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MAY 2012

DeZURIK
APCO | WILLAMETTE

APCO INDUSTRIAL CHECK VALVES

Double Door
Check Valve

Wafer - Silent Check Valve

Globe - Silent Check Valve

Swing Check Valve

Slanting Disc Check Valve

Rubber Flapper Check Valve

APCO Double Door Check Valves

Design and Construction

Double Doors are spring loaded for fast non-slam shut–off against the elastomer body seat. APCO Double Door check valves are available with lugged or wafer bodies in sizes 2–60" (50mm–1500mm). Very short length, results in lowest purchase and installation costs.

Materials of Construction

APCO Double Door check valves are regularly supplied in Ductile Iron, Bronze, Carbon Steel, 316 Stainless Steel, 410 Stainless Steel or Monel Body and Door Materials. Spring and Hinge Pin are 316 Stainless Steel or Inconel. Resilient Seat materials include CR, EPDM, FKM, NBR, or Silicone

Industry Standards

API 594 – Class 125, 150, 250, 300 & 400 Valve Design

API 598 – Valve Pressure Testing and Inspection

API 6D/ISO 14313 – Pipeline Valve Pressure Classes

ASME B16.10 – Face-to-Face

ASME B16.34 – Pressure/Temperature Ratings

ASME B16.5 & B16.47 – Valves with integrated flanges. All Valves are designed to accept mating flanges

Applications

Recommended for Clean Liquids and Gasses in Refineries, Petro-Chemical Plants and for HVAC applications.

APCO Wafer – Silent Check Valves

Design and Construction

Designed to open at approximately 0.25 to 0.5 psi (2–3 kpa) for complete closure upon pump shut down – before flow can reverse itself. APCO Wafer – Silent Check Valves are available in sizes 1–10" (25–250mm). Stops reverse flow, a major cause of water hammer, before it starts.

Materials of Construction

APCO Wafer – Silent Check Valves are regularly supplied with Ductile Iron, Carbon Steel, 304 or 316 Stainless Steel Body Materials. Ductile Iron, 304, 316, or Bronze Plug Materials. 313 Stainless Steel Spring Material. Metal, NBR, FKM or EPDM Seat Materials.

Industry Standards

MSS SP-125 – Gray Iron and Ductile Iron In-Line, Spring-Loaded, Center-Guided Check Valves

MSS SP-126 – Steel In-Line Spring-Assisted Center Guided Check Valves

Applications

Recommended for Commercial and Industrial HVAC applications such as heating systems and condensate return lines.

APCO Globe – Silent Check Valves

Design and Construction

Designed to open at approximately 0.25 to 0.5 psi (2–3 kpa) for complete closure upon pump shut down – before flow can reverse itself. APCO Globe – Silent Check Valves are available in sizes 3–42" (80–1100mm). Stops reverse flow, a major cause of water hammer, before it starts.

Materials of Construction

APCO Globe Silent Check Valves are regularly supplied with Ductile Iron, Carbon Steel, 304 or 316 Stainless Steel Body Materials. Ductile Iron, 304, 316, or Bronze Plug Materials. 313 Stainless Steel Spring Material. Metal, NBR, FKM or EPDM Seat Materials.

Industry Standards

MSS SP-125 – Gray Iron and Ductile Iron In-Line, Spring-Loaded, Center-Guided Check Valves

MSS SP-126 – Steel In-Line Spring-Assisted Center Guided Check Valves

Applications

Recommended for Commercial and Industrial HVAC applications such as heating systems and condensate return lines.

APCO Swing Check Valves

Design and Construction

Heavily constructed with full unobstructed flow. Available with Air Cushion (fast closing) or Oil Control (slow closing). APCO Swing Check Valves are available in sizes 2–72" (50–1800mm). Cushions/controls reduce pressure surges, slam and water hammer.

Materials of Construction

APCO Swing Check Valves are regularly supplied with Ductile Iron or Cast Iron Body Materials with Cast Iron, Ductile Iron, Aluminum Bronze, 304 or 316 Body Seat Materials. Ductile Iron Disc with Bronze or 316 Stainless Steel Metal Disc Seat Materials, NBR, FKM or EPDM Resilient Disc Seat Materials. 303, 304 or 17-4PH Stainless Steel Shaft Materials.

Industry Standards

MSS SP-71 – Testing Gray Iron Swing Check Valves

MSS SP-136 – Testing Ductile Iron Swing Check Valves

ASME B16.1 – Gray Iron Pipe Flanges and Flanged Fittings

ASME B16.5 – Conforms to Bolt Pattern and Drilling

Applications

Recommended for clean and dirty applications such as Industrial Water or Raw Waste Water Service.

