

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative For Single Chamber, Completely Shop-Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

move from A16-01 SN 9444 113

A2988161
299-01

1. Manufactured and certified by Air-X-Changers, Division of Patterson-Kelly Co., Harsco Corp., 5215 Arkansas Road, Port of Catoosa, OK 74015
(Name and address of manufacturer)
- Manufactured for BTB COMPRESSORS, #5, 6565 40TH ST. S.E., CALGARY, ALBERTA, CANADA T2C 2J9
(Name and address of purchaser)
3. Location of installation HUSKY OIL, ALBERTA, CANADA
(Name and address)
4. Type Heat Exchanger 944411.4 K-2766.2 HDR-4 REV.2 24491 1994
(Monz. or vert. tank) (Mfg'r's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (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 1992
Year
- to A1993
Addenda (Date)
- Tube & Plug Sheets SA-516-70 N 1.375" .0625" 8" 31.375"
Mat'l. (Spec. No., Grade) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. LD (R. & in.)) (Length (overall) (R. & in.))
6. Shell: SA-516-70 N 1.375" .0625" 8" 31.375"
Mat'l. (Spec. No., Grade) (Nom. Thk. (in.)) (Corr. Allow. (in.)) (Diam. LD (R. & in.)) (Length (overall) (R. & in.))
7. Seams: Corner Joint --- C = .20 --- --- --- --- ---
Long (Welded, Dbl., Singl., Lap, Butt) R. T. (Spot or Full) Eff. (%) H. T. Temp (F) Time (hr) Grth (Welded, Dbl., Singl., Lap, Butt) R. T. (Spot, Partial, or Full) No. of Courses
8. Heads: (a) Mat'l. SA-516-70 N (b) Mat'l. SA-516-70 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"	.0625"	---	---	---	---	---	4" X 31.375"	
(b)	Ends	.625"	.0625"	---	---	---	---	---	4" X 6.75"	

If removable, bolts used (describe other fastenings) ---

(Mat'l. Spec. No., Gr., Size, No.)

9. MAWP 655 psi at max. temp. 300 °F
Min. design metal temp. -20 °F at 655 psi Hydro., pneu., or comb. test pressure 983 psi.
Nozzles, inspection and safety valve openings: UG-125 Note 39

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Mat'l.	Nom. Thk.	Reinforcement Mat'l.	How Attached	Location
IN, OUT	2	4" ANSI	300# RF	SA-105/SA-106-B	SCH. 80	PIPE & WELD	Welded	Header
IN, OUT	1	4" ANSI	300# RF	SA-105/SA-234 WPB	SCH. 80	ELL & WELD	"	"
VENT DRAIN	1	.75"	CPLG.	SA-105	6000#	CPLG & WELD	"	"

11. Supports: Skirt --- Lugs --- Legs --- Other Structure Attached Bolted
(Yes or no) (No) (No) (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: ---
(Name of part, item number, Mfg'r's name and identifying stamp)

TUBES 98 .625 "OD Straight 108" Length 16 Gauge SA-214 Rolled Tube Sht.
Insp. 196 .75" NF Thd'd --- Plug Sht.
IMPACT EXEMPT PER: UCS 66 (a) CURVE D

CERTIFICATE OF SHOP 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 Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 4241 expires 12-31, 19 96.
Date 6-13-94 Co. name Air-X-Changers Signed James Baker
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Air-X-Changers at Tulsa, Oklahoma
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Oklahoma and employed by Commercial Union Insurance Company

