



Cert. No. LRQ 0963008

ISO 9001

spirax sarco

MPC1, MPC2 and MPC2A

Spirax-Monnier

TI-P054-04
CH Issue 6

High Efficiency Compressed Air Filter / Regulators

Descriptions

The Spirax-Monnier MPC range of (self-relieving) high efficiency oil removing filter/regulators provide very high quality compressed air, with accurate pressure control, for pneumatic actuators and general purpose systems.

Principal features:

- Compact miniature oil removing filter/regulator.
- Self-relieving.
- High efficiency - Exceeding 99.99% against BS 3928, BS 4400 and D.O.P. tests.
- Oil carryover at 21°C - less than 0.01 mg/m³.
- 100% water removal at line temperature.
- Polycarbonate bowl to BS 6005.

Available types supplied as standard

| | |
|--------------|--|
| MPC1 | ATEX compatible. Metal bowl with manual drain and tamper-proof cap. |
| MPC2 | Polycarbonate bowl with manual drain. |
| MPC2A | Metal bowl with autodrain. |

Applications

The MPC is used to provide very high quality compressed air. There are many applications where compressed air of a particularly high quality is required. Typical examples include air bearings on machine tools, air gauging equipment, instrument air supplies, fluidic systems, breathing air, pneumatic positioners, etc.

The MPC1 compressed air filter/regulator is ATEX compatible -

Directive 94/9/EC (ATEX95) Declaration

The MPC1 is intended for use in potentially explosive environments as defined by Equipment Group II Category 2.

- We have determined the MPC1 is a 'simple' mechanical product. It is therefore not covered by the scope of the ATEX directive and consequently does not need to carry any marking

As part of our conformity assessment, an ignition hazard analysis to EN 13463-1 was conducted with the following outcome:

- We have determined the MPC1 does not have its own effective sources of ignition - even in the event of rare failures.

Note: As defined by the European ATEX Standing Committee... "Electrostatic charges caused by the flow-through of a medium are not considered as "own" ignition source in the sense of Directive 94/9/EC."

The MPC1 may be used in a potentially explosive environment, as defined by Equipment Group II Category 2, when used in accordance with its Installation and Maintenance Instructions (IM-P054-08).

Sizes and pipe connections

1/4" screwed BSP (BS 21-Rp, ISO 7)

Spring range (operating pressure range)

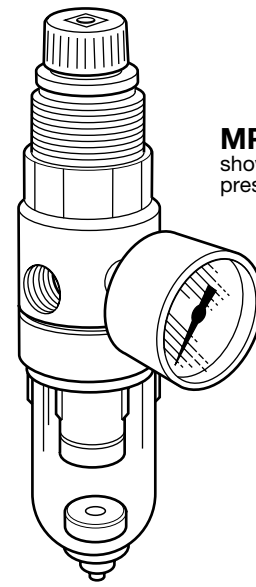
All regulators can be adjusted to zero pressure, or above the figures shown. The operating range is marked on the unit.

| | | |
|------------------------|-------|-----------------|
| Standard spring | Black | 0.7 - 9.0 bar g |
| Optional spring | White | 0.2 - 2.0 bar g |
| | Pink | 0.3 - 4.0 bar g |

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

Operating limits

| | | |
|-------------------------------------|--------------------|-----------------|
| Maximum pressure/temperature | Polycarbonate bowl | 10 bar g @ 50°C |
| | Metal bowl | 17 bar g @ 80°C |



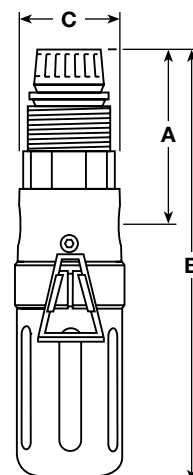
MPC2
shown with optional pressure gauge.

