

TAC 1500 / TAC 3000

EN

OPERATING MANUAL
AIR CLEANER

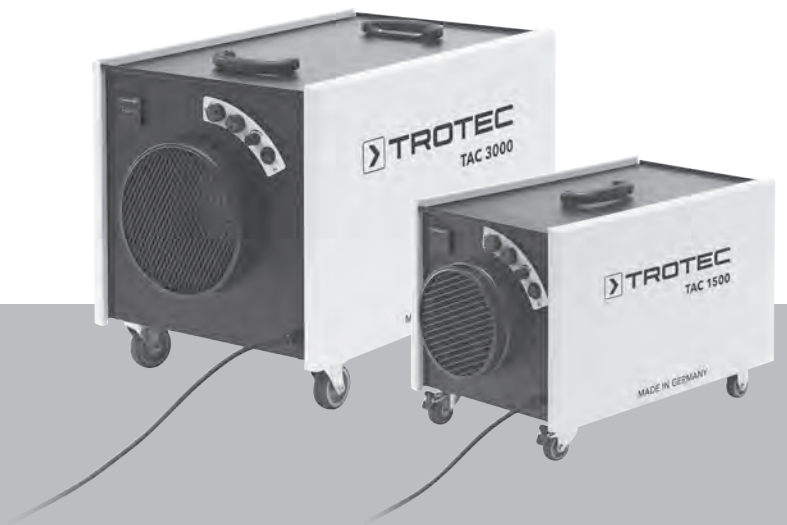


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The scope of delivery may vary from product images. This document was created with all due care. Trotec accepts no liability whatsoever for possible mistakes or omissions.

Notes regarding the operating manual

Symbols

-  **Danger!**
Warns of a hazard which can lead to injuries.
-  **Hazardous electric voltage!**
Warns of a hazard resulting from electric voltage which can lead to injuries.
-  **Caution!**
Warns of a hazard which can lead to damage to property.

The current version of the operating manual can be found at:
www.trotec.de



TAC 1500



TAC 3000



Safety

Carefully read the operating manual before using the device and keep it within reach!

- Do not use the device in potentially explosive rooms.
- Do not use the device in atmospheres containing sulphur or salt.
- Set the device in an upright and stable position.
- Ensure that air inlet and air outlet openings are not obstructed.
- Never insert objects into the device.
- Do not cover or transport the device during operation.
- Ensure that all electric cables outside of the device are protected from damage (e.g. from animals).
- Only use extensions to the connecting cable which are appropriate to the device power consumption, the length of its cable and its use. Avoid electrical overload.
- Connection cables must always be reeled off completely.
- Dispose of replaced filters properly, especially after filtering substances hazardous to health (e.g. asbestos or spray paint mists)
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Observe the storage and operating conditions (see chapter Technical data).
- Do not bring any fluids into the inside of the device. Should this happen nonetheless, pull the mains plug and have the device checked or repaired by the Trotec customer service.
- Never use the device as storage place or footstep.

Intended use

Only use the device to clean atmospheric air from non-conducting and non-combustible dusts, fogs or suspended matter whilst using the appropriate filter classes and adhering to the technical data.

Improper use

Do not place the device on damp or flooded ground. Do not use the device to siphon off vapours or fluids.

Any unauthorised changes, modifications or alterations to the device are forbidden.

Personnel qualifications

People who use this device must:

- be aware of the dangers that occur when working with electrical air cleaners.
- have read and understood the operating manual, especially the Safety chapter.

Electrically skilled person

Electrically skilled personnel must be able to read and understand electric circuit diagrams, to put electrical systems into service and to maintain them, to wire control cabinets, to ensure the functionality of electrical components and to identify possible hazards from electrical and electronic systems.

Instructed person

Instructed persons have been informed of the tasks they were entrusted with as well as of potential hazards resulting from inappropriate behaviour.

They are allowed to operate and transport the device and perform simple maintenance activities (cleaning the housing, cleaning the fan).

The device is to be maintained and looked after by instructed personnel.

Residual risks



Hazardous electric voltage!

Work on the electrical components must only be carried out by qualified electricians.



Hazardous electric voltage!

Before any work on the device, remove the mains plug from the mains socket!



Danger!

Do not leave the packaging lying around. Children might use it as a dangerous toy.



Danger!

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way. Observe the personnel qualifications.



Caution!

In order to ensure the proper functioning of the device as air cleaner and to prevent possible damage to the device, it must not be used without a filter inserted.

Information about the device

Description of the device

Air cleaners are used to filter the room air. On building sites and renovation areas high concentrations of dust can arise, for instance when using angle grinders or during blasting, chiselling or demolition operations as well as when mixing dry mortar or tile cement. Depending on the inserted filter, the air cleaners of the TAC series serve to eliminate various dusts, e.g. from asbestos, building rubble, quartz, flour, wood, etc., but also mould spores, paint particles and mineral fibres in the air, possibly arising during the above-mentioned operations.

This dust is to be vacuumed off as close as possible to the point of origin in order to reduce the pollution of the breathing air to a minimum.

