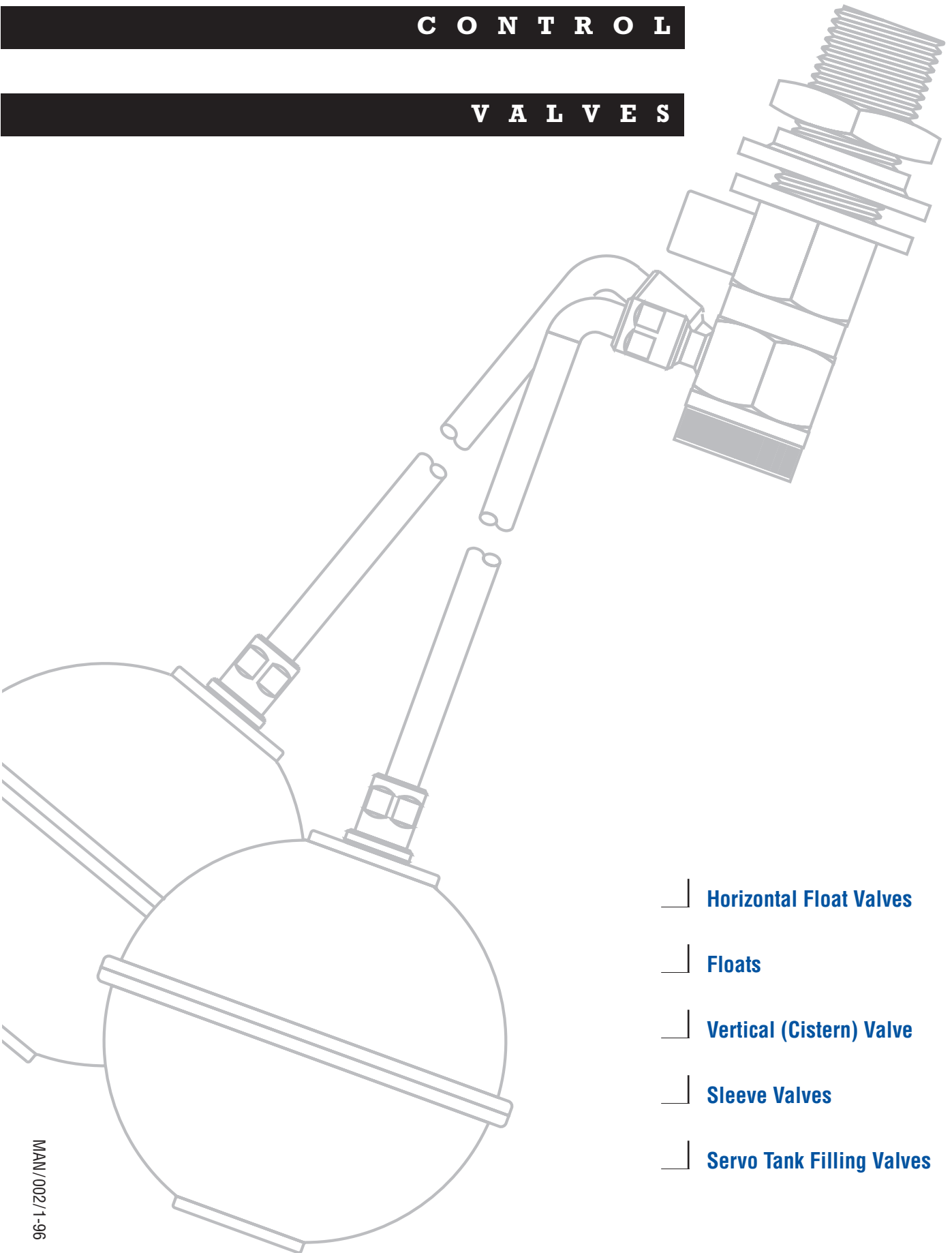


P H I L M A C

F L O A T

C O N T R O L

V A L V E S



Horizontal Float Valves

Floats

Vertical (Cistern) Valve

Sleeve Valves

Servo Tank Filling Valves

S P E C I F I C A T I O N M A N U A L

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Philmac is well renowned for quality products and services.

