



Cold water Cryogenic Vaporizer

Thermax Cold Water Vaporizers reduce the cost of energy for vaporization to nearly zero, depending upon specified design parameters. Thermax Inc's PW units operate on water temperatures below 50° F and can deliver vaporized/superheated gas to within 10°F (nominal) of the entering water stream.



Thermax Inc. Model P300-30 CW rated at 3.5 million BTU's/Hr using 5,000 GPM, 55°F cooling tower water for oxygen vaporization.

General Description:

TVN-PW Series cold (process) water vaporizers are fully rated for cryogenic service to include:

- ⊗ Thermax unique high performance/low surge Vortex Flow™ vaporizer tube bundle
- ⊗ All stainless steel, all welded, removable tube bundle
- ⊗ ASME code rated shell, all welded carbon or alloy steel
- ⊗ Internal baffle construction for tube protection and water flow control

These units can save energy vaporizing:

Oxygen	LNG	Carbon Monoxide
Hydrogen	Ammonia	Chlorine
Argon	HCL	Freon
Nitrogen	Ethylene	Ethane
Helium	Carbon Dioxide	Nitrous Oxide

Special Materials/Service

Units also available for sea water service and low boiling chemicals such as NH₃, Ethylene, HCL using special materials such as Monel, Copper Nickel and Duplex Steel.

Performance:

Thermax Inc. TVN-PW cold water vaporizers will perform continuously with any reliable water source. They may be piped directly into the cooling water circuit, or provided with a separate vaporizer/water pump circuit. Vaporizer gas discharge temperatures to within 20°F of the water stream temperature is an economical choice. Models with other gas exit design temperatures, from -150°F, up to within 5°F of the water stream, are available.

Principles of Design:

The primary object of this style vaporizer is to conserve energy by using the heating value in either cooling tower water circuits, ambient sea or river waters, or any other reliable source of water about 15°F or more above its freezing point (45° to 50°). The units are designed with the cryogen vaporizing in the tube bundle and the water flowing on the shell side. Thermax all welded stainless steel tube bundles feature our Vortex Flow™ action for stable performance under moderate icing conditions. The vaporizers are designed for ice build-up while offering protection from total freeze up with total constant water flow.



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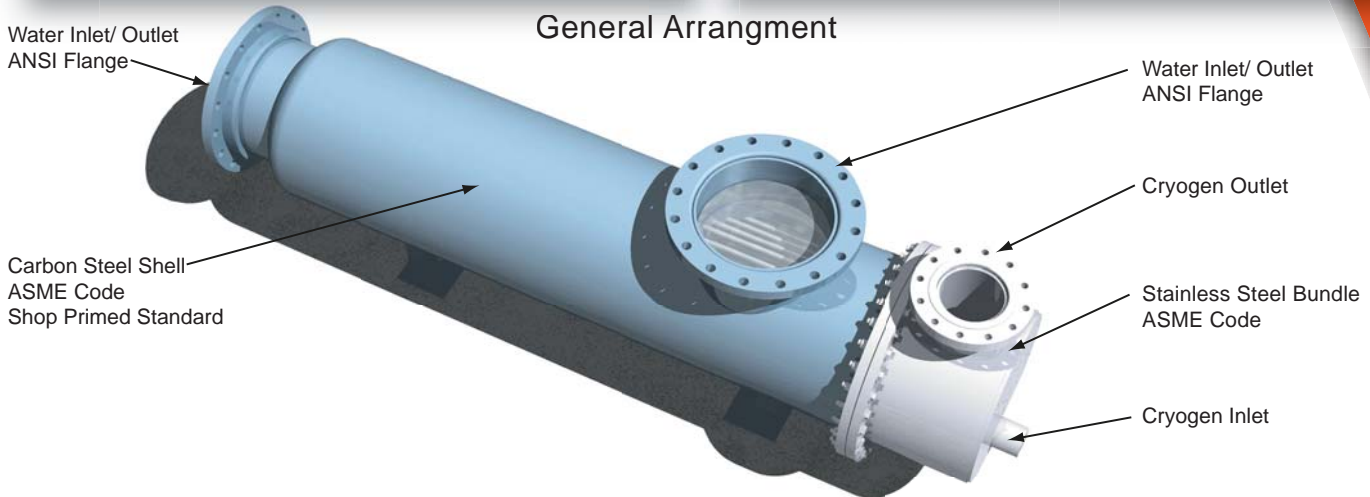
STANDARD MODEL RATINGS AND NOMINAL DIMENSIONS

Product Vaporizers				
Model	Rating MSCFH		Water Flow-GPM	
	N ₂	O ₂ , LNG	50°F Inlet	60°F Inlet
P 50-20	60	50	500	250
P 100-20	120	100	1,000	500
P 100-30	135	130	1,800	900
P 150-20	180	150	1,500	750
P 150-30	320	220	2,700	1,350
P 200-20	240	200	2,000	1,000
P 200-30	430	360	3,600	1,800
P 300-20	360	300	3,000	1,500
P 300-30	650	540	5,400	2,700
P 500-20	600	500	5,000	2,500
P 500-30	1,080	900	9,000	4,500
P 1000-30	2,100	1,800	18,000	9,000
P 5000-30	10,000	9,000	90,000	45,000

Nominal Overall Dimensions in inches Product Vaporizers				
	Length	Width	Height	Weight (Lbs)
P 50-20	144	16	26	1,500
P 100-20	148	21	34	2,000
P 100-30	208	21	34	2,600
P 150-20	150	24	36	2,300
P 150-30	210	24	36	2,990
P 200-20	154	25	40	3,500
P 200-30	214	25	40	4,550
P 300-20	164	30	42	4,000
P 300-30	224	30	42	5,200
P 500-20	168	36	44	4,500
P 500-30	228	36	44	5,850
P 1000-30	228	50	58	9,950
P 5000-30	228	114	124	28,750

Dump Vaporizers			
Model	Rating Lbs/Hr	Water Flow-GPM	
		50°F Inlet	60°F Inlet
P 2.5-10	2,500	400	200
P 5-10	5,000	600	400
P 7.5-10	7,500	1,200	600
P 10-10	10,000	1,600	800
P 15-10	15,000	2,400	1,200
P 25-10	25,000	4,000	2,000

Nominal Overall Dimensions in inches Dump Vaporizers				
	Length	Width	Height	Weight (Lbs)
P 2.5-10	80	16	28	1,200
P 5-10	82	21	34	1,700
P 7.5-10	84	24	36	2,300
P 10-10	90	25	40	2,700
P 15-10	96	26	42	2,800
P 25-10	100	33	44	3,300



Product Vaporizers are designed for customer service from pumped or pressurized tank supplies. The listed ratings cover gas delivered at 30°F (or 20°F below water temperature) from 250 psig liquid/25 psi drop (vaporizer model type -30), 20 psi (vaporizer model type -20). Water side pressure drop 10-20 psi typical.

Dump vaporizers are designed for low gas exit temperatures and low pressure and pressure drops. The listed ratings cover: Cryogen @ 15/20 psig: 5 psi drop; minus 150°F gas outlet. Water side pressure drop 5-10 psi typical.

Thermax standard units are based on typical plant and product requirements. For other Cryogen/water conditions, contact Thermax for most economical selection. We also offer warm water and hot water units- ask for datasheets 7.2 and 7.4.

All tables shown on this Datasheet are intended as a guide that reflect our experience on these models. Actual performance may vary. Please call Thermax Inc. for specific applications. This product and/or data was designed and/or developed by Thermax Inc. and shall not be used in any way injurious to the interests of Thermax Inc.