



Legacy Chillers, Inc.

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## WATER-COOLED SCROLL CHILLERS

Packaged Process Chillers



*With  
Easy-to-Use Touch Screen Display  
on ALL Chiller Models  
(located inside electrical cabinet)*



*Have Questions? Give Us a Call at: **877-988-5464***

Website: [www.legacychillers.com](http://www.legacychillers.com)

[www.legacy-chillers.com](http://www.legacy-chillers.com)

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# TYPICAL **Legacy Chillers** CHILLER APPLICATIONS

(but not limited to):

## **Commercial, Industrial & Residential Cooling Applications**

- Air Conditioning
- Oil
- Injection Molding
- Plating Process
- Welding Machine
- Computer Room Air Conditioning
- Laser
- Dry Cleaning Machine
- Jacket Cooling
- Water-Cooled Condenser
- Printing Processing
- Swimming Pools
- Aquariums
- Fish Hatcheries
- Ice skating Rinks
- Commercial Ship Cooling Applications
- Low Temperature Process
- Plastics & Rubber Industries
- Military
- Anodizing Process Cooling
- Semiconductor Cooling
- Chemical
- Energy
- Plasma Cooling
- Data Center Cooling
- Cold Storage
- Extrusion Cooling
- Custom Cooling Innovation

## **Food & Beverage Industry Applications**

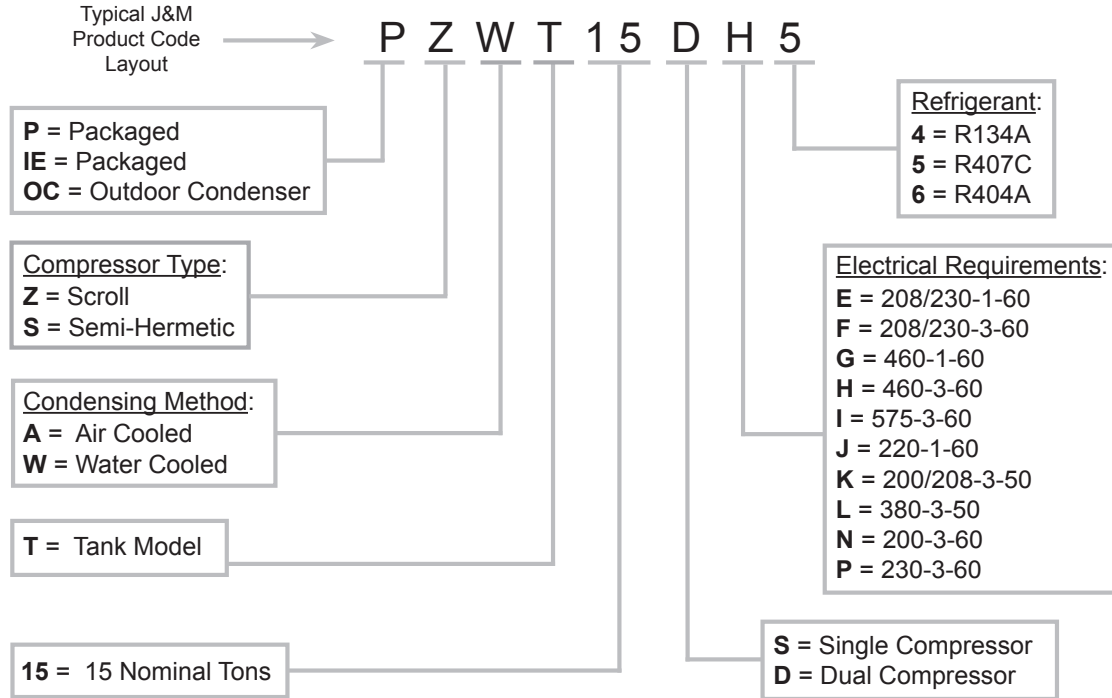
- Bakery Processing
- Brewery
- Winery
- Drinking Water Fountain
- Batch Cooling
- Ice Machine Pre-Cool
- Fruit and Vegetable Washing and Processing
- Candy Manufacturing
- Dairy Cooling
- Soft Drink/Beverage Cooling

## **Medical & Pharmaceutical Applications**

- M.R.I. Imager Cooling
- Operating Room Air Conditioning
- P.E.T. Scan
- C.A.T. Scan
- Lab Cooling
- Hypothermia Pads and Blankets
- Pharmaceutical Process Cooling



Model Shown:  
PZWT13D



### HOW TO PROPERLY SELECT AN AIR-COOLED PACKAGED CHILLER...

#### Caution



Low ambient, or lower leaving water temperatures, can require the recirculation of glycol solutions or other fluid blends.

**These solutions can effect unit capacities.**

Please consult the factory on these or other special applications for proper chiller and component sizing.

**To properly select an Air-Cooled Packaged Chiller, the following information must be known:**

1. The required cooling capacity, BTUH.
2. Delta T of entering and leaving fluid temperatures.
3. Fluid factor (ex. water = 500).
4. GPM of process fluid to be circulated.
5. Design ambient air temperature.

If you know any three of the above items 1 through 4 above, you can calculate the fourth by using the formulas below.

**For 100% water:**

- Cooling capacity (in BTUH) = GPM x Delta T x 500
- GPM = Capacity (in BTUH) / Delta T x 500
- Delta T = Capacity (in BTUH) / GPM x 500

**Sample selection:**

Select a water-cooled, packaged chiller to cool 15 GPM of 100% water from 54°F to 44°F. Design condensing temperature 105°F. **Find:** Water-cooled chiller model.

**Solution:**

1. Chilled fluid Delta T = 54°F - 44°F = 10°F
2. Capacity (in BTUH) = 15 GPM x 10°F Delta T x 500 = 75,000 BTUH
3. From the PZW chiller capacity tables, it can be determined that the PZW7S or PZW7D has the capacity to meet the requirements.

***Need Help... Just Give Us a Call... We are Here to Help!***

# 1S - 52D Water-Cooled Chillers

| Model | Compressor | LWT<br>°F | 105°F Condensing |      |      |
|-------|------------|-----------|------------------|------|------|
|       |            |           | TONS             | KW   | EER  |
| 1S    | ZR16K5E    | 42.0      | 1.05             | 1.10 | 11.9 |
|       |            | 44.0      | 1.10             | 1.10 | 12.5 |
|       |            | 45.0      | 1.13             | 1.10 | 12.8 |
|       |            | 50.0      | 1.26             | 1.10 | 14.4 |
| 1.5S  | ZS15KAE    | 42.0      | 1.77             | 1.73 | 12.7 |
|       |            | 44.0      | 1.84             | 1.72 | 13.3 |
|       |            | 45.0      | 1.88             | 1.72 | 13.5 |
|       |            | 50.0      | 2.07             | 1.69 | 15.2 |
| 2S    | ZS19KAE    | 42.0      | 1.99             | 1.94 | 12.7 |
|       |            | 44.0      | 2.08             | 1.94 | 13.3 |
|       |            | 45.0      | 2.12             | 1.93 | 13.6 |
|       |            | 50.0      | 2.33             | 1.90 | 15.2 |
| 2.5S  | ZS26KAE    | 42.0      | 2.98             | 2.56 | 14.4 |
|       |            | 44.0      | 3.09             | 2.55 | 15.0 |
|       |            | 45.0      | 3.16             | 2.55 | 15.3 |
|       |            | 50.0      | 3.48             | 2.51 | 17.2 |
| 3S    | ZS29KAE    | 42.0      | 3.33             | 2.85 | 14.5 |
|       |            | 44.0      | 3.47             | 2.84 | 15.1 |
|       |            | 45.0      | 3.53             | 2.84 | 15.4 |
|       |            | 50.0      | 4.02             | 2.79 | 17.3 |
| 4S    | ZB38KCE    | 42.0      | 4.25             | 3.88 | 13.5 |
|       |            | 44.0      | 4.46             | 3.89 | 14.1 |
|       |            | 45.0      | 4.54             | 3.90 | 14.4 |
|       |            | 50.0      | 5.17             | 3.93 | 15.8 |
| 4.5S  | ZB42KCE    | 42.0      | 4.46             | 4.64 | 12.0 |
|       |            | 44.0      | 4.63             | 4.63 | 12.4 |
|       |            | 45.0      | 4.71             | 4.40 | 11.6 |
|       |            | 50.0      | 5.17             | 4.61 | 13.9 |
| 5S    | ZB45KCE    | 42.0      | 5.19             | 4.54 | 14.2 |
|       |            | 44.0      | 5.42             | 4.55 | 14.8 |
|       |            | 45.0      | 5.53             | 4.56 | 15.0 |
|       |            | 50.0      | 6.12             | 4.58 | 16.5 |
| 7S    | ZB58KCE    | 42.0      | 6.75             | 5.98 | 14.0 |
|       |            | 44.0      | 7.06             | 5.99 | 14.6 |
|       |            | 45.0      | 7.21             | 5.99 | 14.9 |
|       |            | 50.0      | 7.99             | 6.00 | 16.5 |
| 8S    | ZB66KCE    | 42.0      | 7.66             | 6.70 | 14.2 |
|       |            | 44.0      | 7.99             | 6.72 | 14.7 |
|       |            | 45.0      | 8.17             | 6.73 | 15.0 |
|       |            | 50.0      | 9.08             | 6.78 | 16.6 |
| 9S    | ZB76KCE    | 42.0      | 9.00             | 8.02 | 13.9 |
|       |            | 44.0      | 9.42             | 8.04 | 14.5 |
|       |            | 45.0      | 9.58             | 8.05 | 14.8 |
|       |            | 50.0      | 10.67            | 8.09 | 16.3 |
| 11S   | ZB95KCE    | 42.0      | 11.04            | 9.82 | 13.9 |
|       |            | 44.0      | 11.54            | 9.85 | 14.5 |
|       |            | 45.0      | 11.79            | 9.87 | 14.8 |
|       |            | 50.0      | 13.17            | 9.98 | 16.3 |

