BELL & GOSSETT



C-140D

08	BIG REPRESENTATIVE	
		2000
INITTAG NO.	ORDER NO.	DATE
INGINEER	SUBMITTED BY	DATE
CONTRACTOR	APPROVED BY	DATE



DESCRIPTION

B&G "TCW" and "TCS" Tank Heaters are of the shell and tube type. The tube bundle is of "U" bend construction with tube ends expanded into a stationary tube sheet. This construction permits ample expansion or contraction for wide temperature variations. A fluid in the tank is heated by a fluid or steam circulated through the tubes. The unit is designed primarily for natural convection in the tank.

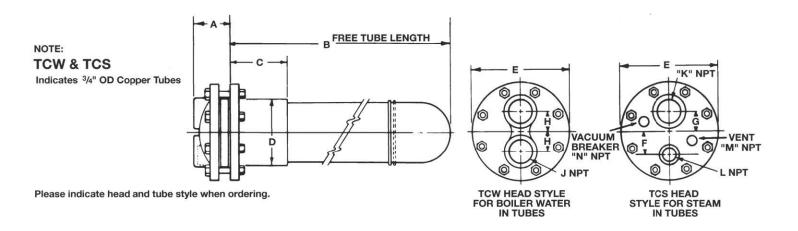
Standard tank heaters are constructed according to ASME Section VIII, Div. I requirements for pressures and temperature noted in table on the back page. A Manufacturers' Partial Data Report for Pressure Vessels, Form No. U-2 as required by the provisions of the ASME Code Rules is furnished with each unit upon request.

This form is signed by an authorized inspector, holding a National Board Commission, and who is employed by an authorized inspection agency, certifying that construction conforms to the latest ASME code for pressure vessels. The ASME "U" symbol is stamped on each vessel.

OPERATING DATA

RECOMMENDED "TCW" AND "TCS" TANK HEATER MODEL NUMBER			APPROVALS
HEATING SURFACE (SQ. FT.)			
	TUBE SIDE	TANK SIDE	
1. Fluid Circulated			
2. Total Flow Expressed in GPM, GRH or lbs./hr			
Total Flow Expressed in GPM, GRH or lbs./hr. Temperature In/Out	/	/	
4. Transfer BTU/hr			
5. Pressure Drop (Maximum)			
6. Fouling Factor or Percentage of Additional Surface			a l
Note: Following applies only to fluids other than water.			
7. Specific Gravity			
8. Specific Heat			al .
9. Latent Heat			
10. Viscosity Expressed in Proper Units and			5
Temperature such as centipoises @ °F			
11. Thermal Conductivity		<u> </u>	
\$707			

DIMENSIONS (in inches)

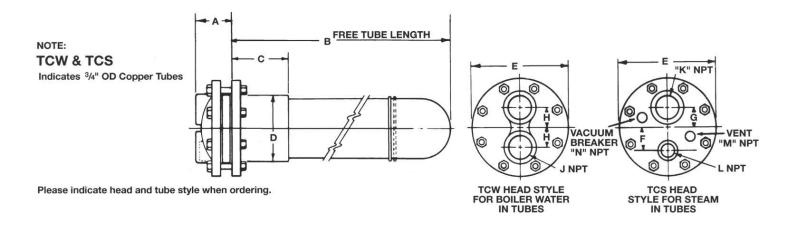


HEATING SURFAC	E SQ. FT.		Α	В											
HEATER NO.	TCW TCS	TCW	TCS	TCW TCS	С	D	E	F	G	н	J	K	L	М	N
TCW-TCS-412	2.1	21/8	21/8	111/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-418	3.3	21/8	21/8	171/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-424	4.5	21/8	21/8	231/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-430	5.6	21/8	21/8	291/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-436	6.8	21/8	21/8	351/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-442	8.0	21/8	21/8	411/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-448	9.2	21/8	21/8	471/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-454	10.4	21/8	21/8	531/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-460	11.5	21/8	21/8	591/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-466	12.7	21/8	21/8	651/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-472	13.9	21/8	21/8	711/4	6 ¹ / ₈	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-484	16.3	21/8	21/8	831/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-496	18.6	21/8	21/8	951/4	61/8	41/2	71/4	111/16	15/16	15/16	11/2	11/4	3/4	1/2	1/4
TCW-TCS-612	3.3	23/4	21/2	91/8	6¹/ ₈	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-618	5.6	23/4	21/2	151/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-624	8.0	23/4	21/2	211/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-630	10.3	23/4	21/2	271/8	6¹/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-636	12.7	23/4	21/2	331/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-642	15.0	23/4	21/2	391/8	6 ¹ / ₈	6 ⁵ / ₈	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-648	17.4	23/4	21/2	451/8	61/8	6 ⁵ / ₈	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-654	19.7	23/4	21/2	511/8	6 ¹ / ₈	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-660	22.1	23/4	21/2	571/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-666	24.4	23/4	21/2	631/8	6¹/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-672	26.8	23/4	21/2	691/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-684	31.5	23/4	21/2	81 ¹ / ₈	6 ¹ / ₈	6 ⁵ / ₈	101/2	29/16	1 ⁷ /8	17/8	2	2	1	1/2	1/2
TCW-TCS-696	36.2	23/4	21/2	931/8	61/8	65/8	101/2	29/16	17/8	17/8	2	2	1	1/2	1/2
TCW-TCS-818	11.0	33/8	33/8	161/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-824	15.0	33/8	33/8	221/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-830	19.0	33/8	33/8	281/4	8	8 ⁵ / ₈	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-836	23.0	33/8	33/8	341/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-842	27.0	33/8	33/8	401/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-848	32.0	33/8	33/8	461/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-854	36.5	33/8	33/8	521/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-860	41.0	33/8	33/8	581/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-866	45.0	33/8	33/8	641/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-872	49.0	33/8	33/8	701/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-884	58.0	33/8	33/8	821/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2
TCW-TCS-896	67.0	33/8	33/8	941/4	8	85/8	121/2	33/8	21/4	21/2	3	3	11/4	1/2	1/2

Dimensions are subject to change. If exact dimensions are needed for layout, write for certified prints.

