

TYTAN

WATER HEATER PROCESS TECHNOLOGY

Electric Inline
Water Heater



**PROCESS
TECHNOLOGY**

TYTAN™ SPECIFICATIONS

SIZES	12,000 watts to 144,000 watts
VOLTAGES	208 volt to 480 volt, three phase (single phase available). Consult factory for specific wattage/voltage combinations available
TEMPERATURE CONTROL	PID microprocessor based digital thermostat
TEMPERATURE LIMIT	194 F (90 C), depending on operating conditions
TEMPERATURE ACCURACY	+ / - 1 F, depending on operating conditions
PRESSURE RATING	100 PSIG (operating)
EFFICIENCY	> 99%
WETTED SURFACES	All titanium standard
INLET/OUTLET	1" MNPT through 72 kW 2" MNPT 96 kW and higher
STANDARD SAFETY FEATURES	Grounded construction E MO emergency stop button Fluid overtemperature detection (J type thermocouple) Element overtemperature detection (bi-metallic snap switches) Control fusing (primary and secondary) Surge/transient protection FM approved overtemperature limit controller
HOUSING	NEMA 1 rated, powder coated metal enclosure
DIMENSIONS	12-48 kW : 28.5" (75 cm) W x 13.5" (34 cm) D x 36.0" (91 cm) H 72 kW : 37.5" (95 cm) W x 13.5" (34 cm) D x 36.0" (91 cm) H 96-144 kW : 28.0" (71 cm) W x 17.0" (43 cm) D x 66.9" (170 cm) H
STANDARD CERTIFICATIONS	UL
OPTIONS	CE compliance S3 compliance PLC control Remote interface Ground fault protection (GFP) Disconnect and circuit breaker Stainless steel elements and wetted parts Flanged/sanitary fluid connections RS remote communications

FEATURES and BENEFITS

- **Improved Process Results:** Heated DI water improves cleaning effectiveness and reduces rinse time in most processes.
- **Cost Saving Design:** >99% element efficiency contributes to low cost of ownership (COO) and excellent return on investment (ROI).
- **Outstanding Cleanliness:** 100% titanium heating elements provide very clean performance for precision cleaning applications.
- **Reliable, Rugged Construction:** Simple, heavy walled element construction for trouble free operation and long life. Baffled element chambers enhance heat transfer efficiency.
- **Outstanding Temperature Responsiveness and Stability:** Excellent temperature accuracy over a wide flow range can substantially improve process consistency.
- **Fast/Easy Maintenance:** Long-life element for minimal process down time. Easy to service design.
- **Rapid Installation:** Minimal facility requirements. Heater is factory tuned to your specifications. Only power and plumbing connections required.
- **Compact Configuration:** Space saving design minimizes footprint requirements. Wall mounted up to 72kW. Floor mounted 96kW and larger.

DIMENSIONS

SIZING

To determine wattage required, use the following equation:

$$\text{GPM} \times \text{TEMP RISE (F)} \times 0.147 = \text{KW REQUIRED}$$

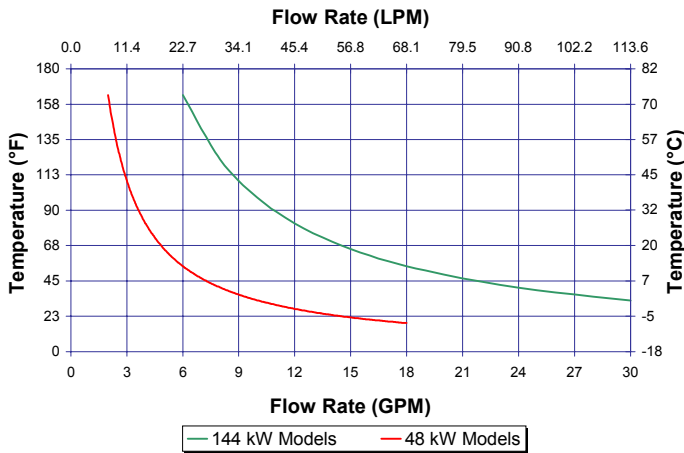
$$\text{LPM} \times \text{TEMP RISE (C)} \times .07 = \text{KW REQUIRED}$$

Where GPM is gallons per minute of flow desired, temperature rise is expressed in degrees F. Round results up to select unit.

