GEOVENT

INSTRUCTION MANUAL

GFB2 TOWER

GeoFilter GFB2 Tower 6-2, GeoFilter GFB2 Tower 9-3,
GeoFilter GFB2 Tower 12-4

Version 1.0 03.11.21

www.geovent.com

Contents

1.0 Introduction

This manual is made and designed in order to facilitate the best and most secure interaction with the product. The manual is relevant for people involved in transportation, stocking, installation, using, maintaining and all other thinkable interaction with the product.

The manual must be read in full and understood before interacting with the product.

When the manual has been read and understood in full, the table of contents can be used to find the relevant information in each case.

The product is manufactured by:

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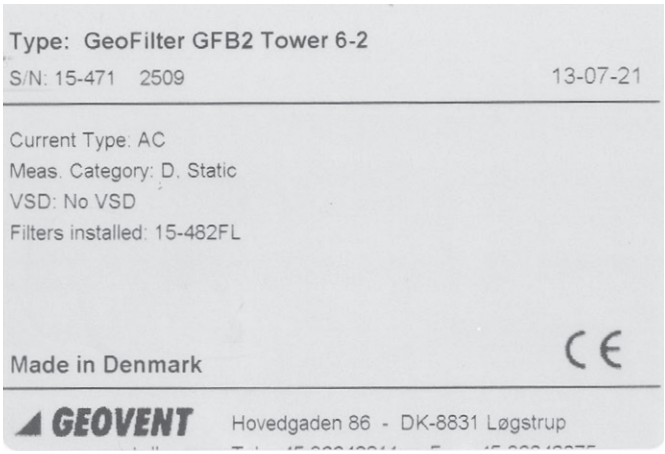
This manual is to be used for all interactions with the product including: Transportation, stocking, installation, operation and maintenance.

This product is marked with: (example)



2.0 Safety

2.1 General safety

Carefully read this manual before use and observe the safety instructions in order to avoid injuries!
Keep this manual in a safe place!

Secure that all users of the product have read this manual and that they follow the instructions as described.
Observe all instructions marked on the product!
Observe the indications of the manufacturer.
Never use the product if you are in doubt about how it works or what you should do.

When doing maintenance or replacing filters, follow the instructions in chapter 7.0.

Power cables and pneumatic air hoses should be replaced at once, if they are damaged. This should only be done by authorised and qualified personnel.
Do not modify the product or use spare parts from other suppliers than Geovent, as this may hamper the product and the function.
All electrical installations must be carried out by an authorised electrician.

2.2 Danger

You must wear safety gloves when handling or using the product to protect your hands from scratches etc.
Be aware that the product may tilt when you move it.
You must handle the product with care and tie it safely to the truck or the fork lift when it is in transport.

Place the filter on a solid, flat foundation (e.g. a concrete floor) and anchor it. Allow space to perform filter changes.

When you change the filter cartridges, follow the instructions in chapter 7.3.

While opening, cleaning and maintaining the unit or while changing parts, disconnect the unit from the mains supply and secure it from being restarted.

In case of an accident or a fire:
- Call for help.
- Disconnect the product from the mains supply.
- Follow the normal and local requirements in case of an accident or a fire.

In case of problems:
- Disconnect the product from the mains supply.
- Inspect the product to see if a repair is possible.
- If a repair is not possible you should dispose of the product. Please follow the instruction for disposal in chapter 10.0.

3.0 Machine overview

3.1. Description

GFB2 Tower is a filter unit that is used for different filtering needs. The product contains filter media, which must be selected according to the specific filtration need.

3.2 Intended use

The GFB2 Tower is used to filter the extracted air from industrial processes such at welding, grinding, sandblasting, and powder coating.
The filter is not to be used in areas categorised as ATEX zones, e.g. with dust from aluminium, flour, wood, and other mediums that present an explosion hazard.
The GFB2 is supplied with filter cartridges of various pleated textiles, both with and without coating.
The filter self-cleans automatically as a compressed air pulse is sent down through the filter cartridges, causing the particles on the filter to be blown off and collected in the bucket below.
Particle catch in the inlet functions as a diffusor and catches large particles, that could otherwise damage the filter cartridges.

The GFB2 Tower has a fan installed on top.

3.3 Machine specifications

3.3.1 Design

Casing: Galvanized steel (corrosion category III), with baffle plate in the inlet.

Filter cartridges: See filter table, section 9.0.

Air pressure tank: Powder coated

Automatic control: Filter regulation with digital display for adjusting cleaning time, cleaning interval, and shot down cleaning.

Collection bucket: Galvanized steel – 25 liter capacity.

3.3.2 Technical data, filter

Specifications

Model	No. of filters	Filter area [m²]	No. solenoid valves
GFB2 TOWER 6-2	6	60	2
GFB2 TOWER 9-3	9	90	3
GFB2 TOWER 12-4	12	120	4

Model	Max. Air flow	Noise emission	Collection bucket
GFB2 Tower 6-2	3.600 m³/h	86 dB(A)	25 Liter
GFB2 Tower 9-3	5.400 m³/h	89 dB(A)	25 Liter
GFB2 Tower 12-4	7.200 m³/h	94 dB(A)	25 Liter

Model	Housing	Air tank	Art. no.
GFB2 Tower 6-2	Galvanized	8 liter	15-471
GFB2 Tower 9-3	Galvanized	12 liter	15-472
GFB2 Tower 12-4	Galvanized	16 liter	15-473

Compressed air:	3,5 - 6 bar - Clean and dry air
Air consumption:	3 liter compressed air per shot
Power supply:	24VDC el. 230VAC (standard)
Temperature:	-10°C - +65°C
Corrosion class:	III
Sealing class.:	Class C

Temperature extracted air	Max 80°C
Temperature surroundings	-10°C - +65°C
Relative humidity must be below	< 90%

Differential pressure drop

Typical pressure drop:	1.000-1.500 Pa

The pressure drop in the filter will vary depending on the load and how dirty the filter cartridges are. The filter cartridges must be replaced, when the pressure drop exceeds 2.000 Pa.

Differential pressure drop is NOT allowed exceed 3.000 Pa.

Particle catch in the inlet functions as a diffusor and catches large particles, that could otherwise damage the filter medium.

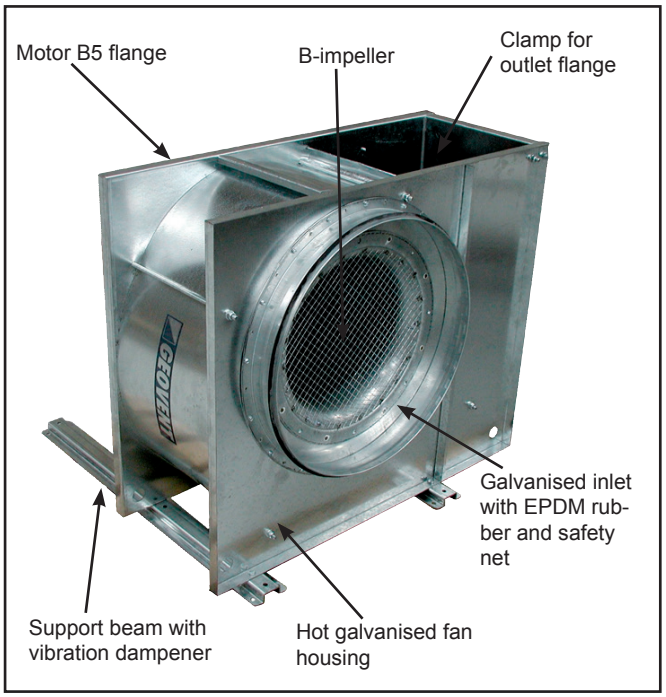
The particles fall into the bucket at the bottom of the filter.

