Crispin Valves
Since 1905

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

Air-Cushioned Swing Check Valve

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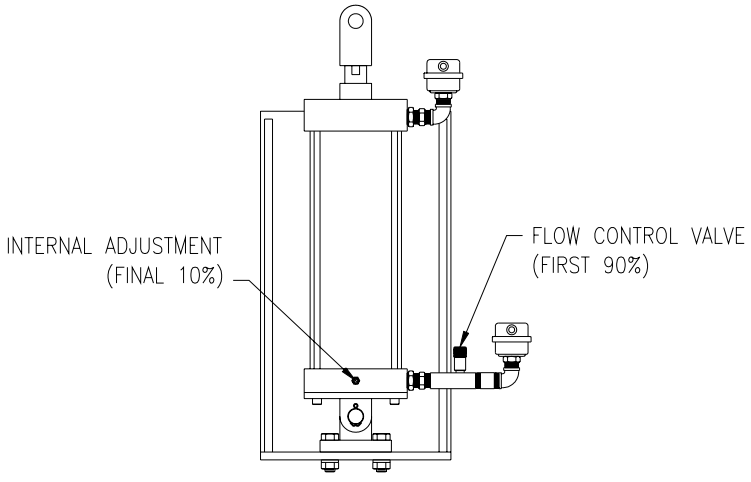
Introduction
This manual will provide you with the information necessary to properly install and maintain the Air-Cushioned Swing Check Valve and ensure a long service life. The Swing Check Valve is ruggedly constructed to give years of trouble-free operation.

Installation
The Swing Check Valve may be installed in a horizontal or vertical position (flow must be upward in vertical position). In both cases, the counterweight arm is located at 30 degrees below the horizontal datum line.

Operation
The side-mounted air cushion provides full control of the disc speed during the closing cycle while maintaining an unrestricted opening of the valve during pump start-up. This control allows the valve to be adjusted to best suit actual system conditions. This, in effect, helps prevent water hammer and surge.

The air-cushion has two adjustments. The first adjustment, provided by the flow control valve located on the bottom of the air cylinder, controls the first 90% of valve closure. The second adjustment controls the final 10% of valve closure and is located in the head of the cylinder, 90° or opposite from the flow control valve.

Start-up Procedure
1. Position the weight mid-way on the lever and secure in place with the two bolts. Note, by moving the weight closer to the pivot shaft, the valve will close slower. By moving the weight toward the end of the lever arm, the valve will close faster.
2. Throttle the isolation valve on the discharge side of the check valve to about 1/3 open. This will prevent slamming after initial pump shut-down.
3. Turn the flow control valve on the bottom of the pneumatic cylinder two full turns counter-clockwise from the fully closed position.
4. Turn internal cushion adjustment screw one full turn counter-clockwise from the fully closed position.
5. Start the pump and allow pressure to stabilize. Stop pump and observe rate of check valve closure.
6. Based on this trial run, make adjustments to the flow control valve. Turning the flow control valve clockwise slows down the rate of closure. Turning the flow control valve counter-clockwise speeds up the rate of closure. During the trial runs, gradually open the discharge isolation valve until it is fully open. It usually takes a combination of adjusting the flow control valve and the weight to achieve the desired closure rate of the valve. Once the ideal setting is achieved on the flow control valve, lock it in place with the socket head set screw in the side of the knob.

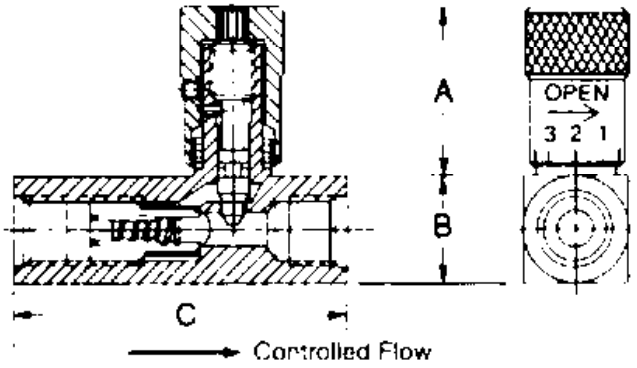


Maintenance

A periodic (recommended 6 months) lubrication of the cylinder rod is required to keep the cushioned swing check valve in good operating condition.

Adjustment of Flow Control Valve

The flow control valve has a micrometer type adjustment, which incorporates a color-coded reference scale to simplify setting and adjusting. The colored band on the stem and the numerical readout indicate to what extent the valve is open or closed. Each color on the color band represents one full turn. Find the scribe mark on the upper surface of the valve body. The number on the knob in proximity to the scribe mark will indicate 10ths of a turn the valve is opened. Record the information for future reference. A set screw is used for locking the knob to the desired valve setting. Turning the knob clockwise closes the valve and slows the rate of valve closure and turning the knob counter-clockwise opens the valve and increases the rate of valve closure.

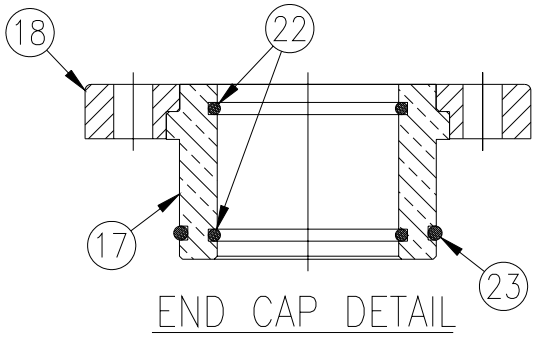


FLOW CONTROL VALVE

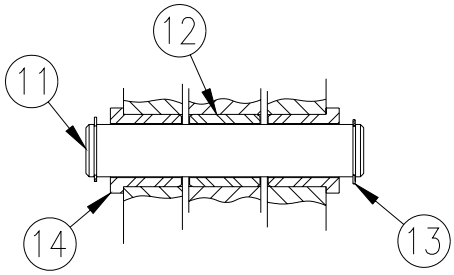
Service

Parts and service are available from your local representative or distributor. Make note of the valve size, operating pressure and model number located on the valve tag.

Drawings and Parts List

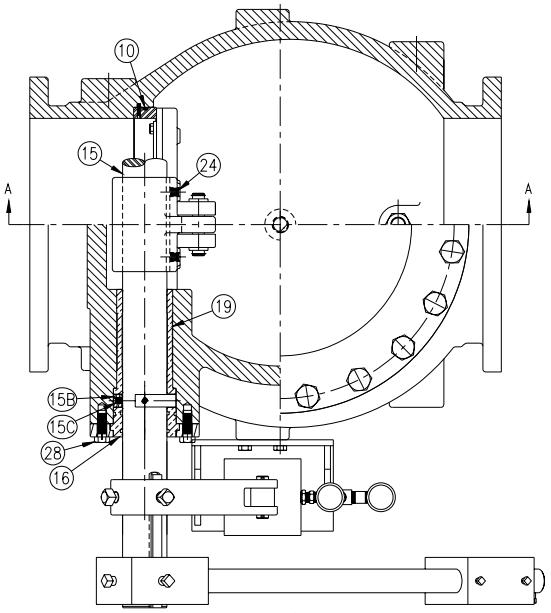


END CAP DETAIL

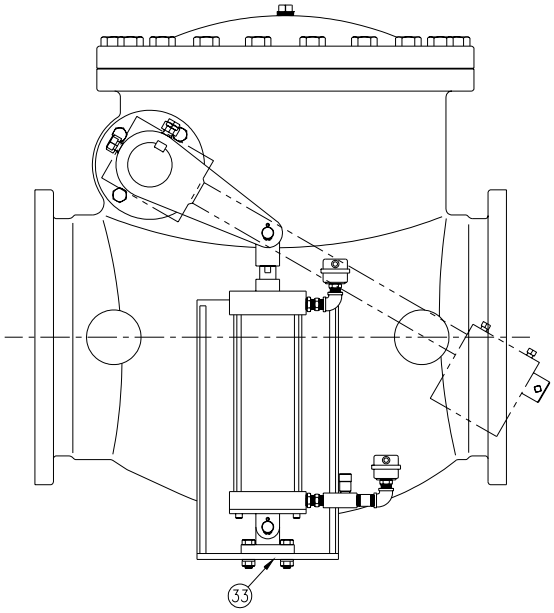


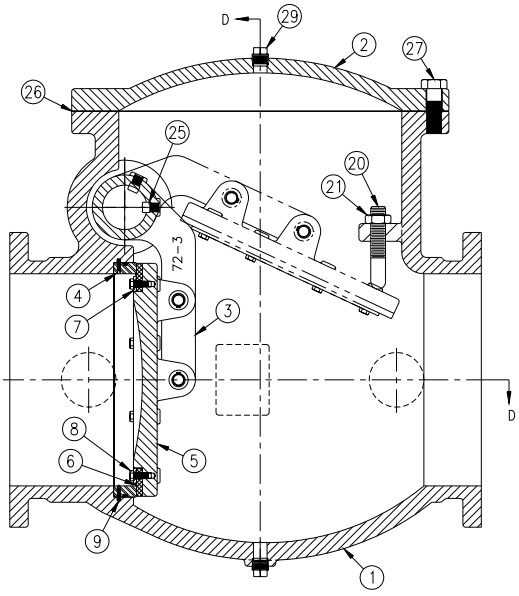
DISC PIN DETAIL

SECTION B–B



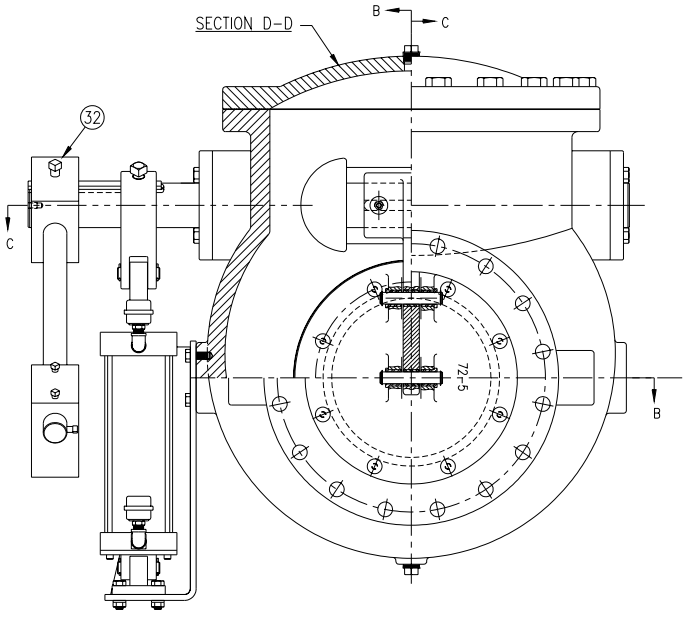
SECTION C–C





SECTION A–A

SECTION D–D



PARTS LIST				
PART NO.	DWG. NO.	DESCRIPTION	MATERIAL	QTY.
1	72-1F	BODY	A126 CL. B CAST IRON	1
2	72-2F	COVER	A126 CL. B CAST IRON	1
3	72-3	DISC ARM	A536 GR.65-45-12 DUCTILE IRON	1
4	72-4	BODY SEAT	B584, UNS C59400, AL-BRONZE	1
5	72-5	DISC	A536 GR.65-45-12 DUCTILE IRON	1
6	72-6	DISC SEAT	D2000 BUNA-N RUBBER	1
7	72-7	SEAT RETAINER	A240 TYPE 316 STAINLESS STEEL	1
8	36-A4-19	SEAT RETAINING BOLT	A193 TYPE 316 STAINLESS STEEL	8
9	69-9	SEAT RETAINER SET SCREW	A193 TYPE 316 STAINLESS STEEL	8
10	AS 568A-467	SEAT O-RING	D2000 BUNA-N RUBBER	1
11	72-11	DISC PIN	A276 TYPE 316 STAINLESS STEEL	2
12	72-12	DISC ARM SLEEVE	A276 TYPE 316 STAINLESS STEEL	2
13	606-8	DISC PIN RETAINING RING	PH 15-7 MO STAINLESS STEEL	4
14	72-14	DISC SLEEVE	A276 TYPE 316 STAINLESS STEEL	4
15	72-15-LW	PIVOT SHAFT	A582 TYPE 303 STAINLESS STEEL	1
15B	72-15B-LW	PIVOT SHAFT RING	A582 TYPE 303 STAINLESS STEEL	1
15C	72-15C-LW	SET SCREW	A193 TYPE 316 STAINLESS STEEL	2
16	72-16	R.H. END CAP BUSHING	B505, UNS C59400, AL-BRONZE	1
17	72-17	L.H. END CAP BUSHING	B505, UNS C59400, AL-BRONZE	1
18	72-20	END CAP FLANGE	A126 CL. B CAST IRON	2
19	72-18	PIVOT BUSHING	B505, UNS C95400, AL-BRONZE	2
20	73-19	DISC STOP	A276 TYPE 316 STAINLESS STEEL	1
21	72-19A	DISC STOP NUT	A194 TYPE 316 STAINLESS STEEL	1
22	AS 568A-343	INT. O-RING	D2000 BUNA-N RUBBER	4
23	AS 568A-352	EXT. O-RING	D2000 BUNA-N RUBBER	2
24	SHSS .75X.75	DISC SET SCREW	A193 TYPE 316 STAINLESS STEEL	2
25	72-23	PIVOT KEY	A276 TYPE 316 STAINLESS STEEL	1
26	72-24	COVER GASKET	KLINGER-SIL C4401	1
27	201-11A	COVER BOLT	A307 GR.B STEEL	20
28	60-11L	END CAP BOLT	A307 GR.B STEEL	8
29	36-33	PLUG	A126 CL. B CAST IRON	2
32	72-32	LEVER ASSEMBLY	STEEL	1
33	72-33	AIR CUSHION	COMMERCIAL ALUMINUM TIE-ROD	1