



**PRINCETON PLASMA
PHYSICS LAB**

Purchase Order Number:

S-04344-F

Part Number:

SE121

Part Name:

NSCX Vacuum Vessel
Prototype

MTM Work Order Number:

64880/1.0



Major

Tool & Machine, Inc.

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

Item#	Document Description / Material Description / File Name / Heat Lot
1	CERTIFICATE OF CONFORMANCE

ASTM B 705 MECH. TEST PIECE

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
2	33	40		Nondestructive Visual Test Certification #8517 - VISUAL

BASE PLATE - BASE PLATE

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
3	59	10	10	Material Certification: TRACE ID: 77337 / 304L_8 - PLATE,SST .75" THK - MC088566.TIF / 896084

DATUM TARGET - PVVS FIXED DATUM TARGET

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
4	38	10	10	Material Certification: / INCONEL 625_233 - BAR,ROUND,NICKEL ALLOY .438" DIA - MC095770.TIF / 885B

F1000000NC4 - FLANGE, CONFLAT, NON-ROTATE, 10.00"

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
5	20	10	10	Material Certification: / F1000000NC4 - FLANGE, CONFLAT, NON-ROTATE, 10.00" - mc094399.pdf / OV104&OV105

F1000800NC4 - FLANGE, CONFLAT, NON-ROTATE, 10.00"

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
6	52	10	10	Material Certification: TRACE ID: 96751 / F1000800NC4 - FLANGE, CONFLAT, NON-ROTATE, 10.00" - MC096585.TIF / N / A FROM VENDOR

FB1000C12S - BOLT AND NUT KIT, 12 PT, SILVER PLATED

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
7	20	10	40	Material Certification: TRACE ID: 93143 / FB1000C12S - BOLT AND NUT KIT, 12 PT, SILVER PLATED - MC094404.PDF / C OF C

FG1000CI - GASKET KIT (10/PK), COPPER, FOR 10" CFF

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
8	20	10	20	Material Certification: TRACE ID: 93141 / FG1000CI - GASKET KIT (10/PK), COPPER, FOR 10" CFF - Same as Item #7 / C OF C

FG1000VU - GASKET, VITON, FOR 10" CFF

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
9	20	10	30	Material Certification: TRACE ID: 93142 / FG1000VU - GASKET, VITON, FOR 10" CFF - Same as Item #7 / C OF C

GC0275S - GASKET CLIP KIT (10/PK), FOR 10" CFF

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
10	20	10	50	Material Certification: TRACE ID: 93144 / GC0275S - GASKET CLIP KIT (10/PK), FOR 10" CFF - Same as Item #7 / C OF C

NAMEPLATE

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
11	31	10	10	Material Certification: TRACE ID: 92220 / INCONEL 625_660 - SHEET,NICKEL ALLOY .125" THK - MC093762.TIF / 2650 3 6874

PVVS NAMEPLATE



TO: PRINCETON PLASMA PHYSICS LAB

DATE: 04/19/2004

ATTENTION: Receiving Department

Seller certifies that:

Part Number: **SE121**

Purchase Order: **S-04344-F**

Part Name: **NSCX Vacuum Vessel Prototype**

Workorder: **64880/1.0**

Part Serial Number:

Quantity: **1**

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

Certifications are on file at this plant.

Other Requirements:

MANUFACTURED PER CUSTOMER REQUIREMENTS
CLEANED PER SPECIFICATION # PP475

Signature: Rohit Dub

Title: Quality Inspector

Date: 04/20/04



Major
Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: ASTM B 705 MECH. TEST PIECE - Itc

Date of Inspection: 04/12/2004

Type of Material:

NDT#: 8517

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Casting <input type="checkbox"/> Bar Stock <input type="checkbox"/> Plate <input type="checkbox"/> Forging <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input checked="" type="checkbox"/> Rough <input type="checkbox"/> Other	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:33 -Op:40 Resource ID: 805-INPROCESS INSPECTION - Part ID: ASTM B 705 MECH. TEST PIECE Part Name: Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0	
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASTM B705 MTM Spec Number: Acceptance Standard:
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Inspection Methods Used: Magnification Used: Light Source Used:	
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

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

Inspector:

Date: 04/09/2004

Reviewed By: 363-C.MANIFOLD

Date: 04/08/2004

Reviewed By Customer: 8780-PRINCETON PLASMA PHY

Date: _____

JS 0291 500



500 Green Street
Washington, PA 15301

Ship to: LANSING MI
To: 1800 WEST WILLOW
LANSING MI

**CERTIFIED MATERIAL
TEST REPORT**

ALRO STEEL CORP
ALRO STEEL DIV
P O BOX 927
JACKSON MI 49204

48915

49204

OUR ORDER NO. HE2612950
YOUR ORDER NO. 3977907
MEMO NO. 217000-00 ENPL STD
DATE 03/27/2002
SALESMAN NO. 187

H. M. O'Connor

AUTHORIZED SIGNATURE

ALC 304/304L STAINLESS HRAP
AMS 55116 (304L) AMS 55136 (304) ASTM F240-00 ASME SA-240-01
(NAIVE CLM)



Heat	Slip	Lot No	Size	Pcs	Weight
896914	70012 A	107830	.2500 x 96.0000 x 240.0000		1785 From slip 06200
896914	71989 A	107149	.2500 x 96.0000 x 252.0000	1	1875 From slip 02115
897201	70615 A	107942	.2500 x 96.0000 x 252.0000	1	1875 From slip 07128
897201	70625 A	107942	.2500 x 96.0000 x 252.0000	1	1875 From slip 07128
897201	70626 A	107942	.2500 x 96.0000 x 250.0000	1	1860 From slip 07128
897202	70076 A	108030	.5000 x 96.0000 x 250.0000	1	3609 From slip 06346
897202	70077 A	108030	.5000 x 96.0000 x 256.0000	1	3696 From slip 06346
897201	70080 A	108030	.5000 x 96.0000 x 252.0000	1	3638 From slip 06346
897476	70092 A	108123	1.0000 x 96.0000 x 242.0000	1	4891 From slip 0816.



Heat	C	MN	P	S	SI	NI	CR	MO	CU	CO	N
896914	.019	1.80	.032	.0006	.34	8.08	18.28	.50	.17	.40	.008
897201	.020	1.83	.028	.0009	.40	8.07	18.18	.43	.18	.34	.097
897202	.019	1.92	.03	.0006	.49	8.15	18.58	.62	.13	.40	.076
897476	.025	1.82	.032	.0005	.29	8.11	18.15	.53	.15	.39	.085



Lot No.	Gauge	Yield Strength	Tensile Strength	Elong	Red. of Area	Hardness	Bend	Corrosion	Grain Size
107830	.2500	42.5 KSI	87.0 KSI	60.0	70.0	B95	OK	OK	
107149	.2500	45.0 KSI	92.0 KSI	57.0	75.0	B85	OK	OK	
107942	.2500	46.0 KSI	89.0 KSI	58.0	66.0	B85	OK	OK	
108030	.5000	46.0 KSI	90.5 KSI	57.0	71.0	BH167	OK	OK	
108123	1.0000	45.8 KSI	86.5 KSI	60.0	81.0	BH167		OK	

PAGE 1 CONTINUE ON PAGE 2

EXCEPT AS OTHERWISE NOTED, THIS MATERIAL HAS BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE LISTED SPECIFICATIONS AND RESULTS CONFORM TO THE SPECIFICATION AND ORDER REQUIREMENTS.

*Rec'd 6/21/11
MB 05/03/02*



20-11-5

5-17-02



0291 500



Allegheny Ludlum

An Allegheny Technologies Company

500 Green Street
Washington, PA 15301

SHIP ALRO LANSING MI
TO 1800 WEST WILLOW
LANSING MI

48215

ALRO STEEL CORP
ALRO TUBE DIV
P O BOX 927
JACKSON MI

49203

CERTIFIED MATERIAL
TEST REPORT

OUR ORDER NO. M 26002700 11/16/02
YOUR ORDER NO. 3074302
MEMO NO. 01/06/00 BUN. CLERK
DATE 02/07/2002
SALESMAN NO. 532

S. J. O'Connor

AUTHORIZED SIGNATURE

MATERIAL WAS NOT WELD REPAIRED

PAGE 2 FINAL PAGE

EXCEPT AS OTHERWISE NOTED, THIS MATERIAL HAS BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE LISTED SPECIFICATIONS AND RESULTS CONFORM TO THE SPECIFICATION AND ORDER REQUIREMENTS.

JS 0291 500



500 Green Street
Washington, PA 15301



Ship ALRO LANSING 2
To 1800 WEST WILLOW
LANSING MI

48915

ALRO STEEL CORP
ALRO STEEL DIV
P O BOX 927
JACKSON MI

CERTIFIED MATERIAL
TEST REPORT

49204

OUR ORDER NO. LP1640831
YOUR ORDER NO. 3879627
MEMO NO. 214449-00 DUAL CERT
DATE 12/13/2001
SALESMAN NO. 582

H. M. O'Donnor

AUTHORIZED SIGNATURE

20-17-02

ALC 304/304L STAINLESS HRAP
AMS 5511G (304L) AMS 5513G (304) ASTM A240-00 ASME SA-240-01
(WAIVE CLM)

Heat	Slip	Lot No	Size	Pcs	Weight
896479	50100 AA	106072	.3750 x 96.0000 x 242.0000	1	2660
896479	50100 AB	106072	.3750 x 96.0000 x 260.0000	1	2858
896479	50100 BA	106072	.3750 x 96.0000 x 242.0000	1	2660
896479	50100 BB	106072	.3750 x 96.0000 x 260.0000	1	2858
896856	50103 A	106029	.6250 x 96.0000 x 276.0000	1	4935
896856	50103 B	106029	.6250 x 96.0000 x 266.0000	1	4756

*Rec'd 6/7/11
MB 05/03/02*

Heat	C	MN	P	S	SI	NI	CR	MO	CO	CU	N
896479	.022	1.90	.03	.0011	.30	8.12	18.36	.56	.14	.40	.097
896856	.022	1.84	.03	.0007	.30	8.09	18.26	.41	.22	.33	.091

Lot No	Gauge	Yield Strength	Tensile Strength	Elong	Red. of Area	Hardness	Bend	Corrosion	Grain Size
106072	.3750	47.7 KSI	87.5 KSI	58.0	77.0	BHN170	OK	OK	
106029	.6250	45.9 KSI	91.5 KSI	56.0	79.0	BHN159	OK	OK	

MATERIAL WAS NOT WELD REPAIRED



EXCEPT AS OTHERWISE NOTED, THIS MATERIAL HAS BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE LISTED SPECIFICATIONS AND RESULTS CONFORM TO THE SPECIFICATION AND ORDER REQUIREMENTS.

JB 0291 500
CH



Allegheny Ludlum

An Allegheny Technologies Company

500 Green Street
Washington, PA 15301

Ship ALRO LANSING 2
To 1800 WEST WILLOW
LANSING MI

48915

ALRO STEEL CORP
ALRO STEEL DIV
P O BOX 927
JACKSON MI

49204

OUR ORDER NO: M12649600
YOUR ORDER NO: 3949569
MEMO NO: 216420-00 DUAL CERT
DATE: 02/08/2002
SALESMAN NO: 582

H. M. O'Donnor

AUTHORIZED SIGNATURE

5-17-02

ALC 304/304L STAINLESS HRAP
AMS 5511G (3041), AMS 5513G (304) ASTM A240-00 ASME SA-240-01
(WAIVE CLM)

Heat	Slip	Lot No	Size	Pcs	Weight
895757	70580 A	103926	.7500 x 96.0000 x 260.0000	1	5566 From slip 40074
896084	70912 A	105302	.7500 x 96.0000 x 254.0000	1	5438 From slip 46070

Heat	C	MN	P	S	SI	NI	CR	MO	CO	CU	N
895757	.027	1.69	.029	.0009	.47	8.11	18.22	.54	.15	.48	.077
896084	.017	1.73	.026	.0004	.33	8.04	18.27	.49	.11	.35	.088

Lot No	Gauge	Yield Strength	Tensile Strength	Elong	Red. of Area	Hardness	Bend	Corrosion	Grain Size
103926	.7500	48.1 KSI	88.0 KSI	59.0	79.0	BHN159		OK	
105302	.7500	38.9 KSI	86.0 KSI	60.0	82.0	BHN163		OK	

*Rec'd 6/7/11
MBos/bj/bz*

MATERIAL WAS NOT WELD REPAIRED



PAGE 1 FINAL PAGE

EXCEPT AS OTHERWISE NOTED, THIS MATERIAL HAS BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE LISTED SPECIFICATIONS AND RESULTS CONFORM TO THE SPECIFICATION AND ORDER REQUIREMENTS.

Traveler(s) Heat # Ingot#
 67829 A 885B

CERTIFICATE OF TEST

Aerodyne Ulbrich Alloys Inc.

Duplicate Copy of Original Test Report used to fill your order.

ALLVAC
 P.O. Box 5030 Ashcraft Ave
 Monroe, NC 28111-5030
 Phone (704) 289-4511

CUST. Major Tool Machine CHK BY SS
 HEAT 885B DATE 4-3-08
 SIZE .4375" QUAN. 5 PC, 19 LB
 PO. # P04-00219 INV. ACT 5470243 DATE SHIP 1-16-04
 SIGNATURE Jamie Caliva

Prof 2 Rev 3

Customer Name

Purchase Order

Size

Alloy

AERODYNE ULBRICH ALLOYS

ACT-2206

.4375" Rd.

NICKELVAC 625

PCS Weight
 82 549

Date: 12/21/2002 Quality Auditor: Tina Coletti

Amend Date: 03/31/2003 Quality Auditor: Amy Perkins

Amy C. Perkins

*9:475 #1
 Dins. 1*

SPECIFICATIONS

AMS 2806	B	AMS 5666	E
ASQR-01	3	ASTM B446	2000*1 Grade 1
F-14	02/28/99	F-22	02/28/99
F-23	03/15/02	PW-QA 6078	Y
PWA 300	BG	PWA 310	AY
S-1000	E	S-400	E

SON 67838

CHEMISTRY

CR EQ = Chromium Equiv

Cb = Nb

	C	S	Mn	Si	Cr	CR EQ	Mo	Co	Ti	Al	B	Zr
HEAT AVG	.058	<.0003	.05	.25	21.21	-	8.50	.04	.27	.18	.003	<.01

*MTM 016
 1-26-04*

Traveler(s)	Heat #	Ingot#									Page 2 of 4	
67829 A	885B	ALLVAC	P.O. Box 5030 Ashcraft Ave		Monroe, NC 28111-5030			Phone (704) 289-4511				
	Fe	Cu	Ni	P	Cb	Ta	W	V	Cb+Ta	Ti+Al	Ni+Co	Y
HEAT AVG	4.47	.06	61.53	.009	3.36	<.01	.03	.03	3.36	.45	61.57	-

CHEMISTRY (TRACE)

	Bi	Pb
HEAT AVG	-	-
LADLE AOD	<.00001	<.0001

CHEMISTRY REMARKS

Chemistry tested at ALLVAC unless otherwise noted.

As Shipped Tensile Test

Operation	Ingot	Heat Treat Code	Test Dir	Temp F	UTS ksi	.2% Yield ksi	.02% Yield ksi	%EL		Gage Length		Tensile Diameter	Tested At
								4D	5D	%RA	4D		
		1750CR	LC	ROOM	134.3	84.9		51.7		59.9	1.0100	0.2510	US INSPECTION SERVICES

Test Dir: L = Longitudinal, T = Transverse, ST = Short Transverse, LT = Long Transverse,
 TC = Transverse Center At Size, TM = Transverse Mid-Radius At Size,
 PC = Pancake, DB = Drawbar, PD = Paddle, TT = Top Transverse At Size,
 BT = Bottom Transverse At Size, LC = Long Center, TX = Top Transverse Mid-Radius At Size,
 LM = Longitudinal Mid Radius
 Operation: SUPER = Crosshead Sep Rate of .10

AS SHIPPED HARDNESS

Ingot	Heat Treat Code	Hardness val	Hardness Type	Tested At
	1750CR	27	RC	US INSPECTION SERVICES

MTM
016
1-26-03

Traveler(s) Heat # Ingot#
 67829 A 885B ALLVAC P.O. Box 5030 Ashcraft Ave Monroe, NC 28111-5030 Phone (704) 289-4511

Page 3 of 4

TENSILE/STRESS RUPTURE HEAT TREATMENT

Location	HT Code: 1750CR		Furnace Cool Rate Per Hrs (F)	Cool Code
	Temp F	Hours Mins		
PLANT	1750	30		WQ

METALLOGRAPHY

GRAIN SIZE (As shipped cond.): Avg. ASTM 9

Tested at US Inspection Services

CONDITION SHIPPED

SURFACE: Centerless Ground

HEAT TREAT: 1750 F., 30 Mins., WQ

REMARKS

Material has been produced, sampled, inspected, and tested in accordance with the customer purchase order and referenced specifications and conforms to the requirements unless otherwise noted in this certificate of test.

Any deviations to specification or customer purchase order requirements relative to testing, test values, hot working fixed practices, have been resolved in writing with customer prior to shipment.

The recording of false, fictitious, or fraudulent statements or entries may be punishable as a felony under federal statutes including federal law, TITLE 18 CHAPTER 47.

If customer purchase order does not specifically reference a revision to a specification, ALLVAC will work to the latest revision on file and in effect at time of order placement.

Test methods are per the latest ASTM Standards, currently recognized industry practices; or as agreed upon between Allvac and customer.

Any chemical elements analyzed and found to have values below the actual limits of detection may be reported as < less than or reported at the detection level.

When values are reported to the significant places called for in the specifications, rounding will be done in accordance with ASTM E-29.

MTM
016

1-26-04

Traveler(s) Heat # Ingot#
67829 A 885B ALLVAC P.O. Box 5030 Ashcraft Ave Monroe, NC 28111-5030 Phone (704) 289-4511 Page 4 of 4

This is to certify that during manufacturing ,handling, testing and inspection this material did not come in direct contact with mercury or any device employing a single boundary of containment.

This Certificate of Test shall not be reproduced except in full, without the written approval of Allvac Quality.

No weld repair has been performed on this material.

Material Safety Data Sheets (MSDS) - View or print from our site: www.allvac.com. Printed copies available on request from the Allvac Sales Department.

SPECIAL REMARKS


INGOT SOURCE: Allvac

Melt Method - AOD/ESR

Testing performed to MCL Manual Section F-23.

GEAE S-400 (GT193)supplier codes: US Inspection Services - T7349, Allvac Monroe - 87012,
Allvac Lockport T1226, Conam-Ams - T1007, Westmoreland - T7869

1.26.04

G.O. CARLSON Inc
Producers of Stainless Steel,
Nickel Alloys and Titanium 
THORNDALE, PA. 19372
TEST CERTIFICATE

GOC: 30005

DATE: 10-JAN-2002

**** SOLD TO: ****

**** SHIP TO: ****

VARIAN VACUUM PRODUCTS
121 HARTWELL AVENUE
LEXINGTON MA 02173

VARIAN VACUUM PRODUCTS
121 HARTWELL AVENUE
ORANGE DOOR IN REAR YARD
LEXINGTON MA 02173

CUSTOMER ORDER #
KANBAN STOCK

CUSTOMER MARK #
KANBAN STOCK

304L BB HOT ROLLED, ANNEALED, DESCALED
UNS S30403; PLATE, ASTM A240-00, GENERAL REQUIREMENTS ASTM A480-99b.

ITEM	DESCRIPTION	MARK: 0920VZ719742/Z1000601	PO# 719742 PA 2100601 50 per 1/16/02		
16	1.125 x 10.02 DIAMETER				
	Qty Heat-Slab	Test	Yield-.2% Tensile	Elong-2in	
		Dir	PSI	%	
320	32 OV104-4F	TT	38683	82478	62
320	18 OV105-6A	TT	40758	82504	61.60
		Rock			
		B			
	OV104-4F	86			
	OV105-6A	85			

***** LADLE ANALYSIS *****								
HEAT:	C	MN	P	S	SI	CR	NI	N
OV104	.020	1.83	.028	.001	.60	18.13	9.08	.061
OV105	.022	1.93	.028	.001	.58	18.04	9.03	.060



OCT 15 2003

80548
Line 1
B.J.

Susan S. Haldeman
Susan S. Haldeman
Quality Assistant
G. O. Carlson, Inc.

I HEREBY CERTIFY THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN RECORDS OF THIS CORPORATION.

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____ DAY OF _____.



VARIAN

Date: 02/24/2004

CERTIFICATE OF CONFORMANCE

I hereby certify that the products provided to **MAJOR TOOL MACHI**
on Purchase Order **P04-00866**
Varian Sales Order **318942246**
have been manufactured in accordance with all applicable Varian drawings
and Varian specifications.

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
001	1	F10000800NC4	FLANGE,CF,10.00" X 8.00",NR,30

Varian Vacuum Technologies
Michael R. Blanchette
Michael R. Blanchette
Quality Assurance Engineer

FEB 24 2004

83267
Line 1
B.A.

OKK
3-1-04



VARIAN

Varian Vacuum Technologies
 121 Hartwell Avenue
 Lexington, MA 02421-3133 USA

Phone: 781.861.7200
 Fax: 781.860.5437
<http://www.varianinc.com>

10 October 2003

CERTIFICATE OF CONFORMANCE

I hereby certify that the products provided to Major Tool & Machine Inc. on PO# P03-02043 and Varian SO# 318664333 have been manufactured in accordance with all applicable Varian drawings and Varian specifications.

<u>ITEM</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
001	1	F10000000NC4	Flange, Conflat, 10.00" x 0.00", Non-rotatable, 304 SST Raw Material# Z1000601 Report# 30005 Heat# 0V104 & 0V105
002	1	FG1000CI	Gasket, Oxygen Free Copper, for 10.0" CFF, 10/pk
003	1	FG1000VU	Gasket, Dupont Viton, for 10.0", 1/Pk
004	1	FB1000C12S	Bolt Set, 12Pt, 304 SST, Silver plated, for 10"
005	1	GC0275S	Gasket Clip, Spring Steel, Nickel Plated, 10/Pk

Varian Vacuum Technologies

Tim Clough
 Quality Assurance Engineer

OCT 15 2003

80548

LINS 2-5
 B.J.



10/20/03

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

Invoice No. No. De Facture Rechnungs Nr 391282001-0	Date Entered Date De Commande Bestelldatum 08/14/03	Customer Reference Référence Client Kundenbest/Maten P03-03302	Report No. Rapport No Zeugnis Nr 20030822079	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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HAYNES
International

FILE COPY 2
Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellausschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellempfänger MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
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Product Description • Description Produit • Material Beschreibung
0.125 (0.12/0.13) x 36 x 120
HAYNES(R) 625 ALLOY SHEET -
NADCAP CERTIFICATE NUMBER 0089
S400E,S1000E, EN 10204 3.1.B

Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
---	---

Specification • Spécification • Spezifikation
AMS 5599 Rev F ASTM-B-443 Rev 99 N06625 1

Heat Number Numero De Chaudiere Charge Nr	Chemical Analysis • Analyse Chimique • Chemische Analyse																			
	Al	B	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W				
2650 3 6874	0.16		0.030	3.63	0.23	21.79		4.71	0.28	8.86	58.96	0.008	0.002	0.11	0.26					
2650 3 6874	3.580	<0.050																		

Certified By • Certifié Par • Bescheinigt Durch: **Paul Guest** 08/22/03
Certification Supervisor/Technician

Paul O. Guest

MTM
016
8-28-03

RECEIVED
AUG 27 2003
79491 line 1 B.J.

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTS IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS DONNÉS CI-DESSUS ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS REPRÉSENTATIFS DES PRODUITS EXPÉDIÉS ET SONT CONSIDÉRÉS COMME ÉTANT FIABLES. NOUS REÇUSONS TOUTE RESPONSABILITÉ LIÉE À L'UTILISATION DE CETTE CERTIFICATION.
DIE VORGEDRUCKTEN ANGABEN BASIEREN AUF PROBEN DIE ALS REPRÄSENTATIV GELTEN FÜR DIE PRODUKTE DIE ÜBER DIE BEZUGNE LIEFERUNG UND ALS QUALITÄTSSICHERUNG UND ZUFRIEDENSTELLUNG ANGEBOHEN WERDEN. WIR LEHNEH JEDE RECHTLICHE VERANTWORTLICHKEIT FÜR DIE VERWENDUNG DIESER ZEICHENUNG AB.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATIONS, APPROVED BY ANY EXEMPTIONS OR PURCHASE ORDER REQUIREMENTS.
SPECIFICATION MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.

MC093762.TIF 1 of 1

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
12	31	15	10	Material Certification: / INCONEL 625_660 - SHEET,NICKEL ALLOY .125" THK - Same as Item #11 / 2650 3 6874

SE121-001P 1-3

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
13	43	10		Inspection Data Checklist: 8 steps
14	43	20		Map(s): SE121-001P-1MTM - MC096186.TIF
15	43	20		Map(s): SE121-001P-1MTM - MC096185.TIF
16	43	20		Inspection Data Checklist: 2 steps
17	43	30		Inspection Data Checklist: 5 steps
18	43	30		Nondestructive Visual Test Certification #7938 - MTM WELD INSPECTION FORM
19	43	40		Inspection Data Checklist: 2 steps
20	43	50		Inspection Data Checklist: 5 steps
21	43	50		Nondestructive Visual Test Certification #7939 - MTM WELD INSPECTION FORM
22	43	60		Inspection Data Checklist: 2 steps
23	43	70		Inspection Data Checklist: 5 steps
24	43	70		Nondestructive Visual Test Certification #7940 - MTM WELD INSPECTION FORM
25	43	80		Inspection Data Checklist: 2 steps
26	43	90		Inspection Data Checklist: 5 steps
27	43	90		Nondestructive Visual Test Certification #7943 - MTM WELD INSPECTION FORM
28	43	100		Inspection Data Checklist: 2 steps
29	43	110		Inspection Data Checklist: 5 steps
30	43	110		Nondestructive Visual Test Certification #7952 - MTM WELD INSPECTION FORM
31	43	120		Inspection Data Checklist: 2 steps
32	43	130		Inspection Data Checklist: 5 steps
33	43	130		Nondestructive Visual Test Certification #7959 - MTM WELD INSPECTION FORM
34	43	140		Inspection Data Checklist: 2 steps
35	43	160		Map(s): SE121-001P-1MTM - MC096171.TIF
36	43	160		Map(s): SE121-001P-1MTM - MC096172.TIF
37	43	160		Inspection Data Checklist: 2 steps
38	43	180		Map(s): SE121-001P-1MTM - MC096214.TIF
39	43	180		Test Certification: RADIOGRAPHIC CERTIFICATE - Same as Item #38

SE121-001P 2-5

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
40	45	10		Inspection Data Checklist: 8 steps
41	45	20		Map(s): SE121-001P-1MTM - MC096197.TIF
42	45	20		Map(s): SE121-001P-1MTM - MC096198.TIF
43	45	20		Inspection Data Checklist: 2 steps
44	45	30		Inspection Data Checklist: 5 steps
45	45	30		Nondestructive Visual Test Certification #7982 - MTM WELD INSPECTION FORM
46	45	40		Inspection Data Checklist: 2 steps
47	45	50		Inspection Data Checklist: 5 steps

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 13

Workorder: 64880/1-0 Sub:43 Op:10

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Verify Panel Joint Alignment Weld Seam # 1-3 (.02" Max)		MFG			INSPECTED ALIGNME OF WELD JOINT (ACC EPTED)	791	712		A
(10)				CWI				02-06-0	02-06-0		
*		Verify Panel / Rest Stop Position Panel #1 (0 - .09" Gap)		MFG			.090 OR LESS	791			A
(20)								02-06-0			
*		Verify Panel / Rest Stop Position Panel #3 (0 - .09" Gap)		MFG			.090 OR LESS	791			A
(30)								02-06-0			
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			PURGE @20CFH WELD @40CFH	791			A
(40)								02-06-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 INCO 625 HT AV 8128 .093 INCO 625 HT CB7996	791			A
(50)								02-06-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S.S.WOOL INSERT	791			A
(60)								02-06-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO		QA			QUALIFIED TO WPS390 PPPL REV0 MTM QUAL FICATION SYSTEM	791			A

INSPECTION DATA CHECKLIST

(70)		PRIOR TO OPERATION START AND THROUGH COMPLETION						02-06-0		
*				QA			.062 75 - 175 AMPS .093 100-210 AMPS ALL PER WPS 390PP PL REV0	791		A
(80)		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION						02-06-0		

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#P/K) After structural welding After welding Port Final Inspection											
Part # / Panel #: SE121-001P PANEL #3			Gage/Std S/N(s): 4470 / J-1165 / J-1009-NDT			Date of Inspection: 02/06/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.034	0.379	LESS THAN 1.01	N/A		44	-0.014	0.382	LESS THAN 1.01	N/A	
2	0.033	0.378	LESS THAN 1.01	N/A		45	-0.011	0.381	LESS THAN 1.01	N/A	
3	0.033	0.380	LESS THAN 1.01	N/A		46	-0.007	0.380	LESS THAN 1.01	N/A	
4	0.034	0.380	LESS THAN 1.01	N/A		47	-0.004	0.380	LESS THAN 1.01	N/A	
5	0.034	0.381	LESS THAN 1.01	N/A		48	-0.004	0.382	LESS THAN 1.01	N/A	
6	0.032	0.380	LESS THAN 1.01	N/A		49	-0.005	0.385	LESS THAN 1.01	N/A	
7	0.029	0.381	LESS THAN 1.01	N/A		50	-0.005	0.383	LESS THAN 1.01	N/A	
8	0.026	0.380	LESS THAN 1.01	N/A		51	E		LESS THAN 1.01	N/A	
9	0.023	0.379	LESS THAN 1.01	N/A		52	E		LESS THAN 1.01	N/A	
10	0.019	0.379	LESS THAN 1.01	N/A		53	E		LESS THAN 1.01	N/A	
11	0.016	0.378	LESS THAN 1.01	N/A		54	E		LESS THAN 1.01	N/A	
12	0.014	0.378	LESS THAN 1.01	N/A		55	E		LESS THAN 1.01	N/A	
13	0.013	0.378	LESS THAN 1.01	N/A		56	E		LESS THAN 1.01	N/A	
14	0.012	0.378	LESS THAN 1.01	N/A		57	E		LESS THAN 1.01	N/A	
15	0.012	0.377	LESS THAN 1.01	N/A		58	0.059		LESS THAN 1.01	N/A	
16	0.012	0.378	LESS THAN 1.01	N/A		59	0.099		LESS THAN 1.01	N/A	
17	0.013	0.378	LESS THAN 1.01	N/A		60	0.078		LESS THAN 1.01	N/A	
18	0.027	0.378	LESS THAN 1.01	N/A		61	0.079		LESS THAN 1.01	N/A	
19	0.027	0.381	LESS THAN 1.01	N/A		62	0.085		LESS THAN 1.01	N/A	
20	0.017	0.380	LESS THAN 1.01	N/A		63	0.085		LESS THAN 1.01	N/A	
21	0.006	0.380	LESS THAN 1.01	N/A		64	0.034		LESS THAN 1.01	N/A	
22	-0.002	0.381	LESS THAN 1.01	N/A		65	0.065		LESS THAN 1.01	N/A	
23	-0.008	0.380	LESS THAN 1.01	N/A		66	0.079		LESS THAN 1.01	N/A	
24	-0.009	0.380	LESS THAN 1.01	N/A		67	0.058		LESS THAN 1.01	N/A	
25	-0.008	0.381	LESS THAN 1.01	N/A		68	0.039		LESS THAN 1.01	N/A	
26	-0.008	0.381	LESS THAN 1.01	N/A		69	0.092		LESS THAN 1.01	N/A	
27	-0.006	0.380	LESS THAN 1.01	N/A		70	0.071		LESS THAN 1.01	N/A	
28	-0.005	0.380	LESS THAN 1.01	N/A		71	0.051		LESS THAN 1.01	N/A	
29	-0.003	0.381	LESS THAN 1.01	N/A		72	0.013		LESS THAN 1.01	N/A	
30	-0.002	0.380	LESS THAN 1.01	N/A		73	0.059		LESS THAN 1.01	N/A	
31	0.001	0.380	LESS THAN 1.01	N/A		74	0.052		LESS THAN 1.01	N/A	
32	0.002	0.379	LESS THAN 1.01	N/A		75	0.007		LESS THAN 1.01	N/A	
33	0.004	0.380	LESS THAN 1.01	N/A		76	0.014		LESS THAN 1.01	N/A	
34	0.004	0.380	LESS THAN 1.01	N/A		77	0.062		LESS THAN 1.01	N/A	
35	0.006	0.380	LESS THAN 1.01	N/A		78	0.063		LESS THAN 1.01	N/A	
36	0.007	0.381	LESS THAN 1.01	N/A		79	0.046		LESS THAN 1.01	N/A	
37	0.009	0.382	LESS THAN 1.01	N/A		80	0.000		LESS THAN 1.01	N/A	
38	0.007	0.380	LESS THAN 1.01	N/A		81	-0.002		LESS THAN 1.01	N/A	
39	0.000	0.381	LESS THAN 1.01	N/A		82	-0.013		LESS THAN 1.01	N/A	
40	-0.004	0.381	LESS THAN 1.01	N/A		83	0.020		LESS THAN 1.01	N/A	
41	-0.008	0.381	LESS THAN 1.01	N/A		84	0.064		LESS THAN 1.01	N/A	
42	-0.013	0.381	LESS THAN 1.01	N/A		85	0.050		LESS THAN 1.01	N/A	
43	-0.014	0.382	LESS THAN 1.01	N/A		86	-0.006		LESS THAN 1.01	N/A	

64880 PPPL NCSX PVVS INSPECTION RECORD						Inspection Drawing Number: SE121-001P-1MTM Rev: 0B					
Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection											
Part # / Panel #: SE121-001P PANEL #3			Gage/Std S/N(s): 4470 / J-1165 / J-1009-NDT			Date of Inspection: 02/06/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.028	MTM 051	LESS THAN 1.01	N/A		126					
88	0.040		LESS THAN 1.01	N/A		127					
89	-0.010		LESS THAN 1.01	N/A		128					
90	0.017		LESS THAN 1.01	N/A		129					
91	E		LESS THAN 1.01	N/A		130					
92	E		LESS THAN 1.01	N/A		131					
93	E		LESS THAN 1.01	N/A		132					
94	0.039		LESS THAN 1.01	N/A		133					
95	E		LESS THAN 1.01	N/A		134					
96	E		LESS THAN 1.01	N/A		135					
97	E	MTM 051	LESS THAN 1.01	N/A		136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
109						148					
110						149					
111						150					
112						151					
113						152					
114						153					
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118						157					
119						158					
120						159					
121						160					
122						161					
123						162					
124						163					
125						164					

64680 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#TACK)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-001P PANEL #1			Gaps/Std S/N(s): 4470 / J-1165 / J-1009-NDT				Date of inspection: 02/06/04				
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.000	0.377	LESS THAN 1.01	N/A		44	0.063	0.384	LESS THAN 1.01	N/A	
2	-0.005	0.378	LESS THAN 1.01	N/A		45	0.079	0.383	LESS THAN 1.01	N/A	
3	-0.009	0.378	LESS THAN 1.01	N/A		46	0.077	0.382	LESS THAN 1.01	N/A	
4	-0.015	0.379	LESS THAN 1.01	N/A		47	0.075	0.381	LESS THAN 1.01	N/A	
5	-0.018	0.378	LESS THAN 1.01	N/A		48	0.072	0.382	LESS THAN 1.01	N/A	
6	-0.020	0.379	LESS THAN 1.01	N/A		49	0.066	0.383	LESS THAN 1.01	N/A	
7	-0.022	0.378	LESS THAN 1.01	N/A		50	0.061	0.381	LESS THAN 1.01	N/A	
8	-0.022	0.378	LESS THAN 1.01	N/A		51	0.055	0.382	LESS THAN 1.01	N/A	
9	-0.023	0.379	LESS THAN 1.01	N/A		52	0.050	0.382	LESS THAN 1.01	N/A	
10	-0.022	0.380	LESS THAN 1.01	N/A		53	0.049	0.381	LESS THAN 1.01	N/A	
11	-0.020	0.379	LESS THAN 1.01	N/A		54	0.054	0.382	LESS THAN 1.01	N/A	
12	-0.013	0.378	LESS THAN 1.01	N/A		55	0.060	0.378	LESS THAN 1.01	N/A	
13	-0.003	0.380	LESS THAN 1.01	N/A		56	0.063	0.379	LESS THAN 1.01	N/A	
14	0.012	0.380	LESS THAN 1.01	N/A		57	0.055	0.382	LESS THAN 1.01	N/A	
15	0.026	0.381	LESS THAN 1.01	N/A		58	0.044	0.380	LESS THAN 1.01	N/A	
16	0.032	0.380	LESS THAN 1.01	N/A		59	0.030	0.382	LESS THAN 1.01	N/A	
17	0.025	0.379	LESS THAN 1.01	N/A		60	E		LESS THAN 1.01	N/A	
18	0.017	0.380	LESS THAN 1.01	N/A		61	E		LESS THAN 1.01	N/A	
19	0.014	0.381	LESS THAN 1.01	N/A		62	E		LESS THAN 1.01	N/A	
20	0.013	0.382	LESS THAN 1.01	N/A		63	0.015		LESS THAN 1.01	N/A	
21	0.012	0.383	LESS THAN 1.01	N/A		64	-0.008		LESS THAN 1.01	N/A	
22	0.010	0.381	LESS THAN 1.01	N/A		65	0.046		LESS THAN 1.01	N/A	
23	0.007	0.381	LESS THAN 1.01	N/A		66	0.056		LESS THAN 1.01	N/A	
24	0.006	0.381	LESS THAN 1.01	N/A		67	0.047		LESS THAN 1.01	N/A	
25	0.010	0.381	LESS THAN 1.01	N/A		68	-0.005		LESS THAN 1.01	N/A	
26	0.016	0.379	LESS THAN 1.01	N/A		69	0.071		LESS THAN 1.01	N/A	
27	0.018	0.379	LESS THAN 1.01	N/A		70	0.045		LESS THAN 1.01	N/A	
28	0.015	0.376	LESS THAN 1.01	N/A		71	0.050		LESS THAN 1.01	N/A	
29	0.003	0.374	LESS THAN 1.01	N/A		72	0.091		LESS THAN 1.01	N/A	
30	-0.009	0.380	LESS THAN 1.01	N/A		73	0.050		LESS THAN 1.01	N/A	
31	-0.015	0.382	LESS THAN 1.01	N/A		74	0.067		LESS THAN 1.01	N/A	
32	-0.013	0.383	LESS THAN 1.01	N/A		75	0.044		LESS THAN 1.01	N/A	
33	-0.016	0.382	LESS THAN 1.01	N/A		76	0.062		LESS THAN 1.01	N/A	
34	0.020	0.383	LESS THAN 1.01	N/A		77	0.055		LESS THAN 1.01	N/A	
35	0.024	0.384	LESS THAN 1.01	N/A		78	0.050		LESS THAN 1.01	N/A	
36	0.025	0.384	LESS THAN 1.01	N/A		79	0.031		LESS THAN 1.01	N/A	
37	0.029	0.385	LESS THAN 1.01	N/A		80	0.057		LESS THAN 1.01	N/A	
38	0.040	0.384	LESS THAN 1.01	N/A		81	0.077		LESS THAN 1.01	N/A	
39	0.053	0.383	LESS THAN 1.01	N/A		82	0.023		LESS THAN 1.01	N/A	
40	0.064	0.385	LESS THAN 1.01	N/A		83	0.041		LESS THAN 1.01	N/A	
41	0.072	0.385	LESS THAN 1.01	N/A		84	0.031		LESS THAN 1.01	N/A	
42	0.077	0.384	LESS THAN 1.01	N/A		85	0.025		LESS THAN 1.01	N/A	
43	0.080	0.385	LESS THAN 1.01	N/A		86	0.060		LESS THAN 1.01	N/A	

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection											
Part # / Panel #: SE121-001P PANEL #1		Gage/Std S/N(s): 4470 / J-1165 / J-1009-NDT			Date of Inspection: 02/06/04						
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.012		LESS THAN 1.01	N/A		126					
88	E		LESS THAN 1.01	N/A		127					
89	E		LESS THAN 1.01	N/A		128					
90	-0.004		LESS THAN 1.01	N/A		129					
91	E		LESS THAN 1.01	N/A		130					
92	E		LESS THAN 1.01	N/A		131					
93	0.022		LESS THAN 1.01	N/A		132					
94	E		LESS THAN 1.01	N/A		133					
95	E		LESS THAN 1.01	N/A		134					
96						135					
97						136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
109						148					
110						149					
111						150					
112						151					
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114						153					
115						154					
116						155					
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125						164					

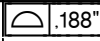
MTM
081

MTM
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Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 16

Workorder: 64880/1-0 Sub:43 Op:20

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .188"		QA		4470	PANEL #1 +0.091 / -0.023 PANEL #3 +0.099 / -0.014 [N/C:15024]	522			R
(10)		Upper Half Of Bilateral Tolerance (tack welded vessel)						02-11-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-06-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 17

Workorder: 64880/1-0 Sub:43 Op:30

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 SHIELDING 20 PUR GE GAS SETTINGS	712			A
(10)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT #AV8 128	712			A
(20)								02-07-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT 300 SERIES SS W/WSS WOOL	712			A
(30)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390	712			A
(40)								02-07-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA FILLER AM PERAGE ACCEPTABLE O WPS	712			A
(50)								02-07-0			



Major

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1458 E. 19th Street, Indianapolis, In 46218
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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 18

Date of Inspection:02/07/2004

Type of Material:625 INCONEL

NDT#:7938

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

Part Information: MTM Job Number: 64880/1.0 -Sub:43 -Op:30 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 1-3 Part Name: PANEL 1-3 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS DI.6 PAR 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

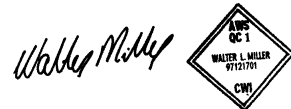
Notes:

Performed inspection of root pass per router instructions on panel assembly 1-3 verified weld settings to the required wps 390 with 1/16 filler

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

Inspector: 712-W.MILLER

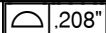
Date: 02/07/2004



Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 19

Workorder: 64880/1-0 Sub:43 Op:40

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .208"		QA		4470	PANEL #1 +0.001 / -0.057 PANEL #3 +0.023 / -0.048 [N/C:15027]	522			R
(10)		Profile Tolerance (+.188 / -.020") (tack welded vessel)						02-07-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-07-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 20

Workorder: 64880/1-0 Sub:43 Op:50

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (SHIELDING 40 PURGE 20)	712			A
(10)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			VERIFIED 1/16 DIA HEAT# AV8128	712			A
(20)								02-07-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ S S WOOL	712			A
(30)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683 ACCEPT	712			A
(40)								02-07-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0 REV 1	712			A
(50)								02-07-0			



Major

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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 21

Date of Inspection:02/07/2004

Type of Material:625 INCONEL

NDT#:7939

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/07/2004

NDT003

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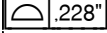
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User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 22

Workorder: 64880/1-0 Sub:43 Op:60

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .228"		QA		4470	PANEL #1 +0.033 / -0.022 PANEL #3 +0.035 / -0.022	522			A
(10)		Profile Tolerance (+.188/-.040") (tack welded vessel)						02-07-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-07-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 23

Workorder: 64880/1-0 Sub:43 Op:70

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (SHI ELDING 40 PURGE 20)	712			A
(10)									02-07-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 INCONEL FILLER HEAT # CB7996	712			A
(20)									02-07-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712			A
(30)									02-07-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712			A
(40)									02-07-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0- PPPL WITH .093 FILLER	712			A
(50)									02-07-0		



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 24

Date of Inspection:02/07/2004

Type of Material:625 INCONEL

NDT#:7940

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/07/2004

NDT003

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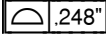
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User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 25

Workorder: 64880/1-0 Sub:43 Op:80

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .248"		QA		4470	PANEL #1 +0.063 / - 0.009 PANEL #3 +0.0 57 / +0.007	522			A
(10)		Profile Tolerance (+.188/-.060") (tack welded vessel)						02-07-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-07-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 26

Workorder: 64880/1-0 Sub:43 Op:90

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (SHI ELDING 40 PURGE 20)	712			A
(10)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA HEAT # CB7996	712			A
(20)								02-07-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712			A
(30)								02-07-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 683	712			A
(40)								02-07-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390-P PPL .093 RANGE	712			A
(50)								02-07-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 27

Date of Inspection:02/07/2004

Type of Material:625 INCONEL

NDT#:7943

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:43 -Op:90 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 1-3 Part Name: PANEL 1-3 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PAR 6.29.1
--	---

Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
COVER PASS INSIDE WELD ASSEMBLY 1-3

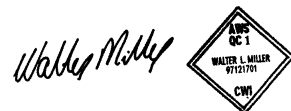
Notes:

PERFORMED THE VISUAL INSPECTION OF THE COVER PASS ON THE INSED WELD JOINT OF ASSEMBLY 1-3 WELDER #683 PERFORMED THIS TASK. THERE WAS NO REJECTABLE INDICATIONS FOUND.

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

Inspector: 712-W.MILLER

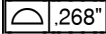
Date: 02/07/2004



Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 28

Workorder: 64880/1-0 Sub:43 Op:100

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .268"		QA		4470	PANEL #1 +0.008 / +0.087 PANEL #3 +0.023 / +0.072	522			A
(10)		Profile Tolerance (+.188/-.080") (tack welded vessel)						02-07-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-07-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 29

Workorder: 64880/1-0 Sub:43 Op:110

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			PURGE SETTINGS (4 0 SHIELDING 20 PURG E)	712			A
(10)								02-09-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT # AV8 128	712			A
(20)								02-09-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS- WOOL	712			A
(30)								02-09-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712			A
(40)								02-09-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER 1/16 D IA (BACK GRING PASS) WPS390	712			A
(50)								02-09-0			



Major

Tool & Machine, Inc.

1458 E. 19th Street, Indianapolis, In 46218
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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 30

Date of Inspection:02/09/2004

Type of Material:625 INCONEL

NDT#:7952

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:43 -Op:110 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 1-3 Part Name: PANEL 1-3 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS.D1.6 SECTION 629.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
BACK GRIND / ROOT PASS

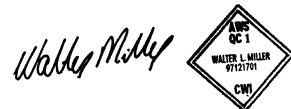
Notes:

PERFORMED THE INSPECTION OF THE BACK GRIND PERP. AND THE WELDING OF THE ROOT PASS 2ND SIDE. WELD OPERATOR #683 PERFORMED THE WELDING. THERE WAS NO REJECTABLE INDICATIONS FOUND AT INSPECTION POINT.

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

Inspector: 712-W.MILLER

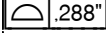
Date: 02/09/2004



Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 31

Workorder: 64880/1-0 Sub:43 Op:120

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .288"		QA		4470	PANEL #1 -0.022 / +0.033 PANEL #3 -0.027 / +0.041	522			A
(10)		Profile Tolerance (+.188/-.100") (tack welded vessel)						02-09-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-09-0			

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 32

Workorder: 64880/1-0 Sub:43 Op:130

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURGE E 20 SHIELDING 40)	712			A
(10)								02-09-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA HEAT # CB7 996	712			A
(20)								02-09-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES W/ SS -W OOL	712			A
(30)								02-09-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712			A
(40)								02-09-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEOT PER WPS 390 W/ .093 DIA WIRE	712			A
(50)								02-09-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 33

Date of Inspection:02/09/2004

Type of Material:625 INCONEL

NDT#:7959

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS- WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:43 -Op:130 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 1-3 Part Name: PANEL 1-3 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
COVER PASS SECOND SIDE (OUTSIDE)

Notes:

PERFORMED THE INSPECTION OF THE FINAL COVER WELD ON THE OUTSIDE OF PART. OPERATOR 683 PERFORMED THE WELDING PER W.P.S.390 NO REJECTABLE INDICATION WAS FOUND AT THIS INSPECTION POINT. WELDMENT 1-3 ASSEMBLY.

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

Inspector: 712-W.MILLER


Date: 02/09/2004



Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 34

Workorder: 64880/1-0 Sub:43 Op:140

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .308"		QA		4470	P #1 (W +0.006/-0.049)(F +0.079/-0.002)-P#3 (W +0.026/-0.047)(F +0.088/+0.002)	522			A
(10)		Profile Tolerance (+.188/-.120") (tack welded vessel)						02-09-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-09-0			

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: **SE121-001P-1MTM Rev: 0B**

Inspection type: Formed Panel Interpass (#) * After structural welding * After welding Port Final Inspection

Part # / Panel #: **SE121-001P PANEL #1** Gage/Std S/N(s): **4470 / J-1009-NDT / J-1165** Date of Inspection: **02/10/04**

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.050	0.377	LESS THAN 1.01	N/A		44	0.070	0.384	LESS THAN 1.01	N/A	
2	0.037	0.378	LESS THAN 1.01	N/A		45	0.074	0.383	LESS THAN 1.01	N/A	
3	0.024	0.378	LESS THAN 1.01	N/A		46	0.075	0.382	LESS THAN 1.01	N/A	
4	0.014	0.379	LESS THAN 1.01	N/A		47	0.073	0.381	LESS THAN 1.01	N/A	
5	0.006	0.378	LESS THAN 1.01	N/A		48	0.069	0.382	LESS THAN 1.01	N/A	
6	-0.002	0.379	LESS THAN 1.01	N/A		49	0.063	0.383	LESS THAN 1.01	N/A	
7	-0.006	0.378	LESS THAN 1.01	N/A		50	0.057	0.381	LESS THAN 1.01	N/A	
8	-0.013	0.378	LESS THAN 1.01	N/A		51	0.053	0.382	LESS THAN 1.01	N/A	
9	-0.017	0.379	LESS THAN 1.01	N/A		52	0.048	0.382	LESS THAN 1.01	N/A	
10	-0.020	0.380	LESS THAN 1.01	N/A		53	0.043	0.381	LESS THAN 1.01	N/A	
11	-0.021	0.379	LESS THAN 1.01	N/A		54	0.040	0.382	LESS THAN 1.01	N/A	
12	-0.019	0.378	LESS THAN 1.01	N/A		55	0.045	0.378	LESS THAN 1.01	N/A	
13	-0.014	0.380	LESS THAN 1.01	N/A		56	0.052	0.379	LESS THAN 1.01	N/A	
14	-0.002	0.380	LESS THAN 1.01	N/A		57	0.051	0.382	LESS THAN 1.01	N/A	
15	0.016	0.381	LESS THAN 1.01	N/A		58	0.045	0.380	LESS THAN 1.01	N/A	
16	0.031	0.380	LESS THAN 1.01	N/A		59	0.035	0.382	LESS THAN 1.01	N/A	
17	0.035	0.379	LESS THAN 1.01	N/A		60	0.059	0.381	LESS THAN 1.01	N/A	
18	0.028	0.380	LESS THAN 1.01	N/A		61	0.076	0.383	LESS THAN 1.01	N/A	
19	0.017	0.381	LESS THAN 1.01	N/A		62	0.063	0.384	LESS THAN 1.01	N/A	
20	0.010	0.382	LESS THAN 1.01	N/A		63	0.031	0.384	LESS THAN 1.01	N/A	
21	0.006	0.383	LESS THAN 1.01	N/A		64	0.016	0.383	LESS THAN 1.01	N/A	
22	0.005	0.381	LESS THAN 1.01	N/A		65	0.081	0.380	LESS THAN 1.01	N/A	
23	0.003	0.381	LESS THAN 1.01	N/A		66	0.073	0.382	LESS THAN 1.01	N/A	
24	-0.002	0.381	LESS THAN 1.01	N/A		67	0.067	0.384	LESS THAN 1.01	N/A	
25	-0.005	0.381	LESS THAN 1.01	N/A		68	0.005	0.382	LESS THAN 1.01	N/A	
26	-0.003	0.379	LESS THAN 1.01	N/A		69	0.091	0.385	LESS THAN 1.01	N/A	
27	-0.002	0.379	LESS THAN 1.01	N/A		70	0.062	0.385	LESS THAN 1.01	N/A	
28	-0.005	0.376	LESS THAN 1.01	N/A		71	0.067	0.382	LESS THAN 1.01	N/A	
29	-0.014	0.374	LESS THAN 1.01	N/A		72	0.104	0.381	LESS THAN 1.01	N/A	
30	-0.027	0.380	LESS THAN 1.01	N/A		73	0.046	0.384	LESS THAN 1.01	N/A	
31	-0.036	0.382	LESS THAN 1.01	N/A		74	0.084	0.383	LESS THAN 1.01	N/A	
32	-0.039	0.383	LESS THAN 1.01	N/A		75	0.067	0.383	LESS THAN 1.01	N/A	
33	-0.027	0.382	LESS THAN 1.01	N/A		76	0.062	0.383	LESS THAN 1.01	N/A	
34	0.023	0.383	LESS THAN 1.01	N/A		77	0.069	0.382	LESS THAN 1.01	N/A	
35	0.026	0.384	LESS THAN 1.01	N/A		78	0.059	0.381	LESS THAN 1.01	N/A	
36	0.029	0.384	LESS THAN 1.01	N/A		79	0.034	0.379	LESS THAN 1.01	N/A	
37	0.029	0.385	LESS THAN 1.01	N/A		80	0.047	0.380	LESS THAN 1.01	N/A	
38	0.029	0.384	LESS THAN 1.01	N/A		81	0.094	0.382	LESS THAN 1.01	N/A	
39	0.035	0.383	LESS THAN 1.01	N/A		82	0.060	0.385	LESS THAN 1.01	N/A	
40	0.048	0.385	LESS THAN 1.01	N/A		83	0.064	0.384	LESS THAN 1.01	N/A	
41	0.056	0.385	LESS THAN 1.01	N/A		84	0.049	0.384	LESS THAN 1.01	N/A	
42	0.063	0.384	LESS THAN 1.01	N/A		85	0.026	0.385	LESS THAN 1.01	N/A	
43	0.067	0.385	LESS THAN 1.01	N/A		86	0.081	0.381	LESS THAN 1.01	N/A	

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) ~~After structural welding~~ After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #1

Gage/Std S/N(s): 4470 / J-1009-NDT / J-1165

Date of Inspection: 02/10/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.044	0.384	LESS THAN 1.01	N/A		126					
88	0.007	0.383	LESS THAN 1.01	N/A		127					
89	0.064	0.378	LESS THAN 1.01	N/A		128					
90	0.047	0.384	LESS THAN 1.01	N/A		129					
91	0.032	0.384	LESS THAN 1.01	N/A		130					
92	0.031	0.383	LESS THAN 1.01	N/A		131					
93	0.035	0.382	LESS THAN 1.01	N/A		132					
94	0.030	0.384	LESS THAN 1.01	N/A		133					
95	0.030	0.381	LESS THAN 1.01	N/A		134					
96						135					
97					136						
98					137						
99					138						
100					139						
101					140						
102					141						
103					142						
104					143						
105					144						
106					145						
107					146						
108					147						
109					148						
110					149						
111					150						
112					151						
113					152						
114					153						
115					154						
116					155						
117					156						
118					157						
119					158						
120					159						
121					160						
122					161						
123					162						
124					163						
125					164						

64880 PPPL NCSX PVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) *After structural welding* After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3

Gage/Std S/N(s): 4470 / J-1009-NDT / J-1165

Date of inspection: 02/10/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.032	0.379	LESS THAN 1.01	N/A		44	-0.038	0.382	LESS THAN 1.01	N/A	
2	0.031	0.378	LESS THAN 1.01	N/A		45	-0.040	0.381	LESS THAN 1.01	N/A	
3	0.030	0.380	LESS THAN 1.01	N/A		46	-0.039	0.380	LESS THAN 1.01	N/A	
4	0.027	0.380	LESS THAN 1.01	N/A		47	-0.035	0.380	LESS THAN 1.01	N/A	
5	0.025	0.381	LESS THAN 1.01	N/A		48	-0.028	0.382	LESS THAN 1.01	N/A	
6	0.023	0.380	LESS THAN 1.01	N/A		49	-0.022	0.385	LESS THAN 1.01	N/A	
7	0.019	0.381	LESS THAN 1.01	N/A		50	-0.012	0.383	LESS THAN 1.01	N/A	
8	0.012	0.380	LESS THAN 1.01	N/A		51	0.081	0.382	LESS THAN 1.01	N/A	
9	0.007	0.379	LESS THAN 1.01	N/A		52	0.083	0.382	LESS THAN 1.01	N/A	
10	0.007	0.379	LESS THAN 1.01	N/A		53	0.080	0.384	LESS THAN 1.01	N/A	
11	0.003	0.378	LESS THAN 1.01	N/A		54	0.041	0.381	LESS THAN 1.01	N/A	
12	0.002	0.378	LESS THAN 1.01	N/A		55	0.022	0.385	LESS THAN 1.01	N/A	
13	0.000	0.378	LESS THAN 1.01	N/A		56	0.085	0.384	LESS THAN 1.01	N/A	
14	0.000	0.378	LESS THAN 1.01	N/A		57	0.061	0.381	LESS THAN 1.01	N/A	
15	0.003	0.377	LESS THAN 1.01	N/A		58	0.069	0.384	LESS THAN 1.01	N/A	
16	0.008	0.378	LESS THAN 1.01	N/A		59	0.117	0.385	LESS THAN 1.01	N/A	
17	0.013	0.378	LESS THAN 1.01	N/A		60	0.098	0.384	LESS THAN 1.01	N/A	
18	0.069	0.378	LESS THAN 1.01	N/A		61	0.092	0.378	LESS THAN 1.01	N/A	
19	0.065	0.381	LESS THAN 1.01	N/A		62	0.100	0.379	LESS THAN 1.01	N/A	
20	0.056	0.380	LESS THAN 1.01	N/A		63	0.098	0.379	LESS THAN 1.01	N/A	
21	0.042	0.380	LESS THAN 1.01	N/A		64	0.041	0.380	LESS THAN 1.01	N/A	
22	0.029	0.381	LESS THAN 1.01	N/A		65	0.061	0.380	LESS THAN 1.01	N/A	
23	0.018	0.380	LESS THAN 1.01	N/A		66	0.102	0.383	LESS THAN 1.01	N/A	
24	0.008	0.380	LESS THAN 1.01	N/A		67	0.102	0.383	LESS THAN 1.01	N/A	
25	0.000	0.381	LESS THAN 1.01	N/A		68	0.068	0.379	LESS THAN 1.01	N/A	
26	-0.003	0.381	LESS THAN 1.01	N/A		69	0.114	0.379	LESS THAN 1.01	N/A	
27	-0.006	0.380	LESS THAN 1.01	N/A		70	0.091	0.381	LESS THAN 1.01	N/A	
28	-0.005	0.380	LESS THAN 1.01	N/A		71	0.069	0.379	LESS THAN 1.01	N/A	
29	-0.005	0.381	LESS THAN 1.01	N/A		72	0.008	0.378	LESS THAN 1.01	N/A	
30	-0.005	0.380	LESS THAN 1.01	N/A		73	0.078	0.384	LESS THAN 1.01	N/A	
31	-0.004	0.380	LESS THAN 1.01	N/A		74	0.092	0.385	LESS THAN 1.01	N/A	
32	-0.004	0.379	LESS THAN 1.01	N/A		75	0.048	0.383	LESS THAN 1.01	N/A	
33	-0.003	0.380	LESS THAN 1.01	N/A		76	0.045	0.383	LESS THAN 1.01	N/A	
34	-0.004	0.380	LESS THAN 1.01	N/A		77	0.089	0.379	LESS THAN 1.01	N/A	
35	-0.004	0.380	LESS THAN 1.01	N/A		78	0.085	0.382	LESS THAN 1.01	N/A	
36	-0.003	0.381	LESS THAN 1.01	N/A		79	0.059	0.381	LESS THAN 1.01	N/A	
37	-0.002	0.382	LESS THAN 1.01	N/A		80	0.013	0.382	LESS THAN 1.01	N/A	
38	-0.004	0.380	LESS THAN 1.01	N/A		81	0.050	0.381	LESS THAN 1.01	N/A	
39	-0.007	0.381	LESS THAN 1.01	N/A		82	0.024	0.380	LESS THAN 1.01	N/A	
40	-0.012	0.381	LESS THAN 1.01	N/A		83	0.044	0.379	LESS THAN 1.01	N/A	
41	-0.018	0.381	LESS THAN 1.01	N/A		84	0.075	0.383	LESS THAN 1.01	N/A	
42	-0.026	0.381	LESS THAN 1.01	N/A		85	0.057	0.385	LESS THAN 1.01	N/A	
43	-0.032	0.382	LESS THAN 1.01	N/A		86	0.018	0.386	LESS THAN 1.01	N/A	

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) ~~After structural welding~~ After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3

Gage/Std S/N(s): 4470 / J-1009-NDT / J-1165

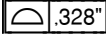
Date of Inspection: 02/10/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.039	0.385	LESS THAN 1.01	N/A	NTM 02/10/04	126					
88	0.038	0.380	LESS THAN 1.01	N/A		127					
89	-0.022	0.383	LESS THAN 1.01	N/A		128					
90	0.076	0.382	LESS THAN 1.01	N/A		129					
91	0.055	0.382	LESS THAN 1.01	N/A		130					
92	0.071	0.384	LESS THAN 1.01	N/A		131					
93	0.060	0.380	LESS THAN 1.01	N/A		132					
94	0.059	0.381	LESS THAN 1.01	N/A		133					
95	0.065	0.383	LESS THAN 1.01	N/A		134					
96	0.031	0.382	LESS THAN 1.01	N/A		135					
97	0.014	0.379	LESS THAN 1.01	N/A	136						
98	0.000	0.381	LESS THAN 1.01	N/A	137						
99					138						
100					139						
101					140						
102					141						
103					142						
104					143						
105					144						
106					145						
107					146						
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121					160						
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123					162						
124					163						
125					164						

Quality Assurance Documentation for Part ID: SE121-001P 1-3 - Item: 37

Workorder: 64880/1-0 Sub:43 Op:160

Part: SE121-001P 1-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .328"		QA		4470	PANEL #1 +0.140 / -0.039 PANEL #3 +0.117 / -0.040	522			A
(10)		Profile Tolerance (+.188/-.120") (tack welded vessel)						02-11-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-11-0			



MQS Inspection, Inc.

