



# ***Operating instructions***

## ***ProtectoTwin***

**Weldability sif**

Peters House, The Orbital Centre  
Icknield Way, Letchworth Garden City  
Hertfordshire  
SG6 1ET

Tel.: +44 (0) 845 862 2620  
Fax: +44 (0) 800 970 7757

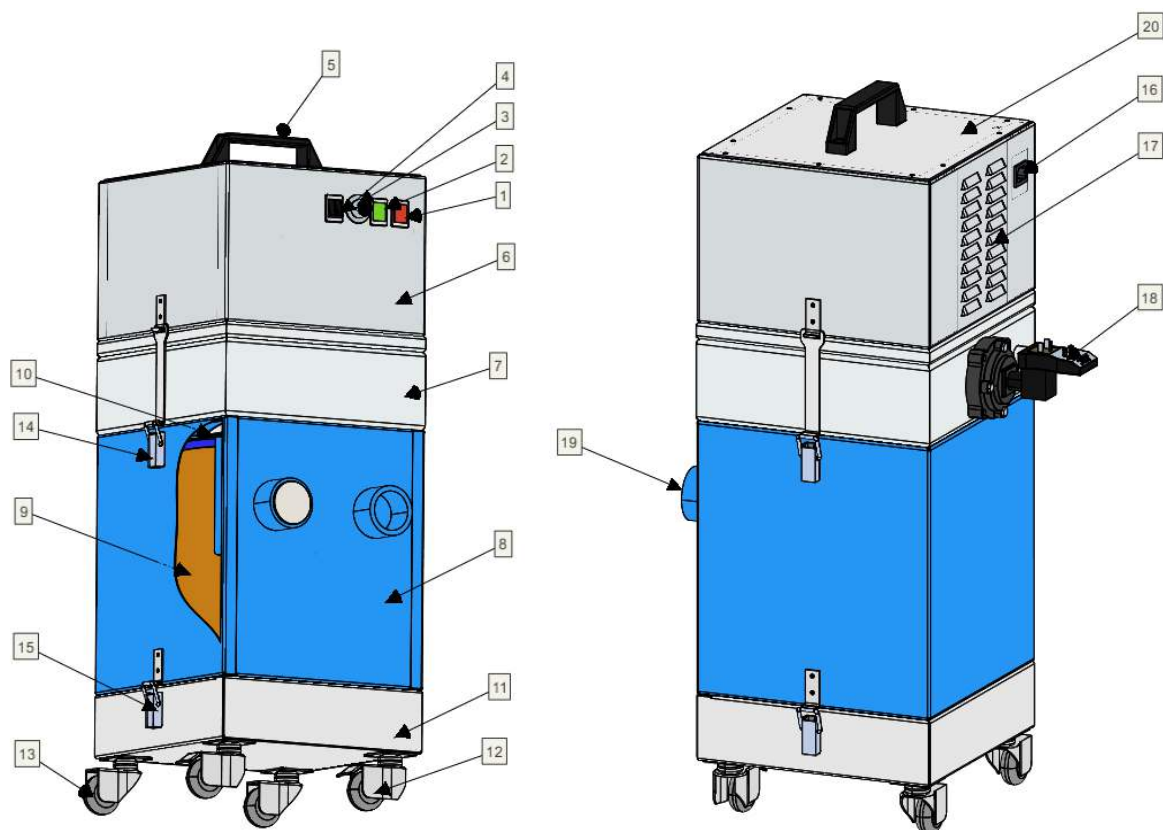
E-Mail: [sales@weldability-sif.com](mailto:sales@weldability-sif.com)

[www.weldability-sif.com](http://www.weldability-sif.com)

## **Contents**

1	Drawing/description of the parts .....	3
2	Preface.....	4
3	How WELDABILITY-ProtectoTwin works .....	5
4	Safety instructions.....	5
5	Starting up.....	7
5.1	Connection of the extraction element.....	7
5.2	Connecting the device.....	7
5.3	Connecting the automatic dedusting system .....	7
6	Explanation of the control elements.....	8
7	Maintenance .....	8
7.1	Dedusting of the filter cartridge .....	10
7.2	Emptying the dust container .....	10
7.3	Changing the filter cartridge .....	11
7.4	Replacing the carbon brushes .....	12
8	Disposal .....	12
9	Technical data.....	13
10	List of spare parts.....	14
11	Declaration of conformity WELDABILITYProtectoTwin .....	15