3.3.3 Construction, MEF fan

Fan housing: 100% galvanised steel for optimal corrosion resistance. A support beam equipped with vibration dampeners as well as inlet with safety net, attached to all fans.

Fan wheel: Galvanized backward curved impeller.

Motor: B5/B35 flange/foot motor, direct drive, protection class IP 55. See manufacturer's manual (attached).



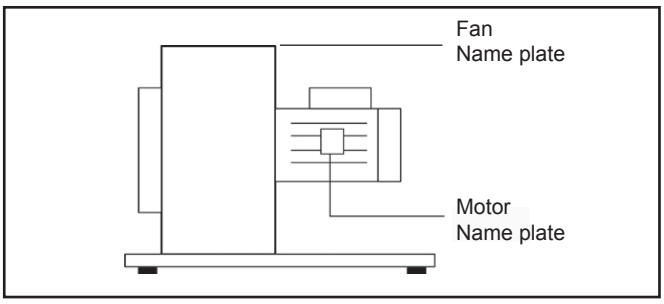
3.3.3 Technical data, MEF fan

The label of the fan is found on the top left on the motor side of the fan housing and contains fan type and data. Motor size (kW) and ampere consumption can be read on the name plate of the motor.

Temperature:

Extract temperature:	Max. 80°C
Ambient temperature:	Max. 40°C

Higher temperatures require the use of special motors. Contact Geovent for more information.



4.0 Transport, handling and storage

During transport in a truck or in another means of transportation the product must be securely packed in a box or a pallet and covered with a water proff material.
The product must be securely stowed in the truck so that it will neither tilt nor shift during transport.

During transport over a short distance e.g. in a stock or a factory, the product can be moved by means of a forklift or a stabeler.
When moved it must be secured that the product does not tilt or shift. And it must be secured that the limitations of the means of transportation is not exceeded.

Secure that there are no people around the product, when the product is moved.

The product must be placed in a dry place and covered securely, in order to secure that moist, metal parts or other substances do not damage the product.
It is not allowed to place anything on top of the product.

5.0 Assembly, installation and start of operation

5.1 Location

We recommend that the filter unit is placed indoor. Out-doors placing can give problems with condensation or water coming into the filter unit (due to the vacuum in the filter unit). Further there may be a problem with the electronics.
If the filter unit is placed out-doors, anyway, we suggest that the filter unit is placed under a protective roof or in a shelter to shield the filter from rain. Adding a termal insulation will reduce the risk for condensation.

Before installing the filter unit, please make sure that the optimum place for installation is selected. Is there room enough for the filter unit? Is there space enough for carrying out satisfactory service and change of filter cartridges?

Place the GFB2 filter upon a solid, flat foundation (e.g. a concrete floor) and anchor it.

5.2 Installation

For error-free performance, the product should be installed indoors, e.g. in a well-ventilated room. We do not recommend outdoor installation. If indoors installation is not possible, it must at least be installed under a roof.

The product is delivered complete, fully mounted and pre-programmed from factory, ready to be connected to the ducting system and the mains.
The filter is delivered complete, fully mounted and pre-programmed from factory, ready to be connected to the ducting system and the mains.

The following installation should be performed by a trained service engineer.

Procedure:

1. Place the product upon solid, flat foundation (e.g. a concrete floor) and anchor it. Allow space to perform filter changes.

2. Attach the product to circular ventilation tubes on both the clean side and the dirty side (the bottom tube connection is always the dirty side). Remember to seal the connection with joint filler and/or tape!

3. To ensure clear dilution, the discharge should be at least two metres over the ridgepole towards the atmosphere with a minimum discharge speed of 8 m/s.

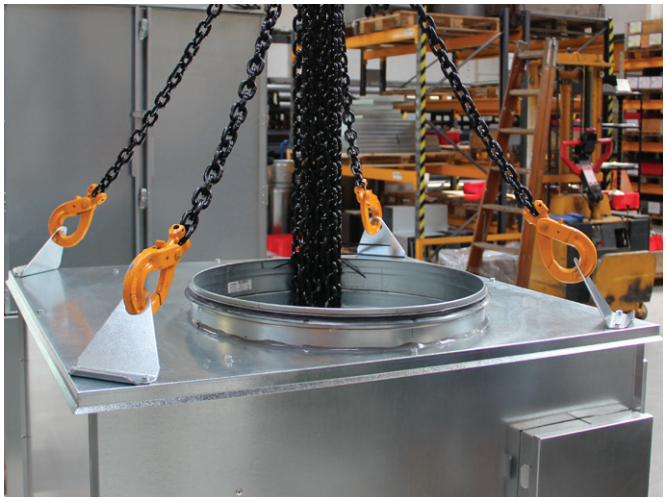
4. All electronic components must be installed by an authorised electrician. Protect the cable and connector from heat, moist, oil and sharp edges.

5. See for connection options in chapter 11.0.

6. The packaging is sorted and disposed of in accordance with local rules and regulations.

IMPORTANT:
Cleaning pressure can be adjusted from 3.5 to 6 bar pure dry air as needed.
Increasing the cleaning pressure to more than 6 bar gives a risk of damaging the filter media.

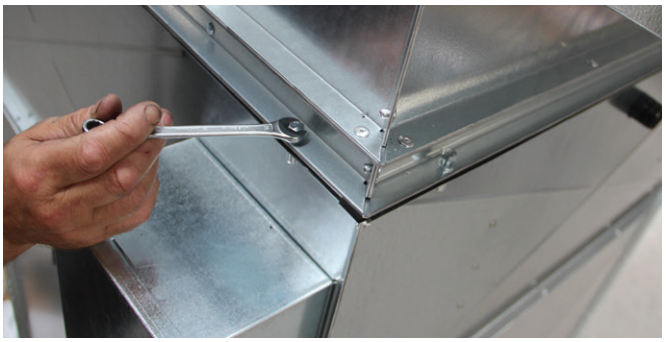
Installation of the fan



Raise the fan on the four lift brackets (these can be removed afterwards.)

The cover on the lower part must be removed before fitting the fan.
Place the fan right above the filter and lower it carefully.

Install the included 6 x 20 mm bolts and washers to secure the fan.



Tighten all the bolts with a 10 mm fork wrench.

Remove the lift brackets after installing the fan.

Connection diagram see page 10
Multi-circuit diagram see page 18

5.3. Control and test of the system

When the product is installed you must secure:

a. That the filter is placed on a solid, flat foundation and anchored to the ground or the wall, so that it cannot tilt.
b. That the doors of the product are securely closed.
c. That the complete system is tight.
d. That the suction in the system is according to specification.

