Chemical Resistance

Philmac's foot and non-return valves are primarily designed to convey water. However there may be occasions where the water contains chemicals and/or alternative fluids need to be controlled. The following table is provided as a **guide only** for the compatibility of various chemicals to Philmac foot and non-return valves. The mixing together of chemicals may affect the compatibility. **Philmac foot and non-return valves are NOT suited for acids.**

Chemical	Compatibility
Acetic acid (10%)	R
Acetic acid (50%)	N
Alcohol (ethanol)	N
Ammonium nitrate	R
Antifreeze	R
Brine	R
Calcium carbonate	R
Calcium chloride	R
Calcium nitrate	R
Calcium sulphate	
Chlorine water	N
Citric Acid	R
Copper Sulphate >5%	N
Diesel (fuel)	R
Ethyl alcohol (ethanol)	N
Hydrochloric acid (10%)	N
Hydrochloric acid (30%)	N
Kerosene	R
Lubricating oils (not synthetic)	R
Magnesium nitrate	R
Magnesium sulphate	R
Mineral oils	R
Nitric acid (10%)	N
Nitric acid (40%)	N
Olive oil	R
Orange juice	R
Petrol	R
Phosphoric acid (85%) N	N
Drinking water	R
Potassium chloride	R
Potassium nitrate	R
Potassium sulphate	
Sodium bicarbonate	
Sodium hypochlorite (<10%)	N
Sulphuric acid (10%)	N
Sulphuric acid (30%)	N
Urea	R
Zinc nitrate	N
Zinc sulphate	N

N=Not Recommended R=Resistant Empty Cell=No data available
Note recommendations based onfluids at 20° C or less

Foot and Non-Return Valves Operation & Installation Instructions

Philmac's foot and non-return valves have been designed to allow water to flow in one direction only. The direction of water flow isclearly marked by an arrow on the body of the valve. Under no flow conditions the spring assisted piston sits in the closed position.

Philmac foot and non-return valves can be connected to both plastic and metal threaded fittings. PTFE tape or an approved sealant is required.

1

Apply PTFE tape or approved sealant to the male thread the non-return/foot valveis to be screwed onto. Sufficient tape needs to be applied to ensure a water tight seal.

2

Screw the valve onto male thread by hand until firm. Confirm the correct orientation of the valve by checking the water direction arrow is pointing downstream.

3

Using a pipe wrench or multi-grips further screw the non-return/foot valve onto the male thread until tight. Where necessary ensure the male thread is held stationary to avoid it from moving. Do not use pipe wrench or multi-grips on the body of the non-return/ foot valve.

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For more informations

Ph: 1800 755 899
www.philmac.com.au
www.youtube.com/user/PhilmacAustralia

Foot Valves & Non Return Valves

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Technical Manual

Benefits

Fast and Easy Installation

• **Multi-position Installation:** The valves have been designed to work in either a vertical (with water moving in an upwards direction) or horizontal position for flexible installation.

• **BSP Inlet Threads:** The Rural and Irrigation sectors use British Standard Pipe (BSP) threads as a standard. Philmac also uses these thread types across the valve range to ensure compatibility with other threaded fittings and make installation easy.

• **Flow Identification:** The body is clearly marked with an arrow to indicate the direction of flow of water.

Complete Security

• **Reliable Operation:** Consistent high quality injection moulded plastic bodies and components plus Nitrile O-rings and a stainless steel spring means years of reliable operation.

• **Corrosion Resistant:** with a plastic body and components, nitrile O-rings and a 316 stainless steel spring, all components are made from high quality corrosion resistant materials.

• **Protective Screen:** A screen is fitted as standard to the foot valve to minimise the entry of large objects which may cause the piston to jam and leave the valve in an open position.

High Performance

• **Manufactured from advanced thermoplastic materials:** Philmac foot and non-return valves are manufactured from lightweight high performance thermoplastic materials, which have excellent impact, UV and corrosion resistance. The material is non-toxic and taint free.

• **High pressure rating:** Foot and non-return valves are rated to a pressure of 1400 kPa (200 psi) (static shutoff) at 200 Celsius to meet the requirements of high pressure systems.

• **Low pressure shutoff:** Foot and non-return valves are designed to seal off at 20 kPa of pressure making them well suited to gravity feed systems.

Complete Coverage

• **Wide range:** The range of foot and non-return valves is comprehensive and includes sizes from ½" to 2" (DN10 to DN50).

