



Operating instructions

(Translation of the original operating instructions)

Type

TEKA-LFE-401

starting from generation 11/2015

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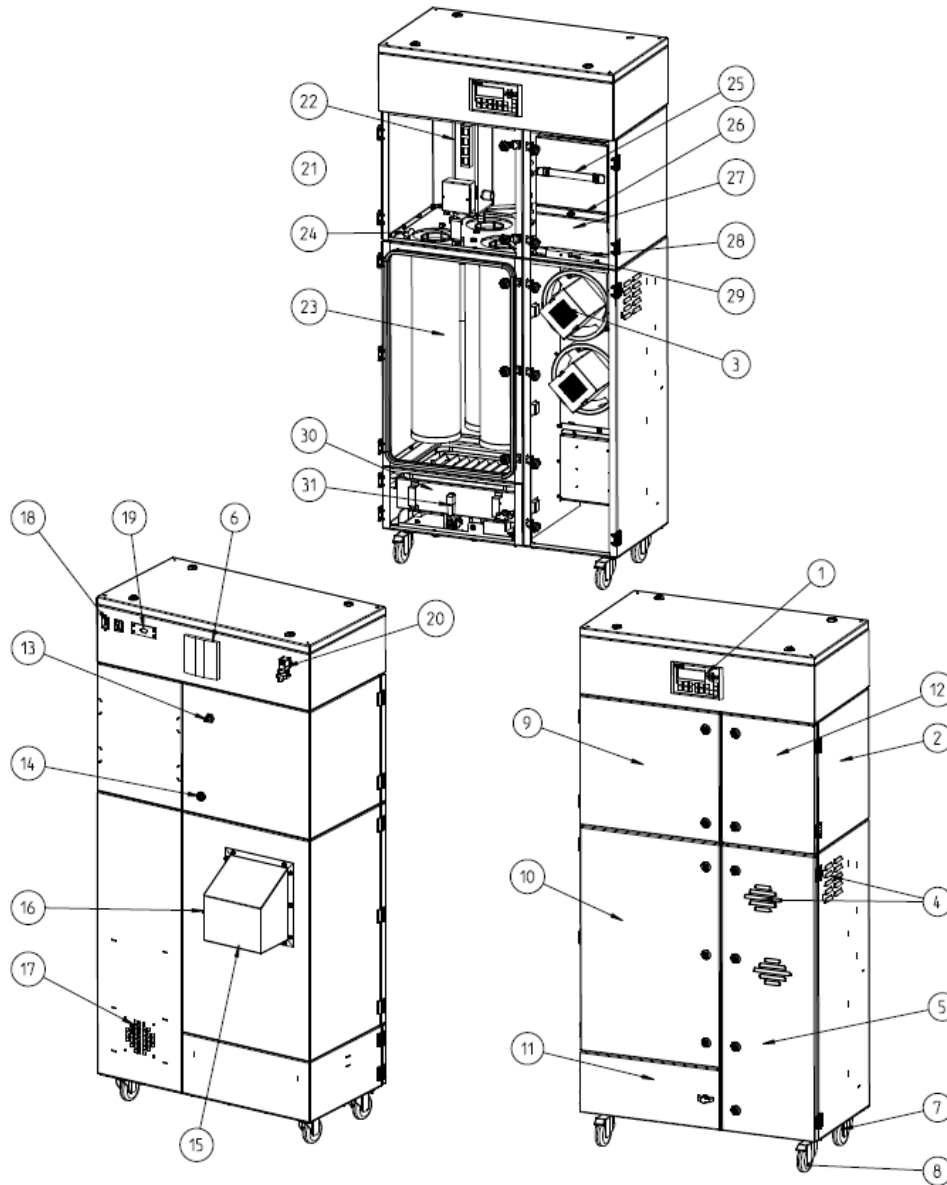
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1 Drawing / description of the elements



Pos. 1	Control panel	Pos. 17	Outlet of the downstream clean air
Pos. 2	Housing of the final filter stage	Pos. 18	Mains connection
Pos. 3	Cooling air filters of the turbines	Pos. 19	Interface Harting
Pos. 4	Cooling opening	Pos. 20	Harting connection for the optional gate valve
Pos. 5	Service door of the turbines	Pos. 21	Magnetic valve
Pos. 6	Ventilation grille of the electronic	Pos. 22	Compressed air container
Pos. 7	Swivel castor for transport	Pos. 23	Filter cartridge
Pos. 8	Swivel castor for transport with brake	Pos. 24	Thumb screw
Pos. 9	Service door for pneumatic	Pos. 25	Activated carbon cartridge
Pos. 10	Filter door	Pos. 26	Intermediate frame
Pos. 11	Access door to the dust collection unit	Pos. 27	Final filter stage
Pos. 12	Maintenance door for the filter final stage	Pos. 28	Lifting device
Pos. 13	End piece nozzle (compressed air connection)	Pos. 29	Locking screw for the lifting device
Pos. 14	Drain cock	Pos. 30	Dust collection drawer
Pos. 15	Suction housing with suction nozzle	Pos. 31	Tension lever
Pos. 16	Connection for metering device		

2 Preface

Congratulations on purchasing the filter system from the TEKA-series "LFE".

