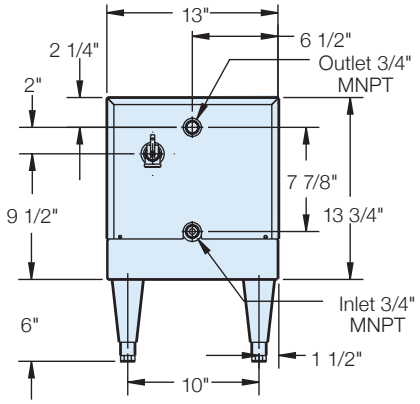
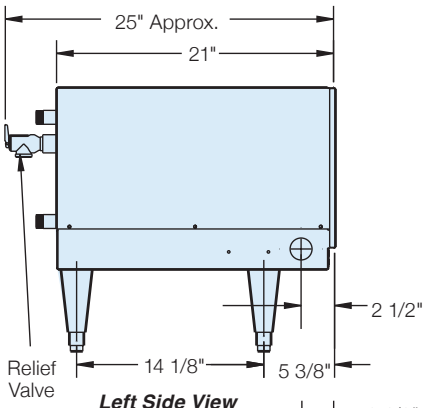
# Model J6 - (1 to 18kW) Dimensions

Shipping Weight: 95 lbs.

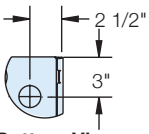



***Rear View***




***Left Side View***

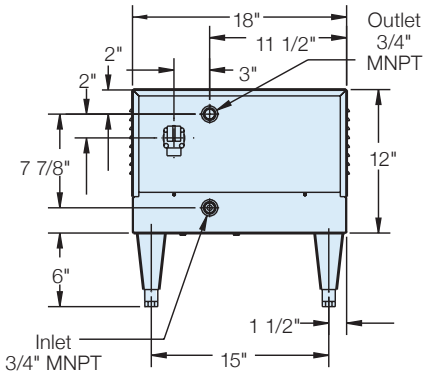
Knockouts: Left Side And Bottom
3/4" X 1" X 1-1/4"



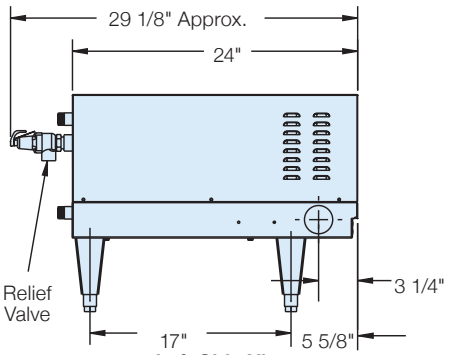

***Bottom View***

# Model J6 - (24 to 58.5kW) Dimensions

Shipping Weight: 110 lbs.

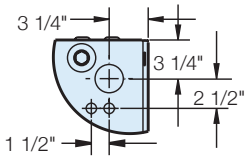



***Rear View***




***Left Side View***

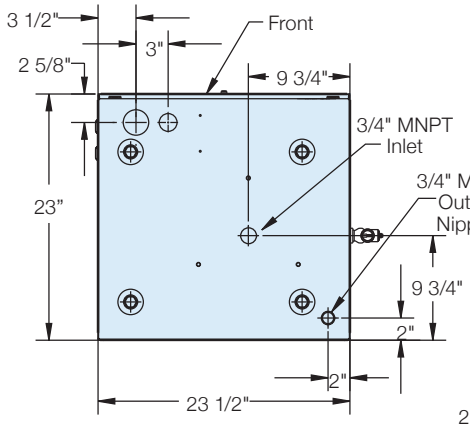
Knockouts: Left Side - (1) 1-1/2" X 2"
Bottom - (2) 1/2" and (1) 1-1/2" x 2"



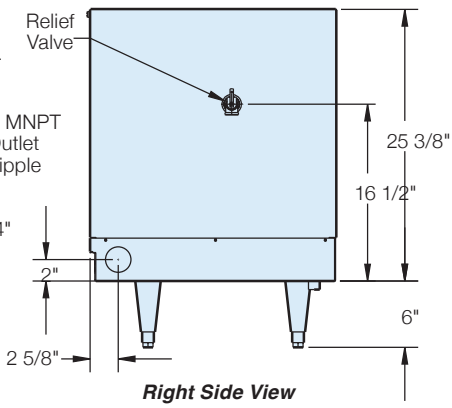

***Bottom View***

# Model J16 - (1 to 58.5kW) Dimensions

Shipping Weight: 160 lbs.




