



RFS 180

Flue gas cleaning and filter system



**Keep this manual to hand and in good condition for future reference.
Please read this operating manual carefully before using the machine.**

Translation of the original operating instructions

Operating instructions

534-04-051, 1, en_GB

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1 Information about the manual

1.1 Symbol legend

Safety instructions

Safety instructions in this manual are indicated with symbols. The safety instructions are introduced by key words which state in words the extent of the hazard.

Comply with safety instructions under all circumstances, and act with care in order to avoid accidents, personal injury, or material damage.

 **DANGER**
... indicates a situation of immediate danger which will result in death or severe injuries if it is not avoided.

 **WARNING**
... indicates a situation of possible danger which can result in death or severe injuries if it is not avoided.

 **CAUTION**
... indicates a situation of possible danger which can result in minor or slight injuries if it is not avoided.

 **NOTICE**
... indicates a situation of possible danger which can result in material damages if it is not avoided.

Tips and recommendations

 ... emphasises useful tips and recommendations as well as information for efficient and trouble-free operation.

OK / NOK

| Symbols | Explanation |
|--|--|
|  | Result is okay. |
|  | Result is not okay. Procedure when troubleshooting. |

1.2 Contents of the operating manual

- This operating manual describes the safe and proper use of the machine.
- All instructions in this manual must be strictly followed without exception.
- The operating manual is an integral part of the machine. It must therefore be kept in the direct vicinity of the machine and be accessible at all times.
- The operating manual must always accompany the machine.

1.3 Copyright

- This instruction manual is to be treated as confidential. It is intended solely for those people who are to work on or with the machine.
- All descriptions, texts, drawings, photos and other depictions are protected by copyright and other commercial laws.
- Any unauthorised use is prohibited.
- This manual, in its entirety or parts thereof, may not be transferred to third parties or copied in any way or form, and its contents may not be used or otherwise communicated without the express written consent of the manufacturer. Infringement of these rights may lead to a claim for compensation. The right to further claims is reserved.
- We reserve all rights in exercising commercial protection laws.

1.4 Liability and warranty

- The contents and instructions in this manual have been compiled in consideration of current regulations and state-of-the-art technology as well as based on our know-how and experience acquired over many years.
- The manufacturer shall not be liable for damage and/or faults resulting from the disregard of instructions in the manual.
- The text and images do not necessarily represent the exact product that has been delivered. The images and graphics are not depicted on a 1:1 scale. The product that has been delivered, may have custom-built specifications, add-on options or recent technical modifications and may therefore deviate from the descriptions, instructions and images contained in the manual.
- We reserve the right to make technical changes to the product in order to improve the properties of use and further product development.
- The guarantee period is in accordance with national guidelines. Details may be found on our website, www.felder-group.com.
- Should any questions arise, please contact the manufacturer.

1.5 Training

- All those appointed to work on or with the machine must have fully read and understood the manual before commencing any work. This requirement must be met even if the appointed person is familiar with the operation of such a machine or a similar one, or has been trained by the manufacturer.
- Knowledge about the contents of this manual is a prerequisite for protecting personnel from hazards and avoiding mistakes so that the machine may be operated in a safe and trouble free manner.
- It is recommended that the operator requests proof from the personnel that the contents of the manual have been read and understood.

2 Safety instructions

2.1 Intended use

- From a safety point of view, the machine is only suitable for extracting vapours and dust particles produced during laser processing with a CNC gantry machine from the Felder Group.
- The filtered extracted air must be discharged into the outside air to a safe place and must not be discharged directly into the recirculated air.
- The term "proper use" also refers to correctly observing the operating conditions as well as the specifications and instructions in this manual. The appliance may only be operated with parts and accessories recommended by the manufacturer. Operational safety is only guaranteed when the appliance is used for the intended purposes. Never leave the machine unattended whilst in use.
- Any use, other than that of the intended purpose of the appliance shall be considered improper and is therefore not permitted. All claims made, against the manufacturer and its authorised represen-

tative regarding damage resulting from improper use of the appliance will be rejected. The operator is solely liable for any damage that results from improper use of the machine.

2.2 Making changes and modifications to the machine

- In order to avoid potential hazards and to ensure optimum performance, no modifications, alterations or changes may be made to the machine that have not been explicitly approved by the manufacturer.
- All the pictograms, signs and labels affixed to the machine must be kept visible, readable and may not be removed.
- Pictograms, signs and labels that have become damaged or unreadable must be replaced promptly.