Materials

| Part | Material |
|-----------------|----------------------------------|
| Body | Aluminium - anodised |
| Bowl | Polycarbonate or aluminium alloy |
| Bonnet assembly | Polycarbonate or aluminium |
| Filter element | Microfibre / stainless steel |
| Valve | Nitrile |

Dimensions (approximate) in mm and kg

| Unit | Size | A | B | C | E | E1 | Weight |
|--------------|------|----|-----|----|----|----|--------|
| MPC1 | 1/4" | 75 | 167 | 41 | 25 | - | 0.2 |
| MPC2 | 1/4" | 65 | 155 | 41 | 25 | 45 | 0.2 |
| MPC2A | 1/4" | 75 | 167 | 41 | 25 | - | 0.2 |



Withdrawal distance: E without bowl guard E1 with bowl guard

Optional extras

MPC optional extras - Selection table

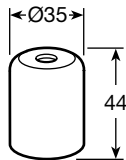
S = Supplied as standard OE = optional extra = not available

| Feature | | MPC1 | MPC2 | MPC2A |
|-----------------------------|-------------------|--|--|--|
| Polycarbonate bowl | Without drain | | OE | |
| | With manual drain | | S | |
| Bowl guard | | | OE | |
| Metal bowl (no sight glass) | With manual drain | S | OE | |
| | With autodrain | | | S |
| Tamper-proof cap | With locking seal | S | OE | OE |
| Pressure gauge | 50 mm Ø | | OE | OE |
| | 40 mm Ø | S | OE | OE |
| Type 8 mounting bracket | | | OE | OE |
| FK21 fixing kit | | S | OE | OE |
| Aluminium locking ring | | S | OE | OE |

Note: Airsets consist of an MPC with a 40mm Ø pressure gauge, locking seal and FK21 fixing kit. A tamper-proof cap with locking seal is recommended as an optional extra for MPC2 and MPC2A airsets.

Tamper-proof cap

Dimensions (approximate) in millimetres



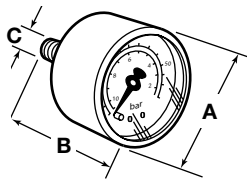
Pressure gauge (Not for MPC2A)

Available in two sizes (1½" and 2"), with 3 pressure ranges. The face is marked in both bar and psi. Please state, size and pressure range when placing an order.

| | | |
|-----------------|-------------|--------------|
| Pressure ranges | 0 to 2 bar | 0 to 30 psi |
| | 0 to 7 bar | 0 to 100 psi |
| | 0 to 11 bar | 0 to 160 psi |

Dimensions (approximate) in millimetres

| Size | A | B | C |
|------|----|----|-------|
| 1½" | 40 | 47 | R1/8" |
| 2" | 48 | 45 | R1/8" |

