

2017 PRODUCTS & SERVICES GUIDE



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For over twenty years we've been saving our customers time and money on industrial automation products including PLCs and HMIs, pneumatics, sensors and even wire. We have a huge

inventory that is constantly growing in order to provide you with the quality components you need to keep your projects moving. We have also invested heavily in new infrastructure

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Universal Field I/O



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Operator Interface



AC Drives



Motors and Motor Controls



Motion Control



Power Transmission



Pneumatics



Process



Relays & Timers



Sensors



Pushbuttons, Switches and Lights



Terminal Blocks & Wire



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Over 2,000 quality-built and highly reliable Hubbell/Wiegmann NEMA rated enclosures are available at great prices with customer service you won't find anywhere else but AutomationDirect.



Hubbell/Wiegmann Enclosures starting at: **\$6.50** SA100SL



NEW! Hubbell/Wiegmann Fiberglass Enclosures starting at: **\$69.00** HW-RHJ60405SC



Integra Enclosures

Our top-quality polycarbonate NEMA enclosures manufactured by Integra are excellent for a wide range of outdoor applications.



Integra Enclosures starting at: **\$33.50** P6063

NEW! Hubbell/Wiegmann Fiberglass Enclosures

Do we have the enclosure you need? You bet! We've added over 189 new top-quality fiberglass enclosures manufactured by Hubbell/Wiegmann to our already extensive line of enclosures, subpanels and accessories.

- **JIC Series Raised Cover:** Thermoset fiberglass, seamless gasket provides water/dust tight seal, submersible non-corrosive design, modest overhang raised cover increases depth allowance.
- **JIC Series Extra Deep:** Same as above but cover design is clam shell style with extra depth dimension for added clearance.
- **Classic Series:** Thermoset fiberglass, seamless gasket provides water/dust tight seal, chemical resistant non-corrosive design, designed for general electric and electronic applications. Also ideal for a broad spectrum of environmental installations.



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Baldor Electric Company

Baldor Electric Company, headquartered in Fort Smith, Arkansas, is a leading marketer, designer, and manufacturer of energy-saving industrial electric motors, drives and mechanical power transmission products. Founded in 1920, Baldor has a long rich history dating back to 1878.

INDUSTRIAL ELECTRICAL MOTORS

Baldor offers the broadest range of industrial AC and DC electric motors to value-minded customers. Baldor-Reliance® motors range from 1/50th through 15,000 horsepower, as well as the entire line of ABB IEC motors and medium voltage motors up to 100,000 horsepower, providing Baldor-Reliance and ABB packaged solutions for most industrial applications.

Baldor-Reliance Super-E® motors are optimized for efficiency, ensuring the lowest operating costs. We also offer broad lines of brake-motors, explosion-proof, C-face, pump-motors and gear-motors to provide solutions for any purpose or environment. Custom

motors to meet specific requirements with the shortest lead times in the industry are a Baldor specialty.

MOUNTED BEARINGS, ENCLOSED GEARING, AND MECHANICAL POWER TRANSMISSION COMPONENTS

Baldor is a leading producer of mechanical power transmission products including Baldor-Dodge® engineered mounted bearings, enclosed gear products, and power transmission components, including couplings, sheaves, bushings and pulleys, designed to thrive in the most rugged environments, with the lowest total cost of

ownership over the lifetime of the product.

In 2011, Baldor Electric Company was acquired by ABB Ltd. and is a proud member of the ABB Group. Together, Baldor and ABB can offer complete industrial solutions to local and global customers more effectively than any other single industrial supplier. ♦

BALDOR ELECTRIC COMPANY
 5711 R.S. Boreham Jr. St. • Fort Smith, AR 72901
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The Only Coupling To Earn Its Wings



The NEW patented Baldor • Dodge® Raptor takes coupling innovation to greater heights. Utilizing a patented winged element design for higher bond strength and improved fatigue resistance, the Raptor delivers:

- Longer driven equipment life and increased reliability
- Easier installation and reduced maintenance
- Drop-in interchangeability

The Raptor is backed by over 50 years of natural rubber expertise and an industry leading 5-year warranty. Expect a higher level of reliability with the new Baldor • Dodge Raptor coupling.

baldor.com 479-646-4711



Raptor's slotted clamp rings offer more clearance at the bolt holes for an easier installation than competitive designs.

BALDOR • DODGE®



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California Motor Controls

Pump Vision PV1200 – Universal Pump Controller

For many years California Motor Controls has been producing touch screen pump controllers for the three largest water/wastewater pump applications: Level control, Pressure Booster control, and Well Pump control. In the past, these controllers have always been separate products, making continuous software development costly.

With our new PV1200 Universal Pump Controller, we have combined these three applications into one easy to use, cost effective controller without compromising features or functions. All three operating modes (Level, Pressure, or Well) share much of the same program and offer full pump station management including PUMP Vision pump control, MOTOR Vision remote monitoring, SCADA Vision communication capability, and data logging.



LEVEL CONTROL MODE

The PV1200 is more than just a level controller. Not only does it operate just about any lift station application known, with Motor Vision it can closely monitor power conditions of the motors and preempt failures by alerting maintenance personnel of impending problems. And because of the built-in communication and email capabilities, and the ability to monitor pump station peripherals such as intrusion, generator status, and more, the PV1200 fills the task of pump station RTU. Add the extensive data logging capabilities and the PV1200 is a complete Pump Station Manager.

PRESSURE BOOSTER MODE

The Pressure Booster controller is designed to provide a constant pressure with variable flow conditions. By incorporating all of the latest energy saving technologies such as variable speed drives, sensorless no flow shutdown, and seamless sequencing of multiple pumps, the PV1200 provides a solid performance under extreme swings in operating conditions.

WELL PUMP MODE

The PV1200 brings all of the operation and protection capabilities typically reserved for municipal pump stations to the agricultural and domestic well market that has historically had “bare bones” controls at remote installations and no communication to the outside world.

We now have a cost-effective monitoring and control solution available for well pumps, too!

For more information, contact California Motor Controls at 707.746.6255 or visit www.cmcontrols.com/pumpvision. ♦



PUMP Vision™ 'Universal Pump Controllers'

Smart pump station manager, data logger, and RTU for water and wastewater applications



The PUMP Vision **PV600** and **PV1200** controllers operate up to four constant or variable speed pumps in level control, pressure booster, and well pump modes



Connect to the Internet for remote operation on Windows, Android, and iOS, as well as conventional SCADA systems.



www.cmcontrols.com/PUMPVision

GTI Predictive Technology

Changing predictive maintenance

Twenty-first century technology has brought about giant strides in portability, connectivity and affordability. That is what drives our philosophy at GTI

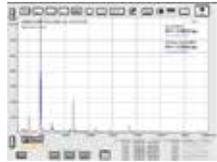
Predictive Technology. We leverage every technological advance to bring the industrial reliability maintenance community powerful, affordable and industry changing solutions.

We do this by utilizing the most powerful platform available today and leverage that with the most user-friendly interface. The Apple iPad allows GTI to use the best technology combined with economy of scale to provide an amazing predictive maintenance solution.

Combining different technologies as apps for the iPad, the GTI Predictive Platform is changing predictive technology. At GTI, we use wireless solutions whenever possible. The iPad platform allows GTI to provide apps for vibration data collection and analysis, field and shop balancing, infrared thermography, laser shaft alignment, and airborne ultrasound.

Using many tools already found in the iPad, GTI Predictive Technology can provide unique tools within our powerful apps – integrated reporting, GPS location, photos in route mode and reports, communication through email and data sharing between apps. As Apple adds more tools, we take their solutions and integrate them into our apps to make the user experience useful and simple.