APCO Slanting Disc Check Valves

Design and Construction

Split body design with slant disc position produces superior flow characteristics creating very low head loss. APCO Slanting Disc Check Valves are available in sizes 2–72" (50–1800mm). Most reliable and efficient check valve available.

Materials of Construction

APCO Slanting Disc Check Valves are regularly supplied with Ductile Iron, Cast Iron Carbon Steel or 316 Stainless Steel Body Materials. Bronze, Ductile Iron, Carbon Steel or 316 Stainless Steel Disc Materials. Bronze or 316 Stainless Steel Seat Materials. 303 Stainless Steel Pivot Pin Material.

Industry Standards

ASME B16.34 – Pressure/Temperature Ratings, Class 150 through 20", Class 300 through 14"

ASME B16.1 – Gray Iron Pipe Flanges and Flanged Fittings

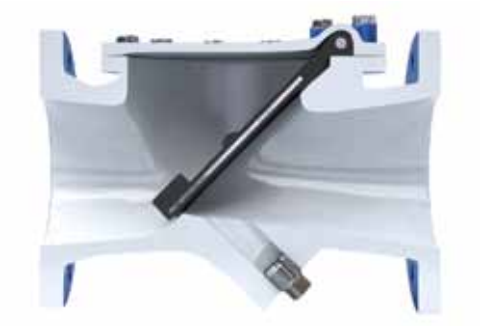
ASME B16.5 – Conforms to Bolt Pattern and Drilling

MIL-V-18436F – Conforms to Slanting Disc Check Valves with Bottom Buffer with Cast Iron or Carbon Steel Body Materials with the exception of face-to-face dimensions

Applications

Recommended for clean Industrial Water and other Industrial Applications.

APCO Rubber Flapper Check Valves



Design and Construction

Rugged yet uniquely simple design with only three major parts. APCO Rubber Flapper Swing Check Valves are available in sizes 2–48" (50-1200mm). Durable and requires virtually no maintenance.

Materials of Construction

APCO Rubber Flapper Swing Check Valves are regularly supplied with Ductile Iron, Cast Iron or Bronze Body Materials. Bodies are available Unlined or Lined with Chloroprene (CR), Natural Rubber, NBR or EPDM Elastomers. NBR, Chloroprene (CR), FKM or EPDM Flapper Materials.

Industry Standards

MIL-V-18436 F – Conforms to Material Requirements of Group A, Type III, Trim 1, Bronze Swing Check Valves

Applications

Recommended for a variety of Industrial Liquids, Waste Water or Slurry Applications.

Other DeZURIK | APCO | Willamette Industrial Products

DeZURIK

Isolation Valves


Butterfly Valves


Knife Gate Valves


Ported Gate Valves


100% Eccentric Plug Valves

Control Valves


High Performance Butterfly


V-Port Ball Valves


Rotary Control Valves

Specialty Service Valves


Coal Burner
Isolation Valves


3 & 4 Way Valves

Severe Service Valves


High Performance
Gate Valves


Urethane Lined
Gate Valves


Resilient Lined
Eccentric Plug Valves

Pulp and Paper


Consistency Transmitters


Basis Weight Control Valves

APCO

Air Valves


Air Release Valves


Air/Vacuum Valves


Combination Air Valves

Other


Pump Priming Systems

Willamette


Metal Seated Cone Valves

Plus many others:
Pump Check Valves
Balancing Valves
Bi-Directional Knife Gate Valves
Dust Collector Gate Valves
Square/Rectangular Knife Gate Valves
Sledge Hammer Valves
Bonneted Knife Gate Valves
Pump Priming Valves
Pump Protector Valves

And more, see our website at www.dezurik.com or contact your DeZURIK Representative for additional information

