Whether it's at product launches, factory tours, or trade shows, the staff at MPT is afforded an up-close look at the newest offerings for our industry, and each December, we look back on the year that was and present our choices for the Top Products spanning the industrial pump and rotary equipment markets.

P P R ODUCTS In the pages that follow, MPT shares its selections for the products that speak to the industry's needs for efficiency, reliability, and innovation. Each of our Top Products was chosen through submissions from our staff, advertisers, and readers like you. The products range from large multinationals you're likely familiar with to smaller, regional suppliers worthy of your attention.

> Regardless of their size or reputation, they all offer value you can take into the new year. Enjoy!



BLACOH INDUSTRIES SURGE TRANSIENT PRESSURE MONITORING

2022 / ΤΟΡ ΡΚΟΟÚCTS



ften referred to as surge or water hammer, transient pressures occur when there is a rapid change of fluid velocity in a pipeline as a result of normal and sometimes unplanned operations, such as the start/stop of a pump or the closing of a valve. These pressure variations can be positive or negative and have a magnitude several times the normal or maximum operating pressure, resulting in severe system damage. The term water hammer was coined to describe the audible hammering sound in the pipes as a result of these transient pressures.

While transient pressures are heard audibly in some systems, in other systems transient pressure waves go undetected until something breaks. The duration of a transient event can be anywhere from several hundredths of a second up to a few minutes. It is quite common for operators and engineers to review pressure records after suspecting a pressure problem in search of "the event."

Typical pressure measurement systems often capture small ticks in pressure. When reviewing pressure records, these small ticks are often deemed acceptable (perhaps even unrelated) to the event in question, especially if they are within design allowances. However, what remains unseen is the true degree of pressure fluctuations, which can only be captured with a high-speed data recorder such as Blacoh's patented SurgeWave™ Transient Monitoring System.

The SurgeWave system allows pipeline operators and maintenance engineers to accurately detect and record transient pressure events occurring in water, wastewater, and petroleum/chemical pipelines. It is unique in that it employs a system of dynamic pressure transducers and digital technology to monitor pipelines for indefinite periods of time. When a transient such as a pressure spike or water hammer event is detected, the system activates a high-speed data recorder to record the event up to 100 times per second. The granularity of this data allows users to see broader and more frequent pressure fluctuations that normal pressure measurement devices cannot provide. The engineering breakthrough that is SurgeWave allows designers, engineers, manufacturers, and operators the ability to assess the overall performance of a pipeline, pumping plant, or petroleum refinery using non-destructive, real-time sensors and hand-held monitoring equipment. With it, users are able to capture true transient pressure fluctuations, address pressure loads immediately, and, ultimately, better protect their pipeline systems.

For more information, visit WWW.BLACOH.COM



CHECK-ALL VALVE

ADAPTER VALVE

S ince 1958, Check-All Valve® Mfg. Co. has manufactured a complete line of spring-loaded pistontype check valves, also known as silent check valves. We service customers all over the world in the chemical, petrochemical, pharmaceutical, biofuel, food and beverage, water treatment, OEM, and MRO industries and our products are trusted in the most demanding applications.

Check-All Valve® is happy to announce the addition of the Adapter Valve to our full-service line of check valves. The Adapter Valve is available in two styles, model AM (MNPT x FNPT) and model AF (FNPT x MNPT). Both models have the same size pipe thread on both ends for installation where a threaded straight adapter is needed. The one-piece body design is machined from high quality bar stock and is manufactured at our factory in West Des Moines, Iowa.

