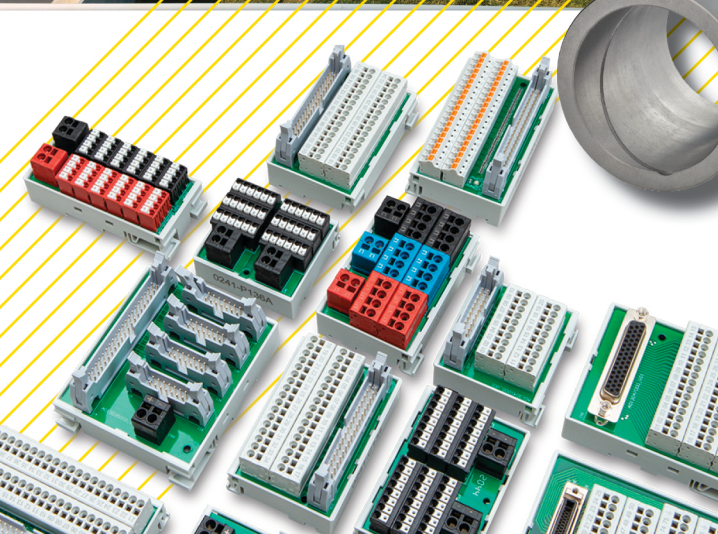
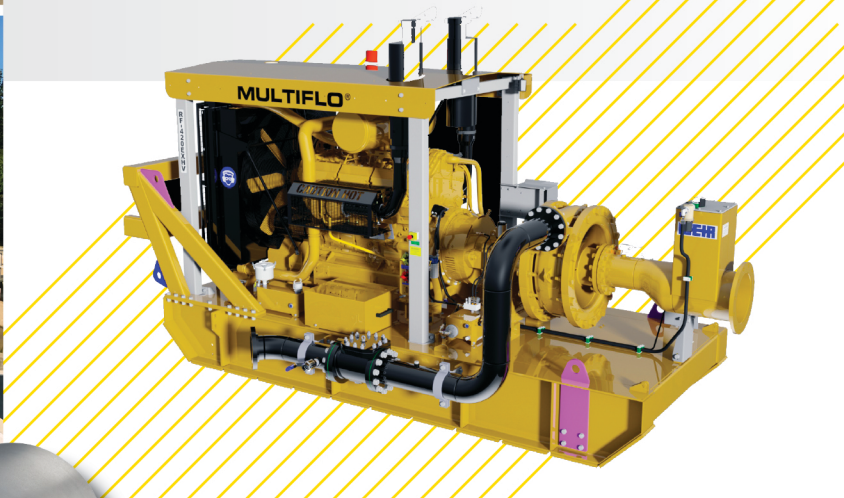




2022 BUYERS GUIDE





Problems with motor bearing damage creates frustrating and expensive downtime. That's why millions of motors around the world depend on AEGIS® Rings to keep bearings safe from unpredictable currents that result in motor failure. Electro Static Technology's patented design provides the most reliable current diversion technology for extending motor life. Learn more at www.est-aegis.com.



Reduce Your Pump Energy Use

Pumps and pumping systems account for 25% of the energy consumed by electric motors in the United States. In pumping intensive industries, this number is over 50%.

To improve the efficiency of pumping systems and reduce their energy consumption, pump users are turning to variable frequency drives (VFDs). Since most pumping systems are designed for maximum service conditions, running them at partial load can save considerable energy. So, by precisely matching motor speed to pumping requirements, VFDs can reduce energy costs by as much as 30% or more.

But VFDs Can Damage Pump Motor Bearings

VFD-induced voltages on motor shafts can discharge through motor bearings, causing pitting, frosting, fluting, and total bearing failure in as little as 3 months!

Pumping System Reliability is Critical

Pump motor failures can cost hundreds of thousands of dollars in repairs and in this industry, the unplanned downtime from motor failure is even more expensive. To ensure the reliability of VFD-driven pump motors and systems, bearing protection is needed.

Proven Long-Term Bearing Protection

By providing a very-low-impedance path from motor shaft to ground, AEGIS® Shaft Grounding Rings ensure the reliable, long-term operation of VFD-driven pumping systems. Proven in millions of installations worldwide, AEGIS® Rings provide unmatched bearing protection of the full L10 life of the motor bearings.



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Protect Large Motors from Bearing Damage with AEGIS® PRO Rings



The larger the motor, the more expensive the repairs and downtime

AEGIS® PRO Rings are specially designed to protect large motors, generators, and turbines against electrical bearing damage. With six rows of conductive microfibers for high current-carrying capacity, AEGIS® PRO Rings reduce shaft voltages to safe levels, protecting both motors and coupled equipment.

For more information, visit est-aegis.com/pro, or contact us at 866-738-1857 or at info@est-aegis.com



Gas Clip Technologies

Gas Clip Technologies believes that quality and affordability go hand-in-hand, which is why they manufacture top-of-the-line gas detectors and accessories that meet every budget. Each product meets the highest standard of reliability and battery life to ensure that every user's safety remains uncompromised. Gas Clip's multi gas detectors are perfect examples.

MULTI GAS DETECTORS

The Multi Gas Clip was Gas Clip's first multi gas detector, and it was also the first portable gas detector in the industry to utilize infrared technology to detect combustible gases (LEL). The continuous run time of the Multi Gas Clip is two months. However, its sisters—the MGC Simple and the MGC Simple Plus—have continuous run times of two years and three years respectively. Additionally, after being charged and calibrated during manufacturing, neither the MGC Simple nor the MGC Simple Plus require recharging or routine

calibration, although bump testing prior to every use is advised. Also, all three of these detectors are designed to identify the presence and level of hydrogen sulfide (H_2S), carbon monoxide (CO), oxygen (O_2), and combustible gases (LEL).

SINGLE GAS DETECTORS

In turn, on the days that require a single gas detector, Gas Clip Technologies have two to choose from—the Single Gas Clip (SGC) and the Single Gas Clip (SGC) Plus. Both include superior sensor reliability along with adjustable alarm set points, a programmable six-digit detector ID code, and a two-year battery life. However, the SGC Plus also includes a built in “hibernate” mode that allows users to place it in a rested state when not in use. It is available in two models—SGC Plus H_2S for detecting hydrogen sulfide and SGC Plus CO for detecting carbon monoxide. The Single Gas Clip, on the other hand, comes in three different versions—SGC O_2 for testing oxygen



levels, SGC H_2S for testing hydrogen sulfide levels, and SGC CO for testing carbon monoxide levels.

GAS CLIP'S NEWEST ADDITION: THE GCT EXTERNAL PUMP

As for accessories, Gas Clip Technologies released the new GCT External Pump earlier this year. It is a motorized sampling pump that allows any Gas Clip diffusion detector—single gas and multi gas—to take remote samples from up to 75 feet away. It has a forty-hour continuous run time on average, and the battery typically recharges in four to six hours. Audio and visual alerts will inform the user of possible errors including blockages and a low battery charge.

Additionally, the sleek, ergonomic design of the pump allows it to sit comfortably in the user's hand, which helps prevent potential drops. However, an alligator clip allows the user to firmly attach the pump to their belt, jumpsuit, etc. as needed. Either way, if the device takes a tumble, the durable casing can withstand the fall as well as other harsh treatment.

CLOSING THOUGHT

After more than a decade of creating industry-changing products, including their new GCT External Pump, Gas Clip Technologies continues to keep their focus on the future and how to further develop simpler and safer gas detection solutions. However, those two concepts are merely stepping-stones to their ultimate goal—helping workers get home to their families at the end of the day; and in truth, that is what gas detection is all about. ■



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- Carbon Monoxide (CO)
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Programmable 6-digit ID • **Compatible with the new GCT External Pump**



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Gorman-Rupp Pumps

For more than eighty-five years, Gorman-Rupp has manufactured the high performance, high quality pumps and pumping systems required for lasting service in the municipal, water, wastewater, sewage, industrial, construction, petroleum, and OEM markets. Our extensive line of pump products include self-priming centrifugal pumps, standard centrifugal pumps, submersible pumps, trash pumps, priming-assisted pumps, and rotary gear pumps. Gorman-Rupp also manufactures a complete line of state-of-the-art packaged lift stations and booster stations that include pumps, motors, controls, piping, accessories, and enclosures.

Through the years, our continued growth has focused on superior pump design, engineering, and customer service. As a result, Gorman-Rupp has become a company known for market innovations and improvements that continue to set standards for the pump industry.

Gorman-Rupp operates two manufacturing plants, producing a full line of pumps and sewage pumping stations with custom-made fiberglass enclosures and electrical control panels.

