

V.P.F. #44957

#104236

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

As required by the Provisions of the ASME Code Rules Section VIII Division 1

MEL JGB\* 19032-2

1. Manufactured by MANNING & LEWIS ENG. CO., 675 RAHWAY AVE., UNION, N. J. 07083  
(Name and address of manufacturer)
2. Manufactured for HERCULES INCORPORATED, WILMINGTON, DELAWARE 19899  
(Name and address of Purchaser)
3. Type VERT Kind HEAT EXCH. Vessel No. (6932) (Mfrs. Serial) (State & State No.)  
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.) (Mfrs. Serial) (State & State No.) Natl. Bd. No. 3706 Yr. Built 1973

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

4. SHELL: Material SA-285-C T.S. 55000 Nom. Tks. 5/16 in. Corr. Allow. 1/16 in. Dia. 2 Ft. 4 in. Lgth. 15 Ft. 9 7/8 in.  
(Kind and Spec. No.) (Flg. or F.B. & Spec. Min. T.S.)
5. SEAMS: Long DBL BUTT H.T. NO R.T. NO Sectioned NO Efficiency 70 %  
(Welded, Dbl., Single, Lap, Butt) (Yes or No)<sup>1</sup> (Spot or Complete) (Yes or No)
- Girth DBL BUTT H.T. NO R.T. NO Sectioned NO No. of Courses 4
6. HEADS: (a) Material T.S. (b) Material T.S.  
(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) \_\_\_\_\_  
(b) \_\_\_\_\_
- If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S., Size, Number) (Describe or Attach Sketch)
7. STAYBOLTS: \_\_\_\_\_ If hollow \_\_\_\_\_ Attachment \_\_\_\_\_ Pitch \_\_\_\_\_ X \_\_\_\_\_ Diam. \_\_\_\_\_  
(Material) (Size of Hole) (Threaded, Welded) (Horiz.) (Vert.) (Nominal)
8. JACKET CLOSURE: \_\_\_\_\_  
(DESCRIBE AS OGEE & WELD, BAR, ETC. IF BAR, GIVE DIMENSIONS. IF BOLTED, DESCRIBE OR SKETCH).

If riveted describe seams fully on reverse side of form

9. Constructed for max. allowable working press.<sup>2</sup> 75 psi. at max. temp. 350 °F. Min. temp. (when less than -20°) \_\_\_\_\_ °F. Hydrostatic } Pneumatic or } Test }  
Combination } Press. 113 psi.

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material SA-240-316 Dia. 27 7/16 In. Tks. 1 1/8 In. Attachment WELDED  
(Kind & Spec. No.) (Subject to Pressure) (Welded, Bolted) (CLAMPED)
- Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ In. Tks. \_\_\_\_\_ In. Attachment \_\_\_\_\_  
(Kind & Spec. No.)
11. TUBES: Material SA-249-316 O.D. 1 In. Thickness 14 In. or Gage Number 316 Type STRAIGHT  
(Kind & Spec. No.) (Straight or U)

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

12. SHELL: Material SA-240-316 T.S. 75000 Nom. Tks. 1/4 In. Corr. Allow. 0 In. Dia. 2 Ft. 4 In. Lgth. 1 Ft. 8 3/4 In.  
(Kind and Spec. No.) (Flg. or F.B. & Spec. Min. T.S.)
13. SEAMS: Long DBL BUTT H.T. NO R.T. SPOT Sectioned NO Efficiency 85 %  
(Welded, Dbl., Single, Lap, Butt) (Yes or No)<sup>1</sup> (Spot or Complete) (Yes or No)
- Girth DBL BUTT H.T. NO R.T. SPOT Sectioned NO No. of courses 1
14. HEADS: (a) Material SA-285-C T.S. 55000 (b) Material T.S. (c) Material T.S.  
(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) Top, bottom, ends 19/16 " 3 25/8 " FLAT  
(b) Channel \_\_\_\_\_  
(c) Floating \_\_\_\_\_
- If removable, bolts used (a) SA-193-B7-12500; 3/4"-10 (28) (b) \_\_\_\_\_  
(Material, Spec. No., T.S., Size, Number)
- (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or Attach Sketch)

If riveted describe seams fully on reverse side of form

15. Constructed for max. allowable working press.<sup>2</sup> 75 psi. at max. temp. 350 °F. Min. temp. (when less than -20°) \_\_\_\_\_ °F. Hydrostatic } Pneumatic or } Test }  
Combination } Press. 116 psi.

Items below to be completed for all vessels where applicable.

16. SAFETY VALVE OUTLETS: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
17. NOZZLES:
- | Purpose (Inlet, Outlet, Drain) | Number | Diam. or Size | Type    | Material   | Thickness | Reinforcement Material | How Attached |
|--------------------------------|--------|---------------|---------|------------|-----------|------------------------|--------------|
| INLET                          | 1      | 16" - 150"    | FLANGED | SA-53-B    | 5/20      |                        | WELDED       |
| OUTLET                         | 1      | 3" - 150"     | FLANGED | SA-53-B    | 5/40      |                        | WELDED       |
| INLET                          | 1      | 12" - 150"    | FLANGED | SA-240-316 | .125      |                        | WELDED       |
| OUTLET                         | 1      | 24" - 150"    | FLANGED | SA-240-316 | .187      |                        | WELDED       |
| INLET                          | 1      | 4" - 150"     | FLANGED | SA-240-316 | 5/40S     |                        | WELDED       |
| VENT/RAIN                      | 2      | 3/4" NPT      | SCREWED | SA-181-1   | 3000"     |                        | WELDED       |
| VENT/RAIN                      | 2      | 3/4" NPT      | SCREWED | SA-182-316 | 3000"     |                        | WELDED       |

P.O.026-57304-FCO

EQ.E-6422-2

Project 026057



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:

28-192 PURGE MeOH STILL REBOILER WITH STEAM ON  
SHELL SIDE AND MeOH, H<sub>2</sub>O, H.C. ON TUBE SIDE  
SHELL SIDE INCLUDES EXT. JOINT

(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, Section VIII Division 1

Date 8/17/73 19 \_\_\_\_\_ Signed MANNING & LEWIS ENG. CO.

MANUFACTURER

By A. W. Sauter

Certificate of Authorization No. 1574 \_\_\_\_\_ EXPIRES 12/31/73

## 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 \_\_\_\_\_ and employed by ~~INSURERS~~ COMMERCIAL UNION INSURANCE CO. of BOSTON, MASS. have inspected the pressure vessel described in this manufacturer's data report on 8-17-73 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 8-17-73 19 \_\_\_\_\_

J. D. Cannon  
 Inspector's Signature

Commissions \_\_\_\_\_

NAT'L. BD. 3874

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 \_\_\_\_\_ 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.