***Bottom View***




***Right Side View***

Knockouts: Left Side - 1-1/2" X 2"
Bottom - 1-1/2" X 2" and 3/4" X 1" X 1-1/4"

Hubbell™

# J6 and J16 Wiring Chart

| kW | Volt | Ph | Unit Amp Draw | Branch Amp Draw | Phase-Phase Resistance (Ohms) | Min. Feed Breaker or Fuse Size | Internal Power Wire Size | Element Jumper Wire Size | Copper Power Feed Wire Size | Conduit Size | Diagram |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 120 | 1 | 8.3 | 8.3 | 14.4 | 15 | 12 | N/A | 14 | ½" | 1(NT) |
| 1.5 | 120 | 1 | 12.5 | 12.5 | 9.6 | 20 | 12 | N/A | 14 | ½" | 1(NT) |
| 2 | 120 | 1 | 16.7 | 16.7 | 7.2 | 25 | 12 | N/A | 12 | ½" | 1(NT) |
| 3 | 120 | 1 | 25.0 | 25.0 | 4.8 | 35 | 12 | 12 | 10 | ½" | 1(NT) |
| 4 | 208 | 1 | 19.2 | 19.2 | 10.8 | 25 | 12 | N/A | 10 | ½" | 1(NT) |
| | 240 | 1 | 16.7 | 16.7 | 14.4 | 25 | 12 | N/A | 12 | ½" | 1(NT) |
| | 380 | 1 | 10.7 | 10.7 | 36.1 | 15 | 12 | N/A | 12 | ½" | 1(WT) |
| | 480 | 1 | 8.3 | 8.3 | 57.6 | 15 | 12 | N/A | 14 | ½" | 1(WT) |
| 5 | 208 | 1 | 24.0 | 24.0 | 8.7 | 30 | 12 | N/A | 10 | ½" | 1(NT) |
| | 240 | 1 | 20.8 | 20.8 | 11.5 | 30 | 12 | N/A | 10 | ½" | 1(NT) |
| | 380 | 1 | 13.2 | 13.2 | 28.9 | 20 | 12 | N/A | 12 | ½" | 1(WT) |
| | 480 | 1 | 10.4 | 10.4 | 46.1 | 15 | 12 | N/A | 14 | ½" | 1(WT) |
| 6 | 208 | 1 | 28.8 | 28.8 | 7.2 | 40 | 12 | 12 | 8 | ½" | 4 |
| | 208 | 3 | 16.7 | 16.7 | 14.4 | 25 | 12 | 12 | 10 | ½" | 10(NT) |
| | 240 | 1 | 25.0 | 25.0 | 9.6 | 35 | 12 | 12 | 8 | ½" | 4 |
| | 240 | 3 | 14.4 | 14.4 | 19.2 | 20 | 12 | 12 | 12 | ½" | 10(NT) |
| | 380 | 3 | 8.6 | 8.6 | 48.1 | 15 | 12 | 12 | 14 | ½" | 10(WT) |
| | 480 | 3 | 7.2 | 7.2 | 76.8 | 10 | 12 | 12 | 14 | ½" | 10(WT) |
| | 600 | 3 | 6.0 | 6.0 | 114.8 | 10 | 12 | 12 | 14 | ½" | 14 |
| 7 | 208 | 1 | 32.5 | 32.5 | 6.4 | 45 | 12 | 12 | 8 | ½" | 4 |
| | 208 | 3 | 18.7 | 18.7 | 12.4 | 25 | 12 | 12 | 10 | ½" | 10(NT) |
| | 240 | 1 | 30.5 | 30.5 | 8.2 | 40 | 12 | 12 | 8 | ½" | 4 |
| | 240 | 3 | 17.6 | 17.6 | 16.5 | 25 | 12 | 12 | 10 | ½" | 10(NT) |
