

Midstream Solutions



**Completion &
Production Solutions**

Midstream Solutions

Midstream summary

We are a leading provider of API 6D valves, ASME “U” stamped quick-opening closures, and pumps for lease automatic custody transfer (LACT) units to the oil and gas industry. These products are used throughout the global midstream distribution and transmission markets. These include gate valves, ball valves, plug valves, check valves, threaded closures, internal door closures, clamp-style closures, and progressive cavity pumps.

Our goal is to provide safe, high-quality, reliable products to customers. With more than 60 years of experience in these vital pipeline markets around the globe, we can meet almost every need with either standard configured products or by providing complete, engineered solutions to meet almost any requirement.

Aftermarket

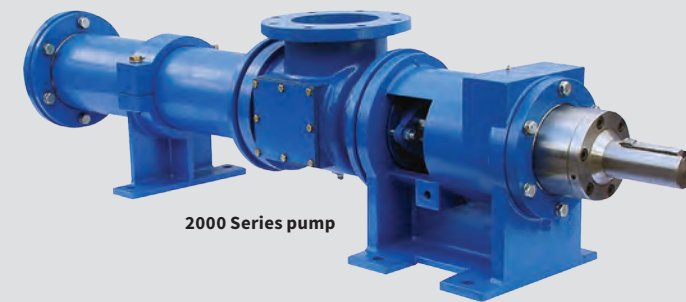
We have developed an excellent aftermarket program for the pipeline and process industries. We specialize in rapid response for customer property repair, field services, and remanufactured products. High-quality assurance standards ensure customers are receiving the best products and services.

Our group maintains a large inventory of new and used gate, ball, check, and double block-bleed plug valves for remanufacturing to customer requirements and quick delivery. Trade-in and buyback programs are available to manage budgets and maximize investment. Service centers strategically located throughout the United States allow us to support any competitor valve of similar valve type that we supply. Our service technicians are NCMS trained, operator qualified, and listed on ISNetworld.

- New valve inventory
- Remanufactured valves
- Field services
- Customer property repair
- Technical support
- Customer training
- Customer asset management
- NCMS trained technicians
- ISNetworld listed
- Veriforce trained
- Retrofits/upgrades

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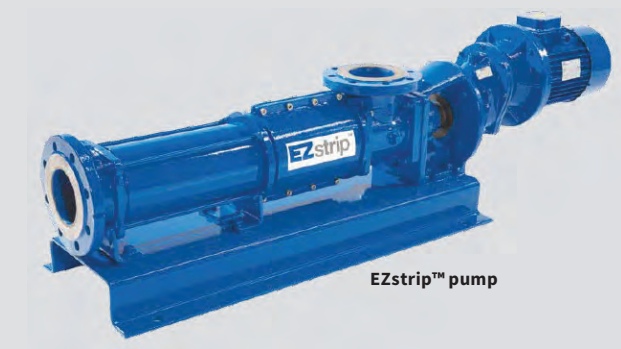
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2000 Series pump



500 Series pump



EZstrip™ pump

Pumps

Pipeline booster pumps

Moyno™ pumps have the field-proven performance and the advanced technology to effectively handle multiphase fluid transfer and LACT applications in the oil and gas industry. The Moyno progressive cavity pump provides low-shear operation with a steady, nonpulsating flow to accurately transfer hydrocarbons from the LACT meter to the pipeline owner. In addition, this versatile pump is effective in handling high-pressure saltwater injection as well as high-pressure oil pipeline injection applications.

Features

- Low shear
- Steady, nonpulsating flow
- Reliable accuracy in transferring to a pipeline
- Smaller footprint and lower cost compared to piston and gear pumps

Benefits

- Progressing cavity pump principle ensures steady output pressure and nonpulsing flow with minimal slippage—a very useful feature when pumping heating oil to burner nozzles, for example
- Smooth action and resilient rubber stator ensures quiet running—ideal for light industrial and domestic installations
- Simple design and easy dismantle
- An abrasion- and chemical-resistant stator for handling viscous liquids and random solids

2000 Series pump

Features and benefits

- Move abrasive fluids
- Flow is a function of rotational speed
- Varying fluid viscosity does not impact pump performance
- Self-priming with no special startup procedures
- Quiet operation and no vibration
- Up to 2,160 GPM capacity/73,970 BPD
- Temperature: 14°F up to 320°F

Applications

- Crude oil transfer
- Water injection
- Produced water transfer
- Oil/water separation
- Multiphase fluid transfer