| Model | Compressors | LWT<br>°F | 105°F Condensing |      |      |
|-------|-------------|-----------|------------------|------|------|
|       |             |           | TONS             | KW   | EER  |
| 7D    | ZS29KAE     | 42.0      | 6.7              | 5.7  | 14.5 |
|       |             | 44.0      | 6.9              | 5.7  | 15.1 |
|       |             | 45.0      | 7.1              | 5.7  | 15.4 |
|       |             | 50.0      | 8.0              | 5.6  | 17.3 |
| 9D    | ZB38KCE     | 42.0      | 8.5              | 7.8  | 13.5 |
|       |             | 44.0      | 8.9              | 7.8  | 14.1 |
|       |             | 45.0      | 9.1              | 7.8  | 14.4 |
|       |             | 50.0      | 10.3             | 7.9  | 15.8 |
| 9.5D  | ZB42KCE     | 42.0      | 8.9              | 9.3  | 12.0 |
|       |             | 44.0      | 9.3              | 9.3  | 12.4 |
|       |             | 45.0      | 9.4              | 8.8  | 11.6 |
|       |             | 50.0      | 10.3             | 9.2  | 13.9 |
| 10D   | ZB45KCE     | 42.0      | 10.4             | 9.1  | 14.2 |
|       |             | 44.0      | 10.8             | 9.1  | 14.8 |
|       |             | 45.0      | 11.1             | 9.1  | 15.0 |
|       |             | 50.0      | 12.2             | 9.2  | 16.5 |
| 13D   | ZB58KCE     | 42.0      | 13.5             | 12.0 | 14.0 |
|       |             | 44.0      | 14.1             | 12.0 | 14.6 |
|       |             | 45.0      | 14.4             | 12.0 | 14.9 |
|       |             | 50.0      | 16.0             | 12.0 | 16.5 |
| 15D   | ZB66KCE     | 42.0      | 15.3             | 13.4 | 14.2 |
|       |             | 44.0      | 16.0             | 13.4 | 14.7 |
|       |             | 45.0      | 16.3             | 13.5 | 15.0 |
|       |             | 50.0      | 18.2             | 13.6 | 16.6 |
| 18D   | ZB76KCE     | 42.0      | 18.0             | 16.0 | 13.9 |
|       |             | 44.0      | 18.8             | 16.1 | 14.5 |
|       |             | 45.0      | 19.2             | 16.1 | 14.8 |
|       |             | 50.0      | 21.3             | 16.2 | 16.3 |
| 22D   | ZB95KCE     | 42.0      | 21.8             | 20.2 | 13.3 |
|       |             | 44.0      | 22.8             | 20.3 | 13.8 |
|       |             | 45.0      | 23.3             | 20.3 | 14.1 |
|       |             | 50.0      | 25.9             | 20.6 | 15.5 |
| 25D   | ZB114KCE    | 42.0      | 25.5             | 24.9 | 12.7 |
|       |             | 44.0      | 26.7             | 25.0 | 11.2 |
|       |             | 45.0      | 27.3             | 25.1 | 13.4 |
|       |             | 50.0      | 30.3             | 25.4 | 14.7 |
| 35D   | ZR250KCE    | 42.0      | 34.5             | 31.8 | 13.4 |
|       |             | 44.0      | 36.0             | 32.0 | 13.9 |
|       |             | 45.0      | 36.8             | 32.0 | 14.3 |
|       |             | 50.0      | 41.0             | 32.2 | 15.7 |
| 43D   | ZR300KCE    | 42.0      | 41.7             | 38.4 | 13.4 |
|       |             | 44.0      | 43.5             | 38.6 | 13.9 |
|       |             | 45.0      | 44.5             | 38.6 | 14.3 |
|       |             | 50.0      | 49.5             | 39.0 | 15.7 |
| 52D   | ZR380KCE    | 42.0      | 52.7             | 49.0 | 13.3 |
|       |             | 44.0      | 55.0             | 49.2 | 13.9 |
|       |             | 45.0      | 56.2             | 49.4 | 14.1 |
|       |             | 50.0      | 62.3             | 49.8 | 15.5 |

1. Capacities on this chart are based on refrigerant R407C. Lower leaving water or low ambient can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.
2. KW input is for compressor(s) only.
3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor (s), condenser fan motor (s) and control power.

## Packaged Water-Cooled Chillers

### Standard Features (All Models):

- **ETL listed** to UL1995 & CAN/CSA C22.2 No. 236-11, 4th edition, 10/14/2011
- **Single point power connection**
- **Idec microprocessor controller with easy to use touch screen display**
- **STAINLESS STEEL**, brazed plate evaporator
- **Scroll** compressor with crankcase heater
- **Suction accumulator**
- **Water flow switch**
- **Hot gas by-pass capacity control**
- **24V control transformer**
- Control circuit fusing
- Condenser(s): Coaxial up to PZW22D
- Condenser(s): Shell and Tube PZW26D through PZW52D
- Compressor motor contactor
- **Painted - Powder Coated (Most Models), galvanized sheet metal cabinet**
- 1/2" insulation on all water and refrigerant lines
- Liquid line drier, sight glass, solenoid, TXV
- Complete refrigerant charge from factory

### Tank Models Only:

- **STAINLESS STEEL** storage tank with 1/2 inch insulation
- Fused, **STAINLESS STEEL** re-circulation pump for tank operation with ball valve and cleanable strainer
- Tank pressure relief valve, vent and drain hose bibs



### Available Options (All Models):

- **Remote Idec touchscreen control panel**
- **Industrial VPN Router**
- **5 Port Ethernet Switch**
- **BacNet Gateway**
- **Process Pump VFD Controller**
- 4 year extended compressor warranty
- Casters (factory mounted)
- Condenser water regulating valve
- 115 volt (rain tight) service outlet
- Non Fused Disconnect
- Phase Monitor, line voltage monitor offering protection against phase loss/reversal, unbalance and hi/lo voltage
- Compressor fusing
- Compressor Sound Cover
- **Factory installed evaporator heat tape freeze protection**
- Low flow by-pass valve
- Fused, **STAINLESS STEEL** process pump
- Dual system pump with manual changeover (some models)
- Dual system pump with auto changeover (some models)
- Pump suction isolation valve
- Water pressure gauge set
- Water Flow Meter
- Auto city water changeover panel with filter
- Stainless steel, SCH80 PVC or Polypropylene piping for deionized and reverse osmosis water systems

### Available Options

- Storage tank sight glass
- Tank low liquid level indicator with dry contacts

# Touch Screen User Interface



## Touch Screen Key Chiller Control Features:

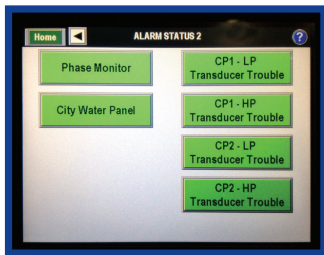
- USB update slot for IN-PLACE HMI and PLC software updates available from [jmchillers.com](http://jmchillers.com)
- Free Software Upgrades
- CE, UL Listed
- Monitor / Control your chiller from anywhere\*
- 4gb SD card in slot for data storage - Standard
- Ultra bright display screen with auto screen saver
- Real-time Pressure and Temperature readings
- Automatic COMPRESSOR Lag/Lead with FIVE operational modes
- Automatic SYSTEM PUMP Lag/Lead with FIVE operational modes
- Factory configured for ALL chiller options

\*Some network configuration required.

