

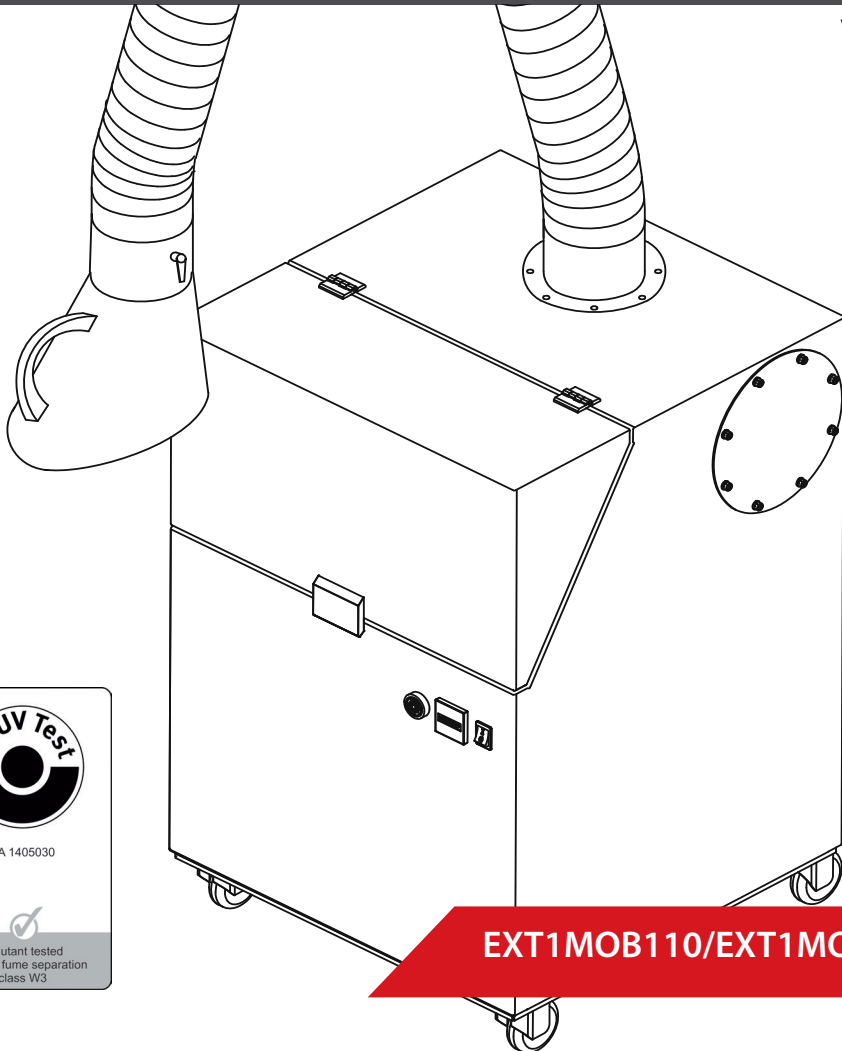


## ProtectoXtract 110/230v

CE  
Approved

## Operation Manual

V3. 2016



**EXT1MOB110/EXT1MOB230**



IFA 1405030



pollutant tested  
welding fume separation  
class W3

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## Original instruction

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# 1. Preface

## 1.1 General

Extraction units have become more and more important, especially the filtration of extracted pollutants and the return of filtered air into the working space.

This certainly shows that the environmental awareness of the individual has strongly developed in a positive way since the fact that production (e.g. welding) generates pollutants is undoubted for a long time. The types of pollutants however depend on the applied procedure. Generally, you distinguish gases from fumes. Fumes are also known as dusts. If you examine these dusts with a microscope, you will state that they consist of tiny respirable particles of 0,001 mm or even smaller sizes.

The conventional attempt to improve working conditions at polluted work places is general ventilation. This procedure is based on a multiple exchange of the air in the production hall, in other words the complete air is renewed. Nevertheless, this method only reduces the concentration of pollutants in the respiration zone of the user to a minimal extent.

