PRELIMINARY

Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Forms

C-2 Documentation Package

Part 1 – Metal Tek International
Casting Data Package

9/8/2005

C-1 Documentation Package

List of Documents 9-8-2005

Doc #	Description	# Pages
1	MTR for ladle 1 heat 29060	1
2	MTR for ladle 2 heat 29061	1
3	MTR for ladle 3 heat 29063	1
4	MTR for weighted average of chemistry – 3 ladles	1
5	Chemistry of weld material Lot # 3012668/82743	1
6	Chemistry of weld material Lot # WO19711	1
7	Westmoreland Tensile test report @ -320°F dated 6-17-05	1
8	St Louis Test Lab dated 5-17-05 – incl. tensile test results @ room temp & Charpy V Notch (CVN) at 77°K & 293°K	7
9	Westmoreland tensile test results of weld material @ -320°F dated 4-28-05	1
10	St Louis Testing tensile test report of weld material @ RT dated 4-22-05	1
11	St Louis Testing CVN test report of weld material @ -320°F dated 4-6-05	2
12	St Louis Testing CVN test report of weld material @ RT dated 3-2-05 *note – page 2 of this report unrelated to project – added to show page 2 of 2*	2
13	Weld map list with magnetic permeability results	10
13a	RT photos	7
14	Final Inspection report	1
15	RT inspection reports from MQS dated 5-20-05 & 6-11-05	7
16	Metal Tek Radiographic Interpretation Report dated 6-15-05	1
17	Heat treat chart 4-28-05	1
18	Heat treat chart – stress relief dated 6-21-05	1
19	CA1292 for major welds dated 6-2-05	1
20	CA1292a for major welds dated 6-15-05	1
21	CA1302 test material – lack of direction dated 5-29-05 & signed 6-06-05	1
22	MQS Radiographic Technique Sheet dated 1-18-2005	5
23	Signed & dated MTS for C-2	11
24	Supplemental routing card for C-2 stress relief dated 6-21-05	1
25	Qualifying report from dimensional scan of C-2 dated 5-22-05	8
26	Qualifying report from dimensional scan of C-2 dated 5-23-05	16
26	MTR C-2 shim dated 4-28-05	1
27	Westmoreland shim tensile tests @ -320°F	1
28	St Louis Testing Labs CVN shim material @ 77°K & 293°K + mechanical test results at RT dated 6-13-05	3
29	Final inspection report – C-2 shim dated 6-22-05	1
30	C-2 Shim C of C dated 6/21/05	1
31	CA1308 – chemistry out of spec	1
32	Metal Tek Radiographic Interpretation Report – C-2 shim dated 6-23-05	2
33	Heat treat chart – C-2 shim – dated 6-03-05	1
34	Dimensioned sketch C-2 shim dated 6-23-05	2
35	MTS – C-2 Shim dated & signed	6
36	EIO shipping release dated 6-27-05	2
9/8/05		

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2
Pattern Number MCWF-C2
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMnMOD
Ladle#1 Heat 29060

Cert Number S75920-1
Pour Date 4/15/2005

Revised 8/1/05

Element	Min	Actual	Max
C	0.04	0.06	0.07
MN	2.3	2.8	2.8
SI	0.0	0.5	0.5
CR	18.0	18.0	18.5
NI	13.0	13.2	13.5
MO	2.1	2.3	2.5
P*	0.0	-----	0.015
S*	0.0	-----	0.015
N	0.24	0.26	0.28

* Reported on weighted average MTR see Doc. #4.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2
Pattern Number MCWF-C2
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMnMOD
Ladle#2 Heat 29061

Cert Number S75920-1
Pour Date 4/15/2005

Revised 8/1/05

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN	2.3	2.8	2.8
SI	0.0	0.5	0.5
CR	18.0	17.8	18.5
NI	13.0	13.1	13.5
MO	2.1	2.4	2.5
P*	0.0	-----	0.015
S*	0.0	-----	0.015
N	0.24	0.28	0.28

* Reported on weighted average MTR see Doc. #4.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2
Pattern Number MCWF-C2
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMnMOD
Ladle#3 Heat 29063

Cert Number S75920-1
Pour Date 4/15/2005

Revised 8/1/05

Element	Min	Actual	Max
C	0.04	0.06	0.07
MN	2.3	2.8	2.8
SI	0.0	0.5	0.5
CR	18.0	18.3	18.5
NI	13.0	13.3	13.5
MO	2.1	2.2	2.5
P*	0.0	-----	0.015
S*	0.0	-----	0.015
N	0.24	0.26	0.28

* Reported on weighted average MTR see Doc. #4.

CAR

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

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Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2
Pattern Number MCWF-C2
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMnMOD

Cert Number S75920-1
Pour Date 4/15/2005

Weighted average of 3 heats – 29060(46%),29061(25%),29063(29%) Total Weight 29107 lbs.

Revised 8/1/05

Element	Min	Actual	Max
C	0.04	0.06	0.07
MN	2.3	2.8	2.8
SI	0.0	0.5	0.5
CR	18.0	18.0	18.5
NI	13.0	13.2	13.5
MO	2.1	2.3	2.5
P*	0.0	0.023	0.015
S*	0.0	0.018	0.015
N	0.24	0.26	0.28

*P & S taken from cast on bar, zones 1,2,&3 and analyzed by wet chemistries, ASTM E1019-03 for sulfur and Colormetric for phosphorous.

*P & S are above the specification.

Averages reported, individuals listed below.

Sulfur: Z1 .022
Z2 .018
Z3 .015

Phosphorous: Z1 .024
Z2 .021
Z3 .025

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-C1

Weld Material Batch 3012668/82743

Element	Actual
C	0.02
MN	7.3
SI	0.4
CR	19.5
NI	15.2
MO	3.0
P	0.03
S	0.03
N	0.17

Respectfully Submitted,

Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com

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MetalTek INTERNATIONAL

Carondelet Division

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Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-C1

Weld Material Batch WO 19711

Element	Actual
C	0.02
MN	3.4
SI	0.2
CR	17.7
NI	16.2
MO	2.8
P	0.02
S	0.002
N	0.15

Respectfully Submitted,

Charles A. Ruud
Quality Assurance Manager

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.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

June 17, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-29323
Req. No. 5394

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

Attention: Rick Suria

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: TENSILE

TENSILE RESULTS: ASTM E21-03a
SOAK TIME: 5 Minutes
SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.
MATERIAL: Metaltek CF8MNMnMOD

DISPOSITION: Report

Sample	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Codes	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	A\U\R
A1 (Z1)	C03040	-320	165.1	95.5	51	37	25.9	—	33210	19210	0.5060	0.4002	2.00	3.02	0.20109020	M9	R
A1 (Z2)	C03041	-320	165.1	94.6	59	51	25.4	—	33120	18980	0.5054	0.3543	2.00	3.18	0.20061359	M9	R
A1 (Z3)	C03042	-320	168.7	101.8	58	57	25.2	—	33840	20420	0.5054	0.3305	2.00	3.18	0.20061359	M9	R
C2 (Z1)	C03043	-320	163.6	94.0	51	41	25.9	D	32840	18880	0.5056	0.3891	2.00	3.03	0.20077240	M9	R
C2 (Z2)	C03044	-320	162.4	91.7	61	61	25.0	—	32580	18390	0.5054	0.3163	2.00	3.21	0.20061359	M9	R
C2 (Z3)	C03045	-320	165.5	93.9	61	61	25.7	—	33230	18850	0.5056	0.3163	2.00	3.21	0.20077240	M9	R

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

D - Failed outside middle half of gage length.

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

6-17-05
June 17, 2005

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF MECHANICAL TESTS

SAMPLE ID: 3 Ea. C-2 COIL, #Z1, #Z2, & #Z3

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length) in.	Elongation (2.0" Gage Length) %	Modulus of Elasticity Msi
#Z1	.1948	.0946	51.4	37,700	82,000	1.17	51.4	23.4
#Z2	.1948	.0887	54.5	35,900	81,000	1.03	51.5	23.2
#Z3	.1901	.0887	53.3	36,100	84,300	1.15	57.5	21.4

Round, reduced section tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370

Identification of tested specimens provided by the client

KS/mrm

Karl Schmitz. Director
Materials Testing

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Certificate No. 0397-01
Certificate No. 0397-02

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METALTEK INTERNATIONAL
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Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z1

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 293°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-1	140	.106	100
Z1-2	128	.059	70
Z1-3	150	.126	100
AVERAGE	139	.097	90

Identification of tested specimen provided by client.

KS/mrm

Karl Schmitz, Director
Materials Testing

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Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z1

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 77°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	90	.045	60
Z1-5	80	.049	60
Z1-6	81	.055	60
AVERAGE	84	.050	60

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

KS/mm

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Pevely, MO 63070

Attention: **Chuck Ruud**

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z2

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 293°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-1	140	.118	100
Z2-2	154	.090	90
Z2-3	150	.109	100
AVERAGE	148	.105	97

Identification of tested specimen provided by client.

KS/mm

Karl Schmitz, Director
Materials Testing

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Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z2

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 77°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-4	88	.071	90
Z2-5	76	.037	60
Z2-6	86	.057	70
AVERAGE	83	.055	73

Identification of tested specimen provided by client.

K-S/mrm

Karl Schmitz, Director
Materials Testing

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Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z3

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 293°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-1	154	.086	100
Z3-2	200	.061	100
Z3-3	142	.080	90
AVERAGE	165	.076	97

Identification of tested specimen provided by client.

KS/mrm

Karl Schmitz, Director
Materials Testing

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Pevely, MO 63070

May 17, 2005
Lab No. 05P-1488
P.O. No. 12516

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): C-2 COIL, #Z3

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 77°K

RESULTS:

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-4	91	.052	80
Z3-5	86	.050	80
Z3-6	81	.061	80
AVERAGE	86	.054	80

Identification of tested specimen provided by client.

KS/mrm

Karl Schmitz, Director
Materials Testing

ACCREDITED
Certificate No. 0397-01
Certificate No. 0397-02

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.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

April 28, 2005

CERTIFICATION

Section 1 of 1

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

WMT&R Report No. 5-26097
P.O. No. 19386R9
WMT&R Quote No. QN250563
Req. No. 4315

Attention: Rick Suria

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: TENSILE

TENSILE RESULTS: ASTM E21-03a
Requirements: UTS ksi (Min 95\Max ---) 0.2% YS ksi (Min 72\Max ---) 4D Elong. % (Min 32\Max ---) Modulus Msi (Min 21\Max —)
SOAK TIME: 5 Minutes
SPEED OF TESTING: 0.0050 in./in./min., 0.0500 in./min./in.
MATERIAL: 316 S/S

DISPOSITION: Acceptable

Sample	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	A\U\R
Bar#1 (Lot#3012668/82743)	B75123	-320	187.7	126.3	33	22	27.1	37740	25394	0.5060	0.4471	2.00	2.65	0.20109020	M9	A
Bar#2 (Batch#W019711)	B75124	-320	166.9	109.5	34	27	26.4	33500	21990	0.5056	0.4315	2.00	2.67	0.20077240	M9	A

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

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

4-28-05
April 28, 2005

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

Attention: **Chuck Ruud**

April 22, 2005
Lab No. 05P-1170
P.O. No. 12516
Page 1 of 1
(revised 6/15/05)

REPORT OF MECHANICAL TESTS

SAMPLE ID: 1 Ea., Sample Bar #1, Lot 3012668/82743
1 Ea., Sample Bar #2, Batch # WO19711

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length) in.	Elongation (2.0" Gage Length) %	Elastic Modulus
#1	.1901	.0855	55.0	56,500	85,000	0.80	55.0	25.5 MSI
#2	.1917	.0881	54.0	63,900	98,100	0.88	54.0	23.1 MSI

Round, reduced section all weld room temperature tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370
Identification of tested specimens provided by the client

Karl Schmitz, Director
Materials Testing

KS/tw

//

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

Attention: Chuck Ruud

April 6, 2005
Lab No. 05P-1007
P.O. No. 12516

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): 1 Ea., Material (1) LNM4455, Lot # 3012668/82743

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: -320°F

ALL WELD METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
LNM4455-1	52	0.027	40
LNM4455-2	50	0.022	40
LNM4455-3	50	0.016	20
Average	51	0.022	33

Identification of tested specimen provided by client.

KS/tw

Karl Schmitz, Director
Materials Testing

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

Attention: Chuck Ruud

April 6, 2005
Lab No. 05P-1007
P.O. No. 12516
Page 2 of 2

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): (2) Metrode B316NF, Batch # WO19711

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: -320°F

ALL WELD METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
B316NF-1	48	0.030	30
B316NF-2	52	0.027	30
B316NF-3	44	0.027	30
Average	48	0.028	30

Identification of tested specimen provided by client.

KS/tw

Karl Schmitz, Director
Materials Testing

ACCREDITED

Certificate No. 0397-01
Certificate No. 0397-02

MEMBER ACIL

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

February 28, 2005
Lab No. 05P-0554
P.O. No. 12516
Page 1 of 2
(Revised Report 3-2-05)

Attention: Rick Suria

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): Electrode LNM 4455 & B316NF — 301266827 43

SPECIFICATION: ASTM A 370-03a — L W01974 Cbr 6/14/05

SPECIMEN TYPE: "A" Vee Notch, All Weld

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: +70°F

RESULTS:

ALL WELD	JOULES	FOOT LBS.	LATERAL EXPANSION	% SHEAR
LNM 4455-7	149	110	0.055	50
LNM 4455-8	130	96	0.050	50
LNM 4455-9	134	99	0.051	50
Average	**138**	102	0.052	50

ALL WELD	JOULES	FOOT LBS.	LATERAL EXPANSION	% SHEAR
B316NF-7	155	114	0.056	50
B316NF-8	151	111	0.053	50
B316NF-9	146	108	0.052	50
Average	**151**	111	0.054	50

Identification of tested specimen provided by client.

KS/clm

Karl Schmitz, Director
Materials Testing

ACCREDITED

Certificate No. 0397.01
Certificate No. 0397.02

Founded 1929
St. Louis Testing Laboratories
INCORPORATED

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

February 28, 2005
Lab No. 05P-0554
P.O. No. 12516
Page 2 of 2
(Revised Report 3-2-05)

Attention: Rick Suria

PROCEDURE QUALIFICATION

WELDER: TERRY STANFIELD
MATERIAL: 1" CF8MnMn, Mod
SPECIFICATION: ASME IX
ELECTRODE: B316NF
PROCESS: SMAW

This is unrelated to report for C-2

REDUCED SECTION TENSILE

SAMPLE ID	WIDTH INCHES	THICKNESS INCHES	AREA SQ. INCHES	ACTUAL LBS.	TENSILE STRENGTH PSI	FRACTURE
TS-2	.750	1.000	.7500	70,000	93,300	Weld Metal
TS-5	.750	1.010	.7575	71,000	93,700	Weld Metal

GUIDED BEND TEST

SAMPLE ID	BEND	RESULTS
TS-1	Side	Acceptable, No Discontinuities
TS-3	Side	Acceptable, No Discontinuities
TS-4	Side	Acceptable, No Discontinuities
TS-6	Side	Acceptable, No Discontinuities

KS/clm

Karl Schmitz, Director
Materials Testing
CWI No. 92120161

ACCREDITED
Certificate No. 0397-01
Certificate No. 0397-02

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Pogel

C-2 COIL WELD MAP

X-RAY View < 1.02

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	~~Weld~~ Permeability Result	MAG Permeability Examination
1	18	2 1/2	1 3/4	1/2	NO	17	OK
2	18	1 1/2	3/4	1/8	NO	17	OK
3	18	2 3/4	1 1/4	3/8	NO	7	OK
4	18	2	1 1/2	1/4	NO	7	OK
5	18	2 7/8	1 1/4	3/8	NO	7	OK
6	18	3/4	1/2	3/8	NO	7	OK
7	18	7	1 1/2	3/8	NO ✓	7	OK
8	18	2 1/4	1 1/2	5/8	NO	8	OK
9	18	2 3/4	1 1/4	1/4	NO	8	OK
10	18	3 1/2	1 1/4	1/4	NO	8	OK
11	18	13/4	1	3/8	NO	10	OK
12	18	4	3	1/2	NO ✓	11	OK
13	18	13 1/2	3 3/4	1/2	YES ✓	11	OK
14	18	2 1/2	1 1/2	1/8	NO	11	OK
15	18	2 3/4	1	1/4	NO	53	OK
16	18	2 1/2	1 1/2	3/4	NO	53	OK
17	18	4	2 1/2	1/2	NO ✓	54	OK
18	18	2	2	1	YES ✓	54	OK
19	19	1 1/2	3/4	3/4	NO	56	OK
20	19	2	1 1/4	1	YES ✓	57	OK
21	19	6	4	1 1/4	YES ✓	58	OK
22	19	2 3/4	2	7/8	YES	36	OK
23	19	3 1/2	2 7/8	1/4	NO	36	OK
24	19	2 1/2	1 3/4	1/4	NO	36	OK
25	19	5	1	5/8	NO	36	OK
26	19	2	1 5/8	1/2	NO	68	OK
27	19	1 3/4	1 1/2	1/4	NO	69	OK
28	19	6	5	1/4	NO ✓	69	OK
29	19	2	2	1/4	NO	30	OK
30	19	4 7/8	3 3/4	1/4	NO ✓	30	OK
31	19	7	4	7/8	YES ✓	30	OK
32	19	2 1/4	2	1/4	NO	30	OK
33	20	2	1	1/4	NO	30	OK
34	20	2	1 1/4	1/4	NO	41	OK
35	20	2 1/2	2	1/4	NO	41	OK

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C-2 COIL WELD MAP

X-RAY ITEM

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	~~Weld~~ X Permeability Result	
36	20	2	1	1/8	NO	41	OK
37	20	1 1/2	1	1/8	NO	41	OK
38	20	2	1 1/2	3/8	NO	41	OK
39	20	4 1/2	2	1/4	NO	42	OK
40	20	2 1/2	1 1/2	3/8	NO	44	OK
41	21	3	1 1/2	1/4	NO	46	OK
42	21	2 1/2	2 1/2	1/4	NO	46	OK
43	21	3 1/4	3	1/2	NO	5	OK
44	21	2 1/2	3/4	1/2	NO	6	OK
45	21	3 1/4	1	1/4	NO	6	OK
46	22	8 3/4	2	1/4	NO ✓	11	OK
47	22	8	2 1/2	1/4	YES ✓	12	OK
48	22	.6	3	1/4	NO ✓	52	OK
49	22	2	1 1/2	1/4	NO	53	OK
50	22	4	2	1/4	NO	53	OK
51	22	2 1/2	2	1/8	NO	12	OK
52	22	3 1/2	2 1/2	1	YES ✓	62	OK
53	22	4 1/2	4	1	YES ✓	13	OK
54	22	1	1	1/4	NO	13	OK
55	22	6 3/4	2 1/2	1/2	YES ✓	13	OK
56	22	1	1	1/4	NO	12	OK
57	22	1 1/2	1	1/4	NO	12	OK
58	22	3 1/2	2	1/8	NO	12	OK
59	22	6 3/4	1	1/8	NO	14	OK
60	22	1 1/2	1 1/2	3/4	YES ✓	16	OK
61	22	4 1/2	3 1/2	1/4	NO ✓	16	OK
62	22	20	5	1	YES ✓	16	OK
63	22	13	4	3	YES ✓	16	OK
64	22	3/4	1/2	1/8	NO	55	OK
65	22	2 1/2	2	1/4	NO	55	OK
66	22	3/4	1/2	1/8	NO	55	OK
67	22	10 1/2	4 1/4	2	YES ✓	58	OK
68	23	3/4	1/2	1/4	NO	59	OK
69	23	4 1/2	3	1/4	NO ✓	60	OK
70	23	3	1 1/2	1/4	NO	60	OK
71	23	3	1	1/2	YES	60	OK
72	23	1	1	1/4	NO	17	OK

C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	Weld Permeability Result	
73	23	7 1/4	1/4	1/8	NO	17	OK
74	23	1 1/2	1 1/2	3/4	YES	18	OK
75	23	3/4	3/4	1/8	NO	18	OK
76	23	2	1/2	3/16	NO	18	OK
77	23	4	2 1/2	1/2	YES	18	OK
78	23	1	1/2	1/4	NO	18	OK
79	23	2 1/2	2	1/4	NO	19	OK
80	23	7	3	3/8	YES	61	OK
81	23	2 1/2	2	1/4	NO	67	OK
82	23	1 1/2	1 1/2	1/4	NO	61	OK
83	23	4	2 1/2	5/8	NO	61	OK
84	23	2	1/2	1/4	NO	67	OK
85	23	1 1/2	1	3/4	NO	67	OK
86	23	7 1/2	5	3	YES	19	OK
87	23	3 1/2	2	1/4	NO	68	OK
88	23	4	2 1/2	5/8	NO	20	OK
89	23	3 1/2	3	1/2	YES	20	OK
90	23	2 1/2	2	1/4	NO	20	OK
91	23	2	3/4	1/4	NO	69	OK
92	23	9	4	1	YES	70	OK
93	23	1 1/2	1	1/4	NO	70	OK
94	23	4	3	1/4	NO	70	OK
95	23	4 1/8	4	1/4	NO	21	OK
96	23	6	3	1/4	NO	22	OK
97	23	3	2 1/2	3/4	YES	22	OK
98	23	2 1/2	1	3/4	YES	22	OK
99	23	4	4	1 1/4	YES	24	OK
100	23	2 1/2	2 1/2	1/2	NO	24	OK
101	23	2 1/2	2 1/2	1 1/2	YES	24	OK
102	23	2 1/2	2 1/2	1/2	YES	24	OK
103	23	2	1	1/4	NO	26	OK
104	23	24	6	1	YES	26	OK
105	24	3	2	1/4	NO	26	OK
106	24	2 1/2	1 1/2	3/4	YES	28	OK
107	24	1	1	1/4	NO	28	OK
108	24	3/4	3/4	1/8	NO	28	OK
109	24	6	3	1	YES	28	OK

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C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	~~Weld~~ Permeability Result	
110	24	1	1	1/8	NO		OK
111	24	8	5	1	YES ✓	1	OK
112	24	7	4	1	YES ✓	1	OK
							OK
114	24	2 1/2	2	1	YES ✓	2	OK
115	24	3 1/2	7/8	3/4	YES	2	OK
116	24	5	3	3/4	YES	2	OK
117	24	1 1/2	1 1/2	1/4	NO	3	OK
118	24	2 1/2	1 3/4	1/4	NO	3	OK
119	24	10	5	1	YES ✓	3	OK
							OK
121	24	1	1/2	1/2	YES	43	OK
122	24	10	2 1/2	1 3/4	YES ✓	43	OK
123	24	2 1/2	2	1/4	NO	44	OK
124	24	2	1 1/2	1/2	YES	44	OK
125	24	3	3/4	1	YES ✓	44	OK
126	24	4 1/2	3 1/2	3/4	YES ✓	50	OK
127	24	1 1/2	1	1/4	NO	50	OK
128	24	4	2 1/2	1/4	NO	50	OK
129	24	2	1 1/2	1/4	NO	45	OK
130	24	2	1	1/4	NO	51	OK
131	24	2	1/2	1/4	NO	51	OK
132	25	1 1/2	1	1/4	NO	90	OK
133	25	2 1/2	1	1/2	YES	90	OK
134	25	3	1	1/2	YES	89	OK
135	25	2 1/2	2	1/2	YES	89	OK
136	25	2	1	1/4	NO	89	OK
137	25	1	1	1/4	NO	88	OK
138	25	2	1	1/4	NO	88	OK
139	25	7	5 1/2	1/2	YES ✓	88	OK
140	25	2	1	1/4	NO	88	OK
141	25	5	2	1/2	YES ✓	87	OK
142	25	2 1/2	2	1/4	NO	87	OK

C-2 COIL WELD MAP

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	X-RAY VIEW Weld Permeability Result	
143	25	5	2 3/4	1/8	NO	93	OK
144	25	5	2 1/2	1/4	NO	93	OK
145	25	1 1/2	1	1/8	NO	93	OK
146	25	3	2 1/2	1/4	NO	93	OK
147	25	3	2 1/2	1/4	NO	92	OK
148	25	12	3	1	YES	85	OK
149	26	1 1/2	1	1/4	NO	14	OK
150	26	3	2	1/8	NO	115	OK
151	26	6	2	1/8	NO	14	OK
152	26	1 1/2	1 1/2	1	YES	14	OK
153	26	3	1 1/2	1/8	NO	13	OK
154	26	2 3/4	1	1/8	NO	13	OK
155	26	3	1 1/2	1	YES	117	OK
156	26	2	1	1/4	NO	36	OK
157	26	2	1	1/2	YES	36	OK
158	26	2	1	1/4	NO	36	OK
159	26	3	2 3/4	1 1/2	YES	36	OK
160	26	3	2	5/8	YES	39	OK
161	26	6	2	1	YES	34	OK
162	26	4 1/2	1	3/4	YES	39	OK
163	27	1	1/2	1/2	YES	97	OK
164	27	2 1/2	1	1/8	NO	97	OK
165	27	2	1 1/4	1/4	NO	37	OK
166	27	3	2	1/4	NO	36	OK
167	27	1 1/2	1	1/8	NO	35	OK
168	27	3	2	1/8	NO	35	OK
169	27	13	2	1 3/4	YES	35	OK
170	27	2	1	1/2	YES	39	OK
171	27	2	1	1/8	NO	39	OK
172	27	2 1/2	1 3/4	1/4	NO	38	OK
173	27	2	1	1/8	NO	38	OK
174	27	2	1	1/4	NO	38	OK
175	27	3	2 1/2	1/8	NO	8	OK
176	27	2	1	1/4	NO	8	OK
177	27	2	*	1/8	NO	8	OK

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C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	Weld Permeability Result	
178	27	3	1 3/4	1/4	NO	100	OK
179	27	2	1	1/8	NO	100	OK
180	27	3 1/2	2	1/4	NO	100	OK
181	27	3	1/4	1/8	NO	101	OK
182	27	4	2	1/4	NO	101	OK
183	27	3	2	1/2	YES	102	OK
184	27	1	1	1/4	NO	103	OK
185	27	2 3/4	1	1	YES ✓	104	OK
186	27	1	1	1/4	NO	105	OK
187	27	2	1	1/4	NO	23	OK
188	27	3 1/2	2	1/4	NO	24	OK
189	27	3	2	1/4	NO	25	OK
190	27	2 1/2	2	1/4	NO	100	OK
191	27	2 1/2	1	3/4	YES	100	OK
192	27	4	3	1/2	YES ✓	100	OK
193	27	8	1 1/2	1	YES ✓	100	OK
194	27	19	2	1/2	YES ✓	100	OK
195	27	2 3/4	2	1/2	YES	100	OK
196	27	6	1 3/4	2	YES ✓	5	OK
197	27	1 1/2	1	1/2	YES	5	OK
198	27	3	2	1/4	NO	5	OK
199	27	2	1 1/4	1/4	NO	5	OK
200	27	4	3	1/4	NO ✓	5	OK
201	27	1 1/2	1	1/2	YES	101	OK
202	27	7 3/4	2	1	YES ✓	102	OK
203	27	6 3/4	1 1/2	1/2	YES	102	OK
204	27	3	2	1/2	YES	102	OK
205	27	2	1 1/4	1/4	NO	103	OK
206	27	4	2	1/4	NO	103	OK
207	27	2	1 1/2	1/4	NO	103	OK
208	27	1	1	1/4	NO	103	OK
209	27	3 1/2	1 1/2	1	YES ✓	4	OK
210	27	1	3/4	1/4	NO	4	OK
212	27	4	2 1/2	1/4	NO	3	OK
213	27	6	2 1/2	3/4	YES ✓	34	OK
214	27	4	2	3/4	YES	34	OK

