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Adventech

Adventech is revolutionizing the electric motor market -a market that has remained relatively unchanged for decades. Armed with cuttingedge technology and the vision to create products that transform both industry and the human experience through energy conscious solutions, Adventech developed the world's only complex-motor generator—the Maxeff Motor.

The Maxeff Motor is perfect for use in any induction motor application such as pump drives, cooling tower

fan drives, automation applications, baghouses, etc. With over 3,000 Maxeff Motors in use globally, we have garnered a reputation in the marketplace as THE efficiency solutions provider.

Allow our team to find the right solution for your application; we are dedicated to saving your team money through energy savings,

reliability, and a competitively priced product.

Let Adventech be your efficiency partner. •



The Maxeff Motor Difference

Standard **Induction Motors**

Active power consumption in excess

Excessive apparent power consumption

Excessive power demands

Excessive motor inrush current

Poor power factor, excessive reactive power

Limited number of restarts. or excessive energy consumption on start-up

VS.

KW/h KVA KW & KVA Demands Peak Demands KVAR Poor ability to restart energy consumption on start-up

Maxeff Motor by Adventech

Less active power by 6% to 12% and higher EFF (IE4/Super Premium EFF)

Less apparent power (fewer amps) by 15% to 80%, depending on the load levels

Less demand by 15% to 80%, depending on the load levels

3-4 times less peaks and inrush current with Maxeff soft start

Maxeff features PF 0.999 at any load, eliminating the reactive power

Maxeff allows infinite number of restarts per hour

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in Electric Motor Generators



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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 stateof-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.



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 subbasements; 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.





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Hoosier Pattern

or 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
- FDM
- · 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 welltrained, well-educated, and stays upto-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-todate 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. •









WHY CHOOSE HOOSIER PATTERN?

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JWC Environmental

NEW WASTE STREAMS REQUIRE NEW SOLUTIONS

By breaking down solids into a manageable size, grinders allow pumps to work efficiently while avoiding downtime for cleaning and repair. However, not all grinders are the same. The equipment installed in most municipal wastewater treatment operations is designed to handle "normal" sewage, but there is nothing normal about the waste stream currently going to these plants. In addition to a surge in wipes, PPE, and other materials going down toilets, there is also the potential for other objects such as small animals and concrete from degrading infrastructure to become part of the waste stream.

While utility managers have attempted to mitigate these issues, their solutions are often less than ideal. For instance, more utilities are screening at pump stations, which were not designed for the task. This adds an extra removal and disposal step, as well as creates the potential for an odor problem. Additionally, some plant operators have installed pumps that incorporate impellers with grinding or chopping capabilities. However, this renders the pumps less effective for their primary purpose, while allowing for abnormal debris to get caught up and cause blockages. These pumps are also expensive to purchase, operate, and maintain.

By contrast, specialized equipment at a pump station that is purposebuilt to condition solids before they are pumped allows the pump to run as efficiently as it was intended. This protects the pump and moves the waste stream forward to a more ideal environment for treatment. To meet this need, JWC Environmental has developed a Wipes Ready® cutting technology that is now an option on its sewage grinders.

MUFFIN MONSTERS®—THE LEADERS IN PUMP PROTECTION

The latest innovation to IWC's Muffin Monster line-up is its Wipes Ready technology. Municipal waste streams are being plagued by an invasion of so-called "flushable" wipes that ball together and shut down waste conveyance systems. The Wipes Ready technologies are designed to shred disposable wipes and rags into small pieces that are unable to reweave into ragballs. Conventional grinders shred wipes into long strips that may reweave into ropes and form ragballs, clogging pumps and other systems. The Wipes Ready technologies feature enhancements to the proven Muffin Monster® and Channel Monster® grinders—equipping them to better protect pumps and prevent unplanned maintenance and damage.

JWC's Muffin Monster grinders are designed to quickly cut problem solids down to size, preventing costly pump problems and sewer backups. They utilize two rows of sharp steel cutters that rotate slowly toward each other to actively pull materials into the grinder while using high torque to breakdown the troublesome solids. Muffin Monster grinders have proven to be effective in dealing with the wide variety of solids that can be found in waste streams, including wood, plastics, and other inorganic materials.

