

1. Manufactured by: MANNING & LEWIS ENG. CO., 675 BAYVIEW AVE., UNION, N. J. (Name and address of manufacturer)

2. Manufactured for: HERCULES WILMINGTON, N.C. (Name and address of purchaser)

Type: HOR Kind: H.E. Vessel No.: 4841 (If any) (State & State No.)

Serial No.: 2567 Date Built: 1967

Item 3 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 Nominal Thickness: 5/16 In. Allowance: 1/16 In. Diam. 2 Ft. 4 In. Length: 11 Ft. 11 In.

5. SEAMS: Long: DBL BUTT HT. NO XR. NO Sectioned: NO Efficiency: 70 % If riveted describe fully on reverse side of form.

Grid: DBL BUTT HT. NO XR. NO Sectioned: NO No. of Courses: 1

6. HEADS: (a) Material: T.S. (b) Material: T.S.

Location (Top, bottom, ends)	Thickness	Crown Radius	Knurle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)								
(b)								

If removable, bolts used: _____ Other fastening: _____

7. STAYBOLTS: (Material) _____ If hollow: _____ Attachment: _____ Pitch: _____ X (Vertical) _____ Diam. _____ (Nominal)

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

9. Constructed for max. allowable working pressure: 150 psi. at max. temp. 375 °F. Min. temp. (when less than -20°) _____ °F. Hydrostatic Test Combination: 375 psi.

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material: SA 240 TP 304 Diam. 29.56 In. Thickness: 1.875 In. Attachment: W (Welded, Bolted)

Floating. Material: SA 240 Diam. _____ In. Thickness: _____ In. Attachment: _____

11. TUBES: Material: TP 304 O.D. 3/4 In. Thickness: 16 In. Number: 668 Type: S (Straight or U)

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

12. SHELL: Material: SA 240-3M T.S. 75000 Nominal Thickness: 25 In. Allowance: 0 In. Diam. 2 Ft. 4 In. Length: 1 Ft. 4 In.

13. SEAMS: Long: DBL BUTT HT. NO XR. SPOT Sectioned: NO Efficiency: 85 % If riveted describe fully on reverse side of form.

Grid: DBL BUTT HT. NO XR. NO Sectioned: NO No. of Courses: 1

14. HEADS: (a) Material: SA 240-304 T.S. 75000 (b) Material: SA 240 T.S. 75000 (c) Material: T.S.

Location	Thickness	Crown Radius	Knurle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) Top, bottom, ends	<u>3/16</u>	<u>26</u>	<u>1.562</u>					<u>CONCAVE</u>
(b) Channel	<u>3/16</u>	<u>26</u>	<u>1.562</u>					<u>"</u>
(c) Floating								<u>"</u>

If removable, bolts used (a) SA 193-B7-125000; 3/4; 36 (b) SA 193-B7-125000; 3/4; 36

(c) _____ Other fastening: _____

15. Constructed for max. allowable working pressure: 150 psi. at max. temp. 375 °F. Min. temp. (when less than -20°) _____ °F. Hydrostatic Test Combination: 334 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
<u>IN-OUT</u>	<u>2</u>	<u>6</u>	<u>SO</u>	<u>SA 312-304</u>	<u>2.50</u>		<u>WELDED</u>
<u>IN</u>	<u>1</u>	<u>3</u>	<u>SO</u>	<u>SA 53-B</u>	<u>5/16</u>		<u>"</u>
<u>OUT</u>	<u>1</u>	<u>1 1/2</u>	<u>"</u>	<u>"</u>	<u>5/16</u>		<u>"</u>

18. LIFT-OFF: Manholes, No. _____ Size _____ Location _____

19. OPENINGS: Manholes, No. _____ Size _____ Location _____

20. SUPPORTS: Cylindrical, No. _____ Lugs _____ Other _____ WELDED

21. REMARKS: 28-144 CRUDE MELTER HEATER WITH STEAM IN SHELL AND DMT IN TUBES

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

E2505-6A

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

Date JUL 20 1967 Signed MANNING & LEWIS ENG. CO. By [Signature]
(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 NATL BD and employed by COMMERCIAL UNION INSURANCE CO. of NEW YORK have inspected the pressure vessel described in this manufacturer's data report on 1967 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 JUL 20 1967
W. A. Storings Inspector's Signature
Certification NATL BD. 5313
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 _____ 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 1967
Inspector's Signature _____
Certification _____
Nat'l Board or State and No.