The heart of predictive maintenance is a good vibration monitoring program. Combined with our other predictive tools, VibePro7 provides an affordable alternative to the current offering of vibration tools on the market. Route data collection, onsite analysis and remote web based



vibration data analysis make this a powerful solution for any reliability maintenance program. Recent apps added to our vibration suite of tools include PhasePro for measuring phase and amplitude of an entire system using a tachometer and a wireless sensor. X-Phase measures the cross channel phase angle between two points. Our most recent release is our Bump Test app.

GTI VibePro Online adds remote data analysis with more tools for a deeper dive into your vibration data. Tools like VibePulse for Fault Detection, the Condition Heat Map add unique functionality available only in VibePro. Overall Plant data, Machine Data, Measurement Point Data (with waterfall plot) and Measurement Data allow users and analysts to trend machine condition, target machines that are in trouble and detect machine issues. Automatic reporting tools save time and money in the analysis process.

BalancePro Field has solutions for single and two channel balancing for both inboard and overhung machines. A simple step-by-step process walks the user through the entire process.

GTI@lign is the app for wireless laser shaft alignment. The product is part of our find it – fix it philosophy with the VibePro platform – detect misalignment with vibration and phase, fix it with the GTI shaft alignment app. GTI@lign uses the power of Pruftechnik hardware.

GTI Thermography apps include ThermoPro and ThermoO2LR. ThermoPro is the GTI app for capturing thermal images and

in app reporting. ThermoProO2LR2 is a quick and easy method for measuring thermal growth for alignment tools. Both app use the powerful FLIR One camera with the iPad.

As a subsidiary of GTI Spindle Technology, we understand the requirements that are needed to monitor pumps, motors, fans and more. Our passion for helping VibePro users allows GTI to continue to improve our solutions based on real demand from real users.

ABOUT GTI SPINDLE TECHNOLOGY

Founded over twenty-five years ago, GTI Spindle Technology's spindle repair and rebuild services are a product of 100 years of combined service, sales and manufacturing experience. GTI Spindle Technology has been dedicated to fulfilling one specific mission: to provide our clients with the highest quality and most extensive range of machine tool spindle repair services and new spindle applications with unsurpassed customer service.

Our commitment to excellence also includes our understanding of rotating equipment of all kinds, especially as related to maintenance and reliability. Our goal is to provide predictive condition monitoring tools that are affordable, simple to use, yet powerful enough to provide the data required by today's vibration analyst. GTI Predictive Technology is constantly updating our predictive maintenance tool kit and developing new solutions for the future, including our new iBumpTest app for measuring natural frequencies and our soon to be released VibePro 8 that delivers a new suite of tools for our VibePro users. ♦



Predictive Technology

iPad Predictive Maintenance Platform



Detect and Correct potential pump issues with GTI's wireless Predictive Maintenance Platform.

Technology available in the 21st century has brought about giant strides in portability, connectivity and affordability. This is what drives our philosophy at GTI Predictive Technology.

GTI Predictive Technology offers a suite of apps that combine vibration data collection and analysis with balancing, shaft alignment, thermography and ultrasound in one affordable and completely scalable solution.

To see our technology in action and learn how your company can take advantage of our Predictive Maintenance Technology, visit us at EASTEC May 16-18, booth 5562. For a live online demonstration contact us at info@gtipredictive.com.



Popular Apps: VibePro (shown), BalancePro, GTI@align, Ultrasound, ThermO2LR, X-Phase.

PRUFTECHNIK

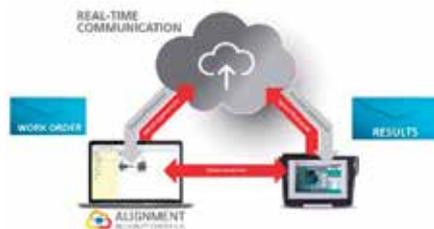
ROTALIGN touch: Precision meets connectivity

The cloud-based shaft alignment system that combines precision measurement with mobile connectivity is revolutionizing the way maintenance crews achieve optimal machine performance and product quality. Softfoot diagnosis, thermal growth trending, vibration spot check to measure overall values, vertical machine alignment, and cardan shaft alignment are a few of the features incorporated into this valuable alignment system. PRUFTECHNIK's invention of the ROTALIGN touch integrates laser shaft alignment and powerful software to produce a valuable data stream that details all aspects of machine alignment condition.



The ROTALIGN touch's newly developed user interface makes the alignment process an integral part of asset management. Its tablet-like touchscreen with 3D display enables a fully intuitive and visual work sequence with onboard prompt or help line on every screen. Additionally, the device includes a 5 Megapixel camera, RFID system, and a Cloud-based alignment structure. The RFID reader allows unique identification of each machine and facilitates retrieval of its last alignment file stored on the ROTALIGN touch computer. The built-in camera lets users customize reports with photos and enhance visual documentation. The onboard WiFi and Bluetooth feature enables devices to send measurement results back from any location directly via the Cloud without access to PC connection.

Encased in extremely durable housing built to withstand the most



severe environments, the ROTALIGN touch encompasses the capacitive, glove-enable touch screen display with strengthened gorilla glass that is Ingress Protection rated IP65. The device is equipped with a rechargeable Lithium Ion battery, sliding cover for connection ports, USB host connector stick, 14 Pin PRUFTECHNIK Alignment connector, and industrial standard power supply charger.

The ROTALIGN touch offers the solution to perform shaft alignment quickly and reliably with its wizard guidance from start to finish and its unchallenged measurement capabilities of the sensALIGN heads. Precision MEMS inclinometers are housed in the sensALIGN heads to determine the accurate rotation angle and detect excessive adjacent vibration. The XXL detector size and high definition Position Sensitive Detectors (PSD) can identify backlash, rotation unevenness, and environmental vibration or coupling play. These negative influences are detected and during the measurement and are automatically eliminated. The overall vibration is also measured, assessed, and compensated for when taking measurements.

The ROTALIGN touch can measure many different coupling types from single flex, to spacer, to cardan shafts and rigid couplings. The interchangeability is as easy as clicking the coupling in the display screen to switch its format. In addition, targets, user defined tolerances, and asymmetric tolerances can be defined for each coupling. Features such as Cardan shaft alignment, vertical alignment, softfoot diagnostics, move simulator and Live Trend push the

ROTALIGN touch to be the foundation of any plant management and reliability program. Cardan shaft alignment with specially designed brackets and patented measuring method, allows cardan shaft to be aligned without removing the shaft which significantly reduces the alignment time, effort and cost. VeritSWEEP, the new continuous vertical alignment mode, allows vertical machine trains to be measured as simply as horizontal machines. Softfoot diagnostics assists the user in identifying the possible causes of machine softfoot. The Move simulator feature simulates the corrections in advance to determine if the machines can be aligned with the shims on hand or the possible horizontal moves if bolt bound (example displayed in image below). Lastly, the Live Trend capability monitors thermal or process-related machine positional changes during run-up or coast-down phase.



Condition monitoring of machines is an important part of a comprehensive maintenance strategy. Precision shaft alignment not only extends machine availability, but also reduces vibration thereby protecting facility assets and improving overall product quality. Laser shaft alignment offers many outstanding advantages including quick measurement setup, graphical display of alignment results, no coupling disassembly required during measurement, and accurate and repeatable results. Alongside the features set out in this article, PRUFTECHNIK offers trainings and free firmware upgrades with additional features for the ROTALIGN touch. ♦

AN EXTRA INCH PER SECOND CAN ACCELERATE YOUR **PROFIT.**

PRUFTECHNIK is a leading single-source solution provider for machine laser alignment, condition monitoring and nondestructive testing.

