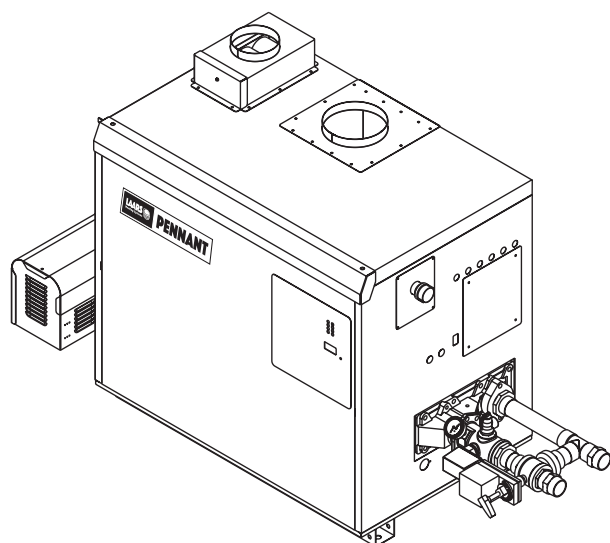


**PENNANT®**



# Pump-Mounted Pool Heater

PNCP | Pump Mounted Pool Heater

Indoor/Outdoor Sizes 500-2000

Submittal Data **LAARS**  
Heating Systems Company

Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Project Name:

Location:

Contractor:

## Standard Equipment

- ASME 160 psi working pressure heat exchanger
- ASME "H" stamp
- Flanged water connections
- Glass-lined cast iron headers
- External header gaskets
- 75 psi (517 kPa) ASME rated pressure relief valve
- Flow switch
- Temperature and pressure gauge
- Pump mounted and wired
- Mixing system for low temperature protection
- Multiple operating gas valve/pressure regulators
- Manual "A" gas valve
- Intake air filter
- Multiple, removable burner trays
- Stainless steel burners
- Built-in draft fan(s) for Category I or III venting
- Air pressure switch
- Burner site glass
- 24V control system
- 115/24VAC transformer
- Manual reset high limit
- Automatic reset high limit
- Electronic temperature control with LCD and touchpad
- PC board for electrical connections
- Hot surface ignition
- On/Off toggle switch
- Pump time delay
- Diagnostic lights
- Less than 10ppm NOx

## Boiler Data

Model:

☐ Boiler PNCP

Number of Units:

Fuel

☐ Natural  
☐ Propane

Heat Exchanger

☐ Copper  
☐ Cupro-Nickel  
☐ Copper, Reversed  
☐ Cupro-Nickel, Reversed

Water Trim








☐ Glass-Lined Cast Iron  
☐ Bronze Trim








Options

☐ CSD-1 (LWCO not incl.)  
☐ CSD-1 & IRI  
☐ Low water cutoff







## Sizing Data

|   | Size | Input <sup>1</sup><br>BTU/H | Output <sup>1</sup><br>BTU/H | Gas<br>Conn.<br>Size<br>inches <sup>2</sup> | Heater<br>Water<br>Conn.<br>Size<br>inches <sup>2</sup> | Mixing<br>System<br>Water<br>Conn. Size<br>inches <sup>2</sup> | Shipping<br>Weight |            |
|---|------|-----------------------------|------------------------------|---|---|--|--------------------|------------|
|   |      |                             |                              |   |   |  | lbs                | kg         |
|  | 500  | <b>500,000</b>              | <b>425,000</b>               | 1¼  | 2   | 2  | <b>775</b>         | <b>352</b> |
|  | 750  | <b>750,000</b>              | <b>638,000</b>               | 1¼  | 2   | 2  | <b>870</b>         | <b>395</b> |
|  | 1000 | <b>999,000</b>              | <b>849,000</b>               | 1½  | 2½  | 2  | <b>1035</b>        | <b>469</b> |
|  | 1250 | <b>1,250,000</b>            | <b>1,062,500</b>             | 2   | 2½  | 2  | <b>1130</b>        | <b>513</b> |
|  | 1500 | <b>1,500,000</b>            | <b>1,275,000</b>             | 2   | 2½  | 2  | <b>1285</b>        | <b>583</b> |
|  | 1750 | <b>1,750,000</b>            | <b>1,487,500</b>             | 2   | 2½  | 2  | <b>1380</b>        | <b>626</b> |
|  | 2000 | <b>1,999,000</b>            | <b>1,699,000</b>             | 2   | 2½  | 2  | <b>1510</b>        | <b>685</b> |

