D-060-C HF

Water

Combination Air Valve for High Flow

Description

The Combination 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 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.

Operation

The Air & Vacuum component, with the large orifice, exhausts air at high flow rates during the filling of the system and admits air at high flow rates during its drainage and at water colomn seperation. High velocity air, or even air mixed with a mist of water spray, cannot blow the float shut. Water entry will cause the sealing of the valve.

At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.

The smooth release of air prevents pressure surges and other destructive phenomena.

Admitting air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.

The automatic Air Release component, releases entrapped air from peaks of pressurized systems where the valve should be installed.

Without air valves pockets of accumulated air may cause the following destructive phenomena:

- Obstruction to effective flow and hydraulic conductivity of the system along with a throttling effect similar to a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Accelerate cavitation damages.
- High-pressure surges.
- Accelerate corrosion.
- Danger of a high-energy burst of compressed air.

As the system starts to fill, the Combination air valve functions according to the following stages:

1. Entrapped air is released by the valve.
2. Liquid enters the valve lifting the floats and sealing
3. Entrapped air, which accumulates at peaks along the system (where Combination Air Valves should be installed), rises to the top of the valve, which in turn displaces the liquid in the valve's body.
4. The float descends, peeling the rolling seal, the orifice opens and the accumulated air is released.
5. Liquid penetrates into the valve, the float rises, rolling the rolling seal to its sealing position.

When internal pressure falls below atmospheric pressure (negative pressure):

1. The float will immediately drop away from the orifice.
2. Air is admitted to the system.

Main Features

- Working pressure range: D-060-C HF 3 -285 psi, D-062 HF 3 -360 psi. D-014 HF 3-580 psi.
- Test pressure for the air valve is 1.5 times its working pressure.
- Working Temperature: 140^0 f.
- Maximum instantaneous working temperature: 194^0 f.
- Aerodynamic design enables high flow rates of air (Inflow and outflow).
- All flow cross-sections are equal or greater than the nominal port area.
- Reliable operation reduces water hammer incidents. Dynamic design allows high velocity air discharge; Preventing premature closing.
- Special orifice seat design: Stainless steel SAE 316 and E.P.D.M. rubber, assures long-term maintenance free operation.
- Screen protected outlet.
- The upper screen is protected with protective "umbrella".
- 250 micron inside & out NSF 61 approved FBE coating.

Automatic component

- Large orifice:

Dramatically reduces the possibility of obstruction by debris.
Discharges high air flow rates, as much as 14 times more than any other existing Automatic Air Release valve.
One size orifice for a wide pressure range (up to 360 psi).
Achieved by: A.R.I. patent, Rolling Seal Mechanism.

- Body made of high strength materials.
- All operating parts are made of specially selected corrosion resistant composite materials.

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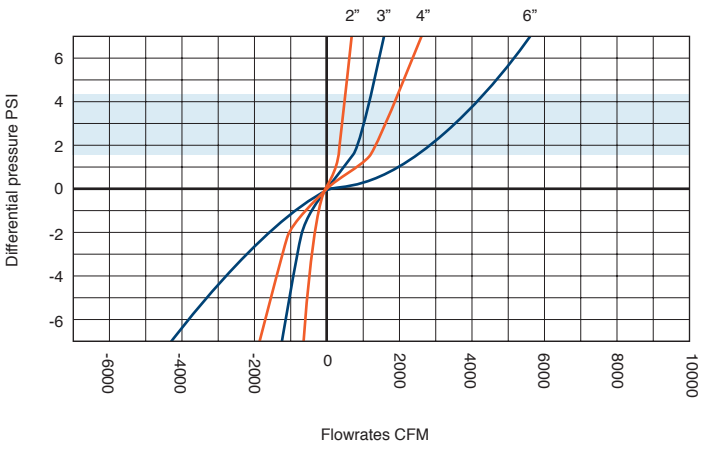
Valve Selection