This also applies for the so-called overhead extraction, i.e. the installation of huge extraction hoods above the work places. With this badly realized airflow, the pollutants pass by the breathing zone of the user before they rise up and are captured and taken in. This certainly is not the intended effect. More efficient than room exhausting or overhead extraction, is the elimination of pollutants directly where they are generated in using local extraction. The investments as well as the operating expenses are much lower in case of local extraction.

The successful application of this technology implies the technological optimisation of the working procedure as well as especially the respect of measures with regard to environmental protection and occupational safety. In the context of a growing sensitization and stricter legal regulations, potential hazards for the environment and the work place have to be determined prematurely and minimized if necessary.

## 1.2 Application

The filter unit ProtectoXtract is mainly used for the local extraction of dusts and fumes. To this end, the unit can be equipped with a flexible suction arm or another extraction device suitable for the individual application.

The filter unit is adapted for the extraction and separation of welding fumes according to the welding fume class „W3“ ProtectoXtract may only be used indoors and has to be supervised during operation!

Prohibition of application:

Welding fumes containing oil, aluminium dust, explosive dusts and gases and hybrid mixtures, water, etc. Please note additional optional Filters are available, extending this Unit's use and making it suitable for 'spark-producing' Welding and Grinding Applications. Please see section '4.6' Page 15:

(In case of doubt, please contact the manufacturer)

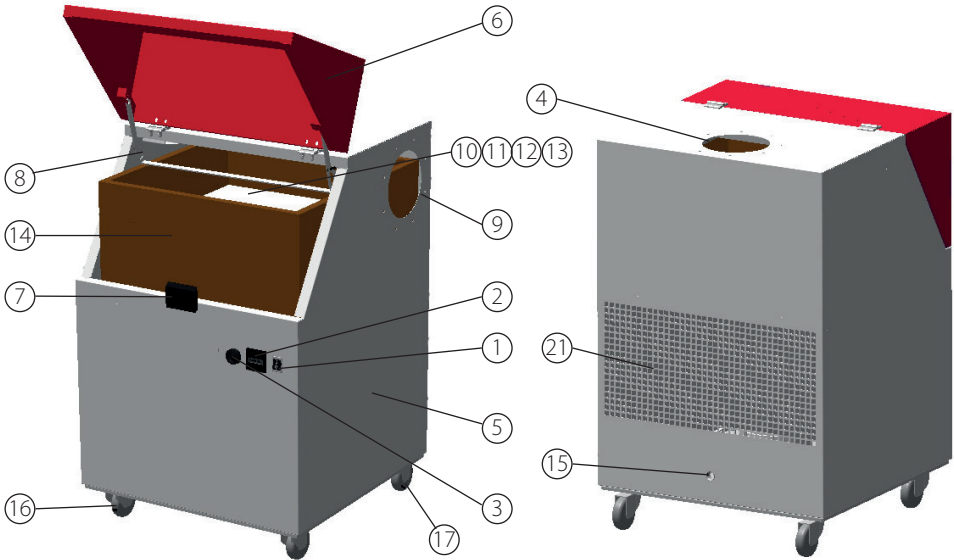
The polluted air is taken in by the suction hood and enters into the filter unit in passing by the suction arm or the suction hose. In the filter unit, the washable aluminium filter (pos 10) prevents burning of the fabric filters, gross dust particles are separated in the gross filter (pos. 11), while the finer dusts are separated in the prefilter (pos. 12). The activated carbon filter (pos. 13) absorbs disturbing odours. The consecutive main filter (pos. 14) separates the fine dust particles with a separation efficiency of more than 99%. The cleaned air is taken in by the fan and returned to the working space via the outlet grid at the back of the unit.

