

PROCESS WATER HEATERS

**FOR INDUSTRIAL APPLICATIONS
ALL VOLTAGES UP TO 58 KW**

Model V

FEATURES

- **Industrial Grade Construction**
 - Stainless steel vessel provides maximum longevity
 - Heavy duty construction withstands demanding industrial use
 - Packaged with all electrical operating controls for efficient installation
- **Versatile Design**
 - Small reserve capacity lowers peak power demand and reduces operating costs in systems with ON/OFF cyclical demand.
 - Most units are easily upgradeable for future expansion
 - A full range of styles, sizes, and optional features are readily available to meet your exact heating needs

APPLICATIONS

- Washing/Cleaning Systems
- OEM Packages
- Safety Shower Systems
- Heat Transfer Systems
- Freeze Protection

An industrial grade process water heater



A RELIABLE INDUSTRIAL PROCESS WATER HEATER

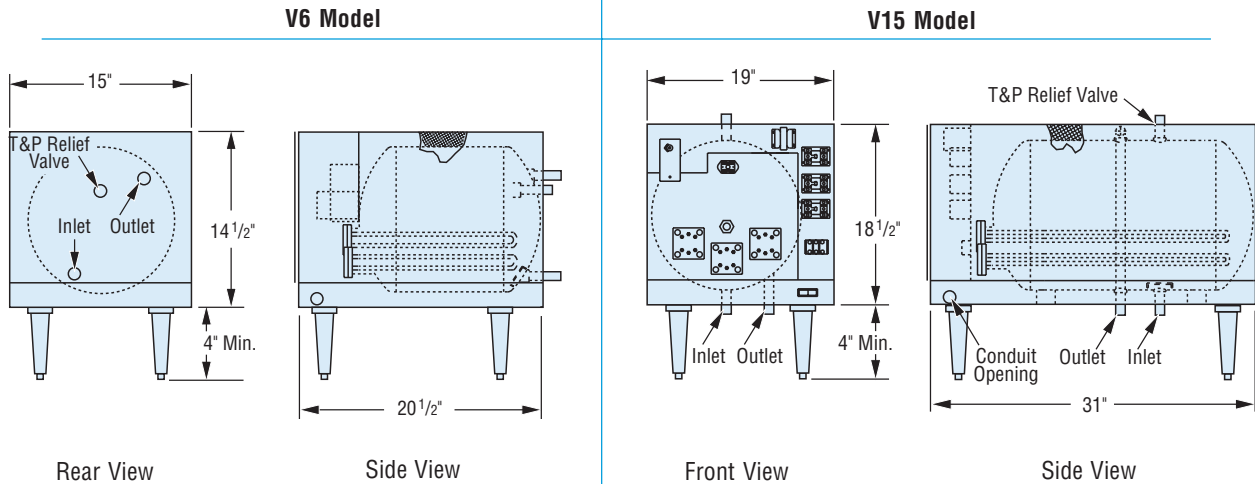
The Hubbell Model V is a dependable and trouble-free source for hot water in continuous, cyclical, or variable flow systems in a wide range of applications. The heart of the V Model is a solid stainless steel pressure vessel which is impervious to the corrosive effects of hot water and provides maximum vessel longevity. Only the highest quality materials and components are

used to ensure reliable operation in even the most demanding application. The V Model is ready for immediate installation and service and all electrical operating controls are factory selected, sized, and wired. When you specify and install a Hubbell Model V, you will have confidence in knowing the owner will be provided with a trouble-free and long lasting source for hot water.