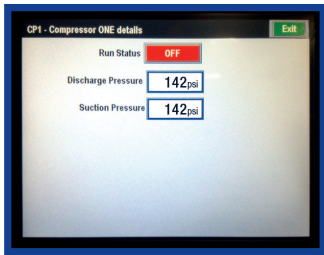
## Other Touchscreen User Interface Examples...



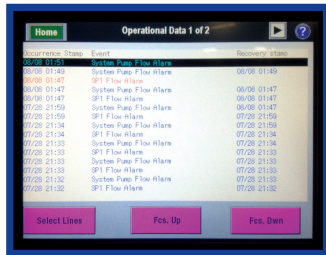
Alarm Status Screen 1



Alarm Status Screen 2



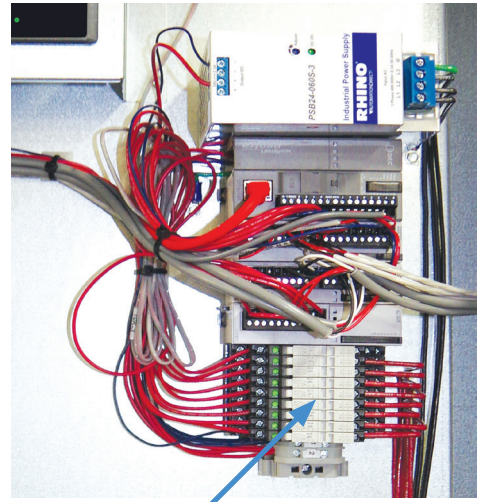
Compressor Operation Status and Pressures



Operational Data and Fault Log

# Pentra Microsmart, Programable Logic Controller (PLC)

PLC Controller



*“Plugin” Control Relays for quick easy replacement. No circuit board to replace. Less downtime and cost.*

**Best-In-Class PLC available for ALL production chiller models.**

Factory installed and programmed into your next Legacy Chillers Process Chiller. The **Pentra PLC** will seamlessly interface with our HMI touch screen.

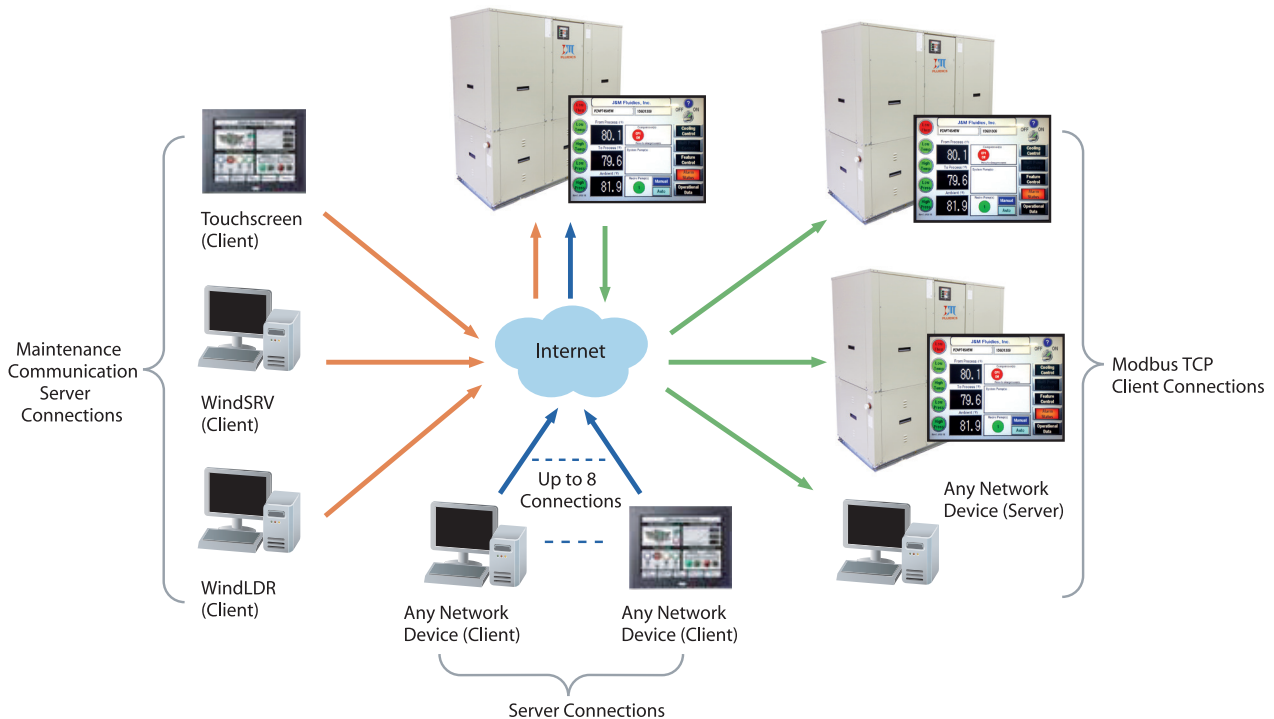
Pentra Key features include:

- **CE, UL Listed**
- **Highly accurate and fast performance**
- **Embedded Ethernet Port**
- **Modbus (Slave) TCP, RTU and ASCII for integration with most Building Automation Systems (BAS)**
- **Optional BacNet and LONWORKS communication protocols via third party gateway hardware**
- **Expandable I/O, ideal for custom chiller control projects**
- **I/O status indicators on for easy diagnostics**

## Offering Extended Connectivity Options...

### Up to 14 Simultaneous Connections!

Using Maintenance Communication Server connections, up to 3 Client devices, such as OI touchscreen, WindLDR software and SCADA OPC server such as WindSRV (KepServerEx), can simultaneously communicate with your MicroSmart Pentra PLC. Using Server Connections, an additional 8 connections can be established and each connection can be defined as Maintenance, User Communication or Modbus TCP server protocol. On top of that, another 3 connections can be configured as Modbus TCP client protocol, with a maximum of 255 requests. Each request can be for different slave devices with different IP addresses on the network.



**IMPORTANT CONSIDERATION:** Legacy Chillers, Inc. offers an optional Level 3 managed switch allowing MODBUS connectivity to the Pentra MicroSmart PLC controller. In most cases, end users firewall settings will need to be updated to allow remote WAN connectivity.



