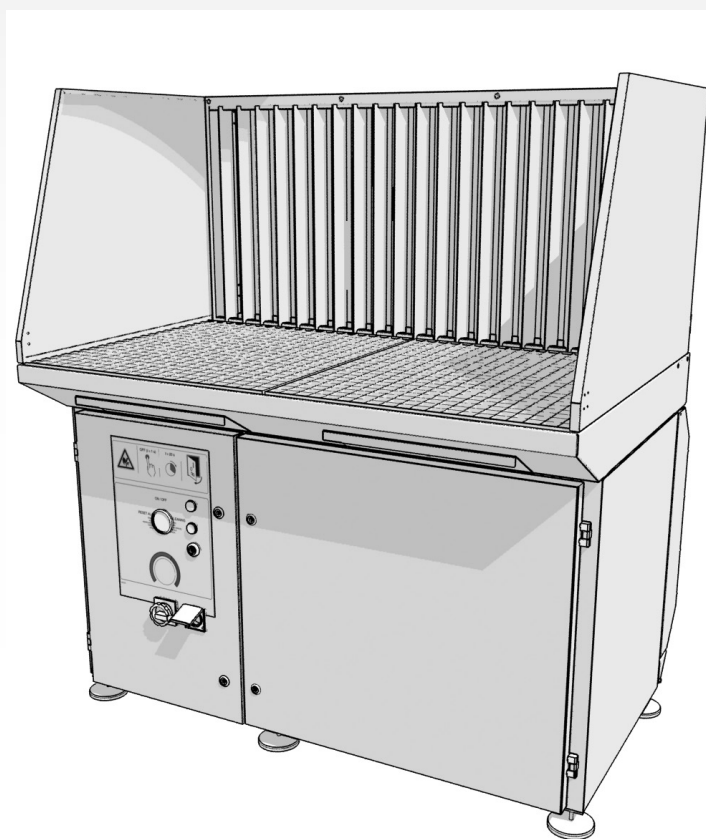


Downdraft table

DRAFTMAX BASIC | ULTRA



EN

Installation and user manual

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EN | ORIGINAL INSTRUCTION

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To improve comprehension for people whose first language is not English, we have written parts of this manual in Simplified Technical English (STE). STE is a controlled language originally developed for aerospace industry maintenance manuals. It offers a carefully limited and standardized subset of English, along with specific writing rules.










PREFACE

Using this manual

This manual is intended to be used as a work of reference for professional, well trained and authorised users to be able to safely install, use, maintain and repair the product mentioned on the cover of this document.

Pictograms and symbols

The following pictograms and symbols are used in this manual:

	TIP Suggestions and recommendations to simplify carrying out tasks and actions.
	ATTENTION A remark with additional information for the user. A remark brings possible problems to the user's attention.
	CAUTION! Procedures, if not carried out with the necessary caution, could damage the product, the workshop or the environment.
	WARNING! Procedures which, if not carried out with the necessary caution, may damage the product or cause serious personal injury.
	CAUTION! Denotes risk of electric shock.
	WARNING! Fire hazard! Important warning to prevent fire.
	WARNING! Explosion hazard! Important warning to prevent explosions.
	Personal protective equipment (PPE) Instruction to use respiratory protection when you do service, maintenance and repair jobs, as well as during functional testing. We recommend to use a half-face respirator according to EN 149:2001 + A1:2009, class FFP3 (Directive 89/686/EEC).
	Personal protective equipment (PPE) Instruction to use protective gloves when you do service, maintenance and repair jobs.

Text indicators

Listings indicated by "-" (hyphen) concern enumerations.
Listings indicated by "•" (bullet point) describe steps to perform.

Service and technical support

For information about specific adjustments, maintenance or repair jobs which are not dealt with in this manual, please contact the supplier of the product. He will always be willing to help you. Make sure you have the following specifications at hand:

- product name
- serial number

You can find these data on the identification plate.

1 INTRODUCTION

1.1 Identification of the product

The identification plate contains, among other things, the following data:

- product name
- serial number



- supply voltage and frequency
- power consumption

1.2 General description

The downdraft table is a workbench with an integrated extraction fan and filtration system that is used for welding, grinding, and plasma cutting applications. Depending on the specific application, the use of certain accessories is required and/or recommended (refer to paragraph 1.3).



Refer to the table in Fig. I on page 16 for more instructions per application.

The downdraft table features a work grid, a three-stage pre-filtration system for optimum spark arresting and two oval filter cartridges¹. Both pre and main filters have dust drawers underneath. The working height of the downdraft table is adjustable.

1.2.1 DraftMax Basic

The filter cartridges of the DraftMax Basic are disposable.

1.2.2 DraftMax Ultra

The filter cartridges in the DraftMax Ultra are self-cleaning by means of an automatically controlled compressed air system.

1.3 Options and accessories

The following products can be obtained as an option and/or accessory:



Refer to paragraph 2.3 for the functioning of the various options and accessories.

A Backdraft kit (required for all welding and plasma cutting applications and recommended for grinding applications)

The backdraft kit consists of narrowing plates to be mounted below the workgrid and a backdraft panel with vertical lamellas.

B Side panels

The side panels consist of hinged trapezium-shaped sheet metal plates and have to be used in combination with the backdraft kit. They are to be mounted on the sides of the downdraft table.

C Plasma cutting work grid (required for plasma cutting applications)

Specially constructed work grid suitable for plasma cutting, including additional perforated steel spark arresters.

D HEPA kit (required for stainless steel welding)

Consists of a filter housing with a HEPA filter to be mounted on the outlet of the downdraft table. Filter surface area 34 m² (366 ft²). Filter class: HEPA 11.

E Silencer/Outlet duct

Consists of a rectangular sheet metal shaft to be mounted on the outlet of the downdraft table or on the HEPA kit.

F Working light

Lighting fixture with 9 W LED light to be mounted to the backdraft panel.

G Movement sensor (DraftMax Ultra only)

Automatic start/stop based on movement sensor, to be mounted on top of the backdraft panel.

1. The filter cartridges are the main filters

H Bench vice mounting bracket

To be connected to the standard work grid of the downdraft table (bench vice not included).

I Wheel set

Consists of 5 swivel castors - 2 of which with brake - to be mounted below the downdraft table.

J Dust tray lid (recommended for stainless steel welding)

Lid to cover the dust drawer below the filter cartridges. Comes with a plastic bag, a face mask, and a pair of disposable gloves.

K FCC-36/PTFE (recommended for heavy applications)

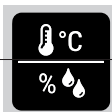
Filter cartridges of BiCo spunbond polyester + PTFE membrane (2 x 18 m²).

1.4 Technical specifications

Dimensions L x W x H	1380 x 1005 x 920 mm (54½ x 39½ x 36 in.)
Height adjustment	920-970 mm (36-38 in.) (in case of wheel set: fixed working height 950 mm / 37½ in.)
Weight (without options): - DraftMax Basic - DraftMax Ultra	245 kg (540 lbs) 255 kg (562 lbs)
Maximum load	200 kg (440 lbs) (in case of wheel set: 150 kg / 330 lbs)
Available connection voltages	400V/3ph/50Hz 480V/3ph/60Hz 600V/3ph/60Hz
Power consumption	2,2 kW (3 HP)
Mains cord	3 m (10 ft.) (1 m/3½ ft. internal, 2 m/6½ ft. external) - without plug
Protection class	IP 55 (control box only)
Sound level (according to ISO 3746): - without options - with silencer - with silencer and HEPA kit	74 dB(A) 69 dB(A) 67 dB(A)
Filter surface area of the filter cartridges	2 x 26 m ² (2 x 280 ft ²)
Dust class	M (according to DIN EN 60335-2-69)
DraftMax Basic + HEPA kit	compliance with EN-ISO 21904-2-2020 (W3)
DraftMax Ultra + HEPA kit	
DraftMax Ultra only: - Compressed air connection - Compressed air pressure - Required compressed air quality	- G 3/8" (female) - 5-8 bar (72-115 psi) - dry and oil-free

1.5 Ambient and process conditions

Process temperature: - min. - nom. - max.	5°C (41°F) 20°C (68°F) 40°C (104°F)
Max. relative humidity	80%
Suitable for outdoor use	no



Refer to the available product data sheets for detailed product specifications.

1.6 Transport of the unit

You cannot hold the manufacturer liable for any transportation damage after delivery of the product.

2 PRODUCT DESCRIPTION

2.1 Components

The product consists of the following main components and elements (refer to Fig. 2.1 and Fig. 2.2):

Fig. 2.1

- A Work grid (two-piece)
- B Control panel
- C Left door (controls/fan)
- D Right door (filter compartment)
- E Compressed air tank (DraftMax Ultra only)

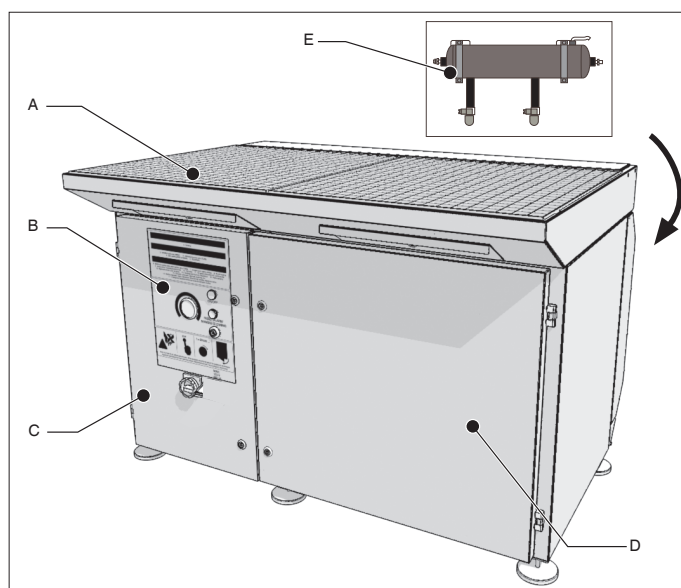


Fig. 2.1 Main components (outside)

Fig. 2.2

- F Pre spark arresters
- G Dust drawers (pre filtration)
- H Dust drawer (filter cartridges)
- I Filter cleaning mechanism (DraftMax Ultra only)
- J Filter cartridges
- K Main spark arresters
- L Fan
- M Outlet grid
- N Electrics high voltage
- O Electrics low voltage

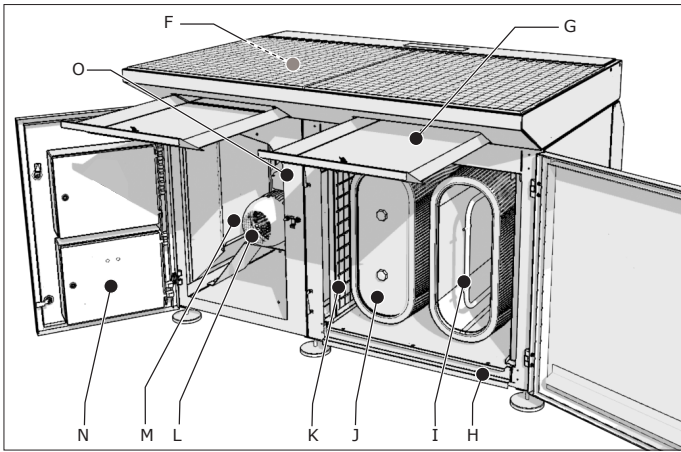


Fig. 2.2 Main components (inside)

The rear of the downdraft table has connections for:

Fig. 2.3

- A Movement sensor (DraftMax Ultra only)
- B Working light
- C Compressed air (DraftMax Ultra only)

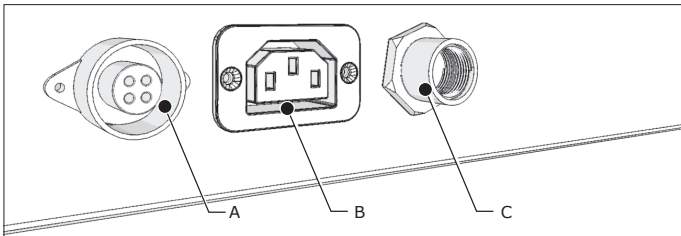


Fig. 2.3 Connections (rear)

If you have a DraftMax Basic, connection (A) and (C) are not available.

2.2 Operation

The air containing welding fume, grinding dust or debris from other processes is extracted and filtered, after which the filtered air is recirculated back into the work environment. The air is extracted through the work grid and the backdraft panel (refer to paragraph 2.3 A) by the internal extraction fan. The air passes through a pre filter for optimum air distribution. This pre filter is the first spark arresting stage. Next, the air passes through a labyrinth spark trap before it reaches the vertical spark arresters in the filter housing. Finally, the air passes through the filter cartridges. The air exits the downdraft table through the outlet on the left side.

2.2.1 DraftMax Basic

The filter cartridges of the DraftMax Basic are disposable. A pressure gauge on the control panel indicates when you must replace the filter cartridges.

2.2.2 DraftMax Ultra

The filter cleaning system inside the DraftMax Ultra starts automatically when the pressure drop reaches a certain maximum value during use (*online cleaning*). The filter cartridges are cleaned from the inside by compressed air shots.

An alarm light on the control panel indicates when you must replace the filter cartridges.

2.3 Options and accessories



Refer to paragraph 1.3 for additional information on the various options and accessories.

Fig. 2.4

A Backdraft kit

The backdraft kit is required for all welding and plasma cutting applications and recommended for grinding applications. By the use of a backdraft kit, the downdraft extraction capacity is reduced to approx. 20%. The remaining 80% is extracted through the backdraft panel.

B Side panels

Side panels improve the extraction effectiveness by reducing the influences of draught. They also prevent tools, metal and other parts from falling off the downdraft table. Side panels are swivable to accommodate large workpieces.

C Plasma cutting work grid (not shown)

The plasma cutting work grid is required for plasma cutting applications (max. 50 A). The additional perforated steel spark arresters protect the pre spark arresters already present.



CAUTION!

Current of plasma cutting machine must **not** exceed 50 A.

D HEPA kit (required for stainless steel welding)

Final filter, especially suitable for alloy welding processes.

E Silencer/Outlet duct

The Silencer/Outlet duct is to be used as a silencer and prevents dust from blowing up from the floor at the same time. If the Silencer/Outlet duct is used in a welding cabin, it also prevents air turbulence in the cabin and air disturbance to the adjacent cabin, if any.

F Working light

The working light provides a clear view to the workpiece. The cover can be hinged to facilitate exchange of the LED luminaire. The working light is activated upon turning on the main switch of the downdraft table.

G Movement sensor (DraftMax Ultra only)

After detecting any movement above the work grid, the automatic start/stop device activates the fan to start running;

- start delay: 2 seconds
- stop delay: 60 seconds

H Bench vice mounting bracket (not shown)

Mounting bracket to mount various types of bench vices. Only suitable for standard work grid.

I Wheel set

Wheel set to facilitate internal transport of the downdraft table.

Also handy to move the downdraft table forward for service purposes to the membrane valves, if necessary (applies to DraftMax Ultra only).

J Dust tray lid (not shown)

When the dust drawer below the filter cartridges needs to be emptied, the lid over the dust drawer, the plastic bag and the personal protection equipment enable dust free removal.

K FCC-36/PTFE (not shown)

Set of filter cartridges, particularly suitable for heavy duty applications.

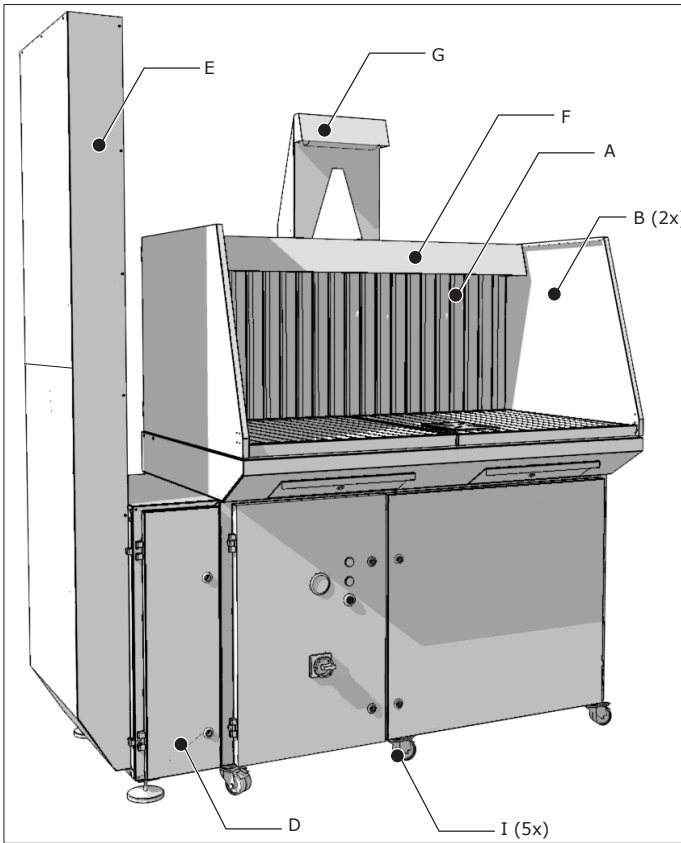


Fig. 2.4 Options

- The product is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children must be supervised not to play with the product.

Intended use²

The product has been designed as a workbench with integrated extraction and filtration facility for welding and grinding purposes, provided the appropriate options have been installed (refer to paragraph 2.3). With the optional HEPA set the product is suitable to extract welding fume from high alloyed steel, i.e. steel with a nickel and chromium content of >30%. This corresponds with welding fume class "W3". 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.

Technical specifications

Do not change the specifications given in this manual.

Modifications

Modification of (parts of) the product is not allowed.

Installation

- The installation of this product is exclusively reserved to authorised, trained and qualified engineers.
- The electric connection must be executed in accordance with the local codes and requirements. Ensure compliance with the EMC regulatory arrangements.
- During installation, always use Personal Protective Equipment (PPE) to avoid injury. This also applies to persons who enter the work area during installation.
- Do not install the product in front of entrances and exits which must be used for emergency services.
- Make sure that the workspace is well illuminated.
- Stay alert and keep your attention to your work. Do not install the product when you are under the influence of drugs, alcohol or medicine.
- Air containing particles such as chromium, nickel, beryllium, cadmium, lead etc., should never be recycled. This air must always be brought outside the working area.

Use



WARNING!

Fire hazard! Do **not** use the product for:

- polishing applications in combination with grinding, welding or any other application that generate sparks (fibers from polishing or abrasive flap disks are highly flammable and pose a high risk of filter fires when exposed to sparks)
- arc-air gouging
- extracting and/or filtering flammable, glowing or burning particles or solids or liquids
- extracting and/or filtering of aggressive fumes (such as hydrochloric acid) or sharp particles
- extracting and/or filtering dust particles which are released when welding surfaces treated with primer

2. "Intended use" as explained in EN-ISO 12100-1 is the use for which the technical product is suited as specified by the manufacturer, inclusive of his directions in the sales brochure. In case of doubt it is the use which can be deduced from the construction, the model and the function of the technical product which is considered normal use. Operating the machine within the limits of its intended use also involves observing the instructions in the user manual.

3 SAFETY INSTRUCTIONS

General

The manufacturer does not accept any liability for damage to the product or personal injury caused by ignoring of 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.