APCO Check Valve Selection Guide

■ = Feature

Feature	Cushion Swing Check Valve	Double Door Check Valve	Rubber Flapper Swing Check Valve	Slanting Disc Check Valve	Silent Check Valve (Wafer)	Silent Check Valve (Globe)	Automatic Control Check Valve
Lowest Initial Cost		■					
Shortest Laying Length		■					
Highest Head Loss					■		
Lowest Head Loss				■			
Resilient Seat (Standard)	■	■	■				■
Resilient Seat (Optional)					■	■	
Metal Seat (Optional)	■	■					
Can be Rubber Lined	■		■				■
Waste Water and Raw Sewage	■		■	■			■
Clean Water	■	■	■	■	■	■	■
Buried Service			■		■	■	
Vertical Installation (Flow Up or Down)					■	■	■
Vertical Installation (Flow Up Only)	■	■	■	■			
Free Open - Free Close	■	■	■	■	■	■	
Silent Closing Characteristics					■	■	■
Cushion Closing	■						
Control Open and Close (Standard)							■
Control Close (Optional)	■		■	■			■
Remote Control							■
Shut Off Valve							■
Throttling Valve							■
Reverse Flow (For Draining)	■		■	■			■
Electric Motor Operated							■
Disc Position Indicator	■		■	■			■
125/300# Class	■	■	■	■	■	■	■
Outside Lever Available	■			■			
Up to 250/300# Class	■	■		■	■	■	■
Up to 600# Class		■		■	■	■	
Up to 1500# Class		■		■	■		
Velocities to 10 FPS	■	■	■	■	■	■	■
Velocities to 15 FPS	■	■	■	■			■
Velocities in Excess of 15 FPS		■		■			■

Note: This valve selection chart is designed to provide you with a quick reference on valve style capabilities. The chart considers both cost and performance factors for a specific application when determining whether a valve style is rated Typical, May Be Used, or Limited Application. For more information, contact DeZURIK, Inc. or your local representative with your specific application requirements.

DeZURIK Valve Selection Chart

1 = Typical Application | 2 = May Be Used | 3 = Limited Application | 4 = Not Used

Application Requirements	Butterfly Valves			Plug Valves			Gate Valves		Rotary Control Valves	
	AWWA	Resilient Seated	High Performance	Standard Port Eccentric	100% Port Eccentric	3-Way & 4-Way	Knife Gate	Ported Gate	Rotary Control Valves	V-Port Control Valve
Function:										
On-Off	1	1	1	1	1	4	1	1	1	2
Throttling	1	1	1	1	1	1	3	4	1	1
Diversion	3	3	3	4	4	1	4	4	4	4
Media:										
Liquids (Clean)	1	1	1	1	1	1	1	3	1	1
Liquids (Dirty)	2	2	3	1	1	1	1	1	1	1
Liquids (Viscous)	2	1	2	1	1	1	1	1	1	1
Liquids (Corrosive)	4	2	1	1	1	1	2	1	1	1
Slurries (Sludge)	2	2	3	1	1	1	1	1	1	1
Liquids & Slurries (Scaling)	4	4	4	2	2	4	4	1	2	3
Slurries (Abrasive)	4	3	2	2	2	2	1	1	1	3
Slurries (Fibrous)	4	2	2	2	2	1	1	1	4	1
High Pressure Steam (+150lbs.)	4	4	1	4	4	4	4	4	1	3
Low Pressure Steam	4	4	1	3	4	3	4	3	1	1
Gasses (Clean)	1	1	1	1	1	1	2	2	1	1
Gasses (Dirty)	2	2	3	1	1	1	2	2	1	1
Gasses (Corrosive)	4	2	1	1	1	1	2	2	1	1
Dry Materials	4	2	4	2	2	4	1	1	4	4
Valve Characteristics:										
High Flow Capacity	1	1	1	2	1	1	1	1	1	1
Low Head Loss (Wide Open)	1	1	1	2	1	1	1	1	N/A	1
Low Torque/Thrust	2	2	1	2	2	1	2	2	2	1
High Temp., 800°F+ (425°C+)	4	4	3	3	4	4	1	4	3	4
Cryogenic	4	4	3	4	4	4	4	4	2	4
Erosion Resistance	4	3	2	1	1	3	1	1	1	3
Cavitation (Kc) @ 60% Open	.35	.35	.35	.59	.59	N/A	N/A	N/A	.60	.49
Recovery Factor F_{L^2} @ 60% Open	.40	.40	.43	.70	.70	N/A	N/A	N/A	.70	.61
Shutoff Class	AWWA C504	ANSI VI or better	ANSI IV, V, VI or better	ANSI IV, VI or better	ANSI VI or better	N/A	TAPPI	Class VI or Better	ANSI IV-VI	ANSI II, IV, VI OR BETTER
Pressure Rating	AWWA 25, 75, 150 & 250	200/ 250 psi CWP	ANSI 150 & 300	125-450 psi CWP	150-175 psi CWP	125 psi CWP	ANSI 150 & 300	100/150 psi CWP	ANSI 150-300	ANSI 150 & 300

Note: This valve selection chart is designed to provide you with a quick reference on valve style capabilities. The chart considers both cost and performance factors for a specific application when determining whether a valve style is rated Typical, May Be Used, or Limited Application. For more information, contact DeZURIK, Inc. or your local representative with your specific application requirements.

Sales and Service

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