

250C

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

MO Number

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

SO Number

1. Manufactured and certified by The Trane Co-2, 101 William White Blvd., Pueblo, Colorado, 81001 (Name and address of Manufacturer)

2. Manufactured for N/A (Name and address of Purchaser)

3. Location of installation N/A (Name and address)

4. Type Horizontal Heat Exchanger 300005 (Horizontal, vertical, or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Manufacturer's serial number)

N/A 5722-7632-0003-A 300005 2016 (CRN) (Drawing number) (National Board number) (Year built)

5. ASME Code, Section VIII, Div. 1 2015/ N/A 1518-5 None [Edition and Addenda, if applicable (date)] (Code Case Number) [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 multichamber vessels.

6. Shell: (a) Number of course(s) 2 (b) Overall length 2.2M

Table with columns: Course(s), Material, Thickness, Long. Joint (Cat. A), Circum. Joint (Cat. A, B, & C), Heat Treatment. Rows include Diameter, Length, Spec./Grade or Type, Nom., Corr., Type, Full, Spot, None, Eff., Type, Full, Spot, None, Eff., Temp., Time.

Table: Body Flanges on Shells. Columns: No., Type, ID, OD, Flange Thk, Min Hub Thk, Material, How Attached, Location, Bolting (Num & Size, Bolting Material, Washer (OD, ID, thk), Washer Material).

7. Heads: (a) N/A (Material spec. number, grade or type) (H.T. - time and temp.) (b) N/A (Material spec. number, grade or type) (H.T. - time and temp.)

Table: Head specifications. Columns: Location (Top, Bottom, Ends), Thickness (Min., Corr.), Radius (Crown, Knuckle), Elliptical Ratio, Conical Apex Angle, Hemispherical Radius, Flat Diameter, Side to Pressure (Convex, Concave), Category A (Type, Full, Spot, None, Eff.).

Table: Body Flanges on Heads. Columns: Location, Type, ID, OD, Flange Thk, Min Hub Thk, Material, How Attached, Bolting (Num & Size, Bolting Material, Washer (OD, ID, thk), Washer Material).

8. Type of jacket None Jacket closure N/A (Describe as ogee & weld, bar, etc.)

If bar, give dimensions; if bolted, describe or sketch N/A

9. MAWP 1379 kPa N/A at max. temp. 149 °C N/A Min. design metal temp. -29 °C at 1379 kPa (Internal) (External) (Internal) (External)

10. Impact test No - See Remarks at test temperature of N/A [Indicate yes or no and the component(s) impact tested]

11. Hydro., pneu., or comb. test pressure Pneu. at 1517 kPa Proof test N/A

Items 12 and 13 to be completed for tube sections.

12. Tubesheet SA-516 Gr. 70 547.0 mm 40.0 mm 0 Welded [Stationary (material spec. no.)] [Diameter (subject to press.)] (Nominal thickness) (Corr. allow.) Attachment (welded or bolted) N/A N/A N/A N/A [Floating (material spec. no.)] (Diameter) (Nominal thickness) (Corr. allow.) (Attachment)

13. Tubes SB-359 C12200 19.05 mm 0.635 mm 165 Straight (Material spec. no., grade or type) (O. D.) (Nominal thickness) (Number) [Type (Straight or U)]

FORM U1-(Cont'd)

NB Number 300005

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) N/A (b) Overall length SEE REMARKS

No.	Course(s)		Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
	Diameter	Length		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Body Flanges on Shells													
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

15. Heads: (a) N/A (Material spec. number, grade or type) (H.T. - time and temp.) (b) N/A (Material spec. number, grade or type) (H.T. - time and temp.)

(a)	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.
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A

Body Flanges on Heads													
No.	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

16. MAWP N/A (Internal) N/A (External) at max. temp. N/A (Internal) N/A (External) Min. design metal temp. N/A at N/A

17. Impact test N/A at test temperature of N/A
 [Indicate yes or no and the component(s) impact tested]

18. Hydro., pneu., or comb. test pressure N/A Proof test N/A

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Outlet	2	141.0 mm ID	Fabricated Pad	SA-516 Gr.70	SA-516 Gr.70	N/A	N/A	None	N/A	Integral with tubesh	N/A
Inlet	2	2 -1/2NPS	Socket Fitting	SA-53 E/B	N/A	5.16 mm	N/A	None	Fig. UW-16.2(k)	N/A	N/A
Pressure port	2	1 NPS	Threaded Coupling	SA-106B	N/A	6.35 mm	N/A	None	Fig. UW-16.2(e)	N/A	N/A
Pressure Port	2	1 NPS	Threaded Coupling	SA-106B	N/A	9.09 mm	N/A	None	Fig. UW-16.2(e)	N/A	N/A
Relief	2	7/8-14UNF	Threaded Port	SA-516 Gr 70	N/A	N/A	N/A	None	Integral with tubsheet	N/A	N/A
Pressure Port	2	1 NPS	Socket Fitting	SA-106B	N/A	6.35 mm	N/A	None	Fig. UW-16.2(e)	N/A	N/A

Additional Nozzles - See Attached U-4...

20. Supports: Skirt No (Yes or no) Lugs None (Number) Legs None (Number) Others None (Describe) Attached Integral with Tubsheet (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, Manufacturer's name, and identifying number):

N/A

22. Remarks

Duplex vessel design. UG-25(d) for non-corrosive service; refrigerant R-134a. Evaporator: ASME shell side only. Constructed in accordance with Appendix 23, External Pressure Design of Copper, Copper Alloy, and Titanium Alloy Condenser and Heat Exchanger Tubes with Integral Fins. Code jurisdiction ends at the first threaded connection, face of first flange/sealing surface, or first sealing surface for proprietary connections or fittings. Impact testing not required per UCS-66(b). Tubsheet designs per U-2(g). Copper tube design temperature 66 C at MAWP.