User manual

- Everyone working on or with the product, must be familiar with the contents of this manual and must strictly observe the instructions therein. The management should instruct the personnel in accordance with the manual and observe all instructions and directions given.
- Do not change the order of the steps to perform.
- Keep the manual with the product.

Users



- The use of this product is exclusively reserved to authorised, trained and qualified users. Temporary personnel and personnel in training can only use the product under supervision and responsibility of skilled engineers.
- Stay alert and keep your attention to your work. Do not use the product when you are under the influence of drugs, alcohol or medicine.




	- sucking cigarettes, cigars, oiled tissues, and other burning particles, objects, and acids
	WARNING! Explosion hazard! Do not use the product for explosion-hazardous applications, e.g.: - aluminium laser cutting - grinding aluminium and magnesium - explosive environments or explosive substances/gases
	WARNING! Do not use the product for: - oxy-fuel cutting - arc-air gouging - oil mist - paint mist - heavy oil mist in welding fume - extraction of hot gases (more than 45°C/113°F continuously) - grinding aluminium and magnesium - flame spraying - extraction of cement, saw dust, wood dust etc. - explosive environments or explosive substances/gases
	WARNING! Do not use the downdraft table without spark arresters, filter cartridges and dust drawers.
	ATTENTION! In case of welding and plasma cutting, the use of a backdraft kit is required.

- Inspect the product and check it for damage. Verify the functioning of the safety features.
- During use, always use Personal Protective Equipment (PPE) to avoid injury. This also applies for persons who enter the work area.
- Check the working environment. Do not allow unauthorised persons to enter the working environment.
- Protect the product against water and humidity.
- Make sure the room is always sufficiently ventilated; this applies especially to confined spaces.
- Make sure that the workshop, in the vicinity of the product, contains sufficient approved fire extinguishers (suitable for fire classes ABC).

Service, maintenance and repairs

- Obey the maintenance intervals given in this manual. Overdue maintenance can lead to high costs for repair and revisions and can render the guarantee null and void.
- Always use Personal Protective Equipment (PPE) to avoid injury. This also applies for persons who enter the work area.
- Make sure the room is sufficiently ventilated.
- Use tools, materials, lubricants and service techniques which have been approved by the manufacturer. Never use worn tools and do not leave any tools in or on the product.
- Clean the area afterwards.

	ATTENTION Service, maintenance and repairs must be performed in accordance with directive TRGS 560 and TRGS 528 by authorised, qualified and trained persons (skilled) using appropriate work practices.
	ATTENTION Before you carry out service, maintenance and/or repair jobs: - fully disconnect the unit from the mains

 	Personal protective equipment (PPE) Wear respiratory protection and protective gloves during service, maintenance and repairs.
	WARNING The industrial vacuum cleaner that you use during service and maintenance must meet dust class H according to EN 60335-2-69 or HEPA class (efficiency $\geq 99.97\%$ at $0.3 \mu\text{m}$).

4 INSTALLATION

4.1 Tools and requirements

You need the following tools and requirements to install the unit:

- basic tools



4.2 Unpacking

Make sure that the product is complete. The package contains:



- Downdraft table
- Work grid (two-piece)
- Bolt M6 (8)
- Square key 8 mm (to lock/unlock doors)
- Square key 6 mm (to lock/unlock dust drawers and doors of electrics)

4.3 Installation

Refer to paragraph 4.4 for mounting instructions of the options and accessories.





If you do not have any options, proceed with paragraph 4.5 for mounting of the work grid.


4.4 Options and accessories

- Install options and accessories, if any.

4.4.1 Backdraft kit

	<input type="checkbox"/> Backdraft panel <input type="checkbox"/> Narrowing plate (2)
---	--

	If you have side panels as well, we recommend to install them to the backdraft panel first. Refer to paragraph 4.4.2.
---	---

	ATTENTION! When the downdraft table is used for grinding only, we recommend not to mount the narrowing plates in the backdraft panel. For welding and plasma cutting, however, the narrowing plates are required .
---	--

To install the backdraft kit, do the following.

Fig. 4.5

- Remove the cover strip. Keep the 8 bolts.
- Put the narrowing plates (B) on the downdraft table.
- Put the backdraft panel (A) in place.
- Attach the narrowing plates and the backdraft panel with the 8 bolts.

The cover strip becomes redundant.

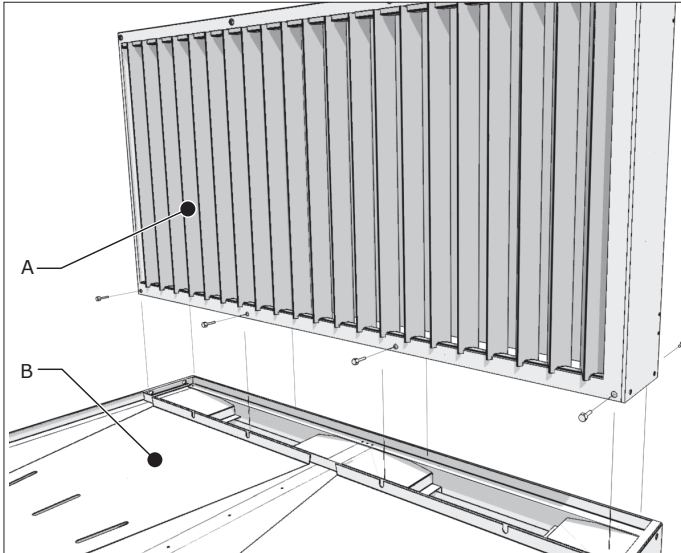
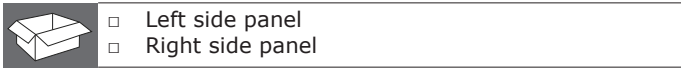


Fig. 4.5 Mounting of the backdraft kit

4.4.2 Side panels



To install the side panels, do the following.

Fig. 4.6

- Loosen the bolts on the loose side of the hinges and remove the washers. Keep the bolts and washers.
- Put the pins through the holes on the sides of the backdraft panel.
- Put the washers and bolts over the pins.
- Tighten the bolts.

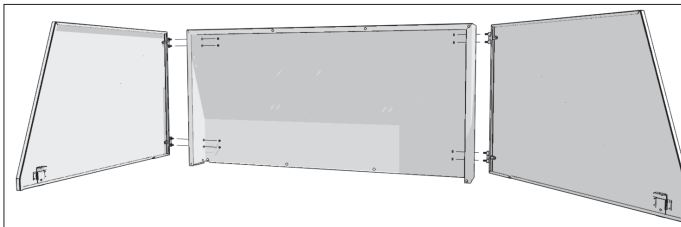
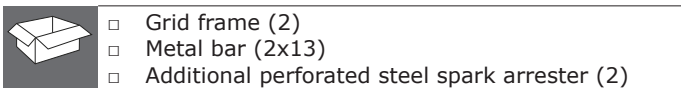


Fig. 4.6 Mounting of the side panels

4.4.3 Plasma cutting work grid



To install the plasma cutting work grid, do the following.

Fig. 4.7

- Put the perforated steel spark arresters (A) over the pre spark arresters. Make sure to direct the edgeless sides to the back.

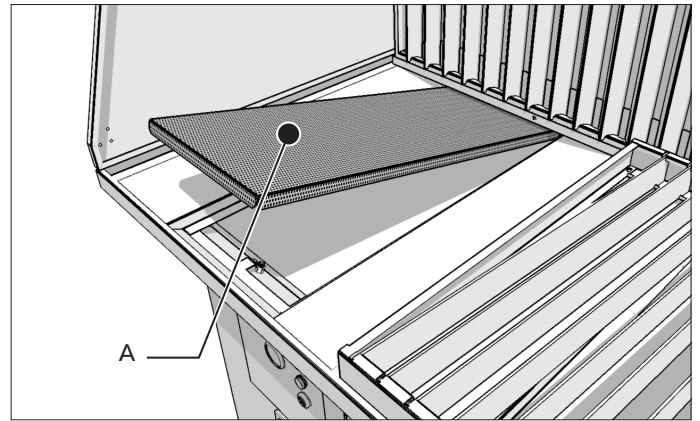
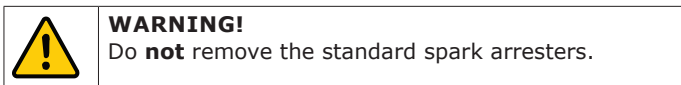


Fig. 4.7 Mounting of the perforated steel spark arresters

Fig. 4.8

- Remove the ground bracket at the position of the work grid. Keep the bolts.
- Install the grid frames.
- Attach the grid frames with the 2 bolts (B).

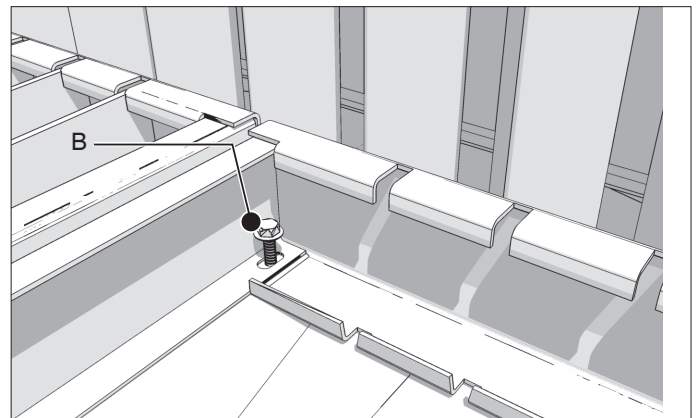
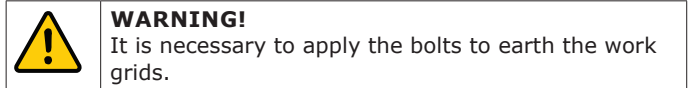


Fig. 4.8 Mounting of the grid frames

Fig. 4.9

- Install the metal bars (C).