2.3 Responsibilities of the operator

- The machine may only be operated if it is in proper working order and in safe condition.
- The general condition of the machine must be checked and the machine must be inspected for visible defects each time before it is switched on.
- Do not leave the machine running unattended.
- Secure the switched-off machine against unauthorised operation (padlock on the main switch, remove the key from the operating mode selector switch, block off the area around the machine, pull out the mains plug etc.).
- In addition to the safety advice and instructions specified in this operating manual, any local accident prevention regulations and general safety regulations applicable to the machine's area of use, as well as any applicable environmental protection regulations, must be observed and complied with.
- The operator and designated personnel are responsible for the trouble-free operation of the machine as well as for clearly establishing who is in charge of installing, servicing, maintaining and cleaning the machine. Keep children away from machines, tools and accessories.

2.4 Operator requirements

- Only authorised and trained operators may work on and with the machine. An operator is a person who, on the basis of their technical training, knowledge and experience as well as knowledge of the relevant regulations, can assess the work to be carried out and recognise possible dangers.
- If they lack the necessary knowledge for working on or with the machine, they must be trained. Responsibility for working with the machine (installation, service, maintenance, overhaul) must be clearly defined and strictly observed.
- Only those people who can be expected to carry out their work reliably may be given permission to work on or with the machine.
- Personnel must refrain from working in ways that could harm others, the environment or the machine itself.
- It is absolutely forbidden for anyone who is under the influence of drugs, alcohol or reaction-impairing medication to work on or with the machine.
- The machine may only be operated by an adult, that is without mental limitations or under the supervision of such a person.
- The operator is obliged to immediately report any irregularities with the machine that might compromise safety to the operator.

2.5 Work safety

- Following the safety advice and instructions given in this manual can prevent bodily injury and material damage while working on and with the machine.
- Failure to observe these instructions can lead to bodily injury and damage to or destruction of the machine.
- Disregard of the safety advice and instructions given in this manual as well as the accident prevention regulations and general safety regulations applicable to the operative range of the machine shall release the manufacturer and their authorised representatives from any liability and from any compensation claims.

2.6 Personal protective equipment

2.6.1 Mandatory safety equipment

When working on or with the machine, the following must always be worn by personnel:

| Please note | |
|---|--|
|  | Safety goggles: Protection to prevent damage to eyes. |
|  | FFP3 respiratory mask: For protection against harmful vapours and dust particles. |
|  | Chemical-resistant protective gloves: For protection against harmful dust particles, that could be absorbed through skin contact. |

2.7 Residual risks

The machine has undergone a hazard analysis. The design and construction of the machine are based on the results of this analysis and correspond to state-of-the-art technology. The machine is considered operationally safe when used properly. Even if the safety measures are complied with, there are still certain associated risks that must be considered when working on the machine.

Generally applicable residual risks

- Crushing by being caught between moving parts.
 - Do not reach into the area of moving parts.
- Risk of damage to health from gas and dust.
 - Connect the dust extraction system in accordance with the instructions and make sure that it is working properly.

Disorder at the workplace

Loose objects or objects that are lying around can cause severe injuries.

- Ensure that there is sufficient space to work around the machine.
- Remove loose objects from the working area.
- Keep the work area orderly and clean.

Standing on the machine

The covers or projecting components of the machine are not suitable for standing on them. If the machine falls down, severe breaks can occur.

- It is forbidden to climb onto the machine.

Damage to electrical components or their insulation

Damaged electrical components or damage to their insulation cause deadly electric shocks.

- Work on electrical fittings may only be carried out by qualified personnel and in strict observance of the safety instructions.
- Disconnect machine from power supply and secure against restarting before carrying out work at electrical devices.



2.7.1 Transport, setup, installation and disposal

Improper transport

Improper transport can cause the machine to tilt or fall. This can cause severe crushing.

- Transport the machine as carefully as possible. Avoid mechanical vibration.
- Clean the working area.
- Only use suitable lifting gear that has a sufficient load-carrying capacity.
- Keep the machine's centre of gravity in consideration.
- Take measures to prevent the machine from slipping.
- Never lift loads over a person.
- Do not stand below suspended loads.

Incorrect setup and installation

Serious injuries

- Before assembling and installing the machine, check to make sure it is complete and in good condition.
- Only assemble a machine when all of the parts are complete and intact.
- Do not setup machine in areas with high electromagnetic fields.
- Keep the work area orderly and clean. Components and tools that are not put in their correct place or put away may cause accidents.
- Place the machine on a level, non-slip and vibration-free surface.
- Do not setup machine in escape routes.
- Only place machine within buildings.
- The working area must be adequately lit.