FEATURES

- SIZE: 0.5- to 4-inch NPT threads
- BODY MATERIALS:

316 Stainless Steel, Brass, Carbon Steel, Alloy 20, Alloy B, Alloy C-276, Monel® 400, Titanium

• SEAT MATERIALS: AFLAS[®] Buna-N EPDM KALRE

AFLAS®, Buna-N, EPDM, KALREZ®, ''Metal-to-Metal'', Neoprene, PTFE, and FKM

• SPRING MATERIALS:

316 SS, Alloy C-276, Alloy B, INCONEL[®] X750, MONEL[®] 400, 17-7PH SS, and Titanium



AM Model: MNPT inlet x FNPT outlet



AF Model: FNPT inlet x MNPT outlet



For more information, call 515.224.2301, email sales@checkall.com, or visit WWW.CHECKALL.COM

2022 / ΤΟΡ ΡΚΟΟÚCΤS

INDUSTRIAL FLOW SOLUTIONS

OVERWATCH® DIRECT IN-LINE PUMP SYSTEM



PUMPING



SHREDDING



ndustrial Flow Solutions™ (IFS) OverWatch® direct in-line pump system offers a revolutionary solution for L the municipal wastewater and stormwater industry. The OverWatch patented system is designed to eliminate the wet well by lifting influent directly from the inlet to the discharge while detecting and responding to solids, eliminating potential clogs. Operation is based on continuous pumping, decreasing backups by lifting influent directly at the entry point, without water loading. Because the system handles influent as it arrives, rags, fats, oils, and greases (FOG) have no chance to solidify and collect near the pump's inlet.

APPLICATIONS

- Sewage and solids handling
- Stormwater management
- Wastewater
- Lift / pump stations

ELIMINATE THE WET WELL AND IMPROVE SAFETY

The OverWatch system creates safer working conditions for maintenance crews and reduces environmental impact. Because influent is contained within the system, it never becomes atmospheric. As a result, there is no buildup or exposure to hazardous odors, bacteria, or hydrogen sulfide (H₂S) gases; work safety is optimized.

NO DOWNTIME FROM A CLOGGED PUMP

Redundant dual pump design maximizes reliability to reduce maintenance and extend the life expectancy of the system. Simplified installation and maintenance means no more screen cleaning and cost savings!

SELF MONITORING SAVES TIME AND MONEY

The OverWatch smart sensing system is designed to improved operational efficiencies as it adjusts in real time to manage flow, detecting and removing clogs without human intervention.

PATENTED DIPCUT® IMPELLER

Variable vane, vortex impeller design features hinged vanes that fold flat exposing shredding blades when operated in reverse rotation. When an elevated torque level above the threshold value is detected, the smart, self-monitoring variable frequency drive reverses the direction of the impeller rotation, changing its function to shred and remove the clog without human intervention, all without losing its high hydraulic pumping efficiency.

CASE STUDY: SHERMAN, NEW YORK

This rural community is home to 730 residents and a lift station that caused twenty-six hours of maintenance each year to remedy frequent pump clogging and weekly bar screen cleaning. The 36-inch silo access descending 20 feet into the ground compromised worker safety.

Solution: One OverWatch® System replaced two submersible pumps previously used to lift influent to the plant headworks, converting the pit into a dry well. Total annual cost reduction is nearly \$8,500 in vacuum truck rental, removing clogs, manual bar screen cleaning/raking, and preventative maintenance, reducing total overall maintenance to twenty minutes over four years.

For more information, visit WWW.FLOWSOLUTIONS.COM



SUNDYNE ANSIMAG SEAL-LESS MAGNETIC DRIVE PUMPS

NSIMAG seal-less magnetic drive pumps are specifically designed for chemical processing applications. All wetted parts are molded ETFE components that can safely handle a wide range of corrosives and solvents without corrosion. A patented, fully encapsulated mag drive hermetically seals the inner magnets to isolate them from process fluid and maintain magnet integrity for the life of the unit. A Kevlar-fiber reinforced vinyl ester shell delivers unprecedented reliability.

During the last several months, ANSIMAG pumps have been used in a wide range of prominent applications. They're used to pump the harsh chemical polymers that coat the electrodes for electric vehicle lithium-ion batteries. ANSIMAG pumps are used by COVID-19 vaccine manufacturers to pump the coolants used in freeze driers. And ANSIMAG pumps are used by Hydrogen Fuel Cell producers to pump caustic chemicals into electrolyzers to adjust the pH of water used to generate green hydrogen.

ANSIMAG pumps are more energy-efficient than mechanically sealed pumps. An innovative rear casing generates no eddy currents, thus eliminating heat generation and reducing energy costs. Because ANSIMAG pumps do not have seals—there are no leaks, no emissions, and no costs related to seal maintenance.

ANSIMAG benefits include:

- Zero leakage: Seal-less design and a single, fully-contained O-ring eliminates possible leakage.
- Chemically resistant lining: Carbon fiber reinforced ETFE is resistant to most chemicals.
- Secondary containment: Lined Kevlar fiber/epoxy offers unsurpassed pressure handling capability.
- Corrosion protection: Powder coat exterior is more durable and resistant than epoxy-based paints.
- Durable construction: Ductile iron exterior is designed for heavy-duty chemical applications.
- Magnetic drive: Hermetically seals the inner magnets, isolating them from the process fluid.
- Fully-encapsulated inner drive: Provides unsurpassed resistance to chemical attack.
- Easy service: Nine wetted parts and a back pull-out design enables service without breaking the wet end.
- Small footprint: Close-coupled design offers quiet operation. •

For more information, visit WWW.SUNDYNE.COM/PRODUCTS/ANSIMAG-PUMPS



VAUGHAN COMPANY

THE VAUGHAN ROTAMIX®

High pump to keep things flowing smoothly. The Vaughan Rotamix[®] system is the world's most cost-effective and durable means of mechanical hydraulic mixing for sludge tanks, digesters, and other high-volume applications. Cutting-edge and American-made, the Vaughan Rotamix[®] pairs the original Vaughan Chopper Pump with a set of high-velocity nozzles to mix the tank, handling any tough solids.

WE STIR UP EVERYTHING BUT TROUBLE

As treatment plant operators know, the absence of hydraulic mixing leads to thick sludge and difficultto-pump slurries. To solve this problem, The Rotamix[®] system incorporates several basic principles of physics and hydraulics, including uniform and vortical fields of flow, induced flow and surface contact. Combined, this unique mixing system optimizes solids contact due to the homogeneous state.

WHAT MAKES ROTAMIX[®] DIFFERENT?

Nobody else in the market can claim to have the Rotamix[®] system's nozzle assemblies and the Vaughan Chopper Pump. The system's mixing power is supplied by fixed nozzle assemblies installed at a factory-specified angle and permanently tightened so no additional adjustments are required. These high-velocity nozzles offer a tenyear warranty and increase the effective mixing volume, inducing entrained fluid which significantly increases the overall mixing effect. In a uniform flow field, the entire contents rotate as a solid unit with the highest velocity on the outside. In a vortical flow field, fluid velocities are the greatest at the center, thus creating a vertical-axis vortex. With multi-zone mixing, average velocities are higher and steadier, preventing solids from settling in the center.

The heart of the Rotamix[®] system is the Vaughan Chopper Pump, which provides clog-free pump operation. Vaughan's proven technology over the past sixty years provides low maintenance and the highest reliability of any chopper pump. Continuously chopped solids not only eliminate nozzle clogging but enhance sludge quality. Digester efficiency is increased by further reducing solids' size and increasing surface contact.

Using custom engineering software, each application is analyzed and sized by Vaughan® in order to achieve



the desired mixing effect. The Rotamix[®] system may be applied in circular, rectangular, oval tanks and basins and other unique process configurations such as egg-shaped digesters, CSO tunnels, and pump stations. No more issues with conventional system—just real cost-effective sludge mixing.

AMERICAN-MADE RELIABILITY YOU CAN COUNT ON

Family-owned and operated, Vaughan Company specializes in durability with over sixty years of experience and four generations of expertise. By combining exceptional technology with a history of unmatched pump reliability and customer support, the Vaughan Rotamix[®] is engineered to handle whatever your job requires.

For more information, call 360.249.4042, email info@chopperpumps.com, or visit WWW.CHOPPERPUMPS.COM



WANNER ENGINEERING

HYDRA-CELL MT8 LOW FLOW/HIGH PRESSURE METERING PUMPS WITH FKM O-RINGS

Prive diaphragms with fluoroelastomer (FKM) o-rings are now available for Hydra-Cell MT8 metering pumps. FKM is recommended in applications where exceptional chemical, thermal and oxidationresistant properties are desired. FKM also has a wide operating temperature range and good mechanical properties.

