

FORM U-1 MANUFACTURERS' DATA REPORT FOR UNFIRED PRESSURE VESSELS
As required by the Provisions of the ASME Code Rules

1. Manufactured by RYAN INDUSTRIES, INC. CLEVELAND, OHIO
(Name and address of Manufacturer)

2. Manufactured for NATIONAL CYLINDER GAS DIVISION OF CHEMETRON CORP., CHICAGO, ILL.
(Name and address of Purchaser)

3. Type HORIZ. Kind JACKETED Vessel No. (4606) () () Natl. Bd. No. 4606 Yr. Built 1967
(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. In. Diam. _____ Ft. In. Length _____ Ft. In.

5. SEAMS: Long _____ H.T. _____ X.R. _____ Sectioned _____ Efficiency _____ %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)

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 (Side to Pressure) (Convex or Concave)

If removable, bolts used _____ Other fastening _____
(Material, Spec. No., T.S., Size, Number) (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.) (Inch)

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. ² _____ psi at max. temp. _____ ° F. Min. temp. (when less than -20°) _____ ° F. Hydrostatic Pneumatic or Test Combination } Press _____ psi

Items 10 and 11 to be completed for tube sections.

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

Floating. Material _____ (Kind & Spec. No.) Diam. _____ In. Thickness _____ In. Attachment _____

11. TUBES: Material _____ O.D. _____ In. Thickness _____ Inches or Gage Number _____ Type _____ (Straight or U)

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

12. SHELL: Material ALUMINUM -SB-209-5083-0 T.S. 40,000 Nominal Thickness .931 Corrosion Allowance _____ In. In. Diam. 7 Ft. In. Length 6-1/2 In.

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

2-BUTT WELD WITH BACKING STRIP
1-Girth DBL. BUTT WELD H.T. NO X.R. COMPLETE Sectioned NO No. of courses 1

14. HEADS (a) Material ALUMINUM T.S. 40,000 (b) Material _____ T.S. _____ (c) Material _____ T.S. _____
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter (Side to Pressure) (Convex or Concave)

(a) Top, bottom, ends .921 2:1 CONCAVE

(b) Channel _____

(c) Floating _____

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

(c) _____ Other fastening _____
(Describe or Attach Sketch)

15. Constructed for max. allowable working press. ² 200 W/BULL EXT. VAC. psi at max. temp. -100 ° F. Min. temp. (when less than -20°) -320 ° F. Hydrostatic Pneumatic or Test Combination } Press 328 psi

If riveted describe seams fully on reverse side of form.

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	1/2"	AL. PIPE	SB-235	5083-0	SCH. 80	WELDED
	2	1"	AL. PIPE	SB-345	6061-16	SCH. 80	WELDED
	1	1-1/2"	AL. PIPE	SB-345	6061-16	SCH. 80	WELDED
	1	1-1/2"	AL. ELBOW	SB-210	6061-16	SCH. 80	WELDED

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

RYAN INDUSTRIES, INC., CLEVELAND, OHIO

18. INSPECTION Manholes, No. _____ Size _____ Location _____
OPENINGS: (Handholes, No.) _____ Size _____ Location _____
Threaded, No. _____ Size _____ Location _____

19. SUPPORTS: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

20. REMARKS: 84" I.D. LIQUID OXYGEN TANKS - VACUUM SERVICE
INNER VESSEL ONLY LENGTH O.D. 13' 1-1/2"
JACKET 94" O.D. NOT CODE STAMPED - VACUUM SERVICE
LENGTH O.D. 13' 1-1/2"

(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 JUN 14 1967 19 Signed RYAN INDUSTRIES, INC. By J. Magyar
(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 JUN 14 1967 19 OHIO #1186
PENN. #W.E. #982
N.B. #3342
Inspector's Signature Commissions 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.