



Innovative Vacuum for Automation

Operating and Maintenance Instructions

Dust filter STF... / STF-D...

30.30.01.00059/03 | 04.2018

Note

These operating instructions were originally written in German and have been translated into English. Store in a safe place for future reference.

Subject to technical changes without notice. No responsibility is taken for printing or other types of errors.

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1 Safety instructions

1.1 Classification of safety instructions


Danger

This warning informs the user of a risk that will result in death or serious injury if it is not avoided.

 DANGER	
	Type and source of danger
	Consequence
	► Remedial action


Warning

This warning informs the user of a risk that could result in death or serious injury if it is not avoided.

 WARNING	
	Type and source of danger
	Consequence
	► Remedial action

Caution

This warning informs the user of a risk that could result in injury if it is not avoided.

 CAUTION	
	Type and source of danger
	Consequence
	► Remedial action

Attention

This warning informs the user of a risk that could result in damage to property if it is not avoided.





ATTENTION	
	Type and source of danger
	Consequence
	► Remedial action



Important information for efficient and trouble-free use.




1.2 Warnings

Explanation of the warning symbols used in the operating instructions.

Warning symbol	Description	Warning symbol	Description
	General warning symbol		Flying debris
	Electrical voltage		Floating dust particles

1.3 Mandatory symbols

Explanation of the mandatory symbols used in the operating instructions.

Mandatory symbols	Description	Mandatory symbols	Description
	Wear a mask		Wear eye protection
	Activate prior to maintenance or repair		

1.4 Regulations in these instructions

These operating and maintenance instructions are valid for Schmalz dust filters from the STF series with or without differential pressure monitors.

Designs:



Small design



Large design



The operating and maintenance instructions are an integral part of the dust filter and must be available to the staff at all times for installation, maintenance and repair work.

These operating and maintenance instructions are specific to the items included in delivery from Schmalz. They do not take into account any modifications to the dust filter made by the customer, which are strictly prohibited.

The dust filter may only be connected and operations started once the operating instructions have been read and understood.

1.5 General safety instructions



You must adhere to the legal regulations and safety regulations applicable at the location of use.

 WARNING	
	<p>Ignoring the general safety guidelines</p> <p>Personal injury/damage to plants or systems</p> <p>► The dust filter must be operated only in its original condition as delivered. The manufacturer assumes no liability for consequences of modifications over which it has no control, in particular, replacement of original parts with parts from other sources.</p>

1.6 Intended use

The dust filter is designed for cleaning the intake air in vacuum applications. This dust filter is intended solely for filtering mechanical components in air.
Before using for other applications, consult the manufacturer.

 DANGER	
	<p>Use in potentially explosive atmospheres</p> <p>Risk of accidents due to explosion</p> <p>► The dust filter must not be used in areas exposed to explosion hazards.</p>

 WARNING	
	<p>Transporting or sucking through liquids or bulk material</p> <p>Personal injury and/or damage to property</p> <p>► This dust filter is intended solely for filtering mechanical components in air. This device must not be used to filter other media (e.g. bulk materials or liquids).</p>

Before installation, maintenance and repair work, the operating instructions of the entire system and any switch-off procedures must be observed.

1.7 Requirements for installation and maintenance personnel

The dust filter must be installed and maintained only by qualified specialist electricians and mechanics.

“A qualified employee is defined as an employee who has received technical training and has the knowledge and experience – including knowledge of applicable regulations – necessary to enable him or her to recognize possible dangers and implement the appropriate safety measures while performing tasks. Qualified personnel must observe the pertinent industry-specific rules and regulations.”

