



brands you trust.



PACIFIC VALVES® - Pressure Seal Valves  
Now offered with graphite gasket  
50% lower maintenance costs

**CRANE**

Crane ChemPharma & Energy

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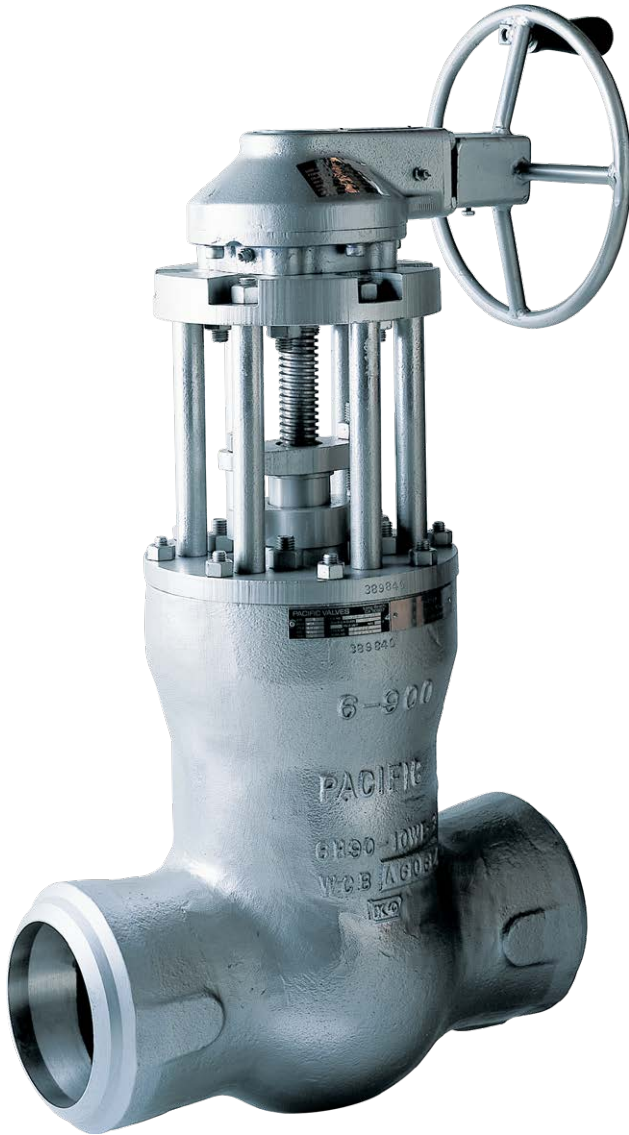


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## Key Features and Applications



### Key Features

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- ❶ Spring-loaded discs are self-aligning and reduces actuator torque requirements
- ❷ No wedging force; disc reacts freely to thermal changes
- ❸ Positive disc travel stops cast into body for uniform seat wear and improved sealing

### Applications

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- Thermal & Cogeneration Power Plant
- Nuclear Power Plants
- Chemical, Petrochemical & Other Industrial Processes



## Overview

### Selection

**TYPE AND SIZE** – Select the best type of valve for the intended service (gate, globe, or check). Gate and globe valves are available with a selection of wedge or disc and body configurations for different services. Valves may be sized to match existing lines, but they should also be sized according to flow conditions for maximum service life.

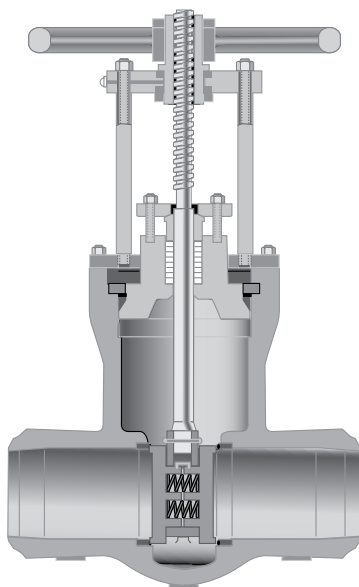
**RATINGS** – Valves must only be used in design conditions within the appropriate ASME pressure-temperature ratings for valve class and body/bonnet material (see Technical Data section).

**TEMPERATURE LIMITATIONS** – Only use valves within the temperature limitations of their construction. Temperature limitations of body/bonnet materials, trim, bolting and packing, and gaskets must all be considered. Special construction for extended service temperatures are available by application.