## 1.3 Options, Accessories and Replacement Parts

Filter Element	Part Number
Washable aluminium filter	EXT978014
Gross-filter (10 pcs)	EXT978003
Pre-filter	EXT978004
Main filter	EXT978005
Activated carbon filter	EXT978006
ProtectoSpark grinding filter	EXT978013
ProtectoXtraTop grinding filter	EXT978016
Suction arm ProtectoXtract complete, dia 150mm	EXT978009
Replacement hose for suction arm	EXT978007
Replacement hood for suction arm	EXT978008
Replacement frame for suction arm	EXT978010
Set of nozzles, dia 150mm with hose and hood 3m	EXT978011
PE-bags for disposal of filter elements (3 pcs)	EXT10030257

## 1.4 Product Overview

The ProtectoXtract consists of the following main components and elements:



1. Main switch ON / OFF
2. Operating hours meter
3. Alarm horn signalling a necessary filter change
4. Connection for suction arm
5. Housing
6. Maintenance flap
7. Snap fastener for maintenance flap
8. Retainer
9. Connection for suction hose (delivery including covering plate)
10. Main filter
11. Gross filter (placed onto prefilter)
12. Prefilter (placed onto activated carbon filter)

13. Activated carbon filter (placed onto the main filter)
14. Main filter
15. Mains cable including mains plug
16. Swivel castor with brake
17. Swivel castor
18. Screw for assembly of the suction arm (part provided, not in the picture)
19. Lock washer for assembly of the suction arm (part provided, not in the picture)
20. Rotary flange (part provided, not in the picture)
21. Outlet of the cleaned air

**Attention:**

As soon as the resistance of the filter, due to the separated dust particles and smoke, has achieved a maximum value, the integrated monitoring electronics triggers off the alarm of the signal horn (pos. 3) indicating that the filters must be renewed.

## 1.5 Technical Specifications

<b>ProtectoXtract</b>	<b>230V 50Hz</b>	<b>115V 50Hz</b>	<b>115V 60Hz</b>
Supply voltage (V)	230	115	115
Type of current (Ph)	H05RR-F 1Ph+N+PE	H07RN-F 1Ph+N+PE	H07RN-F 1Ph+N+PE
Frequency (Hz)	50	50	60
Engine performance (kW)	0,67	0,67	0,67
Current absorption (A)	2,8	4,5	4,5
Volumetric flow max m <sup>3</sup> /h	1270	1270	1270
Depression max. (Pa)	1800	1800	1800
IP rating	IP 54		
ISO class	F		
Control voltage (V)	230	115	115
Duty cycle (%)	100		
Width x Depth x Height (without arm) (mm)	580 x 580 x 900		
Weight (without arm) (kg)	80		
Filter elements	Washable Aluminium filter Gross filter, Prefilter, Activated Carbon filter, main filter		
Extraction performance (%)	>99		
Sound pressure level. (measured according to DIN 45635 T1 at a distance of 1m from the surface of the machine in the free field at a maximal volumetric flow) (dB(A))	72		

## 2. Safety Instructions

### 2.1 General

The manufacturer does not accept any liability for damage to the product or personal injury caused by ignoring the safety instructions in this manual, or by negligence during installation, use, maintenance, and repair of the product mentioned on the cover of this document and any corresponding accessories.

Specific working conditions or used accessories may require additional safety instructions. Immediately contact your supplier if you detect a potential danger when using the product.

**The user of the product is always fully responsible for observing the local safety instructions and regulations. Observe all applicable safety instructions and regulations.**

- Everyone working on or with the product must be familiar with the contents of this manual and must strictly observe the instructions there in.
- The management should instruct the personnel in accordance with the manual and observe all instructions and directions given.
- Never change the order of the steps to perform. Always keep the manual with the product
- The pictograms, warning and instructions attached to the product are part of the safety features. They must not be covered or removed and must be present and legible during the entire life of the product
- Immediately replace or repair damaged or illegible pictograms, warnings and instructions

The product has been designed exclusively for extracting and filtering gases and particles which are released during the most common welding processes. Using the product for other purposes is considered contrary to its intended use. The manufacturer accepts no liability for any damage or injury resulting from such use. The product has been built in accordance with state-of-the-art standards and recognised safety regulations. Only use this product when in technically perfect condition in accordance with its intended use and the instructions explained in the user manual.