Our engineers ensure that our filter systems reflect the state of the art through continuous development. Nevertheless, misuse or misconduct can endanger your safety.

Please observe the following for a successful use of the filter system:



Please read these instructions before operating the system, and observe the safety precautions to avoid injury!

Improper use of the equipment can cause serious injury or death!

Store this manual in a safe place! These instructions are to be regarded as a component of the product!

Adhere to all product notes!

Observe the local regulations in force at the installation site!

Observe the manufacturer's instructions. Contact the manufacturer in case of any uncertainty.

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We thank you for your confidence in us and wish you every success.

3 Mode of operation TEKA-LFE-401

The intended use of the filter unit TEKA-LFE-401 is the application combined with laser devices and especially the extraction and filtration of dusts, fumes and gases.

WARNING

Improper use of the equipment can lead to damage to individual parts and endanger life and limb!

The system must **not** be used for the extraction of oil containing welding smoke, explosive dusts and gases, hybrid mixtures, burning or glowing substances, gases, water, etc.

The system must also not be operated in explosive zones.

Please contact the manufacturer in case of doubt!

The polluted air is extracted with the laser unit and enters the filter unit passing the suction hose and the suction nozzle (pos. 15). This is where the polluted particles are separated on the surface of the integrated filter cartridges (pos. 23). In a consecutive filter stage, the activated carbon cartridge (pos. 25) adsorbs the gaseous pollutants. Furthermore, the extraction unit is equipped with a final HEPA filter stage. The cleaned air is taken in by the turbines and guided back to the working space via the air outlet gills located at the rear panel (pos.17) of the filter unit.

As soon as the resistance of the filter cartridge has reached a maximum value due to the separated dust particles or after expiration of a set time interval, the filters are dedusted automatically.

Attention:

Due to the integrated pneumatic dedusting, the compressed air is evenly distributed over the filter surface, which releases the accumulation of dust. (see chapter 7.1: „Dedusting the filter cartridge“)
The dust released by the compressed air blast is collected in a dust container from where it can be extracted. (see chapter 7.3 Emptying the dust collection drawer)



4 Safety instructions / foreseeable misuse

The filter system is constructed according to the state of the art and the recognised safety regulations. Nevertheless, during use threats to life and limb of the user or other persons may arise. The impairment of the machine or other property are also possible. Read and observe the following safety precautions before using the product.

WARNING

The work on the system and on electrical voltage components represent considerable danger to life and limb in the event of improper handling.

The operator must ensure that their authorised personnel are familiar with all the safety indications in this manual in advance. The operator is responsible for ensuring that all work is carried out by authorised and qualified personnel. We therefore recommend using the training protocol on the last page for that purpose.

Do not work on live electrical components and elements (electric motors , cabinets , etc.) if you are not sure that these are indeed disconnected. Electric shock represents a danger to life.

If necessary, disconnect the device from the mains.

Do not use the system if parts of the system are faulty , missing or damaged. Do not operate the system without filter elements. A defective condition of the system could represent hazards to health.

Check the orderly condition of the system before switching on. Please refer to the information in this manual. Protect the wiring plug from heat, moisture , oil and sharp edges. Dispose of the filter elements according to the national statutory provisions.

Dangers arising from fire. In case of fire, if possible, switch the unit immediately off or disconnect it from the power supply. Fire extinguishing measures which the operator is obliged to determine beforehand must be initiated immediately. The device is additionally equipped with a particle sensor, which can detect an increase of the particles (eg due to fire, filter break, ...) within the device. The particle sensor thus provides a monitoring of the particulate matter, but does not provide 100% protection for the detection of a fire. When the particle sensor is triggered, the device switches off.

5 Storage, Transport and installation of the system

WARNING

Overturning or not permanently fixed equipment may represent a danger to life and limb.

The system must be secured against overturning and sliding during the storage and transport. Do not stand under or next to the load when lifting and lowering. Lift trucks or forklift trucks or transport cranes must have sufficient minimum loading. When transporting, pay attention of ground unevenness and avoid jerky pushing.

The system may only be installed on suitable flooring. Falling over or functional impairments may otherwise represent a danger to life and limb.

The substrate must be vibration free and horizontally aligned. The operator has to verify the viability of the ground. Once the system has arrived at its intended place, the brakes of the swivel castors (pos. 8) have to be actuated.

The system must be protected from the weather. Otherwise, the system functions may be impaired.

The system must be stored in a dry place and protected from moisture during transport. The plant is generally not designed for outdoor installation.



6 Commissioning



WARNING Improper work on the system and on electrical voltage components represent considerable danger to life and limb in the event of improper handling.

The operator is responsible for ensuring that all work is carried out by authorised and qualified personnel. The operator must ensure that their authorised personnel are familiar with all the safety indications in this manual in advance.

We recommend that each employee that operates the filter unit is trained with a training protocol in advance (see form attached). We recommend that each employee that operates the filter unit is trained with a training protocol in advance (see form attached).

A start up of the system in an inappropriate condition can lead to dangers to life and limb.

Before the system start-up the commissioning measures described in this chapter must be completed. In addition, all of the doors of the system must be closed and all necessary connectors attached before turning on. The filter unit must not be operated without the filter elements.

Protect all connection cables that lead away from the unit, from heat, moisture, and sharp edges. It must also be ensured that the connections are protected from damage caused by forklifts and the like.