System Design Considerations

Minimum Sealing Pressure: 20 kPa (3 psi) or 2 m or 0.2 bar of head at 200C.

Maximum Operating Pressure: 1400 kPa (200 psi) at 200C.

Threads: All threads are BSP (Whitworth form).

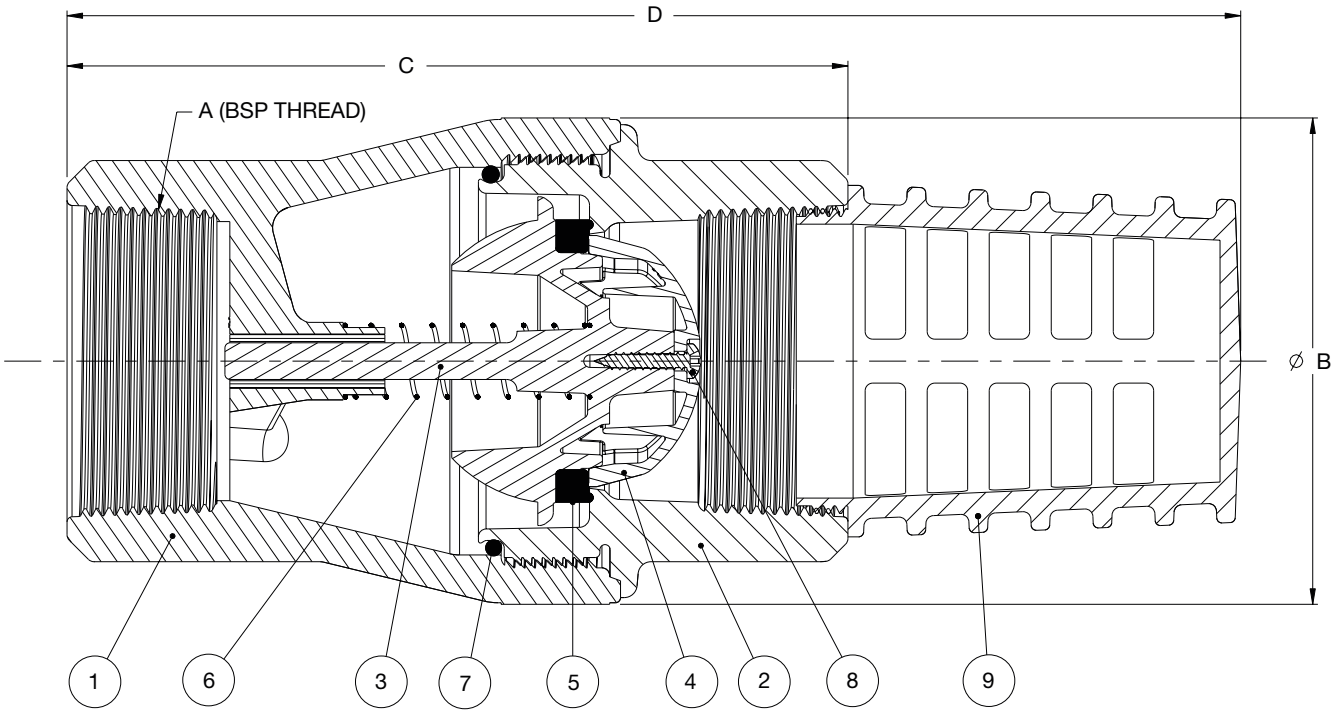
Sealing threads: Philmac recommends sealing threads with PTFE tape. Other approved sealants for plastic materials can be used providing the sealant does not enter the valve where it may cause damage.

Operating temperature: Connection is cold water (less than 200C) rated.

Weathering: All plastic materials used contain pigments to provide excellent protection against degradation from

ultra-violet (UV) radiation. However long-term continuous exposure to UV is not recommended and plastic components should ideally be protected.

Technical Specifications



Number	1	2	3	4	5
Description	Body	End Cap	Piston	Piston Cap	Seal
Number	6	7	8	9	
Description	Spring	O-ring	Screw	Filter	

Valve Size (mm)	Thread Size A (BSP)	Dimension B (mm)	Dimension C (mm)	Dimension D (mm)
20	¾"	57	96	140
25	1"	57	99	150
32	1¼"	65	110	166
40	1½"	73	121	187
50	2"	94	151	226