



D-060-C HF NS

D-062 HF NS



Combination Air Valve for High Flow -Non Slam

Description

The Combination Non Slam Air Valve has the features of both an Air-release valve and an Air/vacuum valve. The Air-release component of the valve was designed to automatically release to the atmosphere small pockets of air as they accumulate at local high points along a pipeline when the pipeline or piping system is full and operating under pressure.

The Air/vacuum component was designed to automatically discharge or admit large volumes of air during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures whenever water column separation occurs. The D-060-C HF NS, D-062 HF NS Protects from pressure surges in the pipeline system, in situations such as column separation, deep well pumping and rapid filling of mains.

Operation

The D-060-C HF NS, D-062 HF NS (High Flow, Non-Slam) air valve are a surge dampening, slam preventing, 3 stage combination air valve.

This revolutionary, long sought after air valve provides high capacity vacuum protection and, at the same time, efficient surge suppression. At sudden drainage and/or water column separation (at sudden pump trips or valve closure, for instance), the large orifice admits air at high flow rates, thus, preventing vacuum. As the water column and/or pressure wave return, large volumes of air are discharged at high velocity, causing the aero-float, doughnut shaped throttling disc, to flow up, closing the large orifice partially, allowing air to exhaust slowly, through the smaller orifice in the aero-float throttling disc. The slowly exhausting air pocket dampens the slam of the returning water column, thus, suppressing the pressure surge. As water arrives at a much slower rate, dampened by the slower air release, it buoys up the main float, gently closing the air/vacuum component of the air valve. The upper screen is protected with protective "umbrella".

Automatic component

The S-050-C, S-052 air release component continues releasing air while the line and the air valve are pressurized.

Large orifice and rolling seal mechanism: Dramatically reduces the possibility of obstruction by debris. Discharges high air flow rates. One size orifice for a wide pressure range (up to 360 psi).

Achieved by: A.R.I patented, Rolling Seal Mechanism.

Body made of high strength materials.

All operating parts are made of specially selected corrosion resistant polymer materials.

Main Features

- Working pressure range: D-060-C HF NS: 3 -285 psi
D-062 HF NS: 3-360 psi.
- Test pressure for the air valve is 1.5 times its working pressure.
- Working Temperature: 140° f.
- Maximum working temperature for short time period: 194° f.
- Aerodynamic design enables high in flow rates and controlled out flow rates of air. All main flow cross-sections are equal or greater than the nominal port area. Reliable operation reduces pressure surges and water hammer incidents.
- Special nozzle design: combination of stainless steel SAE 316 and E.P.D.M rubber, assures long-term maintenance free operation. Screen protected outlet.

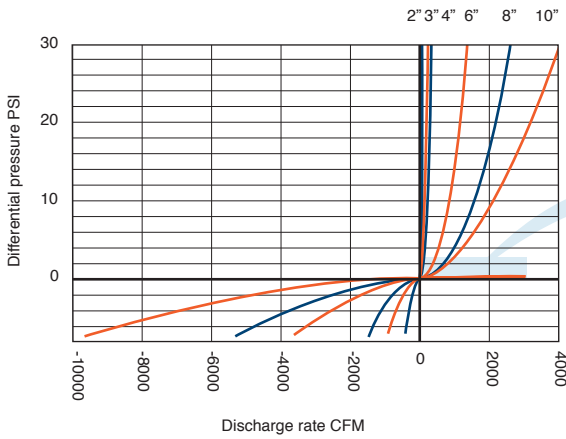
Option

Cover and screen can be removed for attaching ventilation pipe-to-surface. For instructions, please refer to the D-060-C HF page.

