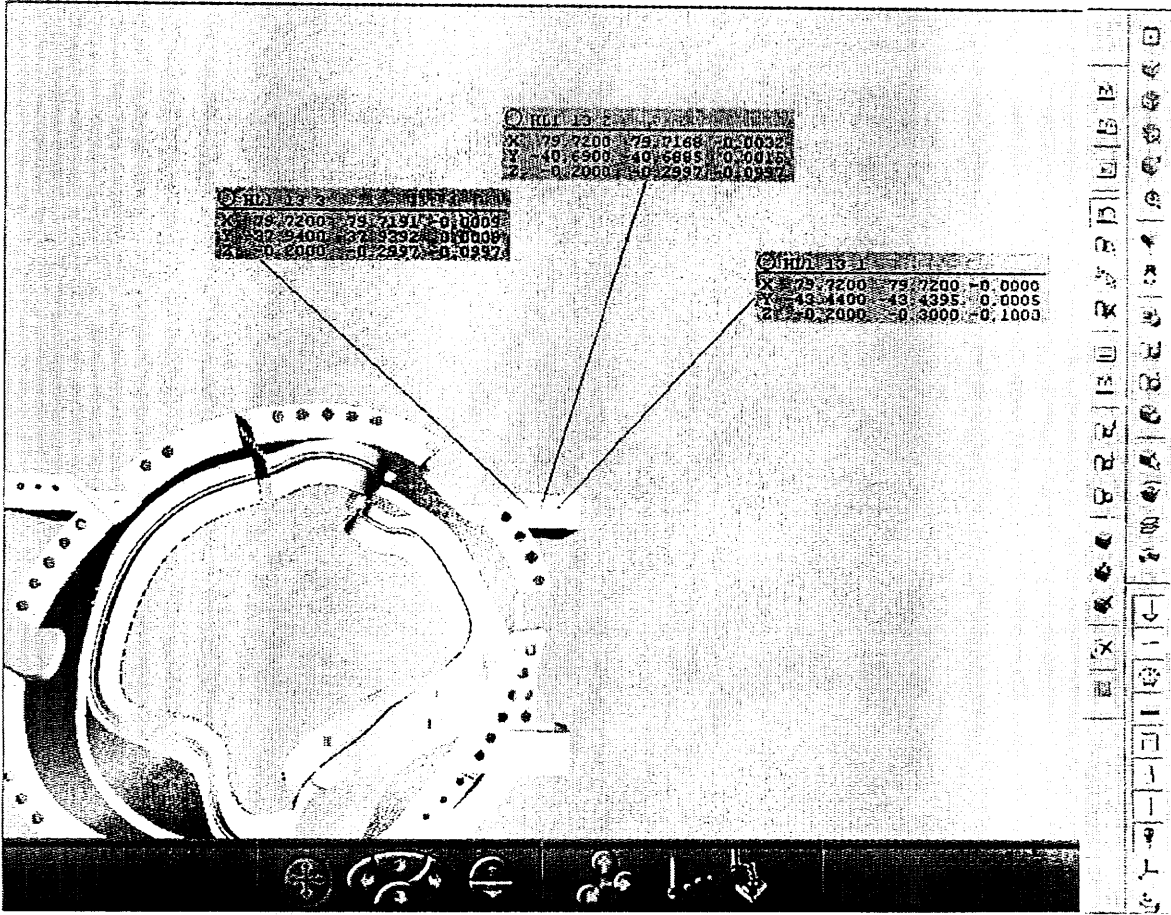
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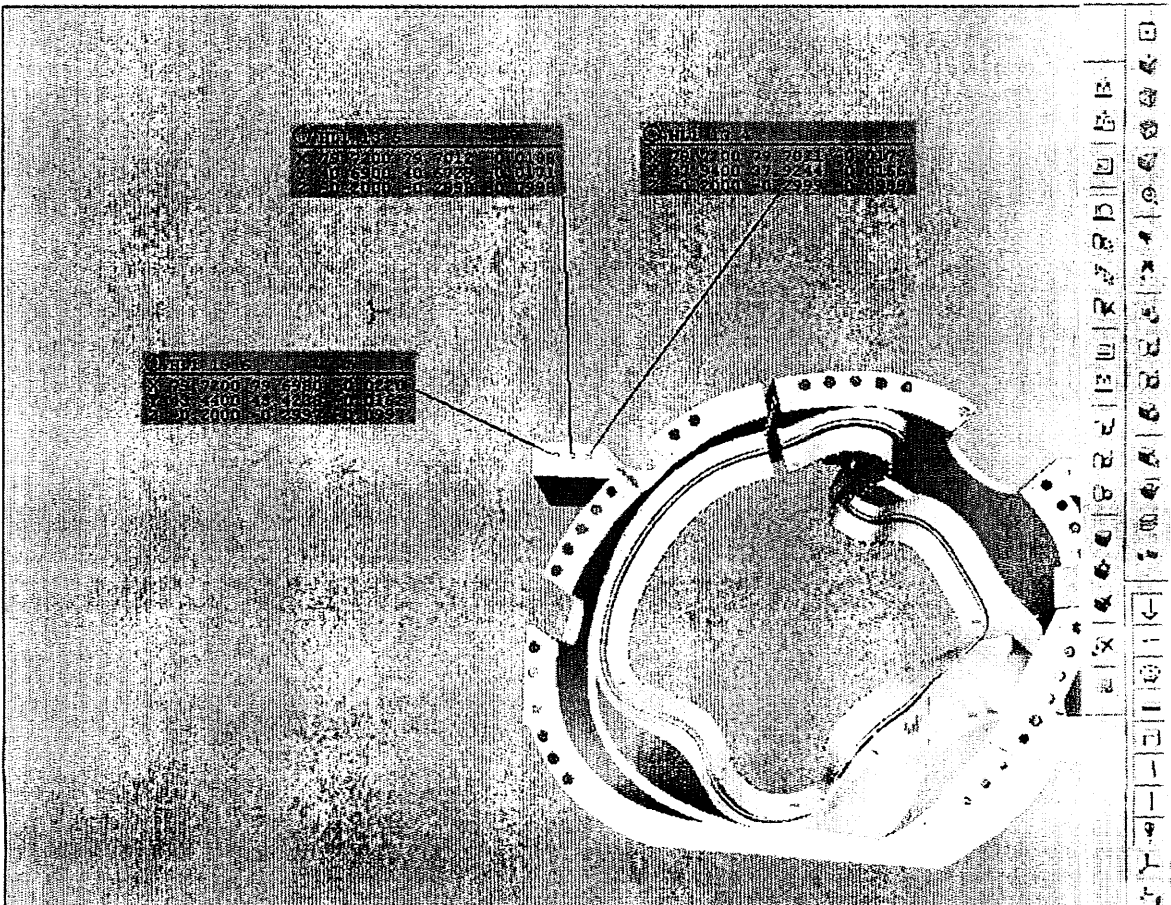
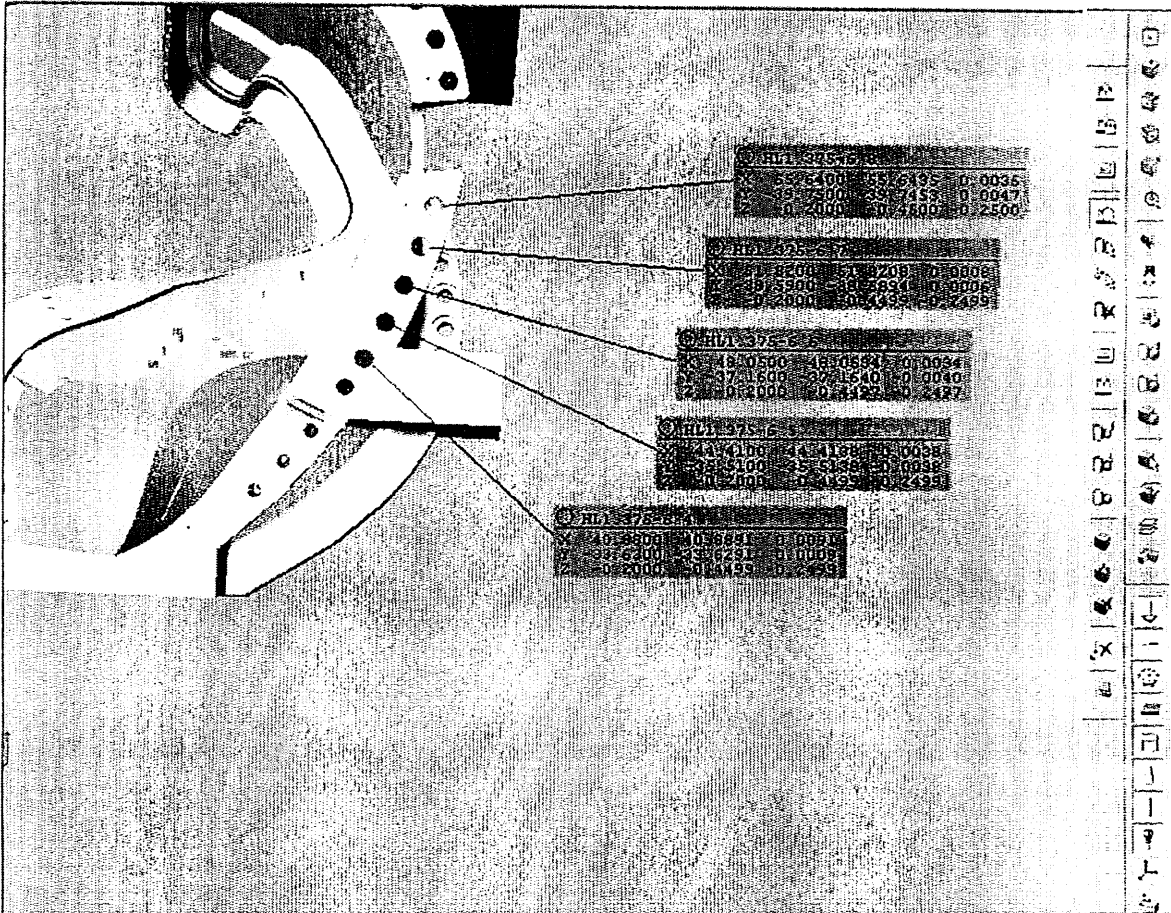
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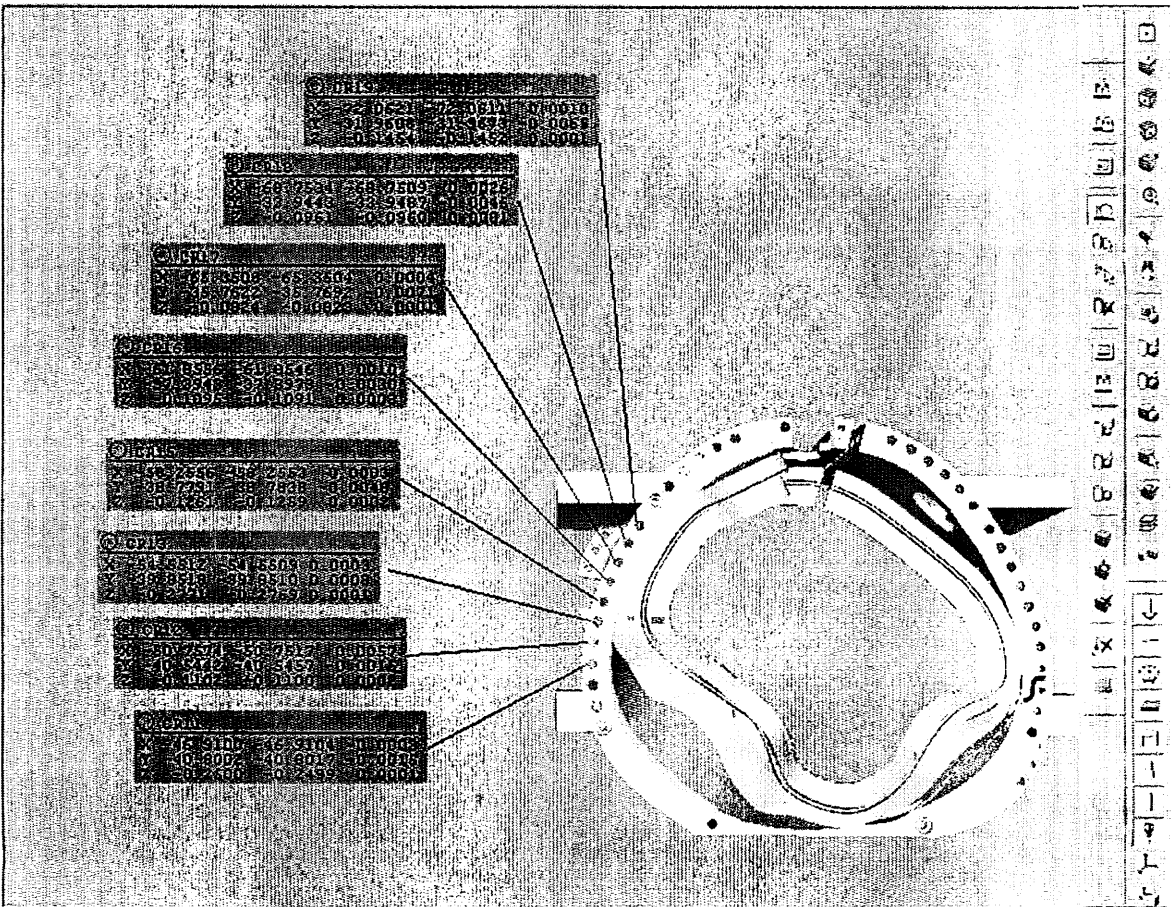
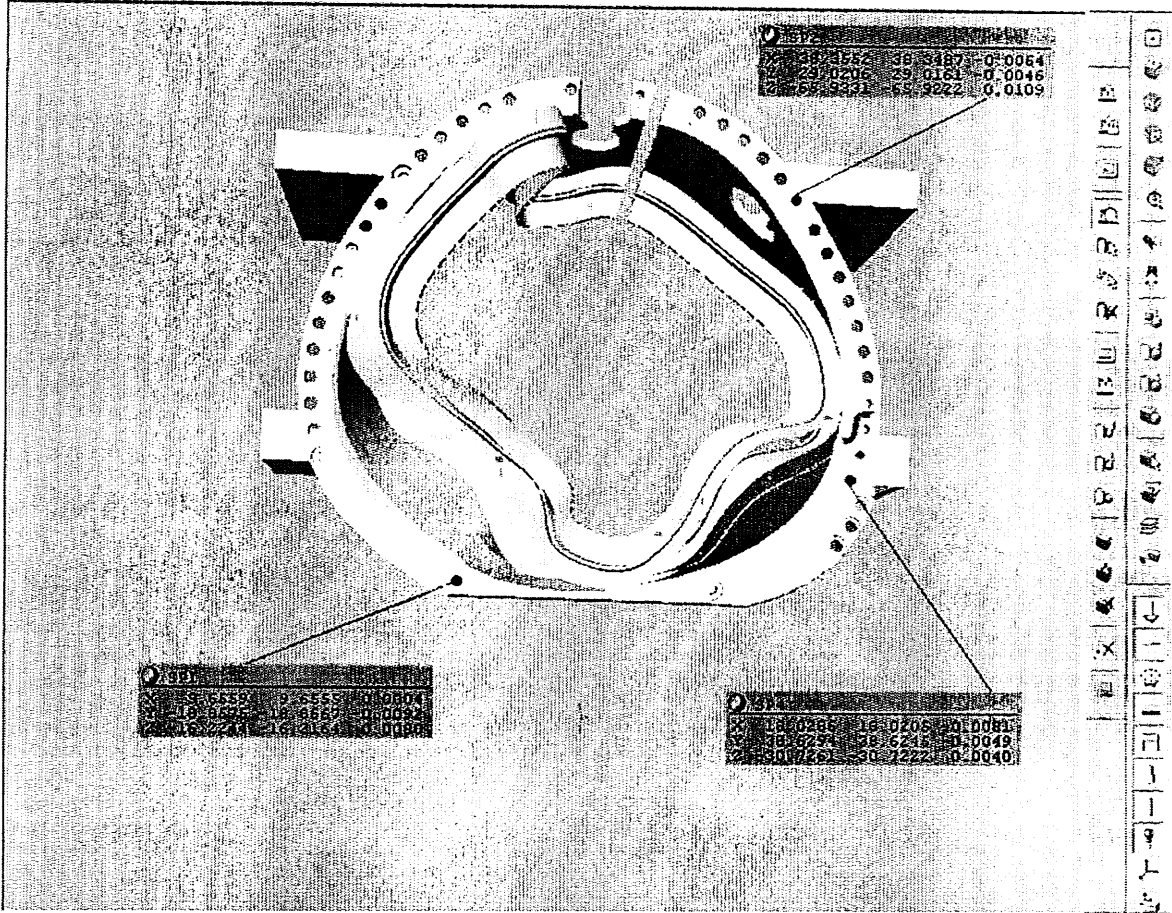