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Philmac manufacture float control valves under a Quality

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Assurance System assessed and approved to ISO 9002.

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Philmac tests float control valves to international and national

---

standards and operate a Certified Laboratory assessed and

---

approved to ISO 9002 guide 25, by Standards Australia Quality

---

Assurance Services.

---

For over sixty years, Philmac has led the way with precision

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engineered float control valves. The range includes horizontal and

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vertical float valves, sleeve valves and servo tank filling valves.

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## CONTENTS

### Horizontal Float Valves

<b>Product Description</b>	<b>3</b>
<b>Materials and Testing</b>	<b>3</b>
<b>Component Description</b>	<b>4</b>
<b>Application and Performance</b>	<b>4</b>
<b>Installation</b>	<b>5</b>
<b>Dimensions</b>	<b>5</b>
<b>Range</b>	<b>6</b>

### Floats

<b>Range and Accessories</b>	<b>7</b>
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### Vertical (Cistern) Valve

<b>Product Information</b>	<b>8</b>
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### Sleeve Valves

<b>Product Description</b>	<b>9</b>
<b>Application and Performance</b>	<b>9</b>
<b>Dimensions</b>	<b>9</b>

### Servo Tank Filling Valves

<b>Product Description</b>	<b>10</b>
<b>Operation and Installation</b>	<b>10</b>
<b>Dimensions and Performance</b>	<b>11</b>

#### Disclaimer

Please note that the information, opinions, recommendations and advice given in this manual are supplied only to provide an improved understanding of the technical aspects of float control valves.

So far as the law allows, Philmac Pty Ltd will not accept liability in respect of any loss or damage of any kind claimed to arise as a result of reliance upon any information contained in this manual.

Please refer to our Terms and Conditions of Supply of Goods

**PRODUCT**

**DESCRIPTION**

Philmac Horizontal Float Valves are of the piston type. The proven design provides the following benefits.

**Precision Engineered**

Consistent high quality for reliable operation.

**Compact**

Minimum space needed

**Full Flow Inlet**

Maximum flow for fast delivery.

**Patented Cam Action**

Positive shut off provides complete seal against water inlet.

**Extensively Tested**

Reliable performance.

**Comprehensive Range**

Wide range of applications.

**The following information appears on horizontal float control valves:**

“Philmac”, Sizing, Approvals.

**MATERIALS**

**High grade materials are selected for use in Philmac Float Valves. Combinations of materials used are detailed in the product range tables.**

**Materials Used**

**Polymers**

Polypropylene (PP)  
Nylon  
Acetal

**Metals**

DZR Brass  
316 Stainless Steel  
Manganese Bronze

**Elastomers**

EPDM  
Nitrile  
Viton A

**Lubricant**

Silicone Grease

Tests are conducted to ensure materials used are suitable for potable water systems. All materials used conform to British Standard BS 6298 and Australian Standard AS 3855 - 1994.

**TESTING**

**Tests for float control valves cover the performance and endurance of the valve assembly.**

Specifically, there are two categories:

**General Requirements**

During manufacture, the operator checks the valve is free from defects and carries out dimensional measurements.

The manufacturing team perform Quality Control tests on both the components and the assembled valves in accordance with the Quality Plan.

**Type Tests**

Technical Services personnel perform type tests when there is a change in the material, design or manufacturing process.

**Shut Off Test**

This test is carried out on the float valve assembly to verify valves will shut off against a hydrostatic water pressure of 2000 kPa.

**Strength Test**

This test is carried out to verify valves are of adequate strength for their designed application. Valves are tested at their maximum recommended operating temperatures, at a pressure of 3000kPa.

**Endurance Test**

Float valve operating mechanisms are subjected to 50,000 cycles. This simulates satisfactory opening and closing operation during the design service life of the valve.