# Single Circuit Packaged Water-Cooled Chillers



Model: PZW3S

| Chiller Model | BTUH 105°F<br>Cond. 45°F LWT | Length<br>Inches | Width<br>Inches | Height<br>Inches | Compressor |     | RLA ea. | LRA ea. | MCA | M.O.P. | Chiller Fluid<br>Conn. | Weight<br>Pounds |
|---------------|------------------------------|------------------|-----------------|------------------|------------|-----|---------|---------|-----|--------|------------------------|------------------|
|               |                              |                  |                 |                  | Qty.       | HP  |         |         |     |        |                        |                  |
| PZW1SE5       | 13,500                       | 36               | 34              | 36               | 1          | 1.3 | 8.3     | 40.3    | 15  | 15     | 1"FPT                  | 210              |
| PZW1.5SE5     | 22,500                       | 36               | 34              | 36               | 1          | 2.0 | 13.5    | 68      | 20  | 30     | 1"FPT                  | 215              |
| PZW1.5SF5     |                              |                  |                 |                  |            |     | 8.0     | 58      | 15  | 15     |                        |                  |
| PZW1.5SH5     |                              |                  |                 |                  |            |     | 4.2     | 29      | 15  | 15     |                        |                  |
| PZW1.5SI5     |                              |                  |                 |                  |            |     | 3.1     | 24      | 15  | 15     |                        |                  |
| PZW2SE5       |                              |                  |                 |                  |            |     | 14.1    | 75      | 20  | 30     |                        |                  |
| PZW2SF5       | 25,400                       | 36               | 34              | 36               | 1          | 2.5 | 9.9     | 73      | 15  | 20     | 1"FPT                  | 215              |
| PZW2SH5       |                              |                  |                 |                  |            |     | 5.1     | 38      | 15  | 15     |                        |                  |
| PZW2SI5       |                              |                  |                 |                  |            |     | 3.8     | 28      | 15  | 15     |                        |                  |
| PZW2.5SE5     | 37,900                       | 36               | 34              | 36               | 1          | 3.5 | 19.9    | 104     | 25  | 40     | 1"FPT                  | 245              |
| PZW2.5SF5     |                              |                  |                 |                  |            |     | 12.8    | 93      | 20  | 25     |                        |                  |
| PZW2.5SH5     |                              |                  |                 |                  |            |     | 5.8     | 48      | 15  | 15     |                        |                  |
| PZW2.5SI5     |                              |                  |                 |                  |            |     | 4.7     | 38      | 15  | 15     |                        |                  |
| PZW3SE5       | 42,400                       | 36               | 34              | 36               | 1          | 4   | 21.8    | 137     | 30  | 45     | 1"FPT                  | 340              |
| PZW3SF5       |                              |                  |                 |                  |            |     | 15.4    | 114     | 20  | 30     |                        |                  |
| PZW3SH5       |                              |                  |                 |                  |            |     | 7.1     | 58      | 15  | 15     |                        |                  |
| PZW3SI5       |                              |                  |                 |                  |            |     | 5.2     | 43      | 15  | 15     |                        |                  |
| PZW4SE5       | 54,500                       | 46               | 34              | 36               | 1          | 5   | 27.1    | 175     | 35  | 60     | 1"FPT                  | 400              |
| PZW4SF5       |                              |                  |                 |                  |            |     | 18.6    | 128     | 25  | 40     |                        |                  |
| PZW4SH5       |                              |                  |                 |                  |            |     | 8.0     | 63      | 15  | 20     |                        |                  |
| PZW4SI5       |                              |                  |                 |                  |            |     | 6.3     | 50      | 15  | 15     |                        |                  |
| PZW4.5SE5     | 56,500                       | 46               | 34              | 36               | 1          | 5   | 25.0    | 129     | 35  | 50     | 1"FPT                  | 425              |
| PZW5SF5       | 66,400                       | 46               | 34              | 36               | 1          | 6   | 18.6    | 156     | 25  | 40     | 1"FPT                  | 450              |
| PZW5SH5       |                              |                  |                 |                  |            |     | 10.3    | 75      | 15  | 20     |                        |                  |
| PZW5SI5       |                              |                  |                 |                  |            |     | 7.1     | 54      | 15  | 15     |                        |                  |
| PZW7SF5       | 86,500                       | 46               | 34              | 36               | 1          | 8   | 28.8    | 195     | 40  | 60     | 1.25"FPT               | 525              |
| PZW7SH5       |                              |                  |                 |                  |            |     | 14.7    | 95      | 20  | 30     |                        |                  |
| PZW7SI5       |                              |                  |                 |                  |            |     | 10.8    | 80      | 15  | 20     |                        |                  |
| PZW8SF5       | 98,000                       | 46               | 34              | 36               | 1          | 9   | 30.1    | 225     | 40  | 60     | 1.25"FPT               | 585              |
| PZW8SH5       |                              |                  |                 |                  |            |     | 15.5    | 114     | 20  | 30     |                        |                  |
| PZW8SI5       |                              |                  |                 |                  |            |     | 12.1    | 80      | 20  | 25     |                        |                  |
| PZW9SF5       | 115,000                      | 46               | 34              | 36               | 1          | 10  | 37.2    | 239     | 50  | 80     | 1.25"FPT               | 600              |
| PZW9SH5       |                              |                  |                 |                  |            |     | 17.2    | 125     | 25  | 35     |                        |                  |
| PZW9SI5       |                              |                  |                 |                  |            |     | 12.4    | 80      | 20  | 25     |                        |                  |
| PZW11SF5      | 139,500                      | 46               | 34              | 36               | 1          | 12  | 49.4    | 300     | 70  | 110    | 1.25"FPT               | 725              |
| PZW11SH5      |                              |                  |                 |                  |            |     | 23.1    | 150     | 30  | 50     |                        |                  |
| PZW11SI5      |                              |                  |                 |                  |            |     | 19.2    | 109     | 25  | 40     |                        |                  |

1) The calculations for the MCA and MOP are based on requirements of NFPA 70, the National Electrical Code (NEC) and CSA C22.1, the Canadian Electrical Code (CEC). The MCA is the minimum wire size needed to guarantee that the wiring will not overheat under any operating conditions. The MOP is the maximum allowable circuit breaker size that will properly disconnect power to the equipment under any anticipated fault condition.

2) Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.



Model Shown:  
PZW9DF6

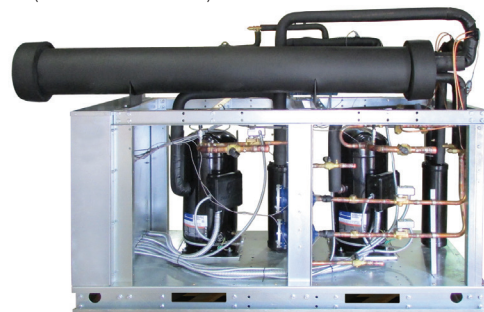
## Dual Circuit Packaged Water-Cooled Chillers

| Chiller Model | BTUH 105°F<br>Cond 45°F | Length<br>Inches | Width<br>Inches | Height<br>Inches | Compressor |    | RLA ea. | LRA ea. | MCA | M.O.P. | Chiller Fluid<br>Conn. | Weight<br>Pounds |
|---------------|-------------------------|------------------|-----------------|------------------|------------|----|---------|---------|-----|--------|------------------------|------------------|
|               |                         |                  |                 |                  | Qty.       | HP |         |         |     |        |                        |                  |
| PZW7DE5       | 84,800                  | 65               | 34              | 37               | 2          | 4  | 21.8    | 137     | 60  | 80     | 1.25"FPT               | 725              |
| PZW7DF5       |                         |                  |                 |                  |            |    | 15.4    | 114     | 35  | 45     |                        |                  |
| PZW7DH5       |                         |                  |                 |                  |            |    | 7.1     | 58      | 20  | 20     |                        |                  |
| PZW7DI5       |                         |                  |                 |                  |            |    | 5.2     | 43      | 15  | 15     |                        |                  |
| PZW9DE5       | 109,000                 | 65               | 34              | 37               | 2          | 5  | 27.1    | 175     | 70  | 90     | 1.25"FPT               | 750              |
| PZW9DF5       |                         |                  |                 |                  |            |    | 18.6    | 128     | 50  | 60     |                        |                  |
| PZW9DH5       |                         |                  |                 |                  |            |    | 8.0     | 63      | 20  | 25     |                        |                  |
| PZW9DI5       |                         |                  |                 |                  |            |    | 6.3     | 50      | 20  | 20     |                        |                  |
| PZW9.5DE5     | 113,000                 | 65               | 34              | 37               | 2          | 5  | 25.0    | 129     | 70  | 90     | 1.25"FPT               | 775              |
| PZW10DF5      | 132,800                 | 65               | 34              | 37               | 2          | 6  | 18.6    | 156     | 50  | 60     | 1.25"FPT               | 800              |
| PZW10DH5      |                         |                  |                 |                  |            |    | 10.3    | 75      | 30  | 35     |                        |                  |
| PZW10DI5      |                         |                  |                 |                  |            |    | 7.1     | 54      | 20  | 25     |                        |                  |
| PZW13DF5      | 173,000                 | 75               | 34              | 37               | 2          | 8  | 28.8    | 195     | 80  | 100    | 1.25"FPT               | 900              |
| PZW13DH5      |                         |                  |                 |                  |            |    | 14.7    | 95      | 40  | 50     |                        |                  |
| PZW13DI5      |                         |                  |                 |                  |            |    | 10.8    | 80      | 30  | 35     |                        |                  |
| PZW15DF5      | 196,000                 | 75               | 34              | 37               | 2          | 9  | 30.1    | 225     | 80  | 100    | 1.25"FPT               | 965              |
| PZW15DH5      |                         |                  |                 |                  |            |    | 15.5    | 114     | 40  | 50     |                        |                  |
| PZW15DI5      |                         |                  |                 |                  |            |    | 12.1    | 80      | 35  | 40     |                        |                  |
| PZW18DF5      | 230,000                 | 75               | 34              | 37               | 2          | 10 | 37.2    | 239     | 100 | 125    | 1.5"FPT                | 975              |
| PZW18DH5      |                         |                  |                 |                  |            |    | 17.2    | 125     | 50  | 60     |                        |                  |
| PZW18DI5      |                         |                  |                 |                  |            |    | 12.4    | 80      | 35  | 45     |                        |                  |
| PZW22DF5      | 279,000                 | 75               | 34              | 37               | 2          | 12 | 49.4    | 300     | 125 | 150    | 1.5"FPT                | 1000             |
| PZW22DH5      |                         |                  |                 |                  |            |    | 23.1    | 150     | 60  | 70     |                        |                  |
| PZW22DI5      |                         |                  |                 |                  |            |    | 19.2    | 109     | 45  | 60     |                        |                  |
| PZW26DF5      | 327,000                 | 85               | 34              | 59               | 2          | 15 | 60.0    | 340     | 135 | 195    | 2"MPT                  | 1950             |
| PZW26DH5      |                         |                  |                 |                  |            |    | 31.4    | 173     | 80  | 100    |                        |                  |
| PZW26DI5      |                         |                  |                 |                  |            |    | 25.0    | 132     | 60  | 80     |                        |                  |
| PZW35DF5      | 442,000                 | 85               | 34              | 59               | 2          | 20 | 81.4    | 505     | 200 | 250    | 2"MPT                  | 2200             |
| PZW35DH5      |                         |                  |                 |                  |            |    | 37.9    | 225     | 90  | 110    |                        |                  |
| PZW35DI5      |                         |                  |                 |                  |            |    | 32.1    | 180     | 80  | 100    |                        |                  |
| PZW43DF5      | 534,000                 | 100              | 34              | 59               | 2          | 25 | 100.0   | 500     | 225 | 300    | 2"MPT                  | 2350             |
| PZW43DH5      |                         |                  |                 |                  |            |    | 48.6    | 250     | 110 | 150    |                        |                  |
| PZW43DI5      |                         |                  |                 |                  |            |    | 36.4    | 198     | 90  | 110    |                        |                  |
| PZW52DF5      | 674,000                 | 100              | 34              | 59               | 2          | 30 | 121.4   | 599     | 300 | 350    | 2.5"MPT                | 2500             |
| PZW52DH5      |                         |                  |                 |                  |            |    | 59.3    | 310     | 150 | 175    |                        |                  |
| PZW52DI5      |                         |                  |                 |                  |            |    | 47.1    | 239     | 110 | 150    |                        |                  |