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C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	Weld Permeability Result	
215							
216	.27	3 1/2	1	3/4	YES	31	OK
217	.27	2	2	1	YES ✓	2	OK
218	.27	2	1	3/4	YES	33	OK
219	.27	2	1	1/4	NO	2	OK
220	.28	3	1	1	YES ✓	106	OK
221	.28	5	4	1/4	NO ✓	23	OK
222	28	4	1	1/4	NO	23	OK
223	28	13	4	1/2	YES ✓	24	OK
224	28	2	1	1/4	NO	24	OK
225	28	9 1/2	7	1/2	YES ✓	22	OK
226	28	3	1 1/4	1/2	YES	20	OK
227	28	1 1/2	1	1/4	NO	20	OK
228	28	1 1/2	1	1/4	NO	19	OK
229	.28	2 1/2	1	1	YES ✓	109	OK
230	.29	6	2	1 1/2	YES ✓	17	OK
231	29	1	1 1/2	3/4	YES	17	OK
232	29	3	1 1/4	3/4	YES	17	OK
233	29	3	1 1/4	3/4	YES	17	OK
234	.29	3	2	1/8	NO	15	OK
235	.30	1 1/2	3/4	1/4	NO	15	OK
236	30	1	3/4	1/8	NO	15	OK
237	30	2	3/4	1/4	NO	15	OK
238	30	2	1	1/4	NO	15	OK
239	30	1 3/4	1	1/4	NO	15	OK
240	30	8 1/8	3 3/4	1/4	YES ✓	15	OK
241	.30	3	1/4	1/8	NO	111	OK
242	.31	1/2	1/2	1/8	NO	111	OK
243	31	1 1/2	1 1/2	1/4	NO	111	OK
244	31	1/2	1/2	1/4	NO	111 2	OK
245	31	6	1	3/4	YES	111	OK
246	.31	9	2	1/4	YES ✓	111 2	OK
247	22	8 3/8	3 5/4	1/2	YES ✓	14	OK
248	22 A	1	1	1/2	NO	14	OK
249	22 A	1	1	1/2	NO	14	OK
250	22 A	1	1	1/2	NO	14	OK
251	22 A	5 1/2	1 1/2	1/8	NO	64	OK

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C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	~~Weld~~ Permeability Result	
252	22 A	2 1/2	2 1/4	1/4	NO	64	OK
253	22 A	9	4 1/2	1/2	YES ✓	64	OK
254	22 A	13	2 1/4	1/2	YES ✓	63	OK
255	22 A	1	1	1/8	NO	63	OK
256	22 A	1	1	1/8	NO	63	OK
257	22 A	1 1/2	1	1/8	NO	63	OK
258	23 A	1	1/2	1/8	NO	63	OK
259	23 A	4	1	1/8	NO	63	OK
260	23 A	1 1/2	1	1/4	NO	63	OK
261	23 A	6 1/2	5 1/2	1/2	YES ✓	63	OK
262	24 A	2 1/2	1	1/4	NO	63	OK
263	24 A	8	2 3/8	3/4	YES ✓	63	OK
264	24 A	10	4 1/4	1/2	YES ✓	63	OK
265	24 A	2 1/2	1 1/2	1/2	NO	63	OK
266	24 A	2 1/2	1 1/2	1/2	NO	62	OK
267	24 A	2 1/4	1	1/4	NO	62	OK
268	24 A	6 1/2	4 1/2	1	YES ✓	62	OK
269	24 A	6 1/2	3 3/4	3/4	YES ✓	62	OK
270	24 A	13 1/2	3 3/4	3/4	YES ✓	71	OK
271	24 A	7	3/4	1/2	NO	71	OK
272	25 A	9	2	1/2	NO ✓	10	OK
273	25 A	7	2 1/2	1/2	NO ✓	83	OK
274	25 A	17	1	3/4	YES ✓	71	OK
275	25 A	9 3/4	3/4	3/4	YES ✓	72	OK
276	25 A	4	4	3/4	YES ✓	72	OK
277	25 A	14	2 1/4	1 1/2	YES ✓	74	OK
278	25 A	2	1	1/4	NO	75	OK
279	25 A	2	1 1/2	1/4	NO	75	OK
280	25 A	2 1/4	1 1/2	1/4	NO	75	OK
281	25 A	6 1/2	3/4	3/4	YES	82	OK
282	26 A	4	3/4	1/4	NO	76	OK
283	26 A	1	1/4	1/8	NO	77	OK
284	26 A	3	2	1/8	NO	4	OK

C-2 COIL WELD MAP

X-RAY VIEW

Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	Weld Permeability Result	
285	26 A	2	1	1/4	NO	4	OK
286	26 A	3	2 1/2	1/4	NO	4	OK
287	26 A	4	2	1/4	NO	4	OK
288	26 A	4	2 1/2	1/4	NO	4	OK
289	26 A	14	5	1/2	NO	30	OK
290	26 A	13	5 1/2	1	YES	30	OK
291	26 A	1 1/2	1	1/8	NO	30	OK
292	26 A	11 1/2	8 3/8	1	YES	29	OK
293	26 A	3/4	1/2	1/8	NO	29	OK
294	27 A	5 1/2	4 1/2	3/4	YES	29	OK

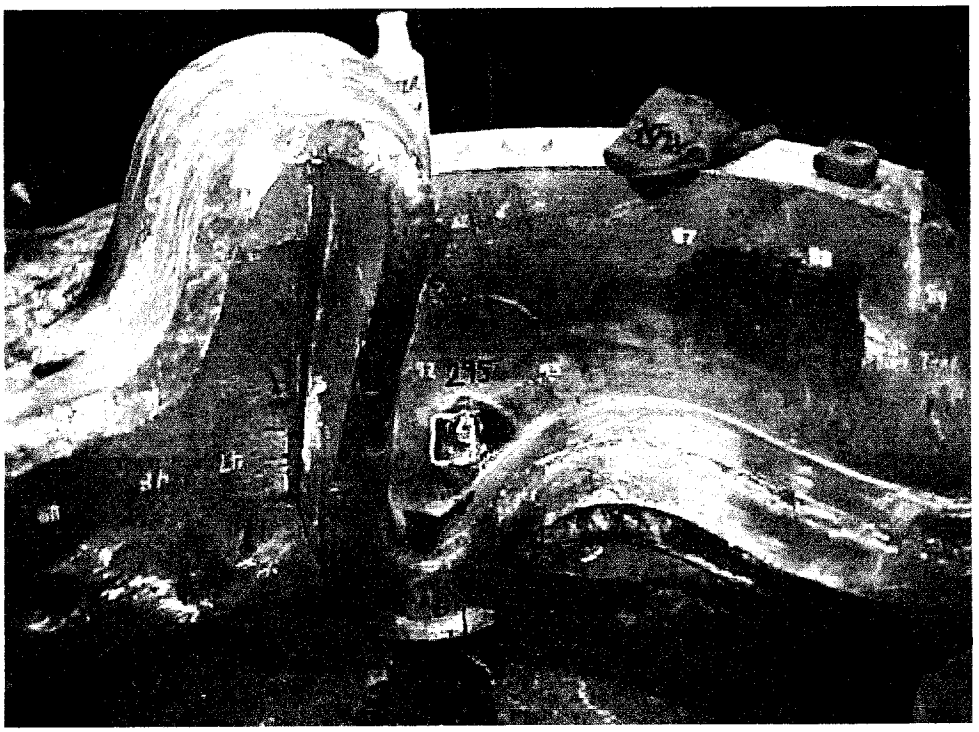
4/4/05

C-2 COIL WELD MAP #2

Submitted 6-15-05 C. Ruud

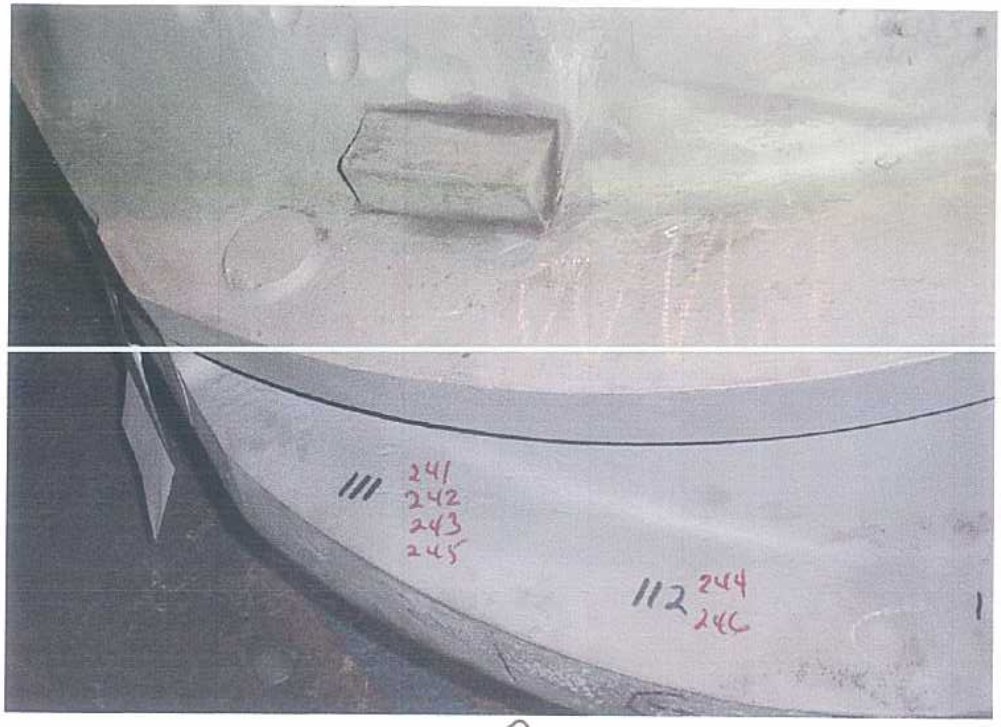
Defect Number	Photo Number	Length Inches	Width Inches	Depth Inches	Over 10% Wall Yes/No	Rt View
295	1	4 1/2"	3 ¼"	7/8"	Y	92-93

Photo 1




V94
110
108

1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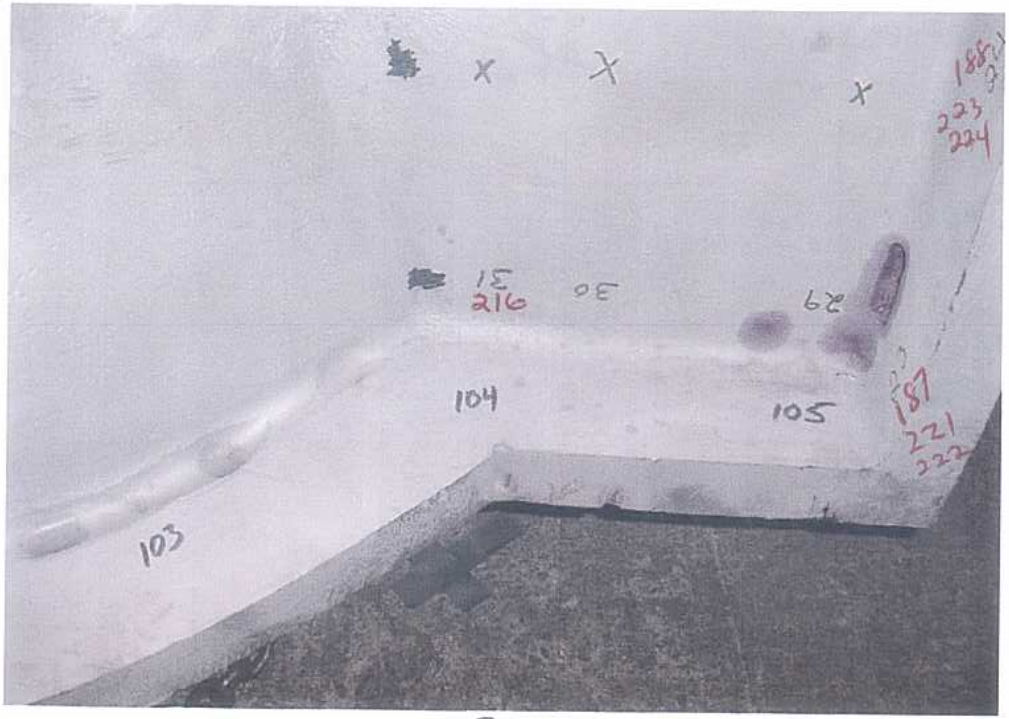
112
244
246

2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216
104
105
187
221
222
103

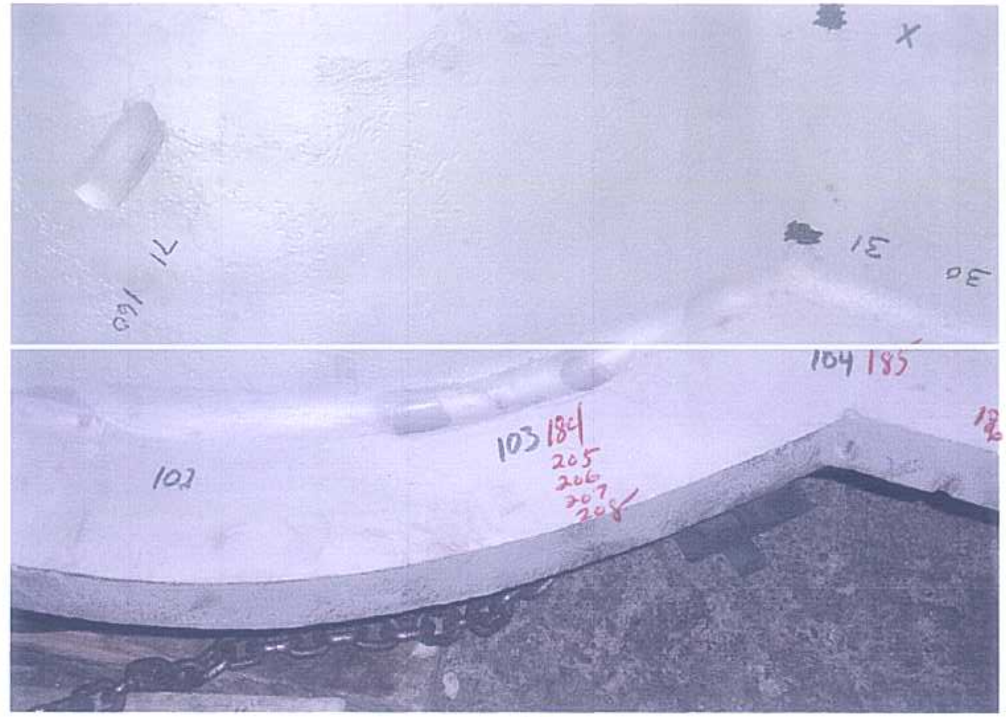
3


109
229
V95

4


98
99

5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31
30
X
104 185
103 184
205
206
207
208
102

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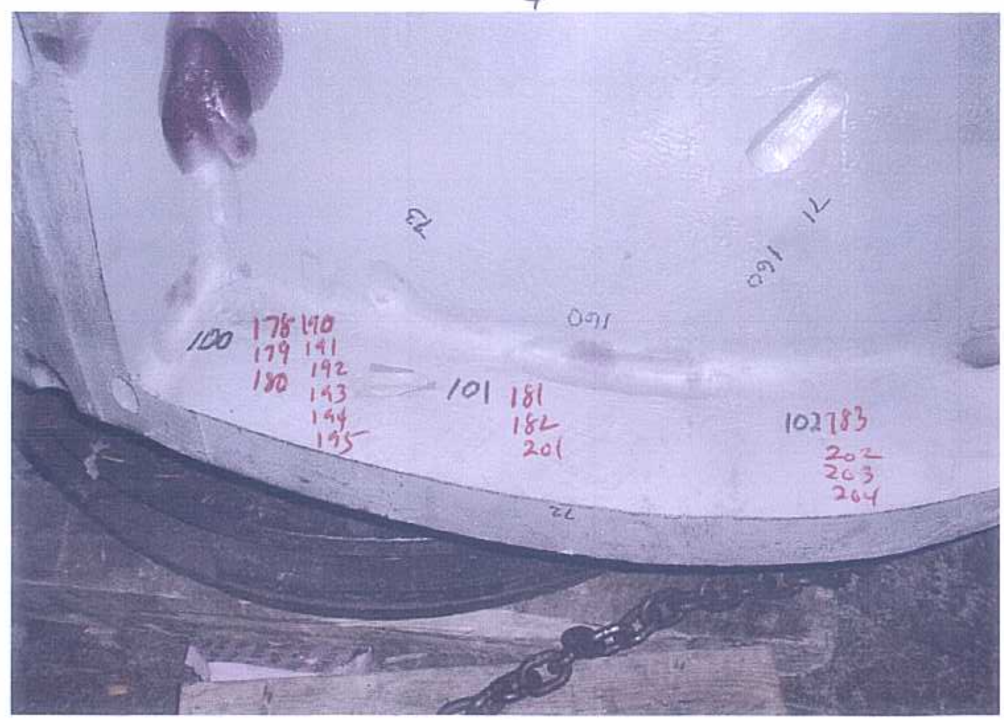
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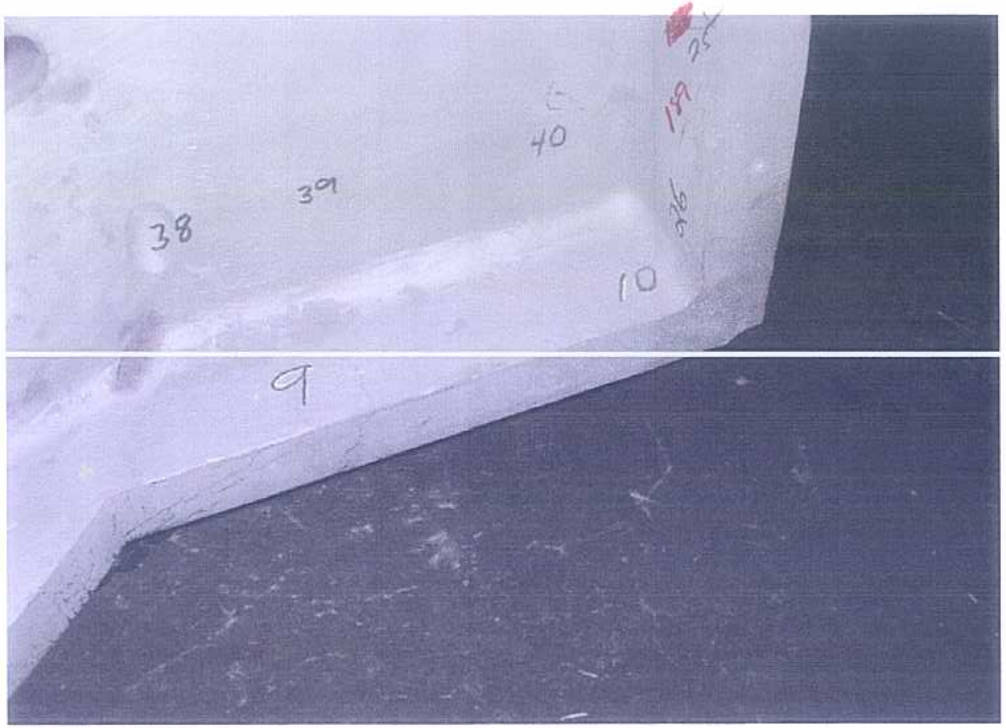
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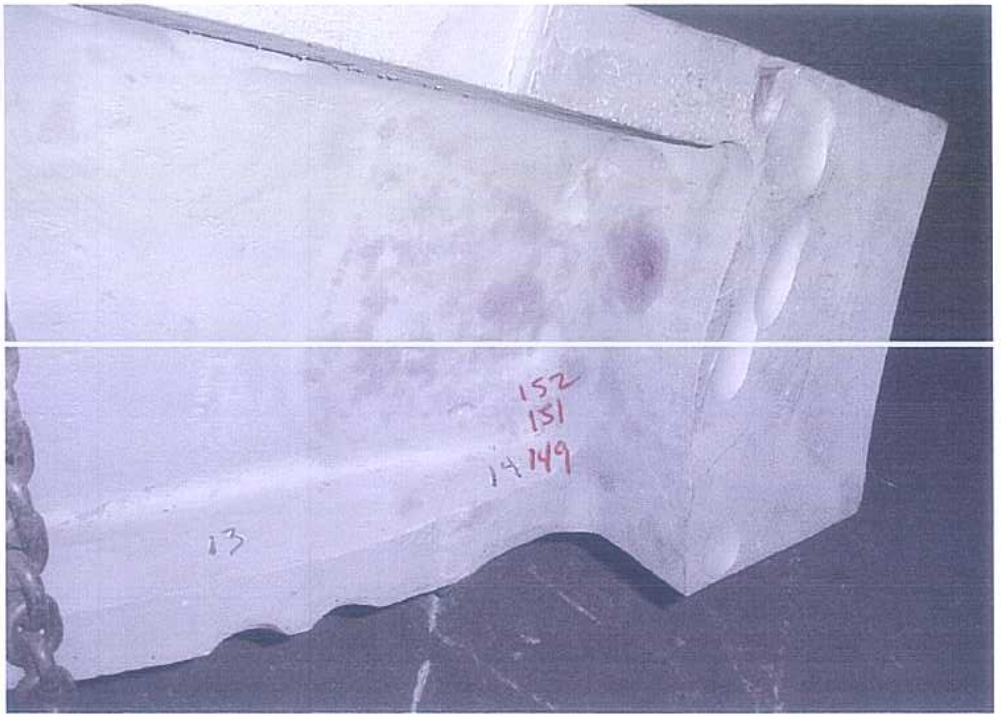
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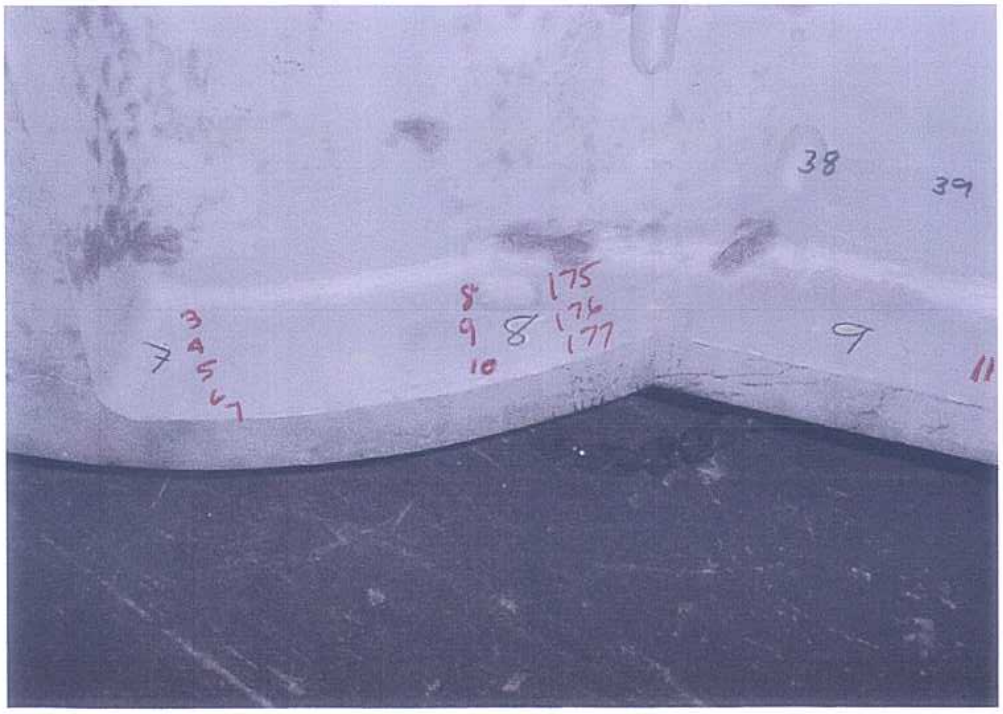
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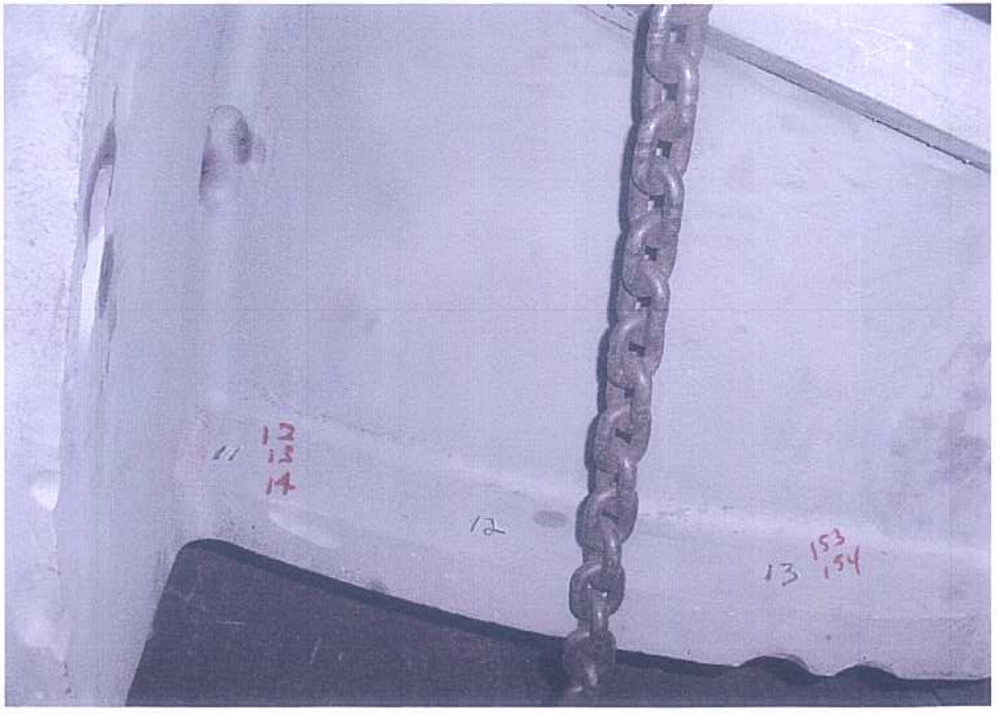
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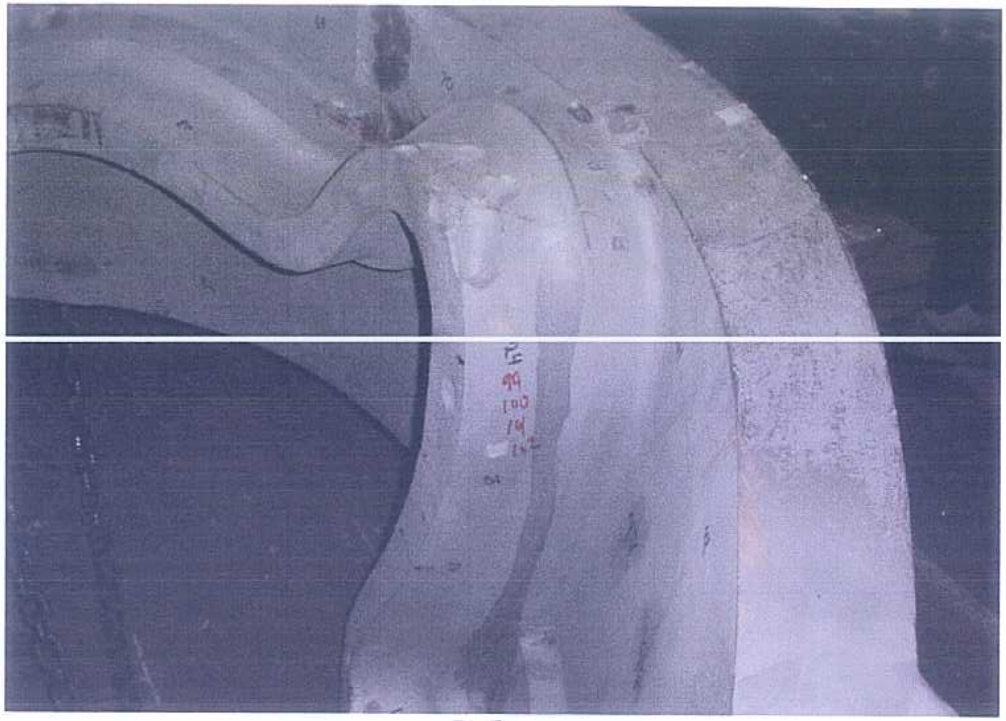