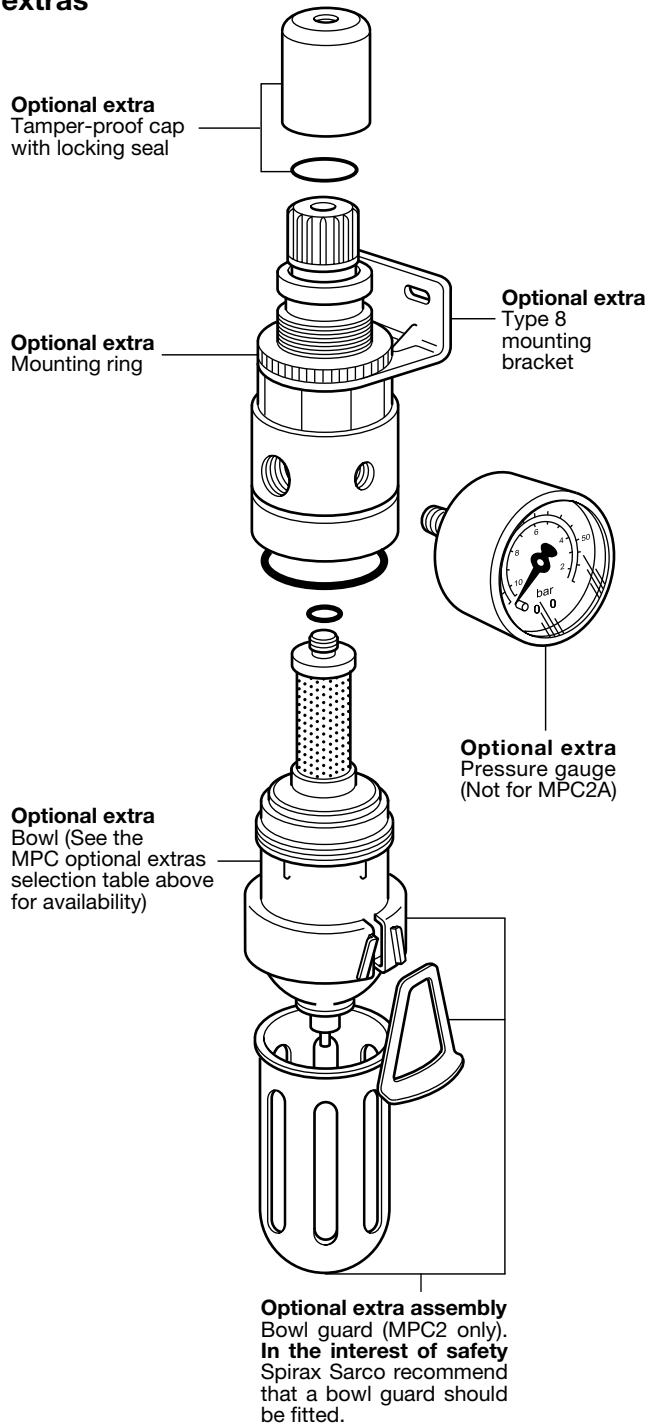
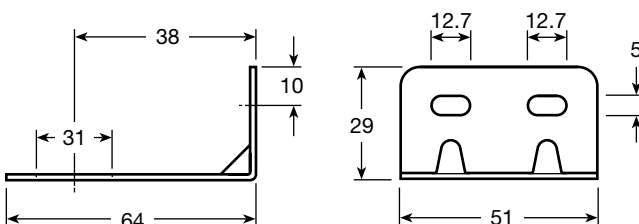


Type 8 mounting bracket and mounting ring

For general installation.

The filter/regulator can be mounted using this zinc plated mild steel bracket and aluminium mounting ring. Both items must be specified when placing an order.

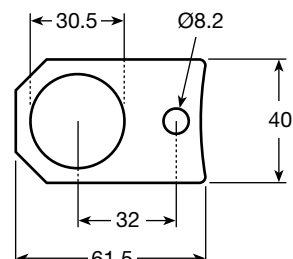
Dimensions (approximate) in millimetres



FK21 fixing kit

The FK21 fixing kit is required to mount the MPC onto the Spirax Sarco range of PN pneumatic actuators. The aluminium mounting ring must also be specified.