The units are available with a variety of cutter configurations, and the design quickly adapts to existing pipeline and in-channel installations with little modification.

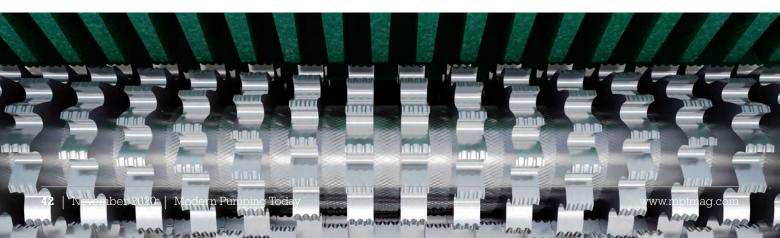
The business case for investing in grinders with new cutting technology is strong. Deploying grinders at pump stations helps protect pump integrity, leading to longer maintenance cycles and fewer breakdowns, as well as more efficient pumping operations and less labor needed to remove clogs. The most advanced products are also low maintenance, so operators can "set it and forget it" for extensive periods.

SERVICE SOLUTIONS TO HELP YOU GET THE MOST OUT OF YOUR EQUIPMENT

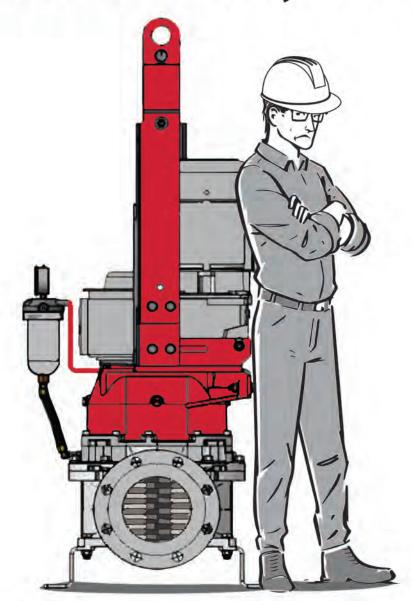
The expert JWC Service Solutions team is responsible for keeping JWC Environmental equipment running at peak performance. This team of professionals is specially trained to help customers get the most out of their equipment and extend the life of their investments. JWC Service Solutions tackles system startups, upgrading equipment to the latest technology, on-site screen rebuilds, and simple replacement parts.

ABOUT JWC ENVIRONMENTAL

JWC Environmental is headquartered in Santa Ana, California. The company is supported by a worldwide network of representatives, distributors, and regional service centers to meet local customer needs. More information on JWC Environmental is available at www.jwce.com or by calling 833.240.0117.



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Protect your pumps

(Prevent dirty cleanups

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Protecting pumps and system components from clogs and damage for over 45 years.

LS Electric America, Inc.

he 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

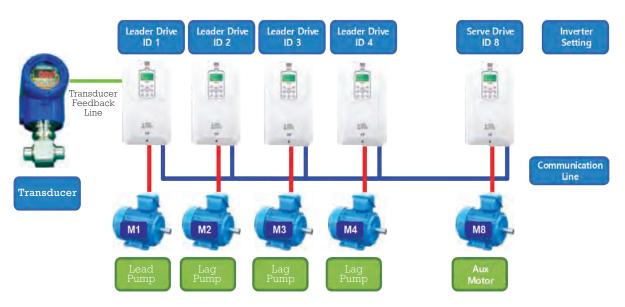
- Uses the H100 standard keypad and parameters.
- · Dedicated lead-lag macro makes programming easy. Setup in minutes!
- A two-wire RS485 connection is all that is needed between each VFD!
- Setup parameters are shared across the connected VFDs for streamlining and reducing startup time.

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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MegAlert

Save money, save time, and increase safety

egAlert manufactures the MotorGuard, GenGuard, and CableGuard patented electrical insulation testing and protection systems designed to detect the first signs of insulation breakdown in critical equipment operating up to 15 KV. The MegAlert system senses when the equipment is offline and then performs a continuous "True Dielectric" I/R test on the winding insulation until the equipment is started again. This allows for corrective action to be taken in time to prevent failures on start up and increase plant uptime. The MegAlert's "hands off" testing capabilities increase personnel safety by eliminating exposure to dangerous arc flash conditions and electrical accidents.