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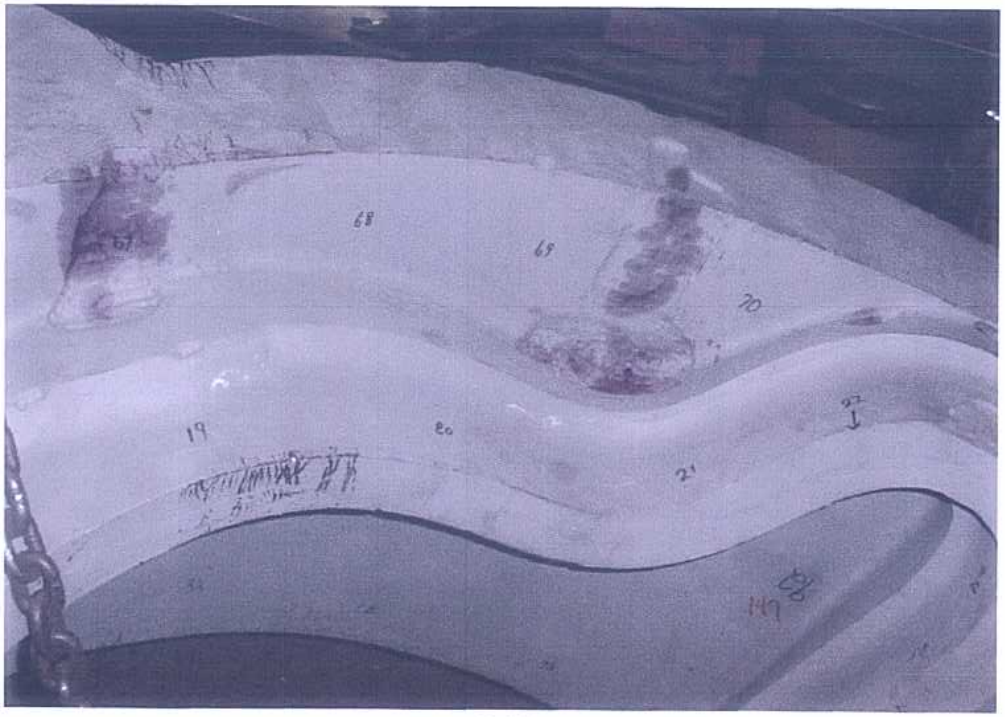

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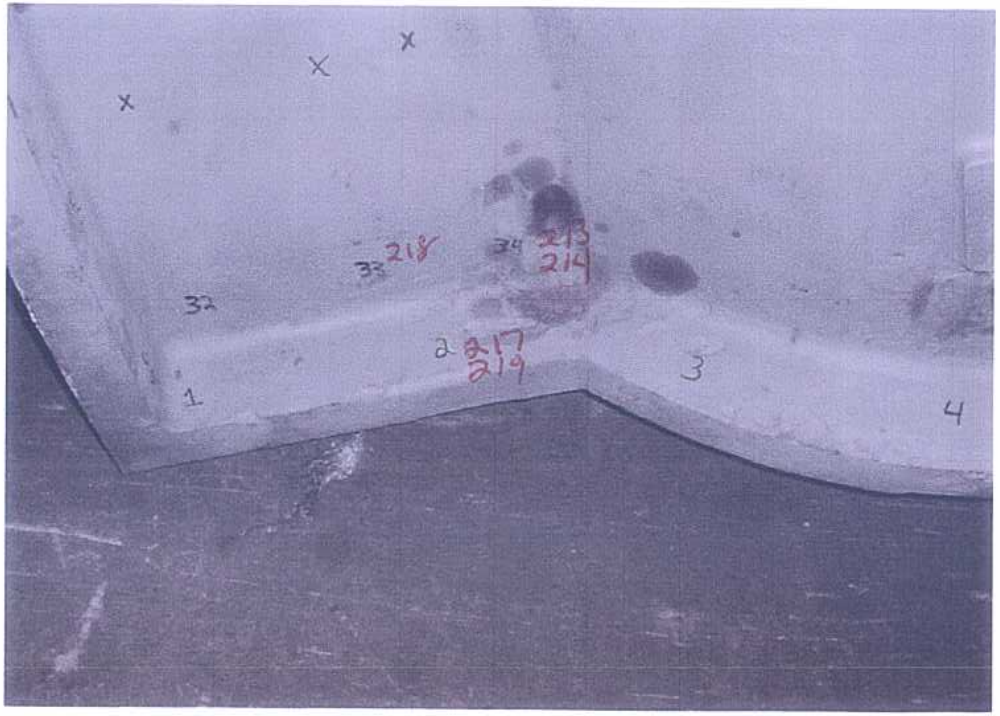


28

MetalTek INTERNATIONAL

Carondelet Division

8600 Commericial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Final Inspection Report

Customer Name: ENERGY INDUSTRIES OF OHIO

Pattern: MCWF-C2

Order Number: PPPL-FP-LTS-2

Revised 7/26/05

ASTM Metal CF8MNMN MOD

Date 7/26/2005

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	S75920-1	CQP - 300 Rev 9	SEE NOTE	Acceptable
Notes Acceptance per ASTM A903. Acceptance criteria - level 1 for high stressed areas, level 2 for all other areas.				
Mag Perm	S75920-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	S75920-1	Technique # 12726	MSS SP 54	Acceptable
Visual	S75920-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant

Technician: Jason Rees
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005

WORK ORDER NO. 361-02283

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Gas	Shrinkage: Cracks	Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF -C2	1	1-2	✓		2										
MAIN BODY		2-3	✓												
E.I.O. C040851		3-4	✓				1								
		4-5	✓												
MS75920		5-6	✓												
		7-8	✓												
		8-9	✓												
		9-10	✗ ST	R			2				R-LW 3+			✓	
		11-12	✓		2									✓	
		12-13	✓											✓	
		13-14	✓		1										
		~~14-15~~													
		15-16	✓			1									
		16-17	✓		1									✓	
		~~17-18~~													
		18-19	✓												
		19-20	✓											✓	
		20-21	✓		2									✓	
		21-22	✓		1									✓	✓
		23-24	✓		1									✓	
		24-25	✓											✓	
		26-27	✓			2									
		27-28	✓											✓	
		29-30	✓		1									✓	
		30-31	✓		1									✓	

NO. ACCEPTED Ø NO. REJECTED 1

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER S. TEAGLE

CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005

WORK ORDER NO. 361-02283

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Gas	Shrinkage: Cracks	Hot Tears	Under cut	Film Artifacts: Surface		REMARKS
MCWF -C2	1	32-33	✓		2								✓		
MAIN BODY		33-34	✓											✓	
E.I.O. C040851		35-36	✓		2									✓	
		36-37	✓										✓		
MS75920		38-39	✓										✓		
		39-40	✓		2								✓		
		41-42	✓										✓		
		42-43		R - ~~Slag~~									✓		
		44-45	✓								R		✓		
		45-46		R									✓		
		47-48		R							R		✓	✓	
		48-49		R							R(2)		✓		
	49	50-51	✓								R(2)		✓		
		52-53	✓										✓		
		53-54	✓										✓		
		54-55	✓										✓		
		55-56	✓										✓		
		56-57	✓										✓		
		57-58	✓										✓		
		58-59	✓												
		59-60	✓										✓		
		60-61	✓												
		62-63	✓			1							✓		
		63-64	✓										✓		
		65-66	✓										✓		

NO. ACCEPTED 0 NO. REJECTED 1

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER S. TEAGUE

CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005

WORK ORDER NO. 361-02283

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Incomplete Penetration: Rejected	Dross Inclusion	Slag	Porosity	Lack of Fusion	Gas	Shrinkage: Cracks	Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF -C2	1	67-68	✓										✓		
MAIN BODY		68-69	✓										✓		
E.I.O. C040851		69-70	✓										✓		
		V64	✓										✓		
MS75920		71-72	✓		1										
		72-73	✓										✓		LIGHT LEAK
		73-74	✓										✓	✓	
		74-75	✓										✓		
		75-76	✓										✓		
		76-77	✓										✓		
		78-79	✓		1								✓		
		79-80	✓										✓		
		80-81	✓										✓		
		81-82	✓										✓		
		83-84	✓										✓		
		85-86	✓		2								✓		
		86-87	✓		1								✓		
	1	87-88		R				Possible Hot Tear - R					✓		
		88-89	✓										✓		
		90-91	✓		1								✓		
		92-93		R						2	R		✓		
		V94	✓							1			✓	✓	
		V95	✓											✓	
		96-97	✓											✓	
		97-98	X	R							R		✓		

NO. ACCEPTED 6

NO. REJECTED 1

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER J. TERALD

CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL
ADDRESS 8600 COMMERCIAL BLVD
CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005
WORK ORDER NO. 361-02283
P.O. NUMBER 21041
XRAY X
GAMMA

PROCEDURE SPECIFICATION ASTM E94-93
ACCEPTANCE CRITERIA MSS-SP-54-1999
SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Inclusion	Dross or Slag	Incomplete Penetration: Porosity	Lack of Fusion	Gas	Cracks	Shrinkage	Hot Tears	Undercut	Surface	Film Artifacts	REMARKS
MCWF -C2	1	98-99	✓		R	GP	R	3+	GP	2	L	L	T	✓		
MAIN BODY		100-101	✓				1							✓		
E.I.O. C040851		101-102	✓											✓		
		102-103	✓											✓		
MS75920	"	103-104		R	}	Same	Defect							✓		
"		104-105		R	}								R	✓		
"		106-107		R									R	✓		
		107-108	✓										R	✓	✓	
		108-109	✓											✓		
		109-110	✓											✓		
		111-112	✓		1									✓		
		112-113	✓				2							✓		
		114-115	✓								2			✓		
		115-116	✓											✓		
"		116-117		R									R	✓		

NO. ACCEPTED 8
NO. REJECTED 1

COMMENTS

MQS TECH. NO. 12970 SHT. REV.
CUST. RSS NO. SHT. REV.
REVIEWER S. Teague
CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005

WORK ORDER NO. 361-02283

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Inclusion	Dross or Slag	Incomplete Penetration: Porosity	Lack of Fusion	Gas Cracks	Shrinkage: Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF -C2	1	1-2	✓				1					✓		
INSIDE RAIL		2-3	✓				1					✓		
E.I.O. C040851		3-4	✓				1					✓		
		4-5	✓									✓		
MS75920		5-6	✓									✓		
		6-7	✓									✓		
		7-8	✓									✓	✓	
		8-9	✓											
		9-10	✓									✓		
		10-11	✓									✓		
		11-12	✓									✓	✓	
		12-13	✓		1							✓	✓	
		13-14	✓				i					✓		
		14-15	✓									✓		
		15-16	✓									✓		
		16-17	✓		1		2-3					✓		
		17-18	✓				1					✓	✓	
		18-19	✓									✓		
		19-20	✓		2							✓		
		20-21	✓									✓		
		21-22	✓							1-2		✓		
		22-23	✓							1		✓		
		23-24	✓									✓		
		24-25	✓									✓		
		25-26	✓									✓	✓	

NO. ACCEPTED 1 NO. REJECTED 0

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER S. Tebbe

CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 05/20/2005

WORK ORDER NO. 361-02283

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Inclusion	Dross or Slag	Incomplete Penetration: Porosity	Lack of Fusion	Shrinkage: Gas Cracks	Hot Tears	Under cut	Film Artifacts: Surface	REMARKS
MCWF -C2	1	26-27	✓			1						✓	
INSIDE RAIL		V28	✓									✓	
E.I.O. C040851		29-30	✓			1						✓	
		30-1	✓									✓	
MS75920													

NO. ACCEPTED 1

NO. REJECTED ∅

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER S. Tomlos

CERTIFIED NDT LEVEL (RT) II

TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER

NAME METAL TEK INTERNATIONAL

ADDRESS 8600 COMMERCIAL BLVD

CITY PEVELY STATE MO ZIP 63070

DATE 06/11/2005

WORK ORDER NO. 361-02341

P.O. NUMBER 21041

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET 1 OF 1

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Shrinkage: Gas	Cracks	Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF -C2	1	9-10	✓		2				1					✓	
		41-42	✓		1										
E.I.O. C040851		45-46	✓		1						2				
		47-48	✓		1						1				
MS75920		48-49	✓											✓	
(R1)		87-88	✓											✓	
		92-93		R				R							
		97-98	✓						1						
		103-104	✓												
		104-105	✓												
		106-107	✓		1										
		116-117	✓		1										

NO. ACCEPTED Ø NO. REJECTED 1

COMMENTS

MQS TECH. NO. 12970 SHT. REV.

CUST. RSS NO. SHT. REV.

REVIEWER John Petroske

CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

MetalTek INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

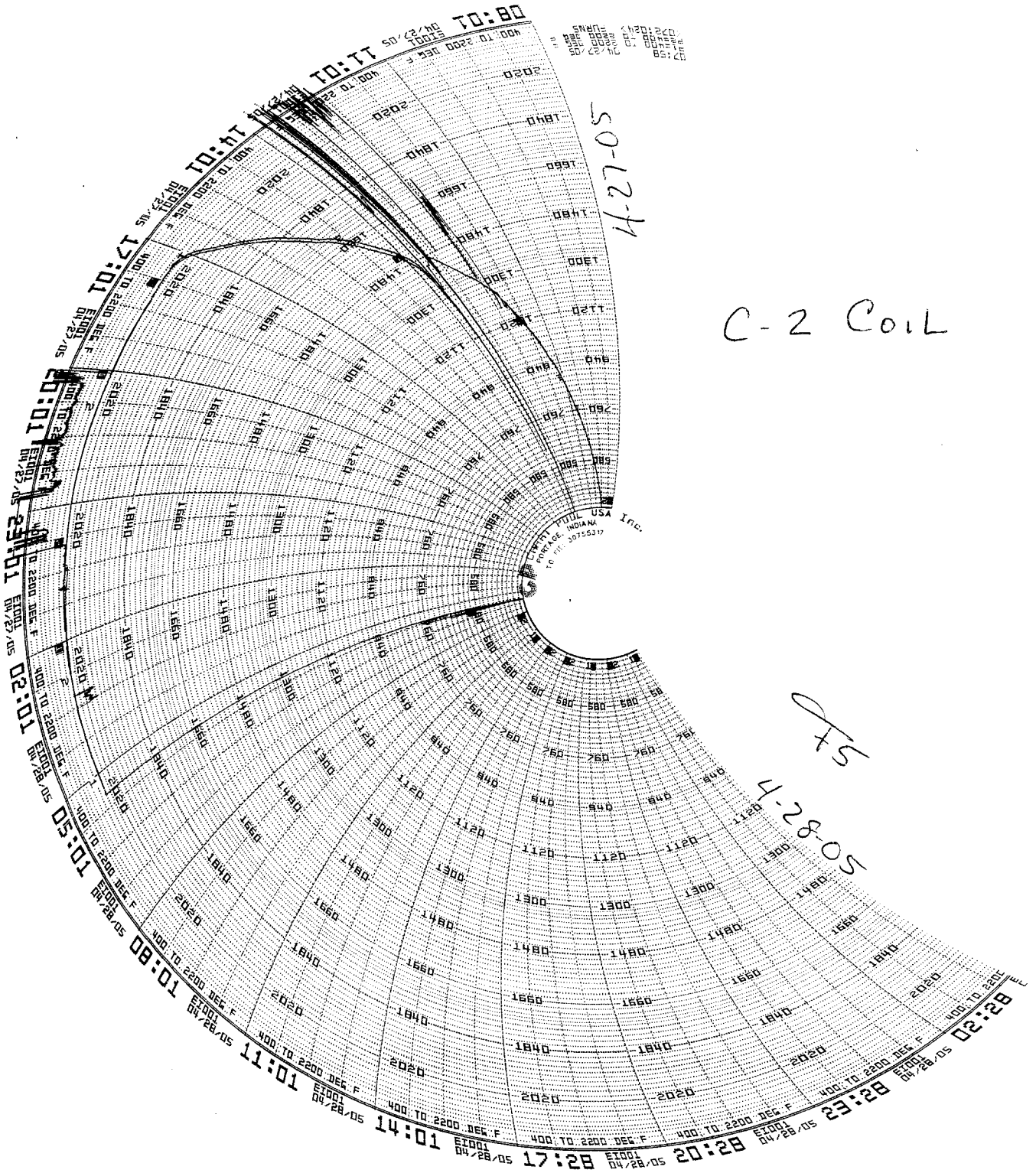
CUSTOMER	PURCHASE ORDER NUMBER	DATE	CONTROL NO.	PAGE
Energy Industries of OH	PPPL-F2-L+S-2	6-15-05	40851	1 of 1

PART NO.	SPECIFICATION	CLASS	TOTAL PIECES	PIECES ACCEPTED
MCWF-C2	E 446	See Spec	1	1

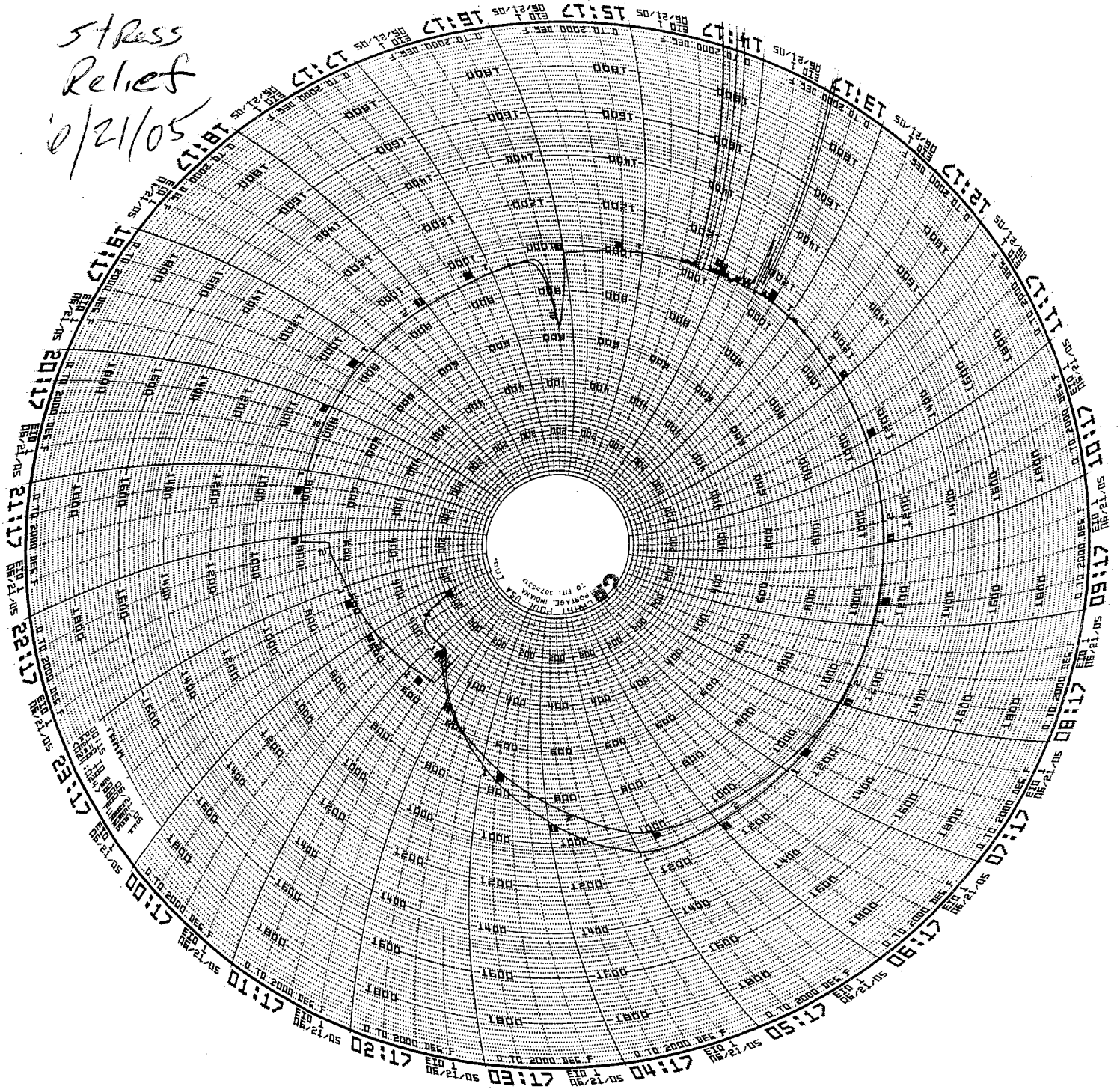
RADIOGRAPHED BY:	INTERPRETED BY:	ASNT LEVEL
M. dyett	Mdyett	II

FILM TYPE	MATERIAL	ISOTOPE	CODE
D7/59	CF8MN/A494 Mod	IRIDIUM 192 COBALT 60 V	ASTM E94 V ASME MIL-STD-453

	VIEW	PENE	ACCEPT	REJECT	SHRINK	INCLUSION	POROSITY	LINEAR	SURFACE	LOF/LOP	COMMENTS
MS75920											
	92-93R2	30/40		X						X	
6-16-05	92-93R3	30/40	/			1	2		/		Film Crimp


4-27-05
C-2 Coil
4-28-05
08:01
11:01
14:01
17:01
20:01
23:01
02:01
05:01
08:01
11:01
14:01
17:28
20:28
23:28
02:28
400 TO 2200 DEG F
ET001
04/28/05

C-2 Coil
Stress
Relief
6/21/05



MetalTek INTERNATIONAL

Corrective Action 1292
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 6/1/2005 6-2-05 Rev 1 cbr
CA Originator C. Ruud
Pattern Number: C-2 Coil

Description of Defect / Non-Conformance
104 defects requiring major welds were found during visual, LP and RT inspections.

Root Cause
Inherent to the manufacturing process.

Corrective Action Weld upgrade C1 casting. Welding will be performed following the approved procedure FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1. FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2.

Verification of Corrective Action
All repairs will be verified by the inspection method used to discover the original defect.

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick

MetalTek INTERNATIONAL

Corrective Action 1292a
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 6/15/2005
CA Originator C. Ruud
Pattern Number: C -2 Coil

Description of Defect / Non-Conformance
Defect found during RT verification. Result in a major weld.

Root Cause
Lack of fusion was discovered.

Corrective Action
Weld repair will be made according to approved prodcedures.

Verification of Corrective Action
Area will be LP and RT inspected.

Estimated Completion Date
6/15/05

Actual Completion Date
Complete.

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick

MetalTek INTERNATIONAL

Corrective Action 1302
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 5/29/2005
CA Originator C. Ruud
Pattern Number: C-2 Coil

Description of Defect / Non-Conformance
Failed to differentiate two directions of test material on pattern/casting per the requirement of NCSX-CSPEC-141-03-07, SECTION 4.2.2.

Root Cause
Failed to communicate specification to Pattern Shop to add cast on test material specimens in the transverse direction.

Corrective Action
Will request a deviation to eliminate requirement.

Verification of Corrective Action
N/A

Preventive Action
Create Inspection and Test Plan summarizing all requirements.

Estimated Completion Date
6/15/05

Actual Completion Date

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick

Accept As-Is. NCSX-CSPEC-141-03-07 is being revised to eliminate the requirement to test in 2 directions. 6-6-05 PM
Ref. also 1301.

TEAM COOPERHEAT-MQS, INC.

RADIOGRAPHIC TECHNIQUE SHEET

FORM 20.3-61 Rev. 4

5512 W. State St-Milwaukee, WI 53208 (414) 771-3060 Fax (414)771-9481 (800) 818-6403 www.cooperheat-mqs.com

CUSTOMER RSS NO.: _____ SHEET: _____ REV: _____

MQS TECH. NO.: 12970

MQS RSS NO.: _____

CUSTOMER METALTEK INTERNATIONAL DATE: 1-18-2005

PART NO. MCWF-C12103989 DESCRIPTION C2 COIL CASTING MATERIAL CF8MNM

TOTAL NUMBER OF VIEWS 121 NUMBER X-RAY VIEWS 121 NUMBER GAMMA RAY VIEWS 0

MACH(s) MAKE(s) VARIAN MODEL(s) L2000 S/N(s) 20 MAX KV(s) 7500

SOURCE(s) N/A

PROCEDURE SPECIFICATION MSS-SP-54 ACCEPTANCE CRITERIA MSS-SP-54

MQS PROCEDURE NO. 20.H.010 REV. 0 PENETRAMETER SPEC. ASTM E142-86

PROCESSING: AUTOMATIC X PROCESSOR B2000 MANUAL ___ TEMPERATURE 27.2°

TECHNICIAN J.P., S.S. NDT LEVEL II APPROVED BY Chris Rudolph NDT LEVEL III

VIEW IDENTIFICATION		*					
SOURCE/X-RAY MACH USED		VARIAN					
CURIES OR KV		7500					
MA OR PULSES		N/A					
SOURCE TO FILM DISTANCE		*					
EXPOSURE TIME OR RADS		*					
MATERIAL THICKNESS		1					
MATERIAL GROUP		1					
PENETRAMETRER SIZE/(AMT)	GP. 1	*		SEE ATTACHED	INFORMATION		
SHIM BLOCK SIZE	GP.	N/A					
FILM SIZE		*					
FILM TYPE/BRAND		*					
PB SCREEN, FRONT		.010					
PB SCREEN, BACK		.010					
SENSITIVITY		2-2T					
FILTER TYPE/LOCATION		N/A					
MASKING TYPE/LOCATION		N/A					
ANGLE		*					
NO. OF FILMS IN CASSETTE		*					
VIEWING: SING./DOUB./BOTH		S-B					
FOCAL SPOT SIZE		2 MM					
SKETCH AND/OR REMARKS		SEE ATTACHED					
GEOMETRIC UNSHARPNESS							

CUSTOMER Metaltek RSS # 12970 PART NO. MCWF-C 2

VIEW	SFD	EXP. TIME	FILM TYPE	FILM SIZE	THK. RANGE	IQI
1-2	65"	25 KR	T	14 X 17	2-3/4"	50(2)
2-3	65"	25 KR	T	14 X 17	2-3/4"	50(2)
3-4	65"	25 KR	T	14 X 17	2-3/4"	50(2)
4-5	65"	25 KR	T	14 X 17	2-3/4"	50(2)
5-6	65"	25 KR	T	14 X 17	2-3/4"	50(2)
7-8	65"	25 KR	T	14 X 17	2-3/4"	50(2)
8-9	65"	25 KR	T	14 X 17	2-3/4"	50(2)
9-10	65"	25 KR	T	14 X 17	2-3/4"	50(2)
10-11	65"	25 KR	T	14 X 17	2-3/4"	50(2)
11-12	65"	25 KR	T	14 X 17	2-3/4"	50(2)
12-13	65"	25 KR	T	14 X 17	2-3/4"	50(2)
13-14	65"	25 KR	T	14 X 17	2-3/4"	50(2)
14-15	65"	25 KR	T	14 X 17	2-3/4"	50(2)
15-16	65"	25 KR	T	14 X 17	2-3/4"	50(2)
16-17	65"	25 KR	T	14 X 17	2-3/4"	50(2)
17-18	65"	25 KR	T	14 X 17	2-3/4"	50(2)
18-19	65"	25 KR	T	14 X 17	2-3/4"	50(2)
19-20	65"	25 KR	T	14 X 17	2-3/4"	50(2)
20-21	65"	25 KR	T	14 X 17	2-3/4"	50(2)
21-22	65"	25 KR	T	14 X 17	2-3/4"	50(2)
23-24	65"	25 KR	T	7 x 17	2-3/4"	50(2)
24-25	65"	25 KR	T	7 x 17	2-3/4"	50(2)
26-27	65"	25 KR	T	7 x 17	2-3/4"	50(2)
27-28	65"	25 KR	T	7 x 17	2-3/4"	50(2)
29-30	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
30-31	70"	25 KR	M125	11 x 17	1-1/2"	30(2)
32-33	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
33-34	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
35-36	70"	25 KR	M125	11 x 14	1-1/2"	30(2)
36-37	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
38-39	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
39-40	70"	25 KR	M125	14 x 17	1-1/2"	30(2)
41-42	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
42-43	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
44-45	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
45-46	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
47-48	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
48-49	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
50-51	85"	35 KR	T/M125	14 X 17	1-1/2" – 2"	30, 40
52-53	90"	40 KR	D8/T/AA/Dumb	14 x 17	1-1/2" – 7"	30,40,100,140
53-54	90"	40 KR	D8/T/AA/Dumb	14 x 17	1-1/2" – 7"	30,40,100,140
54-55	90"	40 KR	D8/T/AA/Dumb	14 x 17	1-1/2" – 5"	30,40,100

