

1 For your safety

1.1 General safety statements

- Before using this product, carefully read the Instructions for Use.
- Strictly follow the Instructions for Use. The user must fully understand and strictly observe the instructions. Use the product only for the purposes specified in the Intended Use section of this document.
- Do not dispose of the Instructions for Use. Ensure that they are retained and appropriately used by the product user.
- Only fully trained and competent users are permitted to use this product.
- Comply with all local and national rules and regulations associated with this product.
- Only trained and competent personnel are permitted to inspect, repair and service the product. Dräger recommend a Dräger service contract for all maintenance activities and that all repairs are carried out by Dräger.
- Properly trained service personnel must inspect and service this product as detailed in the Maintenance section of this document.
- Use only genuine Dräger spare parts and accessories, or the proper functioning of the product may be impaired.
- Do not use a faulty or incomplete product, and do not modify the product.
- Notify Dräger in the event of any component fault or failure.

1.2 Definitions of alert icons

Alert icons are used in this document to provide and highlight text that requires a greater awareness by the user. A definition of the meaning of each icon is as follows:

WARNING
Indicates a potentially hazardous situation which if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially hazardous situation which, if not avoided, could result in physical injury or damage to the product or environment. It may also be used to alert against unsafe practices.

NOTICE
Indicates additional information on how to use the product.

2 Description

2.1 Product overview

The Dräger PAS Filter Series is a range of wall-mounted and portable air filter units that provide high-quality breathing air by filtering the air output from a compressed air source, such as a factory airline or mobile compressor. A portable unit has a carrying handle and stand as shown in the lower image in Fig 1.

The filter unit is contained within a cabinet manufactured from impact-resistant polyethylene. There are labels on the inside of the cabinet that provide pressure and flow requirements, a maintenance schedule, and a list of replacement parts.

The filtration system removes liquid and solid particles down to 0.01 µm and oil vapour and odours down to 3 µg/l. All models have coalescing (Fig 1, Item 2) and activated-carbon (1) filters, with duplex filter elements. Additionally, F3500 and F5500 models are fitted with a pre-filter (3) to remove coarse contaminants from the air supply. The filtration system also has an automatic drain (4) that collects condensate from the filters in a bottle (8).

The unit has an adjustable pressure regulator (7) and an output pressure gauge (6). The pressure regulator is used to adjust the cabinet output to the required pressure, and a 6 mm hexagon key is supplied with the product for this task. The pressure range on the gauge is suitable for positive-pressure and constant-flow systems in accordance with the requirements of EN 14593 and EN 14594.

The unit is fitted with a BSP inlet coupling and CEJN compatible outlet quick couplings. The inlet coupling (9) is on the left-hand side of the cabinet. The outlet couplings (5) are on either the bottom (wall-mounted units) or the right-hand side (portable units) of the cabinet. Models are available with 3 outlets (F3000/F3500) and 5 outlets (F5000/F5500).

Model numbers with a suffix of P (e.g. F3500 P) indicate that the unit is a portable version.

2.2 Intended use

The Dräger PAS Filter units filter the air from a compatible compressed air supply (see Section 3.1) to provide breathing-quality air by removing liquid and solid particles.

2.3 Limitations on use

Dräger PAS Filter units do not include filters or purifiers for removal of carbon monoxide, carbon dioxide or other toxic gases and fumes.

