66147767

084011-CRN-3-F					RER'S DATA RI						
Additional Drawing .147	******************	•		_	ber, Completely					ily)	
Header Volume (cu					s of the ASME (=:::::::::::::::::::::::::::::::::::::	
1. Manufactured and c	ertified	by Air-X-C	Changers, A	Harsco Com	pany, 5215 Ar (Name	rkansas F and addre	Road, ∪ ess of m	atoosa anufact	ı, Oklahom urer)	a, /4015, USA	and the state of t
2. Manufactured for	Forom	ont Energ	y Systems,	10121 Barlow	Trail N.E., Ca	algary, AE	B, T3J 3	C6, CA			and the same of th
The Company of Invaluation		IIKNOWN			(Name and	l address o	of purcha	aser)			
Location of Installati Heat	on Oiv	1VIACAAIA		**************************************	1)	Name and a	address)			
4. Type Exchanger	1400F 1000000401000		011.3		112.213		DR-3, R Drawing			61440 (Nat'l. Bd. No.)	2008 (Year built)
(Horiz. or Vert. tank) 5. The chemical and page 1.			erial No.) s of all parts m	•	CRN) ements of mater	•	•	•	SME BOILE	,	,
CODE. The design	n, const	truction, an	d workmansh	ip conform to A	SME Rules, Se	ection VIII,	Division	11	2007	to N/A	\
C	N/. Code Ca	/A ase Nos.		Specia	N/A Il Service per U0	G-120(d)		*****	(year)	Addenda	(Date)
	SA516		1	.125	0.125	, ,	6.9375"	' (OD)		1' 0.75"	
		o., Grade)	Nom.		Corr. Allow. (in		im. I.D.(f			(overall) (ft. & in.)	
7. Seams: Corner Long. (Welded, Dbl., Sng			N/A (Spot or Full)	C=.20 115 Eff.(%) H.T. Ten	50 0.75 mp (°F) Time (hr)	Girth. (W	N/A /elded, Dbl.,		o. Butt) F	N/A R.T (Spot or Full)	N/A N/A Eff(%) No. of Course
		,			16 (-)	(b) N			,	SA516 70	• •
8. Heads: (a) Mat'l:	Epocht/da (von/pagen: frences	M-200-200-200-200-200-200-200-200-200-20	SA516 (Spec. No.,		Ashedy Milly promise of programme programme in the second	(D) IV	/lati			Spec. No., Grade)	Mark Confession of the Confess
Location		Minimum	Corrosion	Crown Radius	Knuckle Radius	Elliptical Ra			Hemispherica Radius	Flat Diameter	Side to Pressure
(Top, Bottom, Ends	2/	Thickness .625"	Allowance 0.125	N/A	N/A	N/A		ngle V/A	N/A	3.875" x 12.75"	(Convex or Concave) N/A
(a) TOP, BTM (b) ENDS	+	.625"	0.125	N/A	N/A	N/A		V/A	N/A	3.875" x 5.6875"	N/A
If removable, bolts use	d (desc	ribe other f	rastenings)					N/A			
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1)	Mat'l., Sp	ec. No.,	Gr., Size, No.	.)	
