PLASTIC FOOT VALVES

BOSHART INDUSTRIES

17PFV(B)(M), 17PFV & 17PFVF SERIES

Product Booklet

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PLASTIC FOOT VALVES

Foot valves are also referred to as one-way or non-return valves. Foot valves are commonly used with shallow/deep well jet, piston, centrifugal pump installations and various other applications. Their purpose is to prevent reverse flow and maintain system pressure in pressurized pumping systems. They are installed on the end of the suction line of any suction pump. The foot valve not only prevents fluid / water from flowing backward when the pump is off, the valve also keeps the fluid trapped in the suction pipe when the pump stops, sustaining the prime for the pump, and preventing pump burnout. Foot valves work automatically, opened by the pump's suction pulling the valve poppet/flapper open against a low tension spring or with gravity, normally ½ PSI or less cracking pressure (cracking pressure is the pressure it takes to open the valve). When the pump stops, the valve starts closing automatically with assistance of the spring or gravity as the flow slows, and is completely sealed before it comes to a full stop. This eliminates flow reversal which would cause the poppet/flapper to slam against the seat causing hydraulic shock or water hammer. Without a foot valve, gravity would cause the water or fluid to flow in the reverse direction resulting in the loss of prime and system pressure.

Available in 3/4"-2" sizes

Available in 2-1/2"-6" sizes

Available in 3/8" and 1/2" sizes

Flow Rate/Velocity Chart For Foot Valve Selection*					
Nominal		Min 5ft./sec.		Max 7ft./sec.	
in	mm	GPM	LPM	GPM	LPM
3/4	19.05	7.00	26.50	9.00	34.07
1	25.40	13.00	49.21	17.00	64.35
1-1/4	31.75	19.00	71.92	27.00	102.21
1-1/2	38.10	28.00	105.99	39.00	147.63
2	50.80	49.00	185.49	69.00	261.19
2-1/2	63.50	77.00	291.48	107.00	405.04
3	76.20	110.00	416.40	154.00	582.95
4	101.60	196.00	741.94	274.00	1037.20
6	152.40	441.00	1669.37	617.00	2335.60

***When selecting a valve it is crucial to maintain flow velocity that does not exceed 5-7 feet per second.**

In horizontal applications, check for "This side up" and place at the top and centered when installed

For use with ASTM-D2239 Polyethylene (PE) pipe

Flow Coefficient (CV) is the flow rate through a valve in the fully open position, which will produce a differential pressure of 1 PSI.
It is defined as the volume of water in US gallons per minute (GPM) at 60°F (15.5°C)

TEMPERATURE CORRECTION FACTOR FOR PVC VALVES

As temperature increases, working pressure decreases. The optimal working pressure for PVC valves is 150 PSI @ 73°F (22°C)
If the temperature increases above 73°F (22°C), use the PVC correction factor to determine working pressure.
Multiply the maximum working pressure by the correction factor.

Temperature	73°F (22°C)	90°F (32°C)	100°F (38°C)	110°F (38°C)	120°F (49°C)	130°F (54°C)	140°F (60°C)
PVC Correction Factor	1.00	1.00	1.00	0.83	0.66	0.50	0.33

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BII-17PFV-0725(23,131, 81LD)V2

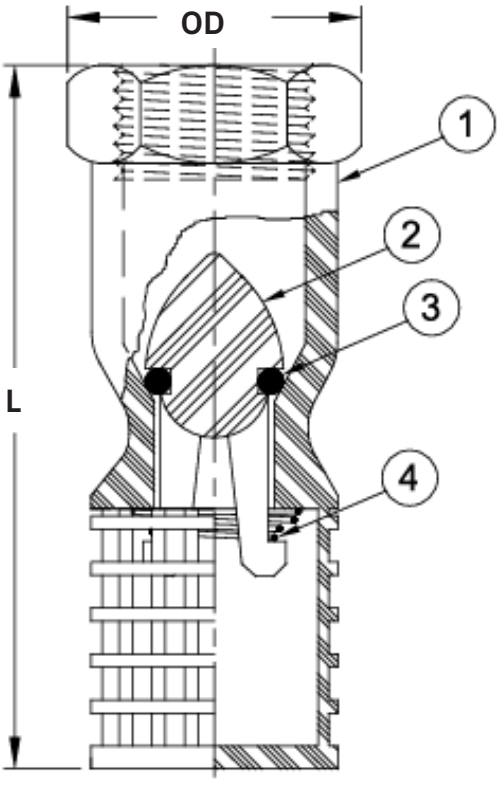
193D SERIES - POPPET TYPE PLASTIC FOOT VALVES (SPRING ASSIST CLOSING)

