

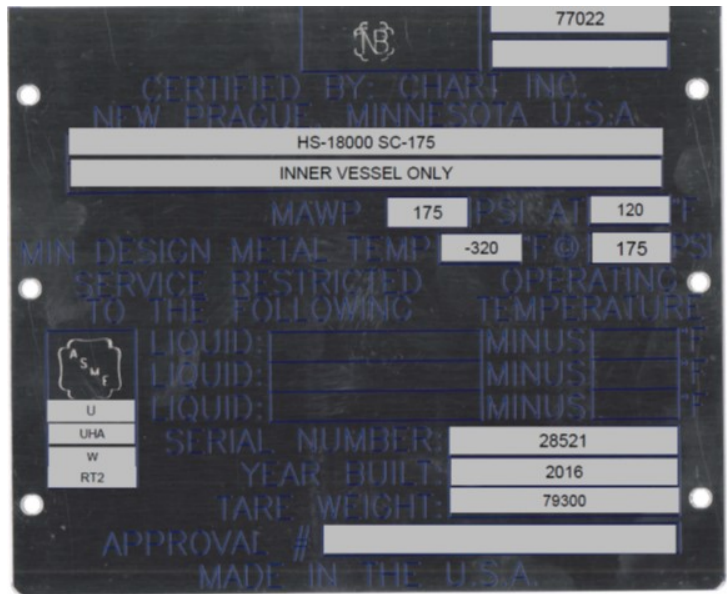


Markey Cryogenic Equipment Co.
 www.markeycryo.com.
 Ph: 888-471-CRYO
 2796
 E-mail kevin@markeycryo.com

Horizontal LNG Tank HS-18000 SC-175

Manufacturer: Chart USA
 Year: 2016
 Model: HS-18000 SC-175
 Fluid: LNG
 Capacity: 18,000 US Gallons
 N.B.: 77022
 Serial: 28521
 Min. Design Temp.: -320* F @ 175 PSI
 Test Pressure: 249 PSI
 MAWP: 175 PSI @ 120* F

30'8" length | 9'5" inner diameter





1/2

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
 (Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

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

1. Manufactured and certified by Chart Inc. 407 Seventh Street NW, New Prague, Minnesota 56071
 (Name and address of Manufacturer)

2. Manufactured for SHELL
 (Name and address of Purchaser)

3. Location of installation UNKNOWN
 (Name and address)

4. Type HS-18000 28521 - D21003635 77022 2016
 (Horizontal or vertical tank) (Manufacturer's serial number) (CRN) (Drawing Number) (National Board Number) (Year Built)

5. ASME Code, Section VIII, Division 1 2015 EDITION NA LOW TEMP. SVC. UW2B UHA
 [Addenda, if applicable(date)] (Code Case numbers) [Special Service per UG-120(d)]

6. Shell: SA240 T304 .548" 0 9' 5" 30' 8"
 (Material spec. number, grade) (nominal thickness) (Corr. Allow.) (Inner diameter) [Length (overall)]

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	
-	-	-	-	-	-	-	-	-	-	-	-	-	-

7. Seams TYPE 1 FULL 100 NA NA TYPE 2 SPOT 65 7
 [Long, (welded, dbl., singl., lap, butt)] [R.T. (Spot or Full)] (Eff(%)) (H.T. Temp.) (Time, hr) Girth (welded, dbl., singl., lap, butt) [R.T. (spot, or full)] (Eff., %) (No. of Courses)

8. Heads: (a) Material SA240 T304 (b) Material SA240 T304
 (Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Apex Ratio	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or Concave)
(a)	END	.545"	0	NA	NA	2:1	NA	NA	NA	CONCAVE
(b)	END	.545"	0	NA	NA	2:1	NA	NA	NA	CONCAVE

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	-	-	-	-	-	-	-	-	-	-	-	-
(b)	-	-	-	-	-	-	-	-	-	-	-	-

9. MAWP 175 - PSI at max. temp. 120 - °F
 (INTERNAL) (EXTERNAL) (INTERNAL) (EXTERNAL)

Min. design metal temp -320 °F at 175 PSI Hydro., pneu, or comb. Test pressure 249 PSI
 Proof test NA

10. 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	
NOZZLE	2	12.75"OD	W.E.	SA312 T304	NA	.406"	0	SA240 T304	FIG. UG-40b1	NA	NA
NOZZLE	2	14.00" OD	W.E.	SA312 T304	NA	.594"	0	SA240 T304	FIG. UG-40b1	NA	NA
DRAIN, XRAY, HYDRO	3	2.38"OD	CPLG	SA182 F304	NA	.429"	0	NA	UW16.1e	NA	NA
DRAIN, VENT, TF	3	3.00"OD	W.E.	SA479 T304	NA	.750"	0	NA	UW16.1e	NA	NA
GPL, FT, LPH	3	.840"OD	W.E.	SA312 T304	NA	.188"	0	NA	UW16.1e	NA	NA
RECIRC	1	2.00"OD	W.E.	SA479 T304	NA	.500"	0	NA	UW16.1e	NA	NA
NOZZLE	2	1.05"OD	W.E.	SA312 T304	NA	.154"	0	SA240 T304	FIG. UG-40b1	NA	NA