Australian Standard  
AS 1910 Lic 1519

## PERFORMANCE

### Operating Temperature

#### Float Valves

Philmac Float Valves are designed for connection to cold water inlet pipes. The valves are suitable for use in applications where the tank water is subsequently heated to 95°C maximum.

#### Floats - Hot water rated

Maximum continuous operating temperature 95°C

#### Floats - Cold water rated

Maximum continuous operating temperature 60°C

### Operating Pressure

Maximum Operating Static Pressure: 1600kPa

### Chemical Resistance

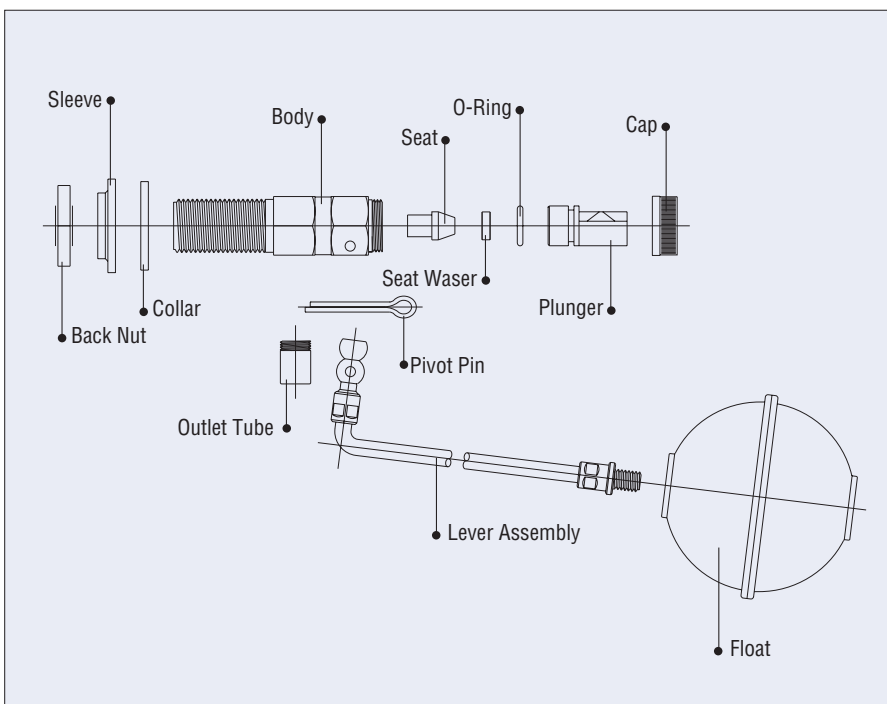
For fluids other than potable water please contact your nearest Philmac office for suitability of the valve.

### Flow Capacity

Inlet Flow Pressure (kPa)	Flow Capacity Litres Per Minute						
	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
10	1	5	13	23	27	41	65
20	2	7	19	33	40	65	83
30	2	10	23	38	51	81	96
40	3	12	25	48	62	96	162
50	3	13	30	55	71	109	187
100	5	19	41	81	100	153	273
200	8	28	59	114	137	214	385
300	9	34	75	136	164	259	442
400	10	40	87	154	189	296	473
500	11	44	98	167	208	316	484
750	13	49	116	185	238	343	490
1000	16	52	122	191	246	350	496

## COMPONENT

## DESCRIPTION



## APPLICATION

Philmac horizontal float valves are designed for use in fluid supply systems to control the inflow to storage tanks. The nominal size range is DN10 to DN50. Floats for cold and hot water applications complete the system.

