

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

(Alternative Form for Single Chamber, Completely Shop- or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by KW International, LLC.
 200 Texas Avenue Columbus, Texas 78934
(Name and address of Manufacturer)

2. Manufactured for Next Era
(Name and address of Purchaser)

3. Location of installation Unknown
(Name and address)

4. Type: Horizontal 109041 --- SEPHZ0240, Rev.1 5285 2023
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year Built)

5. ASME Code, Section VIII, Division 1 2021 --- ---
[Edition and Addenda, if applicable (date)] (Code Case numbers) [Special service per UG-120(d)]

6. Shell *SA-516-70N .75" .125" 48" OD 10'-0"
(Material spec. number, grade) (Nominal thickness) (Corr. Allow.) (Inner diameter) (Length overall)

Body Flanges on Shells												
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material

7. Seams Type 1 Full 100% --- --- Type 1 Full 100% 1
[Long, (welded, dbl, sngl, lap, butt)] [R.T. (spot or full)] (Eff, %) (H.T. temp.) (Time, hr) [Girth, (welded, dbl, sngl, lap, butt)] [R.T. (spot or full)] (Eff, %) (No. of courses)]

8. Heads: (a) SA-516-70N (b) SA-516-70N
(Material spec. number, grade or type) (H.T.-time and temp) (Material spec. number, grade or type) (H.T.-time and temp)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Left Head	.950"	.125"	---	---	2:1	---	---	---	X		S	None	100%
(b)	Right Head	.950"	.125"	---	---	2:1	---	---	---	X		S	None	100%

Body Flanges on Heads												
	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)												
(b)												

9. MAWP 500 --- 200 --- °F
(Internal) (External) (Internal) (External)

Min. design metal temp. -20 °F at 500 PSI. Hydro., pneu. or comb. test pressure 650 PSI

Proof Test ---

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Service	1	18"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	1	6"	RFLWN	SA-105N	---	600#	.125"	---	Welded	---	Left Hd
Service	1	6"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	4	4"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	3	2"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	6	2"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	1	1"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	5	3/4"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	1	1/2"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell

11. Supports: Skirt No --- --- --- --- --- --- --- --- --- ---
(Yes or No) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: *Shell S/N: 14509-1-3, Absolute Metal Products, LLC., Cert. No. 52,928.
(Name of part, item number, Manufacturer's name and identifying stamp)

Impact Testing Exempt per UCS-66.

22

(NB)

5285

CERTIFIED BY



Setting the New STANDARD

KW INTERNATIONAL
www.kwintl.com
FOR SERVICE AND PARTS:
1-344-594-8324

SM

U

RM

M.A.W.P.

500

PSI

AT

200

PSI

M.D.M.T.

-20

°F

AT

500

PSI

TEST PRESSURE

650

PSI

YEAR BUILT

2023

ORDER NO.

16992

TAG NO.

SERIAL NO.

109041

DWS. NO.

SEPH70240

REV.

1

118" O.D. X 10'-0" HZ. 3PH. SEPARATOR

C.A. 1/8"

FORM U-2A

Manufactured by Absolute Metal Products, LLC

Manufacturer's Serial No. 14509-1.1 thru 14509-L-9 CRN _____ National Board No. _____

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U or PRT Certificate of Authorization No. 52,928 Expires 4/1/2025

Date 01 March 2023 Name Absolute Metal Products, LLC Signed [Signature]
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by Authorized Inspection Associates, LLC of Houston, TX have inspected the pressure vessel part described in this Manufacturer's Data Report on 3/7/2023 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By Signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 3/7/2023 Signed [Signature] Commissions NB15475BR
(Inspector) (Inspector Commission No. 15475BR)

MAILING ADDRESS
 P.O. Box 1699
 Gray, LA 70359
 Locations Nationwide
 please visit
 www.nvintl.com



Done Right!

DAILY RADIOGRAPHY WORK REPORT

2449 West Park Ave. Gray,
 Louisiana 70359
 Office (985)876-5559
 Fax (985)876-9355
 Report No: RG 292-6506
 Page 1 of 1

Client: ABSOLUTE METAL PRODUCTS, LLC	Job Location: Houston, TX	Inspection Date: Mar 03, 2023
Billng Address: 7208 GESSNER ROAD HOUSTON TX 77040	NVI Project #: 002314	Ref: N/A
	AFE# or P.O. #: AMP700JF	Project: KMI
	NVI Procedure: NVI-ASME RT-61 Rev. 5 Film Radiography RT-ASME Sec. VI	Acceptance Code: ASME Sec. VIII Div.1
	Customer Job No.: 14509	

Discontinuities found: None
 Please indicate repair area client required no-remediation or with "Repair" in Remarks. ✓ = Accept ✗ = Reject

Report Description: Gamma Radiography of 75" x 48" OD x 126" Cylinder (Long Seam)

Weld No.	Area	Pipe Size	Recommendations			Weld No.	Area	Pipe Size	Recommendations		
			Disc	WS	Remarks				Disc	WS	Remarks
1	1-3	75" x 48" OD x 126"	✓			26					
2	4-6		✓			27					
3	7-9		✓			28					
4	10-12		✓			29					
5	13-15		✓			30					
6	16-18		✓			31					
7	19-21		✓			32					
8	22-24		✓			33					
9	25-27		✓			34					
10	28-30		✓			35					
11	31-33		✓			36					
12	34-36		✓			37					
13	37-39		✓			38					
14	40-42		✓			39					
15	43-45		✓			40					
16	46-48		✓			41					
17	49-51		✓			42					
18	52-54		✓			43					
19	55-57		✓			44					
20	58-60		✓			45					
21	61-63		✓			46					
22	64-66		✓			47					
23	67-69		✓			48					
24	70-72		✓			49					
25	73-75		✓			50					

Technique: DWE/SWY	DWC/DWV	SWE/SWV	Panoramic	SOD: 19.125	GFD: 875	
Exposure Method: IR-192	Curies: 80.0	Ug: 006	Focal Size: 125	Welds Inspected: 1	Exposures per weld: 10	
Estimated Cost: 0.00	Point Sicks: 0.0	Chemical Change: No	Rig Number: 620	Camera Number: D11374		
Film Delivered To Client	Films in Cassette: 1.0	Film Storage Box: 0.0	 Level II Technician: Chase Jones Assistant: Daniel Moreno Assistant:			
Manufacturer: AGFA	Film Quantity: 10.0	Film Type: DS				Film Size: 4.5 X 17
Penetrant Type: ASTM (SE) E-747 B PACK	Required Wire: BB 016	Achieved Wire: BB 016				
Hours Worked: 0.0	Travel Time: 0.0	Mileage: 0.0				Per Diem: No

Generator: No Darkroom: Yes Time: Comments: 10 Slabs @ 4.5" x 17"

Client Representative: Johnny Fortenberry QC Manager Client Email: jfortenberry@absoluteusa.com Client Phone Number: 281898047

Client Signature: 

COFMA 23

Checked by QC Dept.
 3-14-23
 MLE

JSW Steel (USA) INC.
5200 East McKinney Road,
BAYTOWN, TX 77523

METALLURGICAL TEST REPORT

Document MET-04 Rev No. 4 Rev. Date 08/16/22
MTR Rev. 0 2/14/2023

Bulletin Order Item	Heat / PO No.	Shipping Mode	Order Dimensions	Slab Origin	TC No.
T132501 USW2 96-02	S32159 / 15932	TRUCK	0.75x120.5x450		1192501-2159-1

Plates Certified for the Following grades		Specifications		Marking Instructions	
ASME SA516.70 2021 EDITION A R				Stencil in 2 locations 1) Loc. 18 Y Loc. 30 CUST. MADE IN US A IN PO; DIM GRADE HEIGHT ORDER ITEM PLATED SHIPWEEK SLAB ID; TRANSCOEE Stamp in 2 location 3) Loc. 18 Y Loc. 12 Slab ID; Slab ID	

Hot Rolled Carbon Steel Plates
Plates Manufactured in the USA
3645 E. HARSHBARGER ROAD HOUSTON, TX 77040
3645 E. HARSHBARGER ROAD HOUSTON, TX 77040

Test	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	A	N	V	B	Ti	Nb	Ca	CE
LADLE	0.19	0.12	0.014	0.008	0.13	0.020	0.010	0.020	0.000	0.002	0.030	0.0060	0.004	0.0003	0.002	0.002	0.0030	0.32

Plate Tested	Slab Loc.	Gauge Tested	Yield Point (KSI)	Ten. Strength (KSI)	Elong. in 2"	Ratio	Yield Strength Determined At
1284838	A	0.7500	44	78	31.0%	0.57	0.2%

Plate	Loc.	Hardness Scale	Test1	Test2	Test3	Avg	Batch	Hardness Spec.
1284838	A	ROCKWELL C	6	4	6	5	NACE MR0175	

Material	Thickness (IN)	Width (IN)	Length (IN)	Weight (LB)
1284838A	0.7500	120.500	450.00	11533.658

Material	Thickness (IN)	Width (IN)	Length (IN)	Weight (LB)

Carbon Equivalent: C.E. = C + Mn/6 + Cr + Ni + Nb + V + B
 PCI = C + S + Ni + Mn/20 + Cu/20 + Nb/10 + V + B + Ni/15 + Mn/5
 WTS = C + (Mn/5.0) + (Si/0.15) + (Ni/0.015) + (Cr/0.015) + (Nb/0.015) + (V/0.015) + (B/0.015)

Checked by QC Dept.
3-14-23
MLK.