	655		N/A	psi a	at max. temp		00 ernal)		N/A (external)	°F	
(int Min. design metal tem	iternal) nn	-20	(externa °F at	al) 655	psi ⊢	inte) lydro, pneu	,	nh test	, ,) HYDRO. a	at 852
10. Nozzles, inspection						yuro, prica	J., OI 661	IID. 1001	, pressure		at 602 psi
Purpose	T				Mat'l.		Nom.	Rei	nforcement M	lat'l How	Location
(Inlet, Outlet, Drain)	No.	Diam, or S					Thk.		HOICEHIETT IVE	Attached]
IN/OUT DRAIN	2	3" 1"	300# RFW	NN SA105/S/ SA105	A106 GR.B		CH-160 000#	Weld		Welded Welded	Header Header
DIVAN	<u></u>	<u></u>	10.20	10			100	1			1
11. Supports: Skirt		Lugs	N/A Leg		Other		ructure		Attac		Bolted
(Ye 12. Remarks: Manufacturer	es or no) r's Partial		(No.) s property identif	(No.) fied and signed by	Commissioned In:	,	escribe) ve been fui	rnished f	or the following	,	ere and how)
(2) Box Headers.			/BK Profess	sional Fabrica	ators. Inc					, there or one report	
A. <i> </i>			(Nam	ne of part, item r	number, Mfgr's						
(A) TUBES: 26 Sheet (B) INS		5" OD, SE	traight:	YES, Lengt	th: 168", (F-Threaded,	Gauge: 3	16BWG,	Mat		A179 Rolled T T REQUIREMENT	
IMPACT EXEMPT				structed in	n conforman	ce with	Appen	dix 2		1 100 20 20 20 20 20 20 20 20 20 20 20 20 2	
		<u> </u>				: !ANO					
We certify that the sta	atemer	nts made ir	n this report a	are correct and	OP/FIELD COM that all details	s of design	n, mater	rial, cor	nstruction, a	and workmanship	of this vessel
conform to the ASME	Code	for Pressu	ıre Vessels,	Section VIII, D	ivision 1. "U" (Certificate	of Auth	orizatio	on No. 424	11 expires 1	2/31/2008
Date 03/17/2008	Co.	name			s, A Harsco Com	pany		**************************************	Signed _	lay 30	reman
				(Manut	facturer)					(Represent	tative)
			(SERTIFICATE	OF SHOP/FIE	ELD INSP	ECTIO	1			
Vessel constructed by		Air-X	-Changers, A H	Harsco Company		at <u>5215 Arl</u>	kansas R	oad, Cat	oosa, Oklahor	ma, 74015, USA	I, th
undersigned, holding a va and employed by OneBe	ilid comn	mission issue	ed by The Nation	nal Board of Boile	er and Pressure V	essel inspec	ctors and	or the S	tate or Province	ce OK in this Manufacturer's	S Data Report on
March 17, 2008	and s	state that, to t	the best of my l	knowledge and be	elief, the Manufac	cturer has co	onstructed	this pre	ssure vessel i	in accordance with AS	SME Code, Section
VIII, Division 1. By signing Manufacturer's Data Repo	g this ce	rtificate neith	er the Inspecto	r nor his employe	r makes any warr ver shall be liable	ranty, expres	ssed or in ner for an	nplied, co v person	oncerning the ial injury or pre	pressure vessel desc operty damage or a k	ribed in this oss of any kind
arising from or connected		s inspection.		_	1) r=	w	, , , , , , , , , , , , , , , , , , ,	,
Date 03/17/20	008	Signed	William	: Bleena	uush co	ommissions				12752A, OK951	
			(Διι	dintize Insher	ctor\			(Nat'l P	loard (incl. end	dorsements) State P	rov. and No.)

66147768

	084011-CRN-4-F			FORM U-1A I	MANUFACTUF	RER'S DATA RI	EPORT FO	R PRE	SSURE	VESSELS			
or control control	Additional Drawing .299		`		Ü	ber, Completely	•			·	y)		
	Header Volume (c					s of the ASME (
1. M	anufactured and c	ertified	by Air-X-0	Changers, A	Harsco Com	pany, 5215 Ar (Name	kansas Ro and addres	oad, C s of m	atoosa anufact	a, Oklahoma urer)	, 74015, USA	••••••	
2. M	anufactured for	Toromo	ont Energ	y Systems,	10121 Barlow	Trail N.E., Ca (Name and	ilgary, AB,	T3J 3	C6, CA	ANADA			
3. Lo	ocation of Installati	on UN	KNOWN			,		•	,				
	Heat	Acres and the second	***************************************		***************************************	•	lame and a						
4. T	ype Exchanger (Horiz. or Vert. tank)	Mate considerations		011.4 erial No.)		13.213 CRN)		R-4, R awing			61441 (Nat'l. Bd. No.)	over norther thront beautiful or	2008 (Year built)
5.	The chemical and CODE. The design	physica	l properties	s of all parts n	neet the require	ements of mater	rial specifica	itions o	of the A	SME BOILER			SEL
		N/	Ά			N/A			.,,	(year)	Addenda		
			ise Nos.		•	I Service per UC	, ,	7.05"	(OD)	0	1.4.75"		
6. SI		SA516 pec. No	70 o., Grade)	Nom.	.375 Thk. (in.)	0.125 Corr. Allow. (in		7.25" (ı. I.D.(f	(OD) t. & in.)		' 1.75" overall) (ft. & in.)		