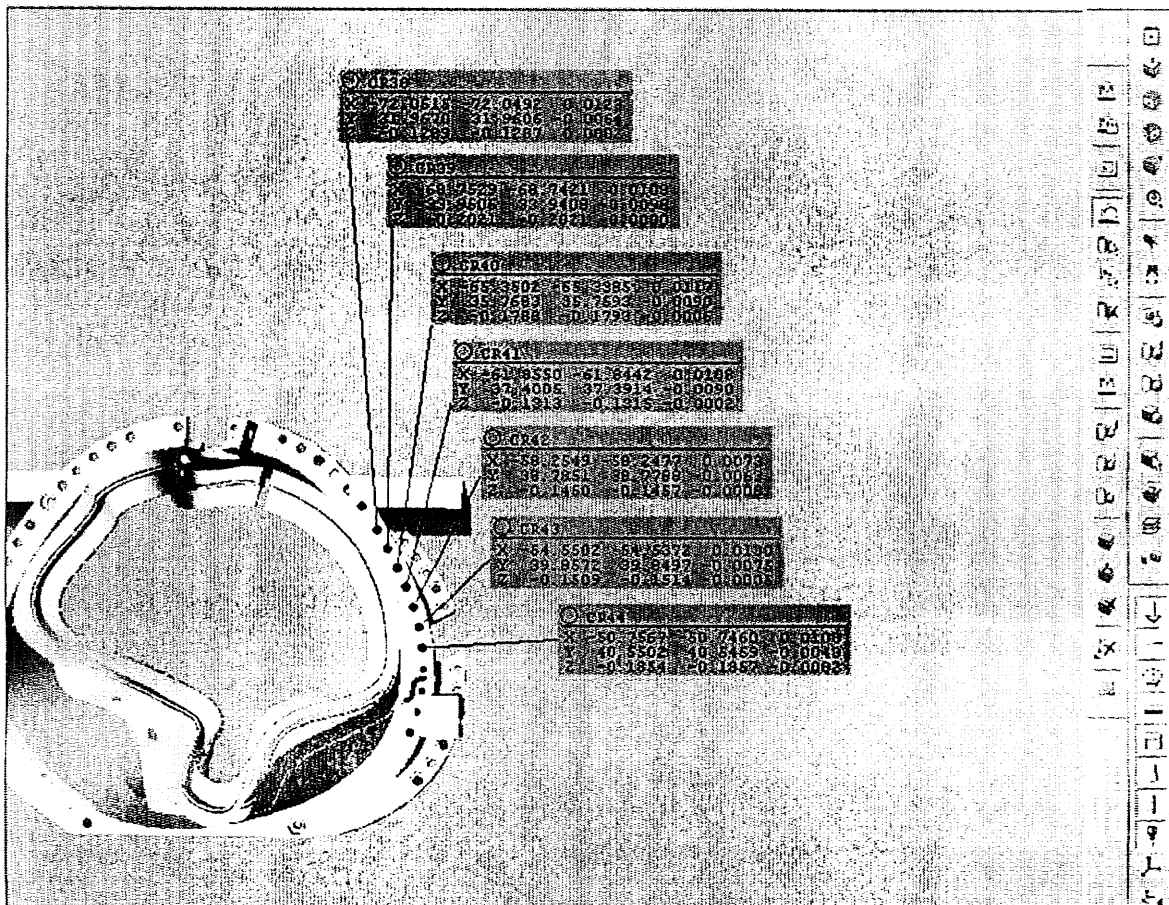
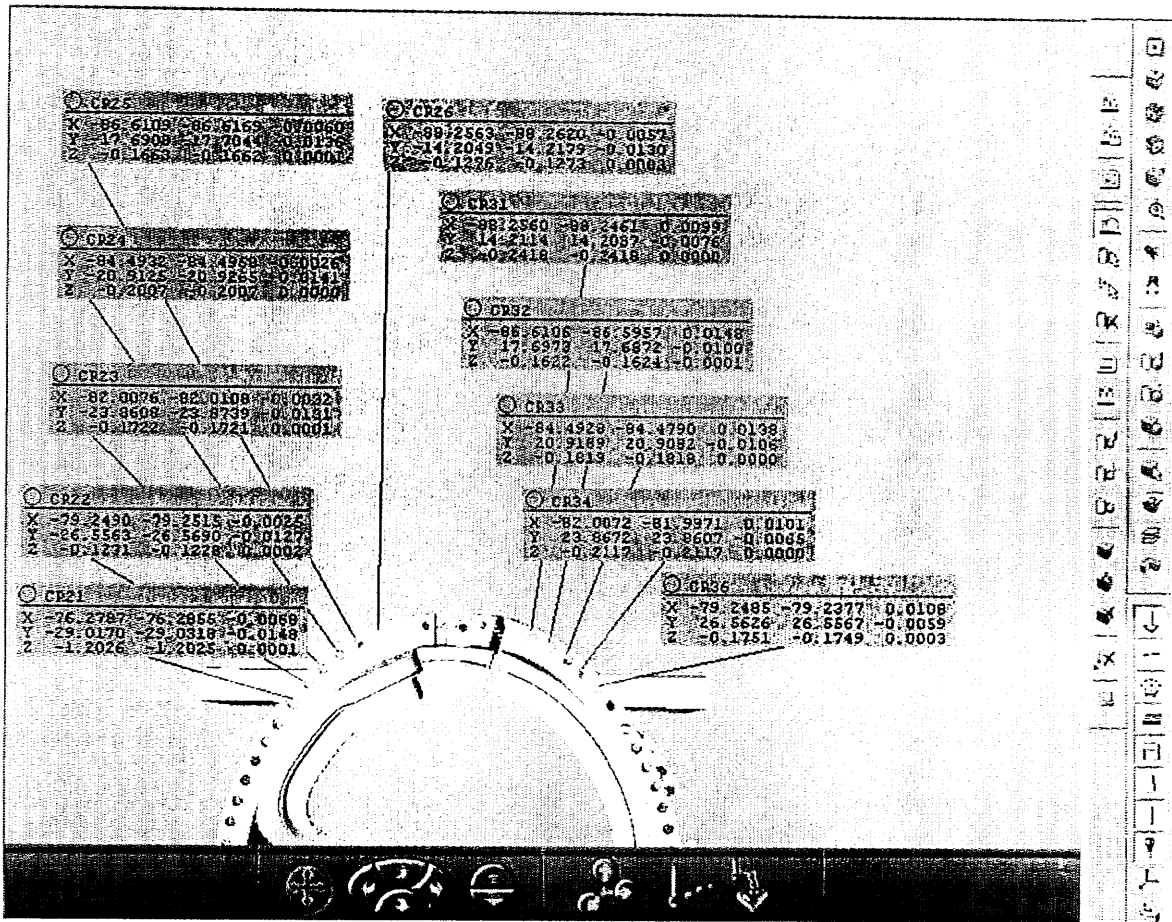


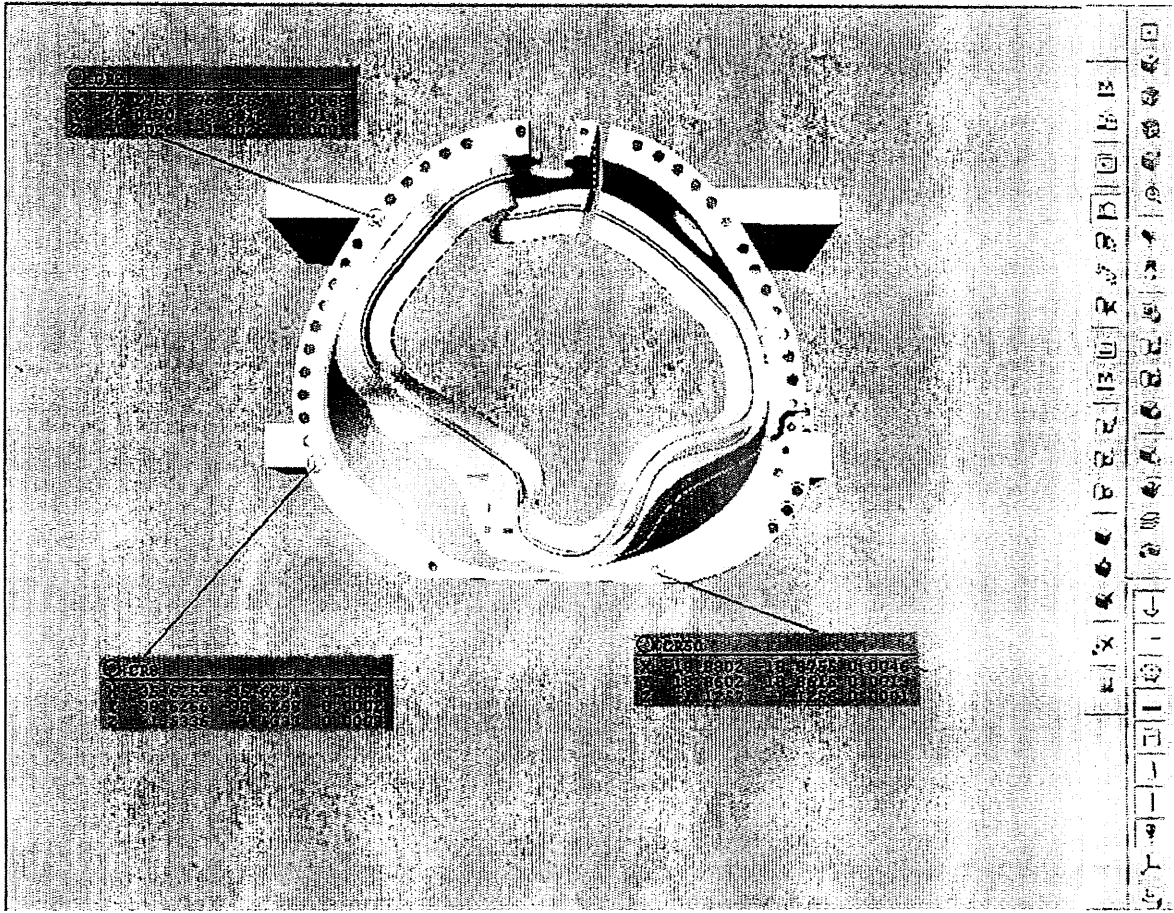












Evaluation done 9/30/05 prior to conditional release of C-4
 S. Rattopoulos, T. Brown, D. Williamson, M. Cole, B. Nelson, J. Chrzastowski
 INSPECTION DATA CHECKLIST



Page: 2
 Date: 09/30/05
 User ID: BOWLINK#

Quality Assurance Documentation for Part ID: SE141-116 - Item: 15

Workorder: 65707/1-0 Sub:1 Op:120

Part: SE141-116 - MODULAR COIL WINDING FORM TYPE-C - PRODUCTION MODULAR COIL WINDING FORM TYPE-C

Drawing ID: SE141-116 Rev: 6			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPLE	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)	E8	47.19 ± .03	CMM	QA		00064	47.17 - 47.18	339-E.R 09-29-05		A
1* (11)	G8	R17.00 +.25 -.00	CMM	QA		00064	17.09	339-E.R 09-29-05		A
1* (20)	B8	47.19 ± .03	CMM	QA		00064	47.18 - 47.19	339-E.R 09-29-05		A
1* (30)	D6	47.19 ± .03	CMM	QA		00064	47.18 - 47.19	339-E.R 09-29-05		A
1* (40)	C6	47.19 ± .03	CMM	QA		00064	47.20	339-E.R 09-29-05		A
1* (50)		∥.02 A	CMM	QA		00064	.0109	339-E.R 09-29-05		A
1* (60)	B6	∥.02 A	CMM	QA		00064	.0045	339-E.R 09-29-05		A
1* (70)	F3	⊖.5 A B C	CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		A
2* (80)	H6	2X R.187 +.025 -.005	INDICATOR	QA		J-651	.185 - .187	339-E.R 09-29-05		A
2* (90)	G8	2X .03 X 45° <i>u. chamfer, but .030 radius</i>		QA		VISUAL	NOT PRESENT	339-E.R 09-29-05		R
2* (100)	G8	.40 ± .010	CALIPER	QA		J-707	.39 - .41	339-E.R 09-29-05		A
2* (110)	G8	2X .030 X 45°		QA		VISUAL	NOT PRESENT	339-E.R 09-29-05		R
2* (120)	F7	2X .32	CALIPER	QA		J-707	.31 - .33	339-E.R 09-29-05		A
2* (130)	F7	2X R.11	RADIUS GAGE	QA		R-25	.12	339-E.R 09-29-05		A
2* (140)	G6	⊖.1 R S T P T O M	CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
2*	G6	4.790 ± .005		QA		VISUAL	ACCEPT	339-E.R		A


1
5
→ 10
→ 12
→ 15
? 16

Evaluation



INSPECTION DATA CHECKLIST

	(150)								09-29-05			
→ 17	2*	G3	\square .1 R S T	OK	CMM	QA	00064	REFERENCE IGES INF	339-E.R			R
	(160)		Q T O N					RMATION	09-29-05			
→ 18	2*	G3	4.790 ± .005			QA	VISUAL	ACCEPT	339-E.R			A
	(170)		RECORD NUMBER USED TO IDENTIFY POINT Q						09-29-05			
→ 19	2*	F5	\square .02 R S T		CMM	QA	00064	REFERENCE IGES INF	339-E.R			R
	(180)		M T O N					RMATION	09-29-05			
→ 20	2*	C5	ϕ .01 R S T	OK	CMM	QA	00064	.0043 - .1657 , .62	339-E.R			R
	(190)		96X Ø.375-16 UNC .188 DEEP C'BORE Ø.625 AS SHOWN		THREAD PLUG GA		A-46	3 - .626	09-29-05			
→ 21	2*	B4	2X .03 X 45°			QA	?	VISUAL	ACCEPT	339-E.R		A
	(200)							09-29-05				
→ 22	3*	G7	ϕ .01 A B C	OK	CMM	QA	00064	.010 - .043	339-E.R			R
	(210)		8X Ø1-8 UNC THRU					09-29-05				
→ 23	3*	H4	.25 ± .01		CMM	QA	00064	SET	339-E.R			A
	(220)							09-29-05				
→ 24	3*	H3	\square .01	OK	CMM	QA	00064	.015	339-E.R			R
	(230)							09-29-05				
→ 25	3*	F3	.25 ± .01		CMM	QA	00064	SET	339-E.R			A
	(240)							09-29-05				
→ 26	3*	F3	\square .01	OK	CMM	QA	00064	.032 Comp'd to file, looks wide	339-E.R			R Kevin to check
	(250)							09-29-05				
→	3*	F5	R76.00	OK	CMM	QA	00064	REFERENCE IGES INF	339-E.R			R
	(260)							RMATION	09-29-05			
→	3*	E5	R73.70	OK	CMM	QA	00064	REFERENCE IGES INF	339-E.R			R
	(270)							RMATION	09-29-05			
→	3*	E4	ϕ .01 A B C	OK	CMM	QA	00064	.010 - .031	339-E.R			R
	(280)		8X Ø1.13 THRU BACK SPOT FACE Ø2.38 MIN DEPTH FOR C'UP					09-29-05				
→	4*	H8	ϕ .010 D A N	OK	CMM	QA	00064	.0304 - .0442 , >.00 SPOT, 1.87 - 1.88 DIA.	339-E.R			R
			3X Ø1.88 THRU Ø3.00 BACK SPOTFACE									



 Kenn to use sphere go-not go gauge

Major
 Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

(290)		MIN TO CLEANUP	SCALE			J-922		09-29-05		
4*	H7	⊕ Ø.01 D A N	CMM	QA		00064	.019 - .020, R .7	339-E.R		R
(300)		3X SPH R.75 TO .75 DEEP					4 - .745	09-29-05		
4*	H6	⊕ Ø.01 D A N	CMM	QA		00064	.009 - .059, >3.00	339-E.R		R
(310)		17X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	SPOT, 1.87 - 1.88	09-29-05		
4*	H5	⊕ Ø.01 D A N	CMM	QA		00064	.047 - .054, 1.126	339-E.R		R
(320)		3X Ø1.13 Ø2.38 BACK SPOTFACE MIN TO CLEANUP					- 1.127	09-29-05		
4*	E6	⊕ Ø.01 D A N	CMM	QA		00064	.022 - .039	339-E.R		R
(340)		3X Ø1.375-6 UNC THRU						09-29-05		
4*	E6	⊕ Ø.01 D A N	CMM	QA		00064	.0019 - .0182, >3.	339-E.R		R
(350)		5X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	00 SPOT	09-29-05		
4*	D4	⊕ Ø.01 D A N	CMM	QA		00064	.018, >3.00 SPOT,	339-E.R		R
(360)		Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP					1.879 DIA.	09-29-05		
4*	B5	⊕ Ø.01 D A N	CMM	QA		00064	.001 - .007, >2.38	339-E.R		A
(370)		3X Ø1.13 Ø2.38 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	SPOT.	09-29-05		
5*	E8	⊕ Ø.01 E A J	CMM	QA		00064	0.77, >3.00 SPOT.	339-E.R		R
(380)		Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	To class or model?	09-29-05		
5*	F6	3X Ø1.375-6 UNC THRU	THREAD PLUG GA	QA		A-375	ACCEPT	339-E.R		A
(400)								09-29-05		
5*	F6	⊕ Ø.01 E A J	CMM	QA		00064	.020 - .021	339-E.R		R
(410)		3X SPH R.75 TO .75 DEEP						09-29-05		
5*	F7	7X .25-20 UNC -2B	THREAD PLUG GA	QA		A-67	ACCEPT	339-E.R		A
(420)								09-29-05		
5*	E7	⊕ Ø.01 E A J	CMM	QA		00064	.008 - .040, >3.00	339-E.R		R
		24X Ø1.88 THRU Ø3.00 BACK SPOTFACE					SPOT.			