| | 380 | 3 | 10.0 | 10.0 | 41.3 | 15 | 12 | 12 | 12 | ½" | 10(WT) |
| | 480 | 3 | 8.4 | 8.4 | 65.8 | 15 | 12 | 12 | 14 | ½" | 10(WT) |
| | 600 | 3 | 6.8 | 6.8 | 102.0 | 10 | 12 | 12 | 14 | ½" | 14 |
| 9 | 208 | 1 | 43.3 | 43.3 | 4.8 | 55 | 10 | 12 | 6 | ¾" | 4 |
| | 208 | 3 | 25.0 | 25.0 | 9.6 | 35 | 10 | 12 | 8 | ½" | 10(NT) |
| | 240 | 1 | 37.5 | 37.5 | 6.4 | 50 | 10 | 12 | 8 | ½" | 4 |
| | 240 | 3 | 21.7 | 21.7 | 12.8 | 30 | 10 | 12 | 10 | ½" | 10(NT) |
| | 380 | 3 | 14.3 | 14.3 | 32.1 | 20 | 12 | 12 | 12 | ½" | 10(WT) |
| | 480 | 3 | 10.8 | 10.8 | 51.2 | 15 | 12 | 12 | 14 | ½" | 10(WT) |
| | 600 | 3 | 9.1 | 9.1 | 76.5 | 15 | 12 | 12 | 14 | ½" | 14 |
| 10.5 | 208 | 1 | 48.8 | 48.8 | 4.3 | 65 | 8 | 10 | 6 | ¾" | 4 |
| | 208 | 3 | 29.1 | 29.1 | 8.2 | 40 | 12 | 12 | 8 | ½" | 10(NT) |
| | 240 | 1 | 43.8 | 43.8 | 5.5 | 55 | 10 | 12 | 6 | ¾" | 4 |
| | 240 | 3 | 25.3 | 25.3 | 11.0 | 35 | 12 | 12 | 8 | ½" | 10(NT) |
| | 380 | 3 | 17.1 | 17.1 | 27.5 | 25 | 12 | 12 | 10 | ½" | 10(WT) |
| | 480 | 3 | 12.6 | 12.6 | 43.9 | 20 | 12 | 12 | 12 | ½" | 10(WT) |
| | 600 | 3 | 10.2 | 10.2 | 68.1 | 15 | 12 | 12 | 14 | ½" | 14 |
| 12 | 208 | 1 | 57.7 | 57.7 | 3.6 | 75 | 8 | 10 | 4 | 1" | 4 |
| | 208 | 3 | 33.3 | 33.3 | 7.2 | 45 | 12 | 12 | 8 | ½" | 10(NT) |
| | 240 | 1 | 50.0 | 50.0 | 4.8 | 65 | 8 | 10 | 6 | ¾" | 4 |
| | 240 | 3 | 28.9 | 28.9 | 9.6 | 40 | 12 | 12 | 8 | ½" | 10(NT) |
| | 380 | 3 | 18.6 | 18.6 | 24.1 | 25 | 12 | 12 | 10 | ½" | 10(WT) |
| | 480 | 3 | 14.4 | 14.4 | 38.4 | 20 | 12 | 12 | 12 | ½" | 10(WT) |
| | 600 | 3 | 11.3 | 11.3 | 61.2 | 15 | 12 | 12 | 14 | ½" | 14 |
| 13.5 | 208 | 1 | 64.9 | 64.9 | 3.2 | 85 | 8 | 10 | 4 | 1" | 4 |
| | 208 | 3 | 37.5 | 37.5 | 6.4 | 50 | 10 | 12 | 8 | ½" | 10(NT) |
| | 240 | 1 | 56.3 | 56.3 | 4.3 | 75 | 8 | 10 | 4 | 1" | 4 |
| | 240 | 3 | 32.5 | 32.5 | 8.5 | 45 | 12 | 12 | 8 | ½" | 10(NT) |
| | 380 | 3 | 21.4 | 21.4 | 21.4 | 30 | 12 | 12 | 10 | ½" | 10(WT) |
| | 480 | 3 | 16.2 | 16.2 | 34.1 | 25 | 12 | 12 | 12 | ½" | 10(WT) |
| | 600 | 3 | 13.6 | 13.6 | 51.0 | 20 | 12 | 12 | 12 | ½" | 14 |