1) The calculations for the MCA and MOP are based on requirements of NFPA 70, the National Electrical Code (NEC) and CSA C22.1, the Canadian Electrical Code (CEC). The MCA is the minimum wire size needed to guarantee that the wiring will not overheat under any operating conditions. The MOP is the maximum allowable circuit breaker size that will properly disconnect power to the equipment under any anticipated fault condition.

2) Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.

Model PZW35M  
(with custom chiller barrel)

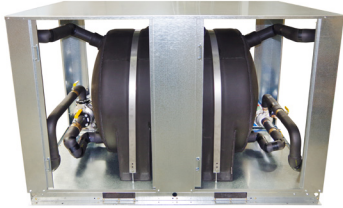


# Packaged, Air-Cooled Chillers with Stainless Steel Tank

| Chiller Model | Nominal BTUH | Length Inches | Width Inches | Height Inches | Compressor |     | RLA  |      | LRA | Recirculation Pump FLA | MCA | M.O.P. | Reservoir Gal. | Chiller Fluid Conn | Weight Pounds |
|---------------|--------------|---------------|--------------|---------------|------------|-----|------|------|-----|------------------------|-----|--------|----------------|--------------------|---------------|
|               |              |               |              |               | Qty.       | HP  | Ea.  | Ea.  |     |                        |     |        |                |                    |               |
| PZWT1SE5      | 14,000       | 36            | 34           | 64.5          | 1          | 1.3 | 8.3  | 40.3 |     | 4.2                    | 15  | 20     | 20             | 1"FPT              | 450           |
| PZWT1.5SE5    | 18,000       | 36            | 34           | 64.5          | 1          | 2   | 13.5 | 68   |     | 4.2                    | 25  | 30     | 20             | 1"FPT              | 500           |
| PZWT1.5SF5    |              |               |              |               |            |     | 8.0  | 58   |     | 4.2                    | 15  | 20     |                |                    |               |
| PZWT1.5SH5    |              |               |              |               |            |     | 4.2  | 29   |     | 0.9                    | 15  | 15     |                |                    |               |
| PZWT1.5SI5    |              |               |              |               |            |     | 3.1  | 24   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT2SE5      | 22,000       | 36            | 34           | 64.5          | 1          | 2.5 | 14.1 | 75   |     | 4.2                    | 25  | 35     | 20             | 1"FPT              | 550           |
| PZWT2SF5      |              |               |              |               |            |     | 9.9  | 73   |     | 4.2                    | 20  | 25     |                |                    |               |
| PZWT2SH5      |              |               |              |               |            |     | 5.1  | 38   |     | 0.9                    | 15  | 15     |                |                    |               |
| PZWT2SI5      |              |               |              |               |            |     | 3.8  | 28   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT2.5SE5    | 28,800       | 36            | 34           | 64.5          | 1          | 3.5 | 19.9 | 104  |     | 4.2                    | 30  | 45     | 20             | 1"FPT              | 600           |
| PZWT2.5SF5    |              |               |              |               |            |     | 12.8 | 93   |     | 4.2                    | 25  | 30     |                |                    |               |
| PZWT2.5SH5    |              |               |              |               |            |     | 5.8  | 48   |     | 0.9                    | 15  | 15     |                |                    |               |
| PZWT2.5SI5    |              |               |              |               |            |     | 4.7  | 38   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT3SE5      | 36,000       | 36            | 34           | 64.5          | 1          | 4   | 21.8 | 137  |     | 4.2                    | 35  | 50     | 20             | 1"FPT              | 650           |
| PZWT3SF5      |              |               |              |               |            |     | 15.4 | 114  |     | 4.2                    | 25  | 35     |                |                    |               |
| PZWT3SH5      |              |               |              |               |            |     | 7.1  | 58   |     | 0.9                    | 15  | 20     |                |                    |               |
| PZWT3SI5      |              |               |              |               |            |     | 5.2  | 43   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT4SE5      | 49,200       | 46            | 34           | 68.5          | 1          | 5   | 27.1 | 175  |     | 4.2                    | 40  | 60     | 50             | 1"FPT              | 700           |
| PZWT4SF5      |              |               |              |               |            |     | 18.6 | 128  |     | 4.2                    | 30  | 45     |                |                    |               |
| PZWT4SH5      |              |               |              |               |            |     | 8.0  | 63   |     | 0.9                    | 15  | 15     |                |                    |               |
| PZWT4SI5      |              |               |              |               |            |     | 6.3  | 50   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT4.5SE5    | 51,600       | 46            | 34           | 68.5          | 1          | 5   | 25.0 | 129  |     | 4.2                    | 40  | 60     | 50             | 1"FPT              | 725           |
| PZWT5SF5      | 55,200       | 46            | 34           | 68.5          | 1          | 6   | 18.6 | 156  |     | 4.2                    | 30  | 45     | 50             | 1"FPT              | 775           |
| PZWT5SH5      |              |               |              |               |            |     | 10.3 | 75   |     | 0.9                    | 15  | 20     |                |                    |               |
| PZWT5SI5      |              |               |              |               |            |     | 7.1  | 54   |     | 0.72                   | 15  | 15     |                |                    |               |
| PZWT7SF5      |              |               |              |               |            |     | 28.8 | 195  |     | 5.4                    | 45  | 70     |                |                    |               |
| PZWT7SH5      | 75,600       | 46            | 34           | 68.5          | 1          | 8   | 14.7 | 95   |     | 1.4                    | 20  | 30     | 50             | 1"FPT              | 850           |
| PZWT7SI5      |              |               |              |               |            |     | 10.8 | 80   |     | 1                      | 15  | 25     |                |                    |               |
| PZWT8SF5      |              |               |              |               |            |     | 30.1 | 225  |     | 6.6                    | 45  | 70     |                |                    |               |
| PZWT8SH5      | 84,000       | 75            | 34           | 70            | 1          | 9   | 15.5 | 114  |     | 1.7                    | 25  | 35     | 80             | 1.25"FPT           | 1000          |
| PZWT8SI5      |              |               |              |               |            |     | 12.1 | 80   |     | 1.5                    | 20  | 25     |                |                    |               |
| PZWT9SF5      | 98,400       | 75            | 34           | 70            | 1          | 10  | 37.2 | 239  |     | 7.9                    | 60  | 90     | 80             | 1.25"FPT           | 1050          |
| PZWT9SH5      |              |               |              |               |            |     | 17.2 | 125  |     | 2.5                    | 25  | 40     |                |                    |               |
| PZWT9SI5      |              |               |              |               |            |     | 19.2 | 80   |     | 1.8                    | 20  | 25     |                |                    |               |
| PZWT11SF5     |              |               |              |               |            |     | 49.4 | 300  |     | 7.9                    | 70  | 110    |                |                    |               |
| PZWT11SH5     | 122,400      | 75            | 34           | 70            | 1          | 12  | 23.1 | 150  |     | 2.5                    | 35  | 50     | 80             | 1.25"FPT           | 1200          |
| PZWT11SI5     |              |               |              |               |            |     | 20.7 | 109  |     | 1.8                    | 30  | 45     |                |                    |               |
| PZWT7DE5      | 73,200       | 75            | 34           | 70            | 2          | 4   | 25   | 132  |     | 6.7                    | 70  | 90     | 50             | 1.25"FPT           | 1000          |
| PZWT7DF5      |              |               |              |               |            |     | 14.6 | 115  |     | 6.7                    | 40  | 50     |                |                    |               |
| PZWT7DH5      |              |               |              |               |            |     | 6.9  | 48   |     | 1.7                    | 20  | 20     |                |                    |               |
| PZWT7DI5      |              |               |              |               |            |     | 5.9  | 40   |     | 1                      | 15  | 20     |                |                    |               |
| PZWT9DE5      | 96,000       | 75            | 34           | 70            | 2          | 5   | 30.1 | 175  |     | 10                     | 80  | 100    | 80             | 1.25"FPT           | 1100          |
| PZWT9DF5      |              |               |              |               |            |     | 20.7 | 128  |     | 10                     | 60  | 70     |                |                    |               |
| PZWT9DH5      |              |               |              |               |            |     | 8.9  | 63   |     | 2.8                    | 25  | 30     |                |                    |               |
| PZWT9DI5      |              |               |              |               |            |     | 7.1  | 50   |     | 1.8                    | 20  | 25     |                |                    |               |
| PZWT9.5DE5    | 102,000      | 75            | 34           | 70            | 2          | 5   | 27.9 | 129  |     | 10                     | 80  | 100    | 80             | 1.25"FPT           | 1200          |
| PZWT10DF5     | 108,000      | 75            | 34           | 70            | 2          | 6   | 20.7 | 156  |     | 10                     | 60  | 70     | 80             | 1.25"FPT           | 1250          |
| PZWT10DH5     |              |               |              |               |            |     | 11.5 | 75   |     | 2.8                    | 30  | 40     |                |                    |               |
| PZWT10DI5     |              |               |              |               |            |     | 7.9  | 54   |     | 1.8                    | 20  | 25     |                |                    |               |
| PZWT13DF5     | 147,000      | 75            | 34           | 70            | 2          | 8   | 32.1 | 195  |     | 10.5                   | 90  | 110    | 80             | 1.5"FPT            | 1300          |
| PZWT13DH5     |              |               |              |               |            |     | 16.4 | 95   |     | 3.2                    | 40  | 50     |                |                    |               |
| PZWT13DI5     |              |               |              |               |            |     | 12   | 80   |     | 2.3                    | 30  | 40     |                |                    |               |
| PZWT15DF5     | 167,000      | 85            | 34           | 70            | 2          | 9   | 33.6 | 225  |     | 7.9                    | 90  | 110    | 120            | 1.5"FPT            | 1400          |
| PZWT15DH5     |              |               |              |               |            |     | 17.3 | 114  |     | 2                      | 45  | 50     |                |                    |               |
| PZWT15DI5     |              |               |              |               |            |     | 13.5 | 80   |     | 1.5                    | 35  | 45     |                |                    |               |
| PZWT18DF5     |              |               |              |               |            |     | 41.4 | 239  |     | 5.6                    | 100 | 125    |                |                    |               |
| PZWT18DH5     | 190,800      | 85            | 34           | 70            | 2          | 10  | 19.2 | 125  |     | 2.8                    | 50  | 60     | 120            | 1.5"FPT            | 1450          |
| PZWT18DI5     |              |               |              |               |            |     | 13.8 | 80   |     | 1.8                    | 35  | 45     |                |                    |               |
| PZWT22DF5     | 240,200      | 85            | 34           | 70            | 2          | 12  | 53.6 | 300  |     | 5.6                    | 150 | 175    | 120            | 2"FPT              | 1600          |
| PZWT22DH5     |              |               |              |               |            |     | 24.3 | 150  |     | 2.8                    | 60  | 80     |                |                    |               |
| PZWT22DI5     |              |               |              |               |            |     | 20.7 | 109  |     | 1.8                    | 50  | 60     |                |                    |               |