Formed in accordance with UG-79, UG 80. UCS-79. No heat treat

S32159-03A
April W

DIN: EN 10204 2004 3.1 This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Fine Grain, Si-Al Fully Killed Steel. We certify that delivery of this product with the requirement of the specification and purchase order received from customer. DRG Conflict Free. No intentional addition of Pb, Se, S, Hg or B. JSW Steel USA, Inc. is an ISO 9001:2015 certified facility.



KW INTERNATIONAL LLC
PO BOX 19829
HOUSTON, TX 77224

Reference Customer P/O: PO31405 TAG: HDELP0531
Trinity Sales Order: 859645

GENTLEMEN:

Attached are copies of mill test reports for the following material provided on referenced purchase order. We certify the following:

22-SA516-70 ELLIP-2:1 HEAD 48.00 OD 1.00 NOM 0.950 MIN WITH 2.0" SF.

CODE	QTY	THICKNESS	PRODUCER	MELT	SLAB	GRADE
TABK	3	1.00	JSW STEEL	S28400	08C1	SA516-70
TABI	1	1.00	JSW STEEL	S27993	01A	SA516-70
TABL	1	1.00	JSW STEEL	S27992	09B	SA516-70
TCCG	1	1.00	CLEVELAND CLIFFS	821X04120	X067373	SA516-70
TCCH	4	1.00	CLEVELAND CLIFFS	821X04120	X067374	SA516-70
TCCA	3	1.00	CLEVELAND CLIFFS	821X00720	X067363	SA516-70
TCDA	3	1.00	CLEVELAND CLIFFS	821X00740	X067316	SA516-70
TCCB	3	1.00	CLEVELAND CLIFFS	821X00720	X067364	SA516-70
TCEC	2	1.00	CLEVELAND CLIFFS	821X05220	X068690	SA516-70
TBAR	1	1.00	JSW STEEL	S30770	03A	SA516-70

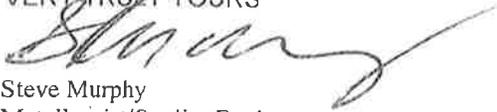
TRINITY HEADS, INC certifies that heads manufactured from material represented by this report were normalized during forming at 1650F (+/-25F) for 30 minutes and air cooled.

The items listed above were formed in strict accordance with all applicable requirements of the ASME Boiler and Pressure Vessel Code Section VIII, Div. 1. All heads comply with UG-79 and UG-81.

Attached mill test reports are in compliance to ASME Code Section II current edition.

If you have further questions, please contact your customer service representative in Navasota, TX at 1-800-392-3594.

VERY TRULY YOURS


Steve Murphy
Metallurgist/Quality Engineer

Checked by QC Dept.

APR 20 2023



ad

JSW Steel (USA) Inc.
5200 East McKinney Road,
SAYTOWN, TX 77523

METALLURGICAL TEST REPORT

MET - 04 Rev. No.: 3 Rev. Date: 02/27/2018
2/6/2020

Order #	Order Item	Heat	PO No.	Shipping Mode	Order Dimensions	Slab Origin	TC No.	
1068904	JSW14000-01	S28403	404253-00	PO#04253500 PNTFDSK TMO SLABS FROM UKRAINE OR CHINA	1x122.5x245	MEXICO	1068904-8400-1	
Plates Certified for the following grades ASME SA516-70 2017 EDITION AR TN				Specifications TEST NORMALIZED AT 1650 °F FOR 30 MINS				Marking Instructions Stencil in 2 location(s); X Loc. 18 Y Loc. 30; CUST: MADEINUSA PN PO; DIM GRADE: FREIGHT ORDERITEM PLATEID SHIPWEEK SLABID TRANSMODE Stamp in 2 location(s); X Loc. 18 Y Loc. 12; Slab ID; Slab ID; Slab ID
Plates Manufactured in the USA TRINITY HEADS INC. MAIL STOP 7253 DALLAS, TX 75336 TRINITY HEADS INC. PLOT 56 HWY 6 SOUTH NAVASOTA, TX 77868								

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	N	V	B	Ti	Nb	Ca	CE
0.20	1.18	0.008	0.002	0.20	0.005	0.006	0.015	0.001	0.002	0.038	0.0026	0.005	0.0002	0.003	0.002	0.0032	0.40

Gauge Tested	Test Dir.	Yield Point	Ten. Stgth. (KSI)	Elong. in 2"	YS/UTS Ratio	Yield Strength Determined At
1.0000	AR	45	75	43.0%	0.80	0.2%
1.0000	TN	48	74	43.0%	0.85	0.2%

Plates Certified For The Above Tests

Material	Thick(IN)	Width(IN)	Len(IN)	Wgt(LB)
1:59711B	1.0000	122.500	245.00	8511.545

HT. # SA516D
MTR APPROVED 12/1/20
DATE
ISP
QUALITY CONTROL DEPT

Checked by QC Dept.

APR 20 2023



Date: EN 10204 2004 2.1. This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Fine Grain, Si-Al Fully Killed Steel. We certify that delivery of this product with the requirement of the specification and purchase order received from customer. DRC Conflict Free. Does not contain Hg. No intentional addition of Pb, Se or S



Lorena Barron

Lorena Barron 281-383-5325 Lorena.barron@jswsteel.us



JSW Steel (USA) INC.
5200 East McKinney Road,
BAYTOWN, TX 77523

TAJAN METALLURGICAL TEST REPORT

MET - 04 Rev. No.: 3 Rev. Date: 02/27/2018
2/6/2020

Material	Order Item	Heat	PO No.	Shipping Mode	Order Dimensions	Slab Origin	TC No.
TJ068904	JSW14000-01	S27892	04253-00	PO# DR253-00 P/N# P20330 NO SLABS FROM UKRAINE OR CHINA	1x122.5x245	BRAZIL	T068904-7992-1

Plates Certified for the Following grades
ASME SA516-70 21 7 EDITION AR TN
 Cold Rolled Carbon Steel Plates
 Plates Manufactured in the USA
 Sold To: TRINITY HEAVIES INC. MAIL STOP 7225 DALLAS, TX 75336
 Ship To: TRINITY HEAVIES INC. PLOT 56 11765 HWY 6 SOUTH NAVASOTA, TX 77863

Test	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	N	V	B	Ti	Nb	Ca	CE
TABLE	0.20	0.13	0.013	0.002	0.19	0.030	0.010	0.020	0.000	0.000	0.039	0.0050	0.004	0.0004	0.003	0.001	0.0020	0.40

Carbon Equivalent CE = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15
 PCM = C + Si/30 + Mn/20 + Cu/20 + Ni/60 + Cr/20 + Mo/15 + V/10 + Sb

Plate Tested	Imp. Loc.	Slab Identity	Gauge Tested	Test Dir.	Yield Point	Ten. Stgth. (KSI)	Elong in 2"	YS/UTS Ratio	Yield Strength Determined At
159707	A	16A	1.0000	AR	46	76	40.0%	0.60	0.2% TAGH
159707	A	16A	1.0000	TN	49	75	44.0%	0.66	0.2%
159708	A	16B	1.0000	AR	47	76	41.0%	0.62	0.2% TAGH
159708	A	16B	1.0000	TN	48	75	42.0%	0.65	0.2%

Material	Thick(IN)	Width (IN)	Len(IN)	Len(IN)	Wgt(LB)
1159707B	1.0000	122.500	245.00	8511.545	
1159708B	1.0000	122.500	245.00	8511.545	

Plates Certified For The Above Tests

Checked by QC Dept.
 APR 20 2020
 [Signature]

HT.# SA792
 MTR APPROVED [Signature]
 DATE [Signature]
 ISP [Signature]
 QUALITY CONTROL DEPT.