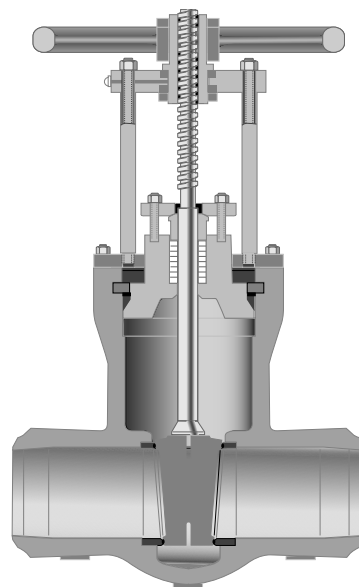
**MATERIAL AND SERVICE** – Pressure Seal valves are available in a variety of body/bonnet materials and trims. Specified materials should be compatible with the service.

### GATE VALVES

1. Gate valves are normally used for on-off service. They are not recommended for throttling service.
2. Gate valves are normally installed in horizontal pipe runs with the valve stem vertically up. They can also be installed in vertical or horizontal pipe runs with the valve stem other than vertical, but special construction may be required depending on valve size, service conditions and material. When purchasing valves for other than the normal installation, valve orientation should be specified when consulting the factory.
3. After closing a gate valve with sufficient force to develop shutoff, the stem should be backed off slightly ( $\frac{1}{8}$  to  $\frac{1}{4}$  turn) to relieve stem load. This will enable the stem to expand slightly without bending or damaging the valve and will not affect valve shutoff.
4. Gate valves are offered in two designs: Parallel Disc and Flexible Wedge. Parallel Disc are position seated; Flexible Wedge are torque seated when closing.



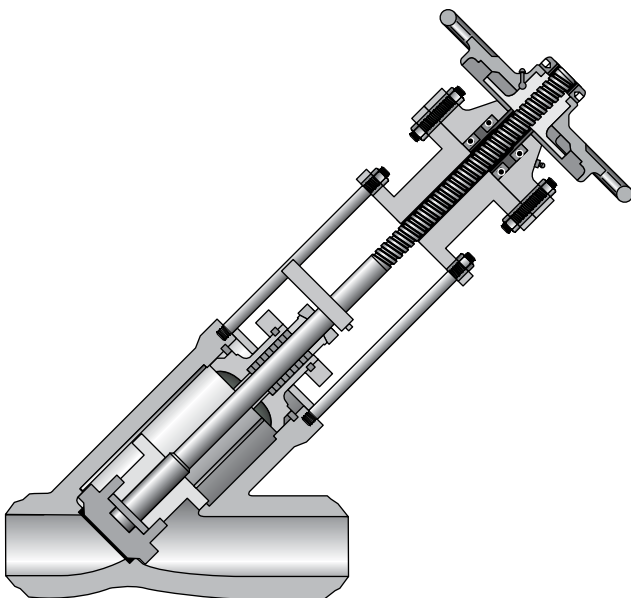
Parallel Disc Gate Valve



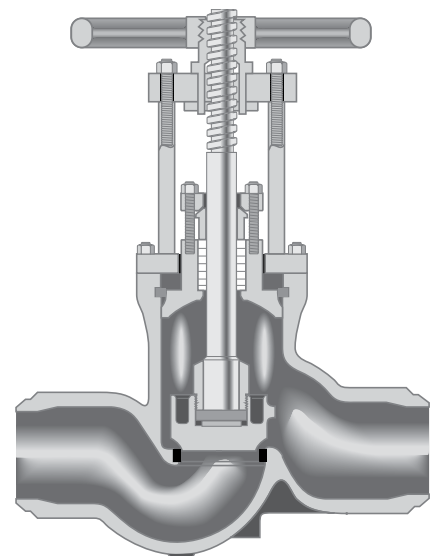
Wedge Gate Valve

## GLOBE AND NON-RETURN (STOP-CHECK) VALVES\*

1. Globe valves are normally installed with flow and pressure under the disc. Always consult with the factory before installing valves with flow in the other direction. Under certain service conditions or when valves are equipped with cylinders or electric motor actuators, there may be a cost advantage in designing and installing the valves with flow over the disc. If actuators are sized for these conditions, care must be taken to assure valves are installed correctly.
2. Globe valves are suitable for most throttling applications; however, they should not be used for throttling at less than 10-20% open. This can cause excessive vibration, noise, and damage to disc and seats. Use of smaller valves with lower flow capacity may permit the valve to be open a greater percentage, thus avoiding damage. Continuous severe throttling applications may require a control valve.
3. Non-return (Stop-Check) valves provide the same function as a globe valve with the addition of providing piston-lift-check valve protection in the event of backflow. The valve stem is not connected to the disc, and when the stem is in the open position then the disc is free to respond to the flow.



**Y-Pattern Globe and Non-Return (Stop-Check) Valve**



**T-Pattern Globe and Non-Return (Stop-Check) Valve**

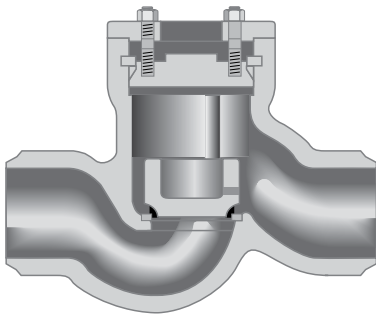
\*For maximum reliability, it is recommended that Pacific Valves® Y-Globes Stop Check Valves and Y-Pattern Lift Check Valves be installed with flow axis horizontal and with bonnet above the valve in a vertical plane. Please consult factory for further details.



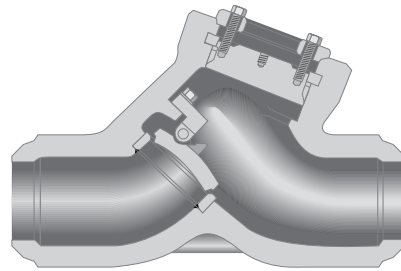
## Overview

### CHECK VALVES

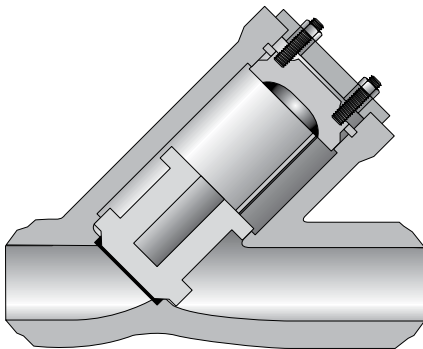
1. Check valves are suited for moderately high velocity applications. For optimum performance, however, these valves should operate within a flow range sufficient to hold the valve open fully, but not so high that it produces excessive turbulence and pressure drop. Either extreme may damage valve internals, and shorten operating life.
2. Service involving frequent flow reversals or fluid pulsations should be avoided. Locating check valves no closer than five pipe diameters from elbows and other flow diverting means can minimize or eliminate problems in most installations. Where this is not possible, it may be necessary to reduce the maximum velocity by as much as 50%.
3. Excessive fluid noise is usually an indication that cavitation is occurring.
4. Check valves are normally designed for installation in horizontal pipe runs or in vertical lines where flow is up only. When valves are used in vertical pipe runs, this should be clearly specified.
5. If severe conditions are outside these recommendations contact Pacific Valves® for further information prior to use.