Depending on the used filter quality it is permissible to employ devices for the separation of quartziferous mineral dusts, wood dust, lead-containing dusts, artificial mineral fibres or high-temperature fibres.

Application as vacuum generator for mould remediation and asbestos abatement is also a possibility. In case of other hazardous substances there are additional requirements; hence observe the corresponding Technical Rules for Hazardous Substances (TRGS) or the country-specific regulations.

TAC air cleaners are ideally suited for:

- producing a vacuum in a room, e.g. in heavily contaminated spaces;
- producing overpressure in a room, e.g. cleanroom;
- air purification in workspaces via air circulation, e.g. indoor building sites, workshops etc.;
- supplying filtered fresh air.

A TAC air cleaner is fundamentally made up of the following components:

- housing with stacking aid
- adjustable fan for air transport
- configurable filter boxes for the integration of filter technology depending on the field of application
- filter monitoring each for pre-filter and main filter

The air cleaners of the TAC series can be equipped with various filters. The filter boxes come with Vario-shift function, they can be fitted for a flexible filter ladder depending on the case of application.

This device provides the user with the possibility of configuring both the filter quality and the filter ladder arrangement for the respective field of application.

The filters must be selected according to the area of application.

The device is approvable for asbestos abatement as per TRGS 519, dust class H.

Note

Filters are not included in the scope of delivery!

Choose the filters according to the area of application from our filter range. Insert the selected filters prior to initial start-up.

Device depiction

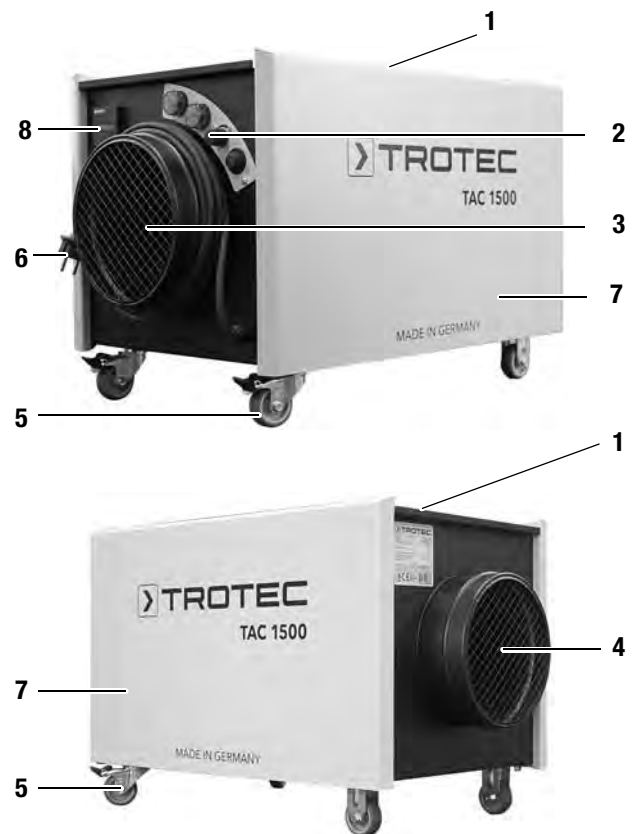


Fig. 1 Front and side view

No.	Designation
1	carrying handle
2	control panel
3	air outlet opening
4	air inlet opening
5	castors, 2 of them lockable
6	power cable with Schuko plug CEE 7/7, approx. 3.5 m
7	side panel (service flap)
8	operating hours counter

Transport and storage

Transport

To make the device easier to transport, it is fitted with wheel. Before transporting the device, proceed as follows:

1. Switch off the device.
2. Remove the mains plug from the mains socket. Do not use the power cable to drag the device!
3. Only wheel the device on a level and smooth surface.

Storage

When the device is not being used, observe the following storage conditions:

- dry,
- protected from dust and direct sunlight,
- with a plastic cover to protect it from invasive dust, if necessary.
- Observe the permissible stacking height, see chapter Technical data.

Configuration

The TAC series is equipped with Vario-shift function. This means that the filter elements can be variably arranged for all application scenarios and in line with the regulations.

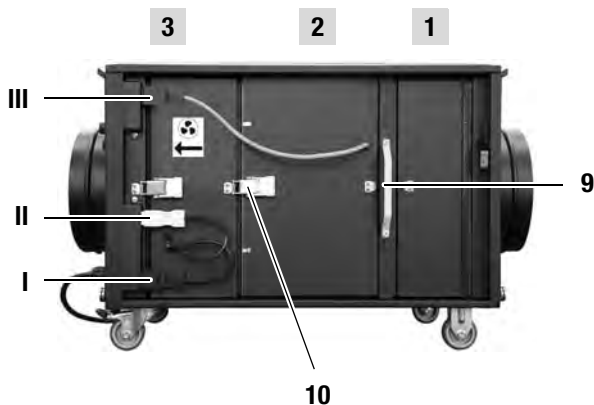


Fig. 2 Side view electrics

No.	Designation
1	PRE-FILTER BOX: COARSE FILTER G and/or FINE FILTER F
2	FILTER BOX: HEPA filter or bag filter
3	FAN BOX
I	connection for filter box 2
II	connection for fan control
III	connection for fan box 3
9	tensioning frame
10	tension lock

