



Cert. No. LRQ 0963008

ISO 9001

# spirax sarco

**TI-P510-01**  
 CH Issue 5

**IP2, IP2A and IP2D**  
**Spirax-Monnier**

## International Compressed Air Filter/Regulators

### Description

The IP range of Spirax-Monnier international compressed air filter/regulators provide high quality compressed air with accurate pressure control for general purpose pneumatic systems.

#### Principal features:

- Internal and external black epoxy finish.
- Compact combined filter/regulator.
- Shrouded whirl disc for efficient separation.
- Option of sight level on metal bowled units.
- 5 micron large surface area element in easy clean nylon mesh.
- Good flow and regulation characteristics.
- For line, bracket or panel mounting.
- Easy fit bowl guard available.

#### Available types:

<b>IP2A</b>	Having a pilot operated automatic drain.
<b>IP2D</b>	Having a semi-auto dump valve with quick action manual override.
<b>IP2</b>	Having a manual drain (metal bowl only).

**Note:** The Spirax-Monnier IP range are supplied self-relieving as standard (the non-relieving version is available on request).

#### Optional extras

For further technical information regarding the following options see page 2:

- Tamper-proof cap.
- Type 21 mounting bracket.
- Pressure gauges.
- Discharge tube adaptor - IP2A only.
- Metal bowl.
- Bowl guard.

### Sizes and pipe connections

1/2" screwed BSP (BS 21-Rp) supplied with 1/4" and 3/8" BSP reducing bushes (1 x pair per size).

### Spring range (operating pressure range)

All regulators can be adjusted to zero pressure, or above the figures shown. The operating range is marked on the unit.

<b>Standard spring</b>	0.5 - 10 bar g
<b>Optional spring</b>	0.2 - 3.5 bar g

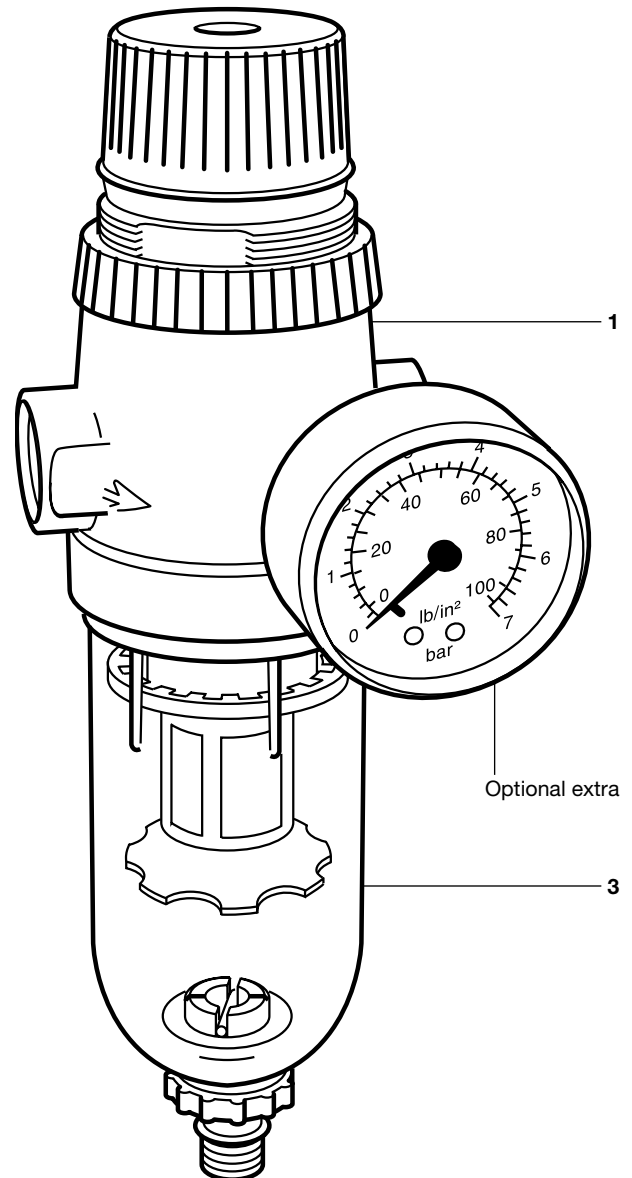
**Note:** The IP range will be supplied with the standard spring unless an alternative option has been specified when placing an order.