CUSTOMER Metaltek RSS # _____ PART NO. MCWF-C 2

VIEW	SFD	EXP. TIME	FILM TYPE	FILM SIZE	THK. RANGE	IQI
55-56	90"	40 KR	D8/T/AA/Dumb	14 x 17	1-1/2" – 5"	30,40,100
56-57	90"	40 KR	D8/T/AA/Dumb	14 x 17	1-1/2" – 5"	30,40,100
57-58	93"	65 KR	D8/AA/T/D8	14 x 17	3" – 7"	60,140
58-59	90"	40 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
59-60	90"	40 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
60-61	90"	40 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
62-63	90"	40 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
63-64	90"	35 KR	T/M125	14 x 17	1-1/2"	30(2)
65-66	90"	150 KR	D8/AA/T/D8	14 x 17	3" – 10"	60,140,180,200
67-68	90"	40 KR	T/M125	14 x 17	1-1/2" – 3"	30,40,60
68-69	90"	40 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
69-70	90"	55 KR	D8/M125/AA	14 x 17	1-1/2" – 6"	30,40,100,120
V64	90"	40 KR	M125/M100	11 X 14	1" – 1-1/2"	20,30
71-72	80"	50 KR	AA/M125/T	14 x 17	1-1/2" – 5"	30,50,60,80,100
72-73	80"	90 KR	AA/M125/M100/T	14 x 17	1-1/2" – 5"	30,50,60,80,100
73-74	80"	35 KR	T/M125	14 x 17	1-1/2" – 4"	30,40,80
74-75	80"	35 KR	T/M125	14 x 17	1-1/2" – 4"	30,40,80
75-76	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
76-77	80"	30 KR	T/M125	11 x 14	1-1/2" – 2"	30,40
78-79	80"	35 KR	T/M125	14 x 17	1-1/2" – 3"	30,40,60
79-80	80"	35 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
80-81	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
81-82	80"	30 KR	T/M125	7 x 17	1-1/2" – 2"	30,40
83-84	80"	35 KR	T/M125	14 x 17	1-1/2" – 3"	30,40,60
85-86	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
86-87	80"	60 KR	D8/M125/T	14 x 17	1-1/2" – 6"	30,40,120(2)
87-88	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
88-89	80"	40 KR	AA/M125/T	14 x 17	1-1/2" – 3"	30,40,60
90-91	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
92-93	80"	30 KR	T/M125	14 x 17	1-1/2" – 2"	30,40
V94	72"	25 KR	T	14 x 17	2-3/4"	50
V95	72"	25 KR	T	8 x 10	2-3/4"	50
96-97	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
97-98	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
98-99	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
100-101	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
101-102	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
102-103	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
103-104	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
104-105	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
105-107	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)

CUSTOMER Metaltek RSS # 12970 PART NO. MCWF-C3

VIEW	SFD	EXP. TIME	FILM TYPE	FILM SIZE	THK. RANGE	IQI
107-108	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
108-109	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
109-110	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
111-112	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
112-113	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
114-115	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
115-116	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)
116-117	65"	25 KR	T/T	14 x 17	2-3/4"	50(2)

CUSTOMER Metaltek RSS # 12970 PART NO. MCWF-C2

VIEW	SFD	EXP. TIME	FILM TYPE	FILM SIZE	THK. RANGE	IQI
1-2	72"	100 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
2-3	72"	100 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
3-4	72"	100 KR	AA-AA-M100	14 X 17	3" – 8"	60(2), 120(2), 140
4-5	72"	100 KR	AA-AA-M100	14 X 17	3" – 8"	60(2), 120(2), 140
5-6	72"	100 KR	AA-AA-M100	14 X 17	3" – 8"	60(2), 120(2), 140
6-7	76"	100 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
7-8	60"	67 KR	AA-M125-M100	14 X 17	3" – 6"	60(2), 80,120(2)
8-9	72"	105 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
9-10	72"	105 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
10-11	60"	67 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
11-12	60"	67 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
12-13	60"	67 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
13-14	74"	95 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
14-15	70"	90 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
15-16	64"	80 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
16-17	62"	74 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
17-18	60"	67 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
18-19	53"	55 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
19-20	48"	50 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
20-21	54"	55 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
21-22	65"	80 KR	AA-M100	11 X 14	3" – 6"	60(2), 120(2)
22-23	74"	110 KR	AA-M100 *	14 X 17	3" – 6"	60(2), 120(2)
23-24	74"	110 KR	AA-M100 *	14 X 17	3" – 6"	60(2), 120(2)
24-25	72"	100 KR	AA-M100	11 X 14	3" – 6"	60(2), 120(2)
25-26	72"	100 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
26-27	72"	95 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
V28	72"	100 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
29-30	65"	70 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)
30-1	65"	70 KR	AA-M100	14 X 17	3" – 6"	60(2), 120(2)

Energy Industries of Ohio

Manufacturing and Test Sequence (MTS) Serial Number C-2

 CO# 40851 Dated 3-9-05 Revision: Rev 4 Dated Issued: 4-18-05

OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON 4/12/05 ~~FROM~~ Pete D. SIGNED QUALITY MANAGER	CMR	4/12/05
15	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, AND FOUNDRY MARK, TO THE PATTERN. CAST ON BARS REQUIRED. Place numbers on the bars as to their location.		4-14
20	COREMAKE CORE SOP 0100 REV 6 CALIBRATION PER CORE SOP 0200R4/0300R6	MAKE CORES IN SAND MIXTURES AS DESCRIBED BY METALTEK ENGINEERING AND VERIFIED IN MODELING TRIALS. METALTEK CORE SOP 0100 REV 6) CORE WASH WITH ZIRCONIUM CORE WASH. (CALIBRATION OF EQUIPMENT REQUIRED PER CORE SOP 0200,R4 / 0300,R6) VERIFY COUNT AND INSPECT.		4-14
30	MOLD MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/1300R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/1600R2	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. ENGINEER OF RECORD – ROGER BROMAN, CONSULT ON MOLD-RELATED CONCERNS. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS.		4-14
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. RECORD POURING TEMPERATURE: 2730 CASTING POURED AT: 2730°F DATE: 4/15/2005 HEAT #"s: 29060, 29061, ~~29062~~, 29063 ELAPSED POUR TIME 1:20 KEEL BLOCKS POURED: cast-on 3 Ladles Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: SR Analyzed: Gluit Date: 4/15/2005	J. Golota	4-15-05
50	MELT SOP 0800R2	SHAKEOUT	CMR	4/18/05

60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	RLL	4-21-05 Cut High
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MAKE SURE TO BLOCK ALL FLANGES OF FORM AND RACETRACK TO MINIMIZE CREEP DISTORTION. Soak Temp: 2050F, Soak Time: 4HR + 1/2 HR/IN, Quench Type: Air Cool	DLS	4-27-05
75	PHYSICAL TESTING	OBTAIN TEST SPECIMENS AND SUBMIT FOR PHYSICAL TESTING. REPORT RESULTS AS PART OF STEP 510.	CHL	4/28/05
NOTE		**THE ORDER OF CLEANING PROCESSES MAY BE ALTERED DUE TO CAPACITY CONSTRAINTS. HOLD POINTS AND COMPLIANCE WILL NOT BE COMPROMISED. EIO WILL BE ADVISED OF ALL CHANGES THAT MAY RESULT IN A REQUEST FOR DEVIATION FROM REQUIREMENTS.**		
80	GRIND GSWA SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.	TJ	5-4
85	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.	~~1ST SHIFT~~ MIKE TOM	5-5-05 5-6-05
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		5-6-05
NOTICE	WITNESS NOTIFICATION **HOLD FOR EIO APPROVAL**	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LAYOUT. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____ APPROVAL RECEIVED ON _____	Q ENG OR QA MGR	
100	**LAYOUT SOP LAYOUT XX, TBD**	INSPECT CASTING TO VERIFY DIMENSIONS. THIS STEP MAY BE DELAYED. DIMENSIONED _____ DATE _____ RELEASED _____(ENGINEER ONLY)		
110	VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM **A802 LEVEL 3 ALL CONDITIONS.** IF OK CHECK HERE _____. IF REJECTED CHECK HERE ____. MARK AND REPAIR AT STEP 120.	VT - LEVEL II	

90 Rev 5 issued 5/10/05 CHL

60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.		
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MAKE SURE TO BLOCK ALL FLANGES OF FORM AND RACETRACK TO MINIMIZE CREEP DISTORTION. Soak Temp: 2050F, Soak Time: 4HR + 1/2 HR/IN, Quench Type: Air Cool		
75	PHYSICAL TESTING	OBTAIN TEST SPECIMENS AND SUBMIT FOR PHYSICAL TESTING. REPORT RESULTS AS PART OF STEP 510.		
NOTE		**THE ORDER OF CLEANING PROCESSES MAY BE ALTERED DUE TO CAPACITY CONSTRAINTS. HOLD POINTS AND COMPLIANCE WILL NOT BE COMPROMISED. EIO WILL BE ADVISED OF ALL CHANGES THAT MAY RESULT IN A REQUEST FOR DEVIATION FROM REQUIREMENTS.**		
80	GRIND GSWA SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.		
85	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.		
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		
NOTICE	WITNESS NOTIFICATION **HOLD FOR EIO APPROVAL**	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LAYOUT. EIO NOTIFIED ON 5/4/03 DCMA NOTIFIED ON 5/4/03 APPROVAL RECEIVED ON 5/10/05 CAR as long as length check performed ✓	Q ENG OR QA MGR	
100	**LAYOUT SOP LAYOUT 0100**	INSPECT CASTING TO VERIFY DIMENSIONS. THIS STEP MAY BE DELAYED. DIMENSIONED _____ DATE _____ RELEASED _____ (ENGINEER ONLY) NOTE: THE FIRST PART PRODUCED OF EACH TYPE A, B AND C WILL BE DIMENSIONED BY LAWTON PATTERN. IF DIMENSIONED BY LAWTON IT WILL BE DOCUMENTED HERE. Subsequent casting done internally per Romer Arm.	JRS	5/11/05
110	VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM **A802 LEVEL 3 ALL CONDITIONS.** IF OK CHECK HERE _____. IF REJECTED CHECK HERE ___/___. MARK AND REPAIR AT STEP 120.	VT - LEVEL II KRA	5/12/05

NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LP STEP. EIO NOTIFIED ON 5/10/05 DCMA NOTIFIED ON 5/10/05	Q ENG OR QA MGR	CAR
115	100% L.P. CQP 0300 REV 10	L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ IF REJECTED CHECK HERE ✓ MARK AND REPAIR AT STEP 120.	LP - LEVEL II KRA 5-12-05	
120	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.	JC 5/20/05	
125	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	JC 5/23/05	
130	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ IF REJECTED SEND BACK TO STEP 125.	LP - LEVEL II	Hold pending RT in CAR
165	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	CA	5-13
170	**HOLD POINT** WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____SIGN BY QA ENG. **MAJOR WELD REPAIRS MAY NOT PROCEED UNTIL INFORMATION IS SUBMITTED.**	Delayed Trl after XRay CAR	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF X-RAY AND DIMENSIONAL STEPS. EIO NOTIFIED ON 5/12/05 DCMA NOTIFIED ON 5/12/05	Q ENG OR QA MGR	CAR 5/12
190	X-RAY AT MQS MQS PROCEDURE 20.H.010 REV 0	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. WHEN MARKING USE BLACK MARKERS. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT – LEVEL II complete at mas 5/24/05	Rmt

210	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 340. REJECTED CHECK HERE ✓ MARK UP DEFECTS AND SEND THE CASTING TO STEP 220.	RT – LEVEL II Complete 5/24/05 at MOS	
220	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.		6-7-05
225	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	DWP	6-8-05
230	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ IF REJECTED SEND BACK TO STEP 225.	LP - LEVEL II	
240	**HOLD POINT** WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION . SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES X, REPORT SENT BY R Swan DATE 6/1/05 DEFECTS < 10 % _____ SIGN BY QA ENG. **MAJOR WELD REPAIRS MAY NOT PROCEED UNTIL INFORMATION IS SUBMITTED.** MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER PRIOR TO REPAIR. ONCE THE REPORT IS SENT, WELDING MAY START.		6/1/05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON 5/25/05 DCMA NOTIFIED ON 5/25/05 for Final start.	Q ENG OR QA MGR	
260	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: 15 - GMAW-CF8MnMn mod 20 - SMAW-CF8MnMn mod MATERIAL USED: LNM 4455 / Heat 52743 Metrode 3816 NF Lot W019711 QUALITY ENG. Name: _____ Date: 6/1/05		
270	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2 **ADD WPS FOR VERTICAL WELDS.**		
280	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.		

Review 5/17/05 6/7/05

NA

210	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 340. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP 220.	RT – LEVEL II	
220	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	[illegible] 6-7-05	should be doc rev 5220
225	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	[illegible] 6-7-05	
230	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE ✓ IF REJECTED SEND BACK TO STEP 225.	LP - LEVEL II	
240	**HOLD POINT** WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION . SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____SIGN BY QA ENG. **MAJOR WELD REPAIRS MAY NOT PROCEED UNTIL INFORMATION IS SUBMITTED.** MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER PRIOR TO REPAIR. ONCE THE REPORT IS SENT, WELDING MAY START.		
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
260	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL/LOT USED:_____ QUALITY ENG. Name: _____ Date: _____		
270	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2 **ADD WPS FOR VERTICAL WELDS.**	GP JLC 6/7/05	0802 Start 6/7/05
280	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.	AB	6-8-05

290	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE ___✓___	LP - LEVEL II TRC 6-8-05	
	REPEAT	REPEAT STEPS __220 TO 290___AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. DOCUMENT REWORK ON STEPS S220 TO S290 ON LAST PAGE OF MTS. IF OK CHECK HERE _____ AND PROCEED TO STEP 295.	See S220	
295	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE ___✓___ AND GO TO STEP 300. IF REJECTED CHECK HERE _____.	CA	
296	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 295. REPEAT UNTIL COMPLIANCE IS ACHIEVED.	CA	
300	X-RAY (NOTE)	IF RADIO GRAPHED AREAS ARE GREATER THAN FOUR TO FIVE INCHES THE CASTING WILL BE SENT TO MQS. SEND TO MQS CHECK HERE___✓_____. RADIOGRAPH AT CAF CHECK HERE _____.	QA ENGINEER RS	
310 A	MQS X-RAY DEFECTS REPAIRED BY WELDING	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	LEVEL II R. Sutin R Talley	6/6/05
310 B	CAF X-RAY DEFECTS REPAIRED BY ~~WELDING~~ CQP 401 REV 5	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II RK	
320	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 340. REJECTED CHECK HERE ___✓___ MARK UP DEFECTS AND SEND THE CASTING TO STEP 220. OK on Reshoot 6/16	RT - LEVEL II Ronk RK	6/15/05 6/16
	REPEAT	REPEAT STEPS __220 TO 320___AS REQUIRED TILL WELDS CLEAR X-RAY. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG. CAn	6/15/05

1st loop repair #1

Doc Repeats on Last page CAn

340	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		PTW 6/16/05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON 6/20 DCMA NOTIFIED ON 6/20	Q ENG OR QA MGR	
350	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 2 ALL CONDITIONS. IF OK CHECK HERE _____. IF REJECTED CHECK HERE ✓. MARK AND REPAIR AT STEP 385. MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II KLA 6-24-05	
360	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP 455. IF REJECTED CHECK HERE ✗	LP - LEVEL II JPS 6.23	
380	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.	N/A	
385	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND EXCAVATION AS REQUIRED.	AB SJ 6/23-05	
390	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. IF OK CHECK HERE ✓ IF REJECTED SEND BACK TO STEP 385.	LP - LEVEL II JDR 6-23-05	
400	**HOLD POINT** WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE. FILE WITH QA. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS.>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____SIGN BY QA ENG. **MAJOR WELD REPAIRS MAY NOT PROCEED UNTIL INFORMATION IS SUBMITTED.** MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER PRIOR TO REPAIR. ONCE THE REPORT IS SENT, WELDING MAY START.	N/A	

6/23/05

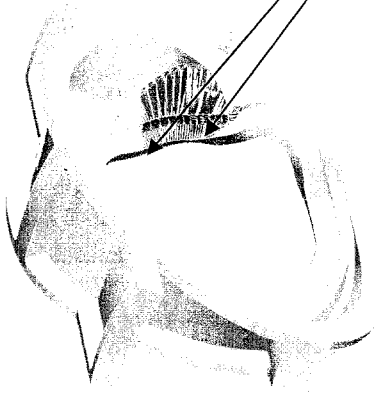
420	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL/LOT USED: _____ QUALITY ENG. Name: _____ Date: _____	N/A	
430	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2 **ADD WPS FOR VERTICAL WELDS.**	N/A	
440	GRIND GCHI SOP 0100 REV 2	HAND GRIND WELDS.		
450	L.P. WELDS CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. IF OK CHECK HERE _____ WASH AND SEND TO STEP 460. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 440.	LP - LEVEL II	
	REPEAT	REPEAT STEPS ___350 TO 450_____AS REQUIRED TILL WELDS CLEAR FINAL LIQUID PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON 6/20/05 DCMA NOTIFIED ON 6/20/05	Q ENG OR QA MGR	
460	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 2 ALL CONDITIONS. IF OK CHECK HERE _____. IF REJECTED CHECK HERE ___✓___. MARK AND REPAIR AT STEP 390. MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II KRA 6-24-05	
470	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE ___✓___ WASH AND SEND TO STEP 455. IF REJECTED CHECK HERE _____	LP - LEVEL II JDR 6-23-05	
480	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS. RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. Performed on entire Part 100% ACCEPTANCE 1.02. IF OK CHECK HERE ___✓___ AND GO TO STEP 430. IF REJECTED CHECK HERE _____ Pictures provided to DCMA	RG 6-23-05	
490	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 451. REPEAT UNTIL COMPLIANCE IS ACHIEVED.	N/A	

NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEPS. EIO NOTIFIED ON 6/20 DCMA NOTIFIED ON 6/20	Q ENG OR QA MGR	cdn
500	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. USE A 6" SQUARE BLOCK TO INDICATE TEST LOCATIONS AND RECORD RESULTS. COMPLIANT AREAS WILL NOT BE MARKED. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. OK CHECK HERE ____ AND GO TO STEP 530. IF REJECTED CHECK HERE ____.	N/A	
510	GRIND GCHI SOP 0100 REV 2	HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT. CIRCLE AREA REMEDIATE FOR RETEST.		
520	RETEST MAG PERM SOP MAG PERM 100, REV 1	RETEST MAG PERMEABILITY AT FAILED TEST POINTS. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. ACCEPTANCE 1.02. IF OK CHECK HERE ____. IF REJECTED CHECK HERE ____ RETURN TO STEP 510.		
530	DOC. REVIEW	REVIEW DOCUMENTS AS REQUIRED IN CAF CHECKLIST, ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (SHIPPER, C OF C, M.T.R., M.T.S., INSPECTION REPORT, X-RAY READER SHEETS AND HEAT TREAT CHARTS)	cdn	6/24/05
NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON 6/24/05 BY cdn. RECEIVED RELEASE FROM EIO ON ____.	Q ENG OR QA MGR	
540	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL 12-14-04. Approved 12-14-04. Revision level 1- Revised 1-26-05 new page 8, correct High stress areas, Revision level 2 3-16-05, delete LO step 455. Revision 3 3-28-05 Added note regarding hold point at weld step 400. Revision level 4 written for C-2 casting 4-18-05. Rev 5 added Layout SOP# and note regarding first casting layout responsibility. 5-10-05 Rev 6 added step 420 and "LOT" to step 260 and 420.5-29-05	CARUUD	

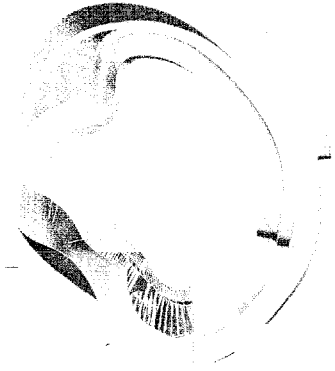
GENERAL ISOMETRIC
VIEW FROM TOP SIDE

TABS DESIGNATE CRITICAL AREA

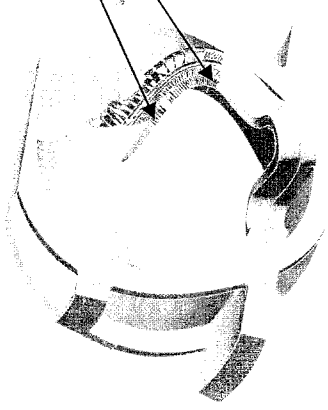
RED AREA INDICATES HIGH STRESSED AREA



TOP SIDE ISOMETRIC



TOP SIDE VIEW



BOTTOM SIDE ISOMETRIC

BOTTOM SIDE VIEW

Start 6/15/05

	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1ST	2ND	3RD	4TH	5TH
S220	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	JC 6/15/05				
S230	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING.	LP - LEVEL LII SB 6/15/05				
S240	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION . SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES X, REPORT SENT BY Cdn DATE 6/15/05 DEFECTS < 10% _____ SIGN BY QA ENG. **REPAIRS MAY NOT PROCEED UNTIL INFORMATION IS SUBMITTED.**	Cdn				
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON 6/13/05 DCMA NOTIFIED ON 6/13/05 Cdn	Q ENG OR QA MGR	Cdn 6/13			
S260	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: WPS 10-SMAW-CF8MNMN mod REV 1 MATERIAL USED: 1 of 4 LNM 4455 MAT. B2743 316NF LOT W019711 QUALITY ENG. Name: Cdn Date: 6/15	Cdn	6/15			
S270	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2 **ADD WPS FOR VERTICAL WELDS.**	JC	6-15 JC 62305			
S280	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.	JC	6-15 JC 62305			
S290	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE ✓ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 220.	LP - LEVEL L II JOR 6/15	OK REJ	OK REJ TJE 6/16	OK JOR 6/15	OK REJ

TO XRAY 6/16

Added Lot of weld material Per rev 1 Cdn

all grind of LP ind Cdn

	REPEAT	REPEAT STEPS S220 TO S290 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA				

go to 460

NOTES: Stress relieve of C-2 Coil Casting

Date: 6-20-05

SUPPLEMENTAL ROUTING CARD

	PART NUMBER: C-2 Coil		SERIAL NUMBER: C-1			AUTHORITY C Ruud
OPER NUMBER	**STATION**					**OPERATOR SIGN/DATE**
Extra operation	Heat treat		Load casting into cold furnace. Ramp up to 1100 F at rate of 200 F per hour. Hold at temp 4-5 hours. Furnace cool to 500 F at 50 F per hour. Air cool. Submit furnace charts to QA.		FS-1	DLS 6-21-05

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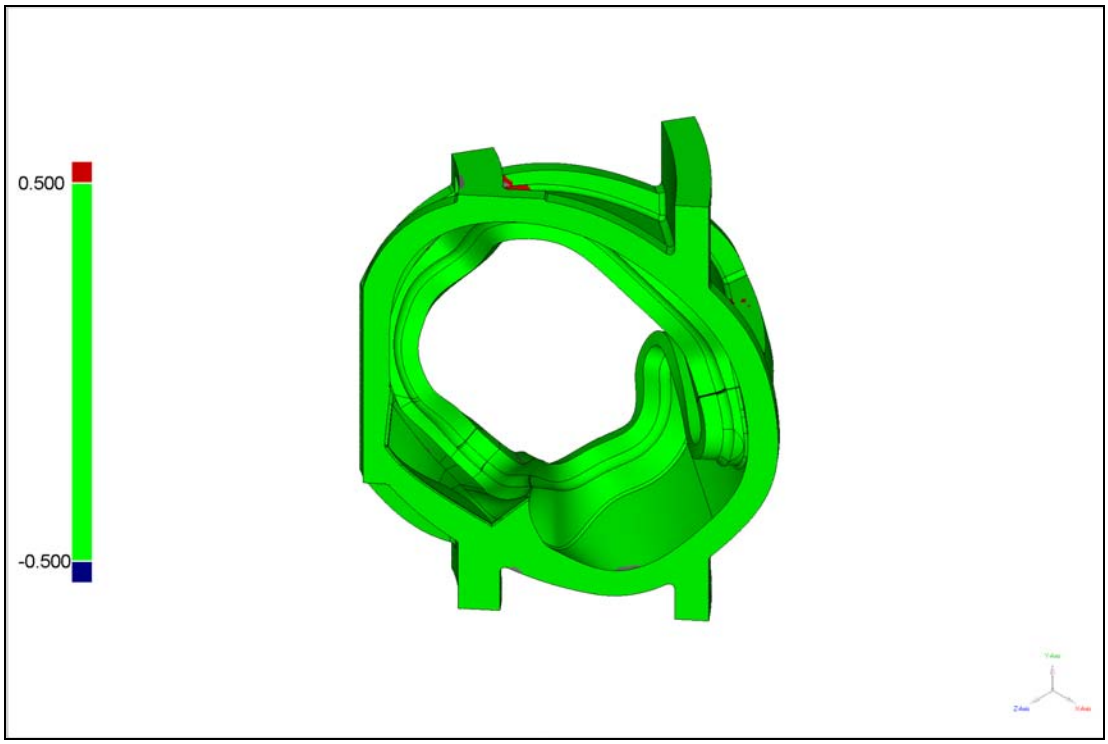
(636) 475-2100

9/6/2005

Qualify Report

Date Generated: 5/22/2005, 11:49 am



Author: Kevin Harris / Jarrod Boyer

Part: C2

Test: Merged Points 1

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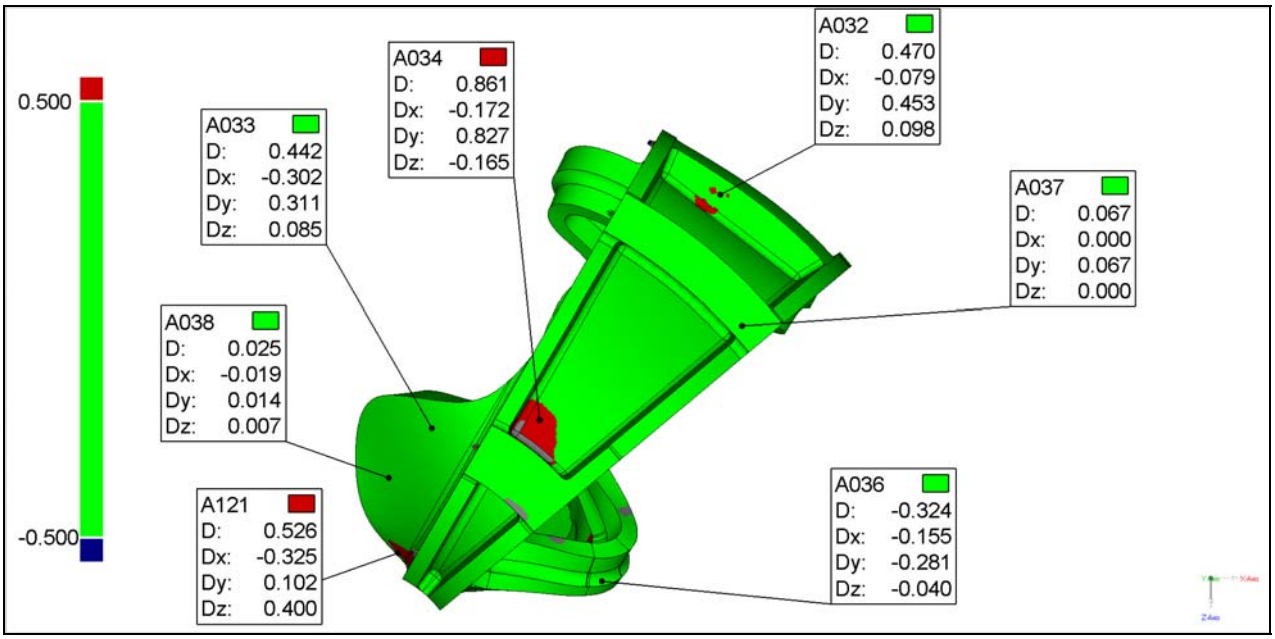
Annotated: Annotation View Top



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A032	0.470	FAIL	0.100	-0.100	54.294	11.519	-71.235	0.039	-0.079	0.453	0.098	54.215	11.972	-71.137
A033	0.442	FAIL	0.100	-0.100	11.899	30.670	-36.884	0.039	-0.302	0.311	0.085	11.597	30.981	-36.798
A034	0.861	FAIL	0.100	-0.100	27.749	40.157	-38.073	0.039	-0.172	0.827	-0.165	27.577	40.984	-38.237
A036	-0.324	FAIL	0.100	-0.100	36.863	-3.808	-14.297	0.039	-0.155	-0.281	-0.040	36.708	-4.090	-14.337
A037	0.067	PASS	0.100	-0.100	57.469	48.188	-51.942	0.039	0.000	0.067	0.000	57.469	48.255	-51.942
A038	0.025	PASS	0.100	-0.100	5.558	19.704	-29.553	0.039	-0.019	0.014	0.007	5.539	19.718	-29.546
A121	0.526	FAIL	0.100	-0.100	6.945	8.741	-18.458	0.039	-0.325	0.102	0.400	6.620	8.843	-18.057