	eams: Corner Long. (Welded, Dbl., Sng		utt) R.T.(N/A (Spot or Full)	C=.20 11: Eff.(%) H.T. Ter	50 1 np (°F) Time (hr)	Girth. (Weld	N/A ded, Dbi.,		p, Butt) R.	N/A T (Spot or Full)	N/A Eff(%)	N/A No. of Courses
			,	SA516			(b) Ma	at'l			SA516 70		
о. п	eads: (a) Mat'l:			(Spec. No.	Grade)		(6) 1416			(S	pec. No., Grade)	***************************************	
	Location (Top, Bottom, Ends	-	Vinimum hickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Rati		al Apex ngle	Hemispherical Radius	Flat Diameter	l	e to Pressure ex or Concave)
(a)	TOP, BTM	7	.875"	0.125	N/A	N/A	N/A	N	I/A	N/A	3.875" x 25.75"		N/A
(b)	ENDS novable, bolts use		.75"	0.125	N/A	N/A	N/A	N	I/A	N/A	3.875" x 5.5"		N/A
Mir 10. i (Inle IN/OU DRAI	(ini n. design metal ten Nozzles, inspection Purpose et, Outlet, Drain) IT	No.	Diam. or S 3" 1"	600# RFV	1310 1310 SA105/SA	Mat'l. A106 GR.B	SCI-	nal) or con Nom. Thk. I-160	T	N/A (external) t pressure	Welded Welded	1	Location leader
12. R	emarks: Manufacturer 2) Box Headers, (A) TUBES: 46	SN 084 x .75	Data Reports 4011.4 FR 5" OD, S ENINGS:	/BK, Profess (Nam traight: 1 92, Type	(No.) ied and signed by sional Fabrica e of part, item r YES, Lengt 7/8X14UNE	ators, Inc number, Mfgr's	name and id Gauge: 10 Materia	cribe) been fur dentifyi 5BWG, L: SA	ng stan <u>M</u> at 105	np) erial: SA (C)IMPACT	(Whatems of the report:	ere and	COLOR CONTRACTOR CONTR
conf	certify that the sta form to the ASME a 03/17/2008	Code	its made ir for Pressu	this report a re Vessels,	are correct and Section VIII, D Air-X-Changers	DP/FIELD COM I that all details livision 1. "U" C s, A Harsco Comp facturer)	of design, Certificate o	mater f Autho	orizatio	nstruction, ar on No. 4241 Signed	nd workmanship expires 1	of this 2/31/2 (2015) (ative)	vessel 008 MLA
<u> </u>				C	ERTIFICATE	OF SHOP/FIE	LD INSPE	CTION	١				
VIII, I Manu arisin	el constructed byrsigned, holding a vaemployed by _OneBe. March 17, 2008 Division 1. By signing ufacturer's Data Repo	acon Amand s g this cer ort. Furth with this	nission issue nerica Insura state that, to rtificate neith nermore, neit i inspection.	d by The Nation nce Co. of Bost the best of my I per the Inspecto	on, MA knowledge and be r nor his employe or nor his employ	er and Pressure Ve elief, the Manufact er makes any warn ver shall be liable i	essel Inspecto have inspectourer has cons anty, express	ors and/ ted the d structed ed or im	or the S compone this pre aplied, co	ent described in ssure vessel in oncerning the p al injury or prop	this Manufacturer's accordance with AS ressure vessel desc	ME Co ribed in	de, Section this
L	Date 03/17/20	บบช	Signed	(Aut	norize i Insped	ctor)	minissions		(Nat'l B		rsements), State, P	rov. and	i No.)

