

FORM U-1 MANUFACTURERS' DATA REPORT FOR **RED PRESSURE VESSELS**

As required by the Provisions of the ASME Code Rules

P. O. 123398

NE

1. Manufactured by RYAN INDUSTRIES, INC. CLEVELAND, OHIO  
(Name and address of Manufacturer)  
 2. Manufactured for STOCK (LIQUID CARBONIC DIVISION, CHICAGO, ILLINOIS)  
(Name and address of Purchaser)  
 3. Type VERTICAL Kind JACKETED Vessel No. (4245) (Natl. Bd. No. 4245 Yr. Built 1966)  
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.) (Mfrs. Serial) (State & State No.)

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 T.S. Nominal Thickness            In. Corrosion Allowance            In. Diam.            Ft. In. Length            Ft. In.  
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)  
 5. SEAMS: Long            H.T.            X.R.            Sectioned            Efficiency            %  
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)  
 Girth            H.T.            X.R.            Sectioned            No. of Courses           

If riveted describe seams fully on reverse side of form.

6. HEADS (a) Material            T.S.            (b) Material            T.S.             
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter (Convex or Concave)  
 (a)             
 (b)             
 If removable, bolts used            Other fastening             
(Material, Spec. No., T.S., Size, Number) (Describe or Attach Sketch)

7. STAYBOLTS: Material            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.            psi at max. temp.            ° F. less than -20°  
 Hydrostatic Test            psi.  
 Pneumatic or Test            psi.  
 Combination Press            psi.

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material            Diam.            In. Thickness            In. Attachment             
(Kind & Spec. No.) (Subject to Pressure) (Welded, Bolted)  
 Floating. Material            Diam.            In. Thickness            In. Attachment             
(Kind & Spec. No.)

11. TUBES: Material            O.D.            In. Thickness            Inches or Gage Number            Type             
(Kind & Spec. No.) (Straight or U)

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

304 S.S. 12. SHELL: Material SA-240 T.S. 75,000 Nominal Thickness .212 In. Corrosion Allowance            In. Diam. 3 Ft. 0 In. Length 5' 1-5/8"  
(Kind and Spec. No.) (Fig. or F.B. & Spec. Min. T.S.)

13. SEAMS: Long DBL. BUTT WELD T. NO X.R. COMPLETE Sectioned NO Efficiency 100 %  
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)  
 Girth DBL. BUTT WELD H.T. NO X.R. COMPLETE Sectioned NO No. of courses 1

If riveted describe seams fully on reverse side of form.

304 S.S. 14. HEADS (a) Material SA-240 T.S. 75,000 (b) Material            T.S.            (c) Material            T.S.             
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter (Convex or Concave)  
 (a) Top, bottom, ends .211" MIN. 2:1  
 (b) Channel             
 (c) Floating           

CONCAVE

If removable, bolts used (a)            (b)             
(Material, Spec. No., T.S., Size, Number)  
 (c)            Other fastening             
(Describe or Attach Sketch)

15. Constructed for max. allowable working press. 200 psi at max. temp. +100 ° F. less than -20°  
 Hydrostatic Test            psi.  
 Pneumatic or Test            psi.  
 Combination Press 327 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
	3	3/4" O.D.	SA-479	TYPE 304 S.S.	ROD BORED	.385" I.D.	WELDED
	1	1-1/8" O.D.	SA-479	TYPE 304 S.S.	ROD BORED	.885" I.D.	WELDED
	3	1-1/2"	SA-479	TYPE 304 S.S.	ROD BORED	1.135" I.D.	WELDED

<sup>1</sup> If postweld heat-treated. <sup>2</sup> List under remarks other internal or external pressures with coincident temperature when applicable. (Over)

FORM U-1 (back)

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

19. SUPPORTS: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs 3 Other 3 WELDED TO  
(Yes or No) (Number) (Describe) (Where & How)  
TO SIDE OF SHELL BRACE RODS attached TOP HEAD

20. REMARKS: 36" I.D. LIQUID OXYGEN VESSEL - LENGTH O.A. 6' 11-1/8"  
INNER VESSEL ONLY

JACKET VACUUM SERVICE - NOT CODE STAMPED  
48" DIA. 8' 4-1/2" LENGTH O.A.

(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 MAY 1 1966 Signed RYAN INDUSTRIES, INC. By J. Wagner  
(Manufacturer)  
Certificate of Authorization Expires #956 12/31/67

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY RYAN INDUSTRIES, INC. at CLEVELAND, OHIO

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of NATIONAL BOARD and employed by HARTFORD STEAM BOILER INSPECTION of HARTFORD, CONN. & INSURANCE CO. have inspected the pressure vessel described in this manufacturer's data report on \_\_\_\_\_ 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 MAY 1 1966 OHIO # 1186  
J. S. [Signature] Commissions PENNA # WC 982  
Inspector's Signature N.B. # 3342  
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 \_\_\_\_\_ 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 Board or State and No.