THE MEGALERT SAFETY **ADVANTAGE**

At MegAlert, safety and reliability is in our culture. Our mission is to manufacture and provide high quality insulation resistance testing and monitoring devices incorporating leading-edge technologies. This ensures safety for personnel, and reliability for motors and generators based on proven MegAlert patented technology.

With an estimated five to ten arc flash accidents occurring daily—far too often resulting in fatalitiesmotor and generator safety is more important than ever. Our devices allow for required testing to be done from outside of the cabinet. protecting personnel from exposure to potentially deadly arc flashes. Our devices save lives by enabling electrical workers to operate safely in hazardous conditions.



At MegAlert, we know that lives depend on the quality of our devices. That's why MegAlert's production facilities manufacture products that comply with the highest possible standards and regulations.

THE MEGALERT RELIABILITY ADVANTAGE

Our products are designed with your need for reliability in mind, ensuring that you experience minimal downtime from your motors and generators. Our devices test automatically when they detect your motor or generator is offline to ensure improvement in plant and machine reliability. Having a highly reliable indicator of a motor or generator's probability for failure on startup is crucial, allowing you to reduce unscheduled downtime and save on potentially disastrous repair costs.

Any successful company requires operational dependability and reliability otherwise it cannot maximize its productivity. MegAlert is dedicated to helping businesses reach optimal



functionality by installing systems to warn against critical motor failures. By installing our systems on motors and generators within a business, companies can feel confident that their operations are dependable and safe.

Our insulation resistance testers are unique in that they are the only true dielectric insulation resistance testers in the world. Our protection systems save companies valuable time by eliminating critical failures within their machinery, but also save expensive repair costs on potentially disastrous malfunctions.

THE MEGALERT COST-SAVINGS **ADVANTAGE**

Our commitment to bringing you products that create a much safer and more reliable work environment comes with the added benefit of cost savings in crucial areas of operation.

There are huge benefits to knowing that a motor or generator is beginning to fail before it actually does. One of the main reasons that this is crucial is that it can save a company thousands of dollars in repairs, lost productivity, and insurance liability. At MegAlert, we understand that saving money is an important focus for all companies, and our products save our customers lots of it. Our resistance testers and other MegAlert products are indispensable. •

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Save Money, Save Time, and Increase Safety

with the One and Only Automatic Inline Megging/Monitoring Systems

BEFORE)





« AFTER



MEGALERT manufacturers the MotorGuard and GenGuard patented testing and protection systems designed to detect insulation breakdown in critical motors and generators. The system senses when the motor or generator is offline and then performs a continuous dielectric I/R test on the winding insulation until the equipment is started again and will provide an early warning signal in time for corrective action to be taken to prevent a failure.

) Eliminate Arc Flash Exposure

) Reduce Repair costs

) Prevent Unexpected Downtime

> Tests Equipment up to 15KV

> 500-5000 VDC Test Outputs



Plast-O-Matic Valves

REDUNDANT ANTI-SIPHON CAPABILITY: COMBINED USE OF RELIEF VALVE AND VACUUM BREAKER

An engineering firm recently specified two seemingly unrelated valves to provide redundant siphon prevention in a ferric chloride piping system.

In many piping systems, when the pump is shut off, vacuum occurs as liquid drains from the highest point to the lowest point in the piping system. This downstream flow creates a vacuum, and as flow continues. it often creates a siphoning effect and drains the supply tank.

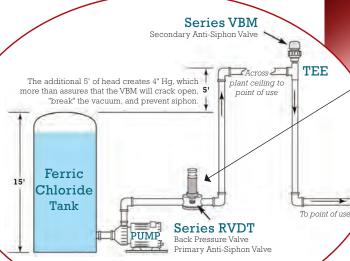
In many corrosive chemical applications, Plast-O-Matic Series RVDT Backpressure/Relief Valve is the leading valve for preventing siphon. It was the first state-approved thermoplastic valve for anti-siphon use in municipal water treatment systems, selected for its PTFE diaphragm and normallyclosed design.

HOW IT WORKS

The RVDT uses a non-wetted spring to keep the valve closed. The set pressure (or opening pressure) is determined by pre-setting an adjusting bolt. When the pump is activated, and pressure builds above the set point, the RVDT opens and allows flow. The set point is based on the total feet of head in the tank plus a safety factor. When the pump is shut off, pressure drops below the set point. This causes the RVDT to automatically close bubble tight, and siphoning due to tank head pressure is prevented.

REDUNDANT SIPHON **PREVENTION**

Because of the critical nature of the application, system designers required a back-up to the RVDTjust in case. The valve selected? Series VBM vacuum breaker—and here's why:



PLAST-O-MATIC VALVES

The most sensible plan was to use a normally-closed vacuum breaker that would positively seal bubble tight under even the lowest pressure, but open at minimal vacuum should the primary anti-siphon valve fail. Plast-O-Matic Series VBM, by virtue of its patented diaphragm, was the only product available to meet this requirement. Most vacuum breaker designs rely upon a floating ball for closure, but these are highly prone to distortion and leakage is common. Series VBM design is tested to over 1,000,000 cycles in laboratory conditions, and the diaphragm is easily replaced if necessary.

BONUS PUMP PROTECTION

In addition to siphon prevention, the series RVDT valve provides a number of additional benefits to the

system. Most important of these is providing pump backpressure, as well as downstream (or diverted) relief in the event of overpressure. The backpressure function enables the pump to run more efficiently, as well as smoothing

Bypass relief enables some or all of the flow normally discharged from the pump to be bypassed or piped away to either the suction side of the pump or back to the feed vessel when an obstruction occurs in the piping system. In this case the valve is usually installed on a tee, or a three-way version is used.

out turbulence.

When the obstruction is cleared and normal flow returns, the pressure in the line returns to normal and the valve closes. The key benefit is to prevent deadheading and costly rebuilds or replacements.

The valve is available in a variety of engineered thermoplastics, as well as stainless steel. For more information on these key piping system components and to safeguard your system, visit www.plastomatic.com.

3 VALVES ING. VACUUM RELIEF

- Air Release Valve, which releases air during system start up.
- Degassing Valve, which provides continuous degassing.
- Vacuum Relief Valve, which prevents pipeline vacuum in case of leaks or siphon.



When a pipeline is being filled, the valve allows the air to escape through a large orifice. As liquid rises in the valve, a float seals against the large valve orifice. During operations, unwanted air will collect in the valve and cause a second, smaller orifice to open and close, allowing continuous system degassing. And finally, if there is a break in the pipeline causing sudden loss of liquid, the valve body will drain, drop the float and open the large orifice. This allows air into the pipeline and prevents implosion damage.



Innovative Patent Pending Design Provides
Three Critical Venting Functions



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Vaughan Company

Celebrating sixty years as your source for reliable chopper pumps and systems



OUR COMMITMENT TO YOU—RELIABILITY

As a pump user, you count on your equipment performing well every day. Who wants to worry about pump operations, especially when the pump is submerged in a greasy sump or stinky manure pit, or is otherwise difficult to reach?

Whether you operate a treatment plant that needs a cost-effective means of mechanical hydraulic mixing of sludge tanks or you're a dairy farmer or corrections facility manager who needs to avoid clogged pumps to keep the wastewater flowing, Vaughan has you covered.

WE CHOP-AND MIX-IT ALL

We could simply tell you, "trust us, our pumps can chopand mix—it all," but here's a real-world story that shows how our pumps can handle the most demanding challenges.

The three standard pumps in the main lift station serving the wastewater treatment plant in Morgan's Point, Texas, often became clogged with shop rags, lumber, plastic bottles, gloves, and wet wipes when rainfall exceeded two inches. The city spent about \$100,000 to maintain and service those pumps over seven years. After the city installed a Vaughan Company SE-Series Submersible Chopper Pump in July 2016, they have experienced over 100 inches of rainfall with no plugging incidents or other issues. And, during 2017 Hurricane Harvey, the Vaughan pumps ran continuously for seventy-two hours with no plugging incidents and no problems while pumping more than 2.5 million gallons of unscreened sewage through the lift station.