A RUGGED AND VERSATILE WATER HEATER

HubbellTM

OUTLINE DIMENSIONS - MODELS V6 AND V15



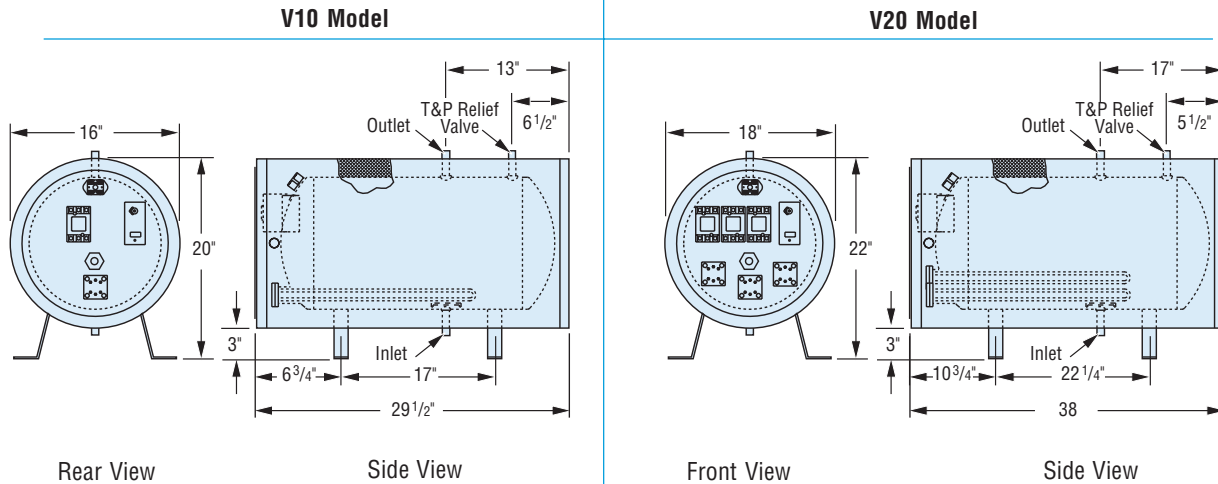
Storage Capacity: 6 gallons
KW Range: 4 thru 18 KW
Shipping Weight: 75 lbs.

Storage Capacity: 15 gallons
KW Range: 12 thru 58 KW
Shipping Weight: 140 lbs.

MODEL NUMBER SELECTION CHART WITH AMPERAGE

Base Model	KW Rating	Storage Capacity (Gallons)	Recovery Rate In GPM For °F Temperature Rise Listed Below							Amperage Draw By Voltage & Phase				
			20°	40°	60°	80°	100°	120°	140°	208 V		240 V		480 V
										1Φ	3Φ	1Φ	3Φ	3Φ
V6	4	6	1.4	0.7	0.5	0.4	0.3	0.2	0.1	19	11	17	10	5
	6		2.1	1.0	0.7	0.5	0.4	0.3	0.2	29	17	25	14	7
	8		2.7	1.4	0.9	0.7	0.6	0.5	0.2	38	22	33	19	10
	10		3.4	1.7	1.1	0.9	0.7	0.6	0.3	48	28	42	24	12
	12		4.1	2.1	1.4	1.0	0.8	0.7	0.3	58	33	50	29	14
	15		5.1	2.6	1.7	1.3	1.0	0.9	0.4	72	42	63	36	18
	18		6.2	3.1	2.1	1.5	1.2	1.0	0.5	87	50	75	43	22
V15	12	15	4.1	2.1	1.4	1.0	0.8	0.7	0.3	58	33	50	29	14
	15		5.1	2.6	1.7	1.3	1.0	0.9	0.4	72	42	63	36	18
	20		6.8	3.4	2.3	1.7	1.4	1.1	0.6	96	56	83	48	24
	24		8.2	4.1	2.7	2.1	1.6	1.4	0.7	115	67	100	58	29
	30		10.3	5.1	3.4	2.6	2.1	1.7	0.8	144	83	125	72	36
	35		12.0	6.0	4.0	3.0	2.4	2.0	1.0	—	97	146	84	42
	40		13.7	6.8	4.6	3.4	2.7	2.3	1.1	—	111	—	96	48
	45		15.4	7.7	5.1	3.9	3.1	2.6	1.2	—	125	—	108	54
	54		18.5	9.2	6.2	4.6	3.7	3.1	1.5	—	150	—	130	65
58	19.8	9.9	6.6	5.0	4.0	3.3	1.6	—	—	—	140	70		

OUTLINE DIMENSIONS - MODELS V10 AND V20



Storage Capacity: 10 gallons
KW Range: 6 thru 20 KW
Shipping Weight: 90 lbs.

Storage Capacity: 20 gallons
KW Range: 12 thru 58 KW
Shipping Weight: 155 lbs.