3 Use

3.1 Compressed air supply

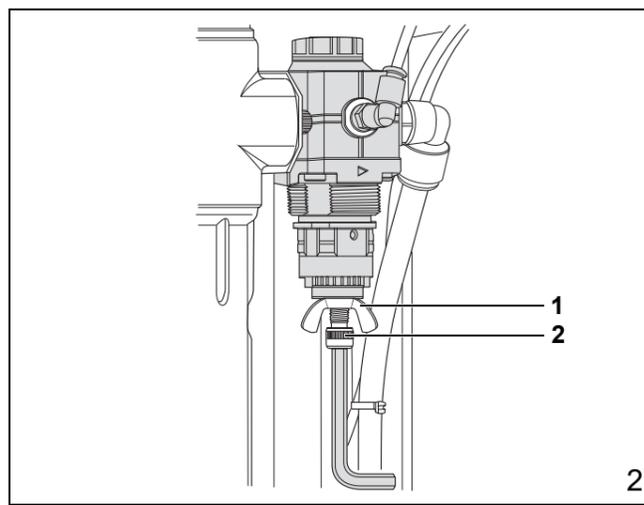
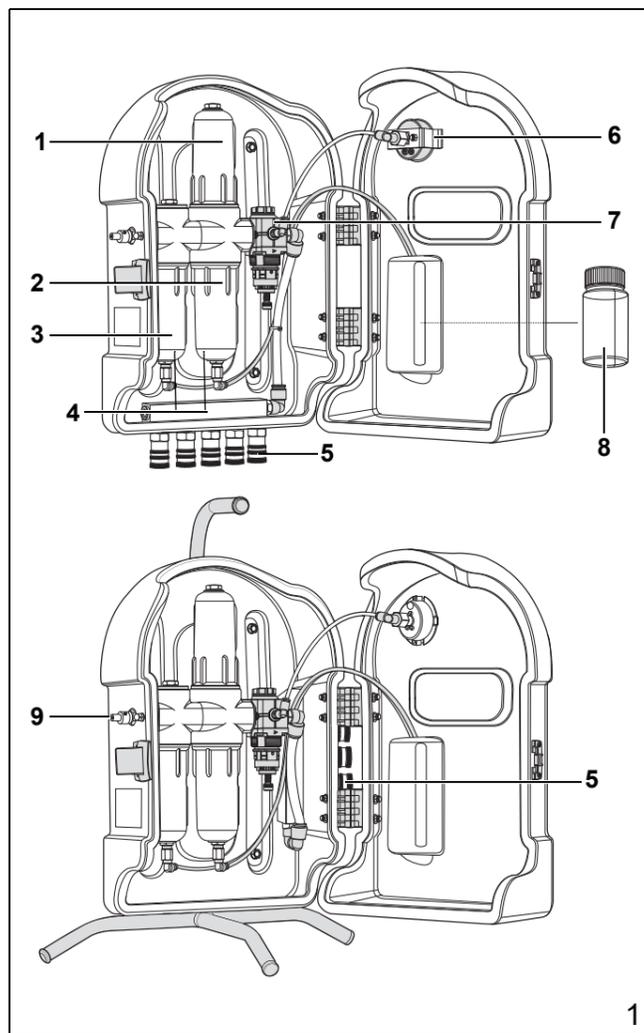
Ensure that the compressed air supply is from a factory airline or mobile compressor as detailed in this section. If in doubt about the quantity or reliability of the air supply, contact Dräger for supply of a suitable compressor.

WARNING
Using an air supply that contains toxic gases or does not comply with temperature, pressure and flow requirements could result in death or serious injury for the user.

Wearers of breathing apparatus being supplied by the filter unit must have a reserve supply of air to allow them sufficient time to evacuate to a safe area in the event of a compressor failure.

The filter unit does not remove carbon monoxide, carbon dioxide or other toxic gases and fumes.

CAUTION
The filter unit should be used in a safe and uncontaminated area, and should be securely held or placed in a position where it can not be damaged.



Ensure that the compressor intake is not near any polluted or toxic atmosphere, and works properly.

The compressed air supply must not exceed a temperature of 45 °C and must not be more than 5 °C above the ambient temperature. This is to prevent the build up of condensation in the breathing air. The compressed air source should include an after-cooler.

3.1.1 Inlet pressure

- Compressor with an air dryer – The inlet pressure to the unit must be at least 0.5 bar above the pressure required at the unit outlet, and below the maximum inlet pressure of 16 bar.
- Compressor without an air dryer – The inlet pressure must be at least 5 bar above the pressure required at the unit outlet, and below the maximum pressure of 16 bar, to ensure a pressure dew point of 5 °C below ambient temperature.

3.2 Mounting the wall-mounted unit

CAUTION
Observe normal precautions when drilling into walls or other structures to avoid damage to existing wiring, gas pipes, water pipes, etc.

1. Open the cabinet and hold the cabinet against the wall in the desired location. Ensure that there is sufficient space around the cabinet to allow coupling connection, and to allow the cabinet cover to be fully opened.
2. Mark the mounting screw positions using the cabinet as a template.
3. Drill the mounting holes. Dräger recommend a drill bit size of approximately 5 mm (number 8).
4. Fix the earth strip under one of the screws and mount the cabinet securely using appropriate wall plugs and screws.

3.3 During use

Ensure that the cabinet is clean and undamaged, paying particular attention to pneumatic components, hoses and connections. Typical signs of damage that may affect the operation of the product include impact damage, abrasion, cutting, corrosion and discolouration. Report damage to service personnel or Dräger and do not use the cabinet until faults are rectified.

