

FORM U-1 MANUFACTURERS' DATA REPORT FOR UNFIRED PRESSURE VESSELS

As required by the Provisions of the ASME Code Rules

M & L JOB #17610-2

- Manufactured by MANNING & LEWIS ENG. CO., 675 RAHWAY AVE., UNION, N. J. 07083
(Name and address of manufacturer)
- Manufactured for HERCULES INC. WILMINGTON N.C
(Name and address of Purchaser)
- Type VERT Kind HE Vessel No. 5847 (Mfrs. Serial) (State & State No.) Natl. Bd. No. 3049 Yr. Built 1970

Items 4-9 incl. to be completed for single wall vessels (such as air tanks), jackets of jacketed vessels, or shells of heat exchangers.

- SHELL: Material SA286-C T.S. 55000 Nom. Tks. 3/8 In. Allow. 1/16 In. Dia. 2 Ft. 8 In. Lgth. 11 Ft. 8 3/4 In.
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)
- SEAMS: Long DBL BUTT H.T. NO R.T. SPOT Sectioned NO Efficiency 85 %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)
Girth DBL BUTT H.T. NO R.T. SPOT Sectioned NO No. of Courses 4
- HEADS: (a) Material SA286-C T.S. 55000 (b) Material SA286-C T.S. 55000
Location (Top, bottom, ends) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)
(a) NO (b) NO
If removable, bolts used NO Other fastening NO (Describe or Attach Sketch)
- STAYBOLTS: NO If hollow NO Attachment NO Pitch X Diam. NO
(Material) (Size of Hole) (Threaded, Welded) (Horiz.) (Vert.) (Nominal)
- JACKET CLOSURE: NO
(DESCRIBE AS OGEE & WELD, BAR, ETC. IF BAR, GIVE DIMENSIONS. IF BOLTED, DESCRIBE ON SKETCH).

- Constructed for max. allowable working press. 150 psi. at max. temp. 375 °F. Min. temp. (when less than -20°) NO °F. Hydrostatic Pneumatic or } Test Combination Press. 225 psi.

Items 10 and 11 to be completed for tube sections.

- TUBE SHEETS: Stationary. Material SA240-304 Dia. 3 1/8 In. Tks. 2 In. Attachment WELDED
(Kind & Spec. No.) (Subject to Pressure) (Welded, Bolted, CLAMPED)
- Floating. Material SA249 Dia. NO In. Tks. NO In. Attachment NO
(Kind & Spec. No.)
- TUBES: Material SA304 O.D. 3/4 In. Thickness 16 inches or Gage Number 778 Type STR
(Kind & Spec. No.) (Straight or U)

Items 12-15 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

- SHELL: Material SA240-304 T.S. 75000 Nom. Tks. 5/16 In. Corr. 0 In. Dia. 2 Ft. 8 In. Lgth. 3 Ft. 0 1/8 In.
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)
- SEAMS: Long DBL BUTT H.T. NO R.T. NO Sectioned NO Efficiency 85 %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)
- Girth NO H.T. NO R.T. NO Sectioned NO No. of courses 1
- HEADS: (a) Material SA516-70 T.S. 70000 (b) Material SA516-70 T.S. 70000 (c) Material SA516-70 T.S. 70000
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)
(a) Top, bottom, ends 2.06 (b) Channel 2.06 (c) Floating 2.06
If removable, bolts used (a) SA193-B7; 125000; 3/4" - 2.8 (b) SA193-B7; 125000; 3/4" - 2.8
(Material, Spec. No., T.S., Size, Number) Other fastening NO (Describe or Attach Sketch)

- Constructed for max. allowable working press. 150 psi. at max. temp. 375 °F. Min. temp. (when less than -20°) NO °F. Hydrostatic Pneumatic or } Test Combination Press. 225 psi.

Items below to be completed for all vessels where applicable.

- SAFETY VALVE OUTLETS: Number NO Size NO Location NO
- NOZZLES:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
IN	1	10	150° S.O.	SA53-B	5/80	-	WELDED
OUT	1	3	150° S.O.	SA53-B	5/80	-	"
IN	1	10	150° S.O.	SA312-304	.250	-	"
OUT	1	20	150° S.O.	SA312-304	.250	-	"
FEED	1	4	150° S.O.	SA312-304	5/406	-	"
DRAIN	1	2	150° S.O.	SA312-304	5/805	-	"
VENT	1	1	H.C.	SA182-F304	3000°	-	"
V.P.D.	2	3/4	H.C.	SA106-11	3000°	-	"

18. INSPECTION Manholes, No. _____ Size _____ Location _____
 OPENINGS: Handholes, No. _____ Size _____ Location _____
 Threaded, No. _____ Size _____ Location _____

19. SUPPORTS: Skirt _____ Lugs 4 _____ Legs _____ Other _____ Attached WELDED TO SHELL
 (Yes or No) (Number) (Number) (Describe) (Where & How)

20. REMARKS: 32-144 MBOM EVAPORATOR REBOILER W/STEAM IN SHELL AND "C" M/L IN TUBES

(Brief description of purpose of the vessel, as Air Tank, After Cooler, Jacketed Cooker, etc. State contents of each part.)

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 unfired Pressure Vessels.

Date 3/10 19 70 Signed MANNING & LEWIS ENG. CO. By A L Gale
 MANUFACTURER

Certificate of Authorization Expires DEC 31, 1970

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY MANNING & LEWIS ENG. CO. at UNION, N. J.

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province NAT'L BD and employed by COMMERCIAL UNION INSURANCE CO. of NEW YORK, N.Y. have inspected the pressure vessel described in this manufacturer's

data report on _____ 19____, and state that to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

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 3/10/70 19____

[Signature]
Inspector's Signature

Commissions _____

NAT'L BD. 3872

Nat'l Board or State and No.

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province _____ 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 that to the best of my knowledge and belief the manufacturer has constructed and assembled this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. 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 _____ 19____

Inspector's Signature

Commissions _____

Nat'l Board or State and No.