# FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
## As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by M & M REFRIGERATION, INC., 412 RAILROAD AVENUE, SUITE 1 FEDERALSBURG, MARYLAND 21632
(Name and address of Manufacturer)

2. Manufactured for LEE TECHNOLOGIES, INC. P.O. BOX 1257 102 N. MARKET ST. BENSON, NC 27504
(Name and address of Purchaser)

3. Location of installation UNKNOWN
(Name and address)

4. Type: HORIZ. (Horiz., vert., or sphere) | RECIRCULATOR (Tank, separator, jkt. vessel, heat exh., etc.) | 04A104 (Mfg's serial No.) | (CRN) | 1900 216 Rev A (Drawing No.) | 2235 (Nat'l. Bd. No.) | 2004 (Year built)

5. ASME Code, Section VIII, Div. 1 01, A03 (Edition and Addenda (date)) | - (Code Case No.) | - (Special Service per UG-120(d))

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): 2 (b) Overall length (ft & in.): 10'

| Course(s) | | | Material | Thickness | | Long. Joint (Cat. A) | | | Circum. Joint (Cat. A, B & C) | | | Heat Treatment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Diameter, in. | Length (ft & in.) | Spec./Grade or Type | Nom. | Corr. | Type | Full, Spot, None | Eff. | Type | Full, Spot, None | Eff. | Temp. | Time |
| 1 | 42" | 8' | SA516-70 | .500 | 0 | 2 | None | 65% | 2 | None | 65% | - | - |
| 1 | 42" | 2' | SA516-70 | .500 | 0 | 2 | None | 65% | 2 | None | 65% | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |

7. Heads: (a) SA516-70 (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (b) SA516-70 (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

| | Location (Top, Bottom, Ends) | Thickness | | Radius | | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure | | Category A | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Corr. | Crown | Knuckle | | | | | Convex | Concave | Type | Full, Spot, None | Eff. |
| (a) | END | .4375 | 0 | - | - | 2:1 | - | - | - | - | YES | 2 | None | 85% |
| (b) | END | .4375 | 0 | - | - | 2:1 | - | - | - | - | YES | 2 | None | 85% |

If removable, bolts used (describe other fastening) - (Mat'l Spec. No., Grade, size, No.)

8. Type of jacket - Jacket closure - (Describe as ogee & weld, bar, etc.)

If bar, give dimensions - If bolted, describe or sketch.

9. MAWP 300 (internal) - (external) psi at max. temp. 200 (internal) - (external) °F Min. design metal temp. 0 °F at 300 psi.

10. Impact test EXEMPT PER UG 20 (F) at test temperature of - °F
(Indicate yes or no and the component(s) impact tested)

11. Hydro., ~~pneu.~~, ~~pneumb~~. test press. 390 HORIZ. Proof test -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: - (Stationary (Mat'l Spec. No.)) | - (Dia., in. (subject to press.)) | - (Nom. thk., in.) | - (Corr. Allow., in.) | - (Attachment (welded or bolted))

- (Floating (Mat'l Spec. No.)) | - (Dia., in.) | - (Nom. thk., in.) | - (Corr. Allow., in.) | - (Attachment)

13. Tubes: - (Mat'l Spec. No., Grade or Type) | - (O.D., in.) | - (Nom. thk., in. or gauge) | - (Number) | - (Type (Straight or U))

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): - (b) Overall length (ft & in.): -

| Course(s) | | | Material | Thickness | | Long. Joint (Cat. A) | | | Circum. Joint (Cat. A, B & C) | | | Heat Treatment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Diameter, in. | Length (ft & in.) | Spec./Grade or Type | Nom. | Corr. | Type | Full, Spot, None | Eff. | Type | Full, Spot, None | Eff. | Temp. | Time |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |

15. Heads: (a) - (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (b) - (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

| | Location (Top, Bottom, Ends) | Thickness | | Radius | | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure | | Category A | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Corr. | Crown | Knuckle | | | | | Convex | Concave | Type | Full, Spot, None | Eff. |
| (a) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| (b) | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

If removable, bolts used (describe other fastening) - (Mat'l Spec. No., Grade, Size, No.)

16. MAWP 150 (internal) ____ (external) psi at max. temp. 200 (internal) - (external) °F Min. design metal temp. -50 °F at 150 psi.

17. Impact test - at test temperature of - °F
(Indicate yes or no and the component(s) impact tested)

18. Hydro., ~~pneu.~~, ~~combined~~ test press. - Proof test -

19. Nozzles, inspection, and safety valve openings:

| Purpose (Inlet, Outlet, Drain, etc.) | No. | Diameter or Size | Flange Type | Material | | Nozzle Thickness | | Reinforcement Material | How Attached | | Location (Insp. Open.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Nozzle | Flange | Nom. | Corr. | | Nozzle | Flange | |
| Wet Return | 1 | 8" | PIPE | SA53E/B | - | S/40 | 0 | INHERENT | UW16.1i | - | - |
| Dry Suction | 1 | 6" | PIPE | SA53E/B | - | S/40 | 0 | INHERENT | UW16.1i | - | - |
| Column. | 2 | 1.25" | PIPE | SA106B | - | S/80 | 0 | INHERENT | UW16.1i | - | - |
| Liq. Makeup | 1 | 2.5" | PIPE | SA53E/B | - | S/40 | 0 | INHERENT | UW16.1i | - | - |
| Drain | 1 | 2" | PIPE | SA106B | - | S/80 | 0 | INHERENT | UW16.1i | - | - |
| Misc. Conn | 4 | .75" | PIPE | SA106B | - | S/80 | 0 | INHERENT | UW16.1i | - | - |
| Drop Leg | 1 | 12" | PIPE | SA53E/B | - | S/40 | - | INHERENT | UW16.1i | - | - |

20. Supports: Skirt NO (Yes or No) Lugs 0 (No.) Legs 0 (No.) Others SADDLES (Describe) Attached SHELL - WELDED (Where and How)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

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22. Remarks: INSPECTION OPENINGS EXEMPT PER UG-46 (A) (4) "FOR NONCORROSIVE SERVICE"

BY-PASS 1 1.5" PIPE SA106B - S/80 0 INHERENT UW16.1i

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## CERTIFICATE OF SHOP COMPLIANCE

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 Pressure Vessels, Section VIII, Division 1,
U Certificate of Authorization No. 21436 Expires 7/18/2007

Date 7/28/04 Name M & M REFRIGERATION, INC. (Manufacturer) Signed [signature] (Representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of MD and employed by One Beacon America Insurance Co., of Boston, MA have inspected the pressure vessel described in this Manufacturer's Data Report on 7/28/04, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. 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 7/28/04 Signed [signature] (Authorized Inspector) Commissions - 6105 AB MD 1049 (Nat'l Board incl. endorsement, State, Province and No.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1,
U Certificate of Authorization No. ____ Expires ____

Date ____ Name ____ (Assembler) Signed ____ (Representative)

## CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province 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 ____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. 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 ____ Signed ____ (Authorized Inspector) Commissions ____ (Nat'l Board incl. endorsement, State, Province and No.)