## 2.2 Instructions

When handling electrical appliances, the following general safety measures must be taken for the protection against electric shocks, risk of injury and fire:

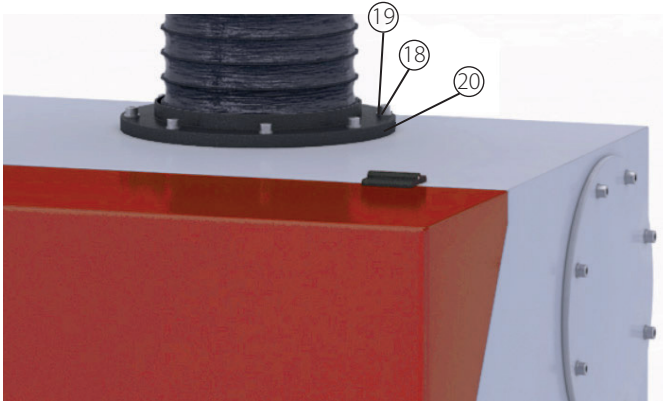
- Read and observe these instructions before using the device
- Keep this operating and maintenance manual in a safe place
- Do not use the device to extract easily inflammable or explosive gases
- Do not use the device in explosive zones
- Do not use the device to extract burning or glowing materials, e.g. cigarettes, matches, metallic dusts, as well as splinters, paper, cleaning cloths etc.
- Do not use the device to extract burning or inflammable materials, e.g. oil or oil mist, greases, release agents (e.g. silicone spray), cleaning agents, etc.
- Do not use the device to extract aggressive media
- Do not use the device to extract liquids of all kinds.
- Do not use the device to extract organic materials without a written authorization of the manufacturer.
- Protect the connecting plug from heat, humidity, oil and sharp edges.
- Observe the approved supply voltage. (Observe the indications on the nameplate)
- Only use Weldability spare parts.
- Do not use the device without filter elements.
- Ensure the appropriate Filters are suitable for the intended application and are installed before use. See section 4.6 for further information on the additional optional filters and their function.
- Before opening the device, separate it from the mains supply.
- The outlet holes must not be covered or blocked.
- Always take care that the device is in a safe position and that the brakes at the swivel castors are pulled.
- When cleaning and maintaining the device, replacing parts or when changing to another function. Disconnect the filter unit from the mains supply.
- The filter elements must not be reused.
- Dispose of the filter cartridges according to the legal regulations.
- The device must not be used if the mains cable is not in perfect condition
- The suction hood must be followed the progression of the weld seam, if possible in exploiting the thermal movements of the welding fume.
- The maximum admissible distance between the extraction element and the welding point should not exceed 25 cm.
- Do not use the filter unit if one or more parts of the unit are faulty, missing or damaged. In each of these cases, please contact the Weldability service department on +44 (0) 845 862 2620.
- When extracting carcinogenic fumes, e.g. materials containing nickel or chrome, the ventilation requirements have to be observed
- During transport, the device has to be secured against falling and slipping.
- When lifting and putting down the device, do not remain below or next to the load.



## 3. Installation

The filter unit is delivered completely assembled. The extraction element (suction arm or suction hose) is separately packed. The extraction element must be connected to the device before commissioning.

### 3.1 Connecting the Extraction Elements



If you use a suction arm, fix it with the help of the flange ring (pos. 20), the screws (pos. 18) and the lock washers (pos. 19) to the upper connection of the housing.

**Attention:**

Take care that the flange must be pivotal.

If you use the suction hose instead of the suction arm, connect it to the lateral connection opening (pos. 9). In this case, the covering plate fixed to this opening must be fixed to the upper intake opening in order to close it.



## 3.2 Connecting the Device

- Connect the filter unit to the mains supply
- (observe the specifications on the name plate)

**Attention:**

Only qualified electricians are authorised to carry out tasks in the electrical field. Observe the indications on the name plate.

## 3.2 Explanation of the Controls

- Pos.1 The main switch switches the filter unit on or off.
- Pos.2 The operating hours meter counts the operating hours as soon as the main switch is pushed.
- Pos.3 The signal horn indicates if the suction performance is sufficient. If it is triggered off, the filters must be replaced.