where
 MTM
 TB



Major

Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

(430)		MIN TO CLEANUP	SCALE			J-922		09-29-05			
5*	E7	Φ .01 E A J 3X Φ 1.5 TO 2.00 DEEP Φ 3.00 TO 1.00 DEEP	CMM	QA		00064	.013 - .037	339-E.R			R
(440)								09-29-05			
5*	D7	3X Φ 1.88 THRU Φ 3.00 BACK SPOTFACE MIN TO CLEANUP	CMM	QA		00064	1.87 - 1.88, >3.00	339-E.R			A
(450)			SCALE			J-922		09-29-05			
5*	G2	SPH R.75 TO .75 DEEP	CMM	QA		00064	.736 - .74	339-E.R			A
(460)								09-29-05			
6*	F2	\square .02 <i>Polished Break</i>	05	QA							
(510)											
6*	F2	1.125 \pm .010	05	QA							
(520)											
6*	F2	2.250 \pm .010	05	QA							
(530)											
6*	E2	Φ .01 F P V 7X Φ 1.625 THRU BOTH SIDES 14X Φ 3.00 TO .500 BOTH SIDES	05	QA							
(540)											
7*	G2	R7.00	05	QA			REFERENCE IGES INF	339-E.R			R
(550)		<i>OK</i>					RMATION	09-29-05			
7*	F2	2X R1.50	05	QA			REFERENCE IGES INF	339-E.R			R
(560)		<i>OK</i>					RMATION	09-29-05			
7*	E2	2.52 \pm .010	CMM	QA		00064	2.51	339-E.R			A
(570)								09-29-05			
7*	E2	90°	CMM	QA		00064	87.92	339-E.R			R
(580)		<i>OK</i>						09-29-05			
7*	E1	2.0°	CMM	QA		00064	2.04	339-E.R			A
(590)								09-29-05			
7*	E2	2.64 \pm .010	DEPTH MICROMET	QA		J-851	2.64	339-E.R			A
(600)								09-29-05			
7*	E2	6.50 \pm .010	CMM	QA		00064	6.486	339-E.R			R
(610)		<i>OK</i>						09-29-05			
7*	E2	3.06 \pm .010	CMM	QA		00064	REFERENCE IGES INF	339-E.R			R
(620)		<i>OK</i>					RMATION	09-29-05			



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INSPECTION DATA CHECKLIST

Page: 6
Date: 09/30/05
User ID: BOWLINK#

7* (630)	D2	R4.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
7* (640)	D3	2.10 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (650)	G7	4.00 ± .010	CMM	QA		00064	3.98 <i>prob OK SR</i>	339-E.R 09-29-05		<i>OK TR</i>	R
8* (660)	G7	.25 ± .010	CMM	QA		00064	SET ?	339-E.R 09-29-05		<i>OK TR</i>	A
8* (670)	G7	R4.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R/RP data
8* (680)	F7	2.00 ± .010	CMM	QA		00064	1.99	339-E.R 09-29-05			A
8* (690)	E3	9.38 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (700)	E2	6.0°	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (710)	C2	Ø8.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (720)	B3	5.9°	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (730)	B3	7.81 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (740)	C6	7.25 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05			R
8* (750)	D7	6X Ø.375-16 UNC TO .75 DEEP .03 X 45° CHAMFER	THREAD PLUG GA	MFG		A-46	ACCEPT THREAD/CHAMFER, .53 - 1.32 DEPT	339-E.R 09-29-05			R
8* (760)	D7	13.6°	CMM	MFG		00064	13.16	339-E.R 09-29-05			A
8* (770)	D7	5.88 ± .010	CALIPER	QA		J-707	5.89	339-E.R 09-29-05			A
8* (780)	D7	2.19 ± .010	CMM	QA		00064	2.172 - 2.198	339-E.R 09-29-05			R
8* (790)	D7	2.19 ± .010	CMM	QA		00064	2.176 - 2.191	339-E.R 09-29-05			R
8* (800)	B7	4X R.50	RADIUS GAGE	QA		R-25	.50	339-E.R 09-29-05			A

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OK TR
Can't find data
OK

Need to get actual data

Can't verify OK skulls be ref

Need cloud data can't be ref

Need cloud pt data

Need cloud data

need cloud data

acceptable

acceptable

OK

OK

7.993



Major
Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

Page: 7
Date: 09/30/05
User ID: BOWLINK#

8* (810)	B7	3.50 ± .010		CALIPER	QA		J-707	3.60	339-E.R 09-29-05		A
8* (820)	B7	1.75 ± .010		SCALE	QA		J-922	1.75	339-E.R 09-29-05		A
8* (830)	C8	2X 1.56 ± .010 THRU <i>OK</i>		CMM	QA		00064	1.) 1.56 2.) 1.79	339-E.R 09-29-05		R
8* (840)	C8	3.75 ± .010 <i>OK</i>		CMM	QA		00064	3.90	339-E.R 09-29-05		R
8* (850)	C8	2X 7.50 ± .010 THRU <i>OK</i>		CMM	QA		00064	1.) 7.53 2.) 7.63	339-E.R 09-29-05		R
8* (860)	C8	8X R.25 <i>OK</i>		RADIUS GAGE	QA		R-25	.25 - .28	339-E.R 09-29-05		R
8* (870)	C8	2X 2.52 ± .010 <i>OK</i>		CMM	QA		00064	2.04 - 2.08 , 2.65 - 2.66	339-E.R 09-29-05		R
8* (880)	E2	Ø8.00 ± .010 <i>OK</i>		CMM	QA		00064	7.992	339-E.R 09-29-05		A
9* (890)	F7	4X Ø.63 ± .010 THRU		PIN GAGE	QA		J-652	.62	339-E.R 09-29-05		A
9* (900)	E7	2.54 ± .010 <i>OK</i>		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (910)	E7	5.08 ± .010 <i>OK</i>		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (920)	F3	4X Ø.63 ± .010 THRU		PIN GAGE	QA		J-652	SEE #890	339-E.R 09-29-05		A
9* (930)	F3	2X Ø .50 ± .010 THRU		PIN GAGE	MFG		J-652	.498	339-E.R 09-29-05		A
9* (940)	E3	2.44 ± .010 <i>need to resolve</i>		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (950)	E3	1.22 ± .010 <i>need to resolve</i>		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (960)	C7	4X Ø.63 ± .010 THRU		PIN GAGE	QA		J-652	.622 - .624	339-E.R 09-29-05		A
9* (970)	C6	2X Ø.25 T.C. HOLE TO 2.5 DEEP		PIN GAGE	QA		J-652	.24	339-E.R 09-29-05		A
10* (980)	C8	\square .125 A B C <i>OK</i>		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
10*	C8	\square .5 A B C <i>OK</i>		CMM	QA		00064	REFERENCE IGES INF	339-E.R		R

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Major

Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

(990)							RMATION	09-29-05		
10* (1000)	C5		OK	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
10* (1010)	C4		OK	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
10* (1020)	G1		OK	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
10* (1030)	E1		OK	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
* (1040)		UOS ALL MACHINED SURFACES TO BE 250 RMS SURFACE FINISH RECORD RANGE	OK	PROFILOMETER	QA	J-1152	31 - 500	339-E.R 09-29-05		R
1* (1050)		RECORD THE WEIGHT OF THE PART 6000LBS MAX			QA	SCALE	5080LBS	339-E.R 09-29-05		A
4* (1060)	H7	22.13 ± .010	? what is this	CMM	QA	00064	TAP	339-E.R 09-29-05		R
4* (1070)	H7	47.79 ± .010	OK	CMM	QA	00064	47.76	339-E.R 09-29-05		R
4* (1080)	H6	59.18 ± .010	OK	CMM	QA	00064	59.16	339-E.R 09-29-05		R
4* (1090)	H6	73.27 ± .010	OK	CMM	QA	00064	TAP	339-E.R 09-29-05		R
4* (1100)	H5	80.49	OK	CMM	QA	00064	80.46	339-E.R 09-29-05		R
4* (1110)	H5	87.87 ± .010	OK	CMM	QA	00064	87.84	339-E.R 09-29-05		R
4* (1120)	H5	89.64 ± .010	OK	CMM	QA	00064	89.64	339-E.R 09-29-05		A
4* (1130)	G4	31.83 ± .010	OK	CMM	QA	00064	TAP	339-E.R 09-29-05		R
4* (1140)	F4	24.10 ± .010	OK	CMM	QA	00064	24.08	339-E.R 09-29-05		A
4* (1150)	F4	11.48 ± .010	OK	CMM	QA	00064	11.46	339-E.R 09-29-05		R

Confirm what 'tap' means



Major
Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

Page: 10

Date: 09/30/05

User ID: BOWLINK#

5* (1340)	D4	22.117 ± .005		CMM	QA	00064	22.118	339-E.R 09-29-05		A
5* (1350)	D4	38.14 ± .010		CMM	QA	00064	38.14	339-E.R 09-29-05		A
5* (1360)	D5	21.33 ± .010		CMM	QA	00064	21.32	339-E.R 09-29-05		A
5* (1370)	D7	87.62 ± .010		CMM	QA	00064	87.63	339-E.R 09-29-05		A
5* (1380)	E8	7.53 ± .010		CMM	QA	00064	7.53	339-E.R 09-29-05		A
5* (1390)	E8	4.91 ± .010	OK	CMM	QA	00064	4.88	339-E.R 09-29-05		R
5* (1400)	G8	36.13 ± .010		CMM	QA	00064	36.12	339-E.R 09-29-05		A
7* (1410)	D4	2.1°	OK	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
8* (1420)	D8	2.63 ± .010	OK	CMM	QA	00064	2.63 - 2.65	339-E.R 09-29-05		R



INSPECTION DATA CHECKLIST

4* (1160)	E4	5.20 ± .010		CMM	QA		00064	5.19	339-E.R 09-29-05		A
4* (1170)	D4	18.31 ± .010		CMM	QA		00064	18.32	339-E.R 09-29-05		A
4* (1180)	D4	32.50 ± .010		CMM	QA		00064	32.50	339-F.R 09-29-05		A
4* (1190)	C5	77.13 ± .010		CMM	QA		00064	77.13	339-E.R 09-29-05		A
4* (1200)	C6	55.56 ± .010		CMM	QA		00064	55.55	339-E.R 09-29-05		A
4* (1210)	B7	23.74 ± .010		CMM	QA		00064	23.73	339-E.R 09-29-05		A
4* (1220)	C7	37.09 ± .010		CMM	QA		00064	37.08	339-E.R 09-29-05		A
4* (1230)	D8	17.22 ± .010		CMM	QA		00064	17.23	339-E.R 09-29-05		A
4* (1240)	F8	28.17 ± .010	OK	CMM	QA		00064	TAP	339-E.R 09-29-05		R
4* (1250)	G8	12X .250-20 UNC-2B		THREAD PLUG GA	QA		A-517 VISUAL	ACCEPT	339-E.R 09-29-05		A
4* (1260)	G8	40.75 ± .010		CMM	QA		00064	40.74	339-E.R 09-29-05		A
4* (1270)	G8	43.42 ± .010	OK	CMM	QA		00064	TAP	339-E.R 09-29-05		R
4* (1280)	D1	12X .25-20 UNC Ø.5 X 82° INCL. CHAMFER		THREAD PLUG GA	QA		A-517 VISUAL	ACCEPT	339-E.R 09-29-05		A
5* (1290)	H8	88.39 ± .010		CMM	QA		00064	88.39	339-E.R 09-29-05		A
5* (1300)	H7	86.42 ± .010	OK	CMM	QA		00064	86.40	339-E.R 09-29-05		R
5* (1310)	H6	59.08 ± .010	OK	CMM	QA		00064	59.06	339-E.R 09-29-05		A
5* (1320)	H5	28.71 ± .010	OK	CMM	QA		00064	28.69	339-E.R 09-29-05		R
5* (1330)	G5	32.42 ± .010		CMM	QA		00064	32.41	339-F.R 09-29-05		A

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18315

Page: 1
Date: 10/03/05
User ID: BOWLINK

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-116 Revision: 6

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: THE FOLLOWING INSPECTION STEPS PER MTM SUBMITTED IDC REPORT DID NOT HAVE
SUPPORTING DIMENSIONAL DATA FROM THE CMM:

510, 520, 530, 540, 620, 630, 640, 670, 690, 700, 710, 720, 730, 740, 900, 910, 940, 950,

ALSO ONE OF THE FLANGE FACES DID NOT HAVE THE 2" X 2" GRID POINTS IN THE IGES FILE AS
REQUIRED BY THE PRODUCT SPECIFICATION.

Proposed Disposition:

SUBMIT TO CUSTOMER CONTINUE MANUFACTURING.

Customer Disposition: Use As Is Rework Repair Scrap Replace

MTM is to take corrective actions to provide all supporting data from the CMM on subsequent winding forms. To address the situation in the flanges which resulted in inadequate dimensional information, Rev. 10 of NCSX-CSPEC-141-03 has been revised as indicated below:

4.2.5 Verification of Dimensions and Tolerances

All cast surfaces, machined surfaces and features such as holes, ports, supports, etc. shall be dimensionally checked to assure compliance with Section 3.2.2. Cast surfaces shall be checked with measurements taken to approximate 4" x 4" grid; machined surfaces shall be checked with measurements taken to approximate a 2" x 2" grid; features such as holes, ports, supports, etc. shall be verified per standard machine shop practices. On the winding tee flange, where a 2" x 2" grid would result in a single line of measurements, a minimum of 2 readings (two lines of measurements) shall be recorded.

Phil
Heitzenroeder

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C = US, O
= PPPL, OU = Mech. Eng. Division
Reason: I agree to 'specified' portions of
this document
Date: 2005.11.28 20:11:23 -05'00'

Brad Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US,
o=ORNL, ou=FED,
email=nelsonbe@ornl.gov
Date: 2005.11.29 08:22:00 -05'00'

Major Tool Implemented By: Michael

Title: CF ENGINEER Date: 1/16/2006

c:\mtp\Maxx14.sp

Major Tool and Machine, Inc. 1458 East 19th Street, Indianapolis, IN 46218-4289 Tel: 317-636-6433 Fax: 317-634-9420

PPPL NONCONFORMANCE REPORT NO: 3617 **Open Date 10/10/05**

Status	9 - Closed NCR	Trend	01-Deviation From Doc/Proc
Department	NCSX	Division	NCSX Project
Source/Org	VENDOR		
Item Dwg/Part#	SE141-116,Rev 6	Procurement #	S005242-F
		Cost Center	9450 1*** 1404
RAP#	3209	Job Doc #	S005242-F
		Vendor	Energy Industries of Ohio
RAP Title	NCSX - Modular Coil Winding Forms		

HoldTag Applied

Nonconforming Condition (include requirement(s) violated):

C-1 MCWF - Web hole numbering information was extracted from drawing SE141-123 and sent to the supplier by email. It shows the #1 hole near the center of the lead block opening and the numbering increasing in the direction of the poloidal break. The stamped numbering does not follow this scheme. The first number, proceeding from the lead block openings toward the poloidal break, is 95.

Lot Size Recd 1 Sample Size Insp 1 Lot Reje... # Rejected 1

Reported By Williamson Validated By Malinowski F Validated Date 10/06/05

Disposition: Rework*__ Repair*__ Use As Is*__ Return To Vendor*__ Scrap*__ Use As Is

MTM recognized their error on this casting and will take care to insure that it's corrected on future castings. See attached MTM N/C 18588.

For rework or repair of vendor supplied equipments, fill in information below:

#Hours	_____	\$Est Labor	_____	SG&A	_____
\$Material	_____	\$Burden	_____	\$Total	_____

Distribution

Cog Heitzenroeder P
 Insp Various
 Proj. Doc Control (when closed)
 QC Files
 Malsbury J
 Boscoe J
 Chrzanowski J
 Sutton L
 Malinowski F
 Raftopoulos S
 Nelson B
 Williams M
 Reiersen W
 Lumberger J
 Tyrrell M

Disposition By	<u>Heitzenroeder P</u>	Date	<u>11/18/05</u>
Supervisor's Concur	<u>Williams M</u>	Date	<u>11/18/05</u>
Eng. Dept. Head Concur	<u>Williams M</u>	Date	<u>11/18/05</u>
WCO/Other	<u>N/A</u>	Date	_____

PQA/QC Mgr Dispos Concur	<u>Malinowski F</u>	Date	<u>11/21/05</u>
QC Field Verification By	<u>Phelps C</u>	Date	<u>11/23/05</u>

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: SE141-116 / MODULAR COIL WINDING FORM TYPE
Drawing ID: SE141-103 Revision: 2
Links: 1-Type:W: 65707/1.0 Sub: 1 Op: 130

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: KEVIN BOWLING
E-Mail: kBowling@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

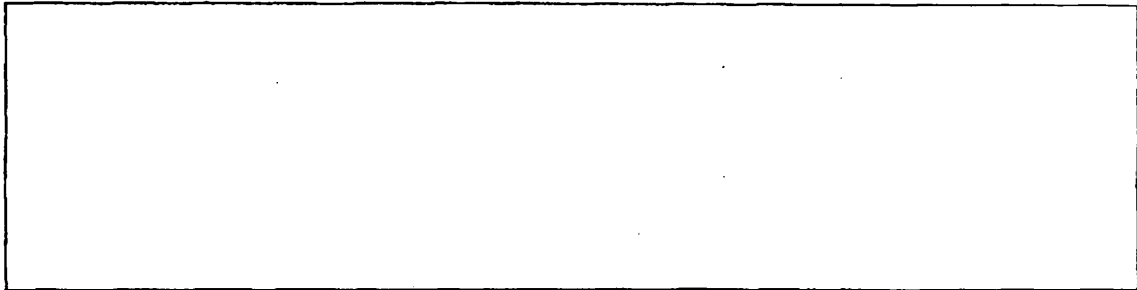
Problem: "T" HOLE NUMBERING WAS INCORRECTLY STAMPED ON THE PART. THE NUMBERING SCHEME WENT THE WRONG DIRECTION FROM THE STARTING POINT.

Proposed Disposition:

CUSTOMER RE-STAMPED THE PART WITH THE CORRECT HOLE NUMBERING SCHEME.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace



Technical Contact Approval: _____

Title: _____ Date: _____

Buyer Approval: _____

Title: _____ Date: _____

Major Tool Implemented By: Mike [Signature]

Title: CST. ENGINEER Date: 1/16/2006

Root Cause 1: 809-PROCESS INSTRUCTION

Resource: WHITE TEAM, ENGINEERING

Equipment:

Description: SKETCH FROM CUSTOMER FOR HOLE NUMBERING SHOWED THE HOLE NUMBERING STARTING FROM THE CENTER OF THE LEADBLOCK OPENINGS AND PROGRESSING TOWARD THE POLOIDAL BREAK. THE SKETCH WAS MIS-READ AND THE HOLE NUMBERING WAS ACTUALLY PERFORMED IN THE WRONG DIRECTION.

