

# Circulation Heaters



## WATROD™ and FIREBAR® Heaters

### Engine Preheaters

Watlow engine preheaters help maintain a desired minimum engine temperature to make starting fast and easy. They also reduce engine wear caused by cold engine starting.

Engine preheaters mount conveniently on an engine or rail. The internal thermostat constantly adjusts to ambient temperature changes to keep engine coolant warm at all times.

An internal tank temperature sensor protects Watlow engine preheaters from dry-fire conditions caused by low coolant levels or blocked flow.

Installation is easy with just two mounting bolts and inlet and outlet hose connections.

### Performance Capabilities

- Watt densities from 45 to 90 W/in<sup>2</sup> (7 to 14 W/cm<sup>2</sup>)
- Wattages up to 5 kilowatts
- UL® and CSA component recognition up to 480VAC and 600VAC respectively
- Thermostatically controlled from 60 to 160°F (15 to 70°C)
- Alloy 800 sheath temperatures up to 1600°F (870°C)

### Features and Benefits

#### Alloy 800 sheath

- Minimizes the risk of premature failure in the event of a dry-fire condition

#### Integral, prewired adjustable thermostat mounted in a general purpose terminal enclosure

- Provides a ready to install unit

#### Easy installation with standard 1 in. (25 mm) diameter beaded inlet and outlet nozzles

- Provides rubber hose connections eliminating the need for threaded fittings and adapters

#### 120/240VAC or 240/480VAC dual voltages

- Makes field wiring flexible
- Minimizes stocking multiple voltages

#### Mounting bracket

- Isolates harmful engine vibration

#### Heavy-duty welded carbon steel tank

- Resists corrosion and extends life

#### Integral check valve

- Assures proper coolant flow and correct thermostat operation. Check valve will not interfere with adequate thermo-siphoning

#### UL® and CSA component recognition under file numbers E52951 and 31388 respectively

Simplifies obtaining third-party recognition for assembly



### Typical Applications

- Stand by generators
- Primary power generators
- Fire pump engines

### Options

#### Terminal Enclosure

The following terminal enclosures are available:

- Standard, general purpose
- Moisture resistant

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- Mount engine preheaters in horizontal position only (as shown in Figures 1, 2 and 3). Contact your Watlow representative if vertical mounting is unavoidable.
- Mount the heater near or below the lowest point on the engine block. Keep outlet nozzle pointed up, as indicated on the tank.
- Estimate kilowatt requirements with the following formula. First determine the engine displacement, then multiply:

<b>English</b>
Cubic inches X 3 = estimated wattage
<b>Metric</b>
Liters X 183 = estimated wattage

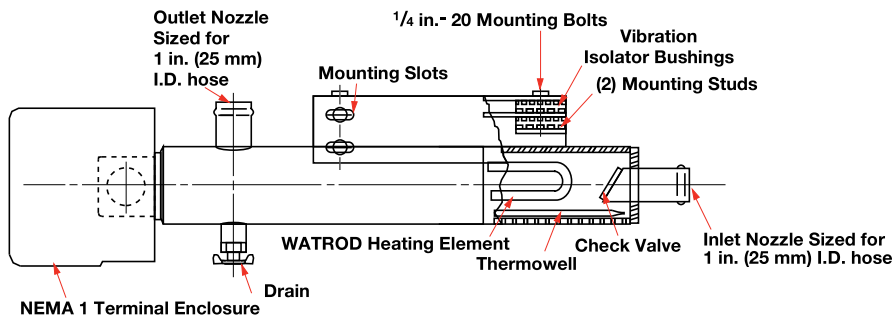
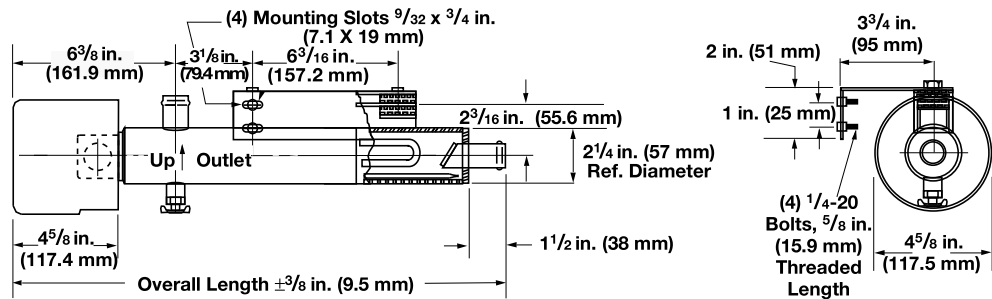