EN 10204 2004 3.1 This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Fine Grain, Si-Al Fully Killed Steel. We certify that delivery of this product with the requirement of the specification and purchase order received from customer. DRC Conflict Free. Does not contain Hg. No intentional addition of Pb, Se or S



Lorena Barron 281-383-5325 Lorena.barron@jswsteel.us
 Page 1 of 1

CUSTOMER: Trinity/Nextera DATE: 5/9/23

S/O #: 16992 S/N #: 109041

DESCRIPTION OF VESSEL: 48" OD x 10' H 3 Ph Sep'r. RT-1 Internal Coating

NOZZLE	HEAT	WELD	WELDER
Shell	S32159	SN. 14509-1-3	AMP
Ref. Hd.	TABL	RS#1	24,56,F
Left Hd.	TABK	RS#2	25,56,F
N1 6" 600# RFLWN	C09-KD		56
N2 6" 300# RFLWN	43329A		56
N3 4" 300# RFLWN	21115A		56
N4 4" 300# RFLWN	21115A		56
N5A,B,C 2" 300# RFLWN	32711A		56
N6A,B 4" 300# RFLWN	21115A		56
C1 2" 6M CPLG	D628		56
C2 2" 6M CPLG	D628		56
C3 2" 6M CPLG	D628		56
C4A,B 2" 6M CPLG	4T9P		56
C5 2" 6M CPLG	D628		56
C6 1" 6M CPLG	41K		24
C7A,B .75" 6M CPLG	A4M		56
C8A,B .75" 6M CPLG	A4M		56
C9 .75" 6M CPLG	A4M		56
C10 .5" 6M CPLG	D561		24
M1 18" 300# RFLWN	GG341		P
M1 18" 300# RF Bld.	83717/1		-----

Ameriforge

An AFG Holdings Company

Material Test Report

Heat Code: CO9-KD

Forged Vessel Connections (FVC)

13770 Industrial Rd. Houston, TX 77015

Sales: (713) 393-4200

PART# FLGRFD79I-EXXONAML

ISO 9001:2015 Certified

MSI SUPPLY INC PO BOX 7463 Houston, TX 77248	00012105	PO: 00312-073882	Sales Order: 193228	Line: 1
		Item Code: LWN060600140A002A1	Qty Shipped: 4	
		Item Desc: 6 X 600 X 14 LWN RF SA105N		
		Mill Heat: Y9309		

Spec: ASTM A350 (18) / ASME SA350 (21) - LF2 CL1 & ASTM A105/A105M (21) / ASME SA105/SA105M (21)

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.16				Mo	Molybdenum	0.03			
Mn	Manganese	1.15		Y	7439-96-5	V	Vanadium	0.02			
P	Phosphorous	0.014				Cb	Columbium	0.014			
S	Sulphur	0.010				B	Boron	0.0002			
Si	Silicon	0.26				Ti	Titanium	0.001		Y	7440-02-0
Cu	Copper	0.18		Y	7440-50-8	Al	Aluminum	0.012			
Ni	Nickel	0.08		Y	7440-02-0	C.E.		0.39			
Cr	Chromium	0.07		Y	7440-47-3						

Mechanical Testing				Heat Treat			
Test Lab	Goolsby Testing Inc 22-3104			Norm. Temp. (F)	1675		
Test Bar Size	5X5X12'			Norm. (Hrs)	5.75		
HBW	143 - 149			Norm. Cooling Type	AIR		
Elg (%)	35.2			Other			
RA (%)	64.2						
Tensile Specimen Size (in)	.498			Country of Melt	USA		
Tensile (ksi)	77.3			Country of Finish Machining	USA		
Yield (ksi)	55.1			Country of Forging	USA		
Gauge Length (in)	2			Vacuum Degassed	YES		
Charpy Orientation	LONGITUDINAL			Gr. Sz	12		
Charpy Temp (F)	-50						
Charpy Specimen Size (mm)	10X10						
Charpy (ft lbs)	31 - 28 - 64						
Avg Energy 3 Specimens (ft)	41						
Min Energy 1 Specimens (ft)	28						
% Shear	10 - 10 - 10						
Lat. Exp. (in)	.027 - .027 - .053						

Checked by QC Dept.
MAY 22 2023

The recording of false, fictitious, or fraudulent statement or entries on this document may be punishable as a felony under federal statute.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1630713
 Certification Date: 4/11/2023
 Issued By: Shaloron Dunn

Material Test Report

Heat Code: CO9-KD

Forged Vessel Connections (FVC)

13770 Industrial Rd. Houston, TX 77015

ISO 9001:2015 Certified

Sales: (713) 393-4200

MSI SUPPLY INC	00012105	PO: 00312-073882	Sales Order: 193228	Line: 1
PO BOX 7463		Item Code: LWN060600140A002A1	Qty Shipped: 4	
Houston, TX 77248		Item Desc: 6 X 600 X 14 LWN RF SA105N		
		Mill Heat: Y9309		
Spec: ASTM A350(18)/ASME SA350(21) - LF2 CL1 & ASTM A105/A105M(21)/ASME SA105/SA105M(21)				

Material is Fully Killed; Fine Grain Practice in accordance with SA-29 Paragraph 5.1.

Product compliant with NACE MR0175/ISO 15156-2:2015, Annex A (A.2.1.2, A2.1.3).
Product compliant with NACE MR0103/ISO 17945:2015, Section 13.1.1 and 13.1.3.

We hereby certify that the material represented by this document has been tested and is in conformance with the Purchase Order and Specification Requirements.

- * No Weld repair performed.
- * Ladle Chemical Analysis results are reported from the raw material suppliers MTR.
- * Tensile taken from a round specimen. Measurement of elongation after fracture.
- * Yield strength was determined using the .2% offset method, unless specified.
- * All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.
- * When reported on MTR: Tensile Testing Per ASTM E8; Brinell Hardness Per ASTM E10; Charpy Testing Per ASTM E23
- * AFGlobal manufactures materials according to a certified Quality Management System conforming to ISO 9001:2015 and PED certified to 2014/68/EU, Annex 1, Section 4.3.
- Unless otherwise noted on PO, Dimensions of all standard pipe flanges and flange fittings (NPS 1/2 to NPS 24) per ASME B16.5-2020, large diameter steel flanges (NPS 26 to 60) per ASME B16.47-2020, Orifice flanges per ASME B16.36-2020.
- * AFGlobal uses the latest edition of ASTM E29 (Standard practice for using significant digits in test data to determine conformance with specifications), to claim conformance or nonconformance to a specification. When an accept/reject determination is required AFGlobal uses a test uncertainty ratio (TUR) of 1:1 or higher as acceptable.
- * DNV PED Certificate No 10000425664-PA-ACCREDIA-USA Valid thru December 03, 2023.

Checked by QC Dept.

MAY 22 2023



The recording of false, fictitious, or fraudulent statement or entries on this document may be punishable as a felony under federal statute.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1630713
Certification Date: 4/11/2023
Issued By: Shaloron Dunn


Dusty Bannon - Quality Analyst

with the requirements of EN10204 3.1 / ISO 10474 3.1.b

SOLD / SHIPPED TO: WINNSUPPLY

Item	Quantity	Description
1	11	6" X 300 X 12" LG RF LWN

Heat Number: 43329A
Material Type: SA105N/SA350LF2CL1

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C	.18
Mn	1.28
P	.013
S	.004
Si	.24
Cr	.03
Mo	.01
V	.00
Cu	.02
Ni	.01
Cb(Nb)	.00
Sn	
As	
Sb	
Ti	.00
Al	.03
B	.0003
C E	0.40

Yield PSI	48,900
Tensile PSI	75,600
Elongation %	33.0
Reduction of Area %	68.7
Hardness	156/156 HBW
CVN -50 °F	FT LBS 68/72/69
	% Shear 50/50/50
	MLE .061/.066/.062

MADE TO FINE GRAIN PRACTICE

Heat Treatment **NORMALIZED**
Temperature 1706 °F
Time at Temperature 3 HRS
Cooling Media AIR

Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). NO MERCURY, OR RADIOACTIVE SUBSTANCES CAME IN CONTACT WITH THIS MATERIAL DURING MANUFACTURING. NO WELDING PERFORMED. We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by: 

Name: Cynthia Madrid Title: QA Representative

Checked by QC Dept.

MAY 24 2023




14527 Smith Rd.
 Humble, Texas 77396
 TEL: (281) 441-4088
 FAX: (281) 441-8899

PAGE: 1 of 1
 REPORT # 23-043145
 DATE: 4/13/2023
 FCI ORDER # 119526
 IAW ASME 2021 ED.