Deficient installation of the extraction hoses

The deficient installation of the extraction hoses can cause fire and explosions in the extraction system. This can cause severe personal and material damage.

- Only use flame-retardant extraction hoses.
- Only use electroconductive extraction hoses.
- Ground extraction hoses against electrostatic charge.

2.7.2 Adjustments tool changes, operation

Improper adjustment and setup

Serious injuries

- Adjustment and setup may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.
- Before beginning any maintenance work on the machine, switch it off and secure it against accidentally being switched on again.
- Adjustments to the machine may only be done once the machine has stopped.
- Only insert a filter when the machine is at a standstill.
- Before commencing any work with the machine, inspect it to ensure that it is complete and in technically good condition.
- Ensure that there is sufficient space to work around the machine.

Surpassing or falling below the allowed ambient temperature

Surpassing or falling below the allowed temperatures can cause malfunctions of the machine and unpredictable machine movements, which can lead to severe personal and material damage.

- Only operate machine within the listed temperature range.

Incorrect commissioning

Serious injuries

- Only start the machine when the extraction hose is properly connected to the extraction connection.
- Do not use the machine in areas with high temperatures, high humidity or in flammable and explosive atmospheres.
- Before commissioning, make sure that the sealing ring, the extraction connection and extraction hose are firmly seated and that no air escapes.
- Check the filter elements regularly to avoid faults and damage to the unit.
- Only use original filter elements and accessories so as not to impair the service life and efficiency of the machine.
- Keep a minimum distance of 150 mm between the emission source and the discharge air opening.
- Do not cover or block the extraction and air outlet during use.
- Ensure that the motor can always cool sufficiently.

2.7.3 Maintain and troubleshoot

Improper operation of the machine

Serious injuries

- Work on the machine may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.
- Only perform work when the machine is disconnected from all energy sources and an unintentional restart is prevented.
- The machine has to be switched off when carrying out any work on the machine.

Improper work at the electrical units

Deadly electric shocks

- Work on electrical fittings may only be carried out by qualified personnel and in strict observance of the safety instructions.
- Disconnect machine from power supply and secure against restarting before carrying out work at electrical devices.

Improper maintenance

Serious injuries

- The machine should only be serviced by trained operators who are familiar with the operation of the machine and who observe all safety regulations.
- Only perform maintenance work when the machine is disconnected from all energy sources and an unintentional restart is prevented.
- Disconnect machine from power supply before carrying out work at electrical devices.
- Wait for all the moving parts to come to a standstill.
- Properly reinstall all components after the maintenance work and check functionality.
- Keep a record of all maintenance work.

Pollutant-laden vapours and dust particles

Serious damage to health and respiratory diseases

- Wear required protective equipment during maintenance work:
 - Respirator mask, protection class 3
 - Safety goggles
 - Chemical-resistant protective gloves
- Dispose of the filter in accordance with the country specific hazardous waste regulations.

Improper correction of malfunctions

Serious injuries

- Wait for all parts to be still.
- Disconnect machine from all energy sources and secure against restarting.

2.8 Foreseeable misapplications

The examples given highlight possible dangers. This list makes no claim to completeness.

This information is intended to enable users to assess hazards and risks.

General misuse

- Disregarding operating instructions.
- Operating the machine, even if the operation manual is not complete or is not available in the language of the country it is being operated in.
- Use of tools or materials which are not intended for processing on the machine.
- Using spare parts, accessories and equipment that have not been approved by the manufacturer.
- To change or modify the machine.
- Climbing on the machine.

Misuse during operation

- Operating the machine carelessly.
- Extracting non-suitable materials. → *Chapter 2.9 'For the extraction of suitable materials' on page 7*

2.9 For the extraction of suitable materials



Before commissioning, check the suitable materials for machining in the machine operating instructions for a CNC gantry machine.

For safety reasons, the machine is not suitable for extracting:

- Aluminium, copper, brass and wood dusts
- explosive dusts
- explosive gas-air mixtures, explosive dust-air mixtures and explosive hybrid mixtures (e.g. mixtures of flammable gases, flammable dusts and air)
- explosive dusts or quantities of dust during work involving sparks or sources of ignition (e.g. welding, steel grinding, etc.)
- Statically adhesive or sticky materials
- Liquids

2.10 What to do in an emergency

- If contaminated vapours and dust particles have been inhaled, leave the danger area immediately and move to fresh air. Open windows and doors. Loosen tight clothing around the neck and chest to keep the airways clear.
- In case of eye or direct skin contact with contaminated vapours and dust particles, rinse the affected area with plenty of clean water.
- Seek medical attention immediately.
- Safety-relevant equipment (eye wash bottle, wash basin, shower) must be available near the work area.

