FLOWSERVE

Edward and Anchor/Darling
Nuclear Application Valves

Experience In Motion

Features and Description of Flowserve Edward One-Piece Tilting-Disc Check Valves

The Edward tilting-disc check valve is designed to close as quickly as possible. It minimizes loud, damaging slamming and vibration noises caused when high-velocity reverse flow is allowed to build up before the completion of closing.

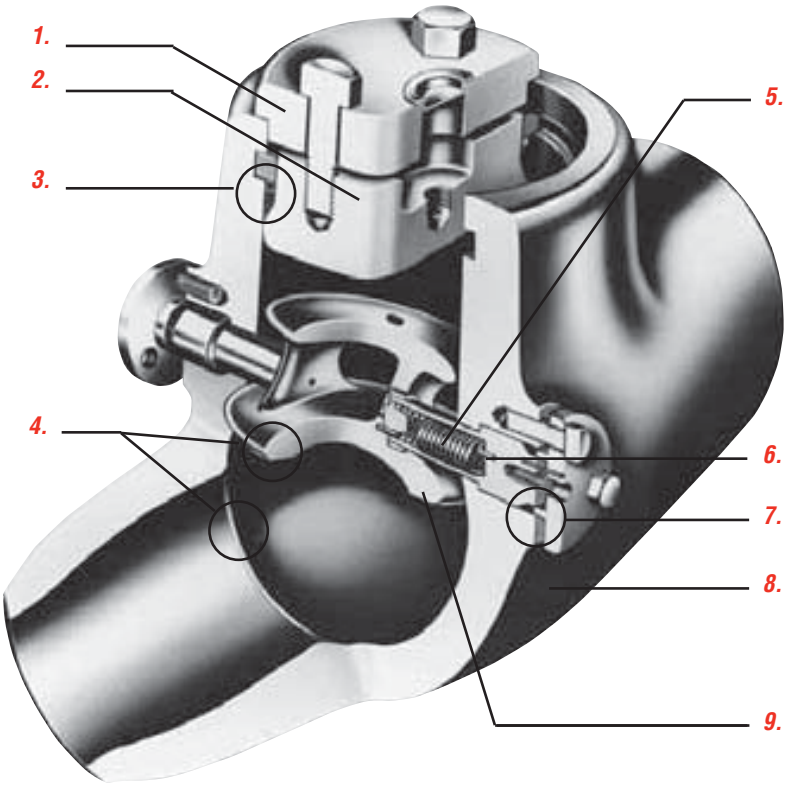
Quick Closing

Quick closing is achieved through a combination of several design construction features. The disc is dome-shaped to avoid hesitation of disc motion or closing, common to conventional flat discs. For minimum pendulum period—an important factor in assuring quick closing—the disc pivot is located close to the center of gravity of the disc.

All disc surfaces are open to line fluid so that no dashpot action can delay closing. The disc pivots on pin supports having chrome-plated bearings for minimum friction. Totally enclosed torsion springs in the pivot pins help speed the closing action, although the disc is counterweighted sufficiently to close automatically without aid from the springs whether the valve is in a vertical or horizontal position. Since the springs are fully enclosed in the pins, they are not subject to possible erosive effects of line fluids and foreign matter cannot get in. There is no bolting in the flow stream.

Adjustable Hinge Pins

Available factory installed or as a conversion kit, Edward valves' unique, adjustable hinge pin replaces the usual concentric hinge pins with double offset eccentric hinge pins, making core alignment a matter of simply dialing in the fit.



1. **Cover retainer** provides loading through the cover retainer and bolting to initiate a seal at the pressure seal gasket.
2. **Cover is precision machined** to retain pressure integrity and critical gasket seating surfaces.
3. **Composite pressure seal gasket** is a pre-loaded pressure energized flexible graphite composite for long, reliable service.
4. **Integral hardsurfaced seats**, both body and disc, provide positive shutoff and long seat life.
5. **Springs ensure quick closing** of the disc by providing a positive seating force to speed closing.
6. **Hinge pin** provides a disc pivot point close to its center of gravity for fast response to flow reversals, which minimizes water-hammer effects.
7. **Hinge pin gasket** is spiral wound, coated steel, or flexible graphite for long, reliable service.
8. **Body features** a straight-thru compact design for low-pressure drop.
9. **Disc assembly** is dome-shaped and counterweighted for fast response to flow reversals.

Parts Specification List for Flowserve Edward One-Piece Tilting-Disc Check Valve

This is not a complete list. Construction and materials will vary between sizes and pressure classes and may be changed without notice. For a complete, accurate and itemized description of a particular valve, contact your Flowserve Edward valves sales representative.

Description[1]	ASME/ASTM No.	ASME/ASTM No.	ASME/ASTM No.	ASME/ASTM No.
Body/Cover*	SA-216 Grade WCB	SA-216 Grade WCC	SA-217 Grade WC9	SA-351 Grade CF8M
Disc††	SA-105 —	SA-105 —	SA-182 Grade F22	SA-182 Grade F316
Pressure Seal Gasket*	Composite Pressure Seal Gasket			
Spacer Ring	A-668 Grade 4140 $MnPO_4$ Plated	A-668 Grade 4140 $MnPO_4$ Plated	A-668 Grade 4140 $MnPO_4$ Plated	Grade 182 Grade F6 CL4
Gasket Retainer	SA-182 Grade F6 CL4	A-182 Grade F6 CL4	A-565 Grade 616 HT	A-638 Grade 660 T2
Cover Retainer	A-216 Grade WCB	A-216 Grade WCB	A-216 Grade WCB	A-216 Grade WCB
Cover Retainer Capscrews or Studs	A-193 Grade B7	A-193 Grade B7	A-193 Grade B7	A-193 Grade B7
Cover Retainer Nuts	A-194 Grade 2H	A-194 Grade 2H	A-194 Grade 2H	A-194 Grade 2H
Hinge Pin Gasket Size 2½, 3, 4	Spiral Wound Gasket (Asb. Free)	Spiral Wound Gasket (Asb. Free)	Spiral Wound Gasket (Asb. Free)	Spiral Wound Gasket (Asb. Free)
Hinge Pin Gasket Size 6 & Larger	Graphite Gasket			
Hinge Pin	A-182 Grade F6aCL4	A-182 Grade F6aCL4	A-565 Grade 616 HT	A-638 Grade 660 Type 2
Hinge Pin Bolts	A-193 Grade B7	A-193 Grade B7	A-193 Grade B16	A-453 Grade 660B
Hinge Pin Retainer	A-105 —	A-105 —	A-182 Grade F22	A-182 Grade F316
Hinge Pin Springs†	A-313	A-313	A-313	A-313

**Other material grades available on application. **All ANSI Class 600 valves utilize an asbestos-free spiral wound bonnet gasket.*
†Hinge Pin Torsion Springs required in size 6 and larger valves only. ††Sizes 2½, 3 and 4, Pressure Classes 900, 1500 and 2500 – disc material is A732-GR21

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