5307 West 86th Street
Indianapolis, IN 46268
Phone: 317-872-8196
Fax: 317-872-4796

MQS W.O.# 371-F0004

RADIOGRAPHIC REPORT: Page 1 of 2

DATE: 2/11/04

Customer: Major Tool & Machine
1458 E. 19th St.
Indianapolis, IN

Customer's P.O. No.: _____
Job Location: Same

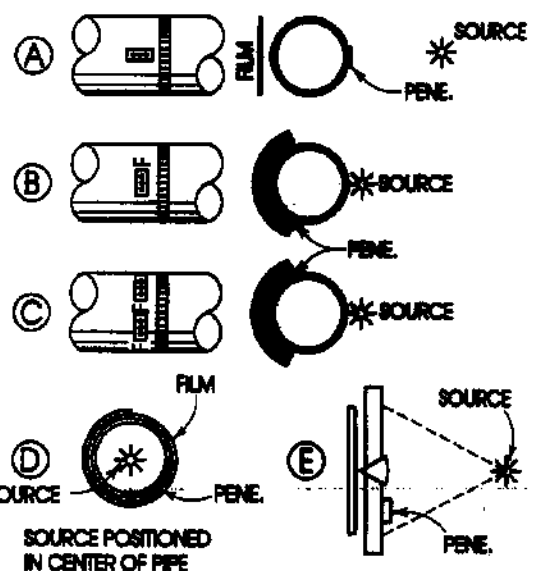
Item Description: SE 21-001P 1-3
100% Insp. _____ Spot Insp. _____

SERIAL NO. or PIECE NO.: 64880/1.0/43/180/818

TECHNIQUE DATA

Weld No.	Film No.	ACC.	REL.	CODE	REMARKS

Inspection Specification: ASME VIII div. 1 UW-51
Acceptance Standard: ASME VIII div. 1 UW-51
RT Procedure No.: 20.A.100
RT Technique Used Below: E



MATERIAL: 625 Inconel
PIPE SIZE: N/A WALL THICKNESS: .375"
WELD PROCESS: SMAW GTAW GMAW
SOURCE ISOTOPE: IR-192 CURIE: 28 KVP/MA: N/A
PHYSICAL SIZE: .154"
EXPOSURE TIME: 1:25 SFD: 12"
FILM/OBJECT INCHES: contact
GEOMETRIC UNSHARPNESS: ≤ .020"
PENETRATOR: TYPE SIZE: ASTM 1B
MATERIAL: FS PLACEMENT: FS
SHIMS: MATERIAL: N/A THICKNESS: N/A
MARKER/NO BELT: Pb #5
FILM: BRAND: Kodak TYPE: AA
SIZE: 4.5" x 17" LOAD: Single
EMULSION(S): N/A
SCREENS: FRONT: 0.03" BACK: 0.03" BACKING: N/A
VIEWING: SINGLE: ✓ DOUBLE: _____
DENSITY (PEN.) 2.0-4.0
DENSITY (WELD) MIN/MAX: 2.0-4.0

- P - Porosity
- C - Crack
- F - Incomplete Fusion
- IP - Incomplete Penetration
- S - Surface

- CODE
- SI - Slag Inclusions
 - BT - Burn Through
 - MT - Melt Through
 - UC - Undercut

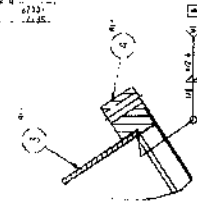
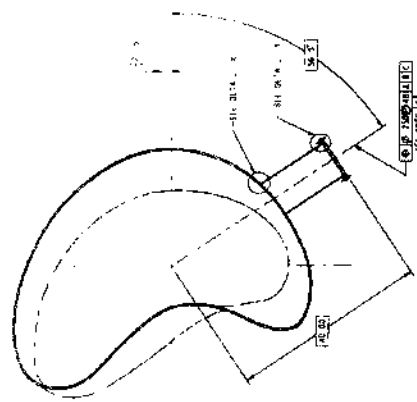
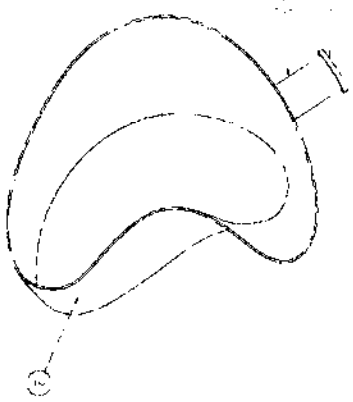
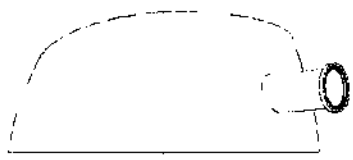
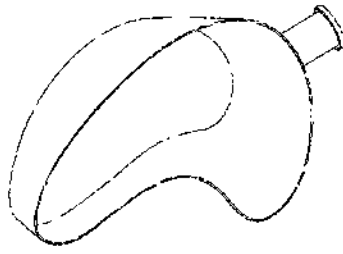
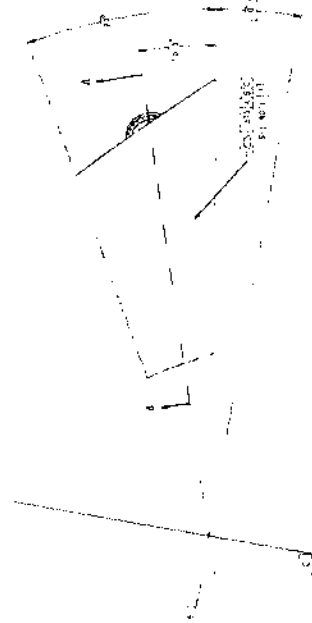
- TI - Tungsten Inclusion
- CV - Root Concavity
- CX - Root Convexity
- OX - Oxidation

1. Robert Weaver 2/11/04
RADIOGRAPHER
1. Robert Weaver 2/11/04
INTERPRETER D. Edwards 2/11/04

NOTES:

1. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
2. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
3. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
4. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
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6. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
7. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.
8. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

C4880/1.0/43/180/88
SE 101-001P 1-3
2/11/04
Page 2 of 2



QUALITY APPLICATION

1. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

2. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

3. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

4. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

5. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

6. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

7. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

8. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND THE PROVISION OF ALL DATA NECESSARY FOR THE DESIGN AND FABRICATION OF THE VESSEL.

NO.	REVISION	DATE	BY		DESCRIPTION
			INITIALS	NAME	
1					
2					
3					
4					
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SECTION A-A

1:10

SCALE

WELDING ENGINEER

APPROVED

DATE

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 40

Workorder: 64880/1-0 Sub:45 Op:10

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		Verify Panel Joint Alignment Weld Seam # 2-5 (.02" Max)		MFG		J1149	CONTOUR FIT UP MAX .010	712	712	A
(10)				CWI				02-12-0	02-12-0	
*		Verify Panel / Rest Stop Position Panel #2 (0 - .09" Gap)		MFG		J-1149	MAX GAP OF PANEL 2 .060	712		A
(20)								02-12-0		
*		Verify Panel / Rest Stop Position Panel #5 (0 - .09" Gap)		MFG		J-1149	MAX. GAP OF PANEL # 5 .062	712		A
(30)								02-12-0		
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (40 S HIELDING 20 PURGE)	712		A
(40)								02-12-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT # AV8 128	712		A
(50)								02-12-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712		A
(60)								02-12-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683 PERFOR ED WELDING	712		A
(70)								02-12-0		
*				QA			ACCEPT PER WPS 390	712		A



INSPECTION DATA CHECKLIST

(80)	CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION							02-12-0	
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04680 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#7/2) After structural welding After welding Port Final inspection

Part # / Panel #: SE121-001P PANEL #2 Gage/Std S/N(s): J-1009-NDT / J-1165 / 4470 Date of inspection: 02/12/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.017	0.386	LESS THAN 1.01	N/A	MTR 061	44	0.024	0.391	LESS THAN 1.01	N/A	MTR 061
2	0.023	0.387	LESS THAN 1.01	N/A		45	0.019	0.408	LESS THAN 1.01	N/A	
3	0.028	0.388	LESS THAN 1.01	N/A		46	0.006	0.385	LESS THAN 1.01	N/A	
4	0.034	0.385	LESS THAN 1.01	N/A		47	0.060	0.391	LESS THAN 1.01	N/A	
5	0.041	0.383	LESS THAN 1.01	N/A		48	0.054	0.379	LESS THAN 1.01	N/A	
6	0.049	0.383	LESS THAN 1.01	N/A		49	0.126	0.380	LESS THAN 1.01	N/A	
7	0.053	0.382	LESS THAN 1.01	N/A		50	0.068	0.379	LESS THAN 1.01	N/A	
8	0.059	0.383	LESS THAN 1.01	N/A		51	0.116	0.379	LESS THAN 1.01	N/A	
9	0.066	0.387	LESS THAN 1.01	N/A		52	0.061	0.382	LESS THAN 1.01	N/A	
10	0.072	0.383	LESS THAN 1.01	N/A		53	0.066	0.386	LESS THAN 1.01	N/A	
11	0.072	0.387	LESS THAN 1.01	N/A		54	0.053	0.384	LESS THAN 1.01	N/A	
12	0.067	0.387	LESS THAN 1.01	N/A		55	0.031	0.385	LESS THAN 1.01	N/A	
13	0.059	0.387	LESS THAN 1.01	N/A		56	0.055	0.389	LESS THAN 1.01	N/A	
14	0.053	0.386	LESS THAN 1.01	N/A		57					
15	0.039	0.389	LESS THAN 1.01	N/A		58					
16	0.027	0.385	LESS THAN 1.01	N/A		59					
17	0.017	0.386	LESS THAN 1.01	N/A		60					
18	0.011	0.385	LESS THAN 1.01	N/A		61					
19	0.007	0.383	LESS THAN 1.01	N/A		62					
20	0.004	0.385	LESS THAN 1.01	N/A		63					
21	0.000	0.386	LESS THAN 1.01	N/A		64					
22	-0.005	0.384	LESS THAN 1.01	N/A		65					
23	-0.006	0.384	LESS THAN 1.01	N/A		66					
24	-0.005	0.410	LESS THAN 1.01	N/A		67					
25	-0.003	0.407	LESS THAN 1.01	N/A		68					
26	0.032	0.405	LESS THAN 1.01	N/A		69					
27	0.035	0.407	LESS THAN 1.01	N/A		70					
28	0.043	0.396	LESS THAN 1.01	N/A		71					
29	0.038	0.395	LESS THAN 1.01	N/A		72					
30	0.019	0.394	LESS THAN 1.01	N/A		73					
31	0.016	0.396	LESS THAN 1.01	N/A		74					
32	0.018	0.396	LESS THAN 1.01	N/A		75					
33	0.036	0.394	LESS THAN 1.01	N/A		76					
34	0.058	0.391	LESS THAN 1.01	N/A		77					
35	0.062	0.389	LESS THAN 1.01	N/A		78					
36	0.060	0.389	LESS THAN 1.01	N/A		79					
37	0.059	0.388	LESS THAN 1.01	N/A		80					
38	0.056	0.387	LESS THAN 1.01	N/A		81					
39	0.052	0.386	LESS THAN 1.01	N/A		82					
40	0.046	0.385	LESS THAN 1.01	N/A		83					
41	0.040	0.383	LESS THAN 1.01	N/A		84					
42	0.037	0.397	LESS THAN 1.01	N/A		85					
43	0.031	0.398	LESS THAN 1.01	N/A		86					

64680 PPPL NCSX PVVS INSPECTION RECORD

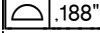
Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#/A)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-001P PANEL #5		Gage/Std S/N(s): J-1009-NDT / J-1165 / 4470				Date of inspection: 02/12/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.039	0.430	LESS THAN 1.01	N/A	MTM 061	44	0.014	0.432	LESS THAN 1.01	N/A	MTM 061
2	0.029	0.431	LESS THAN 1.01	N/A		45	0.016	0.433	LESS THAN 1.01	N/A	
3	0.027	0.428	LESS THAN 1.01	N/A		46	0.078	0.422	LESS THAN 1.01	N/A	
4	0.040	0.426	LESS THAN 1.01	N/A		47	0.073	0.419	LESS THAN 1.01	N/A	
5	0.043	0.424	LESS THAN 1.01	N/A		48	0.048	0.419	LESS THAN 1.01	N/A	
6	0.036	0.426	LESS THAN 1.01	N/A		49	0.010	0.417	LESS THAN 1.01	N/A	
7	0.021	0.426	LESS THAN 1.01	N/A		50	-0.019	0.419	LESS THAN 1.01	N/A	
8	0.006	0.426	LESS THAN 1.01	N/A		51	0.046	0.420	LESS THAN 1.01	N/A	
9	-0.003	0.426	LESS THAN 1.01	N/A		52	0.071	0.414	LESS THAN 1.01	N/A	
10	0.000	0.426	LESS THAN 1.01	N/A		53	0.078	0.419	LESS THAN 1.01	N/A	
11	0.000	0.427	LESS THAN 1.01	N/A		54	0.051	0.410	LESS THAN 1.01	N/A	
12	-0.001	0.428	LESS THAN 1.01	N/A		55	0.057	0.409	LESS THAN 1.01	N/A	
13	-0.003	0.426	LESS THAN 1.01	N/A		56	0.017	0.410	LESS THAN 1.01	N/A	
14	0.000	0.427	LESS THAN 1.01	N/A		57	0.069	0.420	LESS THAN 1.01	N/A	
15	0.003	0.428	LESS THAN 1.01	N/A		58	0.095	0.424	LESS THAN 1.01	N/A	
16	0.004	0.425	LESS THAN 1.01	N/A		59	0.089	0.421	LESS THAN 1.01	N/A	
17	0.006	0.424	LESS THAN 1.01	N/A		60	0.054	0.407	LESS THAN 1.01	N/A	
18	0.010	0.426	LESS THAN 1.01	N/A		61	0.077	0.413	LESS THAN 1.01	N/A	
19	0.018	0.428	LESS THAN 1.01	N/A		62	0.068	0.421	LESS THAN 1.01	N/A	MTM 061
20	0.025	0.423	LESS THAN 1.01	N/A		63					
21	0.033	0.424	LESS THAN 1.01	N/A		64					
22	0.027	0.418	LESS THAN 1.01	N/A		65					
23	0.031	0.420	LESS THAN 1.01	N/A		66					
24	0.033	0.420	LESS THAN 1.01	N/A		67					
25	0.037	0.422	LESS THAN 1.01	N/A		68					
26	0.041	0.423	LESS THAN 1.01	N/A		69					
27	0.044	0.422	LESS THAN 1.01	N/A		70					
28	0.051	0.424	LESS THAN 1.01	N/A		71					
29	0.054	0.423	LESS THAN 1.01	N/A		72					
30	0.055	0.424	LESS THAN 1.01	N/A		73					
31	0.056	0.424	LESS THAN 1.01	N/A		74					
32	0.059	0.421	LESS THAN 1.01	N/A		75					
33	0.061	0.422	LESS THAN 1.01	N/A		76					
34	0.059	0.421	LESS THAN 1.01	N/A		77					
35	0.058	0.422	LESS THAN 1.01	N/A		78					
36	0.064	0.422	LESS THAN 1.01	N/A		79					
37	0.050	0.426	LESS THAN 1.01	N/A		80					
38	0.058	0.433	LESS THAN 1.01	N/A		81					
39	0.069	0.429	LESS THAN 1.01	N/A		82					
40	0.043	0.422	LESS THAN 1.01	N/A		83					
41	0.029	0.422	LESS THAN 1.01	N/A		84					
42	0.057	0.417	LESS THAN 1.01	N/A	MTM 061	85					
43	0.022	0.429	LESS THAN 1.01	N/A		86					

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 43

Workorder: 64880/1-0 Sub:45 Op:20

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NSCX-SOW-121-01-02 SPECIFICATION: NSCX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .188"		QA		4470	P #2 -0.006 / +0.12 6 P #5 -0.019 / +0. 095 [N/C:15054]	522			R
(10)		Upper Half Of Bilateral Tolerance (tack welded vessel)						02-12-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-12-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 44

Workorder: 64880/1-0 Sub:45 Op:30

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURG E 20 SHIELDING 40)	712			A
(10)								02-12-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT #AV81 28	712			A
(20)								02-12-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712			A
(30)								02-12-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER 683	712			A
(40)								02-12-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 WITH .062 FILLER	712			A
(50)								02-12-0			



Major

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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 45

Date of Inspection:02/12/2004

Type of Material:625 INCONEL

NDT#:7982

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/12/2004

NDT003

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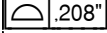
Page: 8

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 46

Workorder: 64880/1-0 Sub:45 Op:40

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NSCX-SOW-121-01-02 SPECIFICATION: NSCX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .208"		QA		4470	P #2 +0.005 / +0.05 4 P #5 -0.018 / +0.039	522			A
(10)		Profile Tolerance (+.188 / -.020") (tack welded vessel)						02-12-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-12-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 47

Workorder: 64880/1-0 Sub:45 Op:50

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURGE E 20 SHIELDING 40)	712			A
(10)								02-12-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT #A V8128	712			A
(20)								02-12-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)								02-12-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712			A
(40)								02-12-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0 W/ .093 FILLER	712			A
(50)								02-12-0			

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

48	45	50	Nondestructive Visual Test Certification #7985 - MTM WELD INSPECTION FORM
49	45	60	Inspection Data Checklist: 2 steps
50	45	70	Inspection Data Checklist: 5 steps
51	45	70	Nondestructive Visual Test Certification #7996 - MTM WELD INSPECTION FORM
52	45	80	Inspection Data Checklist: 2 steps
53	45	90	Inspection Data Checklist: 5 steps
54	45	90	Nondestructive Visual Test Certification #7997 - MTM WELD INSPECTION FORM
55	45	100	Inspection Data Checklist: 2 steps
56	45	110	Inspection Data Checklist: 5 steps
57	45	110	Nondestructive Visual Test Certification #8007 - MTM WELD INSPECTION FORM
58	45	120	Inspection Data Checklist: 2 steps
59	45	130	Inspection Data Checklist: 5 steps
60	45	130	Nondestructive Visual Test Certification #8010 - MTM WELD INSPECTION FORM
61	45	140	Inspection Data Checklist: 2 steps
62	45	160	Map(s): SE121-001P-1MTM - mc096253.tif
63	45	160	Map(s): SE121-001P-1MTM - mc096254.tif
64	45	160	Inspection Data Checklist: 2 steps

SE121-001P 2-5-4

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
65	41	10		Inspection Data Checklist: 8 steps
66	41	20		Map(s): SE121-001P-1MTM - mc096252.tif
67	41	20		Inspection Data Checklist: 2 steps
68	41	30		Inspection Data Checklist: 5 steps
69	41	30		Nondestructive Visual Test Certification #8019 - MTM WELD INSPECTION FORM
70	41	50		Inspection Data Checklist: 5 steps
71	41	50		Nondestructive Visual Test Certification #8020 - MTM WELD INSPECTION FORM
72	41	70		Inspection Data Checklist: 5 steps
73	41	70		Nondestructive Visual Test Certification #8021 - MTM WELD INSPECTION FORM
74	41	90		Inspection Data Checklist: 5 steps
75	41	90		Nondestructive Visual Test Certification #8031 - MTM WELD INSPECTION FORM
76	41	140		Inspection Data Checklist: 2 steps
77	41	150		Inspection Data Checklist: 5 steps
78	41	150		Nondestructive Visual Test Certification #8032 - MTM WELD INSPECTION FORM
79	41	155		Inspection Data Checklist: 5 steps
80	41	155		Nondestructive Visual Test Certification #8036 - MTM WELD INSPECTION FORM
81	41	160		Inspection Data Checklist: 2 steps
82	41	175		Map(s): SE121-001P-1MTM - MC096325.TIF
83	41	175		Map(s): SE121-001P-1MTM - MC096328.TIF
84	41	175		Map(s): SE121-001P-1MTM - MC096326.TIF
85	41	175		Inspection Data Checklist: 2 steps
86	41	180		Test Certification: RADIOGRAPHIC CERTIFICATE - mc096769.tif
87	41	180		Map(s): SE121-001P-1MTM - Same as Item #86



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 48

Date of Inspection:02/12/2004

Type of Material:625 INCONEL

NDT#:7985

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/12/2004

NDT003

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Page: 9

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 49

Workorder: 64880/1-0 Sub:45 Op:60

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,228"} Profile Tolerance (+.188/-.040") (tack welded vessel)		QA		4470	P #2 +0.003 / +0.06 2 P #5 -0.008 / +0. 051	522			A
(10)								02-12-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-12-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 50

Workorder: 64880/1-0 Sub:45 Op:70

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTING 9 PURG E 20 SHIELDING 40)	712			A
(10)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA WIRE HEAT # CB7996	712			A
(20)								02-13-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS MATER IAL W/ SS WOOL	712			A
(30)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 683	712			A
(40)								02-13-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDED PER WPS 390 WITH .093 FILLER	712			A
(50)								02-13-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 51

Date of Inspection:02/13/2004

Type of Material:625 INCONEL

NDT#:7996

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

Part Information: MTM Job Number: 64880/1.0 -Sub:45 -Op:70 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 2-5 Part Name: PANEL 2-5 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
 2ND FILL PASS INSIDE

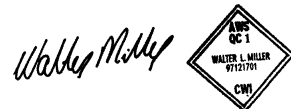
Notes:

PERFORMED THE VISUAL INSPECTION OF THE INSIDE WELD FILL PASS #2. WELDER #683 PERFORMED THE WELDING TO WPS390. UPON INSPECTION THERE WAS NO REJECTABLE INDICATION FOUND.

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

Inspector: 712-W.MILLER

Date: 02/13/2004



Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 52

Workorder: 64880/1-0 Sub:45 Op:80

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,248") Profile Tolerance (+.188/-.060") (tack welded vessel)		QA		4470	P #2 0 +0.021 / +0. 085 P #5 +0.009 / + 0.081	522			A
(10)								02-13-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-13-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 53

Workorder: 64880/1-0 Sub:45 Op:90

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURG E 20 SHIELDING 40)	712			A
(10)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER HEAT # CB7996	712			A
(20)								02-13-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS MATER IAL W/ SS WOOL	712			A
(30)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712			A
(40)								02-13-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0 W/ .093 FILLER	712			A
(50)								02-13-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 54

Date of Inspection:02/13/2004

Type of Material:625 INCONEL

NDT#:7997

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:45 -Op:90 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 2-5 Part Name: PANEL 2-5 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 29.1.6
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
COVER PASS INSIDE WELD ASSEMBLY 2-5

Notes:

PERFORMED THE VISUAL INSPECTION ON THE INSIDE COVER WELD. (ASSEMBLY 2-5) WELD OPERATOR 683 PERFORMED THIS COVER PASS. THERE WAS NO REJECTABLE INDICATION FOUND AT THIS INSPECTION POINT.

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

Inspector: 712-W.MILLER

Date: 02/13/2004



Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 55

Workorder: 64880/1-0 Sub:45 Op:100

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,268" Profile Tolerance (+.188/-.080") (tack welded vessel)		QA		4470	P #2 +0.023 / +0.10 0 P #5 +0.034 / +0 .091	522			A
(10)								02-13-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-13-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 56

Workorder: 64880/1-0 Sub:45 Op:110

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURG E 20 SHIELDING 40)	712			A
(10)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 FILLER HEAT # AV8128	712			A
(20)								02-13-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712			A
(30)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER 683	712			A
(40)								02-13-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 W/ .062 WIRE	712			A
(50)								02-13-0			



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 57

Date of Inspection:02/13/2004

Type of Material:625 INCONEL

NDT#:8007

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:45 -Op:110 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 2-5 Part Name: PANEL 2-5 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
ROOT PASS OUTSIDE

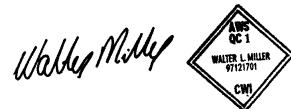
Notes:

PERFORMED THE INSPECTION ON THE BACK GOUGE PRIOR TO WELDING AND THE ROOT PASS ON THE OUTSIDE JOINT OF ASSEMBLY 2-5. WELDER # 683 PERFORMED THE WELDING TO WPS 390. THERE WAS NO INDICATION FOUND DURING THIS INSPECTION POINT.

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

Inspector: 712-W.MILLER

Date: 02/13/2004



Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 58

Workorder: 64880/1-0 Sub:45 Op:120

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,288"} Profile Tolerance (+.188/-.100") (tack welded vessel)		QA		4470	P #2 +0.008 / +0.07 8 P #5 +0.003 / +0. 067	522			A
(10)								02-13-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-13-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 59

Workorder: 64880/1-0 Sub:45 Op:130

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PUR GE 20 SHIELDING 40)	712			A
(10)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA HEAT #CB79 96	712			A
(20)								02-13-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS W/ SS WOOL	712			A
(30)								02-13-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER 683 PERFOR D WELDING	712			A
(40)								02-13-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 WITH .093 DIA WIRE	712			A
(50)								02-13-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 60

Date of Inspection:02/13/2004

Type of Material:625 INCONEL

NDT#:8010

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

COVER PASS OUTSIDE WELD

Inspector: 712-W.MILLER

Date: 02/13/2004

NDT003

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Page: 13

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 61

Workorder: 64880/1-0 Sub:45 Op:140

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,308"} Profile Tolerance (+.188/-.120") (tack welded vessel)		QA		4470	P #2 +0.001 / +0.06 1 P #5 -0.023 / +0. 051	522			A
(10)								02-13-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-13-0			

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: **SE121-001P-1MTM Rev: 0B**

Inspection type: Formed Panel Interpass (#) (After structural welding) After welding Port Final Inspection

Part # / Panel #: **SE121-001P PANEL #2** Gage/Std S/N(s): **4470 / J-1165 / J-1009-NDT** Date of Inspection: **02/14/04**

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.018	0.390	LESS THAN 1.01	N/A		44	0.034	0.3.83	LESS THAN 1.01	N/A	
2	0.024	0.387	LESS THAN 1.01	N/A		45	0.035	0.385	LESS THAN 1.01	N/A	
3	0.030	0.387	LESS THAN 1.01	N/A		46	0.034	0.387	LESS THAN 1.01	N/A	
4	0.038	0.387	LESS THAN 1.01	N/A		47	0.061	0.395	LESS THAN 1.01	N/A	
5	0.047	0.385	LESS THAN 1.01	N/A		48	0.040	0.400	LESS THAN 1.01	N/A	
6	0.058	0.383	LESS THAN 1.01	N/A		49	0.136	0.389	LESS THAN 1.01	N/A	
7	0.067	0.384	LESS THAN 1.01	N/A		50	0.080	0.411	LESS THAN 1.01	N/A	
8	0.073	0.384	LESS THAN 1.01	N/A		51	0.119	0.388	LESS THAN 1.01	N/A	
9	0.083	0.385	LESS THAN 1.01	N/A		52	0.070	0.392	LESS THAN 1.01	N/A	
10	0.091	0.384	LESS THAN 1.01	N/A		53	0.061	0.383	LESS THAN 1.01	N/A	
11	0.093	0.388	LESS THAN 1.01	N/A		54	0.064	0.378	LESS THAN 1.01	N/A	
12	0.090	0.387	LESS THAN 1.01	N/A		55	0.026	0.379	LESS THAN 1.01	N/A	
13	0.084	0.387	LESS THAN 1.01	N/A		56	0.043	0.380	LESS THAN 1.01	N/A	
14	0.078	0.388	LESS THAN 1.01	N/A		57					
15	0.066	0.389	LESS THAN 1.01	N/A		58					
16	0.051	0.390	LESS THAN 1.01	N/A		59					
17	0.040	0.389	LESS THAN 1.01	N/A		60					
18	0.033	0.386	LESS THAN 1.01	N/A		61					
19	0.025	0.383	LESS THAN 1.01	N/A		62					
20	0.020	0.385	LESS THAN 1.01	N/A		63					
21	0.016	0.384	LESS THAN 1.01	N/A		64					
22	0.013	0.383	LESS THAN 1.01	N/A		65					
23	0.009	0.385	LESS THAN 1.01	N/A		66					
24	0.007	0.385	LESS THAN 1.01	N/A		67					
25	0.008	0.385	LESS THAN 1.01	N/A		68					
26	0.019	0.409	LESS THAN 1.01	N/A		69					
27	0.023	0.410	LESS THAN 1.01	N/A		70					
28	0.027	0.406	LESS THAN 1.01	N/A		71					
29	0.016	0.402	LESS THAN 1.01	N/A		72					
30	0.005	0.397	LESS THAN 1.01	N/A		73					
31	0.013	0.395	LESS THAN 1.01	N/A		74					
32	0.024	0.394	LESS THAN 1.01	N/A		75					
33	0.057	0.395	LESS THAN 1.01	N/A		76					
34	0.070	0.398	LESS THAN 1.01	N/A		77					
35	0.066	0.395	LESS THAN 1.01	N/A		78					
36	0.065	0.391	LESS THAN 1.01	N/A		79					
37	0.063	0.390	LESS THAN 1.01	N/A		80					
38	0.058	0.390	LESS THAN 1.01	N/A		81					
39	0.051	0.389	LESS THAN 1.01	N/A		82					
40	0.041	0.385	LESS THAN 1.01	N/A		83					
41	0.040	0.387	LESS THAN 1.01	N/A		84					
42	0.040	0.385	LESS THAN 1.01	N/A		85					
43	0.033	0.384	LESS THAN 1.01	N/A		86					

MTM 067

MTM 067

MTM 067

MTM 067

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #5 Gage/Std S/N(s): 4470 / J-1165 / J-1009-NDT Date of Inspection: 02/14/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.034	0.428	LESS THAN 1.01	N/A		44	0.012	0.431	LESS THAN 1.01	N/A	
2	0.022	0.430	LESS THAN 1.01	N/A		45	0.032	0.420	LESS THAN 1.01	N/A	
3	0.031	0.426	LESS THAN 1.01	N/A		46	0.096	0.415	LESS THAN 1.01	N/A	
4	0.042	0.428	LESS THAN 1.01	N/A		47	0.085	0.419	LESS THAN 1.01	N/A	
5	0.040	0.423	LESS THAN 1.01	N/A		48	0.054	0.420	LESS THAN 1.01	N/A	
6	0.027	0.423	LESS THAN 1.01	N/A		49	0.010	0.426	LESS THAN 1.01	N/A	
7	0.009	0.424	LESS THAN 1.01	N/A		50	-0.035	0.428	LESS THAN 1.01	N/A	
8	-0.002	0.423	LESS THAN 1.01	N/A		51	0.038	0.425	LESS THAN 1.01	N/A	
9	-0.010	0.423	LESS THAN 1.01	N/A		52	0.072	0.408	LESS THAN 1.01	N/A	
10	-0.014	0.425	LESS THAN 1.01	N/A		53	0.087	0.404	LESS THAN 1.01	N/A	
11	-0.017	0.424	LESS THAN 1.01	N/A		54	0.057	0.415	LESS THAN 1.01	N/A	
12	-0.021	0.428	LESS THAN 1.01	N/A		55	0.064	0.423	LESS THAN 1.01	N/A	
13	-0.020	0.424	LESS THAN 1.01	N/A		56	0.015	0.422	LESS THAN 1.01	N/A	
14	-0.017	0.424	LESS THAN 1.01	N/A		57	0.061	0.423	LESS THAN 1.01	N/A	
15	-0.014	0.428	LESS THAN 1.01	N/A		58	0.086	0.419	LESS THAN 1.01	N/A	
16	-0.009	0.426	LESS THAN 1.01	N/A		59	0.092	0.407	LESS THAN 1.01	N/A	
17	0.002	0.422	LESS THAN 1.01	N/A		60	0.060	0.414	LESS THAN 1.01	N/A	
18	0.017	0.423	LESS THAN 1.01	N/A		61	0.082	0.420	LESS THAN 1.01	N/A	
19	0.028	0.425	LESS THAN 1.01	N/A		62	0.069	0.422	LESS THAN 1.01	N/A	
20	0.041	0.424	LESS THAN 1.01	N/A		63					
21	0.057	0.422	LESS THAN 1.01	N/A		64					
22	0.021	0.421	LESS THAN 1.01	N/A		65					
23	0.022	0.420	LESS THAN 1.01	N/A		66					
24	0.023	0.423	LESS THAN 1.01	N/A		67					
25	0.025	0.424	LESS THAN 1.01	N/A		68					
26	0.027	0.424	LESS THAN 1.01	N/A		69					
27	0.028	0.420	LESS THAN 1.01	N/A		70					
28	0.033	0.422	LESS THAN 1.01	N/A		71					
29	0.036	0.426	LESS THAN 1.01	N/A		72					
30	0.039	0.424	LESS THAN 1.01	N/A		73					
31	0.042	0.422	LESS THAN 1.01	N/A		74					
32	0.041	0.420	LESS THAN 1.01	N/A		75					
33	0.040	0.420	LESS THAN 1.01	N/A		76					
34	0.041	0.422	LESS THAN 1.01	N/A		77					
35	0.037	0.422	LESS THAN 1.01	N/A		78					
36	0.062	0.427	LESS THAN 1.01	N/A		79					
37	0.066	0.434	LESS THAN 1.01	N/A		80					
38	0.067	0.428	LESS THAN 1.01	N/A		81					
39	0.066	0.422	LESS THAN 1.01	N/A		82					
40	0.052	0.420	LESS THAN 1.01	N/A		83					
41	0.028	0.421	LESS THAN 1.01	N/A		84					
42	0.074	0.426	LESS THAN 1.01	N/A		85					
43	0.042	0.430	LESS THAN 1.01	N/A		86					

NTM 061

NTM 061

NTM 061

Quality Assurance Documentation for Part ID: SE121-001P 2-5 - Item: 64

Workorder: 64880/1-0 Sub:45 Op:160

Part: SE121-001P 2-5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,328"} Profile Tolerance (+.188/-.140") (tack welded vessel)		QA		4470	P #2 +0.005 / +0.13 6 P #5 -0.035 / +0. 096	522			A
(10)								02-17-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-17-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 65

Workorder: 64880/1-0 Sub:41 Op:10

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		Verify Panel Joint Alignment Weld Seam # 4-5 (.02" Max)		MFG			ACCEPT	712	712	A
(10)				CWI				02-16-0	02-16-0	
*		Verify Panel / Rest Stop Position Panel #4 (0 - .09" Gap)		MFG			.020	712		A
(20)								02-16-0		
*		Verify Panel / Rest Stop Position Panel Sub-Set #2-5 (0 - .09" Gap)		MFG			.080	712		A
(30)								02-16-0		
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PUR GE 20 SHIELDING 40)	712		A
(40)								02-16-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA HEAT #CB7 996	712		A
(50)								02-16-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712		A
(60)								02-16-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #683	712		A
(70)								02-16-0		

INSPECTION DATA CHECKLIST

* (80)	CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 W/ .093 FILLER	712 02-16-0		A
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64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#7ACK) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #4 Gage/Std S/N(s): 4470 / J-770-NDT / J-1165 Date of Inspection: 02/14/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.013	0.399	LESS THAN 1.01	N/A		44					
2	0.031	0.398	LESS THAN 1.01	N/A		45					
3	0.045	0.396	LESS THAN 1.01	N/A		46					
4	0.055	0.396	LESS THAN 1.01	N/A		47					
5	0.058	0.396	LESS THAN 1.01	N/A		48					
6	0.057	0.395	LESS THAN 1.01	N/A		49					
7	0.054	0.395	LESS THAN 1.01	N/A		50					
8	0.049	0.398	LESS THAN 1.01	N/A		51					
9	0.045	0.394	LESS THAN 1.01	N/A		52					
10	0.038	0.393	LESS THAN 1.01	N/A		53					
11	0.034	0.393	LESS THAN 1.01	N/A		54					
12	0.028	0.393	LESS THAN 1.01	N/A		55					
13	0.027	0.394	LESS THAN 1.01	N/A		56					
14	0.025	0.393	LESS THAN 1.01	N/A		57					
15	0.034	0.394	LESS THAN 1.01	N/A		58					
16	0.037	0.394	LESS THAN 1.01	N/A		59					
17	0.038	0.397	LESS THAN 1.01	N/A		60					
18	0.038	0.397	LESS THAN 1.01	N/A		61					
19	0.040	0.391	LESS THAN 1.01	N/A		62					
20	0.042	0.392	LESS THAN 1.01	N/A		63					
21	0.043	0.395	LESS THAN 1.01	N/A		64					
22	0.042	0.394	LESS THAN 1.01	N/A		65					
23	0.045	0.391	LESS THAN 1.01	N/A		66					
24	0.046	0.391	LESS THAN 1.01	N/A		67					
25	0.049	0.394	LESS THAN 1.01	N/A		68					
26	0.052	0.393	LESS THAN 1.01	N/A		69					
27	0.055	0.392	LESS THAN 1.01	N/A		70					
28	0.057	0.393	LESS THAN 1.01	N/A		71					
29	0.054	0.392	LESS THAN 1.01	N/A		72					
30	0.049	0.400	LESS THAN 1.01	N/A		73					
31	0.030	0.396	LESS THAN 1.01	N/A		74					
32	0.039	0.397	LESS THAN 1.01	N/A		75					
33	0.044	0.396	LESS THAN 1.01	N/A		76					
34	0.033	0.393	LESS THAN 1.01	N/A		77					
35	0.061	0.394	LESS THAN 1.01	N/A		78					
36	0.014	0.389	LESS THAN 1.01	N/A		79					
37	0.002	0.394	LESS THAN 1.01	N/A		80					
38	0.012	0.392	LESS THAN 1.01	N/A		81					
39						82					
40						83					
41						84					
42						85					
43						86					

4470
J-770

J-1165

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 67

Workorder: 64880/1-0 Sub:41 Op:20

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,188") Upper Half Of Bilateral Tolerance (tack welded vessel)		QA		4470	P #5 +0.003 / +0.03 5 P #4 +0.004 / +0. 057	522			A
(10)								02-17-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-17-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 68

Workorder: 64880/1-0 Sub:41 Op:30

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURGE 20 SHIELDING 40)	712			A
(10)									02-16-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WIRE .062 DIA HEAT # AV8128	712			A
(20)									02-16-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)									02-16-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER 709	712			A
(40)									02-16-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0 W/ .062 FILLER	712			A
(50)									02-16-0		



Major

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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 69

Date of Inspection:02/16/2004

Type of Material:625 INCONEL

NDT#:8019

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/16/2004

NDT003

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User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 70

Workorder: 64880/1-0 Sub:41 Op:50

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PUR GE 20 SHIELDING40)	712			A
(10)								02-16-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT # AV 8128	712			A
(20)								02-16-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/SS WOOL	712			A
(30)								02-16-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER 709	712			A
(40)								02-16-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 WITH .062 DIA WIRE	712			A
(50)								02-16-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 71

Date of Inspection:02/16/2004

Type of Material:625 INCONEL

NDT#:8020

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:41 -Op:50 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 2-5-4 Part Name: PANEL 2-5-4 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
FILL PASS #1 SUB-ASSY 4-5 INSIDE

Notes:

PERFORMED THE INSPECTION OF THE fill PASS ON DETAILS 4-5 OPERTATOR 709 PERFORMED THE WELDING OF THIS PASS UNDER WPS 390. w/ .062 FILLER THERE WAS NO INDICATIONS FOUND AT INSPECTION POINT.

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

Inspector: 712-W.MILLER

Date: 02/16/2004



Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 72

Workorder: 64880/1-0 Sub:41 Op:70

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURGE 20 SHIELDING 40)	712			A
(10)									02-16-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER HEAT # CB7996	712			A
(20)									02-16-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)									02-16-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER #709	712			A
(40)									02-16-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTER PER WPS 3 0 W/ .093 FILLER	712			A
(50)									02-16-0		



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 73

Date of Inspection:02/16/2004

Type of Material:625 INCONEL

NDT#:8021

Inspection Requirements:

Inspector: 712-W.MILLER

Date: 02/16/2004

NDT003

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User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 74

Workorder: 64880/1-0 Sub:41 Op:90

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTING (PURGE 20 SHIELDING 40)	712			A
(10)									02-17-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA HEAT # CB7 996	712			A
(20)									02-17-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)									02-17-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 709	712			A
(40)									02-17-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 USINF .093 FILLER	712			A
(50)									02-17-0		



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 75

Date of Inspection:02/17/2004

Type of Material:625 INCONEL

NDT#:8031

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:41 -Op:90 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P 2-5-4 Part Name: PANEL 2-5-4 SUB-SET Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
COVER PASS INSIDE

Notes:

PERFORMED THE INSPECTION OF THE INSIDE COVER PASS ON DETAILS 4-5 OPERATOR 709 PERFORMED THE WELDING OF THIS PASS UNDER WPS 390. THERE WAS NO INDICATIONS FOUND AT INSPECTION POINT.

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

Inspector: 712-W.MILLER

Date: 02/16/2004



Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 76

Workorder: 64880/1-0 Sub:41 Op:140

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,268"} Profile Tolerance (+.188/-.080") (tack welded vessel)		QA		4470	P #5 +0.003 / +0.03 5 P #4 +0.004 / +0. 057	522			A
(10)								02-17-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-17-0			

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 77

Workorder: 64880/1-0 Sub:41 Op:150

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURG E 20 SHIELDING 40)	712			A
(10)								02-17-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIA HEAT # AV 8128	712			A
(20)								02-17-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)								02-17-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 709	712			A
(40)								02-17-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390 W/ .062 FILLER	712			A
(50)								02-17-0			



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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 78

Date of Inspection:02/17/2004

Type of Material:625 INCONEL

NDT#:8032

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
 BACK GRIND / ROOT PASS

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

Inspector: 712-W.MILLER

Date: 02/16/2004

NDT003

n:\mtmapps\mndt\pi.qrp

Page: 18

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 79

Workorder: 64880/1-0 Sub:41 Op:155

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURGE E 20 SHIELDING 40)	712			A
(10)								02-17-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 DIA / HEAT #CB 7996	712			A
(20)								02-17-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(30)								02-17-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 709	712			A
(40)								02-17-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTED PER WPS 3 0 W/ .093 FILLER	712			A
(50)								02-17-0			



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 80

Date of Inspection:02/17/2004

Type of Material:625 INCONEL

NDT#:8036

Inspection Requirements:

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

Inspector: 712-W.MILLER

Date: 02/16/2004

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 81

Workorder: 64880/1-0 Sub:41 Op:160

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{g ,328"} Profile Tolerance (+.188/-.140") (tack welded vessel)		QA		4470	P #4 -0.016 / +0.02 4 P #5 -0.019 / +0. 018	522			A
(10)								02-17-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-17-0			

24880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 08

Inspection type: Formed Panel Interpass (#) (After structural welding) After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL # 2 Gage/Std S/N(s): 44707/J-770-NDT / J-1165 Date of Inspection: 02/17/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.053	0.385	LESS THAN 1.01	N/A	MTM	44	0.041	0.381	LESS THAN 1.01	N/A	MTM
2	0.060	0.387	LESS THAN 1.01	N/A		45	0.046	0.381	LESS THAN 1.01	N/A	MTM
3	0.067	0.385	LESS THAN 1.01	N/A		46	0.047	0.385	LESS THAN 1.01	N/A	
4	0.073	0.383	LESS THAN 1.01	N/A		47	0.091				
5	0.079	0.383	LESS THAN 1.01	N/A		48	0.061				
6	0.089	0.387	LESS THAN 1.01	N/A		49	0.164				
7	0.097	0.385	LESS THAN 1.01	N/A		50	0.096				
8	0.101	0.385	LESS THAN 1.01	N/A		51	0.140				
9	0.109	0.384	LESS THAN 1.01	N/A		52	0.078				
10	0.117	0.382	LESS THAN 1.01	N/A		53	0.072				
11	0.118	0.384	LESS THAN 1.01	N/A		54	0.071				
12	0.114	0.386	LESS THAN 1.01	N/A		55	0.034				MTM
13	0.106	0.387	LESS THAN 1.01	N/A		56	0.058				
14	0.099	0.383	LESS THAN 1.01	N/A		57					
15	0.087	0.383	LESS THAN 1.01	N/A		58					
16	0.070	0.388	LESS THAN 1.01	N/A		59					
17	0.057	0.385	LESS THAN 1.01	N/A		60					
18	0.047	0.388	LESS THAN 1.01	N/A		61					
19	0.040	0.383	LESS THAN 1.01	N/A		62					
20	0.033	0.380	LESS THAN 1.01	N/A		63					
21	0.025	0.385	LESS THAN 1.01	N/A		64					
22	0.019	0.382	LESS THAN 1.01	N/A		65					
23	0.013	0.381	LESS THAN 1.01	N/A		66					
24	0.012	0.381	LESS THAN 1.01	N/A		67					
25	0.009	0.383	LESS THAN 1.01	N/A		68					
26	0.030	0.404	LESS THAN 1.01	N/A		69					
27	0.031	0.405	LESS THAN 1.01	N/A		70					
28	0.031	0.404	LESS THAN 1.01	N/A		71					
29	0.021	0.401	LESS THAN 1.01	N/A		72					
30	0.013	0.395	LESS THAN 1.01	N/A		73					
31	0.018	0.391	LESS THAN 1.01	N/A		74					
32	0.027	0.393	LESS THAN 1.01	N/A		75					
33	0.055	0.394	LESS THAN 1.01	N/A		76					
34	0.077	0.394	LESS THAN 1.01	N/A		77					
35	0.078	0.392	LESS THAN 1.01	N/A		78					
36	0.076	0.390	LESS THAN 1.01	N/A		79					
37	0.072	0.389	LESS THAN 1.01	N/A		80					
38	0.067	0.386	LESS THAN 1.01	N/A		81					
39	0.059	0.386	LESS THAN 1.01	N/A		82					
40	0.052	0.385	LESS THAN 1.01	N/A		83					
41	0.046	0.383	LESS THAN 1.01	N/A		84					
42	0.045	0.383	LESS THAN 1.01	N/A	MTM	85					
43	0.043	0.382	LESS THAN 1.01	N/A		86					

94880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) (After structural welding) After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL # 5

Gage/Std S/N(s): 4470 / J-770-NDT / J-1185

Date of Inspection: 02/17/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.038	0.428	LESS THAN 1.01	N/A	STP	44	-0.003				STP
2	0.024	0.426	LESS THAN 1.01	N/A		45	0.013				
3	0.026	0.425	LESS THAN 1.01	N/A		46	0.088				
4	0.040	0.422	LESS THAN 1.01	N/A		47	0.079				
5	0.044	0.422	LESS THAN 1.01	N/A		48	0.045				
6	0.035	0.420	LESS THAN 1.01	N/A		49	-0.003				
7	0.020	0.423	LESS THAN 1.01	N/A		50	0.042				
8	0.007	0.424	LESS THAN 1.01	N/A		51	0.014				
9	0.001	0.421	LESS THAN 1.01	N/A		52	0.050				
10	-0.010	0.422	LESS THAN 1.01	N/A		53	0.075				
11	-0.011	0.422	LESS THAN 1.01	N/A		54	0.050				
12	-0.015	0.422	LESS THAN 1.01	N/A		55	0.058				
13	-0.017	0.424	LESS THAN 1.01	N/A		56	-0.002				
14	-0.015	0.423	LESS THAN 1.01	N/A		57	0.054				
15	-0.009	0.426	LESS THAN 1.01	N/A		58	0.063				
16	-0.002	0.424	LESS THAN 1.01	N/A		59	0.069				
17	0.007	0.420	LESS THAN 1.01	N/A		60	0.048				
18	0.018	0.421	LESS THAN 1.01	N/A		61	0.079				MTM
19	0.031	0.423	LESS THAN 1.01	N/A		62	0.069				
20	0.044	0.423	LESS THAN 1.01	N/A		63					
21	0.063	0.422	LESS THAN 1.01	N/A		64					
22	0.031	0.416	LESS THAN 1.01	N/A		65					
23	0.028	0.417	LESS THAN 1.01	N/A		66					
24	0.016	0.417	LESS THAN 1.01	N/A		67					
25	0.010	0.418	LESS THAN 1.01	N/A		68					
26	0.003	0.418	LESS THAN 1.01	N/A		69					
27	0.004	0.417	LESS THAN 1.01	N/A		70					
28	0.005	0.417	LESS THAN 1.01	N/A		71					
29	0.007	0.417	LESS THAN 1.01	N/A		72					
30	0.009	0.421	LESS THAN 1.01	N/A		73					
31	0.013	0.417	LESS THAN 1.01	N/A		74					
32	0.019	0.419	LESS THAN 1.01	N/A		75					
33	0.027	0.419	LESS THAN 1.01	N/A		76					
34	0.035	0.419	LESS THAN 1.01	N/A		77					
35	0.041	0.415	LESS THAN 1.01	N/A		78					
36	0.069					79					
37	0.065					80					
38	0.087					81					
39	0.088					82					
40	0.045					83					
41	0.026					84					
42	0.058					85					
43	0.039				STP	86					

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) (After structural welding) After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL # 4 Gage/Std S/N(s): 4470 / J-770-NDT / J-1165 Date of Inspection: 02/17/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.034	0.395	LESS THAN 1.01	N/A		44					
2	0.044	0.395	LESS THAN 1.01	N/A		45					
3	0.052	0.396	LESS THAN 1.01	N/A		46					
4	0.056	0.394	LESS THAN 1.01	N/A		47					
5	0.052	0.401	LESS THAN 1.01	N/A		48					
6	0.048	0.398	LESS THAN 1.01	N/A		49					
7	0.042	0.395	LESS THAN 1.01	N/A		50					
8	0.037	0.396	LESS THAN 1.01	N/A		51					
9	0.032	0.394	LESS THAN 1.01	N/A		52					
10	0.027	0.394	LESS THAN 1.01	N/A		53					
11	0.022	0.394	LESS THAN 1.01	N/A		54					
12	0.016	0.391	LESS THAN 1.01	N/A		55					
13	0.017	0.392	LESS THAN 1.01	N/A		56					
14	0.023	0.393	LESS THAN 1.01	N/A		57					
15	0.052	0.398	LESS THAN 1.01	N/A		58					
16	0.055	0.397	LESS THAN 1.01	N/A		59					
17	0.059	0.396	LESS THAN 1.01	N/A		60					
18	0.062	0.398	LESS THAN 1.01	N/A		61					
19	0.064	0.396	LESS THAN 1.01	N/A		62					
20	0.068	0.399	LESS THAN 1.01	N/A		63					
21	0.069	0.395	LESS THAN 1.01	N/A		64					
22	0.071	0.397	LESS THAN 1.01	N/A		65					
23	0.076	0.393	LESS THAN 1.01	N/A		66					
24	0.077	0.396	LESS THAN 1.01	N/A		67					
25	0.083	0.394	LESS THAN 1.01	N/A		68					
26	0.086	0.395	LESS THAN 1.01	N/A		69					
27	0.090	0.396	LESS THAN 1.01	N/A		70					
28	0.088	0.396	LESS THAN 1.01	N/A		71					
29	0.084	0.398	LESS THAN 1.01	N/A		72					
30	0.079	0.396	LESS THAN 1.01	N/A		73					
31	0.056					74					
32	0.071					75					
33	0.077					76					
34	0.053					77					
35	0.089					78					
36	0.041					79					
37	0.021					80					
38	0.023					81					
39						82					
40						83					
41						84					
42						85					
43						86					

4470
J-770

4470
J-770

Quality Assurance Documentation for Part ID: SE121-001P 2-5-4 - Item: 85

Workorder: 64880/1-0 Sub:41 Op:175

Part: SE121-001P 2-5-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,288") Profile Tolerance (+.188/-.140") (tack welded vessel)		QA		4470	P #2 +0.009 / +0.16 4 P #4 +0.016 / +0 .090 P #5 -0.017 / +0.088	522			A
(10)								02-18-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-18-0			



MQS Inspection, Inc.

5307 West 86th Street
Indianapolis, IN 46268
Phone: 317-872-8196
Fax: 317-872-4798

MQS W.D.# 371-F0004 RADIOGRAPHIC REPORT: Page 1 of 2

DATE: 2/18/04
Customer: Major Tool + Machine
1458 E. 19th St.
Indpls, IN.