3 Declaration of Conformity

| | |
|---|--|
|  | EG-Declaration of Conformity according to Machine Guidelines 2006/42/EC Machine number reference: The machine number is printed on the cover sheet of the operating manual. |
|---|--|

We hereby declare that the machine indicated below, which corresponds to the design and construction of the model we placed on the market, conforms with the health and safety requirements as stated by the EC guidelines (see table).

| | | |
|---|--|--|
| Manufacturer | Felder KG KR-Felder-Straße 1 6060 Hall in Tirol | |
| Product designation | Flue gas cleaning and filter system From a safety point of view, the machine is only suitable for extracting vapours and dust particles produced during laser processing with a CNC gantry machine from the Felder Group. | |
| Manufacturer | Nr.1 Machine Markt | |
| Model type | RFS 180 | |
| The following EC guidelines were applied | 2006/42/EC 2014/30/EC | |

This EC Declaration of Conformity is valid only if the CE label has been affixed to the machine. Modifying or altering the machine without the express written agreement of the manufacturer shall render the warranty null and void. The signatory of this statement is the appointed agent for the compilation of the technical information.

| | |
|---|--|
|  | Prof. h.c. Ing. Johann Georg Felder CEO Felder KG KR-Felder-Straße 1, A-6060 HALL in Tirol Date: 1.7.2023 |
|---|--|

UKCA - Declaration of Conformity

| | |
|---|---|
|  | Declaration of Conformity according to UK Directive S.I. 2008/1597 Machine number reference: The machine number is printed on the cover sheet of the operating manual. |
|---|---|

We hereby declare that the machine indicated below, which corresponds to the design and construction of the model we placed on the market, conforms with the health and safety requirements as stated by the UK guidelines (see table).

| | |
|---|---|
| Manufacturer | Felder KG KR-Felder-Straße 1 6060 Hall in Tirol |
| Product designation | Flue gas cleaning and filter system. From a safety point of view, the machine is only suitable for extracting vapours and dust particles produced during laser processing with a CNC gantry machine from the Felder Group. |
| Manufacturer | Nr.1 Machine Markt |
| Model type | RFS 180 |
| The following UK guidelines were applied | S.I. 2008/1597 - Supply of Machinery (Safety) Regulations 2008 S.I. 2016/1091 - Electromagnetic Compatibility Regulations 2016 |

This EC Declaration of Conformity is valid only if the CE label has been affixed to the machine. Modifying or altering the machine without the express written agreement of the manufacturer shall render the warranty null and void. The signatory of this statement is the appointed agent for the compilation of the technical information.



Prof. h.c. Ing. Johann Georg Felder
CEO Felder KG
KR-Felder-Straße 1, A-6060 HALL in Tirol
Date: 1.7.2023

4 Technical information

4.1 Dimensions and weight

Dimensions of the machine

| Data | Value | Unit |
|--------|-------|------|
| Length | 370 | mm |
| Width | 250 | mm |
| Height | 400 | mm |

Packaging dimensions

| Data | Value | Unit |
|--------|-------|------|
| Length | 500 | mm |
| Width | 380 | mm |
| Height | 490 | mm |

Machine weight

| Data | Value | Unit |
|--------|-------|------|
| Weight | 15 | kg |

4.2 Dust extraction

Extraction connection

| Data | Value | Unit |
|-------------------------------|-------|------|
| Hose connection diameter (2x) | 80 | mm |

Airflow capacity

| Data | Value | Unit |
|-------------------|-------|-------------------|
| Volume flow | 180 | m ³ /h |
| Negative pressure | 1000 | Pa |

4.3 Electrical connection

Motor power (according to data plate)

| Data | Value | Unit |
|-------------------|---------|------|
| Mains voltage | 220 | V |
| Voltage tolerance | 10 | % |
| Frequency | 50 / 60 | Hz |
| Motor power | 80 | W |

4.4 Filter system

| Data | Value | Unit |
|---------------------------------------|---|-------------------|
| Pre-filter 1 | Cotton filter | |
| Pre-filter 2 | Activated carbon pellets and activated carbon filter mats | |
| Main filter | HEPA H13 | |
| Particle collection efficiency | 99.97 | % |
| Particle size | ≥ 0.3 | µm |
| Residual dust content in clean air *) | < 0.1 | mg/m ³ |