EZstrip pump

Features and benefits

- Preassembled drive train available with 2-year warranty
- Eliminate dismantling lengths
- Low-shear pumping action
- Varying fluid viscosity does not impact pump performance
- Self-priming
- Quiet operation and no vibration
- Up to 727 GPM capacity/24,900 BPD
- Temperature: 14°F up to 212°F

Applications

- Crude oil transfer
- Water injection
- Produced water transfer
- Oil/water separation
- Drain transfer

500 Series pump

Features and benefits

- Compact design
- Low-shear pumping action
- Varying fluid viscosity does not impact pump performance
- Self-priming
- Quiet operation and no vibration
- Up to 53 GPM capacity/1,815 BPD
- Temperature: 14°F up to 240°F

Applications

- Sump and drain transfer
- Crude oil and water transfer
- Oil/water separation
- Waste tank recycle
- Chemical injection



Closures

Yale Y2000 closure

Our Yale™ Y2000 is a clamp-style closure that’s specifically designed for pipeline applications currently 6 to 24 in. The operation is simple and safe without the need for special tools, and it does not place the operator in harm’s way during any step of the opening process. Standard design codes meet ASME BPVC Sec. VIII, Div.1, and our Y2000 closure is the perfect alternative to the traditional threaded closure.

Features

- Quick opening in less than 90 seconds
- Simple operation with no special tools required
- Pressure class – vacuum through ANSI 600
- Stocked inventory sizes available: 6 - 18 in. offered in STD and XH; 20 – 24 in. offered in Sch 40 and XH
- Dual-certified ASME SA350 LF2 CL1/ASTM A694 F52
- .5 design factor
- Code stamp available on request
- PAV pressure warning device is integral to closure operation
- Compliant with pipeline design codes ASME B31.4, ASME B31.8, and CSA Z662
- Fabricated in the US; available in weld end and flanged end

Sentry and Sentry II closures

Our Sentry™ closure design relies on a simple locking ring that slides within a groove machined into the hub. When expanded to the closed position, the locking ring securely locks the door into position. This design methodology is proven within the oil and gas industry, provides distinct advantages of integral safety, and avoids the reliance on external clamps with combined screw thread expanders. Heavy-duty components are used to actuate the locking ring and are designed to withstand the rigors of long-term operation. Components are designed and arranged to ensure secure retention of all hinge hardware and simplified handling by fabricators.

The original Sentry design utilizes a pressure-energized lip seal available in: HNBR, FKM (fluoroelastomer), low-temperature Buna-N or HNBR, and explosive decompression resistance (EDR) elastomers. The Sentry II design utilizes a standard cross-section O-ring that allows for positive sealing in low-pressure and vacuum applications, as well as being available in a variety of materials to fit a wider range of process fluids and temperatures.

Features

- True, quick-opening – typically less than 90 seconds
- Simple operation– no special tools required
- Pressure warning device is integral to closure operation
- Fully compliant with ASME Boiler Pressure Vessel Code Section VIII, Division 1
- Compliant with all applicable pipeline design codes
- Fail-safe design
- Sizes available–10 through 74 in.
- Operate from -50°F to 550°F (-45.5°C to 287.8°C)
- Pressure classes–300, 600, 900, 1,500 psi

Additional options include

- Horizontal or vertical
- Stainless steel, duplex, super-duplex
- Inconel™ weld overlay
- High-yield hub materials for pipeline specifications
- Offshore external hinge trim



Yale Figure 500 small threaded

More than 60 years of reliable field service have made Yale closures the leader in the industry. With the original Figure 500 closure, Yale was first to develop the inherent safety and operating ease of a threaded closure. The Figure 500 closure design combines simplicity and reliability through the use of a rugged, modified ACME thread to fasten the cap to the hub. The pressure seal is achieved by an O-ring set in the face of the hub. Figure 500 closures are manufactured in sizes 2 to 14 in.



Yale Figure 500R large threaded

The Figure 500R closure was designed for larger diameter closure applications and is machined with a bevel seat. The bevel seat on the hub provides the operator an accurate stabbing section and reduces the risk for thread and seal damage. All Figure 500R closures also have a minimum of 3 in. thread length for greater safety and mechanical sealing integrity. The Figure 500R design is available in sizes 16 to 54 in. Closure horizontal hinges swing left or right for sizes 16 in. and above.



Yale Figure 515 flanged

The Figure 515 flanged closure offers a bolted flange-to-flange configuration. A rugged ACME thread fastens the cap to the hub, making the Figure 515 closure the safest in the industry. The pressure seal is achieved by an O-ring set in the face of the hub. Figure 515 closures are available in diameters ranging from 2 to 42 in. and ANSI class 150 through 1,500.