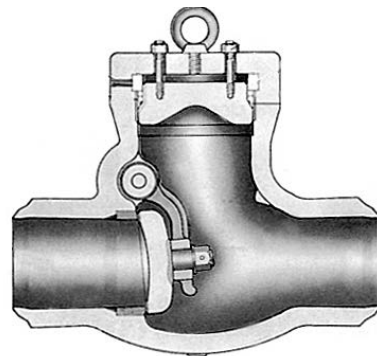
**T-Pattern Lift-Check Valve**



**Tilting Disc Check Valve**



**Y-Pattern Lift-Check Valve**



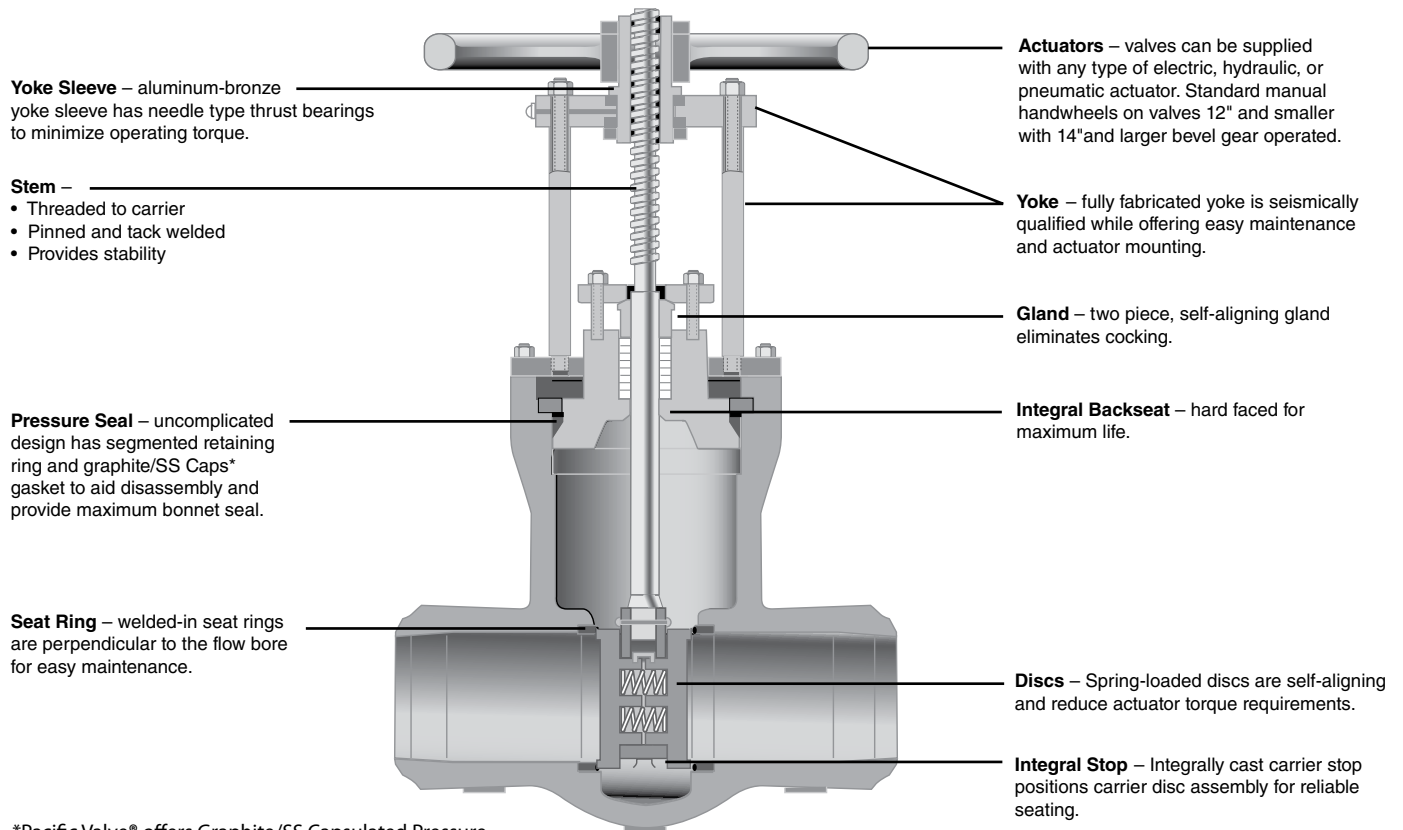
**Swing Check Valve**

**PACIFIC VALVES® CODES AND STANDARDS:**

Years of research and development, together with practical experience in reconditioning all types of valves, have gone into the design and manufacture of Pacific Valves®. High quality material and workmanship, combined with the modern manufacturing methods used in producing these valves, is your assurance of a dependable, uniform product. Pacific Valves® are designed in accordance with applicable requirements of the latest edition of the following standards.

- API** – American Petroleum Institute
- MSS** – Manufacturers' Standardization Society of the Valve and Fittings Industry
- ASME** – American Society of Mechanical Engineers

## Overview Parallel Disc Gate Valve



\*Pacific Valve® offers Graphite/SS Capsulated Pressure Seal Bonnet Gaskets as a standard, Mild Steel Silver Plated Pressure Seal Bonnet Gaskets are available on request.