Before finally putting the filter into operation its function should be tested and the cleaning cycle adjusted, so that it fits the application, in which it will be used.

Check that the pause interval on the cleaning system is appropriate for the actual amount of dust – adjust if necessary (see instructions for filter operation).
Check for vibration or noise issues during use of the GFH. Check that the entire system is completely sealed. In case of squeaking sounds, locate leakage and seal with joint filler.

We recommend checking the ventilation system to ensure, that it is delivering the amount of air which the system is proportioned for. Measure the amount of air and regulate using the regulation valve. In the event of overcapacity, the power usage can exceed the capacity of the fan motor, thereby causing the motor to burn out. See the fan manual.

6.0 Timer control panel

6.1 Operating the filter

The filter is delivered as standard with timer control, but it can be beneficial in some situations to allow the cleaning frequency to be controlled as a function of the filters pressure differentials. In other words, the filter runs a cleaning sequence, when it reaches a given pressure differential (that is, according to how large a pressure loss there is over the filter).

Therefore, be aware of whether the filter has been ordered with timer control or differential control when setting up the filter control.

Menu

How to access programming
Press SET
Press + and - to select the required function.
Press OK to confirm.

Increase or decrease the value of the parameter
Press OK to confirm and exit.
Press SET again to exit programming mode.

Display

The display shows Off if terminals 14 and 15 are broken.
The display shows -0- if terminals 14 and 15 are closed but 12 and 13 are broken (fan switch)

Cleaning function

The Cleaning function is programmable.The shock wave and timer control can be set in the function menu.

The shock wave should be adjusted for the current application. From factory, it is set to shoot every 350 seconds. The timer setting may be changed in F3.

Cleaning function with off fan

The function allows one or more cleaning sequences (the number selected in F13), when the fan is turned off.

The cleaning time is always as selected in F02, while the pause time is selected in F14.
The display alternately shows the number of seconds to cleaning and the code ”PCC”.

List of Functions

F02: Activation time.
Possible values: 0.5 - 5.00. Step 0.01
Default = 0.20

F03: Pause time, cetween shots:
Possible values: 001 - 999. Step 1
Default = 175

F04: Number of valves.
Possible values: 01 - 16
Default = Automatic

F05: Output voltage.
Possible values: d24 / a24 /115 / 230.
Default = a24

F06: Manual cleaning cycle.
Possible values: The number of valves set in F4
Press SET to activate.

F13: Cleaning cycles after fan stop.
Possible values: 01 - 99. Step 1
Default = 01

F14: Pause time between cleaning cycles after fan stop.
Possible values: 001 - 999. Step 1
Default = 8

F15: Service timer.
Possible values: 001 - 999. Step 1 (1=10 h)
Default = 100 (1000 h)

F16: Service alarms.
Possible values: 0 (off) -1 (on).
Default = 0 (off)

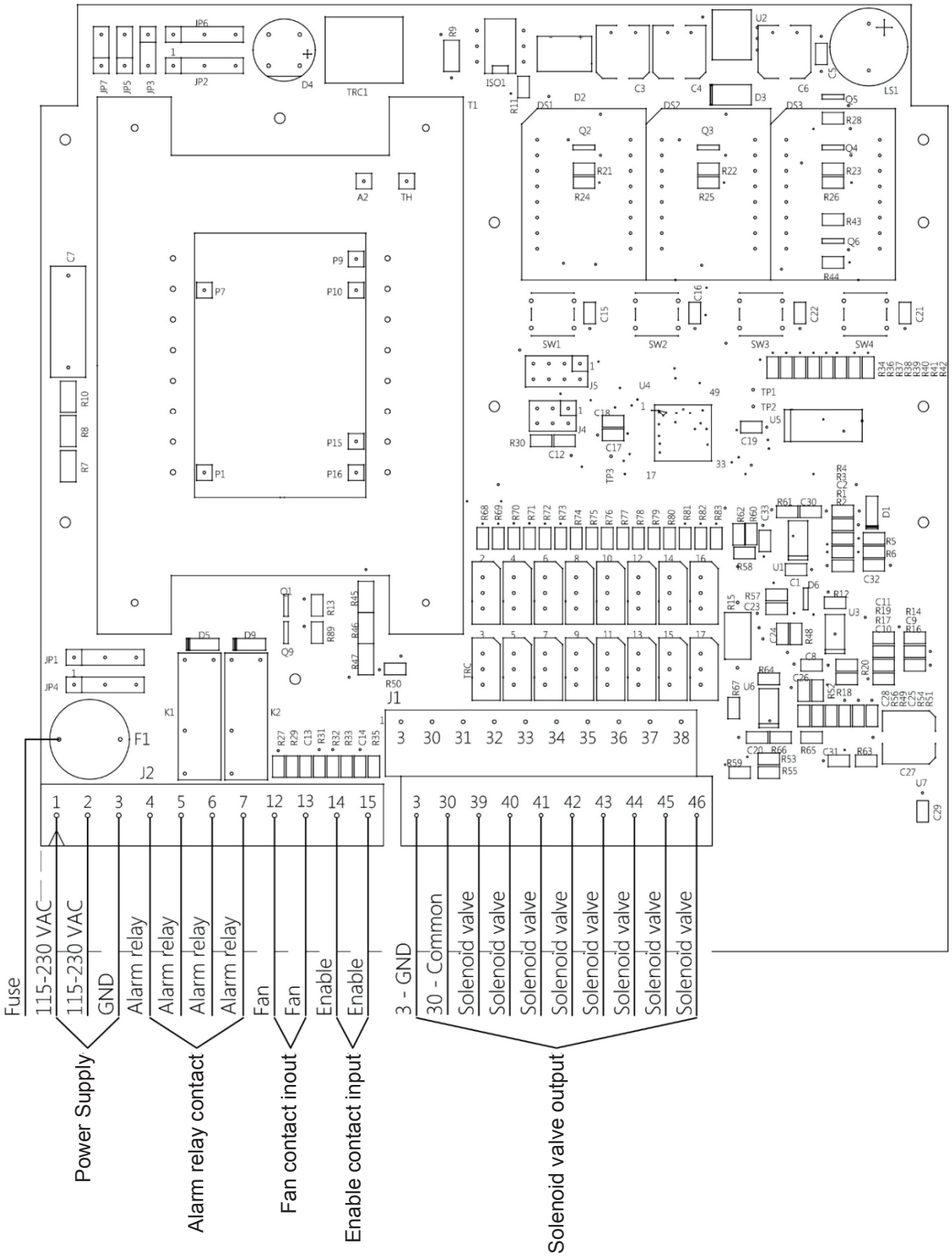
F17: Reset service timer.
Possible values: 0 (off) -1 (reset).
Default = 0 (off)

Note: The service timer will be reset and the F17 will be reset to 0 by setting F17 to 1.

Alarms:
The unit runs a number af checks during the start-up cycle and during normal operation.
The possible alarms and respective solutions are shown in the following table.

