Pumping Technology For Tomorrow's World

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Patterson




Field-Bred Solutions In Heavy Duty Pumping

Around the globe, wherever liquid moves in large volume or at high pressure, you will find Patterson heavy duty pumps and packaged systems. The world comes to Patterson—for enhancing safety and comfort in HVAC and fire suppression technology, for meeting pumping demand in water supply, irrigation, flood prevention and wastewater treatment, and for industrial solutions to liquid transfer and process heating or cooling needs.

Water...The Currency Of Life

Comfort with safety...that's our passion for pumping solutions within the building envelope. Not only that it improves quality of life, but also plentiful water marks a very necessity of life itself.

Patterson answers civilization's call for fresh water...for drinking, washing, sanitation, energy and agriculture.

Managing The Indoor Environment. First and foremost are our high-performance fire suppression pumps and packages for high density commercial, residential and industrial facilities. You may never need them, but it's comforting to know—they're ready to respond in a big way.

Fluid flow is the lifeblood of every indoor climate system. Patterson leads the way with flow power and regulation technology for hot water heating circulation, cooling towers, chillers and complete packaged systems. Whatever the variables—temperature, pressure and flow—Patterson technology manages them for comfort, safety and efficiency.

Water Resources For Sustaining Growth. Patterson fills the need, with flow power to bring potable water home from reservoirs, rivers and wells. Agriculture depends on Patterson pumps for large-scale irrigation needs. Coastal communities, river towns and industrial sites rely on Patterson pumps to protect lives and property throughout changing climatic conditions and weather events.

Our pumps transform mechanical energy into potential kinetic energy and ultimately electric power in hydroelectric pump-up facilities for peak generating capacity. Heavy industry depends on Patterson pumps to provide water for manufacturing, dry-dock operations, ballast and bulk liquid cargo handling, facility fire suppression and cooling needs.

Patterson technology helps transform even wastewater into a valuable resource. Our pumps accommodate the ebb and flow of major municipal sewage and storm water systems. Within the treatment plant where throughput is critical, our pumps are up to the task. When treatment is complete, the cycle comes full circle as pumped outflow becomes a water resource once more.

When water combines with solids, the pumping task often becomes more difficult. Patterson meets the challenge with specialized technology for circulation water, mineral and fiber slurries, food byproducts and similar mixtures.

Field-Driven Innovation That Answers Change

Five values always drive Patterson product development: *efficiency, flexibility, durability, maintainability* and *supportability.* It's these values that give Patterson products your lowest cost of ownership over long life cycles.

Efficiency. A pump must convert mechanical energy into hydraulic force. Only with a firm grasp of hydraulics and mechanics can a designer accomplish this efficiently. The fruits of Patterson knowledge are leading edge impeller design and precision matching of driving and driven components—all for minimum energy consumption.

Flexibility. Every Patterson innovation embodies the ability to accommodate individual needs, whether the economy of a standard unit or the extra capability of a custom solution. It may be within an individual pump unit, or within a packaged system concept.

Durability. Some of our customers may place only one new large pump order with us during their entire career. That's all right with us, because every Patterson product is designed robustly and manufactured for long life.

Maintainability. Our pumps comprise the heart of our customers' operations. The drive for maximum uptime makes simplicity and defined maintenance intervals critical. Patterson takes a system view of every product, rather than simply a component view, to avoid field interference and conflict that otherwise add to maintenance complexity.

Supportability. Every Patterson purchase establishes an owner/factory team, nurtured through effective owner training and responsive support/parts coverage. Through installation, commissioning and operation phases, Patterson adds value through expert applications engineering and local support.

Patterson Vertical In-line (V.I.P.) fire pumps stand ready to deliver instant volume at pressures up to 150 psi.

Uptime-Focused Pumping Technologies

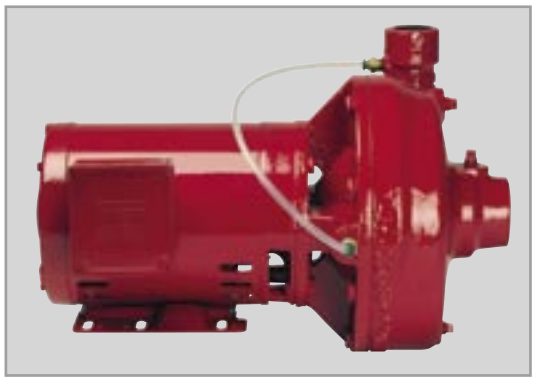
Field experience teaches us what works best in heavy-duty pumping. Patterson engineers apply this knowledge within and across product lines as modular design concepts.