Corr Actn: 1:

Action: 11/09/05 By: 861-K.BOWLING

Description: CREATE AN MTM DRAWING DETAILING THE MARKING WITH MORE ILLUSTRATION TO ELIMINATE CONFUSION.

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: ER316MNNF_093_GTAW / WELD WIRE,GTAW .093 DI
Drawing ID: Revision:

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: MIKE GRIFFITH
E-Mail: mGriffith@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: NCSX-CSPEC-141-03-10 section 3.1.1.2 table 3-4 requires Elongation percentage to be a minimum of 32% at 77K.
Actual test results for elongation are 27%.

Proposed Disposition:

Major Tool proposes that the elongation percentage be accepted as is and the specification be revised to include this elongation percentage.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

NCSX-CSPEC-141-03-10, Sect. 3.1.1.2, Table 3-4 was revised; the min. elongation at 77 K is now specified to be 25%. This is still adequate ductility.

Tech. Rep. Approval

Phil
Heitzenroeder

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C = US,
O = PPPL, OU = Mech. Eng. Division
Reason: I agree to 'specified' portions
of this document
Date: 2005.12.15 13:00:26 -05'00'

RLM Approval:

Brad
Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US,
o=ORNL, ou=FED,
email=nelsonbe@ornl.gov
Date: 2005.12.15 17:01:45
-05'00'

Major Tool Implemented By: _____

Title: CST ENG INSP

Date: 1/16/2006

Major Tool & Machine, Inc.
1458 East 19th Street
Indianapolis, IN 46218-4289

MTM N/C: 18831

Page: 1
Date: 12/09/05
User ID: GRIFFITH

Customer: ENERGY INDUSTRIES OF OHIO

Contact: NANCY HORTON
E-Mail: NKHFlowen@aol.com

Telephone: 216-496-2314
Fax: 216-328-2001

Part: ER316MNNF_093_GTAW / WELD WIRE,GTAW .093 DI
Drawing ID: Revision:

Customer P.O.: S005242-F/Ln:1
Serial No./Qty: C1

Reported By: MIKE GRIFFITH
E-Mail: mGriffith@MajorTool.com

Telephone: 317-636-6433
Fax: 317-634-9420

Problem: Actual results for the room temperature Tensile Test were not supplied on the material test report.

Proposed Disposition:

Metrode has supplied conforming test results from a previously tested batch of weld wire. Major Tool is proposing that these results be used for acceptance as they are representative of the actual wire used by Major Tool.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

MTM has the chemistry certification for this batch. Since it is in conformance, the test results from the previously tested batch will be applicable to this batch.

NCSX will revise the spec with Rev. 11 to accept "typical" test results of weld wire that has certified chemistry.

Major Tool Implemented By: 

Title: CFT ENGINEER Date: 1/2/06

Tech. Rep. Approval:

Phil
Heitzenroeder

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C =
US, O = PPPL, OU = Mech. Eng.
Division
Reason: I agree to 'specified' portions
of this document
Date: 2006.01.09 17:07:36 -0500'

RLM Approval:

Brad
Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US,
o=ORNL, ou=FED,
email=nelsonbe@ornl.gov
Date: 2006.01.10 15:55:50
-0500'

EASTWOOD MANUFACTURING
CERTIFICATION OF COMPLIANCE

CUSTOMER : MAJOR TOOL AND MACHINE
ORDER # : P05-01160

DATE : 5-16-05
OUR NUMBER 32984

WE CERTIFY THAT THE MATERIALS SUPPLIED ON YOUR ORDER
LISTED ABOVE COMPLIES WITH THE REQUIREMENTS OF YOUR ORDER
AND OF THE SPECIFICATIONS LISTED BELOW

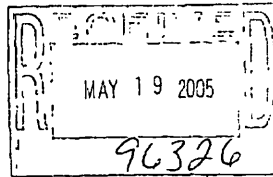
DESCRIPTION .

Lot No. 32984-1	28 PIECES	Part . DS141-036 ASTM A286 Silver plated Per AMS2410	Heat No., 8969595	1 7/16 Round, machined to size Heat Treat. 36691 Silver plate, IMF 00132563 Post plate bake, SEI 37905 Tensile test. WH 05-0420-01
--------------------	-----------	--	-------------------	--

TENSILE KSI	YIELD KSI	ELONGATION	REDUCTION	HARDNESS
150	120	14	35	
PASS	PASS	PASS	PASS	PASS



DALE STARK
EASTWOOD MANUFACTURING



1-4
B-1

MTM
09 5/19/05

studs



401 ROSE AVE S E
MASSILLON, OH 44646

FAX 330-837-7017

CERTIFICATE OF TESTS REPUBLIC ENGINEERED PRODUCTS

JANUARY 26, 2005
PAGE: 1 OF 3

PURCHASE ORDER: 42904-3
PART NUMBER : S4 47670
ORDER NUMBER: 12-52585-06 821
HEAT : 8969595
CHARGE ADDRESS

PURCHASE ORDER DATE: 05/24/04
ACCOUNT NUMBER : 27759001
SCHEDULE : 58828

5/19/05

FRY STEEL COMPANY
BUNNIE ISAKA
13325 MOLETTE ST
SANTA FE SPRINGS CA 90670

FRY STEEL COMPANY
BUNNIE ISAKA
C/O CMI
4201 W 36TH ST
CHICAGO IL 60623

MATERIAL DESCRIPTION

COLD FINISHED STEEL BARS ALLOY DOUGLAS SPEC DMS-1555H GRADE B DTD 07/02/91 EXC
MARK & PARA 3.4 OIL TEMP & 3.5 BORING SPEC BMS 7-28G ASTM A 331-95 ASTM A
108-03 LEVEL 1 MIL S 5000E COND E-4 EXC MARK AMS 6415R EXC BHN AMS 6409B AMS
2310E AMS 2301J AMS 2304A AMS 6484B AMS -S- 5000 ISB 3/99 COND E-4 EXC MARK &
PARA 4.3 EF-AISI-E-4340 AIRCRAFT Q DBL TRANSV MECH PROP COLD DRAWN NOR
M & SUBCRITICAL ANN BEFORE CD REST CHEM

SIZE: RDS 1.4375 X 11 /13FT

LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR	MO	AL
0.42	00.75	.007	.002	0.22	0.10	01.70	00.84	0.21	00.028
V	N	CB	SN						
0.005	.0064	0.002	.007						

SEMI-FINISH RESULTS

AUSTENITIC GRAIN SIZE

AUST GRAIN SZ 7.

DEVELOPED TENS TRANS
NORMALIZE
DEG F
1650.

ASTM E8
AUSTENITIZE
DEG F
1550.

ASTM A370
QUENCHANT
OIL

TEMPER 1
DEG F
900.

TEMP 1 TIME
HOURS
2.0

TENSILE

REDUCTION AREA

PCE	H	10102	185010.
PCE	H	10302	180280.
PCE	T	10503	185540.
PCE	H	10102	180570.
PCE	H	10302	193790.
PCE	T	10504	185240.

PSI	PERCENT
185010.	45.5
180280.	55.6
185540.	55.7
180570.	53.4
193790.	53.0
185240.	46.3

DEVELOPED TRANS TENSILE
NORMALIZE
DEG F
1650.

ASTM E8
AUSTENITIZE
DEG F
1500.

ASTM A370
QUENCHANT
OIL

TEMPER 1
DEG F
475.

TEMPER 2/SR
DEG F
475.

TEMP 1 TIME
HOURS
2.0

TEMP 2 TIME
HOURS
2.0

TENSILE

YIELD (.2%)

REDUCTION AREA ELONGATION

PCE	H	10102	262320.
PCE	H	10302	264250.
PCE	T	10503	262170.
PCE	H	10102	261840.
PCE	H	10302	261260.
PCE	T	10504	261050.

PSI	PERCENT
262320.	47.0
264250.	44.6
262170.	44.6
261840.	43.8
261260.	49.3
261050.	48.2

PERCENT	PERCENT
47.0	10.4
44.6	11.4
44.6	14.3
43.8	13.4
49.3	11.4
48.2	12.9

32984

19/05

AMAN BHATIA
GEN MGR COLD FINISH OPERATIONS

Amn Bhatia

MTM 09 5/19/05

Republic
ENGINEERED PRODUCTS
401 ROSE AVE S E
MARIETTA, OH 44646
FAX 330-837-7017
JANUARY 26, 2005
PAGE: 2 OF 3

PURCHASE ORDER: 42904-3
PART NUMBER: S# 47670
ORDER NUMBER: 12-52585-06 821
HEAT : 8969595

SEMI-FINISH RESULTS (CONTINUED)
ASTM E8
ASTM E10
ASTM E107
ASTM E1077
ASTM E1077

TEMPER 2/SR 1650. DEG F
TEMP 1 TIME 1500. DEG F
TEMP 2 TIME 475. DEG F
OIL
AUSTENITIZE
QUENCHANT
YIELD (2%)
PSI
REDUCTION AREA
ELONGATION
PERCENT

TENSILE
TENSILE HT TRTD
NORMALIZE
ASTM E8
ASTM E10
ASTM E107
ASTM E1077

MACROTECH SRC
SURFACE 1. RANDON 1. CENTER 1.
MIL STD 430
MAG PARTICLE 2301
MAG PARTICLE 2304
AVG
AVG FREQ 0.00
AVG FREQ 0.00
FINISH SIZE RESULTS
SCHEDULE: 58828
SCHEDULE: 58828
TOTAL DEPTH
INCHES
DECARBURIZATION
HBM SURFACE (LAB)
HBM 217
HBM 217
HBM 217
HBM 217
PCE 05
PCE 04
PCE 03
PCE 02
PCE 01
HBM SURFACE (LAB)
HBM 217
HBM 217
HBM 217
HBM 217
MATERIAL SOURCES
RED. RATIO
TO 1.
73.6
PCE 01
DEG F
1625.

NOTES
THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.
CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, ASTM E1019, AND ASTM E1085.

ANAN BHATTIA
GEN MGR COOLD FINISH OPERATIONS

09
MM

5/19/05

Amn Bhattia

h28623

From: Eastwood Manufacturing 261-447-0088 To: MAJOR TOOL & MACHINE

Date: 5/17/2005 Time: 1:44:22 PM

Page 5 of 22



CERTIFICATE OF TESTS

401 ROSE AVE S B MASSILLON, OH 44646 FAX 330-837-7017 JANUARY 26, 2005

PAGE: 3 OF 3

PURCHASE ORDER DATE: 05/24/04

ACCOUNT NUMBER: 27759001

SCHEDULE: 58828-

NOTES (CONTINUED)

NO WELDING OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENT OR ENTRIES ON

CHAPTER 47.

I HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED

AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING

SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND

TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

WHEN EVALUATED, MACRO ETCHES WERE VISUALLY RATED ON SAMPLES ETCHED

USING HYDROCHLORIC ACID AT A TEMPERATURE 170 DEGREES F)

(+/- 10 DEGREES F)

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE

TESTING SPECIFICATIONS.

MFG IN THE U.S.A.

ALISON J. BLONDHEIM

NOTARY PUBLIC, STATE OF OHIO

MY COMMISSION EXPIRES MARCH 10, 2009

END OF DATA

CC

ATTENTION BUNNIE ISAKA

ATTENTION BUNNIE ISAKA

562-802-7481

END OF DATA

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ATTENTION BUNNIE ISAKA

562-802-7481

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562-802-7481

END OF DATA

CC

ATTENTION BUNNIE ISAKA

ATTENTION BUNNIE ISAKA

562-802-7481

END OF DATA

AMAN BHATIA GEN MGR COLD FINISH OPERATIONS

Amman Bhatia

69 MIN

5/14/05

FEB 14 2005

RAY STEEL CO. CERTIFIES THAT THIS IS A TRUE COPY OF THE ORIGINAL MILL TEST REPORT NOW ON FILE. RECEIVED AND INSPECTED

Amman Bhatia

32984

Tensile Test Report

Company: Eastwood Mfg. Date: 4/22/2005
 Lab Report #: 05-0420-01
 Attention: Dale Stark P.O. #: 32984
 Identification: AISI 4340
 Procedure: _____ 1-3/8" O.D.
 Process: _____
 Filter: _____ Heat#8989585
 Qualification: _____
 Welder: _____

TENSILE TEST

Lab ID	Dimensions	Area	Yield Lbs	Ultimate Load Lbs	Yield P.S.I.	Tensile P.S.I.
C	.504 round	.1995	31,880	34,700	159,700	174,000

Elongation	Reduction of Area	Fracture	Comments
18.2%	52.3%	Ductile	

Tests performed in accordance with ASTM A370, E8, and WH Laboratories, LLC Quality Assurance Manual.
 2% Offset Yield - Gauge Length 2.000" for .800", and 1.400" for .350" tensile per ASTM A370.
 Test specimens retained for one (1) week maximum; unused material is retained for one (1) month.

Approved by: Robert French
 Robert French

MTM 09 5/19/05

32984

32984

MAY-13-2005 12:55 FROM:

TO: 281.447.0098

P: 2/3

SEI HEAT TREAT

PO BOX 14339 HOUSTON, TX 77112
PHONE (713) 694-3892 FAX (713) 694-0891

CUSTOMER: EASTWOOD MANUFACTURING	CERTIFICATION DATE: MAY 11, 2005
CERTIFICATION/SO NUMBER: 37905	CUSTOMER ORDER NUMBER: 32984

MATERIAL: 4340	NUMBER OF PIECES: 28
DESCRIPTION: 1-3/8" X 8" STUDS SILVER PLATED	PART NUMBER(S): N/A
SPECIFICATION NUMBER: EASTWOOD MANUFACTURING	REFERENCE: N/A

HEAT TREAT PROCESS	TIME AT HEAT	COOLANT
<i>BAKE</i>	<i>950'</i>	<i>45 min</i>
		<i>AIR</i>

HARDNESS TEST:	NUMBER OF PIECES TESTED:

WE HEREBY CERTIFY THAT THE SERVICE FURNISHED ON THE ABOVE PURCHASE ORDER IS PROVIDED IN ACCORDANCE WITH OUR QUALITY CONTROL MANUAL, REVISION B, DATED JANUARY 21, 2001	QUALITY CONTROL: <i>[Signature]</i>
---	---

32984

32984

Eastwood Manufacturing
8825 Breen Rd.
Houston, Texas 77088
(281) 447-0081 fax (281) 447-0098

P.O. P05-01160

**INSPECTION DATA
CHECK LIST
FOR
Major Tool & Machine Inc.**

Part Number (Detail / Sub-Assy / Assy) DS141-036	Rev.	Page 1 1
Part Name (Detail / Sub-Assy / Assy) Stud, 1.375-6 2A x .9 lg		
MATERIAL:	WORK ORDER # 32984	Quantity 126

P.O. - DRAWING - SPECIFICATION DESCRIPTION			INSPECTION INSTRUCTIONS			INSPECTION RESULTS		INSPECTED BY		
SHT	ZONE	CHARACTERISTIC	GAGE/EQUIP.	BY	SAMPLE	DATA, CAR NO., REMARKS		MFG	QA	DATE
		Length 9.00 $\begin{matrix} +.25 \\ -.00 \end{matrix}$	Caliper #201	ns	25	9.025 - 9.017			NS	5-5-05
		4.50	Caliper #200	ns	25	4.50			NS	5-5-05
		Pitch Dia. 1.2643 - 1.2562	Mic 1-2	ns	25	1.261 - 1.257			NS	5-5-05
		Body Dia. 1.375 $\begin{matrix} +0000 \\ -.0002 \end{matrix}$	#207 Mic 1-2	ns	25	1.3748 - 1.3749			NS	5-5-05
		Thread SO - NOCO	Gage #G017 #G017	ns	25	ok			NS	5-5-05

COMMENTS: RECORD ALL DIMENSIONS THAT CARRIES A TOLERANCE OF (+/-) .25mm OR LESS

MTM 09 5/19/05

From: Eastwood Manufacturing 281-447-0098 To: MAJOR TOOL & MACHINE

Date: 5/17/2005 Time: 1:48:22 PM

mc108260.tif (1670x2180x2.tif) [7]

Page 8 of 22

INDUSTRIAL METAL FINISHING

CERTIFICATE OF COMPLIANCE

TO: EASTWOOD MFG. 5/86
P.O. BOX 41447
HOUSTON, TX 77241

THIS IS TO CERTIFY THAT THE METAL FINISHING SERVICE RENDERED ON ITEM(S)

126 EA. - 1.375 X 9 DE STUDS
252 EA. - 2.75 OD WASHERS
252 EA. - 1.375 12PT NUTS

ON PURCHASE ORDER 12984 LISTED ON OUR INVOICE #00132583

MEETS OR EXCEEDS THE REQUIREMENTS OF SPECIFICATION NUMBER

CERT: SILVER PLATE PER AMS 2410
NO BAKE REQUIRED

QUALITY PROGRAM DATED: 05/01/93 REVISION: 1 DATED: 04/01/94

Tair McPherson
NAME:

QC Manager 5/10/05
TITLE DATE

12984

MTM 05
5/19/05

EASTWOOD MANUFACTURING
CERTIFICATION OF COMPLIANCE

CUSTOMER : MAJOR TOOL AND MACHINE
ORDER # : P05-01168

DATE : 5-16-05
OUR NUMBER 32982

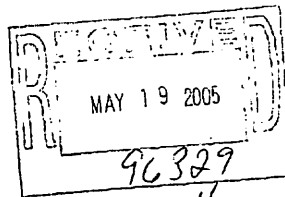
WE CERTIFY THAT THE MATERIALS SUPPLIED ON YOUR ORDER
LISTED ABOVE COMPLIES WITH THE REQUIREMENTS OF YOUR ORDER
AND OF THE SPECIFICATIONS LISTED BELOW

DESCRIPTION :

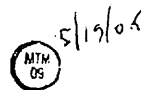
Lot No.:	Part :	Heat No.:	1 5/8 Round, forged and machined to size
32982-1	56 PIECES DS141-060	8977349	Heat Treat: 36891
	ASTM A286		Silver plate: IMF 00132583
	Silver plated		Post plate bake: none
	Per AMS2410		Tensile test: WH 05-0426-20

TENSILE KSI	YIELD KSI	ELONGATION	REDUCTION	HARDNESS
150	120	14	35	
PASS	PASS	PASS	PASS	PASS

DALE STARK
EASTWOOD MANUFACTURING



1-4
B.7



washers nuts



GARY COLD FINISHED BAR PLANTS
PHONE: 219-886-8129 FAX: 219-886-8123

CERTIFICATE OF TESTS REPUBLIC ENGINEERED PRODUCTS

SEPTEMBER 27, 2004
PAGE: 2 OF 2

PURCHASE ORDER: 42714-5
PART NUMBER : 54-51250
ORDER NUMBER: 12-51689-04 823
HEAT : 8977349

PURCHASE ORDER DATE: 03/11/04
ACCOUNT NUMBER : 27759001
SCHEDULE : 54199-

NOTES (CONTINUED)

I HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATION.