**The range of valves available are designed to serve industry in a wide variety of applications.**

#### Plumbing

- Hot water and cold water storage tanks for Domestic and Industrial facilities
- Cisterns

#### Industrial

- Hospital Sterilisers
- Dishwashing Machines

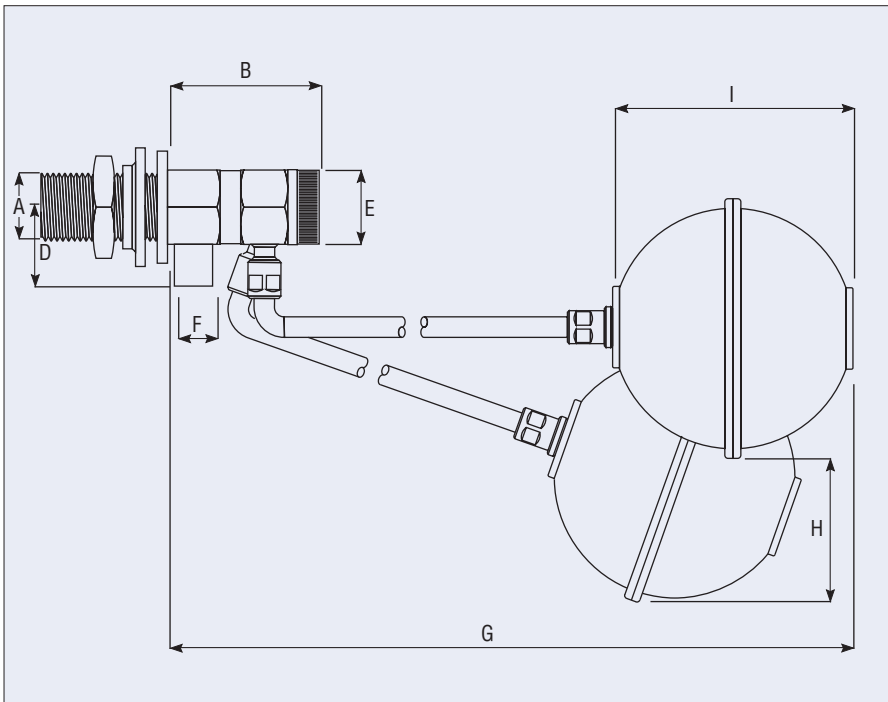
#### Farming

- Drinking Troughs

#### Commercial

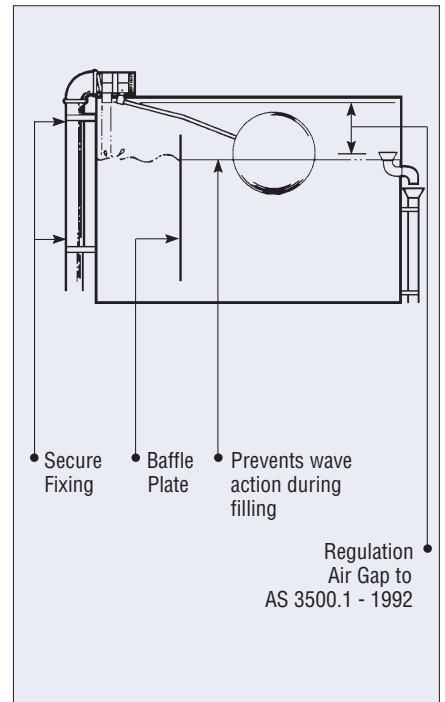
- Airconditioners

## DIMENSIONS



## INSTALLATION

### Typical System Design



### Horizontal Float Valves

Nominal Size	A (BSP) inches	B	D	E	F	G	H	I
DN10	3/8"	35	21	18	6	213	45	80
DN15	1/2"	41	29	24	10	*419	111	100
DN20	3/4"	45	38	30	13	444	121	150
DN25	1"	51	38	35	16	533	171	150
DN32	1 1/4"	57	45	43	45	584	191	175
DN40	1 1/2"	57	50	48	22	660	216	200
DN50	2"	79	56	60	29	787	255	255

\* with 255 lever.

All dimensions in millimeters unless otherwise stated

### Thread Design

All threads are right hand. Metal threads are chamfered at the end face.