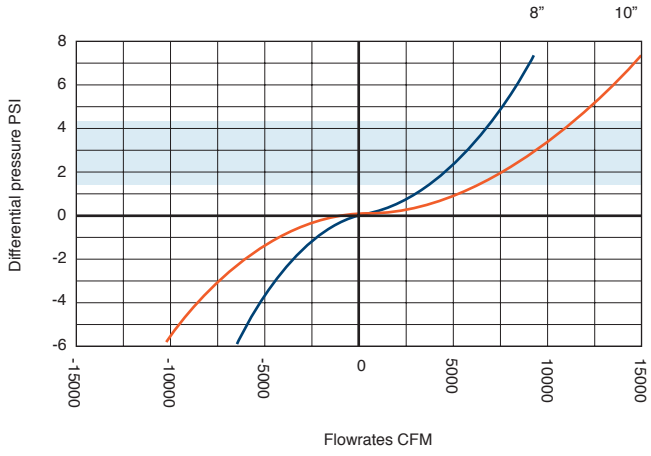
D-060-C HF Vandalism protect by metal casting body, for 285 psi.
D-062 HF Vandalism protect by metal casting body for 360 psi.
D-014 HF for 580 psi.

D-014 HF

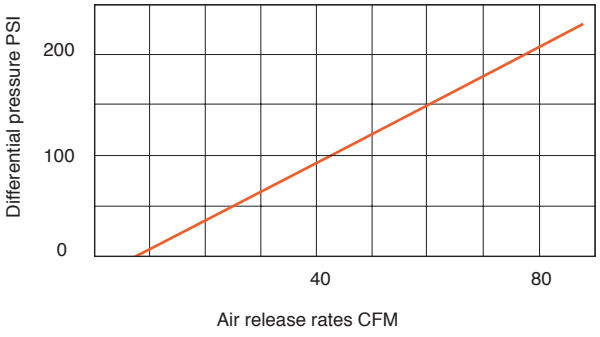
AIR & VACUUM FLOWRATE

reccomended range

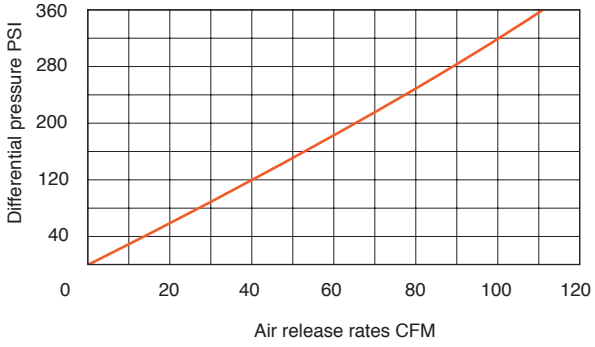




D-060-C HF AUTOMATIC AIR RELEASE



D-062 HF AUTOMATIC AIR RELEASE

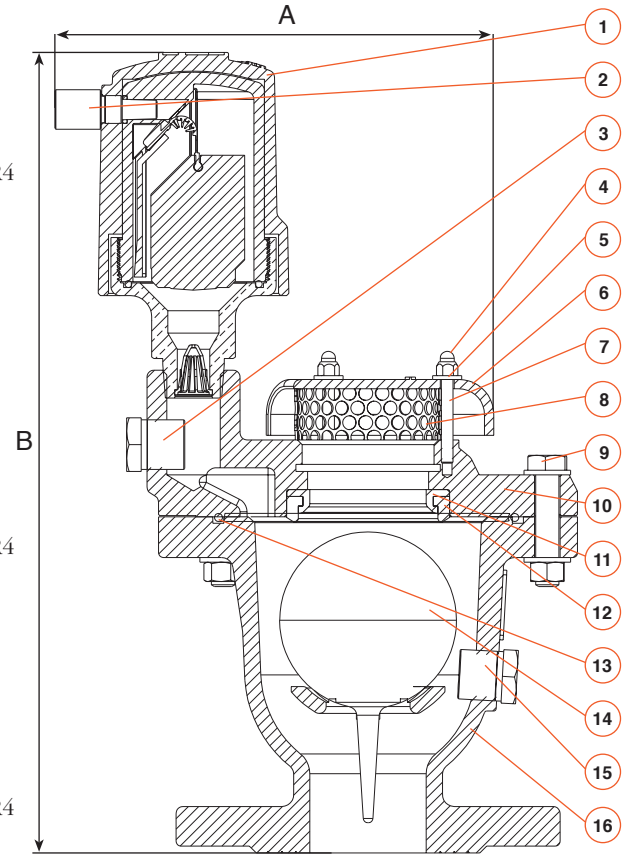


DIMENSIONS AND WEIGHTS

Nominal size	Dimensions A	Dimensions B	Weight Lbs.	Orifice Area Sq.in Air & Vacu.	Auto. D-060-C HF	Auto. D-062 HF
1", 2" Threaded	8.8	13.3	24.7	3.038	0.0186	0.014
2" Flanged	8.8	12.8	26.7	3.038	0.0186	0.014
3"	9.6	15.5	43.2	7.796	0.0186	0.014
4"	11.0	17.2	62.2	12.167	0.0186	0.014
6"	14.8	25.0	173.3	27.376	0.0186	0.014
8"	18.3	28.5	260.1	48.670	0.0186	0.014
10"	23.0	38.9	584.0	76.08	0.0186	0.014