### Parallel Seat Gate Valve

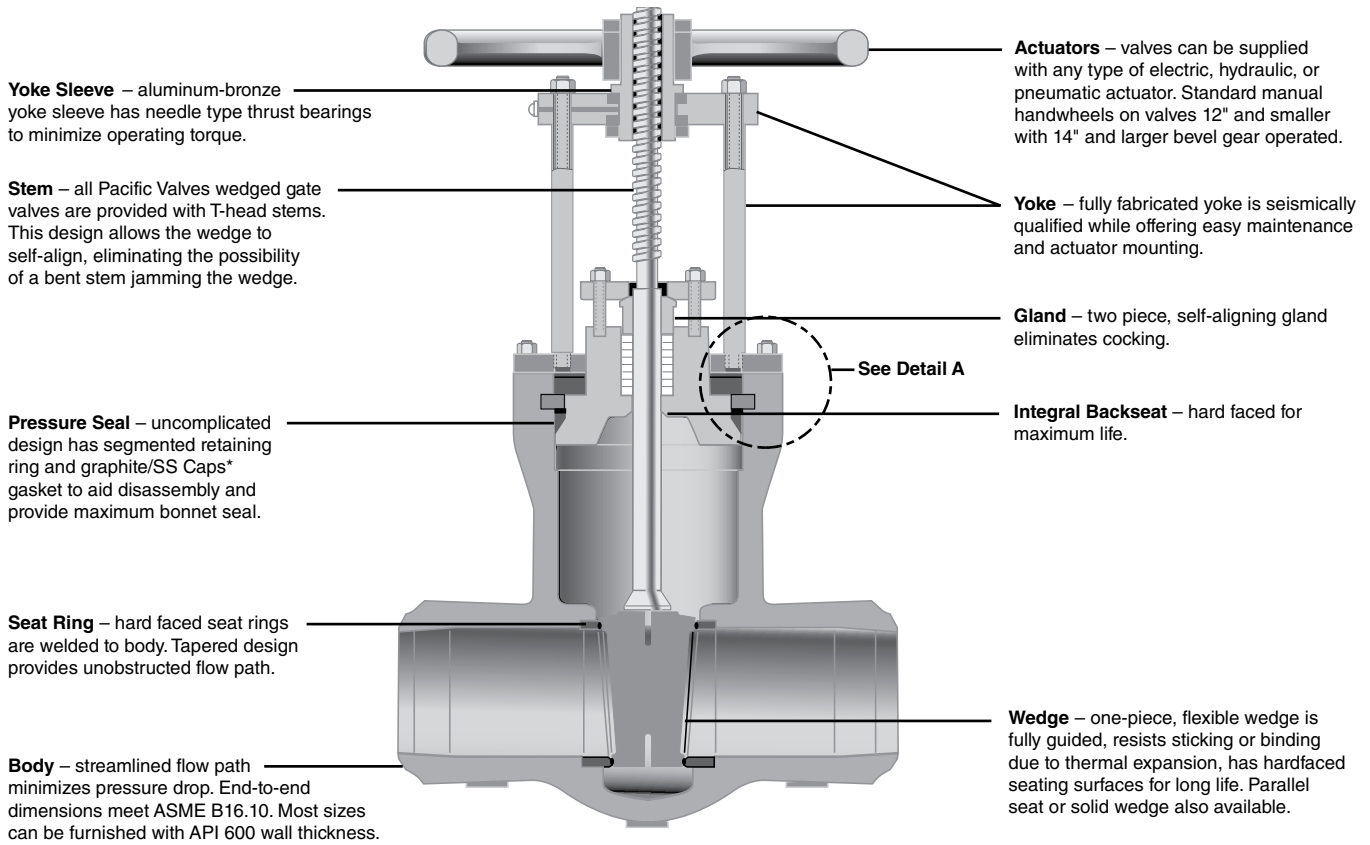
Parallel seat gate and seat ring construction can be furnished for high differential pressure services or where high piping loads or thermal expansion may cause sticking of a wedge type gate. The parallel seat gate assembly consists of two interchangeable spring-loaded discs, a fully guided disc carrier, and retaining pins.

Position seating eliminates stress and potential binding due to thermal expansion of the stem. Spring-loaded discs help maintain contact between the discs and seat rings during initial sealing and eliminate vibration. Discs are interchangeable which simplifies in-line maintenance and eliminates the need to custom fit the seats to the discs. Internal stops provide positive over travel protection for power actuated valves and act as a reference to position the discs in the open and closed positions. This design features low seating torque which reduces actuator size and cost. Hard faced seating surfaces provide high cycle capability in very high differential pressure services.