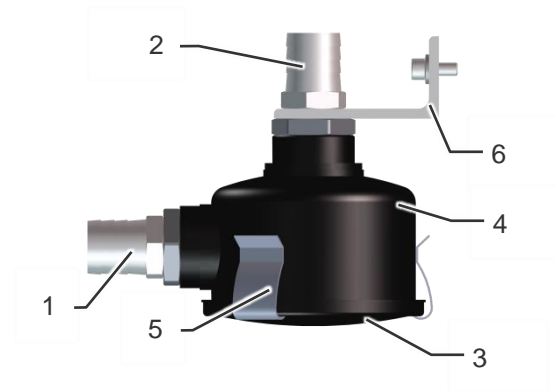
1.8 Installation location requirements

- Operating temperature:
 - With differential pressure monitor: between 0°C and +40°C
 - Without differential pressure monitor: between -40°C and +80°C
- Make sure that no water can enter the dust filter
- Ensure that no warm air can be drawn in
- Ensure that the dust filter remains easily accessible (maintenance, cleaning and replacement of the filter insert)

2 Product description

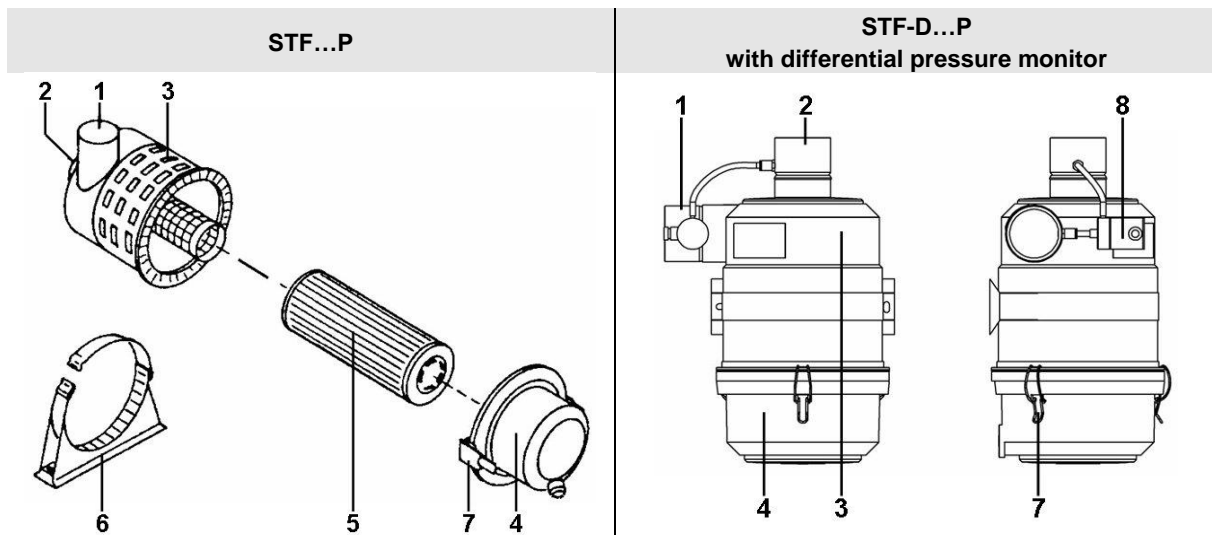
2.1 Versions

Small design:



Item	Designation
1	Air inlet connection (suction cup)
2	Air outlet connection (vacuum generator)
3	Housing cover
4	Filter housing with threaded connection
5	Quick-release fastener
6	Mounting bracket

Large design:



Item	Designation
1	Air inlet connection (suction cup)
2	Air outlet connection (vacuum generator)
3	Upper housing section
4	Lower housing section (dust collecting pan)

Item	Designation
5	Filter insert
6	Bracket with locking clip
7	Clamp
8	Differential pressure monitor, adjustable

2.2 Technical data

Max. vacuum: -950 mbar

Overpressure is not permissible.

2.3 Dust filter with differential pressure monitor STF-D...

The differential pressure between the dirty air and clean air sides of the dust filter can be continuously monitored using the differential pressure monitor (8.2). The differential pressure increases as the degree of filter contamination increases.

The differential pressure can be set to between 10 and 50 mbar using a hand wheel located on the differential pressure monitor. If the set differential pressure is exceeded, the differential pressure monitor switches on.

Version without indicator light:

The output signal (normally open or normally closed) can be forwarded for signal processing by the customer. This signal disappears again as the differential pressure decreases, i.e. after cleaning or replacement of the filter insert.

Version with indicator light:


The differential pressure monitor activates the indicator light when the pressure loss across the dust filter exceeds the set limit. The indicator light switches off again when the pressure loss falls below the limit value (e.g. after cleaning or replacement of the filter insert).