|   | Size | Input <sup>1</sup><br>kW | Output <sup>1</sup><br>kW |
|---|------|--------------------------|---------------------------|
|  | 500  | 147                      | 125                       |
|  | 750  | 220                      | 187                       |
|  | 1000 | 293                      | 249                       |
|  | 1250 | 366                      | 312                       |
|  | 1500 | 440                      | 374                       |
|  | 1750 | 513                      | 436                       |
|  | 2000 | 586                      | 498                       |

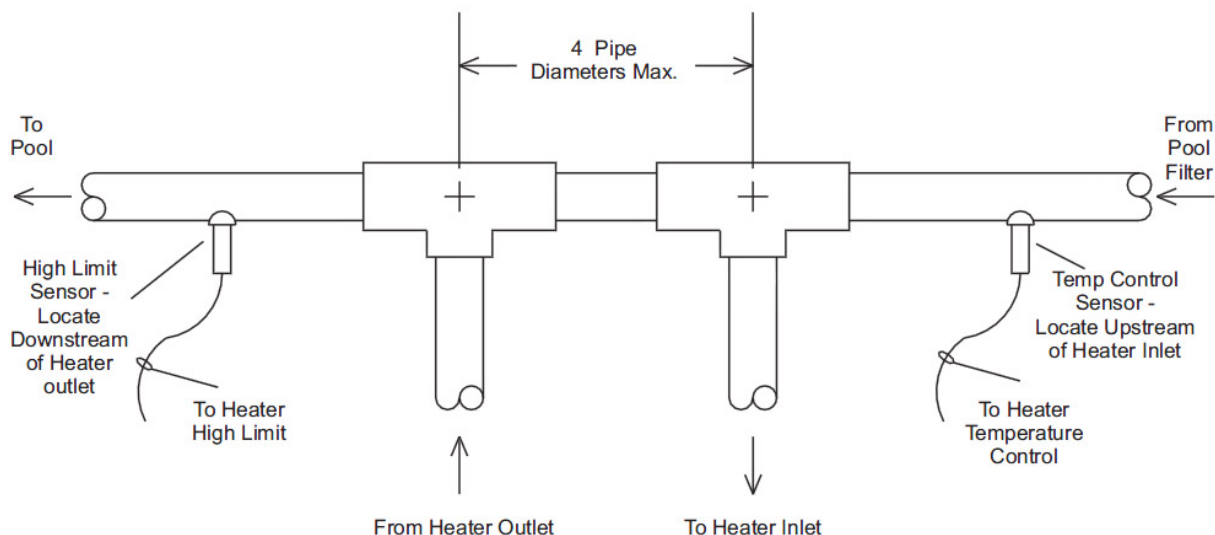
- NOTES:**
1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
  2. Dimensions are nominal.
  3. Shipping weight is approximate, based on previous units shipped and can be affected by several variables including the various weights for optional pumps and even the green or dry wood used in the crate.

## Accessories

-  Side-wall vent terminal for indoor unit (required for side-wall venting)
-  Side-wall combustion air terminal for indoor unit (required only for ducted combustion air)
-  Exhaust vent terminal for outdoor unit
-  Combustion air intake for outdoor unit

## Piping and Sensor Location

The Pennant Pool Heater is shipped with a field-installed mixing system, and must be piped in primary-secondary style, as shown. A remote pool temperature sensor and remote pool temperature high limit are wired to the Pennant, to be mounted in the pool water loop, as shown.