1) The calculations for the MCA and MOP are based on requirements of NFPA 70, the National Electrical Code (NEC) and CSA C22.1, the Canadian Electrical Code (CEC). The MCA is the minimum wire size needed to guarantee that the wiring will not overheat under any operating conditions. The MOP is the maximum allowable circuit breaker size that will properly disconnect power to the equipment under any anticipated fault condition.

2) Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.



## Dimensional Specifications, Features and Options

### Polyethylene Tank & Pump

| TANK MODEL | LENGTH IN. | WIDTH IN. | HEIGHT IN. | WATER CONN. | TANK CAPACITY | RECIRCULATION PUMP | FLA 230/3Ø | FLA 460/3Ø | WEIGHT LBS. |
|------------|------------|-----------|------------|-------------|---------------|--------------------|------------|------------|-------------|
| RRT200     | 88         | 56        | 60         | 2" FPT      | 200 GALLONS   | 3HP                | 9.4        | 4.5        | 445         |
| RRT300     | 88         |           |            | 2.5" FPT    | 300 GALLONS   | 3HP                | 9.4        | 4.5        | 465         |
| RRT500     | 120        |           |            | 3" FPT      | 500 GALLONS   | 5HP                | 13.7       | 6.5        | 595         |
| RRT600     | 120        |           |            | 4" FPT      | 600 GALLONS   | 5HP                | 13.7       | 6.5        | 625         |

### Stainless Steel Tank & Pump

| TANK MODEL | LENGTH IN. | WIDTH IN. | HEIGHT IN. | WATER CONN. | TANK CAPACITY | RECIRCULATION PUMP | FLA 230/3Ø | FLA 460/3Ø | WEIGHT LBS. |
|------------|------------|-----------|------------|-------------|---------------|--------------------|------------|------------|-------------|
| RRT20-SS   | 36         | 34        | 36         | 1" FPT      | 20 GALLONS    | 1/2HP              | 2.6        | 1.3        | 475         |
| RRT50-SS   | 46         |           |            | 1" FPT      | 50 GALLONS    | 1/2HP              | 2.6        | 1.3        | 525         |
| RRT80-SS   | 75         |           |            | 1 1/4" FPT  | 80 GALLONS    | 3/4HP              | 3.5        | 1.7        | 600         |
| RRT120-SS  | 85         |           |            | 1 1/2" FPT  | 120 GALLONS   | 1 1/2HP            | 5.6        | 2.8        | 675         |

#### (Stainless Steel Tank) Standard Features:

- **STAINLESS STEEL** storage tank
- 20, 50, 80, & 120 gallon tank sizes
- 1/2" tank and fluid piping insulation
- Copper fluid piping
- Tank vent and drain connections
- Tank pressure relief valve
- Fused evaporator fluid re-circulating **STAINLESS STEEL** pump
- Fluid pump discharge ball valve and cleanable "Y" strainer
- Control box with pump terminal block
- Painted (Powder Coated), galvanized sheet metal cabinet

#### Available Options:

- Fused, **STAINLESS STEEL** process pump
- Dual process pump with manual changeover
- Dual process pump with auto changeover
- Pump suction isolation valve
- **Process Pump VFD Controller**
- **Tank fluid sight glass**
- Tank liquid level indicator with dry contacts
- Low flow by-pass valve
- **Water flow meter**
- Auto city water make up solenoid
- Stainless steel, SCH80 PVC or Polypropylene piping for de-ionized and reverse osmosis water systems
- 1" tank and piping insulation in lieu of 1/2"
- Seal-tight electrical conduit and connections

#### (Polyethylene Tank) Standard Features:

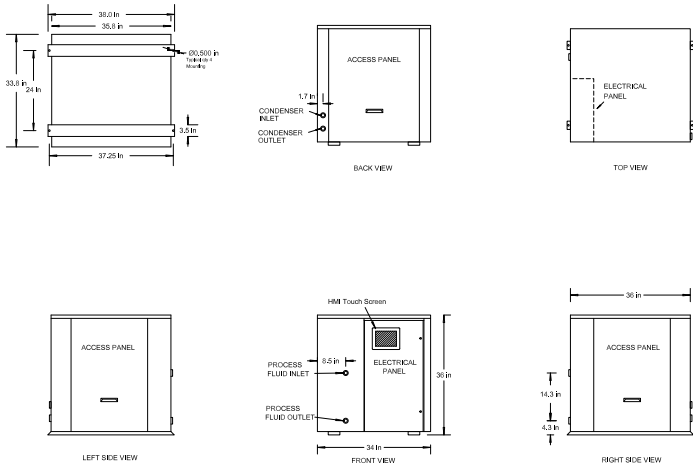
- Open Vented **Polyethylene tank**
- **200, 300, 500, & 600 gallon open-vented tank sizes**
- 1/2" tank and fluid piping insulation
- SCH80 PVC and Polypropylene piping
- Fused evaporator fluid re-circulating **STAINLESS STEEL** pump
- Chiller evaporator pump discharge ball valve and cleanable "Y" strainer
- Control box with pump terminal block
- Galvanized steel sheet metal cabinet
- Hinged removable access panels