Technical data for differential pressure monitor:

Adjustable differential pressure	10...50 mbar
Accuracy	±10%
Differential gap	5 mbar
Maximum operating overpressure	100 mbar
Electrical switching capacity	250V AC / 6 A 24V DC / 1 A
Electrical connection	AMP flat plug 6.3 mm x 0.8 mm, in accordance with DIN 46244
Certification	VDE 0630

3 Installation

Use only the connections, mounting holes and attachment materials that have been provided.

 DANGER	
	<p>Vacuum in the system</p> <p>Risk of injuries</p> <p>► Switch off vacuum generators (such as blowers or pumps) before installation.</p>

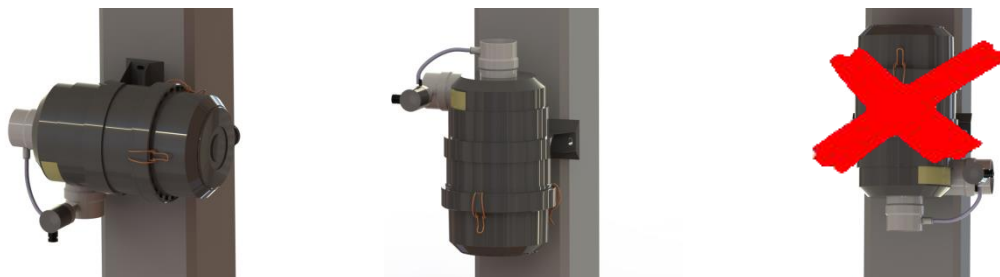
3.1 Installation position

Dust filters can be installed vertically or horizontally. If they are installed vertically, the air inlet must be at the top.

Small design:



Large design:



Incorrect installation voids the warranty for the dust filter and vacuum generator.

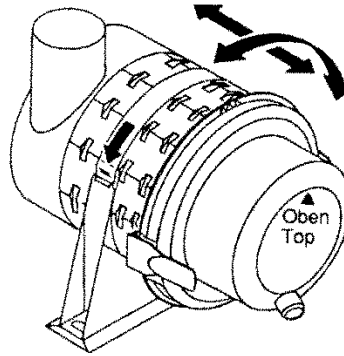
3.2 Mounting

Small design:




1. Secure the mounting bracket with 2 screws near the vacuum generator.
2. Secure the dust filter to the mounting bracket in one of the permitted installation positions.
3. Connect the vacuum hoses with the supplied hose clamps.

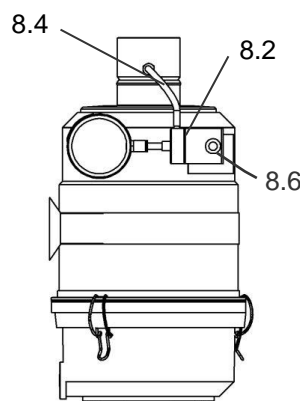
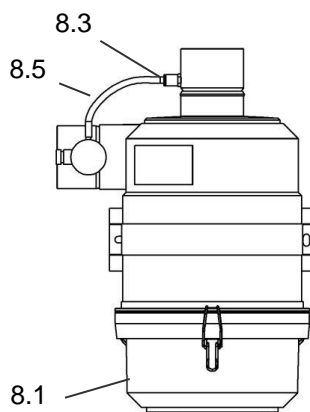
Large design:

1. Secure bracket (6) with 2 screws near the vacuum generator.
2. Place the dust filter in the bracket (6) and turn or slide in to the desired installation position.
3. Close and lock the locking clip.
4. When mounting the unit horizontally, make sure that the "Oben/Top" marking is at the top (+/-15° deviation permitted). →If necessary, remove the lower housing section and refit it when turned.
5. Connect the vacuum hoses with the supplied hose clamps.



3.3 Connecting the differential pressure monitor

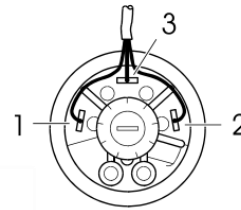
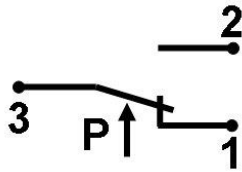
	DANGER
 	<p>Electric shock</p> <p>Fatal injury</p> <ul style="list-style-type: none"> ▶ Disconnect the system from the power supply before connecting or setting the differential pressure monitor. ▶ Before start of operations, make sure that the electrical connections of the differential pressure monitor are covered with the protective cap (8.6).



Item	Designation
8.1	Dust filter STF-D...
8.2	Differential pressure monitor
8.3	Plug-in screw union STV 1/8"-6/4
8.4	Hose
8.5	Hose
8.6	Protective cap

3.3.1 Electrical connection

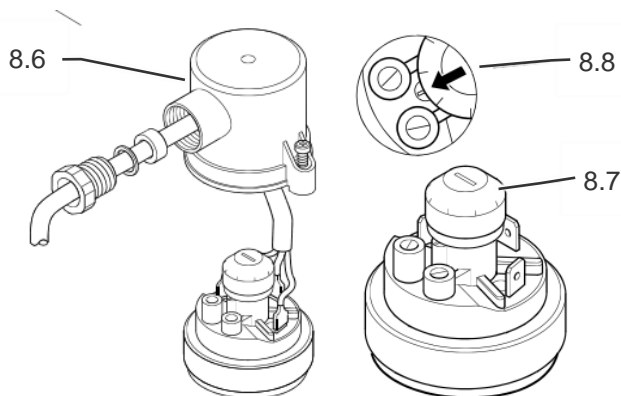
1. Guide the cable with a sheath diameter of 7 mm through the protective cap.
2. Connect cable strands with female push-on connectors according to the diagram.
3. Secure supply line (see technical data chapter 2.3).



3.3.2 Setting the differential pressure

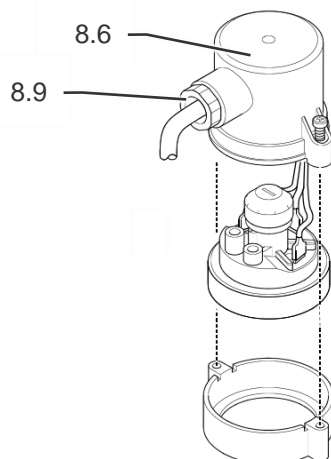


For systems with short supply hoses or special grippers, the indicator light may briefly turn red when the load is released. Possibly increase the limit value of the differential pressure monitor by 5 to 10 mbar.

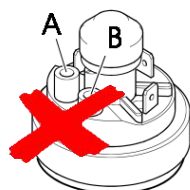


1. Make sure that the differential pressure monitor is not energized.
2. Remove the protective cap (8.6).
3. Adjust differential pressure on adjusting knob (8.7).

The scale (8.8) allows only rough adjustment. For more accurate results, use a meter.




4. Tighten the cable screw union (8.9).
5. Put the protective cap (8.6) back in place and screw tight.



IMPORTANT!



The adjustment screws for fine tuning (A and B) are set at the factory and must not be adjusted.

4 Maintenance

 DANGER	
	<p>Vacuum in the system</p> <p>Risk of injuries</p> <p>► Switch off vacuum generators (such as blowers or pumps) before cleaning, maintenance and repair work.</p>

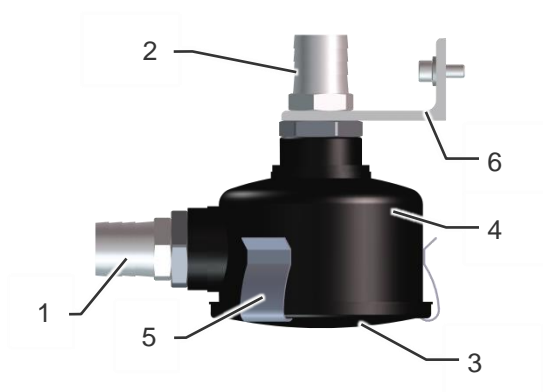
Component	Task	Maintenance period
Filter insert	Clean and check for damage	According to the operating instructions of the entire system. Adjust the maintenance interval to the ambient conditions.
	Replace	<p>Small design:</p> <p>Yearly</p> <p>Large design:</p> <p>At least once after 5 cleanings or at least once every 2 years</p>
Vacuum hose	Check for damage and leaks	Monthly or after repairs have been conducted
Plastic housing and bracket	Check for damage and tears	When performing filter maintenance
Differential pressure monitor (if present)	Check function, hoses and cable connections	Yearly

