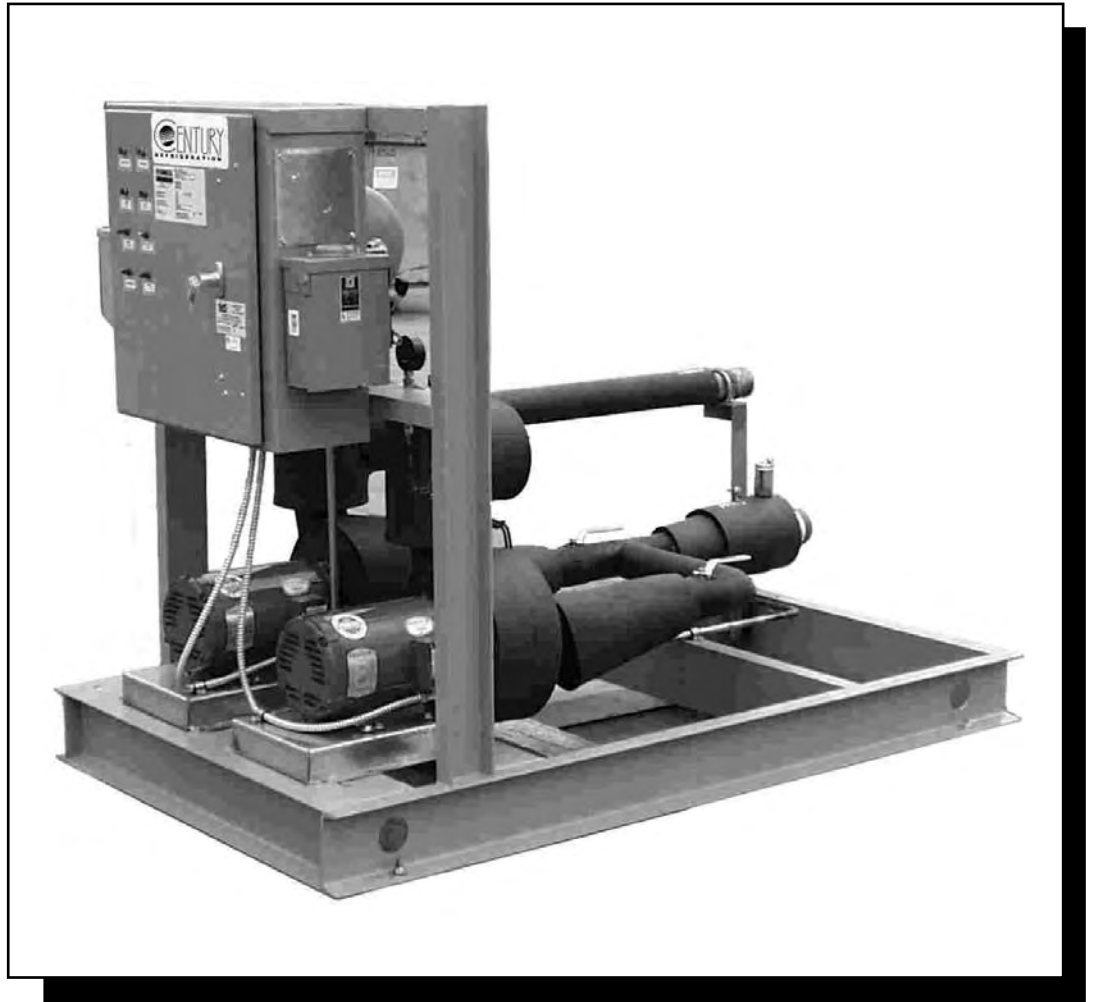


# Series CP Pump Packages



## Standard Features

- Close-coupled, end-suction, centrifugal pumps
- Mounted and wired pump starters
- Hand-Off-Auto switch for each pump
- Pump selector switch on dual pump packages only
- Mounted and wired paddle-type flow switch
- Isolation valve on suction side of pump (ball-type valve through 2 1/2" pipe size, butterfly-type valve 3" pipe size and up)
- Strainer installed on suction side of pump (wye strainer through 3", basket strainer 4" and up)
- Vertical scale Fahrenheit thermometers
- Dial-type differential pressure gauge with shutoff valves across the pump
- Dielectric unions at each dissimilar metal connection
- 1/2" closed cell insulation on all piping and components
- Structural steel base rail configuration
- Corrosion resistant epoxy coating
- NEMA 3R hinged door control panel with UL 508 label
- Automatic switchover to standby pump based on flow or overload failure (dual pump packages only)

## NOMENCLATURE

**Model**                      **CPS-20**

**Series** •

**S = Single** •

**D = Dual**

**T = Triple**

**M = Multiple**

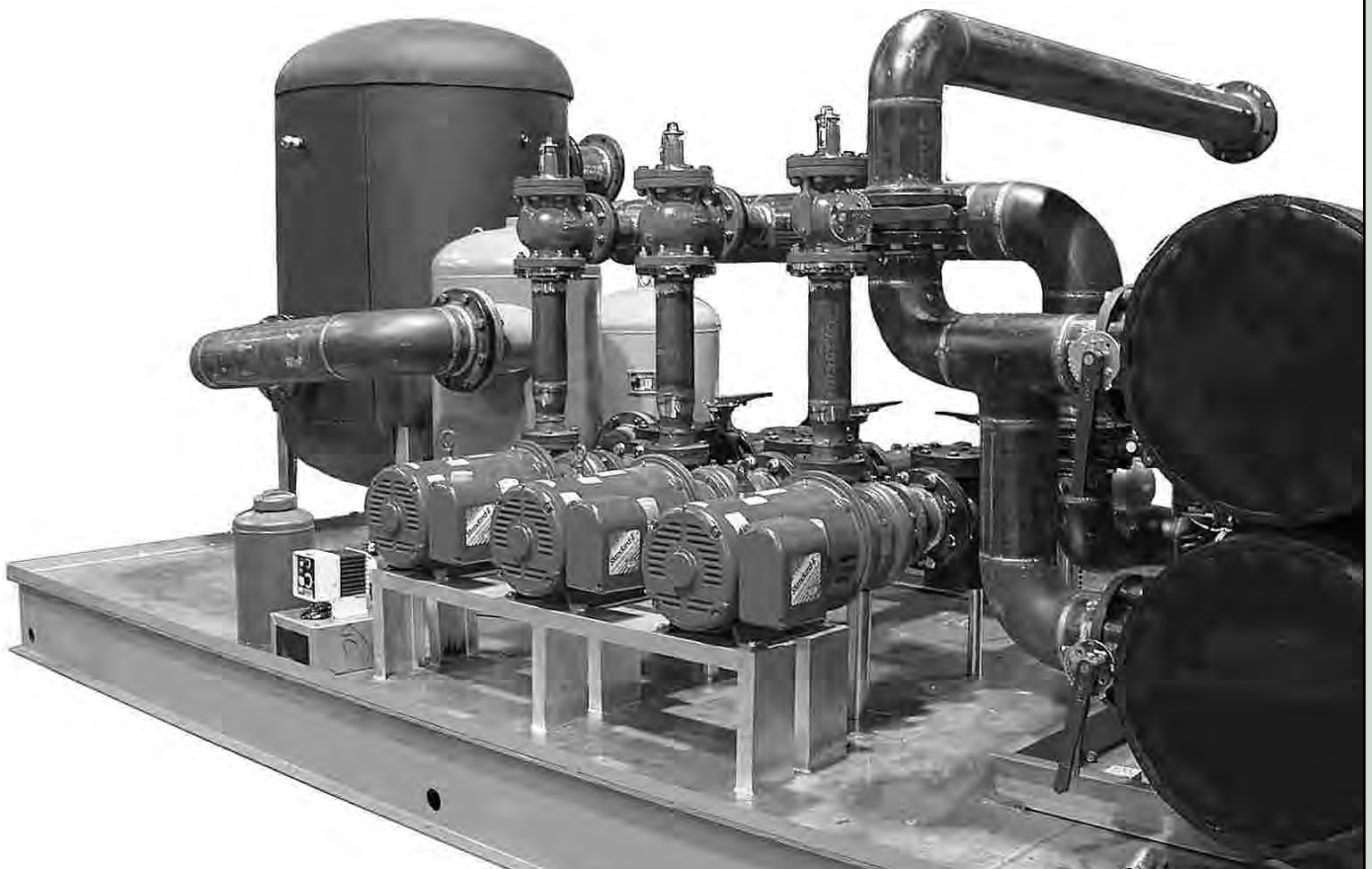
**Maximum GPM** •



**CENTURY**  
REFRIGERATION

# Optional Features

- Weatherproof cabinet with removable access or hinged access panels for outdoor installation with vestibule lights
- Base mounted pumps, in-line pumps, turbine pumps
- PVC piping
- Tangential or in-line air separators mounted
- Expansion tanks: diaphragm or compression type mounted and precharged
- Triple duty tanks: providing mass, air separation, and expansion for system
- Mass storage tanks: vented to atmosphere or pressurized, ASME stamped or non-code
- Variable frequency drives for pumps, mounted and wired
- Non-fused or fused disconnects
- Alarm circuits for pump failure
- Pressure regulating valves
- Glycol feed tanks with or without feeder pumps
- Chemical injection feeder pump systems
- Jacketed pipe insulation



# Series CP Pump Packages



Century Refrigeration has manufactured pumping systems that have been packaged on our chillers systems for over 20 years. We apply our technical and manufacturing expertise to our stand-alone pump systems as well. Whether the application is for chilled water systems, hot water systems, condenser loops, ground water systems, or process flow, Century Refrigeration will build a pump skid to meet your specifications.

## Maintaining Excellence in Engineering

Integrating the mechanical refrigeration and pumping systems requires excellent engineering supervision. Where most manufacturers of pumping systems fail to look beyond their equipment, Century Refrigeration works to make sure the equipment built for the customer can be easily integrated with the system.

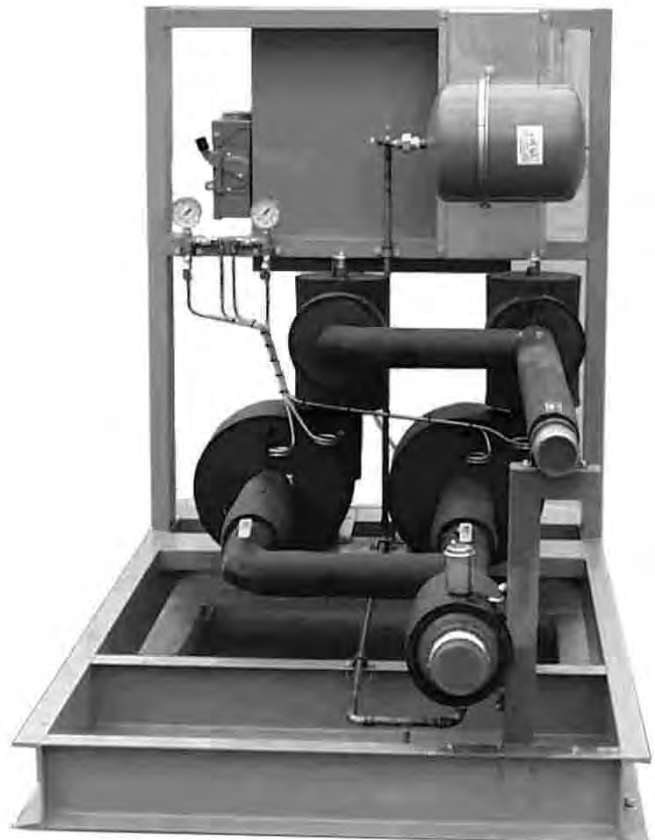
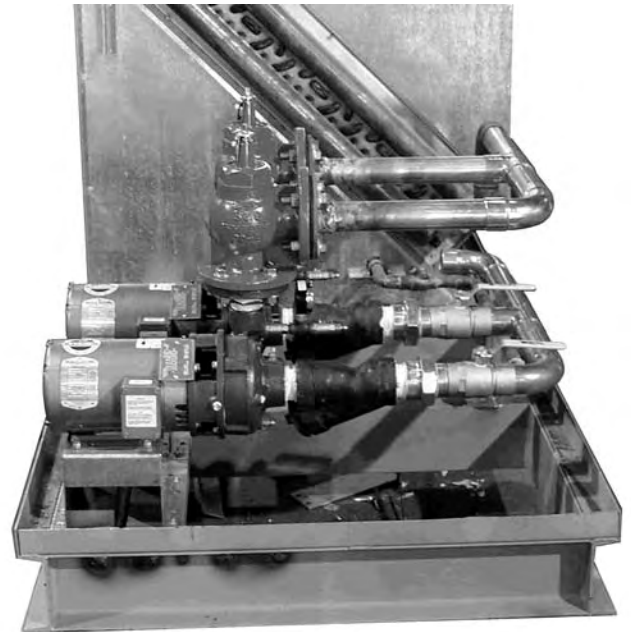
One of the biggest problems in a chilled water pump system is the issue of system volume. Insufficient system volume will result in poor control of chilled water set point and inefficient operation of equipment. As a solution, Century Refrigeration will package mass storage tanks, either open or pressurized, to provide sufficient volume. These tanks can serve as a buffer, or serve as an intermediate blending tank when dealing with water temperatures higher than the normal ranges of chillers in process applications.

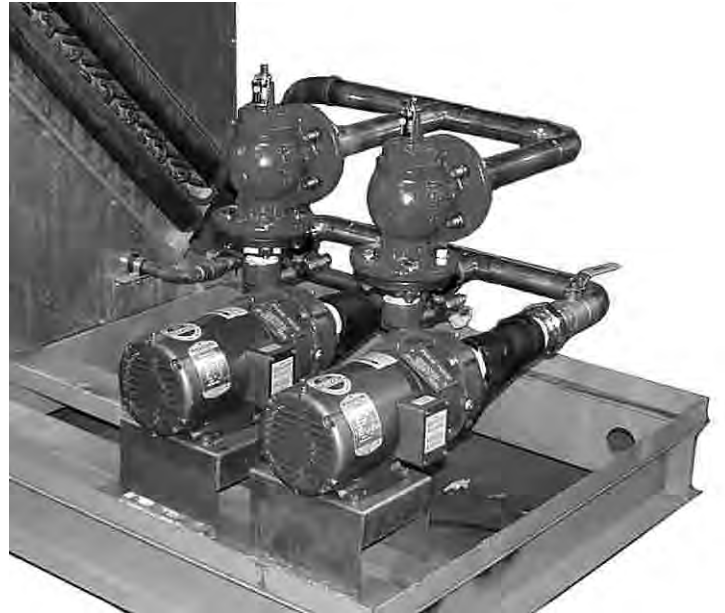
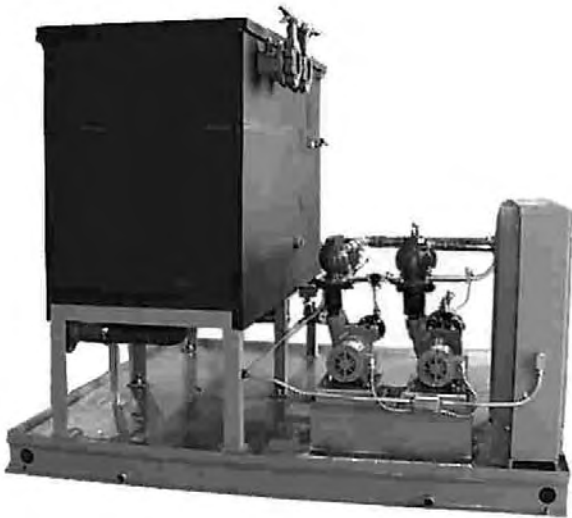
## Meeting Your Needs