**Do not position the machine in places where it is exposed to vibrations or radiation from heat sources. Observe the ambient conditions first.**



**Always use the product in an upright position. Make sure that the inlet is closed when transporting the product over large distances.**



**Never use the machine without full filter package.**

## 4. Maintenance

The filtration of the dust particles increases the saturation degree of the filter cartridge and re-duces the extraction performance.

The saturation degree of the filter cartridge is monitored electronically. In order to maintain the extraction performance of the device, the filters must be replaced if the signal horn (pos.3) is triggered off.

The mechanical filter element makes sure that more than 99 % of the extracted pollutants remain in the filter. This also applies if the filter element is completely or partly saturated. Nevertheless, the increasing saturation of the filter reduces the extraction performance of the filter unit. The washable aluminium filter, Gross filter, prefilter and activated carbon filter must be replaced regularly. However, they should be renewed at the latest when replacing the main filter.

The lifetime of the filter elements heavily depends on the individual conditions of application. Therefore, it cannot be defined in advance.

### Attention:

The operation of the filter device must be interrupted when the filters are replaced. Only replace and dispose of the filters in sufficiently ventilated area and in wearing an appropriate respirator mask.

We recommend a respiration half mask according to DIN EN 141/143 protection level P3. Also we recommend to use suitable safety gloves.

Dispose of the filter according to the legal regulations! Contaminated filter elements must be packed into a suitable container (e.x. PE-bag), the bags are optionally available (see the spare part list on page 8). We recommend the PE-bags.

If the filter is beaten, washed or blown out manually, the filter medium may be destroyed. The pollutants penetrate the ambient air.



**Overdue maintenance can cause fire. Always fully disconnect the machine from the mains before carrying out maintenance jobs of mentioned in the following section.**

## 4.1 Cleaning the Aluminium Filter

The correct fitting of the filter elements corresponds to the following order.



- Disconnect the filter unit from the mains supply
- Release the snap fastener (Pos7) and open the maintenance flap
- Withdraw the spark arrestor filter that is inserted in the main filter. Lift up and pull forward to main filter if necessary
- The spark arrestor can be cleaned with the help of a compressed air supply and if necessary add an appropriate cleaning agent
- Put the main filter back into the device and position it correctly.
- Fold down the maintenance flap (Pos6) carefully. When doing this, make sure the retainer (Pos8) is placed exactly on the wood frame of the main filter (Pos14) and that it moves to the back of the filter unit when the maintenance flap is closed.
- When the maintenance flap is completely shut, close it fully with the help of the snap fastener
- Reconnect the filter unit to the mains supply

## 4.2 Replacing the Gross Filter

- Disconnect the filter unit from the mains supply.
- Release the snap fastener (pos.7) and open the maintenance flap.
- Withdraw the gross filter that is inserted in the main filter. Lift up and pull forward the main filter if necessary.
- Insert the new gross filter.

### Attention:

Only use filter elements provided by Weldability.

- Put the main filter back into the device and position it correctly.
- Fold down the maintenance flap (pos.6) carefully. When doing this, make sure that the retainer (pos. 8) is placed exactly on the wood frame of the main filter (pos. 14) and that it moves to the back into the filter unit if the maintenance flap is closed further.
- When the maintenance flap is completely closed, close it with the help of the snap fastener.
- Reconnect the filter unit to the mains supply.

## 4.3 Replacing the Pre-Filter

- Disconnect the filter unit from the mains supply.
- Release the snap fastener (pos. 7) and open the maintenance flap (pos. 6).
- Replace the old prefilter with the new one. To this end, lift up and take out the main filter if necessary.

### Attention:

Only use filter elements provided by Weldability.

- Put the main filter back into the filter unit and position it correctly.
- Fold down the maintenance flap (pos.6) carefully. When doing this, make sure that the re-tainer (pos. 8) is placed exactly on the wood frame of the main filter (pos. 14) and that it moves to the back into the filter unit if the maintenance flap is closed further. See also the overview above at the section „Replacing the gross filter“.
- When the maintenance flap is completely closed, close it with the help of the snap fastener.
- Reconnect the filter unit to the mains supply.