Gorman-Rupp has over 1,000 distributors throughout the United States and the world that are qualified to give expert advice on pump selection and applications. If you have

a service problem, a factory-trained distributor is only a phone call away. Our distributors are backed by the fastest parts service in the industry. Gorman-Rupp stocks more than 60,000 pumps and parts and ships 99 percent of them within twenty-four hours so your parts will be there when you need them.



The Pump People®

CONSTRUCTION MARKET

Gorman-Rupp is the leading manufacturer of pumps for the construction market. Offering nearly 3,000 models, we have one of the largest selections of fluid-handling products in the world. We have built our reputation on the workhorses of the construction pump market: self-priming centrifugal trash pumps. These dependable, versatile performers help contractors move

large volumes of water quickly. We also manufacture an extensive line of submersible, diaphragm, and priming-assisted pumps that offer maximum reliability and service life.

INDUSTRIAL MARKET

You will find Gorman-Rupp pumps operating in the most hostile industrial environments—down in the sub-basements; in the waste sumps; in the heat, steam, grease, and grime; handling the corrosive and abrasive industrial wastes other pumps cannot. Performing reliably month after month, year after year, in all types of waste control systems, pumping solids and debris that would shut other pumps down, Gorman-Rupp industrial pumps are designed for the people who service them.

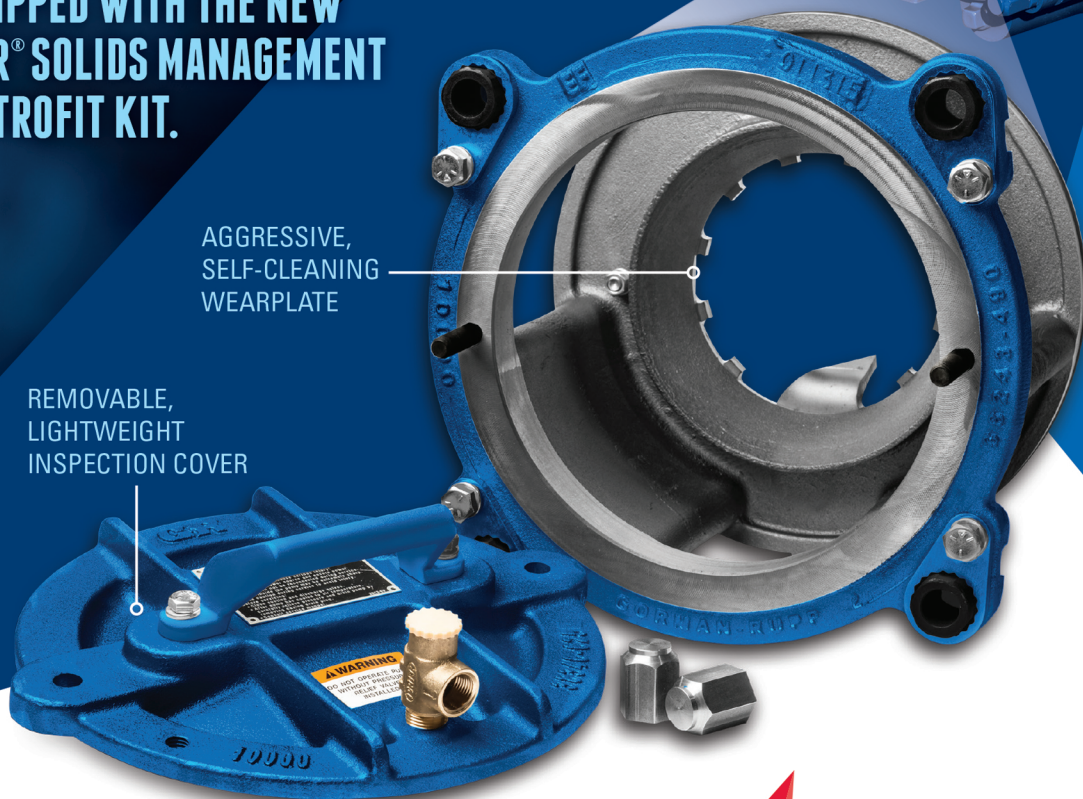
MUNICIPAL MARKET

Gorman-Rupp sets the industry standard for sewage pumping systems including pumps, motors, and controls (complete sewage lift stations). Our solids handling self-priming and submersible sewage pumps offer maximum dependability and ease of service. Our commitment to “total system responsibility” means you only have to make one call should you encounter a problem with your system, from pumps and controls to the lights and fans in our enclosure. We simply offer the best sewage pumps and pumping systems in the industry. ■



ERADICATE CLOGGING

CLOG-PRONE SOLIDS ARE NO MATCH FOR GORMAN-RUPP SUPER T SERIES® PUMPS EQUIPPED WITH THE NEW ERADICATOR® SOLIDS MANAGEMENT SYSTEM RETROFIT KIT.



ERADICATOR
Solids Management System



New sewage, poultry waste, plastic bags, hair, stringy material and other clog-prone materials can wreak havoc on pumps. That's why you need a dependable solution for handling solid waste. Gorman-Rupp's innovative Eradicator® Solids Management System upgrade kit for Super T Series® pumps offers just that. The new aggressive self-cleaning wearplate and back cover assembly, incorporating an obstruction-free flow path, are designed to handle clog-prone material, keeping your pump operating at peak efficiency. A lightweight inspection cover allows for easy access to the inside of the pump without affecting wearplate-to-impeller clearance. And, the Eradicator can be easily installed into existing Super T Series pumps in the field.

Trust Gorman-Rupp pumps to keep your operation running smoothly month after month, year after year.

Hoosier Pattern

For over two decades, Hoosier Pattern has always been on the cutting edge of innovation. We're consistently raising the bar in our industry while maintaining the highest quality for our customers. In 2013, Hoosier Pattern was the first service center to own and operate a 3D sand printer in the United States. As of 2020, we have four 3D sand printers in-house as well as over twenty-five machining centers.

Hoosier Pattern started in 1997 in a 3,500 square foot space with just a couple of machining centers. Today, we operate a 90,000 square foot facility with state-of-the-art technology, allowing us to take on jobs from various customers across multiple industries. Our technology includes:

- Over twenty-five machining centers including vertical and horizontal machining
- CNC lathes
- Five-axis mill
- Plate saws
- Four 3D sand printers for sand molds and cores
- 3D plastic printer
- EDM
- Manual CMM
- Laser scanner

Hoosier Pattern delivers manufacturing capabilities to a wide variety of industrial and commercial pumps. Our customers can request centrifugal pumps, water, sewage pumps, turbine pumps, transfer pumps, fluid flow pumps, and the list doesn't stop there! Our advanced technology allows for pinpoint accuracy and fast turn-around times.

Within two weeks of submitting a product order to Hoosier Pattern, a sand mold of a pump part is made and is ready to ship to the customer's preferred foundry. Hoosier Pattern uses the latest technology from the start, so castings can be made quicker, and products can reach customers sooner.

In addition, Hoosier Pattern has a diverse list of industries we serve, such as consumer appliance, agriculture, and automotive industries.

There is no need to sacrifice design for manufacturability when working with Hoosier Pattern. Complex core designs are 3D printed as one piece, reducing or eliminating assembly errors and foundry casting defects. No internal fins or mismatches. 3D printed foundry molds do not need traditional parting lines and flask sizes. This process gives the foundry the freedom to gate, add risers, and feed the casting in the best possible way to produce the optimal casting.

Complex pump component castings produced quickly and at a known cost are why pump manufacturers turn to 3D printing as the solution to pump casting problems.

Our employees share our vision of excellence in every aspect of their jobs. Our shop reflects that dedication to precision and quality. Our staff is well-trained, well-educated, and stays up-to-date in the latest knowledge of CNC machines, sand printers, plastic printer, laser scanner, accounting software, hardware, and software, allowing us to cater to our customers' needs.

Several of our employees have experience working in foundries—and they are keenly aware of the urgencies that these companies face daily. Our expertise and in-depth knowledge give our team members the advantage of understanding and meeting our customers' needs and expectations. We always strive for excellence in every job. If we promise it, we deliver, no matter what the cost. We know that "every second counts," and we take that seriously as we work on specific deadlines to meet your project's demands.

At Hoosier Pattern, we believe that innovation drives productivity. We have always relied on these practices to deliver on-time and premium-quality products to our customers throughout the United States and worldwide. We understand that industries are evolving, and staying up-to-date with the latest technological advancements is an essential part of our success.

Even though innovation is the driving force behind our product development, our commitment to manufacturing excellence will forever remain our highest priority. ■





INTEGRATED FOUNDRY TOOLING SOLUTIONS

3D PRINTING AND TOOLING FOR
THE FOUNDRY INDUSTRY

WHY CHOOSE HOOSIER PATTERN?

