



# Series 586

## Pivoting Disc Check Valve



Series 586CT Pivoting Disc  
Check Valve with  
Top Mounted Control



Series 586CB Pivoting  
Disc Check Valve with  
Bottom Mounted Control

### Product Advantages

- Two accessory openings - one in each body half
- Double o-ring seals - each side of body seat
- Field replaceable seat and disc rings
- Metal-to-metal seating
- Precise pivot clearance for easy centering, no sticking
- Available in standard sizes 3 through 14-inches - For larger sizes, consult factory

The Cla-Val Series 586 Pivoting Disc Check Valve provides superior flow characteristics with lower head loss than any other comparable hinged disc check valve. The two-piece body design allows for a 40% expanded cross sectional flow area, compensating for the disc mass. The valve is available with top mounted or bottom mounted closing control features to meet a variety of applications. The Model 586CT features a top mounted control for slow opening and controlled closing. The Model 586CB features a bottom mounted control for unrestricted opening and controlled closing.

The unique disc design offers minimal resistance to flow when pivoting and stabilizing in the full open position. The longer laying length minimizes turbulence and cavitation. The off-center pivoting disc provides the least possible flow resistance while minimizing water column reversal and slamming during shutdown due to the short travel distance to the shut-off position.

The weight distribution of the pivoting disc enables it to fall into unrestricted into shut-off position, while a slight pressure differential will cause the disc to open. Because of the very low head loss, the Cla-Val Pivoting Disc Check Valve reduces power consumption and improves pumping efficiency.

### Approvals & Certifications

- 125/150 & 250/300 Class Valves, 3" through 14" meets the Federal Mandate Limiting Lead in Drinking Water
- Meets AWWA standards for metal-to-metal seating

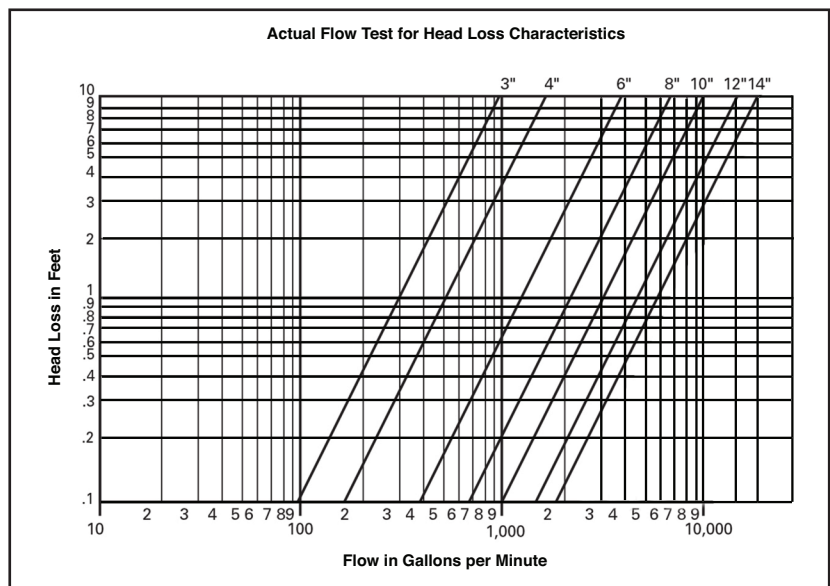
### Note:

Standard offering is two-part epoxy coating interior and exterior.

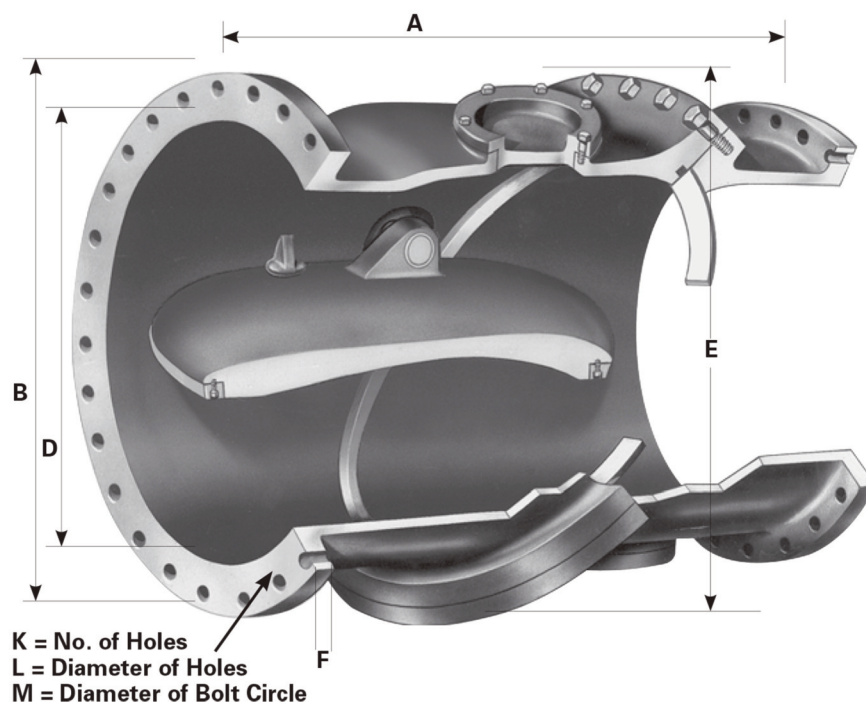
### Certified Independent Laboratory Testing