*) Emission quantity depends on:

- Material
- Material thickness
- Surface finish
- Cutting speed
- Laser power

Dimensioning

| Data | Value | Unit |
|---|----------------|------|
| Pre-filter 1 - Cotton filter (5x) | 340 x 240 x 10 | mm |
| Pre-filter 2 - Activated carbon pellets: capacity approx. | 3.5 | L |
| Pre-filter 2 - Activated carbon filter mats (2x) | 340 x 240 x 15 | mm |
| Main filter - HEPA H13 | 340 x 240 x 50 | mm |

Tool life

The indicated service lives are general guide values.

The actual service life depends on:

- Utilisation rate
- Material
- Material thickness
- Surface finish
- Cutting speed
- Laser power

| Data | Value | Unit |
|--|-------|---------------|
| Pre-filter 1 - Cotton filter | 750 | Working hours |
| Pre-filter 2 - Activated carbon filter | 750 | Working hours |
| Main filter - HEPA H13 | 1500 | Working hours |

4.5 Noise emission

Measurement in accordance with EN ISO 19085-1:2021 appendix E:

- Measurement conditions / additional information in accordance with EN ISO 19085-1:2021 appendix E
- with ISO 11202 for the emission noise pressure with accuracy level 3
- and ISO 3744 for the sound pressure level at accuracy class 3

If the stated noise emission values are to be checked, then the measurements must be taken following the same procedure and in the same operating and installation conditions as described.

WARNING: The noise emission values stated are only valid, when the same operating- and installation conditions apply. Other operation and installation conditions, e.g. a different work process, can lead to higher noise emission values with the danger of underestimation.

WARNING: The noise emission values stated are not exposure level values.

Although there is a correlation between emission and exposure levels, the emission values can not be used to reliably determine whether increased safety measures are required. Factors that influence the actual degree of exposure are the actual work process, the exposure time, the characteristics of the workplace and other neighbouring noise sources in the workshop.

Indication of the noise emission values two numbers according to ISO 4871:1996

| | Idle | Operation |
|---|------|-----------|
| A-weighted emission sound pressure level L _{pA} in dB at workplace A | < 70 | < 70 |
| Uncertainty K _{WA} / K _{pA} in dB | 4 | |

4.6 Operation and storage conditions

| Data | Value | Unit |
|-----------------------------|--------------|------|
| Operating conditions | + 5 to + 35 | °C |
| Storage temperature | - 10 to + 50 | °C |
| Humidity (non-wetting) max. | 65 | % |

Storage of the filter

- Store the filters in a dry location.
- Leave the filter in its original packaging until it is to be used.

5 Machine overview

5.1 Overview

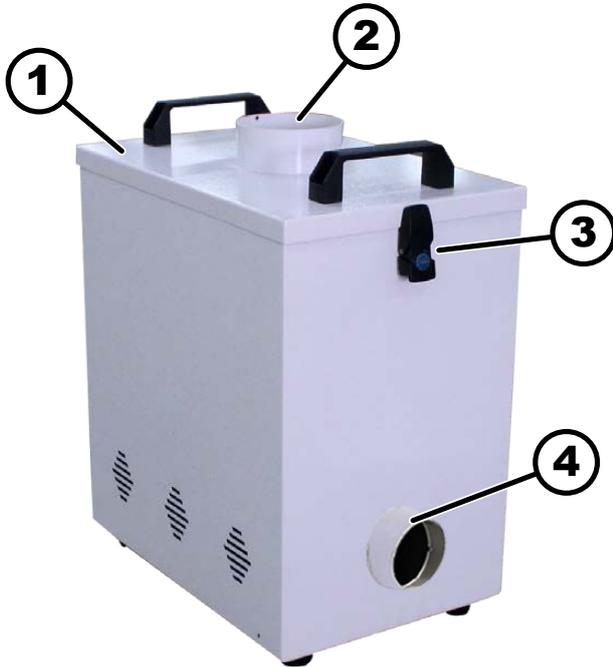


Fig. 1: Machine overview

- 1 Machine cover
- 2 Extraction connection
- 3 lockable safety latch
- 4 Exhaust air connection