Our preeminence is grounded in our ability to integrate these design concepts into solutions that are 96% special configurations. While unique in themselves, our special configurations are usually variations on proven core designs.

HVAC. Mission critical...that's the nature of indoor temperature control. For reliable hydronic heating and air conditioning, Patterson offers a full line of rugged Pro-Max® brand pumps, engineered products and system accessories.

Patterson horizontal split case double suction pumps develop flows to 6,000 gpm, with heads to 160 ft TDH. Our end suction pumps produce flows to 2,500 gpm, with heads to 400 ft TDH. In the Vertical In-line (V.I.P.) pump series, our HVAC models have flows to 10,000 gpm with heads to 400 ft TDH. A split coupling design is optional under 30 hp, and standard above 30 hp, with a double suction impeller on the largest sizes (12 in. and 14 in.).

Easy access and maintenance drive our design concepts—wherever possible incorporating features such as back pullout access and bearing housings mounted directly to the pump volute. Gauge taps at the suction and discharge connections provide complete monitoring flexibility. Special seal and impeller technologies reduce axial thrust to help lengthen maintenance cycles. Precision cast, machined and dynamically balanced impellers minimize vibration and maximize bearing life.



Close-coupled End Suction HVAC Pump.

For low-volume distribution to local coils, radiators and evaporators, our circulators provide dependability, quiet operation and ease of service. Flange-to-flange dimensions equal those of most competing pumps.

Performance-matched electronic and mechanical specialties in our HVAC program

include suction diffusers, valves (multi-duty, circuit balancing, automatic vent and makeup water pressure reducing), air separators and scoops, heat exchangers (shell & tube and plate & frame), flowmeters, expansion tanks and flexible connectors.

Patterson Pre-Pac® Fire Pump Package.

Fire Suppression. Patterson fire pumps stand guard over life and property throughout the world, ready to deliver water at the force and volume necessary for rapid fire suppression. Adaptations of four Patterson pump technologies are well suited for fire suppression service: horizontal split case, vertical in-line, end suction and vertical turbine. Pressures in excess of 390 psi and volumes up to 5,000 gpm are available. All are UL and ULC/cUL listed and FM and NYBSA approved. They meet the criteria published by the National Fire Protection Association (Pamphlet No. 20). Power options include electric, diesel (for underwriter approved installations) and dual drive. Since safety needs are often immediate, Patterson has instituted workflow priorities making the company the industry leader in rapid delivery of standard fire pumps.

Where pump and power must function together as a fail-safe team, fire suppression professionals look to Patterson Pre-Pac® fire pump packages, which are ETL certified. For repowering or upgrading flow output, an excellent solution is the Patterson Engine Package (P.E.P.).

Water and Wastewater. Patterson Forceline® Non-clog Service Pump (NCS) Series dry pit service pumps are field-tuned and refined for reliable pumping of sludge, raw unscreened sewage, miscellaneous liquids and contaminated trashy fluids. Horizontal and vertical models are offered in standard or alloy construction, in frame-mounted and close-coupled configurations. Capacities range from 150 to 12,000 gpm, with heads in excess of 250 ft.

Our Vertical In-line Pumps (V.I.P.) integrate easily into new or existing applications. Pressure ratings ranging from 40 psi to 150 psi are available, along with flow ranges of 150 to 750 gpm.

Patterson Axial and Mixed Flow Pumps offer high capacity at low-to-medium heads for flood control, irrigation and drainage projects; large scale primary water supplies; industrial process work; power plant condensing and other circulating systems. Capacities range from 2,000 to 500,000 gpm, with heads to 100 ft per stage and bowl sizes up to 96 in.

Type “F” Horizontal and Vertical Centrifugal Pumps are Patterson’s heavy duty, non-clogging workhorses for sewage plants and other applications involving sludge, drainage, pulp, food byproducts or other unscreened solids with diameters up to 8 in. The Type “F” concept spans more than 17 standard models and many custom configurations. Special wear resistant castings extend service life with abrasive slurries. Capacities range from 500 to 100,000 gpm, with heads to 150 ft.

Patterson Horizontal Split Case Pump Station.

Horizontal Split Case (HSC) Pumps move clear water or low viscosity clear liquids at moderate heads with outstanding energy

efficiency. They meet Hydraulic Institute Standards in capacities from 50 to over 100,000 gpm, with single stage heads to 550 ft and two stage heads to 1,150 ft. Vertical configurations and custom designs are available.

PVT Vertical Turbine Pump Station.

Today's Patterson Vertical Turbine Pumps offer benefits gained by years of refinement, with exceptional hydraulic performance and low vibration and noise levels. Multiple stages meet pressure requirements with a minimal footprint. Standard units have cast iron discharge heads and cast iron bronze fitted bowls. Optional stainless steel or aluminum bronze construction is available, and fabricated steel heads in lieu of cast iron are available in both above- and below-grade discharge configurations.

MPVT® Vertical Turbine Pump Station.

Patterson High-Pressure (PVT) Pumps, capable of handling flows in excess of 30,000 gpm, adapt to diverse industrial/municipal/power applications. Bowls are 12 in. through 40 in.

Patterson Multi-purpose Vertical Turbine (MPVT®) Pumps are widely used in municipal/industrial solids handling, water treatment, flood control and water supply applications. Standard units are available with bowl sizes from 12 in. to 40 in. and capacities ranging from 1,500 to 20,000 gpm and above. Easily integrated into existing installations, these pumps operate in low NPSHA applications. Since pump discharge, motor and controller are above grade, component maintenance is easy and safe.

L-R Double-Disc Gate Valve.

Valves. The ability to move large flows must be matched by the ability to stop flow. Accordingly, Patterson's Ludlow-Rensselaer double-disc gate valves complement our heavy duty pumps. The proven, double-wedging, locking gate design meets or exceeds A.W.W.A. C500 in high-pressure water and wastewater applications. They are also widely used in chemical process, iron and steel and pipeline service.

Types include round- or square-bottom valves (for throttling service on discharge side) and slimline valves (for isolation on the suction side). Diameters range from 14 in. to 84 in., with pressure ratings from 50 psi to 375 psi.

Performance-Tuned Package Technologies

The advantages of engineering the power source, pump and controls as a Patterson Flo-Pak® pre-engineered package are clear. The single point responsibility reduces design costs, usually with reduced size and complexity. Controller/engine assemblies carry the security of UL listing and ETL certification.

Additionally, assembly takes place in a controlled manufacturing environment for reliable longevity.

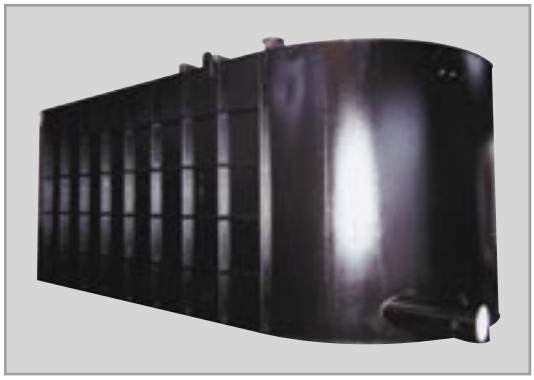
The pre-engineered, factory-installed wiring harness, connections, integrated diagnostics and communications interfaces simplify installation and commissioning. Integrated electronics enclosures provide protection from hostile environments during installation and operation. Patterson offers pump packages with a range of enclosure options.

HVAC. The simplicity of packages in district heating systems and within the building envelope significantly aids maintainability. Patterson has Flo-Pak packages for hydronic heating and heat transfer stations, complete chillers, primary and secondary (booster) pump packages, water source heat pump stations, condenser water pump skids, hot water heating circulators and variable load primary systems.

Patterson Flo-Pak® Primary and Secondary Pump Packages.

Water and Wastewater. Water authorities worldwide rely on Patterson Municipal-Pac™ packages as a single-source solution for high-volume pump stations. Where elevation poses pressure challenges, our Aqua-FloPak™ booster packages offer a simple solution. In wet wells serving sewage or storm water systems, our Prime-Pac™ underground packages excel where inflow is often intermittent. They are UL listed under QCZJ for the skid and piping.

Municipal-Pac™ prepackaged pump systems reduce installation costs by up to 35%.



Enclosed Underground Booster Pump Packages.

Special-duty packages for underground service or needs outside our standard packages are a Patterson specialty. With our flexible design concepts, we can engineer a package to meet your needs.

Industrial. For large-capacity process cooling service, Patterson engineers Flo-Pak packages with variable frequency or constant speed drives to follow cooling load with maximum energy efficiency. Other specialized industrial packages include high-pressure systems for such uses as filter press showers, water jet cutting, debarking, filtering and filter backflushing.

Industrial Pump Station Packages.

Plumbing. Sometimes municipal service is either unavailable or insufficient in pressure or flow. Building owners must turn to plumbing contractors for their water supply solutions. Contractors depend on Flo-Pak Aqua-FloPak™ booster packages to provide independent water systems with efficient, dependable service. Versatile Aqua-FloPak packages also provide dependable water service at controlled volume and pressure for high-rise residential structures, office buildings, dormitories and similar facilities.

Flo-Pak Aqua-FloPak™ Booster Packages For Plumbing Systems.

Solutions Delivered On Time And On The Money

When our tested, proven design concepts reach manufacturing, solutions begin to take shape. Our modern CNC machining centers, vertical turning centers and computerized lathes complement the skills of Patterson craftspeople.

Whether in our USA or Ireland factory, the result is high-precision workmanship with rapid delivery, especially important in fulfilling critical needs. Individual skills are integral to whole system quality—the reason our plate shop personnel are fully qualified in accordance with Section IX of the ASME Code for all types of approved welding.

Patterson Mullingar, Ireland, Factory.

Infusing Value...By Design. Patterson's rich environment of innovation is fueled by product deliveries comprising more than 96% special orders. The ability to accommodate individual requirements successfully proves Patterson design concepts and performance specifications. The Patterson Engineering Department has the tools to confirm each design concept with a complete closed-circuit test loop offering highly controlled conditions for testing pressure, flow rate and cavitation and manufacturing integrity. Other resources include a fully instrumented testing laboratory and a 400,000-gal, below-grade reservoir.

The Assurance Of Lasting Performance. Patterson Pump's Six Sigma process and ISO 9000 certification are your assurance of unsurpassed corporate performance. All manufacturing and business functions are audited, top to bottom, every three years. Each manufacturing process is regularly scrutinized for high controllability within design tolerances.

Central to Patterson manufacturing is a solid, phase-wise infrastructure, and a proven methodology that standardizes tools, techniques and sequence. Standard parts and components nomenclature clarifies understanding in the plant and in the field, both present and in the future.

Patterson Toccoa, GA, Headquarters which include a modern training facility and a comprehensive test laboratory.

Partnership That Extends To The Field

Critical to the concepts of Patterson maintainability and supportability are coordinated operation and maintenance training and field maintenance services.

Value Through Knowledge. Patterson maintains a modern training facility at headquarters in Toccoa, GA, providing instruction in both mechanical and electronic control aspects of high-volume pumping. Application engineers offer training in HVAC system planning (pumps and auxiliaries), pump sizing, installation procedures, troubleshooting and a full range of maintenance topics. The Patterson engineering staff also offers customized system engineering seminars for design teams in water/wastewater, HVAC, fire or plumbing disciplines.

Know-how On Your Doorstep. Our Field Maintenance Service Group is a valuable resource for uptime insurance, offering maintenance and complete rebuilds. Diagnostics are key to efficient service. Patterson field teams offer thorough condition analysis, including vibration and oil diagnostic procedures, thermography and motor evaluation. With the problem identified, our teams restore as-new performance through packing adjustment, lubrication and mechanical or electrical service, all with OEM parts.

Drawing upon experience gained with Patterson products, our service professionals have upgraded, redesigned and rebuilt equipment from other manufacturers. Applying hands-on knowledge of thousands of installations and applications worldwide, our teams provide preventive and predictive maintenance consulting. They help customers plan spare parts inventory levels and implement monitoring systems useful for condition trend analysis.

Special service plans help maximize system uptime. Scheduled Maintenance Service (SMS), set up for each product based on operational experience, goes beyond basic maintenance. It incorporates thorough condition analysis and builds a foundation for building predictive maintenance service. The FMS Group crafts quarterly and semi-annual inspection services customized to each product and application.

Recognizing People's Needs As You Know Them. Experience teaches us that large-volume liquid flow control touches the lives of many people. With implications for life, health and comfort, it's a trust we take seriously, worldwide. We know you appreciate the values built into our products and services, because you've told us so. Next time you have a heavy duty fluid control need, remember the company that shares your values—Patterson Pump Company. We're ready to assist, from sales offices in Europe, the Middle East and Far East, with field representation worldwide. Get to know us. We understand the world as you know it.

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