Alarm	Description	Action
E01	F05 set to 24Vdc - ac jumper detected.	**24Vdc**, switch the device off and move the ac/dc jumpers to dc. **24Vac,** Press OK, then press SET, set the function F05 using +/-, select A24 and press OK to confirm.
E02	F05 set to 24Vac - dc jumper detected.	**24Vac,** switch the device off and move the ac/dc jumpers to ac. **24Vdc,** Press OK, then press SET, set the function F05 using +/-, select d24 and press OK to confirm.
E03	F05 set to 24Vac or 24dc. Voltage out of range detected.	**24V valves,** switch the device off and move the output voltage selection jumper to 24V. **If the jumper is in the correct position**, press OK then SET, select the F05 function with +/- set the correct current and press OK.
E04	F05 set to 115V or dc. Voltage out of range detected.	**115V valves,** switch the device off and move the output voltage selection jumper to 115V. **If the jumper is in the correct position,** press OK then SET, select the F05 function with +/- set the correct current and press OK.
E05	F05 set to 230 V. Voltage out of range detected.	**230V valves,** switch the device off and move the output voltage selection jumper to 230V. **If the jumper is in the correct position,** press OK then SET, select the F05 function with +/- set the correct current and press OK.
E06	The current of the solenoid valve is lower than the minimum threshold or disconnected solenoid valve.	Check that the solenoid valve is connected correctly and the respective data. The alarm is self-reset.
E07	The current of the solenoid valve is higher than the maximum threshold.	Check that the solenoid valve is connected correctly and the respective data. The alarm is self-reset.
E08	Output short circuit. **Alarm cannot be reset**	Switch the filter off, check the solenoid valve, and switch the filter back on.
E11	Maintenance deadline reached.	Carry out maintenance.

Connections diagram



Supply voltage:	230V AC
Alarm relay:	No (Max 3A@250V AC)
Fan input:	Open = Fan off
	Closed = Fan on
Enable Cleaning:	Open = Cleaning disabled
	Closed = Cleaning enabled

2.1.3 Differential pressure control (OPTION)

- **In automatic mode (F01=1)**
  dp value alternating with **OFF** if the enabling switch (14-15) is off.
  dp value alternating with **-0-** if the enabling switch (14-15) is on but 12 and 13 are off.
  dp valve only if the fan is on and active.

- **I manual mode (F01=0)**
  OFF if the enabling switch is off (14-15)
  -0- if the enabling switch (14-15) is on and the fan is off

Manual operating mode F01=0

The economiser will work as a programmable cycle sequencer in manual mode. The connected outputs will be activated at the programmable frequencies. Manual mode can be activated by accessing the configuration menu and setting F01 to 0. F02 and F03 will set the activation time and the pause time, respectively.

Automatic operating mode F01=1 (Standard)

By selecting automatic mode (F01=1), the economieser will work autonomoulsy and carry out the pneumatic washing cycle only when needed. The device will start the washing cycle if the obstruction is higher than Threshold_DP_Start (F08). Washing is suspended when obstruction drops under Threshold_DP_Stop (F09) level until it reaches a value higher than the Threshold_DP_Start threshold once again. When washing is active, the economiser respects the times set in F02 (operating time) and F03 (pause time).

Automatic mode with forced cycle F01=2

Identical to the automatic mode, except for the fact that it is possible to obtain a cleaning cycle with the activation of the solenoid valves connected without reaching the Threshold_DP_Start (F08). The forced cleaning interval may range from 1 to 999 h and can be selected through function F22.

Proportional mode F01=3

With the proportional mode, the economiser will work in full autonomy, initially setting the DP_Start threshold (F08), activation time (F02) and pause time (F03). When the Start Cleaning threshold is exceeded, the solenoid valves are automatically activated in sequence. If the dp threshold drops below 15% at the end of an entire cycle of pulses of the connected solenoid valves, the washing is suspended until pressure returns to a value above the Start Cleaning dp value. If the dp value does not drop below 15% of the Start Cleaning threshold, the frequency of the time is automatically reduced in proportion with each entire cycle of pulses of the connected solenoid valves, until a minimum cycle time between solenoid valves reaches 10 seconds. The minimum threshold of 10 seconds has been chosen in order not to hamper the dispensing of air by the compressor connected to the filter.

Cleaning function with fan off (PCC)

This function allows to carry out one or more cleaning cycles (the number of cycles is defined by F13) when the fan is off.The on or off state of the fan may be determined by the state of contacts 12-13 (contacts open = fan off). If F11=0, or may be determined automatically (with F11=1) when the dp pressure drops under the threshold defined in F12.The pulse time of the valves will always be that defined in F02, while the pause time in this case is defined in F14.
The display alternatively showes the number of the valve activated and the word ”PCC”.

Number of output selection

The number of outputs (solenoid valves), on which the sequencer will run the cleaning cycle, can be selected. Cleaning will be carried out in order from the first to last solenoid valve. The valves can be adjusted by the F04 function.

dp 0 calibration (F07)

This function is used to reset dp reading with the fan off. Increase or decrease the value shown by pressing + and - as required. This value will be subtracted from the value read by the dp sensor.

dp sensor self-calibration

This function allows to reset dp reading with the fan off automatically.
Hold SET and OK at the same time with the device off.
The message CAL will appear after the start-up test.
Release the buttons. The unit will go back to normal state after a few instants.
Automatic calibration is complete.

Fuse
Fuses can be replaced with selected Amp consumption:
3A = 24Vdc / ac

List of Functions

F01: Activation time.
Possible values:
0 - Manual (Δp excluded)
1 - Automatic (Default)(Δp included)
2 - Automatic with forced cycle (Δp included)
3 - Proportional (Δp included)

F02: Activation time.
Possible values: 0.05 - 5.00. Step 0.01
Default = 0.20

F03: Pause time.
Possible values: 001 - 999. Step 1
Default = 020

F04: Number of valves.
Possible values: 01 - 16. Step 1
Default = Dependant on filter size

F05: Output voltage.
Possible values: d24 / a24 /115 / 230
Default = a24

F06: Manual cleaning cycles.
Possible values: 1 the number of valves specified in F04.

F07: Zero dp threshold.
Possible values: 0.00 kPa -3.99 kPa. Step 0.01
Default = 0.00 kPa

F08: Cleaning cycle start threshold.
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 0.40 kPa

F09: Cleaning cycle stop threshold.
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 0.24 kPa

F10: Max DP Alarm Threshold. (Filter Clogging)
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 3.00 kPa

F11: Fan on recognition mode.
Possible value: 0 = fan input
Possible value: 1 = pressure
Default = 0

F12: dp threshold for fan on recognition if F11=1.
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 0.10 kPa

F13: Cleaning cycles after fan stop.
Possible values: 01 - 99. Step 1
Default = 01

F14: Pause time betwen cleaning cycles after fan stop.
Possible values: 001 - 999. Step 1
Default = 10

F15: Service timer.
Possible values: 001 - 999. Step 1. (1=10 h)
Default = 100 (1000 h)

F16: Service alarm.
Possible values: 0 (disabled) -1 (enabled).
Default = 0 (disabled)

F17: Reset service timer.
Possible values: 0 (disabled) -1 (reset).
Default= 0 (disabled).

Note: The service timer will be reset and the **F17** will be reset to 0 by setting **F17** to 1.

F18: Precoating function enabling.
Possible values: 0 = (disabled) 1 = (enabled)
Default = 0 = (disabled)

F19: dp threshold for precoating function.
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 2.00 kPa

F20: Enabling Minimum DP Alarm function.
Possible values: 0 (disabled) 1 = (enabled)
Default = 0 (disabled)

F21: Min. DP Alarm Threshold (Broken Sleeve/Cartridge).
Possible values: 0.00 kPa - 3.99 kPa. Step 0.01
Default = 0.20 kPa

F22: Forced Cleaning Cycle (Available only in funktion mode F01 = 2).
Possible values: 1 h - 999 h. Step (1 h)
Default = 4 h

Alarms
The unit runs a number af checks during the start-up cycle and during normal operation.
The possible alarms and respective solutions are shown in the following table.

Alarm	Description	Action
E01	F05 set to 24Vdc - ac jumper detected	**24Vdc,** switch the device off and move the ac/dc jumpers to dc. **24Vac,** Press OK, then press SET, set the function F05 using +/-, select A24 and press OK to confirm.
E02	F05 set to 24Vac - dc jumper detected	**24Vac,** switch the device off and move the ac/dc jumpers to ac. **24Vdc,** Press OK, then press SET, set the function F05 using +/-, select d24 and press OK to confirm.
E03	F05 set to 24Vac or dc. Voltage out of range detected.	**24V valves**, Switch the device off and move the output voltage selection jumper to 24V. **If the jumper is in the correct position,** press OK then SET, select the F05 function with +/- set the correct current and press OK
E04	F05 set to 115V eller dc. Voltage out of range detected.	**115V valves,** switch the device off and move the output voltage selection jumper to 115V. **If the jumper is in the correct position,** press OK then SET, select the F05 function with +/- set correct current and press OK
E05	F05 set to 230 V. Voltage out of range detected.	**230V valves**, switch the device off and move the output voltage selection jumper to 230V. **If the jumper is in the correct position,** press OK then SET, select the F05 function with +/- set correct current and press OK
E06	Solenoid valve current lower than minimum threshold or disconnected solenoid valve.	Check correct connection of the solenoid valve and respective data. The alarm is self-reset.
E07	Solenoid valve current higher than maximum threshold.	Check correct connection of the solenoid valve and respective data. The alarm is self-reset.
E08	Output short circuit. **Alarm cannot be reset**	Switch the device on and back on after having checked the solenoid valve system.
E09	dp maximum pressure exceeded (F10)	Check state of filtering elements.
E10	dp sensor hardware offset out of range	The self-calibration of the dp sensor has determined that a value is out of range. Disconnect the air tubes and repeat the function. Take the device to be serviced if the alarm occurs again.
E11	Maintenance deadline reached	Carry out maintenance
E12	dp sensor full-scale value reached	Check state of filtering elements. **Important:** Running in this condition may damage the device.
E13	Minimum DP alarm value ranging from F12 to F21 (Warning: The alarm is generated with a fixed delay af 60 seconds)	Check the status of the filtering elements.

6.2 When the product has been installed

When assembly of the filter is complete, installed correctly and ready for use, there will not be any interaction between the user and the filter besides emptying the bucket. Naturally, the user should be aware of whether the suction in the exhaust system is correct. See section 7.0 Maintenance.

During filtration of processes in which the filter media are exposed to high loads, it may be necessary to use Prekote. Prekote is a granulate, which is applied to the filter and increases the life expectancy of the filter media.
See the separate instructions on this or contact Geovent for more information.

IMPORTANT: It is imperative that the cleaning cycle intervals are adjusted according to the load put on the filter.
First when installing and secondly after a period where it is evaluated if the intervals between cleaning shots should be shorter or longer.
If the shots are fired too often, it will shorten the lifespan of the filter media and cost more energy.
Are the shots fired too seldom there will be more strain on the fan making fitration more costly and ineffective.

7.0 Control, test and maintenance

7.1 Control

Before finally putting the filter into operation its function should be tested and the cleaning cycle adjusted, so that it fits the application, in which it will be used.
Check that the pause interval on the cleaning system is appropriate for the actual amount of dust – adjust if necessary (see instructions for filter operation).

Check for vibration or noise issues during use of the product. Check that the entire system is completely sealed. In case of squeaking sounds, locate leakage and seal with joint filler.

We recommend checking the ventilation system to ensure, that it is delivering the amount of air which the system is proportioned for. Measure the amount of air and regulate using the regulation valve. In the event of overcapacity, the power usage can exceed the capacity of the fan motor, thereby causing the motor to burn out. See the fan manual.

7.2 Maintenance

A qualified service engineer should check the entire exhaust system at least once a year.

Periodic maintenance of the filter:

- All electronic parts should be checked yearly
- Check that the supply of compressed air is clean and dry to avoid condensation causing damage to the filter cartridges and solenoid valves.
- Check the pressure loss over the filter and change the filter cartridges if pressure loss exceeds 2.000Pa.
- Regularly check the filter's clean side for dust particles and change filter cartridges in the event of leakage.

Periodic maintenance of fan

- The wheel and fan housing should be rinsed once a year or as needed. This can be done with a cleaning brush and soapy water. Remember to disconnect power before cleaning and to dry off with a dry cloth. This will ensure the fan a longer life.

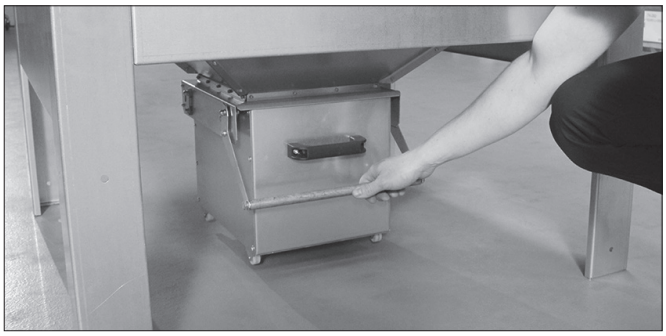
- Maintenance of the motor must be in accordance with the manufacturer's instructions. See the attached manual.

Only use original parts.
Access to the inner side of the fan housing and the fan wheel is from the rear of the fan. Disconnect power and remove the motor flange by loosening the bolts.

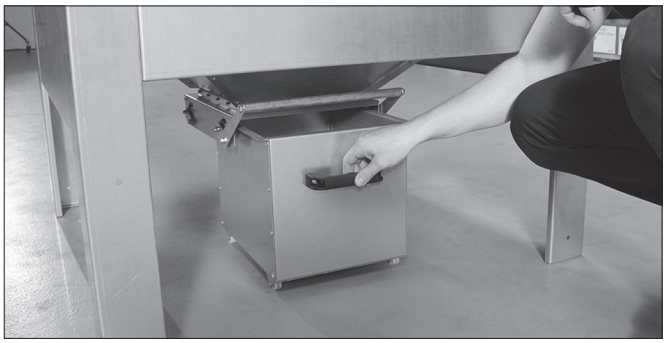
Emptying the collection bucket

Empty the bucket when it reaches around 2/3 capacity, otherwise it may place further strain on the filter cartridges. Following this, dispose of the bucket's content responsibly according to existing regulations.