## 4.4 Replacing the Activated Carbon Filter

- Disconnect the filter unit from the mains supply.
- Release the snap fastener (pos. 7) and open the maintenance flap (pos. 6).
- Lift up the main filter and take it out.
- Take out the gross filter (pos. 11) and the prefilter (pos. 12) out of the main filter, insert the activated carbon filter (pos. 13), put the prefilter and the gross filter onto the new activated carbon filter.

**Attention:**

Only use filter elements provided by Weldability.

- Put the main filter back into the device and position it correctly.
- Fold down the maintenance flap (pos.6) carefully. When doing this, make sure that the retainer (pos. 8) is placed exactly on the wood frame of the main filter (pos. 14) and that it moves to the back into the filter unit if the maintenance flap is closed further.
- When the maintenance flap is completely closed, close it with the help of the snap fastener.
- Reconnect the filter unit to the mains supply.

## 4.5 Replacing the Main Filter

- Disconnect the filter unit from the mains supply.
- Release the snap fastener (pos. 7) and open the maintenance flap (pos. 6).
- Lift up the main filter (pos.14) and take it out.
- Take out the gross filter (pos.11), prefilter (pos.12) and activated carbon filter (pos.13).
- Put the new main filter with the gross filter, the prefilter and the activated carbon filter back into the unit.

**Attention:**

Only use filter elements provided by Weldability.



**Always wear a face mask and gloves during filter replacment**

- Put the main filter back into the device and position it correctly.
- Fold down the maintenance flap (pos.6) carefully. When doing this, make sure that the retainer (pos. 8) is placed exactly on the wood frame of the main filter (pos. 14) and that it moves to the back into the filter unit if the maintenance flap is closed further.
- When the maintenance flap is completely closed, close it with the help of the snap fastener.
- Reconnect the filter unit to the mains supply.

## 4.6 Adapt the unit and extend use. Additional filters

The Unit, as sold, is suitable purely for the extraction of dust and fumes, however the same unit can be configured with an additional filter to make it suitable for 'spark-producing' Welding and Grinding applications.

Extraction systems without a spark arrestor may be at risk from spatter, sparks and dust reaching the combustible filter cartridge, debris in the dustbin or collection location. The first line of fire prevention in fume extraction systems is a spark arrestor and these components begin prevention measures where a fire begins – at the spark.

### **ProtectoSpark - part EXT978013**

The ProtectoSpark is a retro-fittable filter tray that filters out hot metallic particles prior to the entry to the 5 stage filter system. The inclusion of this Filter enables the ProtectoXtract to be used for grinding applications.

**Attention:**

Please ensure this filter is installed should you intend to use the machine for grinding applications.

### **ProtectoXtracTop - part EXT978016**

The ProtectoXtracTop is a retro-fittable filter unit that enables the ProtectoXtract to be used for grinding applications. Extraction of particles takes place through a perforated plate within the supporting surface. The ProtectoXtracTop must only be used in combination with ProtectoSpark.

**Attention:**

Please ensure the ProtectoXtracTop and the ProtectoSpark filter are installed should you intend to use the machine for grinding applications.

## 4.7 Recommended filter changing intervals

After a certain amount of operating hours, the filter elements must be replaced. The amount depends on the produced amount of dust or gas. Nevertheless, the filters must be replaced if the signal horn (pos. 3) is triggered off. We recommend the following changing intervals:

<b>Filter Element</b>	<b>Recommended Operating Period</b>
Washable aluminium filter	Clean as and when required
Gross-filter	50 operating hours
Pre-filter	100 operating hours
Main filter	100 operating hours
Activated carbon filter	200 operating hours
ProtectoSpark grinding filter	Empty dust at regular intervals. Intervals depend on produced quantity of dust and therefore cannot be predetermined
ProtectoXtracTop attachment	Empty dust at regular intervals. Intervals depend on produced quantity of dust and therefore cannot be predetermined

## 4.8 Disassembly and Disposal

- Only qualified electricians may be charged with the disassembly of the machine or the electrical unit, the electrical supply line. Before disassembling the machine, disconnect it from the mains supply.
- Dispose of the pollutants and the filter media correctly and appropriately.
- Observe the indications of the manufacturer or contact the manufacturer.