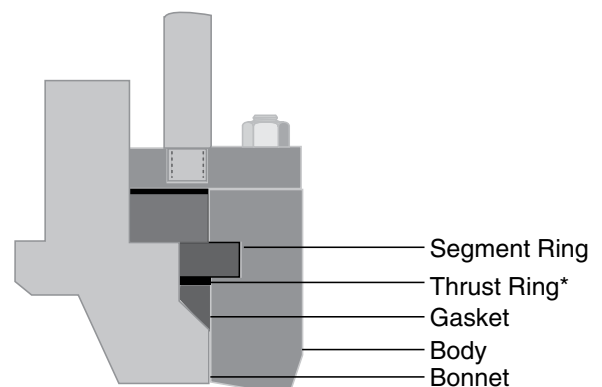
# Overview Wedge Gate Valve



\*Pacific Valve® offers Graphite/SS Capsulated Pressure Seal Bonnet Gaskets as a standard, Mild Steel Silver Plated Pressure Seal Bonnet Gaskets are available on request.

## Flexible wedge

The flex wedge is a one piece, fully guided cast wedge with a central hub to allow the seating faces to move relative to each other thus compensating for distortion of the body seats due to thermal expansion or piping loads. Seat ring and wedge seating surfaces are set on a 5 degree angle from vertical to minimize sliding contact of the wedge and seat ring during opening and closing. Wedging actions help affect a tight seal in low differential pressure services. Flexible wedge construction resists wedge sticking or binding in services where the valve may be closed when hot and opened when cold. Seating surfaces are hard faced to provide high cycle capability in very high differential pressure services.



**Detail A**

\*Where applicable





# Overview Globe Valve

**Yoke Sleeve** – aluminum-bronze yoke sleeve minimizes operating torque. Larger sizes have needle bearing type thrust bearings.

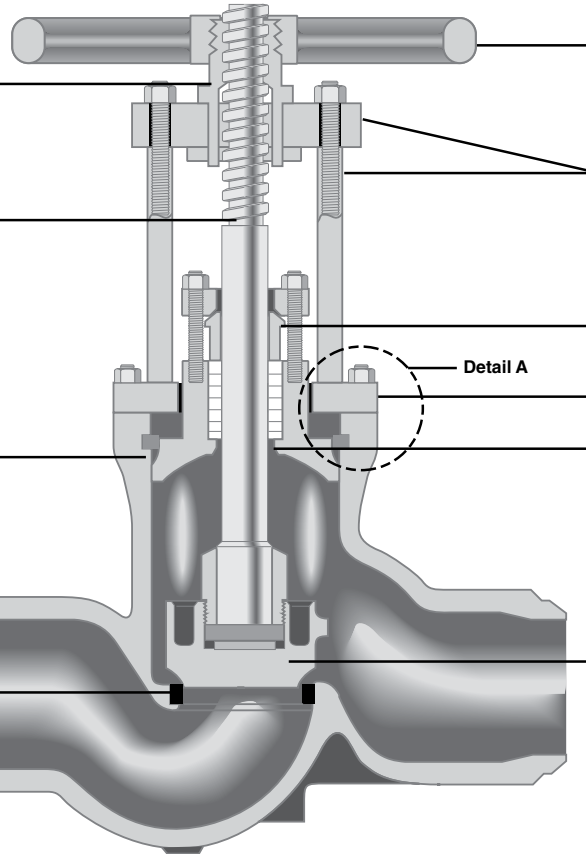
**Stem** – precision-ground stem has upset tee-head for reliable stem/wedge connection.

**Pressure Seal** – uncomplicated design has segmented retaining ring and graphite/SS Caps\* gasket to aid disassembly and provide maximum bonnet seal.

**Hardened Seating Surfaces** – both disc and body seating surfaces are hard faced for maximum service life.

**Body** – streamlined flow path minimizes pressure drop. Butt weld, Venturi or flanged ends provide piping alternatives.

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**Actuators** – valves can be supplied with any type of electric, hydraulic, or pneumatic actuator. Standard manual actuators are handwheels through 14".

**Yoke** – fully fabricated yoke is seismically qualified while offering easy maintenance and actuator mounting.

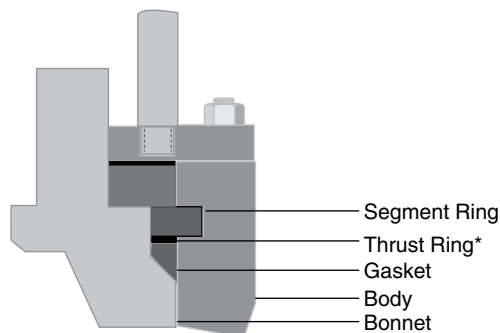
**Gland** – two piece, self-aligning gland eliminates cocking. Swing out bolting facilitates maintenance.