4.1 Removing and cleaning filter inserts

 WARNING	
	<p>Swirling dust particles</p> <p>Damage to eyes and respiratory tract</p> <p>► Wear eye protection</p> <p>► Wear respiratory protection</p>

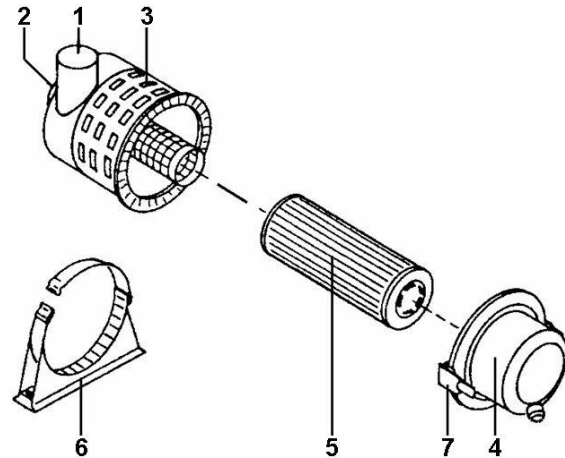
Small design:

1. Open all quick-release fasteners (5).
2. Remove the housing cover (3).
3. Remove the filter insert.
4. Blow the filter insert, never wash or brush it.



Large design:

1. Open all clamps (7).
2. Remove the filter insert (5).
3. Blow the filter insert, never wash or brush it.



Important!

Make sure that no dust can get into the inside of the filter insert during blowing.



Note:

To blow out the unit, set a pipe on a compressed-air gun that is bent at the end by approx. 90°. The pipe must be long enough to reach the bottom of the cartridge. Filter inserts must be blown from the inside out using dry compressed air (max. 5 bar) until there are no more dust formations.

4.2 Install filter element

1. Before installation, make sure that the paper bellows and the rubber seals of the filter insert are not damaged. Replace the filter insert if necessary.
2. Install filter insert.
3. Close the housing.

4.3 Spare and wearing parts

Small design:





Designation	Use	Part no.	Legend
Filter insert FILT-EINS 3 65x70 PAP STF-3/4-IG	STF 3-4	10.07.01.00017	W
Filter insert FILT-EINS 3 98x70 PAP STF-1-1/4-IGN	STF 1-1-4N	10.07.01.00018	W
Filter insert FILT-EINS 128x125 PAP STF-1-1/4-IGH	STF 1-1-4H	10.07.01.00019	W
Filter insert FILT-EINS 3 150x222 PAP STF-2-1/2-IG	STF 2-1-2	10.07.01.00020	W

Large design:

Designation	Use	Part no.	Legend
Filter insert Jumbo	Tube lifter Jumbo	11.04.03.10086	W
Filter insert 4.5	STF ... 4.5 ...	10.07.01.00060	W
Filter insert 6.0	STF ... 6.0 ...	10.07.01.00054	W
Filter insert 8.0	STF ... 8.0 ...	10.07.01.00079	W
Filter insert 12.0	STF ... 12.0 ...	10.07.01.00361	W
Filter insert 15.0	STF ... 15.0 ...	10.07.01.00362	W
Filter insert 24.0	STF ... 24.0 ...	10.07.01.00083	W
Hose clamp SSD60	STF ... 4.5 ... / STF ... 6.0 ...	10.07.10.00017	S
Hose clamp SSD76	STF ... 8.0 ...	10.07.10.00037	S
Hose clamp SSD125	STF ... 24.0 ...	10.07.10.00052	S
Differential pressure monitor	STF-D ... F	21.01.06.00011	S

S = Spare part, **W** = Wearing part

5 Decommissioning and disposal

 DANGER	
 	<p>Electric shock / vacuum</p> <p>Fatal injury</p> <p>▶ Before disassembling, make sure that the system is free of pressure and voltage.</p>
ATTENTION	
	<p>Incorrect disposal of the dust filter</p> <p>Environmental damage</p> <p>▶ Dust filters and filter inserts must be disposed of in accordance with national regulations.</p>

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