STATE-OF-THE-ART FACILITY

90,000 Sq. Ft. Facility
Over 25 In-House
Machining Centers
Laser Scanner
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LS Electric America, Inc.

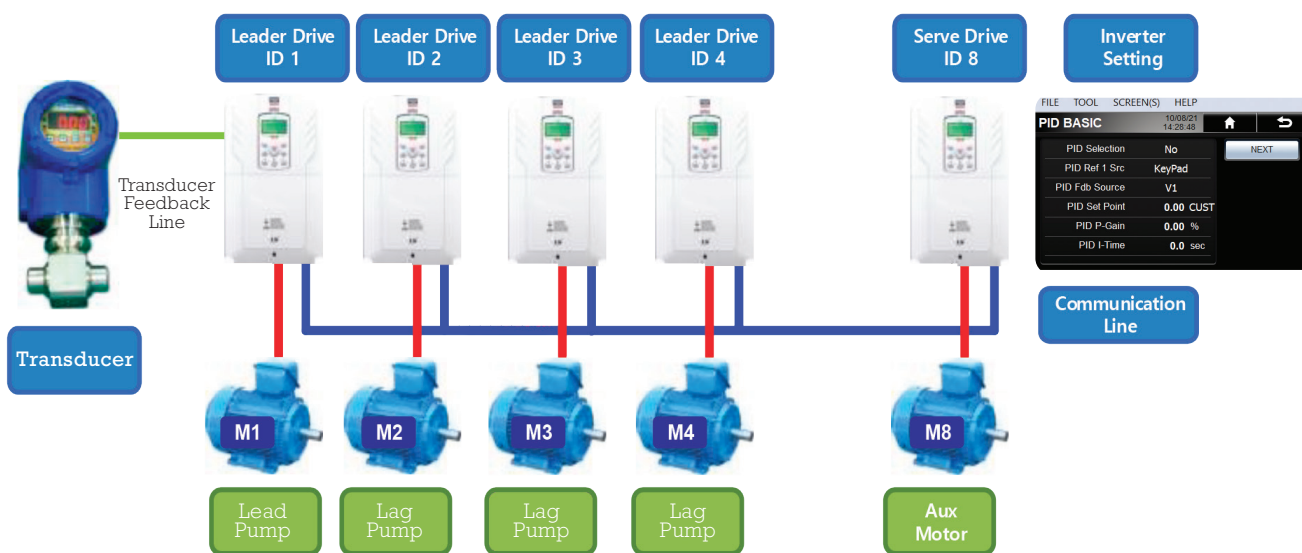
The H100 VFD features the capability to operate lead-lag pumping applications without the need for external control devices such as a SCADA system or PLC. This feature can reduce pump wear, increase system efficiency, and improve reliability.

SIMPLE SETUP

- Uses the H100 standard keypad and parameters.
- Dedicated lead-lag macro makes programming easy. Setup in minutes!
- A two-wire RS485 connection is all that is needed between each VFD!
- Setup parameters are shared across the connected VFDs for streamlining and reducing startup time.

FLEXIBILITY

- Redundant setup eliminates downtime!
- New lead VFD automatically continues operation in case of failure or outage.
- Automatic pump alternation based on operation time or sequencing (FILO/FIFO).
- System can use a single transducer (shared of the network) or have multiple for redundancy.
- Supports up to eight H100 VFDs! 📺



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PID Unit Select	PSI	
PID Unit Scale	x100	
PID Unit 100%	0 PSI	
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Mod-Tronic Instruments

WHEN QUALITY AND PERFORMANCE ARE AS IMPORTANT AS PRICE, YOU CAN COUNT ON OUR PROVEN BRANDS

This has been our company motto since 1972, and forty-nine years later we pride ourselves more than ever on providing our customers with quality products at competitive prices. RewindSensors.com is a market focused website of Mod-Tronic Instruments Limited. Its purpose is to display only the sensors (RTD, thermocouple, current, vibration), anti-condensation heaters, controls, and monitors applicable to the rotating machinery OEM and MRO markets.

Plus, the Mod-Tronic team's technical knowledge is unparalleled. Our sales force has over 114 years of combined experience solving our customers unique and diverse application challenges. We have earned a valued reputation in our industry for working with our customers. We take the time necessary to fully understand your application, analyze your requirements, and offer you the correct products at competitive prices. Not sure what type of temperature sensor you just pulled out of that old motor? Just ask! We have seen almost everything and can help you figure it out.

One of the secrets to Mod-Tronic's success is our team. Customer service is #1 and all of our sales people are friendly, conscientious, and motivated to get answers to our motor industry customers as quickly as possible. They recognize the inherent urgency of the motor repair industry and the need to respond to inquiries promptly with stock part solutions whenever possible.

Every week, we hear from customers calling us, "I can't believe I found someone who will talk to me that actually knows their products!" Our open office environment encourages peer-to-peer support, helping and supporting each other with any challenges or issues. Every

employee's remuneration includes a portion that is a commission on all sales, reinforcing our team approach.

Mod-Tronic is the largest Minco distributor in Canada or the United States for the rotating machinery market. We are located in Brampton, Ontario, Canada, just outside of Toronto, occupying 6,600 square feet of office and warehouse space with an additional warehouse and freight forwarding location in Warren, Michigan.

We have a low \$100 minimum order and we can ship parts the same day from stock to anywhere in Canada, the United States, or around the world. And we ship to Canada and the United States with no cross-border fees! We replenish our stock weekly so if the parts you need are not in our stock, we can still provide them quickly for you. Don't see the exact product you require? Tell us what you need, most of our manufacturers offer custom-built solutions to meet your exact requirements or we can modify stock parts as shown below.

Our emphasis on quality extends to our manufacturers. All of our manufacturers were carefully chosen for the high-quality products they produce. Especially MINCO, whom we have had a business partner relationship with since 1972.

We modify MINCO parts for quick shipment of stock parts including:

- Assembling stock sensors, fittings, connection heads, and thermowells into complete assemblies
- Programming transmitters to your sensor input type and temperature range
- Cutting RTD or thermocouple probes to the exact length you require for your application
- Cutting Teflon leads to length or stainless steel braid over Teflon lead wires to length
- Adding stainless steel armor over leads
- Removing stainless braid
- Adding bayonet mount hardware
- Adding PSA adhesive to surface mount sensors or heaters

Ten of our thirteen key manufacturers are located in the United States and are all known for their top quality. Our other three manufacturers are located in Japan, Switzerland, and Germany. We have carefully selected our manufacturers so that their products complement each other so our customers can call us for all of their temperature sensor, thermostat, thermistor, heater, and instrumentation needs for electric motors.

We have selected manufacturers with products that do not compete with each other. We have maintained a positive long-lasting relationship with all of our manufacturers—some of them for over forty-five years! Our reputation in the market is that we only sell top quality products. Our customers know that their initial cost from us may not be the lowest but their long-term cost and headaches from failures is the absolute lowest. We are so confident in the quality of all of our suppliers that we provide a five-year limited warranty on every product we sell.

Currently, we have over 500 different part numbers in stock for a total of over 10,000 parts and \$1,000,000 of inventory. We assemble and modify our MINCO stock so that we can quickly ship many more part numbers than what is on our stock list. By modifying and assembling our stock, we can ship thousands of different assemblies next or same day for a small upcharge. ■

MOD-TRONIC

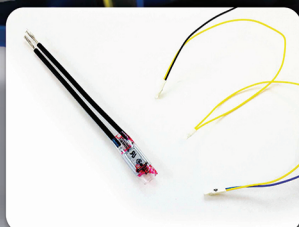
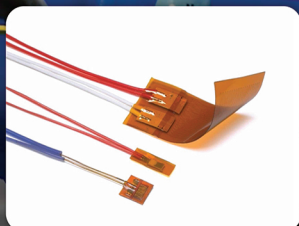
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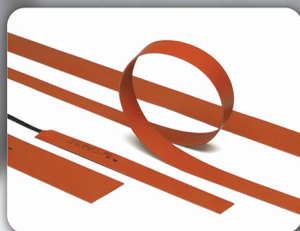
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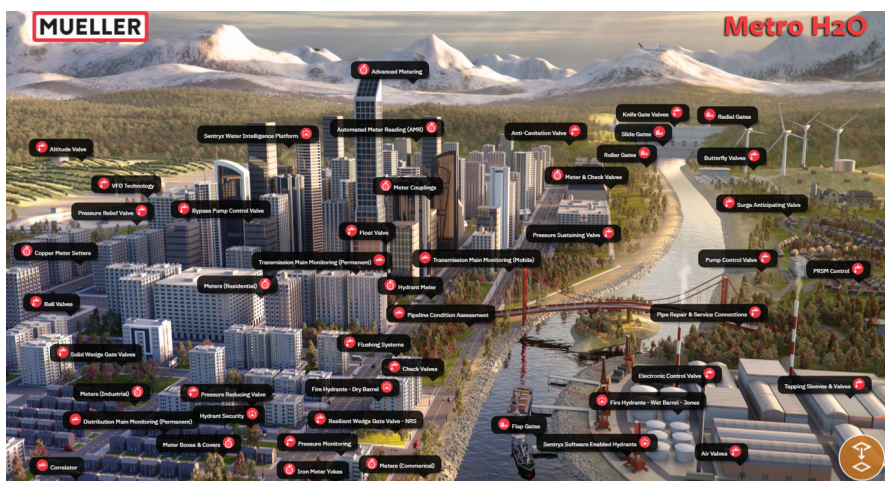
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Mueller is one of the only companies that can fulfill your water system needs from end to end—at the source, at the plant, below the ground, on the street, and in the cloud. Built on a solid legacy of innovation, we have the expertise



and vision to provide advanced infrastructure and technology solutions for monitoring, control, managing, and optimizing water more safely and efficiently than ever before.

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Water Intelligence Platform to provide a total overview of the health of your water system. Existing super centurion hydrants can be easily retrofitted with this technology with no digging or wiring required.

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Drive insights to inform decision making process



Control Manage

Automatic control of network assets & mobile workforce



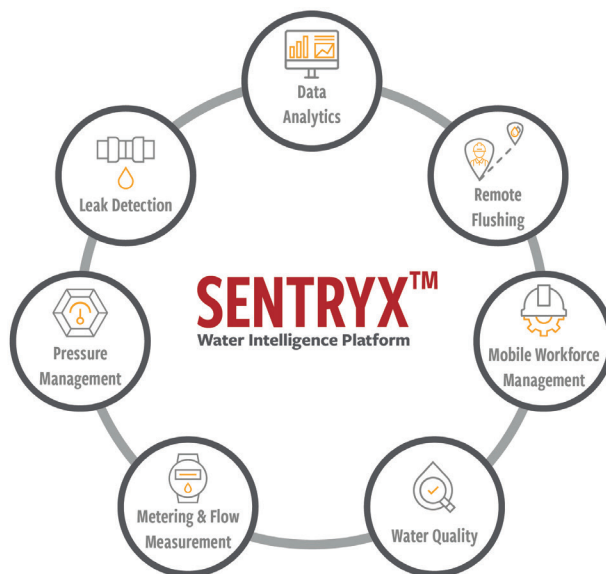
Manage

Data from multiple devices feeds machine learning models to create actionable insights



Optimize

Extend asset life. Optimize and prioritize expenditures.



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Pedrollo



“MADE IN ITALY” PUMPS THAT ARE SYNONYMOUS WITH QUALITY, RELIABILITY, DESIGN, AND INNOVATION

Pedrollo S.p.A., founded in San Bonifacio (Verona) in 1974, is one of the major family-owned industrial companies in Italy and is globally recognized as a benchmark in the electric water pumps industry, with more of 2.5 million pumps manufactured every year.

Pedrollo currently distributes products in more than 160 countries around the world through its ten commercial branches and through its parent company, Pedrollo Group Inc, which is led by Giulio Pedrollo, as chairman, and is now officially present in the North American marketplace through its recent acquisition of Superior Pump. Superior Pump is now part of Pedrollo Group Inc. since the majority acquisition in 4Q2020 and is active in the design, production, and marketing of pumps with a particular focus on the United States and Canada markets. Pedrollo USA is headquartered in Minneapolis, Minnesota, and led by Charlie Michel III as president.

Pedrollo is a leading company in manufacturing and supplying electrical water pumps for residential, commercial, agricultural, and industrial use. Pedrollo is a producer of a complete range of electric water pumps, motors, electronic controls—including VSD and pressure systems. With a focus on innovative products, the wide range of pump includes many diverse types of pump products, such as peripheral, centrifugal, horizontal and vertical multistage, self-priming, pool pumps, deep well submersible pump end as well as electric motors, sump, sewage, effluent, and grinder pumps. Pedrollo will also offer a wide array of accessories, electronic controls, including VSP, and pump systems and packages.

Pedrollo's headquarters occupies a significant area of space and is in

continuous expansion, and currently occupies more than 1.6 million square feet with more than 1,200 employees. Pedrollo's physical size and presence makes it a true and proper industrial district, spread over various specialized plants allowing it to offer practically the entire production and supply chain internally.

Pedrollo's highly automated systems guarantee competitiveness and is constantly investing in innovation, accounting for over 16 percent of revenues, and integrating innovative and original solutions in manufacturing, mechanics, design, electronics, and human intelligence.

The research and development performed at Pedrollo does not only concern the final product, which it holds numerous international patents, but is also applied to machinery and the productive processes employed. The required skills on both the engineering and technological levels are so elevated that, in many cases, they require the direct building of ad hoc dedicated production machinery, designed exclusively by Pedrollo Engineering of the same applied to the numerous registered patents—more than 200 exclusive and original patents—which requires maximum protection through the internal realization of processes, machinery, and safe and ergonomic systems. Such a holistic strategic choice determines a positive position of control and guarantee over both the finished products and the entire production process.

Pedrollo's worldwide success is based on a great innovative capacity sustained by constant research and a strong commitment to development. These efforts are ultimately aimed at the technical improvement of systems and products. Upon ensuring the models' functional priorities, Pedrollo continues with regular design updates: a much-appreciated detail in the market and a

distinctive sign of Italian quality. There is also a constant renewal of products also from an aesthetical point of view, making them more pleasing both to the eye and touch as well as being more efficient—another indicator of the complete attention that Pedrollo promises to its customers. Moreover, Pedrollo uses an advanced prototyping center that enables the invention and realization of new increasingly improved performing products and designed to solve to customers' ever-changing requirements. Pedrollo possesses a tradition of creativity and technology that signifies the excellence of “Made in Italy.”

Pedrollo has committed significant investment aimed at guaranteeing its own companies the capability to produce energy from renewable sources with a positive impact on the environment and society, making it almost entirely autonomous from an energy standpoint. Pedrollo has over 2.5 MW of electricity generated by solar panels and the company recovers rainwater and uses it for industrial and commercial purposes in its plants.

Innovation, quality, service, professionalism, self-reliance, and its innovation-focused business model, along with commitment to sustainability and social responsibility (www.pedrollo4people.com), are the foundations of its long-established reputation.

Pedrollo S.p.A. is a part of Pedrollo Group (www.pedrollogroup.com). ■

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Schenck USA Corp.

SCHENCK USA CORP. is a subsidiary of SCHENCK CORP. Its parent company is Carl Schenck AG of Darmstadt, Germany; whose shares are ultimately held by Dürr, AG of Bietigheim, Germany.

SCHENCK USA CORP. is the company's new name as a result of the merger of Schenck Trebel Corp. and Schenck RoTec Corporation into one entity that comprises Schenck's Balancing and Diagnostic Systems Group for North America under Schenck RoTec GmbH.

SCHENCK USA CORP. is on four acres in Deer Park, New York, that includes a 22,800-square-foot manufacturing and assembly plant, and 17,000 square feet of office space for sales, service, administration and engineering personnel. The company's Southfield, Michigan, location is also a manufacturing and assembly plant serving the automotive customer base with a local engineering and service support staff.

SCHENCK USA provides a range of balancing and vibration analysis equipment for the production, maintenance and repair of rotating components. The company's engineering staff offers a range of experience for any balancing application and maintains a close presence on the balancing committees of the International Organization for Standardization (ISO) and the Society of Automotive Engineers (SAE), to ensure the latest practices and procedures are applied. The company is ISO 9001:2015 accredited.

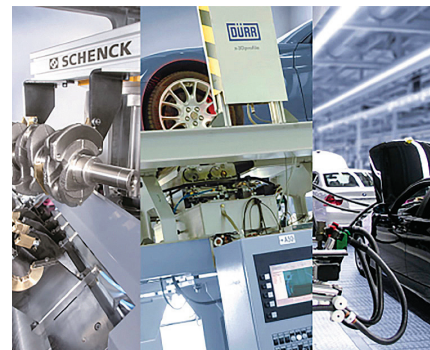
The service team is available for the commissioning and calibration of balancing equipment from multiple North American service points, in addition to leveraging a

global service support structure. With the company's recent acquisition of Test Devices Inc., of Hudson, Massachusetts, it has expanded its capacities in the spin testing and balancing services areas.

The company provides production, sales and servicing of balancing, filling, assembly and test systems, vibration and monitoring systems as well as accompanying services for the automotive industry and their suppliers, for the electrical industry, turbomachinery, general industries, and aviation and space.