## J6 and J16 Wiring Chart (cont.)

| kW | Volt | Ph | Unit Amp Draw | Branch Amp Draw | Phase-Phase Resistance (Ohms) | Min. Feed Breaker or Fuse Size | Internal Power Wire Size | Element Jumper Wire Size | Copper Power Feed Wire Size | Conduit Size | Diagram |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 208 | 1 | 72.1 | 72.1 | 2.9 | 95 | 6 | 8 | 3 | 1" | 4 (DB) |
| | 208 | 3 | 41.6 | 41.6 | 5.8 | 55 | 10 | 12 | 6 | ¾" | 10(NT) |
| | 240 | 1 | 62.5 | 62.5 | 3.8 | 80 | 8 | 10 | 4 | 1" | 4 |
| | 240 | 3 | 36.1 | 36.1 | 7.7 | 50 | 10 | 12 | 8 | ½" | 10(NT) |
| | 380 | 3 | 22.9 | 22.9 | 19.3 | 30 | 12 | 12 | 8 | ½" | 10(WT) |
| | 480 | 3 | 18.0 | 18.0 | 30.7 | 25 | 12 | 12 | 10 | ½" | 10(WT) |
| | 600 | 3 | 14.7 | 14.7 | 47.1 | 20 | 12 | 12 | 12 | ½" | 14 |
| 18 | 208 | 1 | 86.5 | 86.5 | 2.4 | 110 | 6 | 8 | 2 | 1" | 4 (DB) |
| | 208 | 3 | 50.0 | 50.0 | 4.8 | 65 | 8 | 10 | 6 | ¾" | 10(NT) |
| | 240 | 1 | 75.0 | 75.0 | 3.2 | 95 | 6 | 8 | 3 | 1" | 4 (DB) |
| | 240 | 3 | 43.3 | 43.3 | 6.4 | 55 | 10 | 12 | 6 | ¾" | 10(NT) |
| | 380 | 3 | 27.9 | 27.9 | 16.0 | 35 | 12 | 12 | 8 | ½" | 10(WT) |
| | 480 | 3 | 21.7 | 21.7 | 25.6 | 30 | 12 | 12 | 10 | ½" | 10(WT) |
| | 600 | 3 | 18.1 | 18.1 | 38.3 | 25 | 12 | 12 | 12 | ½" | 14 |
| 24 | 208 | 1 | 115.4 | 38.5 | 1.8 | 145 | 10 | 12 | 1/0 | 1¼" | 3A |
| | 208 | 3 | 66.6 | 66.6 | 3.6 | 85 | 8 | 10 | 4 | 1" | 13(NT) |
| | 240 | 1 | 100.0 | 33.3 | 2.4 | 130 | 12 | 12 | 1 | 1¼" | 3A |
| | 240 | 3 | 57.7 | 57.7 | 4.8 | 75 | 8 | 10 | 4 | 1" | 13(NT) |
| | 380 | 3 | 37.1 | 37.1 | 12.0 | 50 | 10 | 12 | 6 | ¾" | 13(WT) |
| | 480 | 3 | 28.9 | 28.9 | 19.2 | 40 | 12 | 12 | 8 | ½" | 13(WT) |
| | 600 | 3 | 22.6 | 22.6 | 30.6 | 30 | 12 | 12 | 10 | ½" | 15 |
| 27 | 208 | 1 | 130.0 | 43.3 | 1.6 | 165 | 10 | 12 | 2/0 | 1½" | 6A |
| | 208 | 3 | 74.9 | 37.5 | 3.2 | 95 | 10 | 12 | 3 | 1" | 12(NCB) |
| | 240 | 1 | 112.5 | 37.5 | 2.1 | 145 | 10 | 12 | 1/0 | 1¼" | 3A |
| | 240 | 3 | 65.0 | 65.0 | 4.3 | 85 | 8 | 10 | 4 | 1" | 13(NT) |
| | 380 | 3 | 42.9 | 42.9 | 10.7 | 55 | 10 | 12 | 6 | ¾" | 13(WT) |
| | 480 | 3 | 32.5 | 32.5 | 17.1 | 45 | 12 | 12 | 8 | ½" | 13(WT) |
| | 600 | 3 | 27.2 | 27.2 | 25.5 | 35 | 12 | 12 | 8 | ½" | 15 |
| 30 | 208 | 1 | 144.2 | 48.1 | 1.4 | 185 | 8 | 10 | 3/0 | 1½" | 6A |
| | 208 | 3 | 83.3 | 41.6 | 2.9 | 105 | 10 | 12 | 2 | 1" | 12(NCB) |
| | 240 | 1 | 125.0 | 41.7 | 1.9 | 160 | 10 | 12 | 2/0 | 1½" | 6A |
| | 240 | 3 | 72.2 | 36.1 | 3.8 | 95 | 10 | 12 | 3 | 1" | 12(NCB) |
| | 380 | 3 | 45.7 | 45.7 | 9.6 | 60 | 10 | 12 | 4 | 1" | 13(WT) |
| | 480 | 3 | 36.1 | 36.1 | 15.4 | 50 | 10 | 12 | 8 | ½" | 13(WT) |
| | 600 | 3 | 29.4 | 29.4 | 23.6 | 40 | 12 | 12 | 8 | ½" | 15 |
| 36 | 208 | 1 | 173.1 | 57.7 | 1.2 | 220 | 8 | 10 | 4/0 | 2" | 6A |
| | 208 | 3 | 99.9 | 50.0 | 2.4 | 125 | 8 | 10 | 1 | 1¼" | 12(NCB) |
| | 240 | 1 | 150.0 | 50.0 | 1.6 | 190 | 8 | 10 | 3/0 | 1½" | 6A |
| | 240 | 3 | 86.6 | 43.3 | 3.2 | 110 | 10 | 12 | 2 | 1" | 12(NCB) |
| | 380 | 3 | 55.7 | 55.7 | 8.0 | 70 | 8 | 10 | 3 | 1" | 13(WT) |
| | 480 | 3 | 43.3 | 43.3 | 12.8 | 55 | 10 | 12 | 6 | ¾" | 13(WT) |
| | 600 | 3 | 36.2 | 36.2 | 19.1 | 50 | 10 | 12 | 8 | ½" | 15 |
| 39 | 208 | 1 | 187.5 | 62.5 | 1.1 | 235 | 8 | 10 | 250 | 2" | 6A |
| | 208 | 3 | 108.3 | 54.1 | 2.2 | 140 | 8 | 10 | 1/0 | 1¼" | 12(NCB) |
| | 240 | 1 | 162.5 | 54.2 | 1.5 | 205 | 8 | 10 | 4/0 | 1½" | 6A |
| | 240 | 3 | 93.8 | 46.9 | 3.0 | 120 | 10 | 12 | 1 | 1" | 12(NCB) |
| | 380 | 3 | 60.8 | 60.8 | 7.4 | 80 | 8 | 10 | 3 | 1" | 13(WT) |
| | 480 | 3 | 46.9 | 46.9 | 11.8 | 60 | 8 | 10 | 6 | ¾" | 13(WT) |
| | 600 | 3 | 36.2 | 36.2 | 19.1 | 50 | 10 | 12 | 8 | ¾" | 15 |

