

# Ball Valve

## Technical Information



The connection you can trust.



## STANDARDS & TESTS

Philmac's range of blue handed ball valves are designed to comply with the following standards and undertake a range of tests to ensure they comply with these standards.

### Standards

**AS/NZ 4020:** Testing of products for use in contact with drinking water.

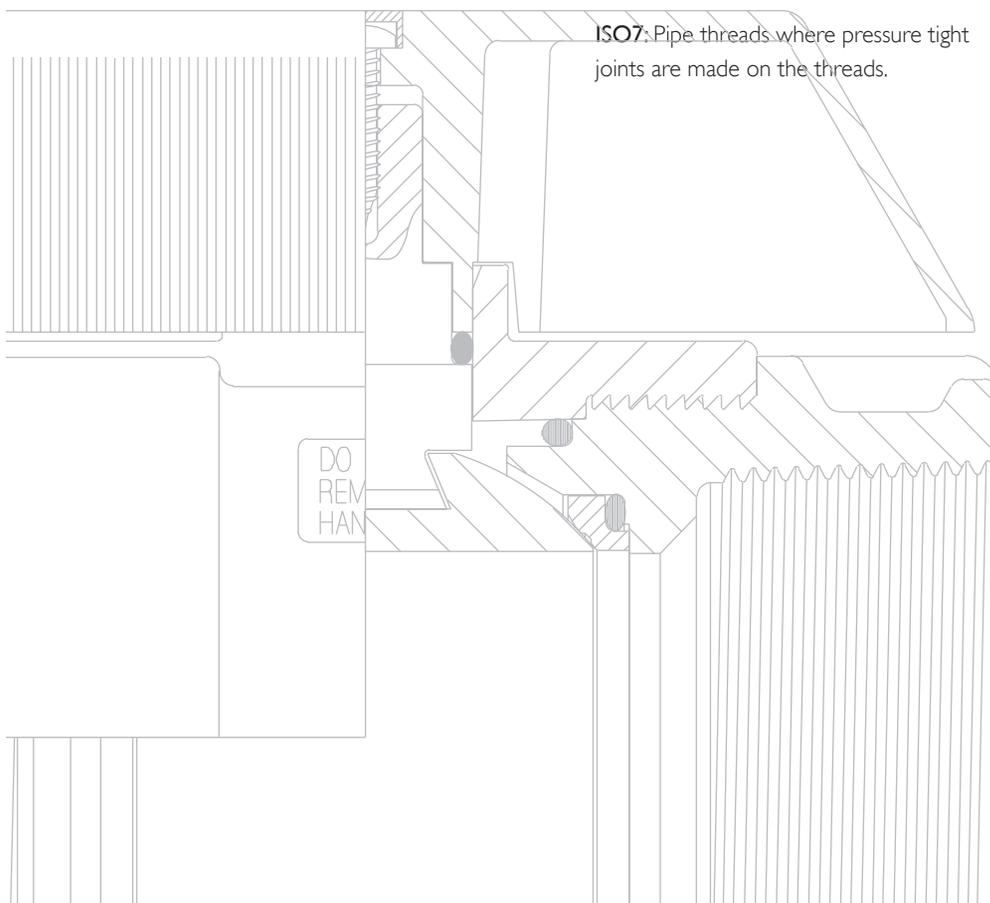
**AS 1722.1:** Pipe threads of Whitworth form part 1: sealing pipe threads.

**ISO7:** Pipe threads where pressure tight joints are made on the threads.

### Tests

**Shut Off Test:** Blue handed ball valves are tested for shut off against a hydrostatic water pressure of 2000 kPa (290 psi) or 20 bar.

**Strength Test:** Blue handed ball valves are tested for adequate strength for their intended application.



## BLUE HANDLED BALL VALVES OPERATION & INSTALLATION INSTRUCTIONS

Philmac blue handled ball valves operate by using a handle to turn a ball located in a body through 90°. The ball has a hole through the centre of it which allows water to pass through when in the open position.