In order to make sure the correct operation of your filter unit ProtectoXtrac as well as an appropriate disposal of the separated dust, we offer you the following services:

- We help you to find a waste disposal company within your reach.
- On demand and free of charge, we provide you a list with all disposal companies in England
- Conclusion of a maintenance and service contract
- A customer help line

For these options, please contact our service department:

Phone: +44 (0) 845 862 2620

Fax: +44 (0) 800 970 7757



## 5. Troubleshooting

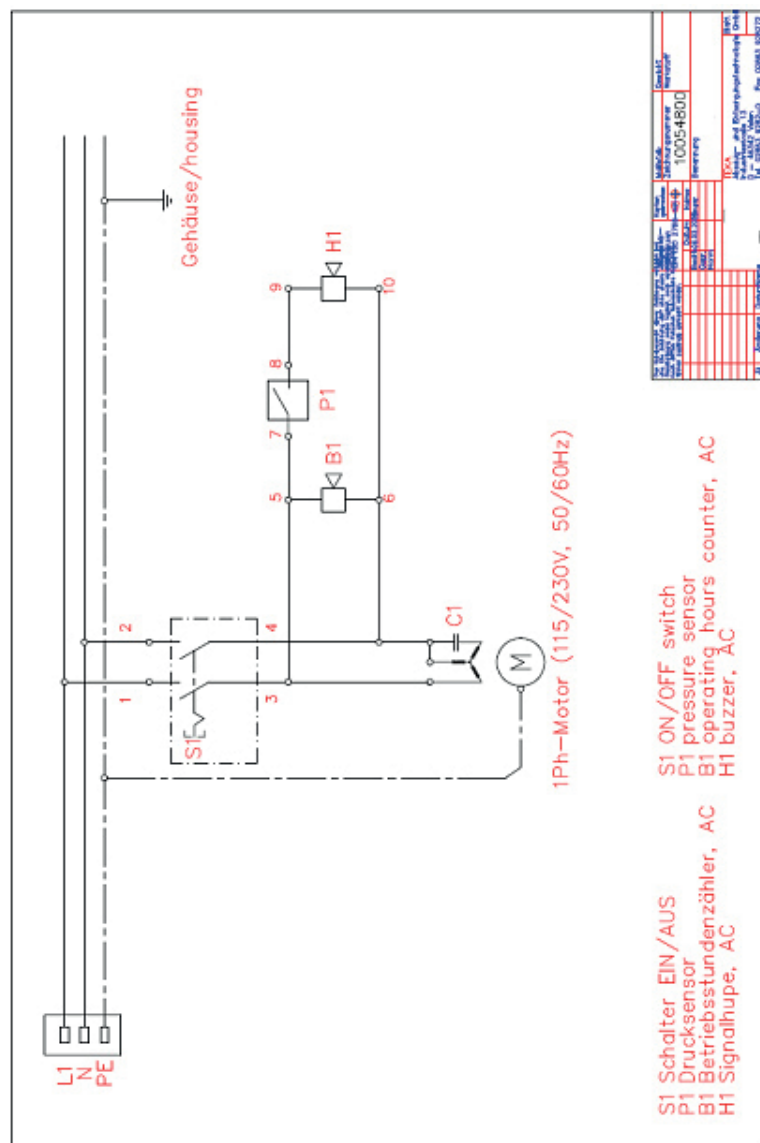
In the event of an incident, disconnect the filter unit from the mains supply as a precaution measure. In case of a potential electrical fault, it is obligatory to consult an electrician.