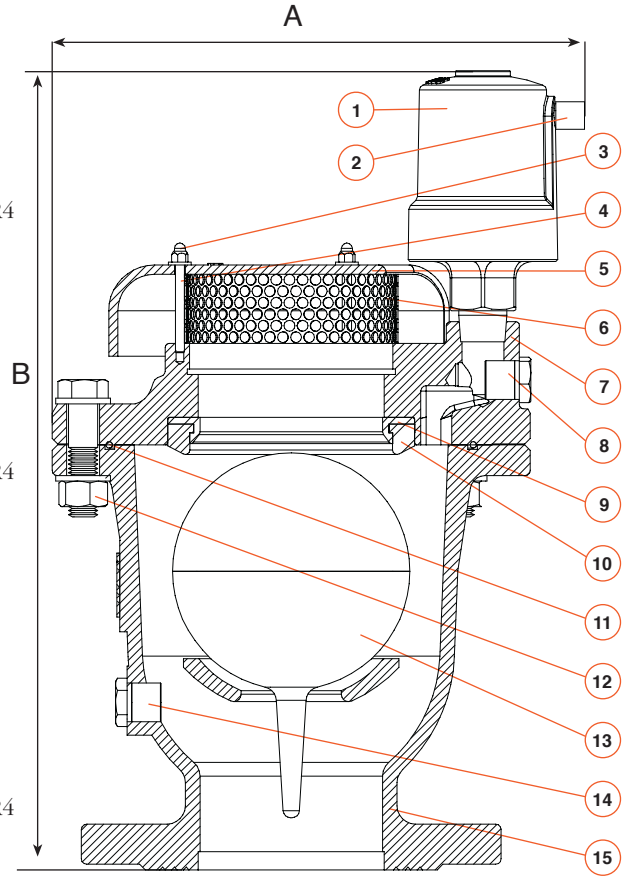
PARTS LIST AND SPECIFICATION FOR 2”

No.	Part		Material
1.	S-050-C		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052		Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Out		Brass
3.	Plug		NSF 61 Certified Reinforced Nylon
4.	Nut		NSF 61 Certified STST UNS 30400
5.	Washer		NSF 61 Certified STST UNS 30400
6.	Screen Cover		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
7.	Bolt		NSF 61 Certified STST UNS 30400
8.	Screen		NSF 61 Certified STST UNS 30400
9.	Bolt & Nut		NSF 61 Certified STST UNS 30400
10.	Cover	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
11.	Nozzle Seat		Stainless Steel SAE 304 / UNS 30400
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	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



PARTS LIST AND SPECIFICATION FOR 3”

No.	Part		Material
1.	S-050-C		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052		Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Out		Brass
3.	Nut		NSF 61 Certified STST UNS 30400
4.	Bolt		NSF 61 Certified STST UNS 30400
5.	Screen Cover		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
6.	Screen		NSF 61 Certified STST UNS 30400
7.	Cover	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
8.	Plug		NSF 61 Certified Reinforced Nylon
9.	Nozzle Seat		NSF 61 Certified STST UNS 30400
10.	Nozzle Seal		NSF 61 Certified E.P.D.M
11.	O - Ring		NSF 61 Certified NBR 70
12.	Bolt & Nut		NSF 61 Certified STST UNS 30400
13.	Float		NSF 61 Certified STST UNS 31600 /polycarbonate
14.	Plug		NSF 61 Certified Reinforced Nylon
15.	Body	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