6.1 Connecting the intake elements

The device must be connected to the suction nozzle (pos. 15) with the help of the suction hose.

6.2 Electrical connection of the system



WARNING Work on electrical voltage components and attaching the power cable entails the risk of electric shock. Work on electrical components can lead to serious dangers to life and limb .

The operator is responsible for ensuring that all work on electric components is carried out by authorised and qualified personnel. The operator is responsible for a potential-free balance of the filter systems.

The device may only be operated if all necessary measuring cables and hoses are connected. Not connected cables and hoses may lead to danger for life and limb.

When delivered all visible cables and hoses are labeled according to their functions. When connecting to the control, please observe the specifications on the circuit diagram which is attached to the control.

- Put the mains cable into the mains plug (pos. 18).
- Connect the filter unit to the mains supply.

NOTICE Pay attention to the admissible supply voltage.

An incorrect power supply may result in an electrical malfunction of the system.

CAUTION Once the controller is turned on, the cleaning function is in operation. This may result in unwanted cleaning processes.

Only switch the controller on when the plant is in working order.



6.3 Pre-coating of the filter cartridges

For a longer service life of the filter cartridges the new filter cartridges can be precoated. However, this is not necessary when using nano filter cartridges.

If you wish to precoat the filter cartridges nevertheless, please read and refer to "Precoating of new filter cartridges" in the chapter "Maintenance". There you can also find a description of the operating method of the precoat.

6.4 Connecting the compressed air supply

The filter cartridges of the system are automatically cleaned. Cleaning is carried out pneumatically via a built-in compressed air tank (pos.22).The contents of the compressed air tank are sufficient for a cleaning process.

A check valve inside the cleaning device housing ensures that the compressed air also remains in the compressed air container when separated from the compressed air supply.

NOTICE Without compressed air supply the filter cartridges will become dirty very quickly.

- The external compressed air supply must be provided by the customer with an approved compressed air hose!
- The compressed air must be dry and oil free.
- Connect the compressed air hose to the hose nozzle (pos.13).
- The operating pressure inside the compressed air tank must be a minimum of 3 bar and maximum of 4 bar so that the compressed air tank returns promptly to the required operating pressure after a cleaning cycle ready for the next cleaning time.

6.5 Connection of an external control unit

The LFE is either switched on or controlled at the Control panel (Pos.1) or through an external control (e. g. of the machine to be sucked out).

The automatic remote control is connected to the LFE via the 10-pin Harting connection. To connect this, a suitable 10-pin Harting connector is required (Harting art.no.: 09200102612, 09200101440). Alternatively, the connector can be obtained completely from Teka (TEKA art.no.: 80757515).

Pin	Designation	Explanation
1, 2	Start contact	In order to put the LMD into operation a contact between Pin1 and Pin2 have to be established. Important: When the follow-up time is activated, the unit switches off after the preset period of time.
3, 4	External message fault (NO)	Pin 3 + 4 serves for the evaluation of an external fault indication. If the unit is in an fault state, the contact is closed (NO: normally open).
5, 6	External message operation (NO)	Pin 5 + 6 serves for the evaluation of the operational control. If the preset operating pressure is reached during the operation, the contact is closed (NO: normally open).
PE	Protective earthing	Potential equalisation

7 Maintenance



Work on the open system entails the risk of electrical shock or accidental re-start the system. Both pose a danger to life and limb.

The operator is responsible for ensuring that all work is carried out by authorised and qualified personnel. When cleaning and servicing equipment during the replacement of parts or when changing to another function, the filter unit must be disconnected from the power supply and secured against restart.

To avoid accidental cleaning of the filter cartridges during the maintenance, the compressed air container must also be emptied beforehand (see chapter "Disconnection from the mains / Emptying the compressed air tank").

During maintenance work there may be contact with contaminated filter elements. Inhalation of contaminants can lead to hazards to the respiratory tracts.

All maintenance work must be carried out in well-ventilated areas and with appropriate protective facial masks only!

We recommend: Half mask respirator with DIN EN 141/143 protection level P3.

In accordance with national regulations, the operator is obliged to carry out repeat and functional tests. A malfunction of the system may otherwise be hazardous.

Unless otherwise specified by national regulations, we recommend regular testing of the electrical and pneumatic lines according to our maintenance intervals (see chapter "Maintenance intervals").

Furthermore, we recommend a regular visual inspection and functional test of the system (see also chapter "Maintenance intervals").

The operator is obliged to store and dispose of the accumulated dust in accordance with national or regional regulations.

When carrying out any maintenance or cleaning work the applicable environmental regulations must be adhered to. Pollutants and filter elements must be properly disposed of or stored.

In case of doubt we recommend contacting a local waste management company.

Depending on the type of dust and amount of dust produced, the system should be cleaned at regular intervals. The degree of contamination strongly depends on the particular conditions of use and a cleaning interval can, therefore, not be determined in advance.

Due to the filtration of dust particles, the saturation degree of the filter cartridge increases and the extraction performance is reduced.

The mechanical filter element guarantees that more than 99 % of the extracted pollutants remain within the filter. This also applies if the filter element is completely or partially saturated. However, if the saturation of the filter increases, the extraction performance of the filter unit is reduced.