"I just wish we had purchased these pumps years ago to eliminate the maintenance headaches we endured, and the costs we incurred keeping our previous pumps in operation," says Brian Schneider, city administrator for Morgan's Point.

WHY YOU SHOULD CARE THAT WE'RE FAMILY OWNED AND MADE IN THE USA

Adding to exceptional pump reliability and performance, with Vaughan Company you get the advantages of buying from a family-owned, made-in-the-USA company. We source nearly all of our materials in the United States and manufacture 100 percent of our pumps here. We support American jobs and American companies, and by sourcing U.S. materials and making our pumps here, we reduce the costs incurred from international suppliers.



SIXTY YEARS OF BENEFITING CUSTOMERS

In 1960, company founder Jim Vaughan invented the world's first chopper pump to solve the problem of clogged manure pumps for local farmers in Washington. Sixty years later, Vaughan Company is still making the world's most reliable chopper pumps and pump systems—and providing unique solutions for farmers, treatment plant operators, and other pumping professionals.

Today, we continue to live Jim's philosophy of "what could make this better?" From in-house 3D computer modeling to computational fluid dynamics (CFD) analysis, Vaughan Company remains committed to giving our customers outstanding service and the most dependable product solutions in the world.

Further, all of us at the Vaughan Company understand the importance of exceptional customer service; take time to understand your needs; and work closely with you to tailor pump solutions that solve your unique challenges.

Contact us to learn how Vaughan Company can help you ensure reliable operations.

VAUGHAN COMPANY

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CONTACT US TO SEE HOW WE CAN HELP YOUR NEXT PROJECT





Blacoh Fluid Control

BLACOH CHATTERLESS VALVES

Blacoh's team of engineers have recently released the SENTINEL™ line of chatterless back pressure and pressure relief valves designed to eliminate valve chatter. These valves are CNC precision machined in sizes up to 2 inches (50 millimeters) and can withstand operating pressure up to 350 psi (24.1 bar).

construction and threaded ring design provide superior sealing for maximum fluid containment. A variety of plastic and metal materials are available to meet your chemical resistance requirements. Find out more at www.blacoh.com/valves.

Back Pressure Valves enhance the performance of pumping systems by applying a continuous back pressure to the system pump, while also acting as an anti-syphon valve.

Pressure Relief Valves protect pumping systems from over pressure damage caused by defective equipment or blockage in the pump system line.

Offered in a full range of options, Blacoh's chatterless valves are in a league of their own. The union-style





Carver Pump

Eighty Years of Pump Experience

Since our inception, we've become recognized as one of the leading centrifugal pump companies, building to the most demanding engineering specifications and military standards in the world.

We were one of the first American pump companies to attain ISO 9001 certification, the most recognized standard for quality in the world: your assurance that our commitment to quality includes not only our hardware, but also superior customer service, leading-edge R&D, and continuous improvement in everything we do.

So whether the job is refueling fighter jets on the deck of an aircraft carrier, supplying paint to an auto assembly line, or bringing water to the fountain in a city park, we put our reputation on the line everyday with every pump we build.

CUSTOM-ENGINEERED SOLUTIONS

Our specialty is addressing the most challenging performance requirements using advanced design tools: the latest solid modeling software for analyzing structural problems, and exceptional hydraulic design capabilities.

We've refined our expertise by delivering tens of thousands of pumps into a wide variety of applications, routinely developing new products for very specific usage. Many of our standard products can be highly customized for specific OEM applications, such as parts-washing systems and boiler/heat-exchanger cleaning systems.

Whether the challenge is pump efficiency, difficult suction conditions, or extreme environments, we'll engineer the best solution to meet your goals f or reliability, quality and performance.

THE LATEST TECHNOLOGY

Every new pump design undergoes a series of rigorous tests using computer simulation, as well as inlaboratory testing. Using the latest finite element analysis (FEA) and computational fluid dynamic (CFD) software and advances in processing speed, we optimize our designs and troubleshoot before building a prototype. •



www.mptmag.com Modern Pumping Today | November 2020 53

Check-All Valve Mfg. Co.