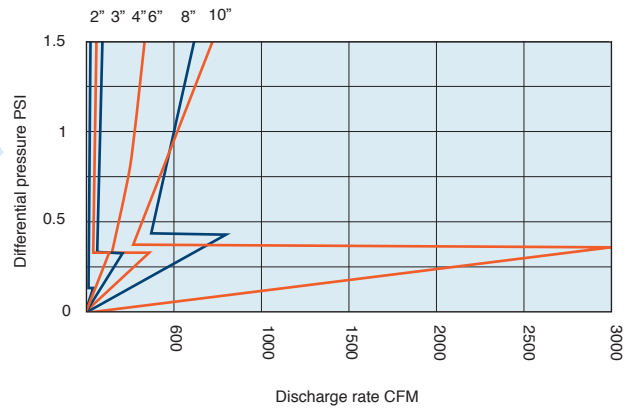
Valve Selection

- D-060-C HF NS protected from vandalism by cast metal body for 285 psi.
- D-062 HF NS protected from vandalism by cast metal body for 360 psi.
- These valves are manufactures with flanged ends to meet ASA standard (D-060-C HF NS -ASA 150, D-062 HF NS -ASA 300) or any requested standard. The 2" valve is also available with NPT male threads.

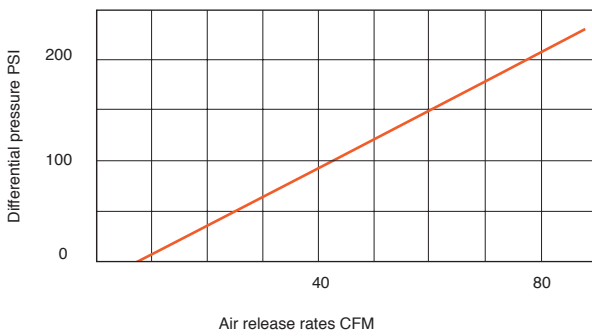
AIR & VACUUM FLOWRATE



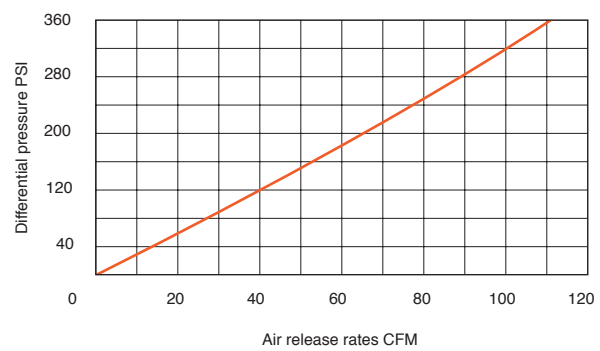
AIR DISCHARGE SWITCHING REGION



D-060-C HF NS AUTOMATIC AIR RELEASE



D-062 HF NS AUTOMATIC AIR RELEASE

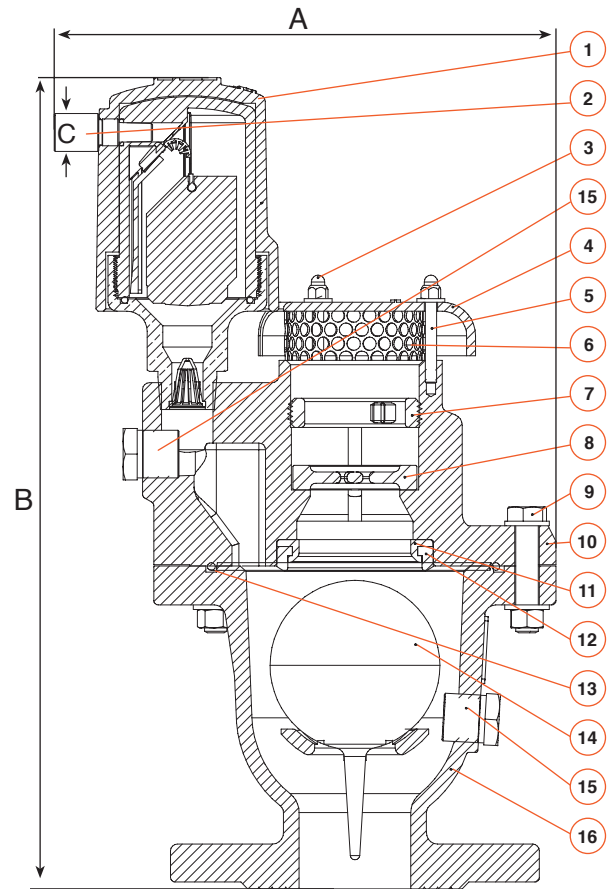


DIMENSIONS AND WEIGHTS

Nominal size	Dimensions				Weight Lbs.	Orifice Area Sq.in		
	A	B	internal C	external		Air & Vacu.	D-060-C HF Auto.	D-062 HF
1", 2" Threaded	8.8	14.7	1/4	0.7	30.9	3.04	0.0186	0.014
2" Flanged	8.8	14.2	1/4	0.7	30.9	3.04	0.0186	0.014
3"	9.6	17.0	1/4	0.7	46.3	7.790	0.0186	0.014
4"	11.0	18.7	1/4	0.7	63.9	12.167	0.0186	0.014
6"	14.8	28.5	1/4	0.7	202.8	27.376	0.0186	0.014