The saturation degree of the filters is monitored electronically. In order to maintain the admissible extraction performance, the filter cartridge is automatically dedusted.

The dust particles are blown off inside out from the downstream clean gas side. The accumulation of dust is released and falls into the dust collecting drawer (Pos.30).

The activated carbon cartridge (pos. 25) must be replaced as soon as the gases reappear on the downstream pure gas side.

The final filter stage (pos. 27) is monitored electronically and emits a signal indicating a due filter change when the saturation value has been reached.

The lifetime of the filter cartridges and the activated carbon depends on the conditions of application. That is why it cannot be defined beforehand.



7.1 Cleaning the filter cartridges

The degree of saturation of the filter cartridges is electronically monitored. In order to ensure the required suction performance of the device, the cleaning of the filter cartridges starts automatically when a preset differential pressure value is reached. If after cleaning the filter cartridges the pressure values are still not below the preset differential pressure value a new cleaning begins. The filter system remains operating during the automatic cleaning. The blast of compressed air takes place inverse to the intake direction.

When the maximum filter resistance is reached, the control unit triggers a filter alarm. If, despite automatic cleaning of the filter cartridge, the pressure continues not to fall short of the alarm value, the filter cartridge needs to be replaced. (see section: "Changing the filter cartridge")

The differential pressure values in the control that trigger a cleaning or filter alarms are default values that are adapted to the filtration system. For detailed information on the mode of action, refer to the control. See the separate operating instructions for the control.

NOTICE Without compressed air supply the filter cartridges will become dirty very quickly. The service life of the filter cartridge depends strongly on the particular conditions of use. It cannot be determined beforehand.

Depending on the setting of the control, there can be an automatic postcleaning of the filter cartridges when the device is switched off. When using the optional collection elements with suction hood to avoid dust escaping from the suction hood, the throttle valve of the suction hood must always be closed once the device is switched off (for this see the separate manual of the collection element).

7.2 Disconnection from the mains / emptying of compressed air tank

- Switch the system off. Pull out the power-plug. Secure the system against unauthorised reconnection during the maintenance period.
- Disconnect the compressed air hose of the external compressed air supply from the system (pos.13).
- Empty the compressed air tank by opening the drain cock (pos.14) with a suitable screwdriver. Small amounts of condensation water can leak out when the drain valve is opened. Close the drain valve again when the compressed air tank is completely emptied.
CAUTION When opening the drain valve a blast of compressed air is possible! Dispose of the condensate according to the statutory provisions.
- After completion of all maintenance work the system can be reconnected to the power supply and connected to the external compressed air supply.



7.3 Emptying the dust collection drawer

The dust collection drawer (pos. 30) has to be emptied after expiration of a certain amount of operating hours. This amount depends on the produced quantity of dust, but the dust collecting tank has to be emptied at least once per week. The dust collecting tank may only be filled up to 25%! (If in doubt, please contact the manufacturer!)

CAUTION The filter cartridge must be cleaned before the emptying of the dust collecting drawer.

For this you have to proceed a manual cleaning via the system control (see separate manual) three times. The filter unit must be switched off beforehand but without disconnecting the unit from the power supply. After that the filter unit must be disconnected from the power supply and secured against restart. Please wait for 5 minutes after the cleaning of the filter cartridge before opening the drawer access door (pos. 11).

- Open the maintenance door of the dust collection housing (pos. 11).
- Lower the dust collection drawer with the help of the tension lever (pos. 31).
- Withdraw the dust collecting drawer (pos.30) and place it carefully on the floor without whirling up any dust.
- Empty the dust collecting drawer carefully into a dust bag and close it (e.g. with the help of a cable tie).
- Put the bag with the accumulated dust in an appropriate container and store or dispose of it according to the regulations.
- Push the dust collecting drawer (pos.30) into the filter housing and lift it up with the help of the tension lever (pos. 31).
- Close the maintenance door for the dust collection housing (pos. 11) and fix it with the help of the screw.
- Reconnect the unit to the compressed air supply and the mains supply.

7.4 Draining of the condensate

Operation with compressed air results in condensation water being gradually deposited in the compressed air tank. The maintenance interval depends heavily on the quality of the compressed air and cannot, therefore, be determined in advance.

- Open the drain valve (pos.14) with a suitable screwdriver and allow the escaping condensate to flow into a suitable container.

CAUTION When opening the drain valve a blast of compressed air is possible! Dispose of the condensate according to the statutory provisions.

- Close the drain valve.
- After completion of all maintenance work the system can be reconnected to the power supply and connected to the external compressed air supply.

7.5 Replacing the filter cartridges

If the maximum admissible filter resistance is reached, the filter unit shows "filter alarm". If despite the automatic cleaning of the filter cartridge the alarm value can not be undercut, the filter cartridge must be replaced.

CAUTION The filter cartridges must be cleaned before replacing.

For this you have to proceed a manual cleaning via the system control (see separate manual) three times. The filter unit must be switched off beforehand but without disconnecting the unit from the power supply. After that the filter unit must be disconnected from the power supply and secured against restart. Please wait for 5 minutes after the cleaning of the filter cartridge before opening the cartridge access door (pos. 10).

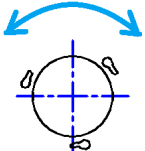
For a longer service life of the filter cartridges the new filter cartridges can be precoated. However, this is not necessary when using nano filter cartridges.

If you wish to precoat the filter cartridges nevertheless, please read and refer to "Precoating of new filter cartridges" in the chapter "Maintenance". There you can also find a description of the operating method of the precoat.

- Before changing the filter cartridge ensure a suitable container (e.g. plastic sack or plastic bag) is ready.

CAUTION The dirty filter cartridges must be packed in an appropriate manner (e.g. plastic bags). Plastic bags are optionally available (see spare parts list)! We recommend promptly stocking up on plastic bags.

Dispose of the filter cartridges according to the statutory provisions.

- Open the maintenance door of the filter cartridges (pos. 10). You find a hex key to open the door by opening the access door to the dust collection unit (pos. 11). Also open the service door for pneumatic (pos. 9). This is only possible by means of a special electrical spanner.
 - Put the disposal bag in a careful and dust-free manner from bottom to top over one of the filter cartridges (pos. 23).
 - Unfasten the 3 thumb screws (pos. 24) of the filter cartridge by turning them clockwise.
 - Grab the filter cartridge and turn it a little clockwise to disconnect it from the screw fastening. Therefore do not touch the filter cartridge directly with your hands, but grab it from the outside through the bag.
 - Remove the filter frame in a dust-free manner from inside the filter cartridge.
 - Carefully close the disposal bag (e.g. with a cable fastener) and store or dispose of it together with the polluted filter cartridge in an appropriate container according to the regulations.
 - Insert the filter frame into the new filter cartridge.
- 
- Hinweis** Only use TEKA spare filters!
- Insert the new filter cartridge into the screw fastening and turn it anticlockwise to the hilt.
 - Hand-tight screw the 3 thumb screws.
 - Carry out this procedure for all filter cartridges.
 - Close the maintenance doors.
 - After completion of all maintenance work the unit can be reconnected to the power supply and the external compressed air supply.



7.6 Replacing the activated carbon cartridge

The activated carbon cartridge (pos. 25) has to be replaced as soon as gases appear on the downstream clean air side. Proceed as follows:

- Open the door of the final filter stage's housing (pos.12). You find a hex key to open the door by opening the access door to the dust collection unit (pos. 11).
- Lower the lifting device (pos. 28) with the help of the locking screw (pos. 29).
- Take the final filter stage (pos. 27) with the intermediate frame (pos. 26) and the activated carbon cartridge (pos. 25) out of the filter housing. Before doing so the projecting measuring hose has to be separated from the intermediate frame.
- Place the new activated carbon cartridge on the intermediate frame. Make sure the seals are correctly installed. Place this filter package in one piece on the lifting device (pos. 28) and push it as far as possible into the filter housing. Then reconnect the measuring hose at the intermediate frame.

Attention:

During installation the final filter stage (in the wooden frame) must always be below, the activated carbon cartridge (in the black sheet metal housing) must always be at the top. The seals of the final filter stage and the seals of the activated carbon cartridge and of the intermediate frame must always be on the top.

Only use TEKA activated carbon cartridges!

Dispose of the filter cartridges according to the legal regulations.

- Lift the lifting device (pos. 28) in turning the locking screw (pos. 29) so that the rubber grommet of the activated carbon cartridge seals tightly the cover of the activated carbon housing (pos. 2). In doing so, check if the rubber grommet is damaged.
- Close the door of the final filter stage's housing.
- Reconnect the unit to the mains supply.

7.7 Replacing the final filter stage

If the filter alarm value for the final filter stage has been reached, it has to be replaced as follows:

- Open the door of the final filter stage's housing (pos. 12). You find a hex key to open the door by opening the access door to the dust collection unit (pos. 11).
- Lower the lifting device (pos. 28) with the help of the locking screw (pos. 29).
- Take the final filter stage (pos. 27) with the intermediate frame (pos. 26) and the activated carbon cartridge (pos. 25) out of the filter housing. Before doing so the projecting measuring hose has to be separated from the intermediate frame.
- Place the intermediate frame on the new final filter stage and the activated carbon cartridge on the intermediate frame. Make sure the seals are correctly installed. Place this filter package in one piece on the lifting device (pos. 28) and push it as far as possible into the filter housing. Then reconnect the measuring hose at the intermediate frame

Attention:

During installation the final filter stage (in the wooden frame) must always be below, the activated carbon cartridge (in the black sheet metal housing) must always be at the top. The seals of the final filter stage and the seals of the activated carbon cartridge and of the intermediate frame must always be on the top.

Only use TEKA filters!

Dispose of the filter cartridges according to the legal regulations.

- Lift the lifting device (pos. 28) in turning the locking screw (pos. 29) so that the rubber grommet of the activated carbon cartridge seals tightly the cover of the housing of the final filter stage (pos. 2). In doing so, check if the rubber grommet is damaged.
- Close the door of the final filter stage's housing.
- Reconnect the unit to the mains supply.

7.8 Replacing the cooling air filters of the turbines

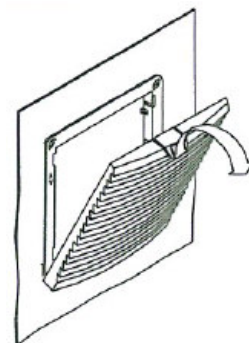
The cooling air filters of the turbines must be checked regularly, at the latest after half a year, for pollution and they must be replaced when necessary (see list of spare parts). The interval between changes depends on the ambient air and the type and duration of the application. That is why it cannot be predicted.