Since 1958, Check-All Valve Mfg. Co. has manufactured a complete line of in-line spring-loaded pistontype 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 quidelines, 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-tometal 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.



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 rareearth 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 σ lass.

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. •



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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 quarantee 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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Onyx Valve Company is a leading manufacturer of pinch valves, check valves, and pressure sensor rings. All of our products and materials are manufactured and assembled right here in America. We pride ourselves on the durability and longevity of our products. Contact us and let us design a flow control solution for you.

Onyx Valve provides pinch valves, duckbill check valves, pressure sensors, and other products and services to the following industries: agriculture, air pollution control, biogas, landfill gas and gas transport, food industries, chemical control, pulp and paper, dry material conveying, mining—minerals, storm water control, tank mixing, and wastewater—sewage, water treatment.

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Scalewatcher

Developed and patented in the Netherlands by Mr. Jan P. de Baat Doelman, Scalewatcher technology was introduced to the European market in the 1980s. With immediate market success. Mr. Doelman 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.

If our product does not work for your application, we will buy it back! With our "Performance Guarantee," you never have to worry about losing cash on a product that does not work.

Scalewatcher North America Inc. manufactures its products in Oxford, Pennsylvania, so you know they're MADE IN THE USA! We can treat pipe sizes from 1/2 inch up to and including 120 inches. Cooling towers, chillers, evaporative condensers, and boilers can all benefit from Scalewatcher water treatment. If it scales up, we can break that scale bond and show you cost savings on maintenance. No plumbing required!

Why keep adding chemicals when Scalewatcher can reduce your chemical dependency?

Break the cycle now and save on energy, water, and maintenance costs with Scalewatcher products!

For more information. call 800.504.8577 and visit www.scalewatcher.com.



SEEPEX Inc.

SEEPEX is a leading worldwide specialist in pump technology that provides progressive cavity pumps, macerators, systems, accessories, 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.

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 large in-house inventory enables us to ship 80 percent of parts orders in twenty-four hours.

MAINTAIN-IN-PLACE WITH SMART CONVEYING TECHNOLOGY (SCT)

SCT is SEEPEX's unique maintain-in-place design. It has been around for over a decade and continues to provide customers with lower maintenance times, reduced

costs, and operating efficiencies compared to other pumping methods. SCT is an easy, cost effective, drop in solution for the replacement of all older or obsolete pump brands. SCT pumps eliminate the need to remove any pipework for maintenance, do not require special tools, and have lighter components for easier and safer lifting.

The SCT design offers easy access to the split stator and guick release rotor, reducing maintenance time by up to 85 percent compared to traditional PC pump designs. The SCT design also allows for the stator to be adjusted and tightened as wear progresses. SCT stators last on average twice as long as traditional stators, save time and money on parts and maintenance, and improve performance efficiency.

MAKE THE SEEPEX SWITCH

Customers who make the SEEPEX SWITCH and replace any brand of conventional progressive cavity (PC) pump or retrofit a SEEPEX pump with a SEEPEX maintain-inplace Smart Conveying Technology (SCT) PC pump will receive a three-year performance guarantee on wear parts. •

SEEPEX.

ALL THINGS FLOW

3 YEAR WEAR PARTS PERFORMANCE GUARANTEE. SEEPEX SWITCH.

SEEPEX is so confident in the high quality of our products that we offer a 3 Year Performance Guarantee on wear parts when you make the SWITCH to a SEEPEX SCT pump. This is the only industry guarantee that includes wear parts: rotors, stators, seals and universal joints.

USE PROMO CODE: 0456

For a limited time get the 3 Year Wear Parts Performance Guarantee when you:

- Replace: SWITCH any brand of progressive cavity pump for a SEEPEX SCT pump
- · Retrofit: SWITCH an existing SEEPEX pump to SCT
- We will help to coordinate installation.