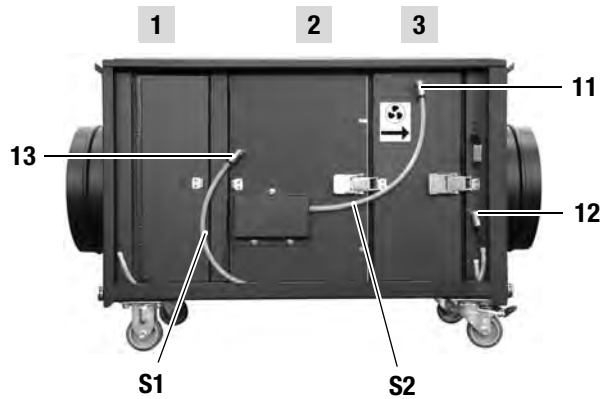


Fig. 3 Side view sensor hose side

No.	Designation
S1	sensor hose S1
S2	sensor hose S2
11	measuring point: fan box 3
12	measuring point: frame (here with dummy plug)
13	measuring point: filter box 2

Inserting filters

Prior to start-up the filter ladder of the device must be configured according to the desired field of application. For this two filter boxes are available.

The filter boxes are located behind the lateral covers.

1. For filter mounting remove the two side panels (7) towards the top.
2. Open the tension locks (10) on both sides of the device.
3. First pull out the tensioning frame (9).



Fig. 4 Removing the tensioning frame

4. Then the other boxes may be removed as required.
5. **For all filter installations always observe the correct flow direction according to the direction of the air current (air flow direction: from back to front)!**

BOX 1: PRE-FILTER BOX

The pre-filter box can be equipped with a coarse filter G and/or a fine filter F.

We recommend using at least one coarse filter for pre-cleaning, so as to maximize the service life of the subsequent filter.

- coarse filter G: Z-line G4
- fine filter F: pleated M5 to F9

The coarse filter is to be assembled in a way that it is the first in the air stream.

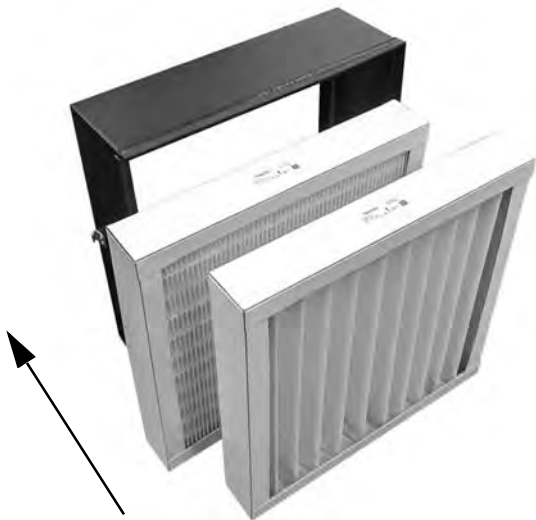


Fig. 5 Filter arrangement in the pre-filter box

BOX 2: FILTER BOX

One of the following main filter types is inserted in the FILTER BOX.

Version I:

High-efficiency particulate air filter: E10 to H14 or dust class M to H

The high-efficiency particulate air filter is inserted in the filter box with its clip-on frame as follows:

1. Pull the clip-on frame out of the guiding grooves:



Fig. 6 Guiding grooves filter box 2

2. Attach the clip-on frame to the air outlet side of the HEPA filter.
3. Push HEPA filter and clip-on frame into filter box 2. Make sure that the clip-on frame again fits into the guiding grooves. If applicable, place the HEPA filter with the clip-on frame on a table and fit filter box 2 to the clip-on frame from above.



Fig. 7 HEPA filter in box 2

Version II – alternative:

Bag filter: M5 to F9

When a bag filter is used, the fine filter in pre-filter box 1 may be omitted.

The bag filter is simply inserted in the filter box without further assembly. The clip-on frame does not need to be removed for this:



Fig. 8 Bag filter in box 2

Note:

When the device warns of a spent pre-filter (box 1) or main filter (box 2), still a flow rate of 500 m³/h (TAC 1500) or 1000 m³/h (TAC 3000) is ensured. For an effective filtration of pollutants the scheduled directives of the (German) employer's liability insurance association recommend to exchange the filter.

Filter types (not included in the scope of delivery)

The designated air filters are especially geared to these devices and come with the largest possible filter surface based on the geometric dimensions.

This ensures maximum air flow rate and service life for safe operation.