## J6 and J16 Wiring Chart (cont.)

| kW | Volt | Ph | Unit Amp Draw | Branch Amp Draw | Phase-Phase Resistance (Ohms) | Min. Feed Breaker or Fuse Size | Internal Power Wire Size | Element Jumper Wire Size | Copper Power Feed Wire Size | Conduit Size | Diagram |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40.5 | 208 | 1 | 195.0 | 65.0 | 1.1 | 245 | 8 | 10 | 250 | 2" | 6A |
| | 208 | 3 | 112.6 | 56.3 | 2.1 | 145 | 8 | 10 | 1/0 | 1¼" | 12(NCB) |
| | 240 | 1 | 168.8 | 56.3 | 1.4 | 215 | 8 | 10 | 250 | 1½" | 6A |
| | 240 | 3 | 97.4 | 48.7 | 2.8 | 125 | 10 | 12 | 1 | 1" | 12(NCB) |
| | 380 | 3 | 60.8 | 60.8 | 7.1 | 80 | 8 | 10 | 3 | 1" | 13(WT) |
| | 480 | 3 | 48.7 | 48.7 | 11.4 | 65 | 8 | 10 | 4 | ¾" | 13(WT) |
| | 600 | 3 | 36.2 | 36.2 | 19.1 | 50 | 10 | 12 | 8 | ¾" | 15 |
| 45 | 208 | 3 | 119.1 | 59.5 | 1.9 | 150 | 8 | 10 | 2/0 | 1¼" | 12(NCB) |
| | 240 | 1 | 187.5 | 62.5 | 1.3 | 235 | 8 | 10 | 250 | 2" | 6A |
| | 240 | 3 | 108.3 | 54.1 | 2.6 | 140 | 8 | 10 | 1/0 | 1¼" | 12(NCB) |
| | 380 | 3 | 68.6 | 34.3 | 6.4 | 90 | 12 | 12 | 2 | 1" | 12(WT) |
| | 480 | 3 | 54.1 | 54.1 | 10.2 | 70 | 8 | 10 | 4 | ¾" | 13(WT) |
| | 600 | 3 | 42.2 | 42.2 | 16.4 | 55 | 10 | 12 | 6 | ¾" | 15 |
| 54 | 208 | 3 | 149.9 | 74.9 | 1.6 | 190 | 6 | 8 | 3/0 | 1½" | 12 |
| | 240 | 3 | 129.9 | 65.0 | 2.1 | 165 | 8 | 10 | 2/0 | 1½" | 12 |
| | 380 | 3 | 80.0 | 40.0 | 5.3 | 100 | 10 | 12 | 1 | 1" | 12(WT) |
| | 480 | 3 | 65.0 | 65.0 | 8.5 | 85 | 8 | 10 | 4 | 1" | 13(WT) |
| | 600 | 3 | 54.3 | 54.3 | 12.8 | 70 | 8 | 10 | 4 | 1" | 15 |
| 58.5 | 208 | 3 | 159.9 | 79.9 | 1.5 | 200 | 6 | 8 | 4/0 | 1½" | 12 |
| | 240 | 3 | 140.7 | 70.4 | 2.0 | 180 | 6 | 8 | 2/0 | 1½" | 12 |
| | 380 | 3 | 91.4 | 45.7 | 4.9 | 115 | 10 | 12 | 1 | 1" | 12(WT) |
| | 480 | 3 | 70.4 | 35.2 | 7.9 | 90 | 12 | 12 | 3 | 1" | 12(WT) |
| | 600 | 3 | 54.3 | 54.3 | 12.3 | 70 | 8 | 10 | 4 | 1" | 15 |
| | 208 | 3 | 178.6 | 59.5 | 1.4 | 225 | 8 | 10 | 4/0 | 1½" | 17 |
| | 600 | 3 | 63.4 | 63.4 | 10.9 | 80 | 8 | 10 | 4 | ¾" | 18 |
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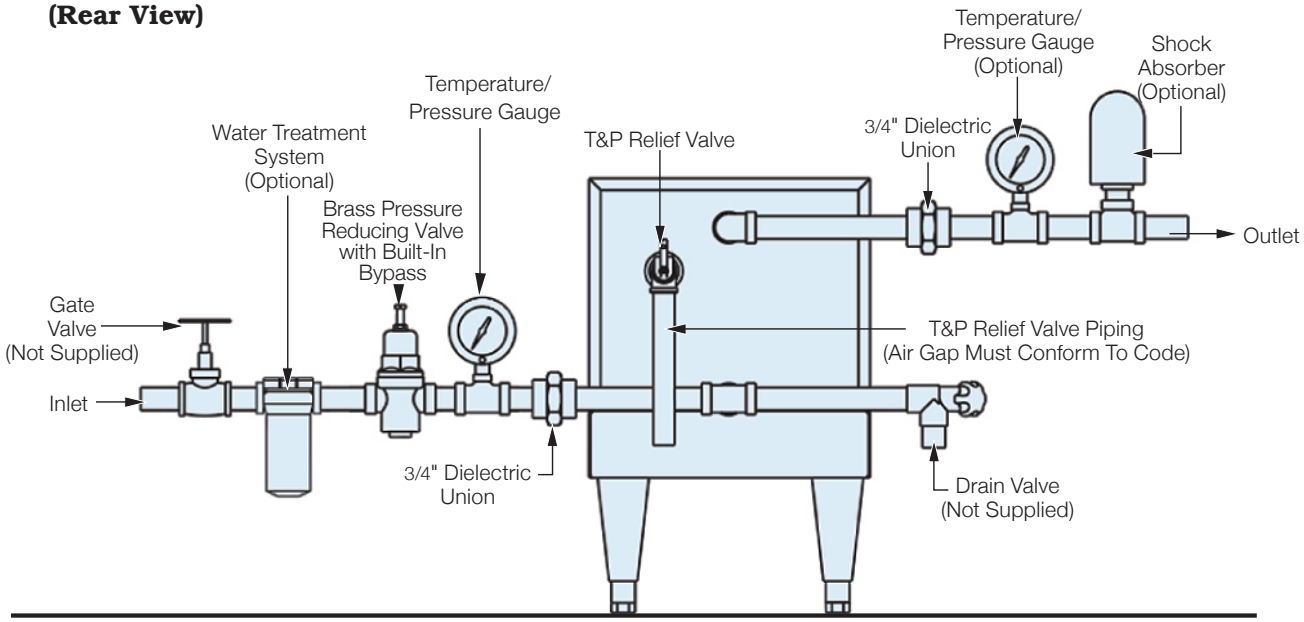
J6 and J16 Wiring Chart Notes:

1. Power feed wire sizing is based on using 75°C Cu THHN wire with feeder branch protection rated at 125%.
2. Internal wire sizing is based on using 200°C SEW-2 or PTFE wiring in a raceway with an ambient temperature up to 60°C.
3. For information on 277V, 415V, or 440V models reference the supplied drawing or contact the factory.
4. Normal phase-to-phase resistance tolerance is ±5%.
5. 380, 480, and 600-volt phase-to-phase resistance values are shown with the transformer disconnected.
6. For 575V models, multiply the kW rating of the 600V model by a de-rating factor of 0.92 to get the actual rating for 575V.
7. For models manufactured prior to June 24, 2005, that utilize wiring diagrams 3, 5, 6, 7(NT), 7(WT), or 11 please contact the factory for wiring diagrams.

# Typical Installation Diagrams

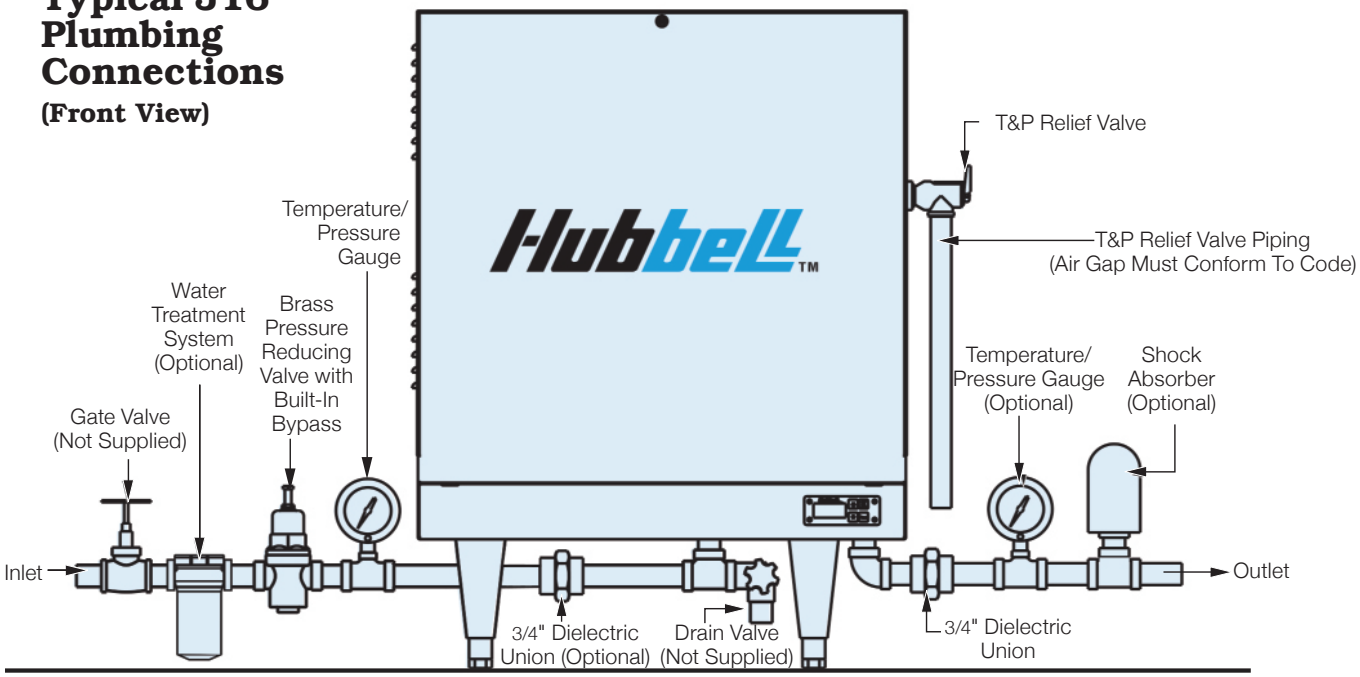
## Typical J6 Plumbing Connections

**(Rear View)**




## Typical J16 Plumbing Connections

**(Front View)**




## Plumbing Notes:

1. Dielectric unions as supplied must be installed in the inlet and outlet piping to prevent electrolysis.
2. No check valve may be installed in the supply line to the booster.
3. All shut off valves must be gate or ball valves - not globe valves.
4. The brass pressure reducing valve with built-in bypass is adjustable from 25 to 75 psi.
5. To minimize heat loss and maximize efficiency, hot water piping should be insulated.