- Open the maintenance door (pos. 5). This is only possible by means of a special electrical spanner.
- The cooling air filters are located in the area of the cooling openings (pos. 4). Remove the old filters and insert the new ones.
- Close the maintenance door.
- Reconnect the unit to the power supply.

7.9 Changing the filter mat of the ventilation grille

The filter mat of the ventilation grille (pos. 6) must be regularly inspected and changed if necessary. This check depends on the level of pollution. The filter mat is in the air grating.

We recommend promptly stocking up on filter mats (see spare part list).





7.10 Pre-coating of new filter cartridges

The pre-coat filter aid assists against a "caking" of extracted particles on the filter surface and thus prolongs the life of the new filter cartridge.



WARNING

On contact the filter aid can be hazardous to the respiratory tract and cause skin irritation or eye irritation. Observe the listed manufacturer instructions provided:

<i>Handling:</i>	Avoid the formation of dust!
<i>Storage:</i>	Seal the container tightly before storage!
<i>Respiratory protection:</i>	Dust mask without protection level!
<i>Hand protection:</i>	Protective gloves in cloth, rubber or leather!
<i>Eye protection:</i>	Safety glasses with side shields!
<i>Body protection:</i>	Anti-static work shoes!

Unlike with other maintenance work, this step must be carried out with the system switched on and operating so that the pre-coat reaches the filter cartridge through suction.



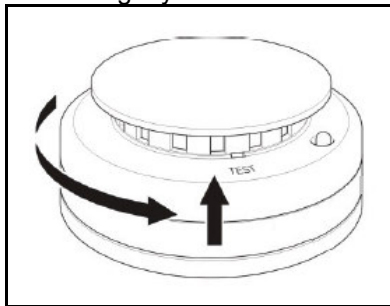
CAUTION There must not, however, be any air pressure in the compressed air containers and the compressed air hose must be disconnected from the system.

Switch the system on. Introduce the pre-coat (10g per square metre of filter surface) on the appropriate area, which is closest to the suction line in the filter system.

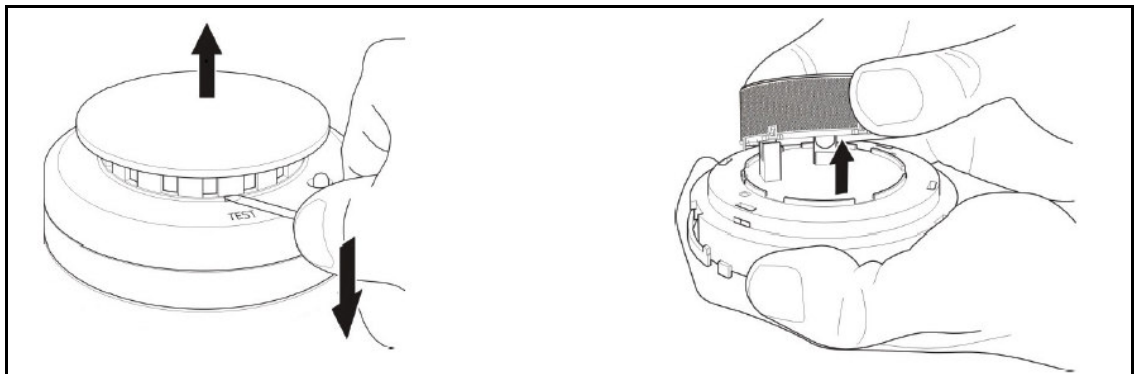
7.11 Cleaning/replacing the particle sensor

i This section is only relevant if the controller reports a “particle sensor” error message which persists after it has been acknowledged even though clearly no smoke is being emitted. In such cases, it is probable that the particle sensor is too highly contaminated or is faulty.

- The particle sensor is located below the final filter stage.
- Remove the detector head from the assembly base. To do this, turn the detector head anticlockwise slightly.



- Remove the cover. To do this insert a screwdriver and lift the cover. It is then necessary to pull the black cover off the smokebox.



- Use compressed air to expel dust from the smokebox.
NOTICE Do not use a dust cloth.
- Mount the covers. Replace the detector head on the assembly base.

If the controller now still reports a “particle sensor” error message then the detector head must be replaced.

NOTICE Replacement parts are available from TEKA, see the spare parts list. In this case, it is not necessary to replace the assembly base which is screwed to the unit.



8 Control

Attention:

For more information concerning program settings, menu structure, etc, see operating instructions of the Software.

9 Disposal



WARNING The dismantling of the installation also entails the possibility of electric shock or breathing hazards. Likewise, there may be bruising and injury during the dismantling work.

Before disassembling, the machine must be disconnected from the mains and the external compressed air supply. Only authorised personnel may disassemble the machine. Respiratory protection and protective clothing must be used during all the work.

NOTICE The operator is obliged to store and dispose of the accumulated dust in accordance with national or regional regulations.

In order to ensure you a trouble-free operation of your TEKA filter system as well as proper disposal of the deposited dust, we offer the following services:

- A maintenance and repair contract
- telephone customer service

Talk with our service department.