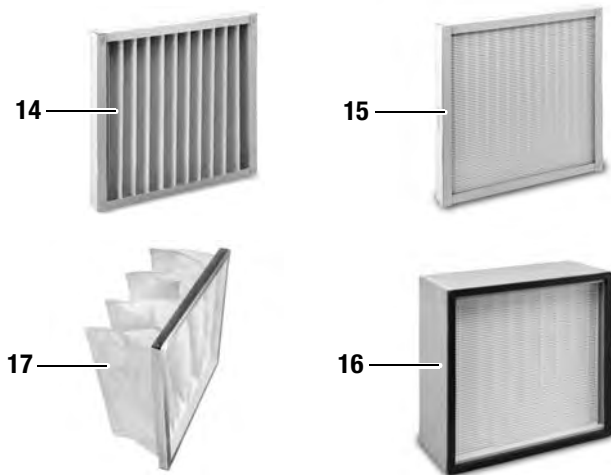


Fig. 9 Filter types

No.	Designation
14	Z-line filter G4
15	pleated filter M5 to F9
16	HEPA filter E10 to H14 / dust class M + H
17	bag filter M5 to F9

The Vario-shift function provides the user with the possibility of selecting the filter quality and the filter ladder according to the case of application and the applicable rules and regulations. Filter ladder and configuration depend on the pollutant particle size, filtration efficiency and the field of application. The filter technology is monitored by sensors. For proper monitoring of the filter function sensor hose lines are connected to both filter boxes.

Configuration A

General configuration for the air filtration of coarse dusts and fine particulates or the separation of suspended matter according to EN 60335-2-69 up to dust class H. Here the filtration of dust particles and other suspended material harmful and hazardous to health has priority. The filter ladder must be operated in a vacuum, i.e. with terminal fan: the fan is to be arranged **downstream** of the main filter **FILTER BOX 2**.

Configuration B

Here air is usually lead from a contaminated area into a clean area, e.g. as filtered fresh air supply. Suspended matter as per EN 1822-1:1998 up to filter class H14 can be filtered, a higher filtration efficiency is possible with a reduced air volume. The filter ladder is operated at excess pressure, i.e. with terminal fine filter: the fan is to be arranged **upstream** of the main filter **FILTER BOX 2**.

Arrangement and connection of filter boxes

For maximum efficiency bag and Z-line filters are to be assembled vertically.

1. Place PRE-FILTER BOX 1 with inserted filter to the first position behind the air inlet opening.
2. Insert FILTER BOX 2 and FAN BOX 3 according to the desired configuration.
3. Insert the tensioning frame behind PRE-FILTER BOX 1.
4. Close all tension locks, both on the side of the electrics and on the sensor hose side.
5. Connect the cable connections on the side of the electrics to the corresponding plugs:

	Plug	Cable	Connection
CABLE 1	black	grey	III
CABLE 2	white	black	II
CABLE 3	black	black	I

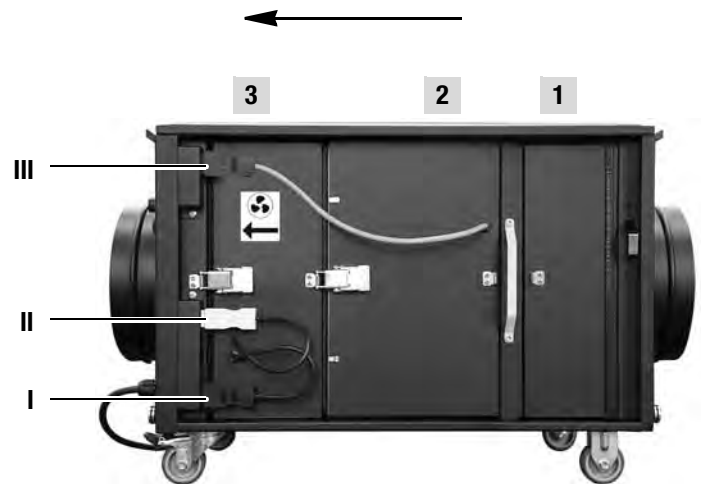


Fig. 10 Cable connections configuration A

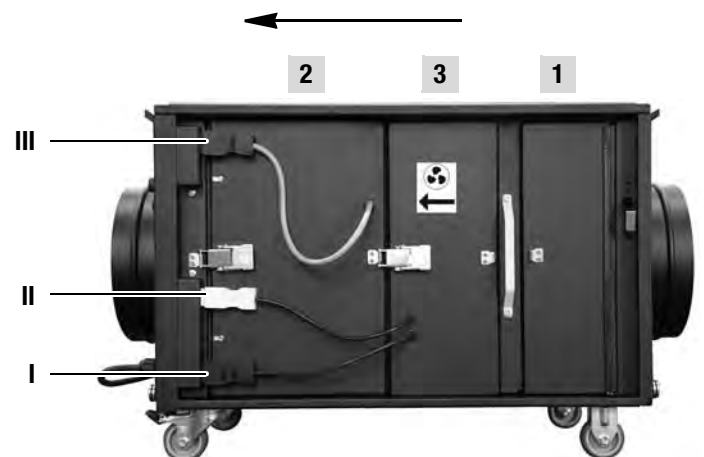


Fig. 11 Cable connections configuration B

6. Connect the two sensor hoses on the sensor hose side according to the selected configuration:

Configuration A

- 11: sensor hose S2 => fan box 3
- 12: dummy plug B => frame
- 13: sensor hose S1 => filter box 2