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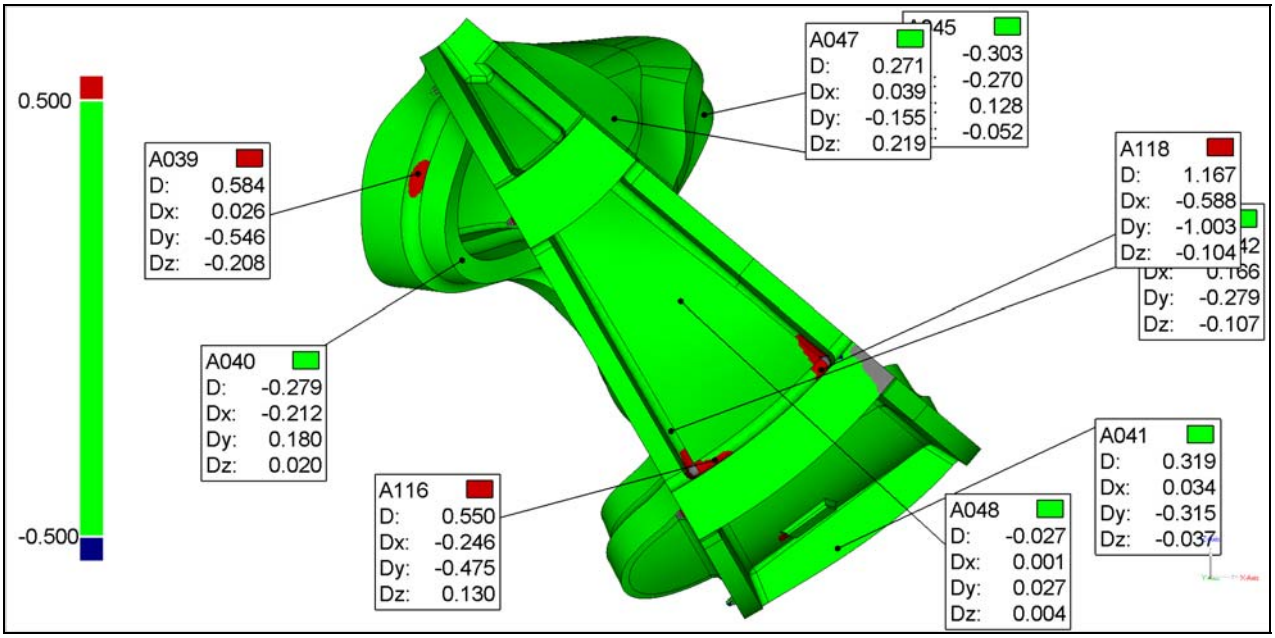
Annotated: Annotation View Bottom



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A039	0.584	FAIL	0.100	-0.100	7.399	10.856	-28.360	0.039	0.026	-0.546	-0.208	7.425	10.310	-28.567
A040	-0.279	FAIL	0.100	-0.100	12.590	14.051	-38.580	0.039	-0.212	0.180	0.020	12.377	14.230	-38.560
A041	0.319	FAIL	0.100	-0.100	56.713	6.078	-72.483	0.039	0.034	-0.315	-0.037	56.747	5.762	-72.520
A044	0.342	FAIL	0.100	-0.100	37.135	-31.757	-58.654	0.039	0.166	-0.279	-0.107	37.301	-32.037	-58.761
A045	-0.303	FAIL	0.100	-0.100	41.032	-8.625	-21.418	0.039	-0.270	0.128	-0.052	40.762	-8.497	-21.469
A047	0.271	FAIL	0.100	-0.100	30.470	-23.402	-21.884	0.039	0.039	-0.155	0.219	30.509	-23.558	-21.665
A048	-0.027	PASS	0.100	-0.100	38.270	-38.262	-43.393	0.039	0.001	0.027	0.004	38.270	-38.235	-43.390
A116	0.550	FAIL	0.100	-0.100	42.288	-28.727	-62.067	0.039	-0.246	-0.475	0.130	42.042	-29.202	-61.937
A118	1.167	FAIL	0.100	-0.100	54.773	-33.113	-51.430	0.039	-0.588	-1.003	-0.104	54.185	-34.115	-51.534

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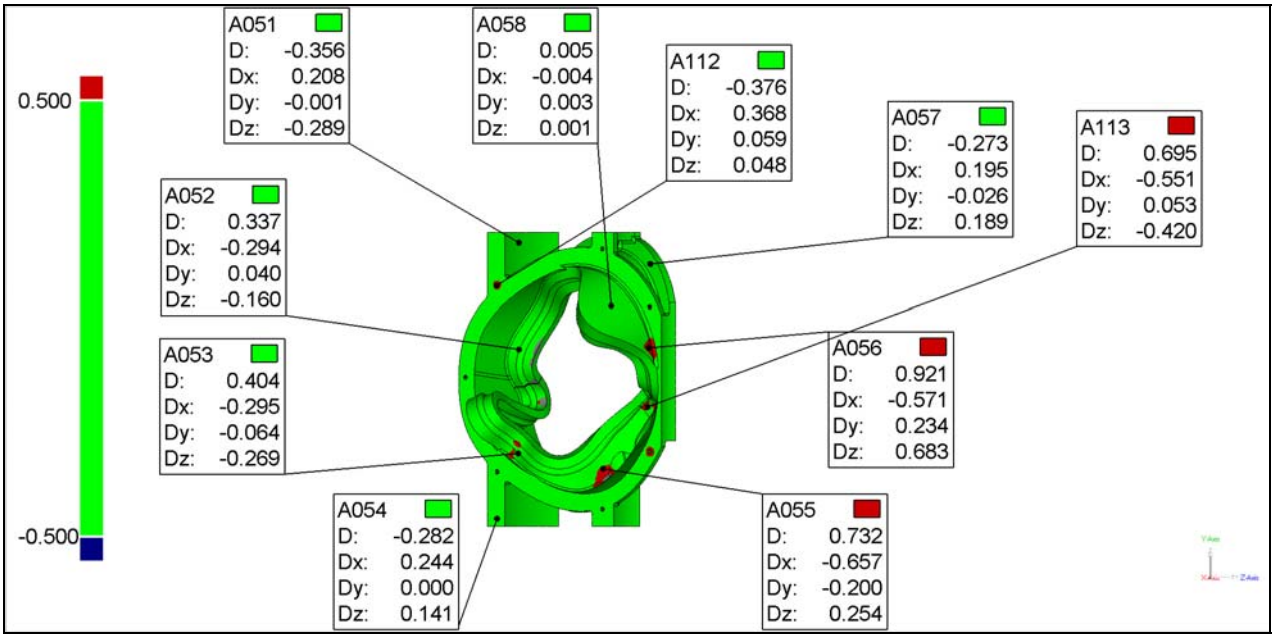

Units: in

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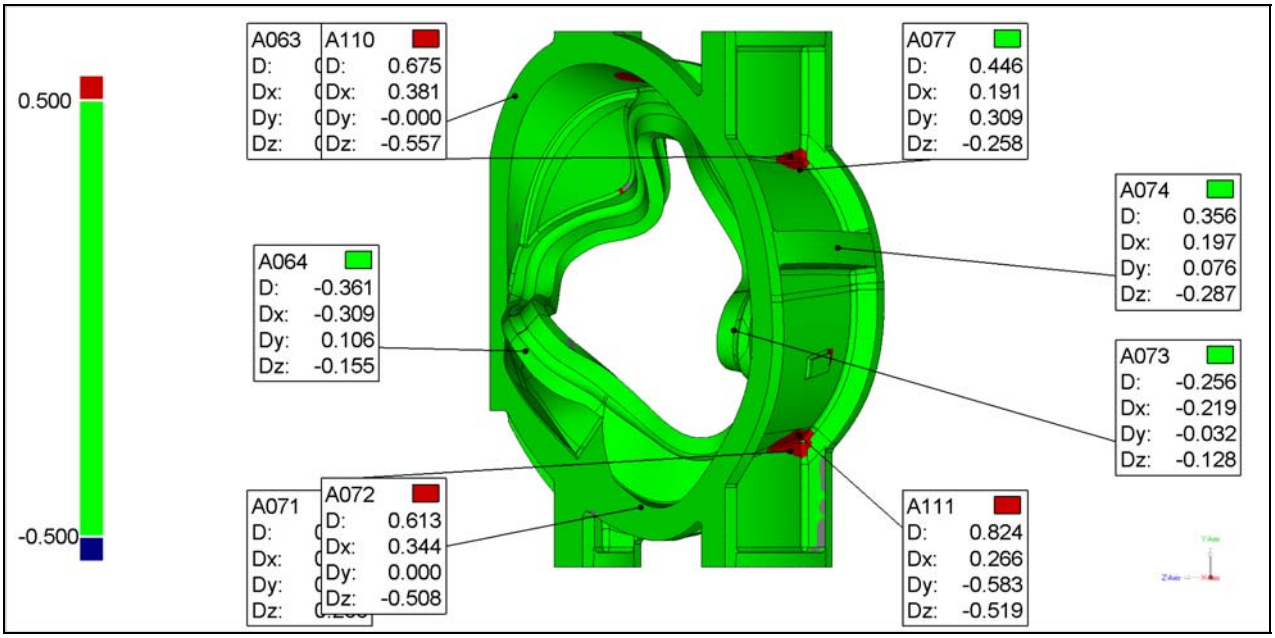
A051	-0.356	FAIL	0.100	-0.100	44.544	44.812	-61.169	0.039	0.208	-0.001	-0.289	44.752	44.811	-61.458
A052	0.337	FAIL	0.100	-0.100	53.352	9.964	-61.169	0.039	-0.294	0.040	-0.160	53.058	10.004	-61.329
A053	0.404	FAIL	0.100	-0.100	36.665	-24.158	-61.411	0.039	-0.295	-0.064	-0.269	36.371	-24.222	-61.680
A054	-0.282	FAIL	0.100	-0.100	38.553	-45.608	-68.276	0.039	0.244	0.000	0.141	38.798	-45.608	-68.135
A055	0.732	FAIL	0.100	-0.100	32.132	-29.208	-33.635	0.039	-0.657	-0.200	0.254	31.476	-29.408	-33.381
A056	0.921	FAIL	0.100	-0.100	7.357	10.477	-18.642	0.039	-0.571	0.234	0.683	6.786	10.711	-17.959
A057	-0.273	FAIL	0.100	-0.100	18.242	37.816	-18.201	0.039	0.195	-0.026	0.189	18.437	37.790	-18.012
A058	0.005	PASS	0.100	-0.100	8.213	24.147	-30.989	0.039	-0.004	0.003	0.001	8.209	24.149	-30.988
A112	-0.376	FAIL	0.100	-0.100	37.662	30.761	-68.470	0.039	0.368	0.059	0.048	38.030	30.820	-68.421
A113	0.695	FAIL	0.100	-0.100	34.410	-8.925	-19.083	0.039	-0.551	0.053	-0.420	33.859	-8.871	-19.503

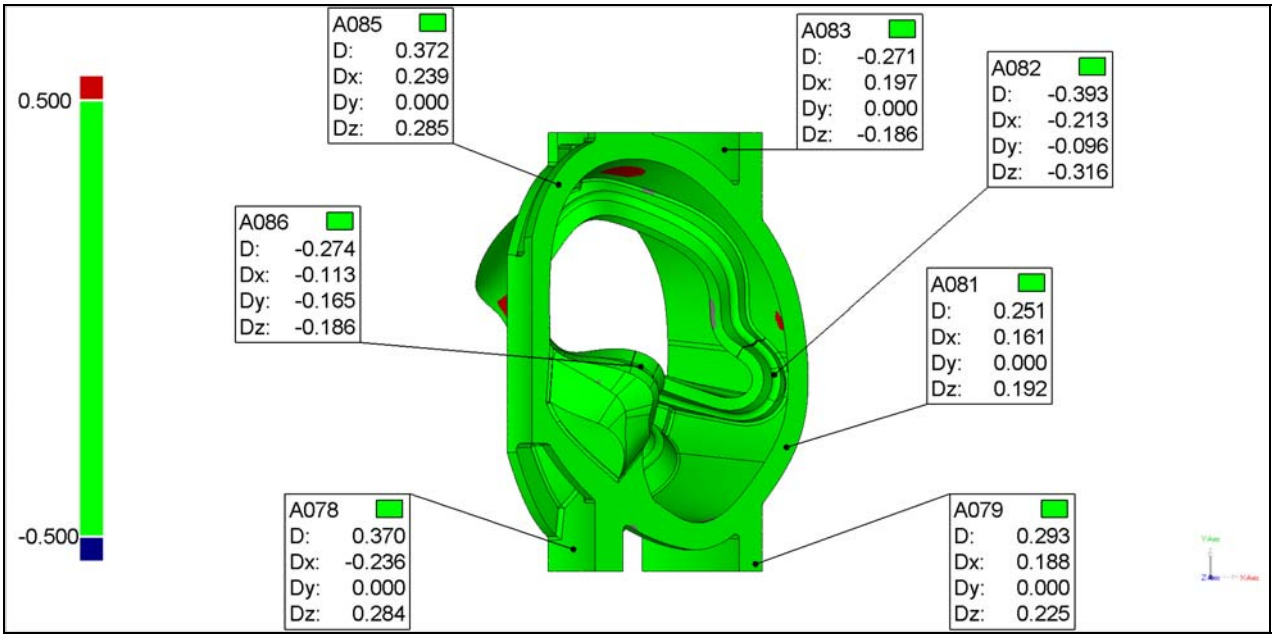
Annotated: Annotation View Right



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A063	0.379	FAIL	0.100	-0.100	18.531	36.560	-14.571	0.039	0.244	0.000	0.290	18.775	36.560	-14.280
A064	-0.361	FAIL	0.100	-0.100	40.476	-9.285	-16.439	0.039	-0.309	0.106	-0.155	40.167	-9.179	-16.594
A071	0.348	FAIL	0.100	-0.100	45.441	-37.411	-37.150	0.039	0.223	0.000	0.266	45.664	-37.411	-36.884
A072	0.613	FAIL	0.100	-0.100	43.968	-27.330	-64.018	0.039	0.344	0.000	-0.508	44.312	-27.330	-64.526
A073	-0.256	FAIL	0.100	-0.100	65.593	-5.551	-53.854	0.039	-0.219	-0.032	-0.128	65.374	-5.583	-53.983
A074	0.356	FAIL	0.100	-0.100	57.859	9.211	-72.488	0.039	0.197	0.076	-0.287	58.056	9.287	-72.775
A077	0.446	FAIL	0.100	-0.100	44.242	23.247	-65.712	0.039	0.191	0.309	-0.258	44.433	23.557	-65.970
A110	0.675	FAIL	0.100	-0.100	43.968	25.667	-64.018	0.039	0.381	-0.000	-0.557	44.349	25.667	-64.575
A111	0.824	FAIL	0.100	-0.100	44.012	-24.426	-65.470	0.039	0.266	-0.583	-0.519	44.278	-25.010	-65.989

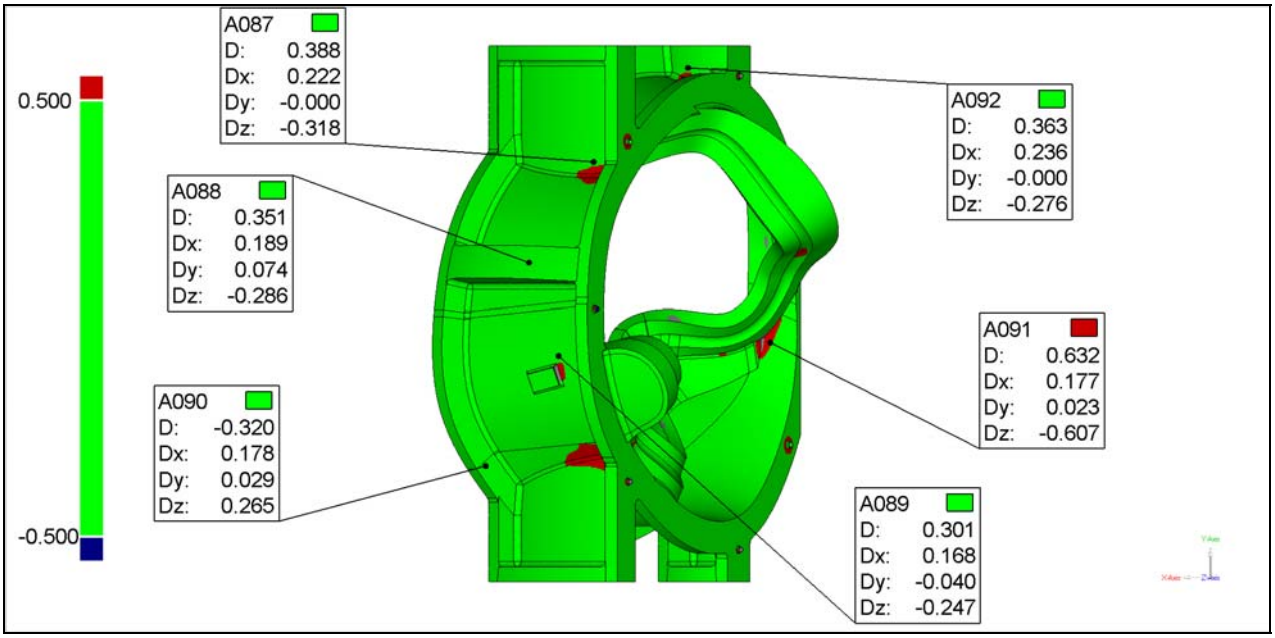
Annotated: Annotation View Front



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A078	0.370	FAIL	0.100	-0.100	22.125	-43.372	-26.471	0.039	-0.236	0.000	0.284	21.889	-43.372	-26.187
A079	0.293	FAIL	0.100	-0.100	62.028	-46.623	-51.069	0.039	0.188	0.000	0.225	62.216	-46.623	-50.844
A081	0.251	FAIL	0.100	-0.100	68.826	-20.908	-56.773	0.039	0.161	0.000	0.192	68.987	-20.908	-56.581
A082	-0.393	FAIL	0.100	-0.100	66.166	-4.946	-54.617	0.039	-0.213	-0.096	-0.316	65.953	-5.043	-54.932
A083	-0.271	FAIL	0.100	-0.100	55.230	44.415	-51.785	0.039	0.197	0.000	-0.186	55.427	44.415	-51.971
A085	0.372	FAIL	0.100	-0.100	18.874	36.730	-14.858	0.039	0.239	0.000	0.285	19.113	36.730	-14.573
A086	-0.274	FAIL	0.100	-0.100	36.904	-3.173	-15.496	0.039	-0.113	-0.165	-0.186	36.791	-3.338	-15.682

Annotated: Annotation View Back



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A087	0.388	FAIL	0.100	-0.100	44.656	27.300	-63.543	0.039	0.222	-0.000	-0.318	44.878	27.300	-63.861
A088	0.351	FAIL	0.100	-0.100	56.271	9.151	-73.572	0.039	0.189	0.074	-0.286	56.460	9.225	-73.859
A089	0.301	FAIL	0.100	-0.100	50.948	-7.547	-71.367	0.039	0.168	-0.040	-0.247	51.115	-7.587	-71.614
A090	-0.320	FAIL	0.100	-0.100	64.015	-27.391	-56.486	0.039	0.178	0.029	0.265	64.193	-27.363	-56.221
A091	0.632	FAIL	0.100	-0.100	12.954	-5.127	-14.409	0.039	0.177	0.023	-0.607	13.131	-5.105	-15.016
A092	0.363	FAIL	0.100	-0.100	27.716	44.240	-32.733	0.039	0.236	-0.000	-0.276	27.952	44.240	-33.009

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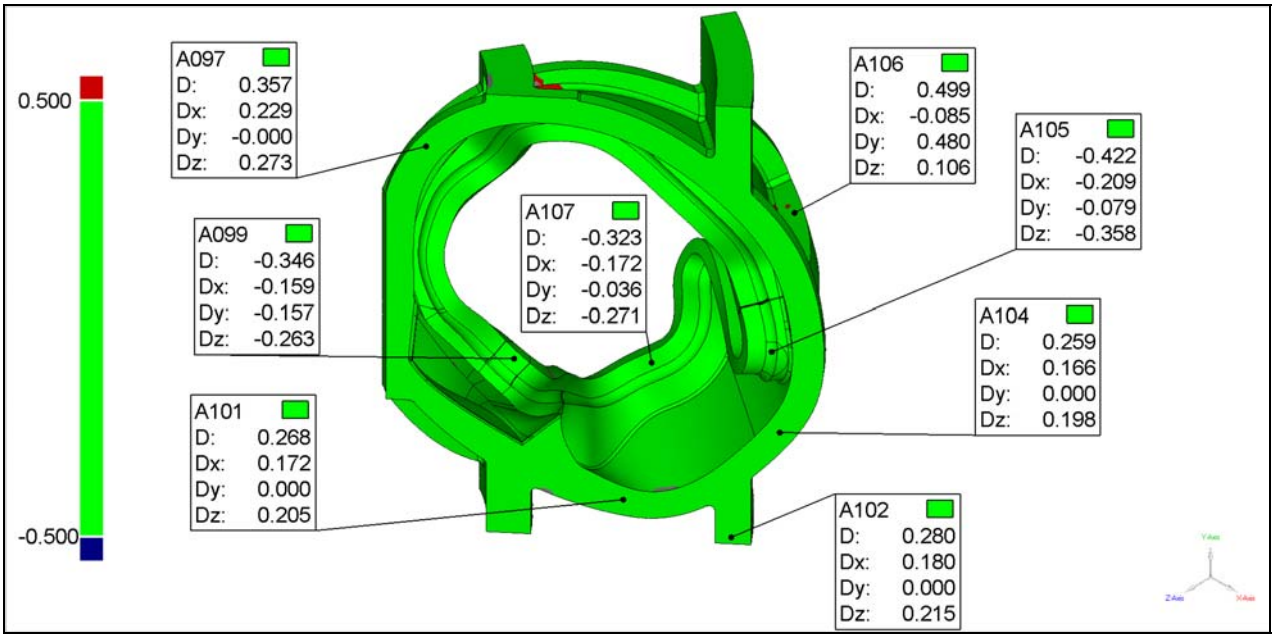
Annotated: Annotation View Isometric



Units: in

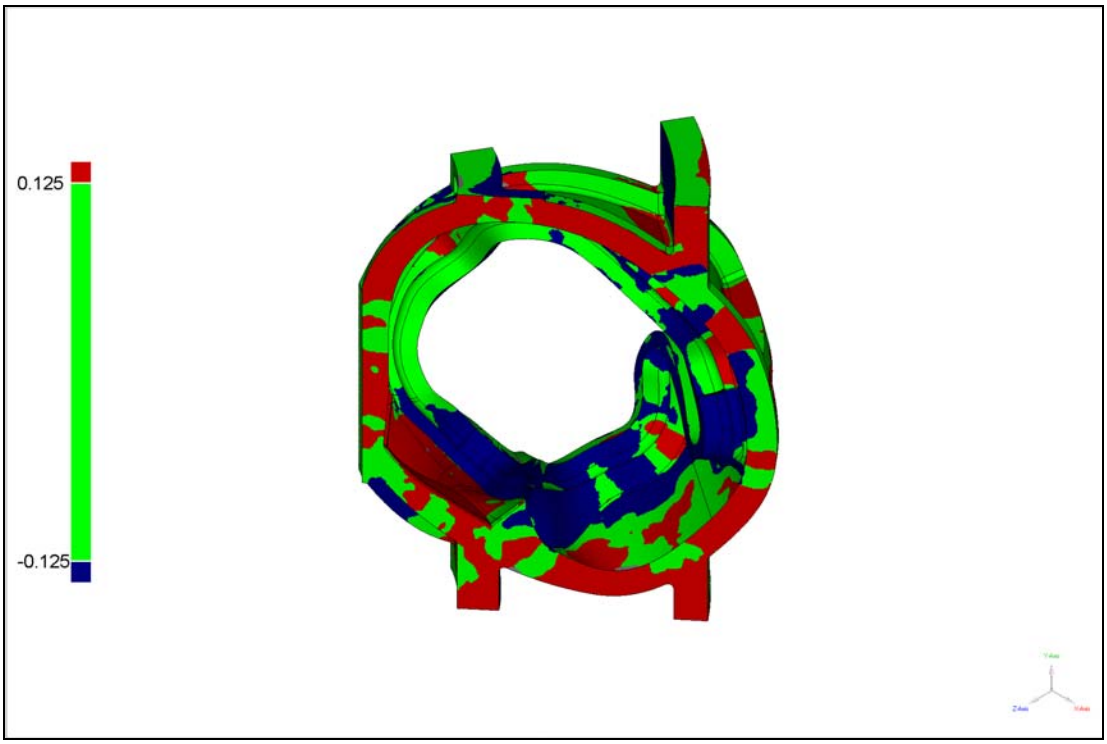
Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A097	0.357	FAIL	0.100	-0.100	18.638	35.973	-14.660	0.039	0.229	-0.000	0.273	18.868	35.973	-14.387
A099	-0.346	FAIL	0.100	-0.100	38.499	-2.006	-17.121	0.039	-0.159	-0.157	-0.263	38.340	-2.164	-17.385
A101	0.268	FAIL	0.100	-0.100	45.849	-39.638	-37.493	0.039	0.172	0.000	0.205	46.021	-39.638	-37.288
A102	0.280	FAIL	0.100	-0.100	60.736	-46.739	-49.985	0.039	0.180	0.000	0.215	60.917	-46.739	-49.770
A104	0.259	FAIL	0.100	-0.100	67.436	-23.082	-55.606	0.039	0.166	0.000	0.198	67.602	-23.082	-55.408
A105	-0.422	FAIL	0.100	-0.100	66.355	-5.353	-54.634	0.039	-0.209	-0.079	-0.358	66.146	-5.431	-54.992
A106	0.499	FAIL	0.100	-0.100	55.821	11.733	-70.985	0.039	-0.085	0.480	0.106	55.736	12.213	-70.879
A107	-0.323	FAIL	0.100	-0.100	35.687	-23.162	-54.842	0.039	-0.172	-0.036	-0.271	35.515	-23.198	-55.113

Carondelet Division
Pevely, MO 63070
(636) 475-2100

9/6/2005

Qualify Report

Date Generated: 5/23/2005, 5:05 pm



Author: Kevin Harris / Jarrod Boyer

Part: C2

Test: Merged Points 1

MetalTek INTERNATIONAL

Carondelet Division
Pevely, MO 63070
(636) 475-2100

9/6/2005

3D Comparison Results

Reference Model	c-coil-casting
Test Model	Merged Points 1
# Data Points	5326043

Tolerances	in
Max Tol +	0.125
Min Tol +	0.125
Min Tol -	-0.125
Max Tol -	-0.125

Deviation	in
Max Dev +	2.048
Max Dev -	-2.060
Average +/-	0.132 / -0.115
Std Dev	0.172

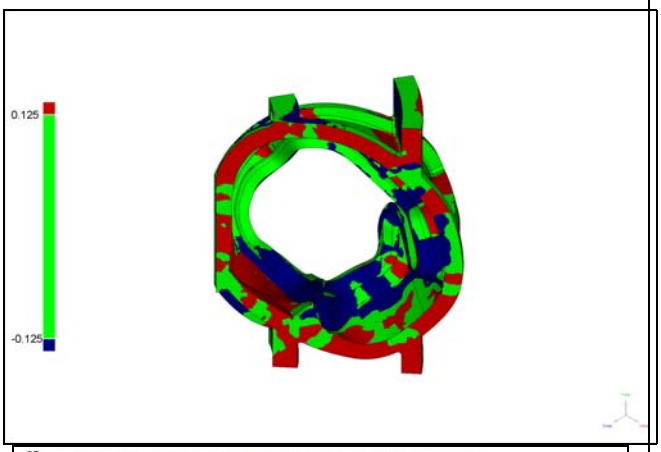
Percentage Deviations

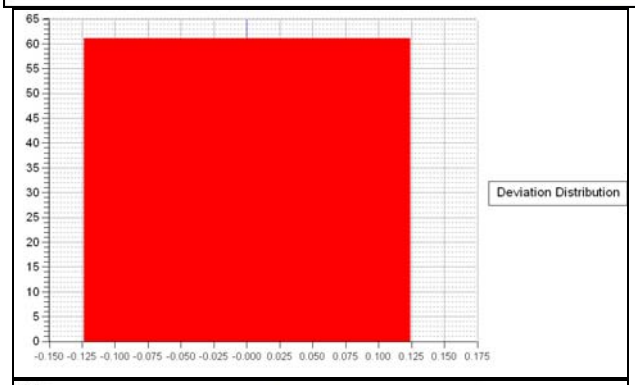
>=Min	<Max	# Points	%
-0.125	0.125	3257136	61.155