66147773

	084011-CRN-5 Additional Drawing				or Single Chamb		EPORT FOI / Shop or Fie)	
	.256 Header Volume (cu	ı.ft.)	**********		y the Provisions		•					
1. M	lanufactured and co	ertified	by Air-X-0	Changers, A	Harsco Com		rkansas Ro				74015, USA	
2. M	anufactured for T	orom	ont Energ	y Systems,	10121 Barlow	r Trail N.E., Ca		T3J 3	C6, CA	,		
3. Lc	ocation of Installation	on Ul	NKNOWN					•				
	Heat					•	Name and a	,			Market Control of the	The second se
4. Iy	/pe Exchanger (Horiz. or Vert. tank)	no waynana	0840 (Mfr's s∈	011.5 erial No.)		14.213 CRN)		R-5, RI awing N			61442 (Nat'l. Bd. No.)	2008 (Year built)
5. T	Γhe chemical and μ CODE. The design	hysica , cons	al properties	s of all parts n	neet the require	ements of mater	rial specifica	tions of	f the AS		` ,	E VESSEL
****	Cı	N/ ode Ca	/A ase Nos.		Special	N/A I Service per U0	G-120(d)		Litteratura	(year)	Addenda	
6. Sh		A516 bec. No	70 o., Grade)	1 Nom.	.625 Thk. (in.)	0.125 Corr. Allow. (in		7.5" (C . I.D.(ft	DD) . & in.)		10.5" rerall) (ft. & in.)	
	eams: Corner Long. (Welded, Dbl., Sngl			N/A (Spot or Full)	C=.20 115 Eff.(%) H.T. Tem		Girth. (Weld	N/A led, Dbl., S		, Butt) R.T	N/A (Spot or Full)	N/A N/A Eff(%) No. of Courses
8. He	eads: (a) Mat'l:	PARAMON STREET	***************************************	SA516 (Spec. No.,	3 70 , Grade)		(b) Ma	t'l		(Sp	SA516 70 ec. No., Grade)	
	Location (Top, Bottom, Ends)		Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio		al Apex gle			Side to Pressure (Convex or Concave)
(a)	TOP, BTM		1.0"	0.125	N/A	N/A	N/A	N/		N/A	3.875" x 22.5"	N/A
(b)	ENDS novable, bolts used		.875"	0.125	N/A	N/A	N/A	N/		N/A	3.875" x 5.5"	N/A
	1014515, 221	. (// CO CO	uo.og-,			(Ma	ıt'l., Spe	N/A ec. No., (Gr., Size, No.)		
9. M		650 ernal)	<u> </u>	N/A (externa	psia	it max. temp	,	1		N/A (external)	°F	
Min.	. design metal tem	,	-20	°F at	•	psi Hy	•	•	ıb. test	pressure	HYDRO. a	t 2145 psi.