Telephone: 0 28 63 / 92 82 - 0

Fax: 0 28 63 / 92 82 72



10 Diagnosics and troubleshooting

A list of system errors is provided in the table. Error messages of the control system are explained in their separate manual.

A recommissioning of the device must only occur if it is ensured that the filter system is functionally equivalent to the original state. Repairs may only be carried out by TEKA personnel or, after consultation with TEKA GmbH, by the personnel authorised by the operator.

Adhere to the instructions in the chapter "Safety instructions" and "Maintenance" when carrying out any repairs. If in doubt, contact our TEKA service department:

Telephone: 0 28 63 - 92 82 - 0
 Fax: 0 28 63 - 92 82 - 72

Fault	Cause	Removal
System does not start.	Plug power supply is missing or incorrectly inserted.	Plug connector check power supply / plug in correctly.
	No power at outlet.	Check the mains, remove error if possible.
Dust at the dust collector.	There is too much dust in the dust collection container.	Empty the dust collection container.
	The tension lever (Pos.31) has not been lift up.	Lift up tension lever.
	The seal of the dust collection container is damaged.	The seal must be renewed.
	The compressed air for the dedusting is set too high.	Reduce the compressed air.
Dust at the service door.	One or more of the door lever is not closed.	Close door lever.
	The seal between the service door and filter housing is damaged.	The seal must be replaced.
	The compressed air for the dedusting is set too high.	Reduce the compressed air.
	Escape of dust at the hinge.	The hinge must be reoriented or replaced.
Suction power too low (smoke hardly extracted)	Filter element is saturated.	Replace the filter package, dispose of old filter properly!
	Filter elements are saturated because no compressed air is connected.	Connect compressed air.
	Damage at the capturing elements.	Replace the capturing elements.
	Clean air outlet contracted.	Check clean air outlet, if necessary, fix error found.
	Suction line contracted.	Check suction line, if necessary, fix error found.
	Throttle valve in the detection element extraction hood is closed.	Open the throttle.



11 Technical data

Filter unit		TEKA – LFE 401	
Supply voltage	V	115 / 230	230
Type of current	Ph	1	1
Frequency	Hz	50 / 60	50 / 60
Motor performance	kW	2x 0.6	2x 1.2
Volumetric air flow max.	m³/h	400	500
Negative pressure max.	Pa	6,300 / 7,500	11,000
IP rating		IP 54	
ISO class		F	
Control voltage	V	24	
Duty cycle	%	100	
Width x depth x height	mm	751 x 400 x 1590	
Weight:	kg	ca. 168	
Filters		3 Filter cartridges, activated carbon, Final filter stage	
Extraction performance	%	>99	
Sound pressure level	dB(A)	68	
external pressure	bar	3 to 4	
Compressed air supply		Dry / oilfree	
Ambient temperature	°C	+5 to +35	
Max. air moisture	%	70	



12 List of spare parts

Designation:	Article no.
Filter cartridge 2,7 m ² , D=145, L=600, ECN (Pos.23)	1000501420027
Precoat for filter cartridge 100g	9510050001
Plastic bag to dispose of filter cartridges (6 pieces)	800000241
Activated carbon filter 337 x 230 x 212 mm (Pos.25)	97059
Final filter stage H13 (Pos.27)	100350004
Cooling air filter (pos. 3) for the turbine G3, 62x62x48	100350008
Filter mats (pos. 22) for the air outlet grid (10 pieces)	200421120007079
Turbine 0,6kW, 115/230V, 50/60Hz	200421160060003
Turbine 1,2kW, 230V, 50/60Hz	200421160104
Particle sensor (detector head)	999204



13 Declaration of conformity for TEKA-LFE-401



TEKA
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We hereby declare under our sole responsibility that the product mentioned above, from the serial number A12000010011001 resp. the production number P25000010011001 on, conforms to the following directives:

Machinery directive:	2006/42/EC
Electromagnetic compatibility:	2014/30/EU
Pressure equipment directive:	2014/68/EU

Applied harmonized standards:

- DIN EN 349
- DIN EN ISO 4414
- DIN EN ISO 12100
- DIN EN 60204 part 1
- DIN EN ISO 13857
- DIN EN 82079 part 1

Plus further national standards and specifications:

- DIN 45635 part 1

This declaration will become void if the suction and filter unit is exposed to modifications that are not approved by the manufacturer in written form.

A handwritten signature in black ink, appearing to read 'Jürgen Kemper', written over a light blue rectangular background.

(Jürgen Kemper, managing director)
Velen, April 28th, 2015



14 Instruction record for TEKA-LFE- 401

(This form can be used by the operator to document the training of the employees. Training should be performed by authorized personnel only. Refer to the instructions in Chapter "Safety Instructions")

By his signature, the employee confirms that he has been instructed regarding the following items:

Instruction	completed
Description of the filter unit	
Operation and application of the filter unit	
Explanation of the safety instructions	
Behavior in case of fire	
Explanation of the control elements of the filter unit	
Maintenance, change and dedusting of the filters	
Appropriate disposal	

Instruction held by: _____

Name of the employee (legible)	Signature

Wir bringen Luft in Bewegung



Signature _____

15 Maintenance intervals

15.1 Usage-related maintenance

The described maintenances become necessary through the demands of the system operations. The maintenance intervals are recommendations. Depending on the application (multi-shift operation, dust generation, ...) it may make sense for the operator to change the maintenance intervals.