## 1 Drawing/description of the parts



Drawing No. 12473703

Pos.1	Filter alarm light: red	Pos.11	Dust container
Pos.2	Operating indicator lamp: green	Pos.12	Swivel castor with brake
Pos.3	Potentiometer for speed regulation	Pos.13	Swivel castor
Pos.4	Main switch	Pos.14	Snap fastener
Pos.5	Handle	Pos.15	Snap fastener
Pos.6	Turbine housing	Pos.16	Mains plug
Pos.7	Housing of the dedusting system	Pos.17	Outlet grid
Pos.8	Cartridge housing	Pos.18	Clock generator of the dedusting process
Pos.9	Filter cartridge	Pos.19	Extraction nozzle
Pos. 10	Screw connection of the filter cartridge	Pos. 20	Cover plate

## 2 **Preface**

Congratulations on the acquisition of the filter unit out of the series WELDABILITY ProtectoTwin!

Thanks to continued development, our engineers make sure that our filter systems correspond to the state of the art. Nevertheless, misuse or inappropriate behavior can endanger your safety. Therefore, observe the following instructions for a successful application of the filter unit:



Read this manual before using the system and observe the safety instructions in order to avoid injuries!

An improper use of the unit can lead to serious injuries or cause death!

Keep this manual in a safe place! Consider the manual as one part of the product!

Observe all indications marked on the product!

Take the local conditions at the installation site into consideration!

Observe the instructions of the manufacturer. If in doubt, contact the manufacturer.

We thank you for your trust and wish you a successful application!

### 3 How WELDABILITY-ProtectoTwin works

The WELDABILITY-ProtectoTwin filtering device is used predominantly for the precise extraction of dust and smoke. In order to carry this out the devices must have one or two flexible extraction hoses or a collection device that is suitable for the application.

Limitations of use:

Soldering smoke containing oils, aluminium dust, sanding dust, dust extraction, gases, water, etc. metals.

(If in doubt please contact the manufacturer!)

The air that contains the toxins is collected by the intake device and enters the filtering device through the extraction hose. This is where the toxins are separated in the form of particles on the surface of the integrated filter cartridge (Pos.9). The purified air is sucked up by the turbines and returns to the work area through the exit grille.

**Warning:**

As soon as the resistance of the filter cartridge has reached its maximum level because of the separated dust particles, the electronic control system activates the red Filter alarm light (pos.1).

The automatic dedusting system is distributing the pressurised air homogeneously over the whole surface of the filter which then removes the layer of dust formed there. (see section 7.1: "Cleaning the filter cartridge")

The dust that has been removed is collected in the dust container where it can be disposed of. (see section 7.2: "Emptying the dust container")

### 4 Safety instructions

When using electrical appliances you must abide by the following basic safety measures as protection against electric shocks and to avoid the risk of injuries or fires:

- Read and abide by these indications before using the device
- Keep these instructions of use and maintenance in a safe place
- Only use the device for extracting dry dust and smoke
- Do not use the device to extract explosive or inflammable gases
- Do not employ the unit for setting it in explosive zones, e.g. zone 0, zone 1, zone 2, zone 20, zone 21, zone 22!
- Do not employ the unit for sucking off burning or glowing materials, e.g. cigarettes, matches, metallic types of dust and/or splinters, paper, cleaning cloths, etc.!
- Do not employ the unit for sucking off burning and/or inflammatory materials, e.g. oils and/or oil mist, fats, parting agent (e.g. silicone spray), cleaning agent, etc.!
- Do not use the device to extract aggressive elements
- Do not use the device to extract incandescent or burning substances
- Do not use the device to extract liquids of any kind
- Do not use the device to extract organic substances without obtaining prior written consent from the manufacturer
- Protect the connectors from heat, humidity, oil and sharp edges
- Respect the connection voltage allowed (look at the indications on the nameplate!)
- Only use WELDABILITY accessories and spare parts