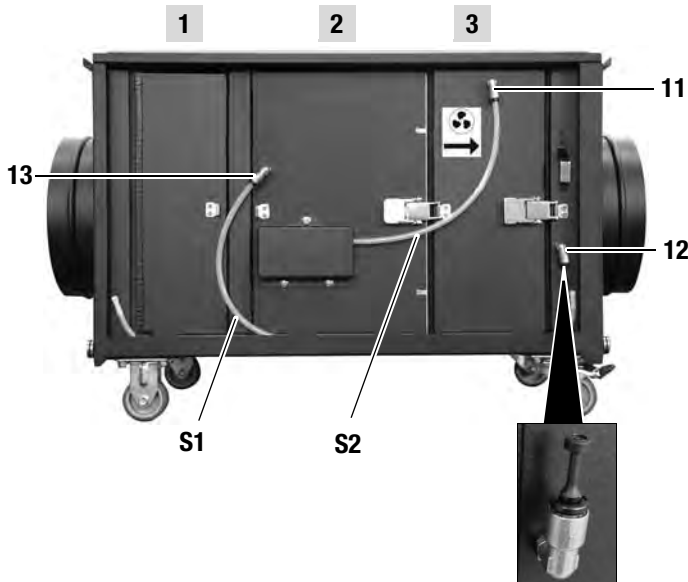


Fig. 12 Sensor hoses configuration A

Configuration B

- 11: sensor hose S1 => fan box 3
- 12: sensor hose S2 => frame
- 13: dummy plug B => filter box 2

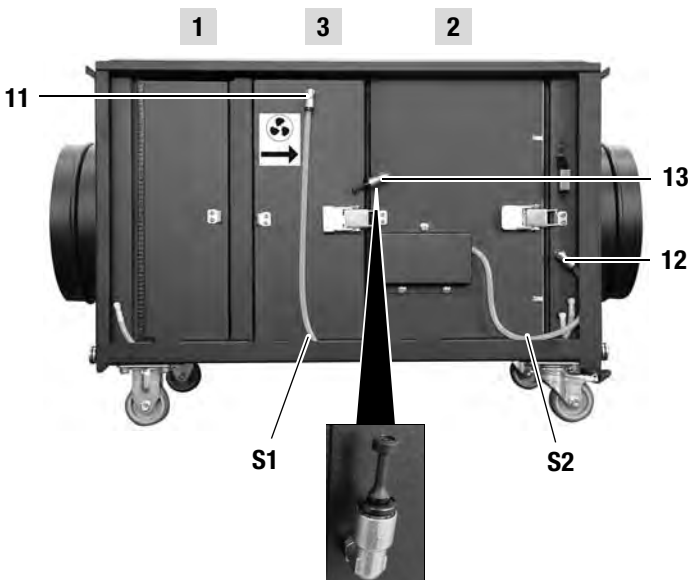


Fig. 13 Sensor hoses configuration B

- Push the sensor hoses **firmly** into the corresponding sensor socket until the hose securely clicks into place.
- The dummy plug has to be relocated depending on the configuration – for proper functioning the sensor sockets must not remain open.

- In order to remove hose or dummy plug, press the outer ring of the measuring point and pull hose or dummy plug at the same time.

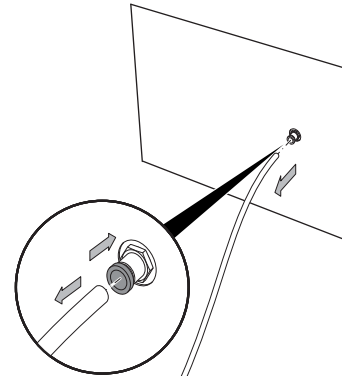


Fig. 14 Removing the sensor hose, schematic diagram

Operation

- When positioning the device, make sure it is located in the centre of the room the air of which is to be cleaned. Alternatively, you can also position the device near the source of air contamination.
- Prior to operation you have to ensure that the filters have been installed in the device as desired.
- Also check, whether the pressure sensors are connected correctly. If the device, during operation, emits a warning of a filter being spent, the respective filter has to be replaced. If the device issues a warning, although a new filter has only just been inserted, check whether all sensor hoses are firmly attached.
- Put the device up in a level, upright and stable position.
- Do not create tripping hazards when laying the power cable.
- Ensure that extension cords are completely unrolled.

Installation of the device in the room, the air of which is to be purified

- The device works in recirculation mode, this means that the contaminated air enters the air cleaner via the air inlet opening and is blown out through the air outlet opening in purified state.

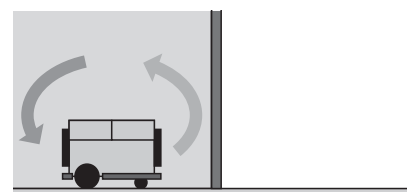


Fig. 15 Air purification in sealed off area via air circulation

Installation of the device outside of the room, the air of which is to be purified

The device can be connected in either recirculation or ventilation mode.