FEATURES:
- One piece polyacetal plastic body and integral strainer
- 60% open area
- Spring loaded poppet check design for positive sealing and low headloss
- Stainless steel spring for corrosion resistance
- Replaceable seal to simplify maintenance
- Low headloss

SPECIFICATIONS:
- One-piece Polyacetal body and strainer
- FPT threads conform to ASME /ANSI B1.20.1 Pipe Threads, General Purpose, Inch
- Stainless steel spring and hardware
- FKM Sealing Gasket ensures a positive seal

CERTIFICATIONS:
- NSF/ANSI Standard 372 Certified (Drinking Water System Components - Lead Content)

RATINGS:
- Max Pressure Rating: 150 PSI (10 bar) (For anything over 150 PSI @ 73°F, refer to the Temperature Correction Factor Chart)
- Cracking Pressure is equal to or less than 1/2 PSI
- Max temperature rating: 140°F (60°C)



MATERIAL LIST		
No	**Part Name**	**Material**
1	Body	Polyacetal
2	Poppet	Polyamid
3	Seal	Fluoroelastomer (FKM)
4	Spring	304 Stainless Steel

Flow Coefficient (CV) is the flow rate through a valve in the fully open position, which will produce a differential pressure of 1 PSI. It is defined as the volume of water in US gallons per minute (GPM) at 60°F (15.5°C)

DIMENSIONS									
Part No.	**Size**	**Connection**	**Flow Coefficient (CV)**	**L**		**OD**		**Weight**	
				in	**mm**	**in**	**mm**	**lbs**	**grams**
175619	3/8"	FPT	1	2.32	58.93	0.91	23.11	0.03	13.61
175620	1/2"		2.8	2.32	58.93	0.95	24.13	0.04	18.14

