

1. Manufactured by MANNING & LEWIS ENG. CO., 675 RAHWAY AVE., UNION, N. J. 07083  
(Name and address of manufacturer)
2. Manufactured for CLARK OIL & REFINING CORP BLUE ISLAND ILL.  
(Name and address of Purchaser)
3. Type VERT Kind HEAT EXCH. Vessel No. (5491) (Mfrs. Serial) (State & State No.) Natl. Bd. No. 2927 Yr. Built 1969  
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.)

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-53-B T.S. 60000 Nom. Tkn. 50 in. Corr. 0.94 in. Dia. 2 Ft. 0 in. Lgth. 6 Ft. 7 3/4 in.  
(Kind and Spec. No.) (Flg. or F.B. & Spec. Min. T.S.)
5. SEAMS: Long. SMLS H.T. No R.T. SPOT Sectioned No Efficiency 100 %  
(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 3
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  (Describe or Attach Sketch)

If riveted describe seams fully on reverse side of form

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).

9. Constructed for max. allowable working press. 300 psi. at max. temp. 450 °F. Min. temp. (when less than -20°)  °F. Hydrostatic } Test Press. 450 psi.  
Pneumatic or }  
Combination }

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material SA 515-70 Dia. 25.375 In. Tkn. 2.25 In. Attachment Welded  
(Kind & Spec. No.) (Subject to Pressure) (Welded, Bolted) (CLAMPED)
- Floating. Material  Dia.  In. Tkn.  In. Attachment   
(Kind & Spec. No.)
11. TUBES: Material SA-249 O.D. 3/4 In. Thickness 16 Inches or Gage Number 475 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-53-B T.S. 60000 Nom. Tkn. 375 in. Corr. 0.94 in. Dia. 2 Ft. 0 in. Lgth. 2 Ft. 5 in.  
(Kind and Spec. No.) (Flg. or F.B. & Spec. Min. T.S.)
13. SEAMS: Long. SMLS H.T. No R.T. None Sectioned No Efficiency 100 %  
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)
- Girth GROOVE H.T. No R.T. None Sectioned No No. of courses 1
14. HEADS: (a) Material T.S. (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 16.75 (b)  (c)
- If removable, bolts used (a)  (b)  (c)   
(Material, Spec. No., T.S., Size, Number) Other fastening  (Describe or Attach Sketch)

If riveted describe seams fully on reverse side of form

15. Constructed for max. allowable working press. 75 & FV psi. at max. temp. 450 °F. Min. temp. (when less than -20°)  °F. Hydrostatic } Test Press. 113 psi.  
Pneumatic or }  
Combination }

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 |
|--------------------------------|--------|---------------|---------|-----------|-----------|------------------------|--------------|
| OUTLET                         | 1      | 18" 150       | FLANGED | SA-53-B   | 375       |                        | WELDED       |
| INLET                          | 1      | 6" 150        | "       | "         | 5/40      |                        | "            |
| OUTLET                         | 1      | 6" 300        | "       | "         | 5/80      |                        | "            |
| INLET                          | 1      | 2" 300        | "       | "         | 5/160     |                        | "            |
| VENT                           | 1      | 2" 300        | "       | "         | 5/80      |                        | "            |
| DRAIN                          | 1      | 1" 300        | "       | "         | 5/80      |                        | "            |
| CNT DRAIN THERMO               | 10     | 3/4 NPT       | SCREWED | SA-105-11 | 3000*     |                        | "            |



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

WELDED TO

19. SUPPORTS: Skirt \_\_\_\_\_ Lugs 4 \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached Shell \_\_\_\_\_  
 (Yes or No) (Number) (Number) (Describe) (Where & How)

20. REMARKS: 24-BY THERMOSYPHON REBOILER, WITH STEAM IN THE SHELL  
AND PHENOL IN THE TUBES, SHELL SIDE EXP. JOINT INCLUDED

(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 APR 16 1969 19 \_\_\_\_\_ Signed MANNING & LEWIS ENG. CO. By Ad 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 APR 16 1969 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 4/16/69 19 \_\_\_\_\_

J. J. Caman  
 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 \_\_\_\_\_ 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 Bd. 3874  
 Nat'l Board or State and No.