Parallel (fastening) threads comply with BS 21 and AS 1722.2

Tapered (sealing) threads comply with BS21 and AS 1722.1

Philmac recommends the use of PTFE tape on BSP threads for a positive seal.

# FLOAT CONTROL

## VALVES

### Plastic (Acetal) Body

Nominal Size	Ref No	BSP Thread Diameter	BSP Thread Length	Thread Type	Lever Length	Cap	Plunger	Seat	Seat Washer	Collar	Sleeve	Back Nut
DN15	3002	1/2"	41	parallel	250	nylon	acetal	acetal	nitrile	-	-	acetal
DN15	3003	1/2"	41	parallel	200	nylon	acetal	acetal	nitrile	-	-	acetal
DN15	3025	1/2"	41	parallel	240	nylon	acetal	acetal	nitrile	-	-	acetal
DN15	3055	1/2"	41	parallel	255 vertical	nylon	acetal	acetal	nitrile	-	-	acetal
DN15	3099	1/2"	41	parallel	220 curved	nylon	acetal	acetal	nitrile	-	-	acetal

### Plastic (Acetal) Body

Nominal Size	Ref No	BSP Thread Diameter	BSP Thread Length	Thread Type	Lever Length	Tube Lever Option	Cap	Plunger	Seat	Seat Washer	Collar	Sleeve	Back Nut
DN10	3005	3/8"	15	tapered	130	-	-	brass	manganese bronze	nitrile	-	-	-
DN15	3007	1/2"	15	tapered	200	-	nylon	acetal	stainless steel	nitrile	-	-	-
DN15	3013	1/2"	36	parallel	250	-	nylon	acetal	stainless steel	nitrile	brass	-	brass
DN15	3014	1/2"	41	parallel	250	-	nylon	acetal	acetal	nitrile	brass	-	acetal
DN15	3015	1/2"	36	parallel	200	-	nylon	brass	acetal	nitrile	brass	-	acetal
DN15	3016	1/2"	36	parallel	200	-	nylon	acetal	acetal	nitrile	brass	-	acetal
DN15	3017	1/2"	36	parallel	200	-	nylon	acetal	acetal	nitrile	brass	PP	acetal
DN15	3019	1/2"	36	parallel	150	-	nylon	acetal	acetal	nitrile	brass	-	acetal
DN15	3022	1/2"	36	parallel	200	-	nylon	acetal	stainless steel	nitrile	brass	PP	brass
DN15	3031	1/2"	21	parallel	200	-	brass	brass	stainless steel	nitrile	brass	-	brass
DN20	3043	3/4"	19	tapered	250	-	brass	acetal	stainless steel	nitrile	-	-	-
DN25	3047	1"	19	tapered	355	-	brass	acetal	stainless steel	nitrile	-	-	-
DN32	3048	1 1/4"	22	tapered	355	✓	brass	brass	stainless steel	nitrile	-	-	-
DN40	3049	1 1/2"	22	tapered	405	✓	brass	brass	stainless steel	nitrile	-	-	-
DN50	3050	2"	25	tapered	455	✓	brass	brass	stainless steel	nitrile	-	-	-

### Stainless Steel Body

Nominal Size	Ref No	BSP Thread Diameter	BSP Thread Length	Thread Type	Lever Length	Cap	Plunger	Seat	Seat Washer	Collar	Sleeve	Back Nut
DN15	3991	1/2"	16	tapered	255	stainless steel	stainless steel	stainless steel	viton A	-	-	-
DN20	3992	3/4"	18	tapered	255	stainless steel	stainless steel	stainless steel	viton A	-	-	-
DN25	3993	1"	19	tapered	355	stainless steel	stainless steel	stainless steel	viton A	-	-	-
DN40	3995	1 1/2"	22	tapered	405	stainless steel	stainless steel	stainless steel	viton A	-	-	-