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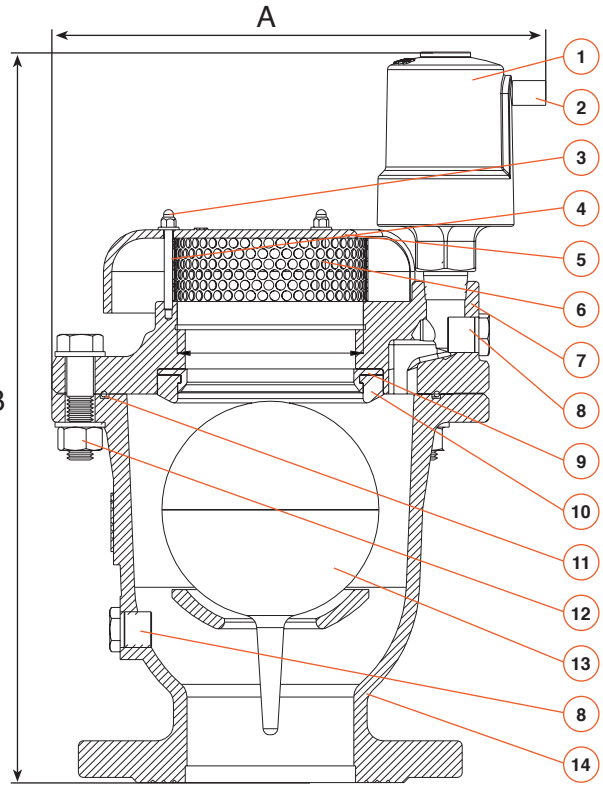
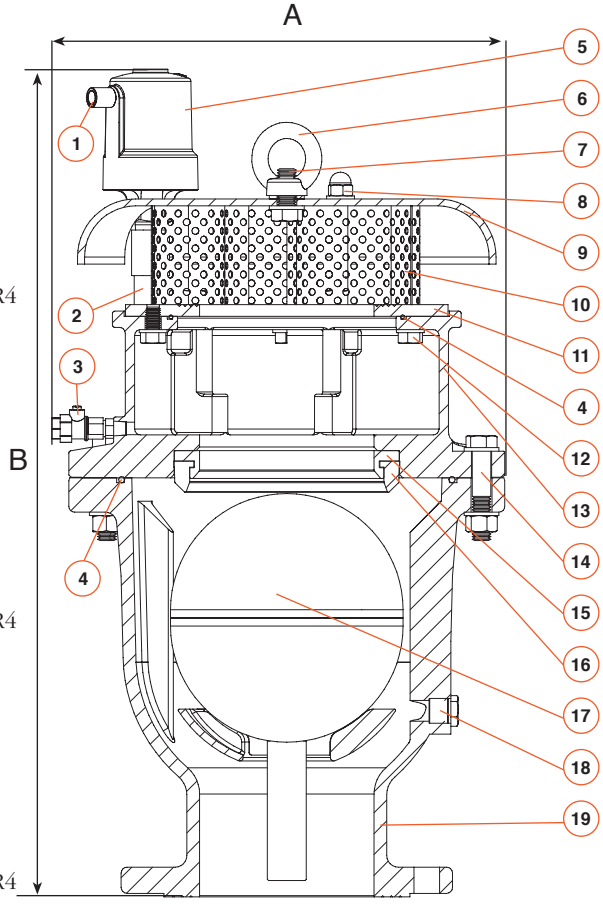
PARTS LIST AND SPECIFICATION FOR 4”

No.	Part		Material
1.	S-050-C		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052		Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Out		Brass
3.	Nut & Washer		NSF 61 Certified STST UNS 30400
4.	Bolt		NSF 61 Certified STST UNS 30400
5.	Screen Cover		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
6.	Screen		NSF 61 Certified STST UNS 30400
7.	Cover	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
8.	Plug		NSF 61 Certified Reinforced Nylon
9.	Nozzle Seat		NSF 61 Certified STST UNS 30400
10.	Nozzle Seal		NSF 61 Certified E.P.D.M
11.	O - Ring		NSF 61 Certified NBR 70
12.	Bolt & Nut		NSF 61 Certified STST UNS 30400
13.	Float		NSF 61 Certified STST UNS 31600 /polycarbonate
14.	Body	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



PARTS LIST AND SPECIFICATION FOR 6”

No.	Part	Material
1.	One Way Out	Brass
2.	Nipple & Coupeling	NSF 61 Certified STST UNS 30400
3.	Test Cock + Adaptor	Bronze & Chrome
4.	O - Ring	NSF 61 Certified NBR 70
5.	S-050-C	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
6.	Lifting Ring	Carbon Steel
7.	Bolt And Washer	NSF 61 Certified STST UNS 30400
8.	Nut	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.	Ring	Steel Din St.37
12.	Bolt & Washer	NSF 61 Certified STST UNS 30400
13.	Cover 285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
14.	Bolt	NSF 61 Certified STST UNS 30400
15.	Nozzle Seat	NSF 61 Certified STST UNS 30400
16.	Nozzle Seal	NSF 61 Certified E.P.D.M
17.	Float	NSF 61 Certified STST UNS 31600 /polycarbonate
18.	Plug	NSF 61 Certified Reinforced Nylon
19.	Body 285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