MODEL NUMBER SELECTION CHART WITH AMPERAGE

Base Model	KW Rating	Storage Capacity (Gallons)	Recovery Rate In GPM For °F Temperature Rise Listed Below							Amperage Draw By Voltage & Phase				
			20°	40°	60°	80°	100°	120°	140°	208 V		240 V		480 V
										1Φ	3Φ	1Φ	3Φ	3Φ
V10	6	10	2.1	1.0	0.7	0.5	0.4	0.3	0.2	29	17	25	14	7
	8		2.7	1.4	0.9	0.7	0.6	0.5	0.2	38	22	33	19	10
	10		3.4	1.7	1.1	0.9	0.7	0.6	0.3	48	28	42	24	12
	12		4.1	2.1	1.4	1.0	0.8	0.7	0.3	58	33	50	29	14
	15		5.1	2.6	1.7	1.3	1.0	0.9	0.4	72	42	63	36	18
	20		6.8	3.4	2.3	1.7	1.4	1.1	0.6	96	56	83	48	24
V20	12	20	4.1	2.1	1.4	1.0	0.8	0.7	0.3	58	33	50	29	14
	15		5.1	2.6	1.7	1.3	1.0	0.9	0.4	72	42	63	36	18
	20		6.8	3.4	2.3	1.7	1.4	1.1	0.6	96	56	83	48	24
	24		8.2	4.1	2.7	2.1	1.6	1.4	0.7	115	67	100	58	29
	30		10.3	5.1	3.4	2.6	2.1	1.7	0.8	144	83	125	72	36
	35		12.0	6.0	4.0	3.0	2.4	2.0	1.0	—	97	146	84	42
	40		13.7	6.8	4.6	3.4	2.7	2.3	1.1	—	111	—	96	48
	45		15.4	7.7	5.1	3.9	3.1	2.6	1.2	—	125	—	108	54
	54		18.5	9.2	6.2	4.6	3.7	3.1	1.5	—	150	—	130	65
	58		19.8	9.9	6.6	5.0	4.0	3.3	1.6	—	—	—	140	70

MODEL V WATER HEATER SPECIFICATIONS

Vessel:	316L stainless steel	Heating Element	
Storage Capacity:	6,10,15,20 Gallons	Type:	Flanged
Voltages:	120 thru 575 Volt	Style:	Tubular
Phases:	1 or 3	Sheathing:	Incoloy
Connection Size		Magnetic Contactor	
Inlet:	3/4" Female NPT	Type:	Definite Purpose
Outlet:	3/4" Female NPT		
Relief Valve:	3/4" Female NPT	Relief Valve	
Thermostat		Approvals:	ASME
Type:	Mechanical	Temperature:	210°F
Style:	Immersion	Pressure:	150psi
Range:	100-195°F	Material:	Bronze
Hi-Limit		Insulation:	2" Fiberglass
Type:	Mechanical	Jacket:	20 GA Galvanized Steel
Style:	Surface	Finish:	Gray Hammertone Enamel
Reset:	Manual	Warranty	
Range:	205°F (Fixed)	Tank:	3 Years
Design WP:	150 psi	Electrical:	1 Year
Design TP:	300 psi		

GENERAL CONSTRUCTION FEATURES

▪ Vessel

The pressure vessel is all welded stainless steel for maximum longevity and is tested under hydrostatic pressure to 300psi. All welds are visually inspected prior to certification to ensure the integrity of each tank.

▪ General

The entire unit is insulated with 2" thick "E" type energy conservation fiberglass blanket insulation and enclosed in a heavy gauge galvanized steel metal jacket finished in gray hammertone enamel. An ASME rated temperature and pressure safety relief valve set at 150psi and 210°F is factory supplied. Entire unit is ready for immediate electrical and plumbing service connections and operation.

▪ Electrical

The V Model water heater comes equipped with all operating controls factory selected, mounted, wired, tested, and ready for immediate electrical service connections. The immersion heating element(s) are heavy duty removable type with incoloy sheathing and a solid brass flange. Each circuit is operated by a definite purpose magnetic contactor having a resistive load rating exceeding the ampere rating of that particular circuit. Water temperature is controlled by an adjustable immersion thermostat. An over-temperature manual resetting hi-limit shall be factory installed to disconnect all conductors to the heating element(s) in the event of an over-temperature condition in the pressure vessel.

MODEL V SIZING INFORMATION

STEP 1

Solve for the unknown using the formulas stated below.

VARIABLES TO SOLVE FOR:

1. KW Requirement:

$$\text{_____ GPM} \times \text{_____ } ^\circ\text{F}\Delta\text{T} \times 0.1465 = \text{_____ KW}$$

2. Temperature Rise:

$$\text{_____ KW} \times 6.824 \div \text{_____ GPM} = \text{_____ } ^\circ\text{F}\Delta\text{T}$$

3. Flow Rate:

$$\text{_____ KW} \times 6.824 \div \text{_____ } ^\circ\text{F}\Delta\text{T} = \text{_____ GPM}$$

STEP 2 - A

For continuous demand systems, choose the V Model with the KW rating which meets the peak demand (GPM) of your system.

STEP 2 - B

For cyclical ON/OFF demand systems, please consult factory for sizing assistance. The following data will be required to properly size the heater.