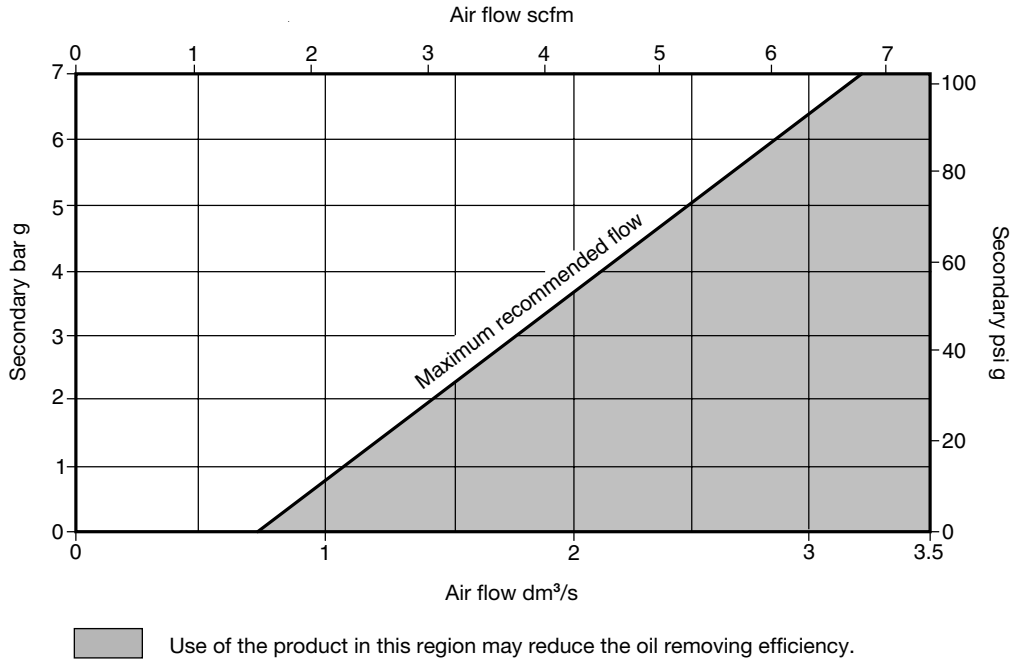
Dimensions (approximate) in millimetres



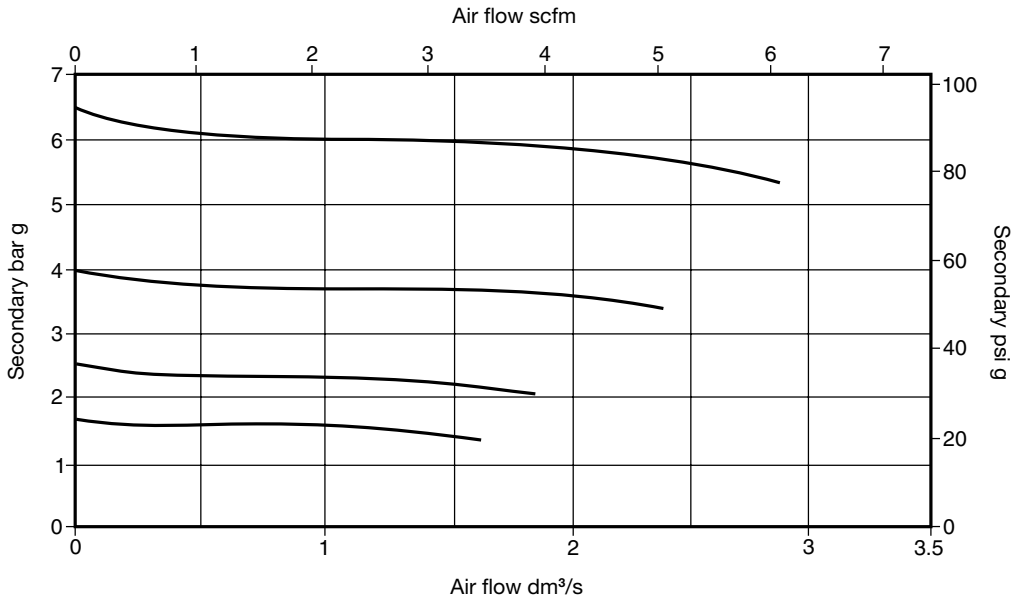
Performance selection (with primary pressure 10 bar)

For any specified primary filtration pressure, there is a maximum recommended air flowrate. Keeping within this, will ensure that the element performance maintains the stated high efficiency levels, particularly for the removal of oil and water contaminants.

Maximum secondary flow at peak performance



Droop characteristics



Graph utilises some typical values for secondary flow / pressure to demonstrate droop

$$\text{Droop} = \frac{\text{Pressure droop}}{\text{Set point}} @ \text{Relevant flowrate}$$

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P045-08) supplied with the product.

How to order

Please state quantity, size and type and any options which are required. Unless otherwise stated, the filter/regulator will be supplied with the 0.7 - 9.0 bar g control spring and a polycarbonate bowl with drain.

Example:

1 off Spirax-Monnier ¼" MPC2 high efficiency compressed air filter/regulator having a 0.3 - 4.0 bar g control spring.
1 off FK21 fixing kit and aluminium mounting ring for fitting an MPC2 onto a Spirax Sarco PN pneumatic actuator.

Spare parts

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

Available spares

| | |
|--|---------|
| Polycarbonate bowl / metal bowl / drain assembly (specify with or without drain) | 1, 2 |
| Element and 'O' ring set | 2, 3, 4 |
| Bowl guard assembly (MPC2 only) | 5, 6, 7 |

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 - Element and 'O' ring set for a Spirax-Monnier ¼" MPC2 high efficiency compressed air filter/regulator.

