



WARNING!

WHEN COVER IS REMOVED FOR INSPECTION OF ONE PASSAGE, BE SURE THERE IS NO PRESSURE IN THE OPPOSITE CHANNEL. IF PRESSURE IS TO BE APPLIED FOR TESTING WITH ONE COVER REMOVED, THE UNCOVERED SPIRAL MUST BE SECURED BY SUITABLE HOLD-DOWN BARS TO PREVENT PARTIAL TELESCOPING UNDER PRESSURE.

Weight, Flooded - Approx.	1065 #
Weight, Empty - Approx.	840 #
Maximum Allowable Working Press. (Both Sides)	150 P.S.I.
Design Temp. (Both Sides)	625 ° F
Inner Channel (Hot Side)	WELDED CLOSED BOTH ENDS 1/4"
Outer Channel (Cold Side)	OPEN BOTH ENDS 5/8"
Outer Spiral Shell Thickness	.1875" X 24" Wide
Spiral Material, Except As Noted	SA-516-70

NOTE:

ALL HEADS SA-516-70
 GASKETS-NON ASBESTOS; 1/8" THK. X 23" NOMINAL DIA.
 ALL FLANGES SA-105, 300# A.N.S.I.

HOOKBOLTS ASSY 14 PER COVER, 3/4" D. X 6" Lg. SA-193-B7
 PAINT- MFG. STD.; DELAVAL BLUE ENAMEL
 LOCATION OF NAMEPLATE IS MFG. OPTION.
 TOLERANCE ON ALL DIMENSIONS ± 1/8" EXCEPT DIAMETER AND ANGULAR DIMENSIONS
 BOLT HOLES TO STRADDLE SHOWN CENTER LINES.
 FOR WELDS DETAILS SEE DWG. D-65 A & B

NOZZLE SCHEDULE

ALL FLANGED NOZZLES SA-106, Gr. B, SCHED. 40
 DRAIN: C; IS SA-106, Gr. B, SCHED. 40.

MARK	NO.	REQ'D	SIZE	RATING	FACING	REMARKS
H						
G						
F						
E						
D						
C	1	1"		N.P.T.		CAPPED
B	2	6"	300#	R.F.		
A	2	2"	300#	R.F.		Cover Nozzle Has Split-Fig.

CERTIFIED PRINT

Approved For Fabrication Or Erection.
 By *[Signature]* Date 10-7-86

DESIGNED, CONSTRUCTED & STAMPED IN ACCORDANCE WITH A.S.M.E. CODE SEC. VIII - DIV I - 1983, ADDENDA WINTER 1985

AMERICAN HEAT RECLAIMING DIV. OF ALFA-LAVAL, INC. P.O. BOX 10 LYKENS, PA. 17048-0010	
CUSTOMER: E.I. DUPONT DE NEMOURS & CO., INC.	
ORDER No. LNCC-65828-C	ITEM No.
60 SQ. FT. SPIRAL HEAT EXCHANGER	
DWN. BY SMY	CHK'D. [Signature]
APP'D. [Signature]	JOB No AS-18051
DATE 10-7-86	MFG. No. 18058 Type I-HC

DATE	SYM.	REVISION	BY

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FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

as required by the provisions of the ASME Code rules, Section VIII, Division 1

American Heat Reclaiming, Div. of Alfa-Laval, Inc.

1. Manufactured and certified by Hanna St., Lykens, PA 17048
(name and address of manufacturer)

2. Manufactured for E. I. du Pont de Nemours & Co., Inc. Memphis, Tennessee
(name and address of purchaser)

3. Location of installation E. I. du Pont de Nemours & Co., Inc. Chattanooga, Tennessee
(name and address)

4. Type: Horiz. 18058 --- 18058 13696 1986
(horiz. or vert., tank) (mfr'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 Code, Section VIII, Division 1: 1983
(year)

W-1985 --- ---
(addenda (Date)) (Code Case no.) (special service per UG-120(d))