PRUFTECHNIK's technical innovations optimize the availability of your production assets—and stop small amounts weighing heavily on your bottom line.

www.pruftechnik.com/us

THE MAKERS OF
OPTALIGN®
AND
ROTALIGN®



Rosedale Products Inc.

Rosedale Products, Inc. is a leading technology developer in the field of liquid filtration systems and waste minimization products for customers around the globe. With more than fifty years of experience, Rosedale offers an exceptional product line that includes high-performance filtration solutions for multiple industries. Rosedale technicians help customers find the best, most cost-effective approaches to their filtration needs.

Our product line sets the industry standard in versatility and reliability and includes bag and cartridge filters, basket strainers, automatic back washing filters, filter cartridges, and many special application products. Together with ongoing consulting, troubleshooting, and support from our team of in-house experts, Rosedale provides comprehensive solutions for every critical industry filtration need.

We are generalists. Rosedale manufactures industrial filtration products for virtually any industry where liquid and gas flows are present.

We have a vast product line that suits many needs, as well as the flexibility to customize standard products. Our sales staff has knowledge of many industrial practices, giving customers the confidence that their filter solution is the best available for their specific need. Our most popular products are bag filters, pleated cartridge filters, and basket strainers.

MULTI-BASKET STRAINERS AND MULTI-BAG FILTERS

Multi-basket strainers and multi-bag filter housings offer a wide range of flow capacities and contaminant-holding capabilities. They contain from 2 to 23 baskets. To serve as a strainer, a unit is ordered with perforated stainless

steel baskets (mesh-lined if desired). When ordered as a filter, it's fitted with perforated stainless steel baskets designed to hold filter bags or pleated cartridges. Industry-standard size bags are used: the standard 30 inch baskets accept bag size 2, the optional 15 inch baskets take size 1.

The standard pressure rating for all models is 150 psi. All multi basket strainer and multi bag filter housings can be supplied with an ASME code stamp, if required.

Features include

- Multiple housing styles available (standard, quick access, low profile, hinged)
- Permanently piped housings are opened without tools and without disturbing the piping
- Machined cover gasket groove provides positive O-ring sealing
- Carbon steel, 304 or 316 stainless steel construction housings
- Large-area, 30 inch deep, heavy-duty, 9/64 inch perforated baskets
- Easy to clean
- Low pressure drop
- Four cover seal materials: Buna N, Ethylene Propylene, Viton®, and Teflon®
- Pressure rating 150 psi
- Flanged connections for 2 through 12 inch pipe
- Vent, drain and gage connections

Available with the following options:

- ASME code stamp
- Higher pressure ratings
- Corrosion allowances
- Steam jackets
- Special connection locations
- Inner baskets for dual-stage straining or filtering
- Cleanable wire mesh lined or

- perforated strainer baskets
- Special alloy materials
- Hydraulic cover lifting assembly
- Sanitary fittings
- Differential pressure indicators

Quick Access Cover (QAC) features a clamp and spring assisted hinged cover that is quick and easy to open and close with no tools required. This will significantly reduce change-out time and lower operating costs. The QAC is rated to 150 PSI and constructed to meet ASME code requirements. Built-in safety features ensure that the cover cannot be opened unless the internal pressure is first released. The QAC is offered with our low profile design making bags more accessible and easy to remove.

Low Profile Design (SLP) Housings are compact and space saving, allowing for ease of bag change-out. Standard operating height is reduced, resulting in a safe design by eliminating platforms and ladders. The SLP is manufactured in any housing version, including our standard davit arm cover, QAC design, and spring assisted hinged cover.

Spring Assisted Hinged Cover (HLP) opens and closes without effort. Simply loosen the swing bolts and lift the cover up to open. An automatic cover stop is provided. This design saves time by eliminating the labor intensive handwheel. It is offered standard with our low profile design, or can be ordered in the QAC design.

Standard Housing Design (STD) is durable and economic. It includes a davit arm and handwheel to facilitate cover removal. It is our most versatile housing design offering a variety of options, including our low profile design. ♦

ROSEDALE PRODUCTS INC.

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Smith & Loveless Inc.

Vertical S&L STAR ONE™ Pumps promote superior efficiency, durability, and ease of O&M

Recent advancements in wastewater pump technology have focused on three areas of extreme importance for today's municipal collection systems and industrial sumps: energy efficiency, improved solids-handling, and reducing O&M time and expense. Today's economic and environmental climate call for reducing energy demand and costs, particularly for municipalities struggling to acquire adequate capital funds and skilled operator labor in its municipalities.

With the rise in popularity of consumer flushables in recent years, municipal collection systems are also faced with frequent clogging issues that are costly and inconvenient.

Smith & Loveless Inc.'s latest wastewater pump innovation, the STAR ONE™ S&L Non-Clog Pump, is designed to answer the call on these industry issues. The next generation S&L Non-Clog Pump, the STAR ONE™ starts with a number of proprietary features to deliver the water industry's longest service life and highest efficiencies—including oversized stainless-steel pump shafts, oversized bearings, and bronze seal housings. Now, the STAR ONE™ S&L Non-Clog Pump offers 3-5 percent higher efficiencies than previous S&L Non-Clog Pumps—paving the way for significant energy cost savings over time.

Increased energy efficiency originates from improvements in S&L's proprietary pump impeller design combined with NEMA Rated Premium Efficient Motors. It is a fully enclosed impeller design, which offers higher operating efficiencies in general than semi-open impellers that are found in submersible and self-priming pumps. The new impeller offers superior flow path balancing. By custom-trimming the impellers inside the shrouds for each application, the back shroud is left at full diameter and stringy materials are prevented from winding around the shaft, which can lower pump efficiencies. S&L Pump impellers never require recirculation ports like self-priming pumps, so no energy is wasted having to pump liquid a second time through the pump.

The standard STAR ONE™ S&L Pump's dual-port impeller meets the 10 States Standard for solids handling wastewater



S&L STAR ONE™ Pumps are designed to meet the highest of standards promoting superior efficiency, durability and ease of maintenance, including the 10 States Standard for 3" (76 mm) solids.



STAR ONE™'s vertical, close-coupled construction and custom-trimmed and fully-enclosed impeller are a few of the proprietary features delivering the industry's longest and most operator-friendly service life.

pumps, passing 3-inch solids (7.6 centimeter) and rarely clogging. However, for applications experiencing high volumes of pump clogs (often caused by consumer flushables), S&L's patented X-PELLER® Impeller option effectively passes high volumes of wipes, rags and

other stringy materials. Its large, open mono-port design dramatically reduces hang-ups while maintaining perfect balance, high efficiencies and compliance with Hydraulic Institute vibration standards. The X-PELLER® Impeller is S&L's easy answer to the tough industry challenge of consumer flushables. Hundreds of successful cases demonstrate that costly downtimes and the need to tear apart pumps to unbind impellers can be eliminated.

To further reduce maintenance requirements and costs, the STAR ONE™ S&L Non-Clog Pump is designed to simplify basic pump maintenance for just a single technician. The fittings of the pump have been developed to feature close tolerances that surpass all NEMA specifications, ensuring the pump can only be disassembled and reassembled in one manner: correctly. The seal element is easily inspected without any disassembly of the pump. If it must be disassembled for full service, all that is needed is the included lifting stanchion and standard tools. Other types of pumps require a full blown hoist, pressure washer and safety equipment to conduct extensive maintenance, not to mention additional personnel for safety measures and/or costly outside service contractors.