MFG IN THE U.S.A.

EVELYN GREENE
NOTARY PUBLIC, STATE OF INDIANA
MY COMMISSION EXPIRES OCTOBER 10, 2009

END OF DATA
FAX BY FAX PC 1 COPY ATTENTION BUNNIE ISAKA
MAIL SOLD TO 1 COPY ATTENTION BUNNIE ISAKA
FILE 1 COPY
WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA

END OF DATA
562-802-7481

PHY & TEL CO CERTIFIES THAT THIS IS A TRUE COPY OF THE ORIGINAL MILL TEST REPORT NOW ON FILE
RE-TESTED AND UNACCEPTED

OCT 05 2004

BUNNIE ISAKA
BUNNIE ISAKA - O.C. SUPERVISOR

AMAN BHATIA
GEN MGR COLD FINISH OPERATIONS

Aman Bhatia



5/18/05

04/27/2005 07:39

7138958985

WH LABORATORIES

PAGE 02

Tensile Test Report

Company: Eastwood Mfg. Date: 4/27/2005
 Attention: Dale Stark Lab Report #: 05-0428-20
 Identification: AISI 4140 P.O. #: 32882
 Procedure: _____ 1-5/8" Diameter Bar
 Process: _____
 Filler: _____
 Qualification: _____
 Welder: _____

TENSILE TEST

Lab ID	Dimensions	Area	Yield Lbs	Ultimate Load Lbs	Yield P.S.I.	Tensile P.S.I.
E	.252 round	.0489	7,140	8,000	143,100	180,400

Elongation	Reduction of Area	Fracture	Comments
18.8%	61.2%	Ductile	

Tests performed in accordance with ASTM A370, E8, and WH Laboratories, LLC Quality Assurance Manual.
 2% Offset Yield - Gage Length 2.000" for .500", and 1.400" for .380" tensile per ASTM A370.
 Test specimens retained for one (1) week maximum; unused material is retained for one (1) month.

Approved by: Robert French
 Robert French

5/19/05


Eastwood Manufacturing
 9825 Green Rd.
 Houston, Texas 77086
 (281) 447-0081 fax (281) 447-0098

P05-01161

**INSPECTION DATA
 CHECK LIST
 FOR
 Major Tool & Machine Inc.**

Part Number (Detail / Sub-Assy / Assy)	Rev.	Page of
DS141-060		1 1
Part Name (Detail / Sub-Assy / Assy)		
Nut, 12 pt 1.375-6 UNC-2B		
MATERIAL:	WORK ORDER #	Quantity
	32982	252

P.O. #	SHT	LINE	DRAWING - SPECIFICATION DESCRIPTION	INSPECTION INSTRUCTIONS			INSPECTION RESULTS	INSPECTED BY		
				GAGE/EQUIP.	BY	SAMPLE		DATA, CAR NO, REMARKS	MFG	QA
			1.375 Maximum	Caliper #200	ns	25	1.375 - 1.370		NS	5-5-05
			2.216 Maximum	Caliper #200	ns	25	2.210 - 2.205		NS	5-5-05
			1.00	Caliper #200	ns	25	1.010 - 1.000		NS	5-5-05
			1.225 Minor Dia. 1.195	Caliper #200	ns	25	1.210 - 1.205		NS	5-5-05
			Thread GO - NOGO	gage 243 244	ns	25	ok		NS	5-5-05
			Across Flat 1.62	Caliper #200	ns	25	1.62		NS	5-5-05

COMMENT: RECORD ALL DIMENSIONS THAT CARRIES A TOLERANCE OF (+/-).25mm OR LESS

MIM 09 5/15/05

From: Eastwood Manufacturing 281-447-0088 To: MAJOR TOOL & MACHINE
 mtc108258.TIF (1684x2155x2.tif) [5]
 Date: 5/17/2005 Time: 1:48:22 PM
 Page: 13 of 22

INDUSTRIAL METAL FINISHING

CERTIFICATE OF COMPLIANCE

TO: EASTWOOD MFG. 5/86
P.O. BOX 41447
HOUSTON, TX 77241

THIS IS TO CERTIFY THAT THE METAL FINISHING SERVICE RENDERED ON ITEM(S)

126 EA. - 1.375 X 9 DE STUDS
252 EA. - 2.75 OD WASHERS
252 EA. - 1.375 12PT NUTS

ON PURCHASE ORDER 12984 LISTED ON OUR INVOICE #00132583

MEETS OR EXCEEDS THE REQUIREMENTS OF SPECIFICATION NUMBER

CERT: SILVER PLATE PER AMS 2410
NO BAKE REQUIRED

QUALITY PROGRAM DATED: 05/01/93 REVISION: 1 DATED: 04/01/94

Tari McPherson
NAME:

QC Manager 5/10/05
TITLE DATE

12984

5/19/05
MIM
05

EASTWOOD MANUFACTURING
CERTIFICATION OF COMPLIANCE

CUSTOMER : MAJOR TOOL AND MACHINE
ORDER # : P05-01162

DATE : 5-16-05
OUR NUMBER 32983

WE CERTIFY THAT THE MATERIALS SUPPLIED ON YOUR ORDER
LISTED ABOVE COMPLIES WITH THE REQUIREMENTS OF YOUR ORDER
AND OF THE SPECIFICATIONS LISTED BELOW

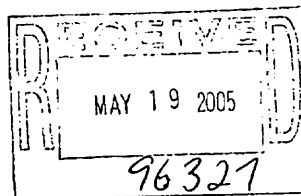
DESCRIPTION :

Lot No.:		Part :			
32983-1	56 PIECES	DS141-079	Heat No.: 8990135	2 3/4 Round, machined to size	
		ASTM A286		Heat Treat: 36891	
		Silver plated		Silver plate: IMF 00132583	
		Per AMS2411		Post plate bake: SEI 37904	
				Tensile test: WH 05-0420-01	

TENSILE KSI	YIELD KSI	ELONGATION	REDUCTION	HARDNESS
150	120	14	35	
PASS	PASS	PASS	PASS	PASS



DALE STARK
EASTWOOD MANUFACTURING



1-4
B.A

washers

5/19/05


mcl08259.tif (1620x2176x2 tiff) [2]

401 ROSE AVE S E
MARIETTA, OH 44646
FAX 330-837-7017
REPUBLIC ENGINEERED PRODUCTS
FEBRUARY 14, 2005
PAGE: 1 OF 3



PURCHASE ORDER: 43004-8
PART NUMBER : 5# 48960
ORDER NUMBER: 12-52806-08 821
HEAT : 8990135
CHARGE ADDRESS ***** SHIP TO *****
PURCHASER ORDER DATE: 07/13/04
ACCOUNT NUMBER : 27759001
SCHEDULE : 60703-

PRY STEEL COMPANY
BUNNIE ISAKA
1325 MOLETTE ST
SANTA FE SPRINGS CA 90670
PRY STEEL COMPANY
C/O CMI
4201 W 36TH ST
CHICAGO IL 60623

MATERIAL DESCRIPTION
COLD FINISHED STEEL BARS ALLOY DOUGLAS SPEC BMS-1555H GRADE B DTD 07/02/91 EXC
MARK & PARA 3.4 OIL TEMP & 3.5 BORING SPEC BMS 7-28G LTV VOUCHER AERO SPEC CVA
1-585G & AMD 1 EXC RED/AREA ASTM A 331-95 ASTM A 108-03 LEVEL 1 MIL B 5000R
COND B-3 EXC MARK AMS 6415R AMS 6409B AMS 2101J AMS 2304A AMS 2304A AMS 6484B
AMS - 8 - 5000 ISSUE DTD 3/99 COND E3 EXC MARK EF-AISI-E-4340 AIRCR
AFT 0 DEL TRANSV MECH PROP ROUGH TURNED NORM & SUBCRITICAL ANN BRFORE TURN S
STRAIGHT REST CHEM FREE FROM DECARB
SIZE: RDS 2.7500/2.7734 X 11 /13FT
LADLE CHEMISTRY %

	C	MN	P	S	SI	CU	NI	CR	MO	AL
0.42	00.73	0.07	0.04	0.26	0.15	01.74	00.86	0.20	00.034	
0.003	0.0057	0.002	0.010							
AUSTENITIC GRAIN SIZE										
AUST GRAIN SZ 7										

DEVELOPED TENS TRANS
NORMALIZE
ASTM E8
AUSTENITIZE
QUENCHANT
TEMPER 1
DEG F
OIL
900

TENSILE
PSI
REDUCTION AREA
PERCENT
42.6
50.8
49.5
49.0
48.4
51.2

DEVELOPED TRANS TENSILE
NORMALIZE
ASTM E8
AUSTENITIZE
QUENCHANT
TEMPER 1
DEG F
OIL
475

TENSILE
PSI
REDUCTION AREA
PERCENT
187750
190780
189630
20503
20302
20102

TEMPER 2/SR
DEG F
1650
1550
TEMPER 1 TIME
HOURS
2.0

YIELD (.2%)
PSI
REDUCTION AREA
PERCENT
229500
228430
227270
228000
228870
220000

GEN MOB COLD FINISH OPERATIONS
ANAN BHATIA
5/19/05

32984

Republic
 ENGINEERED PRODUCTS
 401 ROSS AVE B E
 MASSILLON, OH 44646
 FAX 330-837-7017

CERTIFICATE OF TESTS
 REPUBLIC ENGINEERED PRODUCTS
 FEBRUARY 14, 2005
 PAGE: 2 OF 3

PURCHASE ORDER: 43004-8
 PART NUMBER: 9# 48960
 ORDER NUMBER: 12-52806-08 821
 HEAT: 8990135
 SEMI-FINISH RESULTS (CONTINUED)

DEVELOPED TRANS TENSILE
 ASTM E8
 ASTM A370
 QUENCHANT
 TEMPER 1
 DEG F
 OIL
 475.

TEMPER 2/SR
 DEG F
 1650.
 1500.
 HOURS
 2.0
 2.0

TENSILE
 YIELD (.2%)
 PSI
 263440.
 262720.
 263330.
 263070.
 263050.
 263070.
 265430.
 265620.
 260030.
 40302
 40503
 262820.

LONGITON
 PERCENT
 23.3
 23.3
 10.9
 37.1
 10.0
 3.0
 10.6
 11.5

REDUCTION AREA
 PERCENT
 23.3
 23.3
 10.9
 37.1
 10.0
 3.0
 10.6
 11.5

JOMINY STD
 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
 SAE J406
 ASTM A255
 MIL STD 430

MACROETCH SRC
 SURFACE 1. RANDOM 1. CENTER 1.
 AVG
 MAG PARTICLE 2301
 AVG
 0.00
 MAG PARTICLE 2304
 AVG
 0.00
 FINISH SIZE RESULTS
 SCHEDULE: 60703
 ASTM A370

HEAT TREAT (LAB)
 SURFACE 197
 SURFACE 192
 SURFACE 192
 SURFACE 192
 SURFACE 192
 SURFACE 197
 HEM HT TRTD (LAB)
 SURFACE 197
 SURFACE 192
 SURFACE 192
 SURFACE 192
 SURFACE 192
 SURFACE 197
 MATERIAL SOURCES
 TO 1. RATIO
 20.9
 TENSILE HT TRTD
 NORMALIZE
 DEG F
 1625.
 PCE 01

NOTES
 DECARB NIL
 THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.
 CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, ASTM E1019, AND ASTM E1085.
 NO WELDING OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.
 RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENT OR ENTRIES ON CHAPTER 47.
 THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUES TITLE 18 GEN MGR COLD FINISH OPERATIONS

AMMAN BHATTIA
 GEN MGR COLD FINISH OPERATIONS

5/19/05
 69
 MIM

626223



401 ROSE AVE S E
MASSILLON, OH 44646

FAX 330-837-7017

CERTIFICATE OF TESTS REPUBLIC ENGINEERED PRODUCTS

FEBRUARY 14, 2005
PAGE: 3 OF 3

PURCHASE ORDER: 43004-8	PURCHASE ORDER DATE: 07/13/04
PART NUMBER : S# 48960	ACCOUNT NUMBER . . . : 27759001
ORDER NUMBER: 12-52806-08 821	SCHEDULE : 60703-
HEAT : 8990135	

NOTES (CONTINUED)

I HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

WHEN EVALUATED, MACRO ETCHES WERE VISUALLY RATED ON SAMPLES ETCHED USING HYDROCHLORIC ACID AT A TEMPERATURE 170 DEGREES (F) (+/- 10 DEGREES F)

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

MPG IN THE U.S.A.

ALISON J. BLONDHEIM
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES MARCH 10, 2009

END OF DATA	CC	END OF DATA
FAX SHIP TO 1 COPY	ATTENTION BUNNIE ISAKA	562-802-7481
MAIL SOLD TO 1 COPY	ATTENTION BUNNIE ISAKA	
FILE 1 COPY		
WITH SHIPMENT 1 COPY		

SHIPPING AREA:

32984

FRY STEEL CO. CERTIFIES THAT THIS IS
A TRUE COPY OF THE ORIGINAL MILL TEST
REPORT NOW ON FILE.
RECEIVED AND INSPECTED

FEB 21 2005

Bunnie Isaka
BUNNIE ISAKA

AMAN BHATIA
GEN MGR COLD FINISH OPERATIONS

Aman Bhatia



04/22/2005 12:14

7138958986

WH LABORATORIES

PAGE 01

Tensile Test Report

Company: Eastwood Mfg. Date: 4/22/2005
 Attention: Dale Stark Lab Report #: 05-0420-01
 Identification: AISI 4340 P.O. #: 32984
 Procedure: 2-3/4" O.D. Washer
 Process: _____
 Filler: Heat#8890135
 Qualification: _____
 Welder: _____


TENSILE TEST

Lab ID	Dimenalsions	Area	Yield Lbs	Ultimate Load Lbs	Yield P.S.I.	Tensile P.S.I.
C	.245 round	.0471	7,660	8,770	166,700	186,000

Elongation	Reduction of Area	Fracture	Comments
14.0%	41.7%	Ductile	Transverse

Tests performed in accordance with ASTM A370, E8, and WH Laboratories, LLC Quality Assurance Manual.
 2% Offset Yield - Gage Length 2.000" for .300", and 1.400" for .350" tensile per ASTM A370.
 Test specimens retained for one (1) week maximum; unused material is retained for one (1) month.

Approved by: Robert French
 Robert French

5/19/05


32984

32984

From: Eastwood Manufacturing 281-447-0698 To: MAJOR TOOL & MACHINE

Date: 5/17/2005 Time: 1:48:22 PM

Page 19 of 22

MAY-13-2005 12:53 FROM:

TO: 281447205E

P: 1/2

SEI HEAT TREAT

PO BOX 16339 HOUSTON, TX 77222
PHONE (713) 694-3892 FAX (713) 694-0891

CUSTOMER: EASTWOOD MANUFACTURING	CERTIFICATION DATE: MAY 11, 2005
CERTIFICATION/SO NUMBER: 37904	CUSTOMER ORDER NUMBER: 32983

MATERIAL: 4340	NUMBER OF PIECES: 52
DESCRIPTION: 2-3/4" WASHERS SILVER PLATED	PART NUMBER(S): N/A
SPECIFICATION NUMBER: EASTWOOD MANUFACTURING	REFERENCE: N/A

HEAT TREAT PROCESS	TIME AT HEAT	COOLANT
<i>Bake</i>	<i>900°</i>	<i>45 min</i>
		<i>AIR</i>

HARDNESS TEST:	NUMBER OF PIECES TESTED:

WE HEREBY CERTIFY THAT THE SERVICE FURNISHED ON THE ABOVE PURCHASE ORDER IS PROVIDED IN ACCORDANCE WITH OUR QUALITY CONTROL MANUAL, REVISION B, DATED JANUARY 21, 2001	QUALITY CONTROL: <i>Juan</i>
---	--

5/19/05
MTM
CS

37904

32983

Eastwood Manufacturing
6825 Breen Rd.
Houston, Texas 77086
(281) 447-0081 fax (281) 447-0098

P.O. P05-01162

INSPECTION DATA
CHECK LIST
FOR
Major Tool & Machine Inc.