The standard work grid and the ground bracket become redundant.

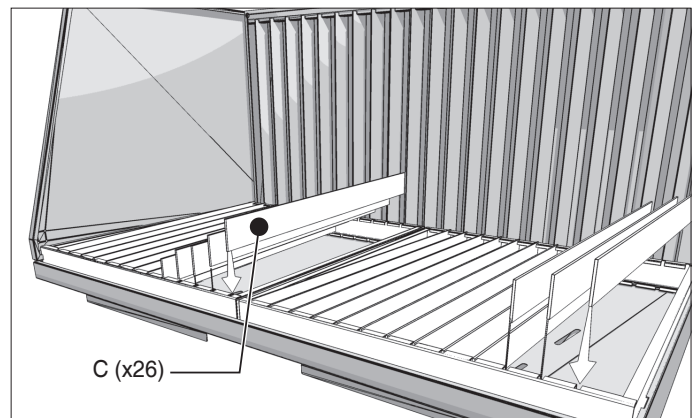


Fig. 4.9 Mounting of the metal bars

4.4.4 HEPA kit

- HEPA box with filter
- Spare bolts M6 (4)
- Draught strip

ATTENTION!
To avoid damage, handle the HEPA box and filter with care when you unpack and install it.

To install the HEPA kit, do the following.

Fig. 4.10

- Remove the outlet panel of the downdraft table. Keep the 4 bolts.
- Apply the draught strip (A) to the downdraft table.

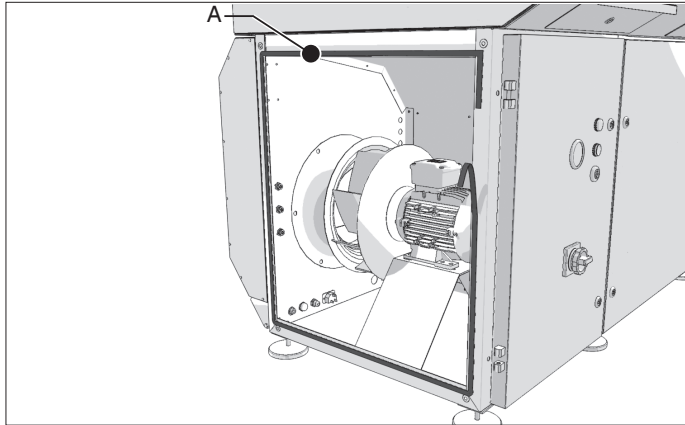


Fig. 4.10 Draught strip

Fig. 4.11

- Push a screwdriver or other tool at the position of the strips (B) to unlock the HEPA filter.
- Remove the HEPA filter.

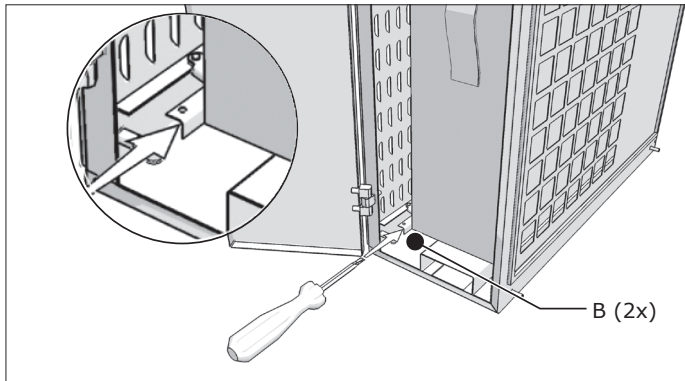


Fig. 4.11 Remove the HEPA filter

To make it easier to install the HEPA box:

- remove the outlet panel of the HEPA box
- remove the outlet grid inside the downdraft table

Do not forget to install them again.

Fig. 4.12

- Put a bolt *halfway* through the 2 upper holes (C) at the outlet of the downdraft table.
- Hang the HEPA box on the bolts.
- Put a bolt through the 2 lower holes (D) in the HEPA box.
- Tighten the 4 bolts (C+D).
- Put the HEPA filter in the box.

- Pull the two straps tightly to lock the filter. When you hear a click sound the filter is correctly locked.

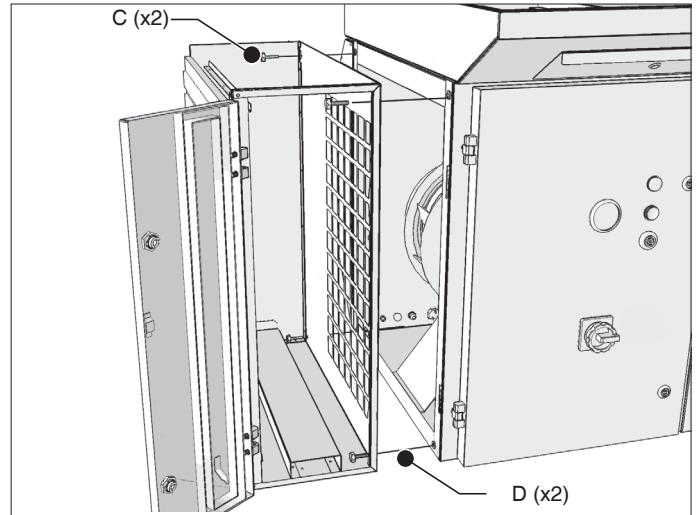


Fig. 4.12 Mounting of the HEPA box

If you will install a Silencer/Outlet duct, the outlet panel of the HEPA box is redundant.

When the downdraft table is at its final position:

- use the adjusting feet to put the table in fully horizontal position

The outlet panel of the downdraft table becomes redundant anyway.

4.4.5 Silencer/Outlet duct

- Upper shaft with top grid
- Lower shaft
- Draught strip
- Bolt (6)
- Washer (6)

You can connect the Silencer/Outlet duct to the HEPA box or install it directly to the downdraft table.

To install the Silencer/Outlet duct, do the following.

Fig. 4.13

- If applicable: remove the outlet panel of the downdraft table or the outlet panel of the HEPA box. Keep the 4 bolts.
- Apply the draught strip to the downdraft table (A) or HEPA box (B).

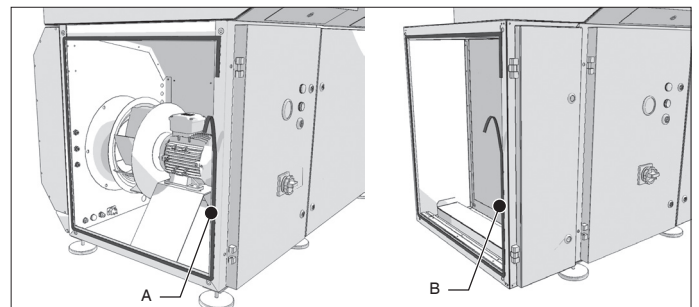


Fig. 4.13 Draught strip

Fig. 4.14

- Put a bolt (C) *halfway* through the 2 lower holes at the outlet of the downdraft table or HEPA box.

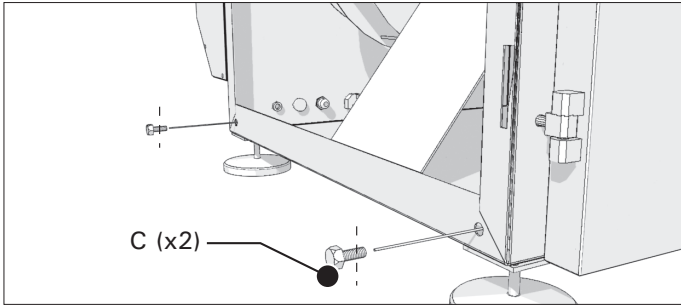


Fig. 4.14

Fig. 4.15

- Put the lower shaft (B) of the Silencer/Outlet duct over the bolts (C).
- Move it in an upright position and put a bolt (A) in the 2 upper holes.
- Tighten the 4 bolts.

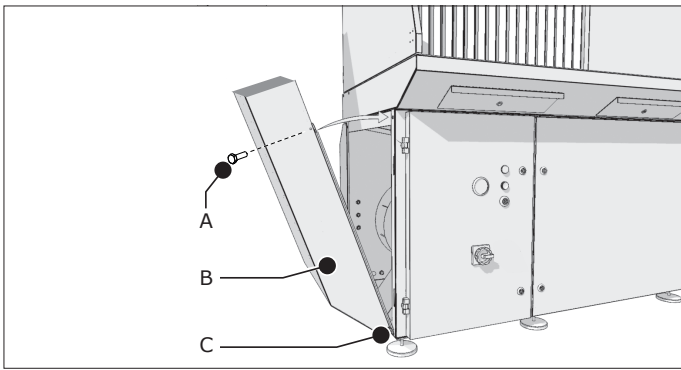


Fig. 4.15 Mounting of the lower shaft

Fig. 4.16

- Put the upper shaft (A) on top of the lower shaft (B).
- Attach it with the 6 bolts + washers (C).