**Bolted Yoke** – yoke is bolted to body.

**Integral Backseat** – hard faced for maximum backseat life.

**Disc** – fully body guided for perfect seating in high pressure services.

**Detail A**



**Detail A**

\*Where applicable



# Overview Y-Globe Valve

**Actuation** – can be supplied with a hammerblow handwheel, manual gear set, electric motor operator, pneumatic, or hydraulic cylinder operator.

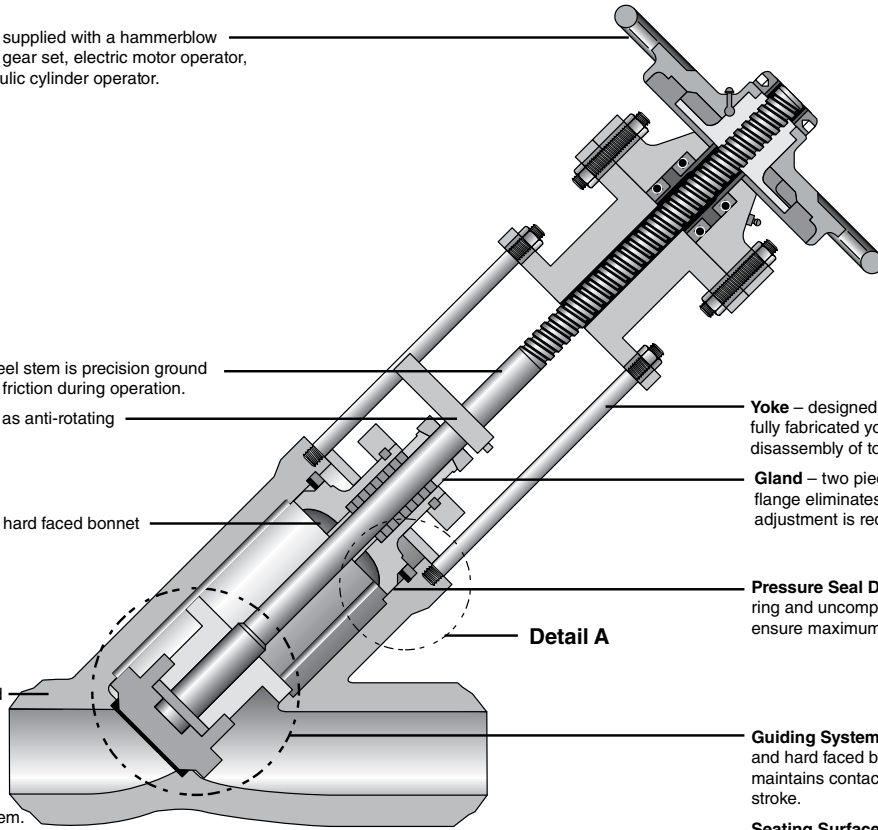
**Stem** – stainless steel stem is precision ground for minimal packing friction during operation.

**Stem Guide** – acts as anti-rotating device for the stem.

**Backseat** – integral hard faced bonnet backseat.

**Body** – streamlined flow path demonstrating high Cv factors which minimize pressure drop across a given system.

**Low Pressure Drop = Low Operating Cost**



**Yoke** – designed to withstand seismic activities, the fully fabricated yoke features hassle-free assembly/disassembly of topworks and simple actuator mounting.

**Gland** – two piece self-aligning gland and gland flange eliminates cocking if packing adjustment is required.

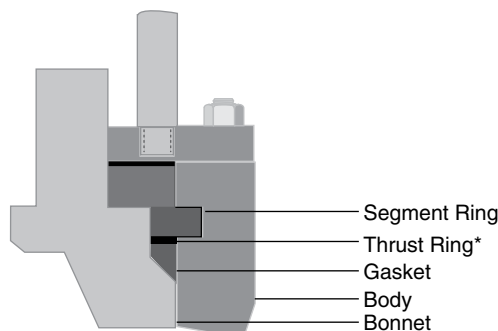
**Pressure Seal Design** – consists of a gasket, thrust ring and uncomplicated segmented retaining rings to ensure maximum bonnet seal.