Customer's P.O. No.: _____
Job Location: Same

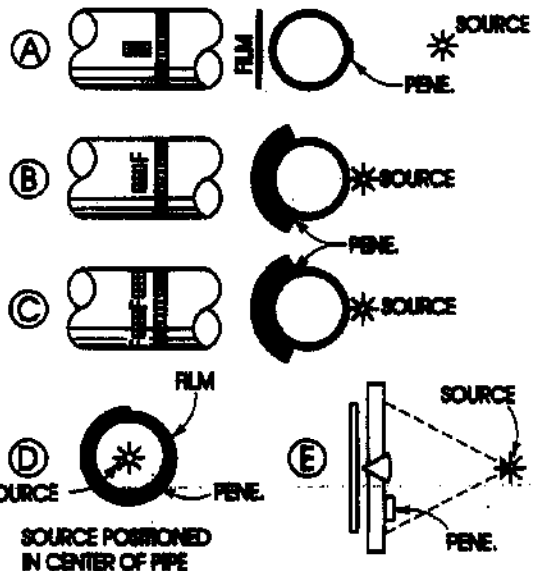
Item Description: SE 21-001P 2-5-4
100% Insp. ✓ Spot Insp. _____

SERIAL NO. or PIECE NO.: 64880/1.0/41/180/818

TECHNIQUE DATA

Weld No.	Film No.	ACC.	REJ.	CODE	REMARKS
5-4	0-1	✓			
	1-2	✓			
2-5	0-1	✓		P	
	1-2	✓			

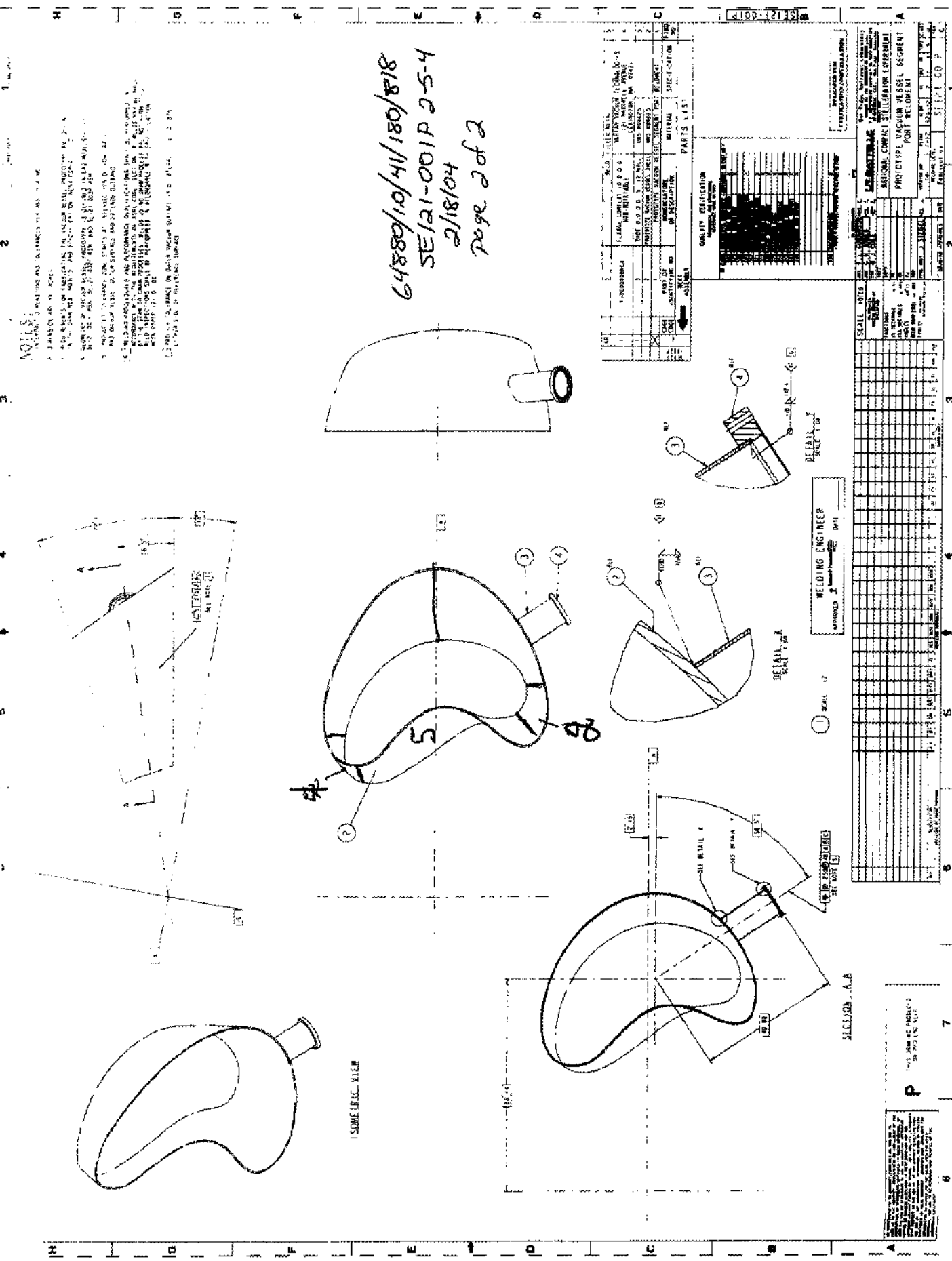
Inspection Specification: ASME VIII Div. 1 UW-51
Acceptance Standard: ASME VIII Div. 1 UW-51
RT Procedure No.: 22.A.100
RT Technique Used Below: F



MATERIAL: 625 Inconel
PIPE SIZE: N/A WALL THICKNESS: .375"
WELD PROCESS: SMAW GTAW GMAW
SOURCE: ISOTOPE: IR-192 CURIE: 26 KV/MA: N/A
PHYSICAL SIZE: .154"
EXPOSURE TIME: 1.45 SPD: 15"
FILM/OBJECT INCHES: contact
GEOMETRIC UNSHARPNESS: ≤ .020"
PENETRATOR: TYPE SIZE: ASTM IB
MATERIAL: SS PLACEMENT: 33
SHIMS: MATERIAL: N/A THICKNESS: N/A
MARKER/NO BELT: Ph 4's
FILM: BRAND: Kodak TYPE: AA
SIZE: 4.5" x 17" LOAD: single
EMULSION(S): N/A
SCREENS: FRONT: .003" BACK: .003" BACKING: N/A
VIEWING: SINGLE: ✓ DOUBLE: _____
DENSITY (PEN.) 2.0-4.0
DENSITY (WELD) MIN/MAX: 2.0-4.0

CODE
 P - Porosity SI - Slag Inclusions TI - Tungsten Inclusion
 C - Crack BT - Burn Through CV - Root Concavity
 F - Incomplete Fusion MT - Melt Through CX - Root Convexity
 IP - Incomplete Penetration UC - Undercut OX - Oxidation
 S - Surface

1. Robert Weaver 2/18/04/371 JS
RADIOGRAPHER
 1. Robert Weaver 2/18/04/371 JS
INTERPRETER Daryl D. Edwards 2/18/04



NOTES:

1. THIS DRAWING IS TO BE USED FOR THE FABRICATION OF THE VESSEL.
2. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER WELDING OF THE VESSEL.
3. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER MATERIALS USED IN THE FABRICATION OF THE VESSEL.
4. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER FINISHING OF THE VESSEL.
5. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER MARKING OF THE VESSEL.
6. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER RECORDING OF THE FABRICATION OF THE VESSEL.
7. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER HANDLING OF THE VESSEL.
8. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER STORAGE OF THE VESSEL.
9. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER SHIPPING OF THE VESSEL.
10. THE FABRICATOR SHALL BE RESPONSIBLE FOR THE PROPER UNLOADING OF THE VESSEL.

64880/10/41/180/818
 SE/21-001P 2-5-4
 2/18/04
 page 2 of 2

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	WELDED VACUUM VESSEL	1	EA	
2	WELDED VACUUM VESSEL	1	EA	
3	WELDED VACUUM VESSEL	1	EA	
4	WELDED VACUUM VESSEL	1	EA	
5	WELDED VACUUM VESSEL	1	EA	
6	WELDED VACUUM VESSEL	1	EA	
7	WELDED VACUUM VESSEL	1	EA	
8	WELDED VACUUM VESSEL	1	EA	
9	WELDED VACUUM VESSEL	1	EA	
10	WELDED VACUUM VESSEL	1	EA	

SCALE 1/2"

WELDING ENGINEER

DATE

REVISION

1 2 3 4 5 6 7 8

A B C D E F G H

SECTION A-A

WELDED VACUUM VESSEL

PROTOTYPE VACUUM VESSEL, SECRET

PORT RECD. 10/18/04

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

SE121-001P TEST

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
88	26	60		Inspection Data Checklist: 8 steps
89	26	70		Inspection Data Checklist: 3 steps
90	26	80		Inspection Data Checklist: 5 steps
91	26	80		Nondestructive Visual Test Certification #7892 - MTM WELD INSPECTION FORM
92	26	90		Inspection Data Checklist: 2 steps
93	26	100		Inspection Data Checklist: 5 steps
94	26	100		Nondestructive Visual Test Certification #7900 - MTM WELD INSPECTION FORM
95	26	110		Inspection Data Checklist: 2 steps
96	26	120		Inspection Data Checklist: 5 steps
97	26	120		Nondestructive Visual Test Certification #7902 - MTM WELD INSPECTION FORM
98	26	130		Inspection Data Checklist: 2 steps
99	26	140		Inspection Data Checklist: 5 steps
100	26	140		Nondestructive Visual Test Certification #7909 - MTM WELD INSPECTION FORM
101	26	150		Inspection Data Checklist: 2 steps
102	26	160		Inspection Data Checklist: 5 steps
103	26	160		Nondestructive Visual Test Certification #7914 - MTM WELD INSPECTION FORM
104	26	170		Inspection Data Checklist: 2 steps
105	26	180		Inspection Data Checklist: 5 steps
106	26	180		Nondestructive Visual Test Certification #7915 - MTM WELD INSPECTION FORM
107	26	190		Inspection Data Checklist: 2 steps
108	26	200		Inspection Data Checklist: 5 steps
109	26	200		Nondestructive Visual Test Certification #7918 - MTM WELD INSPECTION FORM
110	26	210		Inspection Data Checklist: 2 steps
111	26	230		Test Certification: RADIOGRAPHIC CERTIFICATE - mc096219.tif
112	26	230		Map(s): SE121-001P-1MTM - Same as Item #111

SE121-001P - PVVS PRIMARY WELDMENT

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
113	0	10	10	Material Certification: Trace ID: 94881 / INCONEL625_062_GTAW - WELD WIRE/GTAW, .062 DIA - mc095279.pdf / 2653-8-4201 / AB8051 / AV8128
114	0	10	10	Material Certification: Trace ID: 94238 / INCONEL625_062_GTAW - WELD WIRE/GTAW, .062 DIA - mc094944.pdf / 2653-8-4201 / AB8051 / AV8128
115	0	10	10	Material Certification: TRACE ID: 38561 / INCONEL625_062_GTAW - WELD WIRE/GTAW, .062 DIA - MC074409.TIF / 2653-8-4201 / AB8051 / AV8128
116	0	10	30	Material Certification: / INCONEL625_093_GTAW - WELD WIRE/GTAW, .093 DIA - MC075552.TIF / CB7996 / CT7519
117	0	10	30	Material Certification: Trace ID: 95570 / INCONEL625_093_GTAW - WELD WIRE/GTAW, .093 DIA - mc095629.pdf / CB7996 / CT7519
118	0	10	30	Material Certification: TRACE ID: 41171 / INCONEL625_093_GTAW - WELD WIRE/GTAW, .093 DIA - MC075605.TIF / CB7996 / CT7519
119	0	10	40	Material Certification: / INCONEL625_035_GMAW - WELD WIRE/GMAW, .035 DIA - mc068650.tif / VX3417AK
120	40	10		Inspection Data Checklist: 6 steps
121	40	40		Inspection Data Checklist: 8 steps

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 88

Workorder: 64880/1-0 Sub:26 Op:60

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Verify Panel Joint Alignment Weld Seam # 2-5 (.02" Max)		MFG			LESS THAN .020 MISM ATCH	791	933		A
(10)				CWI				01-28-0	01-28-0		
*		Verify Panel / Rest Stop Position Panel #2 (0 - .09" Gap)		MFG			LESS THAN .090	791			A
(20)								01-28-0			
*		Verify Panel / Rest Stop Position Panel #5 (0 - .09" Gap)		MFG			LESS THAN .090	791			A
(30)								01-28-0			
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTABLE TO WPS 90 PPPL REV 0 20 CFH FLOW/ARGON GA	791			A
(40)								01-28-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			HT LOT AV8128 / TRA CE TICKET #94881 6 25 INCO	791			A
(50)								01-28-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			STAINLESS STEEL 300 SERIES CONSTRUCTIO N,STAINLESS STEEL W OOL	791			A
(60)								01-28-0			
*				QA			VERIFED PER WELDE QUALIFICATION CHEC	791			A

INSPECTION DATA CHECKLIST

(70)		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION					SYSTEM				
*				QA			WELDER SET AT 140 M AX AMPERAGE AT TAC WELD OP	791			
(80)		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION						01-28-0			A

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 89

Workorder: 64880/1-0 Sub:26 Op:70

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,188") Upper Half Of Bilateral Tolerance (tack welded vessel)		QA		4470	+0.003 / +0.096	522			A
(10)		At weld seam only (development panel)						01-27-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						01-27-0			
*		Material Thickness		QA		J-770-NDT	0.380-0.389	522			A
(30)		.375 +.04/-0"						01-27-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 90

Workorder: 64880/1-0 Sub:26 Op:80

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH@WELDER / 20 FH PURGE ARGON GA	791			A
(10)								01-30-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			INCO 625 HT LOT AV8 128	791			A
(20)								01-30-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES STAINLES S STEEL / S.S. WOO L	791			A
(30)								01-30-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			VERIFIED TO MTM WE D QUALIFICATIONS	791			A
(40)								01-30-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			75 / 175MPS/ .062 FILLER WPS 390 PP REV 0	791			A
(50)								01-30-0			



Major

Tool & Machine, Inc.

1458 E. 19th Street, Indianapolis, In 46218
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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 91

Date of Inspection:01/30/2004

Type of Material:625 INCONEL

NDT#:7892

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:26 -Op:80 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P TEST Part Name: WELD DEVELOPMENT PANEL Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: MTM Spec Number: Acceptance Standard: AWS D1.6, 6.29.1
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Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT WITH FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

Visual inspection of root pass on test joint. Weld acceptable to customer drawing / specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 01/30/2004



Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 92

Workorder: 64880/1-0 Sub:26 Op:90

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,208") Profile Tolerance (+.188 / -.020") (tack welded vessel) At weld seam only (development panel)		QA		4470	+0.016 - +0.094	522			A
(10)									01-30-0		
*		Magnetic Permeability 1.01 Max. Record range (high / low) At weld seam only (development panel)		QA		J-1165	LESS THAN 1.01	522			A
(20)									01-30-0		

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 93

Workorder: 64880/1-0 Sub:26 Op:100

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH @WELDER / 2 0CFH AT PURGE	791			A
(10)								01-30-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			INCO 625 HT AV8128 .062 DIAM.	791			A
(20)								01-30-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS / S.S .WOOL	791			A
(30)								01-30-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			VERIFIED TO WPS 390 PPPL REV 0 PER MTM QUALIFICATION CHECK	791			A
(40)								01-30-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			75 TO 175 .062 FIL LER	791			A
(50)								01-30-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 94

Date of Inspection:02/02/2004

Type of Material:625 INCONEL

NDT#:7900

Inspection Requirements:

Inspector: 223-M.TROSEN

Date: 02/02/2004

NDT003

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Page: 21

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 95

Workorder: 64880/1-0 Sub:26 Op:110

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 228" Profile Tolerance (+.188/-.040") (tack welded vessel)		QA		4470	+0.012 / +0.093	522			A
(10)		At weld seam only (development panel)						02-02-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-02-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 96

Workorder: 64880/1-0 Sub:26 Op:120

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH @WELDER / 20 CFH @ PURGE	791			A
(10)									02-02-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			INCO 625 HT LOT AV 8128 .062 DIAM.	791			A
(20)									02-02-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S.WOOL INSERT	791			A
(30)									02-02-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTABLE TO MTM QUALIFICATION CHEC PER WPS 390 PPPL R EV O	791			A
(40)									02-02-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			75- 175 AMPS .062 FILLER (ALL PARAME TERS PER WPS)	791			A
(50)									02-02-0		



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 97

Date of Inspection:02/02/2004

Type of Material:625 INCONEL

NDT#:7902

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:26 -Op:120 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P TEST Part Name: Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
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Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
INTERMEDIATE FILLER PASS

Notes:

Filler pass of weld test / development panel fabrication operation #4 was inspected. No rejectable indications were noted at the time of inspection

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

Inspector: 581-D.EDWARDS

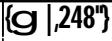
Date: 02/02/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 98

Workorder: 64880/1-0 Sub:26 Op:130

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 248" Profile Tolerance (+.188/-.060") (tack welded vessel)		QA		4470	+0.023 / +0.097	522			A
(10)		At weld seam only (development panel)						02-02-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-02-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 99

Workorder: 64880/1-0 Sub:26 Op:140

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40@ WELDER 20CFH A PURGE	791			A
(10)								02-02-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO. HT LOT CT7519	791			A
(20)								02-02-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			STAINLESS STEELL 30 0 SERIES / S.S. WOO L INSERT	791			A
(30)								02-02-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			CERTIFIED PER MTM Q UALIFICATION SYSTE WPS 390 PPPL REV 0	791			A
(40)								02-02-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			100 - 210 AMPS .093 FILLER ALL PARAMET ERS PER WPS 390PPPL REV 0	791			A
(50)								02-02-0			



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 100

Date of Inspection:02/02/2004

Type of Material:625 INCONEL

NDT#:7909

Inspection Requirements:

Inspector: 581-D.EDWARDS

Date: 02/02/2004

NDT003

n:\mtmapps\mtndt\pi.qrp

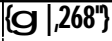
Page: 23

User ID: LONAKER Date: 04/15/04

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 101

Workorder: 64880/1-0 Sub:26 Op:150

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .268" Profile Tolerance (+.188/-.080") (tack welded vessel)		QA		4470	+0.017 / +0.097	522			A
(10)		At weld seam only (development panel)						02-03-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-02-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 102

Workorder: 64880/1-0 Sub:26 Op:160

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			20 CFH PURGE / 40CF H @ WELDER	791			A
(10)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 625 INCO HT # 2653-8-4201 .093 625 INCO HT # CT751 9	791			A
(20)								02-03-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S.S.WOOL INSERT	791			A
(30)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			QUALIFIED PER MTM ELDER QUALIFICATIO CHECK	791			A
(40)								02-03-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 75 175 AMPS .0 93 100-210 AMPS ALL PARAM. TO WPS 390P PPL REV 0	791			A
(50)								02-03-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 103

Date of Inspection:02/03/2004

Type of Material:625 INCONEL

NDT#:7914

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:26 -Op:160 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P TEST Part Name: Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
--	--

Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
BACKSIDE ROOT PASS

Notes:

Backside root pass of weld test / development panel fabrication operation #6 was inspected. No rejectable indications were noted at the time of inspection

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

Inspector: 581-D.EDWARDS


Date: 02/03/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 104

Workorder: 64880/1-0 Sub:26 Op:170

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .288" Profile Tolerance (+.188/-.100") (tack welded vessel)		QA		4470	+0.007 / +0.076	522			A
(10)		At weld seam only (development panel)						02-03-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-03-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 105

Workorder: 64880/1-0 Sub:26 Op:180

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			20 CFH AT PURGE/ 40 CFH @ WELDER	791			A
(10)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 INCO 625 HEAT # CT7519	791			A
(20)								02-03-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S.S. WOOL INSERT	791			A
(30)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			VERIFIED PER MTM W LDER QUALIFICATION CHECK	791			A
(40)								02-03-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			100-210 AMPS ALL PA RAM. PER WPS 390PPP L REV 0	791			A
(50)								02-03-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 106

Date of Inspection:02/03/2004

Type of Material:625 INCONEL

NDT#:7915

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:26 -Op:180 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P TEST Part Name: Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
---	---

Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
--	--

Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
BACKSIDE FILL PASS

Notes:

Backside fill pass of weld test / development panel fabrication operation #7 was inspected. No rejectable indications were noted at the time of inspection

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

Inspector: 581-D.EDWARDS

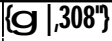
Date: 02/03/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 107

Workorder: 64880/1-0 Sub:26 Op:190

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .308" Profile Tolerance (+.188/-.120") (tack welded vessel)		QA		4470	-0.007 / +0.041	522			A
(10)		At weld seam only (development panel)						02-03-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-03-0			

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 108

Workorder: 64880/1-0 Sub:26 Op:200

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			20CFH @PURGE / 40 CFH @ WELDER	791			A
(10)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT # CT7519	791			A
(20)								02-03-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S.S. WOOL INSERT	791			A
(30)								02-03-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			PER MTM WELDER QU IFICATION CHECK WP S 390PPPL REV 0	791			A
(40)								02-03-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 AMPS PER WPS 390PP PL REV 0	791			A
(50)								02-03-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 109

Date of Inspection:02/03/2004

Type of Material:625 INCONEL

NDT#:7918

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:26 -Op:200 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P TEST Part Name: Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
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Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT
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Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
BACKSIDE COVER PASS

Notes:

Backside cover pass of weld test / development panel fabrication operation #8 was inspected. No rejectable indications were noted at the time of inspection

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

Inspector: 581-D.EDWARDS

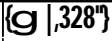
Date: 02/03/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P TEST - Item: 110

Workorder: 64880/1-0 Sub:26 Op:210

Part: SE121-001P TEST - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-1

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .328" Profile Tolerance (+.188/-.140") (tack welded vessel)		QA		4470	-0.065 / +0.041	522			A
(10)		At weld seam only (development panel)						02-05-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)		At weld seam only (development panel)						02-05-0			



MQS Inspection, Inc.

5307 West 86th Street
Indianapolis, IN 46268
Phone: 317-872-8196
Fax: 317-872-4798

MQS W.D.# 371-F0004 RADIOGRAPHIC REPORT; Page 1 of 2

DATE: 2/9/04
Customer: Major Tool & Machine
1458 E. 19th St.
Indpls, IN

Customer's P.O. No.:
Job Location: Same

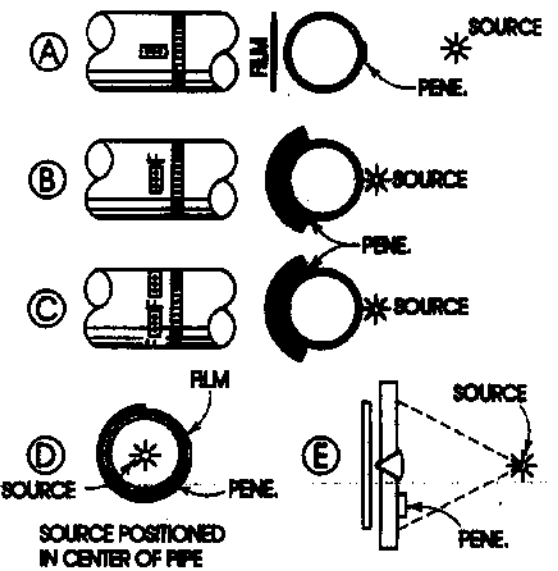
Item Description: SE/21-001P test
100% Insp. Spot Insp.

SERIAL NO. or PIECE NO.: 64889/1.0/26/230/818

TECHNIQUE DATA

Weld No.	Film No.	ACC.	REL.	CODE	REMARKS
	0-14	✓			
	14-24	✓			

Inspection Specification: ASME VIII
Acceptance Standard: ASME VIII div 1 UW-51
RT Procedure No.: QA-100
RT Technique Used Below: E



MATERIAL: 635 Inconel
 PIPE SIZE: N/A WALL THICKNESS: .375"
 WELD PROCESS: SMAW GTAW: GMAW:
 SOURCE: ISOTOPE: Ir 192 CURIES: 28 KVP/MA: N/A
 PHYSICAL SIZE: .154"
 EXPOSURE TIME: SFD: 18"
 FILM/OBJECT INCHES: CONTACT
 GEOMETRIC UNSHARPNESS: ≤ .020"
 PENETRATOR: TYPE SIZE: ASTM 1B
 MATERIAL: SS PLACEMENT: SS
 SHIMS: MATERIAL: N/A THICKNESS: N/A
 MARKER/NO BELT: Pb 2#
 FILM: BRAND: Kodak TYPE: AA
 SIZE: 4.5" x 17" LOAD: single
 EMULSION(S): N/A
 SCREENS: FRONT: .002" BACK: .002" BACKING: N/A
 VIEWING: SINGLE: DOUBLE:
 DENSITY (PEN.) 2.0-4.0
 DENSITY (WELD) MIN/MAX: 2.0-4.0

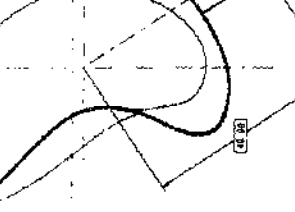
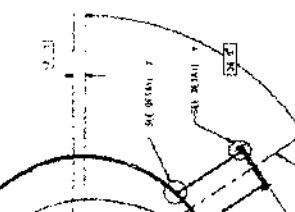
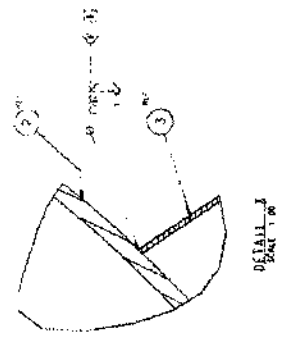
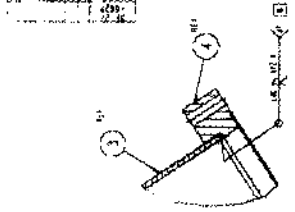
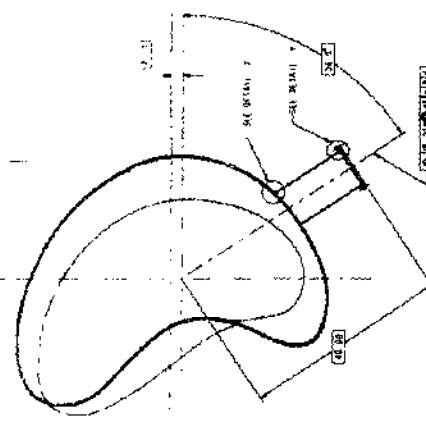
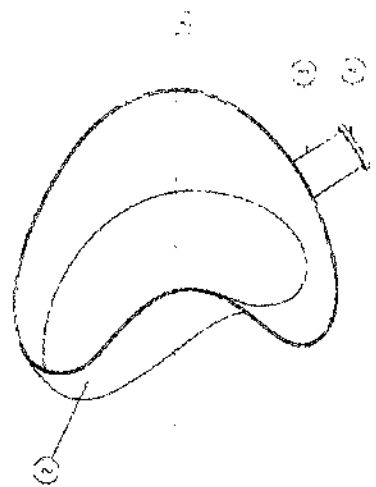
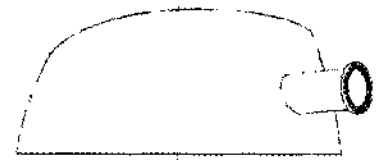
CODE
 P - Porosity
 C - Crack
 IF - Incomplete Fusion
 IP - Incomplete Penetration
 S - Surface
 SI - Slag Inclusions
 BT - Burn Through
 MT - Melt Through
 UC - Undercut
 TI - Tungsten Inclusion
 CV - Root Concavity
 CX - Root Convexity
 OX - Oxidation

1. Robert Weaver 269/5112
 RADIOGRAPHER
 1. Robert Weaver 269/5112
 INTERPRETER D. Edwards 2/9/04

NOTES

- 1. ALL DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED IN FEET AND INCHES.
- 2. MATERIAL SHALL BE AS SPECIFIED.
- 3. ALL SURFACES SHALL BE FINISHED TO THE REQUIREMENTS OF THE SPECIFICATION.
- 4. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.
- 5. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INSURANCE AND BONDING.
- 6. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY TESTING AND RECORDS.
- 7. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SHIPPING AND DELIVERY.
- 8. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STORAGE AND HANDLING.
- 9. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY MAINTENANCE AND REPAIR.
- 10. THE FABRICATOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DEMOLITION AND DISPOSAL.

64880/10/24/230/88
 SE 121-001 P test
 2/9/04
 page 2 of 2



WELDING ENGINEER
 APPROVED: _____ DATE: _____

SCALE: 1/2" = 1'-0"

SECTION 7
 SECTION 8
 SECTION 9

NO.	DESCRIPTION	DATE
1	ISSUED FOR FABRICATION	2/9/04
2	ISSUED FOR TESTING	2/9/04
3	ISSUED FOR DELIVERY	2/9/04
4	ISSUED FOR STORAGE	2/9/04
5	ISSUED FOR MAINTENANCE	2/9/04
6	ISSUED FOR REPAIR	2/9/04
7	ISSUED FOR DEMOLITION	2/9/04
8	ISSUED FOR DISPOSAL	2/9/04

SCALE: 1/2" = 1'-0"

WELDING ENGINEER
 APPROVED: _____ DATE: _____

SECTION 7
 SECTION 8
 SECTION 9

COMPANY: _____
 PROJECT: _____
 DRAWING NO: _____
 SHEET NO: _____

ARCOS INDUSTRIES, LLC
ONE ARCOS DRIVE
Mt. Carmel, PA 17851



DATE 12/19/03

CERTIFICATION OF TESTS

SOLD TO:
 MAJOR TOOL & MACHINE, INC.
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46218

SHIP TO:
 MAJOR TOOL & MACHINE
 1452 EAST 19th Street
 Indianapolis, IN 46218

ARCOS S.O.		CUSTOMER ORDER NO.		CONSIGNEE ORDER NO.		DATE SHIPPED			
79533		P03-05170		N/A		12/19/03			
ITEM	SIZE	GRADE		LOT NO./ALLOY NO.		QUANTITY			
1	1/16 X 36"	ARCOS 625		AV8128		30#			
SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3 ASME SFA 5.14 ASME SECTION II, PART C, 2001 EDITION. AND ALL PARAS AND ADDENDA THRU 2003.									
CHEMICAL ANALYSIS: WIRE									
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.03	0.05	0.08	0.004	0.00	21.8	64.6	9.1		3.77
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.24	0.26	0.01	0.02	0.1		<.50		

ADDITIONAL TEST RESULTS

Ferrite - NB2433.1-1: _____
 Magna Gage: _____
 X-Ray: _____
 Bends: _____
 Hardness: _____

TENSILE As Welded

Heat Treated
 Yield _____
 Tensile _____
 Elongation _____
 Red. of Area _____

OTHER INFORMATION:

LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

12/23/03

81947
 line 1

MLH Q.A. MANAGER
 QUALITY ASSURANCE DEPARTMENT

ARCOS INDUSTRIES, LLC
ONE ARCOS DRIVE
Mt. Carmel, PA 17851



DATE 11/26/03

CERTIFICATION OF TESTS

SOLD TO: MAJOR TOOL & MACHINE, INC.
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46218

SHIP TO: SAME

ARCOS S.O.	CUSTOMER ORDER NO.	CONSIGNEE ORDER NO.	DATE SHIPPED
79388	P03-04749	N/A	11/26/03
ITEM	SIZE	GRADE	LOT NO./ALLOY NO.
1	1/16 X 36"	ARCOS 625	AB8051
			QUANTITY
			30#

SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3
 ASME SFA 5.14 ASME SECTION II, PART C, 2001 EDITION.
 AND ALL PARAS AND ADDENDA THRU 2002.

CHEMICAL ANALYSIS: WIRE									
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.02	0.01	0.06	0.001	0.01	22.2	64.3	9.1		3.56
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.22	0.12	0.03	0.01	0.4		<.50		

ADDITIONAL TEST RESULTS

Ferrite - NB2433,1-1: _____
 Magna Gage: _____
 X-Ray: _____
 Bends: _____
 Hardness: _____

TENSILE As Welded Heat Treated

Yield _____

Tensile _____

Elongation _____

Red. of Area _____

OTHER INFORMATION:

LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

Eileen Zerby Q.A. CLERK
 QUALITY ASSURANCE DEPARTMENT

8/505
 Line 1
 A. 7

12/5/03



Boeing North American, Inc.
 Rocketdyne Propulsion & Power
 6633 Canoga Avenue
 PO Box 7922
 Canoga Park, CA 91309-7922

Accommodation Sales Order

DATE: 10-06-99

ASO NO. 08708-00001

CUSTOMER ORDER NO. P9905389 - P9905441

SOLD TO:
 MAJOR TOOL & MACHINE, INC.
 1458 E. 19TH ST.
 INDIANAPOLIS, IN 46218

REFERENCE G. HARRIS
 NEG. BY CHRISTINE KOZLOWSKI
 TERMS NET 30
 RESALE YES PERMIT NO. N/A
 F.O.B. OUR PLANT CANOGA PARK, CA
 INSPECT. REQ. I & D (80) 001199
 ROCKETDYNE ASSY. NO. R052679A1, R052679A2
 ROCKETDYNE P.O. NO. PR99315316 ITEM: 0001, 0002, 0003, 0011

SHIP TO:
 SAME AS ABOVE

SHIP VIA AIR FRIEGHT "EXPEDITE DELIVERY"

ITEM	QUANTITY	UOM	MATERIAL DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	17	1.24 LBS.	INCO625.062X36" WELD WIRE (.062" Dia. X 36" WELD WIRE RB0170-226 INCO 625) 20 LBS REQUESTED		

TRACEABILITY

Heat Number: 2653-8-4201
 Rocketdyne Traceability number: WC00591
 Material Certification with mill source attached: yes



Verified By: Dan Inez **QE 047** Date: 10-8-99

OCT 21 1999
36699

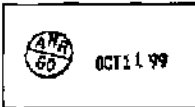
ISSUE TO: COMPANY870800001	DELIVER TRUCKING, SHIPPING	NOTE: A COPY OF THIS ASO MUST ACCOMPANY EACH SHIPMENT OF BAX 728 227 873 11OCT99 PRU... RS-68 02741-71934-41501 02421-72007-11000
LOCATION OF MATERIAL: MACPAC	FILLED BY FILLED D/569 MAX/MIN BAX 728 227	
RELEASED PURCHASING: D/580	OCT 9 1999 QTY <u>17 EA. T4806</u> ISS BY <u>[Signature]</u>	

(1307402) FOLLOWING FOR USE OF SHIPPING AND INSPECTION

TOTAL PKGS. <u>1 CTN.</u>	GR. WT. <u>37</u>	TARE	NET	L	W	H	CU. FT. <u>4.0</u>
CAR NO.	B/ <u>UNPAID</u>	DATE SHIPPED		SEAL NO.			

BAX GLOBAL O/N P BAX 728 227 873 11OCT99 99OCT11
 I/we certify that the items listed herein have been inspected by me/us or under my/our supervision. I/we further certify that to the best of my/our knowledge these materials are as represented in the above description.

ROCKETDYNE INSPECT. STAMP



GOVT. INSPECT. STAMP (when required)



REC'D BY: _____ DATE: _____
 Customer's Signature



Boeing North American, Inc.
 Rocketdyne Propulsion & Power
 6633 Canoga Avenue
 PO Box 7922
 Canoga Park, CA 91309-7922

Accommodation Sales Order

DATE: 10-06-99

ASO NO. 08708-00001

CUSTOMER ORDER NO. P9905389 - P9905441

SOLD TO: MAJOR TOOL & MACHINE, INC. 1458 E. 19TH ST. INDIANAPOLIS, IN 46218	REFERENCE <u>G. HARRIS</u>
	NEGO. BY <u>CHRISTINE KOZLOWSKI</u>
SHIP TO: SAME AS ABOVE	TERMS <u>NET 30</u>
	RESALE <u>YES</u> PERMIT NO. <u>N/A</u>
SHIP VIA AIR FRIEGHT "EXPEDITE DELIVERY"	F.O.B. OUR PLANT <u>CANOGA PARK, CA</u>
	INSPECT. REQ. I & D <u>60</u> <u>OCT 11 99</u>
	ROCKETDYNE ASSY. NO. <u>R052679A1, R052679A2</u>
	ROCKETDYNE P.O. NO. <u>PR99315316</u> ITEM: <u>0001, 0002, 0003, 0011</u>

ITEM	QUANTITY	UOM	MATERIAL DESCRIPTION	UNIT PRICE	TOTAL PRICE
1	17	1.24 LBS.	INCO625.062X36" WELD WIRE (.062" Dia. X 36" WELD WIRE RB0170-226 INCO 625) 20 LBS REQUESTED	XXXXXX	XXXXXX

TRACEABILITY

Heat Number: 2653-8-4201
 Rocketdyne Traceability number: WC00591
 Material Certification with mill source attached: yes



Verified By: Dan Inez DI Date: 10-8-99

ISSUE TO: CMPANY870800001	DELIVER TRUCKING, SHIPPING	NOTE: A COPY OF THIS ASO MUST ACCOMPANY EACH SHIPMENT OF ARTICLES PROGRAM: RS-68 02741-71934-41501 02421-72007-11000
LOCATION OF MATERIAL: MAC/PAC	FILLED BY FILLED D/569 MAX/MIN	
RELEASED PURCHASING: D/580	OCT 9 1999 QTY <u>17 EA. Trucks</u> ISS BY <u>[Signature]</u>	

(1301002) FOLLOWING FOR USE OF SHIPPING AND INSPECTION

TOTAL	GR. WT.	TARE	NET	L	W	H	CU. FT.
PKGS. 1 CTN.	37			13"	13"	41"	4.0
CAR NO.	BAX 728 227 973 110CT89		DATE SHIPPED		SEAL NO.		

I/we certify that the items listed herein have been inspected by me/us or under my/our supervision. I/we further certify that to the best of my/our knowledge these materials are as represented in the above description.

ROCKETDYNE INSPECT. STAMP OCT 11 99

GOVT. INSPECT. STAMP (when required)

REC'D BY: _____ DATE: _____
 Customer's Signature



AstroLite
Alloys Corporation

709 Via Alondra, Camarillo, CA 93010

Telephone: (805) 484-3521

Telex: 658120

Stainless and High Temperature Welding Wire, Rods and Spools

ROCKWELL INTL.
ROCKETDYNE DIV.
6633 CANOGA AVE.
CANOGA PARK, CA 91302

OUR ORDER: 31219

YOUR ORDER: R93PUA89291017

ATTENTION:

THIS IS TO CERTIFY THAT THE 1508/121 PKGS. LBS. OF INCO 625 RB0170-226P .062" X 36"
TO SPEC. ABOVE SHIPPED AGAINST YOUR ORDER NO. ABOVE
ON JANUARY 9, 1989 IS IN CONFORMANCE WITH SPECIFICATIONS AND HAS THE
FOLLOWING CHEMICAL AND PHYSICAL PROPERTIES:

C	.02	MICROSTRUCTURE
MM	.38	NO EVIDENCE OF DETRIMENTAL SURFACE CONDITIONS
SI	.10	ACCEPTABLE PER PARA. 4.3.3
P	.012	
S	.002	WELDABILITY:
CR	21.71	ACCEPTABLE PER REQ-170-226 REV. P
NI	64.02	PARA. 4.3.5.1
CO		
MO	9.01	MANUFACTURER (ALTER SIZE/CONFIGURATION):
CE & TA	3.68	ASTROLITE ALLOYS
AL	.17	
E		VISUAL INSPECTION: PASSED PER PARA. 4.3.2
FE	.72	DETAILED INSPECTION: PASSED PER PARA. 4.3.2.2
CU	.01	
ZR		PENETRANT INSPECTION:
SN		PASSED PER RAO 115-116, TYPE IIA
W		(REV K, AMM 51)
TA		
V		
LA		
C ₁		
H ₁		
TOR	.50	
TI	.16	
HEAT NUMBER:	2653-8-4201	

Physical Properties:

Tensile Strength:

Yield:

Elongation:

ASTROLITE ALLOYS CORP.

MILL SOURCE: HAYNES

THIS MATERIAL CONFORMS TO ALL REQUIREMENTS OF RB0170-226 REV. P.

THIS MATERIAL HAS BEEN 100% ALLOY TYPE TESTED BY ACRONAG.

SWORN TO AND SUBSCRIBED BEFORE ME THIS <u>9</u> DAY OF <u>JANUARY</u> 19 <u>89</u> _____ NOTARY PUBLIC	CERTIFICATE OF TEST	THE TEST RESULTS SHOWN IN THIS REPORT ARE CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF. ASTROLITE ALLOYS CORP. CERTIFIED BY <u>[Signature]</u> QUALITY ASSURANCE REPRESENTATIVE
---	--------------------------------	---



Rockwell Division
Rockwell International

**MATERIALS & PROCESSES
TEST REPORT**

TEST DESCRIPTION MATERIAL EVALUATION			
LAB NUMBER 904580	SUBMITTED BY LORRAINE	PART NO. & QTY INCO 625, 0.62" x 36"	
DATE SENT TO LAB 1-27-89	DATE REC'D IN LAB 1-27-89	MATERIAL & SPEC RBO 170-226	
CONT./QTY	ACCT. 95125	SOURCE HARSCO CORP.	QTY. TO LAB 6.20 #
RELEASE	ACTUAL LAB HRS.	P.N. & QTY. ITEM 9018027	WEIGHT OR LENGTH 0.55-8.420
		P.O. NUMBER 89291017	

WC00591

LABORATORY TESTS AND RESULTS

CHEMICAL ANALYSIS

ELEMENT	REQ'D	OBTAINED							

TENSILE TESTS

SAMPLE NO.	YIELD STRENGTH KSI	ULTIMATE LOAD LBS.	ULTIMATE STRENGTH KSI	ELONGATION %	REDUCTION OF AREA %	HARDNESS	REMARKS
REQ'D							
OBT'D.							

OTHER TESTS

QUALITY ENG. LAB

Material Conforms to
Specification requirements.

Date 3-7-89

20 ea. Parts Destroyed

BAL Parts Returned

By Greg Baker

REPORTED BY:

SUPERVISOR'S RECOMMENDATION

	SIGNED	DATE
	UNIT	

INSPECTION DISPOSITION

	DATE

SSD

STANDARD STEEL SALES ORDER 5727389 01 SHIP CTR \$1700 SHIPPING LIST 20732 CUSTOMER ORDER # P9904144 1T
 BURNHAM, PA. 17009 FREIGHT CODE 04 FOB PPD DESTINATION

RING DWG: HTCT 303701 MTM REV: A H MAJOR TOOL & MACHINE
 MACHINE TO DWG SIZES I
 SPECIFICATION: ASTM A336-98 GRADE F1, QUENCH AND TEMPER. CHARPY V-NOTCH IMPACTS TESTED AT P 1458 E 19TH ST
 ROOM TEMPERATURE FOR INFORMATION ONLY. ULTRASONIC INSPECTION PER HZLM 603041, TABLE 2B T
 MECHANICAL TESTS TO BE LOCATED ON ONE END FACE AT THE 1/4T PLANE. O INDIANAPOLIS IN 46218

----- THIS SHIPMENT -----
 PIECES ON TOT NET NO. PALLET TOT SHIP LOADED 100599 WANT 101599
 ORDER PCS WT(LBS) PALLETS WT EACH WT(LBS) PROM 101599
 3 3 8250 8250 PSAI N
 PIECES SHIP B/L ---FREIGHT--- \$ FOR \$ FOR
 PREV SHPD DATE NO. \$/CWT ON/LBS STOPOFF PERMIT

TRUCK ORIGINATING-CARRIER DELIVERING-CARRIER SHIP: BEST WAY
 OR CAR CAR-NUMBER CODE DESCRIPTION CODE DESCRIPTION
 T

INS SSD
 S/L 1 CTR
 ENV I TAG
 LOC SELAS AREA
 SIZE 114 X 7

SSD

***-HEAT---SERIAL---WGT---CUST
 LV4309 911340 2750
 LV4309 911341 2750
 LV4309 911342 2750

***-HEAT---SERIAL---WGT---CUST

***-HEAT---SERIAL---WGT---CUST

ARCOS ALLOYS
A Division of Hoskins Mfg.
Mt. Carmel, PA 17851



DATE 01/10/00

CERTIFICATION OF TESTS

SOLD TO: MAJOR TOOL & MACHINE
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46216

SHIP TO: SAME

ARCOS S.O.		CUSTOMER ORDER NO.		CONSIGNEE ORDER NO.		DATE SHIPPED	
69824		P0000110		N/A		1/10/00	
ITEM	SIZE	GRADE		LOT NO./ALLOY NO.		QUANTITY	
1	3/32 X 36"	ARCOS 625		CT7519		20#	

SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3
 ASME SFA 5.14 ASME SECTION II, PART C, 1998
 EDITION, AND ALL PARAS AND ADDENDA THRU 1999.

CHEMICAL ANALYSIS:		WIRE							
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.0	0.01	0.01	0.002	0.00	22.4	63.9	8.8		3.68
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.35	0.28	0.04	0.05	0.4		<.50		

ADDITIONAL TEST RESULTS	TENSILE	As Welded	Heat Treated
Ferrite - NB2433.1-1: _____	Yield	_____	_____
Magna Gage: _____	Tensile	_____	_____
X-Ray: _____	Elongation	_____	_____
Bends: _____	Red. of Area	_____	_____
Hardness: _____			

OTHER INFORMATION:

LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos Alloys or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

1-24-00

Eileen Zerby
 Q.A. CLERK
 QUALITY ASSURANCE DEPARTMENT

ARCOS INDUSTRIES, LLC
ONE ARCOS DRIVE
Mt. Carmel, PA 17851



DATE 01/13/04

CERTIFICATION OF TESTS

SOLD TO: MAJOR TOOL & MACHINE, INC.
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46218

SHIP TO: SAME

ARCOS S.O.	CUSTOMER ORDER NO.	CONSIGNEE ORDER NO.	DATE SHIPPED
79698	P04-00127	N/A	1/13/04
ITEM	SIZE	GRADE	LOT NO./ALLOY NO.
1	3/32 X 36"	ARCOS 625	CB7998
QUANTITY			
20#			

SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3
 ASME SFA 5.14 ASME SECTION II, PART C, 2001 EDITION,
 AND ALL PARAS AND ADDENDA THRU 2003.

CHEMICAL ANALYSIS:									
WIRE									
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.04	0.03	0.08	0.004	0.01	21.9	64.9	8.7		3.64
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.21	0.16	0.02	0.12	0.2		<.50		

ADDITIONAL TEST RESULTS

Ferrite - NB2433.1-1: _____
 Magna Gage: _____
 X-Ray: _____
 Bends: _____
 Hardness: _____

TENSILE As Welded Heat Treated

Yield _____
 Tensile _____
 Elongation _____
 Red. of Area _____

OTHER INFORMATION:

LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

1/13/2004

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

1/29/04

Q.A. MANAGER
QUALITY ASSURANCE DEPARTMENT

ARCOS ALLOYS
 A Division of Hoskins Mfg.
 Mt. Carmel, PA 17851



DATE 01/10/00

CERTIFICATION OF TESTS

SOLD TO: MAJOR TOOL & MACHINE
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46216

SHIP TO: SAME

ARCOS S.O.		CUSTOMER ORDER NO.		CONSIGNEE ORDER NO.		DATE SHIPPED			
69824		P0000110		N/A		1/10/00			
ITEM	SIZE	GRADE		LOT NO./ALLOY NO.		QUANTITY			
1	3/32 X 36"	ARCOS 625		CT7519		20#			
SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3 ASME SFA 5.14 ASME SECTION II, PART C, 1998 EDITION, AND ALL PARAS AND ADDENDA THRU 1999.									
CHEMICAL ANALYSIS: WIRE									
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.0	0.01	0.01	0.002	0.00	22.4	63.9	8.8		3.68
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.35	0.28	0.04	0.05	0.4		<.50		

ADDITIONAL TEST RESULTS	Ferrite - NB2433.1-1: _____	TENSILE As Welded	Heat Treated
	Magna Gage: _____	Yield _____	_____
	X-Ray: _____	Tensile _____	_____
	Bends: _____	Elongation _____	_____
	Hardness: _____	Red. of Area _____	_____

OTHER INFORMATION: LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

JAN 14 2000
 39771
 BP
 1-18-00

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos Alloys or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

Eileen Zerby Q.A. CLERK
 QUALITY ASSURANCE DEPARTMENT

ARCOS ALLOYS
 A Division of Hoskins Mfg.
 Mt. Carmel, PA 17851



DATE 01/10/00

CERTIFICATION OF TESTS

SOLD TO: MAJOR TOOL & MACHINE
 1458 EAST 19TH STREET
 INDIANAPOLIS, IN 46216

SHIP TO: SAME

ARCOS S.O.		CUSTOMER ORDER NO.		CONSIGNEE ORDER NO.		DATE SHIPPED	
69824		P0000110		N/A		1/10/00	
ITEM	SIZE	GRADE		LOT NO./ALLOY NO.		QUANTITY	
1	3/32 X 36"	ARCOS 625		CT7519		20#	
SPECIFICATION: AWS A5.14/A5.14M-97. CLASS ERNiCrMo-3 ASME SFA 5.14 ASME SECTION II, PART C, 1998 EDITION, AND ALL PARAS AND ADDENDA THRU 1999.							

CHEMICAL ANALYSIS:		WIRE							
C	Mn	Si	S	P	Cr	Ni	Mo	Cb	Cb + Ta
0.0	0.01	0.01	0.002	0.00	22.4	63.9	8.8		3.68
Ta	Ti	Al	Co	Cu	Fe	V	Total Others		
	0.35	0.28	0.04	0.05	0.4		<.50		

ADDITIONAL TEST RESULTS	TENSILE	
	As Welded	Heat Treated
Ferrite - NB2433.1-1: _____	Yield _____	_____
Magna Gage: _____	Tensile _____	_____
X-Ray: _____	Elongation _____	_____
Bends: _____	Red. of Area _____	_____
Hardness: _____		

OTHER INFORMATION: LOT CLASSIFICATION - S1
 INTENSITY OF TESTING - Schedule F

JAN 14 2000
 39771
 BP
 1-18-00

THIS MATERIAL IS FREE FROM MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

We hereby affirm that the reported results on this certification are correct and accurate. All test and results and operations performed by Arcos Alloys or its subcontractors are in compliance with the applicable material/customer specification.

ARCOS

Eileen Zerby Q.A. CLERK
 QUALITY ASSURANCE DEPARTMENT

Quality Assurance Documentation for Part ID: SE121-001P - Item: 120

Workorder: 64880/1-0 Sub:40 Op:10

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Verify Panel / Rest Stop Position Panel Sub-Set 2-5-4 (0 - .09" Gap)		MFG			.090 GAP OR LESS	791			A
(30)								02-20-0			
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			SHIELDING 40 CFH AN D PURGE 20 CFH TYP E ARGON GAS	791			A
(50)								02-20-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO FILLE R HT # CB7996	791			A
(60)								02-20-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S. S. WOOL INSERT	791			A
(70)								02-20-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPTABLE PER MT WELDER QUALIFICATI N SYSTEM	791			A
(80)								02-20-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 AMPS ALL PARAM. PE R WPS	791			A
(90)								02-20-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 121

Workorder: 64880/1-0 Sub:40 Op:40

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Verify Panel Joint Alignment Weld Seam # 1-2 (.02" Max)		CWI		J-1149	ACCEPT .005	712			A
(10)								02-20-0			
*		Verify Panel Joint Alignment Weld Seam # 3-4 (.02" Max)		MFG		J-1149	ACCEPT .005	712			A
(20)								02-20-0			
*		Verify Panel / Rest Stop Position Panel Sub-Set 1-3 (0 - .09" Gap)		MFG		J-1149	MAX- GAP .060	712			A
(30)								02-20-0			
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PURG E 20 SHIELDING 40)	712			A
(50)								02-20-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT .093 DIA. H EAT#CB7996	712			A
(60)								02-20-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES SS MATER IAL W/ SS WOOL	712			A
(70)								02-20-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDER # 709	712			A
(80)								02-20-0			



INSPECTION DATA CHECKLIST

*(90)	CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390	712	02-20-0		A
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Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

122	40	50	Map(s): SE121-001P-1MTM - mc096356.tif
123	40	50	Map(s): SE121-001P-1MTM - mc096353.tif
124	40	50	Map(s): SE121-001P-1MTM - mc096355.tif
125	40	50	Map(s): SE121-001P-1MTM - mc096354.tif
126	40	50	Map(s): SE121-001P-1MTM - mc096357.tif
127	40	50	Inspection Data Checklist: 2 steps
128	40	70	Inspection Data Checklist: 9 steps
129	40	90	Inspection Data Checklist: 5 steps
130	40	90	Nondestructive Visual Test Certification #8065 - MTM WELD INSPECTION FORM
131	40	110	Inspection Data Checklist: 5 steps
132	40	110	Nondestructive Visual Test Certification #8067 - MTM WELD INSPECTION FORM
133	40	130	Inspection Data Checklist: 5 steps
134	40	130	Nondestructive Visual Test Certification #8068 - MTM WELD INSPECTION FORM
135	40	140	Inspection Data Checklist: 2 steps
136	40	150	Inspection Data Checklist: 5 steps
137	40	150	Nondestructive Visual Test Certification #8071 - MTM WELD INSPECTION FORM
138	40	170	Inspection Data Checklist: 5 steps
139	40	170	Nondestructive Visual Test Certification #8077 - MTM WELD INSPECTION FORM
140	40	180	Inspection Data Checklist: 2 steps
141	40	190	Inspection Data Checklist: 5 steps
142	40	200	Map(s): SE121-001P-1MTM - mc096377.tif
143	40	200	Map(s): SE121-001P-1MTM - mc096381.tif
144	40	200	Map(s): SE121-001P-1MTM - mc096378.tif
145	40	200	Map(s): SE121-001P-1MTM - mc096379.tif
146	40	200	Map(s): SE121-001P-1MTM - mc096380.tif
147	40	200	Inspection Data Checklist: 2 steps
148	40	220	Test Certification: RADIOGRAPHIC CERTIFICATE - mc096763.tif
149	40	220	Map(s): SE121-001P-1MTM - Same as Item #148
150	40	230	Inspection Data Checklist: 5 steps
151	40	240	Inspection Data Checklist: 2 steps
152	40	250	Inspection Data Checklist: 5 steps
153	40	250	Nondestructive Visual Test Certification #8165 - MTM WELD INSPECTION FORM
154	40	260	Inspection Data Checklist: 2 steps
155	40	265	Inspection Data Checklist: 5 steps
156	40	265	Nondestructive Visual Test Certification #8164 - MTM WELD INSPECTION FORM
157	40	270	Inspection Data Checklist: 5 steps
158	40	270	Nondestructive Visual Test Certification #8176 - MTM WELD INSPECTION FORM
159	40	280	Inspection Data Checklist: 4 steps
160	40	330	Furnace charts: FURNACE CHART - MC097536.TIF
161	40	350	Test Certification: VACUUM TEST REPORT - mc097267.tif

SE121-001P-2 PANEL 1 - DIE FORMED PANEL

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
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64860 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #2 Gage/Std S/N(s):4470 / J-770-NDT / J-1165 Date of inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.011	0.384	LESS THAN 1.01	N/A	JS	44	0.030	N/A	LESS THAN 1.01	N/A	JS
2	0.021	0.385	LESS THAN 1.01	N/A		45	0.028	N/A	LESS THAN 1.01	N/A	
3	0.027	0.383	LESS THAN 1.01	N/A		46	0.023	N/A	LESS THAN 1.01	N/A	
4	0.035	0.383	LESS THAN 1.01	N/A		47	0.065	N/A	LESS THAN 1.01	N/A	
5	0.046	0.382	LESS THAN 1.01	N/A		48	0.054	N/A	LESS THAN 1.01	N/A	
6	0.054	0.382	LESS THAN 1.01	N/A		49	0.126	N/A	LESS THAN 1.01	N/A	
7	0.060	0.381	LESS THAN 1.01	N/A		50	0.081	N/A	LESS THAN 1.01	N/A	
8	0.064	0.383	LESS THAN 1.01	N/A		51	0.106	N/A	LESS THAN 1.01	N/A	
9	0.070	0.383	LESS THAN 1.01	N/A		52	0.054	N/A	LESS THAN 1.01	N/A	
10	0.077	0.382	LESS THAN 1.01	N/A		53	0.044	N/A	LESS THAN 1.01	N/A	
11	0.075	0.382	LESS THAN 1.01	N/A		54	0.032	N/A	LESS THAN 1.01	N/A	
12	0.088	0.382	LESS THAN 1.01	N/A		55	0.010	N/A	LESS THAN 1.01	N/A	
13	0.058	0.382	LESS THAN 1.01	N/A		56	0.017	N/A	LESS THAN 1.01	N/A	JS
14	0.048	0.383	LESS THAN 1.01	N/A		57					
15	0.034	0.383	LESS THAN 1.01	N/A		58					
16	0.022	0.382	LESS THAN 1.01	N/A		59					
17	0.011	0.381	LESS THAN 1.01	N/A		60					
18	0.005	0.381	LESS THAN 1.01	N/A		61					
19	-0.001	0.381	LESS THAN 1.01	N/A		62					
20	-0.004	0.383	LESS THAN 1.01	N/A		63					
21	-0.004	0.382	LESS THAN 1.01	N/A		64					
22	-0.007	0.381	LESS THAN 1.01	N/A		65					
23	-0.006	0.382	LESS THAN 1.01	N/A		66					
24	-0.004	0.383	LESS THAN 1.01	N/A		67					
25	-0.003	0.381	LESS THAN 1.01	N/A		68					
26	0.031	N/A	LESS THAN 1.01	N/A		69					
27	0.033	N/A	LESS THAN 1.01	N/A		70					
28	0.031	N/A	LESS THAN 1.01	N/A		71					
29	0.018	N/A	LESS THAN 1.01	N/A		72					
30	0.007	N/A	LESS THAN 1.01	N/A		73					
31	0.015	N/A	LESS THAN 1.01	N/A		74					
32	0.027	N/A	LESS THAN 1.01	N/A		75					
33	0.050	N/A	LESS THAN 1.01	N/A		76					
34	0.067	N/A	LESS THAN 1.01	N/A		77					
35	0.066	N/A	LESS THAN 1.01	N/A		78					
36	0.062	N/A	LESS THAN 1.01	N/A		79					
37	0.058	N/A	LESS THAN 1.01	N/A		80					
38	0.054	N/A	LESS THAN 1.01	N/A		81					
39	0.048	N/A	LESS THAN 1.01	N/A		82					
40	0.043	N/A	LESS THAN 1.01	N/A		83					
41	0.040	N/A	LESS THAN 1.01	N/A		84					
42	0.038	N/A	LESS THAN 1.01	N/A	JS	85					
43	0.034	N/A	LESS THAN 1.01	N/A		86					

