

APCO FRF FULL FLOW RUBBER FLAPPER FOOT VALVES

Design & Construction

APCO FRF Full Flow Rubber Flapper Foot Valve is a type of check valve designed for raw sewage applications typically installed at the bottom of a suction line and inside a wet well. It is an inexpensive way to maintain prime on a single centrifugal pump.

They are available with Ductile Iron bodies with ASME 125/150 end connections in sizes 2-24" (50-600mm).

Since the valve is continuously submerged, it is not readily accessible for inspection or repair. For this reason, the valve is constructed with high quality long-wearing materials. It has a heavy cast body with integral flanges and drop tight resilient seating to ensure no loss of suction.

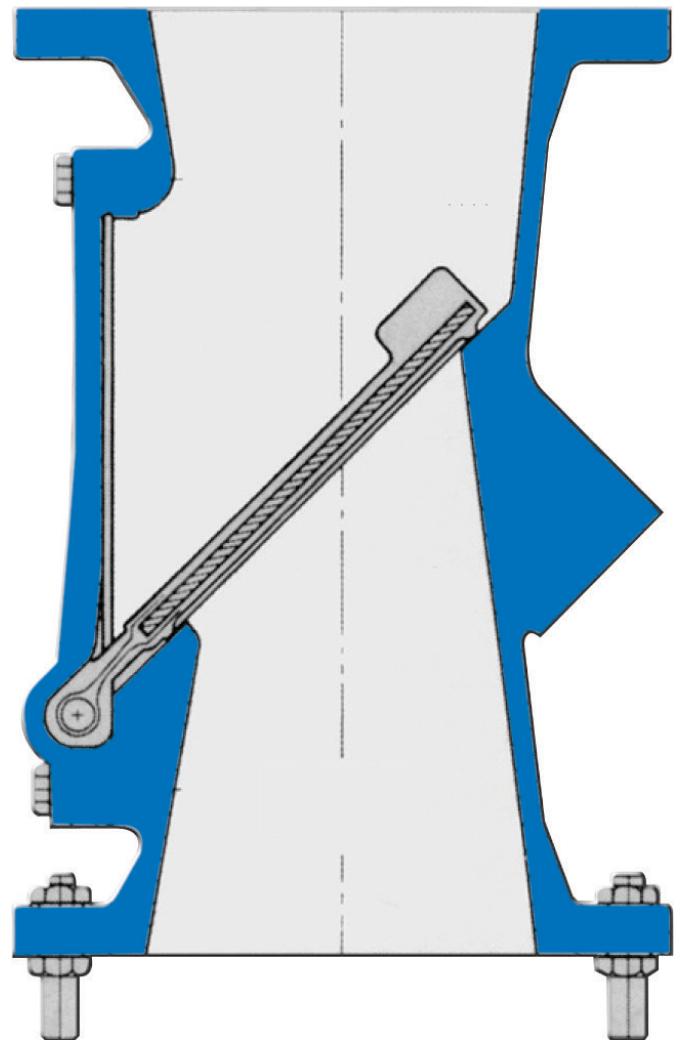
Seat Closing

The APCO Full Flow Rubber Flapper Foot Valve seat is at a 45 degree angle to the centerline of the pipe. This allows flow up vertical installation and minimizes the flapper travel distance from closed to fully open position. The shorter travel distance minimizes head loss and aids in non-slam closure.

