

Spirax Monnier IC International Ultraclean Compressed Air Filter

How does it work

These units filter out solid contaminants and coalesce liquids and aerosols. Contaminated air flows to the inside of the filter cartridge. The cartridge contains a labyrinth of micro fibres which will trap solid particles down to sub micron size. Fine liquid mist and aerosols on their tortuous journey through the depth of the element, will strike one or other of the fibres and will be retained on them by inter-molecular forces.

As the droplets migrate through the element due to the air flow, they will join (coalesce) with others, growing in size. A specially designed porous plastic sock forms the outer layer of the filter cartridge. This encourages further growth, so that their mass is sufficient to allow them to gravitate to the sump of the filter from which they can be drained either automatically or manually. The porous plastic sock also reduces the possibility of re-entrainment.

The Indicator

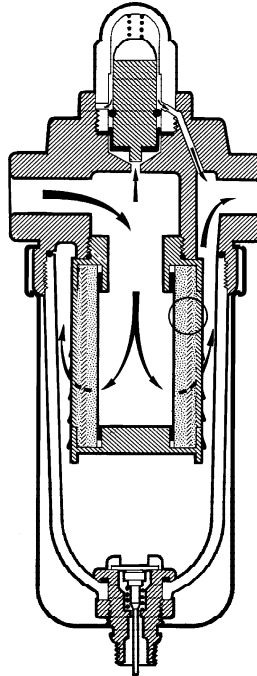
(not fitted to Models IC3D and IC3A)

The indicator senses the increase in pressure drop across the element. When the red section becomes visible, the element needs replacing. The indicator does not respond to sudden surge flows although it is recommended that the initial air pressure is applied slowly. Provided they are not in excess of the filter rating, and will remain in its true position when the system pressure is vented or flow ceases.

A visual check on the indicator position allows planned maintenance to be scheduled.

Points to note

- (1) Coalescing filters should be installed as close as possible to the equipment they are protecting.
- (2) Do not exceed the maximum flow rate (for any given pressure) as shown on the graph or there is every chance that some of the coalesced liquids will be re-entrained and carried on down-stream. See TI-P501-02 (TIS 7.521).
- (3) Do not overload the filter cartridge or there will be a reduction in its efficiency and/or life. It is advisable to fit a conventional pneumatic auto-filter (International IF2A) immediately in front of the coalescing filter for maximum efficiency and life.
- (4) For hydrocarbon vapour and odour removal see TI-P057-01 (TIS 7.522) and TI-P057-02 (TIS 7.523).
- (5) For details of drain types see TI-P501-02 (TIS 7.521).



How to order

Example:- 1 Polycarbonate Bowl Assembly for 1/4" Spirax-Monnier IC4D.

Auto-Drain

The Spirax-Monnier internal auto-drain is a pilot operated unit. As the water level in the bowl rises, the float lifts, allowing the line pressure to act on a piston, which opens the main discharge valve. As the liquid level falls, the float closes the pilot valve 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

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

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

Spare parts

AVAILABLE SPARE

Bowl Assembly including appropriate drain	A,B
State polycarbonate or metal bowl with or without sight level	
Element Set	D,C
Flow Indicator Assembly	E,F
(IC4D and IC4A only)	
Auto Drain	U,W,W1

To service filter

Shut off air. Remove bowl guard if fitted. Release pressure by actuating dump valve or gently unscrewing bowl until pressure relieves. Remove bowl and unscrew element assembly. Wipe all parts clean using soap and water. Dry thoroughly. Replace in reverse order using new filter element and 'O' rings if necessary. Reset indicator by unscrewing sight dome and gently pushing down the indicator itself. Refit sight dome.

To replace indicator

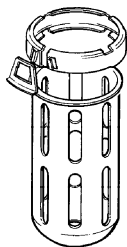
Shut off and release system pressure. Unscrew indicator body and remove complete indicator. Clean pressure transfer ports with a bristle or fine wire. Remove tape from new indicator assembly and screw new assembly into filter head. Remove sight dome and gently push indicator down fully in order to reset. Replace sight dome finger tight. Do not attempt to replace any components of indicator assembly with non-standard parts.

Warning

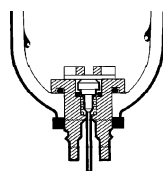
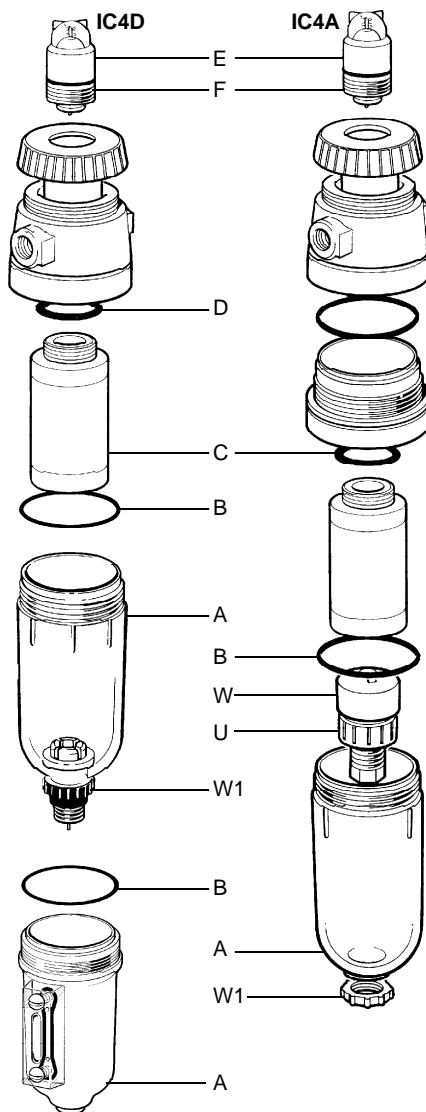
Polycarbonate bowls are attacked by phosphate ester fluids, solvents, paint thinners and carbon tetrachloride. These and similar substances should never be allowed to come into contact with the bowl. Certain compressor lubricating oils also contain additives harmful to polycarbonate and, where there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