In order to maintain its current role as a market and innovation leader in these fields, the company is dedicated to the following points:

- Thoroughly understanding customers' needs and exceeding expectations through partnership interactions
- Ensuring high quality by continuously improving the effectiveness of the company's processes, products and services in accordance with its quality management system (QMS)
- Contributing to the global success of SCHENCK by observing and proactively anticipating market developments
- Ensuring a safe workplace for the company's employees and visitors
- Complying with laws and regulations applicable to the company's operations
- Treating vendors fairly in partnership arrangements
- Creating a rewarding and challenging environment of integrity and ethics



- Constitute a positive environment, where the company encourages internal improvement suggestions

HM-SERIES MACHINE ADVANTAGES AT A GLANCE

HM-Series machines are designed to:

- meet most balancing requirements in single-unit or in high volume production
- solve many horizontal, hard-bearing balancing tasks
- be fitted to many individual applications because of its modular design
- be well suited for the industrial work in a repair shop due to their sturdy construction
- make fast and accurate balancing possible due to permanent calibration
- have a measuring sequence with digital measured value processing that makes them stable
- enable balancing of a large spectrum of rotors with variable rotor support and adaptable drive
- offer a comprehensive safety package for the protection classes B and C, which will protect operating personnel ■

SCHENCK USA CORP.

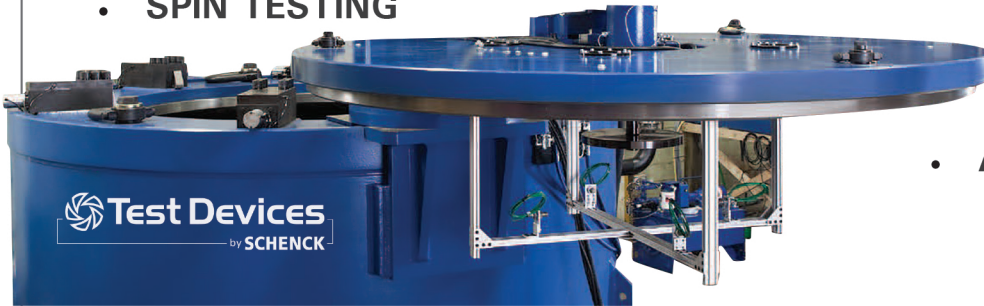
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Thelco

The Thelco team provides high-quality pump parts and pumps from our 40,000-square-foot warehouse in Englewood, Colorado. For sixty-five years, Thelco has maintained a massive inventory of parts and pumps ready to ship domestically and internationally within twenty-four hours. Our experienced and knowledgeable team, paired with an inventory of 4,500 items, on-site fabrication, and industry relationships provide our customers faster lead times and higher quality outcomes. While Thelco specializes in replicating Flowserve® and Worthington® parts and pumps, Thelco distinguishes itself with its customer service and willingness to help find solutions.

THE PARTS YOU NEED, WHEN YOU NEED THEM

Thelco supplies all of the turned parts, gaskets, shims, investment cast impeller lock washers, mechanical seals, and many cast parts for Worthington® and Flowserve® pumps.

Our expertise paired with a vast inventory of thousands of available parts and quick turnaround time shipping domestically and internationally (usually within twenty-four hours of order) helps support production across a wide variety of industries. Thelco also removes barriers to getting the job done quickly without the worry of an unexpected expense with pain-free financing options.

THELCO CAN SUPPLY MORE THAN PARTS

Thelco can also supply whole pumps and unitized pumps on a fabricated steel base. These are supplied as motor driven with coupling and coupling guards. We offer consulting from our senior engineer for your precision pump builds. Call us and

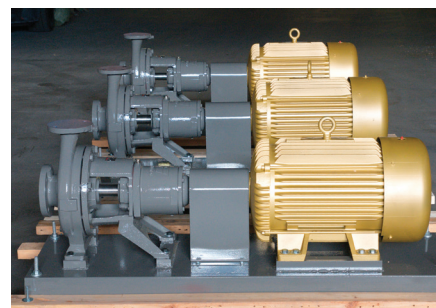
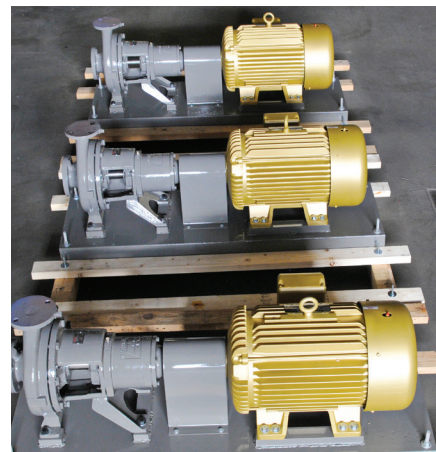
we can help select the pump for your application based on system and fluid conditions. In addition, we have a machining and repair facility on site and would welcome the opportunity to be your repair center.

VETERAN-OWNED AND FAMILY-RUN

Pumps, parts, fabrication, repair, and financing—Thelco delivers exactly what you need, when you need it. Here at Thelco, we believe the key to success lies in the dynamic relationship between the employees of our company and our customers. We've built our business by focusing on the unique needs of each customer to build strong, long-lasting relationships.

The quality of our product line speaks for itself. The Thelco team's commitment and focus on delivering again and again to our customers fuels their business. In fact, our supply of pumps and parts has grown to support a foundation of hundreds of companies we have had repeat business from for over thirty years.

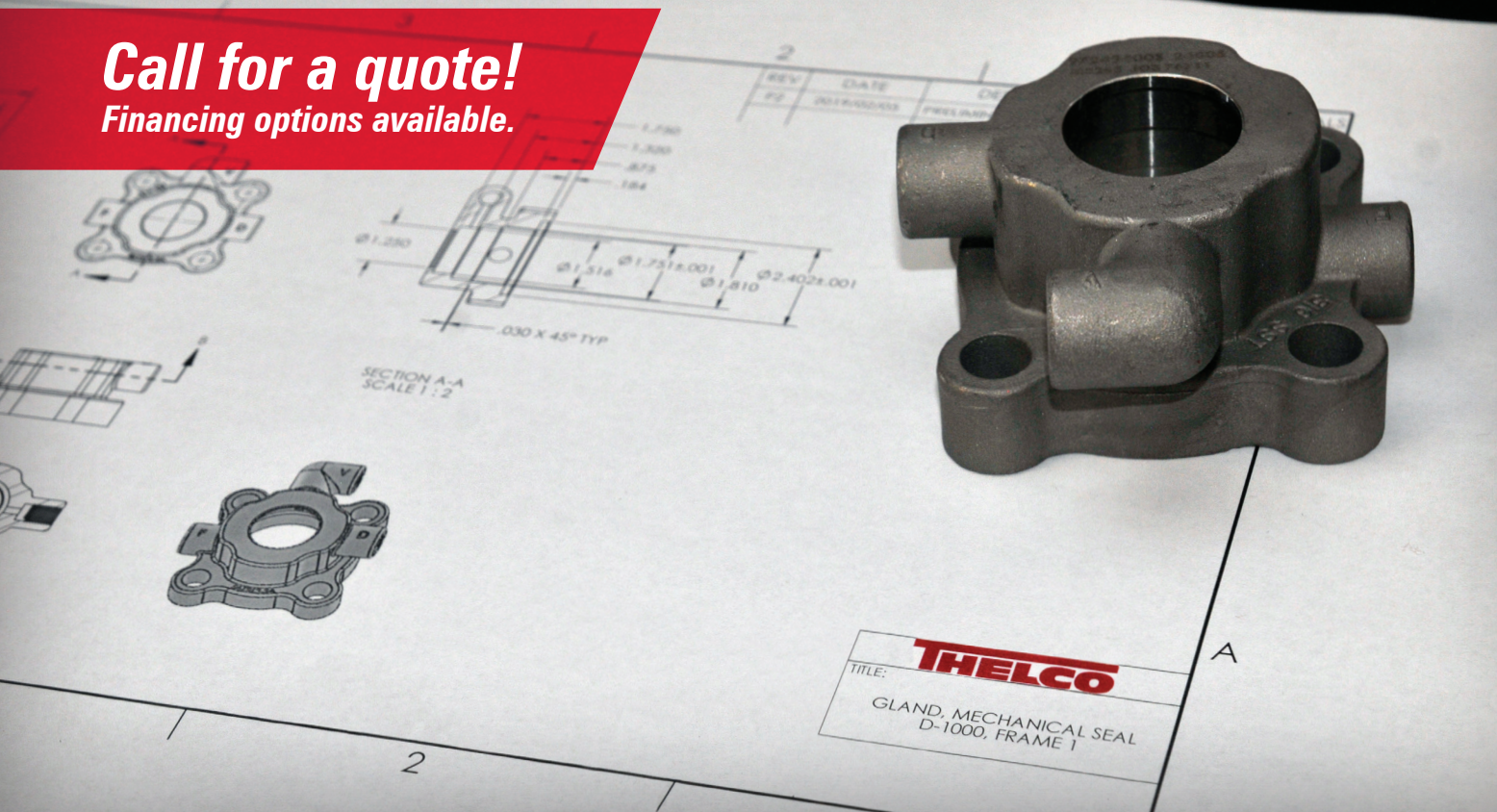
We are proud to be the first call many customers choose to make again and again. Whether it's an overnight parts delivery to a hospital or custom build of an explosion-proof pump: Thelco provides what you need to power your business. ■



THELCO

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shipping domestically and internationally (usually within twenty-four hours of order) helps support production across a wide variety of industries. Thelco also removes barriers to getting the job done quickly without the worry of an unexpected expense with pain-free financing options.