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) (After structural welding) After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #5 Gage/Std S/N(s):4470 / J-770-NDT / J-1165 Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.045	N/A	LESS THAN 1.01	N/A		44	0.004	N/A	LESS THAN 1.01	N/A	
2	0.032	N/A	LESS THAN 1.01	N/A		45	0.002	N/A	LESS THAN 1.01	N/A	
3	0.037	N/A	LESS THAN 1.01	N/A		46	0.073	N/A	LESS THAN 1.01	N/A	
4	0.046	N/A	LESS THAN 1.01	N/A		47	0.069	N/A	LESS THAN 1.01	N/A	
5	0.044	N/A	LESS THAN 1.01	N/A		48	0.040	N/A	LESS THAN 1.01	N/A	
6	0.031	N/A	LESS THAN 1.01	N/A		49	0.014	N/A	LESS THAN 1.01	N/A	
7	0.014	N/A	LESS THAN 1.01	N/A		50	-0.045	N/A	LESS THAN 1.01	N/A	
8	-0.002	N/A	LESS THAN 1.01	N/A		51	0.014	N/A	LESS THAN 1.01	N/A	
9	-0.011	N/A	LESS THAN 1.01	N/A		52	0.035	N/A	LESS THAN 1.01	N/A	
10	-0.018	N/A	LESS THAN 1.01	N/A		53	0.063	N/A	LESS THAN 1.01	N/A	
11	-0.020	N/A	LESS THAN 1.01	N/A		54	0.042	N/A	LESS THAN 1.01	N/A	
12	-0.021	N/A	LESS THAN 1.01	N/A		55	0.049	N/A	LESS THAN 1.01	N/A	
13	-0.023	N/A	LESS THAN 1.01	N/A		56	-0.015	N/A	LESS THAN 1.01	N/A	
14	-0.020	N/A	LESS THAN 1.01	N/A		57	0.062	N/A	LESS THAN 1.01	N/A	
15	-0.017	N/A	LESS THAN 1.01	N/A		58	0.062	N/A	LESS THAN 1.01	N/A	
16	-0.009	N/A	LESS THAN 1.01	N/A		59	0.047	N/A	LESS THAN 1.01	N/A	
17	0.001	N/A	LESS THAN 1.01	N/A		60	0.047	N/A	LESS THAN 1.01	N/A	
18	0.017	N/A	LESS THAN 1.01	N/A		61	0.058	N/A	LESS THAN 1.01	N/A	
19	0.029	N/A	LESS THAN 1.01	N/A		62	0.065	N/A	LESS THAN 1.01	N/A	
20	0.043	N/A	LESS THAN 1.01	N/A		63					
21	0.063	N/A	LESS THAN 1.01	N/A		64					
22	-0.001	N/A	LESS THAN 1.01	N/A		65					
23	-0.010	N/A	LESS THAN 1.01	N/A		66					
24	-0.017	N/A	LESS THAN 1.01	N/A		67					
25	-0.021	N/A	LESS THAN 1.01	N/A		68					
26	-0.023	N/A	LESS THAN 1.01	N/A		69					
27	-0.025	N/A	LESS THAN 1.01	N/A		70					
28	-0.019	N/A	LESS THAN 1.01	N/A		71					
29	-0.014	N/A	LESS THAN 1.01	N/A		72					
30	-0.012	N/A	LESS THAN 1.01	N/A		73					
31	-0.007	N/A	LESS THAN 1.01	N/A		74					
32	0.004	N/A	LESS THAN 1.01	N/A		75					
33	0.013	N/A	LESS THAN 1.01	N/A		76					
34	0.019	N/A	LESS THAN 1.01	N/A		77					
35	0.029	N/A	LESS THAN 1.01	N/A		78					
36	0.077	N/A	LESS THAN 1.01	N/A		79					
37	0.060	N/A	LESS THAN 1.01	N/A		80					
38	0.057	N/A	LESS THAN 1.01	N/A		81					
39	0.060	N/A	LESS THAN 1.01	N/A		82					
40	0.034	N/A	LESS THAN 1.01	N/A		83					
41	0.010	N/A	LESS THAN 1.01	N/A		84					
42	0.062	N/A	LESS THAN 1.01	N/A		85					
43	0.020	N/A	LESS THAN 1.01	N/A		86					

34550 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#/2) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #4 Gage/Std S/N(s):4470 / J-770-NDT / J-1165 Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	-0.007	N/A	LESS THAN 1.01	N/A		44					
2	0.002	N/A	LESS THAN 1.01	N/A		45					
3	0.013	N/A	LESS THAN 1.01	N/A		46					
4	0.021	N/A	LESS THAN 1.01	N/A		47					
5	0.020	N/A	LESS THAN 1.01	N/A		48					
6	0.015	N/A	LESS THAN 1.01	N/A		49					
7	0.014	N/A	LESS THAN 1.01	N/A		50					
8	0.012	N/A	LESS THAN 1.01	N/A		51					
9	0.009	N/A	LESS THAN 1.01	N/A		52					
10	0.005	N/A	LESS THAN 1.01	N/A		53					
11	0.003	N/A	LESS THAN 1.01	N/A		54					
12	0.000	N/A	LESS THAN 1.01	N/A		55					
13	0.003	N/A	LESS THAN 1.01	N/A		56					
14	0.011	N/A	LESS THAN 1.01	N/A		57					
15	0.042	0.391	LESS THAN 1.01	N/A		58					
16	0.043	0.391	LESS THAN 1.01	N/A		59					
17	0.044	0.392	LESS THAN 1.01	N/A		60					
18	0.046	0.389	LESS THAN 1.01	N/A		61					
19	0.044	0.391	LESS THAN 1.01	N/A		62					
20	0.045	0.390	LESS THAN 1.01	N/A		63					
21	0.045	0.391	LESS THAN 1.01	N/A		64					
22	0.045	0.391	LESS THAN 1.01	N/A		65					
23	0.046	0.391	LESS THAN 1.01	N/A		66					
24	0.046	0.390	LESS THAN 1.01	N/A		67					
25	0.049	0.390	LESS THAN 1.01	N/A		68					
26	0.052	0.391	LESS THAN 1.01	N/A		69					
27	0.054	0.393	LESS THAN 1.01	N/A		70					
28	0.052	0.391	LESS THAN 1.01	N/A		71					
29	0.051	0.391	LESS THAN 1.01	N/A		72					
30	0.052	0.392	LESS THAN 1.01	N/A		73					
31	0.017	N/A	LESS THAN 1.01	N/A		74					
32	0.046	N/A	LESS THAN 1.01	N/A		75					
33	0.052	N/A	LESS THAN 1.01	N/A		76					
34	0.038	N/A	LESS THAN 1.01	N/A		77					
35	0.043	N/A	LESS THAN 1.01	N/A		78					
36	0.028	N/A	LESS THAN 1.01	N/A		79					
37	0.020	N/A	LESS THAN 1.01	N/A		80					
38	0.016	N/A	LESS THAN 1.01	N/A		81					
39						82					
40						83					
41						84					
42						85					
43						86					

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) (%) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3 Gage/Std S/N(s): 4470 / J-770-NDT / J-1185 Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.072	0.383	LESS THAN 1.01	N/A	BT	44	-0.025	N/A	LESS THAN 1.01	N/A	BT
2	0.074	0.383	LESS THAN 1.01	N/A		45	-0.022	N/A	LESS THAN 1.01	N/A	
3	0.074	0.383	LESS THAN 1.01	N/A		46	-0.016	N/A	LESS THAN 1.01	N/A	
4	0.075	0.382	LESS THAN 1.01	N/A		47	-0.009	N/A	LESS THAN 1.01	N/A	
5	0.075	0.382	LESS THAN 1.01	N/A		48	-0.001	N/A	LESS THAN 1.01	N/A	
6	0.079	0.383	LESS THAN 1.01	N/A		49	0.010	N/A	LESS THAN 1.01	N/A	
7	0.079	0.382	LESS THAN 1.01	N/A		50	0.026	N/A	LESS THAN 1.01	N/A	
8	0.078	0.382	LESS THAN 1.01	N/A		51	0.072	N/A	LESS THAN 1.01	N/A	
9	0.075	0.383	LESS THAN 1.01	N/A		52	0.042	N/A	LESS THAN 1.01	N/A	
10	0.074	0.382	LESS THAN 1.01	N/A		53	0.041	N/A	LESS THAN 1.01	N/A	
11	0.071	0.381	LESS THAN 1.01	N/A		54	0.035	N/A	LESS THAN 1.01	N/A	
12	0.069	0.381	LESS THAN 1.01	N/A		55	0.027	N/A	LESS THAN 1.01	N/A	
13	0.066	0.381	LESS THAN 1.01	N/A		56	0.072	N/A	LESS THAN 1.01	N/A	
14	0.062	0.381	LESS THAN 1.01	N/A		57	0.019	N/A	LESS THAN 1.01	N/A	
15	0.060	0.382	LESS THAN 1.01	N/A		58	0.057	N/A	LESS THAN 1.01	N/A	
16	0.057	0.380	LESS THAN 1.01	N/A		59	0.086	N/A	LESS THAN 1.01	N/A	
17	0.052	0.380	LESS THAN 1.01	N/A		60	0.076	N/A	LESS THAN 1.01	N/A	
18	0.020	N/A	LESS THAN 1.01	N/A		61	0.083	N/A	LESS THAN 1.01	N/A	
19	0.012	N/A	LESS THAN 1.01	N/A		62	0.091	N/A	LESS THAN 1.01	N/A	
20	0.000	N/A	LESS THAN 1.01	N/A		63	0.079	N/A	LESS THAN 1.01	N/A	
21	-0.012	N/A	LESS THAN 1.01	N/A		64	0.007	N/A	LESS THAN 1.01	N/A	
22	-0.022	N/A	LESS THAN 1.01	N/A		65	0.089	N/A	LESS THAN 1.01	N/A	
23	-0.027	N/A	LESS THAN 1.01	N/A		66	0.082	N/A	LESS THAN 1.01	N/A	
24	-0.027	N/A	LESS THAN 1.01	N/A		67	0.064	N/A	LESS THAN 1.01	N/A	
25	-0.028	N/A	LESS THAN 1.01	N/A		68	0.041	N/A	LESS THAN 1.01	N/A	
26	-0.027	N/A	LESS THAN 1.01	N/A		69	0.092	N/A	LESS THAN 1.01	N/A	
27	-0.024	N/A	LESS THAN 1.01	N/A		70	0.070	N/A	LESS THAN 1.01	N/A	
28	-0.021	N/A	LESS THAN 1.01	N/A		71	0.046	N/A	LESS THAN 1.01	N/A	
29	-0.020	N/A	LESS THAN 1.01	N/A		72	-0.012	N/A	LESS THAN 1.01	N/A	
30	-0.016	N/A	LESS THAN 1.01	N/A		73	0.079	N/A	LESS THAN 1.01	N/A	
31	-0.013	N/A	LESS THAN 1.01	N/A		74	0.059	N/A	LESS THAN 1.01	N/A	
32	-0.010	N/A	LESS THAN 1.01	N/A		75	0.009	N/A	LESS THAN 1.01	N/A	
33	-0.011	N/A	LESS THAN 1.01	N/A		76	0.012	N/A	LESS THAN 1.01	N/A	
34	-0.010	N/A	LESS THAN 1.01	N/A		77	0.057	N/A	LESS THAN 1.01	N/A	
35	-0.006	N/A	LESS THAN 1.01	N/A		78	0.057	N/A	LESS THAN 1.01	N/A	
36	-0.005	N/A	LESS THAN 1.01	N/A		79	0.043	N/A	LESS THAN 1.01	N/A	
37	-0.008	N/A	LESS THAN 1.01	N/A		80	-0.021	N/A	LESS THAN 1.01	N/A	
38	-0.008	N/A	LESS THAN 1.01	N/A		81	0.003	N/A	LESS THAN 1.01	N/A	
39	-0.009	N/A	LESS THAN 1.01	N/A		82	-0.013	N/A	LESS THAN 1.01	N/A	
40	-0.016	N/A	LESS THAN 1.01	N/A		83	0.015	N/A	LESS THAN 1.01	N/A	
41	-0.020	N/A	LESS THAN 1.01	N/A		84	0.055	N/A	LESS THAN 1.01	N/A	
42	-0.022	N/A	LESS THAN 1.01	N/A	BT	85	0.050	N/A	LESS THAN 1.01	N/A	BT
43	-0.023	N/A	LESS THAN 1.01	N/A	BT	86	-0.018	N/A	LESS THAN 1.01	N/A	BT

64050 PPPL NCSX PVS INSPECTION RECORD


Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3

Gage/Std S/N(s): 4470 / J-770-NDT / J-1165

Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	
87	0.170	N/A	LESS THAN 1.01	N/A		126						
88	0.045	N/A	LESS THAN 1.01	N/A		127						
89	-0.007	N/A	LESS THAN 1.01	N/A		128						
90	0.013	N/A	LESS THAN 1.01	N/A		129						
91	0.014	N/A	LESS THAN 1.01	N/A		130						
92	0.018	N/A	LESS THAN 1.01	N/A		131						
93	0.027	N/A	LESS THAN 1.01	N/A		132						
94	0.021	N/A	LESS THAN 1.01	N/A		133						
95	0.008	N/A	LESS THAN 1.01	N/A		134						
96	0.024	N/A	LESS THAN 1.01	N/A		135						
97	0.024	N/A	LESS THAN 1.01	N/A		136						
98						137						
99						138						
100						139						
101					140							
102					141							
103					142							
104					143							
105					144							
106					145							
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121					160							
122					161							
123					162							
124					163							
125					164							

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 08

Inspection type: Formed Panel Interpass (#) N/A After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #1 Gage/Std S/N(s): 4470 / J-770-NDT / J-1185 Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.002	N/A	LESS THAN 1.01	N/A	[Signature]	44	0.070	0.385	LESS THAN 1.01	N/A	[Signature]
2	0.008	N/A	LESS THAN 1.01	N/A		45	0.065	0.385	LESS THAN 1.01	N/A	
3	-0.017	N/A	LESS THAN 1.01	N/A		46	0.054	0.385	LESS THAN 1.01	N/A	
4	-0.025	N/A	LESS THAN 1.01	N/A		47	0.043	0.387	LESS THAN 1.01	N/A	
5	-0.033	N/A	LESS THAN 1.01	N/A		48	0.032	0.386	LESS THAN 1.01	N/A	
6	-0.039	N/A	LESS THAN 1.01	N/A		49	0.023	0.385	LESS THAN 1.01	N/A	
7	-0.044	N/A	LESS THAN 1.01	N/A		50	0.014	0.385	LESS THAN 1.01	N/A	
8	-0.045	N/A	LESS THAN 1.01	N/A		51	0.006	0.385	LESS THAN 1.01	N/A	
9	-0.045	N/A	LESS THAN 1.01	N/A		52	0.000	0.383	LESS THAN 1.01	N/A	
10	-0.043	N/A	LESS THAN 1.01	N/A		53	-0.002	0.383	LESS THAN 1.01	N/A	
11	-0.039	N/A	LESS THAN 1.01	N/A	54	0.003	0.384	LESS THAN 1.01	N/A		
12	-0.032	N/A	LESS THAN 1.01	N/A	55	0.008	0.385	LESS THAN 1.01	N/A		
13	-0.020	N/A	LESS THAN 1.01	N/A	56	0.007	0.386	LESS THAN 1.01	N/A		
14	0.000	N/A	LESS THAN 1.01	N/A	57	0.003	0.385	LESS THAN 1.01	N/A		
15	0.019	N/A	LESS THAN 1.01	N/A	58	-0.002	0.385	LESS THAN 1.01	N/A		
16	0.028	N/A	LESS THAN 1.01	N/A	59	-0.011	0.384	LESS THAN 1.01	N/A		
17	0.030	N/A	LESS THAN 1.01	N/A	60	E	N/A	LESS THAN 1.01	N/A		
18	0.023	N/A	LESS THAN 1.01	N/A	61	E	N/A	LESS THAN 1.01	N/A		
19	0.013	N/A	LESS THAN 1.01	N/A	62	E	N/A	LESS THAN 1.01	N/A		
20	0.008	N/A	LESS THAN 1.01	N/A	63	E	N/A	LESS THAN 1.01	N/A		
21	0.007	N/A	LESS THAN 1.01	N/A	64	0.002	N/A	LESS THAN 1.01	N/A		
22	0.007	N/A	LESS THAN 1.01	N/A	65	0.082	N/A	LESS THAN 1.01	N/A		
23	0.004	N/A	LESS THAN 1.01	N/A	66	0.098	N/A	LESS THAN 1.01	N/A		
24	0.004	N/A	LESS THAN 1.01	N/A	67	0.089	N/A	LESS THAN 1.01	N/A		
25	0.004	N/A	LESS THAN 1.01	N/A	68	-0.008	N/A	LESS THAN 1.01	N/A		
26	0.006	N/A	LESS THAN 1.01	N/A	69	0.097	N/A	LESS THAN 1.01	N/A		
27	0.006	N/A	LESS THAN 1.01	N/A	70	0.079	N/A	LESS THAN 1.01	N/A		
28	0.000	N/A	LESS THAN 1.01	N/A	71	0.082	N/A	LESS THAN 1.01	N/A		
29	-0.011	N/A	LESS THAN 1.01	N/A	72	0.115	N/A	LESS THAN 1.01	N/A		
30	-0.021	N/A	LESS THAN 1.01	N/A	73	0.042	N/A	LESS THAN 1.01	N/A		
31	-0.027	N/A	LESS THAN 1.01	N/A	74	0.087	N/A	LESS THAN 1.01	N/A		
32	-0.020	N/A	LESS THAN 1.01	N/A	75	0.075	N/A	LESS THAN 1.01	N/A		
33	-0.010	N/A	LESS THAN 1.01	N/A	76	0.085	N/A	LESS THAN 1.01	N/A		
34	0.050	0.384	LESS THAN 1.01	N/A	77	0.069	N/A	LESS THAN 1.01	N/A		
35	0.049	0.384	LESS THAN 1.01	N/A	78	0.045	N/A	LESS THAN 1.01	N/A		
36	0.049	0.385	LESS THAN 1.01	N/A	79	0.008	N/A	LESS THAN 1.01	N/A		
37	0.053	0.386	LESS THAN 1.01	N/A	80	0.049	N/A	LESS THAN 1.01	N/A		
38	0.059	0.386	LESS THAN 1.01	N/A	81	0.093	N/A	LESS THAN 1.01	N/A		
39	0.067	0.384	LESS THAN 1.01	N/A	82	0.046	N/A	LESS THAN 1.01	N/A		
40	0.072	0.385	LESS THAN 1.01	N/A	83	0.055	N/A	LESS THAN 1.01	N/A		
41	0.074	0.385	LESS THAN 1.01	N/A	84	0.040	N/A	LESS THAN 1.01	N/A		
42	0.072	0.387	LESS THAN 1.01	N/A	85	0.028	N/A	LESS THAN 1.01	N/A		
43	0.071	0.385	LESS THAN 1.01	N/A	86	0.069	N/A	LESS THAN 1.01	N/A		

64880 PPPL NCSX PV8 INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #1

Gage/Std S/N(s):4470 / J-770-NDT / J-1165

Date of Inspection: 02/20/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	
87	0.023	N/A	LESS THAN 1.01	N/A		128						
88	0.010	N/A	LESS THAN 1.01	N/A		127						
89	0.044	N/A	LESS THAN 1.01	N/A		128						
90	0.023	N/A	LESS THAN 1.01	N/A		129						
91	0.005	N/A	LESS THAN 1.01	N/A		130						
92	0.011	N/A	LESS THAN 1.01	N/A		131						
93	0.019	N/A	LESS THAN 1.01	N/A		132						
94	0.019	N/A	LESS THAN 1.01	N/A		133						
95	0.010	N/A	LESS THAN 1.01	N/A		134						
96						135						
97					136							
98					137							
99					138							
100					139							
101					140							
102					141							
103					142							
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124					163							
125					164							

Quality Assurance Documentation for Part ID: SE121-001P - Item: 127

Workorder: 64880/1-0 Sub:40 Op:50

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,188") Upper Half Of Bilateral Tolerance (tack welded vessel)		QA		4470	P #1 -0.011/0.074, P #2 -0.007/+0.077, P #3 0.052/0.079, P#4 0.042/0.054 [N/ C:15123]	522			R
(10)								02-20-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-20-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 128

Workorder: 64880/1-0 Sub:40 Op:70

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Verify Panel Joint Alignment Weld Seam # 1-2 (.02" Max)		CWI		J-1149	.005	712			A
(10)								02-20-0			
*		Verify Panel Joint Alignment Weld Seam # 3-4 (.02" Max)		CWI		J-1149	.005	712			A
(20)								02-20-0			
*		Verify Panel / Rest Stop Position Panel #1 (0 - .09" Gap)		MFG		J-1149	MAX GAP .060	712			A
(30)								02-20-0			
*		Verify Panel / Rest Stop Position Panel #3 (0 - .09" Gap)		MFG		J-1149	MAX. GAP .060	712			A
(40)								02-20-0			
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			GAS SETTINGS (PUR GE 20 SHIELDING 40) ARGON	712			A
(50)								02-20-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 HEAT # CB7996 & .062 HEAT # AV812 8 625 INCONEL	712			A
(60)								02-20-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES MATERIAL W/ SS WOOL	712			A
(70)								02-20-0			

INSPECTION DATA CHECKLIST

* (80)	CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			WELDERS 709 # 683	712			A
* (90)	CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ACCEPT PER WPS 390	712	02-20-0		A

Quality Assurance Documentation for Part ID: SE121-001P - Item: 129

Workorder: 64880/1-0 Sub:40 Op:90

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791	581		A
(10)				CWI				02-21-0	02-21-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 625 INCO HT AV 8128 .093 625 INC O HT # CB7996	791	581		A
(20)				CWI				02-21-0	02-21-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791	581		A
(30)				CWI				02-21-0	02-21-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 /709 ACCEPTABLE TO MTM WELDER QU IFICATION CHECK	791	581		A
(40)				CWI				02-21-0	02-21-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 FILLER 75-175 .093 FILLER 100-2 10 ALL PARAM. PER WPS	791	581		A
(50)				CWI				02-21-0	02-21-0		



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 130

Date of Inspection:02/21/2004

Type of Material:625 INCONEL

NDT#:8065

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:90 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
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Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT S/N FL-2

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
INTERMEDIATE FILLER PASS WELDS

Notes:

Inspect intermediate-pass welds on joining 1-3 to 2-5-4, 100% each weld. No rejectable indications were noted at the time of inspection.

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

Inspector: 581-D.EDWARDS

Date: 02/21/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P - Item: 131

Workorder: 64880/1-0 Sub:40 Op:110

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791			A
(10)								02-21-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 625 INCO HT AV 8128 .093 625 INC O HT # CB7996	791			A
(20)								02-21-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791			A
(30)								02-21-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 /709 ACCEPTABLE TO MTM WELDER QU IFICATION CHECK	791			A
(40)								02-21-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 FILLER 75-175 .093 FILLER 100-2 10 ALL PARAM. PER WPS	791			A
(50)								02-21-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 132

Date of Inspection:02/21/2004

Type of Material:625 INCONEL

NDT#:8067

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:110 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
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Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT S/N FL-2

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
2ND INTERMEDIATE FILLER PASS WELDS

Notes:

Inspect 2nd intermediate-pass welds on joining 1-3 to 2-5-4, 100% each weld. No rejectable indications were noted at the time of inspection.

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

Inspector: 581-D.EDWARDS

Date: 02/21/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P - Item: 133

Workorder: 64880/1-0 Sub:40 Op:130

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791			A
(10)								02-21-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT # CB7996	791			A
(20)								02-21-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791			A
(30)								02-21-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 / 709 ACCEPTABL E TO MTM WELDER Q LIFICATION CHECK	791			A
(40)								02-23-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 ALL PARAM. PER WP S	791			A
(50)								02-21-0			



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Quality Assurance Documentation for Part ID: SE121-001P - Item: 134

Date of Inspection:02/21/2004

Type of Material:625 INCONEL

NDT#:8068

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:130 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 PARA 6.29.1
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Inspection Methods Used: Magnification Used: 8X MAGNIFICATION Light Source Used: FLASHLIGHT S/N FL-2

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
FINAL COVERPASS WELDS

Notes:

Inspect final coverpass welds on joining 1-3 to 2-5-4, 100% each weld. No rejectable indications were noted at the time of inspection.

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

Inspector: 581-D.EDWARDS

Date: 02/21/2004

Waylon D. Edwards

Quality Assurance Documentation for Part ID: SE121-001P - Item: 135

Workorder: 64880/1-0 Sub:40 Op:140

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,248") Profile Tolerance (+.188/-.060") (tack welded vessel)		QA		4470	P #1 +0.015/+0.085, P #2 +0.008/+0.067 , P #3 +0.022/+0.05 5, P #4 -0.018/+0.0 53	522			A
(10)								02-21-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-21-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 136

Workorder: 64880/1-0 Sub:40 Op:150

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791			A
(10)								02-23-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT # CB7996	791			A
(20)								02-23-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791			A
(30)								02-23-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 /ACCEPTABLE TO MTM WELDER QUALIF ICATION CHECK	791			A
(40)								02-23-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 ALL PARAM. PER WP S	791			A
(50)								02-23-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 137

Date of Inspection:02/23/2004

Type of Material:625 INCONEL

NDT#:8071

Stage of Inspection: <input checked="" type="checkbox"/> Incoming Inspection <input type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment [] Casting <input type="checkbox"/> Bar Stock [] Plate <input type="checkbox"/> Forging [] Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input checked="" type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:150 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECT. V, ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6, PARA. 6.29.1
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Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT AND FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces [] Joint Preps [] Root Pass Back Gouge [] Cover Pass [] Other

Notes:

Performed visual inspection to the backgrounding of Seam 1-2 and Seam 3-4. Background joints acceptable to customer drawing / specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 02/23/2004



Quality Assurance Documentation for Part ID: SE121-001P - Item: 138

Workorder: 64880/1-0 Sub:40 Op:170

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791			A
(10)								02-23-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT # CB7996	791			A
(20)								02-23-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791			A
(30)								02-23-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			709 / ACCEPTABLE TO MTM WELDER QUALI CATION CHECK	791			A
(40)								02-23-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 ALL PARAM. PER WP S	791			A
(50)								02-23-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 139

Date of Inspection:02/23/2004

Type of Material:625 INCONEL

NDT#:8077

Stage of Inspection: <input checked="" type="checkbox"/> Incoming Inspection <input type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment [] Casting <input type="checkbox"/> Bar Stock [] Plate <input type="checkbox"/> Forging [] Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input checked="" type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:170 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECT. V, ARTICLE 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6, PARA. 6.29.1
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Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT AND FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces [] Joint Preps [] Root Pass [] Back Gouge Cover Pass [] Other

Notes:

Performed visual inspection to the cover pass weld in Seam 1-2 and in Seam 3-4. Welds both acceptable to customer drawing / specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 02/23/2004



Quality Assurance Documentation for Part ID: SE121-001P - Item: 140

Workorder: 64880/1-0 Sub:40 Op:180

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		(g ,288") Profile Tolerance (+.188/-.100") (tack welded vessel)		QA		4470	P #1 -0.013/+0.060, P #2 -0.040/+0.021 , P #3 -0.006/+0.04 2, P #4 -0.16/+0.04 8	522			A
(10)								02-23-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-23-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 141

Workorder: 64880/1-0 Sub:40 Op:190

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING / 20 CFH PURGE	791			A
(10)								02-24-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT # CB7996	791			A
(20)								02-24-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. / S .S. WOOL INSERT	791			A
(30)								02-24-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 / ACCEPTABLE TO MTM WELDER QUALI CATION CHECK	791			A
(40)								02-24-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 FILLER 100-210 ALL PARAM. PER WP S	791			A
(50)								02-24-0			

64860 PPPL NC&X PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #4 Gage/Std S/N(s):4470 / J-1165 Date of Inspection: 02/23/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	
1	0.011	N/A	LESS THAN 1.01	N/A		44						
2	0.023	N/A	LESS THAN 1.01	N/A		45						
3	0.032	N/A	LESS THAN 1.01	N/A		46						
4	0.035	N/A	LESS THAN 1.01	N/A		47						
5	0.033	N/A	LESS THAN 1.01	N/A		48						
6	0.030	N/A	LESS THAN 1.01	N/A		49						
7	0.025	N/A	LESS THAN 1.01	N/A		50						
8	0.020	N/A	LESS THAN 1.01	N/A		51						
9	0.013	N/A	LESS THAN 1.01	N/A		52						
10	0.009	N/A	LESS THAN 1.01	N/A		53						
11	0.004	N/A	LESS THAN 1.01	N/A		54						
12	0.000	N/A	LESS THAN 1.01	N/A		55						
13	-0.002	N/A	LESS THAN 1.01	N/A		56						
14	0.005	N/A	LESS THAN 1.01	N/A		57						
15	0.024	N/A	LESS THAN 1.01	N/A		58						
16	0.012	N/A	LESS THAN 1.01	N/A		59						
17	0.004	N/A	LESS THAN 1.01	N/A		60						
18	0.002	N/A	LESS THAN 1.01	N/A		61						
19	0.002	N/A	LESS THAN 1.01	N/A		62						
20	0.008	N/A	LESS THAN 1.01	N/A		63						
21	0.016	N/A	LESS THAN 1.01	N/A		64						
22	0.027	N/A	LESS THAN 1.01	N/A		65						
23	0.036	N/A	LESS THAN 1.01	N/A		66						
24	0.045	N/A	LESS THAN 1.01	N/A		67						
25	0.055	N/A	LESS THAN 1.01	N/A		68						
26	0.062	N/A	LESS THAN 1.01	N/A		69						
27	0.064	N/A	LESS THAN 1.01	N/A		70						
28	0.066	N/A	LESS THAN 1.01	N/A		71						
29	0.070	N/A	LESS THAN 1.01	N/A		72						
30	0.079	N/A	LESS THAN 1.01	N/A		73						
31	0.033	N/A	LESS THAN 1.01	N/A		74						
32	0.044	N/A	LESS THAN 1.01	N/A		75						
33	0.050	N/A	LESS THAN 1.01	N/A		76						
34	0.017	N/A	LESS THAN 1.01	N/A		77						
35	0.046	N/A	LESS THAN 1.01	N/A		78						
36	0.017	N/A	LESS THAN 1.01	N/A		79						
37	0.001	N/A	LESS THAN 1.01	N/A		80						
38	0.011	N/A	LESS THAN 1.01	N/A	81							
39					82							
40					83							
41					84							
42					85							
43					86							

64880 PPPL NCSX PVVS INSPECTION RECORD					Inspection Drawing Number: SE121-001P-1MTM Rev: 0B						
Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final inspection			
Part # / Panel #: SE121-001P PANEL #1			Gage/Std S/N(s):4470 / J-1165				Date of Inspection: 02/23/04				
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.021	N/A	LESS THAN 1.01	N/A		44	0.060	N/A	LESS THAN 1.01	N/A	
2	0.010	N/A	LESS THAN 1.01	N/A		45	0.058	N/A	LESS THAN 1.01	N/A	
3	0.000	N/A	LESS THAN 1.01	N/A		46	0.052	N/A	LESS THAN 1.01	N/A	
4	-0.007	N/A	LESS THAN 1.01	N/A		47	0.045	N/A	LESS THAN 1.01	N/A	
5	-0.015	N/A	LESS THAN 1.01	N/A		48	0.038	N/A	LESS THAN 1.01	N/A	
6	-0.023	N/A	LESS THAN 1.01	N/A		49	0.034	N/A	LESS THAN 1.01	N/A	
7	-0.028	N/A	LESS THAN 1.01	N/A		50	0.027	N/A	LESS THAN 1.01	N/A	
8	-0.031	N/A	LESS THAN 1.01	N/A		51	0.022	N/A	LESS THAN 1.01	N/A	
9	-0.033	N/A	LESS THAN 1.01	N/A		52	0.019	N/A	LESS THAN 1.01	N/A	
10	-0.034	N/A	LESS THAN 1.01	N/A		53	0.019	N/A	LESS THAN 1.01	N/A	
11	-0.033	N/A	LESS THAN 1.01	N/A		54	0.022	N/A	LESS THAN 1.01	N/A	
12	-0.029	N/A	LESS THAN 1.01	N/A		55	0.030	N/A	LESS THAN 1.01	N/A	
13	-0.020	N/A	LESS THAN 1.01	N/A		56	0.035	N/A	LESS THAN 1.01	N/A	
14	-0.005	N/A	LESS THAN 1.01	N/A		57	0.037	N/A	LESS THAN 1.01	N/A	
15	0.013	N/A	LESS THAN 1.01	N/A		58	0.036	N/A	LESS THAN 1.01	N/A	
16	0.026	N/A	LESS THAN 1.01	N/A		59	0.035	N/A	LESS THAN 1.01	N/A	
17	0.029	N/A	LESS THAN 1.01	N/A		60	0.039	N/A	LESS THAN 1.01	N/A	
18	0.023	N/A	LESS THAN 1.01	N/A		61	0.069	N/A	LESS THAN 1.01	N/A	
19	0.014	N/A	LESS THAN 1.01	N/A		62	0.084	N/A	LESS THAN 1.01	N/A	
20	0.008	N/A	LESS THAN 1.01	N/A		63	0.054	N/A	LESS THAN 1.01	N/A	
21	0.007	N/A	LESS THAN 1.01	N/A		64	0.000	N/A	LESS THAN 1.01	N/A	
22	0.008	N/A	LESS THAN 1.01	N/A		65	0.074	N/A	LESS THAN 1.01	N/A	
23	0.006	N/A	LESS THAN 1.01	N/A		66	0.092	N/A	LESS THAN 1.01	N/A	
24	0.003	N/A	LESS THAN 1.01	N/A		67	0.080	N/A	LESS THAN 1.01	N/A	
25	0.004	N/A	LESS THAN 1.01	N/A		68	-0.007	N/A	LESS THAN 1.01	N/A	
26	0.007	N/A	LESS THAN 1.01	N/A		69	0.095	N/A	LESS THAN 1.01	N/A	
27	0.007	N/A	LESS THAN 1.01	N/A		70	0.078	N/A	LESS THAN 1.01	N/A	
28	0.003	N/A	LESS THAN 1.01	N/A		71	0.083	N/A	LESS THAN 1.01	N/A	
29	-0.006	N/A	LESS THAN 1.01	N/A		72	0.116	N/A	LESS THAN 1.01	N/A	
30	-0.019	N/A	LESS THAN 1.01	N/A		73	0.042	N/A	LESS THAN 1.01	N/A	
31	-0.026	N/A	LESS THAN 1.01	N/A		74	0.087	N/A	LESS THAN 1.01	N/A	
32	-0.023	N/A	LESS THAN 1.01	N/A		75	0.076	N/A	LESS THAN 1.01	N/A	
33	-0.012	N/A	LESS THAN 1.01	N/A		76	0.091	N/A	LESS THAN 1.01	N/A	
34	0.047	N/A	LESS THAN 1.01	N/A		77	0.060	N/A	LESS THAN 1.01	N/A	
35	0.044	N/A	LESS THAN 1.01	N/A		78	0.069	N/A	LESS THAN 1.01	N/A	
36	0.042	N/A	LESS THAN 1.01	N/A		79	0.035	N/A	LESS THAN 1.01	N/A	
37	0.041	N/A	LESS THAN 1.01	N/A		80	0.048	N/A	LESS THAN 1.01	N/A	
38	0.046	N/A	LESS THAN 1.01	N/A		81	0.092	N/A	LESS THAN 1.01	N/A	
39	0.056	N/A	LESS THAN 1.01	N/A		82	0.046	N/A	LESS THAN 1.01	N/A	
40	0.063	N/A	LESS THAN 1.01	N/A		83	0.050	N/A	LESS THAN 1.01	N/A	
41	0.067	N/A	LESS THAN 1.01	N/A		84	0.049	N/A	LESS THAN 1.01	N/A	
42	0.065	N/A	LESS THAN 1.01	N/A		85	0.025	N/A	LESS THAN 1.01	N/A	
43	0.062	N/A	LESS THAN 1.01	N/A		86	0.072	N/A	LESS THAN 1.01	N/A	

64000 PPPL NC&X PVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1NTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #1

Gage/Std S/N(s):4470 / J-1185

Date of Inspection: 02/23/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.028	N/A	LESS THAN 1.01	N/A		126					
88	0.013	N/A	LESS THAN 1.01	N/A		127					
89	0.053	N/A	LESS THAN 1.01	N/A		128					
90	0.027	N/A	LESS THAN 1.01	N/A		129					
91	0.009	N/A	LESS THAN 1.01	N/A		130					
92	0.006	N/A	LESS THAN 1.01	N/A		131					
93	0.034	N/A	LESS THAN 1.01	N/A		132					
94	0.053	N/A	LESS THAN 1.01	N/A		133					
95	0.053	N/A	LESS THAN 1.01	N/A		134					
96						135					
97					136						
98					137						
99					138						
100					139						
101					140						
102					141						
103					142						
104					143						
105					144						
106					145						
107					146						
108					147						
109					148						
110					149						
111					150						
112					151						
113					152						
114					153						
115					154						
116					155						
117					156						
118					157						
119					158						
120					159						
121					160						
122					161						
123					162						
124					163						
125					164						

64660 PPPL NCOX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3 Gage/Std S/N(s):4470 / J-1165 Date of Inspection: 02/23/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.039	N/A	LESS THAN 1.01	N/A		44	-0.030	N/A	LESS THAN 1.01	N/A	
2	0.029	N/A	LESS THAN 1.01	N/A		45	-0.027	N/A	LESS THAN 1.01	N/A	
3	0.024	N/A	LESS THAN 1.01	N/A		46	-0.020	N/A	LESS THAN 1.01	N/A	
4	0.026	N/A	LESS THAN 1.01	N/A		47	-0.011	N/A	LESS THAN 1.01	N/A	
5	0.034	N/A	LESS THAN 1.01	N/A		48	-0.005	N/A	LESS THAN 1.01	N/A	
6	0.044	N/A	LESS THAN 1.01	N/A		49	0.003	N/A	LESS THAN 1.01	N/A	
7	0.052	N/A	LESS THAN 1.01	N/A		50	0.019	N/A	LESS THAN 1.01	N/A	
8	0.061	N/A	LESS THAN 1.01	N/A		51	0.078	N/A	LESS THAN 1.01	N/A	
9	0.065	N/A	LESS THAN 1.01	N/A		52	0.078	N/A	LESS THAN 1.01	N/A	
10	0.069	N/A	LESS THAN 1.01	N/A		53	0.083	N/A	LESS THAN 1.01	N/A	
11	0.071	N/A	LESS THAN 1.01	N/A		54	0.043	N/A	LESS THAN 1.01	N/A	
12	0.069	N/A	LESS THAN 1.01	N/A		55	0.027	N/A	LESS THAN 1.01	N/A	
13	0.069	N/A	LESS THAN 1.01	N/A		56	0.085	N/A	LESS THAN 1.01	N/A	
14	0.070	N/A	LESS THAN 1.01	N/A		57	0.047	N/A	LESS THAN 1.01	N/A	
15	0.077	N/A	LESS THAN 1.01	N/A		58	0.076	N/A	LESS THAN 1.01	N/A	
16	0.082	N/A	LESS THAN 1.01	N/A		59	0.118	N/A	LESS THAN 1.01	N/A	
17	0.087	N/A	LESS THAN 1.01	N/A		60	0.096	N/A	LESS THAN 1.01	N/A	
18	0.042	N/A	LESS THAN 1.01	N/A		61	0.089	N/A	LESS THAN 1.01	N/A	
19	0.032	N/A	LESS THAN 1.01	N/A		62	0.094	N/A	LESS THAN 1.01	N/A	
20	0.020	N/A	LESS THAN 1.01	N/A		63	0.087	N/A	LESS THAN 1.01	N/A	
21	0.007	N/A	LESS THAN 1.01	N/A		64	0.029	N/A	LESS THAN 1.01	N/A	
22	-0.006	N/A	LESS THAN 1.01	N/A		65	0.010	N/A	LESS THAN 1.01	N/A	
23	-0.013	N/A	LESS THAN 1.01	N/A		66	0.112	N/A	LESS THAN 1.01	N/A	
24	-0.017	N/A	LESS THAN 1.01	N/A		67	0.092	N/A	LESS THAN 1.01	N/A	
25	-0.019	N/A	LESS THAN 1.01	N/A		68	0.060	N/A	LESS THAN 1.01	N/A	
26	-0.019	N/A	LESS THAN 1.01	N/A		69	0.101	N/A	LESS THAN 1.01	N/A	
27	-0.018	N/A	LESS THAN 1.01	N/A		70	0.082	N/A	LESS THAN 1.01	N/A	
28	-0.016	N/A	LESS THAN 1.01	N/A		71	0.063	N/A	LESS THAN 1.01	N/A	
29	-0.016	N/A	LESS THAN 1.01	N/A		72	0.003	N/A	LESS THAN 1.01	N/A	
30	-0.016	N/A	LESS THAN 1.01	N/A		73	0.113	N/A	LESS THAN 1.01	N/A	
31	-0.015	N/A	LESS THAN 1.01	N/A		74	0.092	N/A	LESS THAN 1.01	N/A	
32	-0.011	N/A	LESS THAN 1.01	N/A		75	0.033	N/A	LESS THAN 1.01	N/A	
33	-0.009	N/A	LESS THAN 1.01	N/A		76	0.028	N/A	LESS THAN 1.01	N/A	
34	-0.010	N/A	LESS THAN 1.01	N/A		77	0.073	N/A	LESS THAN 1.01	N/A	
35	-0.006	N/A	LESS THAN 1.01	N/A		78	0.073	N/A	LESS THAN 1.01	N/A	
36	-0.006	N/A	LESS THAN 1.01	N/A		79	0.060	N/A	LESS THAN 1.01	N/A	
37	-0.005	N/A	LESS THAN 1.01	N/A		80	-0.010	N/A	LESS THAN 1.01	N/A	
38	-0.006	N/A	LESS THAN 1.01	N/A		81	0.024	N/A	LESS THAN 1.01	N/A	
39	-0.010	N/A	LESS THAN 1.01	N/A		82	-0.004	N/A	LESS THAN 1.01	N/A	
40	-0.018	N/A	LESS THAN 1.01	N/A		83	0.027	N/A	LESS THAN 1.01	N/A	
41	-0.022	N/A	LESS THAN 1.01	N/A		84	0.072	N/A	LESS THAN 1.01	N/A	
42	-0.024	N/A	LESS THAN 1.01	N/A		85	0.060	N/A	LESS THAN 1.01	N/A	
43	-0.028	N/A	LESS THAN 1.01	N/A		86	0.014	N/A	LESS THAN 1.01	N/A	

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection

Part # / Panel #: SE121-001P PANEL #3

Gage/Std S/N(s):4470 / J-1165

Date of inspection: 02/23/04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.037	N/A	LESS THAN 1.01	N/A		126					
88	0.048	N/A	LESS THAN 1.01	N/A		127					
89	0.010	N/A	LESS THAN 1.01	N/A		128					
90	0.051	N/A	LESS THAN 1.01	N/A		129					
91	0.048	N/A	LESS THAN 1.01	N/A		130					
92	0.026	N/A	LESS THAN 1.01	N/A		131					
93	0.037	N/A	LESS THAN 1.01	N/A		132					
94	0.047	N/A	LESS THAN 1.01	N/A		133					
95	0.025	N/A	LESS THAN 1.01	N/A		134					
96	0.020	N/A	LESS THAN 1.01	N/A		135					
97	0.020	N/A	LESS THAN 1.01	N/A		136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
109						148					
110						149					
111						150					
112						151					
113						152					
114						153					
115						154					
116						155					
117						156					
118						157					
119						158					
120						159					
121						160					
122						161					
123						162					
124						163					
125						164					


64880 PPPL NCSX PVVS INSPECTION RECORD						Inspection Drawing Number: SE121-001P-1MTM Rev: 0B					
Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-001P PANEL #2			Gage/Std S/N(s):4470 / J-1165			Date of Inspection: 02/23/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	-0.003	N/A	LESS THAN 1.01	N/A		44	0.029	N/A	LESS THAN 1.01	N/A	
2	-0.001	N/A	LESS THAN 1.01	N/A		45	0.026	N/A	LESS THAN 1.01	N/A	
3	0.004	N/A	LESS THAN 1.01	N/A		46	0.017	N/A	LESS THAN 1.01	N/A	
4	0.011	N/A	LESS THAN 1.01	N/A		47	0.058	N/A	LESS THAN 1.01	N/A	
5	0.019	N/A	LESS THAN 1.01	N/A		48	0.047	N/A	LESS THAN 1.01	N/A	
6	0.027	N/A	LESS THAN 1.01	N/A		49	0.119	N/A	LESS THAN 1.01	N/A	
7	0.032	N/A	LESS THAN 1.01	N/A		50	0.086	N/A	LESS THAN 1.01	N/A	
8	0.037	N/A	LESS THAN 1.01	N/A		51	0.113	N/A	LESS THAN 1.01	N/A	
9	0.042	N/A	LESS THAN 1.01	N/A		52	0.086	N/A	LESS THAN 1.01	N/A	
10	0.047	N/A	LESS THAN 1.01	N/A		53	0.085	N/A	LESS THAN 1.01	N/A	
11	0.045	N/A	LESS THAN 1.01	N/A		54	0.077	N/A	LESS THAN 1.01	N/A	
12	0.037	N/A	LESS THAN 1.01	N/A		55	0.051	N/A	LESS THAN 1.01	N/A	
13	0.030	N/A	LESS THAN 1.01	N/A		56	0.062	N/A	LESS THAN 1.01	N/A	
14	0.026	N/A	LESS THAN 1.01	N/A		57					
15	0.017	N/A	LESS THAN 1.01	N/A		58					
16	0.010	N/A	LESS THAN 1.01	N/A		59					
17	0.005	N/A	LESS THAN 1.01	N/A		60					
18	0.002	N/A	LESS THAN 1.01	N/A		61					
19	0.000	N/A	LESS THAN 1.01	N/A		62					
20	0.000	N/A	LESS THAN 1.01	N/A		63					
21	0.003	N/A	LESS THAN 1.01	N/A		64					
22	0.006	N/A	LESS THAN 1.01	N/A		65					
23	0.013	N/A	LESS THAN 1.01	N/A		66					
24	0.022	N/A	LESS THAN 1.01	N/A		67					
25	0.037	N/A	LESS THAN 1.01	N/A		68					
26	0.036	N/A	LESS THAN 1.01	N/A		69					
27	0.038	N/A	LESS THAN 1.01	N/A		70					
28	0.043	N/A	LESS THAN 1.01	N/A		71					
29	0.034	N/A	LESS THAN 1.01	N/A		72					
30	0.024	N/A	LESS THAN 1.01	N/A		73					
31	0.027	N/A	LESS THAN 1.01	N/A		74					
32	0.033	N/A	LESS THAN 1.01	N/A		75					
33	0.058	N/A	LESS THAN 1.01	N/A		76					
34	0.081	N/A	LESS THAN 1.01	N/A		77					
35	0.082	N/A	LESS THAN 1.01	N/A		78					
36	0.077	N/A	LESS THAN 1.01	N/A		79					
37	0.072	N/A	LESS THAN 1.01	N/A		80					
38	0.064	N/A	LESS THAN 1.01	N/A		81					
39	0.052	N/A	LESS THAN 1.01	N/A		82					
40	0.044	N/A	LESS THAN 1.01	N/A		83					
41	0.038	N/A	LESS THAN 1.01	N/A		84					
42	0.035	N/A	LESS THAN 1.01	N/A		85					
43	0.031	N/A	LESS THAN 1.01	N/A		86					

64880 PPPL NCSX PVVS INSPECTION RECORD					Inspection Drawing Number: SE121-001P-1MTM Rev: 0B						
Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-001P PANEL #5				Gage/Std S/N(s):4470 /J-1165			Date of Inspection: 02/23/04				
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.056	N/A	LESS THAN 1.01	N/A	AS	44	0.046	N/A	LESS THAN 1.01	N/A	AS
2	0.042	N/A	LESS THAN 1.01	N/A		45	0.066	N/A	LESS THAN 1.01	N/A	AS
3	0.049	N/A	LESS THAN 1.01	N/A		46	0.138	N/A	LESS THAN 1.01	N/A	
4	0.060	N/A	LESS THAN 1.01	N/A		47	0.111	N/A	LESS THAN 1.01	N/A	
5	0.060	N/A	LESS THAN 1.01	N/A		48	0.052	N/A	LESS THAN 1.01	N/A	
6	0.049	N/A	LESS THAN 1.01	N/A		49	-0.012	N/A	LESS THAN 1.01	N/A	
7	0.036	N/A	LESS THAN 1.01	N/A		50	-0.033	N/A	LESS THAN 1.01	N/A	
8	0.020	N/A	LESS THAN 1.01	N/A		51	0.059	N/A	LESS THAN 1.01	N/A	
9	0.012	N/A	LESS THAN 1.01	N/A		52	0.117	N/A	LESS THAN 1.01	N/A	
10	0.002	N/A	LESS THAN 1.01	N/A		53	0.139	N/A	LESS THAN 1.01	N/A	
11	0.002	N/A	LESS THAN 1.01	N/A		54	0.090	N/A	LESS THAN 1.01	N/A	
12	-0.008	N/A	LESS THAN 1.01	N/A		55	0.071	N/A	LESS THAN 1.01	N/A	
13	-0.013	N/A	LESS THAN 1.01	N/A		56	-0.012	N/A	LESS THAN 1.01	N/A	
14	-0.013	N/A	LESS THAN 1.01	N/A		57	0.079	N/A	LESS THAN 1.01	N/A	
15	-0.009	N/A	LESS THAN 1.01	N/A		58	0.125	N/A	LESS THAN 1.01	N/A	
16	-0.005	N/A	LESS THAN 1.01	N/A		59	0.151	N/A	LESS THAN 1.01	N/A	
17	0.002	N/A	LESS THAN 1.01	N/A		60	0.120	N/A	LESS THAN 1.01	N/A	
18	0.013	N/A	LESS THAN 1.01	N/A		61	0.115	N/A	LESS THAN 1.01	N/A	
19	0.023	N/A	LESS THAN 1.01	N/A		62	0.085	N/A	LESS THAN 1.01	N/A	AS
20	0.032	N/A	LESS THAN 1.01	N/A		63					
21	0.043	N/A	LESS THAN 1.01	N/A		64					
22	0.014	N/A	LESS THAN 1.01	N/A		65					
23	0.008	N/A	LESS THAN 1.01	N/A		66					
24	0.000	N/A	LESS THAN 1.01	N/A		67					
25	-0.003	N/A	LESS THAN 1.01	N/A		68					
26	-0.007	N/A	LESS THAN 1.01	N/A		69					
27	-0.013	N/A	LESS THAN 1.01	N/A		70					
28	-0.013	N/A	LESS THAN 1.01	N/A		71					
29	-0.009	N/A	LESS THAN 1.01	N/A		72					
30	-0.009	N/A	LESS THAN 1.01	N/A		73					
31	-0.006	N/A	LESS THAN 1.01	N/A		74					
32	0.000	N/A	LESS THAN 1.01	N/A		75					
33	0.007	N/A	LESS THAN 1.01	N/A		76					
34	0.016	N/A	LESS THAN 1.01	N/A		77					
35	0.026	N/A	LESS THAN 1.01	N/A		78					
36	0.114	N/A	LESS THAN 1.01	N/A		79					
37	0.098	N/A	LESS THAN 1.01	N/A		80					
38	0.110	N/A	LESS THAN 1.01	N/A		81					
39	0.103	N/A	LESS THAN 1.01	N/A		82					
40	0.048	N/A	LESS THAN 1.01	N/A		83					
41	0.016	N/A	LESS THAN 1.01	N/A		84					
42	0.105	N/A	LESS THAN 1.01	N/A	AS	85					
43	0.062	N/A	LESS THAN 1.01	N/A	AS	86					

Quality Assurance Documentation for Part ID: SE121-001P - Item: 147

Workorder: 64880/1-0 Sub:40 Op:200

Part: SE121-001P - - NCSX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .308" Profile Tolerance (+.188/-.120") (tack welded vessel)		QA		4470	-0.034 / +0.151	522			A
(10)								02-24-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-24-0			



MQS Inspection, Inc.

5307 West 86th Street
 Indianapolis, IN 46268
 Phone: 317-872-8196
 Fax: 317-872-4798

MQS W.O.# 371-F0004 RADIOGRAPHIC REPORT: Page 1 of 2

DATE: 2/24/04
 Customer: Major Tool & Machine
1458 E. 19th St.
Indpls, IN.

Customer's P.O. No.: _____
 Job Location: Same

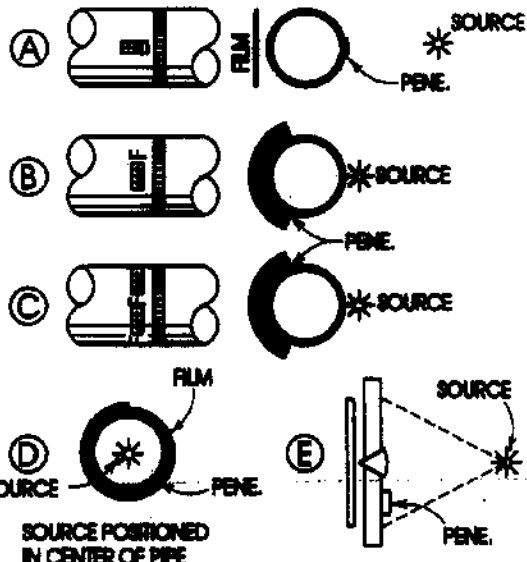
Item Description: SPR SP 121-001P
 100% Insp. ✓ Spot Insp. _____

SERIAL NO. or PIECE NO.: 64880/20/40/220/818

TECHNIQUE DATA

Weld No.	RT No.	ACC.	REL.	CODE	REMARKS
Weld 1-2	0-1	✓		P	
	1-2	✓		P	
	2-3	✓			
Weld 3-4	0-1	✓			
	1-2	✓		P	

Inspection Specification: ASME VIII
 Acceptance Standard: ASME VIII Div 1, UWS-1
 RT Procedure No.: DA100
 RT Technique Used Below: E



MATERIAL: 625 Inconel
 PIPE SIZE: N/A WALL THICKNESS: .375"
 WELD PROCESS: SMAW GTAW GMAW
 SOURCE ISOTOPE: 220Rb CURIES: 100 KV/PMA: N/A
 PHYSICAL SIZE: .151"
 EXPOSURE TIME: _____ SPD: 18"
 FILM/OBJECT INCHES: CONTACT
 GEOMETRIC UNSHARPNESS: 5.020"
 PENETRATOR: TYPE SIZE: ASTM 1B
 MATERIAL: 25 PLACEMENT: 25
 SHIMS: MATERIAL: N/A THICKNESS: N/A
 MARKER/NO BELT: Pb #5
 FILM: BRAND: Kodak TYPE: AA
 SIZE: 4.5" x 17" LOAD: Single
 EMULSION(S): N/A
 SCREENS: FRONT: .000" BACK: .000" BACKING: N/A
 VIEWING: SINGLE ✓ DOUBLE: _____
 DENSITY (PEN.) 2.0-4.0
 DENSITY (WELD) MIN/MAX: 2.0-4.0

CODE

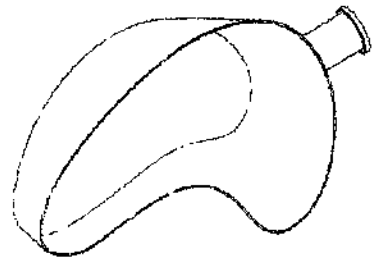
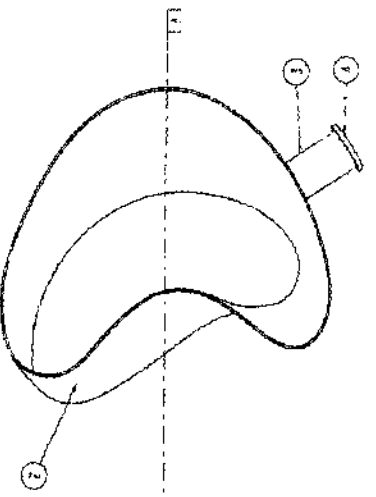
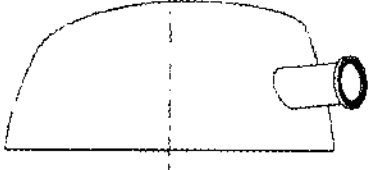
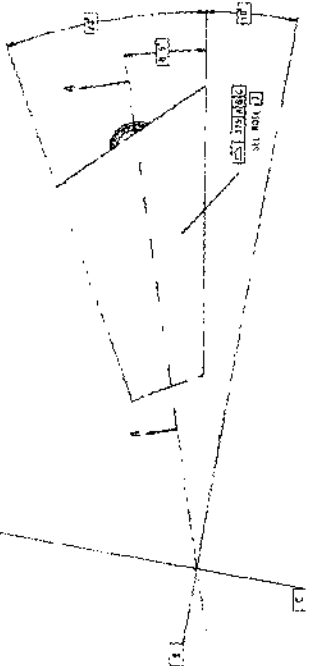
P - Porosity	SI - Slag Inclusions	TI - Tungsten Inclusion
C - Crack	BT - Burn Through	CV - Root Concavity
IF - Incomplete Fusion	MT - Melt Through	CX - Root Convexity
IP - Incomplete Penetration	UC - Undercut	OX - Oxidation
S - Surface		

1. Robert Weaver 2674/371#
 RADIOGRAPHER
 1. Robert Weaver 2674/371#
 INTERPRETER Raymond D. Edwards 2/24/04

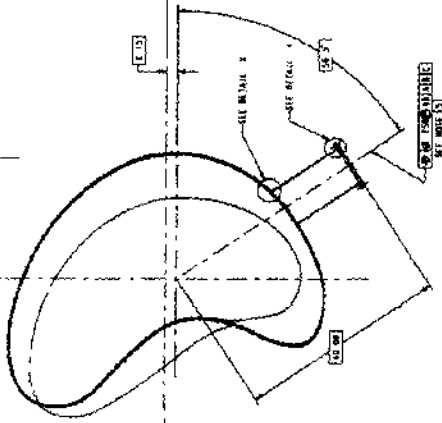
NOTES:

- 1. DIMENSIONS ARE IN INCHES
- 2. DIMENSIONS ARE IN MILLIMETERS
- 3. DIMENSIONS ARE IN METERS
- 4. DIMENSIONS ARE IN FEET
- 5. DIMENSIONS ARE IN KILOMETERS
- 6. DIMENSIONS ARE IN MILES
- 7. DIMENSIONS ARE IN NAUTICAL MILES
- 8. DIMENSIONS ARE IN SEAS
- 9. DIMENSIONS ARE IN LIGHT YEARS
- 10. DIMENSIONS ARE IN PARSECS
- 11. DIMENSIONS ARE IN AU
- 12. DIMENSIONS ARE IN LY
- 13. DIMENSIONS ARE IN PC
- 14. DIMENSIONS ARE IN M
- 15. DIMENSIONS ARE IN CM
- 16. DIMENSIONS ARE IN MM
- 17. DIMENSIONS ARE IN MICROMETERS
- 18. DIMENSIONS ARE IN NANOMETERS
- 19. DIMENSIONS ARE IN PICO METERS
- 20. DIMENSIONS ARE IN FEMTO METERS
- 21. DIMENSIONS ARE IN ATTO METERS
- 22. DIMENSIONS ARE IN ZEPTO METERS
- 23. DIMENSIONS ARE IN YOKTO METERS
- 24. DIMENSIONS ARE IN METERS
- 25. DIMENSIONS ARE IN KILO METERS
- 26. DIMENSIONS ARE IN MEGA METERS
- 27. DIMENSIONS ARE IN GIGA METERS
- 28. DIMENSIONS ARE IN TERA METERS
- 29. DIMENSIONS ARE IN PETA METERS
- 30. DIMENSIONS ARE IN EXA METERS
- 31. DIMENSIONS ARE IN ZETTA METERS
- 32. DIMENSIONS ARE IN YOTTA METERS

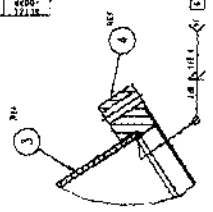
818/pec/01/01/08819
 2100-1E13S
 H0/H0/E
 2 ppc abd



ISOMETRIC VIEW



SECTION - A-A



DETAIL T

NO.	DESCRIPTION	QTY.	UNIT	REVISION
1	FLANGE	1	EA	
2	WELD	1	EA	
3	WELD	1	EA	
4	WELD	1	EA	
5	WELD	1	EA	
6	WELD	1	EA	
7	WELD	1	EA	
8	WELD	1	EA	
9	WELD	1	EA	
10	WELD	1	EA	
11	WELD	1	EA	
12	WELD	1	EA	
13	WELD	1	EA	
14	WELD	1	EA	
15	WELD	1	EA	
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25	WELD	1	EA	
26	WELD	1	EA	
27	WELD	1	EA	
28	WELD	1	EA	
29	WELD	1	EA	
30	WELD	1	EA	

NO.	DESCRIPTION	QTY.	UNIT	REVISION
1	FLANGE	1	EA	
2	WELD	1	EA	
3	WELD	1	EA	
4	WELD	1	EA	
5	WELD	1	EA	
6	WELD	1	EA	
7	WELD	1	EA	
8	WELD	1	EA	
9	WELD	1	EA	
10	WELD	1	EA	
11	WELD	1	EA	
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21	WELD	1	EA	
22	WELD	1	EA	
23	WELD	1	EA	
24	WELD	1	EA	
25	WELD	1	EA	
26	WELD	1	EA	
27	WELD	1	EA	
28	WELD	1	EA	
29	WELD	1	EA	
30	WELD	1	EA	

NO.	DESCRIPTION	QTY.	UNIT	REVISION
1	FLANGE	1	EA	
2	WELD	1	EA	
3	WELD	1	EA	
4	WELD	1	EA	
5	WELD	1	EA	
6	WELD	1	EA	
7	WELD	1	EA	
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26	WELD	1	EA	
27	WELD	1	EA	
28	WELD	1	EA	
29	WELD	1	EA	
30	WELD	1	EA	

NO.	DESCRIPTION	QTY.	UNIT	REVISION
1	FLANGE	1	EA	
2	WELD	1	EA	
3	WELD	1	EA	
4	WELD	1	EA	
5	WELD	1	EA	
6	WELD	1	EA	
7	WELD	1	EA	
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26	WELD	1	EA	
27	WELD	1	EA	
28	WELD	1	EA	
29	WELD	1	EA	
30	WELD	1	EA	

WELDING ENGINEER
 PROJECT #
 DATE
 NATIONAL SUPPLY CORPORATION
 PROTOTYPE MAGNETIC VESSEL - STONE #1
 PORT WEL DRESS
 SPT/1 00 25

Quality Assurance Documentation for Part ID: SE121-001P - Item: 150

Workorder: 64880/1-0 Sub:40 Op:230

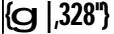
Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			SHIELDING @ 40 CFH / PURGE @ 20 CFH	791			A
(10)								03-01-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 INCO 625 HEAT # AV8128	791			A
(20)								03-01-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			625 INCO	791			A
(30)								03-01-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 ACCEPTED TO MT M WELDER QUALIFICA ION CHECK	791			A
(40)								03-01-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			75-175 AMPS ALL PAR AM. TO WPS	791			A
(50)								03-01-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 151

Workorder: 64880/1-0 Sub:40 Op:240

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .328" Profile Tolerance (+.188/-.140") (within approximately 6" of port attachment p t)		QA		4470	+0.050 / +0.100	522			A
(10)								03-01-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								03-01-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 152

Workorder: 64880/1-0 Sub:40 Op:250

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			SHIELDING @ 40 CFH PURGE @ 20 CFH ARGON	791			A
(10)								03-02-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 INCO 625 HEAT LOT AV8128	791			A
(20)								03-02-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			625 INCO / 300 SERI ES S.S.	791			A
(30)								03-03-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 / 709 ACCEPTED TO MTM WELDER QU IFICATION CHECKS	791			A
(40)								03-02-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIAM FILLER 7 5-175 AMPS / ALL PARAMETERS PER WP	791			A
(50)								03-02-0			



Major

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1458 E. 19th Street, Indianapolis, In 46218
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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 153

Date of Inspection:03/03/2004

Type of Material:625 INCONEL

NDT#:8165

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

Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:250 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: N/A Customer P.O.: S-04344-F Customer Unit/Plant: N/A	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
---	---

Customer Inspection Plan: N/A Test Step: N/A Revision: N/A Material Test Number: N/A	Inspection Criteria: Customer Specification: ASME SECTION V, ARTICLE 6 MTM Spec Number: Acceptance Standard: AWS D1.6, 6.29.1.
---	---

Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT / FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

Visual inspection performed on root pass between Find numbers 2 (shell) and 3 (tube). Welds acceptable per customer drawing and specification requirements.