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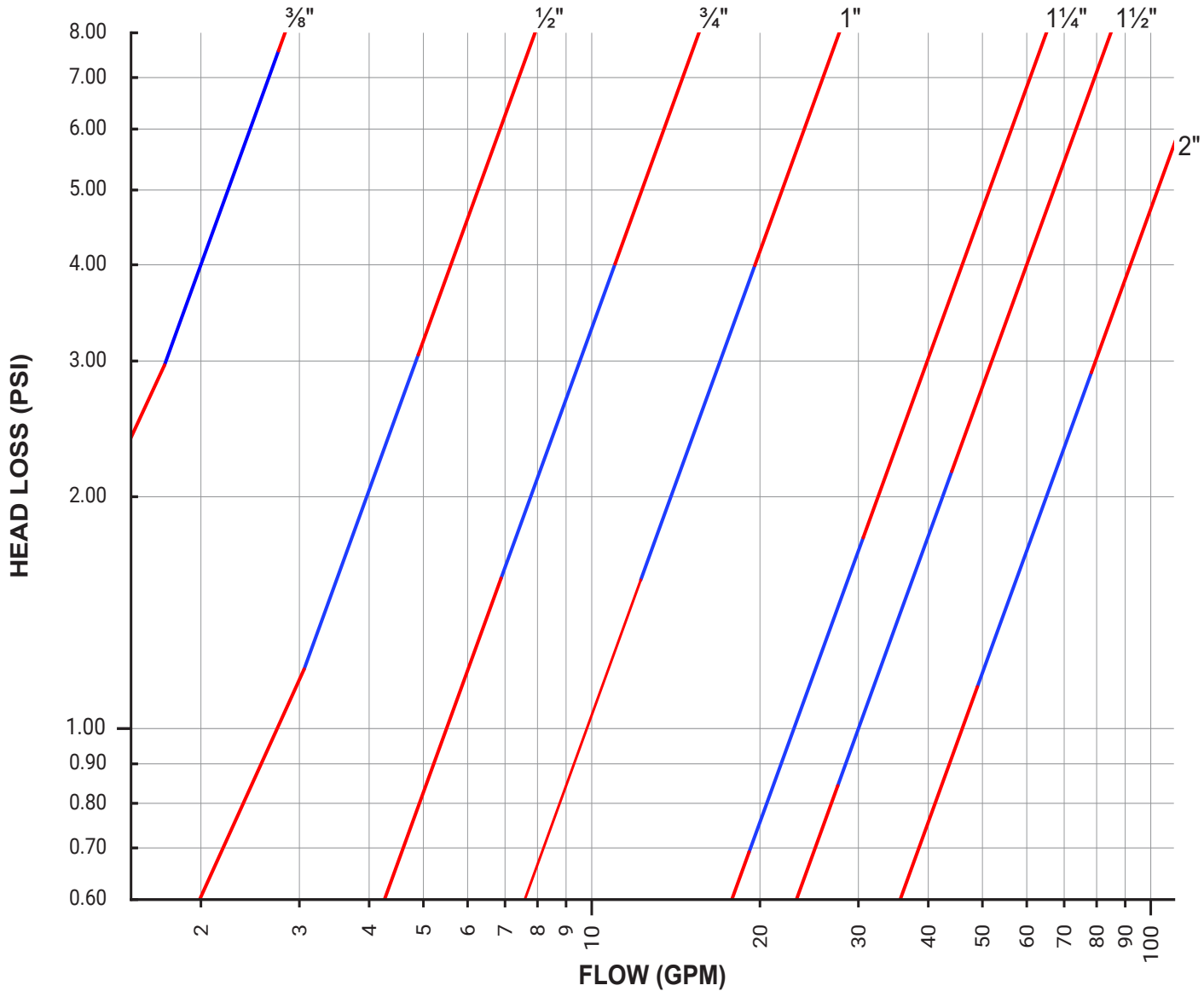
Head Loss Chart - Model 193D



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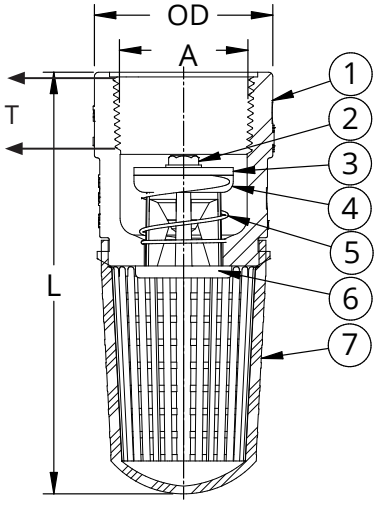
17PFV SERIES - POPPET TYPE PLASTIC FOOT VALVES (SPRING ASSIST CLOSING)

FEATURES:
- Heavy duty PVC valve body
- Stainless Steel spring closes valve against pressure, eliminating flow reversal & minimizing water hammer/hydraulic shock
- Polypropylene tapered screen with rounded nose cone prevents hang-ups on casing during installation
- Screen has small holes to prevent flat pieces of debris/scale from passing through and into the pumps impeller
- The screens high open area ensures flow is not restricted
- Can be installed horizontally or vertically - will perform better and last longer if installed in vertical orientation

SPECIFICATIONS:
- One-piece Extra Heavy Duty valve body molded from Rigid PVC
- FPT threads conform to ASME /ANSI B 1.20.1 Pipe Threads, General Purpose, Inch
- Robust 304 stainless steel/acetol poppet and hardware
- Stainless steel spring and hardware
- NBR Sealing Gasket ensures a positive seal

CERTIFICATIONS:
- NSF/ANSI Standard 372 Certified (Drinking Water System Components - Lead Content)

RATINGS:
- Max Working Pressure: 150 PSI at 73°F (1034 kPa at 22°C) (For anything over 150 PSI @ 73°F, refer to the Temperature Correction Factor Chart)
- Cracking Pressure is equal to or less than 1/2 PSI
- Max temperature rating: 140°F (60°C)