Manufactured by Wanner Engineering, Inc., MT8 pumps are designed for injecting, dosing, mixing, spraying, and other metering applications that require a low flow rate and discharge pressures up to 3500 psi (241 bar). They feature hydraulically balanced, multiple diaphragms to provide smooth, linear, virtually pulse-free flow without the need for pulsation dampers. Featuring electronic flow control, MT8 model pumps exceed API 675 Performance Standards for accuracy (±1 percent), linearity $(\pm 3 \text{ percent})$, and repeatability $(\pm 3 \text{ percent}).$

MT8 metering pumps have a minimum flow rate of 0.06 gallons per hour (0.227 liters per hour) and a maximum flow rate of 8.00 gallons per hour (30.28 liters per hour). Metallic pump heads (316 Stainless Steel, Hastellov C, and Alloy 20) have a maximum discharge pressure of 3500 psi (241 bar). Maximum discharge pressure for non-metallic models is 350 psi (24 bar) for PVDF pump heads and 250 psi (17 bar) for PVC pump heads. The hydraulically actuated, balanced diaphragms provide superior performance across the entire pressure range.

The patented Hydra-Cell overfill/ underfill valve system ensures optimum actuating oil on every stroke for continuous accuracy and protects the pump and diaphragms. The integral relief valve protects the pump from overpressurization on the discharge side. If a blocked suction line or other conditions occur, the MT8 will run dry indefinitely without damage to the pump.

MT8 pumps are optionally available with a manual adjustment controller to provide local control of the pump's flow rate. It can be used in hazardous-duty locations and to expand the turndown ratio within the performance envelope of the pump.

The MT8 duplexing option uses one motor and gearbox reducer to operate two pumps, thus doubling the flow capacity to 16 gallons per hour (60.56 liters per hour) while lowering initial costs. Maintenance requirements are minimal for Model MT8 pumps because its seal-less design means no seals to leak, wear, or replace. Simple-to-replace cartridge check valves have doublesealing surfaces.

MT8 pumps feature robust construction and have a small, space-saving footprint. They are available with various accessories to enhance pump system performance, including calibration columns, back pressure valves, pressure relief valves, SmartDrive motor controllers, oil cooler systems, and a magnetic oil drain plug. Customization and testing services are also available.



For more information, call 612.332.5681, email sales@wannereng.com, or visit WWW.HYDRA-CELL.COM.



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YASKAWA

FP605 INDUSTRIAL FAN AND PUMP DRIVE



IP20/UL Type 1

IP55/UL Type 12





IP55/UL Type 12 Backside Flange

ere for the long haul and helping to contribute to a healthy and sustainable environment, the Yaskawa FP605 is an easy to install and configure industrial fan and pump drive. It is designed for countless applications to reduce energy use, including centrifugal compressors, fans, pumps, and process control in industries such as material handling, food and beverage, chemical, rubber and plastics, textile and printing.

The FP605 builds on the successful legacy established by its predecessor, the P1000 AC Drive. Like Yaskawa's latest GA800 and GA500 AC Drives, the FP605 uses flexibility, sustainability, and ease of use to make the complicated simple.

FLEXIBILITY

w/Switch

The FP605 shows its flexibility by providing a drive solution for all environments, having the ability to run any motor type, accommodating hardware and network control solutions, with a simple installation procedure.

SUSTAINABILITY

The FP605 proves its sustainability with its integrated functional safety capability, environmentally-friendly materials, and, as always, Yaskawa's durable and long-lasting quality and design.

EASE OF USE

We made the FP605 easy to install and easy to start up. Its innovative and award-winning in-box media, intuitive keypad, and software tools help you get the drive out of the box and into the field as fast as possible.

For more information, visit WWW.YASKAWA.COM



AUTOMATIONDIRECT FREE PLC TRAINING-NO PURCHASE NECESSARY

As the world around us becomes more and more automated, an understanding of electrical control systems becomes more and more vital. Manufacturers, as well as the technicians, integrators, and/or engineers they employ, know firsthand the benefits automation provides. In fact, for many, automation has been the key to their success. That's why we feel the more people know about automation, the more prepared they are to succeed in a world that's increasingly automated.