The lower operation expense of STAR ONE™ S&L Non-Clog Pumps, especially when compared to submersibles, is backed up by the recent analysis of an independent municipality. This documented twelve-year study of more than fifty pump stations, based on actual work orders, found that S&L Pumps offered 56 percent savings in total maintenance and repair costs when compared with submersibles. ♦

IT'S GOOD TO BE GROUNDED... ABOVE



Immediate Access

No Confined Space

Low O&M Costs

Safest Operation

S&L Above-ground EVERLAST™ Pump Stations are never submerged—in sewage or the associated pit of submersible pump O&M costs and requirements. EVERLAST™ eliminates confined space burdens, pump stocking and replacement, and inconvenient pump clogs several feet underground. EVERLAST™ promotes superior wire-to-water pump efficiencies, QUICKSMART™ touch-screen controls, and the industry's longest pump life and warranty protection. This translates to real savings in O&M labor time and costs—all grounds for total pump station success.



Smith & Loveless Inc.

Delivering the Lowest Total Cost of Ownership in Pumping—By Far.

Call 800.922.9048 VISIT SmithandLoveless.com

TECO-Westinghouse Motor Company

TECO-Westinghouse Motor Company (TWMC) takes great pride in their commitment to provide the highest quality and premium craftsmanship of AC & DC motors and generators. In addition to motors, TWMC is proud to provide quality variable frequency drives (VFDs) and soft starters, as well as large motor repair services for a myriad of businesses in all industries including petroleum, chemical, water/ waste water, mining, marine propulsion, steel, and electric utility production. Ranging from ¼ to 100,000 horsepower, TWMC's durable high-quality machines are used to power projects of all sizes.

TECO-Westinghouse offers a wide variety of motor product lines to better serve customers' needs. Proven experience in providing custom engineered vertical and horizontal induction and synchronous motors for the electric utility, petrochemical and water/ wastewater industry speaks for itself. In recent advancements, TWMC extended the stocked product line for low and medium voltage, vertical hollow shaft and solid shaft motors up to 800 horsepower. These Max-VHP® vertical motors meet or exceed NEMA Premium Efficiency levels. We recommend pairing one of these vertical motors with a reliable F510, low voltage Pump & Fan VFD for optimal performance. Customers save as much as 50 percent on power by reducing motor activity to 25 percent!

Other product introductions include medium voltage VFDs that are manufactured in the US in NEMA 3R and NEMA 12 enclosures and medium voltage, horizontal, Quick Ship motors from 800 to 3000 HP that are carried in stock. Low voltage VFD options include the L510, an advanced micro drive; the E510, which is designed for NEMA 4 applications; and the A510, a heavy duty drive



that is versatile enough to be used for general applications and tough enough for demanding applications like reciprocating pumps, compressors, and other high torque loads.

Most recently, TWMC has added a new product line of gearing solutions that offers customers highly modular, inventory saving designs that are industry leading in efficiency and cost effectiveness. Unique aluminum housing designs are reinforced and robust to give high performance with excellent heat dissipation that performs well in lower horsepower, higher torque applications. The Helical, Parallel Shaft, and Helical Bevel gear products were designed to directly interchange with the critical dimensions that are commonly used in industry. These gear reducers are suitable for handling a broad range of power requirements from fractional to several hundred horsepower and are complementary to our motor and controls product lines offering our customers a powerful complete solution with system responsibility to drive their applications.

TWMC continues to evolve and looks forward to serving customers' needs by promoting motor and drive solutions that optimize customer efficiencies and needs. The capacities of the Round Rock factory, synthesized with TECO-Westinghouse's global manufacturing resources has uniquely positioned the company to be internationally recognized with an American tradition for excellence in quality. ♦



TECO-WESTINGHOUSE MOTOR COMPANY

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Motor, Drive & Gear Solutions for the Pump Industry



Engineered Capabilities to Meet Your Industry Demands

- ✓ Complete Product Line of Motors & Drives from 1/4 HP to 100,000 HP
 - USA Manufactured Medium Voltage Drives in NEMA 3R & 12
 - Medium Voltage SG Motor Line, in Stock from 800 HP to 3000 HP
 - EQ7 & 510 Series Low Voltage Drives in Stock Up to 1000 HP
- ✓ Low & Medium Voltage MAX-VHP® NEMA Premium® Motors in Stock
 - Vertical Hollow Shaft & Solid Shaft Motors up to 800 HP
- ✓ Broad Selection of Gear Reducers Covering Worm, Helical, Parallel Shaft & Helical Bevel Styles
- ✓ Westinghouse Legacy Driven by TECO Experience
- ✓ Service & Repair Capabilities with a Full Line of Renewal Parts
- ✓ Dedicated Customer Service & Knowledgeable Technical Support Team
- ✓ Superior Product Reliability



Yaskawa The Yaskawa quality experience

Yaskawa is the leading global manufacturer of low and medium voltage inverter drives, servo systems, machine controllers, and industrial robots. Our standard products, as well as tailor-made solutions, are well known and have a high reputation for outstanding quality and reliability.

We're the only industrial drives manufacturer to win the Deming prize—the most prestigious quality award in manufacturing. But we know that tells only part of the quality story. What about innovative design, knowledgeable, responsive engineers who understand your business, and superior support and training? Those crucial assets are a vital part of how a company is ultimately judged and what we mean by the Yaskawa Quality Experience. At Yaskawa, Quality is more than numbers, more than awards—it's the total experience of purchasing and owning Yaskawa products and working with Yaskawa people.

P1000 DRIVE: THE FLEXIBLE, INTUITIVE SOLUTION FOR FAN AND PUMP APPLICATIONS

Yaskawa's P1000 variable frequency drive provides simple, reliable, cost-effective control for variable-torque loads through 1000 HP. Specific application features, energy savings, and network connectivity make the P1000 a great choice for industrial fans and pumps.

Exceptional quality is the hallmark of Yaskawa products. Yaskawa drives have demonstrated extremely high reliability with an average MTBF (mean time between failure) of twenty-eight years or more.

User-friendly configuration tools, including a multi-language LCD display with a real-time clock, parameter storage, fan and pump application presets, and a portable USB copy unit make programming and configuration simple. DriveWizard® computer software delivers configuration, monitoring, and trending functions



YASKAWA



Standard P1000 Drive



18-Pulse Drive Package

enhanced by direct connectivity through the P1000's standard USB port.

A significant quantity of control points are included as standard. For applications requiring more functionality, the P1000 offers three expansion ports for additional I/O, feedback, and network communications, including DeviceNet, EtherNet/IP, Modbus TCP/IP, Profibus-DP, PROFINET, BACnet, and Lonworks.

Energy efficiency is maximized with variable speed control, and the P1000's integrated 12 pulse version reduces harmonic demand from the power system, contributing to a cleaner environment. Additionally, all materials used in the P1000 comply with the directive for Restriction of Hazardous Substances (RoHS).

P1000 Drives are also available in Bypass and Configured packages. The P1000 Configured package provides a P1000 in a NEMA 1, NEMA 12, or NEMA 3R enclosure, with space for several commonly used options, such as reactors, RFI filters, circuit breakers, etc. Custom engineered 18-pulse packages are also available. The P1000 bypass package provides a P1000 Drive in a NEMA 1, 12, or 3R (UL Type) enclosure, with a 3-contactor style bypass, allowing motor operation from either the drive or across the line. These packages have been designed for flexibility in providing commonly requested features and options to provide a customized drive solution.