**Guiding System** – includes a two-piece disc assembly and hard faced body guides. The disc assembly maintains contact with the guides through the full valve stroke.

**Seating Surface** – the disc and body seating surfaces are hard faced for extended service.

**Detail A**

\*Pacific Valves® offer Graphite/SS Capsulated Pressure Seal Bonnet Gaskets as a standard, Mild Steel Silver Plated Pressure Seal Bonnet Gaskets are available on request.

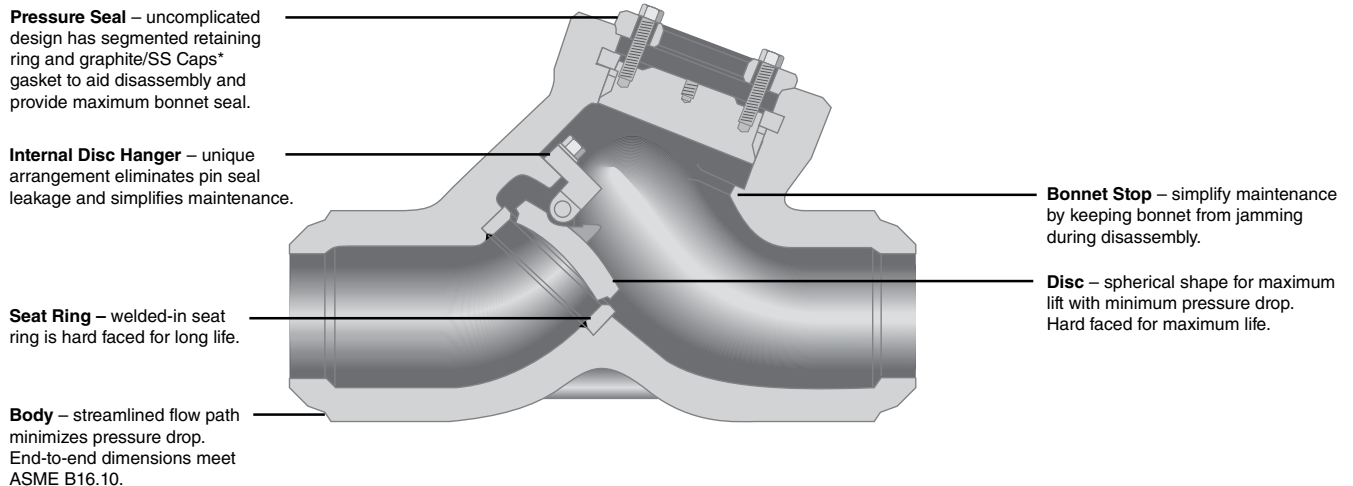


**Detail A**  
Rotated 45° ccw

\*Where applicable



## Overview Tilting Disc Check Valve



\*Pacific Valves® offer Graphite/SS Capsulated Pressure Seal Bonnet Gaskets as a standard, Mild Steel Silver Plated Pressure Seal Bonnet Gaskets are available on request.

### GENERAL DESIGN FEATURES

#### Highly Efficient

The Pacific Valve® tilting disc check valve uses gravity to rapidly close the disc upon reversal of flow. Unlike most other tilting disc check valves which must swing through a 90° arc, the Pacific Valve® design fully opens or closes through an arc of only 45°.

This short-arc coupled with the low pendulum effect achieved by pivoting the disc through a point near its center of gravity assures rapid closure.

#### Tight Shutoff

Conical seating at an angle to flow is self-aligning, tight and always closed in a no-flow situation. Even in vertical (flow-up) pipe runs, this valve provides exceptionally tight shutoff.

#### Long Life

Hard faced seating surfaces, large diameter hinge pins, and corrosion resistant bearing surfaces help lengthen operating life in tough surfaces. There are no springs to break or bind. A positive internal disc stop prevents flutter.

#### Internal Disc Hanger

Provides adjustable alignment and eliminates body wall penetrations. The unique Pacific Valve® tilting disc check valve internal disc hanger not only eliminates potential leakage through external hinge pins, but because the hanger shelf is machined parallel to the seating surface, it allows adjustment of the disc/seat if seat repair is ever required. By adding or removing precision stainless steel spacers between hanger and shelf, the disc can be “dropped” into the body so as to provide perfect alignment and shutoff. No other design offers this combination of features.



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