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Vaughan Company

YOUR SOURCE FOR RELIABLE CHOPPER PUMPS AND HYDRAULIC MIXING SYSTEMS

Vaughan Company was started with one simple question, "What could make this better?" In the service bay of the gas station he owned in Elma, Washington, Jim Vaughan spent hours repairing manure pumps for local dairy farmers. He could see a pattern: the pumps were constantly breaking down due to clogs caused by animal bedding or twine. So in 1960, Jim Vaughan invented the world's first chopper pump.

The Chopper Pump met a genuine need that had applications far beyond dairy farms. The original patent for the Chopper Pump was applied for in 1960 and granted shortly thereafter. By 1961, the company purchased its own manufacturing facility in Montesano, Washington. In the decades since, Vaughan Company has expanded operations greatly and now has forty worldwide patents.



Now a third- and fourth-generation family-owned-and-operated company, Vaughan Company manufactures pumping and mixing equipment for agriculture, municipal, and a variety of industrial applications, shipping worldwide. From 1960 to today, our goal is to produce reliable products that perform in the most demanding applications. And as the years have passed, we've implemented new technologies to stay innovative.



We incorporate in-house 3D modeling, which allows us to create precision castings for all components. With computational fluid dynamics (CFD), we analyze flow patterns and velocities within our pumps, looking for ways to maximize performance. And our computer numerically controlled (CNC) automated machining ensures every Vaughan replacement part fits precisely.

With more than half a century of experience, Vaughan Company remains committed to giving customers outstanding service and the most dependable product solutions in the world.

VAUGHAN CHOPPER PUMP

The Vaughan Chopper Pump is a centrifugal pump with the unique ability of chopping all incoming solids prior to pumping. This not only protects the pump from clogging, but also provides added benefit to downstream components, processes, and the environment.

All wear components are cast steel and heat treated for maximum impact and wear resistance. These heavy-duty patented components



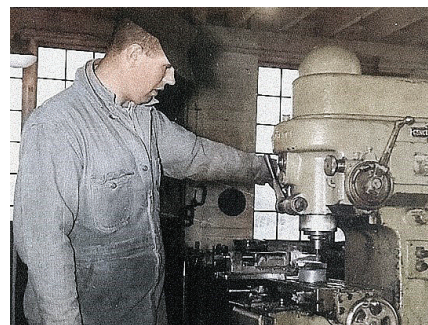
create the ultimate pump for handling severe solids.

VAUGHAN ROTAMIX® SYSTEM

The Vaughan Rotamix® System is the world's most reliable cost-effective means of mechanical hydraulic mixing for sludge tanks, digesters, and other high-volume applications.

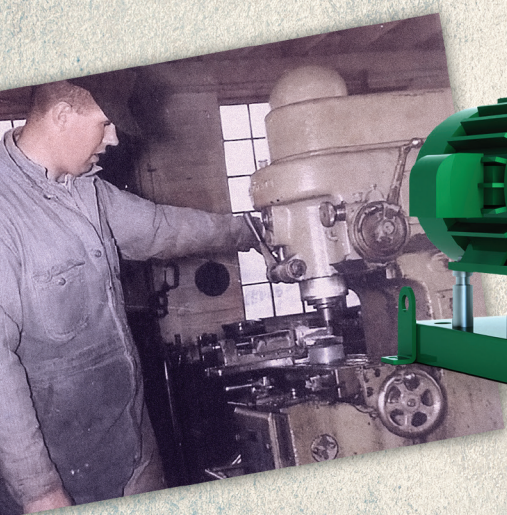
Combining high-velocity mixing nozzles and the Vaughan Chopper Pump, Rotamix® creates a multi-zone mixing pattern while simultaneously chopping all accumulated solids. No more floating mats or solids settled at the bottom of your tank. The Vaughan Rotamix® System produces an easy-to-pump, homogenous mix.

The solutions Vaughan Company offers start here. There are several other product specifications and combinations to consider when approaching a project. The best way to find the right fit for your needs is to contact the pump experts directly.



CONTACT VAUGHAN COMPANY TODAY

Nearly every customer has a unique obstacle to work through. Vaughan Company has provided over sixty years of reliable product solutions, and top-tier customer support. For more information on the pumps and pumping equipment Vaughan Company offers, visit chopperpumps.com to get in touch with the Vaughan team. ■



PROUDLY MADE IN THE USA.

Since 1960, Vaughan Company has been manufacturing the toughest no-clog pumps in the USA. Our 3rd and 4th generation family-owned and operated company builds cutting edge products that are built to last and keep things flowing smoothly.

Choose the unmatched reliability of Vaughan. Ask about our free trial program and on-site demos.

Vaughan
Unmatched Reliability

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EXPEDITED DELIVERY | ELIMINATES COMMUNUTORS | EXTERNALLY ADJUSTABLE CLEARANCES

Blacoh

Pulsation, vibration, water hammer, surge... Blacoh has been solving pump problems since 1976. Wherever vibration, pressure fluctuation, non-steady flow, noise, or rapidly wearing pump components are a problem or a significant disadvantage in the application, Blacoh can solve those problems to improve both the efficiency of the pump and the longevity of its components. We are the industry standard for dampening pulsations created by positive displacement pumps.

Led by a global team of skilled professionals, Blacoh stands alone as the leader and foremost expert in the manufacture of fluid control products for municipal and industrial process industries, and virtually every application from the harshest chemicals to the most delicate cosmetics. We serve many of the largest oil, pharmaceutical,

food, chemical, and petrochemical companies in the world through our global distribution network. The combination of product quality, efficiency in manufacturing, service excellence, expert knowledge, and rapid delivery times, offers customers a value package that we believe no other company in our market can beat.

We test every pulsation dampener we make before it ships to the customer. We receive an order, process it, acknowledge it, build it, and then test it overnight so it can ship the following morning. Every order. Every dampener. No exceptions. That's what it takes to be the best. We've invested heavily in technology to automate all the mundane, repetitive tasks involved in order processing so that each human interaction is completely focused on the customer and the quality of the product.

Our customer service is incomparable to almost every other

manufacturing company in the United States. When we interact with a customer, we treat them like they're the only customer we have. We give them our full attention company-wide. It doesn't matter who you call or when you call Blacoh, you're going to talk to a real person in three rings or less. We have an amazingly dedicated team working in an environment where they are proud of what they do and truly enjoy coming to work every day. When you have happy people, you can't help but have happy customers.

Since the beginning, our customers have been key in directing our progress and growth. They continue driving product innovations and expanding our market presence. We are committed to expanding and growing globally more than ever. This commitment has resulted in the most rapid growth in our company's history—and we're just getting started. ■



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Check-All Valve Mfg. Co.

Since 1958, Check-All Valve Mfg. Co. has manufactured a complete line of in-line spring-loaded piston-type check valves. With worldwide service, Check-All Valve serves a wide range of industries including the chemical, petrochemical, pharmaceutical, food and beverage, water treatment, OEM, MRO, and many others. Lightweight, efficient, and rugged, every Check-All valve is designed and built to perform to exact needs and specifications. The company is ISO 9001-2008 certified and manufactures product lines compliant with CE/PED requirements, Canadian Registration Number guidelines, 3A Sanitary Standards, and others.

Check-All valves are engineered for silent operation. They close quickly and smoothly to eliminate

hammer noise. They are designed to function equally well in either a vertical or horizontal position, with proper spring selection. They are also designed to reduce installation costs. The insert series check valves easily fit into existing line components, which reduces initial cost and installation time. The seating surfaces are parallel to each other thereby eliminating the excessive wear occurring in plug, cone and ball seats. Check-All valves can also be used as low-pressure relief valves and vacuum breakers.

With many styles available, Check-All Valve provides check valves for practically every service application. Valves are offered with metal-to-metal or soft seats in sizes ranging from 1/8-inch NPT to 20-inch flange connections. Pressure

ratings are available from full vacuum to 10,000 PSI. Standard or exotic materials are available and you can choose from a wide variety of spring settings and seat materials for any valve. Most options are available with fast delivery. Specially designed valves are another option that Check-All Valve performs on a regular basis. Check-All Valve Mfg. Co. is staffed to supply you with a quality product as well as personal technical services. ■

CHECK-ALL VALVE MFG. CO.

