

# Midstream

# Midstream Summary

We are a leading provider of API 6D valves, ASME "U" stamped quick opening closures and pumps for 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, quality and reliable products to customers. With over 60 years of experience to 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 assure customers 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 and 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

# Pumps

## Moyno™ LACT System Pumps

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Moyno™ pumps have the field-proven experience 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 non-pulsating 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, non-pulsating flow
- Reliable accuracy in transferring to a pipeline
- Smaller footprint and lower cost compared to piston and gear pumps

LACT Unit



General Utility Pumps



### Features

- Progressing cavity pump principle ensures steady output pressure and non-pulsing 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

# Closures

## Sentry™ and Sentry II

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 EDR (explosive decompression resistance) elastomers. The Sentry II utilizes a standard cross-section O-ring which allows for positive sealing in low pressure and vacuum applications; as well as being available in a wider variety of materials to fit a wider range of process fluids and temperatures.



Launchers and Receivers

### 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"
- Operate from– -50°F to 550°F (-45.5°C to 287.8°C)
- Pressure classes– 300, 600, 900, 1500

### Additional Options Include:

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



Large Vertical Closure

## Yale™ Safecamp

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We extend its line of field-proven pipeline and vessel closures with the Yale SafeClamp closure. Featuring a patent pending, innovative external clamp ring design, the Yale SafeClamp closure features notable safety, sealing, and operational advantages that provide significant benefits to the operator.

### Launchers and Receivers



#### Features

- True quick opening- typically less than 90 seconds
- Simple operation- no special tools required
- Safe operation for operator working at side of vessel or pipeline
- Operating mechanism allows for visual indication of closure status
- 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
- Bidirectional hinge adds versatility
- Sizes available- 14" through 48"
- Operate from- -50°F to 550°F (-45.5°C to 287.8°C)
- Pressure class- Vacuum through ANSI 600

#### Additional Options Include:

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

## 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" pipe wrench.

The unique, lugless feature of the Yale SafeGuard closure provides significant benefits to end users that include an overall low total cost of ownership. Specific benefits include:

- Safety for the operators
- Secure sealing without leakage
- Quick and easy operation that saves time and effort on the part of the operators
- Long service life to optimize the return on your investment

### Features

- The lugless design eliminates risk of hammering on closure cap for added safety and prevention of damage to the closure
- Available in sizes from 2" through 10" for application versatility
- The Yale closure is among the safest in the industry due to its threaded design that makes it extremely difficult to unscrew the cap off a pressurized pipeline or vessel
- A pressure warning device (standard on 6" and larger closures and optional on all others) ensures that all residual pressure in the pipeline or vessel is eliminated before the pressure cap is loosened to ensure operator safety

## Yale Y-2000 Clamp Closure



The Yale Y-2000 is designed for line applications up to 24" where a simple clamp operation offers an alternative to traditional threaded closures.

### Features

- True quick opening- less than 90 seconds
- Simple operation- no special tools required
- Pressure warning device is integral to closure operation
- Compliant with pipeline design codes ASME B31.4 and ASME B31.8
- Sizes available- 6" through 24"
- Operate from- -50°F to 550°F (-45.5°C to 287.8°C)
- Pressure class- Vacuum through ANSI 600

## Yale Figure 500 Small Threaded

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Over 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"-14".

## Yale Figure 500R Large Threaded

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The Figure 500R 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" thread length for greater safety and mechanical sealing integrity. The Figure 500R design is available in sizes 16"-54". Closure horizontal hinges swing left or right for sizes 16" and above.