- Certified flow test conducted at independent test research Laboratory
- Figure shown is based on certified tests on valves sizes 8 and 14-inches. Actual field conditions may vary

**Note:** When comparing similar published data, it is recommended that only certified flow test data be used



## Series 586 Pivoting Disc Check Valve Dimensions



### Series 586: 125/150# Flange Main Valve Dimensions

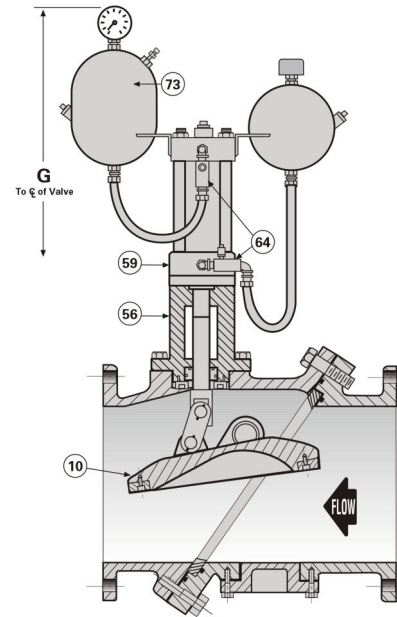
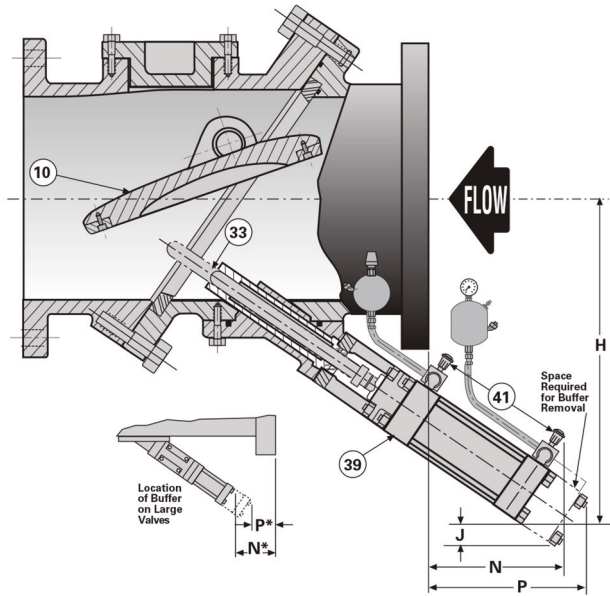
Size (inches)	A	B	D	E	F	G	K	L	M	Weight (lbs.)
3	9.5	7.5	3.0	8.5	.75	9.0	4	.75	6.0	55
4	11.5	9.0	4.0	9.75	.938	11.0	8	.75	7.5	82
6	15.0	11.0	6.0	13.75	1.0	17.5	8	.875	9.5	164
8	19.5	13.5	8.0	15.5	1.125	22.0	8	.875	11.75	265
10	24.5	16.0	10.0	18.0	1.188	25.5	12	1.0	14.25	510
12	24.0	19.0	12.0	21.0	1.25	27.0	12	1.0	17.0	650
14	30.0	21.0	14.0	25.0	1.375	33.0	12	1.125	18.75	1044

### Series 586: 250/300# Flange Main Valve Dimensions

Size (inches)	A	B	D	E	F	G	K	L	M	Weight (lbs.)
3	12.5	8.25	3.0	8.5	1.125	9.0	8	.875	5.625	65
4	11.5	10.0	4.0	9.75	1.25	11.0	8	.875	7.875	93
6	15.0	12.5	6.0	13.75	1.438	17.5	12	.875	10.625	199
8	19.5	15.0	8.0	15.5	1.625	22.0	12	1.0	13.0	357
10	24.5	17.5	10.0	18.0	1.875	25.5	16	1.125	15.25	573
12	24.0	20.5	12.0	21.0	2.0	27.0	16	1.25	17.75	693
14	30.0	23.0	14.0	25.0	2.125	33.0	20	1.25	20.25	1179

Available in standard sizes 3 through 14-inches. For larger sizes, consult factory.

