

FORM U-1 MANUFACTURERS' DATA REPORT FOR UNFIRE-RESISTANT PRESSURE VESSELS

As required by the Provisions of the ASME Code Rules

M & L JOB # 163

E-110-2

- Manufactured by MANNING & LEWIS ENG. CO., 675 RAHWAY AVE., UNION, N. J.
(Name and address of manufacturer)
- Manufactured for HERCULES INC. WILMINGTON N.C. #103864
(Name and address of Purchaser)
- Type HOR. Kind H.E. Vessel No. (1824) (Mfrs. Serial) (State & State No.)
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.) (Natl. Bd. No. 2550 Yr. Built 1967)

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 SA240-316 T.S. 75000 Nominal Thickness 25 In. Corrosion Allowance 0 In. Diam 2 Ft. 6 In. Length 19 Ft. 9-5/8 In.
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)
- SEAMS: Long DBL. BUTT H.T. NO X.R. NO Sectioned NO Efficiency 70 %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)
- Girth DBL. BUTT H.T. NO X.R. NO Sectioned NO No. of Courses 4

If riveted describe seams fully on reverse side of form

- 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)

If removable, bolts used

- STAYBOLTS: (Material) If hollow Attachment Pitch X (Horiz.) (Vert.) Diam. (Nominal)
(Describe or Attach Sketch)

- JACKET CLOSURE: (Describe as ogee & weld, bar, etc. If bar give dimensions, if bolted, describe or sketch)

- Constructed for max. allowable working press. 75 psi. at max. temp. 300 °F. Min. temp. (when less than -20°) - °F. Hydrostatic Pneumatic or Test Combination Press. 125 psi.

Items 10 and 11 to be completed for tube sections.

- TUBE SHEETS: Stationary. Material SA240-316 Diam. 31.5 In. Thickness 1.375 In. Attachment W
(Kind & Spec. No.) (Subject to Pressure) (Welded, Bolted)
- Floating. Material (Kind & Spec. No.) Diam. In. Thickness In. Attachment

- TUBES: Material SA-249 O.D. 3/4 In. Thickness 18 Ga. Number 766 Type S
(Kind & Spec. No.) (Inches or Gauge) (Straight or U)

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

- SHELL: Material SA285-C T.S. 55000 Nominal Thickness .312 In. Corrosion Allowance .062 In. Diam 2 Ft. 6 In. Length 1 Ft. 6 1/2 In.
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)
- SEAMS: Long DBL. BUTT H.T. NO X.R. NO Sectioned NO Efficiency 70 %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)
- Girth DBL. BUTT H.T. NO X.R. NO Sectioned NO No. of courses 1

If riveted describe seams fully on reverse side of form

- HEADS: (a) Material SA285-C T.S. 55000 (b) Material T.S. (c) Material T.S.
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)

(b) Channel

- (c) Floating

If removable, bolts used (a) SA193-B7 : 125000 : 3/4 : 28
(Material, Spec. No., T.S., Size, Number)

(c) Other fastening

(Describe or Attach Sketch)

- Constructed for max. allowable working press. 75 psi. at max. temp. 300 °F. Min. temp. (when less than -20°) - °F. Hydrostatic Pneumatic or Test Combination Press. 113 psi.

Items below to be completed for all vessels where applicable.

- SAFETY VALVE OUTLETS: Number 1 Size 16 Location IN
- NOZZLES: Purpose (Inlet, Outlet, Drain) OUT Number 2 Diam. or Size 6 Type S.O. Material SA240-316 Thickness .25 Reinforcement Material WELDED
OUT 2 6 S.O. SA312-316 S/40S WELDED
IN-OUT 2 10 " SA53-B S/30 "

- INSPECTION Manholes, No. 2 Size 2 Location WELDED
- OPENINGS: Handholes, No. 2 Size 2 Location WELDED
- SUPPORTS: Skirt Lugs 2 (Number) Legs 2 (Number) Other WELDED

- REMARKS: 30-240 WASTE WATER STILL CONDENSER W/WATER & METHANOL IN SHELL AND WATER IN TUBES.

(Brief description of purpose of the vessel, as Air Tank, After Cooler, Jacketed Cooker, etc. State contents of each part. List other internal or external pressures with coincident temperature when applicable.)

(Over)

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this unfired pressure vessel conform to the ASME Code for Unfired Pressure Vessels.

Date SEP 18 1967 19 Signed MANNING & LEWIS ENG. CO. By OK Gale
(Manufacturer)

Certificate of Authorization Expires DEC. 31 - 1967

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 of NAT'L BD. and employed by COMMERCIAL UNION INSURANCE CO. of NEW YORK

have inspected the pressure vessel described in this manufacturer's data report on SEP 18 1967 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 of a loss of any kind arising from or connected with this inspection.

Date SEP 18 1967 19
W. A. Storing Commissions NAT'L BD. 5313
Inspector's Signature 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 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 _____ set 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.

FILE COPY
MUST BE RETURNED
TO VAULT

B.P.F. NO. 37194 DATE 2/22/66
SHEET 2 APPARATUS NO. E-110-2
PROJECT & ACCOUNT 26001 2000
ORDER NO. 336-026-01092
PLANT **HANOVER - WILM., N. C.**
APPROVED *H. G. Schuber*

NR TUBES 766 5 O.D. $3\frac{1}{4}$ "
UNIT SIZE 30" I.D. (UNIT) 29 $\frac{1}{2}$ "
OTL (MAX) OTC (MAX)
OTL (ACT) 28 $\frac{5}{8}$ " IMP NOZZ 16"
TUBE PASSES 1 TUBES/PASS 2
SHELL PASSES 1 BAF CUT 45° (V) 100
TIE ROD SIZE $\frac{1}{2}$ " TR NO 6
BAFFLE PITCH ON SPEC SHEET = 30°
CUSTOMER: HERCULES, INC.
CUST. ITEM NO: E-110-2
VNO. NO:
JOB NO: 16371-2
BY: DAR DATE: 12.9.66
SCALE: HALF

#103864
MANNING & LEWIS ENGINEERING CO.
UNION, N. J.
GRID TUBE LAYOUT $\frac{1}{16}$ " PITCH
MAY USE MAY USE
SCALE: 1" = 30" SCALE: 1" = 30"
SCALE: AS NOTED DAR DATE: 12.24.66 DRAWING NO: C-15371-2