## Yale Figure 515 Flanged

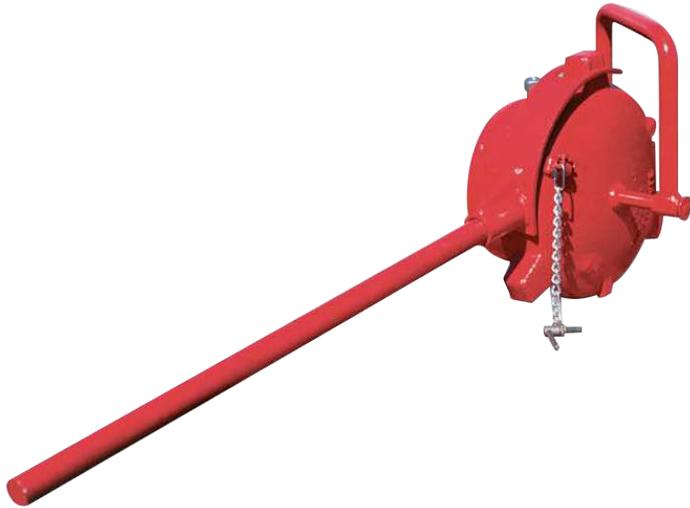
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The Figure 515 flanged closure offers a bolted flange-to-flange configuration. A rugged ACME thread fastens the cap to the hub, making the Figure 515 the safest in the industry. The pressure seal is achieved by an O-ring set in the face of the hub. Figure 515 closures are available in diameter from 2"-42" and ANSI class 150 through 1500.

# Closure Accessories

## Yale Lug Wrench



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

## Closure Actuator Tool



For easy operation, 16" 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.



Typical Yale Application

## Thread Gauge & Field Training

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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

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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

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An additional safety feature—a pressure warning device is furnished as standard equipment on all 6" 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.

# Valves

## T1-EX Expanding Gate Valve



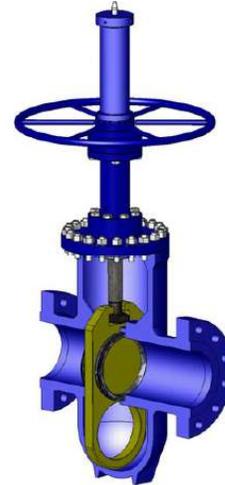
The T1-EX expanding gate valve is designed for critical service. This full bore, through-conduit gate valve features a mechanically sealing gate to assure positive shut-off. The valve can be trimmed to meet most specifications handling a wide range of products and services. Extensions and adaptation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

When the valve is completely closed, the gate and segment are wedged tightly 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 position.

### Features

- Manufactured and tested to API 6D and ANSI B16.34 specifications
- Inline repairable
- Repeated positive shut-off
- Provable zero-leakage
- Reduced wear on sealing surfaces
- External Thermal Body Relief (XTBR)
- Injectable stem packing
- Press fit seats
- Sizes available– 2” through 36” full port
- Pressure Classes– 300, 600, 900, 1500, 2500
- 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 shut-off.

### 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” through 36” full port, through-conduit
- Pressure Classes– 150, 300, 600, 900
- Operate from– -50°F to 250°F (-45.5°C to 121°C)

## OS-Expanding Plug Valve

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The OS-expanding plug valves are designed for applications where positive shut-off, verifiable zero-leakage and double block and bleed (DBB) capabilities are required. The OS-expanding plug valve has a robust clear acrylic indicator flag protector. This keeps moisture and debris from infiltrating the operator housing. The top of the indicator cap is vented to ensure that air flow will quickly evaporate any condensation that appears inside the clear housing.

### Features

- Manufactured and tested to API 6D and ANSI B16.34 specifications
- Inline repairable
- Repeated positive shut-off
- Provable zero-leakage
- Reduced wear on sealing surfaces
- External Thermal Body Relief (XTBR)
- Sizes available– 2" through 36"
- Operate from– -40°F to 200°F (-40°C to 93°C)
- Pressure classes– 150, 300, 600

## Trunnion Mounted Ball Valve

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The trunnion mounted ball valve has a take-apart three-piece forged body design and trims available to meet the demanding requirements of the pipeline and process industries.

### Features

- Manufactured and tested to API 6D and ANSI B16.34 specifications
- Gear design with locking device
- Seat lubrication (6" and larger)
- Body bleed and drain ports
- Redundant stem seals
- NACE
- Fire Safe
- Sizes available– 2" through 42" full port
- Operate from– -20°F to 350°F (-28°C to 176°C)

## Swing Check

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The swing check valve is designed as a through-conduit check valve manufactured and tested to API 6D and ANSI B16.34 specifications. The check valve's standard design allows for the passing of pipeline pigs.

### Features

- Full bore/through-conduit
- Repeated positive shut-off
- Quick closure to prevent backflow
- Trims:
  - Standard
  - NACE MR01-75 (2002)
- Option: External lockable lever arm
- Sizes available– 2" through 36" full port
- Pressure classes– 150, 300, 600, 900
- Operate from– -50°F to 350°F (-46°C to 176°C)

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