1. If using a portable unit, stand the cabinet upright.
2. Empty the condensate collection bottle.

CAUTION
The contents of the condensate bottle may be contaminated with oil and pose an environmental hazard. Handle and dispose of the contents in accordance with national or local regulations.

3. Connect the compressed air supply to the inlet coupling of the filter unit.
4. Check the outlet (working) pressure shown on the output pressure gauge:
 - a. For continuous flow breathing apparatus, it must be within the green area on the gauge.
 - b. For positive-pressure breathing apparatus, the pressure must be within the range shown in the tables below.
5. If required, adjust the pressure regulator as follows:
 - a. Open the cabinet.
 - b. Release the wing nut (Fig 2, Item 1).
 - c. Turn the control bolt (2) to set the required pressure on the gauge.
 - d. Tighten the wing nut to lock the control bolt.
6. Connect the breathing apparatus to the outlet couplings.

WARNING
The airline connected to the outlet coupling must not be made up of more than 5 individual hoses and its total length must not exceed 100 m.

Airline equipment must allow the input pressure and flow specified in the breathing apparatus Instructions for Use to be met. Incorrect airline equipment configurations may result in insufficient air flow to breathing apparatus wearers or increase the possibility of air supply failure. Do not use the filter unit to supply air to more than the users stated in the tables below at any time.

Number of users	Minimum outlet flow rate (litres/minute)
1	550
2	600
3	760
4	920
5	1080

Models F3000 and F3500

Number of users	Minimum supply hose internal diameter	Minimum inlet pressure (bar)
1	10 mm (3/8")	4.5
2		5.5
3		8

Models F5000 and F5500

Number of users	Minimum supply hose internal diameter	Minimum inlet pressure (bar)
1, 2 or 3	12 mm (1/2")	4.5
4		6.5
5		8

3.4 After use

Disconnect all inlets and outlets from the filter unit.

4 Troubleshooting

Isolate or disconnect the air supply from the filter unit. Contact Dräger if the symptom remains after all remedy actions have been attempted.

Symptom	Fault	Remedy
Air leak	Filter unit incorrectly assembled	Reassemble correctly (see Section 5.2)
	Sealing component (O-ring, washer etc.) defective	Replace component (see Section 5.2)
	Filter unit damaged	Contact Dräger
Automatic drain leaking	Dirt preventing drain float from sealing	Clean automatic drain (see Section 5.4)
	Locking nut loose or rubber washer defective	Reassemble correctly or replace component (see Section 5.3)
	Defective automatic drain	Replace automatic drain (see Section 5.3)
Equipment fails air quality test	Inlet pressure too low	Ensure air supply matches criteria described in Section 3.1.1
	Inlet air temperature too high	Ensure air supply matches criteria described in Section 3.1
	Coalescing filter element saturated with moisture	Replace filter element (see Section 5.2)
	Coalescing filter element defective	
	Activated carbon filter element defective	



5 Maintenance

Service and test the PAS Filter unit in accordance with the table below. Dräger recommend that all maintenance is recorded in an equipment log book.

The maintenance tasks may only be carried out by Dräger or trained service personnel.

Component/System	Task	Every 3 months ¹	Every 6 months or 1000 hours ²	Every 12 months or 6000 hours ²
Complete equipment	Air quality test ³	✓		
Activated-carbon filter	Replace element		✓	
Coalescing and pre-filter	Replace element			✓

Notes

- 1 Or in accordance with local regulations.
- 2 Whichever occurs first.
- 3 Contact Dräger for supply of a suitable test equipment.

5.1 Cleaning

Clean the equipment with a lint-free cloth moistened with a mild soap solution. Dry with a lint-free cloth.

5.2 Replacing a filter element

1. Isolate or disconnect the air supply.
2. Open the cabinet.
3. Disconnect the automatic drain tube from the push-in fitting (Fig 3) (only if replacing the coalescing or pre-filter).
4. Grasp the filter bowl firmly, and turn the bowl anticlockwise to unscrew from the filter head (Fig 4). Use a spanner on the filter bowl hexagon boss if necessary.
5. Remove and discard the filter element and filter O-ring(s) (Fig 5, Item 1).

CAUTION
 The filter elements may be contaminated with oil. Handle and dispose of the filter in accordance with national or local regulations.