10. N	Nozzles, inspection	and s	afety valve	openings:		-						
	Purpose t, Outlet, Drain)	No.	Diam. or Si			Mat'l.		Nom. hk.		forcement Mat'l.	How Attached	Location
N/OU	t, Outlet, Drain) T	2	2"	1500# RF\	WN SA105/SA		SCH	hk. -160	Weld	forcement Mat'l.	Attached Welded	Header
	t, Outlet, Drain) T							hk. -160		forcement Mat'l.	Attached	
11. S 12. Re (2)	t, Outlet, Drain) T Supports: Skirt (Yesemarks: Manufacturer's) Box Headers, S (A) TUBES: 50 2 Sheet (B) INSI	NO s or no) s Partial SN 084	2"	1500# RFN CPLG N/A Leg (No.) properly identifi BK, Profess (Name	SA105/SA SA105 SA105 Sis N/A (No.) ied and signed by Calculation in the signed and signed by Calculation in the signed and signed by Calculation in the signed and signed and signed by Calculation in the signed and sig	Other Commissioned Institutes, Inc. umber, Mfgr's r h: 168", G F-Threaded,	Struc (Desc pectors, have to name and id Gauge: 16 Materia	ture ribe) peen furn entifyin BWG, 1: SA	Weld Weld weld sished for g stam Mate 105	Attached the following item p) arial: SA1 (C) IMPACT	Attached Welded Welded d (Whe	Header Header Bolted ere and how)
11. S 12. Re (2)	t, Outlet, Drain) T I Supports: Skirt (Yesemarks: Manufacturer's) Box Headers, S (A) TUBES: 50	NO s or no) s Partial SN 084	2"	N/A Leg (No.) properly identifi BK, Profess (Name	SA105/SA SA105 SA105 SS N/A (No.) ied and signed by Company item in the company ite	Other Commissioned Institutes, Inc. umber, Mfgr's rh: 168", GF-Threaded,	Struc (Desc pectors, have became and id Gauge: 16 Materia pe with A	ture ribe) peen furn entifyin BWG, 1: SA	Weld Weld weld sished for g stam Mate 105	Attached the following item p) arial: SA1 (C) IMPACT	Attached Welded Welded (When softhe report:	Header Header Bolted ere and how)
11. S 12. Re (2) (S I	t, Outlet, Drain) T Supports: Skirt (Yesemarks: Manufacturer's) Box Headers, S (A) TUBES: 50 2 Sheet (B) INSI	NO s or no) s Partial SN 084 x .75 P.OPE PER:	Lugs Data Reports 4011.5 FR/I S'' OD, St NINGS: 1 UG 20 (N/A Leg (No.) properly identifi BK, Profess (Name traight: Y 100, Type (f) . Cons	SA105/SA SA105 SA105 SS N/A (No.) ied and signed by Company item of part, item of p	Other Commissioned Instators, Incumber, Mfgr's rh: 168", Gef-Threaded, conformance	Struc (Desc Dectors, have to mame and id Gauge: 16 Materia December with A PLIANCE of design,	ture ribe) peen furn BWG, 1: SA ppend	Weld Weld wished for g stam Mate 105 Lix 28	Attached the following iter p) arial: SA1 (C) IMPACT 3.	Attached Welded Welded (Whe ms of the report: 79 Rolled To REQUIREMENT Workmanship of	Header Header Bolted ere and how)
N/OUT 11. S 11. S 12. Re (2) (S I	t, Outlet, Drain) T Supports: Skirt (Yes emarks: Manufacturer's) Box Headers, S (A) TUBES: 50 2 Sheet (B) INSI	NO S or no) S Partial SN 084 x 75 P.OPE PER:	Lugs Data Reports 4011.5 FR/I S'' OD, St NINGS: 1 UG 20 (N/A Leg (No.) properly identifi BK, Profess (Name Laght: Y LOO, Type (f). Cons CERTIFIC this report a re Vessels, S	SA105/SA SA105 SA105 SS N/A (No.) ied and signed by Company item of part, item of p	Other Commissioned Instance Incompleted, Mfgr's resulting to the second of the second	Struc Struc (Desc pectors, have the mame and id Gauge: 16 Materia e with A PLIANCE of design, ertificate of	ture ribe) peen furn BWG, 1: SA ppend	Weld Weld Weld g stam Mate 105 Lix 28 al, consrization	Attached the following iter p) arial: SA1 (C) IMPACT 3.	Attached Welded Welded (Whe ms of the report: 79 Rolled To REQUIREMENT Workmanship of	Header Header Bolted ere and how) Libe ETS: Of this vessel 2/31/2008