CUSTOMER ORDER # 00312-073849
 SOLD / SHIPPED TO: WINNSUPPLY

PART# FLGRFQ723-EXXONAML

IAW EN10204 TYPE 3.1

Item	Quantity	Description
1	33	4" X 300 X 14" LG RF LWN

Heat Number: 21115A
 Material Type: SA105/SA350LF2CL1

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C	.17
Mn	1.23
P	.015
S	.002
Si	.25
Cr	.02
Mo	.00
V	.00
Cu	.01
Ni	.01
Cb(Nb)	.00

Yield PSI	48,200
Tensile PSI	74,800
Elongation %	38.1
Reduction of Area %	75.4
Hardness	153/153 HBW
CVN -50 °F	FT LBS 72/60/73
	% Shear 50/50/50
	MLE .081/.054/.083

Sn	
As	
Sb	
Ti	.00
Al	.04
B	.0005

C E 0.38

EF/VD
 FULLY KILLED

MADE TO FINE GRAIN PRACTICE

Heat Treatment NORMALIZED
 Temperature 1706 °F
 Time at Temperature 6 HRS
 Cooling Media AIR

Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by:

Nancy Loos

Name: Nancy Loos

Title: QA Representative

Checked by QC Dept.

MAY 22 2023



14528 SW 10th St
Miami, Texas 77036
TEL: (281) 441-4000
FAX: (281) 441-4000

PAGE 1 OF 1
REPORT # 22-033854
DATE 9/21/2022
FCI ORDER # 116007
IAW ASME 2021 ED

CUSTOMER ORDER # PO29594
SOLD / SHIPPED TO: KW INTERNATIONAL

IAW EN10204 TYPE 3.1

Item Quantity Description
1 2 2" X 300 X 7" LG RF LWN

TAG: PO29594
TAG: FLGRF0709

Heat Number: 32711A
Material Type: SA105N/SA350LF2CL1

Steel Origin (melt): JAPAN

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C .19
Mn 1.26
P .008
S .003
Si .25
Cr .03
Mo .01
V .00
Cu .02
Ni .02
Cb(Nb) .00

Yield PSI 47,100
Tensile PSI 72,400
Elongation % 33.2
Reduction of Area % 72.6
Hardness 150/150 HBW
CVN -50 °F FT LBS 70/73/98
% Shear 80/80/80
MLE .064/.068/.085

Sn
As
Sb
Ti .00
Al .03
B .0002
C E 0.41

MADE TO FINE GRAIN PRACTICE

Heat Treatment NORMALIZED
Temperature 1706 °F
Time at Temperature 5 HRS
Cooling Media AIR

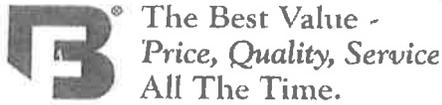
We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by:

Name: Cynthia Madrid Title: QA Representative

Checked by QC Dept.
9-26-22

CERTIFIED MILL TEST REPORT



LOG NO. F0000000175755 Page 1 of 8

BONNEY FORGE CORPORATION
 P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330
 (814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
 www.bonneyforge.com

CUSTOMER: WIN SUPPLY EAST HOUSTON #312

DATE 11/07/2022

CUSTOMER ORDER NO.: 00312-067578

BONNEY ORDER NO. B000317625

SHIP TO: WIN SUPPLY EAST HOUSTON #312
 1357 SHEFFIELD BLVD
 HOUSTON TX 77015
 United States

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
1	100	D628	2 6M A105 COUP TOE 6" LG SA/A105 Al 0.032 C 0.190 Cb 0.004 Co 0.006 Cr 0.110 Cu 0.190 Mn 1.050 Mo 0.040 Ni 0.070 P 0.005 S 0.018 Si 0.230 V 0.035 CE(Long Formula) = 0.42 T/S(PSI) 81,600 Y/S(PSI) 55,680 EL(%) 29.70 RA(%) 63.00 Brinell Hardness 169 BHN 164 BHN
2	700	D577	2 3000 A105 COUP T SA/A105 Al 0.022 C 0.200 Co 0.003 Cr 0.130 Cu 0.040 Mn 1.040 Mo 0.003 Nb 0.012 Ni 0.020 P 0.006 S 0.018 Si 0.230 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 74,400 Y/S(PSI) 42,900 EL(%) 33.00 RA(%) 59.60 Brinell Hardness 143 BHN 142 BHN
3	250	D579	1 6000 A105 COUP T SA/A105 Al 0.018 C 0.200 Co 0.002 Cr 0.110 Cu 0.030 Mn 1.030 Mo 0.010 Nb 0.011 Ni 0.010 P 0.004 S 0.016 Si 0.210 V 0.003 CE(Long Formula) = 0.40 T/S(PSI) 76,300 Y/S(PSI) 46,500 EL(%) 33.00 RA(%) 61.60 Brinell Hardness 144 BHN 147 BHN
4	500	D464	1/4 3M/6M A105 HXPL T SA/A105 C 0.150 Cr 0.070 Cu 0.100 Mn 0.650 Mo 0.010 Ni 0.040 P 0.005 S 0.008 Si 0.210 V 0.001 CE(Long Formula) = 0.28 T/S(PSI) 0 Y/S(PSI) 0 EL(%) 0.00 RA(%) 0.00 Brinell Hardness 150 BHN 162 BHN

Checked by QC Dept.
 4-6-23
 M. Kain

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Paige Smith
 Paige Smith
 Quality Assurance Representative



TEXAS PMW, LLC
315 NORTH WAYSIDE DRIVE HOUSTON, TX 77020
(713) 679-7000 - FAX (713) 679-7020



PENNSYLVANIA MACHINEWORKS, LLC
201 BETHEL AVENUE ASTON, PA 19014
(610) 497-3300 - FAX (610) 497-3325



US DROP FORGE CO.
P.O. BOX 131 - ROUTE 551
1396 AUBURN ROAD WOODMICH TOWNSHIP, NJ 08065
(856) 467-0500 - FAX (856) 467-4598

CERTIFIED MATERIAL TEST REPORT

MSI SUPPLY, INC.
PO BOX 7463
HOUSTON, TX 77018

P.O. 00312075885
ORDER # 03 431242
5/25/23

2X8LG 6MTD HFCP A105 QTY: 14

HEAT CODE: 4T9P MATERIAL: A105
ASTM SPEC: A105 SPEC. YEAR: 21 SPEC. REV:
UNS NUMBER: K03504

CHEMICAL ANALYSIS (%)

C	MN	P	S	SI	NI	CR	MO	CU	TI	AL
.190	1.080	.007	.010	.220	.020	.120	.006	.050	.002	.035
N	PB	CO	SB	V	CB	SN	B	AS	CA	
.002	<.001	.003	<.001	.004	.010	.002	<.001	.002	.001	

PHYSICAL ANALYSIS

YS (PSI)	TS (PSI)	%EL 4D	%RA	HARDNESS (HB)	HARDNESS2 (HB)	C.E=
43700	76500	35.000	62.900	153	154	.40

HARDNESS 1 NACE MR0103 & MR0175

Country of Origin: Canada. Country of Origin is Country of Melt.
Manufactured to: ASME B16.11 - 2016

ASTM A105-05
ASME SECTION II SA105 2021 EDITION
MATERIAL IS CAPABLE OF PASSING A HYDROSTATIC TEST COMPATIBLE WITH THE RATING OF THE FINISHED FITTING
CERTIFICATE I/A/W EN 10204:2004 TYPE 3.1 AND ISO10474:2013 TYPE 3.1
ANSI/NACE MR0103/ISO17945:2015 SECTION 5.2
ANSI/NACE MR0-175/ISO15156-2:2015 SECTIONS A.2.1.2 AND A.2.1.3
ASME SECTION II SA105 2019 ED
MATERIAL IS FULLY KILLED
DURING MANUFACTURE AND PROCESSING, THIS PRODUCT DID NOT COME IN DIRECT CONTACT WITH POLYCHLORINATED BIPHENYLS (PCB'S),
MERCURY OR ANY OF ITS COMPOUNDS NOR WITH ANY MERCURY CONTAINING DEVICE THAT EMPLOYED A SINGLE BOUNDARY OF CONTAINMENT.
NO WELD REPAIRED MATERIAL - MADE IN THE U.S.A.
AS OF THE ORIGINAL MTR PRINT DATE, ARTICLES AS SUPPLIED BY PENN MACHINE HAVE NO INTENDED SUBSTANCE RELEASE, NOR CONTAIN
ANY SIGNIFICANT AMOUNT (DO NOT EXCEED 0.1 WT%) OF CHEMICAL COMPOUNDS ON THE EU CANDIDATE LIST OF SVHC (ARTICLE 59(10))
PER ECHA GUIDELINE RIP 3.8, AND THUS THERE IS NO OBLIGATION TO REGISTER THEM UNDER REACH.
THE PRODUCTS SUPPLIED ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER, AND IN WHICH PMW SUPPLIES TEST RESULTS.

WE HEREBY CERTIFY THAT THE REPORTED FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.