To turn the valve on, the blue handle needs to be turned 90° until the blue handle sits in-line with the body of the valve. To turn the valve off rotate the handle through 90° until it is at right angles to the valve body. Care should be taken when closing the valve. It should not be closed too quickly or water hammer may result.

Philmac blue handled ball valves are sold in the open position with the blue handle directly in line with the body. This protects the ball and ensures no scoring has occurred, therefore every valve arrives in excellent condition.

They have been designed for water to flow through in either direction and for this reason there is no specific inlet or outlet. In some instances it may be appropriate to mark the direction of water flow where it may not be obvious in which direction the water flows.

### Ball (Female Inlet/Outlet)



1. Apply PTFE tape or approved sealant to the male thread the blue handled ball valve is to be screwed in too. Sufficient tape needs to be applied to ensure a watertight seal



2. Screw onto a male thread or screw male thread into the valve by hand until firm



3. Using a pipe wrench or multigrips on the end caps only, further screw the blue handled ball valve into 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 blue handled ball valve.

## SYSTEM DESIGN CONSIDERATIONS

**Threads:** All threads are BSP (Whitworth form).

**Maximum Operating Pressure:** 1600 kPa or 16 bar.

**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 20°C) 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.

### Pressure Loss (kPa)

Flow Rate (L/s)	Inlet Size					
	½" (DN15)	¾" (DN20)	1" (DN25)	1 ¼" (DN32)	1 ½" (DN40)	2" (DN50)
1	14	14	10	*	*	*
1.5	27	27	11	*	*	*
2	44	44	13	6	*	*
2.5	64	64	16	8	*	*
3	89	89	20	11	5	*
4	-	-	33	19	8	*
5	-	-	50	28	13	*
6	-	-	72	39	18	6
7	-	-	99	51	23	8
8	-	-	-	65	30	10
9	-	-	-	81	37	12
10	-	-	-	98	45	15
12	-	-	-	-	63	20
14	-	-	-	-	83	26
16	-	-	-	-	-	33
18	-	-	-	-	-	40
20	-	-	-	-	-	49
22	-	-	-	-	-	58
24	-	-	-	-	-	67
26	-	-	-	-	-	78
28	-	-	-	-	-	89

\* Denotes pressure loss too small to accurately measure but can be assumed to be 5 kPa or less.

## CHEMICAL RESISTANCE

Philmac's blue handled ball 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 and alternative fluids to Philmac blue handled ball valves. The mixing together of chemicals may affect the compatibility. **Philmac blue handled ball 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)	N
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	
Petrol	R
Phosphoric acid (85%)	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	