N/OUT 11. S 11. S 12. Re (2) (S I	t, Outlet, Drain) Supports: Skirt (Yes emarks: Manufacturer's) Box Headers, S (A) TUBES: 50 2 Sheet (B) INSI EMPACT EXEMPT certify that the statement to the ASME	NO S or no) S Partial SN 084 x 75 P.OPE PER:	Lugs Data Reports 4011.5 FR/I B' OD, St NINGS: 1 UG 20 (ts made in for Pressur	N/A Leg (No.) properly identifi BK, Profess (Name traight: Y 100, Type (f). Cons CERTIFIC this report a re Vessels, S	SA105/SA SA105 SA105 SA105 SS N/A (No.) ied and signed by (Siconal Fabrication of part, item not part, item not part, item not part of part, item not part of par	Other Commissioned Instators, Inc. Lumber, Mfgr's r. h: 168", G. F-Threaded, conformance P/FIELD COM that all details vision 1. "U" C. A Harsco Compacturer)	Struc (Desc pectors, have to name and id Gauge: 16 Materia e with A PLIANCE of design, ertificate of	ture ribe) eentifyin BWG, 1: SA ppend materia	Weld Weld Weld g stam Mate 105 Lix 28 al, consrization	Attached the following item p) arial: SA1 (C) IMPACT 3. struction, and n No. 4241	Attached Welded Welded (Whems of the report: 79 Rolled TraceOUTREMENT workmanship of expires 12	Header Header Bolted ere and how) Libe ETS: Of this vessel 2/31/2008
N/OUT DRAIN 11. S 12. Re (2) (S T WWe c conformation of the c	t, Outlet, Drain) T Supports: Skirt (Yes emarks: Manufacturer's) Box Headers, S Sheet (B) INSI MPACT EXEMPT certify that the stat orm to the ASME 03/17/2008 cl constructed by signed, holding a valid mployed by OneBead March 17, 2008 ivision 1. By signing	NO s or no) s Partial SN 084 x . 755 PER: tement Code Co. i	Lugs Data Reports 4011.5 FR/I 5" OD , St NINGS: 1 UG 20 (ts made in for Pressur name Air-X-C nission issued terica Insuran tate that, to tf	N/A Leg (No.) properly identifi BK, Profess (Name traight: Y LOO, Type (f) . Cons CERTIFIC this report a re Vessels, S d by The Nation ide Co. of Bosto he best of my ker the Inspector	SA105/SA SA105 SA105 SA105 SSA105	Other Commissioned Instators, Incumber, Mfgr's rh: 168", Gef-Threaded, conformance P/FIELD COM that all details vision 1. "U" C A Harsco Compacturer) OF SHOP/FIE ar and Pressure Velief, the Manufacturer wakes any warra	Struc (Desc pectors, have to name and id Gauge: 16 Materia are with A PLIANCE of design, ertificate of namy LD INSPEC t 5215 Arkan ssel Inspecto have inspecte urer has consi	ture ribe) peen furn entifyin BWG, 1: SA ppend Author CTION sas Roars and/ored the contracted the	Weld Weld weld weld g stam Mate 105 Lix 28 al, consrization r the State his pressibiled, con-	Attached to the following item p) arial: SA1 (C) IMPACT 3. struction, and n No. 4241 Signed to the following item province at described in according the pre	Attached Welded Welded Welded Welded Welded (Whe ms of the report: 79 Rolled Tr REQUIREMENT (Represent 74015, USA OK his Manufacturer's coordance with AS ssure vessel descr	Header Header Bolted Bolted Bre and how) Data Report on ME Code, Section Bre die Header Head
