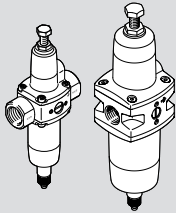


PCRP

Filter regulator



FESTO

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8205315

Operating instruction
8205315
2023-12f
[8205317]

Translation of the original instructions

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1 Applicable documents

All available documents for the product → www.festo.com/sp.

2 Safety

2.1 Safety instructions

- The device can be used under the stated operating conditions in zones 1 and 2 of explosive gas atmospheres and in zones 21 and 22 of explosive dust atmospheres. Manufacturer's declaration → www.festo.com/sp.
- Only use the product in its original condition without unauthorised modifications.
- Only use the product if it is in perfect technical condition.
- Before working on the product, switch off the power supply and secure it against being switched on again.
- All work must be carried out outside of potentially explosive areas.
- Observe the specifications on the product labelling.
- Take into account the ambient conditions at the location of use.
- Remove the particles in the supply lines by blowing compressed air through the tubing. This protects the device from premature failure or increased wear.
- Earth the device via the mounting holes next to the pressure gauge connection or the drilled holes on the mounting bracket.

2.2 Intended use

The filter regulator is intended to maintain the specified output pressure of the compressed air in the downstream string. The filter regulator PCRP smoothes out pressure fluctuations. The outlet pressure p2 can be adjusted within the pressure regulation range → 11.2 Technical data, pneumatic.

2.3 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. The qualified personnel have knowledge and experience in pneumatics.

3 Additional information

- Contact the regional Festo contact if you have technical problems → www.festo.com.
- Accessories and spare parts → www.festo.com/catalogue.

4 Product design

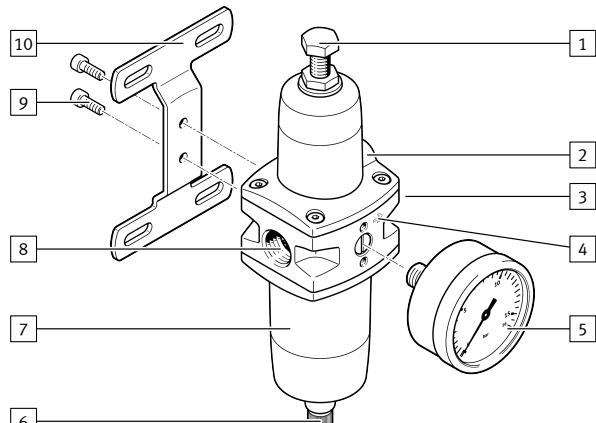


Fig. 1: Product design PCRP-64-...-M

- | | | | |
|---|------------------------------|----|----------------------|
| 1 | Adjusting screw | 6 | Drain screw |
| 2 | Exhaust port | 7 | Filter bowl |
| 3 | Pneumatic port outlet | 8 | Pneumatic port inlet |
| 4 | Indication of flow direction | 9 | M5 screws |
| 5 | Pressure gauge PAGN | 10 | Mounting bracket |

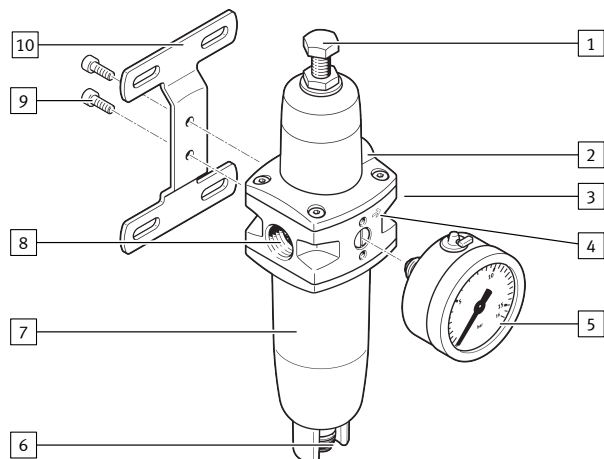


Fig. 2: Product design PCRP-64-...-VC

- | | | | |
|---|------------------------------|----|----------------------------------|
| 1 | Adjusting screw | 6 | Fully automatic condensate drain |
| 2 | Exhaust port | 7 | Filter bowl |
| 3 | Pneumatic port outlet | 8 | Pneumatic port inlet |
| 4 | Indication of flow direction | 9 | M5 screws |
| 5 | Pressure gauge | 10 | Mounting bracket |

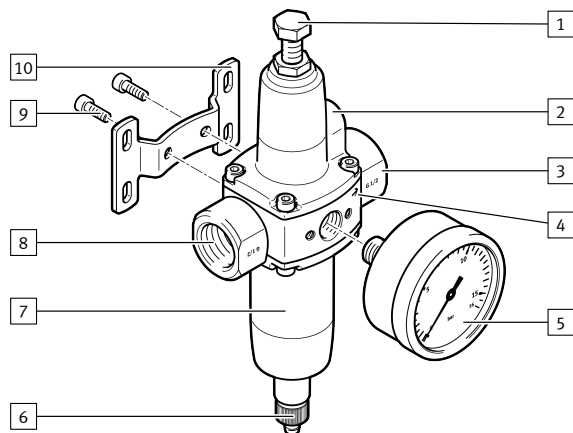


Fig. 3: Product design PCRP-44-...-M

- | | | | |
|---|------------------------------|----|----------------------|
| 1 | Adjusting screw | 6 | Drain screw |
| 2 | Exhaust port | 7 | Filter bowl |
| 3 | Pneumatic port outlet | 8 | Pneumatic port inlet |
| 4 | Indication of flow direction | 9 | M4 screws |
| 5 | Pressure gauge PAGN | 10 | Mounting bracket |

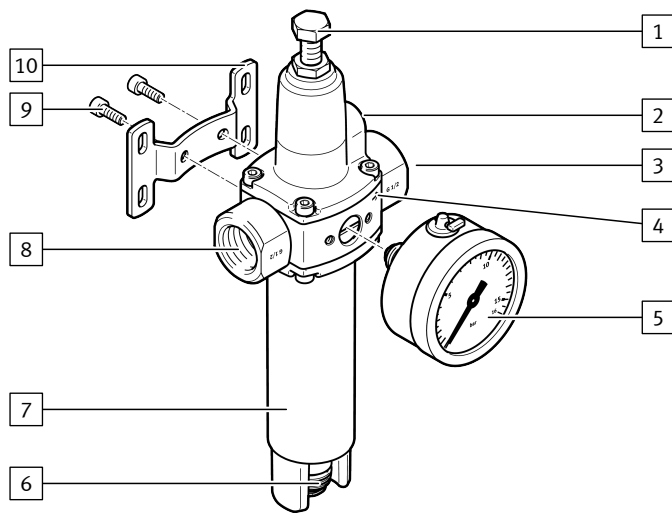


Fig. 4: Product design PCR44-VC

- | | |
|--------------------------------|------------------------------------|
| 1 Adjusting screw | 6 Fully automatic condensate drain |
| 2 Exhaust port | 7 Filter bowl |
| 3 Pneumatic port outlet | 8 Pneumatic port inlet |
| 4 Indication of flow direction | 9 M4 screws |
| 5 Pressure gauge PAGN | 10 Mounting bracket |

5 Function

The filter regulator removes dirt particles and condensate. The output pressure can be set within the pressure range.

6 Assembly

6.1 Assembly of the filter regulator

- Note the flow direction [4] on the product.
- Mount the product with at least 80 mm free space below the filter bowl.
- Mount the product with the mounting bracket [10] upright, $\pm 5^\circ$. Tightening torque of the screws [9]:
 - PCR44: 5 Nm $\pm 10\%$.
 - PCR44: 2.5 Nm $\pm 10\%$. Secure the screw thread with Loctite.
- When assembling filter combinations, follow the sequence along the flow direction.
- When used in an explosive atmosphere, mount the attachments in such a way that they are included in the equipotential bonding of the device.

6.2 Assembly of the pressure gauge

- Place the two seals on the pressure gauge port.
- Screw in the pressure gauge [5] clockwise into the product to the stop.
- Screw in the pressure gauge [5] half a revolution further to ensure that it is sealed.
- Continue turning the pressure gauge until it is properly aligned. The pressure gauge must not be screwed in more than one revolution from the seal to the correct alignment.
- Ensure that the connection is conductive when used in an explosive atmosphere.

6.3 Mounting pneumatic actuator

- Screw the fittings into the pneumatic ports [3] and [8] with a suitable sealing material.
- Ensure that the connection is conductive when used in an explosive atmosphere.

6.4 Mounting pneumatic components

- Note the screw-in depth of the connecting thread. Screwing in too deep will reduce the flow rate.
- Screw the fittings into the pneumatic ports [3] and [8] with a suitable sealing material.
- If necessary, screw the fittings into the exhaust port [2] using an appropriate sealing material.

7 Commissioning

WARNING

The discharge of electrostatically charged parts can lead to ignitable sparks.

- Prevent electrostatic charging by taking appropriate installation and cleaning measures.
- Include the device in the system equipotential bonding.

- Turn the adjusting screw [1] anticlockwise to the closed position.
- Pressurise the complete system slowly.

- Open the adjusting screw [1] by turning clockwise until the pressure gauge [5] displays the required pressure.
 - Pressure range $\rightarrow$ 11.2 Technical data, pneumatic.
 - Lock the adjusting screw [1] with the lock nut.

NOTICE

Strong charge-generating processes can charge non-conductive layers and coatings on metal surfaces.

NOTICE

Escaping exhaust air can swirl up dust and create an explosive dust atmosphere.

NOTICE

Particulate matter in the compressed air can cause electrostatic charges.

i

The input pressure p1 should be at least 0.1 MPa (1 bar; 14.5 psi) higher than the set output pressure p2 at all times.

8 Operation

- Observe the operating conditions.
- Observe the permissible limit values $\rightarrow$ 11 Technical data.
- Draw in of the operating medium outside the potentially explosive area.

9 Maintenance

9.1 Draining condensate

Draining condensate with PCR44-VC

The drain screw [6] can be opened at regular intervals.

- Perform maintenance only outside potentially explosive areas.
- When replacing individual devices of a service unit or changing the configuration:
- Turn the drain screw [6] in $\rightarrow$ Fig. 1 and $\rightarrow$ Fig. 3 anticlockwise as seen from below to drain the condensate.

Draining condensate automatically with PCR44-VC

The fully automatic condensate drain [6] in $\rightarrow$ Fig. 2 and $\rightarrow$ Fig. 4 drains automatically.

Press the push button to drain the condensate manually.

9.2 Replacing filter cartridge

- Exhaust the product.
- Unscrew the filter bowl [7].
- Unscrew the separating disc.
- Remove the used filter cartridge.
- Place the new or cleaned filter cartridge on the separating disc and screw it in. Tightening torque $\rightarrow$ 11.1 Technical data, mechanical.
- Tighten the filter bowl. Tightening torque $\rightarrow$ 11.1 Technical data, mechanical.
- Restart the product $\rightarrow$ 7 Commissioning.

9.3 Cleaning

- Clean the outside of the product as required with a soft cloth.
- Permissible cleaning agents:
- Soap solution, maximum +60 °C
 - Petroleum ether, free of aromatic compounds

10 Fault clearance

Fault description	Cause	Remedy
Low flow rate, operating pressure drops with air consumption.	Constriction in the supply line.	Check the supply line.
	The filter cartridge is dirty.	Replace the filter cartridge. Clean the filter cartridge depending on particles: – Chemical cleaning, based on nitric acid or caustic soda – Mechanical cleaning, ultrasonic – Thermal cleaning
The pressure increases above the set working pressure.	The valve disc at the sealing seat is defective.	Replace the product.
Continuous audible blowing noise at rotary knob.	The valve seat is damaged.	Replace the product.
Audible blowing noise at the drain screw.	The drain screw is leaking.	Replace the product.