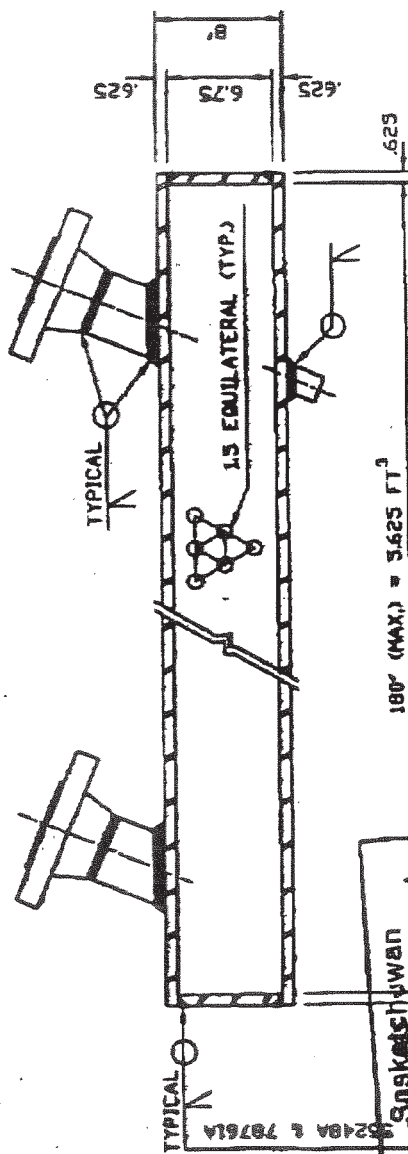
have inspected the component described in this Manufacturer's Data Report on 6-9, 19 94, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Report. Furthermore, neither the Inspector nor his 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 6-13-94 Signed Thomas Payne Commissions NAT'L BD 89403 OK 12264
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements), State, Prov. and No.)

5 ABSO

SPECIFICATIONS

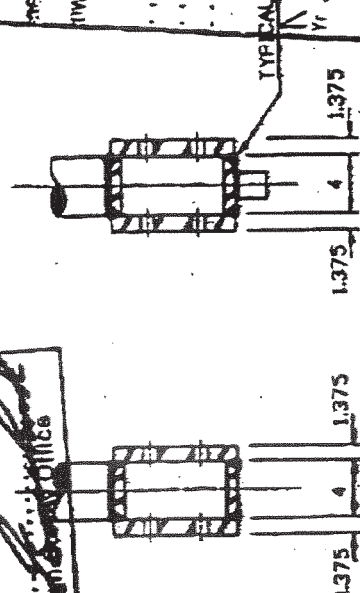
- 1) TUBES - SA-214 WELDED STEEL - 625 OD, 16 B.V.G. WITH ALUMINUM SPIRAL FIN, SHLD. STL (SA-105)
- 2) ACCESS PLUGS - HEX HEAD .75 NF.
- 3) TUBE HOLES DRILLED AND REAMED TO .632" ±.002".
- 4) PLUG HOLES TAPPED FOR .75 NF.
- 5) ALL PLATE - SA-316-70 (NORMALIZED)
- 6) NOZZLES - 4"-300 R.F.V.N (SA-105) SCH. 80 BORE WITH 4" SCH. 80 PIPE (SA-106-B).
- 7) DESIGN PRESSURE - 681 P.S.I. @ 75 / - 80 ° F.
- 8) HYDROSTATIC TEST - 1022 P.S.I.
- 9) ALL WELDS - FULL PENETRATION.
- 10) SECTION DESIGNED, CONSTRUCTED, TESTED AND STAMPED IN STRICT ACCORDANCE WITH A1989 ASME, CODE, SECTION VIII, DIV. 1, APPX XIII. DESIGN REF: UCS-66(a) CURVE B.
- 11) TUBE HOLES ARE GROOVED PER TEHA C7.44.
- 12) CPLGS. - 1"-3000 # FULL (SA-105)
- 13) CORROSION ALLOWANCE - .0625.



CROSS SECTION - SIDE VIEW

Saskatchewan
Municipal Government
Boiler & P.V. Safety
Unit
CRN 1. 8/16/97
FILE 24674
REGISTERED
23/97
24674

ALBERTA LABOUR
General Safety Services Division
BOILERS & PRESSURE VESSELS ACT
K 2768
98679
DESIGN Temp. °C
K1K
A.C. 95
681/151
20/1/79
ACCEPTED
NOV. 23 1990
Mr. B. C. DESAI, P. Eng.
DESIGN SURVEY ENGINEER



CROSS SECTION - END VIEW

CANADIAN REGISTRATION DRAWING	
NEXT ASSY	AIR-X-CHANGERS
98580	TULSA, OKLAHOMA
REF DVGS	DETAIL OF IC-1 HEADERS
BY	FITZ CHKD B WT
DATE	10/12/90
APPD	DATE
SCALE	NONE
DWG #	98679
CHERO	JOB 904514