Part Number (Detail / Sub-Assy / Assy)	Rev.	Page of
DS141-079		1 1
Part Name (Detail / Sub-Assy / Assy)		
Flat Washer		
MATERIAL:	WORK ORDER #	Quantity
	32983	252

P.O. - DRAWING - SPECIFICATION DESCRIPTION			INSPECTION INSTRUCTIONS			INSPECTION RESULTS		INSPECTED BY		
SHT	ZONE	CHARACTERISTIC	GAGE/EQUIP.	BY	SAMPLE	DATA, CAR NO., REMARKS		MFG	QA	DATE
		O.D. 2.75 ±.05	Caliper #200	ns	25	2.745 - 2.740			NS	5-5-05
		I.D. 1.66 ±.010	Caliper #200	ns	25	1.660 - 1.655			NS	5-5-05
	TK	.500 ±.010	Caliper #200	ns	25	.505 - .498			NS	5-5-05

COMMENTS: RECORD ALL DIMENSIONS THAT CARRIES A TOLERANCE OF (+) .25mm OR LESS

(MTM) 5/15/05

From: Eastwood Manufacturing 281-447-0098 To: MAJOR TOOL & MACHINE

Date: 5/17/2005 Time: 1:45:22 PM

P. 20 of 22

mcc108259.tif (1702x2205x2.tif) [7]

MAY-17-2005 12:25 FROM:

TO: 2914470098

P: 1/1

SEI HEAT TREAT

PO BOX 16329 HOUSTON, TX 77222
PHONE (713) 699-3892 FAX (713) 694-0891

CUSTOMER: EASTWOOD MANUFACTURING	CERTIFICATION DATE: APRIL 13, 2005
CERTIFICATION/SO NUMBER: 36891	CUSTOMER ORDER NUMBER: 32984

MATERIAL: 4340	NUMBER OF PIECES: 378
DESCRIPTION: 128 PCS. 1-3/8" X 9" DE STUDS 252 PCS. 2.75" WASHERS	PART NUMBER(S): N/A
SPECIFICATION NUMBER: EASTWOOD MANUFACTURING	REFERENCE: N/A

HEAT TREAT PROCESS	TIME AT HEAT	COOLANT
<i>HARDEN</i>	<i>1575°</i>	<i>3hr</i>
<i>TEMPER</i>	<i>980°</i>	<i>4hr</i>
		<i>OIL Q</i>
		<i>AIR</i>

HARDNESS TEST: <i>37-38^R</i>	NUMBER OF PIECES TESTED: <i>10</i>
---	--

WE HEREBY CERTIFY THAT THE SERVICE FURNISHED ON THE ABOVE PURCHASE ORDER IS PROVIDED IN ACCORDANCE WITH OUR QUALITY CONTROL MANUAL, REVISION B, DATED JANUARY 21, 2001	QUALITY CONTROL: <i>Louis F. L.</i>
---	---

INDUSTRIAL METAL FINISHING

CERTIFICATE OF COMPLIANCE

TO: EASTWOOD MFG. 5/86
P.O. BOX 41447
HOUSTON, TX 77241

THIS IS TO CERTIFY THAT THE METAL FINISHING SERVICE RENDERED ON ITEM(S)

126 EA. - 1.375 X 9 DE STUDS
252 EA. - 2.75 OD WASHERS
252 EA. - 1.375 12PT NUTS

ON PURCHASE ORDER 12984 LISTED ON OUR INVOICE #00132583
MEETS OR EXCEEDS THE REQUIREMENTS OF SPECIFICATION NUMBER

CERT: SILVER PLATE PER AMS 2410
*NO BAKE REQUIRED

QUALITY PROGRAM DATED: 05/01/93 REVISION: 1 DATED: 04/01/94

NAME: *Tari McPherson*

TITLE: *QC Manager* DATE: *5/10/05*

12984

5/17/05


mc106141.tif (1652x2150x2 tiff)

03/04/05 13:36 FAX 630 634 9427
 MAJOR TOOL & MACHINE INC
 1458 E 19TH ST
 INDIANAPOLIS IN 46218
 66218

MAJOR TOOL & MACHINE INC
 1458 E 19TH ST
 INDIANAPOLIS IN 46218
 66218

YOUR PURCHASE #3
 MCMASTER-CARR SUPPLY #3
 600 COUNTY LINE ROAD
 ELMHURST IL 60126-2001
 (630)833-0300

IF THERE ARE ANY QUESTIONS ABOUT THIS
 SHIPMENT CONTACT OUR SALES DEPARTMENT
 (630)833-0300

Today's Date:
 P05-01260
 ORDER NUMBER
 66218

MCMASTER-CARR SUPPLY #3
 600 COUNTY LINE ROAD
 ELMHURST IL 60126-2001
 (630)833-0300

PAGE 1
 MCM NUMBER 6148181-01

Warehouse Location	Manufacturer Part Number	Quantity	Item Description	Your Qty	Your Order	Your Shipm This
	74765 A86	1	LOCTITE PRISM SUPER GLUE TOUGHENED,NUMBER 411,1-POUND BOTTLE,CLEAR	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE TOUGHENED,NUMBER 411,1-POUND BOTTLE,CLEAR	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE TOUGHENED,NUMBER 411,1-POUND BOTTLE,CLEAR	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1

ARTICLE 6148181-01

MAJOR TOOL & MACHINE INC

REFER TO:

Warehouse Location	Manufacturer Part Number	Quantity	Item Description	Your Qty	Your Order	Your Shipm This
	74765 A86	1	LOCTITE PRISM SUPER GLUE TOUGHENED,NUMBER 411,1-POUND BOTTLE,CLEAR	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE TOUGHENED,NUMBER 411,1-POUND BOTTLE,CLEAR	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1
	74765 A86	1	LOCTITE PRISM SUPER GLUE Balance of 1 EA expected to ship by 3/7/2005	EA	1	1

Information about the rest of your order

This is to certify that according to our records, the material furnished on this purchase order was supplied in compliance to the description listed, and as illustrated in our catalog.

Quality Control

Mary Tompkins

2

LNS: 2

PACKED: 2

CARTONS: 2

WEIGHT: 2

TAG

CCP

CYCLE

3/4/05

MAR - 4 2005

53396

11281

MCM NO. 6148181-01 04

PURCHASE ORDER P05-01260

FROM: MCMASTER-CARR 600 COUNTY LINE ROAD ELMHURST IL 60126-2001 USA

SHIP TO: MAJOR TOOL & MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218

CCP



Shipping List 072435
Customer No 101193
Sales Order Shipper

Sold to : STANDARD GRINDING & MFG CO
3721 W. CHASE AVENUE
SKOKIE, IL 60076
United States

Ship to : STANDARD GRINDING & MFG CO
3721 W. CHASE AVENUE
SKOKIE, IL 60076
United States

Ship Date	Customer PO	Sales Order	# of Boxes	Weight	Ship VIA	Bill of Lading	FOB
05/17/2005	60624	085171-00	1	0	YELLOW	072435	DE
Item	Part / Description / Details				Order Quantity	Ship Qty	
000001	39G1CNT73125NMWLF U/M SHT SO Item 4				1.00000		
	G-11-CR 48" untrimmed X 36" untrimmed Thickness: 3.125" +/- .110" PLEASE NOTE THAT THERE IS NO NEMA STANDARD FOR G-11 CR SHEET SPAULDING C OF C TO G-11 CR SHEET NO TESTING REQUIRED AT TIME OF ORDER <i>Sheet lead 3.5000</i>					1.00000	

CERTIFICATE of CONFORMANCE

WE HEREBY CERTIFY THAT THE MATERIAL SUPPLIED ON THIS ORDER WAS MADE IN ACCORDANCE WITH THE STANDARDS AND PROCESSES ESTABLISHED BY SPAULDING COMPOSITES COMPANY FOR THE REQUIREMENTS OF MATERIAL DESCRIBED ABOVE.

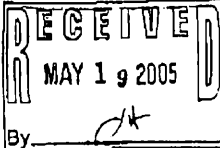

LOT # _____ DOM.
Authorized By: Mark L. Candillo Date: 05/17/2005

Spaulding
 COMPOSITES
 55 Nadeau Drive
 Rochester, NH 03867
 Ph: (603) 332-0555 Fax: (603) 332-5357
 www.spauldingcom.com

Shipping List 072434
 Customer No 101193
 Sales Order Shipper

Sold to : STANDARD GRINDING & MFG CO
 3721 W. CHASE AVENUE
 SKOKIE, IL 60076
 United States

Ship to : STANDARD GRINDING & MFG CO
 3721 W. CHASE AVENUE
 SKOKIE, IL 60076
 United States

Ship Date	Customer PO	Sales Order	# of Boxes	Weight	Ship VIA	Bill of Lading	F O B
05/17/2005	60624	065169-00	1	716	YELLOW	072434	DE
Item	Part / Description / Details				Order Quantity	Ship Qty	
000001	39G1CNT71850NMWLF U/M SHY SO Item 5 G-11-CR 48" *UNTRIMMED X 36" *UNTRIMMED THK: 1.850" +/- .070" PLEASE NOTE THAT THERE IS NO NEMA STANDARD FOR G-11 CR SHEET SPAULDING C OF C TO G-11 CR SHEET NO TESTING REQUIRED AT TIME OF ORDER				1.00000	1.00000	
 By <i>[Signature]</i> 5/31/05 							

CERTIFICATE of CONFORMANCE

WE HEREBY CERTIFY THAT THE MATERIAL SUPPLIED ON THIS ORDER WAS MADE IN ACCORDANCE WITH THE STANDARDS AND PROCESSES ESTABLISHED BY SPAULDING COMPOSITES COMPANY FOR THE REQUIREMENTS OF MATERIAL DESCRIBED ABOVE.

LOT # _____ DOM.
 Authorized By: Mark J. Caudillo Date: 05/17/2005

Customer Copy

Page # 1

Form: SCSHIP Rev: 8/99

000/000

ATLAS FIBRE CO.

947 674 1720

05/26/05 13:00 50/92/00

METRODE PRODUCTS LIMITED
HANWORTH LANE, CHERTSEY

SURREY, UK, KT16 9LL

Tel: +44 (0) 1832 588721

Fax: +44 (0) 1832 585188

Email: info@metrode.com

Website: www.metrode.com

CERTIFIED MATERIAL TEST REPORT

THIS PRODUCT HAS BEEN MANUFACTURED
AND SUPPLIED THROUGH A SYSTEM
APPROVED TO ISO 9001 & 2 OR EQUIVALENT



TEST CERTIFICATE NUMBER

193695

INVOICE TO
EUROWELD LTD
255 ROLLING HILLS ROAD
MOORESVILLE
NC 28117
USA

DESPATCHED TO
EUROWELD LTD
255 ROLLING HILLS ROAD
MOORESVILLE
NC 28117
USA

CUSTOMER ORDER NUMBER	N.05-34
DELIVERY NOTE DOCUMENT NUMBER	DN0105859
QUANTITY (KG)	15.0000
OUR ORDER REFERENCE	SO1787730 / 1
DATE	02/03/05

METRODE WELDING CONSUMABLE	ER316MNF TIG 2.4mm
FORM	TIG WIRE
BATCH NUMBER	W020132
SPECIFICATION	BS EN 12072:2000 W 20 16 3 Mn L

Chemical Analysis (Weight %)										Type: BS EN 10204: 3.1.B / ASME SFA-5.01: Sch. H	
C	Mn	Si	S	P	Cr	Ni	Mo	N	Cu		
0.015	7.43	0.42	0.006	0.014	19.9	15.4	2.52	0.14	0.20		

Mechanical Tests							Type: BS EN 10204: 2.2 / ASME SFA-5.01: Sch. G				
------------------	--	--	--	--	--	--	--	--	--	--	--

Tensile Tests				Impact Energies				
Condition	Test Temperature	Rp0.2x (MPa)	Rm (MPa)	A4 (%)	Z (%)	Temperature (°C)	Impact Energy (J)	Lateral Expansion (mm)
AS-WELDED	ROOM	>400	>600	40	-	-196	70	-

Metrode Products Limited certifies that the above material conforms to the indicated specifications.

This document is produced electronically and is valid without signature.

IMPORTANT: Any liability arising from either reliance on this certificate, or use of our products, is strictly limited and governed by our conditions of business.

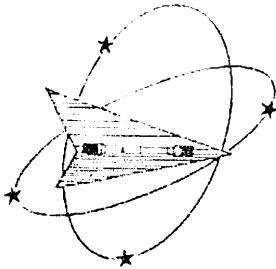
Berrie Kyle - Q.A. Manager

ASME SFA-5.01; Lot classification 54

3/3/05
93911
Line 1 B.1

Notes:
% Ni includes incidental Co unless otherwise specified.
% Mn (Ct) includes incidental Fe unless otherwise specified.
Porosity is given as Pm (Pm is number) and measured on air-water gas using instrument calibrated against NBS-recognized secondary standards (see AWS A4.4-07) unless otherwise specified.

3/7/05



Westmoreland Mechanical Testing & Research, Inc.
 P.O. Box 388
 Westmoreland Drive
 Youngstown, Pa. 15696-0388 U.S.A.
 Telephone: 724-537-3131 Fax: 724-537-3151
 Website: www.wmtr.com
 WMT&R is a technical leader in the material testing industry.



621-01 & 621-02

April 22, 2005

CERTIFICATION

Major Tool & Machine Inc.
 1458 East 19th Street
 Indianapolis, IN 46218

Corrected Date
 May 4, 2005

Page IM1 of 1

WMT&R Report No. 5-25008
 P.O. No. P05-01764
 PQR No. 434
 Welder Jason Bever #465

Attention: Josh Mayne

Subject: All processes, performed upon the material as received, were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/1/2000.
 The following tests were performed on this order: IMPACT and TENSILE

IMPACT RESULTS: ASME Section IX and AWS B2.1, ASTM E23-02

No Requirements

MATERIAL: Metaltek CF8MNMN MOD

SAMPLE TYPE: Charpy V-Notch

DISPOSITION: Report

Specimen ID	TestLog Number	Sample Size	Temp. °F/°C	Energy ft-lbs	Energy joules	Mils Lat Exp	AIUR
Weld-1	B65835	Standard	68/20	173	234.6	84	Report
Weld-2	B65836	Standard	68/20	160	216.9	68	Report
Weld-3	B65837	Standard	68/20	157	212.9	81	Report

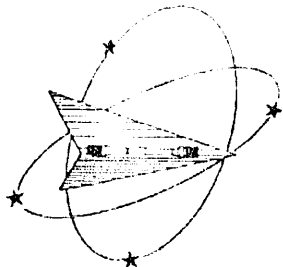
AIUR: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

KNOWINGLY OR WILLFULLY FALSIFYING OR CONCEALING A MATERIAL FACT ON THIS FORM OR MAKING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR REPRESENTATIONS HEREIN COULD CONSTITUTE A FELONY PUNISHABLE UNDER FEDERAL STATUTES. THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT HEREIN WITHOUT THE WRITTEN APPROVAL OF WMT&R.


 Richard G. Parks
 Project Manager/Industrial Technology Engineer

5/4/05
 May 4, 2005

*Testing Specialists for Aerospace, Automotive, and Material Testing Fields
 Locations in Youngstown, PA U.S.A. ~ Tel. (724) 537-3131 and
 Banbury U.K. ~ Tel. +44 (0) 1295 261211*



Westmoreland Mechanical Testing & Research, Inc.
 P.O. Box 388
 Westmoreland Drive
 Youngstown, Pa. 15696-0388 U.S.A.
 Telephone: 724-537-3131 Fax: 724-537-3151
 Website: www.wmtr.com
 WMT&R is a technical leader in the material testing industry.



621-01 & 921-02

April 20, 2005

CERTIFICATION

Section 1 of 2

Major Tool & Machine Inc.
 1458 East 19th Street
 Indianapolis, IN 46218

WMT&R Report No. 5-25008
 P.O. No. P05-01764
 PQR No. 434
 Welder Jason Bever #465

Attention: Josh Mayne

Subject: All processes, performed upon the material as received, were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/1/2000.
 The following tests were performed on this order: IMPACT and TENSILE

TENSILE RESULTS: ASME Section IX and AWS B2.1, ASTM E21-03a

SOAK TIME: 5 Minutes

SPEED OF TESTING: 0.0050 in./in./min., 0.0500 in./min./in.

MATERIAL: Metrode ER316Mnnf

DISPOSITION: Report

Specimen ID	TestLog Number	Temp. °F/°C	UTS KSI/MPA	0.2% YS KSI/MPA	Elong %	RA %	Modulus MSI/GPA	Ult. Load LBS/NEWTONS	0.2% YLD. LBS/NEWTONS
T1	B65833	-320/-196	191.8/1320	148.7/1030	27	39	28.7/198	2630/11699	2039/9071

A/U/R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

DISPOSITION: Report

Specimen ID	TestLog Number	Orig. Width (in./mm)	Final Width (in./mm)	Orig. Thick (in./mm)	Final Thick (in./mm)	Orig. Dia. (in./mm)	4D Orig GL (in./mm)	4D Final GL (in./mm)	Orig. Area (Sq. In./Sq. mm)	Failure Location/Type	Machine Number	A/U/R
T1	B65833	0.1802/4.57708	0.1437/3.650	0.0761/1.933	0.0582/1.478	0.2511/6.378	0.70/17.78	0.89/22.61	0.04183816/26.992307	WELD/DUCTILE	M9	R

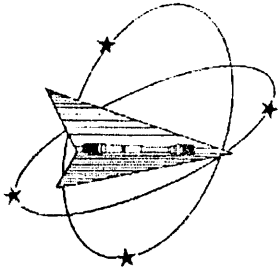
A/U/R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

Roy E. Starr/Matt Wojton
 _____ Technical Services Manager/ _____ Tensile Supervisor

April 20, 2005

KNOWINGLY OR WILLFULLY FALSIFYING OR CONCEALING A MATERIAL FACT ON THIS FORM OR MAKING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR REPRESENTATIONS HEREBY COULD CONSTITUTE A FELONY PUNISHABLE UNDER FEDERAL STATUTES. THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF WMT&R, INC.

Testing Specialists for Aerospace, Automotive, and Material Testing Fields
 Locations in Youngstown, PA U.S.A. ~ Tel. (724) 537-3131 and
 Banbury U.K. ~ Tel. +44 (0) 1295 261211



Westmoreland Mechanical Testing & Research, Inc.
 P.O. Box 388
 Westmoreland Drive
 Youngstown, Pa. 15696-0388 U.S.A.
 Telephone: 724-537-3131 Fax: 724-537-3151
 Website: www.wmtr.com
 WMT&R is a technical leader in the material testing industry.