Items 6-11 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-516,70 .1875" NA 1' 7" O.D. 3' 4"
(mat'l. (spec. no., grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))

7. Seams: * NA 55
(long. (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)

8. Heads: (a) SA-516,70 (b) SA-516,70
(mat'l. (spec. no., grade)) (mat'l. (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)	C-End	1.35"	NA						20-1/2"	Flat
(b)	C-End	1.35"	NA						20-1/2"	Flat

If removable, bolts used (describe other fastenings): SA-193, B7 (14) 3/4"D. ea. hd.
(mat'l., spec. no., gr., size, no.)

9. Type of jacket: _____ Proof test: _____

10. Jacket closure: _____ If bar, give dimensions: _____ If bolted, describe or sketch.
(describe as ogee & weld, bar, etc.)

11. MAWP 150 at max. temp. 625° Min. temp.: _____ Hydro., ~~press. or comb.~~ test press.: 225
(psi) (°F) (°F (when less than -20°F)) (psi)

Items 12 and 13 to be completed for tube sections.

12. Tubesheets: _____
(stationary mat'l. (spec. no., gr.)) (dia. (in.) (subject to pressure)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment (welded, bolted))

_____ (floating mat'l. (spec. no., gr.)) (dia. (in.)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment)

13. Tubes: _____
(mat'l. (spec. no., gr.)) (OD (in.)) (nom. thickness (in. or gauge)) (no.) (type (straight or U))

Items 14-17 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell: _____
(mat'l. (spec. no., gr.)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))

15. Seams: _____
(long (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (°F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)

16. Heads: (a) _____ (b) _____
(mat'l. (spec. no., grade)) (mat'l. (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)										
(b)										

If removable, bolts used (describe other fastenings): _____
(mat'l., spec. no., gr., size, no.)

17. MAWP 150 at max. temp. 625° Min. temp.: _____ Hydro., ~~press. or comb.~~ test press.: 225
(psi) (°F) (°F (when less than -20°F)) (psi)

Items on reverse side to be completed for all vessels where applicable.

Additional sheet shall be closed and dated by the certificate holder and the...

FORM U-1 (back)

18. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	Number	Dia. or Size	Type	Mat'l.	Nom. Thickness	Reinforcement Material	How Attached	Location
Inlet	1	2"	Flg.	SA-106	Sch.40	---	Welded	
Outlet	1	2"	"	"	"	---	"	
Inlet	1	6"	"	"	"	---	"	
Outlet	1	6"	"	"	"	---	"	
Drain	1	1"	Thrd.	"	"	---	"	

19. Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Brackets _____ Attached _____ Welded to Shell _____
(yes or no) (no.) (no.) (describe) (where and how)

20. Remarks: Manufacturers' 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, mfr's. name and identifying stamp)

Hydro-tested per UG 99(b). Vessel is a Spiral Heat Exchanger.
*No seams in outer shell. Hoop load transferred by braces.

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. 1793 expires March 30, 19 87
 Date 11-13-86 Name Amer. Heat Recl., Div. of Alfa-Laval, Inc. Signed John Gittings
(manufacturer)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by American Heat Reclaiming, Div. of Alfa-Laval, Inc. at Hanna St., Lykens, PA
 I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the state or province of Penna. and employed by Commercial Union Insurance Company
 of Boston, Mass. have inspected the pressure vessel described in this Manufacturers' Data

Report on *See Below, 19_____, 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. * 11-4, 11-10, 11-11, 11-12, 1986

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in the Manufacturers' 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 11-13-86 Signed Richard A. Lynch Commissions NB-7967 & PA.WC-2516
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state, prov. and no.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME BOILER AND PRESSURE VESSEL CODE.

"U" Certificate of Authorization no. _____ expires _____, 19_____
 Date _____ Name _____ Signed _____
(assembler that certified and constructed field assembly) (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 Manufacturers' 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 that 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 the Manufacturers' 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 _____ Commissions _____