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

Inspector: 933-D.LEAPLEY

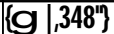
Date: 03/03/2004



Quality Assurance Documentation for Part ID: SE121-001P - Item: 154

Workorder: 64880/1-0 Sub:40 Op:260

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		 .348" Profile Tolerance (+.188/-.160") (within approximately 6" of port attachment p t)		QA		4470	+0.027 / +0.100	522			A
(10)								03-02-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								03-02-0			

Quality Assurance Documentation for Part ID: SE121-001P - Item: 155

Workorder: 64880/1-0 Sub:40 Op:265

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			SHIELDING @ 40 CFH PURGE @ 20 CFH ARGON	791			A
(10)								03-03-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 INCO 625 HEAT LOT AV8128	791			A
(20)								03-03-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			625 INCO / 300 SERI ES S.S.	791			A
(30)								03-03-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			683 / 709 ACCEPTED TO MTM WELDER QU IFICATION CHECKS	791			A
(40)								03-03-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 DIAM FILLER 7 5-175 AMPS / ALL PARAMETERS PER WP	791			A
(50)								03-03-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 156

Date of Inspection:03/03/2004

Type of Material:625 INCONEL

NDT#:8164

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

Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:265 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
---	---

Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS D1.6 SECTION 6.29.1
--	---

Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
FILL PASS #1 ASSY 1-3 TO 2-4-5 ASSY

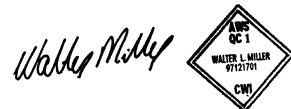
Notes:

PERFORMED THE INSPECTION OF THE fill PASS ON DETAILS 4-5 OPERTATOR 709 PERFORMED THE WELDING OF THIS PASS UNDER WPS 390
NO INDICATIONS FOUND DURING VISUAL INSPECTION.

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

Inspector: 712-W.MILLER

Date: 02/16/2004



Quality Assurance Documentation for Part ID: SE121-001P - Item: 157

Workorder: 64880/1-0 Sub:40 Op:270

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			40 CFH SHIELDING AN D 20 CFH PURGE ARG N GAS	791			A
(10)								03-04-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.093 625 INCO HT #C B7996	791			A
(20)								03-04-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			INCO 625 AND 300 S ERIES S.S	791			A
(30)								03-04-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			709/683 QUALIFIED T O MTM WELDER QUAL ICATION CHECK	791			A
(40)								03-04-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			100-210 AMPS ALL PA RAMETERS TO WPS	791			A
(50)								03-04-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P - Item: 158

Date of Inspection:03/04/2004

Type of Material:625 INCONEL

NDT#:8176

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

Part Information: MTM Job Number: 64880/1.0 -Sub:40 -Op:270 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-001P Part Name: PVVS PRIMARY FABRICATION Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: AWS SECTION 6.29.1
--	--

Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT
--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

% of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
COVER PASS PORT TUBE ASSY

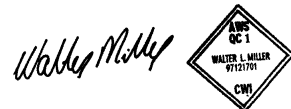
Notes:

PERFORMED THE VISUAL INSPECTION ON THE FINAL COVER PASS OF THE PORT TUBE TO SUB ASSEMBLY. THERE WAS NO INDICATION FOUND AT THIS INSPECTION POINT.

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

Inspector: 712-W.MILLER

Date: 02/13/2004



Quality Assurance Documentation for Part ID: SE121-001P - Item: 159

Workorder: 64880/1-0 Sub:40 Op:280

Part: SE121-001P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		{G .368"} Profile Tolerance (+.188/-.160") (within approximately 6" of port attachment p t)		QA		4470	-0.047 / -0.011	522			A
(10)								03-03-0			
*		Magnetic Permeability 1.01 Max. Record range (high / low)		QA		J-1165	LESS THAN 1.01	522			A
(20)								03-03-0			
*		{# .250 p48"}		QA		4470	0.198	522			A
(30)								03-03-0			
1*		40.0 Basic (untoleranced record actual measurment)		QA		4470	39.991 / 40.015	522			A
(40)								03-03-0			

* 13:52:00	(1)	DEG	4	MAR	2004	240	DEG	4	MAR	2004	480	PAPER	11
CH 13:48:13	8	DEG	4	MAR	2004		TABULAR PRINTOUT						
CH 13:34:23	7	DEG	4	MAR	2004		TABULAR PRINTOUT						
* 13:28:55	7	DEG	4	MAR	2004		TABULAR PRINTOUT						
CH 13:14:19	8	DEG	4	MAR	2004		TABULAR PRINTOUT						
- 13:00:00			4	MAR	2004		4.0 INCH/HOUR					PAPER	11
CH 13:06:54	8	DEG	4	MAR	2004		TABULAR PRINTOUT						

SUIT. # 1 OF 4

0 (1) 120 ZONE1 240 DEG 350 480 500

SHT. 2 of 4

QH 1 27 312.0 DEG 4 MAR 2004 TRIBULAR PRINTOUT

QH 1 00 314.6 DEG 4 MAR 2004 TRIBULAR PRINTOUT 4.0 INCH/HOUR PAPER 11

0 (1) 120 ZONE1 240 DEG 350 480 500

QH 1 25 311.7 DEG 4 MAR 2004 TRIBULAR PRINTOUT

* 11 00 00
4 MAR 2004
TABULAR PRINTOUT
0 INCH/HOUR
PAPER
11

0 (1) 120 ZONE1 240 DEG 850 480 500

SUN 3 OF 4

CH 1 32 311.8 DEG
* 10 32 03
4 MAR 2004
TABULAR PRINTOUT

CH 1 28 228
* 10 28 28
4 MAR 2004
TABULAR PRINTOUT

10 00 00
4 MAR 2004
0 INCH/HOUR
PAPER
11

0 (1) 120 ZONE1 240 DEG 850 480 500

CH 1 45 18.2 DEG
* 9 45 18
4 MAR 2004
TABULAR PRINTOUT

1

CH	1:04	312.9	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
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CH	1:04	312.9	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
*CH	1:00	00	(1)	4	MAR	2004	ZONE1	240	DEG	350	480	PAPER	11
CH	1:04	312.9	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
*CH	1:54	20	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
CH	1:52	18	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
*CH	1:48	00	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
CH	1:47	07	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
*CH	1:46	11	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11
CH	1:44	09	DEG	4	MAR	2004	TABULAR	PRINTOUT	4.0	INCH/HR	480	PAPER	11

SAT 4 00 4

LOY INSTRUMENT, INC.

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1936 WEST CENTRAL AVE.
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3716 LIMA ROAD
FORT WAYNE, IN 46805
PHONE: (260) 471-2171
FAX: (260) 471-3011

SERVICE ENGINEERING REPORT

CUSTOMER:	Major Tool	PAGE:	1	OF	1
ADDRESS:		DATE:	3/29/2004		
	Indy, In	P.O.:	904-00861		
CONTACT:	Doug Mc.	CIR#:	Duniway 2613		
PHONE:	634-9420				

UNIT: Vacuum Leak Test **ITEM:** (SE 121-001P Rev 0) (Spec 475 rev 7)

PROBLEM: I performed the leak test on the vacuum chamber that was for the Princeton project.
 They wanted a Helium leak test performed with the chamber at or under 1×10^{-7} torr.
 The Leak test was done by a Alcatel 142 that was calibrated before the test by a Duniway -8 Calibrated leak.

COMMENTS: The Calibrated leak's Serial Number was 2613 with a calibration date of 12-10-03 with a leak rate of 2.8×10^{-8} atm-cc/s. I checked all of the welds, and all of the flanges at a vacuum of 1×10^{-7} torr with the Alcatel 142.

No leaks were found anywhere on the vacuum chamber.

MAR 30 2004

9 Hours 3-26-04
5 hours 3-29-04

84122
Line 1
B.Z.
4/1/04

PARTS USED: no
PARTS USED: no
MILES TRAVELED: 20 **LABOR:** 12 reg 1 O/T

(TRAVEL TIME INCLUDED)

LOY INSTRUMENT, INC.

WITNESS & ATTESTED
SIGNED: X *[Signature]* **SIGNED:** *[Signature]*
 DOUG McCOCKLE 29 MARCH

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

162	14	10	10	Material Certification: / SE121-001P-2 PANEL # 1 - PANEL BLANK .375" THK INCONEL 625 - MC094098.TIF / 2650 3 6877
163	14	10		Inspection Data Checklist: 3 steps
164	14	30		Furnace charts: FURNACE CHART - mc094645.pdf
165	14	30		Certification: H/T CERTIFICATE - Same as Item #164
166	14	31		Inspection Data Checklist: 1 steps
167	14	35		Inspection Data Checklist: 1 steps
168	14	40		Inspection Data Checklist: 1 steps
169	14	70		Test Certification: SE121-001P-10MTM - mc096190.tif
170	14	70		Inspection Data Checklist: 3 steps

SE121-001P-2 PANEL 2 - DIE FORMED PANEL

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
171	15	10		Inspection Data Checklist: 3 steps
172	15	10	10	Material Certification: / SE121-001P-2 PANEL # 2 - PANEL BLANK .375" THK INCONEL 625 - mc094096.tif / 2650 3 6877
173	15	30		Furnace charts: FURNACE CHART - mc095044.pdf
174	15	30		Certification: H/T CERTIFICATE - Same as Item #173
175	15	31		Inspection Data Checklist: 1 steps
176	15	35		Inspection Data Checklist: 1 steps
177	15	40		Inspection Data Checklist: 1 steps
178	15	70		Test Certification: SE121-001P-10MTM - mc096188.tif
179	15	70		Inspection Data Checklist: 3 steps

SE121-001P-2 PANEL 3 - DIE FORMED PANEL

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
180	16	10		Inspection Data Checklist: 3 steps
181	16	10	10	Material Certification: / SE121-001P-2 PANEL # 3 - PANEL BLANK .375" THK INCONEL 625 - mc094091.tif / 2650 3 6877
182	16	30		Furnace charts: FURNACE CHART - mc094739.pdf
183	16	30		Certification: H/T CERTIFICATE - Same as Item #182
184	16	31		Inspection Data Checklist: 1 steps
185	16	35		Inspection Data Checklist: 1 steps
186	16	40		Inspection Data Checklist: 1 steps
187	16	70		Test Certification: SE121-001P-1MTM - mc096191.tif
188	16	70		Inspection Data Checklist: 3 steps

SE121-001P-2 PANEL 4 - DIE FORMED PANEL

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
189	17	10	10	Material Certification: / SE121-001P-2 PANEL # 4 - PANEL BLANK .375" THK INCONEL 625 - mc094093.tif / 2650 3 6876
190	17	10		Inspection Data Checklist: 3 steps
191	17	30		Furnace charts: FURNACE CHART - mc094878.pdf
192	17	30		Certification: H/T CERTIFICATE - Same as Item #191
193	17	31		Inspection Data Checklist: 1 steps
194	17	35		Inspection Data Checklist: 1 steps
195	17	40		Inspection Data Checklist: 1 steps
196	17	70		Test Certification: SE121-001P-1MTM - mc096189.tif

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEJGNIS

FILE COPY 3

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No. No. de Facture Rechnung Nr. 391396001-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Référence Client Kundenbestelldaten PU3-03297	Report No. Rapport No. Zeugnis Nr. 20030915036	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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Sold To • Client • Bestelldatenschritt MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Beschreibung MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
--	---

Product Description • Description Produit • Material Beschreibung
0.375 x 0/0 x 0/0
SE121-001P-2 PANEL 1
HAYNES(R) 625 ALLOY PLATE
NADCAP CERTIFICATE NUMBER 0089
S400E,S1000E, EN 10204 3.1.B

Specification • Spécification • Spezifikation ASTM-B-443 Rev 00c1 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
---	--	--

Heat Number Nombres Des Charges Charge Nr.	Chemical Analysis • Analyse Chimique • Chemische Analyse																						
	Al	B	C	Ca+Ti (Nb+Zr)	Cr	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W						
2650 3 6877	0.18		0.030	3.82	<0.10	21.42		4.46	0.28	8.56	68.11	0.006	0.004	0.17	0.29								
2650 3 6877		Ta	Zr	Bi	Se	La	C+N+O+P	Pb	Mg	Y	Ag	N	Co	Al+Ti	Ni+Co								

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03

SEP 19 2003

Paul O. Guest

80007 1.2.1 BZ.



9/29/03

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MC094098.TIF

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

FILE COPY 2

**HAYNES
International**

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. De Facture Rechnungs Nr 391396001-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915036	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
Sold To • Client • Bestellausschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 1 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B

Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC
---	--	--

Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.					Tensile Test at Elevated Temperature • Essai De Traction A Ete. Temp. Warm Zugversuch					Stress Rupture Temperature • Essai A Charge De Rupture Zeitstandversuch						
Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In EN % Dehnung	%RA	Temp.	Test Essai Versuch	Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In EN % Dehnung	%RA	Temp.	Stress Constraint Spannung	Hours Heures Stunden	% Elong In EN % Dehnung	% RA
133000 PSI		67500 PSI	50 %	(1) (A)												

Certified By • Certifie Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03 (1) 2739027801

Paul O. Guest

**NDT
RES**
7/22/03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES COINTEGRATED TO BE REPRESENTATIVE OF THE ENTIRE LOT. THE SUPPLIER AND ASSOCIATED TESTING LABORATORY ASSUME NO LIABILITY FOR USE OF THIS CERTIFICATE. LES RENSEIGNEMENTS DONNES ICI SONT OBTENUS A PARTIR D'UN ECHANTILLON REPRESENTATIF DE L'ENSEMBLE PRODUIT. LE FOURNISSEUR ET LE LABORATOIRE D'ESSAIS ASSUMENT AUCUNE RESPONSABILITE EN CE QUI CONCERNE L'USAGE DE CE CERTIFICAT. THE MATERIALS MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATION UNLESS OTHERWISE SPECIFIED. THE INFORMATION IS PROVIDED AS IS WITHOUT WARRANTY OF ANY KIND. THE USER ASSUMES ALL LIABILITY FOR THE USE OF THIS INFORMATION. DIE DATEN ERHEBEN WURDEN AN DER STELLE DER PROBE ENTNOMMEN UND SIND WENN NICHT ANDERSONS ANGEZEIGT WIRD, WURDE KEINE VERANTWORTUNG FUR DIE VERWENDUNG DIESER DATEN ANGENOMMEN. DIE DATEN SIND WENN NICHT ANDERSONS ANGEZEIGT WIRD, WURDE KEINE VERANTWORTUNG FUR DIE VERWENDUNG DIESER DATEN ANGENOMMEN. SPECIFIC SAFETY REQUIREMENTS MAY BE WARNED ON OTHER RELEVANT MATERIALS. SEE THE ATENOS.

MC094098.TIF

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs Nr 391396001-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915036	Pages of Pages Page de Pages Anzahl der Seiten 3 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellaranschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 1 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
--	--	---

Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC
---	--	--

Annealed Hardness Durete Recuit Geglueht Haerte	Aged Hardness Durete Vieilli Gealtert Haerte	Grain Size Grosseur De Grain Korngrosse					IGA	Uniformity	Corrosion Rate		Oxidation Rate	Charpy Impact Test				Creep Rupture				
		Grain Size	Predominant Grain Size	Recry. Grain	Unrecry. Grain %	ALA			Attack Depth	Corrosion		Test Method	Toughness Avg	Toughness 1	Toughness 2	Toughness 3	Test Base/ Versuch	Stress Constraint/ Spannung	Hours/ Heures	% Elong In % Allong EN
96 HRB		8/6							MPY											(1)

Certified By • Certifie Par • Bescheinigt Durch: **Paul Guest** 09/15/03
Certification Supervisor/Technician

(1) 2739027801

Paul O. Guest

MTM 023
9/22/03

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MC094098.TIF

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

Invoice No No. De Facture Rechnungs Nr 391396001-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915036	Pages of Pages Page de Pages Anzahl der Seiten 4 Of 4
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FILE COPY 2

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestelraneschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestelmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 1 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1		Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Skipped Quantité Expédiée Liefermenge 1 PC	

This material is free of mercury contamination.
Mill Orders Used: 2739027801 (1 PC)
(A) 1750 °F to 1950 °F

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03

Paul O. Guest

MC094098.TIF



9/22/03

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LES INFORMATIONS CONTENUES ICI ONT ÉTÉ OBTENUES À PARTIR D'ÉCHANTILLONS CONSIDÉRÉS COMME ÉTANT REPRÉSENTATIFS DE LA PRODUCTION DE L'ÉQUIPEMENT EN QUESTION. NOUS NE SOMES PAS RESPONSABLES JURIDIQUEMENT DE L'UTILISATION DE CE CERTIFICAT.
DIE DATEN ENHALTEN AMANUENT DABER KEIN AUF PROBLEME AN DER REPRÄSENTATIVITÄT DER PRODUKTION DER BEZUGNEHENDEN AUSTAUSCHTEILE AN. WIR ÜBERNEHMEN KEINE VERANTWORTUNG FÜR DIE VERWENDUNG DIESER ZERTIFIKATIONEN.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE APPLICABLE NATIONAL STANDARD BY APPLICABLE TESTS OF THE RELEASED FOR SERVICE.
SPECIFICATIONS MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL IDENTIFICATIONS.

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 1 - Item: 163

Workorder: 64880/1-0 Sub:14 Op:10

Part: SE121-001P-2 PANEL 1 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability 1.0 Max. (Panel Blank)		QA			TESTED 15 RANDOM LOCATIONS, MAX. MAG. PERMEABILITY =1.000	581			A
(10)								09-25-0			
*		.375 (+.040/-0) (Panel Blank)		QA		J-160	.412	085			A
(20)								10-02-0			
*		SURFACE FINISH: SMOOTH, CLEAN, NO HEAVY SCRAPES, PITS, OR GOUGES (Panel Blank)		QA		VISUAL	GOOD	085			A
(30)								10-02-0			



CORRECTED

Certificate of Conformance

EXOTIC METAL TREATING INC.

6234 E. Hanna Avenue • Indianapolis, Indiana

Certificate # 46600

Vendor Code # 0013

P.O. # P03-04360

Exotic Metal Treating Inc. hereby certifies that all materials used in the manufacture of parts **CONFORMS** to the material and/or manufacturing specifications indicated in drawings or specifications as called for on purchase order referenced hereon. Test reports are on file with us or with our suppliers for examination and indicate conformance with the applicable requirements. The parts listed below are processed in accordance with the drawings or specifications called for on referenced purchase order that are current on the date on which the order was accepted. Pertinent details of the work performed are on file at this facility under the process heat number listed hereon.

HEAT # 03-2018

DATE SHIPPED 10-23-03

QUANTITY DESCRIPTION

1 PC #SE121-001P-2 PANEL 1 JOB #64880-14/1

MATERIAL: INCO 625

**SOLUTION ANNEALED PER AMS-2774 DATED JULY 1995
1900°F ± 15°F FOR 45 MINUTES ± 5 MINUTES
RAPID AIR COOLED TO 1000°F & AIR COOLED.**



12/22/03

80729
10/23/03
BZ

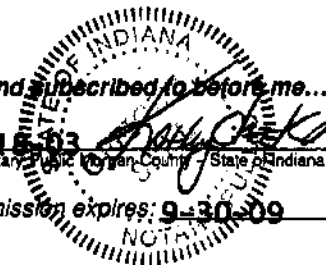
Sworn and subscribed to before me...

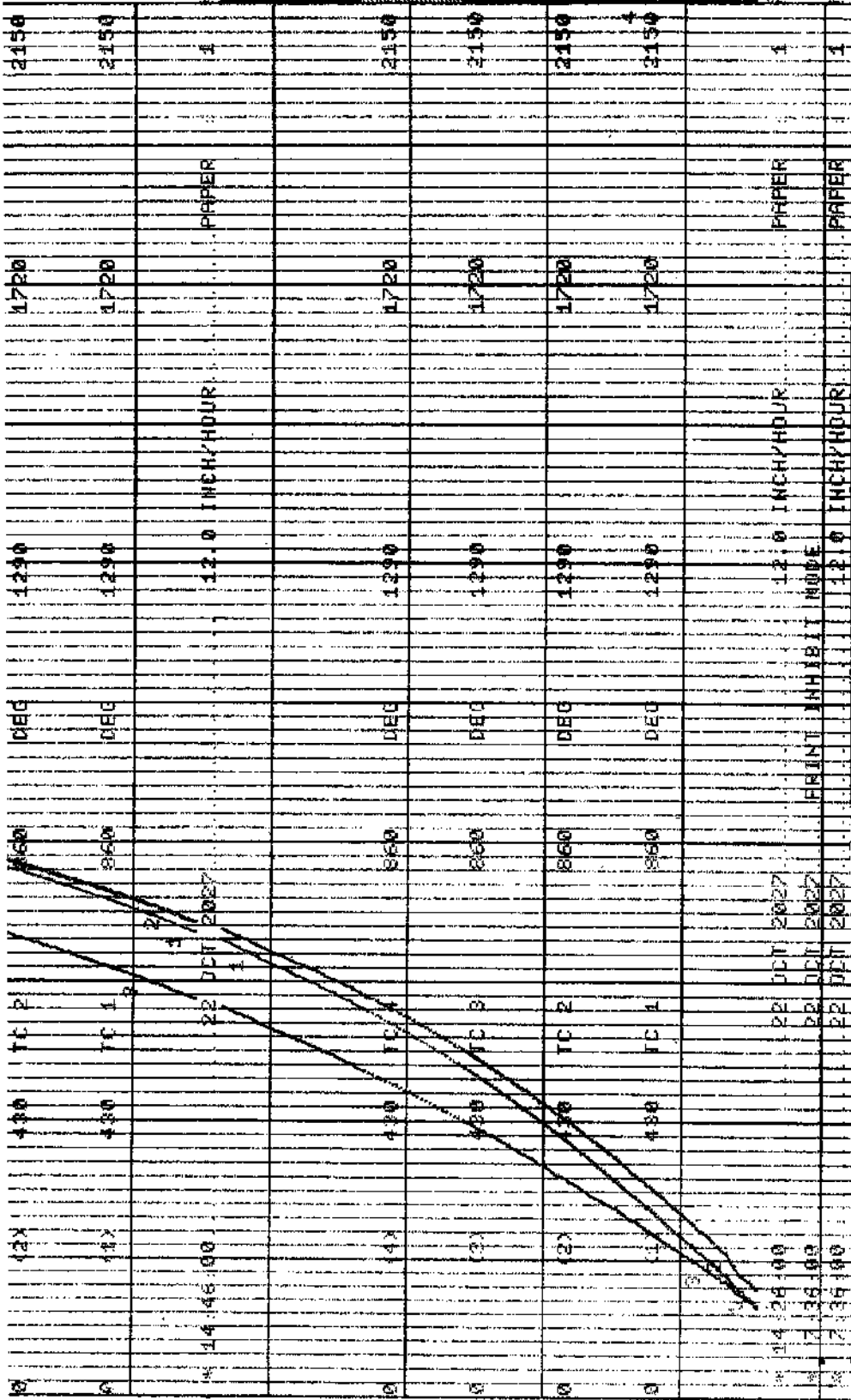
on 12-18-03 [Signature]
Notary Public Morgan County State of Indiana

My commission expires: 9-30-09

[Signature]
(Name)

QA
(Title)





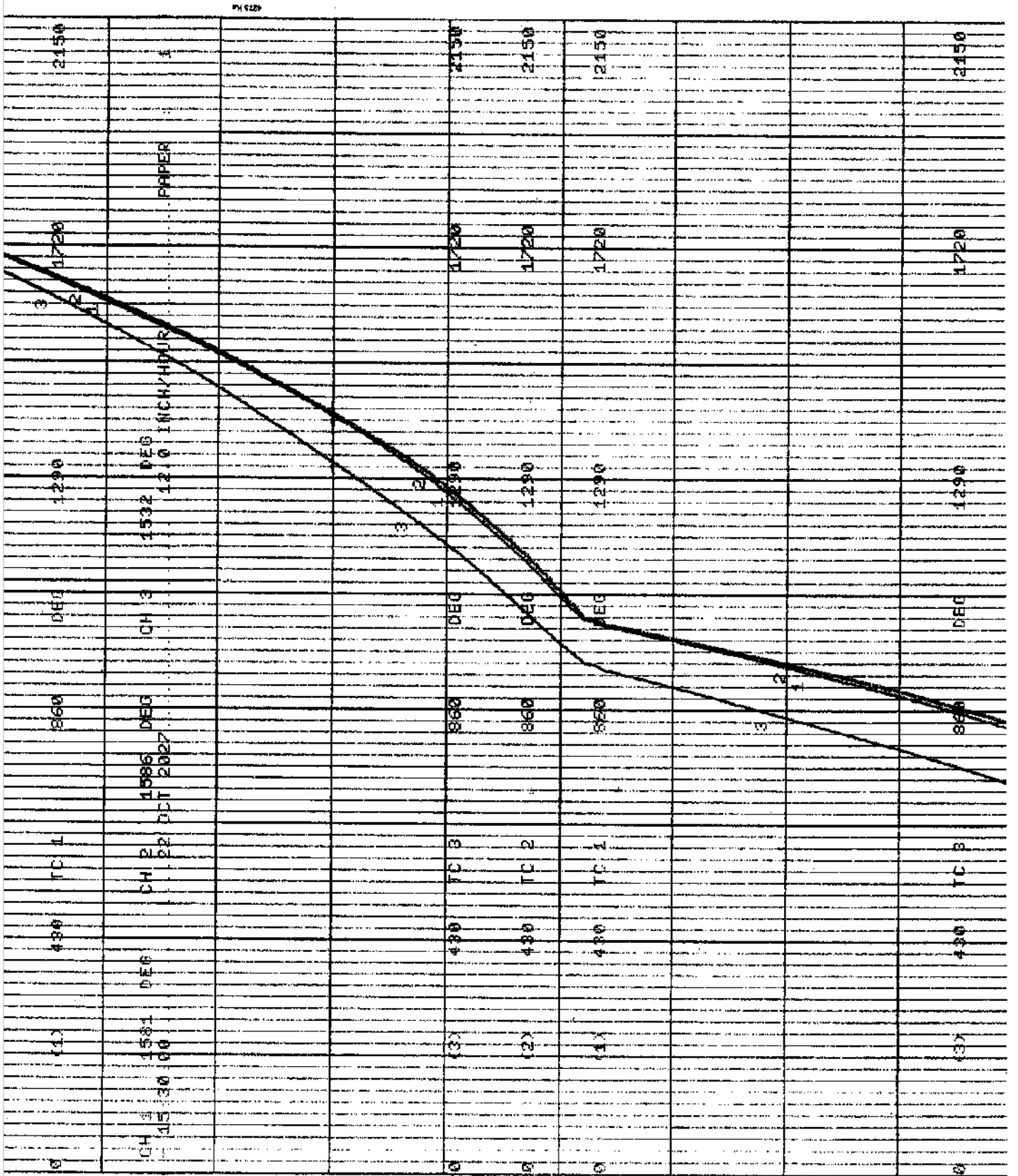
EXOTIC METAL TREATING, INC.
 6234 EAST HANNA AVENUE • INDIANAPOLIS, IN 46203

DATE: 10-22-03 COMPANY: MaTec Tool
 LOAD #: 03-2018 MATERIAL: INCO 625
 QTY: 1 PN: SE121-001P-2 Load 1
Dic Forward Pool 64880-141

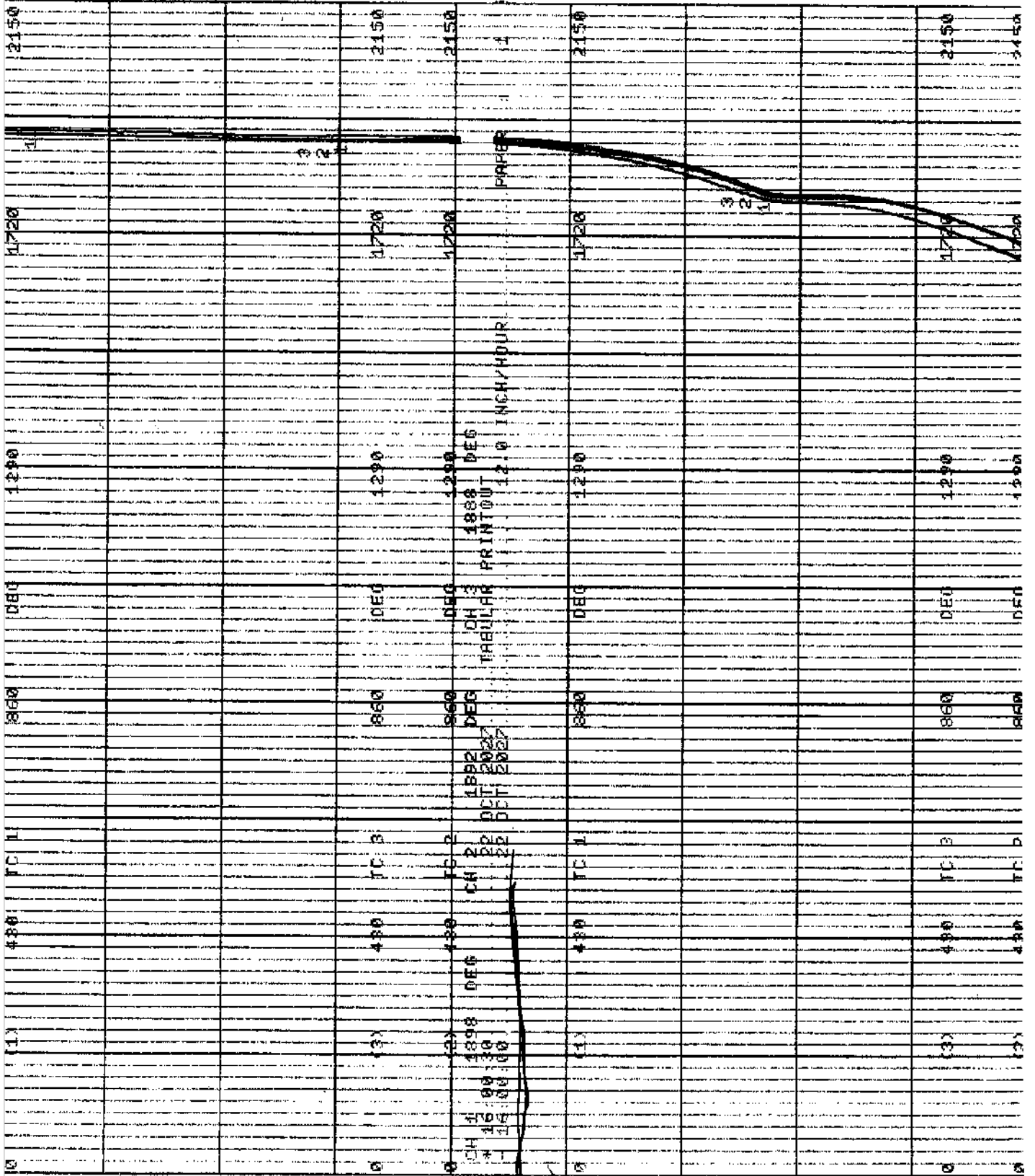
FURNACE: GF-3 ATMOS: Ar
 REF. SPEC.: P.O.
 RECORDER: PPC-02 TIME START: 2:26pm

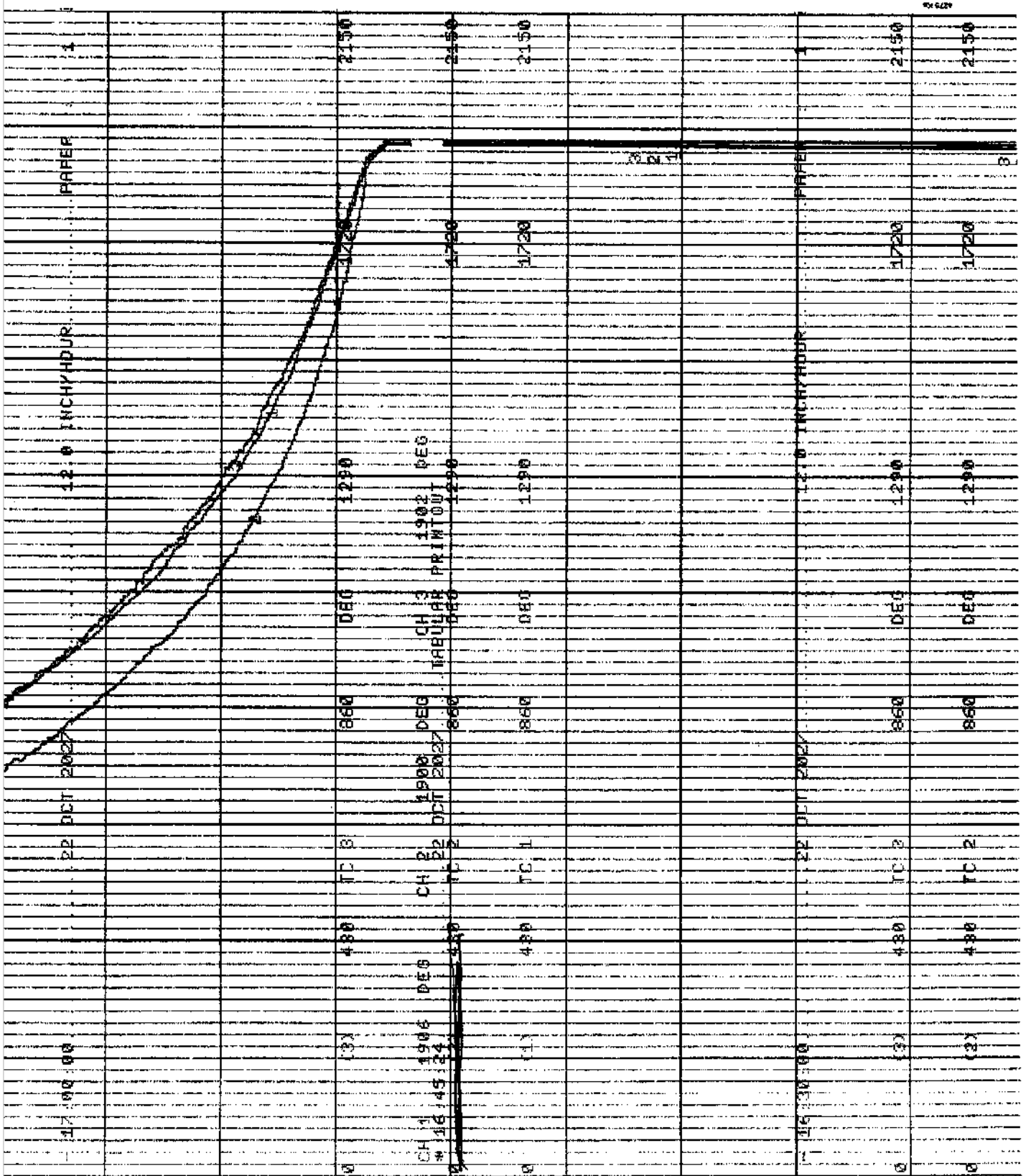
EXOTIC METAL TREATING, INC.
 OCT 23 2003
 80729
 6182

21:46:00
 21:46:00
 21:46:00

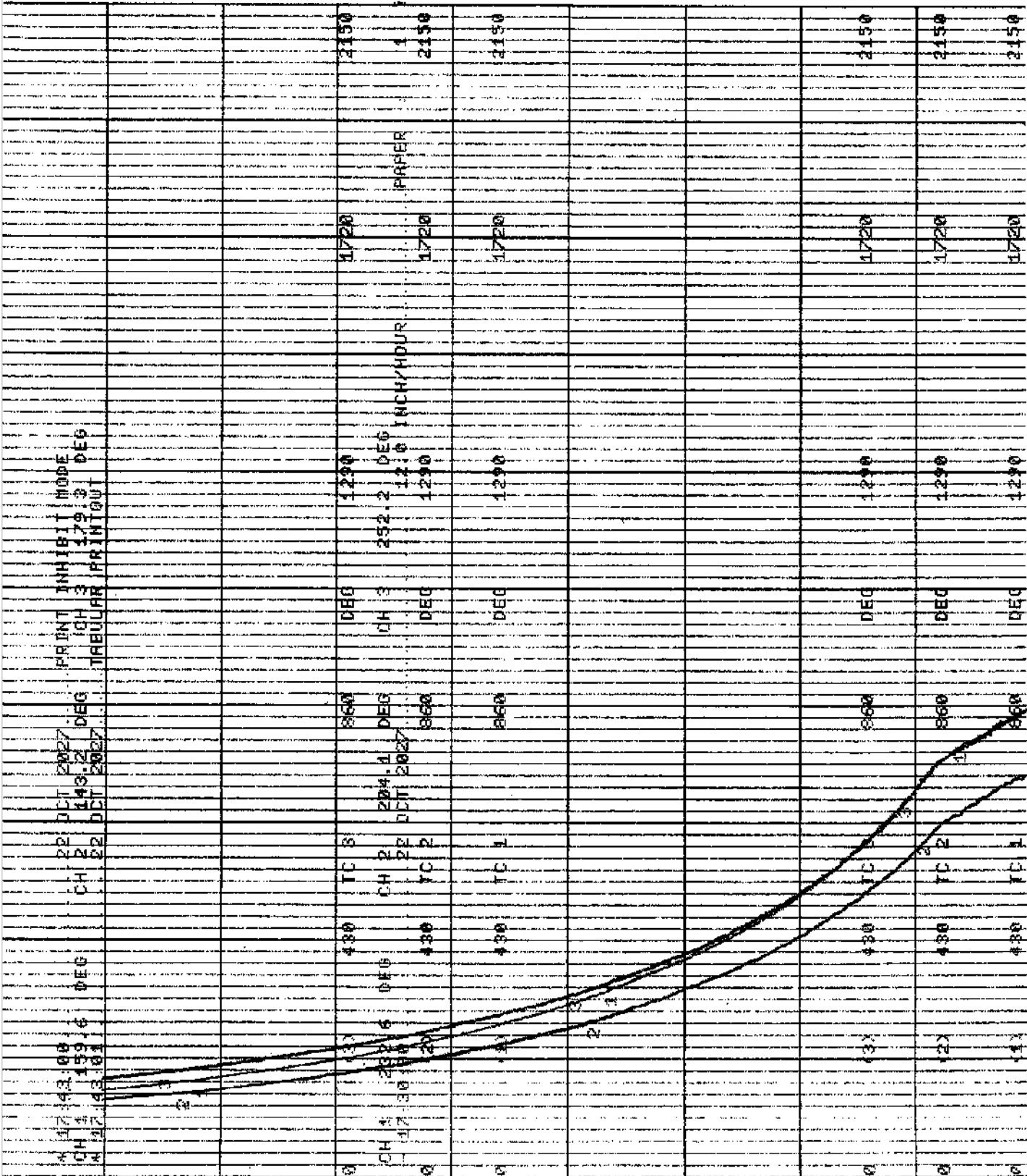


PH 1228





4225 KW



Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 1 - Item: 166

Workorder: 64880/1-0 Sub:14 Op:31

Part: SE121-001P-2 PANEL 1 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		VERIFY HEAT TREAT CERTIFICATION AND FURNACE CHART COMPLY WITH MTM PURCHASE ORDER REQUIREMEN		QA		VISUAL	OK	085		
(10)								01-16-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 1 - Item: 167

Workorder: 64880/1-0 Sub:14 Op:35

Part: SE121-001P-2 PANEL 1 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY OF ANNEAL		QA		J-1165	UNDER 1.01	085		
(10)		1.01 MAX						01-16-0		

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 1 - Item: 168

Workorder: 64880/1-0 Sub:14 Op:40

Part: SE121-001P-2 PANEL 1 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1*		.094" Max Gap (Part Surface To gauge)		MFG		FEELER GAGE	.080 (GOOD)	746	522	A
(10)				QA		FEELER GAGE		10-29-0	10-29-0	

64880 / 1.0 Sub 14


64880 PPPL NCSX PVVS INSPECTION RECORD					Inspection Drawing Number: SE121-001P-1MTM Rev: 0B						
Inspection type: Formed Panel <input type="checkbox"/> Interpass (#) <input type="checkbox"/> After structural welding <input type="checkbox"/> After welding Port <input type="checkbox"/> Final Inspection <input type="checkbox"/>											
Part # / Panel #: SE121-001P PANEL #1			Gage/Std S/N(s): J-1009-NDT / J-1178 / J-1165 / J-1180			Date of inspection: 02/10/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.000	0.377	LESS THAN 1.01	N/A	016	44	0.028	0.379	LESS THAN 1.01	N/A	016
2	0.000	0.377	LESS THAN 1.01	N/A		45	0.037	0.380	LESS THAN 1.01	N/A	
3	0.010	0.376	LESS THAN 1.01	N/A		46	0.040	0.376	LESS THAN 1.01	N/A	
4	0.014	0.377	LESS THAN 1.01	N/A		47	0.045	0.376	LESS THAN 1.01	N/A	
5	0.015	0.379	LESS THAN 1.01	N/A		48	0.055	0.376	LESS THAN 1.01	N/A	
6	0.018	0.381	LESS THAN 1.01	N/A		49	0.055	0.376	LESS THAN 1.01	N/A	
7	0.018	0.381	LESS THAN 1.01	N/A		50	0.045	0.377	LESS THAN 1.01	N/A	
8	0.025	0.380	LESS THAN 1.01	N/A		51	0.036	0.380	LESS THAN 1.01	N/A	
9	0.028	0.381	LESS THAN 1.01	N/A		52	0.022	0.380	LESS THAN 1.01	N/A	
10	0.040	0.381	LESS THAN 1.01	N/A		53	0.015	0.380	LESS THAN 1.01	N/A	
11	0.040	0.379	LESS THAN 1.01	N/A		54	0.015	0.381	LESS THAN 1.01	N/A	
12	0.041	0.380	LESS THAN 1.01	N/A		55	0.015	0.381	LESS THAN 1.01	N/A	
13	0.041	0.380	LESS THAN 1.01	N/A		56	0.015	0.380	LESS THAN 1.01	N/A	
14	0.043	0.380	LESS THAN 1.01	N/A		57	0.015	0.380	LESS THAN 1.01	N/A	
15	0.050	0.380	LESS THAN 1.01	N/A		58	0.018	0.380	LESS THAN 1.01	N/A	
16	0.055	0.381	LESS THAN 1.01	N/A		59	0.020	0.379	LESS THAN 1.01	N/A	
17	0.070	0.381	LESS THAN 1.01	N/A		60	0.030	0.376	LESS THAN 1.01	31.2	
18	0.075	0.379	LESS THAN 1.01	N/A		61	0.030	0.379	LESS THAN 1.01	31.2	
19	0.072	0.379	LESS THAN 1.01	N/A		62	0.025	0.380	LESS THAN 1.01	17.6	
20	0.070	0.379	LESS THAN 1.01	N/A		63	0.055	0.382	LESS THAN 1.01	18.8	
21	0.050	0.381	LESS THAN 1.01	N/A		64	0.055	0.382	LESS THAN 1.01	25.2	
22	0.062	0.381	LESS THAN 1.01	N/A		65	0.055	0.381	LESS THAN 1.01	20	
23	0.070	0.380	LESS THAN 1.01	N/A		66	0.030	0.381	LESS THAN 1.01	22.8	
24	0.050	0.380	LESS THAN 1.01	N/A		67	0.025	0.381	LESS THAN 1.01	18.8	
25	0.045	0.380	LESS THAN 1.01	N/A		68	0.045	0.380	LESS THAN 1.01	20	
26	0.020	0.380	LESS THAN 1.01	N/A		69	0.060	0.380	LESS THAN 1.01	22.2	
27	0.020	0.379	LESS THAN 1.01	N/A		70	0.060	0.379	LESS THAN 1.01	31.2	
28	0.015	0.379	LESS THAN 1.01	N/A		71	0.030	0.379	LESS THAN 1.01	31.2	
29	0.015	0.376	LESS THAN 1.01	N/A		72	0.025	0.379	LESS THAN 1.01	16.4	
30	0.015	0.376	LESS THAN 1.01	N/A		73	0.070	0.380	LESS THAN 1.01	18.8	
31	0.012	0.377	LESS THAN 1.01	N/A		74	0.060	0.380	LESS THAN 1.01	31.2	
32	0.014	0.380	LESS THAN 1.01	N/A		75	0.075	0.381	LESS THAN 1.01	19.4	
33	0.018	0.380	LESS THAN 1.01	N/A		76	0.075	0.380	LESS THAN 1.01	22.4	
34	0.046	0.380	LESS THAN 1.01	N/A		77	0.065	0.378	LESS THAN 1.01	18.6	
35	0.046	0.381	LESS THAN 1.01	N/A		78	0.065	0.378	LESS THAN 1.01	21.6	
36	0.040	0.380	LESS THAN 1.01	N/A		79	0.065	0.376	LESS THAN 1.01	18	
37	0.040	0.377	LESS THAN 1.01	N/A		80	0.060	0.377	LESS THAN 1.01	24.8	
38	0.038	0.377	LESS THAN 1.01	N/A		81	0.060	0.376	LESS THAN 1.01	26.2	
39	0.020	0.377	LESS THAN 1.01	N/A		82	0.070	0.380	LESS THAN 1.01	21	
40	0.020	0.379	LESS THAN 1.01	N/A		83	0.065	0.380	LESS THAN 1.01	22.4	
41	0.020	0.380	LESS THAN 1.01	N/A		84	0.020	0.381	LESS THAN 1.01	19.8	
42	0.018	0.380	LESS THAN 1.01	N/A	016	85	0.030	0.380	LESS THAN 1.01	32.2	016
43	0.022	0.380	LESS THAN 1.01	N/A	016	86	0.045	0.380	LESS THAN 1.01	22.2	016

64880 PPPL NCSX PVVS INSPECTION RECORD					Inspection Drawing Number: SE121-001P-1MTM Rev: 0B						
Inspection type: Formed Panel <input type="checkbox"/> Interpass (#) <input type="checkbox"/> After structural welding <input type="checkbox"/> After welding Port <input type="checkbox"/> Final Inspection <input type="checkbox"/>											
Part # / Panel #: SE121-001P PANEL #1			Gage/Std S/N(s): J-1009-NDT / J-1178 / J-1185 / J-1180			Date of Inspection: 02/10/04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.070	0.378	LESS THAN 1.01	28.8		126					
88	0.025	0.378	LESS THAN 1.01	30.6		127					
89	0.025	0.380	LESS THAN 1.01	18.8		128					
90	0.060	0.380	LESS THAN 1.01	22		129					
91	0.075	0.381	LESS THAN 1.01	24.2		130					
92	0.040	0.381	LESS THAN 1.01	22		131					
93	0.045	0.380	LESS THAN 1.01	18.8		132					
94	0.060	0.380	LESS THAN 1.01	20.8		133					
95	0.075	0.380	LESS THAN 1.01	21.6		134					
96						135					
97						136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
109						148					
110						149					
111						150					
112						151					
113						152					
114						153					
115						154					
116						155					
117						156					
118						157					
119						158					
120						159					
121						160					
122						161					
123						162					
124						163					
125						164					

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 1 - Item: 170

Workorder: 64880/1-0 Sub:14 Op:70

Part: SE121-001P-2 PANEL 1 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	LESS THAN 1.01	085			A
(10)		Magnetic Permeability 1.01 Max						02-11-0			
*				QA		J-1180	READINGS UP TO 31.2	085			A
(20)		32 MICRO-INCH SURFACE FINISH (INTERIOR (CONCAVE) SIDE)						02-11-0			
*		 .094"		QA		J-1149	.090	085			A
(30)		.094" Max Gap (Part Surface To gauge)				MTMFX2903		02-11-0			

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 2 - Item: 171

Workorder: 64880/1-0 Sub:15 Op:10

Part: SE121-001P-2 PANEL 2 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability 1.0 Max. (Panel Blank)		QA		J-1165	<1.01	363			A
(10)								02-11-0			
*		.375 (+.040/-0) (Panel Blank)		QA		J-160	.405	085			A
(20)								10-02-0			
*		SURFACE FINISH: SMOOTH, CLEAN, NO HEAVY SCRAPES, PITS, OR GOUGES (Panel Blank)		QA		VISUAL	GOOD	085			A
(30)								10-02-0			

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEJÜGNIS

FILE COPY 2

HAYNES
International

Haynes International
1029 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. de Facture Rechnungs Nr 391396002-0	Date Entered Date de Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestellnr P03-03297	Report No. Rapport No. Zangula Nr 20030915074	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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Sold To • Client • Bestelbschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestelbschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
---	---

Product Description • Description Produit • Material Bestelbschrift 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 2 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, FN 10204 3.1.B

Specifications • Spécifications • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
---	--	--

Heat Number Numéro de Cuite Charge Nr	Chemical Analysis • Analyse Chimique • Chemische Analyse																		
	Al	B	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W			
2650 3 6877	0.18		0.030	3.52	<0.10	21.42		4.44	0.28	8.56	60.11	0.006	0.004	0.17	0.29				
2650 3 6877																			

Certified By • Certifié Par • Bestelbt Durch: Tammy Shepherd
Certification Supervisor/Technician
09/15/03

T Shepherd

SEP 19 2003

80004 line 2
B.2.
9/22/03



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mc094096.tif 1 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs Nr 391396002-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915074	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 2 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
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Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC
---	--	--

Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.					Tensile Test at Elevated Temperature • Essai De Traction A Hte. Temp. Warm Zugversuch					Stress Rupture Temperature • Essai A Charge De Rupture Zeitstudversuch					
Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In EN % Dehnung	%RA	Test Essai Versuch Temp.	Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In EN % Dehnung	%RA	Test Essai Versuch Temp.	Stress Constrainte Spannung	Hours Heures Stunden	% Elong In EN % Dehnung	% RA
133000 PSI		67500 PSI	50 %	(1) (A)											

Certified By • Certifie Par • Bescheinigt Durch: **Tammy Shepherd** 09/15/03 (1) 2739027801
Certification Supervisor/Technician

T. Shepherd

 9/22/03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCT IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DO NOT CLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE. LES DONNEES CONTENUES ICI ONT ETE OBTENUES A PARTIR D'UN ECHANTILLON REPRESENTATIF DU PRODUIT ENVOYE EN SOUS-COMMANDE. NOUS NE FAISONS AUCUNE AFFIRMATION JURIDIQUE EN CE QUI CONCERNE L'UTILISATION DE CE CERTIFICAT. DIE DATEN BEZUGNEHEND AUF DIESE ANFRAGEN WURDEN VON EINER REPRASANTATIVEN PROBE ERHALTEN UND WERDEN ALS VERLAESSLICH ANGESEHEN. WIR ERHEBEN KEINE HAFTUNG FUR DIE VERWENDUNG DIESE DATEN ALS ANWANDUNG. DIESE DATEN ERFUELLEN DIE ANFORDERUNGEN DER LISTEDEN NORMEN, WENN SIE DURCH DIE VERWENDUNG DER VERWANDTEN NORMEN ERFOLGRIEICH WERDEN. WENN SIE DIE VERWENDUNG DIESE DATEN ALS ANWANDUNG ERFOLGRIEICH WERDEN, SIND SIE FUR DIE VERWENDUNG DER VERWANDTEN NORMEN ERFOLGRIEICH. DIESE DATEN ERFUELLEN DIE ANFORDERUNGEN DER LISTEDEN NORMEN, WENN SIE DURCH DIE VERWENDUNG DER VERWANDTEN NORMEN ERFOLGRIEICH WERDEN. WENN SIE DIE VERWENDUNG DIESE DATEN ALS ANWANDUNG ERFOLGRIEICH WERDEN, SIND SIE FUR DIE VERWENDUNG DER VERWANDTEN NORMEN ERFOLGRIEICH.

mc094096.tif 2 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs Nr 391396002-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestellnr P03-03297	Report No. Rapport No Zeugnis Nr 20030915074	Pages of Pages Page de Pages Anzahl der Seiten 3 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinaire • Bestelldenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 2 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
---	---	--

Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC
---	--	--

Annealed Hardness Durete Result Gegewicht Haerte	Aged Hardness Durete Vieilli Gealtert Haerte	Grain Size Grosueur De Grain Korngroesse					IGA	Uniformity	Corrosion Rate		Oxidation Rate	Charpy Impact Test				Creep Rupture					
		Grain Size	Predominant Grain Size	Recry. Grain	Unrecry. Grain %	ALA			Attack Depth	Corrosion		Test Method	Toughness Avg	Toughness 1	Toughness 2	Toughness 3	Test Equiv Verwech	Stress Constraint Spannung	Hours Heures Stunden	% Elong In % Allong EN % Dehnung	% Elong 6i 15 Hrs
96 HRB		86							MPY												(1)

Certified By • Certifie Par • Bescheinigt Durch: **Tammy Shepherd** 09/15/03 (1) 2739027801
 Certification Supervisor/Technician

T. Shepherd

THE DATA IN THIS REPORT WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTION LOTS OF THE SUPPLIER AND ARE BELIEVED TO BE REPRODUCIBLE. WE DO NOT CLAIM ANY LIABILITY FOR USE OF THE CERTIFIED DATA FOR UNUSUAL OR UNEXPECTED APPLICATIONS. THE USER ASSUMES ALL LIABILITY FOR THE USE OF THE DATA FOR UNUSUAL OR UNEXPECTED APPLICATIONS. THE USER ASSUMES ALL LIABILITY FOR THE USE OF THE DATA FOR UNUSUAL OR UNEXPECTED APPLICATIONS. THE USER ASSUMES ALL LIABILITY FOR THE USE OF THE DATA FOR UNUSUAL OR UNEXPECTED APPLICATIONS.