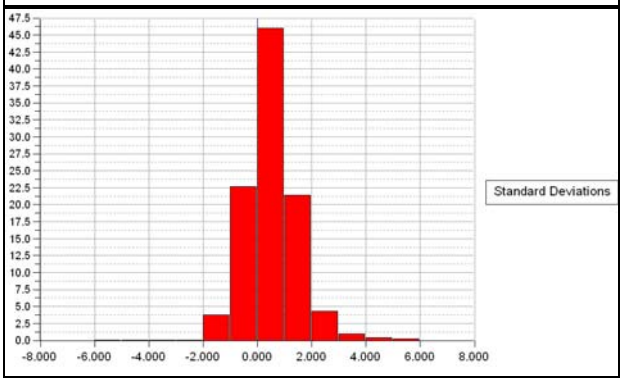
Out of Max Tol +	1067561	20.044
Out of Max Tol -	1001346	18.801

Standard Deviations

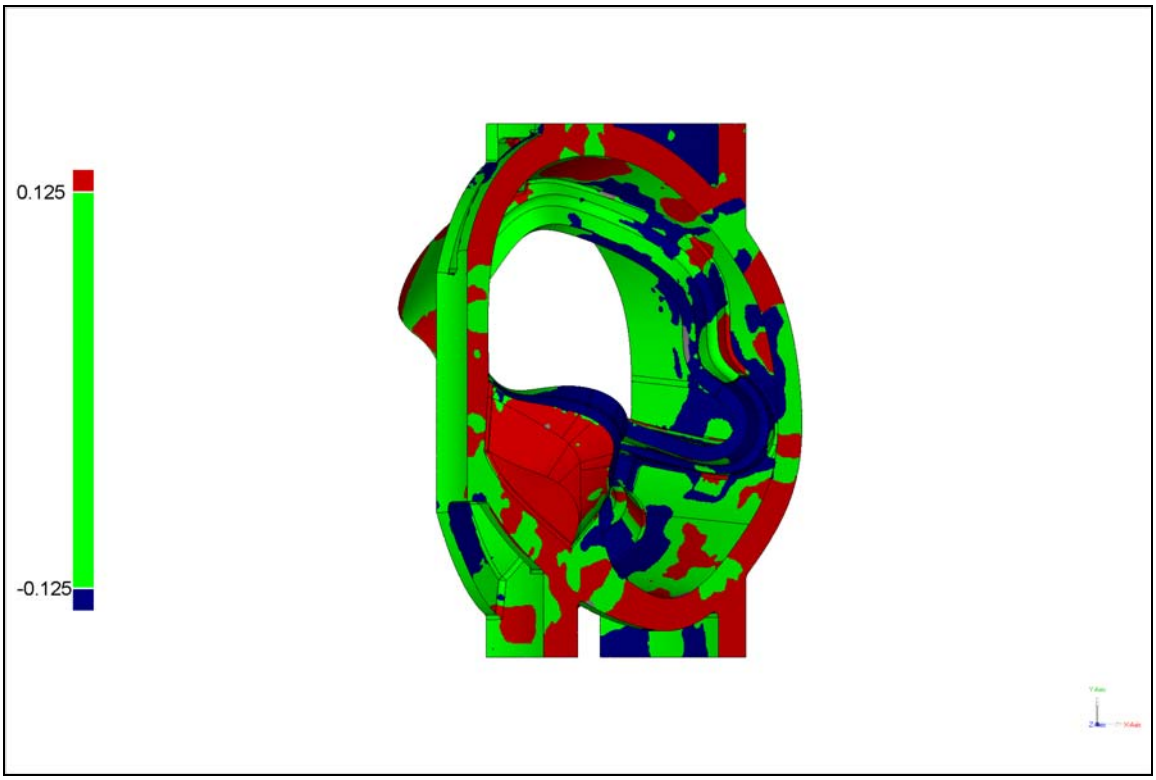
Distribution ()	# Points	%
-6 * Std Dev	38	0.001
-5 * Std Dev	384	0.007
-4 * Std Dev	674	0.013
-3 * Std Dev	2880	0.054
-2 * Std Dev	201623	3.786
-1 * Std Dev	1206953	22.661
1 * Std Dev	2451060	46.020
2 * Std Dev	1137309	21.354
3 * Std Dev	230395	4.326
4 * Std Dev	52331	0.983
5 * Std Dev	20317	0.381
6 * Std Dev	12930	0.243



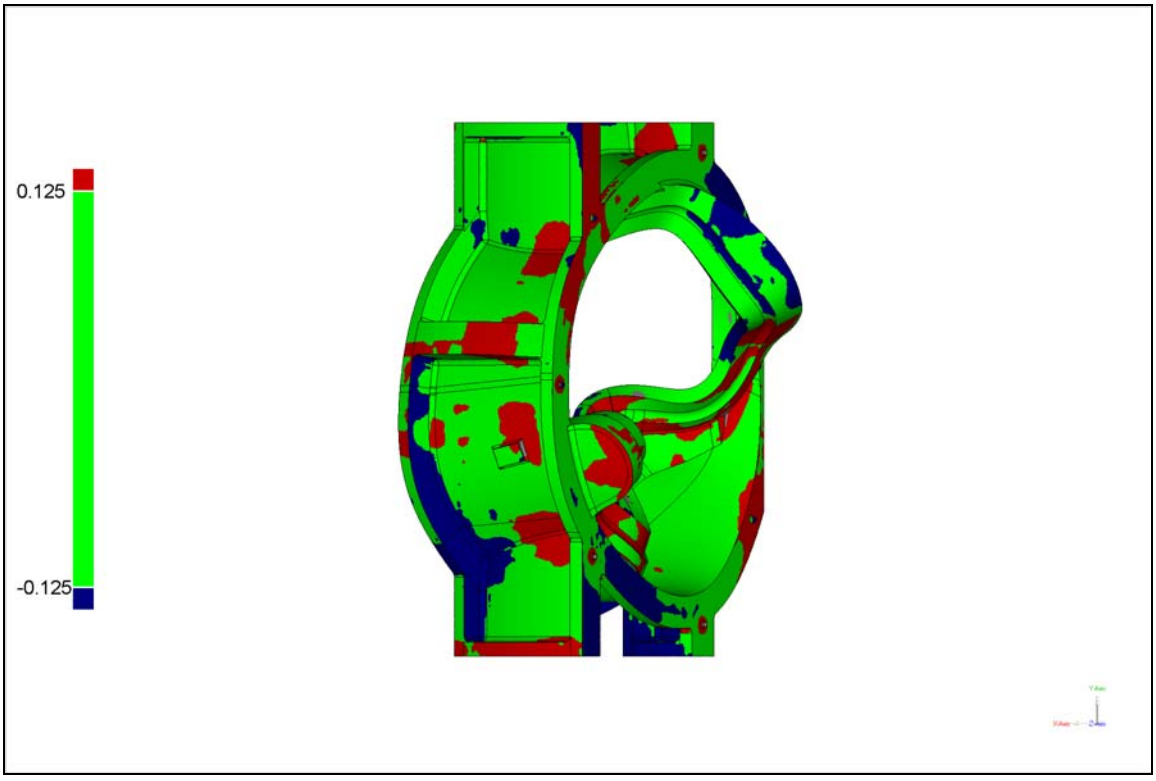




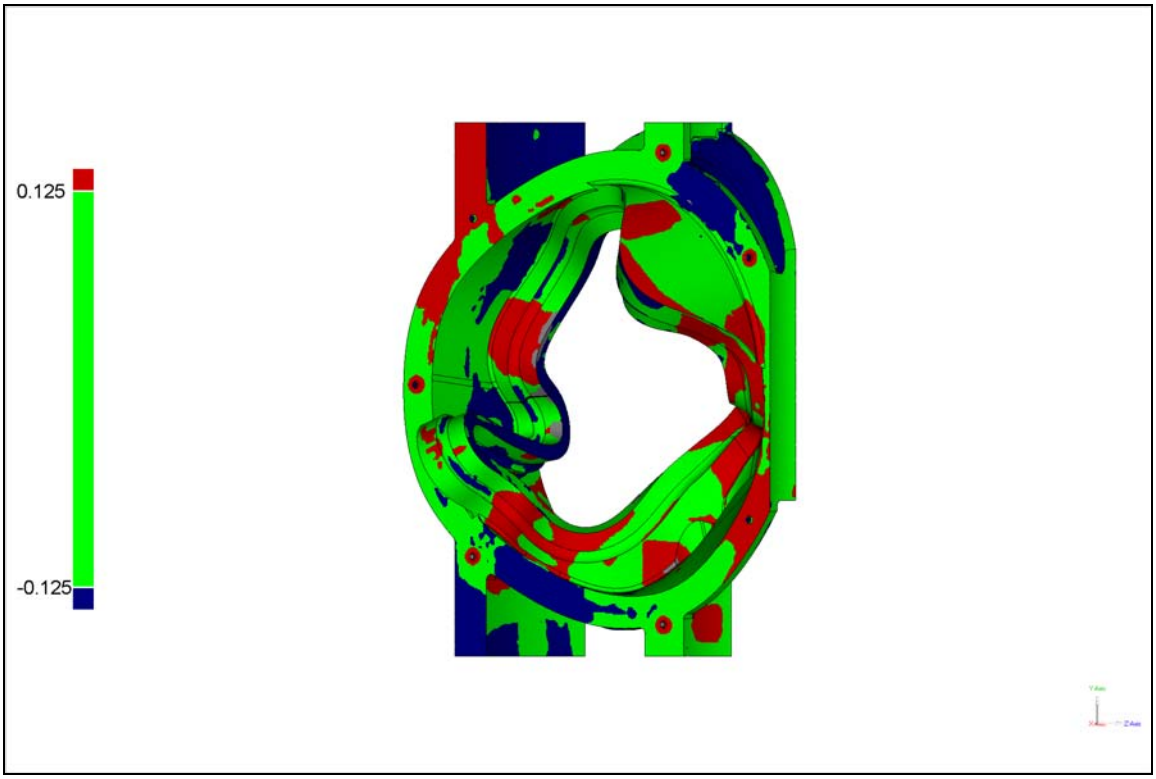
Predefined: Front



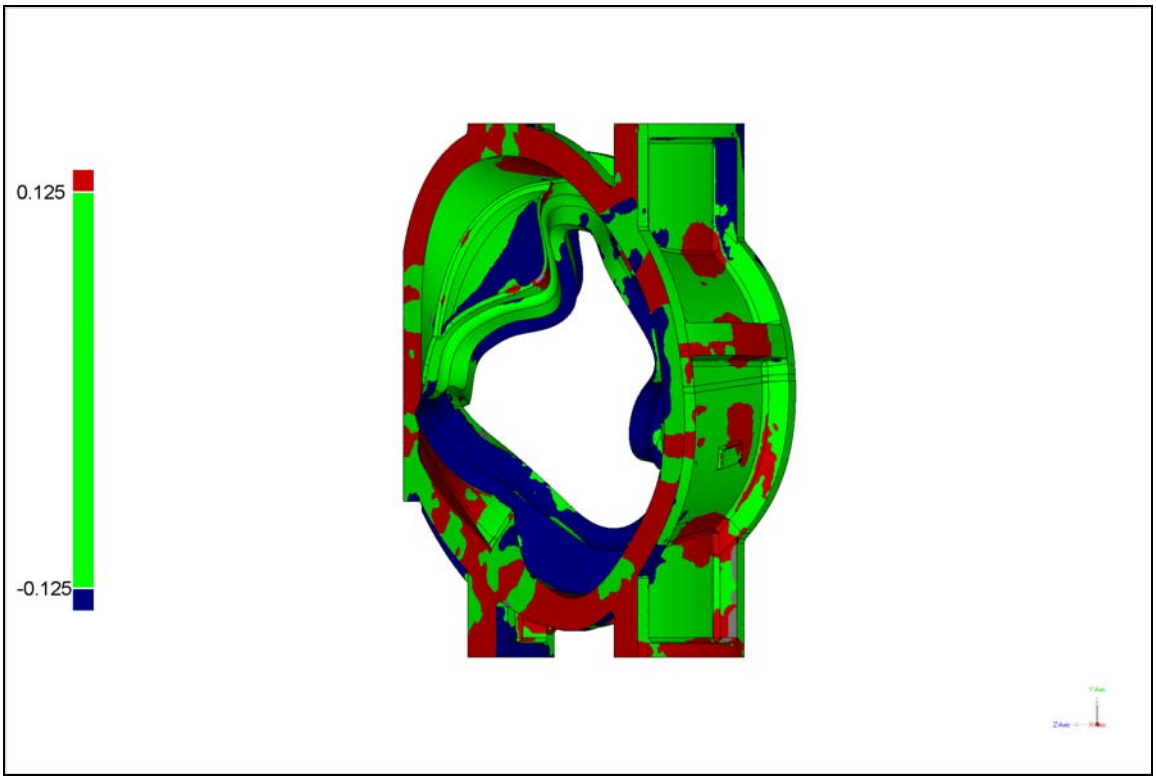
Predefined: Back



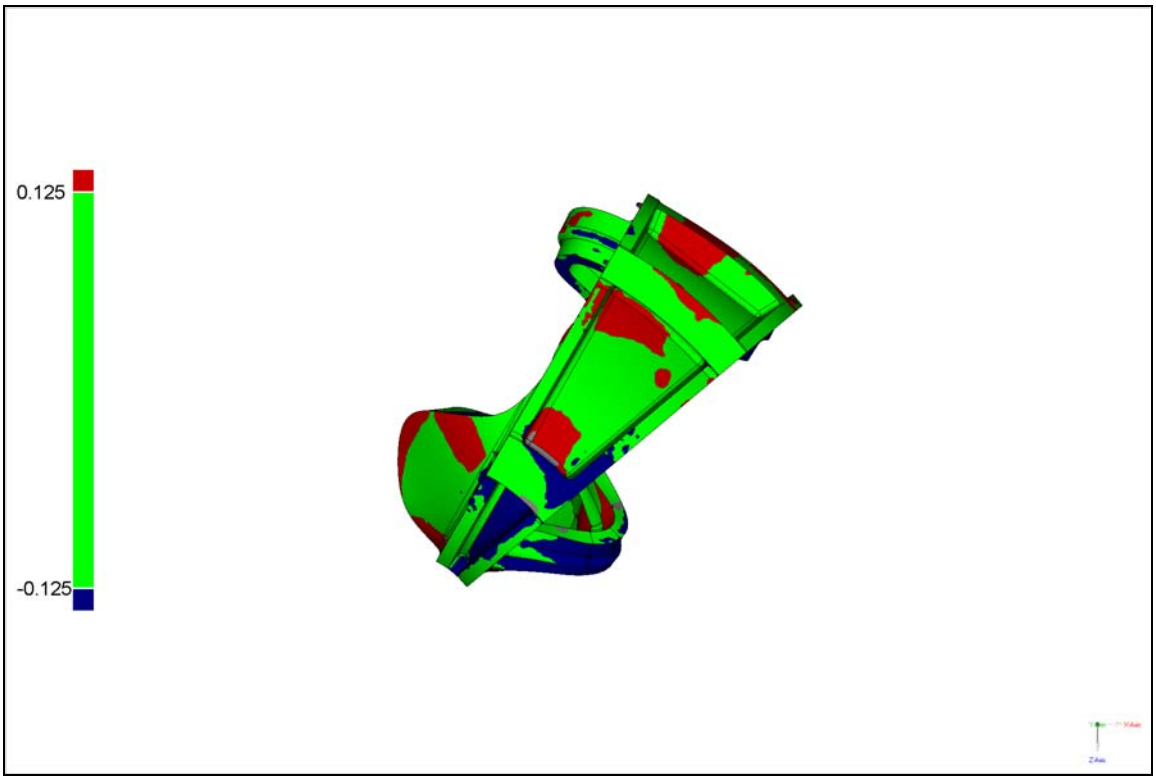
Predefined: Left



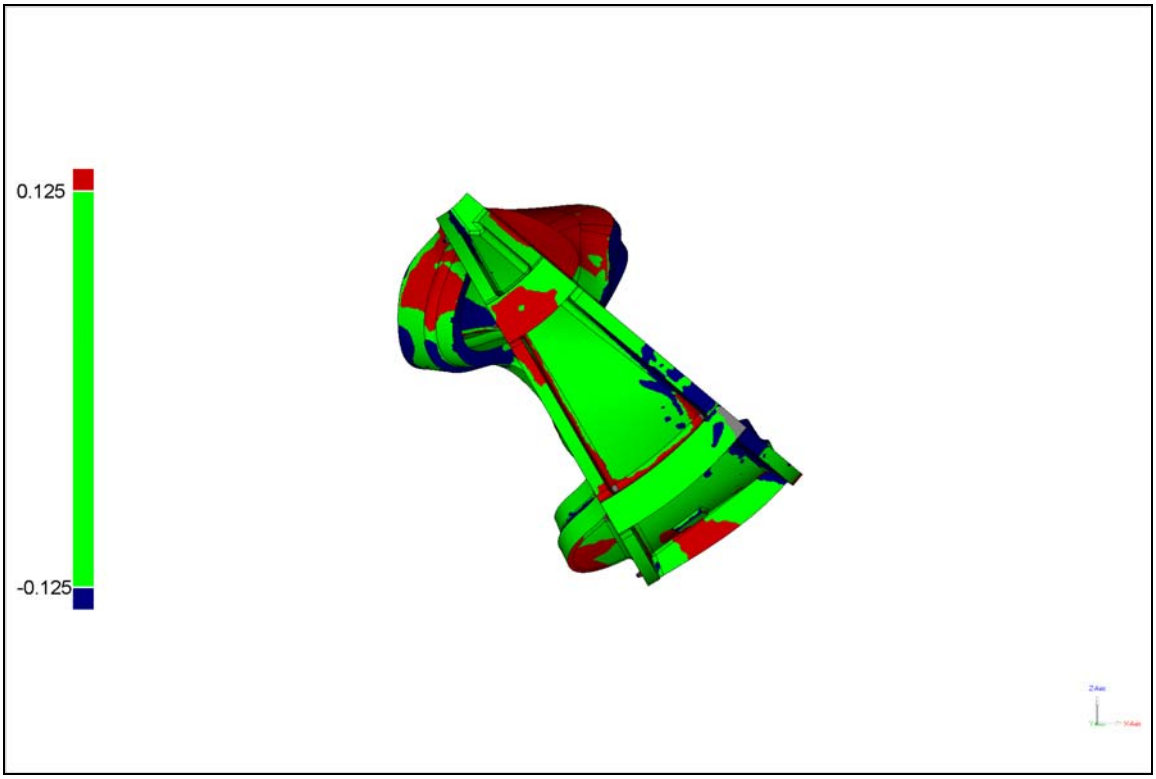
Predefined: Right



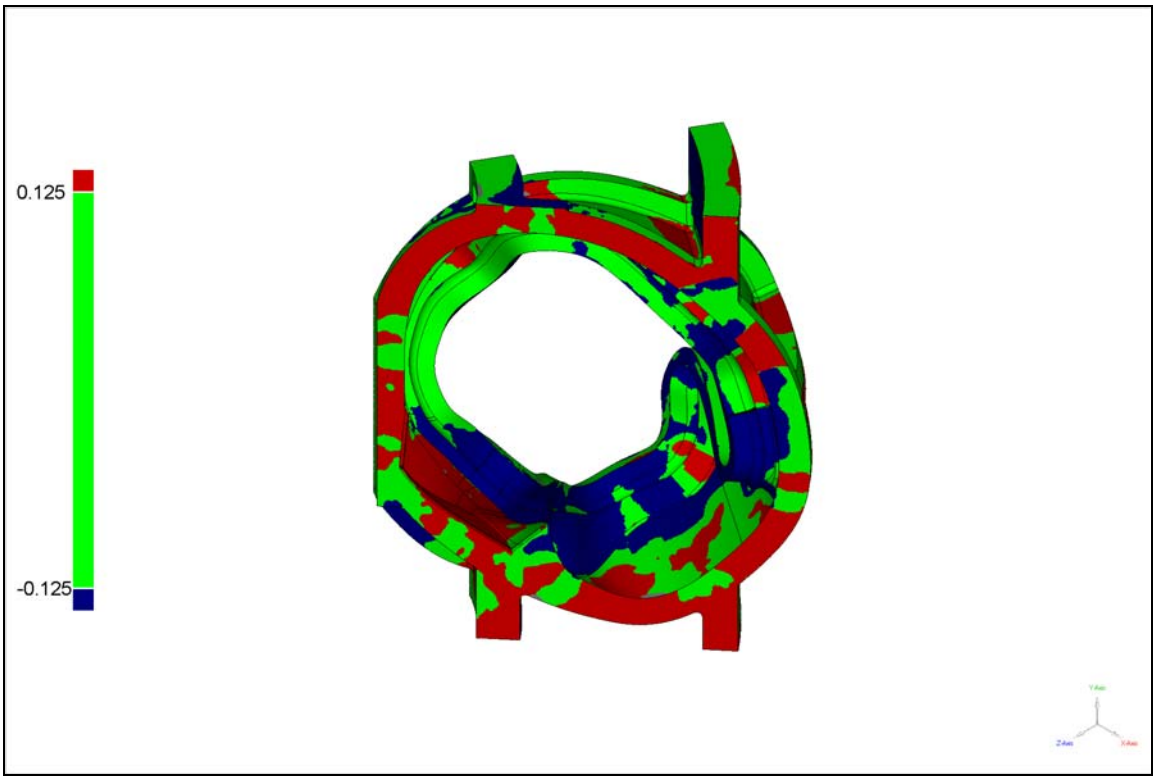
Predefined: Top



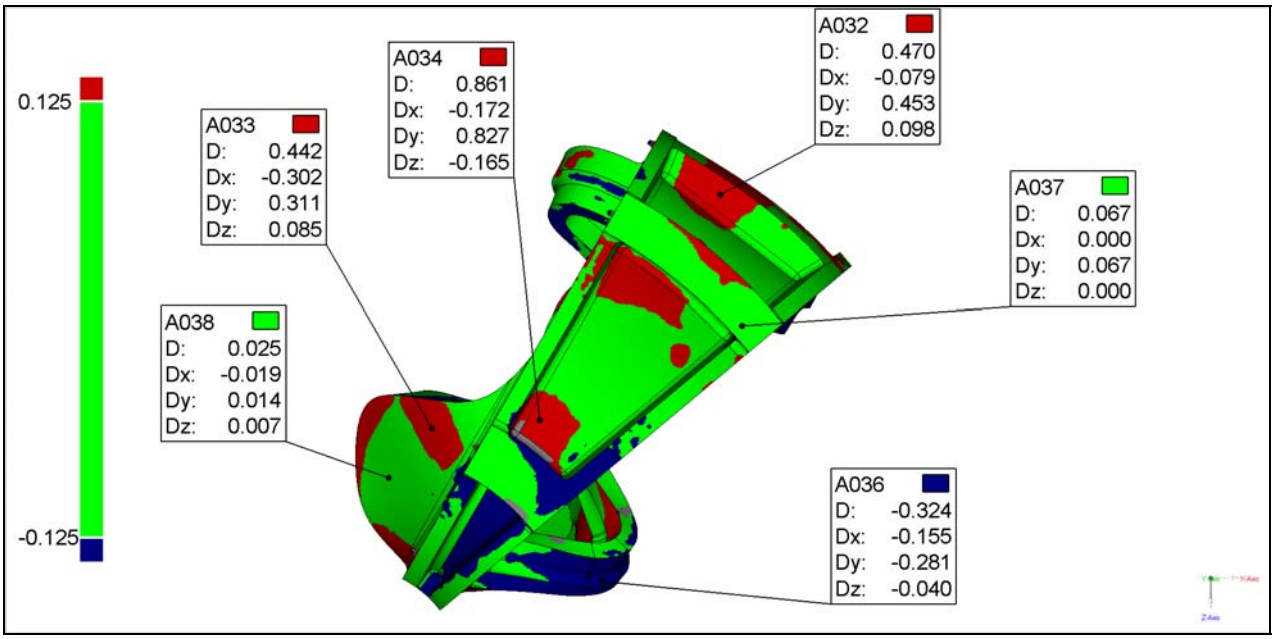
Predefined: Bottom



Predefined: Isometric



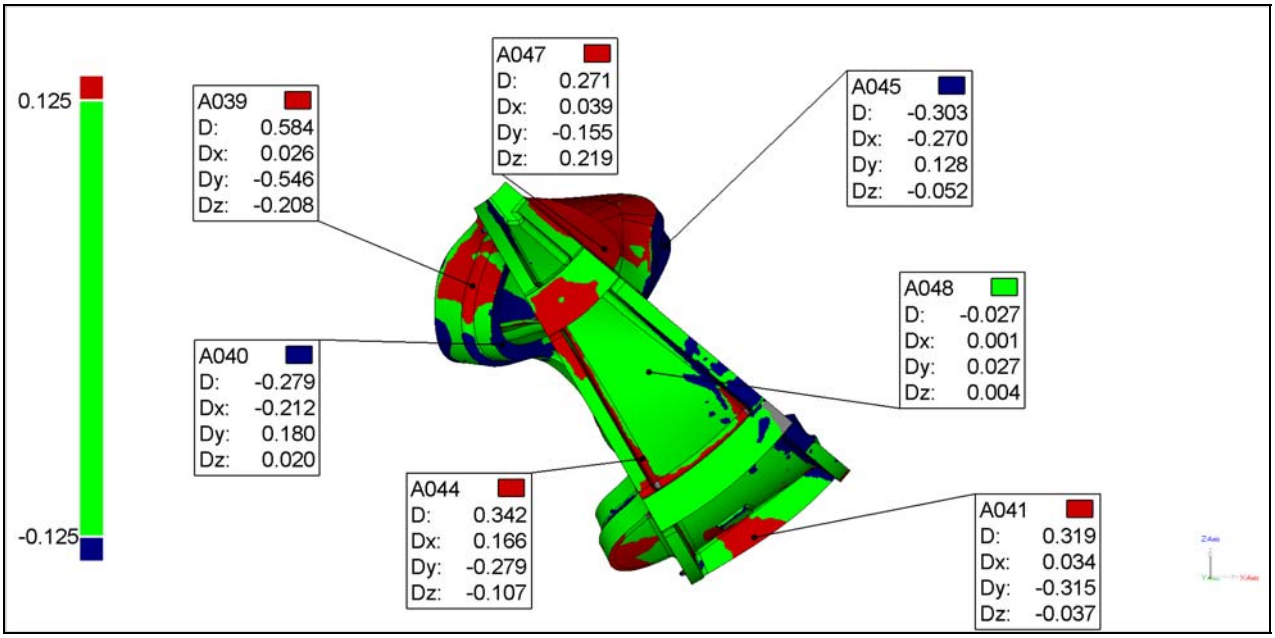
Annotated: Annotation View Top



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A032	0.470	FAIL	0.100	-0.100	54.294	11.519	-71.235	0.039	-0.079	0.453	0.098	54.215	11.972	-71.137
A033	0.442	FAIL	0.100	-0.100	11.899	30.670	-36.884	0.039	-0.302	0.311	0.085	11.597	30.981	-36.798
A034	0.861	FAIL	0.100	-0.100	27.749	40.157	-38.073	0.039	-0.172	0.827	-0.165	27.577	40.984	-38.237
A036	-0.324	FAIL	0.100	-0.100	36.863	-3.808	-14.297	0.039	-0.155	-0.281	-0.040	36.708	-4.090	-14.337
A037	0.067	PASS	0.100	-0.100	57.469	48.188	-51.942	0.039	0.000	0.067	0.000	57.469	48.255	-51.942
A038	0.025	PASS	0.100	-0.100	5.558	19.704	-29.553	0.039	-0.019	0.014	0.007	5.539	19.718	-29.546