- Do not start the device without a filter cartridge
- Before opening the device, disconnect it from the mains
- The air outlet should never be covered or blocked
- Always check that the device is in a safe place and that the guiding roller's brakes are on
- When you are about to clean or carry out maintenance on the device, change parts or modify the device for a different operation you must disconnect it from the mains
- The filter cartridges cannot be reused!
- Remove the filters in accordance with the legal norms
- Periodically check if the mains lead has signs of damage
- The device must not be used if the mains lead is not in perfect condition
- Only use dry non-greasy pressurised air at a pressure of 3 bar (min.) and 4 bar (max.)
- The collection parts that are connected must not provoke movements in the WELDABILITY-ProtectoTwin filtering device (e.g. in the extraction hose)
- Make the extraction arm move on its path making the most of the thermal movements of the soldering smoke if possible
- The maximum distance allowed to reach the soldering point must not exceed 25 cm
- Do not use the filtering device if one or various parts are found to be faulty, are missing or damaged. Under these circumstances you must contact the WELDABILITY service department (telephone +44 (0) 845 862 2620).
- When extracting carcinogenic soldering dust, like materials that contain nickel or chrome, for example, you must comply by the technical ventilation requirements of TRGS 560 "Air return when working with dangerous carcinogenic substances"

## 5 **Starting up**

The filtering device is supplied ready for connection.

The collection parts and any other possible accessories must be assembled or installed in the device before starting it up.

### 5.1 **Connection of the extraction element**

- Push the flexible connection hose as far as possible into the extraction nozzle (Pos.19).

If you use a second hose, proceed as follows:

- Remove the cover from the connection nozzle (Pos.19).
- Push the flexible connection hose as far as possible into the extraction nozzle (Pos.19).

**Warning:**

For the filtering device to operate correctly you must guarantee a hermetic connection. The WELDABILITY ProtectoTwin filter device should not move because of the collection parts that are connected to it (e.g. extraction hose).

### 5.2 **Connecting the device**

- Connect the filtering device to the mains.  
(Check the indications on the nameplate!)

**Warning:**

Any work with the electrical installation should be carried out by specialised electricians. Check the indications on the nameplate!

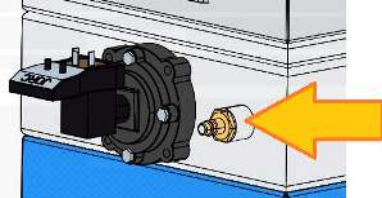
### 5.3 **Connecting the automatic dedusting system**

The ProtectoTwin becomes delivered with an automatic dedusting system (pos. 7). If the housing for the dedusting system is not installed yet at delivery, proceed as follows to connect the housing to the filter unit:

- Disconnect the filter unit from the mains supply.
- Release the toggle clamps between the cartridge housing (pos. 8) and the turbine housing (pos. 6) and remove the turbine housing.
- Place the housing containing the dedusting system (pos. 7) onto the cartridge housing, the discharge drilling pointing to the bottom. (Doing this, check if the sealing on the cartridge housing is damaged.)
- Place the turbine housing onto the compressed air container. (Doing this, check if the sealing on the compressed air container is damaged.)
- Fix the turbine housing to the compressed air container with the help of the longer closing hook.

As soon as the dedusting housing has been mounted, it must be connected to the local compressed air supply.

- Connect an approved compressed air hose to the quick release coupling of the dedusting housing. (The external compressed air supply must be at least 3 bar and 4 bar maximum.)



- The compressed air must be dry and oil free.
- Connect the filter unit and the dedusting system to the mains supply.

**Attention:**

Only electricians are authorized to perform tasks regarding electrical connections!  
Observe indications made on the nameplate! The compressed air supply must be dry and oil free!  
The compressed air container has to be emptied before performing any maintenance and repair task!

Without compressed air supply, the filter cartridge pollutes very fast.

## 6 Explanation of the control elements

- Pos.1      Red filter alarm light: Indicates a due filter check and change if necessary.
- Pos.2      Green operating indicator lamp: indicates that the device is in operation.
- Pos.3      The potentiometer regulates the number of revolutions of the turbine, i.e. it regulates the volumetric flow.
- Pos.4      Main switch: Switches the filter unit on or off.

## 7 Maintenance

When filtering dust particles the degree of saturation of the filter cartridge is increased and the extraction power is reduced.

The degree of saturation of the filter cartridge (Pos.9) is controlled electronically. In order to achieve an acceptable extraction performance from the device the filter cartridge must be dedusted as soon as the red filter alarm light lights up (Pos.1). (See section 7.1: "Cleaning the filter cartridge")



To loosen the dust particles you have to blow on the clean-air-side from the inside towards the exterior. The layer of dust that is loosened then falls in the dust container (Pos.11) made for this purpose. (See section 7.2: "Emptying the dust container")

The time the filter cartridge lasts greatly depends on its conditions of use therefore it cannot be set beforehand.

If after cleaning the filter cartridge the filtering device does not reach the necessary working pressure the filter cartridge must be changed. (See section 7.3: "Changing the filter cartridge")

The turbine must be checked after every 300 operating hours on carbon brushes which must be replaced if necessary. Please consider that replacement interval of the carbon brushes can vary. When turning on and off the unit frequently the collector of the turbine wears out differently what consequently has an influence on change interval of the carbon brushes. The turbine is subject to abrasive wear as well. Its average life span is about 600-800 operating hours.

**Warning:**

Whilst changing the filter cartridge the filtering device must be stopped. The changing of the filter cartridge and its disposal must only be carried out in a well-ventilated area with the use of an appropriate protective mask!

We recommend: Protective half-mask DIN EN 141/143 protection level P3.

Only someone with appropriate training should change the filter cartridge!

## 7.1 Dedusting of the filter cartridge

The automatic dedusting system cleans the filter cartridge cyclically.

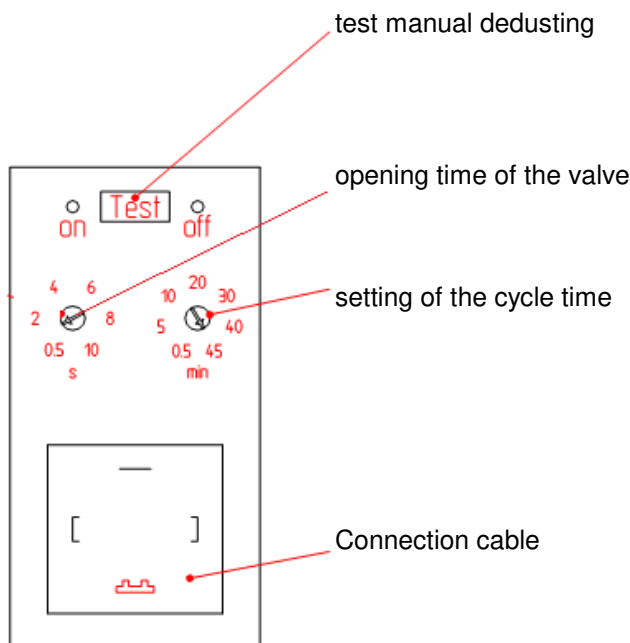
The dedusting interval can be adjusted via the clock generator (Pos. 18) according to the produced amount of dust.

The opening time is set to 1.25 seconds and the timer is set to 45 minutes.

If these settings do not correspond to your use of the filter unit, you can change the settings as follows.

### **Attention:**

The compressed air container must be emptied before performing any maintenance and repair task.



## 7.2 Emptying the dust container

After a certain amount of time in operation the dust container (Pos.11) must be cleaned. When this process is necessary depends on the quantity of dust generated

- Disconnect the device from the mains.
- Remove the housings (Pos.6, 7, 8) by opening the snap fastener (Pos.15).
- Empty the dust accumulated into a suitable recipient following the applicable norms and dispose of it appropriately.
- Place the housings (Pos.6, 7, 8) on the dust container (Pos.11) and fasten them with the snap fastener (Pos.15).  
(Check if the sealing underneath the cartridge housing (Pos.8) is damaged.)
- Connect the filtering device to the mains.  
(Observe the indications on the nameplate!)

**Warning:**

The emptying of the dust container must only be carried out in a well-ventilated area with the use of an appropriate protective mask!

We recommend: Protective half-mask DIN EN 141/143 protection level P3.

The above-mentioned tasks should only be carried out by personnel who have been specifically trained.

Dispose of the dust according to legal regulations!

### **7.3 Changing the filter cartridge**

- Disconnect the device from the mains supply
- Remove the turbine housing (Pos.6) and the automatic dedusting system (Pos.7) from the cartridge housing (Pos.8) by opening the snap fasteners (Pos.14).
- Release the snap fasteners (Pos. 15) and remove the dust container.
- Release the fixing screws (Pos.10) on the upper side of the cartridge housing.
- Withdraw the filter cartridge (Pos.9).
- Insert the new filter cartridge into the cartridge guide.