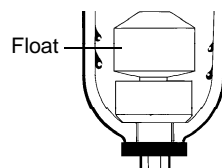
**Metal Bowl
with Sight Level**



Bowl guard
See note
under "Warning"



**Metal Bowl
with Sight Level**



Bowl guard
See note
under "Warning"

Spirax-Monnier Products

General Safety, Installation and Maintenance Guidelines

WARNING

As with all Pressurised Systems, do NOT attempt ANY Installation or Maintenance function if there is ANY pressure in the product or connected system.

Spirax-Monnier

Spirax Monnier compressed air products are of well proven and simple design, with high natural levels of designed safety built in. However, used or installed incorrectly, their performance and that of the system they are protecting or controlling, may suffer. The information given indicates the product limiting conditions, maintenance and installation requirements and any specific component disposal needs.

Product Maintenance - See Over

Installation and Operation

1. Filters, Filter/Regulators, Lubricators, Flow Meters, Separators and Drain Traps should be fitted in horizontal pipelines, with the bowls vertically downwards.
2. Regulators and Ball Valves can be installed in any position.
3. On Pressure Regulators and combined Filter/regulators, a Pressure Gauge can be connected to one of the $\frac{1}{8}$ " ports. The gauge should be selected to cover the maximum pressure range of the main Control Spring. The gauge will indicate the downstream or controlled pressure.
4. Ensure that the Control Spring range for Regulators and Filter/Regulators fully meets the pressure requirements of the system.

5. There are Maximum Operating Pressures, and Maximum Operating and Environmental Temperatures for each product. These are shown in the table below.
6. Adequate space should be provided around any product to allow easy access for routine servicing requirements.
7. Products fitted with a Bowl (Polycarbonate or Metal) should be adequately drained - manually or automatically - to reduce the potentially harmful effects of water carryover.
8. **WARNING** Polycarbonate Bowls and Sight Domes, and Sight Levels fitted to Metal bowls, may be attacked by Phosphate Ester based fluids, Solvents, Chemical cleaners, Carbon Tetrachloride, etc. These and other similar substances should never be allowed to come into contact with these product components. Certain compressor lubricating oils also contain additives harmful to these components. Where there is any doubt, we recommend, in the interests of safety, that Bowl Guards or Metal Bowls are fitted.
9. Local regulations may restrict the use of this product below the conditions quoted.
10. For more detailed information on any individual product, please ask for the appropriate Technical Information Sheet listed in the table.

For Maximum Pressures/Temperatures see overleaf
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MAXIMUM PRESSURES/TEMPERATURES

	Polycarbonate Bowl		Metal Bowl		Metal Bowl with Sight level		DISPOSAL CLASS	TI
FILTERS	bar	°C	bar	°C	bar	°C		
MF2	10	50	-	-	-	-	1 & 3	P050-05
IF2/D/A	10	50	17	80	17	70	1 & 2	P500-01
IC3/4/DA	10	50	17	80	17	70	1 & 2	P501-01
IXI	10	50	17	70	17	70	1 & 2	P057-01
SF3/A	-	-	17	80	17	70	1 & 3	P050-03

REGULATORS

MR1/2/3	21 bar 70°C : CONTROL RANGES : 0.2/2. 0.3/4, 0.7/9 bar	1 & 3	P051-01
IRI	20 bar 70°C : CONTROL RANGES : 0.2/3.5, 0.5/1 bar	1 & 2	P058-01
SR2	21 bar 70°C : CONTROL RANGES : 1.3 - 17.0 bar	1 & 3	P570-01
SR3	21 bar 70°C : CONTROL RANGES : 0.2/4, 0.3/9 bar	1 & 3	P570-03

FILTER REGULATORS

IP2/A/D	10	50	17	80	17	70	1 & 2	P510-01
	RANGES : 0.2/3.5, 0.5/10 bar							
MP2	10	50	-	-	-	-	1 & 3	P054-01
	RANGES : 0.2/2.0, 0.3/4.0, 0.7/9.0 bar							
MPC2	10	50	-	-	-	-	-	P054-04
	RANGES : 0.2/2.0, 0.3/4.0, 0.7/9.0 bar						1 & 3	

LUBRICATORS

ML3	10	50	-	-	-	-	1 & 3	P052-07
IL1	10	50	17	80	17	70	1 & 2	P059-01
SL3	-	-	17	80	17	70	1 & 3	P052-04

OTHER PRODUCTS

IFM2	10	50	-	-	-	-	1 & 2	P580-01
S.M.S.	-	-	17	70°C	-	-	1 & 3	P050-17
BALL	all to 15 bar & 45°C							
VALVES (all)	(see performance graph on TI for full details)						1 & 4	P560-01
DRI-LINE	-	-	16	80°C	-	-	1 & 3	P050-07

DISPOSAL

1. Some plastic and/or rubber components
2. Main body Zinc - epoxy coated
3. Main body Aluminium - epoxy coated
4. Brass and Steel
5. Electronic Components

Note

Customers are reminded that under UK and EC Health, Safety and Environmental Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous.