

# Patterson

Energy Efficient Solutions in HVAC Pumping



**ENVIROFLO**  
HYDRONIC PUMPING SOLUTIONS



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Cost-effective quality.  
Flexibility. Interchangeability.  
Expert applications support. The  
fastest delivery in the marketplace  
for standard units. And **GREEN**.

That's EnviroFlo™ Hydronic  
Pumping Solutions from Patterson.

## Adding **GREEN** Sustainability to HVAC

EnviroFlo™ Hydronic Pumping Solutions are delivering Patterson's world-class engineering expertise to commercial, residential and industrial HVAC installations worldwide. Engineered for easy application in new or existing systems, EnviroFlo products support chilled water, condenser water, heating water, process cooling and heating, ice storage and geothermal applications.

This complete line of rugged pumps, engineered products and system accessories is designed to stand the test of time. Our hydronic pumping solutions provide reliable and sustainable energy efficient performance that strengthens Green strategies by minimizing energy consumption.

Member of:  
**Hydraulic**  
INSTITUTE



## Horizontal Split Case HVAC Pumps

Optimized design for extended life and efficient service.

EnviroFlo Horizontal Split Case Pumps offer a high-efficiency design that minimizes energy consumption for a more Green sustainable HVAC system. And they are easy to service without disturbing piping connections. Just flip the lid on the HSC pump and you have a clear view of the entire rotating element, making it easy to service internal components.

Patterson engineers have shortened the distance between inboard and outboard bearings on these pumps to reduce the cantilever effect on the pump shaft and cut deflection at the seal faces. This results in long seal and case ring service intervals. Pumps are also delivered with standard silicon carbide mechanical seals or tungsten carbide, optional.

Standard regreaseable ball bearings are set in integrally cast bearing housings. Bronze fitted construction, with replaceable bronze shaft sleeves, is also standard; an optional stainless steel shaft and sleeve are available. A precision-cast, dynamically balanced bronze impeller minimizes vibration and maximizes bearing life.

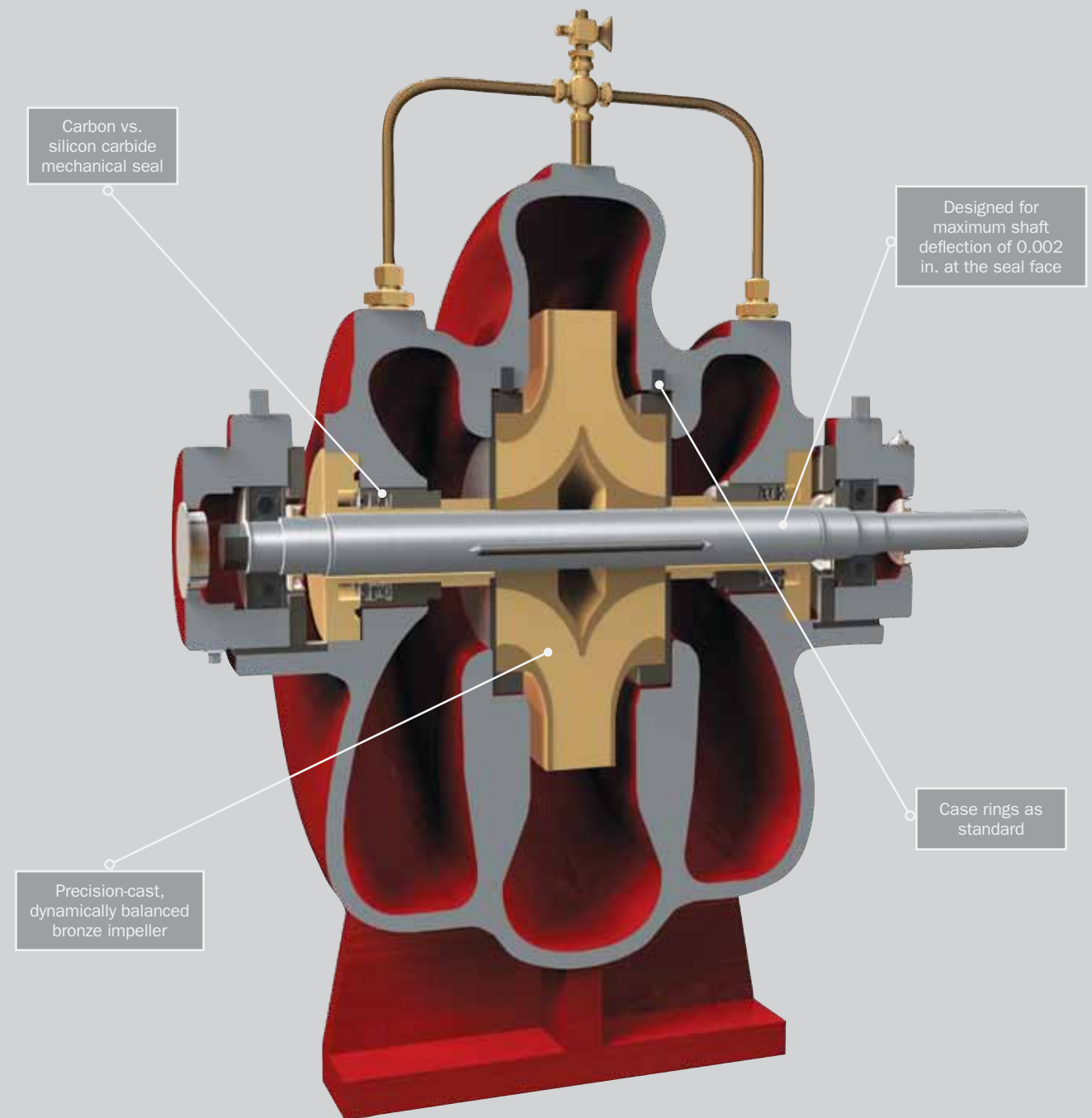
EnviroFlo HSC pump bodies are formed from Class 30 cast iron with a carbon steel shaft (stainless steel is optional). Designed to deliver energy efficient flows to 6,000 gpm with heads to 160 ft tdh, these pumps offer standard case working pressure at 175 psi; optional 250 psi is available on select models. Gauge taps at the suction and discharge connections give complete monitoring flexibility.



EnviroFlo™ Flex Coupled Horizontal Split Case Configuration



High-Efficiency EnviroFlo HSC Design Delivers Green Benefits



East Hartford High School—EnviroFlo Horizontal Split Case Pumps met critical construction schedule demands with easy, groutless base installation. Now they're providing high efficiency primary/secondary chilled water and condenser water movement for reliable student/teacher comfort.



## End Suction HVAC Pumps

Minimize energy consumption for **GREEN** benefits.

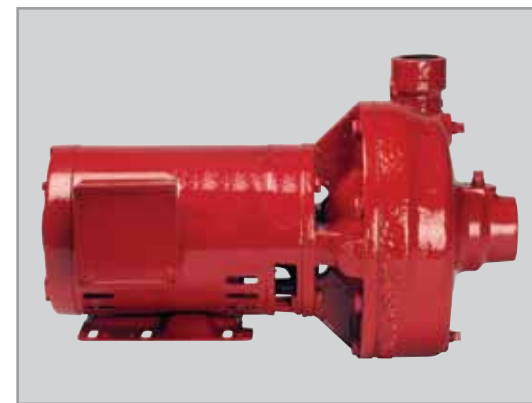
Available in both frame-mounted and close-coupled configurations, EnviroFlo End Suction Pumps will maximize the operation of your HVAC systems for years to come. Available in flows to 2,500 gpm and heads to 400 ft tdh, each pump is engineered Green through and through, delivering high-efficiency performance that minimizes operating and energy costs.

Built to last, the precision-cast, dynamically balanced impeller in every pump minimizes vibration and maximizes bearing life, while annular pressure reducing clearance and impeller balance holes reduce axial thrust. Case wear ring and grease-lubricated bearings are standard.

To simplify maintenance without disturbing piping connections or removing the motor, a back pullout configuration, including a sliding motor base, provides easy access to internal parts. Gauge taps at the suction and discharge connections allow for easy operational status monitoring.

The bearing housing mounts directly to the pump volute to save space and provide proper alignment. A heavy structural steel channel base does not require grouting, but it is recommended.

Case working pressure is 175 psi with 250 psi available on select models.

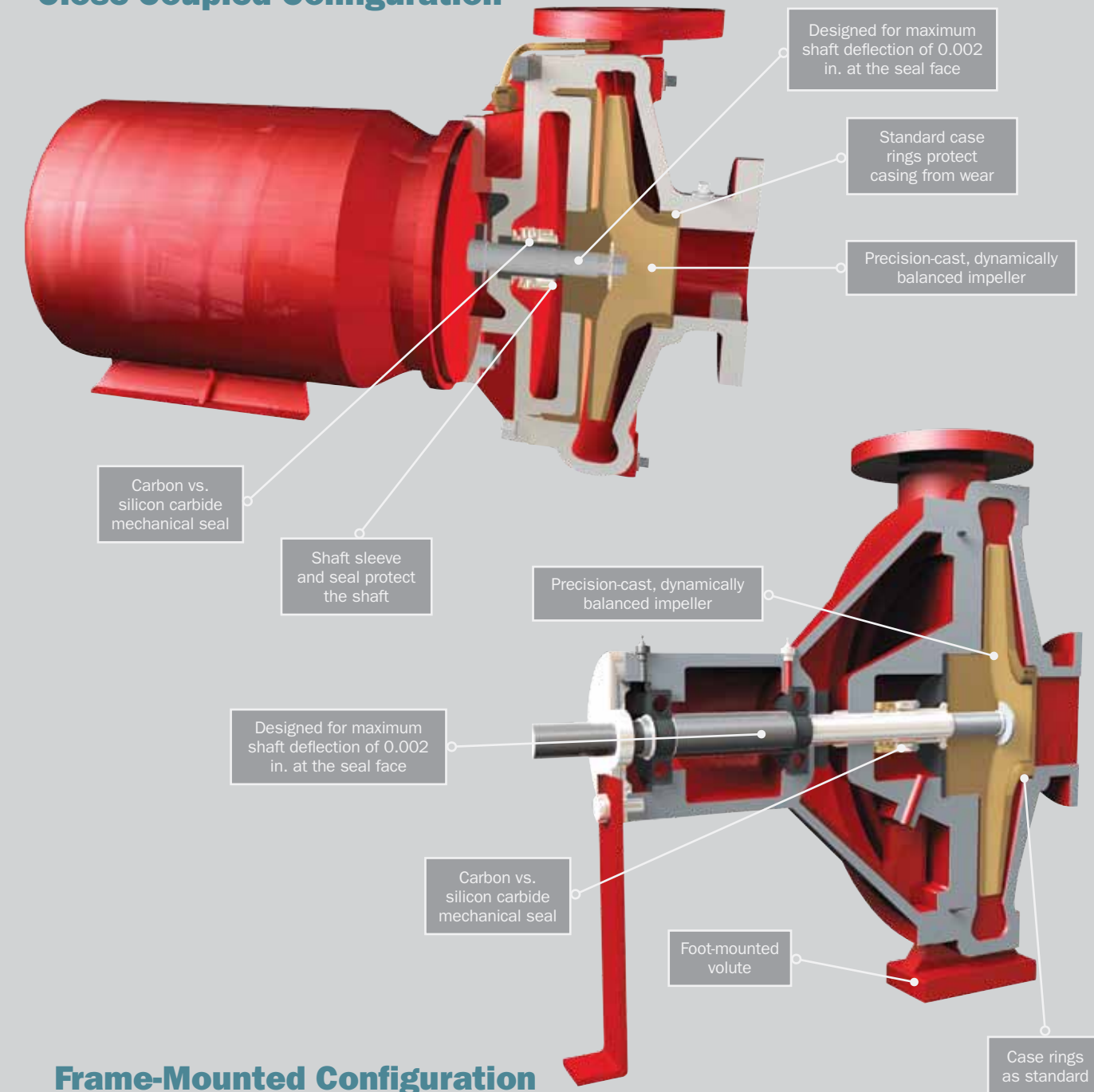


EnviroFlo Close-Coupled End Suction Configuration



EnviroFlo Frame-Mounted End Suction Configuration

## Close-Coupled Configuration



## Frame-Mounted Configuration



Rhode Island School of Design—EnviroFlo Frame-Mounted End Suction and Vertical In-Line Pumps are maintaining critical climate control requirements in a 128-year-old library while minimizing energy consumption.



## Vertical In-Line HVAC Pumps

Supporting energy sustainability with efficient performance.

With a legacy of quality and durability, EnviroFlo Vertical In-Line Pumps offer reliability and full flexibility to overcome constraints and serve all types of HVAC applications. Both split-coupled and close-coupled configurations are available in a high-efficiency design that minimizes energy consumption and prolongs service life.

A precision-cast, dynamically balanced impeller minimizes vibration while maximizing bearing life. A case wear ring, grease-lubricated bearings and a variable speed rated coupling are standard.

EnviroFlo Vertical In-Line Pumps are designed for easy maintenance. A back pullout configuration provides easy access to interior areas without disturbing piping connections. The split coupling design is available in 5 hp or larger, and a double suction impeller is available on largest sizes (12 in. and 14 in.).

The bearing housing mounts directly to the pump volute to save space and provide proper alignment. An optional, heavy structural steel channel base is available for floor-mounted versions. While it does not require grouting, it is recommended.

Flows to 10,000 gpm with heads to 400 ft tdh are offered. Case working pressure is 175 psi with 250 psi available on select models.



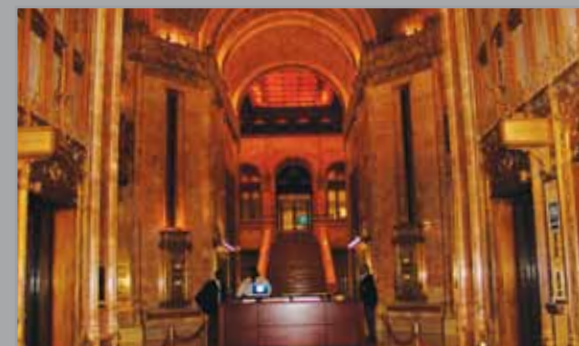
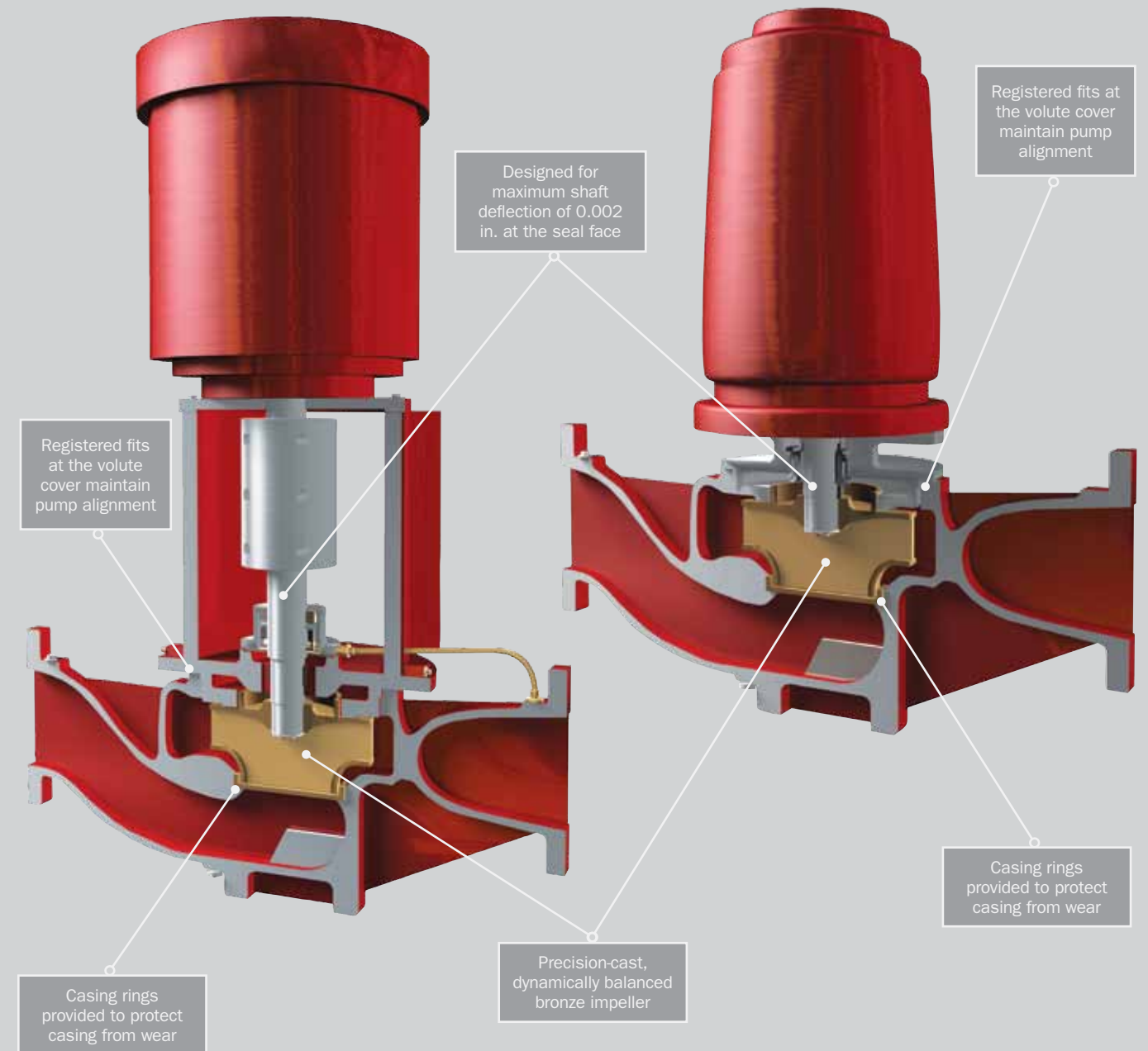
*EnviroFlo Split-Coupled Vertical In-Line Configuration*



*EnviroFlo Close-Coupled Vertical In-Line Configuration*

### Split-Coupled Configuration

### Close-Coupled Configuration



**Woolworth Building**—EnviroFlo Close-Coupled Vertical In-Line Pumps are providing world-class quality and reliability as they circulate condenser water to 18 units on three floors of this world-renowned structure in NYC.

## EnviroFlo™ Engineered Products



### Circulators

#### Benefits

- Engineered for dependability, ease of service and quiet operation
- Easy interchangeability—flange-to-flange dimensions equal those of most competing pumps

#### Features

- Available in both cast iron and all-bronze bodies
- EPDM mechanical seal and casing O-ring—Optional: Buna-N
- Standard split-phase motor, UL and CSA listed, ODP, 115-1-60 with thermal protection
- Rated to 125 psi and 250° F
- Enclosed impellers
- Up to 150 gpm and up to 55 ft tdh



### Suction Diffusers

#### Benefits

- Establish correct flow regimen for efficient pump suction conditions
- Simplify system design by combining the functions of the suction entrance pipe, long radius elbow, Y-strainer and start-up strainer
- Low pressure drop—thanks to inlet flange designed to allow a butterfly valve to fully open into the body of the suction diffuser
- Body is designed to use bolts—no threaded studs required
- Corrugated stainless steel permanent strainer provides maximum surface area

#### Features

- Available in full and reducing sizes, 2 in. – 12 in.
- Standard with magnetic plug
- Fine mesh brass start-up strainer
- Support foot
- Rated to 175 psi, 250° F

### Dirt and Air Separators

#### Benefits

- Ensures quiet, controlled heating and cooling by removing entrained air from recirculating hot and chilled water

#### Features

- ASME code stamped, 175 psi
- Vortex design
- Available in 2 in. – 12 in. sizes (in stock)
- Sizes larger than 12 in. are also available
- Available with or without integral stainless steel strainer

### Plate & Frame Heat Exchangers

#### Benefits

- Embossed plates promote high turbulence at low fluid velocities, for very high heat transfer coefficients and reduced fouling
- High thermal efficiency and high surface density requires 1/5 – 1/2 of the floor space of equivalent duty heat transfer equipment
- It is possible to heat or cool two or more fluids within the unit by simply installing divider sections between the plates

#### Features

- True counterflow of fluids, reducing amount of transfer surface required
- Lightweight construction
- Adjust unit's thermal performance by adding or removing plates
- Free-flow unit handles large particles and slurries



### Multipurpose Valves

#### Globe and Plug Style

- Combination valve replaces the features of a check valve, balancing valve and shutoff valve
- Available in 2 in. – 12 in. sizes
- Cast iron body with ANSI flanged connections
- Working pressure is 175 psi at 250° F
- Hand wheel operator on plug and lever – handle on plug style
- Metering ports
- Optional meter gauge

### Other Engineered Products

Additional products available include air purgers, expansion tanks, circuit balancing valves and shell & tube heat exchangers.

## EnviroFlo Accessories



### Makeup Water Pressure Reducing Valves

Tight seating check valve with integral strainer and unitized design for simplified servicing. Set at 15 psi. Sizes 1/2 in. and 3/4 in. Rated for 100 psi and 212° F.

### Automatic Vent Valves

Float-actuated, automatic air venting through top-mounted purge valve. Under system pressure, the valve plug seals and prevents water flow. Also serves as a vacuum break. Available in sizes 1/8 in. – 1 in. NPTF.

### Other Specialty Products

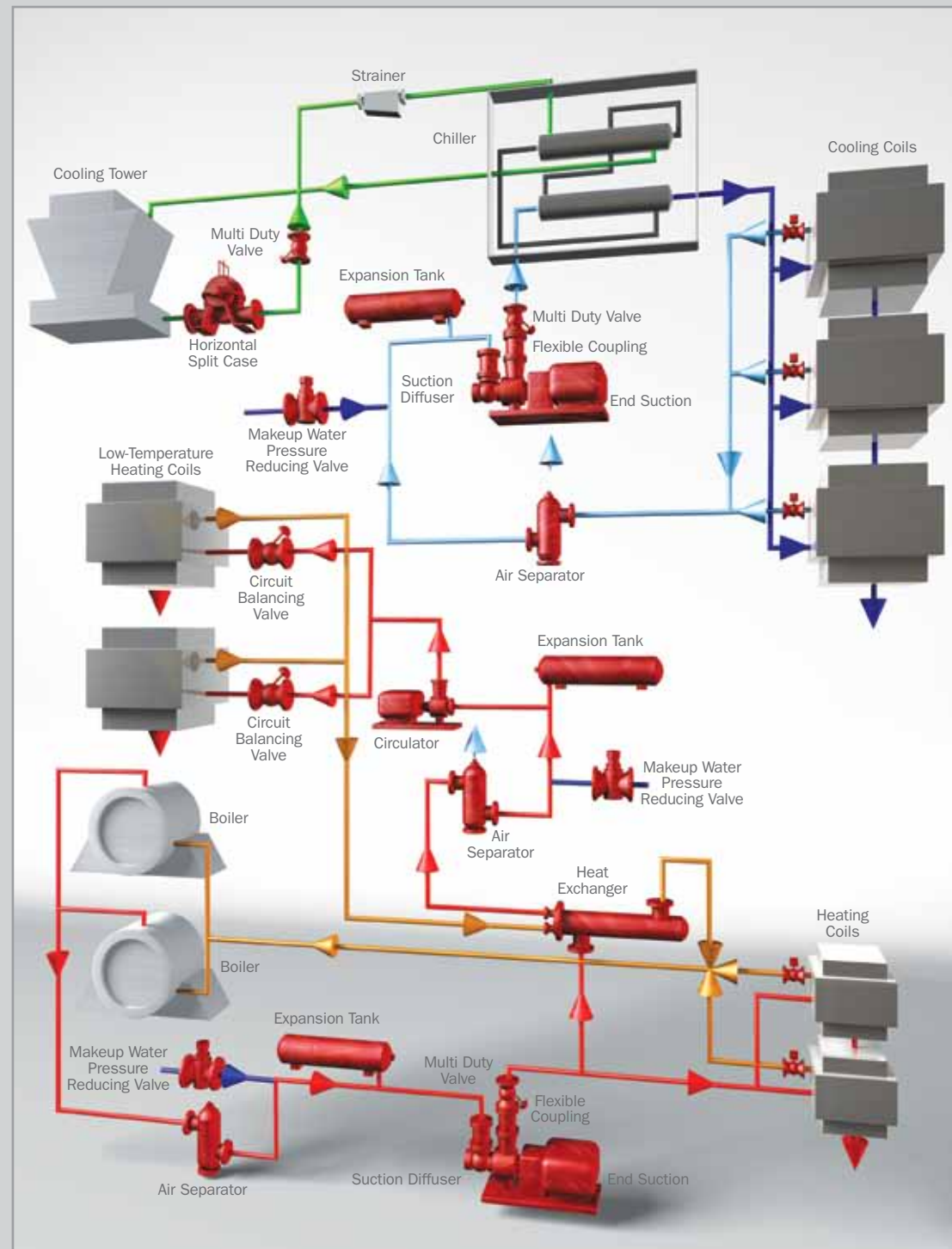
Also available are flowmeters, tank drainers, tank air control fittings and related specialties.

### Flexible Connectors

Standard neoprene or nylon connectors (other materials available) reduce noise and vibration. Rated to 214 psi at temperatures up to 240° F. Solid plate steel flanges provide a fluid tight connection. Stainless steel flexible connectors also available.

## HVAC EnviroFlo Solutions

Patterson has the engineering expertise, high-efficiency pumps, engineered products and accessories to provide sustainable, energy efficient HVAC solutions to multiple story and large complex commercial, residential and industrial applications.



## Full Service Resources

Testing, training and personalized service... all from Patterson.

Patterson's commitment to sustainable HVAC applications around the world goes beyond our extensive line of quality EnviroFlo pumps, engineered products and accessories.

Our highly engineered pumps are thoroughly tested, including hydrostatic pressure-testing, in our fully equipped laboratory. This enables our engineers to verify design and performance specifications of our pumps and ensures reliable service for you year after year.

Also, we are one of the few worldwide pump manufacturers who offer coordinated training in the proper operation and maintenance of our pumping products. Engineering and maintenance personnel from around the globe benefit from this training at our dedicated facility in Toccoa, Georgia, U.S.A. And our teams of field and factory experts always stand ready to provide our customers with dedicated personal service, whether it's a complete pump rebuild, a single O.E.M. part or the answer to a simple question.

You can count on our EnviroFlo pump technology experts to help you identify and secure everything you need for a high-performance, efficient HVAC installation. Your comfort in working with us is as important as the interior comfort our products power for your installations.



Training Facility



Highly Efficient, Green Installation

## Pumping Technology for Tomorrow's World

Over the last century, Patterson has built a firm reputation for reliable pump installation worldwide—whether satisfying urban water and waste demands; harnessing and controlling ravaging floods; reclaiming arid deserts; taming rampaging and devastating fires; or protecting the planet's ecological balance.

Patterson Pump Company leads America as one of the foremost designers and manufacturers of: split case pumps; fire pumps; axial and mixed flow pumps; vertical turbine pumps; end suction pumps; vertical in-line pumps; solids handling pumps; engineered packaged systems; and exclusive Ludlow-Rensselaer Double-Disc Gate Valves.

**Proven Quality and Reliability for More Than a Century.** It is Patterson's century-long dedication to the quality, innovation and reliability of its products that has inspired its high-quality, valued employees.

Patterson's design engineers are driven to continuously make incremental improvements throughout the company's product line and to develop leading-edge pumping technology.

Similarly, Patterson's highly trained machinists meticulously operate the cutting-edge, computer-controlled machining centers, vertical turning centers and computerized lathes in order to create Patterson products with high-precision workmanship in less time for faster delivery of standard units.

The quality and reliability of Patterson products doesn't stop at installation. Patterson is equally dedicated to providing the finest field

and factory services and maintaining the best service department in the industry.

**ISO 9000 Certification.** Patterson does more than strive for quality and reliability; Patterson has invested in the company's core values.

Patterson is ISO 9000 certified, attesting to its world-class quality and dependability. The company is continually reevaluated, with a complete reassessment every three years, to ensure all elements are maintained to keep its products world-class.

**Six Sigma.** Patterson has also invested significant resources into its Six Sigma program. Six Sigma is an optimized level of performance. That's overall excellence—not only in a world-class finished product, but also in the administrative, service and manufacturing processes throughout the company.

Patterson's Six Sigma program is a proven methodology that standardizes the right tools and techniques, while providing working teams with step-wise progressions in applying these tools. The program has successfully enhanced Patterson's reputation for high-quality, reliable pump design, manufacture and service.



*Patterson Headquarters, Toccoa, Georgia, U.S.A. (above), which includes a comprehensive test laboratory (right). Patterson Factory, Mullingar, Ireland (far right).*





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