- In recirculation mode, the air to be cleaned is led via a hose from the room into the air inlet opening of the device. The purified air is fed through another hose from the air outlet opening and back into the room.
- In ventilation mode, the air to be cleaned is led via a hose from the room into the air inlet opening of the device. This creates a slight negative pressure in the room. Clean, fresh air flows in from outside.



Fig. 16 Installation variants for maintaining the pressure

When connecting hoses, the following must be observed:

- The used pipes and hoses must be designed for the available static compression of the fans. They should preferably be laid in a straight line and at full length. 7.6 m of air hose each can be connected to the air inlet and air outlet openings of TAC 1500 and TAC 3000.
- There ought to be a minimum distance of 1 m between air inlet and air outlet opening.

Control panel

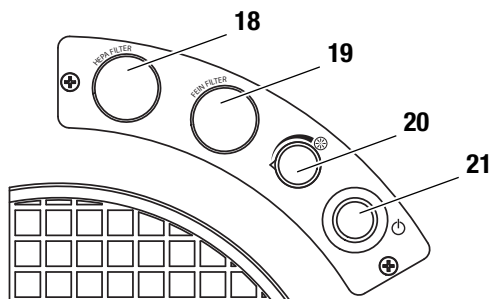


Fig. 17 Control panel

No.	Designation
18	visual and acoustic filter change indicator FILTER BOX 2 (HEPA filter or bag filter)
19	visual and acoustic filter change indicator PRE-FILTER BOX 1 (coarse filter G & fine filter F)
20	infinitely variable air flow regulation
21	mains switch

Switch-on

- Ensure that air inlet and outlet are not covered.
- Switch the device on by actuating the mains switch (21).
 - The integrated indicator light lights up.

Switch-off

- Switch the device off by actuating the mains switch (21).
 - The integrated indicator light goes off.

Adjusting the air volume

- By use of the infinitely variable air flow regulation (20) you can adjust the fan speed and thus regulate the air flow rate of the device.
 - In order to increase the air volume, turn the button to the right.
 - In order to decrease the air volume, turn the button to the left.
- With the filter arrangement G4, F7 and H13 to meet the requirements of dust class H, the device with connected exhaust air hose (7.6 m, laid in 2 90° arcs) reaches an air flow rate of:
 - TAC 1500: 600 m³/h
 - TAC 3000: 1150 m³/h
- If the filter change indicator of a filter box warn that a filter change will soon be required, the following min. air flow rate will still be ensured:
 - TAC 1500: 500 m³/h
 - TAC 3000: 1000 m³/h
 Exchange the corresponding filters in a timely manner.

Shutdown

1. Switch off the device.
2. Remove the mains plug from the mains socket.
3. Clean the device according to chapter Maintenance.
4. Store the device according to chapter Storage.

Errors and faults

The accurate functionality of the device was tested during production a number of times. However, if functionality faults do occur, then check the device according to the following list.

The device does not start:

- Check the power connection (230 V/1~/50 Hz).
- Check the mains plug for damages.

Your device still does not operate correctly after these checks?

Bring the device to a specialist workshop or to Trotec for repair.

Maintenance

Activities required before starting maintenance

- Do not touch the mains plug with wet or damp hands.
- Before any work, detach the mains plug!



Maintenance tasks which require the housing to be opened must only be carried out by a specialist workshop or by Trotec.



Changing the filter

If a filter needs to be exchanged, please proceed as described in Inserting filters in chapter Configuration.

Cleaning the housing and filterboxes



Caution!

Do not use a high-pressure cleaner.

- The housing and filterboxes may be cleaned with a warm jet of water and a mild cleaning agent.
- The fan box ought to be wiped down on the outside using a damp cloth and carefully rinsed on the inside with a jet of warm water.

Technical data

Parameter	Value	
Model	TAC 1500	TAC 3000
Article number	1.580.000.105	1.580.000.115
Recommended air volume for dust class H (m ³ /h)	500	1000
Dust class (as per DIN EN 60335-2-69)	dust class H (transmittance ≤ 0.005%) for substances with a maximum allowable concentration of ≤ 0.1 mg/m ³ , carcinogenic hazardous substances as per GefStoffV § 11 (Ordinance on Hazardous Substances), TRGS 905 or 906 (Technical Rules for Hazardous Substances), approvable for asbestos abatement as per TRGS 519	
Infinite adjustment of air volume	yes	yes
Filter change indication, visual and acoustic	yes	yes
Vario-shift function for the variable configuration of use with terminal fan or filter box 2	yes	yes
Motor power	175 W	450 W
Input voltage	230 V / 50-60 Hz	230 V / 50-60 Hz
Current consumption	1.4 A	2.8 A
Electrical connection	safety plug (CEE 7/7)	
Connecting cable	rubber conduit (H05RR-F3G1), length 3.5 m	
Air transport hose (blow-out and suction side)	ø 200 mm	ø 250 mm
Sound level (distance 1 m)	61 dBA	65 dBA
Dimensions (L x W x H)	705 mm x 362 mm x 377 mm	833 mm x 460 mm x 519 mm
Weight (full)	22 kg	36 kg
Mobility: portable / wheeled / stackable	yes / yes / yes	yes / yes / yes