The P1000 drive is available in 200-240VAC Three Phase 50/60 Hz (up to 175 horsepower), 380-480VAC Three Phase 50/60 Hz (up to 1000 horsepower), and 500-600VAC Three Phase 50/60Hz (up to 250 HP) ratings. All ratings are available in a Flange configuration that allows for mounting the drive with its heatsink out

the back of any Type 12 enclosure. In addition, the P1000 is designed for use around the world, and carries agency certifications for all major geographical regions. ♦

PERFORMANCE UNDER PRESSURE



Need a drive that will consistently maintain the pressure, flow or level of your water system? Try the family of iQpump drives from Yaskawa.

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Check-All Valve Mfg. Co.

Check-All Valve Mfg. Co. is proud to introduce a new check valve product offering. The EPIC® series consists of in-line spring-loaded poppet-type check valves that are designed to be cost effective, simple, rugged and efficient while operating in any flow orientation. The EPIC® is machined from 300 series stainless steel bar stock with Aflas® seat/seals and a ½-PSI stainless steel spring (cracking pressure). It is streamlined so that media flows through the valve over smooth, contoured surfaces with a minimum change in direction. The check valve also achieves a high flow capacity and reduced

pressure loss compared to other poppet style check valves of similar sized connections. These features minimize the pressure drop across the valve. The EPIC® closes quickly and smoothly for silent operation and eliminates water hammer.

Additionally, the EPIC® series incorporates a replaceable drop-in check mechanism (Replaceable Insert Kit sold separately) that is easily installed into the existing body without requiring additional assembly of separate checking components. This pre-assembled complete check mechanism eliminates the need to assemble individual checking components, creating an efficient and economical method of effectively rebuilding the entire check mechanism, if an application requires. Due to the materials of construction, high flow

capacity, complete repairability and the quality customers have come to expect from Check-All, the EPIC® check valves are uniquely suited for a very wide range of applications in liquids, gases and steam. ♦

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BROCHURE CONTACT**

**CHECK-ALL VALVE
MFG. CO.**

1800 Fuller Road
West Des Moines, IA 50265

515.224.2301

Fax: 515.224.2326

sales@epiccheckvalves.com

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It's called EPIC® for a reason...

The EPIC® series consists of in-line spring-loaded poppet-type check valves with a one piece, drop-in, replaceable check mechanism, that are designed to be cost effective, simple, rugged and efficient while operating in any flow orientation.
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Check valves with a World of Possibilities

Pre-assembled Drop-in Replaceable Check Mechanism

PATENT PENDING

Manufactured in West Des Moines, Iowa, USA
by Check-All Valve Mfg., Co.®

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Dickow

Dickow specializes in supplying centrifugal pumps with a seal less magnetic coupling. Our model NMWR/ NMWB are specifically designed for high temperature heat transfer fluids (hot oil) up to 750 F without any water cooling. The series NMWR/ NMWB are sealless with no shaft duct to the atmosphere. The containment shell forms a closed system with a hermetically sealed liquid end replacing double acting mechanical seals with external fluid reservoirs and necessary control equipment. Additionally, the containment shell is not used as an additional bearing holder meaning no dynamic stress occurs.

As in all Dickow sealless pumps the magnets are permanent rare-earth Samarium Cobalt with unlimited life. The driven rotor is completely encapsulated as to not come into contact the pumped liquid. Power is transmitted through the containment shell by a bank of external magnets. The inner and outer magnets are locked together by magnetic forces and operate as a synchronous coupling. The inner magnet transmits the power to the impeller at the same speed as the motor.

The bearing housing has been designed as a cooling devise with cast on fins that dissipate heat to the atmosphere. This keeps the temperature inside the containment shell below the system temperature in the volute casing.

The pump shaft is carried in the wetted end by pure Silicon Carbide (SiC) with a diamond layer that allows for limited dry running. The SiC components are elastically fitted in their holders which eliminate any concern of thermal shock and stress at high pumping temperatures. SiC is highly resistant to wear and corrosion.

The NMWR is long coupled. The drive shaft is carried in generously dimensioned oil lubricated antifriction bearings that are rated for 25,000 hours of operation. The oil bath is protected against the atmosphere and separated from the magnetic coupling by two

labyrinth seals. The level of the oil is controlled by a constant level oiler and a site glass.

The NMWB is closed coupled eliminating the requirement of the oil

bath and bearings. Additionally, the closed coupling shaft misalignment issues. The maximum capacity of these pumps is 4,000 gallons per minute with differential head 500 feet. ♦

DICKOW Pump Company

Dickow Pump Company has manufactured centrifugal pumps for more than 75 years, always with an emphasis on precision, longevity in service, and hydraulic efficiency. Today we offer the broadest and most technologically advanced range of magnet drive pumps, and have solid in-plant experience

In fact, Dickow ranks first among all sealless pumps in customer satisfaction and has the longest interval between required maintenance. Local representation? The Best. ISO 9001 approved? Of Course.

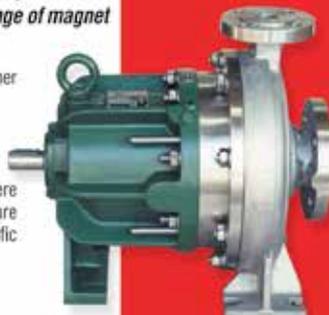
Dickow Pumps don't sit on the shelf – although parts are there when you eventually need them – because Dickow Pumps are engineered products for optimum performance in your specific application.

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Magnet Drive Pumps



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• Efficient, economical selection



KMB
• Horizontal Centrifugal Pump
• Close Coupled with standard electric motor



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Fluid Components International (FCI)

FCI's products are specified by name in many of the world's most demanding environments for flow instrumentation. They are recognized for their reliability, accuracy and repeatability in harsh conditions, where their total performance ensures users of both their end-product's quality and operational safety. FCI offers a broad range of application solutions from off-the-shelf devices to custom-engineered systems.

FCI flow switches are ideal for pump protection and flow assurance to prevent pump run-dry conditions, which can damage pump components, degrade pump performance over time and reduce their useful lifecycle. These flow switches feature a no-moving parts thermal dispersion flow sensor and plant rugged design that makes

them ideal for a wide range of point-level process applications. Their versatile design also allows them to measure flow or level or temperature.

Flow conditioners developed by FCI's Vortab Company provide a low-pressure loss solution to correct flow profile irregularities that also affect the operation of pumps and the accuracy of flow instrumentation. In today's crowded plants, elbows, valves, blowers and other devices in the pipeline often disrupt flowing media and affect other equipment.

For efficient and low maintenance operation, pumps require a repeatable, uniform upstream flow profile of the liquid entering the pump. When elbows, valves, or other equipment are installed too closely to a pump, they can cause swirl and velocity profile distortions, resulting

in uneven force placed on the pump impeller. Such disturbances can create excess noise and cavitations, resulting in reduced bearing life. Vortab Flow Conditioners correct these flow profile problems to keep pumps running longer and reduce maintenance costs.

All FCI products are tested and calibrated to rigorous standards at FCI's world-class, fully NIST traceable flow calibration laboratories to ensure instrument accuracy with the customers' actual fluid and process conditions. FCI is ISO9001:2008 and AS9100 certified and meets MIL-STD-45662A and ANSI/NCSSL-Z-540 requirements. The company's advanced technologies also include mechanical design, advanced materials, metallurgy, electronics, bus communications, and more. ♦

Pump Flow Assurance

FCI Flow Switches ensure early warning and safe shutdown when leaks, low flow or dry conditions occur. **Vortab Flow Conditioners** maximize pump life by eliminating distorted velocity profiles at pump inlets.