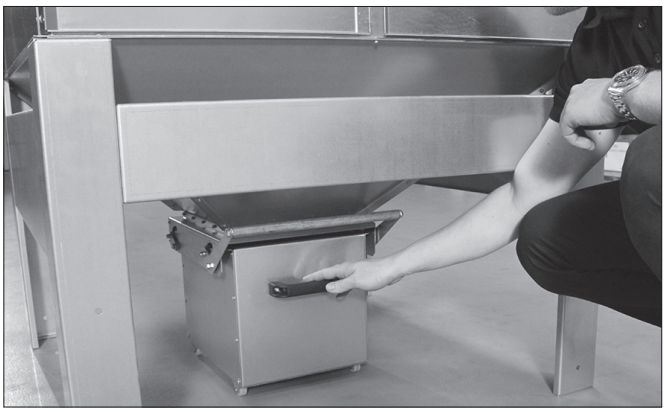
Only empty the bucket after switching off the system



1. Pull the handle up.



2. Pull/roll out bucket and empty.



Roll bucket in and push handle down while holding.

Opening and closing the door

1. Loosen the bolts, turn the latch 90° to the left.

2.The door opens (the filter can be replaced)

3. After Inspection or filter change, close the door again.

4. Turn the latch 90° to the right, while holding the door in place.

5. Tighten the bolts until the latch is tightly secured to the door.

Security Check:

1. Check that all 4 locks are tight so they cannot be loosened by hand.

2. Pull the handle, to be sure thet it is locked.

7.3 Replacing the filter cartridges

The filter medium should be changed after about 4.000 – 8.000 hours of operation or after a maximum of 4 years. This depends partially on the strain on the filter, and partially on what its use has been.

Procedure:

1. Before opening the door of the filter, it is important that the service technician takes the necessary personal safety precautions such as wearing a respirator and gloves that meet the Working Environment Authority's rules for working with contaminated dust.

2. All power must be disconnected and unable to be activate during servicing.

3. Loosen all screws holding the filter cartridge in place.

4. Turn the filter to remove it.

5. Place the contaminated filter in a plastic bag and dispose of it according to rules for hazardous waste.

6. Mount the clean filter cartridge by repeating the above steps in reverse order.

7. Check the filter unit for functionality and leakage before use.

How to optimize your filter

1. Choose the correct filter medium for the job
2. Clean using correct air pressure
3. Correct injection sequence setting
4. Daily addition of Prekote
5. Ensure that the filter medium is dry
6. Shut down cleaning

8.0 Cleaning

The outside of the product is cleaned by means of a vacuum cleaner or a damp cloth.

REMARK: Do not clean the product during operation. Turn the product off before cleaning.

The filter self-cleans automatically as a compressed air pulse is sent down through the filter cartridges, causing the particles on the textile of the filter to be blown off and collected in the bucket below.
Do not open the doors during operation to avoid injury.

Cleaning of the inside of the product is not recommended.

When the doors of the product are opened, you must wear protection gloves, eye protection and a suit covering your body.

9.0 Troubleshooting

In the event of problems caused by increased pressure loss, low amounts of air etc., go through the following points:

Dust proceeds to come out of the inlets
The cleaning system is having to “blow” too much dust off the cartridges at one time and the dust is seeping into the tubes. Reduce the pause interval on the filter control until the dust no longer comes out through the inlets.

Pressure loss increases quickly during use and air level falls accordingly
The cleaning system cannot keep up with the dust level.
- Reduce the pause interval until the pressure loss is normal again. If this fails, the filter cartridge must be changed.
- Increase cleaning pressure (to a maximum of 6 bar, as the filter media could otherwise be damaged).
- Increase after-cleaning.
- Use Prekote. Contact Geovent for more information.

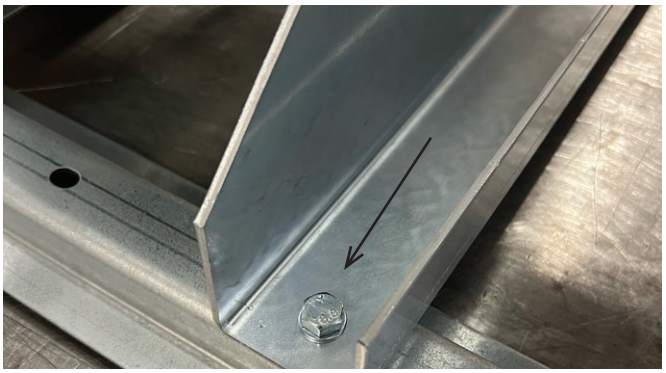
The pressure switch sounds alarm
Either the filter cartridge is torn or needs to be replaced immediately (pressure differential is too low) or the filter cartridges are nearing the end of their lifecycle, and need to be replaced (pressure differential too high).

Filter media and their use (suggested)

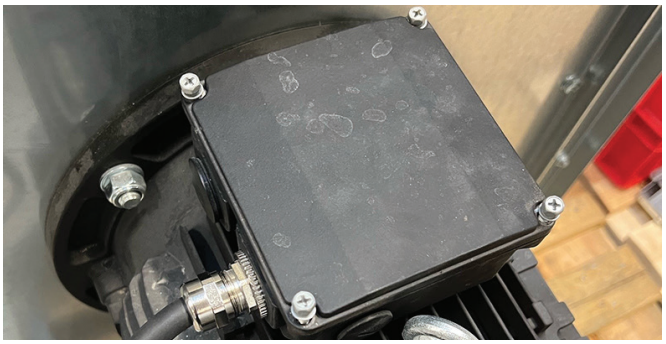
Application	15-335	15-480 FL	15-108 Dustbox	15-482	03-260 HVU	03-259 HVU	03-260 HVU-it	15-480A	15-481 FL
Oil mist	X								X
Dry welding smoke									X
Oil saturated welding smoke									P*
Foundry									X
Zink					X	X	X		
Powder coating		X						X	
Plasma / lazer cutting				P*					
Sandblasting / Sand		X							
Sandblasting / Glass								M*	
Sandblasting / enamel, steel, aluminium					X	X	X		
Grinding			X		X	X	X		X
Unspecified dust - no smoke		X							
Milk powder									X
Spice								A*	
Tobacco								X	
Paper								X	
Chalk									X
Cement									X
Saw dust								A*	
	*Notes: P = Prekote			M = Moisture resistant			A = ATEX approved		

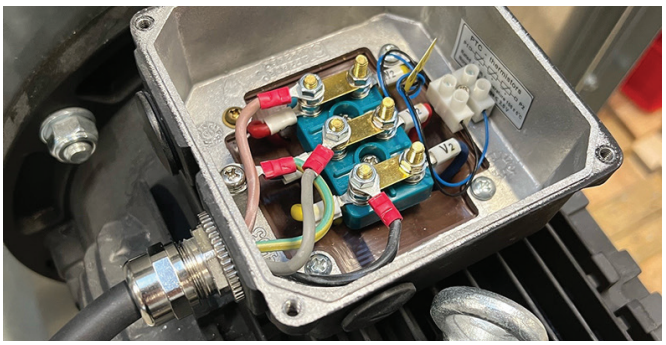
Wheel replacement and engine replacement on GFB2 Tower

- Remove the roof of the GFB2 Tower.
- Remove the back of the top.