8"	18.3	33.8	1/4	0.7	308.6	48.670	0.0186	0.014
10"	23.0	39.2	1/4	0.7	680.0	76.08	0.0186	0.014

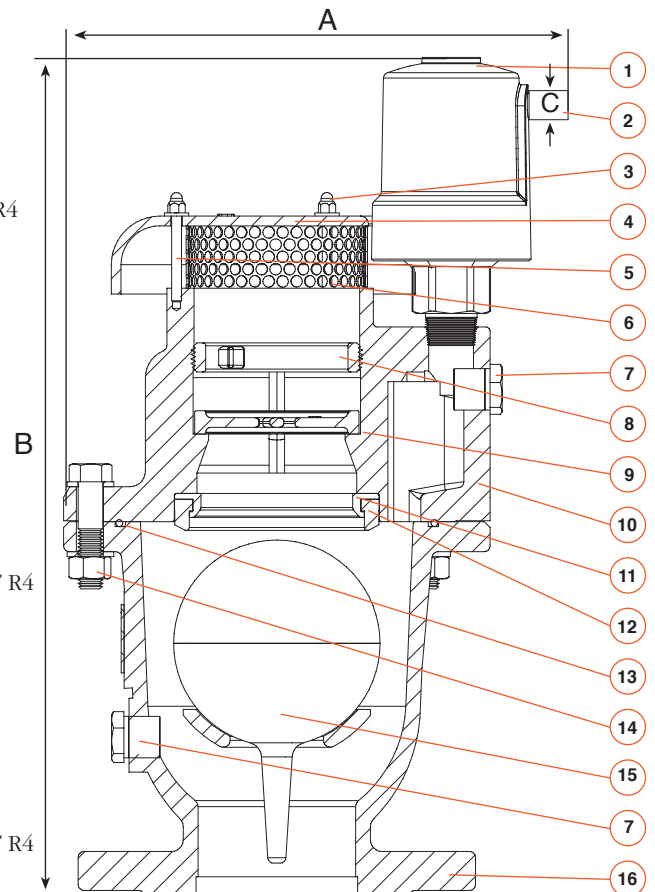
PARTS LIST AND SPECIFICATION FOR 2"

No. Part	Material
1. S-050-C Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4
S-052 Body	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2. One Way Outlet	Brass
3. Nut & Washer	NSF 61 Certified STST UNS 30400
4. Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
5. Bolt	NSF 61 Certified STST UNS 30400
6. Screen	NSF 61 Certified STST UNS 30400
7. Flap	NSF 61 Certified STST UNS 31600
8. Ring	NSF 61 Certified STST UNS 31600
9. Bolt & Nut	NSF 61 Certified STST UNS 30400
10. Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
11. Nozzle Seat	NSF 61 Certified STST UNS 31600
12. Nozzle Seal	NSF 61 Certified E.P.D.M.
13. O - Ring	NSF 61 Certified NBR 70
14. Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
15. Plug	NSF 61 Certified Reinforced Nylon
16. Body	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