FCI FLUID COMPONENTS INTERNATIONAL LLC

Visit FluidComponents.com
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Flow Switches and Level Alarms

Vortab Flow Conditioners Reduce Straight Run and Eliminate Swirl

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Gorman-Rupp Company

The quality manufacturing and testing that go into every G Series pump guarantee long-lasting, trouble-free operation. All G Series pumps are designed with features that are only available on Gorman-Rupp rotary gear pumps.

Optimum bushing locations provide high pressure operation while reducing overhung loads. On both packed box and mechanical seal models, the bushings are located as close as possible to the applied loads, providing maximum shaft support. High strength gear material eliminates the need for special steel fittings traditionally required for viscous applications.

Venting provides continuous flow of liquid through seal cavity, ensuring cooling. The seal cavity maintains low pressure, reducing seal face load and increasing seal life.

G Series Pumps offer the widest selection of sealing options available in the industry. The pumps are engineered to allow installation of industry-standard cartridge, compression packing, or standard component mechanical seals.

Intelligent design makes servicing G Series pumps faster, easier and more cost effective. The back pull-out design provides the ability to perform service and maintenance without disconnecting pump housing from piping. Innovation o-ring design on the relief valve allows for adjustment during operation, without leakage.

Gorman-Rupp gear pumps are designed for maximum application flexibility and include built in features that make them completely interchangeable with other gear pump manufacturers. Foot brackets are centrally located under pump ports to provide stability to the pump and piping. Pumps can be configured to fit any piping configuration making them extremely versatile.

Available in Medium-Duty, Heavy-Duty, and Extreme duty abrasive resistant models. Materials of construction include cast iron, cast

steel, ductile iron, austempered ductile iron, and stainless steel.

Patented features enable our rotary gear pumps to perform better and

last longer in countless applications, providing quality and reliability that makes them the ideal gear pump in the industry. ♦

GOLDEN RULE.

Treat others the way you want to be treated. Simple and true. And that's why we design our **Gorman-Rupp rotary gear pumps** to be the most reliable, durable, and easy-to-service on the market. Because that's what you deserve.



The Pump People



> GRpumps.com

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Griffco Valve

Griffco Valve provides high-quality chemical feed equipment for pumps and systems. Products include back pressure valves, pressure relief

valves, calibration columns, injection valves, corporation stops, pulsation dampeners, gauge guards, Y-strainers, and other chemical feed accessories.

Established in 1993 and privately held, Griffco manufactures its products in the USA in an ISO 9001 certified facility.

Every employee at Griffco is committed to providing the best customer service and support possible. Since the company has produced more than a quarter million valves and other accessories over the years, Griffco personnel understand the market and know how to provide the best product, right answers, and trusted support.

The Griffco Valve dedication to customer service encompasses:

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- Fast quotation preparation
- Application assistance and technical support
- 98 percent track record of on-time product delivery
- World-class product support
- All necessary product documentation
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- Handling custom requests

Griffco Valve products are available worldwide supporting a wide range of applications, markets, and different pumping technologies. For unmatched service and support, contact your representative at Griffco Valve today. ♦

The Calming Effect of Griffco Pulsation Dampeners



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Milton Roy Controlled-volume metering pumps and packages

Built on a strong reputation of reliability, Milton Roy combines vast industry experience, a proven track record, and a culture of continuous technological improvement to deliver the most reliable, comprehensive range of metering pumps.

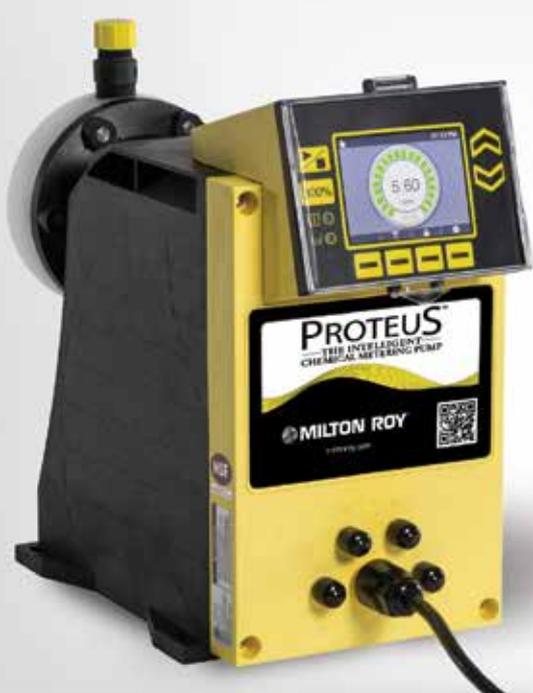
Our latest innovation is the PROTEUS™ intelligent chemical metering pump. Engineered to meet today's most demanding requirements for a wide range of applications including water and wastewater treatment, agricultural, chemical, oil and gas, power generation, pulp and paper, and textile industries to name a few. This intelligent pump is built on a universal technology platform with the ability to adapt as technology evolves. It features a mechanically-actuated diaphragm pump driven by advanced variable speed technology for accurate and reliable performance. An easy-to-use operation interface with a backlit color display enables convenient navigation in five languages. Available in manual or enhanced versions with flow rates 0.006 to 18 gallons per hour (0.023 to 68 liters per hour), PROTEUS

intelligent chemical metering pump provides complete process control.

The workhorse of our portfolio is the mROY® metering pump. This pump has been upgraded and offers enhanced safety, improved hydraulic efficiency, easier startup and maintenance, and the same great performance you depend on—helping you accurately convey chemicals while reducing downtime and maintenance costs. Produced in a variety of models and frame sizes that provide capacities from 0.20 gallons per hour up to 87 gallons per hour in a simplex configuration, the mROY metering pump boasts a hydraulically balanced diaphragm with 96,000-hour design life and a three-year warranty.



Along with the most reliable metering pumps, Milton Roy can develop a customized chemical injection package, adapted for your requirements. These packages are designed in-house or through our channel partner network. You will benefit greatly from our extensive engineering experience and broad, field-proven product selection and solutions. ♦





an Acculyne Industries brand

PROTEUS™

The Intelligent Chemical Metering Pump

Engineered to meet today's most demanding standards for accuracy, reliability, and process control flexibility.

- **Intelligent:** platform adapts as technology evolves
- **Process control flexibility:** flow rates from 0.006 to 18 GPH (0.023 to 68 l/hr)
- **Reliable:** mechanically actuated diaphragm designed for years of service
- **Precision:** a +/- 1% steady state accuracy over 1000:1 turndown ratio
- **Trust:** reliable uptime service

Learn more at miltonroy.com or contact your local sales representative.



Proco Products, Inc.

ProFlex™ Style 790 Low Headloss Inline Check Valve

Proco Products, Inc. introduces the newest addition to the ProFlex™ line of Rubber Duckbill Check Valves with the newly engineered Style 790 low headloss check valve, the only assurance to ZERO backflow. Where other products have failed in design and performance, Proco has spent countless hours in the engineering and design stages to ensure the Style 790 will be your last and only requirement for a low headloss inline check valve.

The Style 790 is the elastomeric valve of choice for municipalities, airport runway runoffs, railway washouts, highway flood damage prevention and odor control. The 790's unique design provides rapid dispersion of head pressures and with its low cracking pressure, it prevents upstream flooding.

The inline design of the Style 790 valve allows the valve to be installed without having to do any modifications to existing structures or costly pre-install planning. The unique fold away design of the inner sleeve also allows for a near full port flow, allowing for quick drainage.