621-01 & 621-02

April 20, 2005

CERTIFICATION

Major Tool & Machine Inc.

Section 2 of 2

WMT&R Report No. 5-25008
 P.O. No. P05-01764

TENSILE RESULTS: ASME Section IX and AWS B2.1, ASTM E21-03a

SOAK TIME: 5 Minutes

SPEED OF TESTING: 0.0050 in./in./min., 0.0500 in./min./in.

MATERIAL: Metrode ER316Mnnf

DISPOSITION: Report

Specimen ID	TestLog Number	Temp. °F/°C	UTS KSI/MPA	0.2% YS KSI/MPA	Elong %	RA %	Modulus MSI/GPA	Ult. Load LBS/NEWTONS	0.2% YLD. LBS/NEWTONS
T2	B65834	-320/-196	204.7/1410	156.5/1080	29	34	29.9/206	5095/22664	3894/17323

A/U/R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

DISPOSITION: Report

Specimen ID	TestLog Number	Orig. Dia. (in./mm)	Final Dia. (in./mm)	4D Orig GL (in./mm)	4D Final GL (in./mm)	Orig. Area (Sq. In./Sq. mm)	Failure Location/Type	Machine Number	A/U/R
T2	B65834	0.1780/4.521	0.1444/3.668	0.70/17.78	0.90/22.86	0.02488456/16.054520	WELD/DUCTILE	M9	R

A/U/R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT


 Roy E. Starr/Matt Wojton
 Technical Services Manager / Tensile Supervisor

4-20-05
 April 20, 2005

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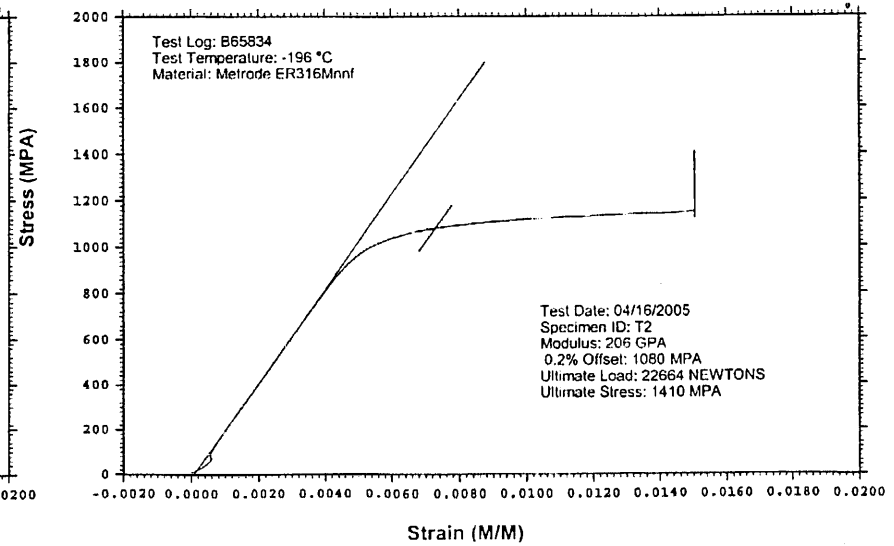
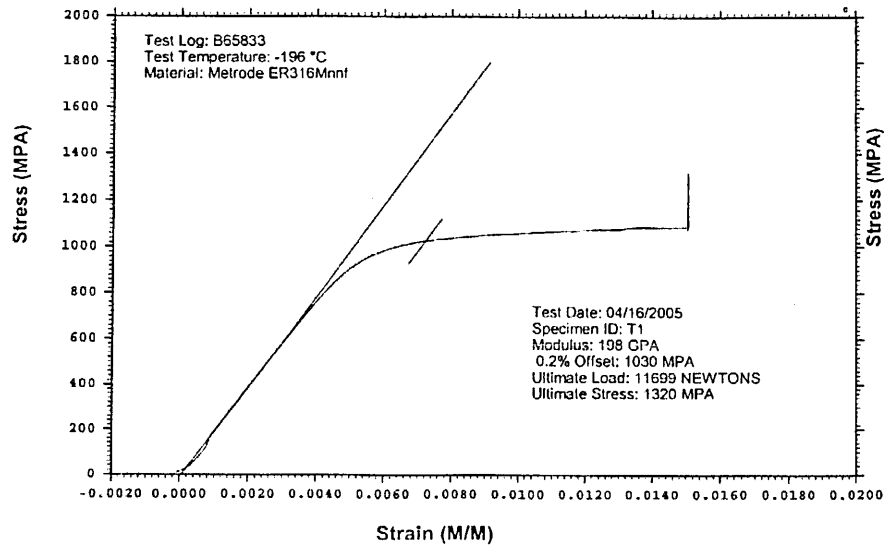
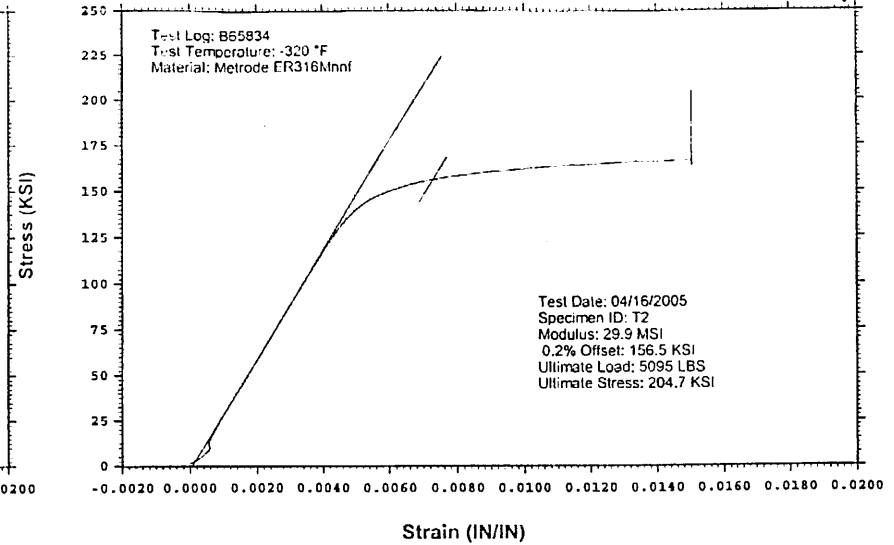
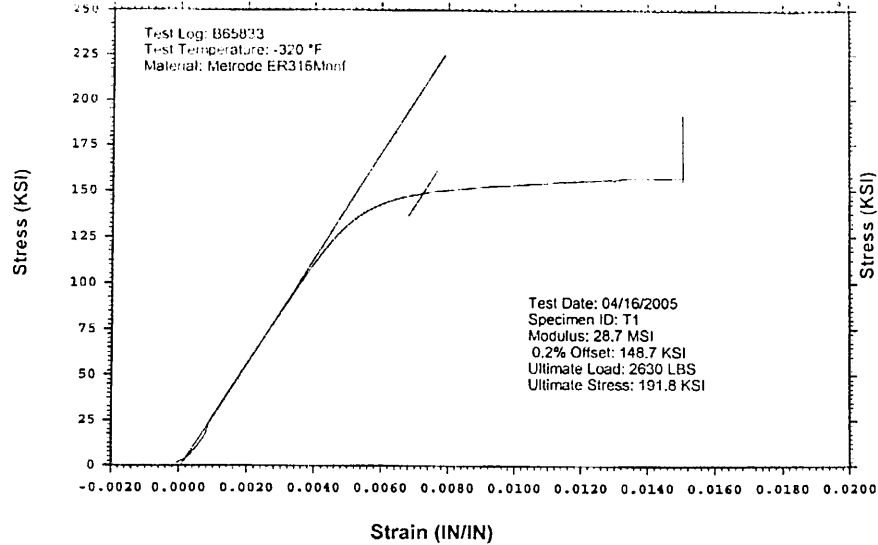
WESTMORELAND MECHANICAL TESTING & RESEARCH, Inc

Stress vs. Strain

Phone: (724)537-3131

Customer: Major Tool & Machine Inc.
WMT&R Report: 5-25008

P.O. No.: P05-01764
PQR No.: 434
Welder: Jason Bever #465



METRODE PRODUCTS LTD
 HAINWORTH LANE
 CHERTSEY SURREY
 ENGLAND KT16 9LL
 Tel: +44 (0)1932 566721
 Fax: +44 (0)1932 565168
 Email: info@metrode.com
 Internet: http://www.metrode.com



TEST CERTIFICATE
 THIS PRODUCT HAS BEEN MANUFACTURED
 AND SUPPLIED THROUGH A SYSTEM APPROVED
 TO ISO 9001 & 2 OR EQUIVALENT



TEST CERTIFICATE NUMBER 194277

INVOICE TO
EUROWELD LTD 255 ROLLING HILLS ROAD MOORESVILLE NC 28117 USA

DESPATCHED TO:
EUROWELD LTD 255 ROLLING HILLS ROAD MOORESVILLE NC 28117 USA

BATCH No.	W020132
OUR ORDER REF.	S01788013 / 1
DATE	09/03/05
PRODUCT	ER316MNNF TIG 2.4MM
FORM	TIG WIRE
SPECIFICATION	BS EN 12072:2000 W 20 16 3 Mn L

IMPORTANT: Any liability arising from either reliance on this certificate, or use of our products, is strictly limited and governed by our conditions of business.

CUSTOMER ORDER No.
N. 05-39

DELIVERY NOTE DOCUMENT No.
DN0106163

QUANTITY (Kg)
17.5000

CHEMICAL ANALYSIS (WEIGHT %)				TYPE	CERTIFIED MATERIAL TEST REPORT: BS EN 10204: 3.1.B											
C	Mn	Si	S	P	Cr	Ni	Mo	N	Cu							
0.015	7.43	0.42	0.006	0.014	19.9	15.4	2.62	0.14	0.20							

TYPICAL ALL-WELD METAL MECH. PROPERTIES, AS WELDED:-
 TS: >600 N/mm²; 0.2%PS: >400 N/mm²; EL. ON 4D: 40 %;
 CVN @ -196 DEG.C: 70 J.

3/23/05
 44534
 Line 1
 B-2

MTM 09

Metrode Products Ltd. certifies that the above material conforms to the indicated specifications

B. KYIET
 D.A. MANAGER

B. Kyiet

NOTES: *All includes incidental Cu unless otherwise specified
 *S (Cb) includes incidental Ta unless otherwise specified.
 Force is given as F_{0.2} (tensile Number) and measured on all-weld pad using instrument calibrated against NBS run-in secondary standards (See AWS A4.2-97) unless otherwise specified.

All test certificates issued by METRODE will contain this embossed oval.
 Any recipient of a copy of METRODE Test Certificate without the oval should ensure from the supplier that it is a true and accurate reproduction of the original.

nc106579.tif (1652x2103x2.tif)



GE Advanced Materials, Polymershapes

Certificate of Conformance

Date:

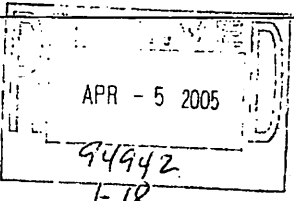
Attn: Receiving Inspection
 To: Major Tool + Machine
 Address: 1438 E. 19th St.
 Indianapolis, IN 46218

Customer P.O. Number: POS-01288
 Sales Order No: 2790834

It is hereby certified that the product information provided below conforms to the corresponding information in the possession of GE Advanced Materials, Polymershapes with respect to such products. This certification and the sale of products are subject to GE Advanced Materials, Polymershapes' standard conditions of sale. This document shall not be reproduced, except in full, without prior written approval.

Quantity	Description	Lot/Specification/Standard Number
36	Glick Plendia sheet .062" THK X 16" X 35"	NO SPEC / N38.009023

MTH 05
 4/5/05



GE Advanced Materials, Polymershapes
 By: Ernest Evans
 Title: Warehouse Worker

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INSPECTION DATA CHECKLIST

Quality Assurance Documentation for Part ID: SE141-116 - Item: 23

Workorder: 65707/1-0 Sub:1 Op:90

Part: SE141-116 - MODULAR COIL WINDING FORM TYPE-C - PRODUCTION MODULAR COIL WINDING FORM TYPE-C

Drawing ID: SE141-116 Rev: 6			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPLE	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		RECORD RANGE UPPER AND LOWER LIMITS OF MAG PERMEABILITY READI (Mu) FOR THE AS CAST SURFACES	MASTER GAGE	QA		J-1270	LESS THAN 1.01 (LESS THAN RANGE OF GAGE)	212-J.LE			A
(10)								09-20-05			
*		RECORD RANGE UPPER AND LOWER LIMITS OF MAG PERMEABILITY READI (Mu) FOR THE MACHINED SURFACES	MASTER GAGE	QA		J-1270	LESS THAN 1.01 (LESS THAN RANGE OF GAGE)	212-J.LE			A
(20)								09-20-05			

Nondestructive Test Certification for Liquid Penetrant Examination

Quality Assurance Documentation for Part ID: SE141-116 - Item: 25

1458 E. 19th Street, Indianapolis, In 46218
TEL: (317)636-6433 FAX: (317)634-9420

Date of Inspection: 09/20/2005

Type of Material: CAST STAINLESS

NDT#: 13726

Stage of Inspection:	Manufacturing Process:	Surface Condition:	Test Being Run to:	Heat Treated:
<input type="checkbox"/> Incoming Inspection	<input type="checkbox"/> Weldment <input checked="" type="checkbox"/> Casting	<input checked="" type="checkbox"/> Machined	<input checked="" type="checkbox"/> Router Instructions	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> In-Process Inspection	<input type="checkbox"/> Bar Stock <input type="checkbox"/> Plate	<input type="checkbox"/> Rough	<input checked="" type="checkbox"/> Drawing	<input type="checkbox"/> No
<input type="checkbox"/> After Repair	<input type="checkbox"/> Forging <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Other	<input type="checkbox"/> Test Plan	
<input checked="" type="checkbox"/> Final Inspection		CLEANED & DEBURRED	<input type="checkbox"/> Technique Card	
			SEE NOTES	

Part Information:	Test Results:	
MTM Job Number: 65707/1.0 -Sub:1 -Op:100	Quantity Inspected: 1	
Resource ID: 810-LIQUID PENETRANT INSPE	Quantity Accepted: 1	
Part ID: SE141-116	Quantity Rejected: 0	
Part Name: MODULAR COIL WINDING FOR	Run Hours: 0.0	
Serial Number: MCWF C-1 (SE141-103-1)		
Customer P.O.: S005242-F		
Customer Unit/Plant:		

Customer Inspection Plan: SEE NOTES	Inspection Criteria:
Test Step:	Customer Specification: ASTM A903/A903M
Revision:	MTM Spec Number: PS582 (REF NDT-WI-09)
Material Test Number:	Acceptance Standard: ASTM A903 (SEE NOTES)

Inspection Materials Used:	Penetrant Examination Processes:
Manufacturer: SHERWIN	Type: II (Visible) / Dwell Time: 15 Minutes
Type of Penetrant: DP-51	Method: A (Water Wash)
Batch Number: 41-E47	Method of Drying: Normal Evaporation
Developer: D-100	Form: e (nonaqueous for Type II visible dye) / Dwell Time: 12 Min
Batch Number: 410-L6	

Inspection Requirements:					
100 % of all accessible surfaces	<input type="checkbox"/> Joint Preps	<input type="checkbox"/> Root Pass	<input type="checkbox"/> Back Gouge	<input type="checkbox"/> Cover Pass	<input checked="" type="checkbox"/> Other
SEE NOTES					

Notes:
PT 100% of the part as-cast surfaces as well as finished machine surfaces.

See PS582 for processing instructions.

During the inspection also perform a visual inspection of the casting surface per ASTM A802/A802M and accept per the same. Include reference to ASTM A802 on the certification.

Specification: ASTM A903/A903M

Method: ASTM E165-02

Acceptance Criteria: ASTM A903/A903M Level II for as cast surfaces

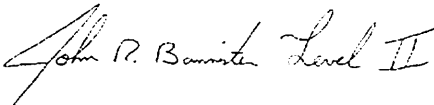

Acceptance Criteria: ASTM A903/A903M, Section 7, Table1, Level I for machined surfaces including the entire "T" section (high stress areas)

Certification: MTM certification to include the information per Supplementary Requirements S1 of ASTM A903/A903M
MTM NDT Cert: LPI CERTIFICATION

Deionized water used to preclean and rinse part.

This is to certify that the pieces specified have been inspected in accordance with the specifications shown.