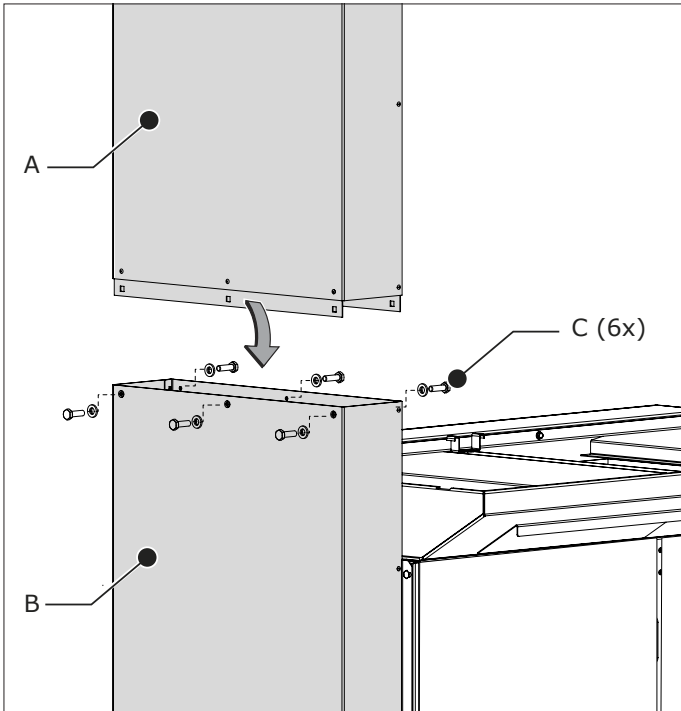


Fig. 4.16 Mounting of the upper shaft

The outlet panel of the downdraft table becomes redundant.

4.4.6 Working light



- Lighting fixture with 2,3 m of cable and plug
- Bolts M6 (6)
- Tie-wrap (3)

To install the working light, do the following.

Fig. 4.17

- Install the lighting fixture on the backdraft panel with the 6 bolts (A).

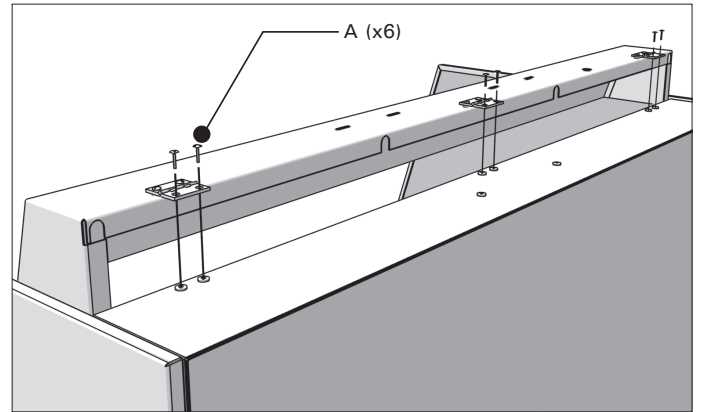


Fig. 4.17 Mounting of the lighting fixture

Fig. 4.18

- Lead the cable down the back side of the downdraft table.
- Attach the cable to the backdraft panel with the 3 tie-wraps (B).
- Connect the cable (refer to Fig. 2.3B).

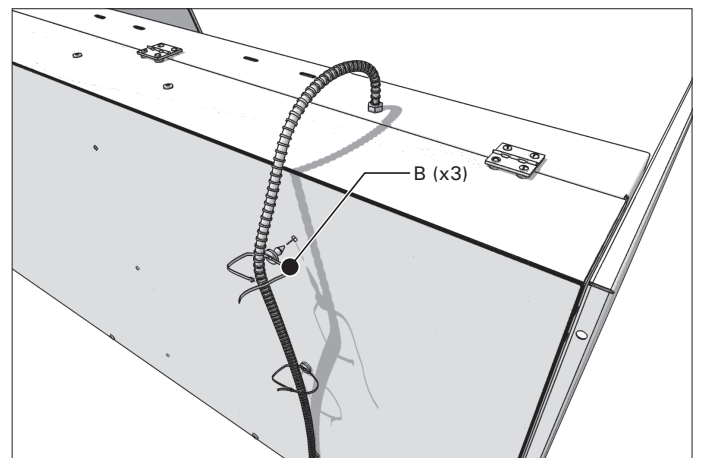


Fig. 4.18 Mounting of the cable

4.4.7 Movement sensor



- Automatic start/stop device with 2,3 m of cable and plug
- Bolts M6 (2)
- Tie-wrap (3)

To install the movement sensor, do the following.

Fig. 4.19

- Install the movement sensor on top of the backdraft panel with the 2 bolts (A).

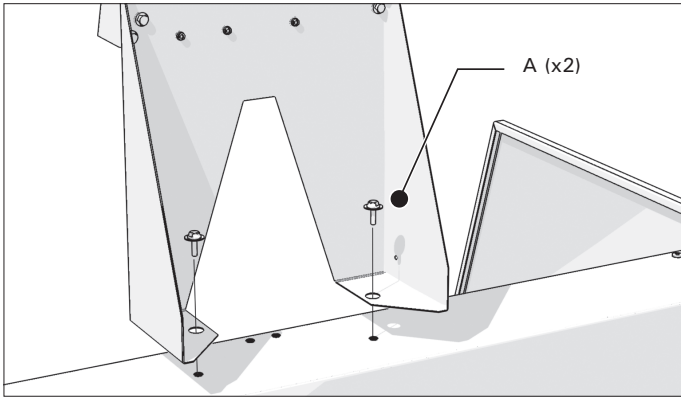


Fig. 4.19 Mounting of the movement sensor

Fig. 4.20

- Lead the cable down the back side of the downdraft table.
- Attach the cable to the backdraft panel with the 3 tie-wraps (B).
- Connect the cable (refer to Fig. 2.3A).

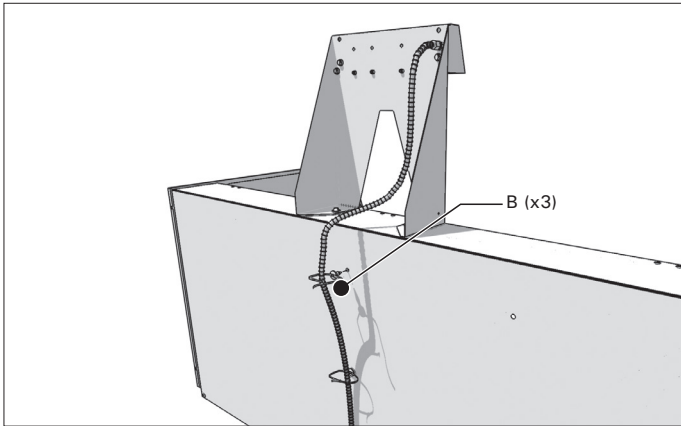


Fig. 4.20 Mounting of the cable

4.4.8 Bench vice mounting bracket

The bench vice mounting bracket is suitable for mounting on the standard work grid only.

	<ul style="list-style-type: none"> <input type="checkbox"/> Mounting bracket <input type="checkbox"/> Strip (2) <input type="checkbox"/> Bolt M6 (4) <input type="checkbox"/> Nut M6 (4) <input type="checkbox"/> Washer (8)
--	---

To install the bench vice mounting bracket, do the following.

Fig. 4.21

- Determine the desired position and put the mounting bracket on the grid.
- Install the strips below the grid and attach them with the bolts, nuts and washers.

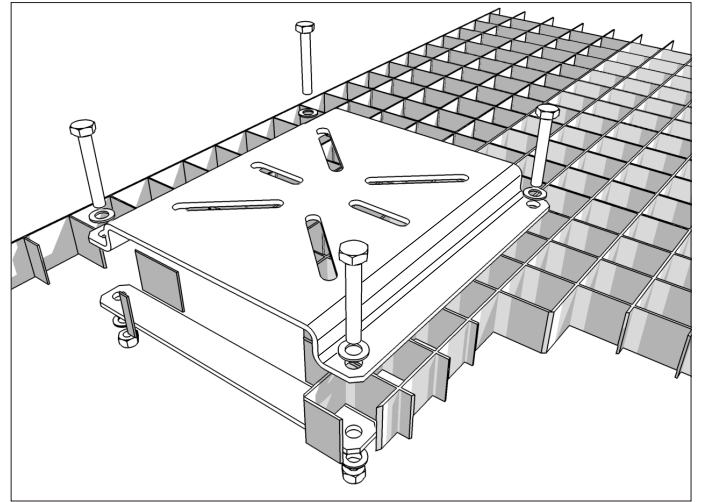


Fig. 4.21 Mounting of the bench vice mounting bracket

4.4.9 Wheel set

	<ul style="list-style-type: none"> <input type="checkbox"/> Swivel caster with brake (2) <input type="checkbox"/> Swivel caster without brake (3)
--	---

To install the wheel set, do the following.

- Lift the downdraft table with a fork-lift truck or pallet truck.
- Loosen and remove the 5 adjusting feet.
- Install the swivel casters instead;
 - swivel casters with brake: left + right front corner
 - swivel casters without brake: positions on the rear

	ATTENTION Turn the screw thread of the swivel casters in as deep as possible.
	By the use of the wheelset, the working height of the downdraft table is fixed to 950 mm (37½ in.).

4.5 Work grid

To install the work grid, do the following.

Fig. 4.1

- Loosen the ground bracket³ from the downdraft table. Keep the screws.
- Install the work grids.
- Put the ground bracket over both work grids.
- Attach it with the removed screws.

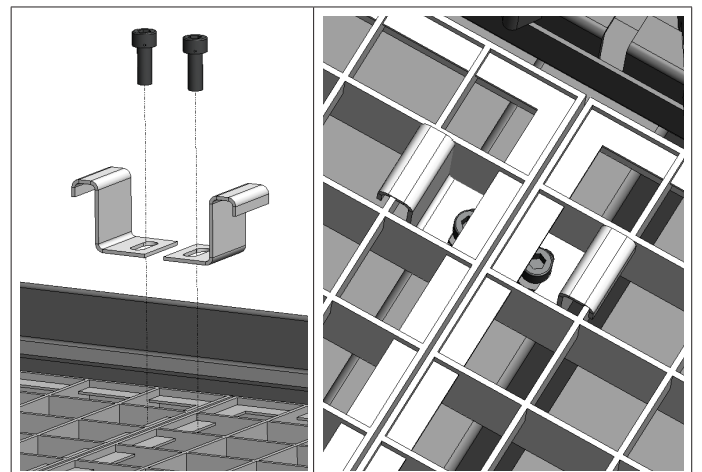


Fig. 4.1 Ground bracket (two-piece)

3. The ground bracket consists of two pieces

**ATTENTION**

It is necessary to apply the bracket to ground the work grids.