Being a manufacturer of customized equipment, Century Refrigeration must be flexible to meet customer needs. Although we use certain manufacturers of pumps and hydronic accessories in standard packages, we will consider any application that requires a specific component or system to meet your needs.

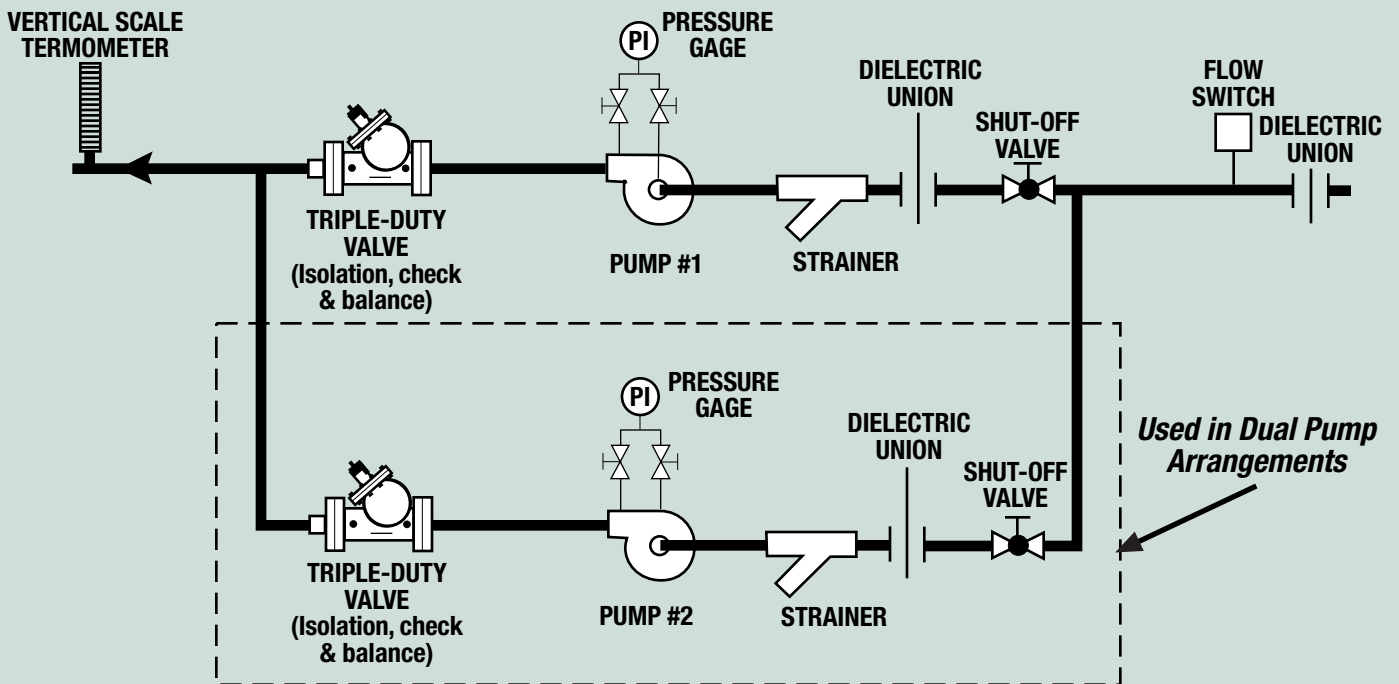
Along with our standard features, the optional capabilities allow you to customize the pump package to meet the project scope. Whether it requires a weatherproof cabinet for outdoor installation, variable frequency drives for primary/secondary systems, expansion tanks for boiler systems or chilled water systems, or mass tanks to provide for a more efficient system, Century Refrigeration has a pump package that will fit your needs.