#### Available Options:

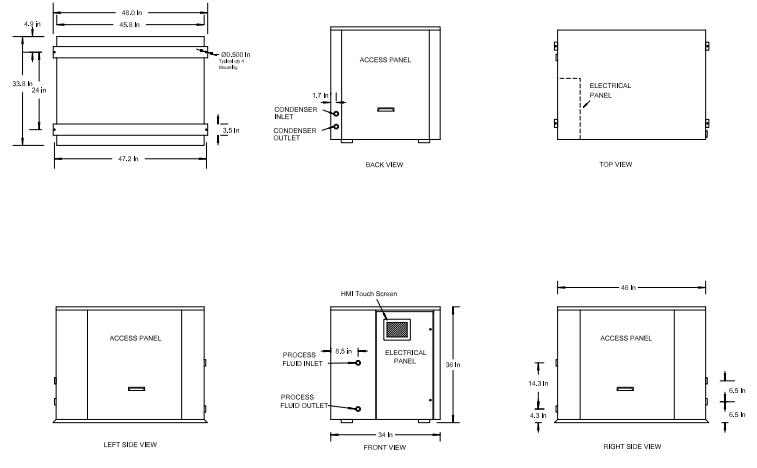
- Fused, **STAINLESS STEEL** process pump
- Dual process pump with manual changeover
- Dual process pump with auto changeover
- Pump suction isolation valve
- **Process Pump VFD Controller**
- **Tank fluid sight glass**
- Tank liquid level indicator with dry contacts
- Low flow by-pass valve
- **Water flow meter**
- Auto city water make up solenoid
- 1" tank and piping insulation in lieu of 1/2"
- Seal-tight electrical conduit and connections