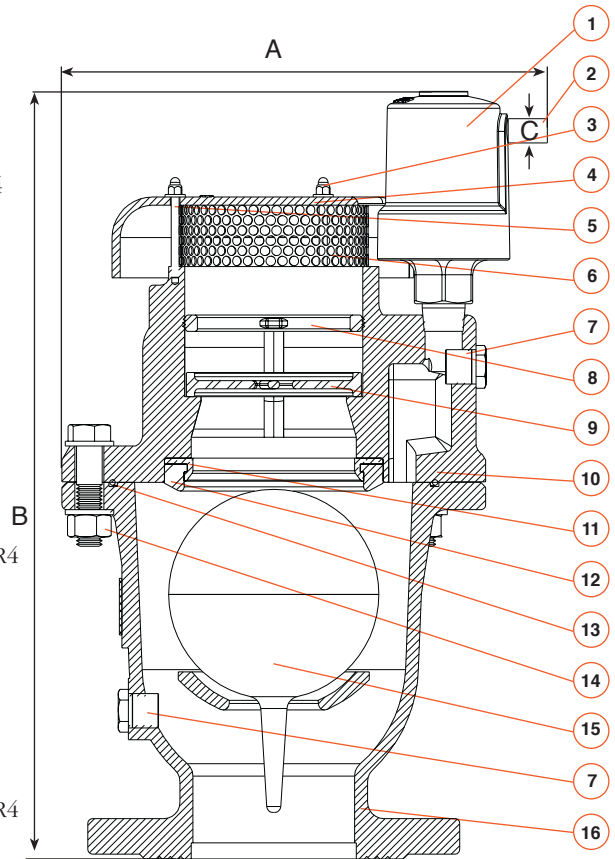
PARTS LIST AND SPECIFICATION FOR 3"

No. Part	Material
1. S-050-C Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4
S-052 Body	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2. One Way Outlet	Brass
3. Nut & Washer	NSF 61 Certified STST UNS 30400
4. Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
5. Bolt	NSF 61 Certified STST UNS 30400
6. Screen	NSF 61 Certified STST UNS 30400
7. Plug	NSF 61 Certified Reinforced Nylon
8. Flap	NSF 61 Certified STST UNS 31600
9. Ring	NSF 61 Certified STST UNS 31600
10. Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
11. Nozzle Seat	NSF 61 Certified STST UNS 31600
12. Nozzle Seal	NSF 61 Certified E.P.D.M.
13. O - Ring	NSF 61 Certified NBR 70
14. Bolt & Nut	NSF 61 Certified STST UNS 30400
15. Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
16. Body	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



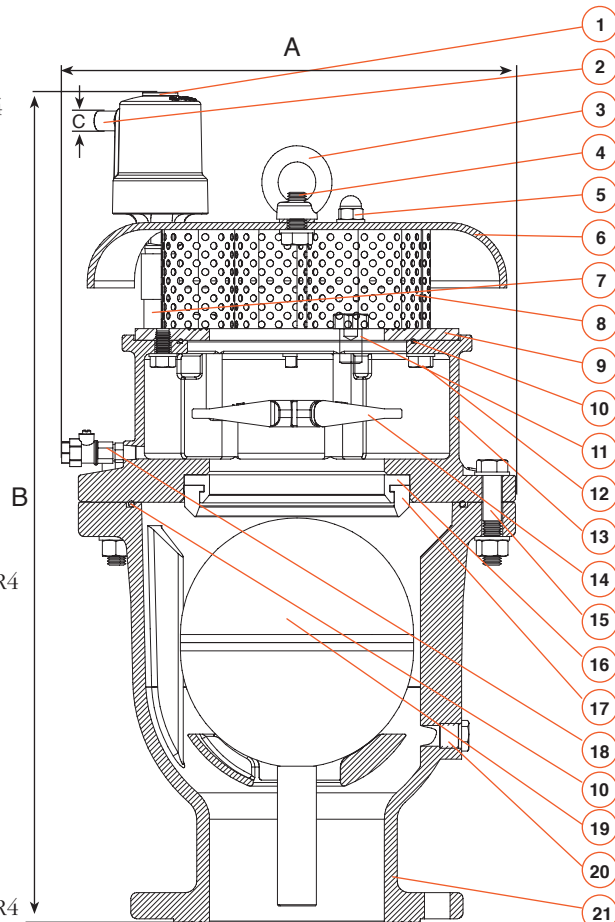
PARTS LIST AND SPECIFICATION FOR 4"

No.	Part	Material
1.	S-050-C Body S-052 Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4 Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Outlet	Brass
3.	Nut	NSF 61 Certified STST UNS 30400
4.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
5.	Bolt	NSF 61 Certified STST UNS 30400
6.	Screen	NSF 61 Certified STST UNS 30400
7.	Plug	NSF 61 Certified Reinforced Nylon
8.	Ring	NSF 61 Certified STST UNS 31600
9.	Flap	NSF 61 Certified STST UNS 31600
10.	Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
11.	Nozzle Seat	Stainless Steel DIN 7981 C A2
12.	Nozzle Seal	NSF 61 Certified E.P.D.M.
13.	O - Ring	NSF 61 Certified NBR 70
14.	Bolt & Nut	NSF 61 Certified STST UNS 30400
15.	Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
16.	Body	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



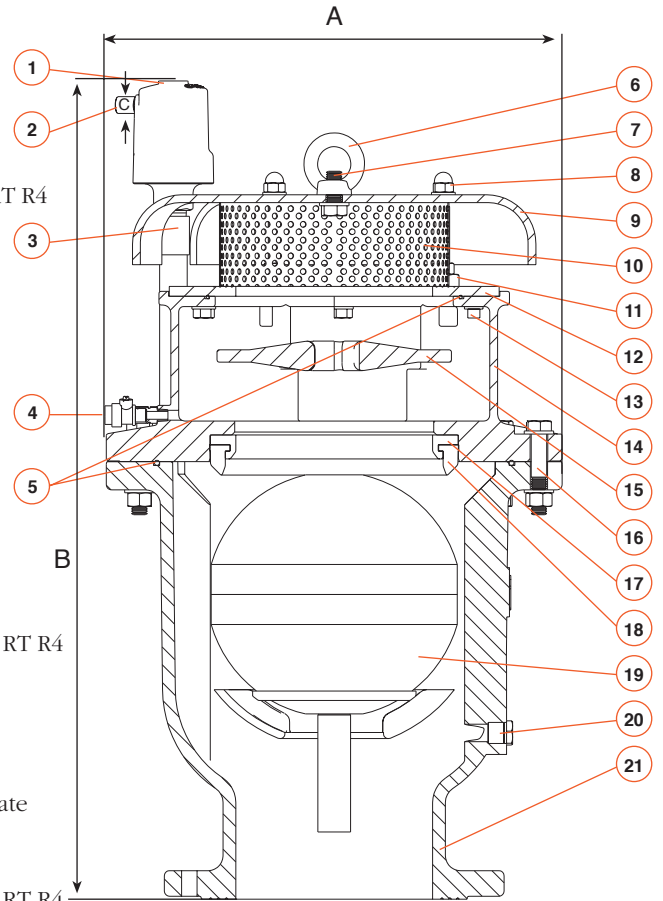
PARTS LIST AND SPECIFICATION FOR 6"

No.	Part	Material
1.	S-050-C Body S-052 Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4 Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Outlet	Brass
3.	Lifting Ring	Carbon Steel
4.	Bolt & Washer	NSF 61 Certified STST UNS 30400
5.	Nut & Washer	NSF 61 Certified STST UNS 30400
6.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
7.	Nipple & coupling	NSF 61 Certified STST UNS 30400
8.	Screen	NSF 61 Certified STST UNS 30400
9.	Ring	NSF 61 Certified STST UNS 31600
10.	O - Ring	NSF 61 Certified NBR 70
11.	Bolt	NSF 61 Certified STST UNS 30400
12.	Bolt & Nut	NSF 61 Certified STST UNS 30400
13.	Cover	Cast Iron ASTM A48 CL.35B / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
14.	Flap	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
15.	Bolt & Nut	NSF 61 Certified STST UNS 30400
16.	Nozzle Seat	Stainless Steel DIN 7981 C A2
17.	Nozzle Seal	NSF 61 Certified E.P.D.M.
18.	Test Cock + Adaptor	Bronze & Chrome
19.	Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
20.	Plug	NSF 61 Certified Reinforced Nylon
21.	Body	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



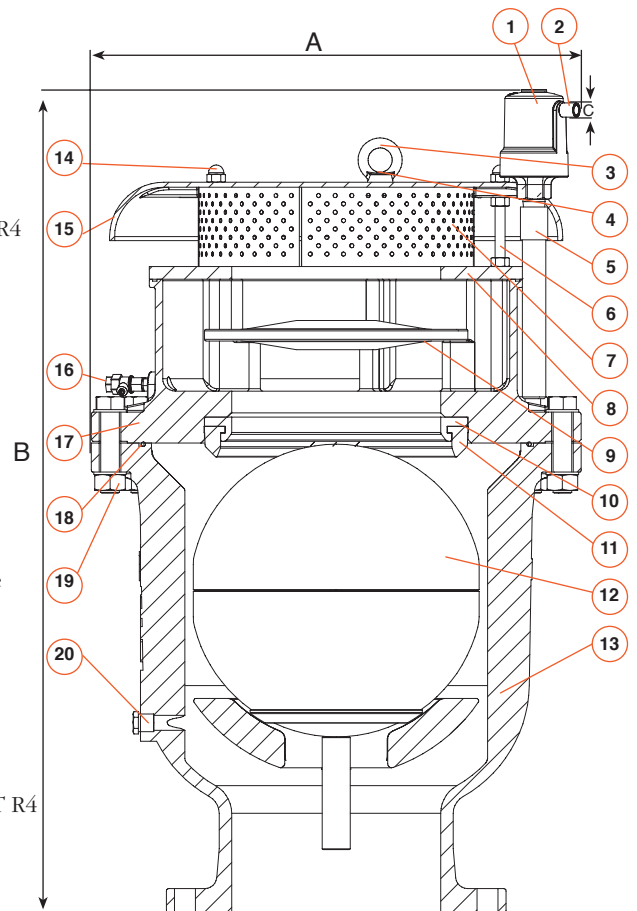
PARTS LIST AND SPECIFICATION FOR 8"

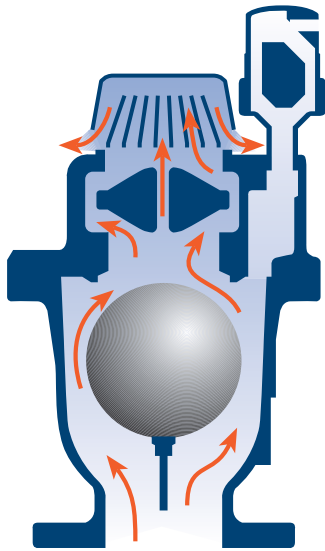
No.	Part	Material
1.	S-050-C Body S-052 Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4 Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Outlet	Brass
3.	Nipple & coupling	NSF 61 Certified STST UNS 30400
4.	Test Cock + Adaptor	Bronz & Chrome
5.	O - Ring	NSF 61 Certified NBR 70
6.	Lifting Ring	Crabon Steel
7.	Bolt & Washer	NSF 61 Certified STST UNS 30400
8.	Nut & Washer	NSF 61 Certified STST UNS 30400
9.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
10.	Screen	NSF 61 Certified STST UNS 30400
11.	Bolt	NSF 61 Certified STST UNS 30400
12.	Ring	NSF 61 Certified STST UNS 31600
13.	Bolt & Washer	NSF 61 Certified STST UNS 30400
14.	Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
15.	Flap	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
16.	Bolt & Nut	NSF 61 Certified STST UNS 30400
17.	Nozzle Seat	Stainless Steel DIN 7981 C A2
18.	Nozzle Seal	NSF 61 Certified E.P.D.M.
19.	Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
20.	Plug	NSF 61 Certified Reinforced Nylon
21.	Body	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