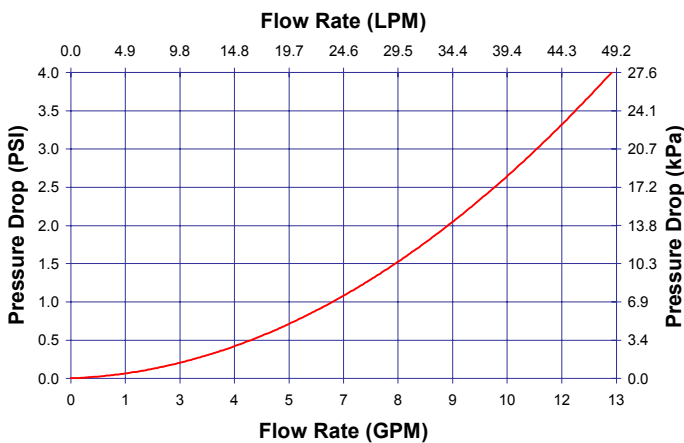
Example: 2.5 GPM x 95 F x 0.147 = 35 kW (Use 36 kW)

CONSULT OUR FACTORY FOR DETAILED SIZING INFORMATION AND APPLICATION ASSISTANCE.

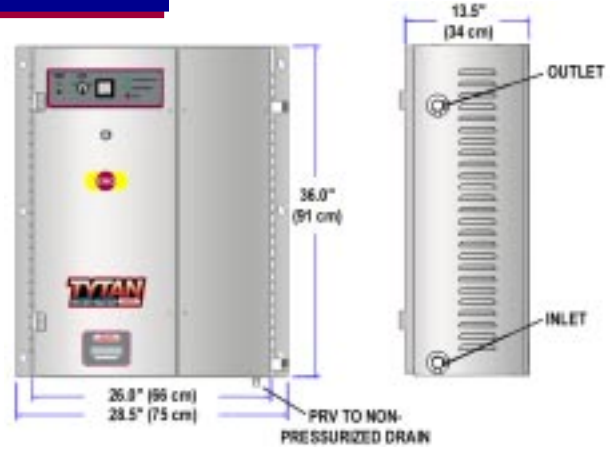
FLOW VS. TEMPERATURE RISE



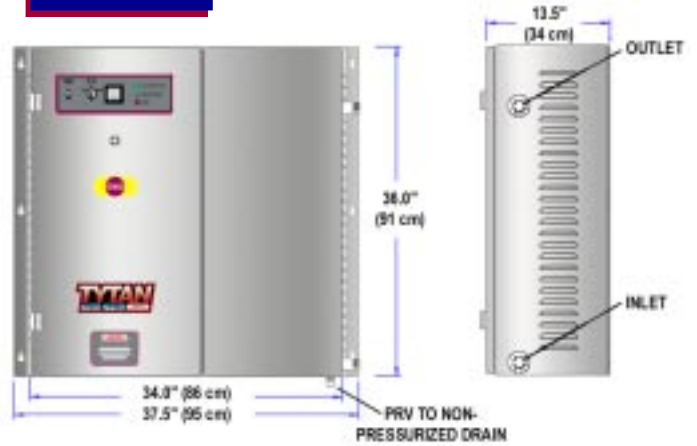
PRESSURE DROP - ALL SIZES



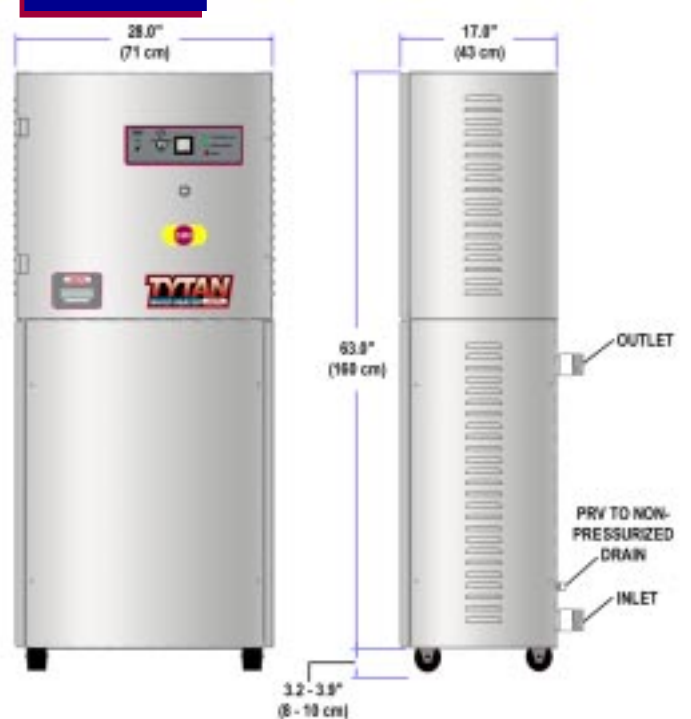
12-48 kW



72 kW



96-144 kW



PROCESS TECHNOLOGY

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TYTAN™ WATER HEATER ORDERING INFORMATION

Series	Wattage	Voltage	Phase	Options
	-012 = 12,000	-208	-1 = 1 phase*	-SC = SEMI S3 and CE compliant
	-018 = 18,000	-240	-3 = 3 phase	-CB = disconnect and circuit breaker
	-024 = 24,000	-380	* = specific units	-RI = remote interface
	-036 = 36,000	-400		-RC = RS remote communications
	-048 = 48,000	-415		-PLC = PLC control
	-054 = 54,000	-480		-S = stainless steel wetted parts
	-072 = 72,000			-X = special options (specify in clear text)
	-096 = 96,000			
	-120 = 120,000			