*Century Refrigeration Builds All Kinds of Cool Stuff!*





## STANDARD PUMP PACKAGE



# Series 18 Pump Packages

## Single Pump Package

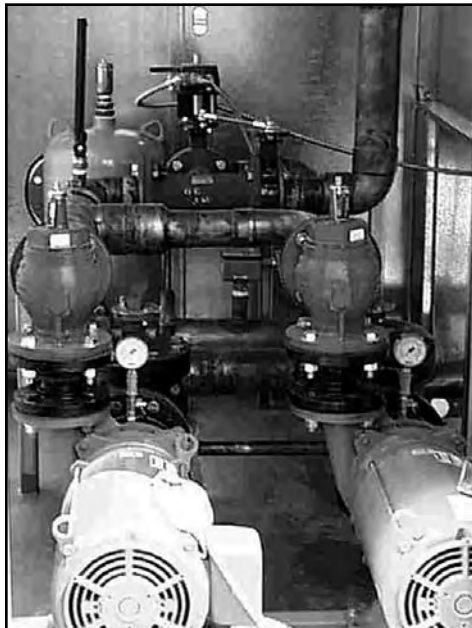
Model Number	CPS-20	CPS-45	CPS-80	CPS-130	CPS-200	CPS-350	CPS-600	CPS-800								
Pump Quantity	1	1	1	1	1	1	1	1								
Flow Range	1-20 GPM	21-45 GPM	46-80 GPM	81-130 GPM	131-200 GPM	201-350 GPM	351-600 GPM	601-800GPM								
Pipe Size <sup>1</sup>	1"	1 "	2"	2 "	3"	4"	6"	8"								
Dimensions (L"xW"xH") <sup>2 3</sup>	48"x36"x48"	48"x36"x48"	60"x36"x48"	72"x36"x60"	72"x48"x66"	84"x48"x66"	96"x60"x72"	96"x84"x72"								
Operating Weight	840 lbs.	1,140 lbs.	1,425 lbs.	1,620 lbs.	2,040 lbs.	2,660 lbs.	3,410 lbs.	4,760 lbs.								
Pump Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal								
Piping Material	ABS Copper	ABS Copper	ABS Copper	ABS Copper	ABS Copper	ABS Copper	Sch. 40 Steel	Sch. 40 Steel								
Connection <sup>3</sup>	1" MPT	1 " MPT	2" MPT	2 " MPT	3" MPT	4" Flange	6" Flange	8" Flange								
Total System Head (feet) <sup>4</sup>	50'	—	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'
Motor Horsepower	1	—	2	5	3	5	5	7	5	10	7	15	10	20	15	25
Pump Speed (RPM)	1750	—	1750	1750	1750	3500	1750	3500	3500	3500	3500	3500	3500	3500	3500	3500

1 Discharge water lines are sized for velocities between 8 feet/sec. and 12 feet/sec.

2 Dimensions are for indoor installations. Outdoor weather proof cabinet may increase unit dimensions. Consult factory.

3 Dimensions and connections are for basic pump package only. Addition of expansion tank, air separator, mass tanks, or some other component will affect unit foot print and/or connection type.