Yale Figure 500 safeguard lugless

Yale Figure 500 SafeGuard lugless closures provide productivity, durability, and safety for the most critical installations. The lugless feature of the SafeGuard closure prevents in-field safety risks associated with hammering on the closure cap lugs as well, as the potential for damage to the closure that could hinder its sealing capability and shorten the service life of the closure. The Yale SafeGuard closure can be easily operated with a standard 24- or 36-in. pipe wrench.



Typical Yale application

Closure accessories

Closure actuator tool

For easy operation, 16 in. and larger closures are furnished with a Closure actuator tool (CAT). The CAT tool is designed to assist in both opening and closing the closure.

Yale lug wrench

Closure caps, 4 to 14 in., are formed with the characteristic Yale lugs. A specially designed detached wrench slips over the lugs for quick closure closing and opening.

Thread gauge and field training

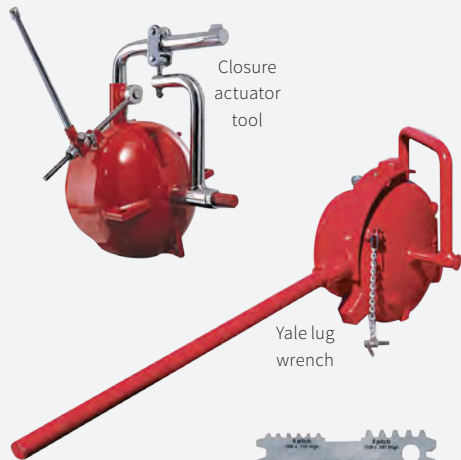
Corroded, severely worn, or damaged threads can be a safety hazard. Thread gauges and seminars are available for training field personnel in proper maintenance and thread inspection procedures.

Conversion: Closure to figure 505 pipeline union

Twelve-inch and smaller ANSI Series 150 through 600 closures can be converted to Yale Figure 505 unions. This is a convenient method to extend the pipeline without welding.

Pressure warning device

An additional safety feature — a pressure warning device is furnished as standard equipment on all 6 in. and larger closures and may be purchased as an option on smaller sizes. Before the cap can be rotated, the seating screw must be removed from the pressure warning device body. This action will warn the operator of any residual pressure in the vessel before the closure cap is loosened. The pressure warning device is not designed to release internal pressure.



Thread gauge and field training



Conversion: closure to figure 505 pipeline union



Pig signallers

Features

- Omni-directional trigger with a joystick like action
- No dynamic seals
- Failsafe trigger which is not activated by vibration/flow
- Compact design
- Lightweight
- Magnetic operation
- Stainless steel construction



Benefits

- Easy installation, increased repeatability, and reliability
- Reduced maintenance
- Prevents false signals
- Minimum space requirement
- Simple installation anywhere through 360°F (182°C)
- Stable even in most hostile environment



Valves

T1-EX expanding gate valve

The T1-EX expanding gate valve is designed for critical service. This full-bore, through-conduit gate valve features a mechanically sealing gate to ensure positive shutoff. The valve can be trimmed to meet most specifications, handling a wide range of products and services. Extensions and adaptations for actuation are options regularly requested and provided.

When the valve is completely closed, the gate and segment are tightly wedged against each seat. During operation, the gate and segment retract from the seats prior to travel. This retraction reduces wear on the resilient seat material and protects sealing surfaces in the open and closed positions.

Features

- Manufactured and tested to API 6D and ANSI B16.34 specification
- Inline repairable
- Repeated positive shutoff
- Provable zero-leakage
- Reduced wear on sealing surfaces
- External thermal body relief (XTBR)
- Injectable stem packing
- Press-fit seats
- Sizes available–2 to 36 in. full port
- Pressure classes–300, 600, 900, 1,500, 2,500 psi
- Operate from -50°F to 550°F (-45.5°C to 287.8°C)



T2-SL slab gate valve

The T2-SL slab gate valve is rugged and reliable. This full-bore, through-conduit gate valve features hydraulically energized seats to assure positive shutoff.

Features

- Manufactured and tested to API 6D and ANSI B16.34 specifications
- Hydraulically energized seats
- Full-bore/through-conduit
- Inline repairable
- Reduced wear on sealing surfaces
- Seat sealant injections port
- Sizes available–2 to 36 in. full port, through-conduit
- Pressure classes–150, 300, 600, 900 psi
- Operate from -50°F to 250°F (-45.5°C to 121°C)



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