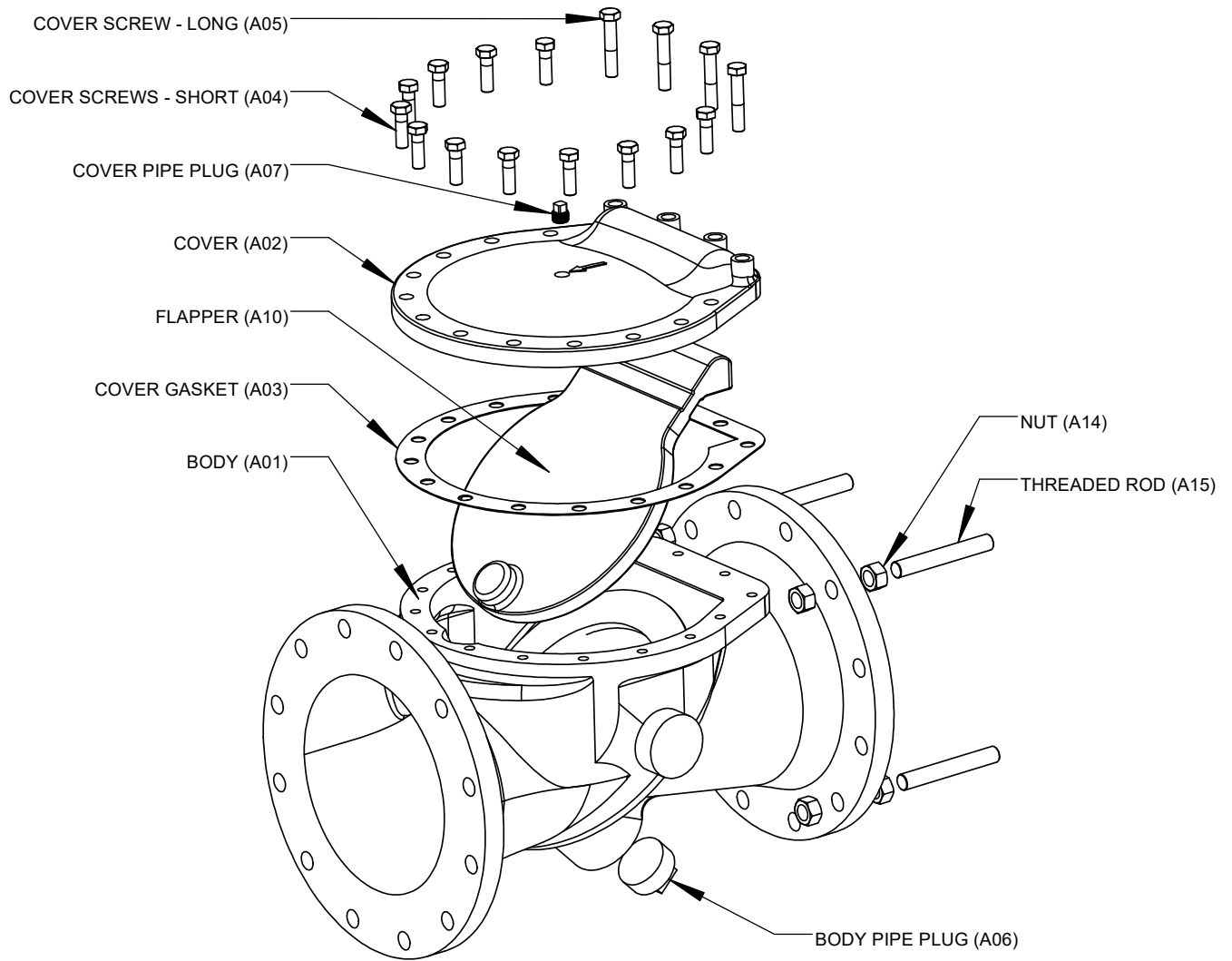
How it Works

The foot valve is installed in the vertical position with the direction of flow upward. In this position, the valve is normally closed. Prior to initial start up of the centrifugal pump, it is recommended to manually fill the suction line with water. This eliminates the risk of damage to the centrifugal pump from running dry.

Once the suction line is filled, the foot valve takes over and opens while the centrifugal pump is running and closes when the pump stops running to maintain a primed flooded suction pump.



Full Flow Rubber Flapper Foot Valves (FRF)



Materials of Construction

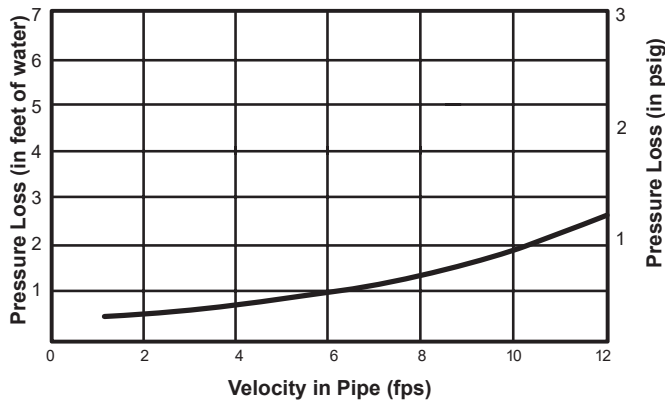
Item	Description	Material
A01	Body	Ductile Iron, ASTM A536
A02	Cover	Ductile Iron, ASTM A536
A03	Cover Gasket	Cellulose Cork Fiber
A04	Cover Screws (Short)	Carbon Steel, Zinc Plated 316 Stainless Steel
A05	Cover Screws (Long)	Carbon Steel, Zinc Plated 316 Stainless Steel
A06	Body Pipe Plug	Steel, Galvanized Iron, Malleable, ASTM A197
A07	Cover Pipe Plug	Steel Alloy, SAE J502, Heat Treated Carbon Steel, Zinc Plated
A10	Flapper	Acrylonitrile-Butadiene Terpolymer of Ethylene Propylene & A Diene
A14	Nut	Carbon Steel, Zinc Plated 316 Stainless Steel
A15	Threaded Rod	1018 Steel, Cold Drawn Bar, ASTM A108 316 Stainless Steel, ASTM A276

Valve Selection

Pressure Ratings (at ambient temperature)

Body Material	Pressure
Ductile Iron	250 psi (1720 kPa)

Typical Friction Loss Chart



Valve Weights

Valve Size	Weight
2" 50mm	19 8
3" 80mm	21 10
4" 100mm	38 17
4.3" 110mm	70 32
6" 150mm	100 45
8" 200mm	185 84
10" 250mm	335 152
12" 300mm	475 215
14" 350mm	640 290
16" 400mm	950 431
18" 450mm	1250 567
20" 500mm	1550 703
24" 600mm	2000 907

Pounds
Kilograms

Ordering

To order, simply complete the valve order code from information shown. An ordering example is shown for your reference.