Contact us for a complete
catalog or see us at
www.checkall.com.

More than a Check valve *It's a Check-All®*

SILENT OPERATION!

Our check valves close quickly and smoothly to avoid water hammer noise and vibration.

SPRING-LOADED!

Multiple spring settings as well as seat and body materials available to meet your application needs.

UPSTREAM TRIM!

The upstream trim is protected from corrosive media mixing; thereby, extending valve service life.

And most lead times
are less than one week.
That's what makes our
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Proudly manufactured
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Horner Industrial Group

The Horner Industrial Group, founded in 1949 as Horner Electric, began as an electric motor repair company. Throughout the years they've expanded their repair capabilities to include gearboxes, fans, blowers, pumps, and hydraulic cylinders. In 2013, they created the Horner Thermal Spray and Industrial Coatings division. In 2019, they combined their Pump Repair division with their Thermal Spray and Industrial Coatings division to create a unique offering to their customer base.

By applying the latest spray and coating technology associated with reducing wear and extending life to pump repair, the resulting end product is far superior to any standard pump repair currently in the marketplace.

The Twin-Arc Thermal Spray method used by Horner Industrial has been used by the military, (predominately Navy and Air Force), for over thirty

years and can be used to apply ANY metal on ANY metal without galvanic reaction taking place with a holding force exceeding 9,000 psi, and it never heats up the base material more than 300 degrees Fahrenheit (148 degrees Celsius) unlike welding or other spray metal finishes on the market. The only way to remove the coating is to machine or grind it off. They then use a Loctite coating made for pumps that increases the abrasion resistance of the finished product, resulting in prolonged performance with less maintenance issues and higher efficiencies held for longer period of times.

It is now possible to completely restore an obsolete damaged impeller, shaft, rotating element, or pump case and restore it back to "like new" condition at a fraction of the price of a new unit in a fraction of the time it would take to get a new, replacement part. ■



YOU LINE YOUR PIPES TO PREVENT CORROSION, WHY NOT COAT YOUR PUMPS TO DO THE SAME.

By combining our Industrial Coatings expertise with our Pump Repair Department we're able to restore your pump to "like new" or better condition. Once we coat your pump it will be protected from corrosion and premature wear. Studies have proven that pumps that have been coated last longer and hold efficiencies years longer than pumps that are left untreated. The cost and turnaround time to provide this service is significantly less than buying new.



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CERTIFIED



Contact Terry Thorne

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KROHNE

KROHNE offers a complete measurement instrumentation product portfolio including industry specific system solutions and complementary services for projects of any size, anywhere in the world. Since starting in 1921, we have amassed an enormous amount of application knowledge that is integrated into our products, solutions, and services.

The resulting innovative technologies are based on our extensive R&D with 10 percent of the work force dedicated that area. While sensor development for flow, level and other variables is the primary focus, we are also very active in advancing device communication and the Internet of Things (IoT) for the process industries including device diagnostics for analysis and process optimization.

If you buy a KROHNE product, you will get a measuring device

that performs most accurate with low uncertainty under real process conditions. To achieve this, we operate more than 120 calibration facilities for volume flow, mass flow, level, temperature, density, and pressure for every device we manufacture. For example, every flowmeter is wet calibrated using water or air as standard before leaving our facilities. We can also provide customer specific calibration such as:

- Multipoint calibrations
- Varying temperatures, viscosities, or pressures
- Specific fluids
- Specific pipe geometries or piping provided by the customer

For calibration we only use direct comparison. For example, we calibrate

our Coriolis mass flowmeters with a gravimetric weighing system. Our calibration rigs are the most accurate for measuring device production with reference accuracies 5 to 10 times better than that of the meter under test.

This goes for small (1 millimeter) or very large meter sizes since Krohne operates precise volumetric calibration rigs up to 120 inches with a certified accuracy of 0.013 percent based on a 144-foot-tall tank containing almost 132,000 gallons of water allowing for a maximum flow rate of 7,925,000 gallons per hour.

In North America, we have a brand-new manufacturing and calibration facility in Beverly, Massachusetts. We serve our markets through a network of representatives, distributors, and direct sales personnel.

Our mission is to provide unparalleled application expertise, on-time delivery, and cost-effective quality products so that we can exceed our valued customers' expectations. We offer a technically proficient, KROHNE-trained sales force that gets involved in all aspects of technical sales and applications support.

Our dedicated technical support, field application, start-up and repair teams are located throughout the regions to provide timely and effective services at your site or at our factory. Our TASC (Technical Application Support Center) is the heart of KROHNE's technical support capability and is available by phone or email every day, at any time, day or night. This group of trained engineers and technicians is at your disposal for product application, installation, operation, or troubleshooting questions. You can reach our support team by calling our toll-free number 800.FLOWING (356.9464) or by email at tasc@krohne.com.

Reach us by email at info@krohne.com or by phone at 800.FLOWING (356.9464). Our website is us.krohne.com. ■



Continuous flow measurement with air or gas entrainments

OPTIMASS series – Coriolis mass flowmeters with Entrained Gas Management (EGM™)

us.krohne.com/optimassmeters

products solutions services

KROHNE
measure the facts

KSB SupremeServ

As a global leader in our field, KSB SupremeServ companies in North America offer comprehensive services to help relieve the pressure and reduce the life-cycle cost of your most challenging pump problems. Whether you need support in installing and commissioning your equipment, maintenance, repair, customized service concepts, spare parts, or replacement, rebuild, or exchange, KSB SupremeServ brings knowledge and creative solutions to improve equipment reliability and system performance.

KSB SupremeServ provides service and repair of all rotating equipment for all fields of application. With more than 150 specialists across twelve service centers in North America, our service network is here to serve your needs 24/7 with first-class pump and system maintenance.

SERVICE AND REPAIRS YOU CAN COUNT ON

When pumps are down, fast action is critical. KSB SupremeServ employs professional, original factory trained technicians performing all pump rebuilds and repairs to OEM standards and original documentation using precision measuring equipment and hand tools registered and calibrated annually by an ISO-certified inspection firm.

We provide personalized, one-to-one business relationships for all your RFQs, proposals, expediting, contract fulfillment, technical service support, including field service.

- Fabrication and machining
- Dynamic balancing
- Mechanical seal repairs
- Replacement of parts with genuine KSB OEM spare parts from our inventory

- Welding by MIG, TIG, SMAW (stick), stainless, carbon, and specialized alloys
- Metal fabrication, sheet, plate, structural members, and piping
- Disassembly, inspection/report with evaluation of failure mode, and reassembly to as new condition of all types of pumps

CUSTOM SPARE PARTS WITH REVERSE ENGINEERING

Breakdowns occur daily, resulting in the difficult task of sourcing replacement parts that may not be available or have extended delivery times. In such cases, KSB offers reverse engineering, a process of rapid manufacturing that enables the production of high-quality castings within a very short time frame. This solution lets you keep your existing equipment in operation. ■

KSB SupremeServ



PUMPS

Service | Repair | Spare Parts

12 Networked Service Centers covering North America



pumps911.com

Lovato Electric

WHERE TECHNOLOGY MEETS TRADITION

For nearly 100 years, Lovato Electric has been designing and manufacturing low voltage electrical devices for industrial applications.

Established in 1922 in Bergamo, Italy, Lovato Electric is a private company, managed by the same family of entrepreneurs for four generations.

Among the first companies in Italy to obtain ISO 9001 certification in 1992, Lovato Electric has a range of over 10,000 products complying with the strictest requirements of international standards including UL and CSA.

Manual motor protectors, contactors, overload relays, electro-mechanical starters, softstarters, variable speed drives, pushbuttons and selector switches, signal towers, limit switches, cam switches, disconnect switches, miniature circuit breakers, time relays, protection relays, level control relays, general purpose relays, micro PLCs, power supplies, battery chargers, metering, automatic power factor controllers, automatic transfer switch



controllers, engine and generator controllers, supervision, and energy management software are the types of products and solutions designed and produced by Lovato Electric.

To provide competitive products and services in the industrial automation and energy management fields is our company's mission.

Our thirteen branches abroad and a network of over ninety importers guarantee the availability of Lovato Electric products in more than 100 countries all over the world.