## Clearances

| Appliance Surface | Required Clearance From Combustible Material |     | Suggested Service Access Clearances |    |
|-------------------|--|-----|-------------------------------------|----|
| Left Side         | 1  | 2.5 | 24                                  | 61 |
| Right Side        | 1  | 2.5 | 24                                  | 61 |
| Top               | 1  | 2.5 | 12                                  | 30 |
| Back*             | 1  | 2.5 | 12                                  | 30 |
| Front             | 1  | 2.5 | 36                                  | 91 |
| Vent              | Per venting system supplier's instructions   |     |                                     |    |

\*When vent and/or air is connected to the back, 36" (91cm) is suggested.  
Dimensions in **inches** *cm*

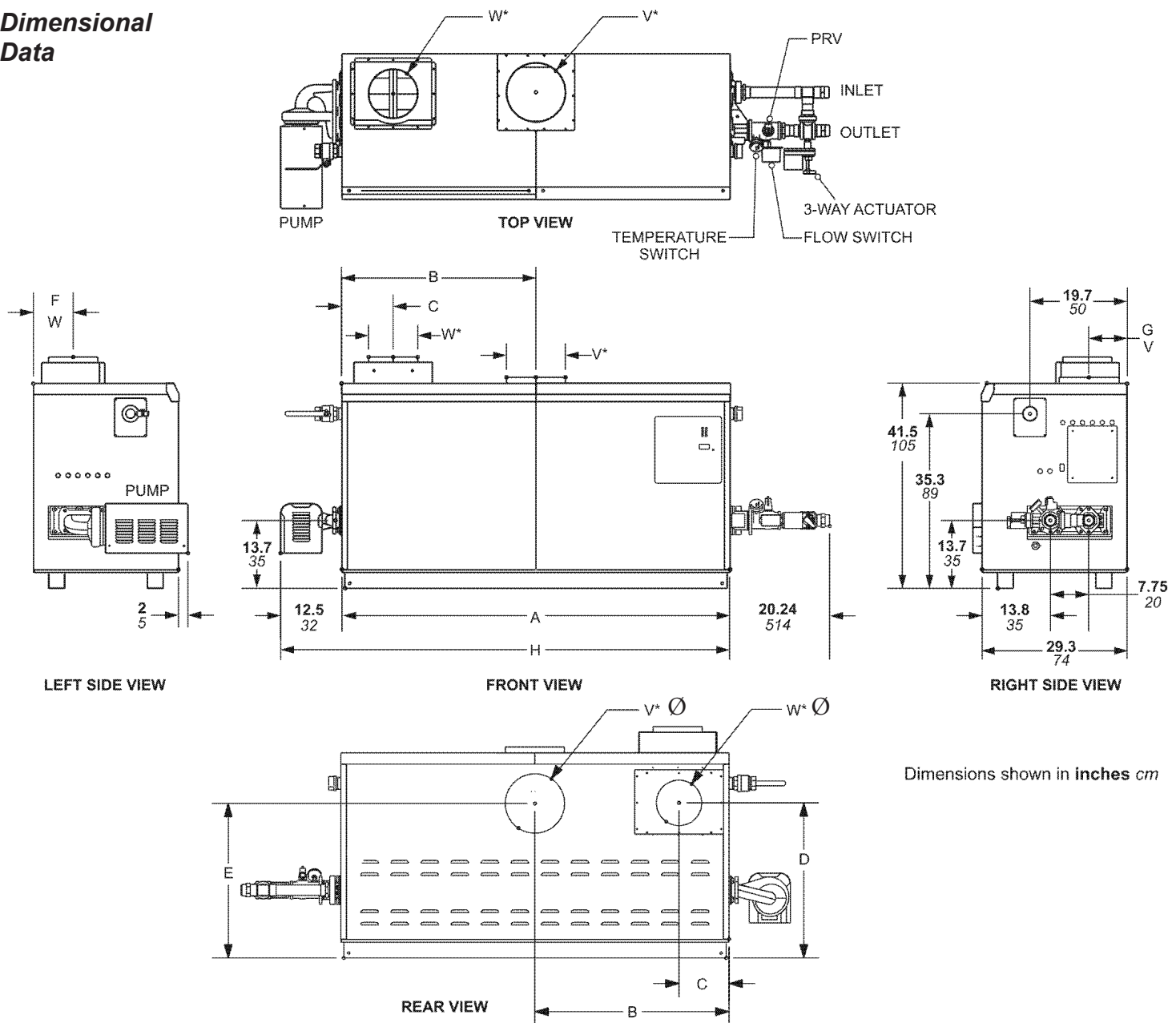
## Electrical Data

| Model                                   | Boiler / Heater |        |              | Pump                           |        |              | Blower(s)                      |
|---|-----------------|--------|--------------|--------------------------------|--------|--------------|--------------------------------|
|   | Volts           | Phase  | Amps         | Volts                          | Phase  | Amps         |                                |
| PNCH, PNCV<br>Pump mounted<br>500-1000  | 115             | Single | Less than 12 | Included in Pennant connection |        |              | Included in Pennant connection |
| PNCH, PNCV<br>Pump mounted<br>1250-2000 | 115             | Single | Less than 12 | 115                            | Single | Less than 12 | Included in Pennant connection |

## Pump Data

| Sizes | Power (HP) | Current (Amps) |
|-------|------------|----------------|
| 500   | 1/3        | 2.8            |
| 750   | 1/3        | 2.8            |