# FLOATS

## Range

Nominal Size	Size (Imperial)	Ref No.	Connecting Thread (Whit)	Options	Profile	Water Rating	Material	Colour
80	3"	4993	5/16"	-	round	cold	PP	black
80	3"	4991	5/16"	-	round	hot	PP	natural
80	3"	1613	5/16"	sand loaded	round	hot	copper	-
80	3"	1614	5/16"	-	round	hot	copper	-
100	4"	4994	5/16"	-	oval	cold	PP	black
100	4"	4995	5/16"	-	oval	hot	PP	natural
115	4 1/2"	1617	5/16"	-	round	hot	copper	-
125	5"	1615	5/16"	-	round	hot	copper	-
125	5"	1645	5/16"	-	round	hot	stainless steel	-
150	6"	4996	5/16"	-	round	cold	PP	black
150	6"	1618	5/16"	-	round	hot	copper	-
175	7"	4997	3/8"	-	round	cold	PP	black
175	7"	1619	3/8"	tube	round	hot	copper	-
200	8"	4998	1/2"	tube	round	cold	PP	black
200	8"	1612	3/8"	tube	round	hot	copper	-
200	8"	1648	3/8"	-	round	hot	stainless steel	-
255	10"	1623	1/2"	tube	round	hot	copper	-

## RECOMMENDED

## FLOAT SIZES

Nominal Valve Size	Float Size							
	80	100	115	125	150	175	200	255
DN10	● ■							
DN15		■	●	▲				
DN20				● ▲	■			
DN25				▲	● ■			
DN32						● ■		
DN40							● ■ ▲	
DN50								●

- Copper
- Plastic
- ▲ Stainless Steel

## FLOAT

## ACCESSORIES

### Cord Attachment (Ref No 1718)

May be used with 15mm, 20mm and 25mm float valves for underwater applications.

### Threaded Adaptor (Ref No 1738)

1/2" threaded adaptor to connect 200mm plastic float to screwed lever valves.

**PRODUCT**

**DESCRIPTION**

The Philmac Vertical (Cistern) Valve is of the piston type. Designed for cisterns requiring bottom entry water inlet, the valve suits a wide range of cistern tanks (excluding Caroma). Maximum operating static pressure is 1600kPa.

The proven design provides the following benefits:

**Robust Design**

Operation is tolerant of poor water quality - unlike diaphragm type valves.

**Quiet Operation**

Built-in noise baffle for quieter filling.

**Positive Shut-Off**

Piston design provides complete seal against water inlet.

**High Quality Materials**

Corrosion resistant material promotes long and trouble free service life.

**Australian Made**

Complies with Australian Standard 1218-1990 (filling rate).

**DIMENSIONS**

Nominal Size	DN15
Ref No	1527
BSP Thread Diameter	1/2"
BSP Thread Length	45
Lever Length	255
Rec Float Size	100

**INSTALLATION**

**Lever Arm Assembly Details**

- 1 Remove valve, lever and split pin from bag.
- 2 Screw float onto threaded end of lever.
- 3 Insert cam end into valve piston ensuring cam enters piston recess. This may require rotation of the piston to align to the correct position.
- 4 Align cam hole with valve housing, insert split pin and flare the end to secure.

**Installation and Operating Instructions**

- 1 Turn off water supply to the valve and disconnect existing pipework.
- 2 Drain tank, noting current water level prior to removing existing valve.
- 3 Remove white plastic back nut from bottom of new valve, retaining washer on valve stem.
- 4 Insert threaded section into bottom hole of cistern, making sure the sealing washer is in direct contact with the base of tank.
- 5 Assemble back nut to protruding thread of valve, and tighten.
- 6 Re-connect pipework.
- 7 Turn on water supply and bend lever arm to achieve desired water level.



Australian Standard  
AS 1910 Lic 1519

**PRODUCT**

**APPLICATION**

**DESCRIPTION**

Philmac sleeve float valves are of the piston type. Designed for applications where full flow is required, the valves operate under a wide pressure range.

The valves are specially designed for rural applications such as livestock troughs.

**Chemical Resistance**

Moulded in engineering plastic, the valves can handle commonly used agricultural fluids. For special applications contact your nearest Philmac office..