 9/22/03

m0094096.tif 3 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS

FILE COPY 2

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. De Facture Rechnungs Nr 391396002-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestellkaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915074	Pages of Pages Page de Pages Anzahl der Seiten 4 Of 4
Sold To • Client • Bestellaranschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestimmung MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 2 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1			Quantity Ordered Quantité Commandée Bestellemenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
This material is free of mercury contamination. Mill Orders Used: 2739027801 (1 PC) (A) 1750 °F to 1950 °F				

Certified By • Certifié Par • Beschließt Durch: **Tammy Shepherd** 09/15/03
Certification Supervisor/Technician

T. Shepherd

mc094096.tif 4 of 4


9/24/03

THE DATA OBTAINED HEREBY WERE OBTAINED FROM SAMPLES SUBMITTED TO BE REPRESENTATIVE OF THE PRODUCT IN THE SUBJECT SHIPMENT AND ARE HELD TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS DES ÉPREUVES OBTENUS ICI SONT CONSIDÉRÉS COMME ÉTANT REPRÉSENTATIFS DE LA MATIÈRE DANS LE CAS D'UN ÉCHANTILLON SUBSTITUÉ À UN ÉCHANTILLON DE LA MATIÈRE EN QUESTION. NOTRE RESPONSABILITÉ JURIDIQUE EN CE QUI CONCERNE L'UTILISATION DE CE CERTIFICAT
DIE DATEN SIND NUR ANNAHME BEZÜGLICH DER PROBEERGEBNISSE UND NICHT BEZÜGLICH DER PRODUKTIONSBEDINGUNGEN. WIR ÜBERNEHMEN KEINE VERANTWORTUNG FÜR DEN VERKLEBUNGSPROZESS BEI DER VERANWENDUNG DIESER ZERTIFIKATION.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATIONS, PROVIDED BY ANY LISTED PURCHASER OR ORDER NUMBER.
SPECIFIC REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.



CORRECTED

Certificate of Conformance
EXOTIC METAL TREATING INC.

Certificate # 46797

6234 E. Hanna Avenue • Indianapolis, Indiana

Vendor Code # 0013

P.O. # P03-04902

Exotic Metal Treating Inc. hereby certifies that all materials used in the manufacture of parts CONFORMS to the material and/or manufacturing specifications indicated in drawings or specifications as called for on purchase order referenced hereon. Test reports are on file with us or with our suppliers for examination and indicate conformance with the applicable requirements. The parts listed below are processed in accordance with the drawings or specifications called for on referenced purchase order that are current on the date on which the order was accepted. Pertinent details of the work performed are on file at this facility under the process heat number listed hereon.

HEAT # 03-2248

DATE SHIPPED 12-8-03

QUANTITY	DESCRIPTION
1 PC	#SE121-001P-2 PANEL 2D JOB #64880-2/2
1 PC	#SE121-001P-2 PANEL 2 JOB #64880-15/1

MATERIAL: INCO 625

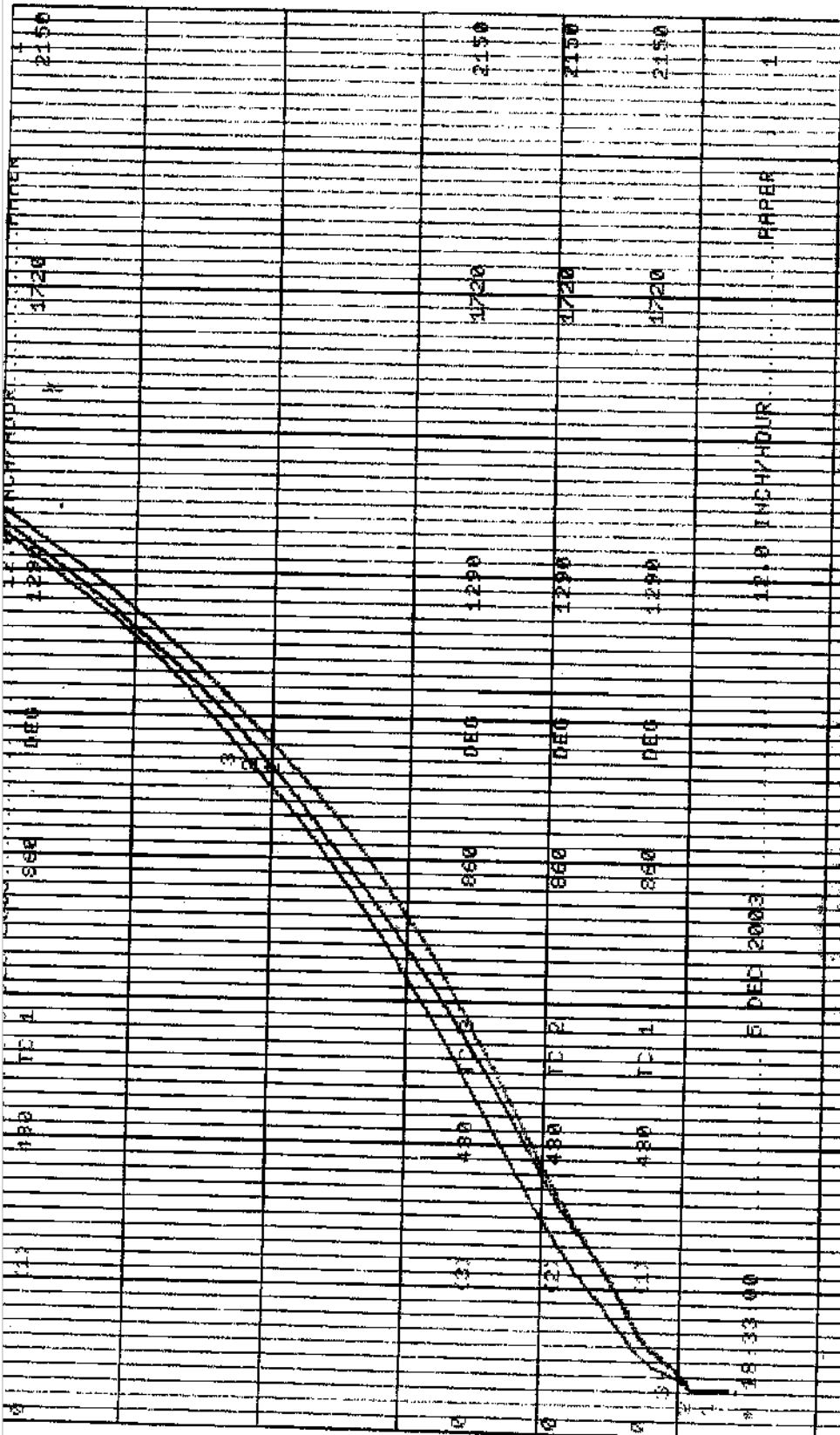
SOLUTION ANNEALED PER AMS-2774 DATED JULY 1995
1900°F ± 15°F FOR 45 MINUTES ± 5 MINUTES
RAPID AIR COOLED TO 1000°F & AIR COOLED.

81546
12/8/03
B.I.

MTM
023
12/22/03

Sworn and subscribed to before me...
 on this 12-8-03 day of December 2003
 Notary Public Morgan County - State of Indiana
 My commission expires 9-30-09

[Signature]
 (Name)
QA
 (Title)



121103

EXOTIC METAL TREATING, INC.
 DEC - 8 2003
 815 406
 8-21

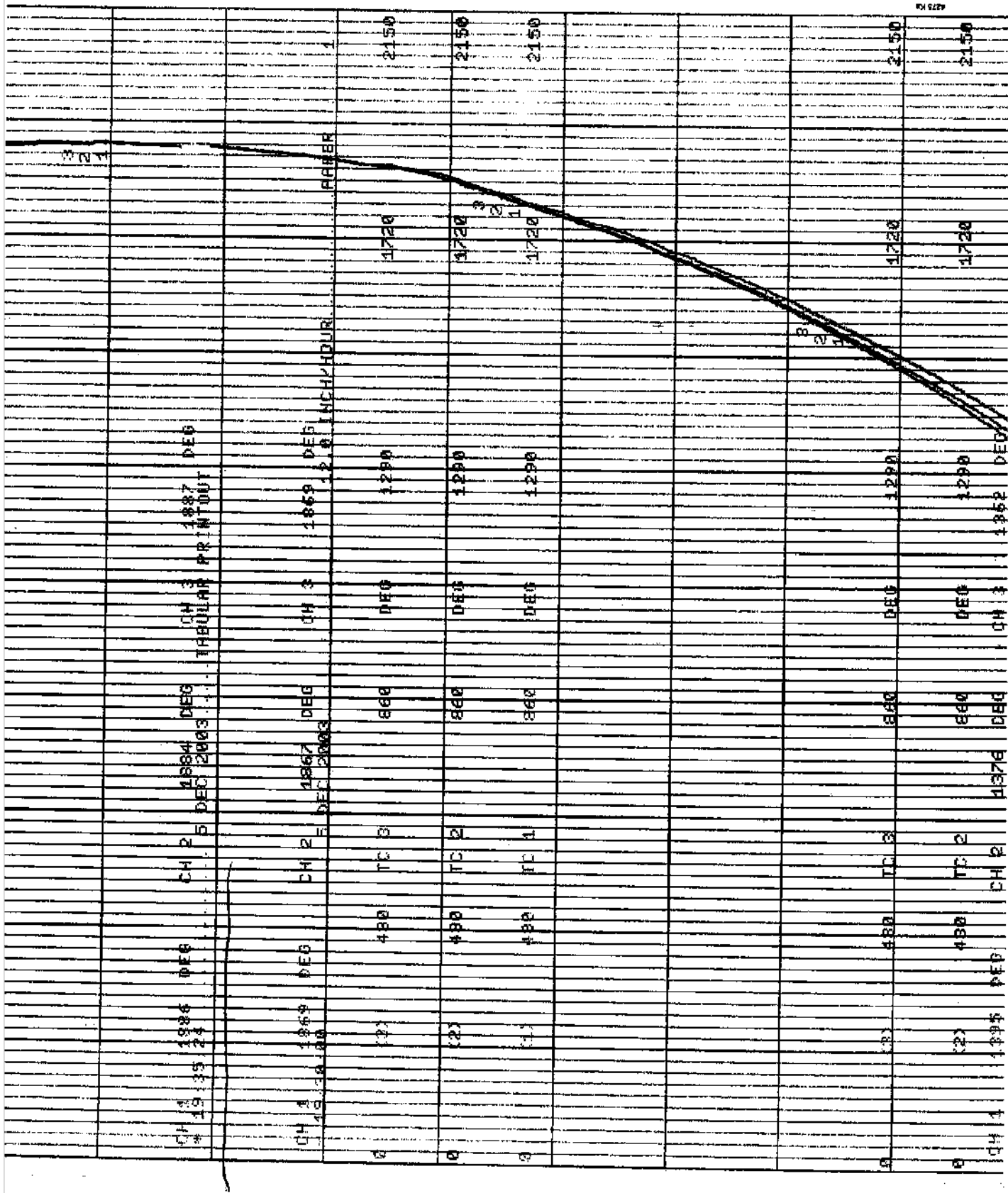
EXOTIC METAL TREATING, INC.
 6234 EAST HANNA AVENUE • INDIANAPOLIS, IN 46203
 DATE: 12-5-03 COMPANY: MAJETA DOC
 LOAD #: 03-2248 MATERIAL:
 QTY: 2 P/N: 6E121-001-P-2
 FURNACE: GFI ATMOS: Air
 REF. SPEC: AMS 2774 Rev. Juc. 95
 RECORDER: DPA 2 TIME START: 18:33
 PANEL 2, 20

DEC 2003

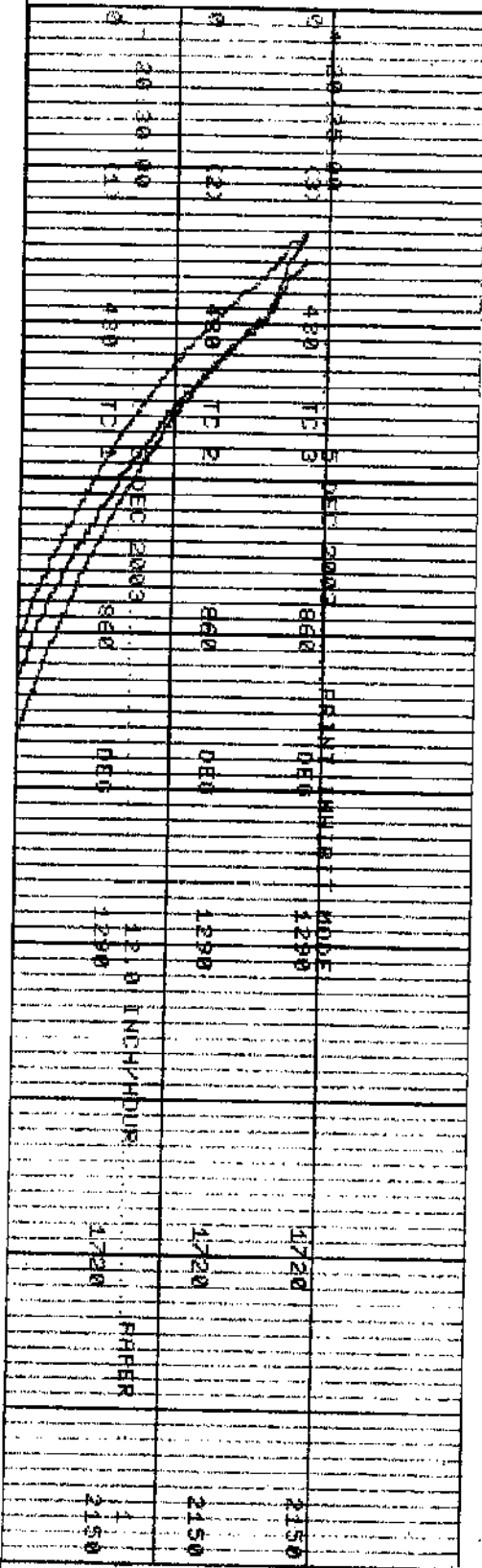
12.0 INCH/HOUR

PAPER

1



CH 1	1990	DEC	CH 2	1991	DEC	CH 3	1992	DEC
4 20 21 20			5	DEC 2003		REGULAR PRINTOUT		
0	3)	480	TC 3	880	DE0	1290	1720	2150
0	2)	480	TC 2	880	DE0	1290	1720	2150
0	1)	480	TC 1	880	DE0	1290	1720	2150
0	20 00 00		5 DEC 2003			12 0 INCH/HR		
0	3)	480	TC 3	880	DE0	1290	1720	2150
0	2)	480	TC 2	880	DE0	1290	1720	2150
0	1)	480	TC 1	880	DE0	1290	1720	2150



Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 2 - Item: 175

Workorder: 64880/1-0 Sub:15 Op:31

Part: SE121-001P-2 PANEL 2 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		VERIFY HEAT TREAT CERTIFICATION AND FURNACE CHART COMPLY WITH MTM PURCHASE ORDER REQUIREMEN		QA		VISUAL	GOOD	085		
(10)								01-16-0		A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 2 - Item: 176

Workorder: 64880/1-0 Sub:15 Op:35

Part: SE121-001P-2 PANEL 2 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY OF ANNEAL		QA		J-1165	UNDER 1.01	085		
(10)		1.01 MAX						01-16-0		A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 2 - Item: 177

Workorder: 64880/1-0 Sub:15 Op:40

Part: SE121-001P-2 PANEL 2 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)		.094" Max Gap (Part Surface To gauge)		MFG QA		J-642	.094" NOGO	407 01-20-0	363 01-20-0	

A

64880 PPPL NCSX PVVS INSPECTION RECORD


Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-00/ #2				Gage/Std S/N(s): J-1009		J-1165		J-1180		Date of Inspection: 02/09/2004	
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.050	0.402	<1.01	31.2	MTM 040	44	0.02	0.380	<1.01	34.3	MTM 040
2	0.045	0.407	<1.01	48.8	MTM 040	45	0.02	0.379	<1.01	55.6	MTM 040
3	0.045	0.412	<1.01	39.2		46	0.03	0.378	<1.01	28.4	
4	0.030	0.412	<1.01	24.8		47					
5	0.025	0.405	<1.01	50.4		48	0.045	0.377	<1.01	38.4	MTM 040
6	0.015	0.399	<1.01	57.6		49	0.035	0.404	<1.01	32	MTM 040
7	0.010	0.399	<1.01	25.6		50	0.045	0.384	<1.01	55.6	
8	0.015	0.395	<1.01	44		51	0.060	0.389	<1.01	24.4	
9	0.020	0.395	<1.01	56		52	0.045	0.380	<1.01	37.6	
10	0.025	0.402	<1.01	52		53	0.040	0.378	<1.01	37.6	
11	0.030	0.397	<1.01	50.4		54	0.020	0.393	<1.01	35.2	MTM 040
12	0.030	0.391	<1.01	48.8		55	0.065	0.393	<1.01	41.2	
13	0.035	0.389	<1.01	50		56					
14	0.040	0.387	<1.01	42.4		57					
15	0.046	0.386	<1.01	38		58					
16	0.050	0.385	<1.01	34.4		59					
17	0.030	0.383	<1.01	48		60					
18	0.020	0.381	<1.01	40.4		61					
19	0.015	0.380	<1.01	35.2		62					
20	0.020	0.378	<1.01	38.8		63					
21	0.015	0.378	<1.01	37.2		64					
22	0.015	0.385	<1.01	60.8		65					
23	0.020	0.386	<1.01	50.4		66					
24	0.030	0.386	<1.01	43.6		67					
25	0.035	0.384	<1.01	41.6		68					
26	0.040	0.384	<1.01	60.4		69					
27	0.050	0.385	<1.01	45.2		70					
28	0.055	0.382	<1.01	47.6		71					
29	0.060	0.382	<1.01	64.8		72					
30	0.060	0.381	<1.01	51.6		73					
31	0.055	0.381	<1.01	43.2		74					
32	0.060	0.381	<1.01	43.6		75					
33	0.070	0.383	<1.01	31.2		76					
34	0.066	0.381	<1.01	49.6		77					
35	0.066	0.381	<1.01	50.8		78					
36	0.040	0.382	<1.01	37.2		79					
37	0.040	0.381	<1.01	51.6		80					
38	0.030	0.381	<1.01	41.6		81					
39	0.020	0.381	<1.01	34		82					
40	0.025	0.382	<1.01	34		83					
41	0.020	0.381	<1.01	33.6		84					
42	0.015	0.380	<1.01	30	MTM 040	85					
43	0.015	0.379	<1.01	28.8		86					

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 2 - Item: 179

Workorder: 64880/1-0 Sub:15 Op:70

Part: SE121-001P-2 PANEL 2 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	<1.01	854			A
(10)		Magnetic Permeability 1.01 Max						02-09-0			
*				QA		J-1180	FROM WITHIN TO 65 R	854			R
(20)		32 MICRO-INCH SURFACE FINISH (INTERIOR (CONCAVE) SIDE)					A	02-09-0			
*				QA		J-1149	<.094	854			A
(30)		 .094" .094" Max Gap (Part Surface To gauge)				MTMFX2904		02-09-0			

INSPECTION DATA CHECKLIST

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 3 - Item: 180

Workorder: 64880/1-0 Sub:16 Op:10

Part: SE121-001P-2 PANEL 3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability 1.0 Max. (Panel Blank)		QA		J-1165	<1.01	363			A
(10)								02-11-0			
*		.375 (+.040/-0) (Panel Blank)		QA		J-160	.381	085			A
(20)								10-02-0			
*		SURFACE FINISH: SMOOTH, CLEAN, NO HEAVY SCRAPES, PITS, OR GOUGES (Panel Blank)		QA		VISUAL	GOOD	085			A
(30)								10-02-0			

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs Nr 391396003-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915037	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellanrschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 3 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
---	--	---

Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
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Heat Number Numero De Coche Charge Nr	Chemical Analysis • Analyse Chimique • Chemische Analyse																		
	A)	B	C	Cu+Ta (Nb+Ta)	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W		
2650 3 6877	0.18		0.030	3.52	<0.10	21.42		4.46	0.28	8.56	60.11	0.006	0.004	0.17	0.29				
	(N)	Ta	Zr	Bi	Se	La	(Ni+Cu)	Pb	Mg	Y	Ag	N	Ca	Al+Ti	Ni+Co				
2650 3 6877																			

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
09/15/03

Paul O. Guest

SEP 19 2003

90006 Inv 3 B.1.
9/22/03
MTM 023

THE DATA LISTED HEREIN WERE OBTAINED FROM SAMPLES AS SUBMITTED TO US REPRESENTATIVE OF THE PRODUCT IN THE SUBJECT REPORT AND ARE BOUND BY THE RELEASE. WE DISCLAIM ANY LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS LISTÉS ICI ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS REPRÉSENTATIFS DES PRODUITS LISTÉS ICI EN VERTU DE NOTRE DÉCLARATION DE RESPONSABILITÉ. IL N'EST PAS GARANTÉ QUE LES RÉSULTATS LISTÉS ICI SONT VRAIEMENT LES VOS.
DIE VORGESAMMELTEN ANGABEN BAZIEMEN AUF PROBEEN DIE ALS REPRÄSENTATIV ERFOLGEN FÜR DIE PRODUKTE DIE HIERIN LISTIERT SIND ZUR VERFÜGBARUNG ANGEBOHEN WURDEN. WIR ÜBERNEHMEN KEINE VERANTWORTUNG FÜR DIE VERWENDUNG DIESEER ZERTIFIKATE.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATION, AND IS NOT TO BE USED FOR ANY OTHER APPLICATIONS UNLESS SPECIFICALLY APPROVED BY HAYNES INTERNATIONAL. THIS CERTIFICATE IS VALID FOR MULTIPLE QUANTITIES OF THE SAME MATERIAL.

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CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs Nr 391396003-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915037	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellarnschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 3 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
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Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
---	--	--

Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.					Tensile Test at Elevated Temperature • Essai De Traction A Hie.Temp. Warm Zugversuch					Stress Rapture Temperature • Essai A Charge De Rupture Zetstandversuch						
Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In % Allong EN % Dehnung	%RA	Temp:	Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In % Allong EN % Dehnung	%RA	Temp:	Test Essai Versuch	Stress Coordinate Spannung	Hours Heures Stunden	% Elong In % Allong EN % Dehnung	% RA
133000 PSI		67500 PSI	50 %													

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03 (1) 2739027801

Paul O. Guest

 9/22/03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCT IN THE SUBJECT EQUIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES DONNÉES CONTIENUES ICI ONT ÉTÉ OBTENUES À PARTIR D'ÉCHANTILLONS REPRÉSENTATIFS DES PIÈCES EN QUESTION. ON CROIT QU'ELLES SONT FIABLES. NOUS NE SOMES PAS RESPONSABLES D'UN DOMAINE JURIDIQUE EN LIEN AVEC L'UTILISATION DE CE CERTIFICAT.
DIE VORGESCHTEN ANGABEN WURDEN AN DER FOLGE VON PROBEWERTUNGEN ERHALTEN, DIE ALS REPRÄSENTATIV FÜR DIE BEZUGSGERÄTE ANGESEHEN WERDEN. WIR LEISTEN KEINE RECHTLICHE VERANTWORTUNG FÜR DIE VERWENDUNG DIESER ANGABEN IN ANSONSTEN NACHZUSEHENDEN ANWENDUNGSBEREICHEN.
THE MATERIALS USED IN THE MANUFACTURE OF THE TESTED SYSTEMS, AS DEFINED BY ANY SPECIFICATIONS OR PURCHASE ORDER REQUIREMENTS, SHALL BE THE SAME AS THE MATERIALS SPECIFIED IN THE PURCHASE ORDER OR OTHER DOCUMENTS THAT MAY BE APPLICABLE TO THE ORDER OR OTHER DOCUMENTS.

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FILE COPY 2

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS				
Invoice No No. De Facture Rechnungs Nr 391396003-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No. Zeugnis Nr 20030915037	Pages of Pages Page de Pages Anzahl der Seiten 3 Of 4

Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 3 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
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Specification • Spécification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantité Commandée Bestellemenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
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Annealed Hardness Dureté Recuit Gehtzeit Härte	Aged Hardness Dureté Vieilli Gealtert Härte	Grain Size Grossueur De Grain Korngrösse					IGA	Uniformity	Corrosion Rate		Oxidation Rate	Charpy Impact Test				Creep Rupture				
		Grain Size	Predominant Grain Size	Recry. Grain	Unrecry. Grain %	ALA			Attack Depth	Corrosion		Test Method	Toughness Avg	Toughness 1	Toughness 2	Toughness 3	Test Estat Versuch	Stress Constraint Spannung	Hours Heures Stunden	% Elong In % Allong EN % Dehnung
96 HRB		8/6							MPY											(1)

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
09/15/03 (1) 2739027801

Paul O. Guest

NTM
023
9/22/03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTS IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS CONTIENS ICI SONT OBTENUS D'ÉCHANTILLONS CONSIDÉRÉS COMME ÉTANT REPRÉSENTATIFS DES PRODUITS ENVOYÉS EN VUE D'ÊTRE CERTIFIÉS. NOUS DÉCLINONS TOUTE RESPONSABILITÉ JURIDIQUE QU'ELLE SOIT DÉTERMINÉE EN VERTU DE LA LOI.
DIE WERKSZEUGNIS ANNAHMEN HABEN SICH AN FÜR PROBEEN ERHALTEN, DIE ALS REPRÄSENTATIV FÜR DIE LIEFERTE WERKSZEUGNIS ANNAHMEN ERACHTET WERDEN. WIR ÜBERNEHMEN KEINE VERANTWORTUNG FÜR DEN GEBRAUCH DIESER ZERTIFIKATION. WIR ÜBERNEHMEN KEINE VERANTWORTUNG FÜR DEN GEBRAUCH DIESER ZERTIFIKATION.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LATEST SPECIFICATION, MODIFIED BY ANY ADDITIONAL PURCHASE ORDER REQUIREMENTS.
DIE WERKSZEUGNIS ANNAHMEN HABEN SICH AN FÜR PROBEEN ERHALTEN, DIE ALS REPRÄSENTATIV FÜR DIE LIEFERTE WERKSZEUGNIS ANNAHMEN ERACHTET WERDEN.
DIE WERKSZEUGNIS ANNAHMEN HABEN SICH AN FÜR PROBEEN ERHALTEN, DIE ALS REPRÄSENTATIV FÜR DIE LIEFERTE WERKSZEUGNIS ANNAHMEN ERACHTET WERDEN.

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CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. De Facture Rechnung Nr	Date Entered Date De Commande Bestelldatum	Customer Reference Reference Client Kundenbestelldaten	Report No. Rapport No Zeugnis Nr	Pages of Pages Page de Pages Anzahl der Seiten
391396003-0	08/15/03	P03-03297	20030815037	4 Of 4
Sold To • Client • Bestelleranschrift		Ship To • Destinataire • Bestimmung		Product Description • Description Produit • Material Beschreibung
MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		0.375 x 0/0 x 0/0 SF121-001P-2 PANEL 3 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Spécification • Spezifikation			Quantity Ordered Quantité Commandée Bestellmenge	Quantity Shipped Quantité Expédiée Liefermenge
ASTM-B-443 Rev 00e1 N06625 1			1 PC	1 PC
<p>This material is free of mercury contamination. Mill Orders Used: 2739027801 (1 PC) (A) 1750 °F to 1950 °F</p>				

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
 Certification Supervisor/Technician 09/15/03

Paul O. Guest



9/22/03

INDIANAPOLIS: THIS IS THE OFFICIAL HAYNES CERTIFICATION OF TESTS FROM HAYNES INTERNATIONAL. IT IS THE PROPERTY OF HAYNES INTERNATIONAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE HAYNES CERTIFICATION OF TESTS IS THE PROPERTY OF HAYNES INTERNATIONAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE HAYNES CERTIFICATION OF TESTS IS THE PROPERTY OF HAYNES INTERNATIONAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

mc094091.tif



CORRECTED

Certificate of Conformance
EXOTIC METAL TREATING INC.

Certificate # **46687**

6234 E. Hanna Avenue • Indianapolis, Indiana

Vendor Code # **0013**

P.O. # **P03-04564**

Exotic Metal Treating Inc. hereby certifies that all materials used in the manufacture of parts **CONFORMS** to the material and/or manufacturing specifications indicated in drawings or specifications as called for on purchase order referenced hereon. Test reports are on file with us or with our suppliers for examination and indicate conformance with the applicable requirements. The parts listed below are processed in accordance with the drawings or specifications called for on referenced purchase order that are current on the date on which the order was accepted. Pertinent details of the work performed are on file at this facility under the process heat number listed hereon.

HEAT # **03-2122**

DATE SHIPPED **11-10-03**

QUANTITY

DESCRIPTION

1 PC

#SE121-001P-2 PANEL 3 JOB #64880-16/1

MATERIAL: INCO 625

SOLUTION ANNEALED PER AMS-2774 DATED JULY 1995
1900°F ± 15°F FOR 45 MINUTES ± 5 MINUTES
RAPID AIR COOLED TO 1000°F & AIR COOLED.



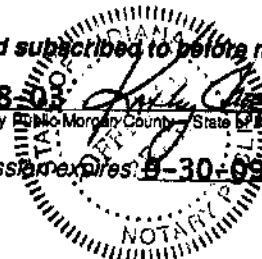
12/22/03

8/1/06
11/10/03
B.A.

Sworn and subscribed to before me...

on **12-18-03** *[Signature]*
Notary Public Morgan County State of Indiana

My commission expires: **9-30-09**

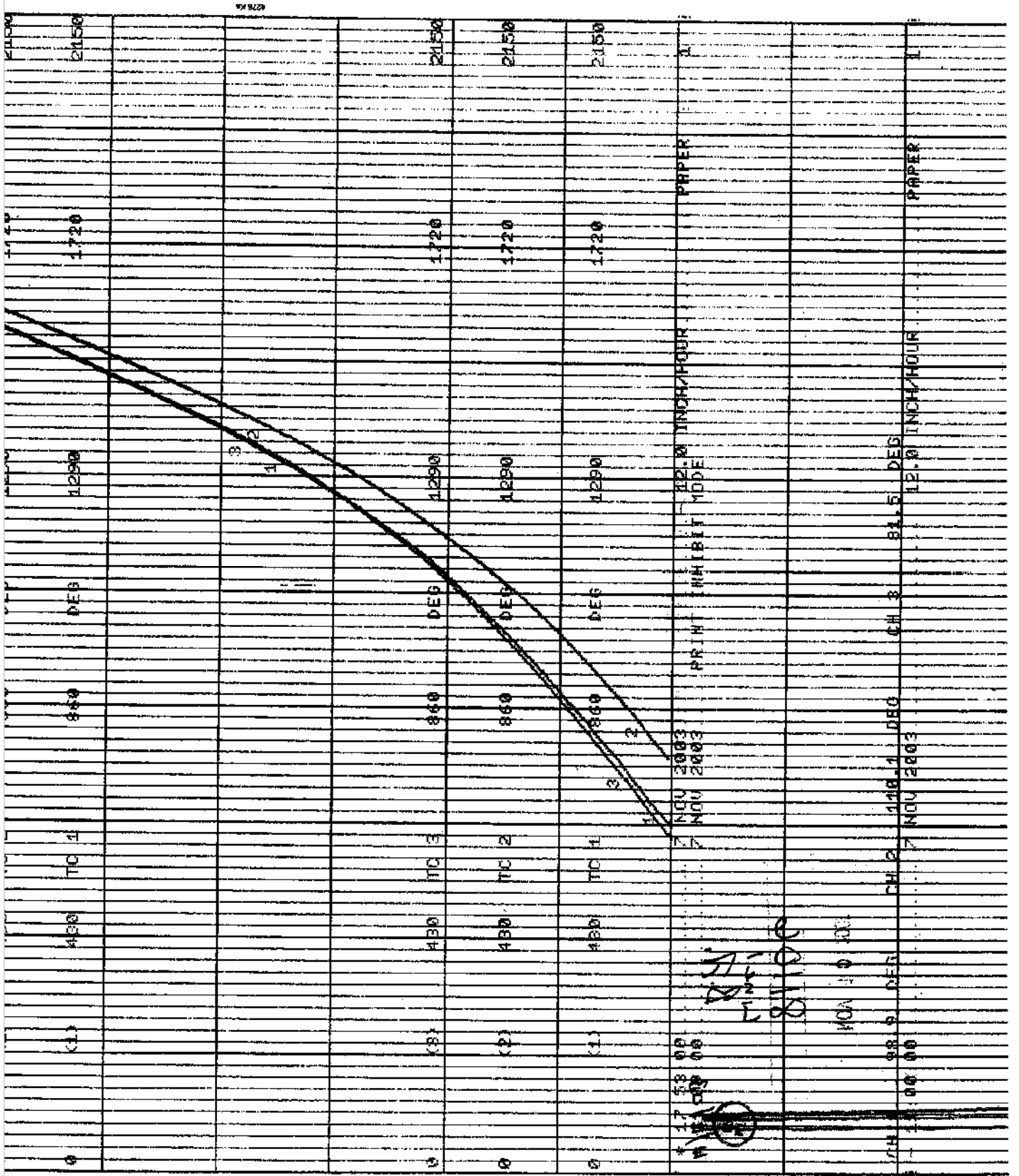


[Signature]

(Name)

PA

(Title)

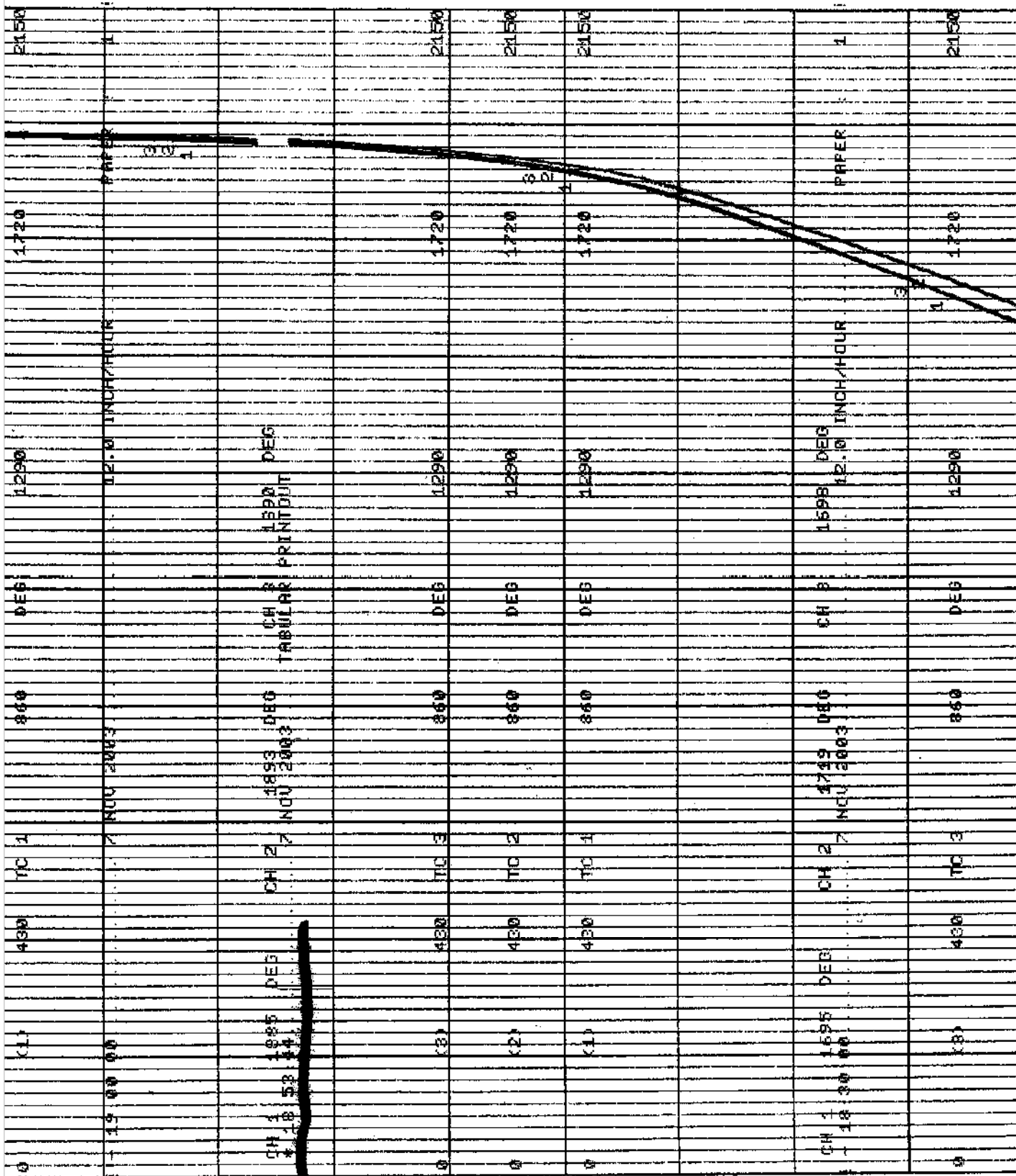


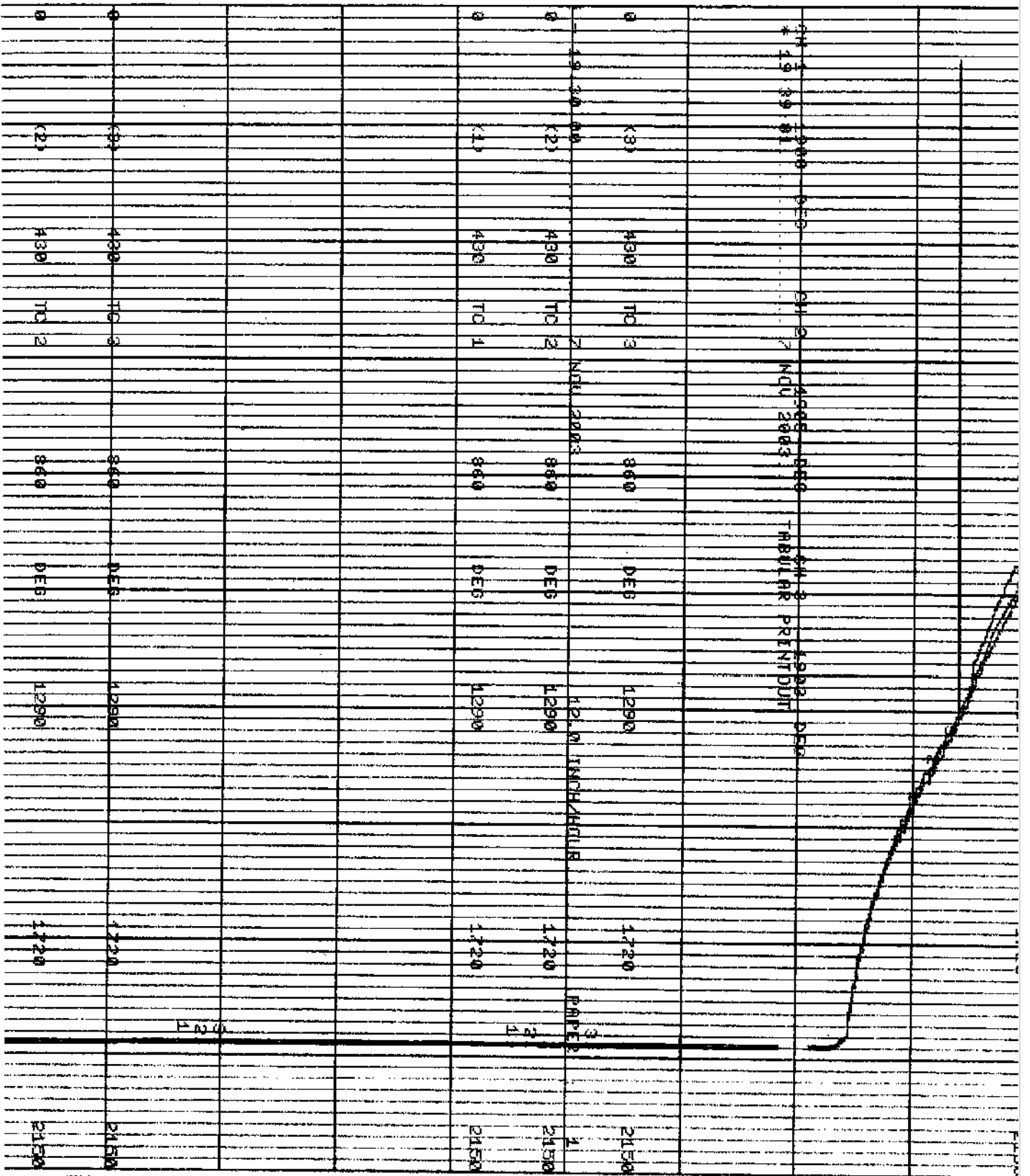
NOV 2003
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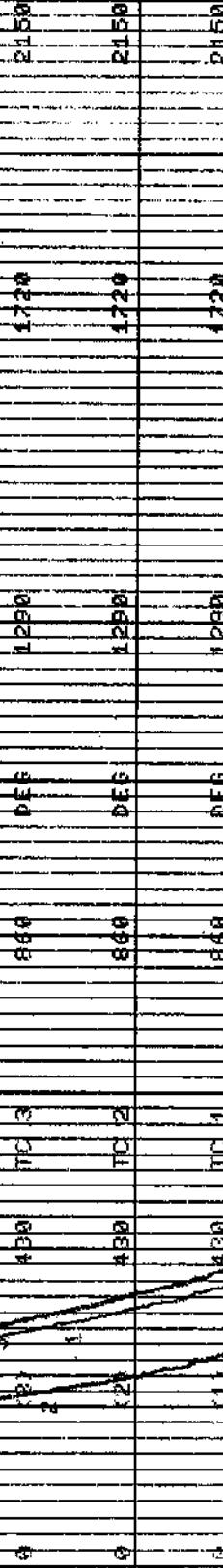


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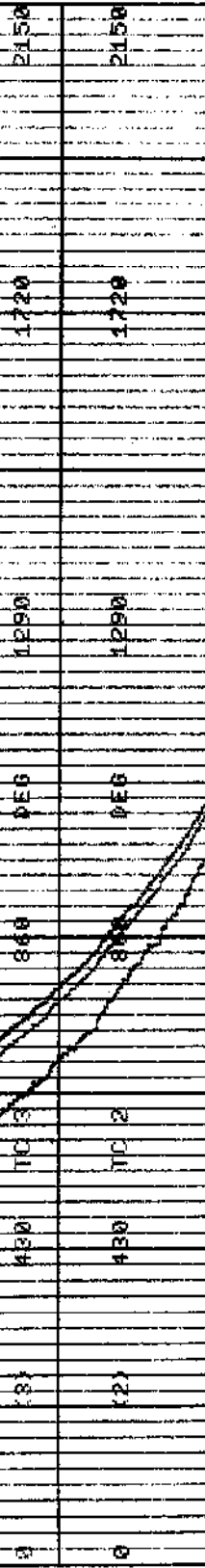


PAPER

12.00 INCH/HOUR

7 NCU 2003

* 20 00 00



Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 3 - Item: 184

Workorder: 64880/1-0 Sub:16 Op:31

Part: SE121-001P-2 PANEL 3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		VERIFY HEAT TREAT CERTIFICATION AND FURNACE CHART COMPLY WITH MTM PURCHASE ORDER REQUIREMEN		QA		VISUAL	GOOD	085		
(10)								01-16-0		A



INSPECTION DATA CHECKLIST

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 3 - Item: 185

Workorder: 64880/1-0 Sub:16 Op:35

Part: SE121-001P-2 PANEL 3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY OF ANNEAL		QA		J-1165	UNDER 1.01	085		
(10)		1.01 MAX						01-16-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 3 - Item: 186

Workorder: 64880/1-0 Sub:16 Op:40

Part: SE121-001P-2 PANEL 3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS





Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)		.094" Max Gap (Part Surface To gauge)		MFG QA		J-642	.094" MAX.	407 02-04-0	363 02-04-0	

A

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B



Inspection type: Formed Panel			Interpass (#)		After structural welding		After welding Port		Final Inspection		
Part # / Panel #:	SE121-00	PANEL #3	Gage/Std	S/N(s):	J1009	J1178	J1165	Date of Inspection:	02/11/2004		
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.03	0.38	<.101			44	0.02	0.382			
2	0.025	0.38	<.101			45	0.03	0.381			
3	0.015	0.381	<.101			46	0.03	0.381			
4	0.01	0.379	<.101			47	0.03	0.382			
5	<.01	0.381	<.101			48	0.03	0.38			
6	<.01	0.381	<.101			49	0.03	0.38			
7	<.01	0.378	<.101			50	0.03	0.38			
8	<.01	0.378	<.101			51	0.03	0.382			
9	<.01	0.38	<.101			52	0.02	0.382			
10	<.01	0.38	<.101			53	0.02	0.382			
11	<.01	0.381	<.101			54	<.01	0.383			
12	<.01	0.379	<.101			55	0.02	0.382			
13	<.01	0.38	<.101			56	0.03	0.383			
14	<.01	0.382	<.101			57	0.02	0.383			
15	<.01	0.382	<.101			58	0.015	0.383	26.2		
16	<.01	0.38	<.101			59	0.02	0.38	24.6		
17	<.01	0.379	<.101			60	<.01	0.378	19.8		
18	0.06	0.379	<.101			61	<.01	0.378	21.6		
19	0.06	0.378	<.101			62	<.01	0.379	18.4		
20	0.05	0.379	<.101			63	0.02	0.378	19.6		
21	0.04	0.379	<.101			64	0.015	0.379	22		
22	0.04	0.38	<.101			65	0.015	0.378	24.8		
23	0.04	0.381	<.101			66	0.02	0.382	18.2		
24	0.025	0.381	<.101			67	0.03	0.382	20		
25	0.025	0.381	<.101			68	0.02	0.38	23.6		
26	0.025	0.379	<.101			69	<.01	0.379	25.2		
27	0.01	0.38	<.101			70	0.03	0.381	18.8		
28	0.025	0.381	<.101			71	0.02	0.38	16		
29	0.025	0.381	<.101			72	<.01	0.379	19.2		
30	0.02	0.381	<.101			73	0.03	0.381	25.2		
31	0.02	0.381	<.101			74	0.03	0.382	28		
32	0.02	0.38	<.101			75	0.02	0.382	30.4		
33	0.025	0.38	<.101			76	0.045	0.382	30.8		
34	0.02	0.382	<.101			77	0.03	0.384	27.6		
35	0.015	0.38	<.101			78	0.02	0.383	18.8		
36	0.02	0.38	<.101			79	0.02	0.379	19		
37	.020.	0.381	<.101			80	<.01	0.379	23.6		
38	0.015	0.381	<.101			81	0.08	0.379	20.2		

39	<.010	0.38	<.101			82	0.08	0.38	19.2		
40	<.010	0.38	<.101			83	0.06	0.381	26		
41	<.010	0.379	<.101			84	0.05	0.38	18.2		
42	<.010	0.38	<.101			85	0.03	0.382	21.6		
43	<.010	0.381	<.101			86	0.015	0.383	20.4		

64880 PPPL NCSX PVVS INSPECTION RECORD Inspection Drawing Number: **SE121-001P-1MTM Rev: 0B**

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection


Part # / Panel #: SE121-00 PANEL #3 Gage/Std S/N(s): Date of Inspection:

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.03	0.385	<.101	22		126					
88	0.015	0.384	<.101	21.8		127					
89	0.02	0.382	<.101	24.6		128					
90	0.07	0.382	<.101			129					
91	0.08	0.381	<.101			130					
92	0.08	0.383	<.101			131					
93	0.06	0.382	<.101			132					
94	0.055	0.382	<.101			133					
95	0.055	0.379	<.101			134					
96	0.07	0.38	<.101			135					
97	0.07	0.379	<.101			136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
109						148					
110						149					
111						150					
112						151					
113						152					
114						153					
115						154					
116						155					
117						156					
118						157					
119						158					
120						159					

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 3 - Item: 188

Workorder: 64880/1-0 Sub:16 Op:70

Part: SE121-001P-2 PANEL 3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	<1.01	363			A
(10)		Magnetic Permeability 1.01 Max						02-12-0			
*				QA		J-1009	30.8	363			A
(20)		32 MICRO-INCH SURFACE FINISH (INTERIOR (CONCAVE) SIDE)						02-12-0			
*		 .094"		QA		J-1149	.080	363			A
(30)		.094" Max Gap (Part Surface To gauge)				MTMFX2905		02-12-0			

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

HAYNES
International

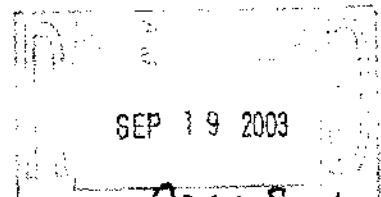
Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No. No. de Facture Rechnungs Nr. 391396004-0	Date Entered Date de Commande Bestelldatum 08/15/03	Customer Reference Référence Client Kundenbestellnummer P03-03297	Report No. Rapport No. Zeugnis Nr. 20030915048	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
Sold To • Client • Bestellausschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Bestreitung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 4 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation 4 ASTM-B-443 Rev 00e1 N06625 1			Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC

Heat Number Numéro de Cuisse Liquage Nr.	Chemical Analysis • Analyse Chimique • Chemische Analyse																
	Al	B	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W	
2650 3 6876	0.19		0.030	3.55	0.21	21.97		4.62	0.30	8.65	59.46	0.005	0.003	0.19	0.26		
2650 3 6876	As	Ta	Zr	Bi	Se	La	C+N	Ph	Mg	Y	Ag	N	Ca	Al+Ti	Nb+Co		

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
09/15/03

Paul O. Guest



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9/22/03

mc094093.tif 1 of 4

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FILE COPY 1

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902


Invoice No. No. De Facture Rechnungs Nr. 391396004-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No. Zeugnis Nr. 20030915048	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
Sold To • Client • Bestellausschritt MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 4 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation ASTM-B-443 Rev 00el N06625 1			Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC

Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.					Tensile Test at Elevated Temperature • Essai De Traction A Hte. Temp. • Warm Zugversuch					Stress Rupture Temperature • Essai A Charge De Rupture • Zeitstandversuch						
Ultimate Zugfestigkeit	% Yield Lim. Elong. A 1% % Bruchdehnung	0.2% Yield Lim. Elong. A 0.2% 0.2% Bruchdehnung	% Elong. in 2" / % Dehnung	RA %	Temp.	Ultimate Zugfestigkeit	% Yield Lim. Elong. A 1% % Bruchdehnung	0.2% Yield Lim. Elong. A 0.2% 0.2% Bruchdehnung	% Elong. in 2" / % Dehnung	RA %	Temp.	Temp.	Stress Constrains Spannung	Rupture Fracture Bruchart	% Elong. in 2" / % Dehnung	RA %
132000 PSI		63800 PSI	46 %		(1) (A)											

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
09/15/03 (1) 2039027701

Paul O. Guest

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 9/22/03

mc094093.tif 2 of 4

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FILE COPY 2

HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. De Facture Rechnungs Nr 391396004-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldaten P03-03297	Report No. Rapport No Zeugnis Nr 20030915048	Pages of Pages Page de Pages Anzahl der Seiten 4 Of 4
Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 4 HAYNES(R) 625 ALLOY PLATE - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Spécification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1			Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
<p>This material is free of mercury contamination. Mill Orders Used: 2039027701 (1 PC) (A) 1750 °F to 1950 °F</p>				

Certified By • Certifié Par • Bescheinigt Durch: **Paul Guest**
Certification Supervisor/Technician

09/15/03

Paul O. Guest

THE DATA OBTAINED HEREIN WERE OBTAINED FROM SAMPLES SUBMITTED TO THE REPRESENTATIVE OF THE PROPERTY IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DO NOT CLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS OBTENUS ICI SONT LE RÉSULTAT D'UN SEUL ÉCHANTILLON REPRÉSENTATIF DES ÉLÉMENTS EXPÉDIÉS ET SONT CÉDÉS À TITRE D'INFORMATION. HAYNES N'ASSUME AUCUNE RESPONSABILITÉ LÉGALE EN RAISON DE L'UTILISATION DE CE CERTIFICAT.
DIE WERKSZEUGNISSE ANGELEGEN HÄRBEREITEN SICH AUF EIN EINZIGES BEISPIEL DER BEZUGSNEHMENDEN LIEFERUNG ZU. HAYNES NIMMT KEINE VERANTWORTUNG FÜR DIE VERWENDUNG DIESE ZERTIFIKAT.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE TESTS SPECIFIED ABOVE, UNLESS ANY OTHER FORM OF PURCHASE ORDER SPECIFICATIONS
SOWEIT DIE NADCAP ANFORDERUNGEN BEZÜGLICH DER MATERIALSPEZIFIKATIONEN



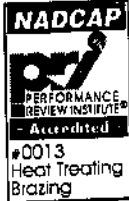
9/22/03

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 4 - Item: 190

Workorder: 64880/1-0 Sub:17 Op:10

Part: SE121-001P-2 PANEL 4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability 1.0 Max. (Panel Blank)		QA		J-1165	<1.01	363			A
(10)								02-11-0			
*		.375 (+.040/-0) (Panel Blank)		QA		J-160	.396	085			A
(20)								10-02-0			
*		SURFACE FINISH: SMOOTH, CLEAN, NO HEAVY SCRAPES, PITS, OR GOUGES (Panel Blank)		QA		VISUAL	GOOD	085			A
(30)								10-02-0			



CORRECTED

Certificate of Conformance

EXOTIC METAL TREATING INC.

6234 E. Hanna Avenue • Indianapolis, Indiana

Certificate # 46762
Vendor Code # 0013

P.O. # P03-04770

Exotic Metal Treating Inc. hereby certifies that all materials used in the manufacture of parts **CONFORMS** to the material and/or manufacturing specifications indicated in drawings or specifications as called for on purchase order referenced hereon. Test reports are on file with us or with our suppliers for examination and indicate conformance with the applicable requirements. The parts listed below are processed in accordance with the drawings or specifications called for on referenced purchase order that are current on the date on which the order was accepted. Pertinent details of the work performed are on file at this facility under the process heat number listed hereon.