Maintenance work must always be documented by means of a protocol.

The approach of the maintenance measures is described in chapter "Maintenance".

Maintenance work	Chapter	Maintenance interval	
		recommended by TEKA	determined by the operator
Cleaning of filter cartridges Replacing the filter cartridges	7.1 7.5	The cleaning of the filter cartridges is automatically carried out by the filter unit and thus is not subject to a maintenance interval. The saturation of the filter cartridges is automatically monitored by the filter unit and thus is not subject to a maintenance interval. The filter unit triggers an alarm when a replacement of the filter cartridges is necessary.	
Replacing the final filter stage	7.7	The saturation of the final filter stage is automatically monitored by the filter unit and thus is not subject to a maintenance interval. The filter unit triggers an alarm when a replacement of the final filter stage is necessary.	
Check of fill level/emptying of the dust collection container	7.3	weekly	
Draining of the condensation water	7.4	weekly	
Activated carbon cartridge + cooling air filter + filter mat: Check the degree of pollution	7.6, 7.8 7.9	every six months	

15.2 General maintenance

The described maintenances are independent from the demands of the system operations.

The operator is obliged to carry out repeated inspections and functional tests according to national regulations. If not otherwise covered by national regulations, the described maintenance intervals must be respected.

Maintenance work must always be documented by means of a protocol.

Maintenance work	Chapter	Maintenance interval
Visual inspection of the filter unit	15.2.1	weekly
Visual inspection of the pipelines for dust deposits	15.2.2	weekly
Visual inspection of the pneumatic pipes	15.2.3	weekly
Functional test of the unit	15.2.4	weekly
Electrical test of the electrical lines and earthing connections	15.2.5	annually

15.2.1 Visual inspection of the filter unit

Visual inspection: Make sure that there are no visible safety-related defects.

⚠️ WARNING Disconnect the filter unit from the power supply and secure it against unauthorised switching on (see chapter 7.2).

The following steps must be carried out in the course of the visual inspection:

- Check the unit for completeness and damages.
- Check if all required pipeline elements, cable connections and hoses are connected to the filter unit.
- Check all electrical earthing connections and cables for visible damages.
- Ensure that all parts are firmly connected.
- Check all connection points of the filter unit for escaping dust.
- Check all metal parts for corrosion or damages/changes of the coating.
- Check the inner filter area and the filter housing.
- Check the hinges of the maintenance door for damages.
- Visual inspection of the control and operating elements as well as the outside running cables for damages.
- Check the dust collection container for tightness, check the sealing rubber of the container.

15.2.2 Visual inspection of the pipelines for dust deposits

Visual inspection: Observe if there are no visible safety-related defects.

⚠️ WARNING Disconnect the filter unit from the power supply and secure it against unauthorised switching on (see chapter 7.2).

The following steps must be carried out in the course of the visual inspection:

- Open the inspection flaps of the pipeline and check the pipeline for dust deposits. Dust deposits must be eliminated.

15.2.3 Visual inspection of the pneumatic pipes

Visual inspection: Observe if there are no visible safety-related defects.

⚠️ WARNING Disconnect the filter unit from the power supply and secure it against unauthorised switching on (see chapter 7.2).

The following steps must be carried out in the course of the visual inspection:

- Open the pneumatic access door (fig. 8).
- Carry out a visual inspection of the pneumatic parts.
- Check the parts for visible damages.

15.2.4 Functional test of the unit



Carry out a visual inspection before the functional test of the unit. In case of observations that endanger the safety of the unit these must be eliminated before the functional test of the unit.

The following steps must be carried out in the course of the functional test:

- Switch the unit on.
- Pay attention to failures or error messages of the steering. Also refer the separated operating manual of the steering.
- Pay attention to extraneous noises or vibrations during the plant operation.
- Carry out a manual dedusting of the filter cartridges. Also refer to the separated operating manual of the steering.
- Check if within one interval of the filter dedusting the number of dedusting shocks is equal to the number of filter cartridges (in each interval successively every filter cartridge becomes dedusted once).
- Check if dust is escaping from the unit during the dedusting cycle.
- A functional test should always be carried out with a connected/producing machine tool. Check if the collection of the fume or dust is sufficient. (Visual inspection)

15.2.5 Electrical test of the electrical lines and earthing connections



Working on electrical voltage components and attaching the power cable entails the risk of electric shock. Working on electrical components can lead to serious dangers to life and limb.

The operator is responsible for ensuring that all work on electric components is carried out by authorised and qualified personnel.

The filter unit is a "stationary electrical systems" from an electrical point of view. Those systems are subject to regular electrical checks by the operator of the unit and are subject to national standards of the different countries.

The here recommended maintenance interval complies with the in Germany applying "Regulation 3 of the German Social Accident Insurance - Electrical plants and equipment" (formerly known as BGV-A3).

The check must only be carried out by a qualified electrician or a person trained in electrics using suitable measuring and test devices. The scope of testing and the methods must be in line with the respective national standard. All contacts in the control cabinet must be checked for tight fit, and must be readjusted if necessary.