MATERIAL LIST		
No	**Part Name**	**Material**
1	Valve Body	Polyvinyl Chloride (PVC)
2	Spring	304 Stainless Steel
3	Poppet Disc	304 Stainless Steel
4	Sealing Gasket	NBR (Nitrile Butadiene Rubber)
5	Spring	304 Stainless Steel
6	Poppet Guide	Acetal
7	Screen	Polypropylene

DIMENSIONS

Part No.	IC Connection	Flow Coefficiency (CV)	L (Total Length)		OD		A		T (FPT Thread Length)		Weight	
			in	mm	in	mm	in	mm	in	mm	lbs	grams
17PFV075	3/4" FPT	Not currently available	3.72	94.49	1.61	40.89	1.47	37.34	0.65	16.51	0.12	54.00
17PFV100	1" FPT		4.34	40.89	1.88	47.75	1.73	43.94	0.81	20.57	0.16	72.57
17PFV125	1 1/4" FPT		4.93	125.22	2.22	56.39	2.08	52.83	0.87	22.10	0.27	122.47
17PFV150	1 1/2" FPT		5.33	135.38	2.51	63.75	2.36	59.94	0.82	20.83	0.35	158.76
17PFV200	2" FPT		6.09	154.69	3.09	78.49	2.95	74.93	1.05	22.67	0.54	244.94

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17PFV(B)(M) SERIES - POPPET TYPE PLASTIC FOOT VALVES (SPRING ASSIST CLOSING)

FEATURES:
- Heavy duty PVC valve body
- Stemless acetal poppet guide for long-lasting, quiet, trouble free operation in both vertical and horizontal installations
- Stainless Steel spring closes valve against pressure, eliminating flow reversal & minimizing water hammer/hydraulic shock
- Polypropylene tapered screen with rounded nose cone prevents hang-ups on casing during installation
- Screen has small holes to prevent flat pieces of debris/scale from passing through and into the pumps impeller
- The screens high open area ensures flow is not restricted
- Can be installed horizontally or vertically - will perform better and last longer if installed in vertical orientation

PROUDLY MANUFACTURED BY BOSHART INDUSTRIES

SPECIFICATIONS:
- One-piece Extra Heavy Duty valve body molded from Rigid PVC
- FPT threads conform to ASME /ANSI B 1.20.1 Pipe Threads, General Purpose, Inch
- Robust 304 stainless steel/acetol poppet and hardware
- Stainless steel spring and hardware
- NBR Sealing Gasket ensures a positive seal

CERTIFICTATIONS:
- NSF/ANSI Standard 372 Certified (Drinking Water System Components - Lead Content)

RATINGS:
- Max Working Pressure: 150 PSI at 73°F (1034 kPa at 22°C) (For anything over 150 PSI @ 73°F, refer to the Temperature Correction Factor Chart)
- Cracking Pressure is equal to or less than 1/2 PSI
- Max temperature rating: 140°F (60°C)

MATERIAL LIST		
No	**Part Name**	**Material**
1	Body	Polyvinyl Chloride (PVC)
2	Spring	Stainless Steel
3	O-Ring	NBR (Nitrile Butadiene Rubber)
4	Nut	Polyvinyl Chloride (PVC)
5	Valve Body	Polyvinyl Chloride (PVC)
6	Poppet	Polyvinyl Chloride (PVC)
7	Gasket	NBR (Nitrile Butadiene Rubber)
8	Screen	Polyvinyl Chloride (PVC)

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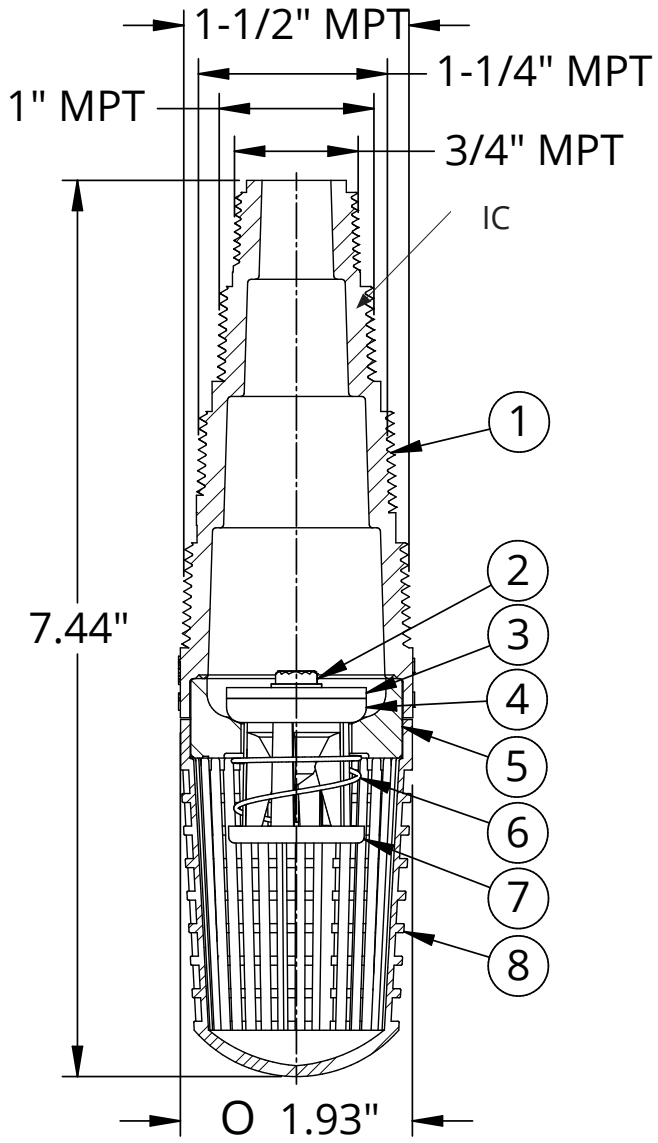
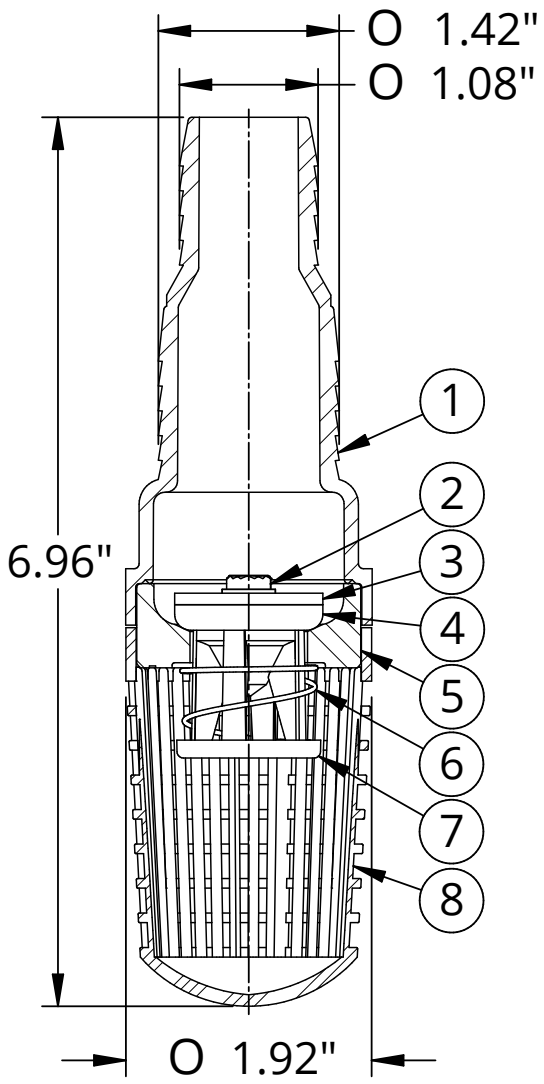


■ 4 in 1 Threaded Valve can easily be adapted from 3/4” to 1”, 1-1/4” or 1-1/2” MPT thread connections by cutting off smaller thread.



■ 2 in 1 Barbed Valve allows for quick and easy installation into Poly Pipe without the need for additional fittings. Can easily be adapt to 1-1/4” by cutting off 1” barb.

Installer can keep only one valve on service truck and utilize cut off points to adapt to desired size.

SPECIFICATIONS				
Part No.	**Inlet Connection (IC)**	**Flow Coefficiency (CV)**	**Weight**	
			lbs	**grams**
17PFVB100125	1" OR 1 1/4" INSERT	Not currently available	0.24	108.86
17PFVM075150	3/4' - 1 1/4' MPT		0.31	140.61

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17PFV- SERIES - POPPET TYPE PLASTIC FOOT VALVES (SPRING ASSIST CLOSING)

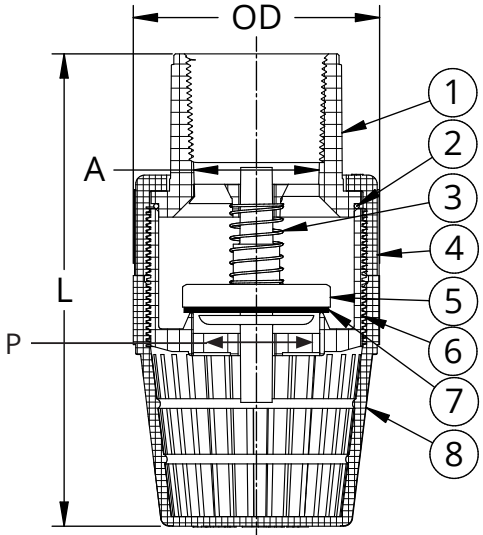
FEATURES:
- Tapered screen for easy installation
- Rapid closing spring loaded poppet to help eliminate back flow and water hammer
- Stainless Steel spring closes valve against pressure, eliminating flow reversal & minimizing water hammer/hydraulic shock
- Screen has slots (add slot sizes) to precvent debris larger than the (slot size) cannot go through
- The screens high open area ensures flow is not restricted
- Vertical installation is recommended. The valve will perform better and last longer if installed in vertical orientation. NOTE: If installed in the horizontal position, you must ensure the hinge pin is at top dead center to avoid risk of malfunction

SPECIFICATIONS:
- Full port design ensures unrestricted flow
- 304 Stainless Steel hardware and rod
- Injection molded PVC body and screen
- NBR Sealing Gasket ensures a positive seal
- Threads confrom to ANSI/ASME B1.20.1 Pipe Threads, General Purpose, Inch

CERTIFICATIONS:
- NSF/ANSI Standard 372 Certified (Drinking Water System Components - Lead Content)

RATINGS:
- Max Working Pressure: 150 PSI at 73°F (1034 kPa at 22°C) (For anything over 150 PSI @ 73°F, refer to the Temperature Correction Factor Chart)
- Minimum Back Flow Head pressure: 5 PSI
- Cracking Pressure is equal to or less than 1/2 PSI
- Max temperature rating: 140°F (60°C)

MATERIAL LIST		
No	**Part Name**	**Material**
1	Valve Body (Inlet)	Polyvinyl Chloride (PVC)
2	O-Ring	NBR (Nitrile Butadiene Rubber)
3	Spring	304 Stainless Steel
4	Valve Body Nut	Polyvinyl Chloride (PVC)
5	Poppet	Polyvinyl Chloride (PVC)
6	Inner Body (Port)	Polyvinyl Chloride (PVC)
7	Gasket Seal	NBR (Nitrile Butadiene Rubber)
8	Screen	Polyvinyl Chloride (PVC)



Flow Coefficient (CV) is the flow rate through a valve in the fully open position, which will produce a differential pressure of 1 PSI.
It is defined as the volume of water in US gallons per minute (GPM) at 60°F (15.5°C)

DIMENSIONS														
Part No.	**IC Connection**	**Flow Coefficient (CV)**	**L (Total Length)**		**OD**		**A**		**P (Port Dia.)**		**S (Slot Wdth)**		**Weight**	
			in	**mm**	**in**	**mm**	**in**	**mm**	**in**	**mm**	**in**	**mm**	**lbs**	**grams**
17PFV-250	2 1/2" FPT	278	9.80	249	5.12	130	2.60	66	2.60	66	0.02	0.45	2.97	1347
17PFV-300	3" FPT	367	11.10	282	5.59	142	3.00	76	2.91	74	0.01	0.15	3.74	1696