Tab. 1: Fault clearance

11 Technical data

11.1 Technical data, mechanical

PCR		-44-...-T18	-44-...-T19	-44-...-T31
Mounting position	[°]	vertical ± 5		
Thread size		G 1/4, 1/4 NPT, G 1/2, 1/2 NPT		
Tightening torques				
Filter cartridge	[Nm]	0.3	1 ± 10%	0.3
Filter bowl	[Nm]	2.6 ± 10%		

PCRP		-44-...-T18	-44-...-T19	-44-...-T31
Temperature ranges				
Temperature of medium	[°C]	-20 ... +80	-60 ... +80	0 ... +60
Ambient temperature	[°C]	-20 ... +80	-60 ... +80	0 ... +60
Storage temperature	[°C]	-20 ... +80	-60 ... +80	-10 ... +60
Materials				
Control housing	Stainless steel casting, 1.4409/CF3M (316L)			
Spring housing	Stainless steel casting, 1.4409/CF3M (316L)			
Filter bowl	Stainless steel casting, 1.4409/CF3M (316L)			
Filter mounting	POM-GF30	Stainless steel casting 1.4409/CF3M, 316L	POM-GF30	
Spring	High-alloy stainless steel			
Adjusting screw	High-alloy stainless steel			
Filter cartridge	PE (T18)	High-alloy stainless steel, 1.4404/316L	PE (T31)	
Drain screw for PCRP-...-M	High-alloy stainless steel, 1.4404/316L			—
Pushbutton for PCRP-...-VC	—			PBT
Plug screw	High-alloy stainless steel			
Seals	NBR, CR, VMQ			
Hardware	High-alloy stainless steel			

Tab. 2: Technical data, mechanical PCRP-44

PCRP		-64-...-T18	-64-...-T19	-64-...-T31
Mounting position	[°]	vertical ± 5		
Thread size		G 1/4, 1/4 NPT, G 1/2, 1/2 NPT		
Tightening torques				
Filter cartridge	[Nm]	1.75 ± 15%		
Filter bowl	[Nm]	3.6 ± 15%		
Temperature ranges				
Temperature of medium	[°C]	-20 ... +80	-60 ... +80	0 ... +60
Ambient temperature	[°C]	-20 ... +80	-60 ... +80	0 ... +60
Storage temperature	[°C]	-20 ... +80	-60 ... +80	-10 ... +60
Materials				
Control housing		Stainless steel casting, 1.4409/CF3M (316L)		
Spring housing		Stainless steel casting, 1.4409/CF3M (316L)		
Filter bowl		Stainless steel casting, 1.4409/CF3M (316L)		
Filter mounting		Stainless steel casting 1.4409/CF3M, 316L		
Spring		High-alloy stainless steel		
Adjusting screw		High-alloy stainless steel		
Filter cartridge		High-alloy stainless steel, 1.4404/316L		
Drain screw for PCRP-...-M		High-alloy stainless steel, 1.4404/316L	—	
Pushbutton for PCRP-...-VC		—		PBT
Plug screw		High-alloy stainless steel		
Seals		NBR, CR, VMQ		
Hardware		High-alloy stainless steel		

Tab. 3: Technical data, mechanical PCRP-64

11.2 Technical data, pneumatic

PCRP		-44	-64-...-7	-64-...-12
Compressed air quality				
Operating medium		Compressed air to ISO 8573-1:2010 [–:4:–]		
		Inert gases		
Pneumatics				
Operating pressure PCRP-...-M	[MPa]	0.1 ... 2		
	[bar]	1 ... 20		
	[psi]	14.5 ... 290		
Operating pressure PCRP-...-VC	[MPa]	0.2 ... 1.2		
	[bar]	2 ... 12		
	[psi]	29 ... 174		
Pressure regulation range	[MPa]	0.05 ... 1.2	0.05 ... 0.7	0.05 ... 1.2
	[bar]	0.5 ... 12	0.5 ... 7	0.5 ... 12
	[psi]	7.25 ... 174	7.25 ... 101.5	7.25 ... 174
Flow direction		See arrow on the device		

Tab. 4: Technical data, pneumatic