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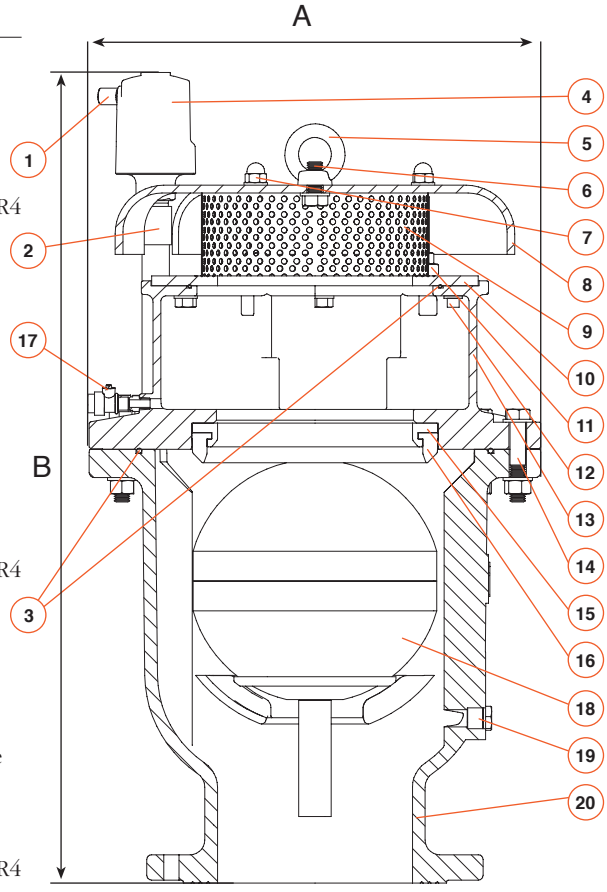
A.R.I. FLOW CONTROL ACCESSORIES

PARTS LIST AND SPECIFICATION FOR 8”

No.	Part		Material
1.	One Way Out		Brass
2.	Nipple & Coupeling		NSF 61 Certified STST UNS 30400
3.	O - Ring		NSF 61 Certified NBR 70
4.	S-050-C		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052		Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
5.	Lifting Ring		Carbon Steel
6.	Bolt & Washer		NSF 61 Certified STST UNS 30400
7.	Nut		NSF 61 Certified STST UNS 30400
8.	Screen Cover		Cast Iron ASTM A48 CL.35B / Resicoat RT R4
9.	Screen		NSF 61 Certified STST UNS 30400
10.	Ring		Steel Din St.37
11.	Bolt & Washer		NSF 61 Certified STST UNS 30400
12.	Bolt & Washer		NSF 61 Certified STST UNS 30400
13.	Cover	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
14.	Bolt		NSF 61 Certified STST UNS 30400
15.	Nozzle Seat		NSF 61 Certified STST UNS 30400
16.	Nozzle Seal		NSF 61 Certified E.P.D.M
17.	Test Cock + Adaptor		Bronze & Chrome
18.	Float		NSF 61 Certified STST UNS 31600 /polycarbonate
19.	Plug		NSF 61 Certified Reinforced Nylon
20.	Body	285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
		360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



PARTS LIST AND SPECIFICATION FOR 10”

No.	Part	Material
1.	S-050-C	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	S-052-C	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
2.	One Way Out	Brass
3.	Lifting Ring	Carbon Steel
4.	Bolt & Washer	NSF 61 Certified STST UNS 30400
5.	Nut	NSF 61 Certified STST UNS 30400
6.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
7.	Nipple & Coupeling	NSF 61 Certified STST UNS 30400
8.	Screen	NSF 61 Certified STST UNS 30400
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	Stainless Steel SAE 304 / UNS 30400
12.	Nozzle Seal	NSF 61 Certified E.P.D.M
13.	O - Ring	NSF 61 Certified NBR 70
14.	Float	Stainless Steel SAE 316L /UNS 31600 /polycarbonate
15.	Plug	NSF 61 Certified Reinforced Nylon
16.	Body 285 psi	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
	360 psi	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4