1. Hot Water Flow Rate:

_____ GPM

5. Total Gallons used per cycle (#1 x #2)

_____ Gallons

2. Time hot water at above rate is required:

_____ Minutes

6. Water Temperature:

_____ $^\circ\text{F}$ Incoming Cold

_____ $^\circ\text{F}$ Outgoing Hot

3. Time between usages:

_____ Minutes

7. Power supply available:

_____ Volts _____ Phase _____ Amps

4. Total Cycle Time (Add #2 and #3)

_____ Minutes

ELECTRICAL

$$\frac{\text{KW} \times 1000}{\text{Volts}} \div 1.73 = \text{Amps } 3 \Phi$$

$$\frac{\text{KW} \times 1000}{\text{Volts}} = \text{Amps } 1 \Phi$$

EXAMPLE: Model **V1545T4** is 45 KW at 480 V 3 Φ .

$$\frac{45 \times 1000}{480} \div 1.73 = 54 \text{ Total Amp Draw}$$

METRIC CONVERSIONS

Liters x 0.2641 = Gallons

$^\circ\text{F} = (^\circ\text{C} \times 1.8) + 32$

kPa x 0.1456 = psi

Gallons x 3.79 = Liters

$^\circ\text{C} = (^\circ\text{F} - 32) \times 0.556$

Lbs x 0.4536 = Kg

Gallons x 0.003785 = m³

psi x 0.06896 = Bar

Kg x 2.2 = Lbs

m³ x 264.2 = Gallons

Bar x 14.5 = psi

Watts/Sq.Cm. x 6.4 = Watts/Sq.In.

$1^\circ\text{C } \Delta\text{T} = 1.8^\circ\text{F } \Delta\text{T}$

psi x 6.86 = kPa

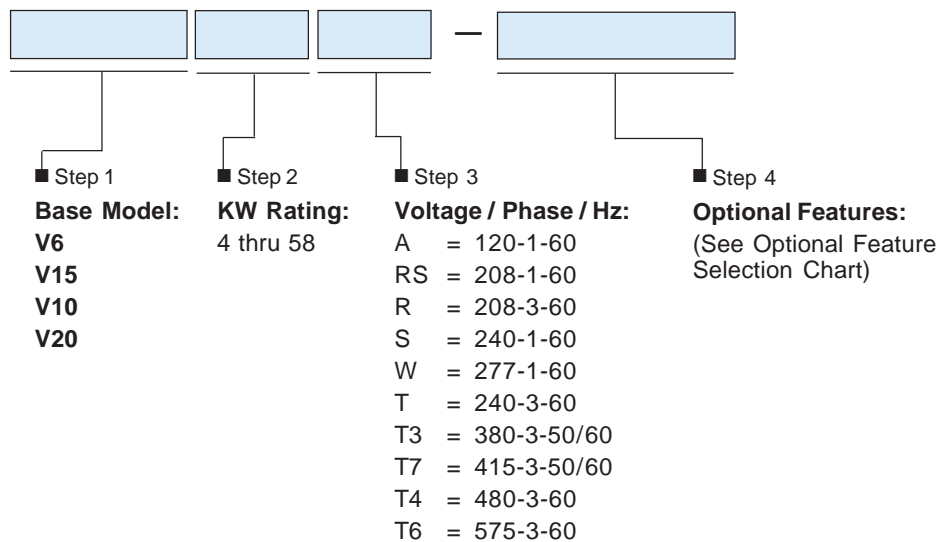
Watts/Sq.In. x 0.155 = Watts/Sq.Cm.

OPTIONAL FEATURE SELECTION CHART

Optional Code	Optional Feature
D	Digital Display electronic temperature control package
CD	SCR "zero fired" power controllers for 0-100% proportional control of heaters
W	Watertight construction for wet/humid locations (V10 and V20 only)
J	304 Stainless Steel protective jacket for wet/humid locations
F	Flanged inlet and outlet connections (150#, please specify size)
B	Threaded inlet and outlet connections (specify size: 1 1/2", 2" MNPT)
L	Low water cutout device to prevent dry firing of heating elements
H	Immersion adjustable hi-temperature cut out (100-240°F) with manual reset
T	Low range operating thermostat (30-110°F)
I	Pump interlock terminal block to prevent energizing when pump is not on
R	Sanitary connections (specify size)
G	Dial temperature/pressure gauge for in-line installation (2 1/2" dial)
V	Fused low voltage control transformer for 120V control circuit
P	Power circuit fusing for 48 amp maximum branch circuit size
M	Integrally welded seismic attachment points
XX	Customized features, please consult factory

Note: Other optional features are available, please consult factory if required.

MODEL NUMBER DESIGNATION



Example: V2045T4-L

A universal V model water heater with 20 gallons storage capacity, 45 KW rated at 480 volt 3 phase 60 Hz power and supplied with a low water cutout as an optional feature.