**Warning:**

Only use WELDABILITY spare parts!

- Tighten the fixing screws (Pos.10).
- Place the housings (Pos.6, 7, 8) onto the dust container (Pos.11) and fix them with the help of the snap fasteners (Pos.14) and (Pos. 15).  
(Check if the sealing underneath the cartridge housing (Pos.8) is damaged.)
- Connect the filter unit to the mains supply.  
(Observe the indications on the nameplate!)

**Warning:**

The changing of the filter and its disposal must only be carried out in a well-ventilated area with the use of an appropriate protective mask!

We recommend: Protective half-mask DIN EN 141/143 protection level P3.

The above-mentioned tasks should only be carried out by personnel who have been specifically trained.

Dispose of the dust according to legal regulations!

## **7.4 Replacing the carbon brushes**

It is necessary to replace the carbon brushes of the AC turbine approx. every 300 operating hours. Proceed as follows:

- Disconnect the filter unit from the mains supply.
- Release the connecting screws at the cover plate (Pos. 20) and the turbine housing (Pos. 6).
- Remove the cover plate (Pos. 20) from the turbine housing (Pos. 6).
- Pull the blade receptacle of the mains line out of the blade terminal of the carbon brush.
- Press the barb of the carbon brush down and withdraw the carbon brush.
- Insert the new carbon brush until the barb locks into place.
- Put the blade receptacle of the mains supply on the blade terminal of the new carbon brush.
- Put the cover plate (Pos. 20) onto the turbine housing (Pos. 6). (Doing this, check if the sealing on the turbine housing (Pos. 3) is damaged.)
- Fix the cover plate (Pos. 6) with the help of the connecting screws.
- Connect the filter unit to the mains supply. (Observe the indications on the nameplate!)

### **Attention:**

Only electricians are authorized to perform tasks regarding electrical connections. Observe the indications on the nameplate!

## **8 Disposal**

To facilitate the impeccable performance of your WELDABILITY ProtectoTwin extraction device along with the disposal of the extracted dust, we are pleased to offer you the following services:

- Help in finding a residue disposal company situated near you.
- A list of all the residue disposal companies in Germany is available free of charge.
- Maintenance contract
- Customer support via telephone

Phone: +44 (0) 845 862 2620

Fax: +44 (0) 800 970 7757

## 9 Technical data

### **Attention:**

Observe the indications on the nameplate!

Filter unit		WELDABILITY ProtectoTwin
Supply voltage	V	230
Type of current	Ph	1 + N + PE
Frequency	Hz	50
Motor performance	kW	2 x 0.8
Maximum volumetric flow	m³/h	340
Maximum negative pressure	Pa	20000
Type of protection		IP 54
ISO class		F
Control voltage	V	230
Duty cycle	%	100
Width x depth x height	mm	300 x 300 x 810
Weight	kg	20
Quantity of extraction hoses		2
Filter cartridge		Filter cartridges
Filtering surface of the filter cartridge	m²	2,5
Separation performance	%	>99
Type of cleaning		manual
Noise level (Measured according to DIN 45635 T1 at 1 m distance from the surface of the machine in a free area with maximum flow)	dB(A)	74
Compressed air		external
Minimum pressure	bar	3
Maximum pressure	bar	4
Compressed air supply		dry / oil-free

## **10 List of spare parts**

Designation:

Art. No.:

Filter cartridge (Pos.9)

EXT9870003

carbon brushes of AC turbine

EXT9870004

## **11 Declaration of conformity WELDABILITYProtectoTwin**

### **Weldability sif**

Peters House, The Orbital Centre  
Icknield Way, Letchworth Garden City  
Hertfordshire  
SG6 1ET

Tel.: +44 (0) 845 862 2620

Fax: +44 (0) 800 970 7757

E-Mail: [sales@weldability-sif.com](mailto:sales@weldability-sif.com)

[www.weldability-sif.com](http://www.weldability-sif.com)

We herewith declare in sole responsibility that the before mentioned product, starting from machine No.: 9000010011001, conforms to the following standards:

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

### **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

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.

**Authorized representative for the technical documentation:** Weldability sif



*(Adrian Hawkins, managing director)*