



— MODEL —

Series 501A

Wafer Swing Check Valve

DESCRIPTION

The Cla-Val Model 501A Wafer Swing Check Valve combines low head loss characteristics and a compact space saving design. It is intended for use with a wide variety of fluids including water, oil, gas, and steam. The 501A Check Valve is designed for installation between ANSI flanges centered and supported by the flange bolts.

INSTALLATION

The Cla-Val 501A Check Valve is designed to fit between ANSI Class 125 and Class 150 Flanges (flat face). Two standard flange gaskets for each valve are recommended.

Determine minimum bolt/stud length by adding check valve length to ANSI bolt length. ANSI bolt length can be found in the following standards: For Class 125 use ASME/AWWA/ANSI standard B16.1, or For Class 150 use ASME/AWWA/ANSI standard B16.5.

The Cla-Val 501A Check Valve is installed between pipe flanges with the nameplate or eye bolt on top and with the flow arrow indicating the "free flow" direction. The 501A is intended for horizontal pipe installations, but can operate satisfactorily in vertical up flow applications. See engineering data sheet E-501A for recommendations.

During flowing conditions the clapper swings into the downstream piping. To avoid valve damage this piping must be: 1.) full internal pipe diameter, 2.) without internal mechanical obstructions, and 3.) straight for a minimum of 3 pipe diameters from the valve outlet.

The valve is supported between the flanges by long flange bolts and nuts or studs and nuts connecting the two pipe flanges. The valve is centered to the pipe by the flange bolts. 12" and larger size valves are quite heavy, so some form of support is recommended.

Two customer supplied gaskets are needed.

1.) Before valve is installed, pipe line should be flushed of all chips, scale, and debris.

2.) It is recommended that either gate or block valves be installed near both ends of the 501A Check valve to facilitate isolating the valve for preventative maintenance and repair.

3.) Verify flange dimensions match valve rating and dimensions.

4.) Loosely install lower half of the flange bolts with gaskets on both flanges.

5.) Lower 501A Check Valve between flanges and gaskets with nameplate or eye bolt upwards and centered until it is resting and supported by lower bolts. Note flow arrow orientation to be sure it is correct for the application.

6.) Install remaining upper bolts and tighten in a "cross-over" pattern until no leaks appear.

OPERATION

The standard soft seat provides a drip tight seal and the quick spring assisted closure minimizes the possibility of water hammer. The clapper initiates closure before flow reversal to prevent any surges created by the check valve closure.

MAINTENANCE

Due to the low wearing working parts and simple construction the 501A Check valve will provide many years of trouble free service. However, for critical applications or for preventative maintenance, an annual visual inspection is recommended.

The primary symptom that signals the need for valve servicing is when the synthetic rubber seal (Nitrile or Viton) which can wear during service eventually creates a small leaking condition in the check direction. Valves subject to a high frequency of operations may require spring replacement at earlier intervals. This should become apparent when valve closure is noisy.

1. Caution. It should be realized that the valve cannot be serviced under pressure. Steps should be taken to remedy this situation before proceeding any further.

2. Removal from the pipe line for maintenance only requires the removal of upper half of the flange bolts and the lower half being loosened only.

DISASSEMBLY

1. Remove valve from pipe line.

2. Lay valve down with clapper assembly facing upwards (flow arrow pointing up). Protect valve from damage.

3. Remove pipe plug.

4. Remove hinge pin. Slightly compress spring with hand tools to allow easy removal.

One end of the hinge pin is threaded to assist in removal. Install a mating threaded rod to serve as a tool when removing pin.

5. Carefully lift clapper and hinge arm assembly out of valve. Do not damage seating surfaces of valve body. On larger valves it may be easier to unbolt clapper from hinge arm.

6. Remove two thrust washer bushings and spring.

7. Remove 'O' ring seat seal in valve body with a small hand tool.

8. Inspect all parts for signs of wear or damage. Replace if necessary.

REASSEMBLY

1. Reassembly is basically the reverse of disassembly steps.

2. Clean all parts.

3. Lay valve body down with seat and hinge arm cavity facing upwards. Use care to prevent damage.

4. Replace two bushings in valve body after using a very small amount of waterproof grease on the inside of the bushings.

5. Install new 'O' ring seat seal in dovetail groove in valve body. The groove is slightly larger in diameter than the 'O' ring to secure 'O' ring in place. Lubricate the 'O' ring with a very small amount of waterproof grease before installing. Stretch 'O' ring and place or "pop" it into groove at two opposite locations. Then push remainder of 'O' ring into the groove by hand pressure making sure that it is in flat and not twisted.