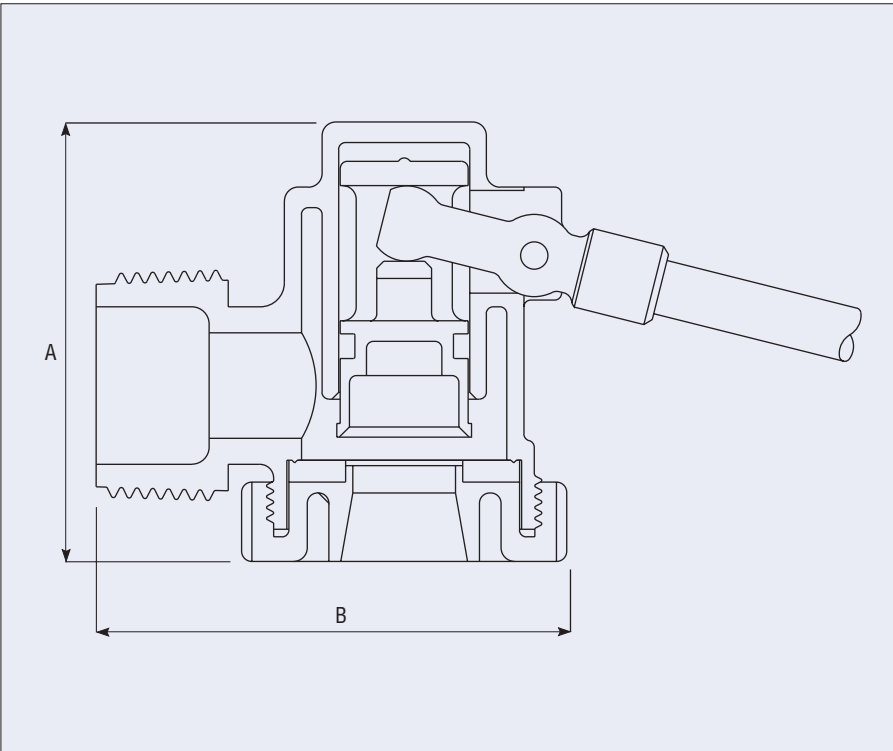
**Installation**

Locate valve in desired position. Avoid excess tightening on inlet thread. Use only PTFE tape seal. For underwater discharge use float attachment cord and weight. (See float accessories, page 7).

**Pressure**

Maximum operating static pressure: 1000 kPa (145 psi).

**DIMENSIONS**



**PERFORMANCE**

**Flow Capacity (DN20 Valve)**

Inlet Flow Pressure		Flow Rate
kPa	psi	litres/minute
50	7	65
100	15	90
150	22	105
200	29	132
250	36	140
300	44	156
350	51	165
400	58	174
450	65	185
500	73	195
750	109	238

**Dimensions**

Valve Size	Ref No	Thread BSP	Dimension A	Dimension B	Unit Weight	Float Size
DN20	4702	3/4"	64	69	221gms	150
DN25	4703	1"	64	69	223gms	150

**PRODUCT****DESCRIPTION**

Philmac Servo Tank Filling Valves range in size from 40-80mm with BSP female thread connections.

The valves can be adapted to flanged systems if required, by the use of a flange conversion kit.

The unique servo action provides positive valve closure at pressures from 10-2000 kpa.

Due to the servo action, only small floats are required to operate the valve, making it ideal for confined spaces.

**The valves offer a range of benefits including:**

Positive shut-off.

Solid gun metal construction.

Threaded or Flanged connection.

Unrestricted flow.

Proven use worldwide by major water authorities.

**OPERATION****Valve Closure**

As the water level in the tank rises, the float forces the lever upwards.

The lever in turn forces the piston down, closing the orifice between the seat retainer and seat.

The inlet pressure bypassing the split ring causes pressure to build up in the chambers.

This servo action assists principle closure of the main piston onto seat.