Tolerance: ± 2%

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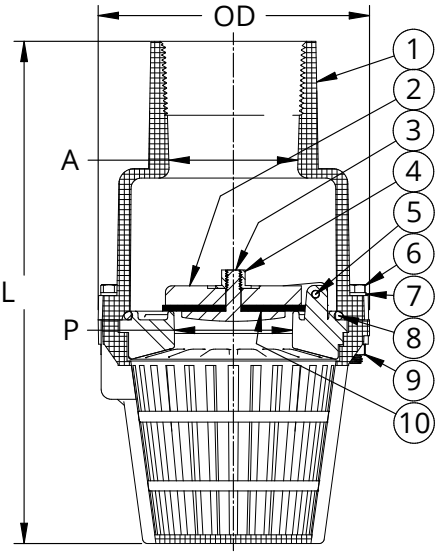
17PFVF SERIES - FLAPPER TYPE PLASTIC FOOT VALVES (GRAVITY CLOSING)

FEATURES:
- Tapered screen for easy installation.
- Gravity closing flapper to help eliminate back flow.
- Screen has small holes to prevent flat pieces of debris/scale from passing through and into the pumps impeller.
- The screens high open area ensures flow is not restricted.
- Vertical installation is recommended. The valve will perform better and last longer if installed in vertical orientation.

SPECIFICATIONS:
- 100% fill flow flapper design
- 304 Stainless Steel hardware and rod
- Injection molded PVC body and screen
- NBR Sealing Gasket ensures a positive seal.
- Threads confrom to ANSI/ASME B1.20.1 Pipe
- Threads, General Purpose, Inch
- 5/16-18 UNC x 1-3/4" Long Hex Head Bolt
- 5/16" Lock Washer
- #353 O-Ring
- 5/16-18 UNC Hex Nut

CERTIFICATIONS:
- NSF/ANSI Standard 372 Certified (Drinking Water System Components - Lead Content)

RATINGS:
- Max Working Pressure: 150 PSI at 73°F (1034 kPa at 22°C) (3" and 4") (For anything over 150 PSI @ 73°F, refer to the Temperature Correction Factor Chart)
- Minimum Back Flow Head pressure: 5 PSI (3" and 4")
- Max Working Pressure: 100 PSI at 73°F (1034 kPa at 22°C) (6")
- Minimum Back Flow Head pressure: 7 PSI (6")
- Cracking Pressure is equal to or less than 1/2 PSI
- Max temperature rating: 140°F (60°C)



MATERIAL LIST		
No	**Part Name**	**Material**
1	Valve Body	Polyvinyl Chloride (PVC)
2	Flapper	Polyvinyl Chloride (PVC)
3	Gasket Retainer	Acrylonitrile Butadiene Styrene (ABS)
4	Retainer Nut	Acrylonitrile Butadiene Styrene (ABS)
5	Hinge Pin	304 Stainless Steel
6	Hex Head Bolt	304 Stainless Steel
7	Lock Washer	304 Stainless Steel
8	O-Ring	Nitrile Butadiene Rubber (NBR)
9	Hex Nut	304 Stainless Steel
10	Gasket	Nitrile Butadiene Rubber (NBR)

Flow Coefficient (CV) is the flow rate through a valve in the fully open position, which will produce a differential pressure of 1 PSI.
It is defined as the volume of water in US gallons per minute (GPM) at 60°F (15.5°C)

DIMENSIONS														
Part No.	**IC Connection**	**Flow Coefficient (CV)**	**L (Total Length)**		**OD**		**A**		**P (Port Diameter)**		**S (Slot Width)**		**Weight**	
			in	**mm**	**in**	**mm**	**in**	**mm**	**in**	**mm**	**in**	**mm**	**lbs**	**grams**
17PFVF-300	3" FPT	405	12.33	313.00	7.13	181.00	3.07	78.00	2.91	74.00	0.01	0.26	3.86	1750
17PFVF-400	4" FPT	614	14.11	358.00	8.23	209.00	4.10	104.00	3.86	98.00	0.01	0.23	5.89	2670
17PFVF-600	6" FPT	1183	20.09	510.00	11.54	293.00	5.91	150.00	5.71	145.00	0.02	0.46	14.88	6750

Tolerance: ± 2%

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