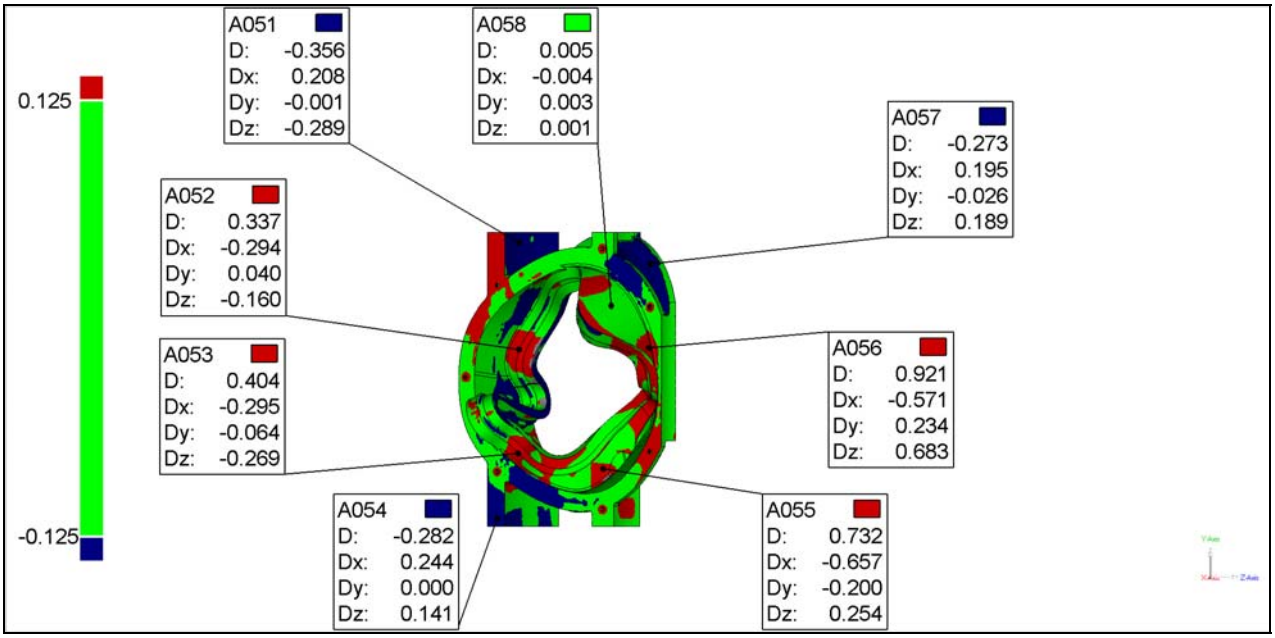
Annotated: Annotation View Bottom



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A039	0.584	FAIL	0.100	-0.100	7.399	10.856	-28.360	0.039	0.026	-0.546	-0.208	7.425	10.310	-28.567
A040	-0.279	FAIL	0.100	-0.100	12.590	14.051	-38.580	0.039	-0.212	0.180	0.020	12.377	14.230	-38.560
A041	0.319	FAIL	0.100	-0.100	56.713	6.078	-72.483	0.039	0.034	-0.315	-0.037	56.747	5.762	-72.520
A044	0.342	FAIL	0.100	-0.100	37.135	-31.757	-58.654	0.039	0.166	-0.279	-0.107	37.301	-32.037	-58.761
A045	-0.303	FAIL	0.100	-0.100	41.032	-8.625	-21.418	0.039	-0.270	0.128	-0.052	40.762	-8.497	-21.469
A047	0.271	FAIL	0.100	-0.100	30.470	-23.402	-21.884	0.039	0.039	-0.155	0.219	30.509	-23.558	-21.665
A048	-0.027	PASS	0.100	-0.100	38.270	-38.262	-43.393	0.039	0.001	0.027	0.004	38.270	-38.235	-43.390

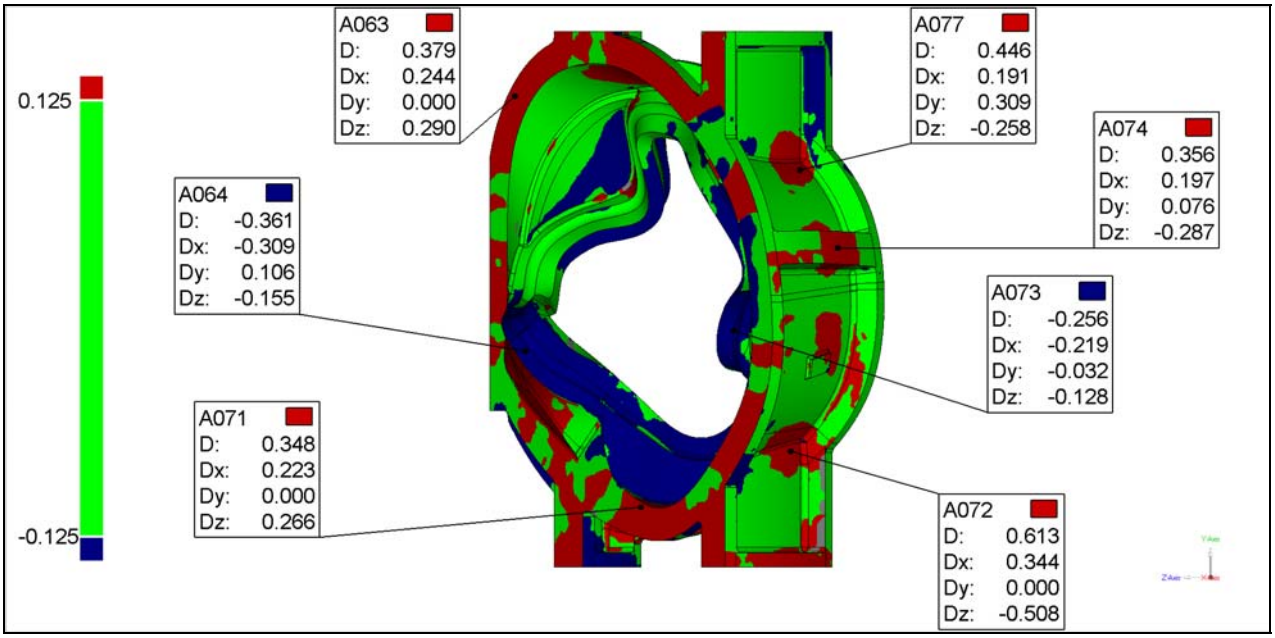
Annotated: Annotation View Left



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A051	-0.356	FAIL	0.100	-0.100	44.544	44.812	-61.169	0.039	0.208	-0.001	-0.289	44.752	44.811	-61.458
A052	0.337	FAIL	0.100	-0.100	53.352	9.964	-61.169	0.039	-0.294	0.040	-0.160	53.058	10.004	-61.329
A053	0.404	FAIL	0.100	-0.100	36.665	-24.158	-61.411	0.039	-0.295	-0.064	-0.269	36.371	-24.222	-61.680
A054	-0.282	FAIL	0.100	-0.100	38.553	-45.608	-68.276	0.039	0.244	0.000	0.141	38.798	-45.608	-68.135
A055	0.732	FAIL	0.100	-0.100	32.132	-29.208	-33.635	0.039	-0.657	-0.200	0.254	31.476	-29.408	-33.381
A056	0.921	FAIL	0.100	-0.100	7.357	10.477	-18.642	0.039	-0.571	0.234	0.683	6.786	10.711	-17.959
A057	-0.273	FAIL	0.100	-0.100	18.242	37.816	-18.201	0.039	0.195	-0.026	0.189	18.437	37.790	-18.012
A058	0.005	PASS	0.100	-0.100	8.213	24.147	-30.989	0.039	-0.004	0.003	0.001	8.209	24.149	-30.988

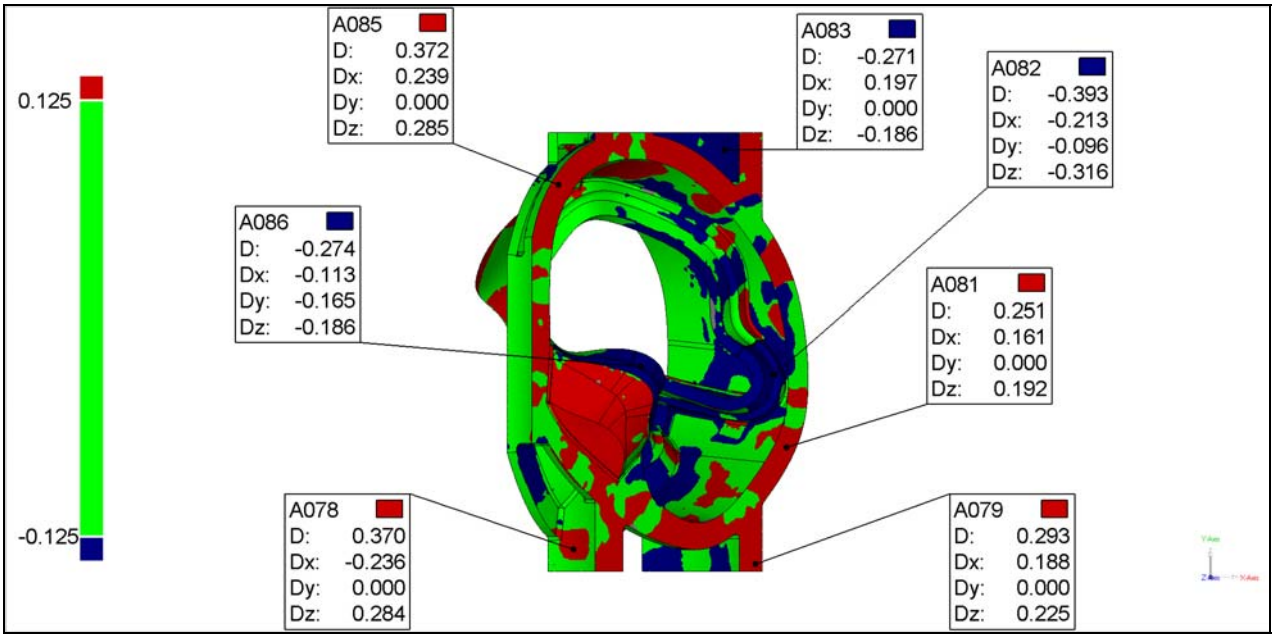
Annotated: Annotation View Right



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A063	0.379	FAIL	0.100	-0.100	18.531	36.560	-14.571	0.039	0.244	0.000	0.290	18.775	36.560	-14.280
A064	-0.361	FAIL	0.100	-0.100	40.476	-9.285	-16.439	0.039	-0.309	0.106	-0.155	40.167	-9.179	-16.594
A071	0.348	FAIL	0.100	-0.100	45.441	-37.411	-37.150	0.039	0.223	0.000	0.266	45.664	-37.411	-36.884
A072	0.613	FAIL	0.100	-0.100	43.968	-27.330	-64.018	0.039	0.344	0.000	-0.508	44.312	-27.330	-64.526
A073	-0.256	FAIL	0.100	-0.100	65.593	-5.551	-53.854	0.039	-0.219	-0.032	-0.128	65.374	-5.583	-53.983
A074	0.356	FAIL	0.100	-0.100	57.859	9.211	-72.488	0.039	0.197	0.076	-0.287	58.056	9.287	-72.775
A077	0.446	FAIL	0.100	-0.100	44.242	23.247	-65.712	0.039	0.191	0.309	-0.258	44.433	23.557	-65.970

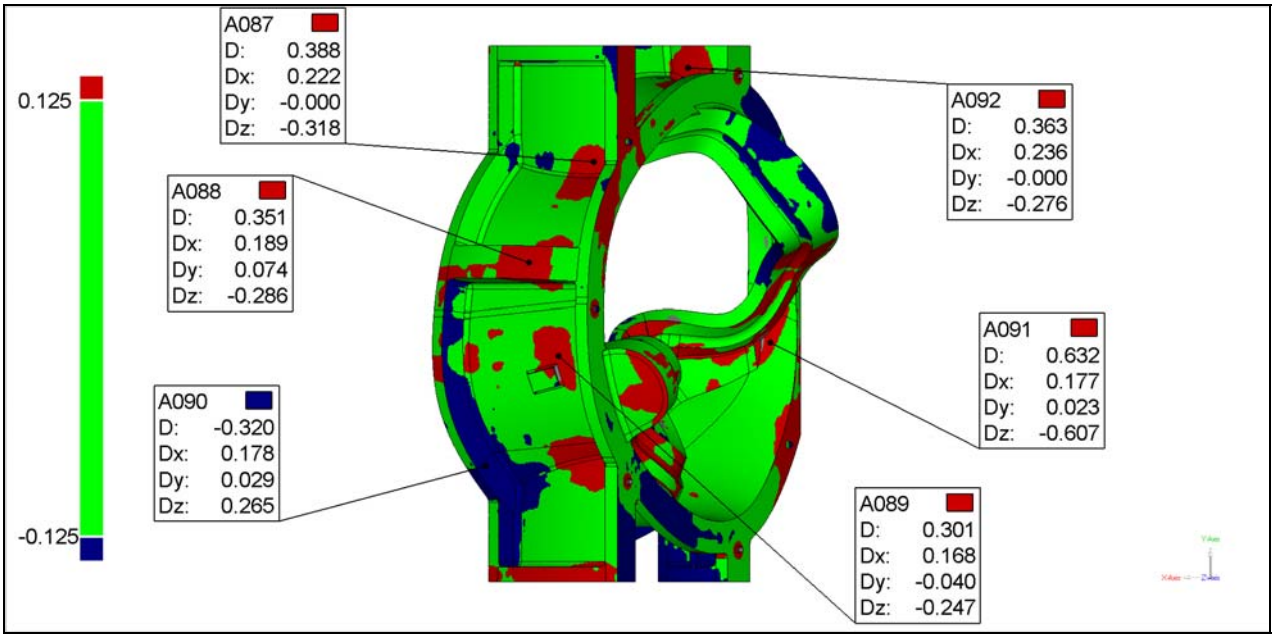
Annotated: Annotation View Front



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A078	0.370	FAIL	0.100	-0.100	22.125	-43.372	-26.471	0.039	-0.236	0.000	0.284	21.889	-43.372	-26.187
A079	0.293	FAIL	0.100	-0.100	62.028	-46.623	-51.069	0.039	0.188	0.000	0.225	62.216	-46.623	-50.844
A081	0.251	FAIL	0.100	-0.100	68.826	-20.908	-56.773	0.039	0.161	0.000	0.192	68.987	-20.908	-56.581
A082	-0.393	FAIL	0.100	-0.100	66.166	-4.946	-54.617	0.039	-0.213	-0.096	-0.316	65.953	-5.043	-54.932
A083	-0.271	FAIL	0.100	-0.100	55.230	44.415	-51.785	0.039	0.197	0.000	-0.186	55.427	44.415	-51.971
A085	0.372	FAIL	0.100	-0.100	18.874	36.730	-14.858	0.039	0.239	0.000	0.285	19.113	36.730	-14.573
A086	-0.274	FAIL	0.100	-0.100	36.904	-3.173	-15.496	0.039	-0.113	-0.165	-0.186	36.791	-3.338	-15.682

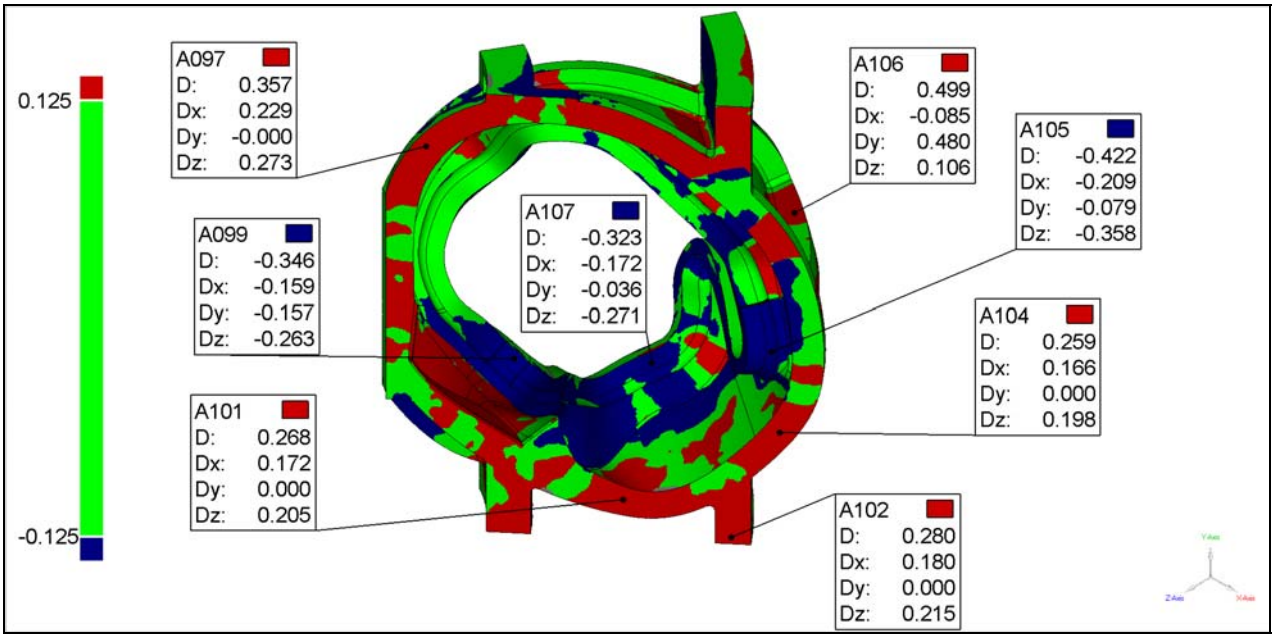
Annotated: Annotation View Back



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A087	0.388	FAIL	0.100	-0.100	44.656	27.300	-63.543	0.039	0.222	-0.000	-0.318	44.878	27.300	-63.861
A088	0.351	FAIL	0.100	-0.100	56.271	9.151	-73.572	0.039	0.189	0.074	-0.286	56.460	9.225	-73.859
A089	0.301	FAIL	0.100	-0.100	50.948	-7.547	-71.367	0.039	0.168	-0.040	-0.247	51.115	-7.587	-71.614
A090	-0.320	FAIL	0.100	-0.100	64.015	-27.391	-56.486	0.039	0.178	0.029	0.265	64.193	-27.363	-56.221
A091	0.632	FAIL	0.100	-0.100	12.954	-5.127	-14.409	0.039	0.177	0.023	-0.607	13.131	-5.105	-15.016
A092	0.363	FAIL	0.100	-0.100	27.716	44.240	-32.733	0.039	0.236	-0.000	-0.276	27.952	44.240	-33.009

Annotated: Annotation View Isometric



Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A097	0.357	FAIL	0.100	-0.100	18.638	35.973	-14.660	0.039	0.229	-0.000	0.273	18.868	35.973	-14.387
A099	-0.346	FAIL	0.100	-0.100	38.499	-2.006	-17.121	0.039	-0.159	-0.157	-0.263	38.340	-2.164	-17.385
A101	0.268	FAIL	0.100	-0.100	45.849	-39.638	-37.493	0.039	0.172	0.000	0.205	46.021	-39.638	-37.288
A102	0.280	FAIL	0.100	-0.100	60.736	-46.739	-49.985	0.039	0.180	0.000	0.215	60.917	-46.739	-49.770
A104	0.259	FAIL	0.100	-0.100	67.436	-23.082	-55.606	0.039	0.166	0.000	0.198	67.602	-23.082	-55.408
A105	-0.422	FAIL	0.100	-0.100	66.355	-5.353	-54.634	0.039	-0.209	-0.079	-0.358	66.146	-5.431	-54.992
A106	0.499	FAIL	0.100	-0.100	55.821	11.733	-70.985	0.039	-0.085	0.480	0.106	55.736	12.213	-70.879
A107	-0.323	FAIL	0.100	-0.100	35.687	-23.162	-54.842	0.039	-0.172	-0.036	-0.271	35.515	-23.198	-55.113

MetalTek INTERNATIONAL

Carondelet Division
Pevely, MO 63070
(636) 475-2100

9/6/2005

Annotated: All

Units: in

Name	Dev	Status	Tol +	Tol -	Ref X	Ref Y	Ref Z	Dev Radius	Dev X	Dev Y	Dev Z	Test X	Test Y	Test Z
A032	0.470	FAIL	0.100	-0.100	54.294	11.519	-71.235	0.039	-0.079	0.453	0.098	54.215	11.972	-71.137
A033	0.442	FAIL	0.100	-0.100	11.899	30.670	-36.884	0.039	-0.302	0.311	0.085	11.597	30.981	-36.798
A034	0.861	FAIL	0.100	-0.100	27.749	40.157	-38.073	0.039	-0.172	0.827	-0.165	27.577	40.984	-38.237
A036	-0.324	FAIL	0.100	-0.100	36.863	-3.808	-14.297	0.039	-0.155	-0.281	-0.040	36.708	-4.090	-14.337
A037	0.067	PASS	0.100	-0.100	57.469	48.188	-51.942	0.039	0.000	0.067	0.000	57.469	48.255	-51.942
A038	0.025	PASS	0.100	-0.100	5.558	19.704	-29.553	0.039	-0.019	0.014	0.007	5.539	19.718	-29.546
A039	0.584	FAIL	0.100	-0.100	7.399	10.856	-28.360	0.039	0.026	-0.546	-0.208	7.425	10.310	-28.567
A040	-0.279	FAIL	0.100	-0.100	12.590	14.051	-38.580	0.039	-0.212	0.180	0.020	12.377	14.230	-38.560
A041	0.319	FAIL	0.100	-0.100	56.713	6.078	-72.483	0.039	0.034	-0.315	-0.037	56.747	5.762	-72.520
A044	0.342	FAIL	0.100	-0.100	37.135	-31.757	-58.654	0.039	0.166	-0.279	-0.107	37.301	-32.037	-58.761
A045	-0.303	FAIL	0.100	-0.100	41.032	-8.625	-21.418	0.039	-0.270	0.128	-0.052	40.762	-8.497	-21.469
A047	0.271	FAIL	0.100	-0.100	30.470	-23.402	-21.884	0.039	0.039	-0.155	0.219	30.509	-23.558	-21.665
A048	-0.027	PASS	0.100	-0.100	38.270	-38.262	-43.393	0.039	0.001	0.027	0.004	38.270	-38.235	-43.390
A051	-0.356	FAIL	0.100	-0.100	44.544	44.812	-61.169	0.039	0.208	-0.001	-0.289	44.752	44.811	-61.458
A052	0.337	FAIL	0.100	-0.100	53.352	9.964	-61.169	0.039	-0.294	0.040	-0.160	53.058	10.004	-61.329
A053	0.404	FAIL	0.100	-0.100	36.665	-24.158	-61.411	0.039	-0.295	-0.064	-0.269	36.371	-24.222	-61.680
A054	-0.282	FAIL	0.100	-0.100	38.553	-45.608	-68.276	0.039	0.244	0.000	0.141	38.798	-45.608	-68.135
A055	0.732	FAIL	0.100	-0.100	32.132	-29.208	-33.635	0.039	-0.657	-0.200	0.254	31.476	-29.408	-33.381
A056	0.921	FAIL	0.100	-0.100	7.357	10.477	-18.642	0.039	-0.571	0.234	0.683	6.786	10.711	-17.959
A057	-0.273	FAIL	0.100	-0.100	18.242	37.816	-18.201	0.039	0.195	-0.026	0.189	18.437	37.790	-18.012
A058	0.005	PASS	0.100	-0.100	8.213	24.147	-30.989	0.039	-0.004	0.003	0.001	8.209	24.149	-30.988
A063	0.379	FAIL	0.100	-0.100	18.531	36.560	-14.571	0.039	0.244	0.000	0.290	18.775	36.560	-14.280
A064	-0.361	FAIL	0.100	-0.100	40.476	-9.285	-16.439	0.039	-0.309	0.106	-0.155	40.167	-9.179	-16.594
A071	0.348	FAIL	0.100	-0.100	45.441	-37.411	-37.150	0.039	0.223	0.000	0.266	45.664	-37.411	-36.884
A072	0.613	FAIL	0.100	-0.100	43.968	-27.330	-64.018	0.039	0.344	0.000	-0.508	44.312	-27.330	-64.526
A073	-0.256	FAIL	0.100	-0.100	65.593	-5.551	-53.854	0.039	-0.219	-0.032	-0.128	65.374	-5.583	-53.983
A074	0.356	FAIL	0.100	-0.100	57.859	9.211	-72.488	0.039	0.197	0.076	-0.287	58.056	9.287	-72.775
A077	0.446	FAIL	0.100	-0.100	44.242	23.247	-65.712	0.039	0.191	0.309	-0.258	44.433	23.557	-65.970
A078	0.370	FAIL	0.100	-0.100	22.125	-43.372	-26.471	0.039	-0.236	0.000	0.284	21.889	-43.372	-26.187
A079	0.293	FAIL	0.100	-0.100	62.028	-46.623	-51.069	0.039	0.188	0.000	0.225	62.216	-46.623	-50.844
A081	0.251	FAIL	0.100	-0.100	68.826	-20.908	-56.773	0.039	0.161	0.000	0.192	68.987	-20.908	-56.581
A082	-0.393	FAIL	0.100	-0.100	66.166	-4.946	-54.617	0.039	-0.213	-0.096	-0.316	65.953	-5.043	-54.932
A083	-0.271	FAIL	0.100	-0.100	55.230	44.415	-51.785	0.039	0.197	0.000	-0.186	55.427	44.415	-51.971
A085	0.372	FAIL	0.100	-0.100	18.874	36.730	-14.858	0.039	0.239	0.000	0.285	19.113	36.730	-14.573
A086	-0.274	FAIL	0.100	-0.100	36.904	-3.173	-15.496	0.039	-0.113	-0.165	-0.186	36.791	-3.338	-15.682
A087	0.388	FAIL	0.100	-0.100	44.656	27.300	-63.543	0.039	0.222	-0.000	-0.318	44.878	27.300	-63.861
A088	0.351	FAIL	0.100	-0.100	56.271	9.151	-73.572	0.039	0.189	0.074	-0.286	56.460	9.225	-73.859
A089	0.301	FAIL	0.100	-0.100	50.948	-7.547	-71.367	0.039	0.168	-0.040	-0.247	51.115	-7.587	-71.614
A090	-0.320	FAIL	0.100	-0.100	64.015	-27.391	-56.486	0.039	0.178	0.029	0.265	64.193	-27.363	-56.221
A091	0.632	FAIL	0.100	-0.100	12.954	-5.127	-14.409	0.039	0.177	0.023	-0.607	13.131	-5.105	-15.016
A092	0.363	FAIL	0.100	-0.100	27.716	44.240	-32.733	0.039	0.236	-0.000	-0.276	27.952	44.240	-33.009
A097	0.357	FAIL	0.100	-0.100	18.638	35.973	-14.660	0.039	0.229	-0.000	0.273	18.868	35.973	-14.387
A099	-0.346	FAIL	0.100	-0.100	38.499	-2.006	-17.121	0.039	-0.159	-0.157	-0.263	38.340	-2.164	-17.385
A101	0.268	FAIL	0.100	-0.100	45.849	-39.638	-37.493	0.039	0.172	0.000	0.205	46.021	-39.638	-37.288
A102	0.280	FAIL	0.100	-0.100	60.736	-46.739	-49.985	0.039	0.180	0.000	0.215	60.917	-46.739	-49.770
A104	0.259	FAIL	0.100	-0.100	67.436	-23.082	-55.606	0.039	0.166	0.000	0.198	67.602	-23.082	-55.408
A105	-0.422	FAIL	0.100	-0.100	66.355	-5.353	-54.634	0.039	-0.209	-0.079	-0.358	66.146	-5.431	-54.992
A106	0.499	FAIL	0.100	-0.100	55.821	11.733	-70.985	0.039	-0.085	0.480	0.106	55.736	12.213	-70.879
A107	-0.323	FAIL	0.100	-0.100	35.687	-23.162	-54.842	0.039	-0.172	-0.036	-0.271	35.515	-23.198	-55.113

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number	PPPL-FP-LTS-2	Cert Number	S73220-2
Pattern Number	SE-141-073 COIL C SHIM	Pour Date	4/28/2005
CAF Metal Designation	CF8MNMnMod		
Material Spec	CF8MNMN MOD		

Element	Min	Actual	Max
C	0.040	0.07	0.070
CR	18.000	18.1	18.500
MN	2.300	2.97	2.800
MO	2.100	2.45	2.500
N	0.240	0.255	0.280
NI	13.000	13.12	13.500
P	0.000	0.01	0.015
S	0.000	0.01	0.015
SI	0.000	0.5	0.500

The certificate is produced with EDP and valid without signature.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

June 20, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-29403
Req. No. 5394

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

Attention: Rick Suria

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: TENSILE

TENSILE RESULTS: ASTM E21-03a
SOAK TIME: 5 Minutes
SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.
MATERIAL: Metaltek CF8MNMnMOD

DISPOSITION: Report

Sample	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	A\U\R
29198 (1)	C03696	-320	166.1	96.0	57	62	28.6	33330	19260	0.5054	0.3103	2.00	3.14	0.20061359	M9	R
29198 (2)	C03697	-320	161.4	96.8	38	33	28.8	32390	19430	0.5055	0.4130	2.00	2.75	0.20069299	M9	R
29198 (3)	C03698	-320	165.0	92.6	62	62	27.6	33100	18581	0.5054	0.3109	2.00	3.23	0.20061359	M9	R

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

Matthew Wojton 6-20-05

Roy E. Starr/Matt Wojton
Technical Services Manager / Tensile Supervisor June 20, 2005

3

Founded 1929 St. Louis Testing Laboratories INCORPORATED

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

June 13, 2005
Lab No. 05P-1739
P.O. No. 12516
Page 1 of 3

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): HT # 29198

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 293° K / 68° F

REQUIREMENTS: 50 ft. / lb

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
1-7	132	0.085	100
1-8	176	0.084	100
1-9	152	0.082	100
Average	153	0.084	100

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
2-7	160	0.112	100
2-8	144	0.107	100
2-9	140	0.069	100
Average	148	0.096	100

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
3-7	176	0.110	100
3-8	124	0.087	100
3-9	144	0.107	100
Average	148	0.101	100

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

ACCREDITED
Certificate No. 0397-01
Certificate No. 0397-02

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

Attention: Chuck Ruud

June 13, 2005
Lab No. 05p-1739
P.O. No. 12516

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): HT # 29198

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 77° K / -321° F

REQUIREMENTS: 35 ft / lb

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
4-7	84	0.055	50
4-8	83	0.035	50
4-9	76	0.058	50
Average	81	0.049	50

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
5-7	82	0.059	50
5-8	82	0.040	50
5-9	98	0.075	80
Average	87	0.058	60

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
6-7	82	0.050	50
6-8	93	0.052	50
6-9	94	0.051	50
Average	90	0.051	50

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

ACCREDITED

Certificate No. 0397-01
Certificate No. 0397-02

MEMBER ACIL

Founded 1929 St. Louis Testing Laboratories INCORPORATED

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

June 13, 2005
Lab No. 05P-1739
P.O. No. 12516

Attention: CHUCK RUUD

REPORT OF MECHANICAL TESTS

SAMPLE ID: 3 EA., 29198

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Modules of Elasticity	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length) in.	Elongation (2.0" Gage Length) %
29298-1	0.1817	0.0855	52.9	21.2 Msi	40600	91900	1.00	50.0
29198-2	0.1825	0.0962	47.3	20.9 Msi	42700	88500	1.00	50.0
29198-3	0.1840	0.1170	36.4	21.1 Msi	39500	88300	0.97	48.5

Round, reduced section room temperature tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

Karl Schmitz, Director
Materials Testing

KS/tlv

ACCREDITED

Certificate No. 0397-01
Certificate No. 0397-02

MetalTek INTERNATIONAL

Carondelet Division

8600 Commericial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Final Inspection Report

Customer Name: ENERGY INDUSTRIES OF OHIO

Pattern: SE-141-073 COIL C SHIM

Order Number: PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 6/22/2005

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	S73220-2	CQP - 300 Rev 9	ASTM A903 Level II	Acceptable
Mag Perm	S73220-2	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	S73220-2	Technique # 12726	MSS SP 54	Acceptable
Visual	S73220-2	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Certificate of Conformance

ENERGY INDUSTRIES OF OHIO

Order Number PPPL-FP-LTS-2

Pattern SE-141-073 COIL C SHIM

ASTM Metal CF8MNMN MOD Date 6/21/2005

Cert Number

S73220-2

We certify that we have complied in accordance with the drawings(s) and specifications(s) listed on the above purchase order. The articles furnished were made and/or processed from parts and/or materials in accordance with all applicable drawings(s) and specifications(s) pursuant to the afore mention purchase order.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

Corrective Action 1308
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 6/13/2005
CA Originator C. Ruud
Pattern Number: C and A Coil Shims 11 Pieces

Description of Defect / Non-Conformance
Chemistry for 11 shim castings is out of specification.