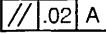
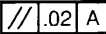

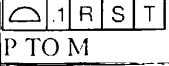
Inspector: 667-J.BANNISTER
Date: 09/21/2005


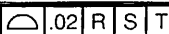

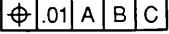



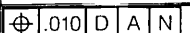
Quality Assurance Documentation for Part ID: SE141-116 - Item: 25

Workorder: 65707/1-0 Sub:1 Op:120

Part: SE141-116 - MODULAR COIL WINDING FORM TYPE-C - PRODUCTION MODULAR COIL WINDING FORM TYPE-C

Drawing ID: SE141-116 Rev: 6			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPLE	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)	E8	47.19 ± .03	CMM	QA		00064	47.17 - 47.18	339-E.R 09-29-05		A
1* (11)	G8	R17.00 +.25 -.00	CMM	QA		00064	17.09	339-E.R 09-29-05		A
1* (20)	B8	47.19 ± .03	CMM	QA		00064	47.18 - 47.19	339-E.R 09-29-05		A
1* (30)	D6	47.19 ± .03	CMM	QA		00064	47.18 - 47.19	339-E.R 09-29-05		A
1* (40)	C6	47.19 ± .03	CMM	QA		00064	47.20	339-E.R 09-29-05		A
1* (50)			CMM	QA		00064	.0109	339-E.R 09-29-05		A
1* (60)	B6		CMM	QA		00064	.0045	339-E.R 09-29-05		A
1* (70)	F3		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		A
2* (80)	H6	2X R.187 +.025 -.005	INDICATOR	QA		J-651	.185 - .187	339-E.R 09-29-05		A
2* (90)	G8	2X .03 X 45°		QA		VISUAL	NOT PRESENT	339-E.R 09-29-05		R
2* (100)	G8	.40 ± .010	CALIPER	QA		J-707	.39 - .41	339-E.R 09-29-05		A
2* (110)	G8	2X .030 X 45°		QA		VISUAL	NOT PRESENT	339-E.R 09-29-05		R
2* (120)	F7	2X .32	CALIPER	QA		J-707	.31 - .33	339-E.R 09-29-05		A
2* (130)	F7	2X R.11	RADIUS GAGE	QA		R-25	.12	339-E.R 09-29-05		A
2* (140)	G6		CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
2*	G6	4.790 ± .005		QA		VISUAL	ACCEPT	339-E.R		A

INSPECTION DATA CHECKLIST

(150)							09-29-05		
2* (160)	G3	 .1 R S T Q TO N	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
2* (170)	G3	4.790 ± .005 RECORD NUMBER USED TO IDENTIFY POINT Q		QA	VISUAL	ACCEPT	339-E.R 09-29-05		A
2* (180)	F5	 .02 R S T M TO N	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
2* (190)	C5	 .01 R S T 96X Ø.375-16 UNC .188 DEEP C'BORE Ø.625 AS SHOWN	CMM THREAD PLUG GA	QA	00064 A-46	.0043 - .1657 , .62 3 - .626	339-E.R 09-29-05		R
2* (200)	B4	2X .03 X 45°		QA	VISUAL	ACCEPT	339-E.R 09-29-05		A
3* (210)	G7	 .01 A B C 8X Ø1-8 UNC THRU	CMM	QA	00064	.010 - .043	339-E.R 09-29-05		R
3* (220)	H4	.25 ± .01	CMM	QA	00064	SET	339-E.R 09-29-05		A
3* (230)	H3	 .01	CMM	QA	00064	REFERENCE IGES INF RMATION	242-M.G 11-09-05		A
3* (240)	F3	.25 ± .01	CMM	QA	00064	SET	339-E.R 09-29-05		A
3* (250)	F3	 .01	CMM	QA	00064	REFERENCE IGES INF RMATION	242-M.G 11-09-05		A
3* (260)	F5	R76.00	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
3* (270)	F5	R73.70	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
3* (280)	F4	 .01 A B C 8X Ø1.13 THRU BACK SPOT FACE Ø2.38 MIN DEPTH FOR C'UP	CMM	QA	00064	.010 - .031	339-E.R 09-29-05		R
4*	H8	 .010 D A N 3X Ø1.88 THRU Ø3.00 BACK SPOTFACE	CMM	QA	00064	.0304 - .0442 , >.3. 00 SPOT, 1.87 - 1.8 8 DIA.	339-E.R		R



Major

Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

(290)		MIN TO CLEANUP	SCALE			J-922		09-29-05		
4*	H7	⊕ ∅.01 D A N	CMM	QA		00064	.019 - .020 , R .7	339-E.R		R
(300)		3X SPH R.75 TO .75 DEEP					4 - .745	09-29-05		
4*	H6	⊕ ∅.01 D A N	CMM	QA		00064	0.009 - 0.059, >3.0	295-C.W		R
(310)		17X ∅1.88 THRU ∅3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	0 SPOT, 1.87 - 1.88	10-01-05		
4*	H5	⊕ ∅.01 D A N	CMM	QA		00064	0.001 - 0.007, >2.3	295-C.W		A
(320)		3X ∅1.13 ∅2.38 BACK SPOTFACE MIN TO CLEANUP					8 SPOT	10-01-05		
4*	E6	⊕ ∅.01 D A N	CMM	QA		00064	.022 - .039	339-E.R		R
(340)		3X ∅1.375-6 UNC THRU						09-29-05		
4*	E6	⊕ ∅.01 D A N	CMM	QA		00064	.0019 - .0182, >3.	339-E.R		R
(350)		5X ∅1.88 THRU ∅3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922	00 SPOT	09-29-05		
4*	D4	⊕ ∅.01 D A N	CMM	QA		00064	.018, >3.00 SPOT, 1.879 DIA.	339-E.R		R
(360)		∅1.88 THRU ∅3.00 BACK SPOTFACE MIN TO CLEANUP						09-29-05		
4*	B5	⊕ ∅.01 D A N	CMM	QA		00064	.047 - .054, 1.126 - 1.127	295-C.W		R
(370)		3X ∅1.13 ∅2.38 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922		10-01-05		
5*	E8	⊕ ∅.01 E A J	CMM	QA		00064	0.77, >3.00 SPOT.	339-E.R		R
(380)		∅1.88 THRU ∅3.00 BACK SPOTFACE MIN TO CLEANUP	SCALE			J-922		09-29-05		
5*	F6	3X ∅1.375-6 UNC THRU	THREAD PLUG GA	QA		A-375	ACCEPT	339-E.R		A
(400)								09-29-05		
5*	F6	⊕ ∅.01 E A J	CMM	QA		00064	.020 - .021	339-E.R		R
(410)		3X SPH R.75 TO .75 DEEP						09-29-05		
5*	F7	7X .25-20 UNC -2B	THREAD PLUG GA	QA		A-67	ACCEPT	339-E.R		A
(420)								09-29-05		
5*	F7	⊕ ∅.01 E A J	CMM	QA		00064	.008 - .040, >3.00 SPOT.	339-E.R		R
		24X ∅1.88 THRU ∅3.00 BACK SPOTFACE								



Major

Tool & Machine, Inc.

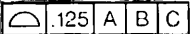

INSPECTION DATA CHECKLIST

(430)		MIN TO CLEANUP	SCALE			J-922		09-29-05		
5*	E7	$\text{⊕} \text{⌀} .01 \text{ E A J}$	CMM	QA		00064	.013 - .037	339-E.R		R
(440)		3X Ø1.5 TO 2.00 DEEP Ø3.00 TO 1.00 DEEP						09-29-05		
5*	D7	3X Ø1.88 THRU Ø3.00 BACK SPOTFACE MIN TO CLEANUP	CMM	QA		00064	1.87 - 1.88, >3.00	339-E.R		A
(450)			SCALE			J-922		09-29-05		
5*	G2	SPH R.75 TO .75 DEEP	CMM	QA		00064	.736 - .74	339-E.R		A
(460)								09-29-05		
6*	F2	$\text{▭} .02$	05	QA			CANNOT CHECK DUE ASSY	295-C.W 10-01-05		A
(510)										
6*	F2	1.125 ± .010	05	QA			CANNOT CHECK DUE ASSY	295-C.W 10-01-05		A
(520)										
6*	F2	2.250 ± .010	05	QA			CANNOT CHECK DUE ASSY	295-C.W 10-01-05		A
(530)										
6*	E2	$\text{⊕} \text{⌀} .01 \text{ F P V}$	05	QA			CANNOT CHECK DUE ASSY	295-C.W 10-01-05		A
(540)		7X Ø1.625 THRU BOTH SIDES 14X Ø3.00 TO .500 BOTH SIDES								
7*	G2	R7.00	05	QA			REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
(550)										
7*	F2	2X R1.50	05	QA			REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
(560)										
7*	E2	2.52 ± .010	CMM	QA		00064	2.51	339-E.R 09-29-05		A
(570)										
7*	E2	90°	CMM	QA		00064	87.92	339-E.R 09-29-05		R
(580)										
7*	E1	2.0°	CMM	QA		00064	2.04	339-E.R 09-29-05		A
(590)										
7*	F2	2.64 ± .010	DEPTH MICROMET	QA		J-851	2.64	339-E.R 09-29-05		A
(600)										
7*	E2	6.50 ± .010	CMM	QA		00064	6.486	339-E.R 09-29-05		R
(610)										
7*	E2	3.06 ± .010	CMM	QA		00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
(620)										

INSPECTION DATA CHECKLIST

7* (630)	D2	R4.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
7* (640)	D3	2.10 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (650)	G7	4.00 ± .010	CMM	QA		00064	3.98	339-E.R 09-29-05		R
8* (660)	G7	.25 ± .010	CMM	QA		00064	SET	339-E.R 09-29-05		A
8* (670)	G7	R4.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (680)	F7	2.00 ± .010	CMM	QA		00064	1.99	339-E.R 09-29-05		A
8* (690)	E3	9.38 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (700)	E2	6.0°	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (710)	C2	Ø8.00 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (720)	B3	5.9°	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (730)	B3	7.81 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (740)	C6	7.25 ± .010	CMM	QA		00064	REFERENCE IGES INFORMATION	339-E.R 09-29-05		R
8* (750)	D7	6X Ø.375-16 UNC TO .75 DEEP .03 X 45° CHAMFER	THREAD PLUG GA CALIPER	MFG		A-46 J-707	ACCEPT THREAD/CHAMFER, .53 - 1.32 DEPT H	339-E.R 09-29-05		R
8* (760)	D7	13.6 °	CMM	MFG		00064	13.16	339-E.R 09-29-05		A
8* (770)	D7	5.88 ± .010	CALIPER	QA		J-707	5.89	339-E.R 09-29-05		A
8* (780)	D7	2.19 ± .010	CMM	QA		00064	2.172 - 2.198	339-E.R 09-29-05		R
8* (790)	D7	2.19 ± .010	CMM	QA		00064	2.176 - 2.191	339-E.R 09-29-05		R
8* (800)	B7	4X R.50	RADIUS GAGE	QA		R-25	.50	339-E.R 09-29-05		A

INSPECTION DATA CHECKLIST

8* (810)	B7	3.50 ± .010	CALIPER	QA	J-707	3.60	339-E.R 09-29-05		A
8* (820)	B7	1.75 ± .010	SCALE	QA	J-922	1.75	339-E.R 09-29-05		A
8* (830)	C8	2X 1.56 ± .010 THRU	CMM	QA	00064	1.) 1.56 2.) 1.79	339-E.R 09-29-05		R
8* (840)	C8	3.75 ± .010	CMM	QA	00064	3.90	339-E.R 09-29-05		R
8* (850)	C8	2X 7.50 ± .010 THRU	CMM	QA	00064	1.) 7.53 2.) 7.63	339-E.R 09-29-05		R
8* (860)	C8	8X R.25	RADIUS GAGE	QA	R-25	.25 - .28	339-E.R 09-29-05		R
8* (870)	C8	2X 2.52 ± .010	CMM	QA	00064	2.04 - 2.08 , 2.65 - 2.66	339-E.R 09-29-05		R
8* (880)	E2	Ø8.00 ± .010	CMM	QA	00064	7.992	339-E.R 09-29-05		A
9* (890)	F7	4X Ø.63 ± .010 THRU	PIN GAGE	QA	J-652	.62	339-E.R 09-29-05		A
9* (900)	E7	2.54 ± .010	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (910)	E7	5.08 ± .010	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (920)	F3	4X Ø.63 ± .010 THRU	PIN GAGE	QA	J-652	SEE #890	339-E.R 09-29-05		A
9* (930)	F3	2X Ø .50 ± .010 THRU	PIN GAGE	MFG	J-652	.498	339-E.R 09-29-05		A
9* (940)	E3	2.44 ± .010	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (950)	E3	1.22 ± .010	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
9* (960)	C7	4X Ø.63 ± .010 THRU	PIN GAGE	QA	J-652	.622 - .624	339-E.R 09-29-05		A
9* (970)	C6	2X Ø.25 T.C. HOLE TO 2.5 DEEP	PIN GAGE	QA	J-652	.24	339-E.R 09-29-05		A
10* (980)	C8	 .125 A B C	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05		R
10*	C8	 .5 A B C	CMM	QA	00064	REFERENCE IGES INF	339-E.R		R



INSPECTION DATA CHECKLIST

(990)							RMATION	09-29-05		
10* (1000)	C5		CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05			R
10* (1010)	C4		CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05			R
10* (1020)	G1		CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05			R
10* (1030)	E1		CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05			R
* (1040)		UOS ALL MACHINED SURFACES TO BE 250 RMS SURFACE FINISH RECORD RANGE	PROFILOMETER	QA	J-1152	31 - 500	339-E.R 09-29-05			R
1* (1050)		RECORD THE WEIGHT OF THE PART 6000LBS MAX		QA	SCALE	5080LBS	339-E.R 09-29-05			A
4* (1060)	H7	22.13 ± .010	CMM	QA	00064	TAP	339-E.R 09-29-05			R
4* (1070)	H7	47.79 ± .010	CMM	QA	00064	47.76	339-E.R 09-29-05			R
4* (1080)	H6	59.18 ± .010	CMM	QA	00064	59.16	339-E.R 09-29-05			R
4* (1090)	H6	73.27 ± .010	CMM	QA	00064	TAP	339-E.R 09-29-05			R
4* (1100)	H5	80.49	CMM	QA	00064	80.46	339-E.R 09-29-05			R
4* (1110)	H5	87.87 ± .010	CMM	QA	00064	87.84	339-E.R 09-29-05			R
4* (1120)	H5	89.64 ± .010	CMM	QA	00064	89.64	339-E.R 09-29-05			A
4* (1130)	G4	31.83 ± .010	CMM	QA	00064	TAP	339-E.R 09-29-05			R
4* (1140)	F4	24.10 ± .010	CMM	QA	00064	24.08	339-E.R 09-29-05			A
4* (1150)	F4	11.48 ± .010	CMM	QA	00064	11.46	339-E.R 09-29-05			R

INSPECTION DATA CHECKLIST

4* (1160)	E4	5.20 ± .010	CMM	QA	00064	5.19	339-E.R 09-29-05		A
4* (1170)	D4	18.31 ± .010	CMM	QA	00064	18.32	339-E.R 09-29-05		A
4* (1180)	D4	32.50 ± .010	CMM	QA	00064	32.50	339-E.R 09-29-05		A
4* (1190)	C5	77.13 ± .010	CMM	QA	00064	77.13	339-E.R 09-29-05		A
4* (1200)	C6	55.56 ± .010	CMM	QA	00064	55.55	339-E.R 09-29-05		A
4* (1210)	B7	23.74 ± .010	CMM	QA	00064	23.73	339-E.R 09-29-05		A
4* (1220)	C7	37.09 ± .010	CMM	QA	00064	37.08	339-E.R 09-29-05		A
4* (1230)	D8	17.22 ± .010	CMM	QA	00064	17.23	339-E.R 09-29-05		A
4* (1240)	F8	28.17 ± .010	CMM	QA	00064	TAP	339-E.R 09-29-05		R
4* (1250)	G8	12X .250-20 UNC-2B	THREAD PLUG GA	QA	A-517 VISUAL	ACCEPT	339-E.R 09-29-05		A
4* (1260)	G8	40.75 ± .010	CMM	QA	00064	40.74	339-E.R 09-29-05		A
4* (1270)	G8	43.42 ± .010	CMM	QA	00064	TAP	339-E.R 09-29-05		R
4* (1280)	D1	12X .25-20 UNC Ø.5 X 82° INCL. CHAMFER	THREAD PLUG GA	QA	A-517 VISUAL	ACCEPT	339-E.R 09-29-05		A
5* (1290)	H8	88.39 ± .010	CMM	QA	00064	88.39	339-E.R 09-29-05		A
5* (1300)	H7	86.42 ± .010	CMM	QA	00064	86.40	339-E.R 09-29-05		R
5* (1310)	H6	59.08 ± .010	CMM	QA	00064	59.06	339-E.R 09-29-05		A
5* (1320)	H5	28.71 ± .010	CMM	QA	00064	28.69	339-E.R 09-29-05		R
5* (1330)	G5	32.42 ± .010	CMM	QA	00064	32.41	339-E.R 09-29-05		A



Major

Tool & Machine, Inc.

INSPECTION DATA CHECKLIST

5* (1340)	D4	22.117 ± .005	CMM	QA	00064	22.118	339-E.R 09-29-05			A
5* (1350)	D4	38.14 ± .010	CMM	QA	00064	38.14	339-E.R 09-29-05			A
5* (1360)	D5	21.33 ± .010	CMM	QA	00064	21.32	339-E.R 09-29-05			A
5* (1370)	D7	87.62 ± .010	CMM	QA	00064	87.63	339-E.R 09-29-05			A
5* (1380)	E8	7.53 ± .010	CMM	QA	00064	7.53	339-E.R 09-29-05			A
5* (1390)	E8	4.91 ± .010	CMM	QA	00064	4.88	339-E.R 09-29-05			R
5* (1400)	G8	36.13 ± .010	CMM	QA	00064	36.12	339-E.R 09-29-05			A
7* (1410)	D4	2.1°	CMM	QA	00064	REFERENCE IGES INF RMATION	339-E.R 09-29-05			R
8* (1420)	D8	2.63 ± .010	CMM	QA	00064	2.63 - 2.65	339-E.R 09-29-05			R

Quality Assurance Documentation for Part ID: SE141-116 - Item: 26

Workorder: 65707/1-0 Sub:1 Op:140

Part: SE141-116 - MODULAR COIL WINDING FORM TYPE-C - PRODUCTION MODULAR COIL WINDING FORM TYPE-C

Drawing ID: SE141-103 Rev: 2			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPLE	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		INSPECT AND RECORD RESISTANCE ACROSS BOLT INSUL. VALUE TO BE >500 KOHM'S		QA			35,000 K-OHMS	242-M.G			A
(10)								10-26-05			
*		INSPECT AND RECORD RANGE OF RESISTANCE ACROSS POLOIDAL BREAK MIDPLANE AND BOLTS VALUE TO BE >500 KOHM'S		QA			HOLE 2 > 100.000 K-OHMS; ALL OTHERS A P. INFINITY	295-C.W			A
(20)								10-01-05			

Employees: 212-J.Lehr / 242-M.Griffith / 295-C.Weaver / 339-F.Root