

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 Robert Mitchell Co., Inc. Douglas Bros. Div. 1039 Riverside St.
(Name and address of manufacturer) Portland, ME 04103

Manufactured for Hoffmann-LaRoche, Inc., P.O. Box 333, Nutley, N.J. 07110
(Name and address of purchaser)

3. Location of Installation Hoffmann-LaRoche, Inc., 233 Roche Drive, Belvidere, N.J. 07823
(Name and address)

4. Type Vert. DB-88-124 DB-88-125 87E0014 Rev.2 59.60 1988
(Horr. or vert. tank) (Mfr's serial No.) (CRN) (Drawing) (Nat'l Bd. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME Boiler and Pressure Vessel Code. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1986 Year

12/31/87
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, or sheets of heat exchangers
6. Shell: SA-240-304L .250 None 2'5 1/2" 6'1 1/2"
(Mat'l Spec. No., Grade) (Nom. Thk. (in)) (Corr. Allow. (in)) (Diam. I.D. (ft & in)) (Length (Overall) (ft & in))

7. Seams: Sngl. with backing None 65 3
(Long (Dbl., Sngl.)) (R.T. (Spot or Full)) (E.H. (in)) (H.T. Temp. (°F))
No. of Courses

Db1. None 3
(Time) (Girth (Dbl., Sngl.)) (R.T. (Spot, Partial, or Full)) (No. of Courses)

8. Heads: (a) Mat'l. SA-240-304L (Spec No., Grade) (b) Mat'l. (Spec No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Bottom	.1628	None			2:1				Concave
(b)										

If removable, bolts used (describe other fastenings) (Mat'l. Spec No., Gr., Size No.)

9. Type of Jacket 2 Proof Test 500" x 1,000" If bolted, describe or sketch.
10. Jacket Closure Bar & Top Flg. (Describe as ogee & weld, bar, etc.)

11. MAWP 140 psi at max. temp. 360 °F. Min. temp. (when less than -20°F) 220 °F.
Hydro., pneu., or comb. test press. 220 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: N/A Stationary Mat'l (Spec No., Gr.) N/A Diam. (in) (Subject to pressure) N/A Nom Thk (in) N/A Corr Allow (in) N/A Attach (Welded, Bolted)
Floating Mat'l (Spec No., Gr.) N/A Diam. (in) N/A Nom Thk (in) N/A Corr Allow (in) N/A Attach
13. Tubes: N/A Mat'l (Spec No., Gr.) N/A O.D. (in) N/A Nom Thk (in or Gauge) N/A Number N/A Type (Straight or 'U')

Items 14-17 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers
14. Shell: SA-240-304L .625 None 2'3 1/4" 6'1 1/2"
(Mat'l Spec. No., Grade) (Nom. Thk. (in)) (Corr. Allow. (in)) (Diam. I.D. (ft & in)) (Length (Overall) (ft & in))

15. Seams: Db1. None 70 2
(Long (Dbl., Sngl.)) (R.T. (Spot or Full)) (E.H. (in)) (H.T. Temp. (°F))
Time (Girth (Dbl., Sngl.)) (R.T. (Spot, Partial, or Full)) (No. of Courses)

16. Heads: (a) Mat'l. SA-240-304L (Spec No., Grade) (b) Mat'l. (Spec No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Bottom	.585	None			2:1				Convex
(b)										

If removable, bolts used (describe other fastenings) (Mat'l. Spec No., Gr., Size No.)
See Remarks

17. MAWP Atmos. psi at max. temp. 360 °F. Min. temp. (when less than -20°F) 220 psi externally applied
Hydro., pneu., or comb. test press. 220 psi

Form U-1 (Back)

18. Nozzles, Inspection and Safety Valve Openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
Inlet	A	6"	Pipe	SA-312-304L	Sch.80	SA-240-304L	Welded	Shell
Outlet	B	10"	"	"	Sch.40	"	"	"
Sightglass	C	7 1/2"	Pad	SA-240-304L	---	"	"	"
Drain	D	2"	"	"	---	None	"	"
Steam Inlet	E	2"	Pipe	SA-312-304L	Sch.40	None	"	Jacket
Cond Outlet	F	1"	"	"	"	None	"	"
Steam Inlet	G	2"	"	"	"	None	"	"
Cond Outlet	H	1"	"	"	Sch.80	None	"	"

19. Supports: Skirt NO Lugs 4 Legs --- Other --- Attached Welded to Jacket
 (Yes or no) (No.) (No.) (Describe) (Where and how)

20. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

(Name of part, item number, mfr's name and identifying stamp)

The inner chamber of the jacketed vessel is designed in accordance with the requirement of UG-28, however the intended internal pressure is atmospheric at ambient temp. Vessel's tested in the vertical position & safety valves located elsewhere in system.

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. 16779 expires 6-29 19 90
 Date 4/1/88 Co. name Robert Mitchell Co., Inc. Signed By Anne F. Schmitt
 (Manufacturer) Douglas Bros. Div. (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Robert Mitchell Co., Inc. at 1039 Riverside St. Portland, ME 04103
Douglas Bros. Div.
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Maine and employed by Lumbermens Mutual Casualty Co. Long Grove, IL 60049

Report on 3/30, 19 88, 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 the 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 4/1/88 Signed [Signature] Commissions ME. 553, N.D. 9655
 (Authorized Inspector) (Not Board, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

"U" Certificate of Authorization No. _____ expires _____, 19 ____
 Date _____ Co. name _____ Signed _____
 (Assembler that certified and constructed field assembly) (By 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/or 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 that, 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 _____ Commissions _____
 (Authorized Inspector) (Not Board (incl. endorsements), State, Prov., and No.)