11. Supports: Skirt NO Lugs NA Legs NA Other BUMPERS Attached SHELL WELDED
 (Yes or No) (Number) (Number) (Describe) (Where and how)

FORM U-1A (Back)

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

WELDED HEADS, BRIGHTON TRU EDGE HEADS, SERIAL NO. 1036495-1 AND 1036495-2; "U" NO. 51949

(Name of part, Item number, Manufacturer's Name and identifying stamp)

VACUUM JACKETED VESSEL. LOW TEMPERATURE SERVICE. INNER VESSEL CODED ONLY. IMPACT TEST EXEMPT PER UHA51(a)(4)(a). RT-
UW-51(A) AND UT PER UW51(A)(4). TEST POSITION IS HORIZONTAL. HYDRO/XRAY PORTS ARE PLUGGED AND SEAL WELDED. FOR
NONCORROSIVE SERVICE.

CERTIFICATE OF SHOP/FIELD 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 BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number 8377
expires 1/15/2019

Date 9/26/2016, Co. Name CHART, INC. Signed Denise Benda
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Chart Inc at 407 7TH STREET NW, NEW PRAGUE, MINNESOTA 56071

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by

ONECIS INSURANCE COMPANY

have inspected the component described in this Manufacturer's Data Report on 9/21/2016, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 9/26/2016 Signed Brad Minette Commissions NB 13148ABN
(Authorized Inspector) [National Board (incl. endorsements)]

2/2
NB#77022

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by BRIGHTON TRU-EDGE HEADS, 11861 MOSTELLER ROAD, CINCINNATI OH 45241
(Name and address of Manufacturer)

2. Manufactured for CHART (MN), 407 SEVENTH STREET NW, NEW PRAGUE MN 56071
(Name and address of Purchaser)

3. Location of installation UNKNOWN
(Name and address)

4. Type ELLIP HEADS 114.1875"OD x .6250"THK 1036495 - 1,2 2016
[Description of vessel part (shell, two-piece head, tube bundle)] (Manufacturer's serial number) (CRN)
PO# 3411189 TG# P/N A-21008662
(National Board number) (Drawing number) (Drawing prepared by) (Year built)

5. ASME Code, Section VIII, Div. 1 2015 EDITION
[Edition and Addenda (date)] (Code Case number) [Special service per UG-120(d)]

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

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

7. Heads: (a) SA240-304 (SOLUTION ANNEALED PER UHA 44) (b)
(Material spec. number, grade or type) (H.T. - time & temp.) (Material spec. number, 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)		.5450				2:1						1	FULL	Unk.
(b)														

Body Flanges on Heads										Bolting			
	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Num & Size	Bolting Material	Washer (OD, ID, Thk)	Washer Material	
(a)													
(b)													

8. MAWP at max. temp. Min. design metal temp. at
(Internal) (External) (Internal) (External)

9. Impact test NO at test temperature of
[indicate yes or no and the component(s) impact tested]

10. Hydro., pneu., or comb. test pressure NONE Proof test

11. 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	

12. Identification of part(s)

Name of Part	Quantity	Line No.	Mfr's. Identification No.	Mfr's Drawing No.	CRN	National Board No.	Year Built

13. Supports: Skirt Lugs Legs Others Attached
(Yes or no) (Number) (Number) (Describe) (Where and how)

14. Remarks: NO DESIGN FUNCTION BY BRIGHTON TRU-EDGE HEADS. * HEADS CONSTRUCTED IN ACCORDANCE WITH APPENDIX 44-6.1 (g).

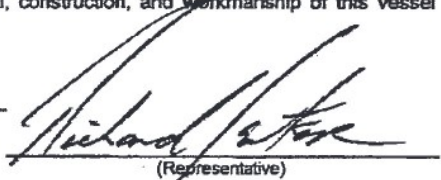
FORM U-2A (Back)

CERTIFICATE OF SHOP/FIELD 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 BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization Number 51,949 Expires 11/25/2018

Date 8-2-2016 Name BRIGHTON TRU-EDGE HEADS Signed _____
(Manufacturer) (Representative)



CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by The Hartford Steam Boiler Inspection and Insurance Company of Connecticut of Hartford, CT

have inspected the pressure vessel part described in this Manufacturer's Data Report on 8-2-2016, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 8-2-2016 Signed _____
(Authorized Inspector)



Commissions NB10504A
(National Board (incl. endorsements))