| Recovery Ratings 1-58.5 kW | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| KW Rating | Recovery Rate in GPH at °F Temperature Rise (ΔT) | | | | | | | |
| | 20° ΔT | 30° ΔT | 40° ΔT | 60° ΔT | 70° ΔT | 80° ΔT | 110° ΔT | 140° ΔT |
| 1 | 20 | 14 | 10 | 7 | 6 | 5 | 4 | 3 |
| 1.5 | 31 | 20 | 15 | 10 | 9 | 8 | 6 | 4 |
| 2 | 41 | 27 | 20 | 14 | 12 | 10 | 7 | 6 |
| 3 | 61 | 41 | 31 | 20 | 18 | 15 | 11 | 9 |
| 4 | 82 | 55 | 41 | 27 | 23 | 20 | 15 | 12 |
| 5 | 102 | 68 | 51 | 34 | 29 | 26 | 19 | 15 |
| 6 | 123 | 82 | 61 | 41 | 35 | 31 | 22 | 18 |
| 7 | 143 | 96 | 72 | 48 | 41 | 36 | 26 | 20 |
| 9 | 184 | 123 | 92 | 61 | 53 | 46 | 33 | 26 |
| 10.5 | 215 | 143 | 107 | 72 | 61 | 54 | 39 | 31 |
| 12 | 246 | 164 | 123 | 82 | 70 | 61 | 45 | 35 |
| 13.5 | 276 | 184 | 138 | 92 | 79 | 69 | 50 | 39 |
| 15 | 307 | 205 | 154 | 102 | 88 | 77 | 56 | 44 |
| 18 | 368 | 246 | 184 | 123 | 105 | 92 | 67 | 53 |
| 24 | 491 | 328 | 246 | 164 | 140 | 123 | 89 | 70 |
| 27 | 553 | 368 | 276 | 184 | 158 | 138 | 100 | 79 |
| 30 | 614 | 409 | 307 | 205 | 175 | 154 | 112 | 88 |
| 36 | 737 | 491 | 368 | 246 | 211 | 184 | 134 | 105 |
| 39 | 798 | 532 | 399 | 266 | 228 | 200 | 145 | 114 |
| 40.5 | 829 | 553 | 415 | 276 | 237 | 207 | 151 | 118 |
| 45 | 921 | 614 | 461 | 307 | 263 | 230 | 167 | 132 |
| 54 | 1105 | 737 | 553 | 368 | 316 | 276 | 201 | 158 |
| 58.5 | 1198 | 798 | 599 | 399 | 342 | 299 | 218 | 171 |

| Recovery Ratings 64-88 kW | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 64 | 1310 | 873 | 655 | 437 | 374 | 328 | 238 | 187 |
| 68 | 1392 | 928 | 696 | 464 | 398 | 348 | 253 | 199 |
| 81 | 1658 | 1105 | 829 | 553 | 474 | 415 | 301 | 237 |
| 86 | 1761 | 1174 | 880 | 587 | 503 | 440 | 320 | 252 |
| 88 | 1802 | 1201 | 901 | 601 | 515 | 450 | 328 | 257 |
| | | | | | | | | |

# Formulas To Solve For:

## Recovery

GPH x _____ °F ΔT x 0.00244 = KW

KW x 410 ÷ GPH = _____ °F ΔT

KW x 410 ÷ _____ °F ΔT = GPH

**Note:** 1 KW will heat 4.1 GPH at a 100°F ΔT

## Electrical

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

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

## Metric Conversion

Liters x 0.2641 = Gallons
Gallons x 3.79 = Liters
Gallons x 0.003785 = $m^3$
$m^3$ x 264.2 = Gallons
1°F ΔT = 1.8°F ΔT

°F = (°C x 1.8) + 32
°C = (°F - 32) x 0.556
psi x 0.06896 = Bar
Bar x 14.5 = psi
psi x 6.86 = kPa

kPa x 0.1456 = psi
Lbs x 0.4536 = Kg
Kg x 2.2 = Lbs
Watts/Sq.Cm. x 6.4 = Watts/Sq.In.
Watts/Sq.In. x 0.155 = Watts/Sq.Cm.

# Voltage De-Rating Factors

| Rated Voltage | Applied Voltage | KW De-Rating Factor |
|---|---|---|
| 600 | 575 | 92% |
| 600 | 550 | 84% |
| 480 | 460 | 92% |
| 480 | 440 | 84% |
| 240 | 230 | 92% |
| 240 | 220 | 84% |

When the actual supply voltage (applied voltage) is different than the booster design voltage (rate voltage) the resulting KW output will be affected. Please see the chart for typical voltage de-rating factors, or use the following formula:

$\frac{Applied\ Votage^2}{Rated\ Voltage^2} \times Rated\ KW = KW\ output\ at\ applied\ voltage$

# J Model Standard Accessories

## J6 and J16 Boosters

- √ T&P Relief Valve
- √ Brass pressure reducing valve with built-in bypass
- √ (4) NSF approved plastic legs
- √ (1) Combination temperature and pressure gauge
- √ (2) Dielectric Unions

- √
- √

- √
- √

***Note:*** Any and all optional accessories for a Hubbell booster heater must be called out in the written specifications. A model number in and of itself does not reflect any optional accessoties selected.

# Optional Accessories

☐ **1. Slide Brackets:** Available for the J6 model only, these brackets allow for mounting the booster heater under a counter. See slide bracket diagram for details.