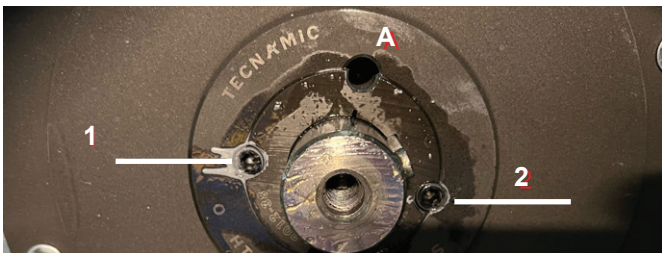


Remove the motor flange and motor support.

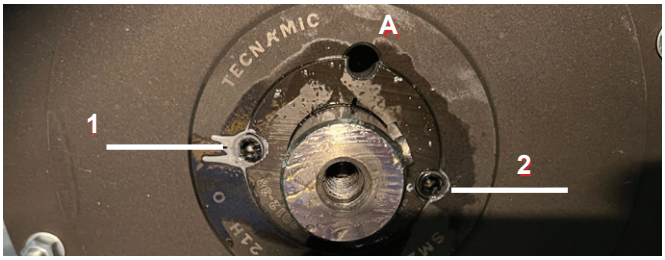




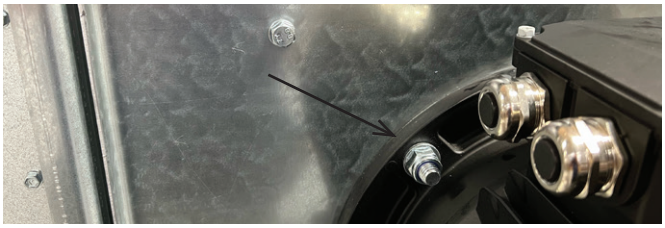
Remove all cables.
Now lift the motor flange with motor and support out of the fan housing.
Measure the position of the wheel on the axle before removing it.
(Measure the distance between the back of the wheel and the motor flange)
This measurement must be used when reinstalling the wheel.



- Remove the fan wheel by loosening the grub screws 1 and 2 on the taper lock. Move one of the grub screws into the empty hole A and screw it in so that the taper lock loosens. Then remove the wheel from the axle.
- When installing a new wheel, tighten the grub screws slightly so that the taper lock is not too loose.
- When the wheel is placed on the axle, it should be at the same distance that was measured during removal. Then tighten the grub screws.
- Tighten the grub screws evenly, starting with screw 1 and then screw 2, so that the taper lock does not settle unevenly.
- Once the grub screws are evenly tightened, tighten them with a torque wrench.



- Start at grub screw 1 and tighten evenly up to 25 nM. Then tighten grub screw 2 up to 25 nM.
- The wheel is now tightened with the correct torque.



If motor change is needed

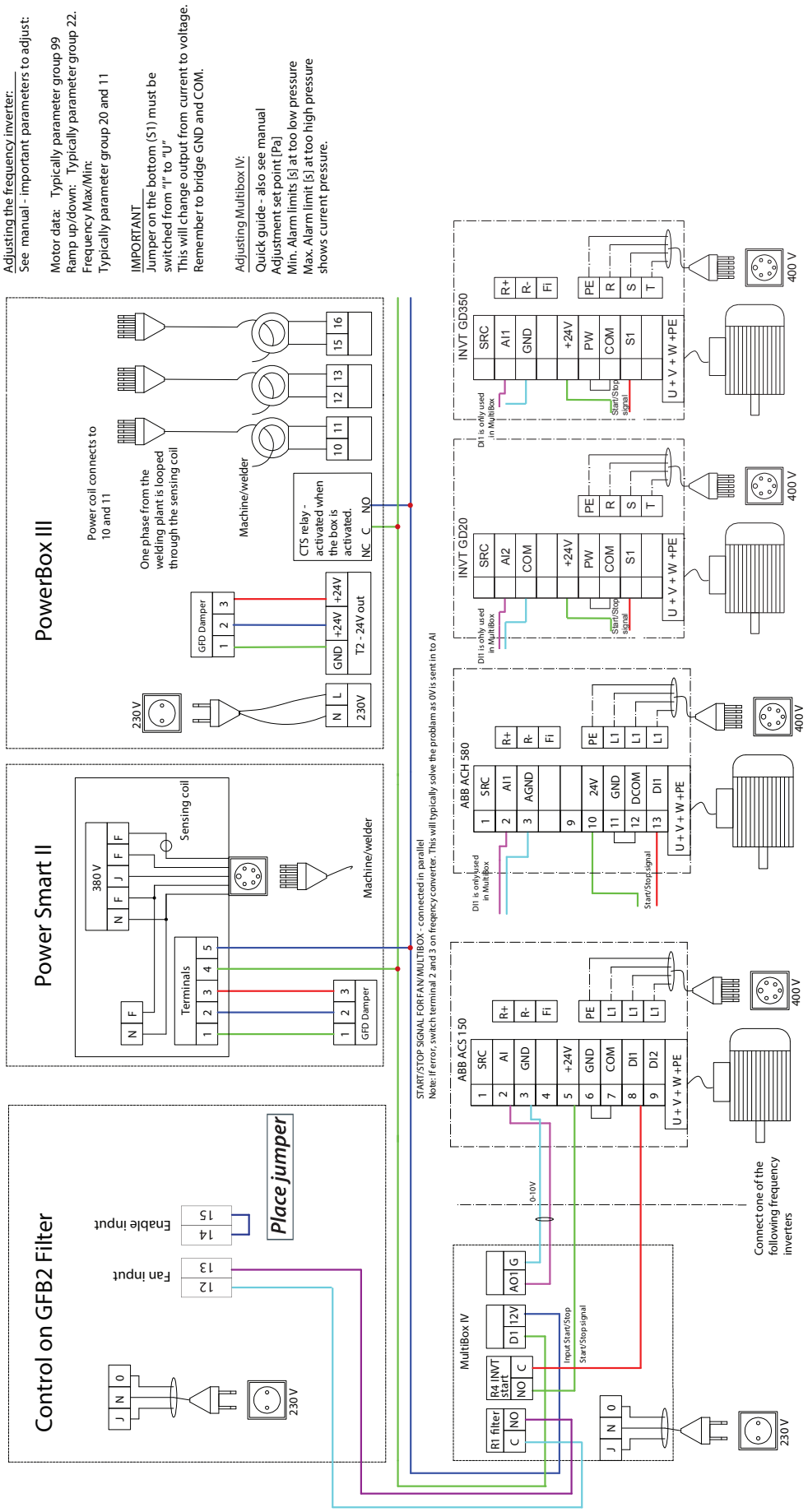
- If you need to change the motor, loosen the bolts holding the motor to the fan housing/motor flange.
- After mounting the motor on the fan housing, reinstall the motor support.
- Remove the motor and replace it with the new motor, which is to be fastned with the bolts to the fan housing/motor flange
- Ensure that the wheel can be turned without noise and that the wheel does not touch the suction nozzle.