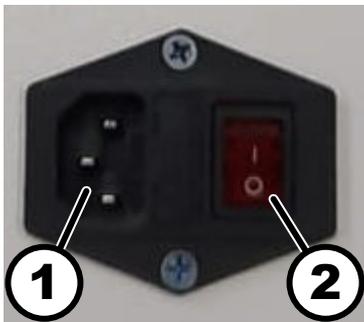


Fig. 2: Mains connection, main switch

- 1 Mains connection C14
- 2 Main switch: Switch the machine on/off

5.2 Pictograms, signs and labels



Fig. 3: Warning sticker on the machine housing

5.3 Information on the machine data plate

| | | | |
|--|-----|----------|----|
| Felder KG KR-Felder-Straße 1, A-6060 HALL in Tirol felder-group.com, info@felder-group.com +43 5223 58500, Fax +43 5223 56130 | | 1 | |
| TYPE : | | | |
| NR.: | | | |
| V: | PH: | HZ: | A: |
| KW: | | | |
| Baujahr / year of construction / ANNEE DE CONSTR.: | | | |
| Additional information (optional) | | | |

Fig. 4: Machine data plate

- 1 Manufacturer information
- 2 Model type
- 3 Machine number
- 4 Electrical connection
- 5 Year of construction
- 6 Additional information (optional)

6 Transporting, packing, storing

6.1 Transport inspection

1. Upon arrival, inspect the shipment to ensure that it is complete and has not suffered any damage.
2. If any transport damage is visible from the outside, do not accept the delivery or only accept it with reservation.
3. Record the scope of the damage on the transport documents/hauliers delivery note.
4. Initiate the complaint process.
5. Any defects that are not discovered upon delivery, must be reported as soon as they are identified as damage claims are only valid if claimed within the valid complaint period.

6.2 Packaging

If no agreement has been made with the supplier to take back the packaging materials, help to protect the environment by reusing the materials or separating them according to type and size for recycling.

When using overseas transport the machine must be tightly packed and protected from corrosion. Use desiccant.

Environmental protection

Packaging materials are valuable raw materials and in many cases they can be used again, reprocessed or recycled.

ENVIRONMENT

Dispose of the packaging in an environmentally friendly manner

- Dispose of packaging materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.
- Contract a recycling company.

6.3 Storage

Keep items sealed in their packaging until they are assembled/installed and be sure to observe the stacking and storage symbols on the outside of the packaging.

Storage conditions

- Do not store outdoors.
- Store in a dry and dust-free environment. Use desiccant if necessary.
- Protect from direct sunlight.
- Avoid mechanical vibration.
- Avoid extreme temperature fluctuations (condensation build-up).
- Apply a coat of oil to all exposed machine parts (corrosion protection).
- Regularly check the general condition of all parts and the packaging during longer storage (> 3 months). If necessary, refresh or re-apply the coat of anti-corrosive agent.

7 Setup and installation

7.1 Unpack the activated carbon filter

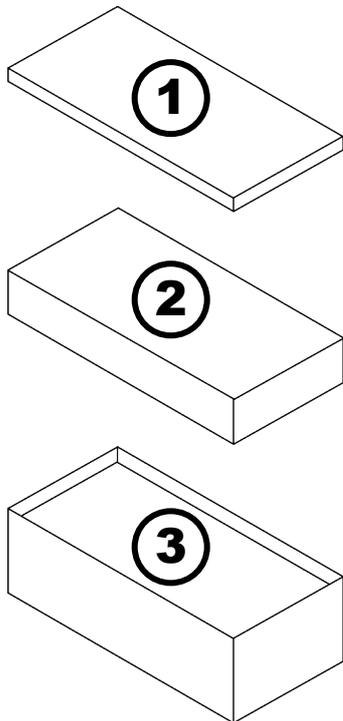


Fig. 5: Filter system

- 1 Cotton filter
- 2 Activated carbon filter
- 3 HEPA H13 Filter

Protective equipment:

- Chemical-resistant protective gloves

1. Open the safety latches.
2. Remove the housing cover.
3. Remove the cotton filter.
4. Remove the activated carbon filter and unpack it.
5. Insert the activated carbon filter.
6. Insert the cotton filter.
7. Replace the housing cover.
8. Close the safety latches.

7.2 Attach the dust extraction hose

Tool:

- Hose clamp

1. Connect the extraction hood to the extraction connection using the hose clamps.



Fig. 6: Attach the dust extraction hose

1 Extraction connection

2. Connect the extraction hose to the extraction connection with hose clamps.



Fig. 7: Connect the extraction

1 Exhaust air connection

3. Feed the exhaust air hose outside so that the exhaust air is discharged into the outside air.
4. Check the extraction performance.

