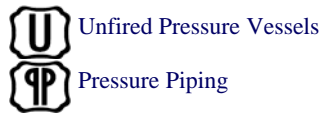


**Model #**  
**CPCS**

## Chilled Water Packaged Pumping System Constant Primary / Constant Secondary

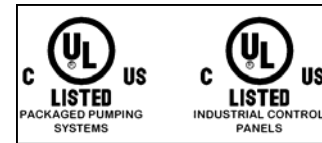


TYPICAL SPECIFICATIONS	
System Return Temperature	38 to 68 deg F
Chilled Water Temperature	28 to 60 deg F
Standard System Flow Rate	5 to 3000 GPM
Standard Power	460 V (Other Voltages Available)
Dimensions	Based Upon Customer Requirements
Working Pressure	100 to 150 psig (6.8 to 10.2 barg)
Working Temperature	< 240 deg F (< 115 deg C)

**EnviroSep CPCS**, Constant Primary / Constant Secondary, Chilled Water Packaged Pumping System is a UL-Listed, factory manufactured system utilized in conventional building cooling systems which uses Chilled Water as the cooling medium. Chilled Water Return 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 facility requirements. Upon the Chiller(s) cooling the Chilled Water to 44°F, the constant speed, Secondary Chilled Water Pump(s) supply chilled water to the facility at the desired flow rate. A conventional, Hand-Off-Auto Industrial Control Panel is utilized for the most simple control sequence. The **Model CPCS** may be controlled by other system variables, such as Total System Load (BTU/hr), System Pressure, or System Temperature via a customized PLC-Controller. Air-free, chilled water is supplied to the facility at a manually-controlled flow rate. The **Model CPCS** also allows for thermal expansion based on the system volume. The **Model CPCS** Control Panel is furnished with hard-wired, remote System Start/Stop commands and Alarm outputs to any Building Management System. This fully integrated turn-key system speeds installation and start-up which provides significant, initial-investment savings to contractors, engineers, and building owners.

### Standard Features:

- Base-mounted, End-suction Pumps or Split-coupled Vertical Inline Pumps
- Pump Differential Pressure Switches
- Vortex Air Separator, *with Auto Air Vent*
- Bladder Expansion/Compression Tank
- Triple Duty Valves & Suction Diffusers
- UL Listed NEMA 12 Industrial Control Panel, *with Hand-Off-Auto operation*
- Make-up Water Assembly, *with Safety Relief Valve*
- Chemical Bypass Feeder
- System Temperature Indicators
- Chilled Water Supply Pressure Gauges



### Options:

- Chillers may be added as completely, integrated system
- Internet Connectivity for Remote System Monitoring
- Interface w/ Building Management System
- Chiller Staging Capability
- NEMA 3R/4/4X Rating
- Seismic or Vibration Isolators
- Combination Air & Dirt Separator
- Flexible Pump Connectors
- Specific Performance Criteria (Upon Request)

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**Specify the following parameters:**

- I. System Cooling Load = \_\_\_\_\_ BTU/hr
- II. System Differential Pressure Required = \_\_\_\_\_ psid
- III. System Flow Rate = \_\_\_\_\_ GPM
- IV. System Inlet Pressure = \_\_\_\_\_ psig
- V. Return Temperature = 54 °F
- VI. Supply Temperature = 44 °F
- VII. System Electrical = \_\_\_\_\_ V \_\_\_\_\_ Hz
- VIII. System Volume = \_\_\_\_\_ Gal.

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

**SYSTEM OPTIONS**

- Stand-by Pump
- System 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
- Remote System Monitoring
  - Ethernet
  - Dial-up Modem
- Communication Protocol
  - Ethernet I/P
  - Modbus RTU
  - Siemens FLN
  - Johnson Controls N2
  - BACnet (MS/TP)
  - Lon Works
  - Profibus
  - DeviceNet
- System Chiller
  - Screw
  - Centrifugal
- System drain valves
- Flexible Connectors
- Vibration Isolation
- Control Valve Bypass and Isolation
- 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

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



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 \_\_\_\_\_ psig to \_\_\_\_\_ psig.

**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, hydronic accessories, 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, (and including Variable Speed Pump Controller).

**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

**SYSTEM CONTROLLER** – Controller shall include all controls necessary to operate the system as a stand-alone system. The PLC-based controller shall be of the same manufacturer as the Packaged Pumping System. Controller shall include Remote/Local system start capability. Acceptance of up to 16 remote 4-20 ma signals shall be provided for modulation of pump speed, and other optional control functions. Enclosure shall be NEMA 12 with thru-the-door disconnect. Operator Interface shall be a color touch screen type. Controller shall include independent PID control loop for each remote signal.

**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.

**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.

**MAKE-UP WATER ASSEMBLY** - Make-up Water Assembly shall be pre-piped and installed into system suction header; including, Self-contained, Cast Iron Pressure Reducing Valve, set @ 12 psig; Bronze isolation and bypass valves; Cast Iron Y-strainer; Bronze Backflow Preventer; System Pressure Relief Valve, set @ 75 psig; and Liquid Filled Pressure Gauge with Bronze Isolation Valve.

**BUTTERFLY VALVES** - System Butterfly Isolation Valves shall be Lug-mounted, Cast Iron with 10-position Lever Operator for 6" and below; and Gear Operated above 6" in size. Disc shall be Al-Br or Stainless Steel. Seat material shall be Buna-N or EPDM.

**BALL VALVE** - Isolation Ball Valves shall be Bronze 2-pc with 316L Stainless Steel Ball and RTFE seats. All Valves shall have Latch-lock lever for Lock-Out procedures.

**MANUFACTURER** - Shall assume system liability, and performance guarantee and warranty all equipment on system for 12 months after initial start-up.