6. Ensure that the O-ring (Fig 5, Item 2) and O-ring groove in the filter head are clean and undamaged.
7. Fit the replacement O-ring(s) (1) to the end of the filter and fit the replacement filter element.
8. Lightly lubricate the threads of the filter bowl with silicone-free grease.
9. Ensure that the O-ring is correctly positioned in the filter head and screw the filter bowl into the filter head hand tight.
10. Reconnect the automatic drain tube to the push-in fitting.
11. Close the cabinet and connect an inlet air supply. Check for leaks immediately.

If there is a leak, repeat the whole procedure above and carefully inspect the filter element, filter housing and O-rings. Replace defective parts as necessary. Contact Dräger if the fault cannot be rectified.

5.3 Replacing an automatic drain

1. Remove the filter bowl as described in Section 5.2, Steps 1 – 4.
2. Unscrew the push-in connector (Fig 6, Item 1) from the drain screw (4).
3. Unscrew and remove the locking nut (2) and washer (3).
4. Unscrew and remove the automatic drain (6) and rubber washer (5) from the filter bowl.
5. Ensure the sealing face and threads of the filter bowl are clean and undamaged.
6. Screw the replacement automatic drain into the port in the filter bowl until the rubber washer (5) is compressed to form a seal.
7. Refit the washer and locking nut.
8. Set the automatic drain for automatic operation: use the hexagon key to turn the drain screw clockwise as far as it will go (Fig 6, A).
9. Refit the push-in connector to the drain screw.
10. Refit the filter bowl and automatic drain tube as described in Section 5.2, Steps 8 – 11.

5.4 Removing dirt from the automatic drain

1. Connect an inlet air supply.
2. Open the cabinet and unscrew the push-in connector (Fig 6, Item 1) from the drain screw (4).
3. Open the automatic drain: use the hexagon key to turn the drain screw anticlockwise as far as it will go (Fig 6, B). As the drain opens, condensate and dirt will be blown out.
4. Set the automatic drain for automatic operation: use the hexagon key to turn the drain screw clockwise as far as it will go (Fig 6, A).
5. Refit the push-in connector to the drain screw.

6 Storage

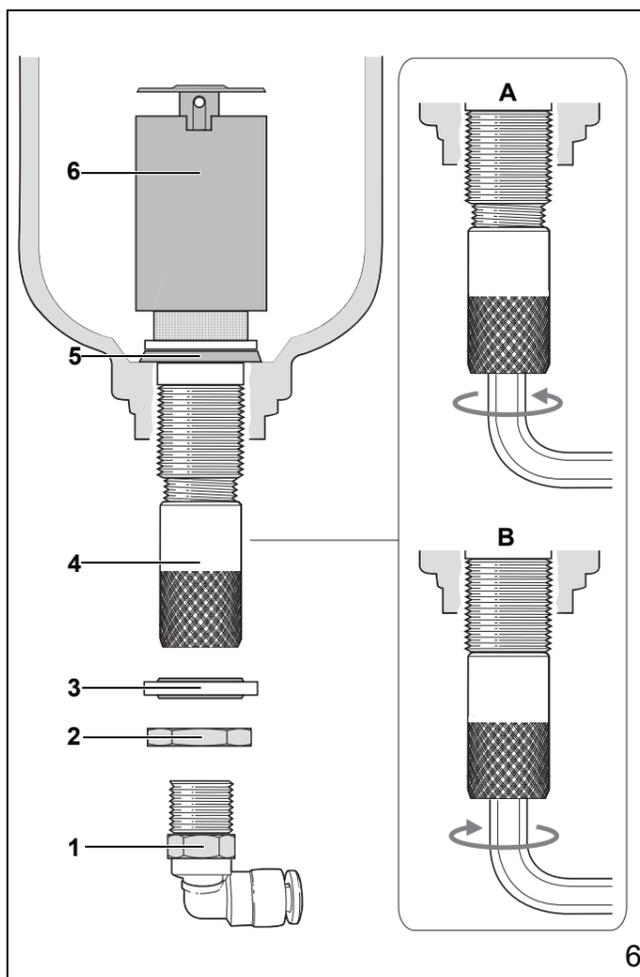
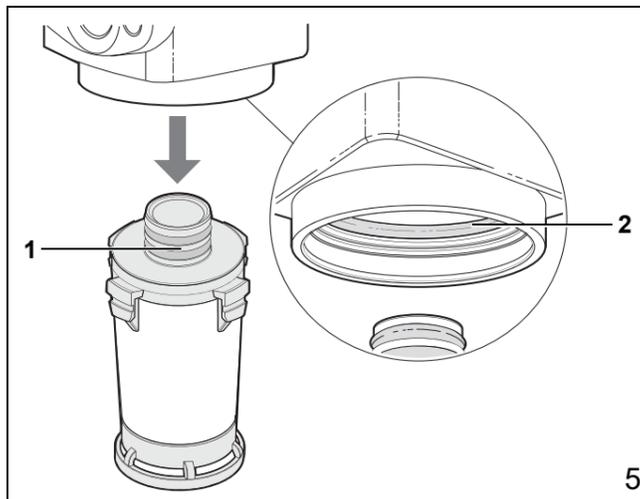
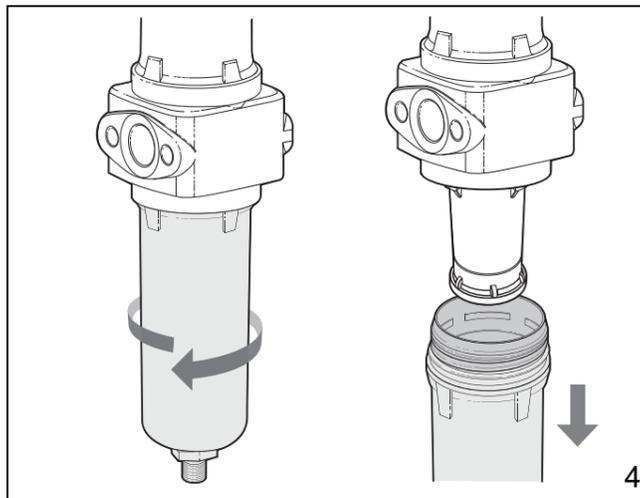
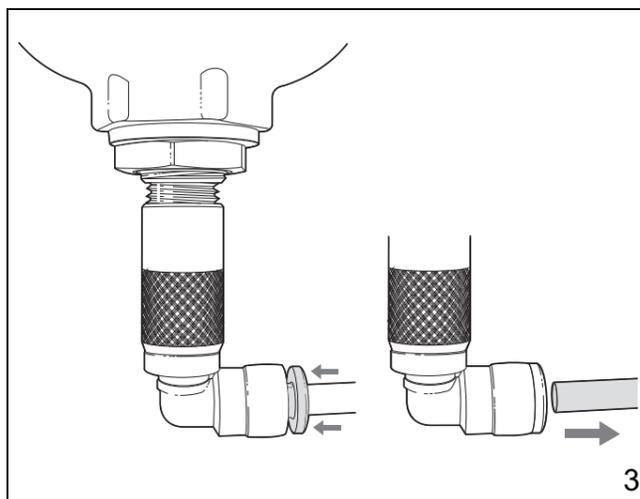
Store the product in a cool dry environment, free from dust and dirt. Do not expose to direct sunlight.

7 Disposal

When required, dispose of the product in accordance with national or local regulations for waste disposal.

8 Technical data

Model number suffix:	P – portable version
Dimensions:	430 × 280 × 162 mm
Weight:	4.5 kg (F3000) 5 kg (F3500) 5 kg (F5000) 5.5 kg (F5500)
	Portable units weigh 1 kg more
Operating temperature:	0 to 40 °C
Usage area:	Suitable for indoor or outdoor use



Inlet coupling:	1/4" BSP (F3000/F3500) 3/8" BSP (F5000/F5500)
Maximum inlet pressure:	16 bar
Outlet coupling:	Dräger female quick coupling (CEJN compatible)
Maximum outlet pressure:	10 bar
Maximum number of outlets:	3 (F3000/F3500) 5 (F5000/F5500)
Peak flow rate:	760 litres/minute (F3000/F3500) 1080 litres/minute (F5000/F5500)
Maximum number of users:	3 (F3000/F3500) 5 (F5000/F5500)

9 Order list

No. Fig. 1	Dräger Item-No.	Description	Used on
3	3359929	Pre-filter element (pre-April 2018) ¹	PAS F3500/3500P
3	3707716	Pre-filter element (April 2018 onwards) ¹	PAS F3500/3500P
3	3359934	Pre-filter element ¹	PAS F5500/5500P
2	3359933	Coalescing filter element	PAS F3500/3500P
2	3359932	Coalescing filter element	PAS F5500/5500P
1	3359928	Activated carbon element	all
4	3359913	Auto drain assembly	all
5	33563348	CEJN series 342 coupling 1/4" BSPM	all
6	3363349	0-16 bar pressure gauge	all
8	3363350	150 ml PP clear bottle	all

Note

- 1 Includes replacement O-ring(s).