The Style 790 check valve will allow for passive flow operation making it the perfect fit for:

- **Combined Sewer Overflows (CSO's):** A combined sewer is a sewage collection system of pipe and tunnels designed to also collect surface runoff. Combined sewers can cause serious water pollution problems during combined sewer overflow (CSO) events when wet weather flows

exceed the sewage treatment plant capacity.

- **Sanitary Sewer Overflow:** A condition in which untreated sewage is discharged from a sanitary sewer into the environment prior to reaching sewage treatment facilities.
- **Outfalls:** An outfall is the discharge point of a waste stream into a body of water; alternatively, it may be the outlet of a river, drain or a sewer where it discharges into a body of water.

Contact a Proco representative today to learn more about this exciting new addition to our ProFlex™ Series 700 Check Valve product line.

For more information, visit www.procoproducts.com. ♦

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Ruthman Companies and Gusher Pumps

Continuing a century of service

Since 1912, the Ruthman Companies has achieved through continuous growth, innovation and service what few manufacturers have—over a century of service and success in the fluid handling industry. Today, with a host of global partners, Ruthman Companies serves industries in America as well as Europe, the Middle East, and China.

GUSHER PUMPS

The Ruthman Companies flagship brand, Gusher Pumps, which now includes over 11,000 products, is today stronger than ever, largely because of the Ruthman consumer based manufacturing and market-ing philosophy. While many in the industry are content in producing “off the shelf” standard models, Gusher engineers products for specific customer requirements and is willing to meet challenging situations with innovative engineering. The result is Gusher's unique acquired expertise and ability to serve today's global market with one of the most extensive selections of pumps and equipment available anywhere in the world, including, to name a few, Gusher 7071 ANSI Series pumps, the 7550 series pumps, designed for heavy duty industrial applications, and the vertical top pull-out 7600.

A FAMILY PROFESSION AND A PROFESSIONAL FAMILY

The story begins in 1924 with Alois Ruthman's design of the first vertical ball-bearing machine tool coolant pump and named it “The Gusher.” In 1949, Thomas R. Ruthman joined his father's company and, as president, is still active in the company today along with his son, Thomas G. Ruthman. Les, Gary, and Scott Smith follow their father, Pete, a founding member who joined Gusher in 1929. Gusher now has five locations and over 200 employees.

PARTNERS IN PERFORMANCE

Today the Ruthman Family of Companies also includes: Gusher Pumps of Williamstown and Dry Ridge, Kentucky; Gusher Pumps of Newcastle, Indiana, and Gusher Pumps of California, Other Ruthman Companies include BSM Pump Corporation specializing in vane and positive displacement gear pumps. Fulflo Specialties manufactures the industry standard in hydraulic pressure relief valves. FPI Pumps of Florida, specializing in Large Volume Axial Flow Pumps, Great Lakes Pump and Supply distributes pumps and re-lated products in the Midwest, USA. GM Treble is the Ruthman Companies distributor in the United Kingdom. Great Southern Pump serves the Florida municipal market. Nagle Pumps of Chicago manufactures

heavy duty sludge and slurry pumps to a global market. Process Systems Inc. is a manufacturer of turbine pumps, including the Ruthman owned Deming® Vertical Turbine Pump brand. Ruthmann Pumpen of Germany produces DIN standard pumps for the European and Middle Eastern markets. Vulcan Tools of Dayton, Ohio, manufactures tool and die making equipment. Wagner Process Equipment serves the industrial and municipal equipment needs in California and Nevada.

Gusher and the Ruthman Company partners' success and growth is primarily due to the high demand for a quality product and a continuous willingness and ability to meet the challenges presented by customers and the industry for innovative products and solutions. ♦



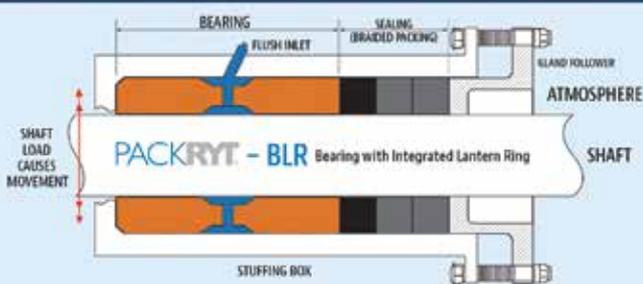
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The PackRyt® Sealing System is a unique stuffing box sealing arrangement that incorporates a bearing and flush channel system together. Our system brings shafts into concentricity and keeps them there, significantly increasing sealing reliability.

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SEAL EFFECTIVELY.**



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SealRyt

We solve sealing problems others can't

The PACKRYT® System is a shaft stabilization methodology that retrofits into existing stuffing boxes without box modification. This system combines high-capability bearing structures with either premium mechanical packing or mechanical seals depending on the best solution for the application. Each part is custom manufactured to your stuffing box dimensions. Options include

- **BLR:** A unique stuffing box sealing arrangement that incorporates a bearing and flush channel system together. This replaces outdated packing/lantern ring/packing configurations. Our system brings shafts into concentricity and keeps them there, significantly increasing sealing reliability.
- **BRG:** A unique stuffing box sealing arrangement that incorporates a bearing custom made to close tolerances for your application. This replaces outdated braided-packing-only configurations. Our system brings shafts into concentricity and keeps them there, significantly increasing sealing reliability.
- **ORM:** Mechanical seals are ultra-precision devices with seal faces carefully lapped to less than 1.8 microns. This type of precision is expensive and downtime, due to seal face parting and failure, is even more costly. Bearing with O-ring mounted on outside diameter for use with mechanical seals to keep seal faces concentric. Optional locking collar available.
- **Line Shaft Bearings:** Any shaft utilizing a steady bushing for support, whether vertical or horizontal, is a candidate for a SealRyt® Lineshaft bearing. These locations can be found inside tanks on agitator shafts, vertical pump columns, auger screw supports, powder blade mixers, marine drive shafts, and so on.
- **SteamRyt:** A long-term soot blower sealing solution developed through years of polymeric and textile research. SealRyt's polymer bearing attains exceptional, previously unheard of temperature capabilities and our unique arrangement of one bearing fore, one bearing aft creates a protected cavity for our sealing material.
- **Diverter:** A unique stuffing box sealing arrangement that incorporates a flush channel relocation system internally within the composite bearing. This replaces outdated lantern ring/packing configurations that dump excess water into the process. The Diverter relocates the flush deposit and drastically throttles flush volume. Our system ALSO brings shafts into concentricity and keeps them there, significantly increasing sealing reliability. ♦

SEEPEX Inc.

SEEPEX is a leading worldwide specialist in pump technology that provides progressive cavity pumps, systems, macerators, accessories, spare parts, and services. We take a consultative approach to offering innovative products and customized solutions. Each pump we supply meets the specific needs of an industry, a company, an application, and the product being pumped. For more than forty years, SEEPEX has been offering customers in environmental, chemical, food and beverage, oil and gas, pulp and paper, and numerous other industries,

optimal economical pumping solutions based on low pump life-cycle costs. SEEPEX progressive cavity pumps convey fluids of all characteristics gently, accurately, and reliably.

SEEPEX Inc. is an ISO-9001-2008 certified, 82,000 square feet manufacturing facility situated on ten acres of land in Enon, Ohio, USA. We have a larger presence in North

America than any other progressive cavity pump manufacturer!