# R407C Packaged, Water-Cooled Chillers

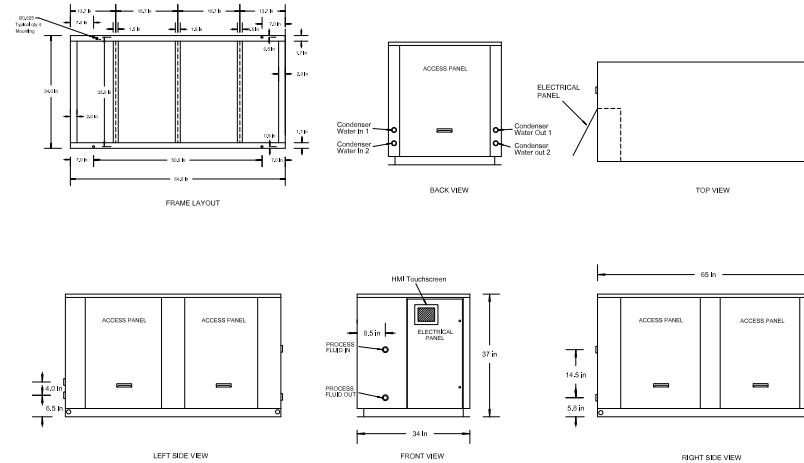
PZW1S, 1.5S, 2S, 2.5S, 3S



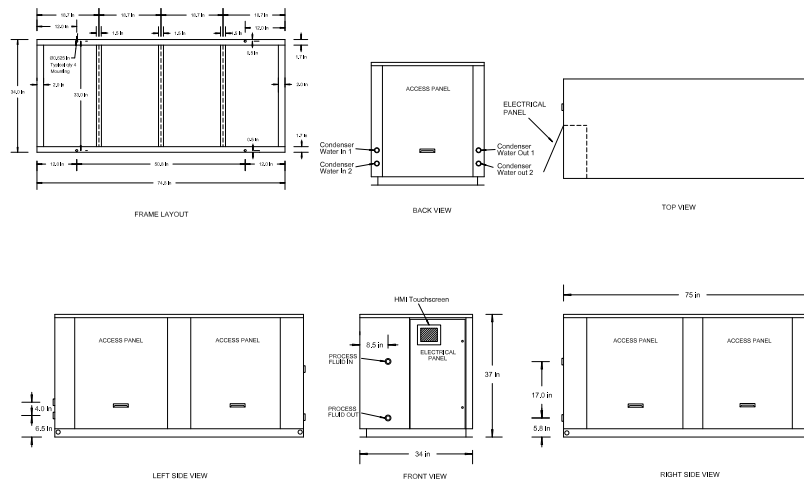
PZW4S, 4.5S, 5S, 7S, 8S, 9S, 11S



PZW7D, 9D, 9.5D, 10D

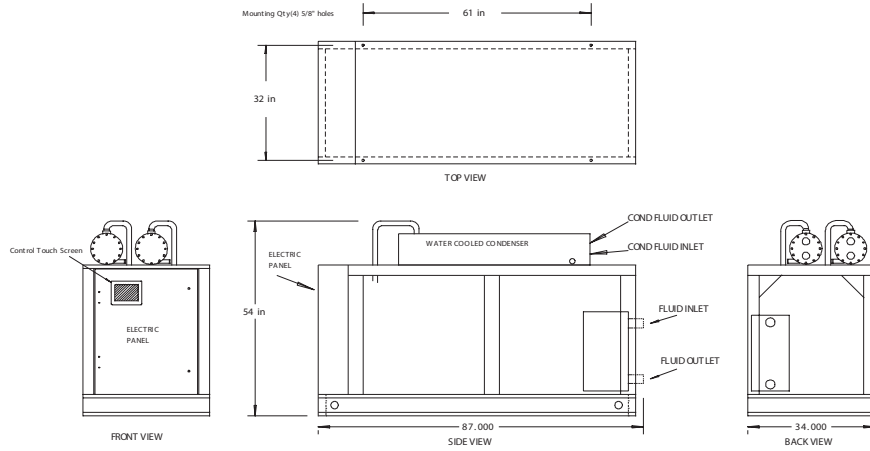


PZAT13D, 15D, 18D

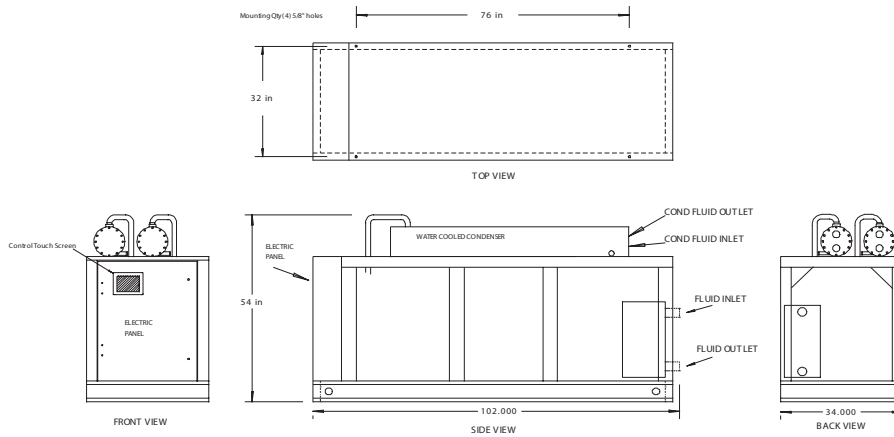


# R407C Packaged, Water-Cooled Chillers

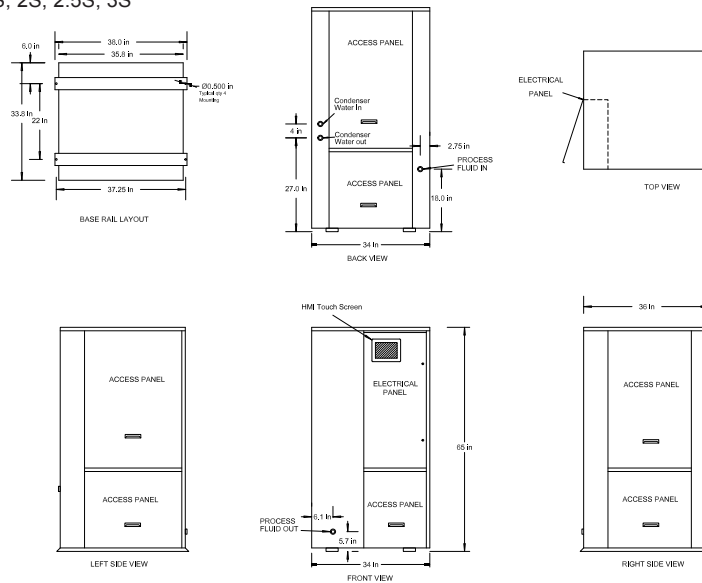
**PZW26D, 35D**



**PZW43D, 55D**

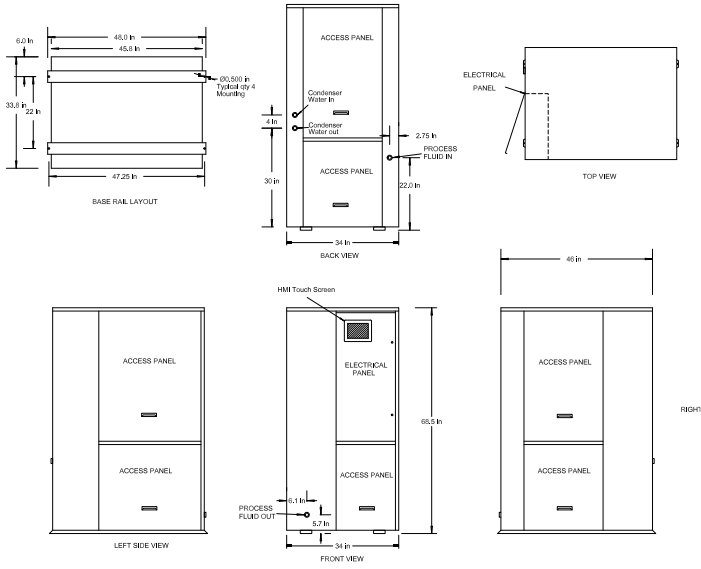


**PZWT1S, 1.5S, 2S, 2.5S, 3S**

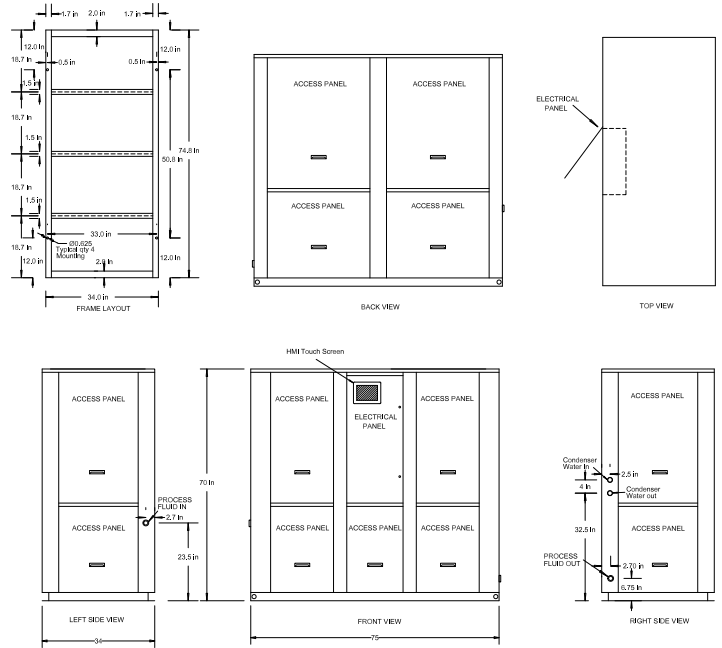


# R407C Packaged, Water-Cooled Chillers

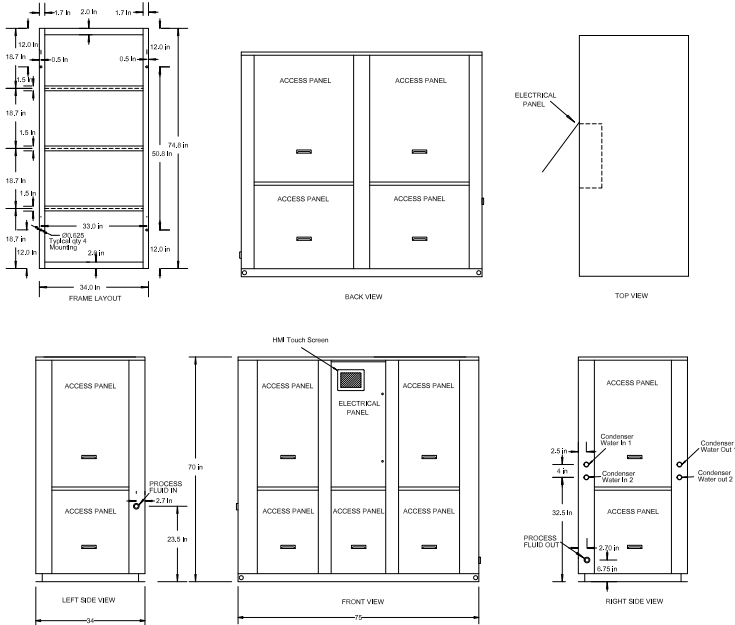
PZWT4S, 4.5S, 5S, 7S



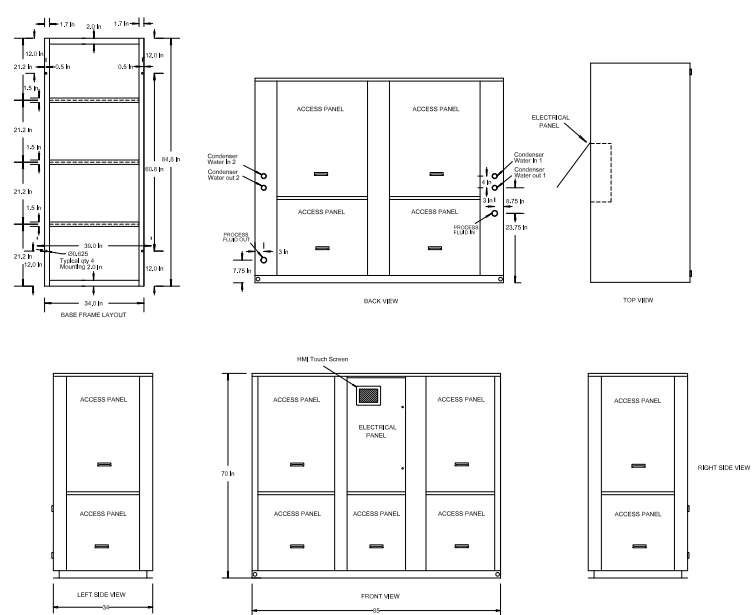
PZWT8S, 9S, 11S



PZWT7D, 9D, 9.5D, 10D, 13D



PZWT15D, 18D, 22D



**PROPYLENE GLYCOL CAPACITY CORRECTION FACTOR TABLE**

| PERCENT PROPYLENE GLYCOL BY WEIGHT | 15%   | 20%   | 25%   | 30%   | 35%   | 40%   | 50%   |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| FREEZING POINT IN °F               | 24    | 18    | 15    | 9     | 5     | -5    | -30   |
| CAPACITY FACTOR MULTIPLIER*        | 0.992 | 0.986 | 0.972 | 0.960 | 0.950 | 0.928 | 0.878 |
| PRESSURE DROP MULTIPLIER           | 1.04  | 1.08  | 1.13  | 1.21  | 1.26  | 1.47  | 2.79  |

**ETHYLENE GLYCOL CAPACITY CORRECTION FACTOR TABLE**

| PERCENT ETHYLENE GLYCOL BY WEIGHT | 10%  | 15%  | 20%  | 25%  | 30%  | 35%  | 40%  |
|-----------------------------------|------|------|------|------|------|------|------|
| FREEZING POINT IN °F              | 25   | 21   | 17   | 11   | 5    | 0    | -10  |
| CAPACITY FACTOR MULTIPLIER*       | 0.98 | 0.96 | 0.95 | 0.93 | 0.92 | 0.91 | 0.89 |
| PRESSURE DROP MULTIPLIER          | 1.08 | 1.11 | 1.16 | 1.21 | 1.27 | 1.32 | 1.38 |

\* At standard ARI 590 conditions: 54°F entering fluid temperature, 44°F leaving fluid temperature, 95°F ambient temperature, 0.0005 fouling.



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