(ES-ELECTRONIC SIGNATURE)
MICHAEL BARRON
QA Manager

MANUFACTURERS OF QUALITY  PIPE FITTINGS
SERVICE PARTNERSHIP
www.pennusa.com

Checked by QC Dept.

6-2-23
MIE

12Jul12 8: 6 TEST CERTIFICATE No: 1 106969

KREHER STEEL COMPANY, LLC:
1550 NORTH 25TH AVENUE
MELROSE PARK, IL 60160
Tel: 708-345-8180 Fax: 708-345-8293

P/O No 2726
Rel
S/O No 1 235478-001
B/L No 1 191952-002 Shp 12Jul12
Inv No Inv

12-30-14

Sold To: (7811)
PRODUCTION MANUFACTURING CO., INC.
5909 EAST 13TH STREET
TULSA OK 74112

Ship To: (1)
PRODUCTION MANUFACTURING CO., INC.
5909 EAST 13TH STREET
TULSA OK 74112

Tel: 918-836-3585 Fax: 918-835-9681

CERTIFICATE of ANALYSIS and TESTS

Cert. No: 1 106969
12Jul12

Part No
TURN & POLISH ROUNDS A105
2.2500 X 16'R/L

0

ASTM A105-05
ASME SA105
HEAT NUMBER 121546
Cu .15 , V .035 AND Cb/Nb .003
LOT NUMBER 50267 WEIGHT 6504
TENSILE 80300
YIELD 52800
ELONGATION 24 %
REDUCTION OF AREA 47 %
HARDNESS 156 -156 AT SURFACE
MADE IN THE USA

2 1/4" Ø SA105
41K

Heat Number
121546

*** Chemical Analysis ***
C=0.2000 Mn=0.8800 P=0.0050 S=0.0290 Si=0.2400 Cu=0.1500
Ni=0.0600 Cr=0.1030 Mo=0.0210 Al=0.0020 B=0.0030 V=0.0350
Sn=<.009> B=<.0004> Ti=<.0004> N=<.0089> Ca=<.0007>

I hereby certify that this data is correct as
contained in the records of this company.
I hereby certify that no mercury came in contact
with or no weld repair was done to this product
while in our possession.

J. Pass

PRODUCTION MFG, TULSA, OKLA
CUSTOMER IPS
P.O. # HP281455X
ITEM 1" - 16000" x 3" T&E Comp
HEAT CODE 41K

Checked by QC Dept.

NOV 17 2017

[Signature]



400 McMunn St.
South Lyon, MI 48178

TEST REPORT



KWI# FITNP0140

Date : 07/23/2022

Page : 1

Job : MJ00010548

Order : MS00015235

Truck#: MT07604

Heat : A222984

Pick#: 62541

Ship#: *A4M*

Ship To :		Sold To :	
<i>13/4" x .425 SA105 SA105N LF2</i>		<i>8/3/22</i>	
P.O. No : 12102	Cust Item :	Shape : Round Round	Wt/ft : 6.014
OD Size : 1.750 IN	ID Size :	Wall Size : 0.425 IN (Average)	Grade : 7400-2
Surface : OIL		Anneal : Normalized	

Specifications : ASME-SA105-21-000,ASME-SA350-21-LF2 (Class 1),ASTM-A105-18,ASTM-A519--17,EN-EN 10204 3.1-2004,NACE-MR0103-2015,NACE-MR0175-2015

OIL. PRODUCE TO ASTM A105 & ASTM A519. CHEMISTRY & PHYSICALS TO SA-350/LF2, ASTM A105 & ASME SA-105/SA-105N. CERT TO NACE MR0-175, MR0-103 & EN10204 3.1.B. REPORT CE = %C + (%MN)/6 + (%CU + %NI)/15 + (%CR + %V + %MO)/5 < .45 AIM 0.020 MAX S. MARK W/MST, SIZE, GRADE, CUST NAME, PO#, SPEC & HEAT#. T/R TO INCLUDE COMPLETE CHEMISTRY, PHYSICALS, ROA, HBW, GRAIN SIZE & MFG IN USA. CHARPY @ -50 DEG-F. ROUTING-CALL TERRY DE PRIEST @ 918-836-3585 W/ READY.

Heat	Furnace	Melted Source	Feet	Weight (lbs)
A222984	EAF	USA,SDI - PITTSBORO, IN	4275	25710

Chemistry Analysis - L (Ladle) , PI/P2(Product Analysis) - %																			ppm				
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	V	Sn	Nb	SB	As	Ti	Zr	N	Ca	CO	W	B	H2	CE
L	0.18	1.08	0.009	0.003	0.200	0.280	0.07	0.014	0.02	0.026	0.004	0.008	0.000	0.003	0.004	0.000	0.013	0.001	0.005	0.000	0.00		0.42

Grain Size: 8 CASTING METHOD: Bloom

Tensile Properties - PSI				%Elong		Hardness	
Tensile	Yield			2"	ROA %	HBw	Mid
84593	73119	0.2%		39.0	71.9	149.0	163.0

Tensile: 5/8" strip longitudinal

Charpy									
Temp	Size	Impact Longitudinal	Avg -L	Lat Exp	% Shear	Impact Transverse	Avg-T	Lat Exp	% Shear
-50 F	7.500	96 FP	102						
	MM	115 FP							
		96 FP							

Additional Testing							
Hydro(Tested 100% Length)	Ultrasonic %	Eddy Current	Flatten	Flare	Bend	Expansion	
							PASS

Heat Cycle							
Normalized		Temper		Final Anneal		Stress Relieved	
Temperature	Time	Temperature	Time	Temperature	Time	Temperature	Time
1700 F	20.00 Min						

Checked by QC Dept.
4-6-23
MTC



400 McMunn St.
South Lyon, MI 48178

TEST REPORT



Date : 07/23/2022
Page : 2
Job : MJ00010548
Order : MS00015235

Truck# : MT07604
Pick# : 62541

Heat : A222984
Ship# :

Lot Details			
Bundle	Footage	Pcs	Length
ms0001523501001	600	40	Cut 15' -
ms0001523501002	720	48	Cut 15' -
ms0001523501003	720	48	Cut 15' -
ms0001523501004	720	48	Cut 15' -
ms0001523501005	720	48	Cut 15' -
ms0001523501006	795	53	Cut 15' -

- Material has not been exposed to metallic mercury, lead or asbestos so as to cause contamination. Material is free from radioactive contamination. Cold Drawn Seamless. No weld repair. 100% Manufactured USA.
- Michigan Seamless Tube LLC, South Lyon MI is a division of Specialty Steel Works, Inc.
- Certificate of Conformance Statement: This certificate asserts that the tubing listed above has been manufactured, inspected and approved in accordance with all specifications, requirements and the customer's purchase order.

Jacob Gorzkowski
Jacob Gorzkowski
Quality Assurance Manager

CUSTOMER MST
P.O.# 312-065792
ITEM 3/4" 6000# X 3' TOE
HEAT CODE A4M

Checked by QC Dept.
4-6-23
M. [Signature]

LINE#

CERTIFIED MILL TEST REPORT

KWI PART# FITNP0047



The Best Value -
Price, Quality, Service
All The Time.

12.0

LOG NO. F0000000180364

Page 7 of 9

BONNEY FORGE CORPORATION

P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330

(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906

www.bonneyforge.com

CUSTOMER: WIN SUPPLY EAST HOUSTON #312

DATE 02/13/2023

CUSTOMER

BONNEY ORDER NO. B000321823

ORDER NO.: 00312-070960

SHIP TO: WIN SUPPLY EAST HOUSTON #312
1357 SHEFFIELD BLVD
HOUSTON TX 77015
United States

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
18	50	D545	1 6M A105 HCP T	SA/A105 C 0.200 Cb 0.009 Co 0.003 Cr 0.120 Cu 0.040 Mn 1.050 Mo 0.004 Ni 0.020 P 0.006 S 0.022 Si 0.200 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 75,000 Y/S(PSI) 45,700 EL(%) 35.00 RA(%) 60.10 Brinell Hardness 159 BHN 160 BHN
19	25	D645	2 6000 A105 HCP T	SA/A105 Al 0.023 C 0.180 Cb 0.001 Co 0.007 Cr 0.140 Cu 0.220 Mn 1.040 Mo 0.020 Ni 0.070 P 0.015 S 0.018 Si 0.250 V 0.033 CE(Long Formula) = 0.41 T/S(PSI) 85,700 Y/S(PSI) 59,324 EL(%) 30.80 RA(%) 65.40 Brinell Hardness 175 BHN 174 BHN
21	100	D561	1/2 6000 A105 COUPT	SA/A105 C 0.200 Cb 0.002 Co 0.010 Cr 0.130 Cu 0.120 Mn 1.000 Mo 0.010 Ni 0.050 P 0.008 S 0.022 Si 0.200 V 0.002 CE(Long Formula) = 0.41 T/S(PSI) 73,800 Y/S(PSI) 45,600 EL(%) 31.00 RA(%) 62.00 Brinell Hardness 149 BHN 144 BHN
22	50	D383	1 3000 A105 BOSS W/LIPT	SA/A105 Al 0.031 C 0.190 Cb 0.004 Co 0.006 Cr 0.100 Cu 0.210 Mn 0.960 Mo 0.017 Ni 0.080 P 0.005 S 0.020 Si 0.210 V 0.024 CE(Long Formula) = 0.40 T/S(PSI) 74,000 Y/S(PSI) 50,600 EL(%) 26.00 RA(%) 30.00 Brinell Hardness 150 BHN 153 BHN

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Billie Jo Clemens

Billie Jo Clemens

Quality Assurance Representative

Checked by QC Dept.