**Always disconnect the machine from the mains before carrying out the activities below.**

Fault found	Origin	Recommended Repair
Extraction performance is not sufficient (Fumes are not or only hardly extracted)	Filters are saturated  Extraction element is damaged  Suction hose or suction arm is not or not correctly connected  Clean air outlet is narrowed or covered  Suction duct is narrowed	Replace the filters, dispose correctly of the saturated filter!  Replace the extraction element  Check the position of the suction hose or the suction arm and connect it if necessary.  Check the clean air outlet, repair the fault if necessary  Check the suction duct, repair the fault if necessary
The operation does not start	The plug connection for the mains supply is not connected.  The power socket is not live	Connect the plug connection for the mains supply  Check the mains supply, repair the fault if necessary
Fire	Appropriate filters have not been installed before use	

## 5.1 Circuit Diagram



# 6. Declaration of Conformity

Weldability sif  
Peters House, The Orbital Centre  
Icknield Way, Letchworth Garden City  
Hertfordshire

SG6 1ET

Tel.: +44 (0) 845 862 2620

E-Mail: sales@weldability-sif.com

Fax: +44 (0) 800 970 7757

www.weldability-sif.com

We hereby declare under our sole responsibility that the product mentioned above, from the serial number 6907210011001 on, conforms to the following directives:

**Device usage:** Filter unit for local extraction of dust and fumes.

<b>Machinery directive:</b>	2006/42/EG
<b>Electromagnetic compatibility:</b>	2004/108/EG
<b>Pressure equipment device:</b>	97/23/EG
<b>Low voltage directive:</b>	2006/95/EG

## applied harmonised standards:

- DIN EN 349
- DIN EN 983
- DIN EN 12100 part 1 and part 2
- DIN EN 60204 part 1
- DIN EN ISO 13857
- DIN EN ISO 14121

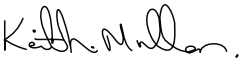
## plus further national standards and specifications:

- DIN 45635 part 1
- DIN EN ISO 15012-1
- DIN EN ISO 14121
- TRGS 560

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.

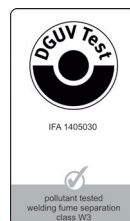
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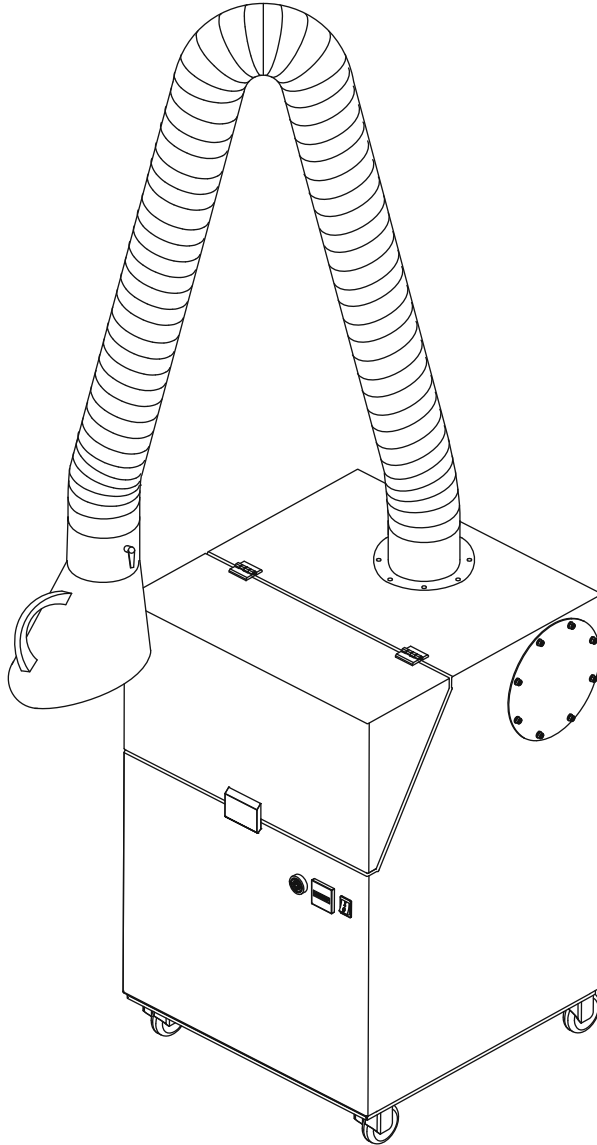
Signature



Keith Mullan

Quality Manager  
Weldability Sif





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