Recommendation for filter combinations specific to the application and corresponding room size suitability		TAC 1500		TAC 3000	
		suitable for rooms sized up to ¹⁾			
Fields of application	Filter combination	m ³	m ³	m ³	m ³
Coarse dust ²⁾ (≤ 3 ACH ⁶⁾)	G4	220	75	500	170
Fine particulates ³⁾ (≤ 3 ACH ⁶⁾)	G4 + F7 to F9	110	37	270	90
Suspended matter ⁴⁾ (≥ 10 ACH ⁶⁾)	G4 + H13	50	17	100	34
Hygienic areas ⁵⁾ (≥ 15 ACH ⁶⁾)	G4 + H13	35	12	70	23

¹⁾ With an assumed room height of 3 m; ²⁾ Typical coarse dust tasks: sawing, filing; ³⁾ Typical fine dust tasks: restoration works with materials containing minerals or glass wool; ⁴⁾ Typical suspended matter tasks: grinding, asbestos abatement or mould remediation, mineral dusts etc.; ⁵⁾ H13 downstream; ⁶⁾ Air exchange per hour

Optional equipment	TAC 1500	TAC 3000
Guiding wheels with pneumatic tyres, traceless	on request	on request
Trestle rollers (instead of guiding wheels)	on request	on request
Fork pockets for fork lifts	on request	on request

Filter elements (accessory consumables)	TAC 1500	TAC 3000
G4 Z-line filter	article number 7.160.000.404	article number 7.160.000.428
F7 Pleated filter cartridge	article number 7.160.000.409	article number 7.160.000.429
F7 bag filter	article number 7.160.000.414	article number 7.160.000.430
H13 HEPA filter approved for dust class H	article number 7.160.000.424	article number 7.160.000.431

Available accessories	TAC 1500	TAC 3000
Air transport hose Tronect SP-T, length 7.6 m	article number 6.100.001.200	article number 6.100.001.205
Professional extension cable, length 20 m, 230 V / 2.5 mm ²	article number 7.333.000.376	article number 7.333.000.376