### Operating limits

Maximum working pressure	Polycarbonate bowl	10 bar g
	Metal bowl	17 bar g
Maximum working temperature	Polycarbonate bowl	50°C
	Metal bowl	80°C
	Metal bowl with sight level	70°C

### Materials

No.	Part	Material
1	Body	Zinc alloy - epoxy coated
2	Valve	Brass rubber faced
3	Bowl	Polycarbonate or aluminium (epoxy coated)
4	Element (5 µm)	Nylon mesh
5	Diaphragm	Reinforced nitrile rubber

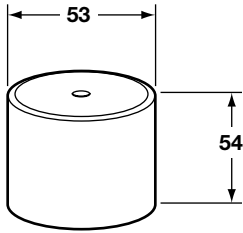


**Optional extras**

**Tamper-proof cap**

An aluminium tamper-proof cap can be fitted to prevent unauthorised pressure adjustment.

**Dimensions (approximate) in mm**



**Type 21 mounting bracket**

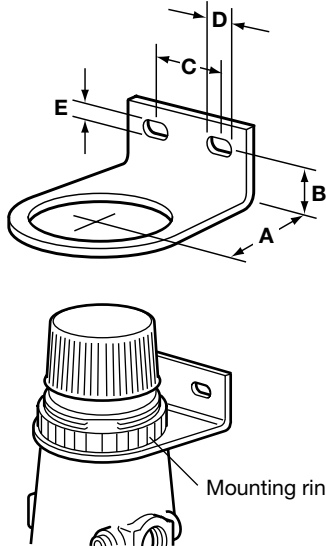
A plated mild steel bracket which can be attached to the filter/regulator by the plastic mounting ring supplied.

**Note:** An aluminium mounting ring can be supplied at extra cost, and must be specified, if required, on order placement.

**Dimensions (approximate) in mm**

A	B	C	D	E
44	19	32	12	6

If the regulator is to be panel mounted a hole is required in the panel 48 mm diameter, and the panel thickness must not exceed 8 mm.



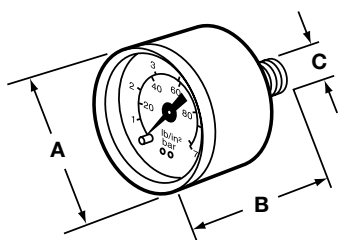
**Pressure gauge**

Available in two sizes, with 4 pressure ranges. The face is marked in both bar and psi. Please state, size and pressure range when placing an order.

<b>Pressure ranges</b>	0 to 2 bar	0 to 30 psi
	0 to 7 bar	0 to 100 psi
	0 to 11 bar	0 to 160 psi
	0 to 20 bar	0 to 300 psi (2" size only)

**Dimensions (approximate) in mm**

Size	A	B	C
1½"	40	47	R½"
2"	49	45	R½"



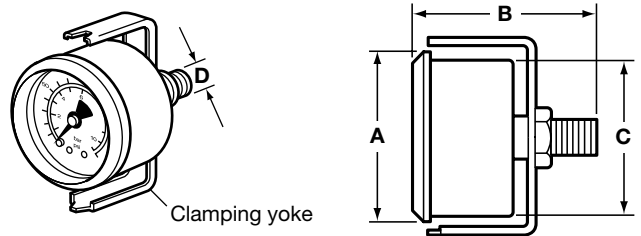
**Pressure gauges for panel mounting**

With chromium plated bezel available in two ranges, the face being marked in bar and psi as follows:-

<b>Pressure ranges</b>	0 to 2 bar	0 to 30 psi
	0 to 11 bar	0 to 160 psi

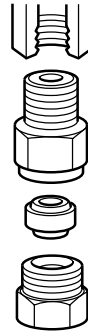
**Dimensions (approximate) in mm**

A	B	C	D
53	56	48	R½"



**Discharge tube adaptor IP2A only**

An adaptor can be supplied for the auto-drain on the IP2A models, to accept 8 mm O/D copper or plastic tube.