Figure 1



kW	Overall Length in. (mm)	Part Number			Est. Ship. Wt.	
		120/240VAC 1-Phase	208VAC 1-Phase	240/480VAC 1-Phase	lbs	(kg)

**Application: Ethylene Glycol/Engine Coolant**

1.13	20 <sup>7</sup> / <sub>8</sub> (530.2)		CPBPL2S12		12	(6)
1.50	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPBPB6S12	CPBPB2S12		12	(6)
1.69	20 <sup>7</sup> / <sub>8</sub> (530.2)		CPBPM2S12		12	(6)
1.88	20 <sup>7</sup> / <sub>8</sub> (530.2)		CPBPN2S12		12	(6)
2.00	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPBPC6S12			12	(6)
2.25	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPBPD6S12			12	(6)
2.25	26 <sup>11</sup> / <sub>16</sub> (677.9)		CPBPD2S12		15	(7)
2.50	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPBPE6S12			12	(6)
3.00	26 <sup>11</sup> / <sub>16</sub> (677.9)		CPBPF2S12	CPBPF7S12	15	(7)
3.75	26 <sup>11</sup> / <sub>16</sub> (677.9)		CPBPG2S12		15	(7)
4.00	26 <sup>11</sup> / <sub>16</sub> (677.9)			CPBPH7S12	15	(7)
5.00	26 <sup>11</sup> / <sub>16</sub> (677.9)			CPBPJ7S12	15	(7)

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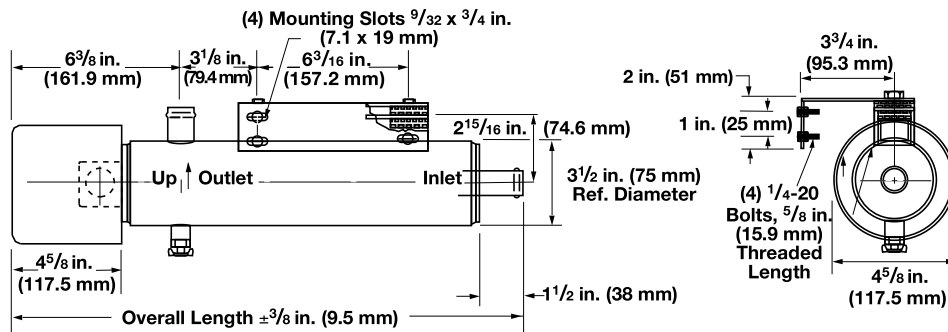


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### Engine Preheaters

Figure 2

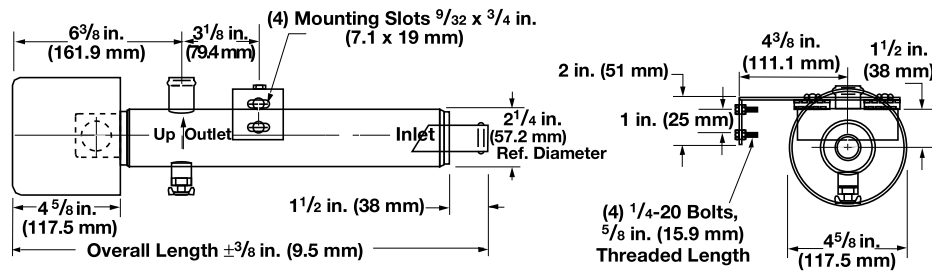


kW	Overall Length in. (mm)	Part Number		Est. Ship.	
		277VAC 1-Phase	480VAC 3-Phase	lbs	Wt. (kg)

Application: Ethylene Glycol/Engine Coolant

1.50	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPB4S12	CPCPB13S12	12	(6)
2.00	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPC4S12	CPCPC13S12	12	(6)
2.50	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPE4S12	CPCPE13S12	12	(6)
3.75	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPG4S12	CPCPG13S12	12	(6)
4.00	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPH4S12	CPCPH13S12	12	(6)
5.00	20 <sup>7</sup> / <sub>8</sub> (530.2)	CPCPJ4S12	CPCPJ13S12	12	(6)

Figure 3



kW	Overall Length in. (mm)	Part Number		Est. Ship.	
		120/240VAC 1-Phase	208VAC 1-Phase	lbs	Wt. (kg)

Application: Ethylene Glycol/Engine Coolant

0.75	15 <sup>5</sup> / <sub>8</sub> (396.9)		CPBPK2S12	9	(4)
1.00	15 <sup>5</sup> / <sub>8</sub> (396.9)	CPBPA6S12		9	(4)