

**Chilled Water  
 Packaged Pumping System  
 Constant Primary/Constant Secondary  
 Model CPCS**

The Model CPCS, Constant Primary/Constant Secondary, Chilled Water Packaged Pumping System is a UL-listed factory assembled and tested system used in conventional building cooling systems which utilizes Chilled Water as the cooling source. Chilled Water is supplied to the System Chiller(s) at a standard 54°F by use of constant speed, primary centrifugal pump(s) which are sized to meet specific building requirements. The Model CPCS provides air-free chilled water at a manually-controlled flow rate, while automatically refilling under normal system losses. The CPCS also allows for system thermal expansion based on the building system volume. Once the System Chiller(s) have cooled the chilled water to 44°F, constant speed, secondary chilled water pump(s) supply the Chilled Water to the building system at the desired flow rate. A UL-listed control panel with single-point power connection is wired to all electrical sources. Each Unit is custom engineered and designed to meet specific system requirements. All systems are fabricated and welded per ASME Section IX Code and Standards, and are Hydrostatically tested prior to shipment. The Model CPCS speeds installation and start-up of building cooling systems which provide significant savings to contractors, engineers, and building owners.

**STANDARD CONSTRUCTION**

- Structural Channel Base
- Carbon Steel Piping
- Operational Testing
- Pump Isolation Valves
- Hydrostatically Tested
- High Temperature Industrial Enamel Paint

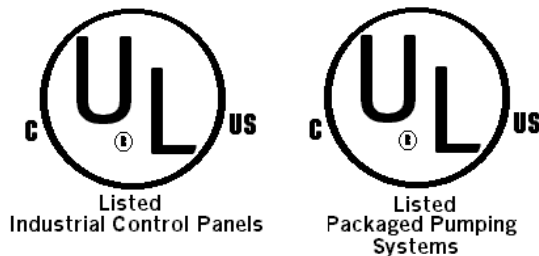


**Legend:**

- A. Base-mounted, End-suction Centrifugal Pumps
- B. Triple Duty Valve
- C. Air Separator with Auto Air Vent
- D. Expansion Tank
- E. System Inlet / Outlet Thermometers
- F. Pump Differential Pressure Gauge
- G. UL-listed Electrical Control Panel
- H. Make-up Water Assembly

**CONDITIONS OF OPERATION**

Max. Allowable Pressure:	125 psig / 8.6 bar
Max. Allowable Temperature:	240 °F / 115.5 °C



**SYSTEM OPTIONS**

- Stand-by pumps
- Suction Diffuser
- Panel-mounted Gauges
- Flexible Connectors
- Vibration Isolation

**Model CPCS  
Chilled Water  
Packaged Pumping System Order  
Form**

**Specify the following parameters:**

- I. System Cooling Load = \_\_\_\_\_ BTU/hr
- II. System Differential  
Pressure Required = \_\_\_\_\_ psid
- III. System Inlet  
Pressure = \_\_\_\_\_ psig

IV. Return Temperature = 54 °F

V. Supply Temperature = 44 °F

VI. System Electrical = \_\_\_\_\_ V \_\_\_\_\_ Hz

VII. System Volume = \_\_\_\_\_ Gal.

Note: System medium assumed to be water, unless otherwise specified.

**SYSTEM OPTIONS**

Stand-by Pump

Steam Pressure Gauges

Pump Suction Diffuser

Vertical In-line Pump

Split-coupled Vertical In-line Pump

Closed-coupled end-suction Centrifugal  
Pump

Auto standby pump start on lead pump  
failure

Auto Pump Alternation

Remote start connection

Panel-mounted Differential Pressure Gauges

Pump Run Time Hour Meter

Outdoor use Rating

Outdoor Cabinet

System Inlet/Outlet Isolation Valves

System Flow Switch

Differential Pressure Switch across Pump  
suction/discharge

System drain valves

Flexible Connectors

Vibration Isolation

Regardless of system size, temperature,  
pressure, fluid medium, or space requirements,  
**EnviroSep** can provide solutions to all specialized  
needs.

**EnviroSep** • Fluid & Heat Recovery Systems  
A Division of TMT, Inc.  
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# Typical Specifications for CPCS

Furnish and install one **EnviroSep** Model CPCS- [A] - [B] - [C] - [D] Chilled Water Packaged Pumping System with the system capacity to cool \_\_\_\_\_ BTU/hr of \_\_\_\_\_ (fluid) from 54 °F to 44 °F when \_\_\_\_\_ psig is available at the System Return.

## **KEY:**

[A] = Model # (BTU/hr)  
[B] = # of pumps (1,2,3,etc.)  
[C] = Parallel (P) or Stand-by (S) pump designation  
[D] = Manual (M) or Automatic (A) alternation for multiple pumps

**GENERAL** - This package shall be factory assembled with pump(s), air separator, expansion tank, triple duty valves, fabricated steel frame, interconnection piping( welded per ASME Section IX certified welders), UL-listed Industrial Control Panel factory wired for single-point field connection per NEC.

**PUMPS**-Pump(s) shall be single, end-suction type with radically split, top center-line discharge, self-venting casing. Pump construction shall be cast iron, bronze fitted and shall be fitted with a long-life, product lubricated, drip tight mechanical seal, with O-ring seat retainer. Impeller shaft to be 416SS fitted with a SS shaft sleeve and be supported by two heavy duty ball bearings. The design shall allow back pull out servicing, enabling the complete rotating assembly to be removed without disturbing casing piping connections. The pump shall be mounted on a rigid, single base plate and by flexible with guard to the motor. Seal shall be rated for continuous duty at 270°F, motor shall be open drip proof, NEMA MG-1 with 1.15 service factor

**AIR REMOVAL EQUIPMENT**- System shall include one tangential air separator with internal stainless steel collector tube. Connections to be flanged with a rating of 150 psig. System shall be equipped with ¾" Pressure Relief Valve, ¾" Pressure Regulating Valve, ASME Compression / Expansion Tank (sized by or provide system volume and temperature difference), and tank fitting, sight glass, and tank drain connections to tank. Bladder-type expansion tank may be substituted as alternate.

**TRIPLE DUTY VALVE**- System shall include, on the discharge of each pump, a combination valve incorporating three functions in one body: tight shut-off, spring closure type silent non-slam check, and flow measured/throttling. Valve body shall be ductile iron with two ¼" NPT connections on each side of the valve seat. The valve disc shall be bronze plug disc type with high impact engineered resin seat to ensure tight shut-off and silent check valve operation. Valve stem shall be SS with flat surfaces provided for

adjustment with open end wrench.

**SUCTION DIFFUSER**- System shall include, on the suction of each pump a suction diffuser with cast iron body, outlet guide vanes and removable SS strainer.

**CONTROL PANEL** - System shall include one (1) UL - Listed, NEMA 12, Industrial Control Panel with single-point power connection, pre-wired to all electrical components. Panel shall have thru-the-door fused disconnect; magnetic circuit breaker supplementary motor protector with fast-closing contacts, non-reversing 3-pole contactor, and variable setting, bi-metallic overload relay for each motor; 30 mm Foundry-duty switches; 30 mm Corrosion Resistant pilot lights; control transformer; Automatic Alternator (if required). Operation of each pump shall be Hand-Off-Auto with external connection to terminal blocks. When standby pump(s) are used, the standby pump(s) shall manually/automatically(customer specified) start on primary pump failure. All internal wiring shall be placed in conduit.

**MANUFACTURER** - Shall assume system liability, and performance guarantee and warranty all equipment on system for 12 months after initial shipment as indicated in standard Terms and Conditions.

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