HEAT # 03-2210

DATE SHIPPED 11-26-03

QUANTITY

DESCRIPTION

1 PC	#SE121-001P-2 PANEL 4	JOB #64880-17/1
1 PC	#SE121-001P-2 PANEL 4D	JOB #64880-4/2

MATERIAL: INCO 625

**SOLUTION ANNEALED PER AMS-2774 DATED JULY 1995
1900°F ± 15°F FOR 45 MINUTES ± 5 MINUTES
RAPID AIR COOLED TO 1000°F & AIR COOLED.**



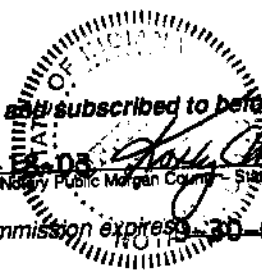
12/22/03

81387
1,2
11/26/03

Sworn and subscribed to before me...

on 12-22-03 at Notary Public Morgan County - State of Indiana

My commission expires 03-30-09



Kurt Shuber
(Name)
QA
(Title)

EXOTIC METAL TREATING, INC.
6234 EAST HANNA AVENUE • INDIANAPOLIS, IN 46203

DATE: 11-26-03 COMPANY: MASTOE

LOAD #: 03-2210 MATERIAL: _____

QTY: 2 # 4 40 P/N: SE 121-001 P-2

FURNACE: GF 1 ATMOS: AIR

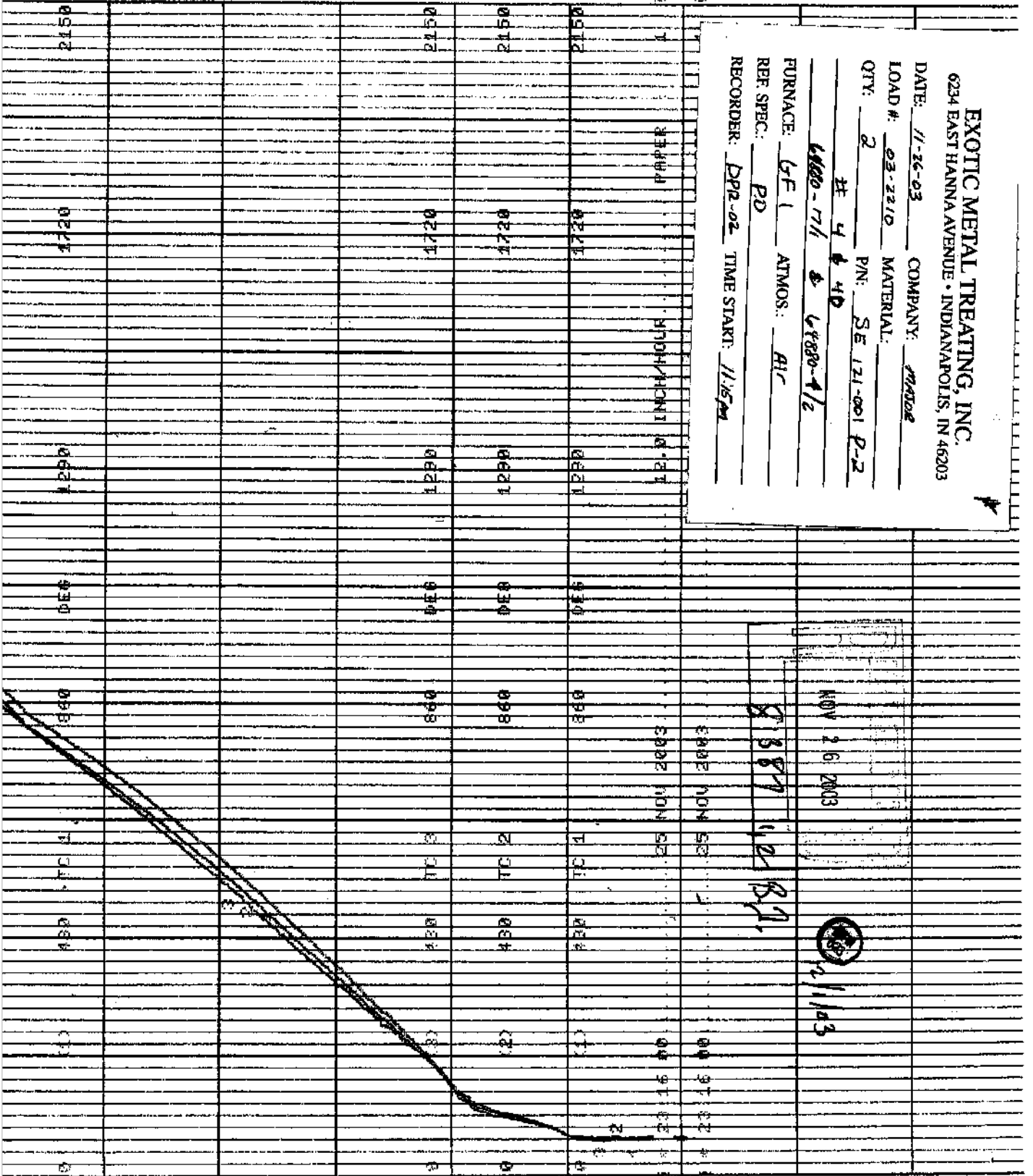
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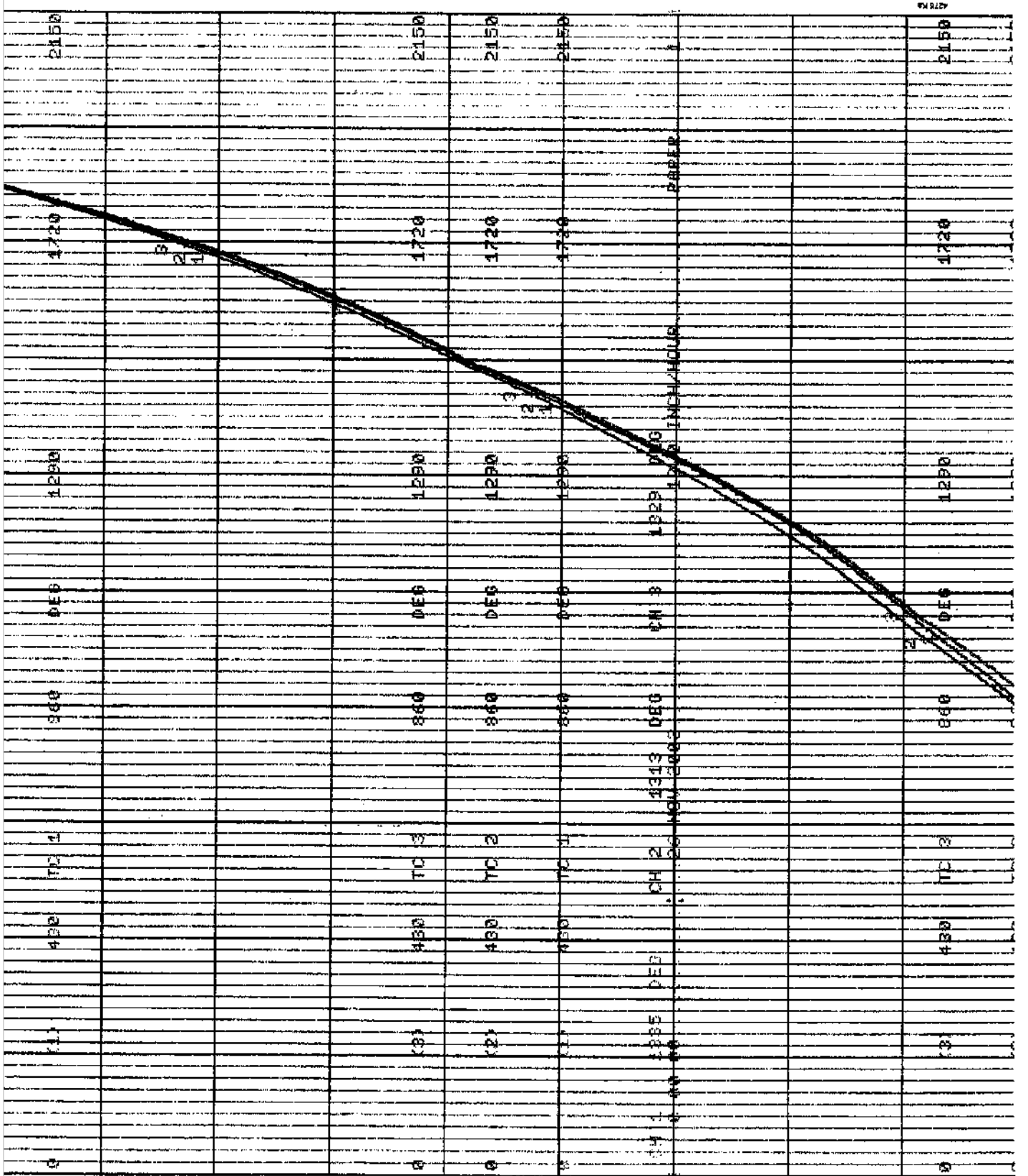
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NOV 26 2003

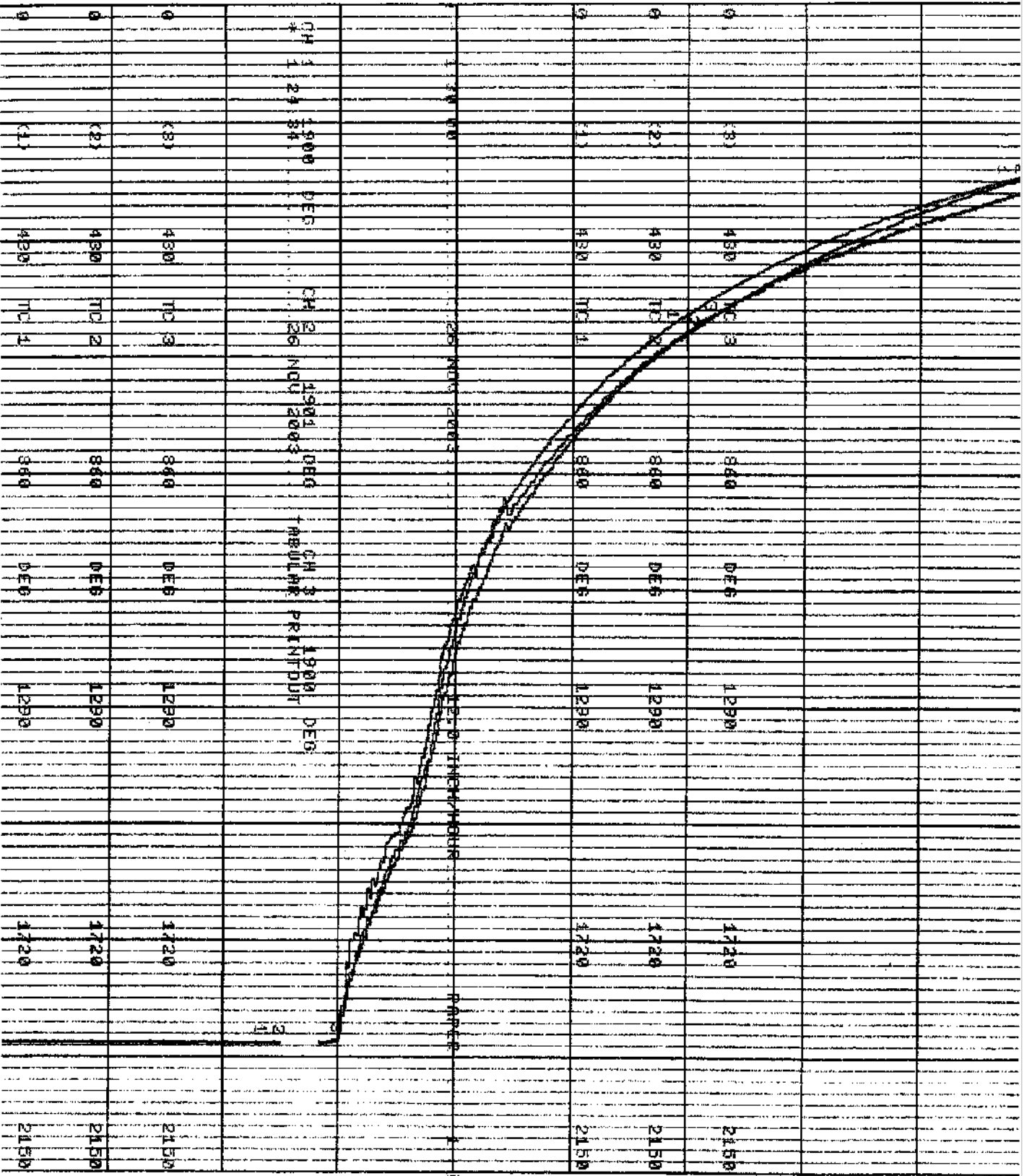
8387 1.0 R₁

11/14/03





4784



4876 Kb

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 4 - Item: 193

Workorder: 64880/1-0 Sub:17 Op:31

Part: SE121-001P-2 PANEL 4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		VERIFY HEAT TREAT CERTIFICATION AND FURNACE CHART COMPLY WITH MTM PURCHASE ORDER REQUIREMEN		QA		VISUAL	GOOD	085		
(10)								01-16-0		A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 4 - Item: 194

Workorder: 64880/1-0 Sub:17 Op:35

Part: SE121-001P-2 PANEL 4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY OF ANNEAL		QA		J-1165	UNDER 1.01	085		
(10)		1.01 MAX						01-16-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 4 - Item: 195

Workorder: 64880/1-0 Sub:17 Op:40

Part: SE121-001P-2 PANEL 4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)		.094" Max Gap (Part Surface To gauge)		MFG QA		J-642	.094" NOGO	407 01-20-0	363 01-20-0	

A

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-00/ #4				Gage/Std S/N(s): J-1009		J-1165	J-1180	Date of Inspection: 02/09/2004			
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.000	0.390	<1.01	38		44					
2	0.000	0.391	<1.01	33		45					
3	0.005	0.392	<1.01	31		46					
4	0.005	0.390	<1.01	29		47					
5	0.007	0.390	<1.01	30		48					
6	0.010	0.390	<1.01	41		49					
7	0.012	0.390	<1.01	50		50					
8	0.020	0.390	<1.01	37		51					
9	0.030	0.389	<1.01	30		52					
10	0.030	0.390	<1.01	36		53					
11	0.035	0.390	<1.01	42		54					
12	0.025	0.389	<1.01	40		55					
13	0.015	0.389	<1.01	39		56					
14	0.010	0.389	<1.01	34		57					
15	0.000	0.390	<1.01	34		58					
16	0.000	0.391	<1.01	39		59					
17	0.030	0.392	<1.01	35		60					
18	0.030	0.394	<1.01	29		61					
19	0.030	0.394	<1.01	18		62					
20	0.040	0.396	<1.01	21		63					
21	0.035	0.396	<1.01	24		64					
22	0.035	0.396	<1.01	26		65					
23	0.035	0.396	<1.01	28		66					
24	0.030	0.397	<1.01	30		67					
25	0.040	0.396	<1.01	25		68					
26	0.030	0.395	<1.01	28		69					
27	0.030	0.395	<1.01	31		70					
28	0.025	0.395	<1.01	29		71					
29	0.020	0.395	<1.01	26		72					
30	0.020	0.395	<1.01	31		73					
31	0.005	0.398	<1.01	45		74					
32	0.005	0.395	<1.01	47		75					
33	0.010	0.392	<1.01	33		76					
34	0.035	0.393	<1.01	42		77					
35											
36											
37											
38											
39											
40											
41											
42											
43											

Customer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

197 17 70 Inspection Data Checklist: 3 steps

SE121-001P-2 PANEL 5 - DIE FORMED PANEL

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
198	18	10		Inspection Data Checklist: 3 steps
199	18	10	10	Material Certification: / SE121-001P-2 PANEL # 5 - PANEL BLANK .375" THK INCONEL 625 - mc094089.tif / 2650 2 6877
200	18	30		Certification: H/T CERTIFICATE - mc095443.pdf
201	18	30		Furnace charts: FURNACE CHART - Same as Item #200
202	18	31		Inspection Data Checklist: 1 steps
203	18	35		Inspection Data Checklist: 1 steps
204	18	40		Inspection Data Checklist: 1 steps
205	18	70		Test Certification: SE121-001P-1MTM - mc096173.tif
206	18	70		Inspection Data Checklist: 3 steps

SE121-001P-3

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
207	29	10		Inspection Data Checklist: 1 steps
208	29	20	10	Material Certification: / INCONEL 625_660 - SHEET,NICKEL ALLOY .125" THK - Same as Item #11 / 2650 3 6874
209	29	30		Inspection Data Checklist: 1 steps
210	29	40		Inspection Data Checklist: 5 steps
211	29	50		Inspection Data Checklist: 5 steps
212	29	50		Nondestructive Visual Test Certification #7951 - MTM WELD INSPECTION FORM
213	29	70		Inspection Data Checklist: 3 steps

SE121-003P

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
214	0	20		Nondestructive Visual Test Certification #8564 - CLEANLINESS CERTIFICATION
215	39	10		Inspection Data Checklist: 5 steps
216	39	10		Nondestructive Visual Test Certification #8489 - MTM WELD INSPECTION FORM
217	39	30		Inspection Data Checklist: 5 steps
218	39	40		Map(s): SE121-001P-1MTM - MC097539.TIF
219	39	40		Map(s): SE121-001P-1MTM - MC097541.TIF
220	39	40		Map(s): SE121-001P-1MTM - MC097543.TIF
221	39	40		Map(s): SE121-001P-1MTM - MC097542.TIF
222	39	40		Map(s): SE121-001P-1MTM - MC097540.TIF
223	39	40		Inspection Data Checklist: 8 steps

SE121-003P-4 - WELD BACKING RING

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
224	25	10	10	Material Certification: / INCONEL 625_660 - SHEET,NICKEL ALLOY .125" THK - mc093762.tif / 2650 3 6874
225	25	20		Inspection Data Checklist: 5 steps
226	25	20		Nondestructive Visual Test Certification #8545
227	25	40		Inspection Data Checklist: 2 steps


SE212-003P-3 - PORT EXTENSION

n:\mtmapps\mtqapla9.qrp

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 4 - Item: 197

Workorder: 64880/1-0 Sub:17 Op:70

Part: SE121-001P-2 PANEL 4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	< 1.01	854			A
(10)		Magnetic Permeability 1.01 Max						02-09-0			
*				QA		J-1180	CHECKS TO 47	854			R
(20)		32 MICRO-INCH SURFACE FINISH (INTERIOR (CONCAVE) SIDE)						02-09-0			
*		 .094"		QA		J-1149	< .094	854			A
(30)		.094" Max Gap (Part Surface To gauge)				MTMFX2906		02-09-0			

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 5 - Item: 198

Workorder: 64880/1-0 Sub:18 Op:10

Part: SE121-001P-2 PANEL 5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: A			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability 1.0 Max. (Panel Blank)		QA		J-1165	<1.01	363			A
(10)								02-11-0			
*		.375 (+.040/-0) (Panel Blank)		QA		J-160	.415	085			A
(20)								10-02-0			
*		SURFACE FINISH: SMOOTH, CLEAN, NO HEAVY SCRAPES, PITS, OR GOUGES (Panel Blank)		QA		VISUAL	GOOD	085			A
(30)								10-02-0			

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

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International

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Haynes International
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PO Box 9013
Kokomo, Indiana, 46902

Invoice No. No. De Facture Rechnungs Nr. 391396005-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestelldatum P03-03297	Report No. Rapport No. Zeugnis Nr. 20030915051	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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Sold To • Client • Bestelleranschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
---	---

Product Description • Description Produit • Material Beschreibung
0.375 x 0/0 x 0/0
SE121-001P-2 PANEL 5
HAYNES(R) 625 ALLOY PLATE -
NADCAP CERTIFICATE NUMBER 0089
S400E,S1000E, EN 10204 3.1.B

Specification • Spécification • Spezifikation ASTM-B-443 Rev D0e1 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
---	--	--

Heat Number Numero de Charge Charge Nr.	Chemical Analysis • Analyse Chimique • Chemische Analyse																	
	Al	B	C	Cr (Nb-Ta)	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W	
2650 3 6877	0.18		0.030	3.52	<0.10	21.42		4.46	0.28	8.56	60.11	0.006	0.004	0.17	0.29			
		Ta	Zr	Bi	Sc	La	Other	Pb	Mg	Y	Ag	N	Ca	Al/Ti	Ni/Cu			
2650 3 6877																		

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
09/15/03

Paul O. Guest

SEP 19 2003

80008 ⁴⁴⁵ 8.7.

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Invoice No No. De Facture Rechnungs Nr 391396005-0	Date Entered Date De Commande Bestelldatum 08/15/03	Customer Reference Reference Client Kundenbestellnummer P03-03297	Report No. Rapport No Zeugnis Nr 20030913051	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Ship To • Destinataire • Bestelmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA		Product Description • Description Produit • Material Beschreibung 0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 5 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Spécification • Spezifikation ASTM-B-443 Rev 00c1 N06625 1			Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC

Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.						Tensile Test at Elevated Temperature • Essai De Traction A Hic-Temp. Warm Zugversuch						Stress Rupture Temperature • Essai A Charge De Rupture Zeitsandversuch					
Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% (% Streckgrenze)	0.2% Yield Lim. Elast. A 0.2% (% Streckgrenze)	% Elong In EN % Dehnung	%RA		Test Essai Versuch Temp	Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% (% Streckgrenze)	0.2% Yield Lim. Elast. A 0.2% (% Streckgrenze)	% Elong In % Allong EN % Dehnung	%RA		Temp	Stress Constrained Spannung	Hours Mins/Sec	% Elong In % Allong EN % Dehnung	%RA
131000 PSI		65500 PSI	47 %		(1) (A)												

Certified By • Certific Par • Bescheinigt Durch: **Paul Guest**
Certification Supervisor/Technician

09/15/03

(1) 2039028001

Paul O. Guest

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Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestelldung MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
---	--

Product Description • Description Produit • Material Beschreibung
0.375 x 0/0 x 0/0
SE121-001P-2 PANEL 5
HAYNES(R) 625 ALLOY PLATE -
NADCAP CERTIFICATE NUMBER 0089
S400E,S1000E, EN 10204 3.1.B

Specification • Specification • Spezifikation ASTM-B-443 Rev 00e1 N06625 1	Quantity Ordered Quantite Commandee Bestellmenge 1 PC	Quantity Shipped Quantite Expediee Liefermenge 1 PC
---	--	--


Annealed Hardness Durete Recuit Gezeichnet Haerte	Aged Hardness Durete Vieilli Gealtert Haerte	Grain Size Grossueur De Grain Korngrösse				IGA	Uniformity	Corrosion Rate		Oxidation Rate	Charpy Impact Test				Creep Rupture						
		Grain Size	Preferred Grain Size	Free Grain	Charpy Grain %			ALA	Attack Depth		Corrosion	Yr Mois	Toughness Avg	Toughness 1	Toughness 2	Toughness 3	Test Viel Vernich Temp	Stress Contrainte Spannung	Hours Heures Stunden	% Elong In % Allong EN % Dehng	% Elong @ 25 Hrs
98 HRB		R																			(1)

Certified By • Certifie Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03 (1) 2039028001

Paul O. Guest

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CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIE • WERKSZEUGNIS				
Invoice No. No. De Facture Rechnungs Nr. 391396005-0	Date Entered Date De Commande Reception 08/15/03	Customer Reference Reference Client Kundenbestellnr. P03-03297	Report No. Rapport No. Zeugnis Nr. 20030913051	Pages of Pages Page de Pages Anzahl der Seiten 4 Of 4

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Sold To • Client • Bestellanwschrift	Ship To • Destination • Bestimmung	Product Description • Description Produit • Material Beschreibung
MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	0.375 x 0/0 x 0/0 SE121-001P-2 PANEL 5 HAYNES(R) 625 ALLOY PLATE NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation	Quantity Ordered Quantite Commandee Bestellmenge	Quantity Shipped Quantite Expeditee Liefermenge
ASTM-B-443 Rev 00e1 N06625 1	1 PC	1 PC

This material is free of mercury contamination.
Mill Orders Used: 2039028001 (1 PC)
(A) 1750 °F to 1950 °F

Certified By • Certifie Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

09/15/03

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LES INFORMATIONS CONTENUES ICI ONT ETE OBTENUES A PARTIR D'ECHECHANTILLONS FOURNIS PAR LES USAGERS. L'ACCORD ET L'OBLIGATION DE SIGNALER LES DEFECTS, DANS LE CADRE DU TEMPS PRESCRIT, DEPENDRONT DE LA PRESENCE DE CERTIFICATS.
DIE DATEN ENHALTEN AN DEREN ANNAHME BERUHEN AUF PROBEKORPERN, DIE VON DEN KUNDEN FUR DIE PRODUKTE ZUR VERFUGUNG GESTELLT WURDEN. DIE VERANTWORTUNG FUR DIE ANNAHME VON MANGELN UND DIE FRISTEN FUR DIE ANMELDUNG VON MANGELN HANGEN VON DER VERFUGBARKEIT VON CERTIFICATEN AB.



9/22/03

mc094089.tif 4 of 4



Certificate of Conformance

EXOTIC METAL TREATING INC.

6234 E. Hanna Avenue • Indianapolis, Indiana

Certificate # 46917

Vendor Code # 0013

P.O. # P04-00028

Exotic Metal Treating Inc. hereby certifies that all materials used in the manufacture of parts CONFORMS to the material and/or manufacturing specifications indicated in drawings or specifications as called for on purchase order referenced hereon. Test reports are on file with us or with our suppliers for examination and indicate conformance with the applicable requirements. The parts listed below are processed in accordance with the drawings or specifications called for on referenced purchase order that are current on the date on which the order was accepted. Pertinent details of the work performed are on file at this facility under the process heat number listed hereon.

HEAT # 04-14

DATE SHIPPED 1-7-04

QUANTITY

DESCRIPTION

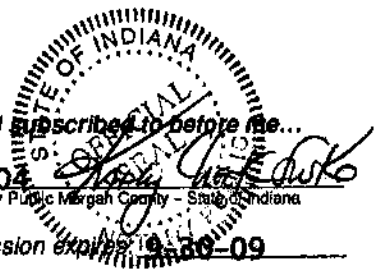
1 PC	#SE121-001P-2 PANEL 5D	JOB #64880-5/2
1 PC	#SE121-001P-2 PANEL 5	JOB #64880-18/1

MATERIAL: INCO 625

SOLUTION ANNEALED PER AMS-2774 DATED JULY 1995
1900°F ± 15°F FOR 45 MINUTES ± 5 MINUTES
RAPID AIR COOLED TO 1000°F & AIR COOLED.

MTR 023
1/8/04

JAN 7 2004
82092
1,2



Sworn and subscribed to before me...

on 1-7-04

Notary Public Morgan County - State of Indiana

My commission expires 09-30-09

Kurt Shank
(Name)

QA
(Title)

1.6	480	TC 6	860	DEB	1290	1720	2150
1.5	480	TC 5	860	DEB	1290	1720	2150
1.4	480	TC 4	860	DEB	1290	1720	2150
1.3	480	TC 3	860	DEB	1290	1720	2150
1.2	480	TC 2	860	DEB	1290	1720	2150
1.1	480	TC 1	860	DEB	1290	1720	2150
1.0	480	TC 0	860	DEB	1290	1720	2150
0.9	480	TC 0	860	DEB	1290	1720	2150
0.8	480	TC 0	860	DEB	1290	1720	2150
0.7	480	TC 0	860	DEB	1290	1720	2150
0.6	480	TC 0	860	DEB	1290	1720	2150
0.5	480	TC 0	860	DEB	1290	1720	2150
0.4	480	TC 0	860	DEB	1290	1720	2150
0.3	480	TC 0	860	DEB	1290	1720	2150
0.2	480	TC 0	860	DEB	1290	1720	2150
0.1	480	TC 0	860	DEB	1290	1720	2150
0.0	480	TC 0	860	DEB	1290	1720	2150

R P

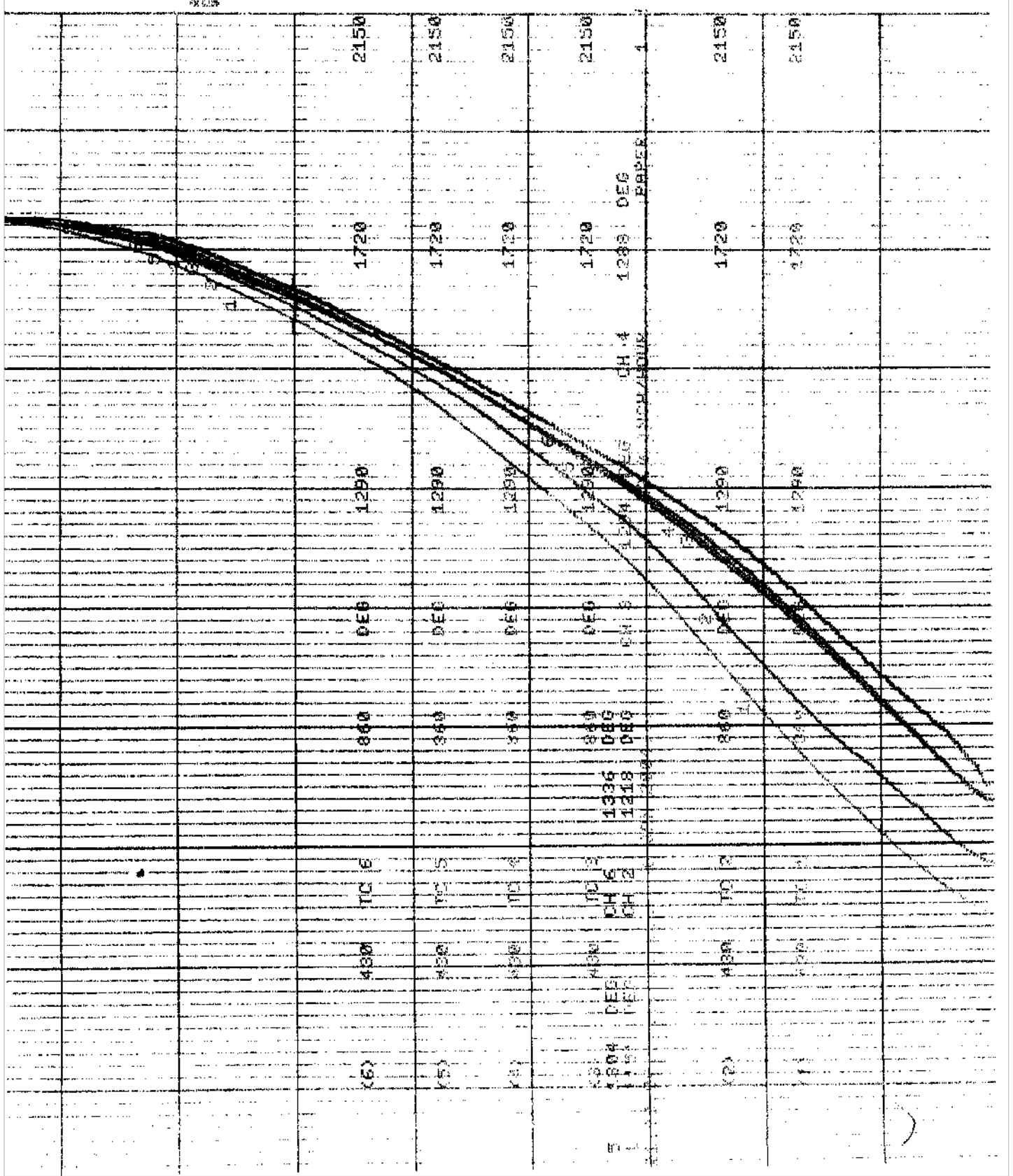
EXOTIC METAL TREATING, INC.
 6234 EAST HANNA AVENUE • INDIANAPOLIS, IN 46203

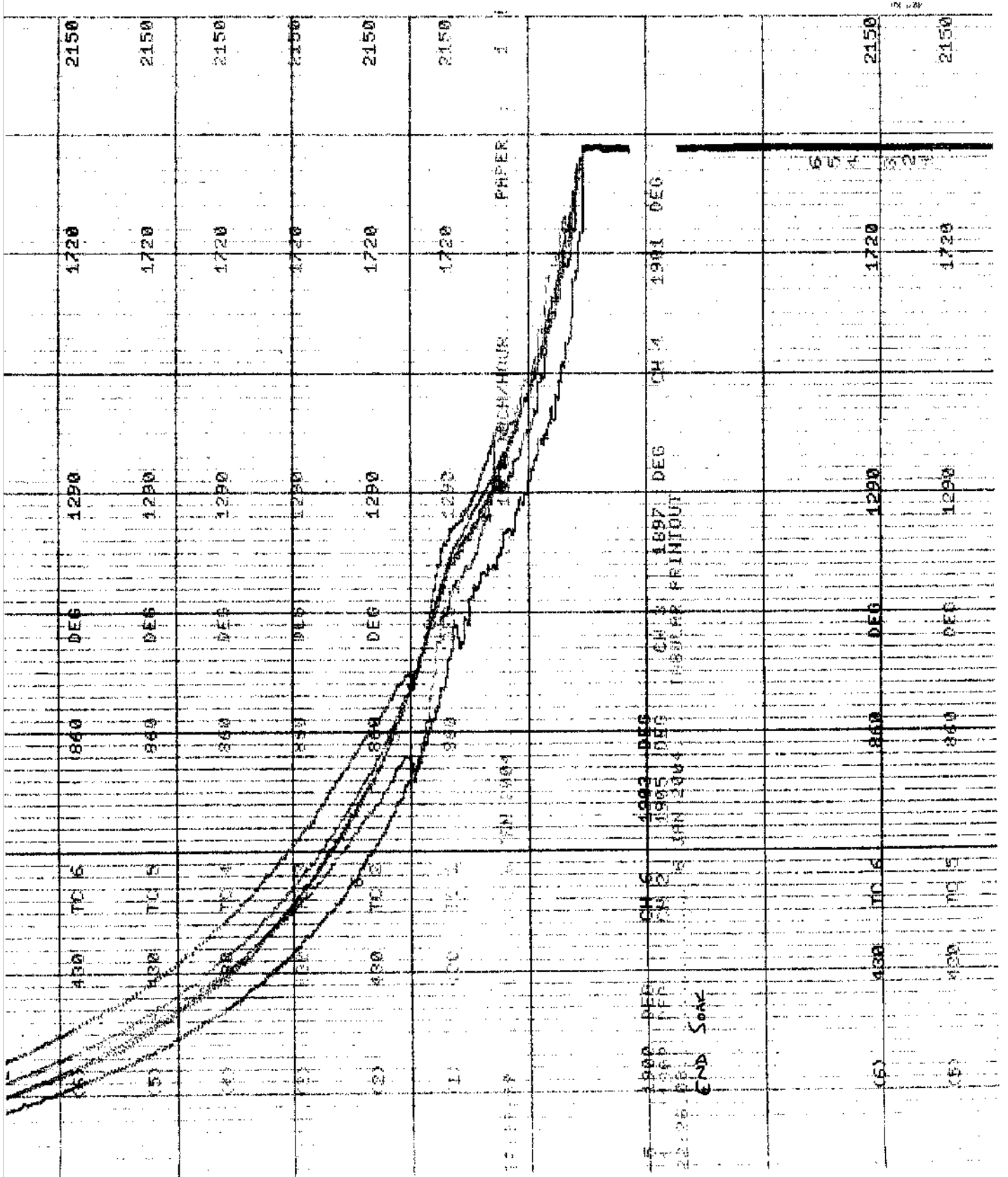
DATE: 1-6-04 COMPANY: Major Tool
 LOAD #: 04-14 MATERIAL: _____
 QTY: 2 PIN: SE 121-001P-2
Panel SD + Panels
64880-5/2 & 64880-18/1

FURNACE: GF 1 ATMOS.: Air
 REF. SPEC.: PO + AMS 2774
 RECORDER: DPP-02 TIME START: 20:19

① 1/7/04

JAN 7 2004
 82092
 62
 B.J.





Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 5 - Item: 202

Workorder: 64880/1-0 Sub:18 Op:31

Part: SE121-001P-2 PANEL 5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		VERIFY HEAT TREAT CERTIFICATION AND FURNACE CHART COMPLY WITH MTM PURCHASE ORDER REQUIREMEN		QA			VISUAL	825		
(10)								01-07-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 5 - Item: 203

Workorder: 64880/1-0 Sub:18 Op:35

Part: SE121-001P-2 PANEL 5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY OF ANNEAL		QA		J-1165	UNDER 1.01	085		
(10)		1.01 MAX						01-16-0		

A



INSPECTION DATA CHECKLIST

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 5 - Item: 204

Workorder: 64880/1-0 Sub:18 Op:40

Part: SE121-001P-2 PANEL 5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
1* (10)		.094" Max Gap (Part Surface To gauge)		MFG QA		J-642	.094" NOGO	407 01-20-0	363 01-20-0	

A

04890 PPPL NC9X PVVS INSPECTION RECORD


Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection			
Part # / Panel #: SE121-00/ #5				Gage/Std S/N(s): J-1009		J-1165	J-1180	Date of Inspection: 02/10/2004			
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.038	0.424	<1.01	27		44	0.02	0.415	<1.01	18	
2	0.038	0.424	<1.01	25		45	0.062	0.415	<1.01	16	
3	0.039	0.425	<1.01	19		46	0.03	0.415	<1.01	21	
4	0.020	0.421	<1.01	20		47	<0.10	0.410	<1.01	23	
5	<0.10	0.419	<1.01	21		48	0.02	0.415	<1.01	19	
6	<0.10	0.420	<1.01	18		49	0.078	0.424	<1.01	18	
7	<0.10	0.422	<1.01	24		50	0.045	0.404	<1.01	27	
8	0.015	0.422	<1.01	21		51	0.078	0.419	<1.01	29	
9	0.030	0.420	<1.01	20		52	0.015	0.419	<1.01	19	
10	0.040	0.420	<1.01	19		53	<0.10	0.411	<1.01	28	
11	0.040	0.422	<1.01	18		54	0.03	0.403	<1.01	35	*
12	0.045	0.422	<1.01	18		55	0.063	0.415	<1.01	32	
13	0.055	0.423	<1.01	26		56	0.045	0.418	<1.01	28	
14	0.062	0.423	<1.01	21		57	0.012	0.418	<1.01	27	
15	0.062	0.420	<1.01	27		58					
16	0.062	0.420	<1.01	31		59					
17	0.062	0.419	<1.01	30		60					
18	0.062	0.418	<1.01	24		61					
19	0.062	0.419	<1.01	19		62					
20	0.062	0.417	<1.01	21		63					
21	0.030	0.413	<1.01	20		64					
22	0.040	0.414	<1.01	21		65					
23	0.025	0.414	<1.01	18		66					
24	0.020	0.416	<1.01	19		67					
25	<0.10	0.416	<1.01	19		68					
26	<0.10	0.417	<1.01	18		69					
27	<0.10	0.419	<1.01	20		70					
28	<0.10	0.418	<1.01	21		71					
29	<0.10	0.417	<1.01	37	*	72					
30	<0.10	0.416	<1.01	24		73					
31	<0.10	0.417	<1.01	21		74					
32	<0.10	0.414	<1.01	28		75					
33	<0.10	0.422	<1.01	25		76					
34	0.020	0.425	<1.01	32		77					
35	<0.10	0.423	<1.01	32		78					
36	<0.10	0.419	<1.01	22		79					
37	<0.10	0.413	<1.01	20		80					
38	0.040	0.413	<1.01	19		81					
39	0.060	0.414	<1.01	23		82					
40	0.016	0.426	<1.01	19		83					
41	0.040	0.424	<1.01	22		84					
42	0.020	0.419	<1.01	26		85					
43	<0.10	0.412	<1.01	14		86					

Quality Assurance Documentation for Part ID: SE121-001P-2 PANEL 5 - Item: 206

Workorder: 64880/1-0 Sub:18 Op:70

Part: SE121-001P-2 PANEL 5 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CS

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	<1.01	854			A
(10)		Magnetic Permeability 1.01 Max						02-09-0			
*				QA		J-1180	CHECKS FROM WITHI TO 37 RA	854			R
(20)		32 MICRO-INCH SURFACE FINISH (INTERIOR (CONCAVE) SIDE)						02-09-0			
*		 .094"		QA		J-1149	.078	363			R
(30)		.094" Max Gap (Part Surface To gauge)				MTMFX2907		02-10-0			

Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 207

Workorder: 64880/1-0 Sub:29 Op:10

Part: SE121-001P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-002P Rev: --			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*				QA		J-1143	MAX. RECORDING OF ERM. OF PLATE 1.002 , 12 PLCS. RANDOMLY CHECKED.	581		
(10)		MAGNETIC PERMEABILITY 1.01 MAX						09-17-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 209

Workorder: 64880/1-0 Sub:29 Op:30

Part: SE121-001P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-002P Rev: --			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY		
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT
*		MAGNETIC PERMEABILITY 1.01 MAX (AFTER ROLLING / PRIOR TO WELDING)		QA		J-1165	<1.01	363		
(10)								02-11-0		

A

Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 210

Workorder: 64880/1-0 Sub:29 Op:40

Part: SE121-001P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-003P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA				791			A
(10)								09-24-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA				791			A
(20)								09-24-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA				791			A
(30)								09-24-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA				791			A
(40)								09-24-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA				791			A
(50)								09-24-0			

Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 211

Workorder: 64880/1-0 Sub:29 Op:50

Part: SE121-001P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START		QA			ACCPET	712			A
(10)								02-06-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START		QA			INSPECTED WIRE TYP TO WPS	712			A
(20)								02-06-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START		QA			MATERIAL TYPE MAT ES	712			A
(30)								02-06-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START		QA			ACCEPT	712			A
(40)								02-06-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START		QA			ACCEPT PER WPS	712			A
(50)								02-06-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 212

Date of Inspection: 02/09/2004

Type of Material: 625 INCONEL

NDT#: 7951

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Casting <input type="checkbox"/> Bar Stock <input type="checkbox"/> Plate <input type="checkbox"/> Forging <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:29 -Op:50 Resource ID: 205-PLASMA WORKCENTER Part ID: SE121-001P-3 Part Name: PORT EXTENSION TUBE Serial Number: Customer P.O.: S-04344-F Customer Unit/Plant:	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0	
---	---	--

Customer Inspection Plan: Test Step: Revision: Material Test Number:	Inspection Criteria: Customer Specification: ASME SECTION V ARTICAL 6 MTM Spec Number: N/A Acceptance Standard: D1.6 SECTION 6.29.1
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Inspection Methods Used: Magnification Used: 8X Light Source Used: FLASHLIGHT	
--	--

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proper Filler Material/Flux:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shielding Gas/Back Purge:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other
 PLASMA WELD ONE PASS

Notes:
 PERFORMED THE INSPECTION PER THE ROUTER INSTRUCTIONS. WELD OPERATOR# 733 PERFORMED THE WELDING OF THIS COMPONENT. (PORT EXT. TUBE)

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

Inspector: 712-W.MILLER

Date: 02/09/2004



Quality Assurance Documentation for Part ID: SE121-001P-3 - Item: 213

Workorder: 64880/1-0 Sub:29 Op:70

Part: SE121-001P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-001P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		32 MICRO-INCH RA SURFACE FINISH (PORT EXTENSION TUBE)		QA		J-1152	20-32	522			A
(10)								02-24-0			
*		MAGNETIC PERMEABILITY 1.01 MAX (PORT EXTENSION TUBE)		QA		J-1165	LESS THAN 1.01	522			A
(20)								02-24-0			
1*		8.0" Diameter +3/32" / -0 (per ASTM B444)		QA		J-801	8.000 / 8.092	522			A
(30)								02-24-0			



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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-003P - Item: 214

Date of Inspection: 04/19/2004

Type of Material: INCONEL 625

NDT#: 8564

Stage of Inspection:

- Incoming Inspection
- In-Process Inspection
- After Repair
- Final Inspection

Manufacturing Process:

- Weldment
- Bar Stock
- Forging
- Casting
- Plate
- Other

Surface Condition:

- Machined
- Rough
- Other

Test Being Run to:

- Router Instructions
- Drawing
- Test Plan
- Technique Card

Heat Treated:

- Yes
- No

Part Information:

MTM Job Number: 84880/1.0 -Sub:0 -Op:20
Resource ID: 825-FINAL INSPECTION - PLAN
Part ID: SE121-003P
Part Name: NCSX PVVS COMPLETE
Serial Number:
Customer P.O.: S-04344-F
Customer Unit/Plant:

Test Results:

Quantity Inspected:
Quantity Accepted:
Quantity Rejected:

Run Hours: 0.0

Customer Inspection Plan:

Test Step:
Revision:
Material Test Number:

Inspection Criteria:

Customer Specification: NCSX-CSPEC-121-01-01 PARAGRAPH 3.3.2.4
MTM Spec Number: PP475
Acceptance Standard: ASTM A-380 PARAGRAPH 7.2

Inspection Methods Used:

Magnification Used:
Light Source Used: FL-2

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Callbr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

FINAL CLEANLINESS VERIFICATION

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

Inspector:

Date:

Reviewed By: 363-C.MANIFOLD

Date: 04/19/2004

Reviewed By Customer: 8780-PRINCETON PLASMA PHY

Date: _____

Quality Assurance Documentation for Part ID: SE121-003P - Item: 215

Workorder: 64880/1-0 Sub:39 Op:10

Part: SE121-003P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-002P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA			20 CFH ARGON PURGE GAS AND WELDER 40 FH ARGON, PURGE GA USED AT TACK WELD ONLY	791			A
(10)		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION						04-06-0			
*				QA			.062 625 INCO HEAT LOT AV8128 .093 HE AT LOT CB 7996	791			A
(20)		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION						04-06-0			
*				QA			300 SERIES S.S. S. S. WOOL INSERT	791			A
(30)		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION						03-31-0			
*				QA			709 / 683 QUALIFIED TO WPS PER MTM WELDER QUALIFICATION CHECK SYSTEM	791			A
(40)		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS COMPLETE PRIOR TO OPERATION START AND THROUGH COMPLETION						04-06-0			
*				QA			ALL PARAMETERS WITHIN WPS REQUIREMENTS	791			A
		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START									



INSPECTION DATA CHECKLIST

(50)	AND THROUGH COMPLETION							04-06-0	
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Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-003P - Item: 216

Date of Inspection:04/06/2004

Type of Material:625 INCONEL

NDT#:8489

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

Part Information: MTM Job Number: 64880/1.0 -Sub:39 -Op:10 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-003P Part Name: NCSX PVVS COMPLETE Serial Number: N/A Customer P.O.: S-04344-F Customer Unit/Plant: N/A	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: N/A Test Step: N/A Revision: N/A Material Test Number: N/A	Inspection Criteria: Customer Specification: ASME SECT. V, ARTICLE 6 MTM Spec Number: Acceptance Standard: AWS D1.6, PARA. 6.29.1
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Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT AND FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

Visual inspection performed on root pass and cover pass welds joining find no. 3 (Port Extension Tube) to itself and to find no. 4 (Weld Backing Ring). Welds acceptable to customer drawing / specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 04/06/2004



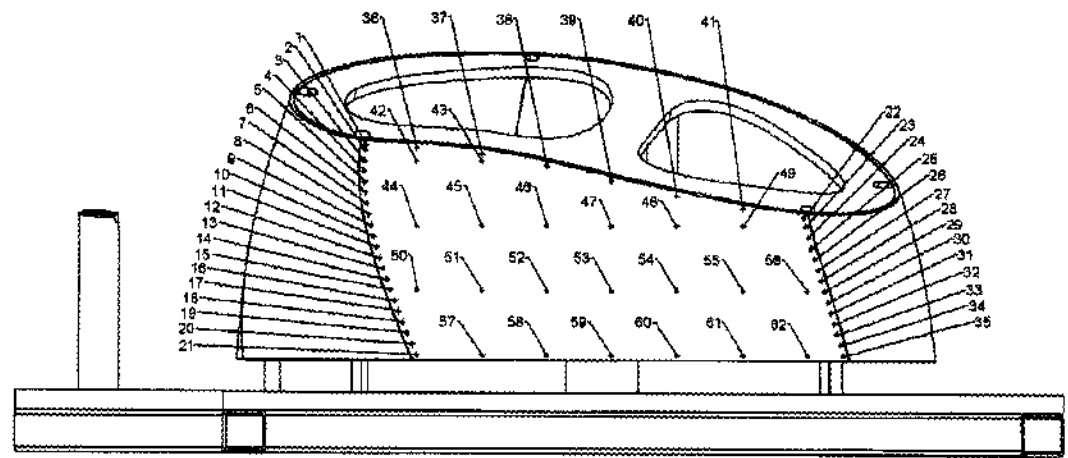
Quality Assurance Documentation for Part ID: SE121-003P - Item: 217

Workorder: 64880/1-0 Sub:39 Op:30

Part: SE121-003P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-003P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			20 CFH ARGON GAS AND D WELDER 40 CFH ARGON	791			A
(10)								04-06-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 INCO 625 HEAT LOT # AV8128	791			A
(20)								04-06-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. S.S. WOOL INSERT	791			A
(30)								04-06-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			709 QUALIFIED TO MT M WELDER QUALIFICATIONS SYSTEM	791			A
(40)								04-06-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			ALL PARAMETERS WITHIN WPS GUIDELINES	791			A
(50)								04-06-0			

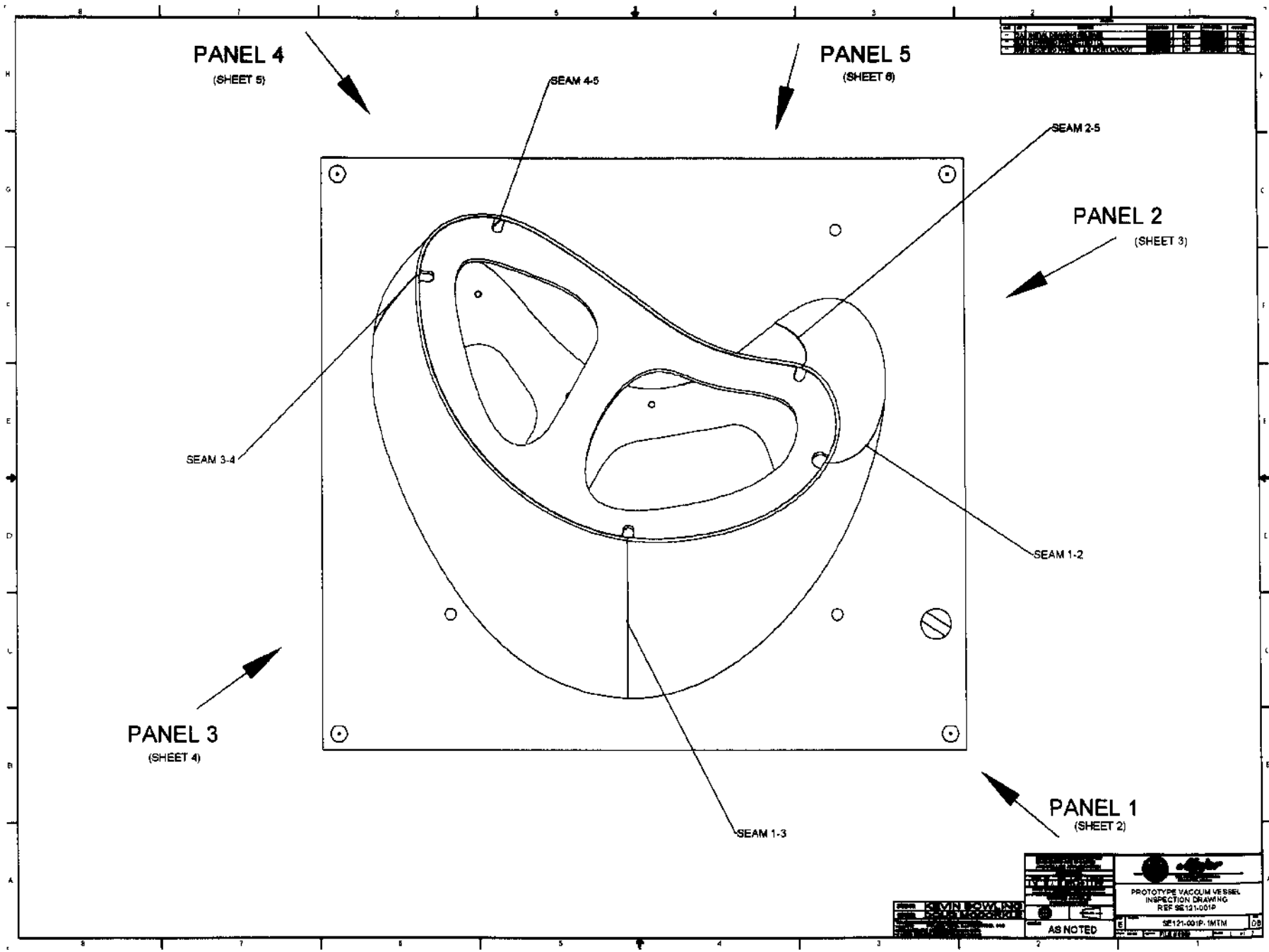
REV	DATE	BY	CHKD



PANEL 5

	PROTOTYPE VACUUM VESSEL INSPECTION DRAWING 037-52114-02
	3C12-001P-1MTR AS NOTED

64880 PPPL NCSX PVVS INSPECTION RECORD						Inspection Drawing Number: SE121-001P-1MTM Rev: 0B					
Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection X			
Part # / Panel #: SE121-001P PANEL #6		Gage/Std S/N(s): 4470, J-1009-NDT, J-1185, J-1180				Date of Inspection: 04-16-04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.108	0.425 *	LESS THAN 1.01	9.4		44	0.078	0.428 *	LESS THAN 1.01	12.1	
2	0.105	0.428 *	LESS THAN 1.01	8.6		45	0.076	0.424 *	LESS THAN 1.01	17.6	
3	0.117	0.419 *	LESS THAN 1.01	7.5		46	0.153	0.417 *	LESS THAN 1.01	11.8	
4	0.123	0.42 *	LESS THAN 1.01	13.4		47	0.142	0.415	LESS THAN 1.01	15.3	
5	0.116	0.421 *	LESS THAN 1.01	12.5		48	0.087	0.419 *	LESS THAN 1.01	16.9	
6	0.098	0.422 *	LESS THAN 1.01	14.6		49	0.013	0.427 *	LESS THAN 1.01	19.6	
7	0.074	0.421 *	LESS THAN 1.01	18.9		50	-0.006	0.43 *	LESS THAN 1.01	13.8	
8	0.055	0.418 *	LESS THAN 1.01	17.3		51	0.076	0.42 *	LESS THAN 1.01	17.5	
9	0.046	0.417 *	LESS THAN 1.01	16.2		52	0.125	0.408	LESS THAN 1.01	12.6	
10	0.04	0.415	LESS THAN 1.01	14.3		53	0.174	0.404	LESS THAN 1.01	16.9	
11	0.033	0.413	LESS THAN 1.01	15.9		54	0.154	0.413	LESS THAN 1.01	15.2	
12	0.024	0.413	LESS THAN 1.01	10.3		55	0.132	0.419 *	LESS THAN 1.01	16.4	
13	0.02	0.416 *	LESS THAN 1.01	10.0		56	0.033	0.422 *	LESS THAN 1.01	15.3	
14	0.019	0.418 *	LESS THAN 1.01	9.5		57	0.102	0.422 *	LESS THAN 1.01	14.6	
15	0.018	0.421 *	LESS THAN 1.01	8.7		58	0.135	0.417 *	LESS THAN 1.01	9.6	
16	0.017	0.42 *	LESS THAN 1.01	16.5		59	0.141	0.415	LESS THAN 1.01	10.8	
17	0.019	0.419 *	LESS THAN 1.01	14.3		60	0.195 *	0.42 *	LESS THAN 1.01	17.1	
18	0.026	0.42 *	LESS THAN 1.01	17.6		61	0.216 *	0.422 *	LESS THAN 1.01	16.4	
19	0.034	0.419 *	LESS THAN 1.01	18.6		62	0.153	0.423 *	LESS THAN 1.01	15.3	
20	0.041	0.42 *	LESS THAN 1.01	13.5		63					
21	0.049	0.417 *	LESS THAN 1.01	19.6		64					
22	0.02	0.414	LESS THAN 1.01	21.3		65					
23	0.023	0.415	LESS THAN 1.01	17.6		66					
24	0.021	0.411	LESS THAN 1.01	8.4		67					
25	0.017	0.415	LESS THAN 1.01	10.2		68					
26	0.013	0.415	LESS THAN 1.01	10.9		69					
27	0.01	0.414	LESS THAN 1.01	8.7		70					
28	0.009	0.417 *	LESS THAN 1.01	9.3		71					
29	0.009	0.418 *	LESS THAN 1.01	12.3		72					
30	0.015	0.417 *	LESS THAN 1.01	14.6		73					
31	0.019	0.417 *	LESS THAN 1.01	15.3		74					
32	0.024	0.417 *	LESS THAN 1.01	12.4		75					
33	0.03	0.417 *	LESS THAN 1.01	14.3		76					
34	0.039	0.417 *	LESS THAN 1.01	10.3		77					
35	0.047	0.415	LESS THAN 1.01	9.2		78					
36	0.151	0.426 *	LESS THAN 1.01	10.7		79					
37	0.112	0.429 *	LESS THAN 1.01	17.2		80					
38	0.112	0.423 *	LESS THAN 1.01	19.4		81					
39	0.113	0.417 *	LESS THAN 1.01	18.3		82					
40	0.062	0.42 *	LESS THAN 1.01	9.8		83					
41	0.025	0.417 *	LESS THAN 1.01	7.9		84					
42	0.136	0.426 *	LESS THAN 1.01	16.3		85					
43	0.068	0.43 *	LESS THAN 1.01	17.1		86					



PANEL 4
(SHEET 5)

PANEL 5
(SHEET 6)

PANEL 2
(SHEET 3)

PANEL 3
(SHEET 4)

PANEL 1
(SHEET 2)

SEAM 4-5

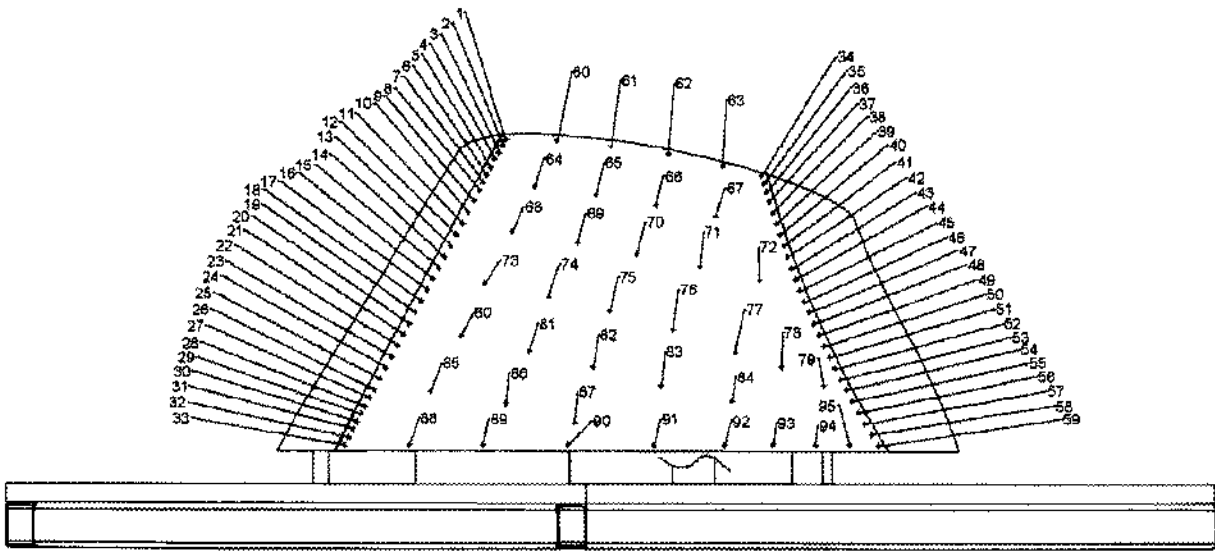
SEAM 2-5

SEAM 3-4

SEAM 1-2

SEAM 1-3

PROTOTYPE VACUUM VESSEL INSPECTION DRAWING REF 98121-001P	
SE 121-001P-1MTM	
AS NOTED	05



PANEL 1

REV	DATE	BY	CHKD

NEW ORLEANS POLYLINE 1000 Poydras Street New Orleans, LA 70112 (504) 581-1111		PROTOTYPE VACUUM VESSEL INSPECTION DRAWING REF: 88111-0010
		88121-001P-1MTM 08