6. Carefully place clapper and hinge arm assembly into body with seating surfaces together. Line up hinge arm holes, bushings, and hinge arm cavity of body.

7. Lubricate hinge pin with a very small amount of waterproof grease and reinstall (using threaded rod tool) from the outside through body, first bushing, and part of hinge arm.

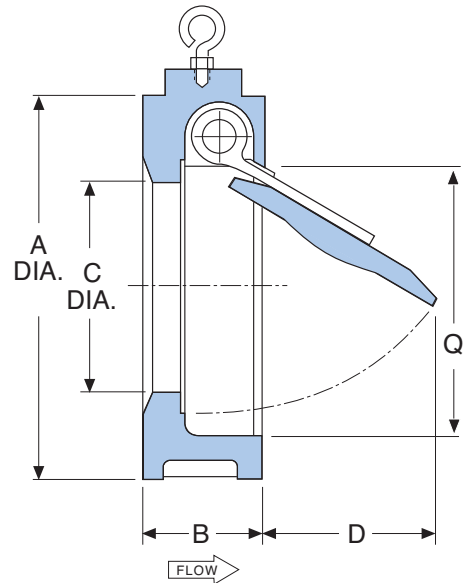
8. Carefully compress torsion spring slightly and place in center of hinge arm cavity. Insert hinge pin through spring, remaining part of hinge arm, and second bushing. Be sure that threaded end of hinge pin can be seen from the outside of the valve body.

9. Replace plug.

10. Check valve for freedom of movement. Place valve in a vertical position with hinge pin at top. Move clapper assembly by hand through full stroke. Larger valves should be supported to prevent valve overturning and causing damage.

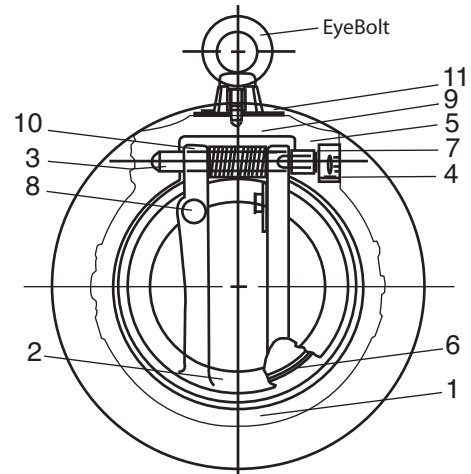
11. Conduct leak test if possible.

12. Reinstall valve in pipeline



Dimensions (In Inches)

Size	A	B	C	D	E (Deg.)	Q	Wt.Lbs.
2	4 1/8	1 1/16	1 3/8	1 1/16	59	2	3.1
2 1/2	4 7/8	1 1/16	1 3/4	1 1/16	60	2 7/8	4.2
3	5 3/8	2 1/2	2 3/8	1 1/8	62	3	6.6
4	6 3/4	2 1/2	3 1/8	1 5/8	60	4	8.1
5	7 3/4	2 3/4	3 7/8	2 1/2	61	5	12.3
6	8 3/4	3	4 1/2	3 3/4	72	6	18
8	11	3 1/2	6 1/4	4 3/4	70	7 3/4	27.3
10	13 3/8	4 1/2	7 5/8	5 3/4	66	9 3/4	51.3
12	16 1/8	4 1/2	9 1/2	7 3/8	65	11 3/4	72.6



Series 501A - Wafer Swing Check Valves (Standard) 2" - 12"

Technical Data

Pressure Rating: 235 Max psi

Temperature Range:- 5° to 210° F

Disc Cracking Pressure: All Valves equal approximately 0.5 psi

Fluids: Water, Wastewater, Chemicals and Petroleum

No.	Description	Material	Specifications
1	Body	Cast Iron or Steel	ASTM A48 / ASTM A216
2	Disc	316 Stainless Steel	ASTM A473 / A743M- CF8M
3	Shaft	316 Stainless Steel	ASTM A276
4	Plug	304 Stainless Steel	ASTM A276
5	Seat (Shaft)	PTFE	-
6	Seat (Body)	Nitrile or Viton™	Commercial
7	Bushing	316 Stainless Steel	ASTM A276
8	Travel Stop	316 Stainless Steel	ASTM A276
9	Tag	Aluminum	-
10	Spring	304 Stainless Steel	-

For a more detailed IOM Manual go to www.cla-val.com or contact a Cla-Val Regional Sales Office.