5-8-23
MK

CMTR: Rev 3



14527 Smith Rd.
 Humble, Texas 77396
 TEL: (281) 441-4088
 FAX: (281) 441-8899

PAGE: 1 of 1
 REPORT # 23-044167
 DATE: 5/1/2023
FCI ORDER # 118127
 IAW ASME 2021 ED.
 IAW NACE MR0175 2015Ed

CUSTOMER ORDER # PO30842
 SOLD / SHIPPED TO: KW INTERNATIONAL

Item Quantity Description

3 6 18" X 300 X 17" LG RF LWN

TAG: PO30842
 TAG: FLGRF3226
 PART HBW: 149

Heat Number: **GG341**

Steel Origin (melt): **ITALY**

Material Type: **SA105N**

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C .17
 Mn 1.18
 P .008
 S .003
 Si .25
 Cr .07
 Mo .02
 V .00
 Cu .20
 Ni .09
 Cb(Nb) .00
 N .007
 Sn .009

Yield PSI 43,396
 Tensile PSI 71,988
 Elongation % 37.4
 Reduction of Area % 72
 Hardness 1478/151 HBW

Ti .00
 Al .03
 B .0004
 C E 0.40

MADE TO FINE GRAIN PRACTICE

Heat Treatment **NORMALIZED**
 Temperature 1650 °F
 Time at Temperature 2.5 HRS
 Cooling Media AIR

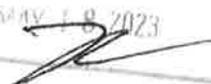
Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). NO MERCURY, OR RADIOACTIVE SUBSTANCES CAME IN CONTACT WITH THIS MATERIAL DURING MANUFACTURING. NO WELDING PERFORMED. We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by: 

Name: Cynthia Madrid

Title: QA Representative

Checked by QC Dept.

MAY 18 2023




Flanschenwerk Bebitz
 Flanschenwerk Bebitz GmbH • Lebendorfer Str. 1 • 06420 Könnern OT Bebitz • GERMANY
 Tel. +49 34691 40 0 - Fax +49 3469140 329 - Email: flanges@bebitz.de (A01)



Abnahmeprüfzeugnis 3.1 / Inspection certificate 3.1 / Certificat de reception 3.1
nach (A02) / acc. DIN EN 10204 : 2005 Nr. (A03) / No.22-03656 Datum (Z02) / Date 26.09.2022

Zeichen des Herstellers (A04)
 Manufacturer's brand



Stempel des Abnehmers (Z03)
 Stamp of the testing engineer



Überprüft als Hersteller nach AD-Merkblatt W0 / TRD100 und VdTUV Werkstoffblätter 350/3, 354, 399 / Approved as manufacturer according AD-Merkblatt W0 / TRD100 and VdTUV Material Sheets 350/3, 354, 399
 Zertifiziert nach DGR 2014/68/EU durch TÜV NORD Systems GmbH Co. KG, notifizierte Stelle 0045 / Certified according to PED 2014/68/EU, certifying body TÜV NORD GmbH Co. KG, notified body no. 0045

Besteller
 (A06)
 Customer

Bestell-Nr (A07) / Order-No. 317265
Auftrag (A08) / Order 20002217
Lieferschein / Delivery No. 30008314
Position (B07.1) / Item 20

Stck (B08) Bezeichnung (B01; B09 - B11)

Quantity Product
 38 18 inch Blind Flange 300 lbs raised face
 Customer ID: 18-----FN503CAA

Schmelze/Prüflos (B07)
Heat no./Test no.
 83717/1

Material A 105N - ASTM A105M-21 / ASME SA-105M

(B02; B05) normalized 900 °C, air cooled - manufactured from fully killed steel and to fine grain practice

Anford. ASME B16.5-2017

(B03) NACE MR0175-2015/MR0103-2015 - DIN EN ISO 15156-2:2015 Annex A/DIN EN ISO 17945:2015

Require-ments 2019 ASME Boiler & Pressure Vessel Code - Section II Part A; ASTM A961-20 / ASME SA-961

Schmelzenanalyse (C71 - C92) / Ladle analysis

Erschmelzung (C70) / Melting process E+VD

C	Si	Mn	P	S	Cr	Ni	Ti	Mo	Nb	V	N	Cu	Al	CEV
0,190	0,19	1,10	0,007	0,003	0,13	0,07	0,002	0,04	0,002	0,003	0,004	0,14	0,023	0,42

Mechanische Prüfungen / Mechanical tests

$$CEV = C + \frac{Mn}{6} + \frac{V + Mo + Cr}{5} + \frac{Ni + Cu}{15} \quad PREN = Cr + 3,3 \times Mo + 16 \times N$$

Probenlage (C02): T / Position of Specimen: T					KBV / Impact test DIN EN ISO 148-1					Härte (C32)		
Zugversuch / Tensile Test - ASTM A 370					ASTM A370 (V-Kerb / V-notch)					Hardness		
Temp (C03) °C	Streckgrenze (C11) / Yield 0,2% 1,0% MPa (N/mm²) MPa (N/mm²)		Zugfestigkeit (C12) Tensile MPa (N/mm²)	Dehnung (C13) Elongation %		Einschnürr. Red. of area %	Temp. (C03) °C	Einzelwerte (C42) Single values J			MW (C43) Average J	ISO 6506-1 HBW 2,5/187,5
20	min 250		485	22,0		30	20					137
	max			5d ₀	4d ₀							187
20	317		489	30,1	37,6	72	-29	135	149	157	147,0	148
												146

Country of Melting: Germany - Country of Origin: Germany

Checked by QC Dept.

MAY 18 2023

Am Material wurden keine Reparaturschweißungen vorgenommen. / No welding repair on the material.
 Material ist nicht radioaktiv oder mit Quecksilber kontaminiert. / Material is free from radioactive or mercury contamination.
 Sicht- und Maßprüfungen ohne Beanstandungen. (D01) / Visual and dimensional examinations without objections.
 Die Anforderungen der Bestellung sind erfüllt. / The product meets the requirements of the order specifications.
 Die Angaben in Klammern entsprechen den Vorgaben der DIN EN 10168 / Data in parentheses refer to DIN EN 10168.
 APZ ist mit EDV erstellt und ohne Unterschrift gültig. / MTR was electronically generated and is valid without a signature.

R. Sparing

Abnahmebeauftragter des Herstellers (Z02) / Inspection Representative of the Manufacturer



Acuren Inspection, Inc.
 101 Old Underwood Road, BLDG J
 La Porte, Texas 77571
 Phone: 281.228.0000

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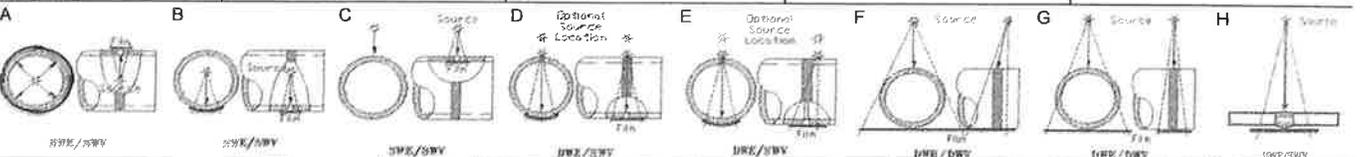
LAP889041

RADIOGRAPHIC EXAMINATION REPORT

Page 1 of 2

CUSTOMER: KW INTERNATIONAL		407_J070721	DATE: 06/19/2023
LOCATION/ADDRESS: COLUMBUS, TX		CUSTOMER CONTACT: JOHN DELACERTA	
PART # / DRAWING #: 109041		CUSTOMER PO #: N/A	CUSTOMER WO #: N/A
ITEM DESCRIPTION: 48" X .75 VESSEL		STAGE OF MANUFACTURE: Final	SURFACE CONDITION: As Welded

NDE PROCEDURE	REV.	SPECIFICATION/CODE	REV./EDITION	ACCEPTANCE PROCEDURE / STANDARD:	PARTS INSPECTED:	ACCEPTED:	REJECTED:
RT-1	38	ASME Sec. III Div. 1.	2020	SECTION VIII / UW-51	1	1	0
Material and Thickness:	Carbon Steel	.750 in.	A	B Steel	C		D
Diameter: (inches)	48"		A	B	C		D
Rein. Thickness: (inches)	.125		A	B	C		D
Distance:	SOD: 23.25	OFD: 0.875	A	SOD: OFD:	B SOD: OFD:	C SOD: OFD:	D
Exposure Time (H:M:S):	00:25		A	B	C		D
IQI Amount / Type / Material:	1 B Wire	Mat: S/S	A	Mat: B	Mat: C		Mat: D
IQI Size / Location:	Size: .010	Film	A	Size: B	Size: C		Size: D
Shim Thickness & Material:	N/A		A	B	C		D
Number of Exposures:	1		A	B	C		D
Markers: Number or Spacing:	1-2 THROUGH 12-1		A	B	C		D
Focal Spot µg	0.115 in.	0.0043 µg	A	in. µg B	in. µg C		in. µg D
Screens: (inches)	Front: .010	Rear: .010	A	Front: Rear: B	Front: Rear: C		Front: Rear: D
Film Loading / Brand / Type:	Single	AGFA D5	A	B	C		D
Film Process: Choose..	Time: 3:30	Temp: 72 °F	A	Time: Temp: B	Time: Temp: C		Time: Temp: D
Shot Configuration:	A - SWE/SWW		A	B	C		D



SOURCE: <input checked="" type="checkbox"/> Ir <input type="checkbox"/> Co <input type="checkbox"/> Se <input type="checkbox"/> X-Ray	Ci 50	kV	ma	DENSITOMETER MODEL #: X RITE 301	DENSITOMETER SERIAL #: 028682	CAL. DUE DATE: 06/22/2022
C - Crack SL - Slag T - Tungsten	CP - Cluster Porosity P - Porosity/Gas Pocket HB - Hollow Bead	IP - Insufficient Penetration IF - Insufficient Fusion EP - Excessive Penetration	EU - External Undercut IU - Internal Undercut IC - Internal Concavity	S - Surface IPD - IP Due to High/Low BT - Burn Through	IFD - IF Due to Cold Lap FA - Film Artifact	

Weld/Component	View	Technique	Density		Accept	Reject	List Indications	Welder ID - Other ID Remarks
			IQI/Base	Weld				
RS1	1-2	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		24/56/F
	2-3	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	3-4	A	2.7	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	4-5	A	2.7	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5-6	A	2.8	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	6-7	A	2.9	2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	7-8	A	3.0	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	8-9	A	3.0	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	9-10	A	3.1	2.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	10-11	A	3.1	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	11-12	A	2.9	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	12-1	A	2.9	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

<input checked="" type="checkbox"/> Additional Pages	Comments:	Per Diem YES	Assistant Tech Name (Print): RANDY A. LUJAN
# of Film & Size: (24) 04.5" X 10 AGFA D5	Total # of Welds: 1	No. on Job: 2	Travel if Applicable: Hours: Miles Total
CLIENT REPRESENTATIVE JOHN DELACERTA	04/17/2023	Randy Lujan/	04/17/2023 II
Print Name / Signature		Date	

The Client Representative who receives this report is responsible for verifying that the acceptance standard listed in the report is correct, confirming that all radiographs listed in the report have been received by Client and promptly notifying of any issues with this report and/or the work summarized herein. The owner is responsible for the permanent custody of all radiographs and the final disposition of all items inspected.

PEER REVIEW (IF APPLICABLE):

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LAP669041

RADIOGRAPHIC EXAMINATION CONTINUATION SHEET

Page 2 of 2

CUSTOMER: KW INTERNATIONAL		407_J070721	DATE: 06/19/2023
LOCATION/ADDRESS: COLUMBUS, TX		CUSTOMER CONTACT: JOHN DELACERTA	
PART # / DRAWING #: 109041		CUSTOMER PO #: N/A	CUSTOMER WO #: N/A
ITEM DESCRIPTION: 48" X .75 VESSEL		STAGE OF MANUFACTURE: Final	SURFACE CONDITION: As Welded
C - Crack SL - Slag T - Tungsten	CP - Cluster Porosity P - Porosity/Gas Pocket HB - Hollow Bead	IP - Insufficient Penetration IF - Insufficient Fusion EP - Excessive Penetration	EU - External Undercut IU - Internal Undercut IC - Internal Concavity
		S - Surface IPD - IP Due to High/Low BT - Burn Through	IFD - IF Due to Cold Lap FA - Film Artifact

Weld/Component	View	Technique	Density		Accept	Reject	List Indications	Welder ID - Other ID Remarks
			IQI/Base	Weld				
RS-2	1-2	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		24/56/F
	2-3	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	3-4	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	4-5	A	2.9	2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5-6	A	2.9	2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	6-7	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	7-8	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	8-9	A	2.7	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	9-10	A	2.7	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	10-11	A	2.9	2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	11-12	A	2.8	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	12-1	A	2.7	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>		

CLIENT REPRESENTATIVE

JOHN DELACERTA

04/17/2023

Randy Lujan/

04/17/2023

II

Print Name / Signature

Date

Print Name / Signature

Date

Inspection Level

The Client Representative who receives this report is responsible for verifying that the acceptance standard listed in the report is correct, confirming that all radiographs listed in the report have been received by Client and promptly notifying of any issues with this report and/or the work summarized herein. The owner is responsible for the permanent custody of all radiographs and the final disposition of all items inspected.

PEER REVIEW (IF APPLICABLE)

Print Name / Signature

Date

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DOCUMENT TITLE:
HYDROSTATIC PRESURE TEST RECORD
 DOCUMENT TYPE: **QUALITY RECORD**

Document No.: KWI-FM-009
 Original Issue Date: 29-JUL-14
 Form Revision: 0
 Form Rev. Date: 29-JUL-14
 Form App'd: AVD Page 1 of 1

PROJECT INFORMATION

SALES ORDER NUMBER: 16992	CUSTOMER: Nxt ERA Energy
JOB/SERIAL NUMBER: 109041	CODE/SPECIFICATION: ASME SEC. VIII; ASME B31.3
NB NUMBER (IF APPLICABLE): 5285	PROCEDURE/REV.: KWI-PR-001, REV.0
MATERIAL DESCRIPTION: <u>PRESSURE VESSEL, PIPE, ETC.</u>	DRAWING NUMBER: SEPH20240

EQUIPMENT

PRESSURE GAUGE		
MANUFACTURER: Maxisafe	MODEL NUMBER: Maxisafe	SERIAL NUMBER: 1500-1
CALIBRATION DATE: 7-14-23	NOTES: N/A	
CHART RECORDER		
MANUFACTURER: Crystallix	MODEL NUMBER: 1SR51X(R)	SERIAL NUMBER:
CALIBRATION DATE: 4-6-24	NOTES: N/A	