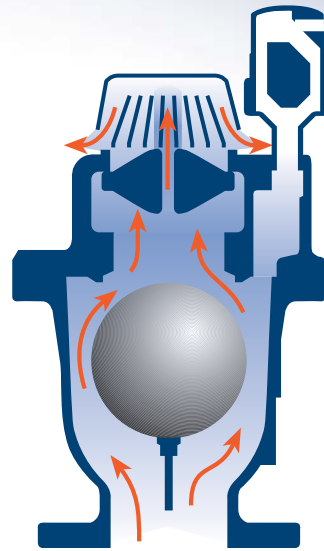
PARTS LIST AND SPECIFICATION FOR 10"

No.	Part	Material
1.	S-050-C Body S-052 Body	Cast Iron ASTM A-48 CL.35B / Resicoat RT R4 Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Outlet	Brass
3.	Lifting Ring	Crabon Steel
4.	Bolt & Washer	NSF 61 Certified STST UNS 30400
5.	Nipple & coupling	NSF 61 Certified STST UNS 30400
6.	Bolt	NSF 61 Certified STST UNS 30400
7.	Screen	NSF 61 Certified STST UNS 30400
8.	Ring	NSF 61 Certified STST UNS 31600
9.	Flap	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
10.	Nozzle Seat	Stainless Steel DIN 7981 C A2
11.	Nozzle Seal	NSF 61 Certified E.P.D.M.
12.	Float	NSF 61 Certified STST UNS 31600 /Polycarbonate
13.	Body	Cast Iron ASTM A48 CL.35B / Ductile Iron ASTM A-536 60-40-18
14.	Nut & Washer	NSF 61 Certified STST UNS 30400
15.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
16.	Test Cock + Adaptor	Bronz & Chrome
17.	Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4 / Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
18.	O - Ring	NSF 61 Certified NBR 70
19.	Bolt & Nut	NSF 61 Certified STST UNS 30400
20.	Plug	NSF 61 Certified Reinforced Nylon

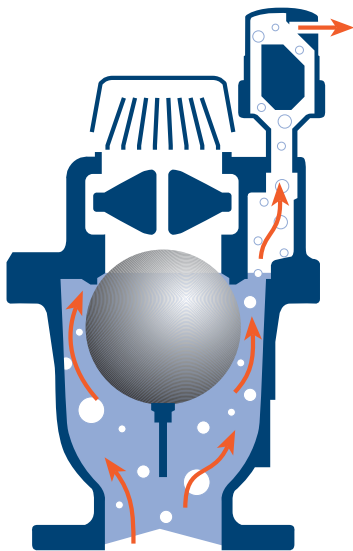




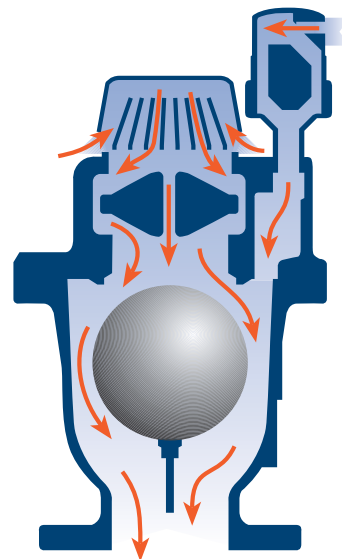
1. When water, rapidly filling the pipe line, pushes the air out through the Air Valve, a differential air pressure is created across the valve orifice.



2. When this differential pressure reaches a prefixed level (usually it will be prefixed at 0.72 psi) the orifice disc will close.
3. Air will continue to come out through the small orifice disc - until all the air will be exhausted and water will reach the air & vacuum float. This double stage air & vacuum air discharge prevents the slam effect and therefore suppresses water hammer.



4. When water reaches the air & vacuum float, it lifts it up, closing the air & vacuum orifice and completing the air & vacuum cycle.
5. The "vented Check Valve Orifice Disc" will come back to its normal open position.



6. When water is drained out of the pipe line, the resulting pressure drop lets the air & vacuum float fall down, opening the orifice fully for intake of high volume of air into the line.