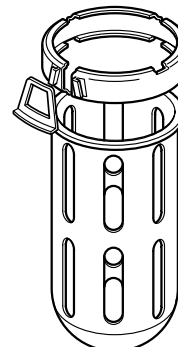
**Metal bowl**

with sight level



**Bowl guard**

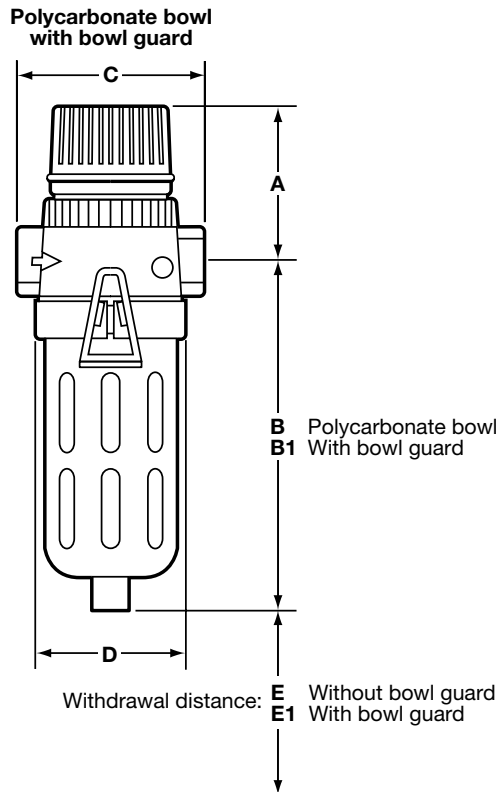
In the interest of safety Spirax Sarco recommend that a bowl guard should be fitted to polycarbonated bowls - see the 'Warning' under 'Safety information, installation and maintenance' page 5.



**Dimensions/weights (approximate) in mm and kg**

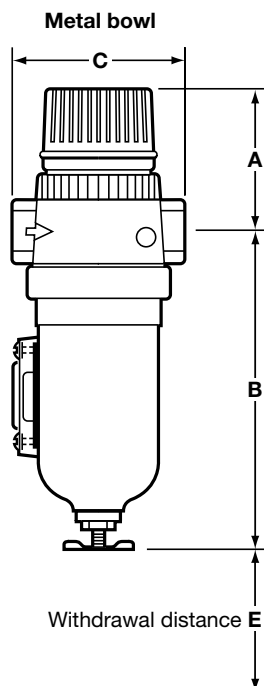
**Polycarbonate bowl**

Unit	A	B	B1	C	D	E	E1	Weight
IP2A	82	152	158	76	62	39	82	0.83
IP2D	82	145	151	76	62	39	79	0.75

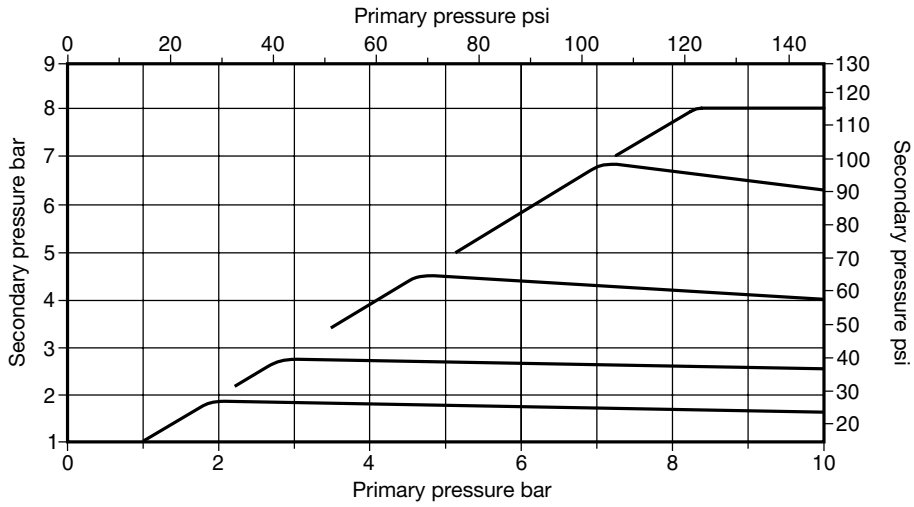


**Metal bowl**

Unit	A	B	C	D	E	Weight
IP2	82	143	76	62	39	0.80
IP2A	82	152	76	62	39	0.88
IP2D	82	145	76	62	39	0.80

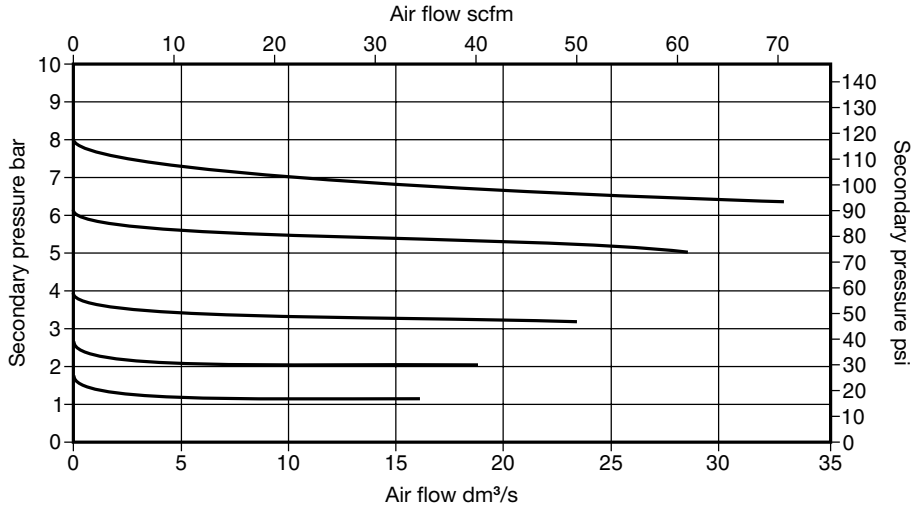


**Performance**  
with primary pressure 10 bar

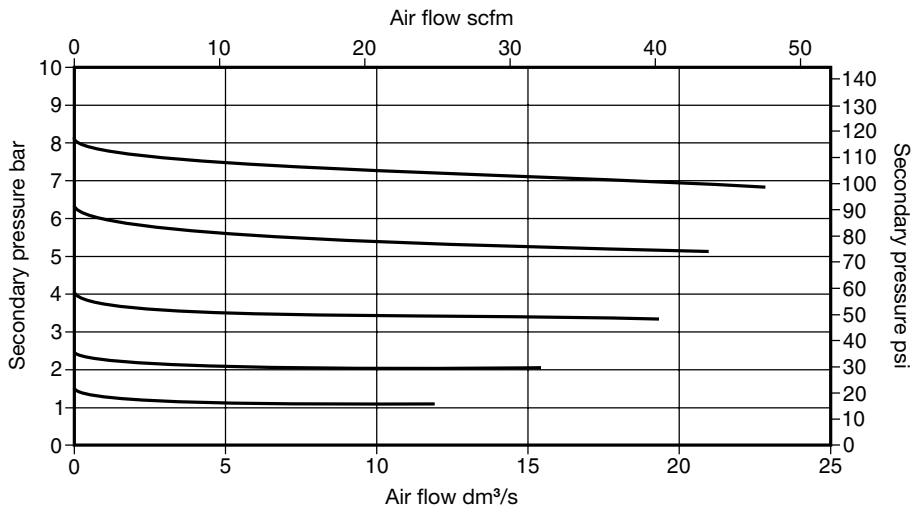


**Regulation**

**Standard  
1/2" connection**



**With 1/4" and  
3/8" reducing bushes fitted**



## How they work

Contaminated compressed air (5) is directed into the inside of the bowl (14) by the shrouded whirl disc (7). This centrifugal separation allows most of the liquids and solids to pass down into the sump (15) away from any turbulence. The air is then filtered by the nylon mesh element (6) before passing upwards through the main valve (2) of the regulator and then to the outlet (9). Ensure that the bowl is regularly drained by either the dump drain valve (8 - IPD), the manual drain (12 - IP2 metal bowl) or the auto drain (13 - IP2A). With the adjustment knob (1) rotated fully anticlockwise the valve return spring (16) will keep the main valve (2) shut. Clockwise rotation of the adjustment knob will compress the main pressure control spring (3), deflect the diaphragm (4) downwards opening the main valve (2). As air flows to the downstream (9) side of the regulator, the secondary pressure increases. The secondary pressure is sensed by the aspirator (10) and transmitted to the underside of the diaphragm. As the controlled pressure varies, so does the force on the underside of the diaphragm. When this force (proportional to the secondary pressure) equals the compression in the main control spring, the main valve will shut. Any fall in secondary pressure will cause the main valve to open sufficiently to meet the air flow requirements and accurately maintain the set secondary pressure. On self-relieving models any appreciable rise in secondary pressure from its set value will cause the diaphragm (and the pushrod 11) to lift. This will allow the air to escape through the centre of the pushrod to atmosphere. When excess pressure has been vented the orifice in the pushrod will reseat on the main valve.

### Auto-drain - IP2A

The Spirax-Monnier internal auto-drain is a pilot operated unit. As the water level in the bowl rises, the float (13) lifts, allowing line pressure to act on a piston, which opens the main discharge valve. As the liquid level falls, the float closes and line pressure shuts the main valve. Under zero pressure conditions, the automatic drain will be in the open position, allowing any liquid to drain away.

### Automatic dump valve - IP2D

This is a spring loaded valve which will allow the filter/regulator to automatically drain when the pressure in the bowl drops below 0.06 bar (i.e. when air is shut off).

The units can also be drained manually by pushing the protruding valve stem sideways or upwards.

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P510-04) supplied with the product.

### Warning:

Polycarbonate bowls and sight levels on metal bowls can be attacked by phosphate ester fluids, solvents, paint thinners and carbon tetrachloride. These and similar substances should never be allowed to come into contact with the bowl. Certain compressor lubricating oils also contain additives harmful to polycarbonate and where there is any doubt we recommend, in the interests of safety that a metal bowl or bowl guard should be fitted.

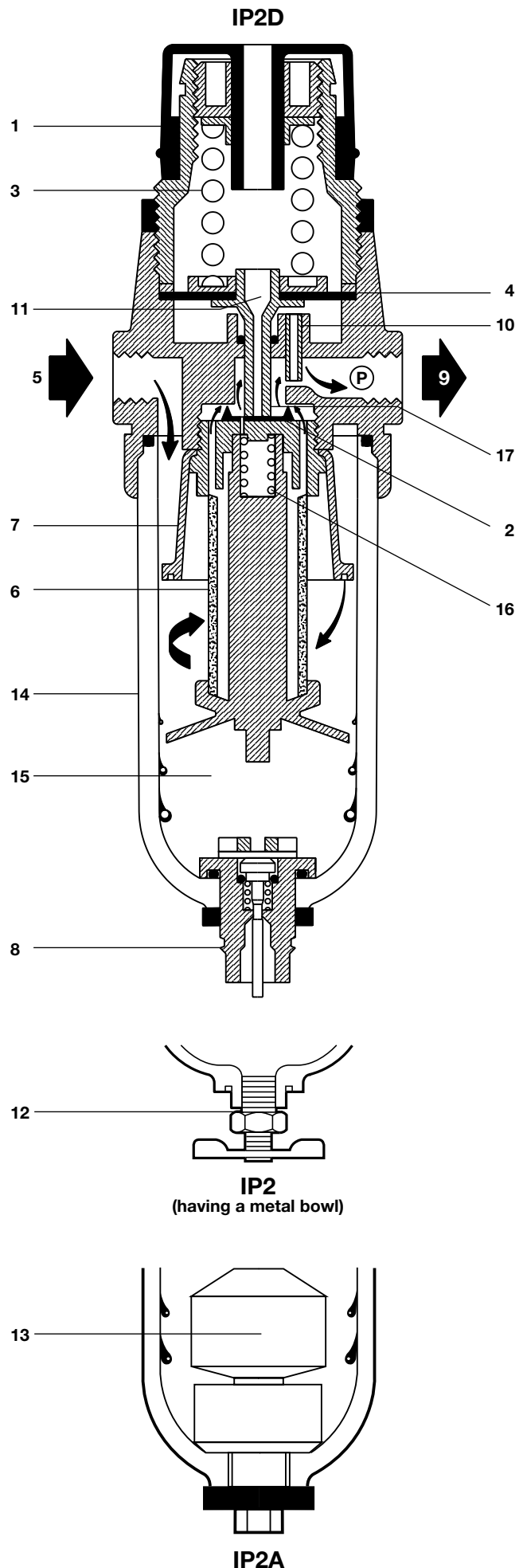
### Installation note:

Fit into a horizontal pipeline, with the bowl vertically downwards, as close as possible to the equipment it is serving. Connect the unit so that the air flow is in the direction shown by the arrow cast on the body. A pressure gauge fitted to one of the ports is recommended (to show the secondary pressure). The port(s) not in use should be blanked off with the plugs supplied (P).

## How to order

State quantity, size (½") and type, (Spirax-Monnier IP2, IP2A or IP2D). Unless otherwise instructed, the filter/regulator will be supplied with a polycarbonate bowl and 0.5 to 10 bar control spring.

**Example:** 1 off Spirax-Monnier ½" screwed BSP IP2 international compressed air filter/regulator. **Note:** Optional extras must be specified separately.



**Spare parts**

The spare parts available are detailed below. No other parts are supplied as spares.

**Available spares**

Pressure control spring set - State pressure range	<b>E, F, O</b>
Valve and diaphragm assembly	<b>G, H, J, K, L, M</b>
Bowl assembly including appropriate drain - State polycarbonate or metal (with or without sight level)	<b>A, B</b>
Element set (packet of 3 of each) <b>B, C, (P IP2, IP2A and IP2D only)</b>	
Auto drain	<b>W, W1</b>

**How to order spares**

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of unit.

**Example:** 1 off Pressure control spring set (0.5 - 10 bar) for a 1/2" IP2 Spirax-Monnier international compressed air filter/regulator.

**Conversion kit 7**

To convert a manual drain (**IP2**) or dump valve (**IP2D**) into an automatic drain model (**IP2A**). Conversion kit 7 and an auto-drain are required.

Distance piece	<b>A1</b>
'O' ring seal for distance piece and bowl	<b>B1 (2 off)</b>

**Metal bowl with sight level**  
for IP2, IP2A and IP2D