Lovato Electric, Inc. (USA) is headquartered in Chesapeake, Virginia, and supports the U.S. market through authorized distributor partners. ■

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Megator

YOUR BEST SOURCE FOR POSITIVE DISPLACEMENT PUMPS, PUMPING SYSTEMS, AND POLLUTION CONTROL SOLUTIONS

Megator is a leading manufacturer of innovative and unique positive displacement pumps, pumping systems, and pollution control solutions. Our products and systems have continually exceeded our customers' expectations for quality, performance, and reliability. Megator products are the first choice for many demanding applications worldwide in these environments: Megator has built a global reputation for manufacturing innovative and unique positive displacement pumps and pollution control solutions for some of the harshest environments. The performance, quality, and reliability of our products in general industry, marine, mining, and pollution control applications continually exceed our customers' expectations.

Since 1946, we have been helping customers choose the best equipment and solutions for their specific needs. Our pumps and systems are used in thousands of demanding locations, including merchant fleets and in navies such as the U.S. Navy and the British Royal Navy.

Today, Megator Corporation is headquarters for North and South America in Pittsburgh, Pennsylvania. From this location, we support our authorized independent representatives and distributors. Although mining and marine applications are a major focus, our product line has gained wide acceptance in the process industries, oil and gas, petrochemical, general industrial, and municipal sectors.

While always a participant in the oil spill market, in recent years we have increased our presence in that sector. Megator is the North and South American headquarters for Salarollump peristaltic hose pumps and Truxor amphibious vehicles. Both of these products offer capabilities that are unique to the industry and further diversify our offering.

At Megator, our top priority is helping customers solve their pumping and pollution control problems. It's why we've been in business for more than sixty-seven years, and it's what motivates us to achieve excellence in everything we do each and every day. ■



RELIABILITY YOU CAN TRUST



**Rapid Recovery with
Megator System 3**
> Skimmer – Recovery – Separation

The Sliding Shoe Pump – Built to Last, *not to Replace*

- > Single Cover Access
- > Self-Priming
- > Dry Running
- > Self-Compensating for Wear
- > High Suction Lift
- > Reduced Downtime – Maintenance-in-Place
- > Same Pump for Varying Viscosities
- > Clean or Dirty Liquids
- > Low Shear/Emulsification
- > Smooth Non-Pulsating Flow



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Pumps 2000 America

Pumps 2000 was established in Australia in 1989 to offer pumps capable of handling abrasive, solid-laden, and corrosive fluids in underground mining environments, and to create an alternative to the heavy, maintenance-intensive diaphragm pumps that were used predominantly in mines. These pumps featured low weight as well as improved pump life and performance. Several patented features make it possible for Pumps 2000 to offer market-leading low life-cycle cost, while handling difficult applications.

Pumps 2000 America was established in 2007 to market Pumps 2000 products and solutions throughout North and South America. Today, our pumps continue to be used in coal and hard-rock mining throughout North and South America, as well as in general industry, marine,

building and construction, food processing, chemicals, and pollution control applications.

Pumps 2000 pumps are built and tested at our facility in Pittsburgh, Pennsylvania. From this location, we also provide comprehensive technical support to our distributors, agents, and end-users across North and South America, and operate a service facility and warehouse to ensure fast delivery of pumps and spares.

SUPERIOR VERTICAL INTEGRATION

Our unique combination of in-house R & D and manufacturing enables us to offer pumps and pumping systems which are technically superior and significantly higher quality than our competitors. The use of injection molding has given Pumps 2000 greater freedom in



material composition and has led to the development of lubrication-free pumps and our own plastic blends. A number of products are currently under development.

All Pumps 2000 products are certified in accordance with ATEX Manufacturing processes are in accordance with ISO 9000 quality management systems standards. Our pumps also comply with ISO/IEC 80079-34 quality standards related to potentially explosive atmospheres.

Pumps 2000's experienced team is always ready to assist you with solving your pumping needs. Please contact us with your inquiry. ■

World's First High-Volume Diaphragm Pumps

The Lightweight Dual-Diaphragm Pumps that Outperform and Outlast the Competition

Pumps 2000 Pneumatic Diaphragm Pumps.

Designed for abrasive, solid-laden and corrosive fluids and to create an alternative to heavy, maintenance-intensive diaphragm pumps.

- > Less downtime and maintenance – **Pays for itself**
- > Lower air consumption – **Saves on energy costs**
- > Lightweight – **Results in less injury**
- > Low noise levels

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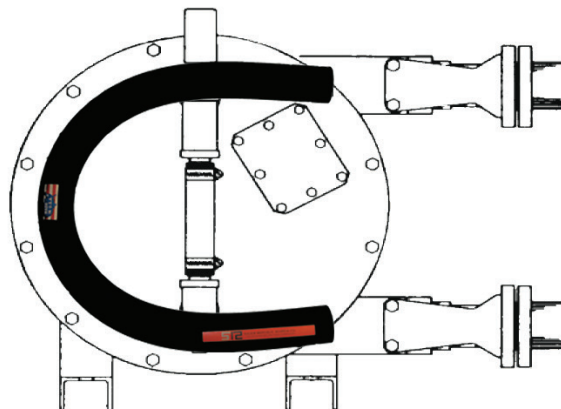
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Salem-Republic Rubber Company

For nearly half a century, Salem-Republic Rubber Company has been manufacturing high quality hand-built hoses. Over ten years ago the company began utilizing the hand-built process to produce ground cover peristaltic pump hoses due to the high demand for alternatives to the OEM supplied replacement hoses. Salem-Republic Rubber Company builds peristaltic pump hoses that are compatible with the requirements for all of the major positive displacements pumps.

The "No Crush" polyester carcass is constructed using multiple plies of high tensile strength corded



reinforcements. The smooth precision ground cover, and concentric wall, ensures optimum performance and consistent flows. Tubes of these hoses can be constructed of Natural Rubber, for abrasion resistant

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brought the technology to the United States and applied and received a patent in 1991. From that moment on, Scalewatcher North America has been on the forefront of environmentally-sensitive water treatment. Located in Oxford, Pennsylvania, Scalewatcher North America continues to lead the industry in descaling products that do no harm to the environment.

Scalewatcher North America focuses on the elimination of scale and the problems associated with scale build up. Industries know the costs involved in keeping their capital investments running smooth. Scalewatcher is there to help. Scaled cooling towers, chillers, and associated equipment can negatively impact a company's bottom line, and not just in cash. The caustic chemicals used to remove scale only create more problems with the environment. Your company can "GO GREEN" and stay within your budget.

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Sensaphone® offers a comprehensive line of remote monitoring products for the water and wastewater industries. These products monitor environmental and equipment status conditions including tank levels, power failures, flow rates, pump status, temperature, humidity, air circulation, vibration, carbon dioxide, water pH, water leaks, smoke, power failure, unauthorized access, and more.

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Sentinel™ PRO builds on the power of the Sentinel system and can monitor up to 64 Modbus registers, plus twelve digital or analog inputs. The Sentinel PRO system seamlessly interfaces with any water or wastewater processing equipment that uses a PLC with Modbus sensors. The system supports both Modbus RTU-485 and TCP protocols.

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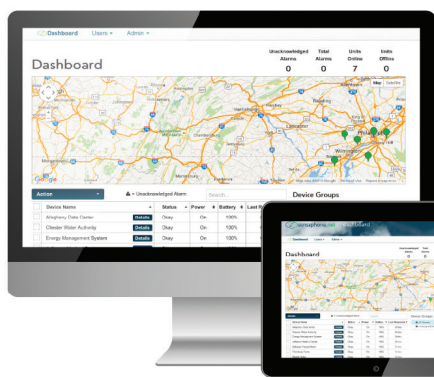
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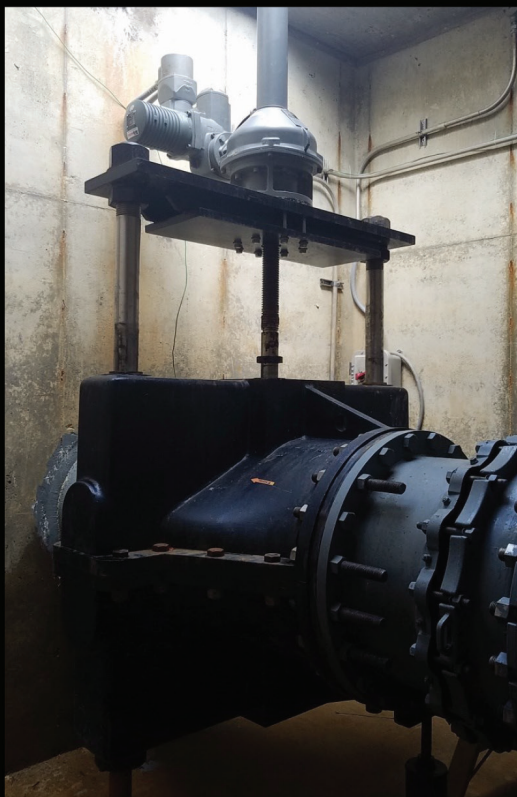
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