PRESSURE **UP TO 120 PSI**

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SMART CONVEYING TECHNOLOGY (SCT)

PROGRESSIVE CAVITY PUMP

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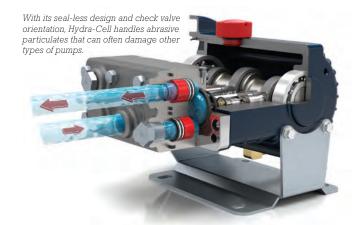
Wanner Engineering, Inc.

When William Wanner patented the "Hydra-Cell" positive displacement pump he invented more than forty years ago, he hit upon a concept for seal-less pumping technology that would develop into one of the most versatile and reliable pumps on the market today.

Hydra-Cell pumps provide dependable performance in applications as varied as oil and gas field transfer, precise metering for chemical injection, pumping high-pressure machine tool coolant, reverse osmosis, boiler feed, and many other plant and processing operations. Its seal-less design and patented diaphragm protection control enable the pump to run dry without damage.

COMPREHENSIVE PRODUCT LINE

- · Hydra-Cell seal-less pumps including the enhanced D15 vertical and D17 horizontal models
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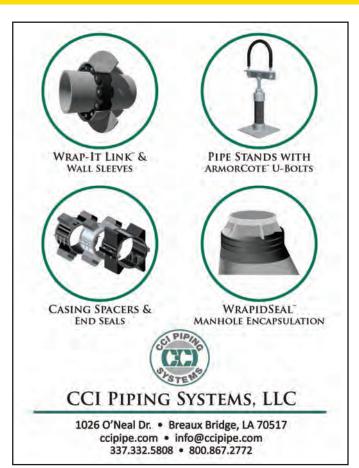
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With all our major locations having dedicated training centers, our team of sales personnel and factory authorized sales agents are able to provide exceptional industry expertise throughout the world. Our aggressive research and development programs have resulted in the design and production of technologically advanced electronic and hydraulic control systems that consistently meet the challenges of increasingly complex and diverse applications. •

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Continental Pump Co.

We are a family-owned progressive cavity pump company that has been in business since 1946, George Heath Jr. is the second generation owner. Our 22,000 square foot facility is located in the Midwest, sixty miles west of Saint Louis, Missouri. We house over two million dollars in inventory for guick order processing and shipping.

Our pumps, drive units, and replacement parts are compatible with numerous progressive cavity pump brands. Our sales staff is knowledgeable and offers great customer service and support. Our loyalty to our distributors is unmatched, and we stand behind our products.

You can contact us or visit our website for product information and locate a local distributor.

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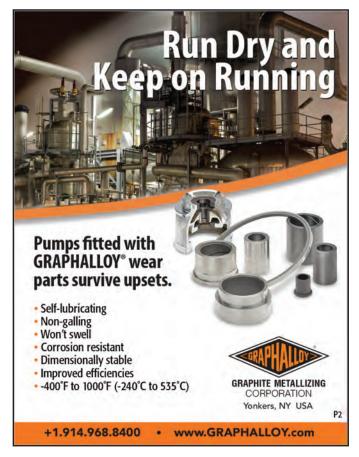
Graphite Metallizing Corporation

GRAPHALLOY® case rings and bushings allow pumps to survive repeated "run-dry" conditions, slow roll operation, and frequent stop/starts—conditions where metal and plastics fail.

GRAPHALLOY can improve the reliability and efficiency of your pumps. In horizontal and vertical pumps, GRAPHALLOY will not seize or gall if run dry or with marginal lubrication. The GRAPHALLOY fitted pump is able to survive upsets, dry running, loss of suction, slow roll on standby, and other transient conditions that would damage a conventionally fitted pump.

GRAPHALLOY can be the solution to the toughest bearing, bushing, thrust washer, cam follower, or pillow block bearing design problem. It is available in over 100 grades with specific properties that meet a wide range of engineering solutions and specifications. FDA acceptable grades of GRAPHALLOY are available for food contact equipment. NSF® International has certified two grades of GRAPHALLOY material for use in municipal well pumps and water treatment plant applications.