4.6 Compressed air connection (DraftMax Ultra only)



The downdraft table functions on compressed air with a recommended working pressure of 5-8 bar (72-115 psi). Make sure that the working pressure is between these values (preferably at 5 bar/72 psi). If required, install a pressure relief valve to prevent overpressure. If the pressure is too high, the pressure relief valve of the system will be opened, thus decreasing the pressure until the system pressure has reached an appropriate level.

**ATTENTION**

The compressed air must be dry and oil-free according to ISO 8573-3 class 6.

- Connect the downdraft table to compressed air (refer to Fig. 2.3C).

4.7 Positioning



You can move the downdraft table to its final position with:

- a fork-lift truck (preferred way); or
- a pallet truck (in this case you must tilt the table); or
- cargo lashings lifted by a fork-lift truck (refer to Fig. II on page 16)

**CAUTION**

Do not position the product where it is exposed to vibrations or heat radiation from heat sources. Observe the earlier described ambient conditions.

- Put the downdraft table against the wall.
- If necessary:
Use the adjusting feet to put the table level and to adjust it to the desired height (min. 920 mm - max. 970 mm/36-38 in.) (also refer to Fig. III on page 16).

4.8 Electric connection

**CAUTION**

Make sure that the product is suitable for connection to the local mains. You can find information about the connection voltage and frequency on the identification plate. The cables must be connected in conformance with the local rules and regulations and can only be carried out by well qualified and authorised technicians.

You can connect the downdraft table to the mains by:

- a three-phase plug (grounded); or
- directly to the power supply

- Connect the mains cord to the mains.

4.8.1 Sense of rotation

To make sure that the sense of rotation of the fan is correct:

- Turn on the main switch.
- Push the ON button to switch on the fan.
- Push the OFF button to switch off the fan.
- Wait 10 seconds.
- Open the left door.

**WARNING**

Do **not** open the door within 10 seconds after you have switched off the fan. Keep your hands away from the fan wheel.

The motor contains a sticker that indicates the correct sense of rotation.

- Examine the sense of rotation during the slow-down period of the fan.
- Turn off the main switch.
- Disconnect the downdraft table from the mains.
- If necessary:
Change the connection of the phases.

5 USE

**WARNING!**

Fire hazard! Do **not** use the downdraft table without spark arresters, filter cartridges and dust drawers.

5.1 DraftMax Basic

5.1.1 Control panel

The control panel has the following controls and indicators:

Fig. 5.1

- A Main switch
- B Pressure gauge
- C ON button (green)
- D OFF button (black)

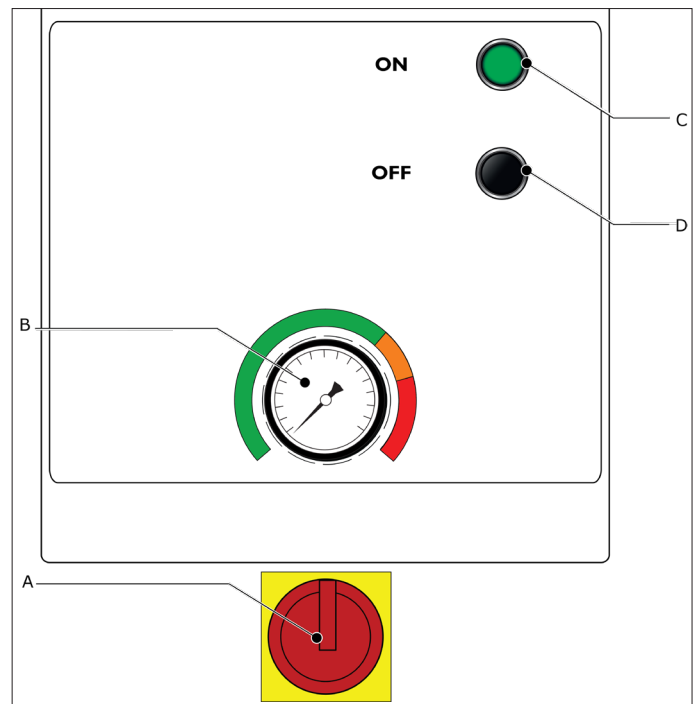


Fig. 5.1 Control panel DraftMax Basic

5.1.2 Operation

Fig. 5.1

- Make sure that the main switch (A) is on.
- Push the ON button (C) to start the fan.
- Start welding/grinding.
- Push the OFF button (D) after you have finished welding/grinding to stop the fan.

5.1.3 Filter replacement

Fig. 5.1

- During use, you must regularly check the pressure gauge (B). When the pressure reaches 1400 Pa, you must replace the filter cartridges.
- Refer to paragraph 6.2.1 for the filter replacement procedure.

5.2 DraftMax Ultra

5.2.1 Control panel

The control panel has the following controls and indicators:

Fig. 5.2

- A Main switch
- B Pressure gauge
- C Button ON/OFF (green)
- D Button MANUAL CLEANING (black)
- E Indicator light ALARM

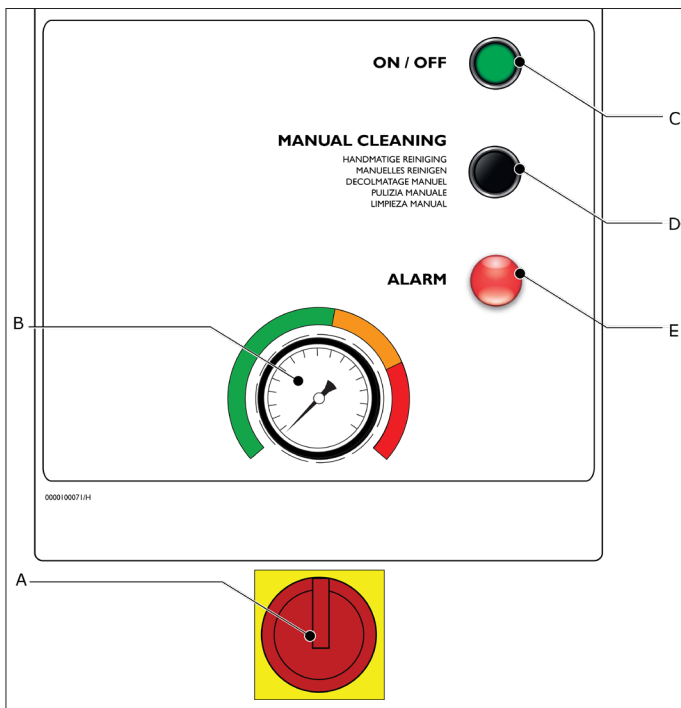


Fig. 5.2 Control panel DraftMax Ultra

5.2.2 Operation

Fig. 5.2

- Make sure that the main switch (A) is on.

Depending on your specific configuration:

Without any sensor	With: movement sensor
<ul style="list-style-type: none"> • Push the ON/OFF button (C) to start the fan • Start welding/grinding • Push the ON/OFF button (C) after you have finished welding/grinding to stop the fan 	<ul style="list-style-type: none"> • Start welding/grinding
	The fan will start and stop automatically

5.2.3 Automatic filter cleaning

When the pressure over the filter cartridges reaches the threshold value (1200 Pa) during use, the filter cleaning

system starts automatically. This procedure takes 2 minutes, during which each filter cartridge is cleaned by 7 compressed air shots.

5.2.4 Manually activated filter cleaning

If desired, you can activate the filter cleaning system manually (online cleaning only).

Fig. 5.2

- Push the ON/OFF button (C) to start the fan.
- Push the MANUAL CLEANING button (D) to activate the filter cleaning system.

This procedure takes 2 minutes, during which each filter cartridge is cleaned by 7 compressed air shots.

5.2.5 Indicator light ALARM

The ALARM light can show two different signals:

Signal	Means	Required action
	Filter cartridges are clogged	Replace the filter cartridges (refer to par. 6.2.1). Replace the HEPA filter, if any, as well (refer to par. 6.2.2)
	No compressed air available	Repair the compressed air connection

To suppress the ALARM light temporarily: Push the ON/OFF button two times (off and on). The ALARM light starts blinking again after 10 minutes, unless you have solved the problem.

5.2.6 Filter replacement

When the filter cleaning system is unable to get the pressure below 1200 Pa within 10 minutes, the filter cartridges are probably clogged and must be replaced. This is indicated by the alarm light (ref. paragraph 5.2.5).

Fig. 5.2

- Push the ON/OFF button (C) to stop the fan.
- Refer to paragraph 6.2.1 for the filter replacement procedure.

6 MAINTENANCE


6.1 Periodic maintenance



The product has been designed to function without problems for a long time with a minimum of maintenance. In order to guarantee this some simple, regular maintenance and cleaning activities are required which are described in this chapter. If you observe the necessary caution and carry out the maintenance at regular intervals, any problems occurring will be detected and corrected before they lead to a total breakdown.

WARNING
Overdue maintenance can cause fire.

The indicated maintenance intervals can vary depending on the specific working and ambient conditions. Therefore we recommend to thoroughly inspect the complete product once every year beside the indicated periodic maintenance. For this purpose contact your supplier.





	<p>CAUTION! De-energize the downdraft table and disconnect the compressed air (if applicable) before you carry out the activities below. First read the maintenance regulations at the beginning of this manual.</p>
--	---

The text printed in italics in the table below refers to options and accessories.