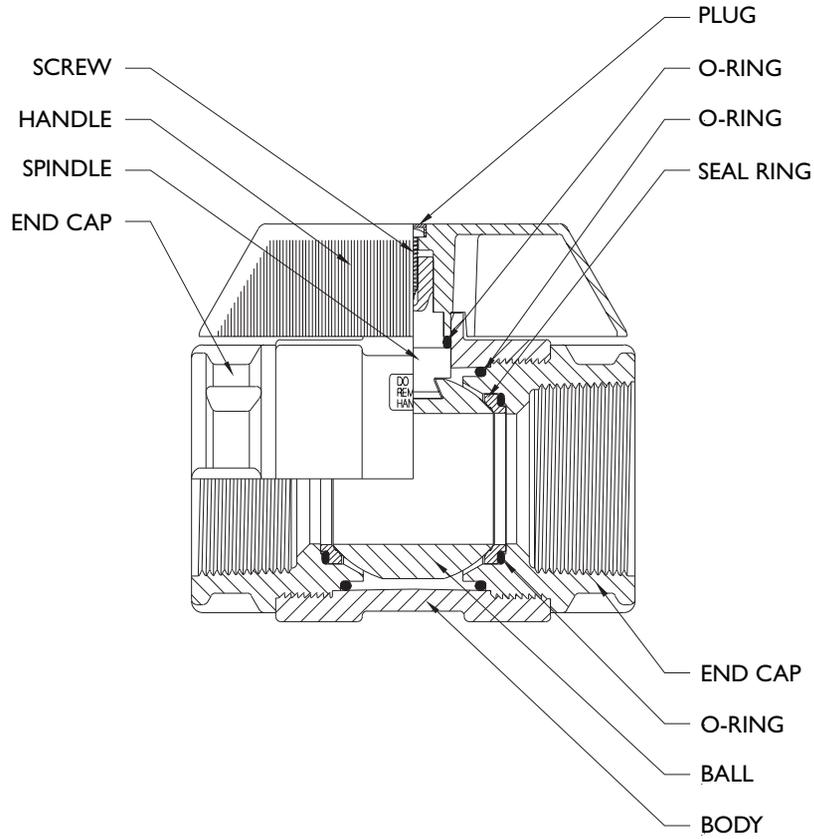
**N = Not Recommended**

**R = Resistant**

**Empty Cell = No data available**

Note recommendations based on fluids at 20°C or less.

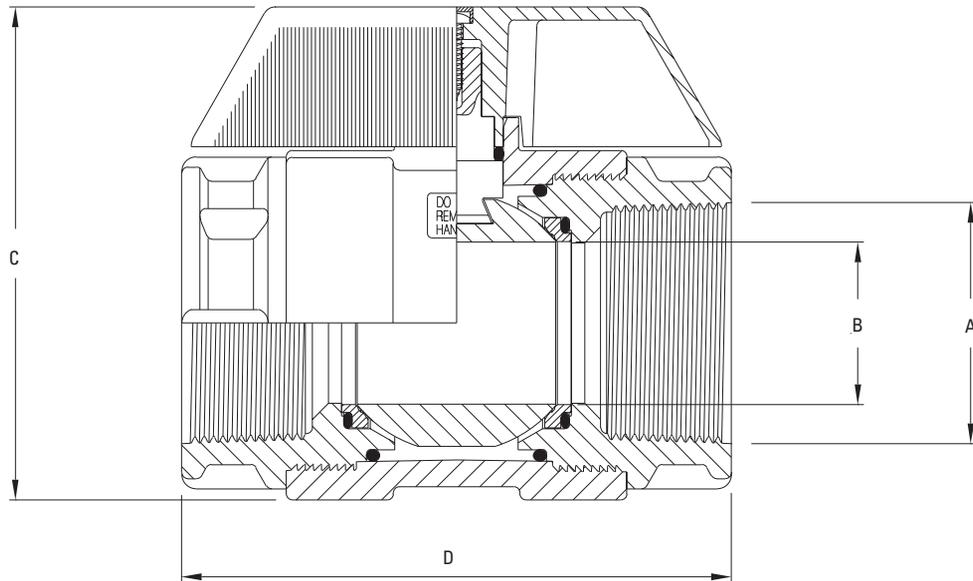
## BLUE HANDLED BALL VALVES MATERIAL & COMPONENTS



### Blue Handled Ball Valve

Size	Nominal Size	Part Number	Body	End Cap	Seal Ring	Ball	Spindle	Screw	Handle	O-rings
½"	DN15	95500100	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber
¾"	DN20	95500200	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber
1"	DN25	95500300	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber
1 ¼"	DN32	95500400	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber
1 ½"	DN40	95500500	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber
2"	DN50	95500600	GF Nylon	GF Nylon Alloy	Polypropylene + PTFE	Polypropylene + PTFE	Nylon or Acetal	316 S/S	GF Nylon	Nitrile rubber

## BLUE HANDLED BALL VALVES RANGE & DIMENSIONS



BLUE HANDLED  
BALL VALVES

Size (A)	Nominal Size	Part Number	B	C	D
½"	DN15	95500100	16.1	72	79
¾"	DN20	95500200	16.1	72	86
1"	DN25	95500300	20	82	98
1 ¼"	DN32	95500400	26	91	110
1 ½"	DN40	95500500	32	101	120
2"	DN50	95500600	40	119	136

All dimensions in millimetres unless otherwise stated