

E408

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by ALFA LAVAL INC., 5400 INTERNATIONAL TRADE DR, RICHMOND VA 23231
(Name and address of Manufacturer)
2. Manufactured for CROWN IRON WORKS, P.O. BOX 1364, MINNEAPOLIS, MN, 55440 US
(Name and address of Purchaser)
3. Location of Installation Crown Iron Works, 2500 W. County Rd. C, Roseville, MN, 55113, US
(Name and address)
4. Type Vertical Plate Heat Exchanger 30110-69225 30110-69225.1 26715 2007
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exh., etc.) (Mfg's serial no.) (CRN) (Drawing No.) (Natl. Bd. No.) (Year Built)
5. ASME Code, Section VIII, Div. 1 2004 A06
Edition Addenda (date) Code Case No. Special Service per UG-120(d)

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): _____ (b) Overall length (ft + in.): _____

Course(s)		Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B + C)			Heat Treatment		
No.	Diameter, in.	Length, ft./in.	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time

7. Heads: (a) SA-516-70 (b) SA-516-70
(Mat'l Spec. No. Grade or Type) H.T. - Time + Temp (Mat'l Spec. No. Grade or Type) H.T. - Time + Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Radius Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Fixed	3 3/8"	0"						107 x 46"					
(b)	Movable	2 9/16"	0"						101 x 46"					

If removable, bolts used (describe other fastening) SA193-B7 (4) 1.89" (M48 actual) & (12) 1.54" (M39 actual) BOLTS
(Mat'l Spec. No., Grade, Size, No.)

8. Type of Jacket _____ Jacket Closure _____
(Describe as ogee + weld, bar, etc.)

If bar, give dimensions _____ If bolted, describe or sketch _____

9. MAWP 150 psi at max. temp. 200 ° F Min. design metal temp. -20 ° F at 150 psi
(Internal) (external) (Internal) (external)

10. Impact Test NO (Impact Exemption UCS-66(a), (b), UHA-51, UNF-65, as applicable)
(Indicate yes or no and the component(s) Impact tested)

11. Hydro., pneu., or comb. test press. 195 Hydro Proof test _____

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: Stationary (Mat'l Spec. No.) _____ Dia., in. (subject to press.) _____ Nom. thk., in. _____ Corr. Allow., in. _____ Attachment (welded or bolted) _____

Floating (Mat'l Spec. No.) _____ Dia., in. _____ Nom. thk., in. _____ Corr. Allow., in. _____ Attachment _____

13. Tubes: Mat'l Spec. No., Grade or Type _____ O.D., in. _____ Nom. thk., in. or gauge _____ Number _____ Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers jacketed vessels or channels of heat exchangers

14. Shell (a) No. of course(s): _____ (b) Overall length (ft + in.): _____

Course(s)		Material		Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B + C)			Heat Treatment		
No.	Diameter, in.	Length, ft./in.	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time

15. Heads: (a) _____ (b) _____
(Mat'l Spec. No. Grade or Type) H.T. - Time + Temp (Mat'l Spec. No. Grade or Type) H.T. - Time + Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Radius Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)														
(b)														

If removable, bolts used (describe other fastening) _____ (Mat'l Spec. No., Grade, Size, No.)

FORM U-1 (Back)

30110-69225
(Mfg's serial no.)

16. MAWP _____ psi at max. temp. _____ ° F Min. design metal temp. _____ ° F at _____ psi
(internal) (external) (internal) (external)

17. Impact Test _____
(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. _____ Hydro _____ Proof test _____

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet	2	14"	STUDS	SA193-B7		1"					
Outlet	2	14"	STUDS	SA193-B7		1"					

20. Supports: Skirt _____ Lugs _____ Legs _____ Others FEET Attached BOLTED
(Yes or no) (No.) (No.) (Describe) (Where and how)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks _____ (195) SA-240-316 .024 " Cassettes Maximum Distance between Heads = 54.41 "
Customer PO#: 103368 Tag #: E-408 / SO 11476-43 Constructed under the Provisions of UG-90(c)(2)
Owner to supply Safety Valve/Noncorrosive Service Only

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. 25,017 Expires July 5, 2010
Date 11/6/07 Name Alfa Laval, Inc. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of VA and employed by OneBeacon America Insurance of Boston MA have inspected the pressure vessel described in this Manufacturer's Data Report on 10-17, 2007, 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 Data 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 11-7-07 Signed [Signature] Commissions NB 10803A VA951R
(Authorized Inspector) (Nat'l Board Incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements made in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of Authorization No. 25,017 Expires July 5, 2007
Date _____ Name _____ Signed _____
(Assembler) (Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. 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 Data 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 _____ Signed _____ Commissions _____
(Authorized Inspector) (Nat'l Board Incl. endorsement, State, Province and No.)