DIMENSIONS

(in inches) - continued



HEATING SURFACE	E SQ. FT.		A B												
HEATER NO.	TCW TCS	TCW	TCS	TCW TCS	С	D	E	F	G	Н	J	K	L	М	N
TCW-TCS-1024	27.0	33/8	33/8	233/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1030	34.5	33/8	33/8	293/8	81/4	10 ³ / ₄	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1036	42.0	33/8	33/8	353/8	81/4	10 ³ / ₄	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1042	49.5	33/8	33/8	413/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1048	56.0	33/8	33/8	473/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1054	63.5	33/8	33/8	533/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1060	71.0	33/8	33/8	593/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1066	78.5	33/8	33/8	65 ³ / ₈	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1072	86.0	33/8	33/8	713/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1084	101.0	33/8	33/8	833/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1096	116.0	33/8	33/8	953/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-10108	131.0	33/8	33/8	1073/8	81/4	103/4	145/8	41/16	213/16	215/16	4	4	2	3/4	3/4
TCW-TCS-1236	61.0	37/8	51/8	361/4	101/4	123/4	165/8	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1242	72.0	37/8	51/8	421/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1248	83.0	37/8	51/8	481/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1254	94.0	37/8	51/8	541/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1260	104.0	37/8	51/8	601/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1266	115.0	37/8	51/8	661/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1272	126.0	37/8	51/8	721/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1278	137.0	37/8	5 ¹ / ₈	781/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1284	147.0	37/8	51/8	841/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1296	169.0	37/8	51/8	961/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-12108	191.0	37/8	51/8	1081/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-12120	212.0	37/8	51/8	1201/4	101/4	123/4	16 ⁵ / ₈	51/16	311/16	311/16	4	4	2	3/4	3/4
TCW-TCS-1436	86.0	6³/ ₈	6³/ ₈	371/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1442	102.0	63/8	63/8	431/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1448	116.0	6 ³ / ₈	6 ³ / ₈	491/2	101/4	14	177/8	5 ¹ / ₈	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1454	131.0	6 ³ / ₈	6 ³ / ₈	551/2	101/4	14	17 ⁷ /8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1460	146.0	6 ³ / ₈	63/8	611/2	101/4	14	177/8	5 ¹ / ₈	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1466	161.0	6 ³ / ₈	6³/ ₈	671/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1472	175.0	63/8	6 ³ / ₈	731/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1478	190.0	63/8	63/8	791/2	101/4	14	177/8	5 ¹ / ₈	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1484	204.0	63/8	6 ³ / ₈	851/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-1496	234.0	6 ³ / ₈	6 ³ / ₈	971/2	101/4	14	177/8	5 ¹ / ₈	35/8	4	6	6	3	3/4	3/4
TCW-TCS-14108	263.0	63/8	6 ³ / ₈	1091/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4
TCW-TCS-14120	292.0	6 ³ / ₈	6 ³ / ₈	1211/2	101/4	14	177/8	51/8	35/8	4	6	6	3	3/4	3/4

Dimensions are subject to change. If exact dimensions are needed for layout, write for certified prints.

GENERAL INFORMATION

MATERIAL FEATURES

- 1. Tubes are 3/4" O.D. copper.
- 2. Heads are cast iron. Brass can be furnished on request.
- Tube sheets and welding collars are flange quality steel.
 Brass tube sheets with 300°F Design Temperature can be furnished on request.
- Tube supports are brass.
- All materials furnished for pressure parts are certified to ASME specifications.
- Units are available with stainless steel, 90/10 cupro nickel, Admiralty, and steel tubing. Consult factory for other variations.
- Many Tank Heater applications require lining the tank with various materials i.e., epoxy phenolic, cement, etc. When the thickness of these linings exceed 0.01*, oversized construction must be provided. Consult factory.

DESIGN PRESSURES — STANDARD

Design Temperature 375°F

TUBE BUNDLE DIAMETER (NOMINAL)	DESIGN PRESSURE	TEST PRESSURE				
4*	150 PSI	300 PSI				
6"	150 PSI	300 PSI				
8*	150 PSI	300 PSI				
10*	125 PSI	250 PSI				
12*	125 PSI	250 PSI				
14"	125 PSI	250 PSI				

For operating pressure and design temperature for brass construction please consult factory.

For design pressures and temperatures higher than standard consult factory.

For tube bundle diameter larger than standard consult factory.

For further information, contact Bell & Gossett Heat Transfer Products, 175 Standard Parkway, Cheektowaga, NY 14227, Phone (716) 862-4171 — Facsimile (716) 862-4176 —