N/OUT DRAIN 11. S 12. Re (2) (SS II WVe c confc Date Vesse anders afid er //III, Di Manufarising	t, Outlet, Drain) T Gupports: Skirt (Yes emarks: Manufacturer's) Box Headers, S Sheet (B) INSI MPACT EXEMPT Certify that the statement of the ASME 03/17/2008 I constructed by signed, holding a valid mployed by OneBear March 17, 2008	NO S or no) S Partial SN 084 x .75 P.OPE PER: tement Code Co. I	Lugs Data Reports 4011.5 FR/I S'' OD, St NINGS: 1 UG 20 (ts made in for Pressur name Air-X-(nission issued erica Insuran tate that, to the tificate neithe ermore, neith inspection.	N/A Leg (No.) properly identifi BK, Profess (Name traight: Y LOO, Type (f) . Cons CERTIFIC this report a re Vessels, S d by The Nation ide Co. of Bosto he best of my ker the Inspector	SA105/SA SA105 SA105 SA105 SS N/A (No.) ied and signed by Company Section VIII, Die Section VIII, Die Air-X-Changers, (Manufation) CERTIFICATE CERTIFICATE CATE OF SHOP CERTIFICATE COMPANY Anowledge and belignor his employer or nor his employer or nor his employer or nor his employer	Other Commissioned Institutes, Inc. Lumber, Mfgr's r. h: 168", G. F-Threaded, conformance P/FIELD COM that all details vision 1. "U" C. A Harsco Compacturer) OF SHOP/FIE ar and Pressure Ver lief, the Manufacture makes any warraer shall be liable in	Struc (Desc pectors, have to name and id Gauge: 16 Materia are with A PLIANCE of design, ertificate of namy LD INSPEC t 5215 Arkan ssel Inspecto have inspecte urer has consi	ture ribe) peen furn entifyin BWG, 1: SA ppend Author CTION sas Roars and/or d the co- tructed tild or imp for any p	Weld Weld weld weld g stam Mate 105 Lix 28 ad, Caton r the Sta mponer his pressolied, con persona	Attached The following iter P) ATIAL: SAL (C) IMPACT 3. Struction, and in No. 4241 Signed Dosa, Oklahoma, atte or Province in described in its sure vessel in according the pre- Linjury or proper	Attached Welded Welded Welded Welded Welded (Whe ms of the report: 79 Rolled Tr REQUIREMENT (Represent 74015, USA OK his Manufacturer's coordance with AS ssure vessel descr	Header Header Bolted Bolted Bre and how) Data Report on ME Code, Section ibed in this ss of any kind

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	084011-CRN-6- Additional Drawin		F			RER'S DATA R						
***********	.256 Header Volume (d		As Red	•		amber, Completely ME Boiler and Pres				• • •		
1. M	anufactured and		by Air-X-0	Changers, A	Harsco Com	npany, 5215 A	rkansa	s Road, C	atoosa	, Oklahoma,	74015, USA	
2 M	anufactured for	Torom	ont Energy	y Systems,	10121 Barlov			idress of ma AB, T3J 3		,		
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						s of purchas				
3. Lo	ocation of Installat	tion Ur	NKNOWN				(Name a	nd address)			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
4. Ty	pe Heat Excha	anger		84011.6 turer's serial numb		210.213 (CRN)		HDR-6, R			61443 ational Board number)	2008 (Year built)
	The chemical and CODE. The desig	physica	al properties	of all parts m	eet the require	ements of mate		cifications o	of the AS			E VESSEL
1900		N/ Code Case	/A e numbers)	,	(Spe	N/A ecial Service per UG-	120(d))	.,,,,		(year)	[Addenda (Date)]
6. Sł	·	SA516			1	0.125		0' 5.5" (OD)		.8750"	
7 5	,		nber, grade		thickness)	(Corr. allow.)	1	(Inner diam	•	[Lengt	h (overall)]	N/A N/A