4 Total head includes a 15' internal drop for pump package.



# Double Pump Package

Model Number	CPD-20	CPD-45	CPD-80	CPD-130	CPD-200	CPD-350	CPD-600	CPD-800								
Pump Quantity	2	2	2	2	2	2	2	2								
Flow Range	1-20 GPM	21-45 GPM	46-80 GPM	81-130 GPM	131-200 GPM	201-350 GPM	351-600 GPM	601-800GPM								
Pipe Size <sup>1</sup>	1"	1 "	2"	2 "	3"	4"	6"	8"								
Dimensions (L"xW"xH") <sup>2 3</sup>	48"x42"x48"	48"x42"x48"	60"x48"x48"	72"x60"x60"	72"x60"x66"	84"x60"x66"	96"x84"x72"	96"x84"x72"								
Operating Weight	1,330 lbs.	1,470 lbs.	1,650 lbs.	1,955 lbs.	2,285 lbs.	3,010 lbs.	5,040 lbs.	5,880 lbs.								
Pump Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal								
Piping Material	ABS Copper	ABS Copper	ABS Copper	ABS Copper	ABS Copper	ABS Copper	Sch. 40 Steel	Sch. 40 Steel								
Connection <sup>3</sup>	1" MPT	1 " MPT	2" MPT	2 " MPT	3" MPT	4" Flange	6" Flange	8" Flange								
Total System Head (feet) <sup>4</sup>	50'	—	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'	50'	100'
Motor Horsepower	1	—	2	5	3	5	5	7	5	10	7	15	10	20	15	25
Pump Speed (RPM)	1750	—	1750	1750	1750	3500	1750	3500	3500	3500	3500	3500	3500	3500	3500	3500

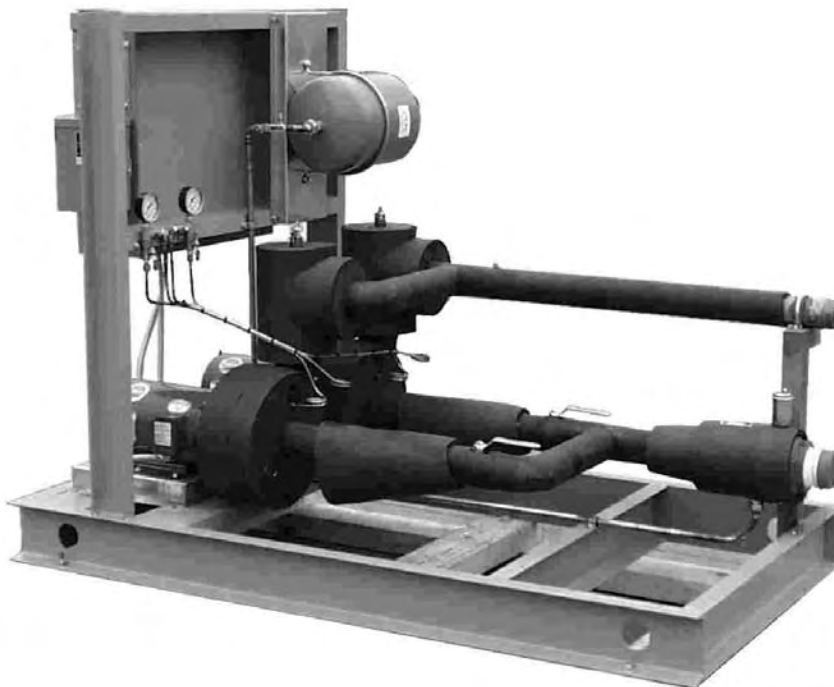
1 Discharge water lines are sized for velocities between 8 feet/sec. and 12 feet/sec.

2 Dimensions are for indoor installations. Outdoor weather proof cabinet may increase unit dimensions. Consult factory.

3 Dimensions and connections are for basic pump package only. Addition of expansion tank, air separator, mass tanks, or some other component will affect unit foot print and/or connection type.