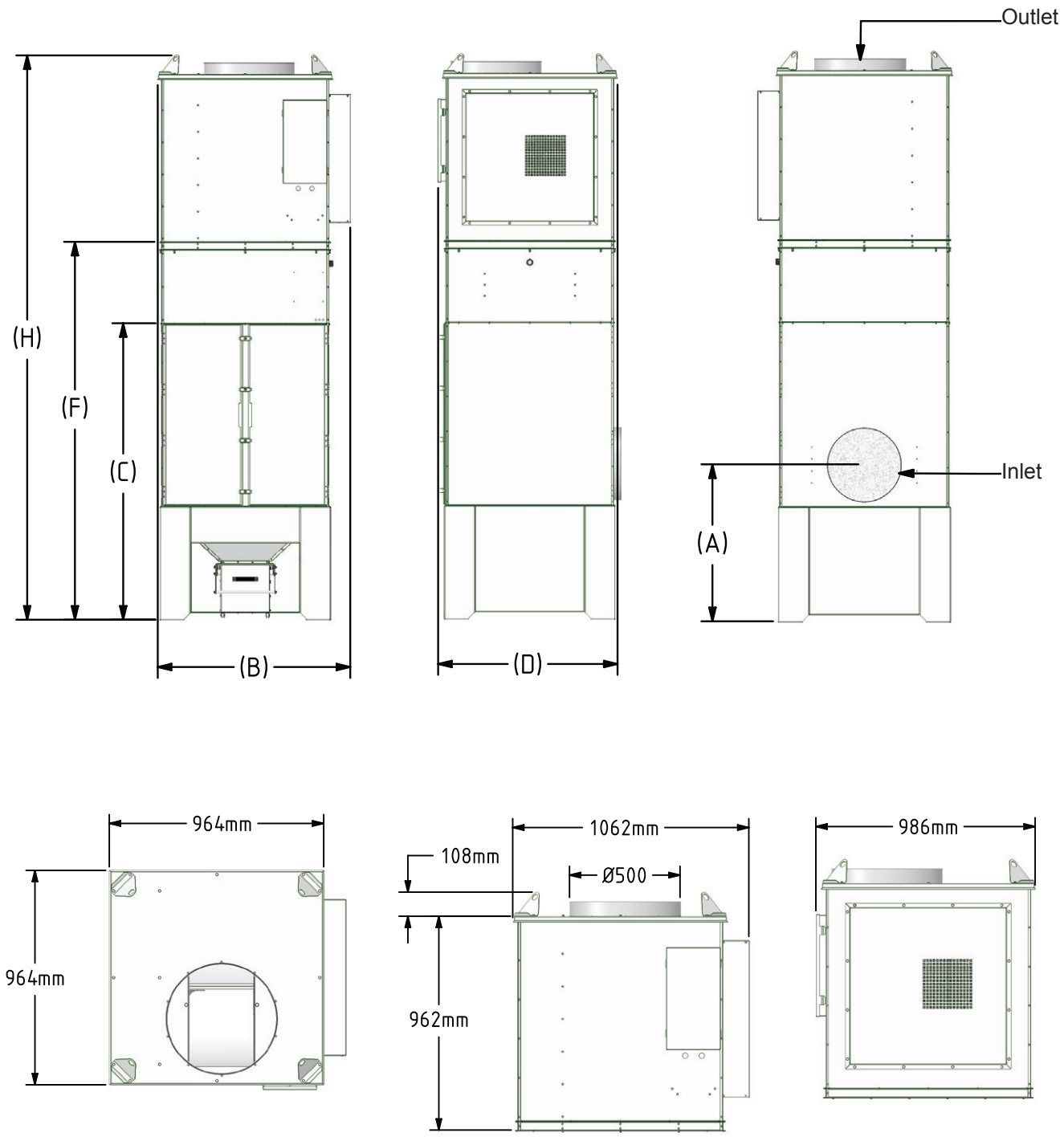
- The fan wheel has now been changed and the fan is ready to be rewired for start-up.
- The fan is now ready to be rewired and started up again.

Note: MAKE SURE THE FAN HAS THE CORRECT OPENING DIRECTION.

- Mount the back of the top.
- Mount the roof.

11.0 Multi coupling diagram





GFB2 Tower 9-3

Model/Dimension [mm]	A	B	D	H	Inlet	Outlet	Weight	Casing
GFB2 Tower 6-2	810	985	910	3040	ø315np	ø400np	290 kg	Galvanized
GFB2 Tower 9-3	855	1060	985	3100	ø400np	ø500np	360 kg	Galvanized
GFB2 Tower 12-4	900	1230	985	3150	ø500np	ø500np	480 kg	Galvanized

10.0 Dismantling, disabling and scrapping

Deactive the product by disconnection the electrical mains. Dismantle the compressed air pipes and other tubes etc.

When you dispose of the product you should dismantle the filter elements as described in chapter 7.3.It is very important that the instructions of this manual is followed in order to avoid contamination of people and the environment!

The inside of the product must be cleaned by means of a vacuum cleaner with a filter which suits the purpose.

Dismantle the electronics, wires and cables and put these into a suitable bag. Afterwards dispose of it according to local regulations.

Dismantle the metallic parts by unscrewing screws and bolts. Afterwards cut the larger pieces into smaller pieces and dispose of it according to local regulation.

BEWARE of sharp edges of the metallic parts which could harm persons etc.

The packing material must be sorted according to local regulation in order to be able to reuse the material.

12.0 Liability

Warranty
Geovent A/S grants a warranty for products, which are defective, when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after the date of shipment.

No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

Wear on parts such as filter cartridges and hose is not included in the warranty.

User liability

In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this instruction manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

Please refer to the current sales and delivery conditions at www.geovent.com

13.0 Declaration of conformity

The manufacturer: GEOVENT A/S
HOVEDGADEN 86
DK-8831 LØGSTRUP

hereby declares that:

The product: GeoFilter GFB2 Tower
Model: GFB2 Tower 3-1,
GFB2 Tower 6-2,
GFB2 Tower 9-3,
GFB2 Tower 12-4

complies with the relevant parts of the following directives and standards:

Directive 2006/42 / EC of the European Parliament and of the Council of 17 May 2006 on machines and amending directives 95/16 / EC

This declaration is no more valid if changes are made to the product by others than the manufacturer.

Authorized to collect the technical file:

Lise Cramer

Date: 03.11.2021

Position: Director
Name: Thomas Molsen

Signature : _____

14.0 Spare part list

Varenr.	Beskrivelse
92-214	Timer control panel GFB2 TOWER (mounted as standard)
92-214B	Differential pressure control panel GFB2 TOWER
93-VNP-208	Solenoid valve 24V

15-480FL	FT/11 – 99,9% at 0,3µm (grinding dust / All-Round)
15-480AFL	FT/11 - 99,9% at 0,3µm ALUTEC (All-Round)
15-481FL	FT/13 – 99,9% at 0,3µm (welding smoke)
15-482FL	FT/18 – 99,9% at 0,3µm (laser/plasma) PTFE (for GFB HD)

GEOVENT

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