Component	Action	Frequency: every ...		
		week	2 weeks	12 months
Pre spark arresters	Check for damage and correct installation. Replace if necessary.	X		
	Clean with an industrial vacuum cleaner		X	
Main spark arresters	Check for damage and correct installation. Replace if necessary.	X		
	Clean with an industrial vacuum cleaner		X	
Filter cartridges	Check for damage and correct installation. Replace if necessary.	X		
Dust drawers	Check for damage and correct installation. Replace if necessary.	X		
	Empty the dust drawer underneath the filter cartridges with an industrial vacuum cleaner		X	
Doors	Check for damage and correct installation. Replace if necessary.	X		
Outlet grid	Clean with an industrial vacuum cleaner			X
Plasma cutting work grid	<i>Check for damage. Replace damaged bars if necessary.</i>	X		
Perforated steel spark arresters (below plasma cutting work grid)	<i>Check for damage and correct installation. Replace if necessary.</i>	X		

6.2 Filter replacement



		<p>Personal protective equipment (PPE) Wear respiratory protection and protective gloves when you replace any filter.</p>
	<p>WARNING Do not replace any filter while the fan is running.</p>	
	<p>ATTENTION Use an industrial vacuum cleaner that meets dust class H according to EN 60335-2-69 to clean the spark arresters, dust drawers, filter compartment and the (optional) HEPA filter housing.</p>	


6.2.1 Filter cartridges

The spare filter cartridges are supplied in a plastic bag and come with face mask and a pair of disposable gloves. It is recommended to replace both filter cartridges at the same time.

To replace the filter cartridges, do the following.

Fig. 6.1

- De-energize the unit.
- Unpack the replacement filters and keep the plastic bags.
- Open the right door with the square key. Turn the square key to the **left** to unlock the door.

	<p>WARNING Wait at least 60 seconds before open the door to allow the dust in the filter compartment to settle.</p>
---	---

- Remove the used filter cartridges and pack them in the plastic bags in which the new filters are supplied.
- Seal the bags firmly with the supplied tie-wrap.
- Clean the pre spark arresters and put them back.
- Empty the dust drawers below the pre spark arresters and the filter cartridges, preferably with an industrial vacuum cleaner. Put dust drawers back in place.
- Remove the main spark arresters and clean them.
- Clean the entire filter compartment, including the space left and right of the main spark arresters.
- Put the main spark arresters back.
- Install new filter cartridges.
- Close the door.
- Dispose of the used filter cartridges in accordance with state or local regulations.

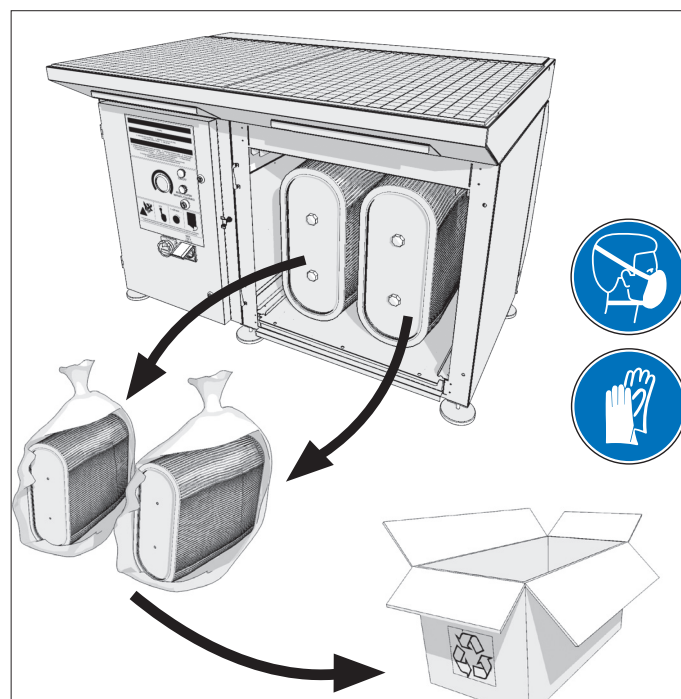


Fig. 6.1 Filter replacement

If you have installed the optional HEPA kit, you must replace the HEPA filter as well.

6.2.2 HEPA filter (option)

The HEPA filter is supplied in a plastic bag and comes with face mask and a pair of disposable gloves. You must replace the HEPA filter together with the filter cartridges.

To replace the HEPA filter, do the following.

- Open the door of the HEPA box.
- Unlock the HEPA filter (refer to Fig. 4.11B).

- Remove the used HEPA filter and pack it in the plastic bag in which the new filter is supplied.
- Clean the filter housing.
- Install a new HEPA filter.
- Pull the two straps tightly to lock the filter. A click sound confirms that the filter is correctly locked.
- Close the door.
- Dispose of the used HEPA filter in accordance with state or local regulations.

7 TROUBLESHOOTING

If the unit does not function (correctly), consult the checklist below to see if you can remedy the error yourself. Should this not be possible, contact your supplier.



	Text printed in <i>italics</i> refers to options and accessories.
	WARNING Obey the safety regulations that are written in chapter 3 when you carry out the activities below.
	After you have switched off the fan, wait at least 60 seconds before you open any door.

Symptom	Problem	Possible cause	Solution
General			
The fan does not start	The downdraft table does not function	No power supply	Connect the mains voltage
		Main switch is off	Turn on the main switch
		Motor defective	Repair or replace the motor
		ON/OFF button defective	Replace the ON/OFF button
		Fuse(s) defective	Check fuses F1, F2 and F3 and replace if necessary
		Thermal relay tripped	Check current settings and reset the thermal relay
		Thermal relay defective	Replace the thermal relay
		Left and/or right door open	Close and lock both doors
Safety switch in left and/or right door defective	Replace safety switch(es)		

Symptom	Problem	Possible cause	Solution
Poor extraction capacity	Downdraft table does not function properly	Filter cartridges clogged	Replace both filter cartridges (refer to par. 6.2.1). <i>Replace the HEPA filter as well (refer to par. 6.2.2)</i>
		Pressure gauge defective (indicates value below 800 Pa)	Replace the pressure gauge and the filter cartridges (refer to par. 6.2.1). <i>Replace the HEPA filter as well (refer to par. 6.2.2)</i>
		Inverted direction of rotation of the motor	Invert the connection of the phases to change the direction of rotation
Dust or smoke coming out of the outlet	Pollution of the facility	Pre and/or main spark arresters polluted	Clean the spark arresters
		Filter cartridge(s) ripped	Replace both filter cartridges (refer to par. 6.2.1) and clean the outlet grid. <i>Replace the HEPA filter as well (refer to par. 6.2.2)</i>
<i>Working light not working</i>	<i>No light</i>	<i>Main switch off</i>	<i>Turn on main switch</i>
		<i>Cable is not connected</i>	<i>Connect the cable (refer to Fig. 2.3B)</i>
		<i>LED tube is defective</i>	<i>Replace the LED tube</i>
		<i>Fuse defective</i>	<i>Check fuse F4 and replace if necessary</i>
DraftMax Ultra only			
The fan does not start	The downdraft table does not function	<i>Automatic start/stop (movement sensor) not connected</i>	<i>Connect cable of automatic start/stop (refer to Fig. 2.3A)</i>
		<i>Sensor of movement sensor defective</i>	<i>Replace the sensor</i>
Irregular filter cleaning	One of the filter cartridges is not being cleaned	One of the membrane valves defective	Replace both membrane valves
Poor extraction capacity	No filter cleaning	Membrane valve(s) defective	Replace both membrane valves
Button MANUAL CLEANING does not react	No filter cleaning	Button MANUAL CLEANING defective	Replace button MANUAL CLEANING
		PC board defective	Replace PC board
Signal of alarm light: 	Downdraft table does not function properly	Filter cartridges clogged	Replace both filter cartridges (refer to par. 6.2.1). <i>Replace the HEPA filter as well (refer to par. 6.2.2)</i>
Signal of alarm light: 	Filter cleaning system does not function	No compressed air available	Connect/repair the compressed air supply

8 SPARE PARTS

8.1 Filter unit

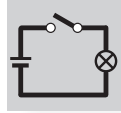
The following spare parts are available for the downdraft table;

- refer to exploded view Fig. IV on page 17 and spare parts list Fig. V on page 18



9 ELECTRICAL DIAGRAM

Refer to the separately supplied electrical diagram.



10 DISPOSAL

Dismantling and disposal of the downdraft table must be done by qualified persons.



Personal protective equipment (PPE)

Wear respiratory protection and protective gloves when you dismantle and dispose of the unit.

10.1 Dismantling

To safely dismantle the downdraft table, obey the safety instructions that follow.

Before dismantling of the downdraft table:

- disconnect it from the mains
- disconnect it from the compressed air
- clean the outside

During dismantling of the downdraft table:

- make sure that the area is sufficiently ventilated, e.g. by a mobile ventilation unit

After dismantling of the downdraft table:

- clean the dismantling area

10.2 Disposal

Dispose of the pollutants and dust, together with the used filter cartridges, in a professional manner in accordance with federal, state or local regulations.