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Helwig Carbon Products

One of the fastest growing areas in the pumping industry is bearing protection. When VFD drives control pump motors, you get significant energy savings and longer pump life. The downside is the induced shaft currents that are created in the pump motor will discharge through the motor bearings and cause frosting, fluting, noise, and eventual failure. This downtime can be costly. These induced currents can be mitigated by installing a Bearing Protection Kit (BPK) with a silver graphite brush on the motor or pump. This engineered solution will provide a path of least resistance for the induced currents and lead them to ground without going through the bearings. You will experience longer pump life, less costly downtime, fewer returns, and satisfied end users with a Helwig Carbon Products BPK.

Helwig Carbon also makes mechanical carbons for pump applications. These components are used for vanes, rotors, seals, bushings, and bearings in a variety of pumps. These precision machined carbon components maintain tight tolerances. Carbon graphite bushings are self-lubricated and can operate at high temperatures. A wide variety of grades and sizes are in stock, plus we can manufacture custom parts quickly. For more information, visit www.helwigcarbon.com. •



InfoSight

In industrial environments, accurately tracking assets means knowing what you have, where it is, and its condition. InfoSight Corporation's metal tags withstand physical challenges including heat, abrasion, and exposure to ultraviolet light and enable error-proof tracking that can be maintained throughout an asset's lifespan.

InfoSight's tags can be used to track a wide variety of assets. One application is for plants that are required to have Leak Detection and Repair Programs. InfoSight's LDAR Tag System gives plants control over each LDAR component's unique ID number and tag supply. Customers order blank tags and print new ones only as needed. Additionally, InfoSight's unique LDAR tag design allows the attached tag to be read from either side.

InfoSight's durable metal tags can be applied directly to the asset or attached using a flexible wire type tie. The software included with InfoSight's laser tag printers allows the user to design tags that include alphanumeric messages, barcodes, and logos. A scan of the barcoded tag can confirm that the operator is checking the correct asset, update service records to show the completed work, or access notes and technical information via a customer's IT system.

InfoSight tags make asset identification and tracking simple. ◆



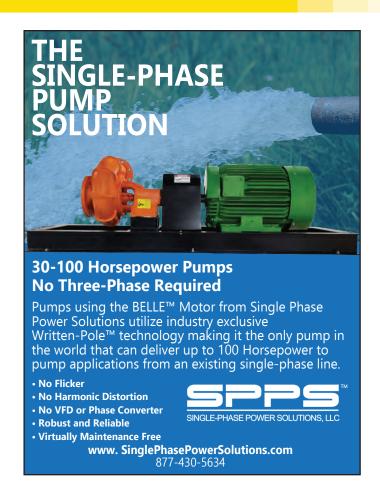
Single-Phase **Power Solutions**

Single-Phase Power Solutions knows that the location of your pump system may not always have access to threephase power. We also know that using a phase converter can be problematic, especially where reliability, ease of use, and issues with harmonics are concerned.

Single-Phase Power Solutions is proud to provide you with the world's only high horsepower electric pumps that run on single-phase energy, reducing cost and maintenance, while increasing accessibility and sustainability.

Our pump systems provide a robust, reliable, and energy-efficient solution for your pumping application. Available in sizes up to 100 horsepower, our systems utilize the industry's highest quality components, and can be customized to meet your specific requirements.

All SPPS Pump Systems are made in America, which means faster build and quicker delivery times. A pump system from SPPS can pay for itself in less than a year, with rebates available from most utilities. The U.S. Department of Energy, the USDA, and Natural Resources Canada accept our pumps as an energy-saving upgrade when replacing an engine-driven pump. •



Sun-Star Electric, Inc.

Sun-Star Electric, Inc. is a Texas corporation established in 1977 and is the principal worldwide distributor for Hitachi submersible motors.

Sun-Star Electric, Inc. designs and manufactures its own Sun-Star branded oil-filled and wet-wound submersible motors for standard and special applications along with the deep-ocean-capable Agua Star motor.

Sun-Star Electric is an expert for rapid service and repair of the power generation industry's critical, highpressure water-filled boiler water circulating pump motors.

Sun-Star Electric, Inc. maintains a 75,000-square-foot manufacturing facility, which is fully equipped for the manufacture and repair of submersible electric motors and includes full fabrication, machining, winding, and inhouse testing capabilities. In 2011, SunStar Electric, Inc. transitioned to an employee-owned company (ESOP).