Our company's headquarters, SEEPEX GmbH, is in Bottrop, Germany. We are represented in more than seventy countries through a dense network of subsidiaries, branch offices, distributors, and agents. We will keep expanding consistently in the future by developing innovative, market driven products, and services, by expanding our enterprise purposefully on an international basis and by opening additional market segments. With SEEPEX, all things flow. ♦



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Our ALPHA chemical metering systems – complete with SEEPEX's progressive cavity pumps and controls – offer customers simple plug-and-play installation. They are used in a variety of water treatment applications including disinfection, pH control, coagulation and flocculation. ALPHA minimizes the amount of ancillary equipment, which reduces failure potential, complexity and cost. All wetted materials within the system are corrosion resistant and reliable.

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Sensaphone

New cloud-based cellular system monitors water pumping stations without internet connection

Sensaphone® introduces its Sentinel™ PRO monitoring system with cellular modem. The Sentinel PRO is a cloud-based, cellular system that provides 24/7 remote monitoring of unattended equipment and environmental conditions in water and wastewater applications where Internet or Ethernet connectivity is unavailable.

The cellular Sentinel PRO system is ideal for unattended pump stations, wells and tank farms because it can detect changes in conditions such as tank levels, flow rates, pump status, turbidity, power supply, temperature from -109 to 168 degrees Fahrenheit, equipment malfunction and security breach. When the system identifies an issue, it immediately sends alerts by phone, text or email over standard cellular networks provided by AT&T or Verizon. This instant notification allows personnel to take fast corrective action. The system integrates seamlessly with floats, pump alarm outputs, level transducers and other equipment.

The Sentinel PRO system supports the Modbus communications protocol and includes a second relay output to monitor and control complex networks. The

system monitors, delivers alarms and datalogs input/output points from third-party Modbus sensors, transducers and programmable logic controllers (PLCs) and supports Modbus RTU/485 and Modbus TCP. The Sentinel PRO system interacts with all existing sensors within a facility and provides operators with on-demand, real-time status and data acquisition from any Internet connected device via sensaphone.net or the Sensaphone iPhone/Android app.

All sensor readings are saved in the cloud, which protects against data loss and provides unlimited information storage. Only one Sentinel PRO unit is required to monitor up to 64 Modbus registers or 12 different digital or analog status conditions. Multiple Sentinel PRO devices can be managed from one account using web-based management tools. In addition to the cellular Sentinel PRO system, Sensaphone offers an Ethernet-based version. Like all Sensaphone monitoring devices, the Sentinel PRO system is manufactured in the USA. For more information, call 877.373.2700, email sales@sensaphone.com, or visit www.sensaphone.com. ♦

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 REMOTE MONITORING SOLUTIONS

MADE IN USA

Shelco Filters

Shelco Filters is a leading manufacturer of filtration equipment for commercial, industrial, and small municipal applications. Since 1973, Shelco has used state-of-the-art research and development to design high-quality filters that increase performance and reduce costs. The Shelco industrial line offers single-cartridge, multiple-cartridge, and bag filter housings in both 304 and 316 stainless steel, as well as nominally rated cartridges and bag filters. Shelco's proven single shell design has become an industry standard—and our entire product line offers innovative solutions for each customer.

Shelco's USF Filter Housings are constructed in 304L or 316L stainless steel for maximum durability, are available to accept a wide variety of filter cartridges, and are designed to handle the most aggressive industrial filter applications. Shelco's heavy-duty ASME Code Cartridge Housings are available in various sizes, materials of construction, and custom features. ASME-code certified housings are available for applications requiring the rigorous globally accepted engineering standards.

Shelco's new High-Flow housings and filters offer an affordable, off-the-shelf high-flow filter, and housing option that delivers finer filtration and protection of the metals used in other parts of the filtration process. Shelco's housings are ideal for high-temperature, high-pressure applications, and are typically interchangeable to accommodate high-flow filters or bags.

Shelco's MicroVantage line includes high purity, absolute-rated cartridges, and membrane cartridges in addition to housings that excel in critical, demanding applications requiring maximum durability, ease-of-use, and exceptional value. Shelco manufactures and supplies a complete line of replacement filter elements, including wound, activated carbon, stainless steel, and jumbo-style cartridges. The pleated, membrane, or depth

high-purity filters meet and exceed the demanding specifications of a wide spectrum of today's industries. Applications include water and other in-plant liquids, gases, foods,

beverages, chemical, petrochemical, pharmaceutical, cosmetics, photographic solutions, fuels, lubricants, paints and coatings, plating solutions, and more. Made in the USA! ♦

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Watson-Marlow

Qdos Peristaltic Metering Pumps

The Qdos range of peristaltic metering pumps, by Watson-Marlow Fluid Technology Group, reduces chemical metering costs compared to conventional solenoid or stepper-driven diaphragm metering pumps, while ensuring accurate, linear and repeatable metering across all process conditions. Designed as a drop in replacement to diaphragm pumps, the Qdos is ideal for disinfection, pH adjustment and flocculation of drinking water, wastewater and industrial process water.

Qdos offers long maintenance intervals, reducing the impact of process downtime and lowering the overall cost of ownership. Qdos models are available to handle flow rates from 0.001 to 15 GPH at 100 psi, and can delivering flow rates

that remain constant right up to 7 bar (100 psi).

Revolutionary patented ReNu pumphead technology is at the core of the Qdos pump. This ensures the delivery of accurate and repeatable flow for fluids of wide ranging viscosities. Process uptime is maximized by facilitating quick, safe and easy pumphead removal and replacement, with no need for tools, no specialist training, and no maintenance technicians. The contained pumphead design with integral leak detection reduces wastage and eliminates operator exposure to chemicals.

Unlike a diaphragm metering pump that often requires a range of high maintenance ancillary items, the Qdos pump requires no ancillary equipment – no backpressure valves, pulsation

dampeners, degassing valves, foot valves and strainers, or float switches.

Simplicity in installation, operation, and maintenance were key considerations when designing the Qdos range of pumps. An intuitive menu offers advanced control features, including fluid level monitoring, fluid recovery, line priming, and flow calibration. The color display provides instant pump status and can be configured to display in 7 different languages.

The Qdos range of pumps can be ordered with the ReNu pumphead mounted on the left or right. The keypad, display and input/output connections are readily accessible for easy operation and maintenance. All models are IP66 rated for use in washdown environments. ♦

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BJM Pumps[®] is headquartered in Old Saybrook, Connecticut, and has been providing fluid handling solutions for industrial and municipal services since 1983. BJM Pumps has grown quickly by supplying world class pumps and accessories, priced competitively, through its global network of stocking distributors in the United States, Canada, and South America.

BJM Pumps[®] supplies a wide variety of submersible pumps and pump accessories for many different applications. Products include slurry pumps, stainless steel pumps, corrosion resistant pumps, sump pumps, sewage pumps, trash pumps, sludge pumps, non-clog pumps, solids handling pumps, shredder pumps, vortex pumps, submersible dewatering pumps, sand pumps, agitator pumps, hydraulic pumps, explosion proof pumps, utility pumps, and specialty pumps such as 12 Volt pumps and residue pumps (or Mop-Up-Pump). ♦

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<p>Radial Shredding <i>Rotating cutter bar with serrated cutting edges, traps and shreds solids against the sharp grooves of the radial cutting ring. Wipes and other fibrous debris are ripped apart with ease.</i></p>	<p>Axial Shredding <i>Dual cutting elements operate in tandem to multiply shearing action. As the material exits the radial shredding area, the axial cutting components shear any remaining pieces by way of multiple cutting bars. Impeller design expedites flow and hydraulic performance, preventing clogs.</i></p>	<p>Robust Construction <i>Features 440C Hardened SS on all shredding elements and a high torque, 4-pole motor, to ensure difficult solids are handled more efficiently. Impeller and suction cover are constructed of chrome iron for added durability, long life and trouble free performance.</i></p>

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