Performance charts of the TAC series

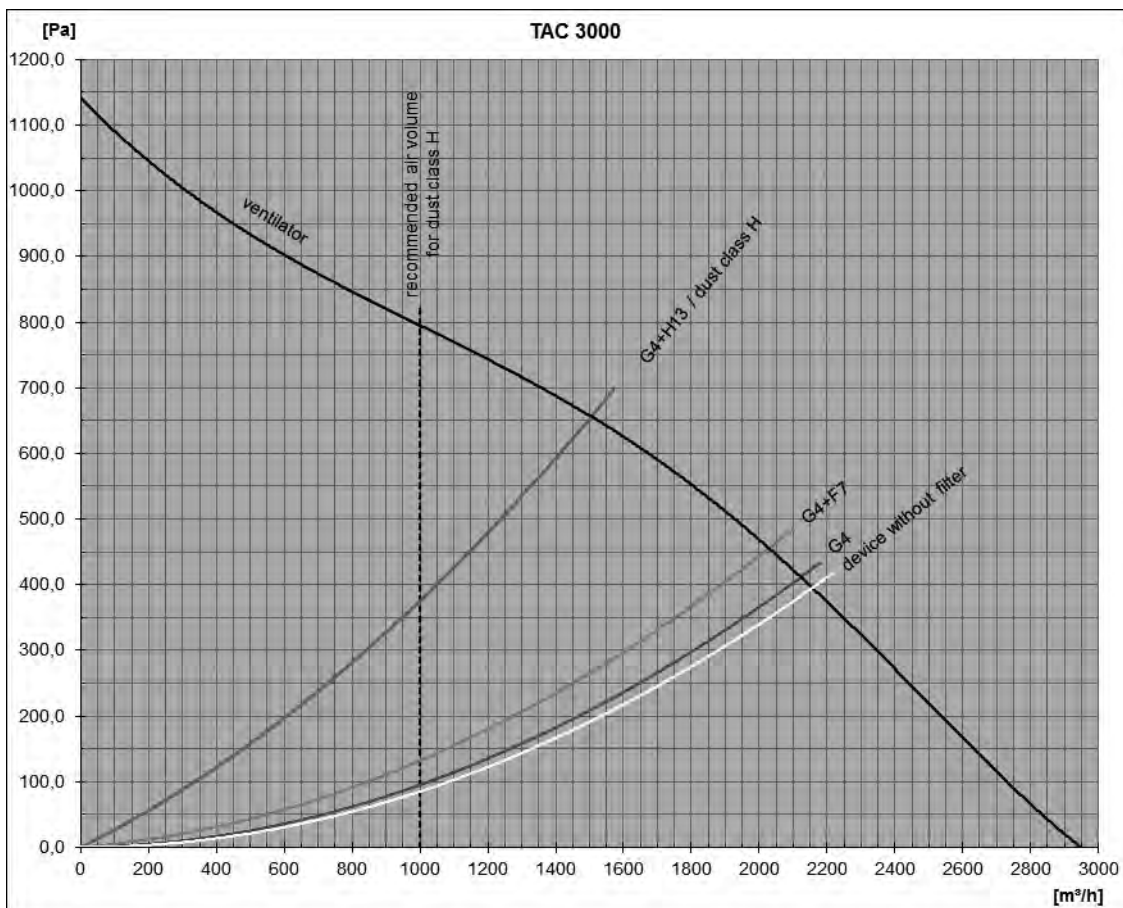
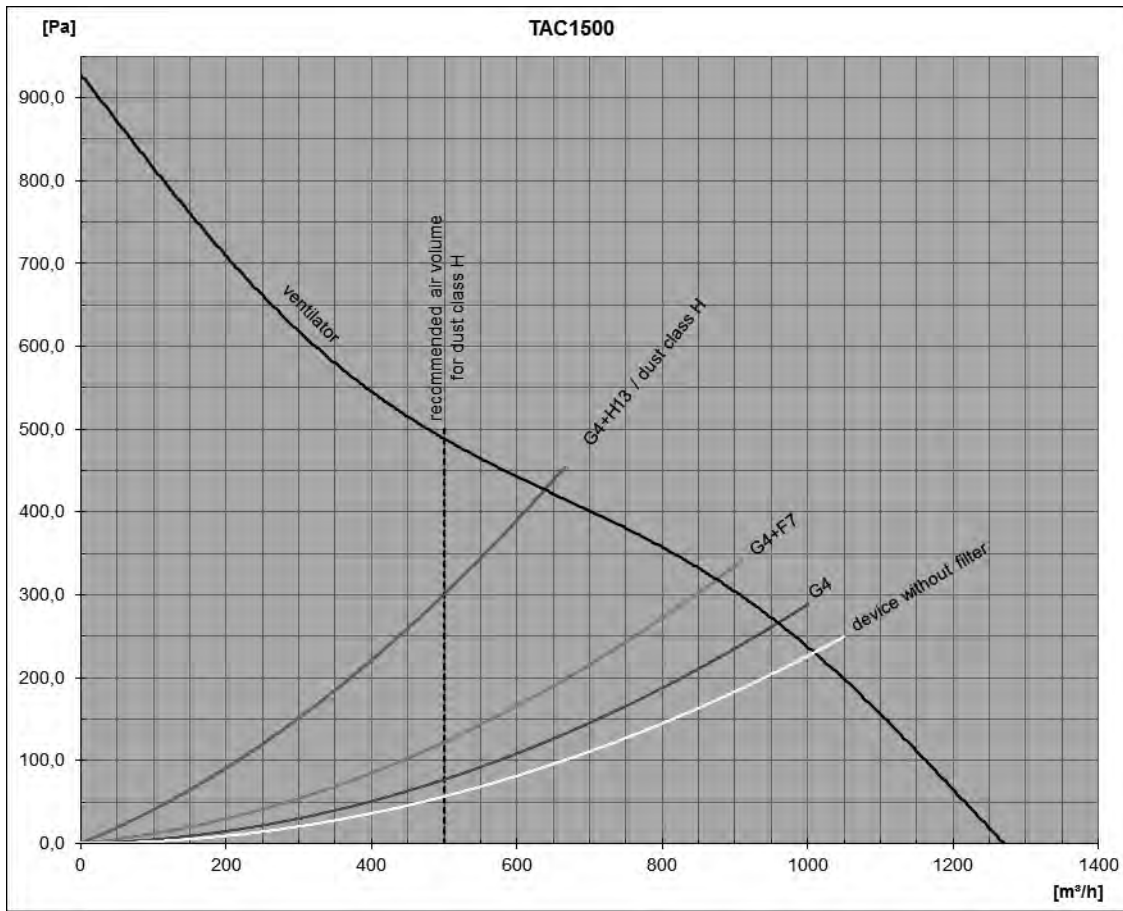


Fig. 18 Performance charts of the TAC series

Disposal



In the European Union, electronic equipment must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2002/96/EC of the European Parliament and Council of 27th January 2003 concerning old electrical and electronic equipment. At the end of its life, please dispose of this instrument in a manner appropriate to the relevant legal requirements.

**Declaration of conformity
(Translation of the original)**



EC Declaration of Conformity
in accordance with EC Machinery Directive
2006/42/EC

TROTEC* GmbH & Co. KG
Grebbener Straße 7
D-52525 Heinsberg

herewith declares, that due to its design and construction, and in the version introduced by us, the following machinery conforms with the relevant fundamental requirements of the listed EC directives.

Important note:


In case of improper use, installation, maintenance etc. or unauthorized changes of the factory-supplied device version, this declaration loses its legal validity.

Device version:	Air Cleaner
Series:	TAC
Year of manufacture:	as of April 2014
Applicable regulations:	2006/42/EC Machinery Directive 2004/108/EC EMC Directive

Applied harmonised standards:	EN 12100:2010 EN 60204-1 EN 60335-1 EN 60335-2-40:2003 + A11:2004 + A12:2005 + A1:2006 EN 55011:2009 + A1:2010 EN 61000-3-2:2006 + A1:2009 + A2:2009 EN 61000-3-3:2008
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