☐ **2. Shock Absorber:** Reduce the harmful pressures resulting from quick closing dishwasher solenoid valves by installing a shock absorber between the booster and the dishwasher.

☐ **3. Tamper Resistant Package:** For prison and other secure facilities a tamper resistant package is available with all hardware tamper resistant type. Includes standard plastic legs unless otherwise specified.

☐ **4. Protective Cover:** Keep your Hubbell booster free from dirt, debris, chemicals and excessive water with this removable form fitted protective cover. Velcro fasteners make it easily installed and simple to remove when service is required. Clear window allows visibility of Hubbell booster digital display.

☐ **5. Alternate Legs:** Please specify type: Nickel plated die cast, stainless steel, stainless steel with flanged base for floor mounting.

☐ **6. 24 Volt Heater Interlock Adapter:** An optional plug adapter that interlocks the heater via a 24-Volt signal through the J1 connector on the control board (standard on the J3).

☐ **7. Water Treatment System:** Provide superior mineral scale prevention and corrosion control by feeding a special blend of scale control compounds into the hot water stream before the booster. The in-line system to include a clear cartridge housing to allow an operator to view the cartridge and determine when it needs replacement without the need to open the system.

☐ **8. Alternative Voltages:** Hubbell booster heaters are available in alternate voltages including 380, 415, 440 and 575 volt. Please contact factory for kW selection.

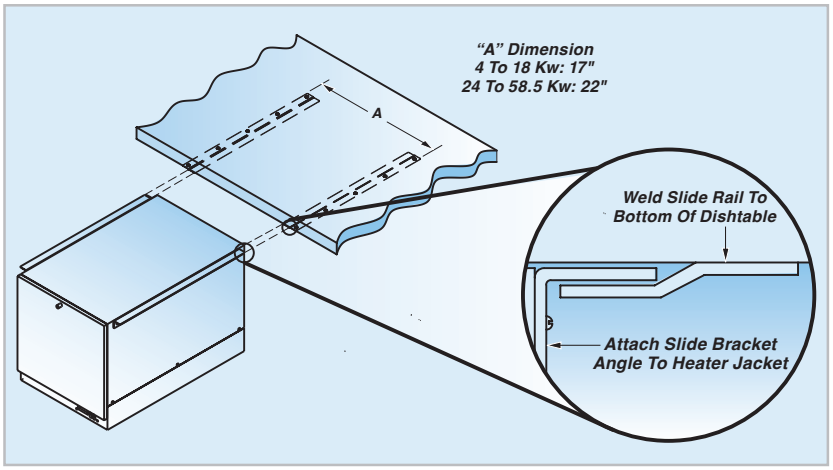
☐ **9. Low Temperature Interlock:** This device is built into the booster and monitors water temperature and will trip an SPDT relay when water temperature drops below a set point (150 - 180°F) thereby preventing final rinse from activating.

☐ **10. Remote Alarm Adapter:** This device installs into the Hubbell controller and provides remote alarm capability to indicate a reset fault condition. Common/N.O./N.C. rated 220 VDC, 250 VAC, 2 amp max.

☐ **11. Remote Control Panel:** This device allows you to install the booster in one location and have complete control of it (on/off, temperature adjustment, reset and temperature indication) from another location (200 feet maximum). Remote control panel is 5" x 2" x 3" and NEMA 4 rated.

***Note:*** None of the listed optional accessories are available with J4 models.

# J6 Slide Bracket Detail



# Water Quality Requirements

Recommended water hardness is 4 to 6 grains of hardness per gallon (GPG). Water hardness above 6 GPG should be treated by a water conditioner (water softener or in-line treatment). Water hardness below 4 GPG also requires treatment to reduce potential corrosion. Excessive GPG will result in higher operating and maintenance costs and will reduce product longevity.

Chlorides must not exceed 50 parts per million (ppm). Excessive chlorides will result in metallic corrosion and will reduce product longevity.

Water treatment has been shown to reduce costs associated with deliming the booster as well as reducing metallic corrosion. Product failure caused by these conditions is not covered under warranty. See warranty for complete details.

# Booster Sizing for a Low Temp Dishmachine

Chemical low-temp dishwashers are most effective when supplied with 140°F hot water. This water temperature may not be available due to an undersized primary water heater or local safety code. Hubbell J model boosters can operate as a pre-heater for chemical low-temp dishwashers to provide an adequate supply of 140°F hot water for proper operation. For temperatures other than the factory setting of 185°F, simply set the digital display to your desired temperature.

**To properly size a Hubbell booster heater for low temp use:**

1. Determine the required temperature rise; the difference in temperature between your supply water temperature to your booster and your desired hot water temperature out of the booster.
2. Determine the water usage gallons per hour (GPH) by consulting the dishwasher data plate, literature or NSF listing.
3. Select the appropriate kW based on 1 and 2 above using either the formula below or the Recovery Rating Chart on page 4.

# Booster Sizing Formula

**Required Variables:**

**A.** Water usage in GPH _____

**B.** Supply water temp in °F _____

**C.** Desired water temp in °F _____

**D.** Calculate the ΔT (temp rise) by subtracting **C** - **B** in °F _____

**Formula to Determine KW:**

_____ GPH x _____ °F ΔT x 0.00244 = _____ KW