AS NOTED

64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B


Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection X			
Part # / Panel #: SE121-001P PANEL #1		Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180				Date of Inspection: 04-16-04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.069	0.376	LESS THAN 1.01	8.4	MTM	44	0.034	0.386	LESS THAN 1.01	13.2	MTM
2	0.054	0.378	LESS THAN 1.01	9.6	MTM	45	0.037	0.385	LESS THAN 1.01	15.4	MTM
3	0.046	0.38	LESS THAN 1.01	12.8		46	0.038	0.384	LESS THAN 1.01	9.5	
4	0.034	0.38	LESS THAN 1.01	8.8		47	0.038	0.384	LESS THAN 1.01	9.7	
5	0.027	0.381	LESS THAN 1.01	9.6		48	0.036	0.385	LESS THAN 1.01	6.4	
6	0.018	0.381	LESS THAN 1.01	10.4		49	0.034	0.386	LESS THAN 1.01	15.2	
7	0.009	0.381	LESS THAN 1.01	11.6		50	0.032	0.384	LESS THAN 1.01	13.2	
8	0.003	0.381	LESS THAN 1.01	20.0		51	0.029	0.385	LESS THAN 1.01	14.7	
9	-0.004	0.381	LESS THAN 1.01	21.3		52	0.028	0.385	LESS THAN 1.01	16.2	
10	-0.009	0.382	LESS THAN 1.01	21.2		53	0.027	0.384	LESS THAN 1.01	8.4	
11	-0.014	0.383	LESS THAN 1.01	10.0		54	0.03	0.384	LESS THAN 1.01	16.2	
12	-0.014	0.381	LESS THAN 1.01	7.2		55	0.034	0.383	LESS THAN 1.01	14.4	
13	-0.011	0.381	LESS THAN 1.01	9.6		56	0.044	0.384	LESS THAN 1.01	14.8	
14	-0.001	0.383	LESS THAN 1.01	10.8		57	0.06	0.385	LESS THAN 1.01	16.4	
15	0.015	0.383	LESS THAN 1.01	8.8		58	0.068	0.386	LESS THAN 1.01	17.2	
16	0.029	0.383	LESS THAN 1.01	10.2		59	0.074	0.385	LESS THAN 1.01	18.0	
17	0.036	0.383	LESS THAN 1.01	12.5		60	0.064	0.381	LESS THAN 1.01	24.8	
18	0.03	0.383	LESS THAN 1.01	9.5		61	0.061	0.381	LESS THAN 1.01	15.4	
19	0.019	0.383	LESS THAN 1.01	8.7		62	0.029	0.386	LESS THAN 1.01	19.2	
20	0.01	0.383	LESS THAN 1.01	12.5		63	-0.015	0.385	LESS THAN 1.01	16.4	
21	0.006	0.384	LESS THAN 1.01	11.4		64	0.014	0.387	LESS THAN 1.01	11.6	
22	0.004	0.387	LESS THAN 1.01	16.2		65	0.057	0.385	LESS THAN 1.01	14.8	
23	0.001	0.386	LESS THAN 1.01	12.4		66	0.028	0.385	LESS THAN 1.01	10.8	
24	-0.004	0.386	LESS THAN 1.01	11.1		67	-0.007	0.386	LESS THAN 1.01	21.6	
25	-0.007	0.387	LESS THAN 1.01	12.3		68	-0.005	0.386	LESS THAN 1.01	7.6	
26	-0.007	0.386	LESS THAN 1.01	6.8		69	0.076	0.386	LESS THAN 1.01	9.6	
27	-0.007	0.386	LESS THAN 1.01	5.6		70	-0.015	0.386	LESS THAN 1.01	11.2	
28	-0.011	0.386	LESS THAN 1.01	6.8		71	-0.09	0.388	LESS THAN 1.01	16.8	
29	-0.02	0.386	LESS THAN 1.01	8.0		72	0.021	0.388	LESS THAN 1.01	17.3	
30	-0.035	0.383	LESS THAN 1.01	7.6		73	0.028	0.388	LESS THAN 1.01	10.9	
31	-0.049	0.384	LESS THAN 1.01	8.4		74	0.048	0.384	LESS THAN 1.01	18.6	
32	-0.056	0.378	LESS THAN 1.01	10.8		75	-0.031	0.384	LESS THAN 1.01	12.7	
33	-0.051	0.379	LESS THAN 1.01	9.6		76	N/A	N/A	N/A	N/A	
34	0.006	0.384	LESS THAN 1.01	11.2		77	N/A	N/A	N/A	N/A	
35	0.011	0.385	LESS THAN 1.01	6.8		78	-0.102	0.385	LESS THAN 1.01	10.3	
36	0.008	0.386	LESS THAN 1.01	10.8		79	0.039	0.391	LESS THAN 1.01	8.0	
37	0.006	0.385	LESS THAN 1.01	21.6		80	0.011	0.387	LESS THAN 1.01	15.2	
38	0.004	0.385	LESS THAN 1.01	12.0		81	0.022	0.387	LESS THAN 1.01	14.6	
39	0.005	0.388	LESS THAN 1.01	13.6		82	-0.059	0.385	LESS THAN 1.01	12.3	
40	0.012	0.386	LESS THAN 1.01	14.3		83	-0.081	0.387	LESS THAN 1.01	17.2	
41	0.022	0.387	LESS THAN 1.01	15.2		84	-0.007	0.386	LESS THAN 1.01	16.2	
42	0.031	0.387	LESS THAN 1.01	10.2	MTM	85	-0.036	0.391	LESS THAN 1.01	18.4	MTM
43	0.035	0.387	LESS THAN 1.01	14.3	MTM	86	-0.018	0.389	LESS THAN 1.01	12.0	MTM

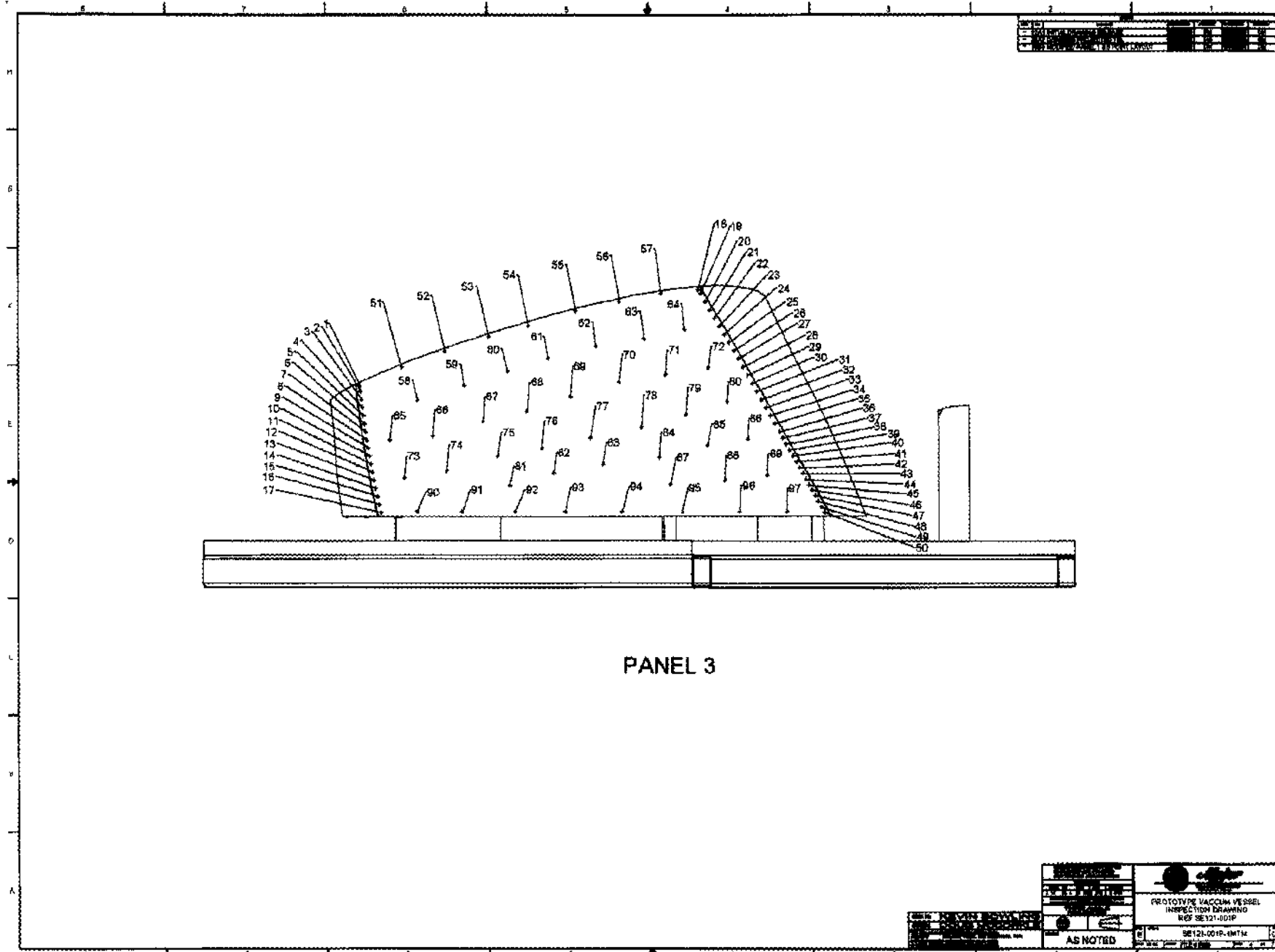
64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection X

Part # / Panel #: SE121-001P PANEL #1 Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180 Date of Inspection: 04-16-04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	-0.081	0.387	LESS THAN 1.01	8.5		126					
88	-0.073	0.385	LESS THAN 1.01	9.4		127					
89	-0.053	0.388	LESS THAN 1.01	12.0		128					
90	-0.082	0.385	LESS THAN 1.01	10.0		129					
91	-0.113	0.389	LESS THAN 1.01	13.2		130					
92	-0.112	0.387	LESS THAN 1.01	10.4		131					
93	-0.106	0.388	LESS THAN 1.01	16.2		132					
94	-0.058	0.387	LESS THAN 1.01	14.8		133					
95	0.033	0.385	LESS THAN 1.01	15.2		134					
96						135					
97					136						
98					137						
99					138						
100					139						
101					140						
102					141						
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125					164						



PANEL 3

REV	DATE	BY	CHKD

TITLE PROTOTYPE VACUUM VESSEL INSPECTION DRAWING REF SE21-001P	SHEET NO 58121-001P-1M112

64680 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel		Interpass (#)		After structural welding		After welding Port		Final Inspection X			
Part # / Panel #: SE121-001P PANEL #3		Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180				Date of Inspection: 04-16-04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.093	0.388	LESS THAN 1.01	10.0		44	-0.029	0.385	LESS THAN 1.01	14.3	
2	0.076	0.382	LESS THAN 1.01	6.8		45	-0.034	0.387	LESS THAN 1.01	16.4	
3	0.056	0.377	LESS THAN 1.01	10.0		46	-0.033	0.388	LESS THAN 1.01	14.3	
4	0.044	0.375	LESS THAN 1.01	12.4		47	-0.029	0.389	LESS THAN 1.01	13.4	
5	0.036	0.379	LESS THAN 1.01	11.6		48	-0.024	0.389	LESS THAN 1.01	8.6	
6	0.033	0.38	LESS THAN 1.01	15.6		49	-0.021	0.387	LESS THAN 1.01	17.6	
7	0.038	0.38	LESS THAN 1.01	15.3		50	-0.016	0.387	LESS THAN 1.01	15.2	
8	0.047	0.38	LESS THAN 1.01	17.6		51	0.112	0.384	LESS THAN 1.01	14.3	
9	0.054	0.379	LESS THAN 1.01	18.2		52	0.076	0.386	LESS THAN 1.01	14.2	
10	0.06	0.379	LESS THAN 1.01	17.8		53	0.089	0.389	LESS THAN 1.01	8.3	
11	0.062	0.379	LESS THAN 1.01	18.4		54	0.05	0.387	LESS THAN 1.01	16.9	
12	0.063	0.377	LESS THAN 1.01	20.1		55	0.025	0.385	LESS THAN 1.01	12.5	
13	0.062	0.379	LESS THAN 1.01	15.3		56	0.024	0.387	LESS THAN 1.01	17.6	
14	0.059	0.38	LESS THAN 1.01	16.0		57	0.074	0.387	LESS THAN 1.01	13.2	
15	0.058	0.377	LESS THAN 1.01	14.3		58	0.087	0.385	LESS THAN 1.01	12.3	
16	0.058	0.378	LESS THAN 1.01	16.3		59	0.095	0.385	LESS THAN 1.01	14.6	
17	0.06	0.379	LESS THAN 1.01	8.6		60	0.095	0.388	LESS THAN 1.01	21.3	
18	0.076	0.382	LESS THAN 1.01	9.4		61	0.076	0.387	LESS THAN 1.01	14.3	
19	0.074	0.383	LESS THAN 1.01	15.3		62	0.086	0.385	LESS THAN 1.01	16.0	
20	0.066	0.383	LESS THAN 1.01	14.5		63	0.094	0.387	LESS THAN 1.01	14.0	
21	0.052	0.385	LESS THAN 1.01	12.3		64	0.065	0.388	LESS THAN 1.01	12.3	
22	0.036	0.384	LESS THAN 1.01	16.4		65	0.119	0.385	LESS THAN 1.01	14.8	
23	0.024	0.385	LESS THAN 1.01	18.5		66	0.121	0.383	LESS THAN 1.01	13.4	
24	0.013	0.383	LESS THAN 1.01	12.1		67	0.065	0.383	LESS THAN 1.01	17.2	
25	0.007	0.385	LESS THAN 1.01	15.3		68	0.084	0.384	LESS THAN 1.01	15.3	
26	0.004	0.384	LESS THAN 1.01	8.6		69	0.104	0.386	LESS THAN 1.01	14.6	
27	0.003	0.385	LESS THAN 1.01	9.4		70	0.085	0.385	LESS THAN 1.01	10.3	
28	0.004	0.383	LESS THAN 1.01	7.8		71	0.039	0.388	LESS THAN 1.01	12.4	
29	0.006	0.383	LESS THAN 1.01	8.6		72	-0.001	0.386	LESS THAN 1.01	14.3	
30	0.008	0.383	LESS THAN 1.01	9.4		73	0.107	0.385	LESS THAN 1.01	17.3	
31	0.006	0.384	LESS THAN 1.01	9.4		74	0.098	0.384	LESS THAN 1.01	14.3	
32	0.006	0.384	LESS THAN 1.01	6.1		75	0.052	0.383	LESS THAN 1.01	16.1	
33	0.005	0.383	LESS THAN 1.01	8.4		76	0.054	0.383	LESS THAN 1.01	14.3	
34	0.002	0.383	LESS THAN 1.01	15.2		77	0.103	0.387	LESS THAN 1.01	13.2	
35	0.002	0.383	LESS THAN 1.01	14.9		78	0.102	0.389	LESS THAN 1.01	16.3	
36	0.004	0.384	LESS THAN 1.01	16.2		79	0.082	0.385	LESS THAN 1.01	9.4	
37	0.006	0.384	LESS THAN 1.01	17.6		80	0.011	0.384	LESS THAN 1.01	16.2	
38	0.005	0.386	LESS THAN 1.01	13.2		81	0.058	0.385	LESS THAN 1.01	10.2	
39	-0.001	0.385	LESS THAN 1.01	14.3		82	0.044	0.388	LESS THAN 1.01	14.3	
40	-0.006	0.387	LESS THAN 1.01	12.1		83	0.077	0.385	LESS THAN 1.01	13.2	
41	-0.012	0.385	LESS THAN 1.01	15.6		84	0.113	0.386	LESS THAN 1.01	18.4	
42	-0.018	0.384	LESS THAN 1.01	10.6		85	0.092	0.389	LESS THAN 1.01	12.3	
43	-0.024	0.385	LESS THAN 1.01	14.8		86	0.005	0.386	LESS THAN 1.01	16.2	

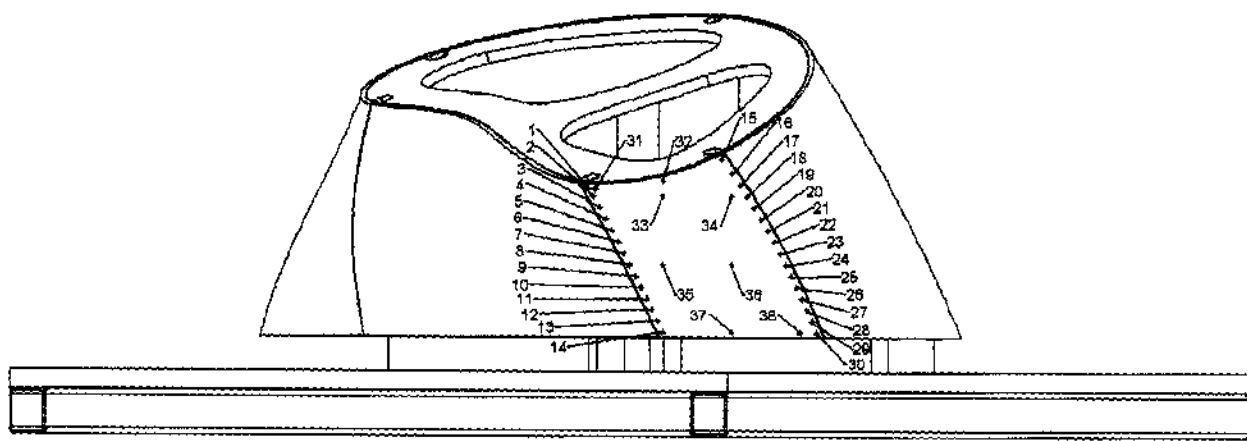
64660 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection X

Part # / Panel #: SE121-001P PANEL #3 Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180 Date of Inspection: 04-16-04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
87	0.09	0.385	LESS THAN 1.01	10.2		126					
88	0.085	0.386	LESS THAN 1.01	12.4		127					
89	0.004	0.386	LESS THAN 1.01	16.2		128					
90	0.071	0.385	LESS THAN 1.01	9.4		129					
91	0.087	0.383	LESS THAN 1.01	15.0		130					
92	0.083	0.387	LESS THAN 1.01	12.4		131					
93	0.109	0.386	LESS THAN 1.01	12.0		132					
94	0.114	0.386	LESS THAN 1.01	13.4		133					
95	0.068	0.387	LESS THAN 1.01	10.2		134					
96	0.053	0.385	LESS THAN 1.01	17.2		135					
97	0.031	0.386	LESS THAN 1.01	16.4		136					
98						137					
99						138					
100						139					
101						140					
102						141					
103						142					
104						143					
105						144					
106						145					
107						146					
108						147					
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124						163					
125						164					



PANEL 4

REV	DATE	BY	CHKD

SEE DRAWING 9000000000

AS NOTED

PROTOTYPE VACUUM VESSEL INSPECTION DRAWING REF 9E121-001P	9E121-001P-141TM
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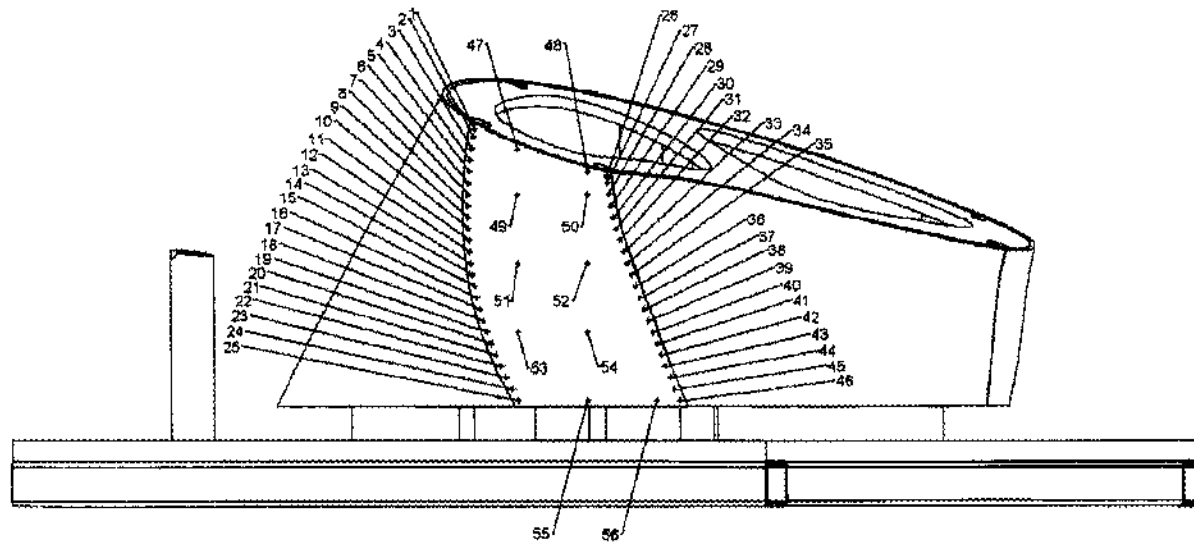
64880 PPPL NCSX PVVS INSPECTION RECORD

Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection X

Part # / Panel #: SE121-001P PANEL #4 Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180 Date of Inspection: 04-16-04

Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	0.027	0.413	LESS THAN 1.01	13.2		44					
2	0.046	0.414	LESS THAN 1.01	10.8		45					
3	0.054	0.413	LESS THAN 1.01	21.2		46					
4	0.059	0.413	LESS THAN 1.01	16.8		47					
5	0.060	0.414	LESS THAN 1.01	14.8		48					
6	0.057	0.417 *	LESS THAN 1.01	16.4		49					
7	0.053	0.412	LESS THAN 1.01	17.3		50					
8	0.048	0.413	LESS THAN 1.01	12.6		51					
9	0.043	0.415	LESS THAN 1.01	16.1		52					
10	0.039	0.417 *	LESS THAN 1.01	15.9		53					
11	0.036	0.417 *	LESS THAN 1.01	14.3		54					
12	0.032	0.418 *	LESS THAN 1.01	10.6		55					
13	0.031	0.416 *	LESS THAN 1.01	14.5		56					
14	0.037	0.416 *	LESS THAN 1.01	12.3		57					
15	0.051	0.392	LESS THAN 1.01	13.2		58					
16	0.041	0.393	LESS THAN 1.01	15.1		59					
17	0.030	0.394	LESS THAN 1.01	17.9		60					
18	0.017	0.391	LESS THAN 1.01	18.7		61					
19	0.008	0.391	LESS THAN 1.01	12.3		62					
20	0.001	0.390	LESS THAN 1.01	10.9		63					
21	-0.002	0.390	LESS THAN 1.01	15.3		64					
22	0.000	0.391	LESS THAN 1.01	16.0		65					
23	0.004	0.390	LESS THAN 1.01	18.9		66					
24	0.009	0.389	LESS THAN 1.01	17.1		67					
25	0.015	0.388	LESS THAN 1.01	17.0		68					
26	0.023	0.389	LESS THAN 1.01	15.3		69					
27	0.028	0.392	LESS THAN 1.01	12.4		70					
28	0.031	0.391	LESS THAN 1.01	15.3		71					
29	0.034	0.392	LESS THAN 1.01	14.3		72					
30	0.036	0.391	LESS THAN 1.01	16.1		73					
31	0.050	0.401	LESS THAN 1.01	16.2		74					
32	0.051	0.396	LESS THAN 1.01	12.6		75					
33	0.062	0.400	LESS THAN 1.01	8.3		76					
34	0.026	0.395	LESS THAN 1.01	10.4		77					
35	0.067	0.394	LESS THAN 1.01	11.6		78					
36	0.016	0.392	LESS THAN 1.01	12.1		79					
37	-0.002	0.393	LESS THAN 1.01	9.3		80					
38	-0.016	0.388	LESS THAN 1.01	10.6		81					
39						82					
40						83					
41						84					
42						85					
43						86					



PANEL 2

PROTOTYPE VACUUM VESSEL INSPECTION DRAWING REF SE121501P	
62101-00 RP-1MTR	08
AS NOTED	

64880 PPPL NCSX PVVS INSPECTION RECORD


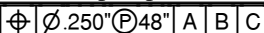
Inspection Drawing Number: SE121-001P-1MTM Rev: 0B

Inspection type: Formed Panel Interpass (#) After structural welding After welding Port Final Inspection X											
Part # / Panel #: SE121-001P PANEL #2		Gage/Std S/N(s): 4470, J-1009-NDT, J-1165, J-1180				Date of Inspection: 04-16-04					
Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials	Point Number	Profile Deviation	Material Thickness	Magnetic Permeability	Surface Finish	Inspector Initials
1	-0.025	0.387	LESS THAN 1.01	10.2		44	0.052	0.376	LESS THAN 1.01	9.8	
2	-0.023	0.386	LESS THAN 1.01	16.3		45	0.043	0.375	LESS THAN 1.01	13.4	
3	-0.018	0.384	LESS THAN 1.01	15.3		46	0.032	0.381	LESS THAN 1.01	11.5	
4	-0.013	0.383	LESS THAN 1.01	12.4		47	0.047	0.392	LESS THAN 1.01	12.0	
5	-0.004	0.383	LESS THAN 1.01	11.3		48	0.096	0.399	LESS THAN 1.01	13.4	
6	0.008	0.384	LESS THAN 1.01	10.9		49	0.141	0.389	LESS THAN 1.01	16.4	
7	0.021	0.383	LESS THAN 1.01	14.2		50	0.145	0.406	LESS THAN 1.01	14.2	
8	0.027	0.383	LESS THAN 1.01	15.3		51	0.162	0.386	LESS THAN 1.01	14.5	
9	0.034	0.382	LESS THAN 1.01	17.6		52	0.154	0.388	LESS THAN 1.01	13.2	
10	0.041	0.383	LESS THAN 1.01	14.6		53	0.147	0.380	LESS THAN 1.01	15.6	
11	0.049	0.383	LESS THAN 1.01	12.3		54	0.135	0.381	LESS THAN 1.01	13.4	
12	0.053	0.385	LESS THAN 1.01	16.8		55	0.125	0.380	LESS THAN 1.01	14.6	
13	0.054	0.383	LESS THAN 1.01	14.5		56	0.130	0.381	LESS THAN 1.01	10.9	
14	0.050	0.383	LESS THAN 1.01	15.2		57					
15	0.046	0.383	LESS THAN 1.01	10.3		58					
16	0.038	0.383	LESS THAN 1.01	9.8		59					
17	0.031	0.383	LESS THAN 1.01	11.0		60					
18	0.030	0.382	LESS THAN 1.01	12.3		61					
19	0.031	0.381	LESS THAN 1.01	15.4		62					
20	0.034	0.381	LESS THAN 1.01	14.6		63					
21	0.038	0.383	LESS THAN 1.01	13.2		64					
22	0.045	0.383	LESS THAN 1.01	18.6		65					
23	0.053	0.383	LESS THAN 1.01	17.6		66					
24	0.064	0.382	LESS THAN 1.01	12.3		67					
25	0.077	0.381	LESS THAN 1.01	15.2		68					
26	0.092	0.409	LESS THAN 1.01	14.3		69					
27	0.097	0.407	LESS THAN 1.01	10.3		70					
28	0.105	0.404	LESS THAN 1.01	9.4		71					
29	0.102	0.402	LESS THAN 1.01	12.3		72					
30	0.086	0.392	LESS THAN 1.01	14.6		73					
31	0.086	0.393	LESS THAN 1.01	18.4		74					
32	0.091	0.394	LESS THAN 1.01	13.2		75					
33	0.112	0.393	LESS THAN 1.01	14.3		76					
34	0.135	0.391	LESS THAN 1.01	10.6		77					
35	0.136	0.388	LESS THAN 1.01	9.2		78					
36	0.129	0.390	LESS THAN 1.01	15.2		79					
37	0.120	0.386	LESS THAN 1.01	14.3		80					
38	0.111	0.384	LESS THAN 1.01	16.4		81					
39	0.100	0.385	LESS THAN 1.01	17.2		82					
40	0.088	0.383	LESS THAN 1.01	12.3		83					
41	0.079	0.383	LESS THAN 1.01	15.2		84					
42	0.071	0.379	LESS THAN 1.01	10.2		85					
43	0.061	0.380	LESS THAN 1.01	17.1		86					

Quality Assurance Documentation for Part ID: SE121-003P - Item: 223

Workorder: 64880/1-0 Sub:39 Op:40

Part: SE121-003P - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-01-

Drawing ID: SE121-003P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		Magnetic Permeability of all Inconel 625 Material And Weld Zones (1.01 Max)		QA		J-1165	LESS THAN 1.01	522			A
(10)								04-08-0			
*		Magnetic Permeability of Conflat Flange (1.02 Max)		QA		J-1165	LESS THAN 1.02	522			A
(20)								04-08-0			
*		Magnetic Permeability of Weld / Heat Affecte ne (Flange to Tube) (1.2 Max)		QA		J-1165	LESS THAN 1.2	522			A
(30)								04-08-0			
*		 Finished part profile		QA		4470	+0.216/-0.034 TOTAL PROFILE [N/C:15410 -Doc:15140]	522			R
(40)								04-16-0			
*		 Port Extension position (after re-attachment)		QA		4470	0.570 [N/C:15418-Do c:15418]	522			R
(50)								04-19-0			
*		.375 +0.04/-.06"		QA		J-1009-NDT	P#1 0.378-0.391,P#2 0.409-0.375,P#3 0.389-0.375,P#4 0.418 -0.388,P#5 0.430-0.404 [N/C:15377-Doc :15377]	522			R
(60)								04-08-0			
*		.125 +/- .013"		QA		J-1009-NDT	0.127-0.130	522			A
(70)								04-08-0			
1*		32 MICRO INCH SURFACE FINISH RA ENTIRE INTERIOR VESSEL AND PORT EXTENSION SURFACE.		QA		J-1180	ACCEPT	522			A
(80)								04-16-0			

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

Invoice No. No. De Facture Rechnungs Nr. 391282001-0	Date Entered Date De Commande Bestelldatum 08/14/03	Customer Reference Référence Client Kundenbest/Maten P03-03302	Report No. Rapport No. Zeugnis Nr. 20030822079	Pages of Pages Page de Pages Anzahl der Seiten 1 Of 4
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HAYNES
International

FILE COPY 2
Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestellausschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestelldatung MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
---	---

Product Description • Description Produit • Material Beschreibung 0.125 (0.12/0.13) x 36 x 120 HAYNES(R) 625 ALLOY SHEET - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
--

Specification • Spécification • Spezifikation AMS 5599 Rev F ASTM-B-443 Rev 99 N06625 1	Quantity Ordered Quantité Commandée Bestelldatung 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
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Heat Number Numero de Cuiée Charge Nr.	Chemical Analysis • Analyse Chimique • Chemische Analyse																			
	Al	B	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	S	Si	Ti	V	W				
2650 3 6874	0.16		0.030	3.63	0.23	21.79		4.71	0.28	8.86	58.96	0.008	0.002	0.11	0.26					
2650 3 6874	3.580	<0.050																		

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician
08/22/03

Paul O. Guest

MTM
016
8-28-03

RECEIVED
AUG 27 2003
79491 line 1 B.7.

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTS IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS DONNÉS CI-DESSUS ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS REPRÉSENTATIFS DES PRODUITS EXPÉDIÉS ET SONT CONSIDÉRÉS COMME ÉTANT FIABLES. NOUS REÇUSONS TOUTE RESPONSABILITÉ LIÉE À L'UTILISATION DE CE CERTIFICAT.
DIE VORGEDRUCKTEN ANGABEN BASIEREN AUF PROBEN DIE ALS REPRÄSENTATIV GELTEN FÜR DIE PRODUKTE DIE GEFERLT WERDEN UND ZUGELASSENE LIBERTÄT UND ALS QUALITÄTSSICHERUNG UND ZUFÜHRUNG ANGESEHEN WERDEN. WIR LEHNEH JEDE RECHTLICHE VERANTWORTLICHKEIT FÜR DIE VERWENDUNG DIESER ZEICHENUNG AB.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATIONS, APPROVED BY ANY EXCEPTIONS OR PURCHASE ORDER REQUIREMENTS.
SPECIFICATION MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.

mc093762.tif 1 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

Invoice No No. De Facture Rechnungs Nr 391282001-0	Date Entered Date De Commande Bestelldatum 08/14/03	Customer Reference Reference Client Kundenbestelldaten P03-03302	Report No. Rapport No Zeugnis Nr 20030822079	Pages of Pages Page de Pages Anzahl der Seiten 2 Of 4
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HAYNES
International

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Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestelleranschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
--	--

Product Description • Description Produit • Material Beschreibung 0.125 (0.12/0.13) x 36 x 120 HAYNES(R) 625 ALLOY SHEET NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
--

Specification • Specification • Spezifikation AMS 5599 Rev F ASTM-B-443 Rev 99 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC
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Tensile Test at Room Temperature • Essai De Traction A Temp. Ambiante • Zugversuch Bei Raum Temp.						Tensile Test at Elevated Temperature • Essai De Traction A Hte.Temp. Warm Zugversuch						Stress Rupture Temperature • Essai A Charge De Rupture Zeitslandversuch					
Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In % Allong EN % Dehnung	%RA		Test Essai Versuch Temp.	Ultimate Zugfestigkeit	1% Yield Lim. Elast. A 1% 1% Streckgrenze	0.2% Yield Lim. Elast. A 0.2% 0.2% Streckgrenze	% Elong In % Allong EN % Dehnung	%RA		Test Essai Versuch Temp.	Stress Constrained Spannung	Hours Heures Stunden	% Elong In % Allong EN % Dehnung	% RA
134000 PSI		72000 PSI	46 %		(1) (A)												

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technician

08/22/03 (1) 3438301501

Paul O. Guest

MTM
016
9.23.03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTS IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS CONTIENS ICI ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS REPRÉSENTATIFS DES PRODUITS EXPÉDIÉS ET SONT CROUS PENSÉS ÊTRE FIABLES. NOUS RÉCUSONS TOUTE RESPONSABILITÉ LÉGALE EN QUANT À L'UTILISATION DE CE CERTIFICAT.
DIE VORGENANNTEN ANGABEN BAZIEREN AUF PROBEN DIE ALS REPRÉSENTATIV GELTEN FÜR DIE PRODUKTE DER DESSER LIEFERUNG ZUGEHÖRENDE LIEGEN UND ALS VERLÄSSLICH UND ZUFÜHRBAR ANGESEHEN WERDEN. WIR LEHNEN JEDE RECHTLICHE VERANTWORTLICHKEIT FÜR DIE VERWENDUNG DIESER ZERTIFIKATION AB.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATIONS, MODIFIED BY ANY EXCEPTIONS OR PURCHASE ORDER REQUIREMENTS.
SPECIFICATION MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.

mc093762.tif 2 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

**HAYNES
International**

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Invoice No No. De Facture Rechnungs Nr 391282001-0	Date Entered Date De Commande Bestelldatum 08/14/03	Customer Reference Référence Client Kundenbest.Nr. P03-03302	Report No. Rapport No. Zeugnis Nr. 20030822079	Pages of Pages Page de Page Anzahl der Seiten 3 Of 4
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Sold To • Client • Bestellanschrift MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestellmenge MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA
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Product Description • Description Produit • Material Beschreibung 0.125 (0.12/0.13) x 36 x 120 HAYNES(R) 625 ALLOY SHEET - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B	
Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC

Specification • Specification • Spezifikation AMS 5599 Rev F ASTM-B-443 Rev 99 N06625 1
--

Annealed Hardness Dureté Recuit Geglüht Härte	Aged Hardness Dureté Vieilli Gealtert Härte	Grain Size Grossier De Grains Korngrösse					IGA	Uniformity	Corrosion Rate	Oxidation Rate	Charpy Impact Test				Creep Rupture					
		Grain Size	Proportion Grain Size	Recry. Grain	Unrecry. Grain %	ALA					Attack Depth	Corrosion	Test Method	Toughness Avg	Toughness 1	Toughness 2	Toughness 3	Test Elong Versuch Temp	Stress Constratit Spannung	Hours Hours Stunden
98 HRB		8						0.0001 In												(1)

Certified By • Certifié Par • Bescheinigt Durch: **Paul Guest** 08/22/03 (1) 3438301501
Certification Supervisor/Technician

Paul O. Guest

MTM
016
5-29-03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLER CONSIDERED TO BE REPRESENTATIVE OF THE PRODUCTS IN THE SUBJECT SHIPMENT AND ARE BELIEVED TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM USE OF THIS CERTIFICATE.
LES RÉSULTATS CONTENUS ICI ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS SUPPOSÉS REPRÉSENTATIFS DES PRODUITS ENVOYÉS ET SONT CRÉDÉS À NOTRE RESPONSABILITÉ LÉGALE QUANT À L'UTILISATION DE CE CERTIFICAT.
DIE VORGENOMMENTEN ANGEFÜHRTEN ERGEBNISSE SIND PRODUKTREPRÄSENTATIV GELTEN FÜR DIE PRODUKTE DES DIESER LIEFERUNG ZUGEHÖRIGEN LIEFERUNG UND ALS GÜTEBEWERTUNG UND ZUFÜHRUNG ANGESEHEN WERDEN. WIR LEISTEN JEDE RECHTLICHE VERANTWORTLICHKEIT FÜR DIE VERWENDUNG DIESER ZEUGNISSE AB.
THIS MATERIAL MEETS THE REQUIREMENTS OF THE LISTED SPECIFICATION(S), MODIFIED BY ANY EXCEPTIONS OR PURCHASE ORDER REQUIREMENTS.
SPECIFICATION MARKING REQUIREMENTS MAY BE WAIVED ON ORDERS REQUIRING MULTIPLE MATERIAL SPECIFICATIONS.

mc093762.tif 3 of 4

CERTIFICATION OF TESTS • RAPPORT D'ESSAIS CERTIFIÉ • WERKSZEUGNIS

FILE COPY 2

Invoice No No. De Facture Rechnungs-Nr 391282001-0	Date Entered Date De Commande Anmeldedatum 08/14/03	Customer Reference Reference Client Kundenspezifisches P03-01302	Report No. Rapport No Zertifikat-Nr 20030822079	Page of Page Page de Page Anzahl der Seiten 4 Of 4
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HAYNES
International

Haynes International
1020 West Park Avenue
PO Box 9013
Kokomo, Indiana, 46902

Sold To • Client • Bestelldatumsnehmer MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Ship To • Destinataire • Bestelldatumsnehmer MAJOR TOOL AND MACHINE INC 1458 E 19TH ST INDIANAPOLIS IN 46218 USA	Product Description • Description Produit • Material Beschreibung 0.125 (0.12/0.13) x 36 x 120 HAYNES(R) 625 ALLOY SHEET - NADCAP CERTIFICATE NUMBER 0089 S400E,S1000E, EN 10204 3.1.B
Specification • Specification • Spezifikation AMS 5599 Rev F ASTM-B-443 Rev 99 N06625 1	Quantity Ordered Quantité Commandée Bestellmenge 1 PC	Quantity Shipped Quantité Expédiée Liefermenge 1 PC

This material is free of mercury contamination.
This material has passed the bend test as specified in 'AMS 5599'
This material has been annealed and cooled in a protective atmosphere.
Mill Orders Used: 3438301501 (1 PC)
(A) 1750 °F to 1950 °F

Certified By • Certifié Par • Bescheinigt Durch: Paul Guest
Certification Supervisor/Technicien

08/22/03

Paul O. Guest

MM
016

8.28.03

THE DATA CONTAINED HEREIN WERE OBTAINED FROM SAMPLES CONSIDERED BY THE REPRESENTATION OF THE PRODUCTS BY THE SUBJECT REPORT AND ARE HEREBY TO BE RELIABLE. WE DISCLAIM ANY LEGAL LIABILITY FROM THE USE OF THIS CERTIFICATE.
LES RÉSULTATS PRÉSENTÉS ICI ONT ÉTÉ OBTENUS À PARTIR D'ÉCHANTILLONS CONSIDÉRÉS PAR LA REPRÉSENTATION DES PRODUITS PAR LE SUJET DU RAPPORT ET SONT PAR conséquent À ÊTRE CONSIDÉRÉS COMME ÉTANT FIABLES. NOUS DÉCLINONS TOUTE RESPONSABILITÉ JURIDIQUE EN DÉPENDANCE DE L'UTILISATION DE CE CERTIFICAT.
DIE WERKSZEUGNIS DATEN WAREN ANHANDLER VON PROBEEN ERHALTEN UND WERDEN VON DER PRODUKTREPRÄSENTATION DER PRODUKTE DURCH DAS UNTERSUCHTE UNTERNEHMEN HERVORGEBEN UND SIND DIESBEI ALS VERZÄSSLICH ANZUSEHEN. WIR LEHNEBEN ALLE RECHTLICHE VERANTWORTLICHKEIT FÜR DEN VERWENDUNG DERES DATEN AB.
THE MATERIAL METS THE REQUIREMENTS OF THIS LISTED SPECIFICATION, UNLESS BY ANY EXCEPTIONS OR PURCHASE ORDER SPECIFICATIONS.
SPECIFICATION MARQUE REQUISITION DE MATÉRIEL DÉFINIÉ EN ORDRE REQUIÉRE MATÉRIEL SPÉCIFIQUEMENT.



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE121-003P-4 - Item: 227

Date of Inspection:03/31/2004

Type of Material:625 INCONEL

NDT#:8545

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

Part Information: MTM Job Number: 64880/1.0 -Sub:25 -Op:20 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE121-003P-4 Part Name: PORT EXTENSION WELD BACKI Serial Number: N/A Customer P.O.: S-04344-F Customer Unit/Plant: N/A	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
---	---

Customer Inspection Plan: N/A Test Step: N/A Revision: N/A Material Test Number: N/A	Inspection Criteria: Customer Specification: ASME SECT. V, ARTICLE 6 MTM Spec Number: Acceptance Standard: AWS D1.6, PARA. 6.29.1
---	--

Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT AND FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

Visual inspection performed on the cover pass weld joining find no. 4 (Weld Backing Ring) to itself. Weld acceptable to customer drawing / specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 04/15/2004



Quality Assurance Documentation for Part ID: SE121-003P-4 - Item: 227

Workorder: 64880/1-0 Sub:25 Op:20

Part: SE121-003P-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-003P Rev: 0		INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY				
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			PURGE @ 20 CFH ARGON GAS AND WELDER@ 0 CFH ARGON GAS	791			A
(10)									03-31-0		
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 625 INCO HEAT LOT AV8128	791			A
(20)									03-31-0		
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S. S. S. WOOL INSERT	791			A
(30)									03-31-0		
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			709 QUALIFIED TO WPS PER MTM WELDER QUALIFICATION CHECK SYSTEM	791			A
(40)									03-31-0		
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			75-175 AMPS .062 FILLER , ALL PARAMETERS WITHIN WPS REQUIREMENTS	791			A
(50)									03-31-0		

Quality Assurance Documentation for Part ID: SE121-003P-4 - Item: 228

Workorder: 64880/1-0 Sub:25 Op:40

Part: SE121-003P-4 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-003P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*				QA		J-1165	LESS THAN 1.01	085			A
(10)		MAGNETIC PERMEABILITY 1.01 MAX						03-05-0			
*				QA		VISUAL	OK	085			A
(20)		CLEANLINESS PER PP475						03-05-0			

**Major**
Tool & Machine, Inc.Table of Contents
Quality Assurance Documents For
Workorder: 64880/1.0Page: 8
Date: 04/19/04
User ID: DURHAMCustomer: 8780 - PRINCETON PLASMA PHYSICS LAB
Customer P.O.: S-04344-F
Customer Part ID: SE121 - NSCX Vacuum Vessel Prototype

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
228	19	10		Inspection Data Checklist: 5 steps
229	19	10		Nondestructive Visual Test Certification #8102
230	19	20		Inspection Data Checklist: 2 steps

THREADED LIFTING BOSS - THREADED LIFTING BOSS

Item#	Sub	Op	Pc	Document Description / Material Description / File Name / Heat Lot
231	58	10	10	Material Certification: TRACE ID: 69597/316_100 - BAR, ROUND, 316SST, .75 DIA. - MC086258.TIF / 13207

*Shipping Release**Non Conformance 15103**Non Conformance 15377**Non Conformance 15410**Non Conformance 15418**RDD 04/20/04*

Quality Assurance Documentation for Part ID: SE212-003P-3 - Item: 229

Workorder: 64880/1-0 Sub:19 Op:10

Part: SE212-003P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-002P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		CWI / TEAM LEADER VERIFY SHIELDING GAS AND PURGE GAS COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			SHIELDING 40 / PUR GE @ 20 CFH	791			A
(10)								02-25-0			
*		CWI / TEAM LEADER VERIFY WELD FILLER MATERIAL COMP PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 625 INCO FILLE R HEAT # AV 8128	791			A
(20)								02-25-0			
*		CWI / TEAM LEADER VERIFY PURGE DAM MATERIAL COMPL PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			300 SERIES S.S.	791			A
(30)								02-25-0			
*		CWI / TEAM LEADER VERIFY WELDER QUALIFICATIONS CO PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			709 / 728 ACCEPTA BLE TO MTM QUALIFI ATIONS CHECK SYSTE	791			A
(40)								02-25-0			
*		CWI / TEAM LEADER VERIFY PARAMETER COMPLIANCE PRIOR TO OPERATION START AND THROUGH COMPLETION		QA			.062 70-170 AMPS AL L PARAMETERS WITHI WPS RANGE	791			A
(50)								02-25-0			



Major

Tool & Machine, Inc.

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

Nondestructive Test Certification for Visual Inspection

Quality Assurance Documentation for Part ID: SE212-003P-3 - Item: 230

Date of Inspection:02/25/2004

Type of Material:304L SST AND 625 INCONEL

NDT#:8102

Stage of Inspection: <input type="checkbox"/> Incoming Inspection <input checked="" type="checkbox"/> In-Process Inspection <input type="checkbox"/> After Repair <input type="checkbox"/> Final Inspection	Manufacturing Process: <input checked="" type="checkbox"/> Weldment <input type="checkbox"/> Bar Stock <input type="checkbox"/> Forging	<input type="checkbox"/> Casting <input type="checkbox"/> Plate <input type="checkbox"/> Other	Surface Condition: <input type="checkbox"/> Machined <input type="checkbox"/> Rough <input checked="" type="checkbox"/> Other AS-WELDED / BLENDED	Test Being Run to: <input checked="" type="checkbox"/> Router Instructions <input checked="" type="checkbox"/> Drawing <input type="checkbox"/> Test Plan <input type="checkbox"/> Technique Card	Heat Treated: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Part Information: MTM Job Number: 64880/1.0 -Sub:19 -Op:10 Resource ID: 230-FABRICATION - WEIDNER Part ID: SE212-003P-3 Part Name: PORT EXTENSION Serial Number: N/A Customer P.O.: S-04344-F Customer Unit/Plant: N/A	Test Results: Quantity Inspected: 1 Quantity Accepted: 1 Quantity Rejected: 0 Run Hours: 0.0
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Customer Inspection Plan: N/A Test Step: N/A Revision: N/A Material Test Number: N/A	Inspection Criteria: Customer Specification: ASME CODE ARTICLE 6, SECTION V MTM Spec Number: Acceptance Standard: AWS D1.6, SECT. 6.29.1
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Inspection Methods Used: Magnification Used: 10X Light Source Used: AMBIENT / FLASHLIGHT

Pre-Weld Inspection	Acc	Rej	N/A	In-Process Inspection	Acc	Rej	N/A	Post-Weld Inspection	Acc	Rej	N/A
Base Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preheat/Interpass Temp:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welds Properly Completed:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filler Material Certs:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Proper Filler Material/Flux:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Surfaces:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PQR/WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shielding Gas/Back Purge:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Dimensions:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WPQ:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Welder Conforming to WPS:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Weld Contours:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Preparation:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Root Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Post-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fit-up:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fill Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-Weld Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cover Pass:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Equip Condition/Calibr:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Interpass Cleaning:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
				Distortion of Part:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Inspection Requirements:

100 % of all accessible surfaces Joint Preps Root Pass Back Gouge Cover Pass Other

Notes:

Visual inspection performed on the welds between Find no. 5 (Port extension tube) to Find no.6 (Conflat flange) weld. Welds acceptable per customer drawing and specification requirements.

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

Inspector: 933-D.LEAPLEY

Date: 02/25/2004



Quality Assurance Documentation for Part ID: SE212-003P-3 - Item: 231

Workorder: 64880/1-0 Sub:19 Op:20

Part: SE212-003P-3 - - NSCX PROTOTYPE VACUUM VESSEL SEGMENT SCOPE OF WORK: NCSX-SOW-121-01-02 SPECIFICATION: NCSX-CSPEC-121-0

Drawing ID: SE121-002P Rev: 0			INSPECTION INSTRUCTIONS			RESULTS		INSPECTED BY			
SHEET	ZONE	CHARACTERISTIC	GAGE/EQUIP	BY	SAMPL	SER#	DATA/REMARKS	INSP	VERFD	AUDIT	
*		32 Micro Surface Finish (Interior)		QA		J-1152	20-30	522			A
(10)								02-25-0			
*		1.2 Max Magnetic Permeability (Flange To Tube)		QA		J-1165	LESS THAN 1.2	522			A
(20)								02-25-0			

VJRB0065

T.C.I. Corp.

Print on: 11/01/2001

E:\MTR\VJRB\VJRB0065.BMP Page: 1

Heat#: 13207

Coll#: BO8501008

VIRAJ IMPOEXPO LTD.
10, IMPERIAL CHAMBERS, 1 ST FLOOR,
WILSON ROAD, BALLARD ESTATE,
MUMBAI, 400 058. (INDIA)

808501006208-109

VJRB 0065

TEST CERTIFICATE

CUSTOMER

FIDELITY STAINLESS LTD.
7078 PINE TREE DRIVE, MISSISSAUGA,
ONTARIO, L5S 1S7, CANADA.

ORDER NO.
P00248

PACKING LIST NO.
IMP10143A

INSPECTION NO. DATED
IMP10143/3 08/08/2001

BUNDLE NO.
42423, 42832, 43037, 43039.

GRADE:
316/316L

DESCRIPTION

STAINLESS STEEL BRIGHT BARS

62962 RB

COLD DRAWN GROUND AND POLISHED

SIZE (INCHES)	SHAPE	TOLERANCE	LENGTH	PIECES	WEIGHT (LBS)
3/4	ROUND	ASTM A484	12' RL	321	8489

CHEMICAL ANALYSIS

HEAT NO. 13207

C	Mn	Si	S	P	Ni	Cr	Mo	Cu	N	Co	As
0.028	1.330	0.400	0.020	0.038	10.220	16.870	2.060	0.480	0.066	0.200	

TEST RESULT

YIELD POINT PROOF STRESS (KSI)	TENSILE STRENGTH (KSI)	ELONGATION %	REDUCTION OF AREA %	HARDNESS BHN
80	96	41	71	194

Specification :

MATERIAL CONFIRMS TO ASTM A276-316A, ASTM A479-316A, ASTM A484-316, ASTM A262-316A PRACTICE E, FMS 50, ASTM A182-316A, BSM CL1, ASTM A336-316, ASTM A182-316, AMS 5848, AMS 5853E, ASME SA182-316ED, ASME SA479-316ED, QQ-S-785F, MIL-S-7720A AM2, NACE MR-01-75-05 UNS# S31600/S31603, GRAIN SIZE .5 A9 PER ASTM E112-85.

NTM 016
1.9.02

Remarks :

MATERIAL IS FREE FROM MERCURY CONTAMINATION. MICROSTRUCTURE : FREE FROM CONTINUOUS CARBIDE NETWORK. MACROSTRUCTURE : GOOD MINIMUM SOLUTION ANNEALING TEMPERATURE 1050C WATER QUENCHED. FREE FROM WELD OR WELD REPAIR.

We hereby certify that the material described above has been tested and complies with the terms of order/contract.

M.T.F.
ORDER DATE 9/18/01
PO# P.O. 4104912
OUR REF. 466055
RECEIVED
NOV 02 2001
By



Report
WORKS INSPECTOR

THE ALRO GROUP
RT03515644

PRINCETON UNIVERSITY
PLASMA PHYSIC LABORATORY—PPPL

PRODUCT QUALITY CERTIFICATION AND SHIPPING RELEASE

PROJECT NCSX	ITEM DESCRIPTION PVVS			SHIPMENT NUMBER 64880/1	
PPPL Subcontract / Order No. S-04344-F	REV. 5	ITEM NO. 1	SUBCONTRACTOR REFERENCE NO. 64880	REV. -	QUANTITY SHIPPED 1

SUBCONTRACTOR'S CERTIFICATION

This is to certify that the products and services identified herein have been produced under a controlled quality assurance program and are in conformance with the procurement requirements including applicable codes, standards and specifications as identified in the above-referenced documents unless noted below. Any supporting documentation will be retained in accordance with the procurement requirements.

SIGNED: *[Signature]* DATE: **4-20-04**

TITLE: **QA TL** COMPANY: **MAJOR TOOL & MACHINE**

PPPL (AUTHORIZED REPRESENTATIVE) SHIPPING RELEASE

This is to certify that evidence supporting the above Subcontractor's Certification statement has been audited and no product/service nonconformances from procurement requirements have been found unless noted below. Product/service is hereby released for shipment.

This section serves as the Quality Assurance release for the above described product for shipment. It does not constitute an acceptance thereof and does not relieve the Vendor, Manufacturer or Subcontractor of any and all responsibility or obligation imposed by the purchase contract. It does not waive any rights the Purchaser may have under the purchase contract, including the Purchaser's right to reject the above described material upon discovery of any deviations from requirements of the purchase contract, drawings and specifications.

NONCONFORMANCES FROM PROCUREMENT QUALITY REQUIREMENTS **MTM NONCONFORMANCES**
NC 15103, 15410 & 15418. *et* also NC 15377 *et*

REMARKS/PRODUCT SERIAL NUMBERS: **Documentation package to follow. CMM to CAD dimensional verification in progress. The Project determined there is more value in having the PVVS on site while these are resolved. *et***

BY PPPL QA REPRESENTATIVE (OR DESIGNEE) <i>[Signature]</i>	DATE 4-20-04
---	------------------------

*raised
1:00 PM
4/20/04 *et**

Customer: PRINCETON PLASMA PHYSICS LAB

Contact: LARRY SUTTON
E-Mail: S-04286-F

Telephone: 609-243-2441
Fax: 609-243-2021

Part: /

Drawing ID: SE121-001P

Revision: 0

Customer P.O.: S-04344-F/Ln:1
Serial No./Qty:

Reported By: DOUG MCCORKLE
E-Mail: dMcCorkle@MajorTool.com

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

Problem: RADIOGRAPHIC INSPECTION REQUIREMENT ASME SECTION VIII, DIVISION 1, UW-51
PROCESSING DEFECTS NOTICED ON THE FILM DURING CUSTOMER VISIT. ROLLER MARKS WERE
OBSERVED ON THE FILM AT LEAST PARTIALLY OVER THE WELD IMAGE.

Proposed Disposition:

CONTINUE MANUFACTURING. ISSUE WILL BE SUBMITTED TO PRINCETON FOR DIRECTION. IF
RE-SHOOT IS DESIRED, PROVISIONS WILL BE ADDED INTO THE CURRENT MANUFACTURING
ROUTING IN A PRACTICAL LOCATION.

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

MTM's subcontracted RT Level II has determined that the marks in question do not interfere with the interpretation of the film (i.e. they can be differentiated from relevant indications).
See attached MTM document.

Phil Heitzenroeder

Technical Contact Approval: 2004.04.19 16:08:52 -04'00'

Title: NCSX Dep. Eng. Mgr. Date: 4/19/04

Buyer Approval: Phil Heitzenroeder
2004.04.19 16:09:22 -04'00'

Title: VV Tech. Rep. Date: 4/19/04

Major Tool Implemented By: _____

Title: _____ Date: _____

Customer: PRINCETON PLASMA PHYSICS LAB

Contact: LARRY SUTTON
E-Mail: S-04286-F

Telephone: 609-243-2441
Fax: 609-243-2021

Part: /
Drawing ID: SE121-003P Revision: 0

Customer P.O.: S-04344-F/Ln:1
Serial No./Qty:

Reported By: DOUG MCCORKLE
E-Mail: dMcCorkle@MajorTool.com

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

Problem: THE PROFILE ON PANEL #5 EXCEEDS THE +0.187 TOLERANCE. THE PROFILE FALLS OUT IN TWO AREAS ON THE BOTTOM EDGE. THE PROFILE POINTS THAT ARE OUT ARE INSPECTION POINT #60 & #61. THEY CHECK 0.195 AND 0.216.

Proposed Disposition:

SUBMIT TO PPPL FOR REMEDIAL DISPOSITION

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

A major goal of the prototype effort is to obtain feedback on the dimensional accuracy achievable by the proposed manufacturing methods, and therefore these tolerances are not cause for rejection and the prototype will be accepted "as is". Keeping in mind that in the "production" vessel the segmentation would be different and this would have been a panel weld seam within the vessel field period, the required tolerances may be achievable for production. Feasibility of these tolerances will be considered as part of the prototype evaluation.

Technical Contact Approval: Phil Hetzenroeder
2004.04.19 11:32:24 -04'00' _____

Title: NCSX Dep Engrg Mgr **Date:** 4/19/2004

Buyer Approval: Phil Hetzenroeder
2004.04.19 11:32:44 -04'00' _____

Title: Vacuum Vessel Tech Rep **Date:** 4/19/2004

Major Tool Implemented By: _____

Title: _____ **Date:** _____

Customer: PRINCETON PLASMA PHYSICS LAB

Contact: LARRY SUTTON
E-Mail: S-04286-F

Telephone: 609-243-2441
Fax: 609-243-2021

Part: /

Drawing ID: SE121-003P

Revision: 0

Customer P.O.: S-04344-F/Ln:1
Serial No./Qty:

Reported By: DOUG MCCORKLE

E-Mail: dMcCorkle@MajorTool.com

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

Problem: THE 0.250 PROJECTED TRUE POSITION CHECKS 0.570.

Proposed Disposition:

SUBMIT TO CUSTOMER FOR DISPOSITION

Number of additional pages: _____

Customer Disposition: Use As Is Rework Repair Scrap Replace

A major goal of the prototype effort is to obtain feedback on the dimensional accuracy achievable by the proposed manufacturing methods, and therefore these tolerances are not cause for rejection and the part will be accepted "as is". However, accurate positioning of the ports is a critical requirement for the production vessel and therefore it is requested that all pertinent data and process history be included in the document package.

Phil Heitzenroeder

Technical Contact Approval: 2004.04.19 17:08:18 -04'00'

Title: NCSX Dep. Eng. Mgr.

Date: 4/19/04

Buyer Approval: Phil Heitzenroeder
2004.04.19 17:08:45 -04'00'

Title: NCSX VV Tech. Rep.

Date: 4/19/04

Major Tool Implemented By: _____

Title: _____

Date: _____