# 125/150 & 250/300 Pivoting Disc Check Valve: 3 thru 14-inches



## Top and Bottom Control Dimensions

Valve Size (inches)	G	H	N	J	P
3	consult factory	consult factory	consult factory	consult factory	consult factory
4	consult factory	consult factory	consult factory	consult factory	consult factory
6	21.375	13.375	8.625	2.75	11.5
8	28.625	14.75	7.75	3.625	11.0
10	30.625	16.5	5.0	4.125	9.0
12	31.875	17.875	7.125	5.125	11.0
14	35.875	19.75	4.75	5.376	9.0

**Note:** Dimensions are the same for both 125/150 and 250/300 Class Valves and for 586CB and 586CT configurations.

## Operating Principles

### Model 586CT

This valve is highly recommended when slow open and full control closure of the disc (10) is essential. Slow gradual opening and control closing of the valve disc will prevent or greatly reduce surge pressures (water hammer) that can cause damage to the pipeline each time the pump starts and stops or during power failure.

### Slow Gradual Opening

Slow gradual opening is accomplished as the piston inside the cylinder (59) moves upwards pushing oil through the upper control valve (64).

### Fully Controlled Closing

**1st Stage:** Closing control occurs as the piston moves downward pushing oil through the lower control valve (64). **2nd Stage:** Final control stage occurs as the piston approaches the bottom of the cylinder and enters the internal cushion chamber, built into the cap of the cylinder.

By simply regulating each flow control valve (64), a slow gradual opening of the disc (10) can be achieved as well as variable control closing of the disc. Closing time adjustments can be made in the field to best suit your installation. This is a desirable feature because times for opening and closing computed during design of a pump station and pipeline may not coincide with actual field conditions.

### Model 586CB

This unique bottom mounted control component arrangement allows the valve disc (10) to open fully without interference and to close freely for approximately 90% of its stroke. After the disc is 90% closed, it comes in contact with the buffer rod (33), at this point final control speed of the last 10% (adjustable) of closing is established.

The flow control valve (41) on the cylinder (39) is easily adjusted to allow slow closure to suit pipeline flow conditions. This prevents or minimizes slamming which greatly reduces pressure surges.

This valve is recommended where rapid flow reversal (caused by a hydro-pneumatic surge tank or a critical slope of discharge pipeline) is so fast that a free closing check valve cannot shut prior to reverse flow and therefore slams. The bottom mounted control component will stop the disc at approximately 90% (adjustable) of closure and control close the disc to shut-off without slamming. This is accomplished with minimal pressure rise. The control component is self contained. Auxillary equipment is not required.

Such control strategies have been used successfully for decades to eliminate slamming of the valve disc and resultant water hammer.

# Series 586 Pivoting Disc Check Valve Technical Data

## Materials

### Valve Body:

Ductile Iron - ASTM GR 536 65-45-12

### Disc:

3 - 10-inches Bronze Alloy C90700

12 - 14-inches Ductile Iron - ASTM GR 536 65-45-12

### Seat Ring and Disc Ring:

Bronze ASTM B16 C360000

### Pivot Pins:

Stainless Steel ASTM A582 T303

### Pivot Pin Bushing:

11 - 14-inches Stainless Steel A269 T304

### Exterior Paint:

2-Part Epoxy - FDA Approved for  
Potable Water Contact



## Typical Applications

Cla-Val 586 Pivoting Disc Check Valves are used anywhere a quick, responsive and quiet closure is desired and in the majority of pump applications, including the following;

- Vertical Turbine Pumps
- Booster Pump Stations in High Rise Buildings
- House Pump Applications



## Purchase Specifications

The valve body shall be two-piece ductile iron unit. The two body halves and body seat shall be o-ring sealed and bolted together in a manner to sandwich the body seat on a 55° angle. Each body half must have an access covered hole for internal inspection and each body half and disc fully machined to accept future attachments of a bottom control device or a top mounted control device. The seat ring and disc ring must be of the design that permits replaceability in the field without need for special tools or machining. The pivot pins in the body and the bushings in the disc lugs must be stainless steel of different hardness to prevent galling. The bushings shall be press-fit to prevent wear. An indicator shall be provided to show the position of the disc. The area throughout the valve body must be equal to full pipe area. The area through the seat section shall be 40% larger than the inlet and outlet of the valve to achieve low head loss.

The valve must be available in two configurations:

- (A) The first with a bottom device for unrestricted opening and controlled closing;
- (B) The second with a top mounted device for slow opening and controlled closing.



586CB

**Configuration (A) Model 586CB:** For unrestricted opening and positive non-slam closing, the valve must have a bottom mounted control component. The control component shall be designed to contact the disc during the last 10% (adjustable) of closure and control the final closing of the valve to prevent water hammer. The rate of closure to be externally adjustable and variable.



586CT

**Configuration (B) Model 586CT:** For slow open and non-slam closing, a top mounted control component must be provided with slow opening and full control closing features to prevent surge and water hammer. Control component must have (2) control closing flow rates. (1) 90% primary adjustable rate (2) 10% adjustable slow rate during final disc closure. The control component must be a self contained oil system, separate and independent from the water line media. The oil reservoir for closing cycle shall be open to atmosphere with an air breather cap to prevent dust and other media from contaminating the oil. The oil reservoir for opening cycle must be hermetically sealed to contain pressure if necessary (air over oil) and be equipped with a pressure gauge and pneumatic air valve.

The pivoting disc check valve shall be as provided by Cla-Val, Newport Beach, CA.