7.3 Function test

| Check: | |
|-----------------------|--|
| Operating performance | <ul style="list-style-type: none"> • Operating noise • Warming |

| Check: | |
|----------------------------|--|
| | <ul style="list-style-type: none"> • Smell development • Leaks |
| Residues and contamination | <ul style="list-style-type: none"> • Machine surfaces • Extraction hose |
| Wear and tear | <ul style="list-style-type: none"> • Seals • Extraction hose and hose connections • Power cable |
| Damage | <ul style="list-style-type: none"> • Externally visible damage |

8 Use

8.1 Switch on / switch off / shutdown due to an emergency stop



CAUTION

Insufficient preparation and preconditions

Personal injury

- It is only permitted to switch on the machine if, for the work at hand, the required preconditions are fulfilled and any preliminary work is completed.

Before operating the machine for the first time, inspect it for defects.

Switching on

1. ➤ Connect the mains plug.
2. ➤ Turn the machine on using the main switch (position I).

Switch off / Emergency stop

1. ➤ Switch off the machine using the main switch (position 0).
 - ➡ The machine stops immediately.
2. ➤ Pull out the mains plug.

Prolonged downtime

1. ➤ Switch off the machine using the main switch (position O).
2. ➤ Pull out the mains plug.

9 Maintenance

9.1 Maintenance schedule

| Chap. | If required | Page |
|-------|-------------------|------|
| 9.2 | Clean the machine | 14 |
| 9.3 | Change the filter | 14 |

9.2 Clean the machine

- Do not use compressed air when cleaning.
- Never use caustic or abrasive cleaning detergents.
- Do not use alcohol, petrol, thinner, or any other type of cleaner on the non-metallic parts.



WARNING

Pollutant-laden vapours and dust particles

Severe health damage and respiratory diseases due to direct skin contact and inhalation of pollutant-laden vapours and dust particles.

- Before starting work, switch the machine off and ensure that it cannot be switched on again.
- Wear a respirator mask, protection class 3.
- Wear chemical-resistant protective gloves.
- Wear safety goggles.

Protective equipment:

- FFP3 respiratory mask
- Protective clothing
- Chemical-resistant protective gloves
- Safety goggles

Tool:

- Cleaning cloths

1. Switch off the machine and secure it against being switched on again.
2. Wait for the fan impeller to stop.
3. Remove the extraction hoses.
4. Clean the machine, the interior of the machine and the extraction connection of machining residues and other impurities.
5. Perform a visual inspection of all machine parts.
 - ➔ Immediately repair any damage to the machine and its components.
6. Connect extraction hoses.

9.3 Change the filter



WARNING

Pollutant-laden vapours and dust particles

Severe health damage and respiratory diseases due to direct skin contact and inhalation of pollutant-laden vapours and dust particles.

- Before starting work, switch the machine off and ensure that it cannot be switched on again.
- Wear a respirator mask, protection class 3.
- Wear chemical-resistant protective gloves.
- Wear safety goggles.



DANGER

Pollutant-laden filter

Severe health damage and respiratory diseases due to direct skin contact and inhalation of pollutant-laden vapours and dust particles.

- Dispose of used filters immediately.
- Store used filters in areas where contamination is not possible.

Protective equipment:

- FFP3 respiratory mask
- Protective clothing
- Chemical-resistant protective gloves
- Safety goggles

1. Switch off the machine and secure it against being switched on again.
2. Wait for the fan impeller to stop.
3. Remove the extraction hose.
4. Open the safety latches.
5. Remove the housing cover.
6. Remove the filter and place it in an airtight waste bag.
7. Twist the top edge of the waste bag together several times and close it airtight with a cable tie.

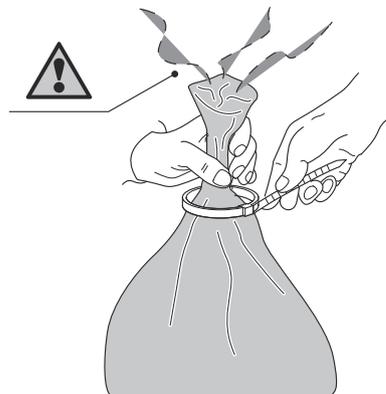


Fig. 8: Seal the waste bag airtight

8. Insert a new filter.

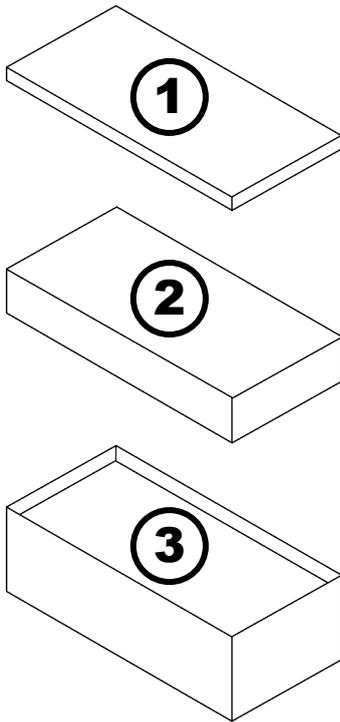


Fig. 9: Filter system

- 1 Cotton filter
- 2 Activated carbon filter
- 3 HEPA H13 Filter

- 9. ➤ Replace the housing cover.
- 10. ➤ Close the safety latches.
- 11. ➤ Connect the extraction hose.
- 12. ➤ Dispose of the old filter in accordance with the country specific hazardous waste regulations.

10 Troubleshooting

10.1 What to do in the event of malfunctions



WARNING

Improper troubleshooting

Severe injuries and damage to property

- Troubleshooting may only be carried out by authorised, trained personnel who are familiar with how to operate the machine and are in strict observance of all safety instructions.

In the event of malfunctions that pose an immediate threat to persons, equipment or operational safety:

- 1. ➤ Switch off the machine.
- 2. ➤ Disconnect the machine from the mains supply.
- 3. ➤ Have an authorised specialist determine the cause and repair the malfunctions.

10.2 What to do after rectifying the fault

Check,

- if the malfunction and cause of the malfunction have been professionally remedied.

10.3 Procedure in case of fire



CAUTION

Fire hazard due to flammable substances

Injuries and material damage caused by fire

- Do not open the device in the case of fire.

Procedure in case of fire

- 1. ➤ Pull out the mains plug.
- 2. ➤ Get as far away from the source of the fire as possible.
- 3. ➤ Call the fire brigade.

10.4 Faults, causes and repairs

| Fault description | Cause | Remedy |
|---------------------------------|--|---|
| Machine does not start. | Power cable is not connected. | —> Connect the power cable. |
| | Fault on the machine. | —> Contact Felder Group service centre. |
| No extraction power. | Extraction hose is not connected to the protective housing. | —> Connect extraction hose to the protective housing. |
| | Extraction hose is not connected to the extraction connection. | —> Connect the extraction hood to the extraction connections. → Chapter 7.2 'Attach the dust extraction hose' on page 12 |
| | Extraction hose is damaged. | —> Exchange the extraction hose. |
| Extraction power is too low. | Extraction hose is not connected correctly. | —> Correctly connect the extraction hose. |
| | Extraction path is too long. | <ol style="list-style-type: none"> 1. —> Check the extraction path with a shorter hose. 2. —> If necessary shorten the extraction distance. |
| | Extraction hose is kinked. | <ol style="list-style-type: none"> 1. —> Lay out the extraction hose so that there are no kinks. 2. —> Check for leaks. |
| | Extraction path blocked. | —> Check the extraction path and solve the fault. |
| | Filter is full. | <ol style="list-style-type: none"> 1. —> Change the filter. → Chapter 9.3 'Change the filter' on page 14 2. —> Dispose of the old filter properly. |
| Machine stops during operation. | Power supply interrupted. | —> Check the power supply. |
| | Overheating due to a very dirty filter. | <ol style="list-style-type: none"> 1. —> Switch off the machine and leave to cool down. 2. —> Change the filter. → Chapter 9.3 'Change the filter' on page 14 3. —> Dispose of the old filter properly. |
| | Fan impeller blocked due to filter breakage. | —> Contact Felder Group service centre. |

11 Disposal

12 Attachment

12.1 About spare parts



NOTICE

Wrong or faulty spare parts

Material damage, malfunction, machine failure

- Only use spare parts approved by the manufacturer (see spare parts list).

If unauthorised spare parts are fitted into the machine, all warranty, service, compensation and liability claims against the manufacturer and their contractors, dealers and representatives will be rejected.



Use genuine spare parts

The original spare parts that have been authorised for use are listed in a separate spare parts catalogue, enclosed in the documentation package supplied with the machine.

Spare part order

The following information is required when ordering spare parts:

- Type description and machine number according to the identification plate
- Article number, article description and required quantity
- Shipping address
- Shipping mode (mail, freight, sea, air, express)

Orders for spare parts, which do not include the required details, will not be processed. Unless specific dispatch instructions are given, the manufacturer / supplier standards shall apply.



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