

66174348

104078-CRN-3
Additional Drawing No.
.517
Header Volume (cu.ft.)

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 Harsco Industrial Air-X-Changers, 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA
(Name and address of manufacturer)
2. Manufactured for ENERFLEX LTD., C&P- BARLOW, 10121 BARLOW TRAIL NE, CALGARY, T3J 3C6, CANADA
(Name and address of purchaser)
3. Location of Installation UNKNOWN 03-35-78-25-24 (A) 598894
(Name and address)
4. Type Heat Exchanger 104078.3 V1683.213 HDR-3, REV0 68466 2010
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing No.) (National Board number) (Year built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 2007 to A09
(Code Case numbers) (Special Service per UG-120(d)) (year) (Addenda (Date))
6. Shell: SA516 70(N) .75 in 0.0625 in N/A N/A
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))
7. Seams: Corner Joint N/A C=20 1150 °F 0.75 N/A N/A N/A N/A
(Long. (welded, dbl., singl., lap, butt)) (R.T. (Spot or Full)) (Eff. (%)) (H.T. temp) Time (hr) (Grth. (welded, dbl., singl., lap, butt)) (R.T. (spot or full)) (Eff. (%)) No. of Courses
8. Heads: (a) Material SA516 70(N) (b) Material SA516 70(N)
(Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP, BTM	.625"	0.0625	N/A	N/A	N/A	N/A	N/A	6" x 28.375"	N/A
(b)	ENDS	.5"	0.0625	N/A	N/A	N/A	N/A	N/A	6" x 5.4375"	N/A

If removable, bolts used (describe other fastenings)

N/A

(Material spec. number, grade, size, number)

9. MAWP 350 psi N/A at max. temp. 300 °F N/A
(Internal) (External) (Internal) (External)
- Min. design metal temp. -49 °F at 350 psi Hydro, pneu., or comb. test pressure HYDRO. at 455 psi
- Proof test N/A

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	Number	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
IN/OUT	2	6"	300# RFWN	SA350 LF2/SA333 GR.6	SCH-80	Weld	Welded	Header
DRAIN	1	1"	CPLG	SA350 LF2	6000#	Weld	Welded	Header
DRAIN	2	1"	CPLG	SA350 LF2	6000#	Weld	Welded	Header

11. Supports: Skirt NO Lugs N/A Legs N/A Other Structure Attached Bolted
(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:

N/A

(Name of part, item number, Manufacturer's name and identifying stamp)

Line 6 - Tube and Plug Dimensions OR Header Dimensions: 6.6875" X 0.7500" X 2' 4.3750"Straight length of tubes, OR, Distance between the headers: 24' 0.0"(A) TUBES: 70 x .625" OD, Gauge: 16BWG, Material: SA214 Rolled Tube Sheet (B) INSP. OPENINGS:Additional Remarks - See Attached U-4...

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization No. 4241 expires 12/31/2011

Date 07/28/2010

Co. name

Harsco Industrial Air-X-Changers
(Manufacturer)

Signed

Jon R. Messer
(Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Harsco Industrial Air-X-Changers at 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province OK and employed by OneBeacon America Insurance Co. of Lynn, MA have inspected the component described in this Manufacturer's Data Report on July 19, 2010 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel 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 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 07/29/2010

Signed

[Signature]
(Authorized Inspector)

Commissions

11672A, OK765

(National Board (incl. endorsements), State, Province and number)

PSV - 300 PSI / 2067 KPA SCFM - 4471

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII,

1. Manufactured and certified by Harsco Industrial Air-X-Changers, 5215 Arkansas Road, Catoosa, Oklahoma, 74015, USA
(Name and address of Manufacturer)

2. Manufactured for ENERFLEX LTD., C&P- BARLOW, 10121 BARLOW TRAIL NE, CALGARY, T3J 3C6, CANADA
(Name and address of Purchaser)

3. Location of Installation UNKNOWN
(Name and address)

4. Type Heat Exchanger N/A 104078.3
(Horizontal, vertical, or sphere) (Tank, separator, heat exh., etc.) (Manufacturer's serial number)

V1683.213 HDR-3, REV0 68466 2010
(CRN) (drawing no.) (National Board number) (Year built)

Additional nozzles, inspection and safety valve openings:

Additional Remarks:

140, Type: 3/4X16UNF-Threaded, Material: SA350 LF2 (C) IMPACT REQUIREMENTS: PLATE IMPACT EXEMPT
PER: UCS-66(A) & FIGURE UCS-66 CURVE D & UCS 68. PIPE AND FLANGE IMPACT EXEMPT PER: UCS-66(G).
Constructed in conformance with Appendix 28.

Certificate of Authorization: Type "U" No. 4241 Expires 12/31/2011

Date 07/28/2010 Name Harsco Industrial Air-X-Changers Signed Jan K. Messer
(Manufacturer) (Representative)

Date 07/29/2010 Name [Signature] Commissions: 11672A, OK765
(National Board (incl. endorsements), State, Province and number)

		CERTIFIED BY		Air-X-Changers		FLORA, OKLAHOMA U.S.A.	
W		MAX. DESIGN PRESS.	14	PSI	300	°F	
		MAX. DESIGN PRESS.		PSI		°F	
		MIN. DESIGN METAL TEMP.	-20	°F	14	PSI	
		SER. NO.	104078.1.2	CRN			
		YEAR	2010	HYDRO.	65	PSI	ITEM EJW-TAW

		68466		CERTIFIED BY		Air-X-Changers		FLORA, OKLAHOMA U.S.A.	
W		MAX. DESIGN PRESS.	350	PSI	300	°F			
HT		MAX. DESIGN PRESS.		PSI		°F			
		MIN. DESIGN METAL TEMP.	-49	°F	350	PSI			
		SER. NO.	104078.3	CRN	V1683.213				
		YEAR	2010	HYDRO.	455	PSI	ITEM	AC	