TEST DATA

TEST PRESSURE: 1666#	TESTING MEDIUM: MUNICIPAL WATER
TEST DURATION: 1 hour	CORROSION INHIBITOR: NONE

INSPECTION RESULTS

PIECE NUMBER/SERIAL NO.	ACCEPT/REJECT	COMMENTS
RPO 109041	✓	

Justin Mack
 KWI TEST TECHNICIAN SIGNATURE

6/20/23
 DATE OF TEST

Mark Titin
 WITNESS SIGNATURE

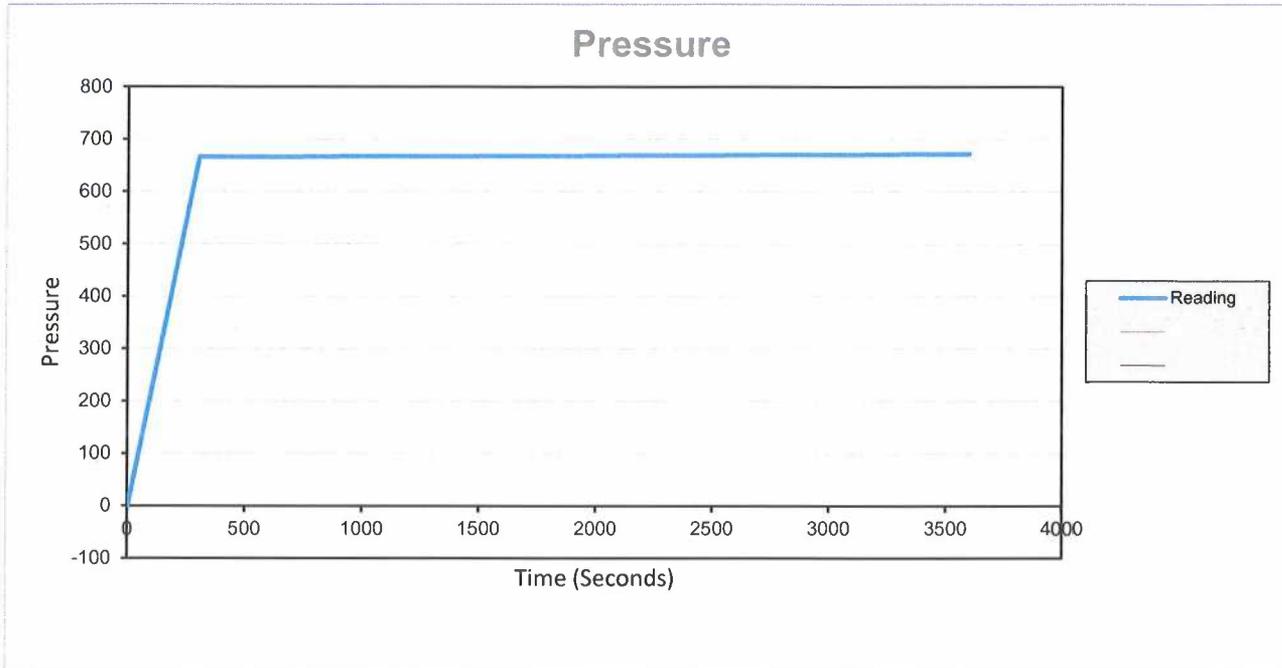
6-20-23
 DATE OF TEST

Data Collection Report

109041 NB#5285 48 OD 500# HZ. 3-PH SEPARATOR

Gauge Information	
Serial Number	924556
Model	15KPSIXP2I
Message Store	-----
Units	PSI

Run Info	
Start Time	6/20/23 9:45:45 AM
Stop Time	6/20/23 10:50:36 AM
Logging Interval	300



	QUALITY FORM		SECTION NO.	
	FABRICATION TRAVELER		KWI-FM-212	
			REVISION	2
			DATE	AUG 2022
			PAGE*	1 of 3

PROJECT INFORMATION			
DATE: 4/20/2023	SALES ORDER: 16992	CUSTOMER: NEXT ERA ENERGY RESOURCES LLC	
JOB/SERIAL NUMBER(S): 109041	DRAWING NO: SEPHZ0240 Rev. 1	NB #: 5785	
PROJECT DESCRIPTION: 48" OD x 10'-0" 500# HZ. 3-PHASE SEPARATOR			RT-1

DESIGN REQUIREMENTS			
DESIGN PRESS. INT: 500	EXT:	DESIGN TEMP: 200	
CALCULATIONS, WPS & PQR REVIEWED BY:	AI:	DATE: 28 APR 23	
	QC:	DATE: 4-25-23	

OUTSIDE APPROVAL INSPECTIONS	
ITP REQUIRED: YES <input type="checkbox"/> NO <input type="checkbox"/>	IF YES, CLIENT INSPECTION REIURED? YES <input type="checkbox"/> NO <input type="checkbox"/>
NDE REQUIRED: YES <input type="checkbox"/> NO <input type="checkbox"/>	IF YES, NDE IS A HOLD POINT

FABRICATION							
	SHOP	DATE	QC	DATE	AI		
					HOLD	CHK	DATE
MATERIAL INSPECTION / PROFILER							
a. Check Thickness and Surface	mc	5-24					
b. Examine MTR's and Compare to Heat No.							Am 6/27
c. Record Mill Stamp and Transfers	mc	5-24					
FABRICATION INSPECTION							
a. Verify Nozzle Thick and Flange Ratings							
b. Shell Layout	#mc	5-24	+				
c. Head Layout	# J.M.	06/02	+	JT	6-2		
d. Nozzle Fit up Shell	# J.M.	06/02	+				
e. Nozzle Fit up Head	# J.M.	06/02	+	JC	6-6-23		
f. Check Internals	# J.M.	06/02	+			*	Am 6/20
CUTTING, FITTING, AND ALIGNMENT							
a. Girths Seams	Ref End	# J.M.	06/18	+	JT	6-8-23	
b. Head Seams	Left End	# J.M.	06/08	+	JG	6-7	
NONDESTRUCTIVE EXAMINATIONS & TESTING							
a. Radiography.							
a. Long Seams.							

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	QUALITY FORM		SECTION NO.	
	FABRICATION TRAVELER		KWI-FM-212	
			REVISION	2
			DATE	AUG 2022
			PAGE	2 of 3

b. Round Seams.			Acuren	6-19					
c. Nozzles.									
b. Ultrasonic Test.									
c. Penetrant Test.									
d. Oil Bucket / Weir Test.					+				
FINAL INSPECTION								*	
a. Final Dimension	# <i>OK</i>	6-19	+	<i>KS</i>	6-19				
b. Check Fillet Weld Sizes.	# <i>OK</i>	6-19	+						
c. Out of Roundness.	# <i>OK</i>	6-19	+						
d. Weld Appearance and Reinforcement.	# <i>OK</i>	6-19	+						<i>AKM 6/20</i>
e. Name Plate Attached.	# <i>OK</i>	6-19	+						<i>AKM 6/20</i>
f. Check Stamping on Nameplate.									<i>AKM 6/20</i>

QUALITY TESTING AND CHECKS								
	SHOP	DATE	QC	DATE	AI			
					HOLD	CHK	DATE	
POST WELD HEAT TREATMENT								
a. Chart reviewed			+					
HYDROSTATIC TESTING								
a. Pressure Test Report				<i>AKM</i>	6-20-22			<i>AKM 6/20/23</i>
b. Gauge S/N: <i>1500-1</i>				<i>AKM</i>				
c. Code Stamp.				<i>AKM</i>				<i>AKM 6/27/23</i>
DATA REPORT SIGNED								
a. Verified				<i>AKM</i>	6-20-22			
SANDBLAST								
a. Inspection			+					
PAINT								
a. Inspection			+					

QC FINAL APPROVAL:	DATE:
---------------------------	--------------

QC Final Approval Required before Shipping or moving to Assembly

#-KWI Shop Hold Point

+ - KWI QC Hold Point

*-AI Hold Point

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KW International, LLC
SHOP REPORT

CUSTOMER: NEXT ERA/TRINITY SHOP ORDER: 16922

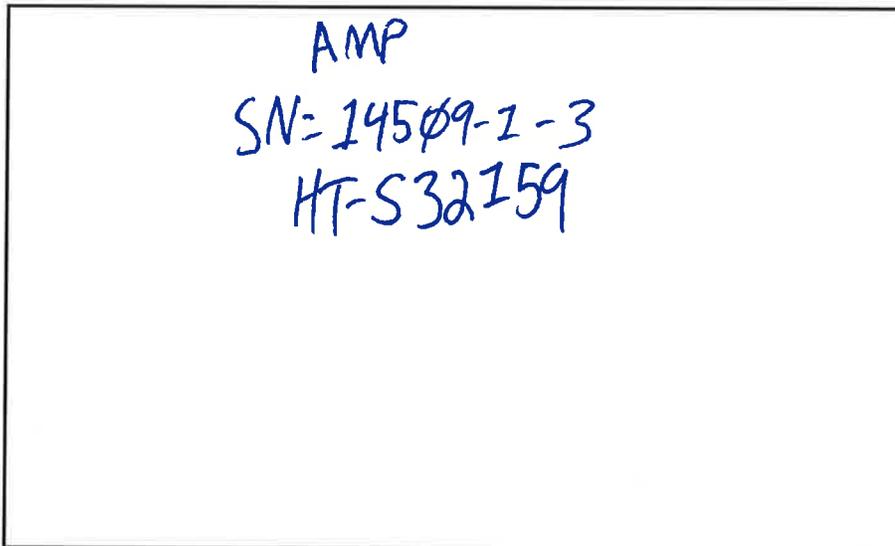
SERIAL NO.: 109041 NATIONAL BOARD NO.: 5785

DESCRIPTION: 48" OD X 10'- 0" 500# HZ. 3-PHASE SEPARATOR.

DRAWING NO.: SEPHZ0240, REV. 0 VESSEL: 1 OF 1

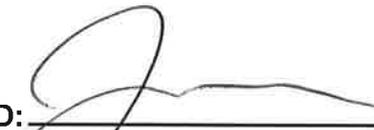
TYPE OF TEST: HYDROSTATIC TEST PRESSURE: 650

REF END



TABK

TABL

SIGNED: 

TITLE: QUALITY CONTROL

COMPANY: KW International LLC

DATE TESTED: 6-20-77

GAUGE: 1500-1