Valve Style
Give valve style code as follows:
FRF = Full Flow Rubber Flapper Foot Valves

Valve Size
Give valve size code as follows:
2 = 2" 50mm 12 = 12" 300mm
3 = 3" 80mm 14 = 14" 350mm
4 = 4" 100mm 16 = 16" 400mm
4.3 = 4.3" 100mm 18 = 18" 450mm
6 = 6" 150mm 20 = 20" 500mm
8 = 8" 200mm 24 = 24" 600mm
10 = 10" 250mm

Note: Size 4.3" is a 4" valve that can pass a 3" diameter solid.

Body Style
Give body style code as follows:
100F = Full Flow Rubber Flapper Foot Valve

End Connection
Give end connection code as follows:
F1 = Flanged ASME 125/150

Body Material
Give body material code as follows:
DI = Ductile Iron

Trim Combination
Flapper Material
Give flapper material code as follows:
NBR = Acrylonitrile-Butadiene -70 to 250° F (-57 to 121° C)
EPDM = Terpolymer of Ethylene Propylene & A Diene -20 to 300° F (-29 to 150° C)
Leg Material
Give leg material code as follows:
CS = Carbon Steel
S2 = 316 Stainless Steel

Options
Give option code as follows:
DTR = DeZURIK Standard Certified Hydrostatic Shell & Seat Test Report
SB16 = 316 Stainless Steel Bolting
--- = Coatings (contact DeZURIK)

Accessories
Give option code as follows:
STR1 = 304 Stainless Steel Strainer
STR2 = 316 Stainless Steel Strainer

Ordering Example:

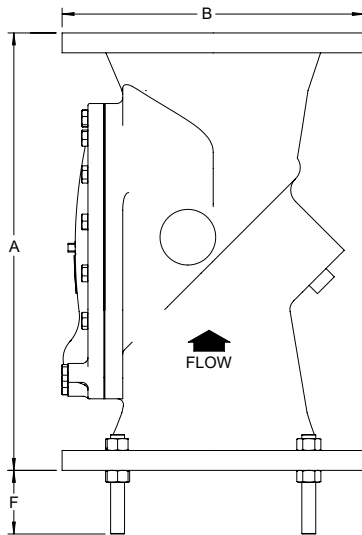
FRF,8,100F,F1,DI,NBR-CS*STR1

Note: Additional sizes and materials available on application. Contact DeZURIK.

Dimensions

Valve Size	A	B	F
2" 50mm	8.00 203	6.00 152	4.00 102
3" 80mm	9.50 241	7.50 191	4.00 102
4" 100mm	11.50 292	9.00 229	4.00 102
4.3" 100mm	13.75 349	9.00 229	4.00 102
6" 150mm	15.00 381	11.00 279	4.00 102
8" 200mm	19.50 495	13.50 343	4.00 102
10" 250mm	24.50 622	16.00 406	4.00 102
12" 300mm	27.50 699	19.00 483	4.00 102
14" 350mm	31.00 787	21.00 533	4.00 102
16" 400mm	32.00 813	23.50 597	4.00 102
18" 350mm	36.00 914	25.00 635	6.00 152
20" 500mm	40.00 1016	27.50 699	6.00 152
24" 600mm	48.00 1219	32.00 813	6.00 152

Inch
Millimeter

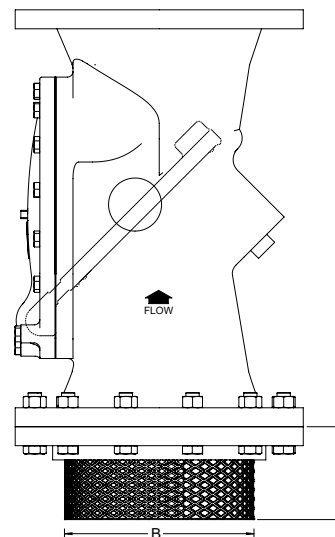


Dimensions Strainer Accessory

Valve Size	A	B
2" 50mm	4.75 121	2.25 57
3" 80mm	4.88 124	3.25 83
4" 100mm	4.88 124	4.25 108
4.3" 100mm	4.88 124	4.25 108
6" 150mm	5.00 127	6.25 159
8" 200mm	5.13 130	8.25 210
10" 250mm	5.25 133	10.50 267
12" 300mm	5.25 133	12.50 318
14" 350mm	5.38 137	13.75 349
16" 400mm	5.38 137	15.75 400
18" 350mm	5.50 140	17.75 451
20" 500mm	5.75 146	20.20 513
24" 600mm	7.00 178	24.25 616

Inch
Millimeter

Strainer Accessory



Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

Web Site: DeZURIK.com E-Mail: info@DeZURIK.com



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