| 1000  | 1/2        | 5.2            |
| 1250  | 1/2        | 5.2            |
| 1500  | 3/4        | 7.2            |
| 1750  | 1          | 9.8            |
| 2000  | 1          | 9.8            |

## Dimensional Data



| Size | A   |     | B   |     | C   |    | D   |    | E   |    | F  |    | G  |    | H   |     | Air Conn. W* |    | Vent Conn. V* |    | Horiz. Vent Pipe |    |
|------|-----|-----|-----|-----|-----|----|-----|----|-----|----|----|----|----|----|-----|-----|--------------|----|---------------|----|------------------|----|
| 500  | 33½ | 85  | 15¾ | 40  | 5¾  | 15 | 29¾ | 76 | 33¾ | 86 | 7¾ | 20 | 8¾ | 22 | 46  | 117 | 6            | 15 | 8             | 20 | 6                | 15 |
| 750  | 45½ | 116 | 21¾ | 55  | 5¾  | 15 | 29¾ | 76 | 33¾ | 86 | 7¾ | 20 | 8¾ | 22 | 58  | 147 | 8            | 20 | 10            | 25 | 8                | 20 |
| 1000 | 57½ | 146 | 28¾ | 73  | 5¾  | 15 | 29¾ | 76 | 33¾ | 86 | 7¾ | 20 | 7  | 18 | 70  | 178 | 8            | 20 | 10            | 25 | 8                | 20 |
| 1250 | 68  | 172 | 34  | 86  | 10⅞ | 26 | 30¾ | 78 | 31⅞ | 79 | 8¾ | 22 | 8¾ | 22 | 80  | 203 | 12           | 30 | 12            | 30 | 10               | 25 |
| 1500 | 78½ | 199 | 39¾ | 101 | 10⅞ | 26 | 30¾ | 78 | 31⅞ | 79 | 8¾ | 22 | 8¾ | 22 | 91  | 231 | 12           | 30 | 12            | 30 | 10               | 25 |
| 1750 | 89  | 226 | 44½ | 113 | 10⅞ | 26 | 30¾ | 78 | 31⅞ | 79 | 8¾ | 22 | 8¾ | 22 | 101 | 256 | 12           | 30 | 14            | 36 | 12               | 30 |
| 2000 | 99½ | 253 | 49¾ | 126 | 10⅞ | 26 | 30¾ | 78 | 31⅞ | 79 | 8¾ | 22 | 8¾ | 22 | 112 | 284 | 12           | 30 | 14            | 36 | 12               | 30 |

\*Air and vent connections may be on top or back of the Pennant, and are field convertible.

Dimensions in **inches** *cm*