	-144 = 144,000			

TY = TYTAN™ water heater

HEATER SELECTION MATRIX (by standard heater sizes)

FLOW RATE (LPM/GPM)

TEMPERATURE RISE (DIFFERENTIAL) degrees C / degrees F

	7/13	15/27	22/40	36/65	45/81	52/94	55/100	65/117	75/135
3.8/1	TY12	TY12	TY12	TY12	TY12	TY18	TY18	TY18	TY24
7.6/2	TY12	TY12	TY12	TY24	TY24	TY48	TY48	TY48	TY48
11.4/3	TY12	TY12	TY18	TY48	TY48	TY48	TY48	TY72	TY72
15.1/4	TY12	TY18	TY24	TY48	TY48	TY72	TY72	TY72	TY96
18.9/5	TY12	TY24	TY48	TY48	TY72	TY72	TY72	TY96	TY120
22.7/6	TY12	TY24	TY48	TY72	TY72	TY96	TY96	TY120	TY120
26.5/7	TY18	TY48	TY48	TY72	TY96	TY120	TY120	TY120	TY144
30.3/8	TY18	TY48	TY48	TY96	TY96	TY120	TY120	TY144	*
34.1/9	TY18	TY48	TY72	TY96	TY120	TY144	TY144	*	*
37.8/10	TY24	TY48	TY72	TY96	TY120	TY144	TY144	*	*
41.6/11	TY24	TY48	TY72	TY120	TY144	*	*	*	*
45.4/12	TY48	TY72	TY96	TY144	*	*	*	*	*

* consult factory

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is gigantic in power:
one that stands
out for greatness
of achievement.