CE DECLARATION

CE declaration of conformity for machinery



We, Plymovent Manufacturing B.V., Koraalstraat 9, 1812 RK Alkmaar, Netherlands, herewith declare, on our own responsibility, that the product:

- DraftMax Basic
- DraftMax Ultra

which this declaration refers to, is in accordance with the conditions of the following Directives:

- Machine Directive 2006/42 EC
- EMC 2014/30 EU
- LVD 2014/35 EU
- ErP Directive 2009/125 EC
- EN-ISO 21904-2-2020 (W3) ⁴

Signature:

Name: M.S.J. Ligthart
Position: Product Manager
Date of issue: 15th June 2019

4. DraftMax + HEPA kit

Fig. I Selection diagram

	Application			
	Welding alloyed steel	Welding stainless steel	Grinding	Plasma cutting
DraftMax Basic	yes	yes	yes	yes
- Backdraft kit	required	required	option	required
- Side panels	option	option	option	option
- Plasma cutting work grid	no	no	no	required
- HEPA kit	recommended	option	option	option
- Silencer/Outlet duct	recommended	recommended	recommended	recommended
- Working light	option	option	option	option
- Bench vice mounting bracket	option	option	option	no
- Wheel set	option	option	option	option
- Dust tray lid	recommended	recommended	option	option
DraftMax Ultra	yes	yes	yes	yes
- Backdraft kit	required	required	option	required
- Side panels	option	option	option	option
- Plasma cutting work grid	no	no	no	required
- HEPA kit	recommended	option	option	option
- Silencer/Outlet duct	recommended	recommended	recommended	recommended
- Working light	option	option	option	option
- Movement sensor	option	option	option	option
- Bench vice mounting bracket	option	option	option	no
- Wheel set	option	option	option	option
- Dust tray lid	recommended	recommended	option	option

Fig. II Cargo lashings

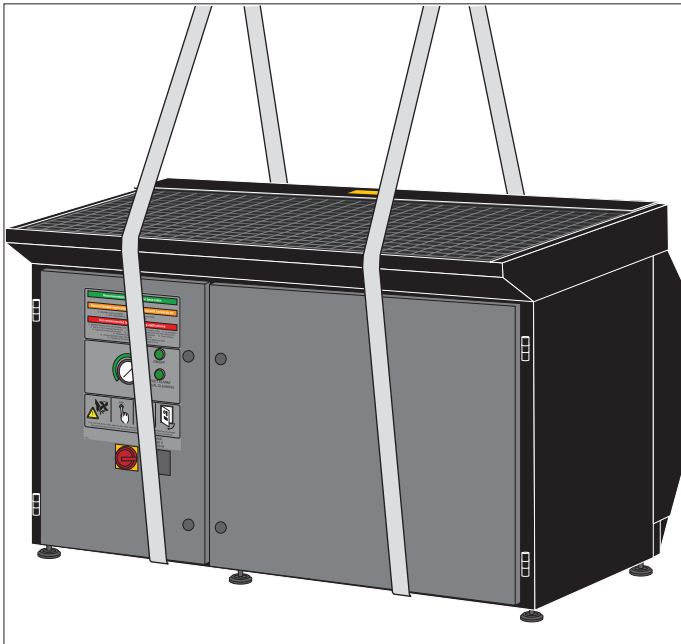


Fig. III Adjusting feet

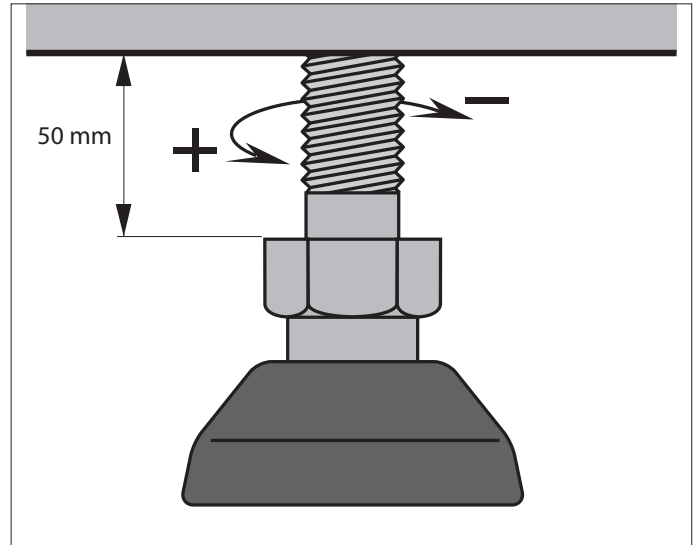


Fig. IV Exploded view

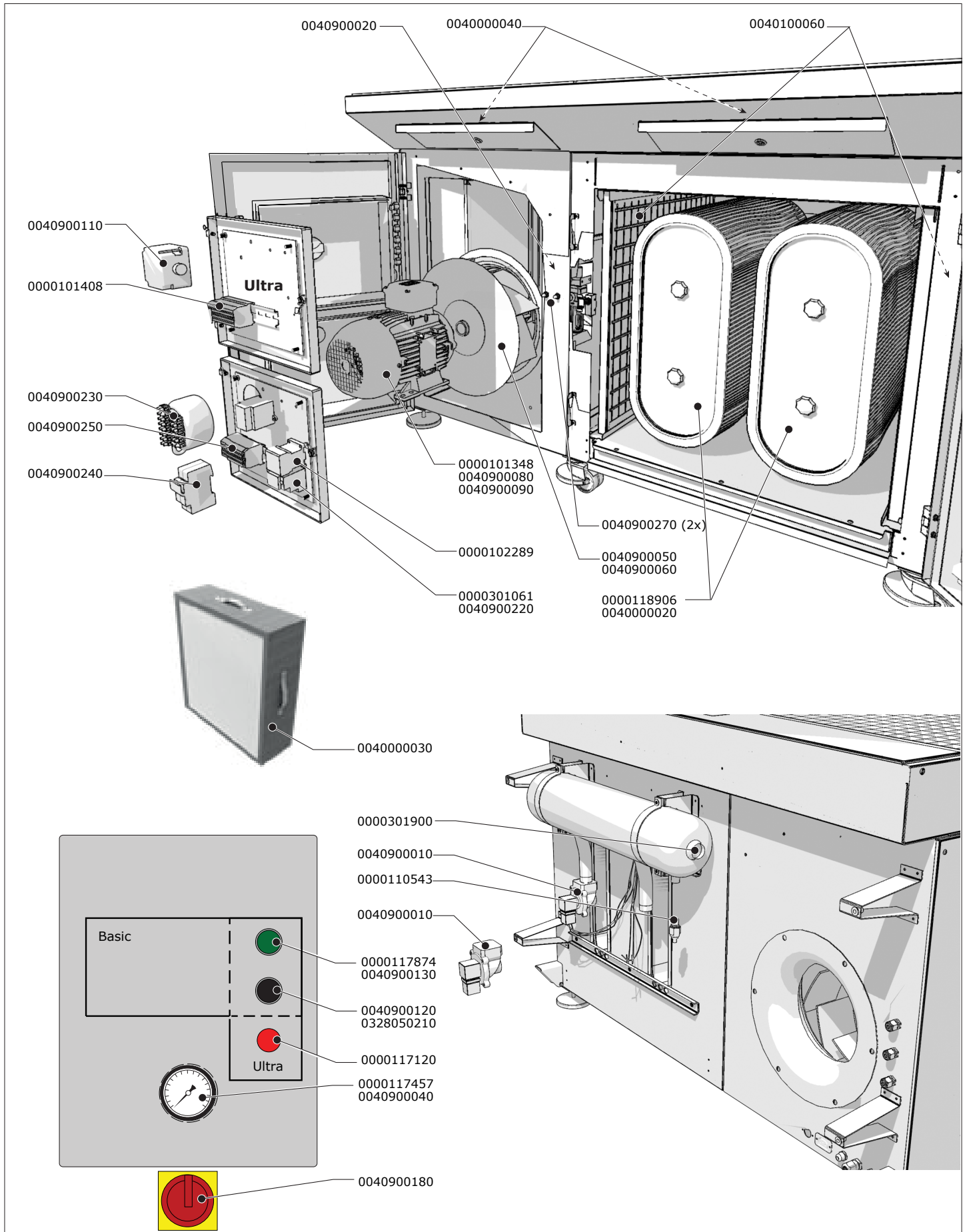


Fig. V Spare parts

Art. no.	Description
General	
0000101348	Motor 2,2 kW; 230-400V/3ph/50Hz (IEC)
0000101408	Fuse 2 A 5x20 mm UL
0000102289	Relay MC2A
0000102753	Adjustable foot for DM/MF/ME
0000102822	Work grid (2-piece)
0000117457	Pressure gauge Ø 60 mm (black ring)
0000117906	Coil 24V AC incl. connector
0000117908	Membrane (square) + spring for magnetic valve
0000301061	NTR-4.2/5.7A / Thermal relay
0040000020	DuraFilter FCC-52 (2-piece)
0040000040	Pre spark arrester (set of 2)
0040100060	Spark arrester (set of 2)
0040900040	Pressure gauge Ø 63 mm (metal ring)
0040900050	Fan wheel 50Hz/2800 rpm
0040900060	Fan wheel 60Hz/3400 rpm
0040900080	Motor 3 kW (4 HP); 208-240/480V/3ph/60Hz (USA)
0040900090	Motor 3 kW (4 HP); 600V/3ph/60Hz (Canada)
0040900180	Main switch 25A
0040900220	Thermal relay 3,2-16 A
0040900230	Transformer UL 65 VA
0040900240	Fuse 1A slow blow (CC MR1)
0040900250	Fuse 500 mA
0040900270	Safety switch
DraftMax Basic	
0040900130	Push button green incl. LED (complete) N/O
0328050210	Push button black (complete) N/C
DraftMax Ultra	
0000110543	Compressed air presence switch NC
0000117120	Service indicator (red LED)
0000117874	Push button "stay-put" green incl. LED (complete) N/O
0000301016	PCB + PIC, incl. software v3.0
0000301900	Relief valve for compressed air tank (7,5 bar)
0040900010	Magnetic valve AC
0040900020	Pressure regulator
0040900110	Pressure difference switch 6-50 mBar
0040900120	Push button black (complete) N/O
Options and accessories	
0000102982	Perforated steel spark arrester (2-piece) for plasma cutting work grid
0000118906	DuraFilter FCC-36/PTFE (2-piece)
0040000030	HEPA filter
0040900290	PIR movement detector