Root Cause
Chemistry specification was not changed in system and not communicated to Lab personnel.

Corrective Action
Specification was corrected in system and Lab personnel trained. Mag permeability was checked on the parts and are less than 1.02u.

Verification of Corrective Action
Chemistries were checked on subsequent parts and are within specification.

Preventive Action
Create Inspection and Test Plan summarizing all requirements.

Estimated Completion Date
6/15/05

Actual Completion Date
Complete.

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick

MetalTek INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER	PURCHASE ORDER NUMBER	DATE	CONTROL NO.	PAGE
Energy Industries of Ohio	PPPL-FP-LTS-2	6-23-05	40851	1 of 1

PART NO.	SPECIFICATION	CLASS	TOTAL PIECES	PIECES ACCEPTED
SE-141-073 coil C shim	E 186	III	1	1

RADIOGRAPHED BY:	INTERPRETED BY:	ASNT LEVEL
[signature]	[signature]	II

FILM TYPE	MATERIAL	ISOTOPE	CODE
80	CF8MNMNMN	IRIDIUM 192 ___ COBALT 60 ✓	ASTM E94 ___ ASME ✓ MIL-STD-453

-6 part MS73220-2	VIEW	PENE	ACCEPT	REJECT	SHRINK	INCLUSION	POROSITY	LINEAR	SURFACE	LOF / LOP	COMMENTS
RT-2	A	50	✓						✓		[stamp 0802] 6/24/05
	B	↓	✓						✓		
	C	↓	✓						✓		
	D	↓	✓						✓		
	E	↓	✓						✓		

Metal Tech INTERNATIONAL

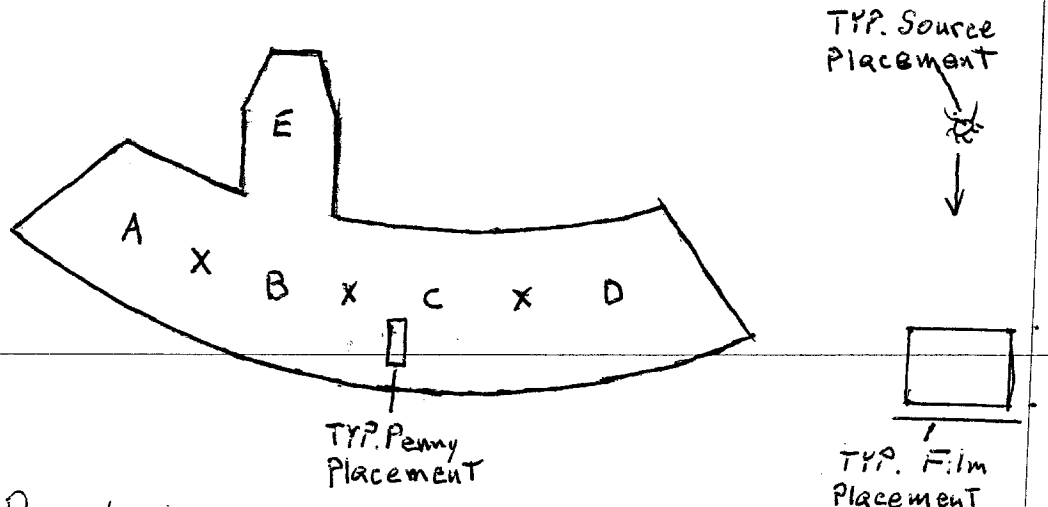
RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer Energy Industries of Ohio	Pattern Number SE-141-073
Material CF8MNMN-MOD	Traceability Number MS73220
Film Manufactuer FUJI	Source Number CO60 24.7 CI
IQI LEVEL 2-2T From CQP 401 X Other (Specify, E.G. 2-4T, 2-1T) N/A	

Exposures (views)	A	B	C	D	E
Thickness (IN.)	3 3/8"	→	→	→	→
S/F Distance (IN.)	24"	→	→	→	→
Penetrameter	50	→	→	→	→
Time (MIN.)	Calculate	→	→	→	→
Focal Spot (IN.)	.1	→	→	→	→
Film Size (IN.)	14X17	→	→	→	→
Screen Size (Pb) Front/Back	.01	→	→	→	→
S.W.E./D.W.E.	SWE	→	→	→	→
S.W.V/D.W.V.	SWV	→	→	→	→
Film Type	80	→	→	→	→
Acceptance Standard	E186	→	→	→	→
Severity Level	III	→	→	→	→

Shooting Sketch (Use Additional Pages as Needed)

use Spec. MSS-SP-54



Technique Prepared By: Roy Kelley Level: II Date: 3-10-05

Technique Approved By: [signature] Level: III Date: 3-10-05

8

C Shim

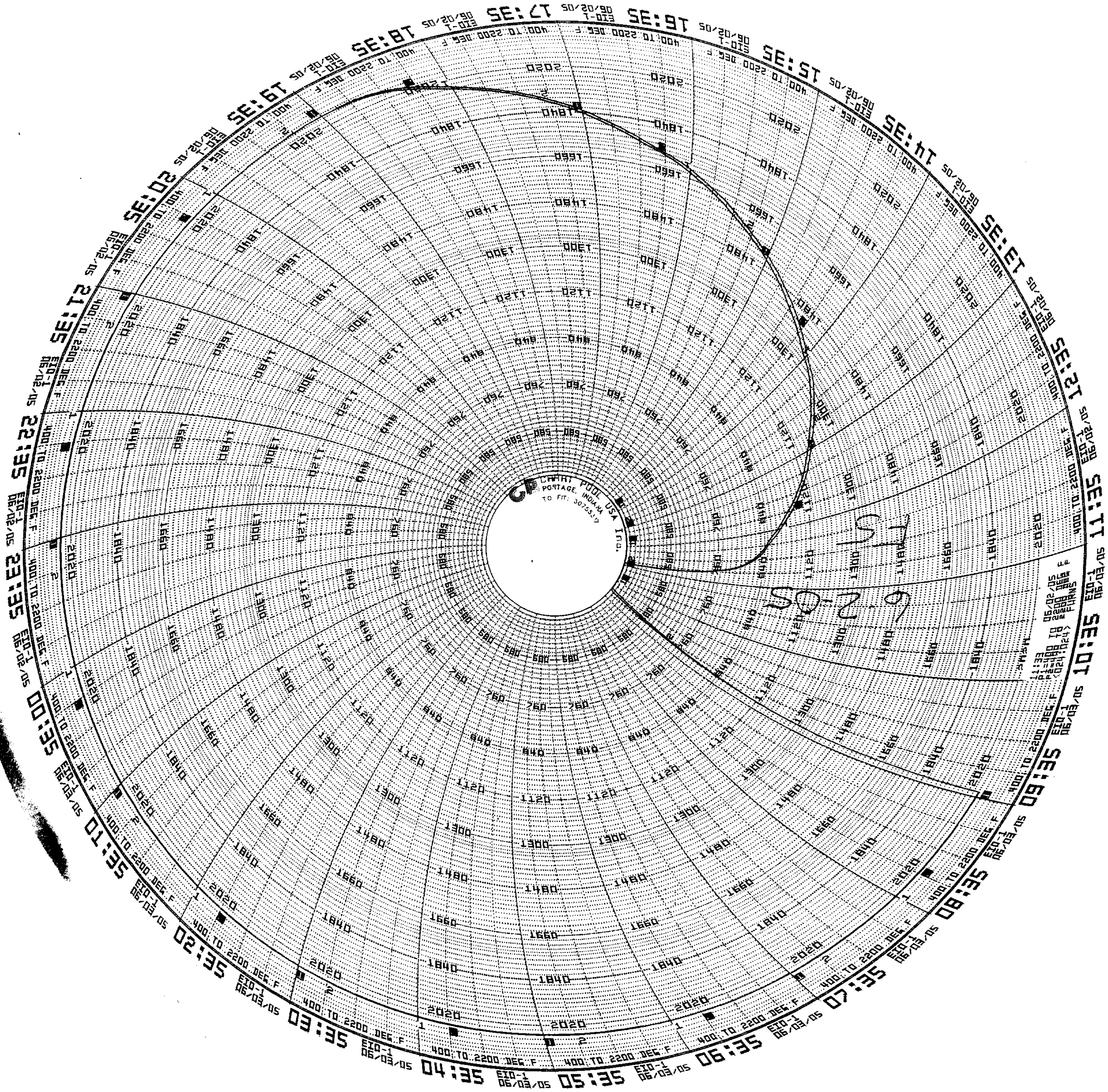
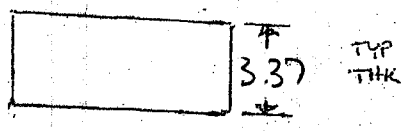
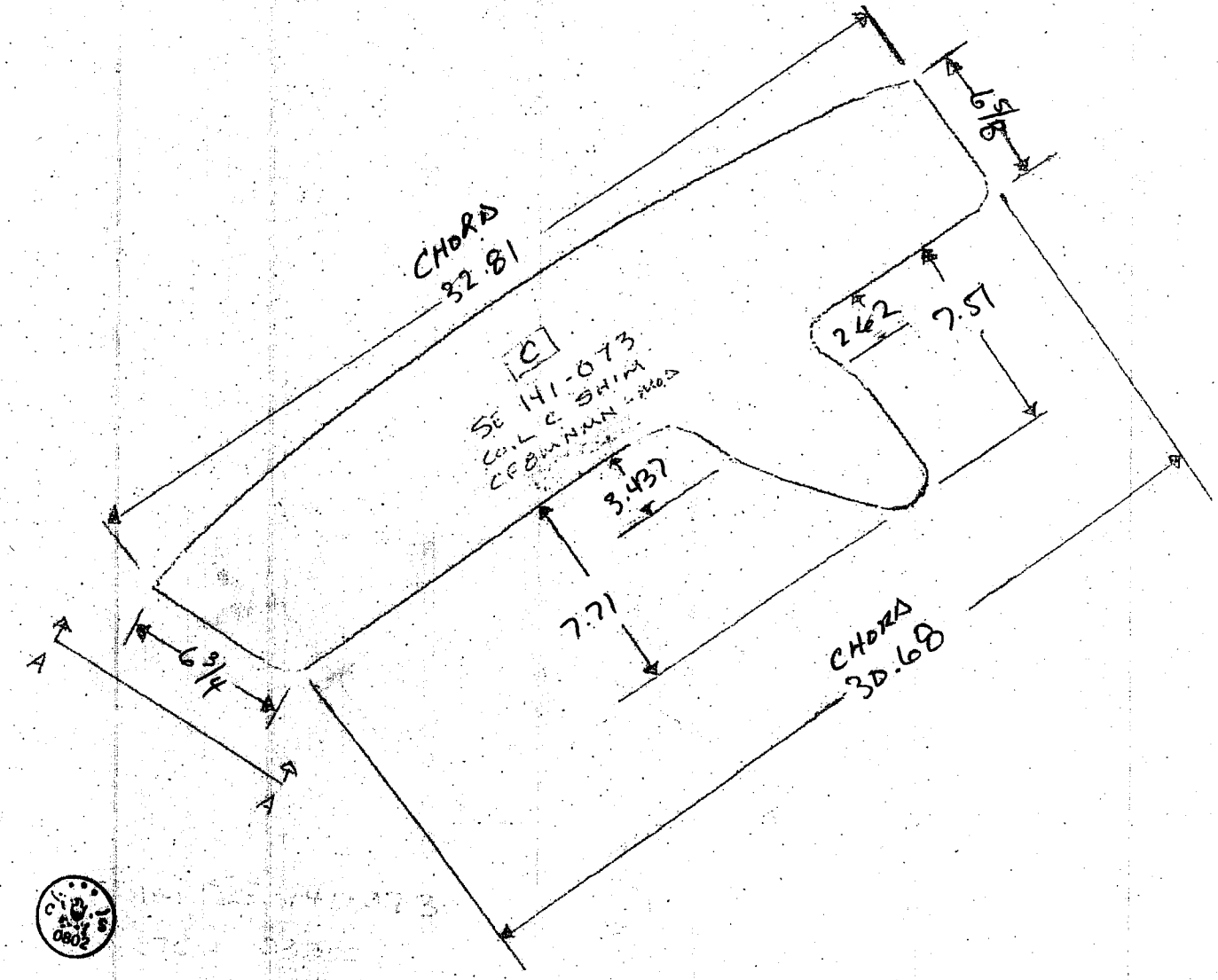


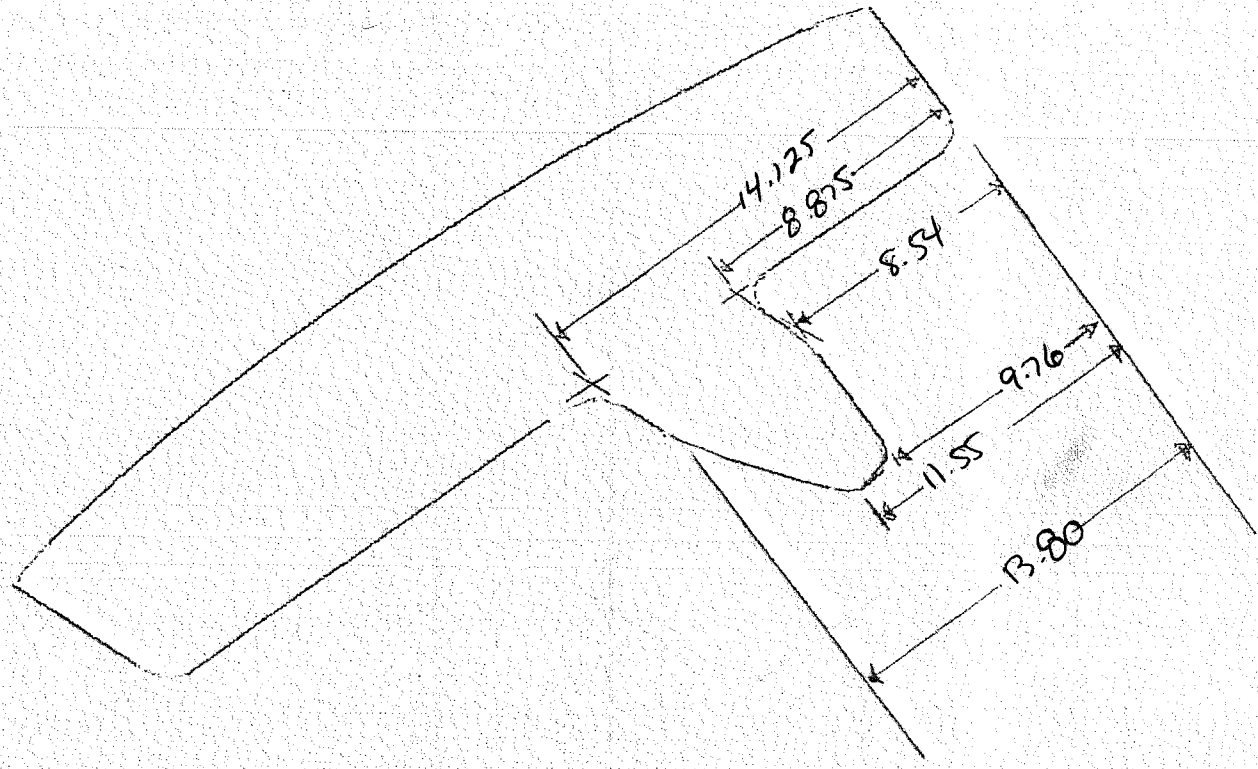
CHART POOL USA Inc.
PORTAGE, INDIANA
400 TO 2200 DEG F
EIO-1
06/02/05
06/03/05
ST 6/2/05



SECT A-A



SHIM SE 141-073-6
SKETCH 6/23/05



SHIM SE 141-073-6
SKETCH 6/23/05

FIVE PARTS KEEP TOGETHER -6 CAR

Energy Industries of Ohio

Manufacturing and Test Sequence (MTS) Coill C Shim

CO# 40851, Pattern SE 141-073 A MS73220-2 Dated December 14, 2004 Revision:Original **Dated Issued:4-27-05**

OPER. #	STATION	DESCRIPTION OF PROCESS Keep all parts together. Sign and date each step when all 5 parts have been completed.	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON Pete FROM 12/15/04 SIGNED QUALITY MANAGER	CAR	4/21/05
20	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, FOUNDRY MARK, TO THE PATTERN.	TB	4/22/05
30	MOLD MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/1300R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/1600R2	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. ENGINEER OF RECORD – ROGER BROMAN, CONSULT ON MOLD-RELATED CONCERNS. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS.	CR	4/22/05
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. RECORD POURING TEMPERATURE: 2825 CASTING POURED AT: 1245 4m DATE: 4/28 HEAT #"s: 29195 ELAPSED POUR TIME NA KEEL BLOCKS POURED: yes Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: SR Analyzed: G Hunt Date: 4/28 **Note: Make 15 additional test bars for mechanical testing.**	JG	4/28/05
50	MELT SOP 0800R2	SHAKEOUT	CA	4/29
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	BWH	4/16/05
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. With C-1 Coil.	DLS	6/2/05

80	PHYSICAL TESTING	OBTAIN TEST SPECIMENS AND SUBMIT FOR PHYSICAL TESTING. REPORT RESULTS AS PART OF STEP 480. Returned to HT w/ Parts	WH	4/29/05
90	GRIND GSWA SOP 0100R3 GCHI SOP 0100R2	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED. CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED.	CEG JA	6/16/05
100	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE. *		MTW 6/16/05
110	VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% OF COMPONENT ACCORDING TO ASTM A802 LEVEL 3 ALL CONDITIONS. IF OK CHECK HERE ✓. IF REJECTED CHECK HERE ____. MARK AND REPAIR AT STEP 130.	VT - LEVEL II	SSH 6-16-05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIOAND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LP STEP. EIO NOTIFIED ON 6/10/05 DCMA NOTIFIED ON 6/10/05	Q ENG OR QA MGR	CAR 6-16-05
120	100% L.P. CQP 0300 REV 10	L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 2. IF OK CHECK HERE ____ IF REJECTED CHECK HERE ✓ MARK AND REPAIR AT STEP 120.	LP - LEVEL II	SSH 6-16-05
130	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.	CA	4/20
140	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA- LEVEL 2. All defects ground out	LP - LEVEL II	D.F 4/23/05
150	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	MW	4/23/05
160	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA.. USE YELLOW MARKER. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____SIGN BY QA ENG.	Not Required	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIOAND DCMA AT LEAST FIVE DAYS IN ADVANCE OF XRAY AND LAYOUT STEPS. EIO NOTIFIED ON 6/20/05 DCMA NOTIFIED ON 6/20/05	Q ENG OR QA MGR	CA

170	CAF X-RAY CQP 401 REV 5	X-RAY PER TECHNIQUE: To be determined. USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II DM	6/23/05
180	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE ✓ AND SEND TO STEP 310. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP 200.	RT – LEVEL II DM	6/23/05
190	LAYOUT	INSPECT CASTING TO VERIFY DIMENSIONS. THIS MAY BE PERFORMED BEFORE OR AFTER STEP 180. DIMENSIONED JT DATE 6/23/05 RELEASED _____(ENGINEER ONLY)	RB	6/23/0
200	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.		
210	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA- LEVEL 2.	LP - LEVEL II	
220	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA.. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____ SIGN BY QA ENG.		
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIOAND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
230	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL USED:_____ QUALITY ENG. Name: _____ Date: _____		
240	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		
250	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.		

N/A

260	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 2. IF OK CHECK HERE _____ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE _____AND RETURN TO STEP 220.	LP - LEVEL II	
	REPEAT	REPEAT STEPS __220 TO 260___AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
270	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE ✓ AND GO TO STEP 290. IF REJECTED CHECK HERE _____.	CAL	6/23/05
280	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 270. REPEAT UNTILL COMPLIANCE IS ACHIEVED.		NA
290	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE: To be determined. USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II	
300	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 310. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP 200.	RT - LEVEL II	
	REPEAT	REPEAT STEPS __200 TO 300___AS REQUIRED TILL WELDS CLEAR X-RAY. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
310	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		BAB 6-24-05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIOAND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON 6/20/05 DCMA NOTIFIED ON 6/20/05	Q ENG OR QA MGR	Orfan
320	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL II ALL CONDITIONS. IF OK CHECK HERE ✓. IF REJECTED CHECK HERE _____. MARK AND REPAIR AT STEP 340.	VT - LEVEL II	KLA 6-24-05

		MUST BE PERFORMED BY LEVEL II in VT.		
330	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP 410. IF REJECTED CHECK HERE _____	LP - LEVEL II SEE STEP 140	LP OK
340	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.	N/A	
350	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903.	LP - LEVEL II	
370	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE. FILE WITH QA. MUST SEND REPORT ON ALL WELDS OVER 10% OF NOMINAL WALL THICKNESS TO CUSTOMER. NOMINAL WALL THICKNESS TO CUSTOMER. DEFECTS.>10% YES _____, REPORT SENT BY _____ DATE_____ DEFECTS < 10 % _____SIGN BY QA ENG.		
380	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		
390	GRIND GCHI SOP 0100 REV 2	HAND GRIND WELDS.		
400	L.P. WELDS CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. IF OK CHECK HERE _____ WASH AND SEND TO STEP 460. IF REJECTED CHECK HERE _____AND RETURN TO STEP 390.	LP - LEVEL II	
	REPEAT	REPEAT STEPS __390 TO 410____AS REQUIRED TILL WELDS CLEAR FINAL LIQUID PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
410	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS. RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE _____AND GO TO STEP 430.	N/A SEE STEP 270	

420	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 420. REPEAT UNTILL COMPLIANCE IS ACHIEVED.	N/A	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIOAND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
430	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. USE A 6" SQUARE BLOCK TO INDICATE TEST LOCATIONS AND RECORD RESULTS. COMPLIANT AREAS WILL NOT BE MARKED. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. OK CHECK HERE ____AND GO TO STEP 470. IF REJECTED CHECK HERE ____.	SEE STEP 270	
440	GRIND GCHI SOP 0100 REV 2	HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT. CIRCLE AREA REMEDIATE FOR RETEST.	N/A	
450	RETEST MAG PERM SOP MAG PERM 100, REV 1	RETEST MAG PERMEABILITY AT FAILED TEST POINTS. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. ACCEPTANCE 1.02. IF OK CHECK HERE _____. IF REJECTED CHECK HERE _____RETURN TO STEP 450	↓	
460	PHOTOGRAPH	TAKE DIGITAL PICTURES.	CAR	6/25/05
470	AUDIT REVIEW	PROCESS DOCUMENT TO PROGRAM MANAGER FOR COMPLIANCE AUDIT.	CAR	6/25/05
480	DOC. REVIEW	REVIEW DOCUMENTS AS REQUIRED IN CAF CHECKLIST, ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (SHIPPER, C OF C, M.T.R., M.T.S., INSPECTION REPORT, X-RAY READER SHEETS AND HEAT TREAT CHARTS)	CAR	6/25/05
NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON 6/25/05 BY CAR. RECEIVED RELEASE FROM EIO ON _____.	Q ENG OR QA MGR	CAR
490	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL 12-14-04.	CARUUD	

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 6-27-05

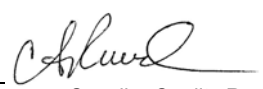
I. General Information:			
Project Name:	Modular Coil Winding Form C2		
PO No:	NCSX-SOW-141-02-01	Rev.:	
Supplier:	MetalTek		
Procurement Agent:	EIO		
Shipment:	☒ Partial ☐ Final		

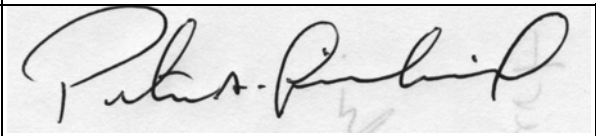
II. Material Description
Casting C2 Coil

III. Release Checklist	
Plan Requirements Complete?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
Variances?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
Princeton Notified of Shipment?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
DCMA Notified of Shipment?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
☒ Conditional ☒ Unconditional	Explain conditional releases in comments section.

IV. Comments
Variances – See attached package for CA's and deviations Dimensional report evaluated, adequate machine stock exists

By signing below you acknowledge that the casting has met all applicable standards and contractual requirements

V. Supplier Quality Representative Sign Off		
Charles Ruud		6-27-05
Supplier Quality Representative (SQR) Print/Type Name	Supplier Quality Representative (SQR) Signature	Date

VI. Supplier Approval For Shipment		
Procurement Agent Notified of Shipment	Date: 6-27-05	
Required Vendor Data Ready for Shipment	Date: 6-27-05	
Peter A Djordjevich	 X	6-27-05

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 6-27-05

I. General Information:			
Project Name:	Modular Coil Winding Form C2		
PO No:	NCSX-SOW-141-02-01	Rev.:	
Supplier:	MetalTek		
Procurement Agent:	EIO		
Shipment:	☒ Partial ☐ Final		
Supplier's Representative Print/Type Name	Supplier's Signature	Date	

1. Enter:
   Project Name
   PO Number
   Supplier
   Procurement Agent

2. Enter a brief description of items being released, including applicable drawing number(s), dash or item number(s), drawing revision letter, specification(s), and serial number(s).

3. Self-Explanatory

4. Record any unusual circumstance, such as a conditional release.

5. The Supplier's representative shall sign and date.

7. Signature and date of the Supplier's authorized representative indicating shipping date.

8. In case of partial release, the supplier shall maintain copies of each sequential "Supplier Quality Release" and establish complete accountability of material release on final shipment.

9. Supplier shall include a copy of the completed form with each shipment.