**Valve Opening**

As the water level drops, the float forces the lever down, which in turn forces the piston upwards opening the orifice.

This allows the water to bypass through the chambers.

Further movement of the lever results in opening the main piston.

**VALVE****SELECTION**

Valve selection should be related directly to demand and not to pipe size.

For example, a 40mm valve can be fitted to an 80mm line providing the valve is capable of supplying the required flow rate.

Ensure that the valve will fit into the tank.

**INSTALLATION**

Ensure that excess wave action does not occur. The threaded outlet of the valve allows for an extension pipe to be connected so that discharge can take place below water level.

Holes must be drilled in the outlet tube of sufficient size to ensure an appropriate air gap to prevent back syphonage.

Alternatively, it may be necessary especially in larger tanks to install either a baffle or a stilling tank.



DN40 and DN50

Australian  
Standard  
AS 1910 Lic 1519

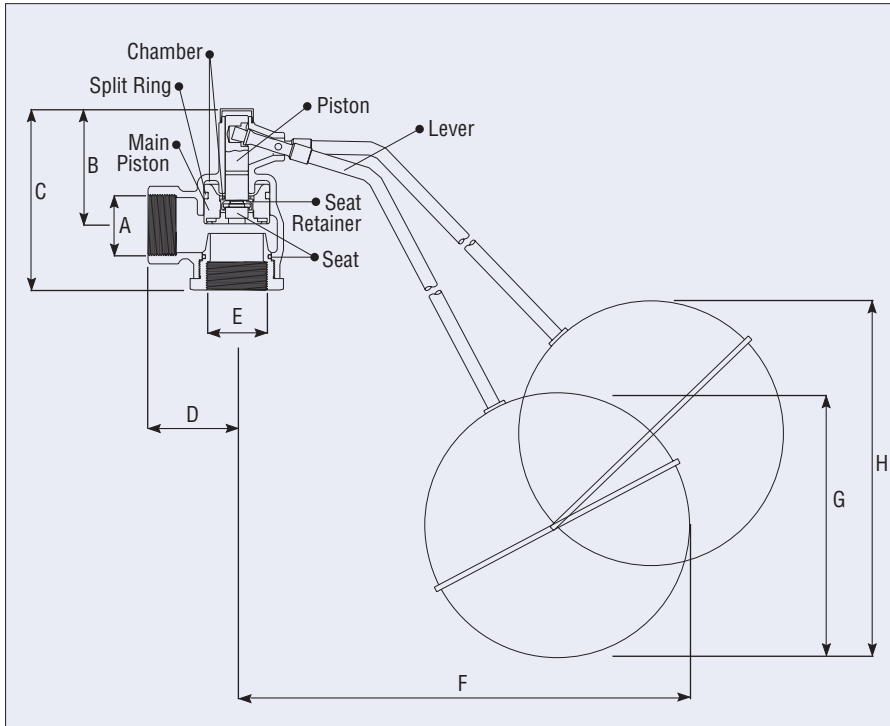


DN80

WaterMark  
Spec.012 Lic.W130

## DIMENSIONS

## PERFORMANCE



### Flow Capacity

Inlet Flow Pressure (kPa)	Flow Rate Litres Per Minute		
	40mm	50mm	80mm
100	420	600	1440
150	510	720	1680
200	600	840	1960
250	670	960	2170
300	730	1020	2290
350	770	1080	2460
400	800	1140	2580
450	830	1220	2700
500	900	1300	2820

### Dimensions

Valve Size	Ref No	Valve Dimensions								Flange Connection Table E	Float Size	Unit Weight (Kilogram)
		Inlet A(BSP)	B	C	D	Outlet E(BSP)	F	G	H			
DN40	3815	1 1/2"	110	165	70	1 1/2"	760	200	260	40	200	4
DN50	3816	2"	110	170	80	2"	890	255	260	50	255	6
DN80	3817	3"	145	225	110	3"	1040	255	410	80/100	255	11

# Philmac Pty Ltd

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