Access free video libraries that explain the fundamentals of PLC control from entry level programming to advanced PLC functions. The online video series initially offered non-brand specific PLC basics with topics on logic gates, basic switches, sinking and sourcing, scan time, I/O fundamentals, memory addressing and more. Additionally, the course provides in-depth training on AutomationDirect's families of PLCs including the award-winning CLICK PLC. No time or viewing limitations, simply enter your email address to register your account or continue your training.

AutomationDirect offers tens of thousands of highvalue industrial automation products, both name brand and private-labeled, that are chosen by our product



engineers for their best-in-class features, price, and quality. Our name-brand products come from companies such as Fuji Electric, EATON, and Hubbell/Wiegmann. We also co-engineer many of our private labeled products with the manufacturer to ensure our customers are getting the features they ask for at prices they can afford. And, once a purchase is made our automated facility has an order accuracy of 99.98 percent but we do offer a thirty-day money back guarantee on most products for any last-minute changes customers may need. And, orders over \$49 ship free of charge.

For more information, visit WWW.AUTOMATIONDIRECT.COM

GREASEZILLA

FATS, OILS AND GREASE (FOG) SEPARATION SYSTEM

Developed by Downey Ridge Environmental Company, Greasezilla® is a turnkey system that provides an ecological and cost-effective process to divert FOG from the waste stream. Greasezilla® leaves almost nothing to be landfilled and has a total operating cost of one to two cents per gallon, making Greasezilla® the ideal front-end pretreatment system for FOG waste.

Greasezilla's[®] hydronic thermal system takes grease trap waste in its trucked-in form and separates it into three layers—brown grease, batter, and water. The brown grease is pumped off and stored, with the remaining layers sent to wastewater treatment plant headworks or anaerobic digesters. The brown grease is a highquality advanced biofuel, ready as a biodiesel feedstock. Greasezilla[®] can also polish used cooking oil (UCO) into a premium yellow grease advanced biofuel.

Greasezilla[®] is fully automated, making it easy to operate and maintain with minimal staffing. Greasezilla's[®] standard two-tank reactor system requires a footprint of only 1,000 square feet and is available in two formats to accommodate interior or exterior placement. Currently, the company is working closely with pumpers and wastewater treatment sites across the nation eager to incorporate Greasezilla's[®] sustainable, proven, and profitable technology into their operations.



For more information, visit WWW.GREASEZILLA.COM.



2022 / TOP PRODUCTS

HELWIG CARBON BPK: ULTIMATE SOLUTION TO SHAFT GROUNDING

Bearing failure is the number one cause of electric motor failure and it can be avoided. Many pumps utilize a variable frequency drive (VFD) to increase pump motor efficiency. While VFDs lower power consumption, they also induce currents onto the motor shaft. These shaft currents will often discharge through the motor bearings causing fluting, burnt grease, and eventual bearing failure. Downtime, repairs, and warranty claims can be the result of bearing failure and can be extremely costly to any company.

Helwig's BPKs (Bearing Protection Kits) have been leading the industry in shaft grounding solutions for years. Our proven silver graphite brush technology, K007, is unlike other shaft grounding systems because it eliminates the need for maintenance and will keep bearings protected year-after-year. Helwig BPKs effectively divert induced electrical currents away from the bearings. The result is the lowest shaft voltage and maximum discharge to ground through the kit rather than through the bearings, protecting them from damage and failure.

From small pumps and motors to large industrial applications, the BPK's versatile shape and size have made shaft-grounding solutions possible for motors across all industries. BPKs have also proven to be effective in



contaminated and harsh environments. The constant force spring provides a self-cleaning track that is undeterred by grease and other contaminates. Additionally, our MultiFit Bracket mounting system allows for a BPK to be attached to multiple bolt designs while keeping constant contact on the motor shaft. The MultiFit Bracket system can be used with existing bolts, which eliminates the need for drilling and tapping.

For more information, visit WWW.HELWIGCARBON.COM