4 Total head includes a 15' internal drop for pump package.

5 Pumps are designed for 100% redundant, primary/standby operation. Pumps will not operate simultaneously.



# Series CP Pump Package Specification

## GENERAL REQUIREMENTS

Balance:	Rotating parts, statically dynamically.
Construction:	To permit servicing without breaking piping or motor connections.
Pump Motors:	Operate at 3500 RPM unless specified otherwise.
Pump Connections:	Flanged

Furnish and install pumps with capacities as specified herein. Pumps shall be end suction type, single-stage, close coupled for installation in horizontal position, and capable of being serviced without distributing piping connections. Pump volute shall be Class 30 cast iron with integrally cast pedestal support. The impeller shall be cast bronze, enclosed type, dynamically balanced, keyed to the shaft and secured by a locking cap screw. The liquid cavity shall be sealed off at the motor shaft by an internally-flushed mechanical seal with ceramic seal seat of at least 98 percent alumina oxide content and carbon seal ring, suitable for continuous operation at 225°F. A replaceable bronze shaft sleeve shall completely cover the wetted area under the seal.

Pumps shall be rated for minimum of 175 PSI working pressure. Casing shall have gauge ports at nozzles and vent and drain ports at top and bottom of casing. Pump bearing housing assembly shall have heavy-duty re-greasable ball bearings, replaceable without disturbing piping connections and have foot support at coupling end. The motor shall meet NEMA specifications and shall be the size, voltage, and enclosure called for on the plans. Pump and motor shall be factory aligned. Provide access space around pumps for service. Provide no less than minimum as recommended by pump manufacturer. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation. Pumps shall be manufactured by ITT Bell and Gossett, Scot, MEPCO, or approved equal.

## TRIPLE DUTY VALVE

Furnish and install as specified, a valve designed to performs the functions of a non-slam check valve, throttling valve, shut-off valve, and calibrated balancing valve. The valve shall be of heavy-duty cast iron construction with NPT connections per ANSI B1.20.1-83 suitable for 175 psi working pressure for operating temperatures up to 250°F. The valve shall be fitted with a bronze seat, replaceable bronze disc with EPDM seat insert, brass stem, and chatter preventing stainless steel spring. The valve design shall permit repacking under full system pressure. Each valve shall be equipped with brass readout valves (with integral check valve) to facilitate taking differential pressure readings across the orifice for accurate system balance. The valve manufacturer shall be ITT Bell and Gossett.

## HYDRAULIC TRIM

On the suction side of the pump, install a wye strainer, and a ball valve for shut-off. The wye strainer and ball valve manufacturer shall be ITT Bell Gossett, Armstrong, Watts, Josam, or Owner approved equal.

## AIR SEPARATOR

Horizontal tangential type air separator designed to effectively separate free air in hydronic cooling system. The air separator shall be heavy duty cast iron designed to function satisfactorily at working pressures up to 125 psi and liquid temperatures up to 350°F. The air separator shall have an integral weir designed to decelerate system flow to maximize air separation. The air separator shall be ASME stamped.

The in-line air separator shall also assist in eliminating free air from the system by directing the air to an ancillary air vent attached to the air separator while reduced oxygenated water is circulated to the system. Manufacturer of the air separator shall be ITT Bell and Gossett.

## AIR VENT

Non-modulating, high capacity, automatic type designed to purge free air from the system and provide positive shut-off at pressures up to 150 psig at a maximum temperature of 250°F. Vent shall be constructed of cast iron body and bonnet with stainless steel, brass, EPDM, and silicon rubber internal components.

## EXPANSION TANK

Size tank to be suitable for the total water volume of the entire system using normal engineering standards and practices. Tank shall be either diaphragm or bladder design type. Tank shall be constructed of carbon steel shell with a heavy duty butyl rubber diaphragm. The air charging connection shall be to the diaphragm. Tank shall be suitable for outdoor installations. Tank shall be ASME stamped. Maximum operating pressure of the tank shall be 125 psi and the maximum operating temperature shall be 240°F.

Acceptable Manufacturers of the expansion tank include ITT Bell & Gossett, Ventrice, or approved equal.



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