7. SE	eams: Cor [Long. (welde	ner Jo d, dbl., sng		N/A R.T.(Spot or Ful	C=.20) Eff.(%)	CONTRACTOR OF THE PARTY OF THE	1 ne (hr)	[Girth. (welded	N/A , dbl., sngl.	, lap, butt)] [F	N/A t.T. (spot or full)]	N/A N/A Eff(%) No. of Courses
8. H	eads: (a) Materia	ıl			16 70		(b) Ma	aterial			SA516 70	
	Location	1 1	Minimum	(Spec. n Corrosion	o., grade) Crown Radius	Knuckle Radius	Elliptical	Ratio Conic	al Apex	Hemispherical	Spec. no., grade) Flat Diameter	Side to Pressure
	(Top, Bottom, Ends	s) T	hickness	Allowance				Aı	ngle	Radius		(Convex or Concave)
(a) (b)	TOP, BTM ENDS		.875"	0.125 0.125	N/A N/A	N/A N/A	N/A		I/A I/A	N/A N/A	3.875" x 22.5" 3.875" x 3.75"	N/A N/A
	novable, bolts use	d (desc				1 1371			N/A		0.070 × 0.70	
		•				at m	nax. tem		number, gr	rade, size, number)		
9. M	AWP	1650 ps (Internal)			N/A (External)	a, ii	iax. (Cili	p	(Inte) °F mal)	N/A (External)	
М	in. design metal to	emp.	-20 °F	at	1650 psi		Hydro,	pneu., or o	comb. te	st pressure	HYDRO.	at 2145 psi
10. No	zzles, inspection	and saf	fety valve op	penings:		pantigo april 1000 estantiga						
Purp	oose (Inlet, Outlet, Drain)	Numbe	r Diameter Size	ог Туре		Material		Nominal Thickness	Reinfo	orcement Materia	al How Attached	Location
IN/OU		2	2"	1500# RF\		A106 GR.B		SCH-160 Weld			Welded	Header
DRAII		1	1"	CPLG	SA105		i	6000#	Weld		Welded	Header
11. Su	pports: Skirt	NO	Lugs	N/A Leg		Other		Structure		Attached	·	Bolted
12. Ren) narks: Manufacturer's	(Yes or no) P artial D		Number) roperly identified	(Number) and signed by C	ommissioned Inspe	ectors, ha	(Describe) ve been furni	shed for t	he following items	•	nere and how)
_(2) Box Headers,	SN 084	4011.6 FR/	BK, Profess	ional Fabrica	ators, Inc number, Manufacture	r's name a	nd identifying s	tamn)			
	(A) TUBES: 26	ж .62	25" OD, S	traight:	YES, Leng	gth: 168",	Gauge	: 16BWG	, Mat		179 Rolled :	
	Sheet (B)INS		UG 20			T-Threaded, conforman					REQUIREMENT	<u>3:</u>
												
10/			J			P/FIELD COM						A CAME DOLLED
AND	ertify that the statem PRESSURE VESSE	ents mad L CODE	de in this repo E, Section VIII	on are correct a , Division 1. "U'	ind that all detail: ' Certificate of Al	s of design, mater uthorization No.	iai, const 4241	ruction, and expires		isnip of this vess 2/31/2008	sei conform to the i	ASIVIE BUILER
Date	03/17/2008	Co.	name		Air-X-Change	rs, A Harsco Con	npany		5	Signed	us of 0	temen
	***************************************	*********			(Manufac						(Represent	ative)
				C	ERTIFICATE	OF SHOP/FIE	LD INS	PECTION				
	el constructed by signed, holding a va	lid comm			arsco Company					osa, Oklahoma,		I, the
	mployed by OneBe	acon Am	nerica Insuran	ce Co. of Bosto	on, MA		have ins	pected the c	componer	nt described in t	nis Manufacturer's ecordance with AS	
the pr	March 17, 2008 SURE VESSEL CO essure vessel descr	DE, Sec	tion VIII, Divis nis Manufactu	sion 1. By signi rer's Data Rep	ing this certificate ort. Furthermore	e neither the Inspe e, neither the Inspe	ector nor	his/her empl	oyer mak	es any warranty	, expressed or imp	lied, concerning
	rty damage or a loss		kind arising fro	om or connecte				'	-	•		
D	ate 03/17/20	800	Signed	MASSESS (Au	thorize inspect	CONTRACTOR	mmission	ıs	(National I		2A, OK951 ments), State, Province	e and number)