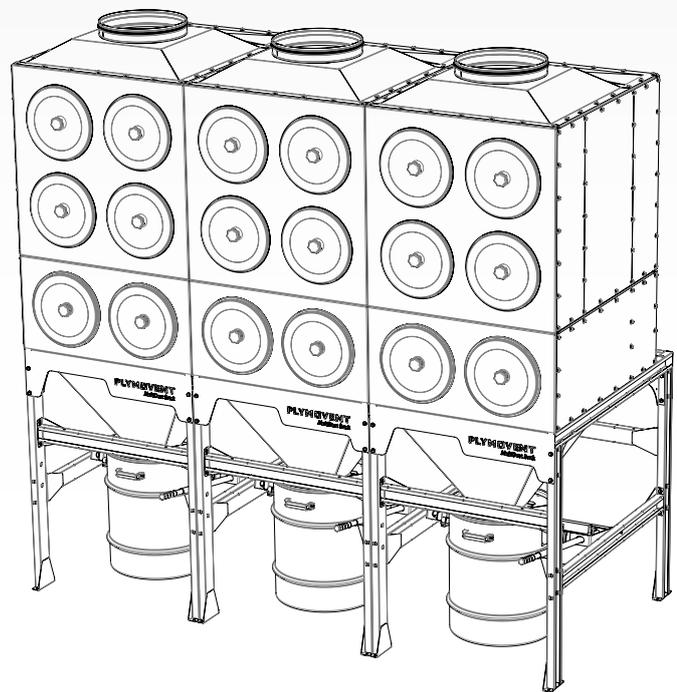


Central filter system | modular

MDB GO | MDB PRO



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! 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.

Product indications

- MultiDust Bank equals to: MDB
- The specific product type (4/6/8 etc.) corresponds with the number of filter cartridges
- Suffixes:
 - H: horizontal layout
 - V: vertical layout
 - no suffix: square layout

1 INTRODUCTION



This manual applies to MDB units with a square inlet module and a round outlet^{*)}. This configuration is supplied as standard as of January 2023.

The previous configuration of the MDB is still available as an option. This type has cylindrical inlet and outlet modules.

If you have ordered the previous version, you must use the installation and user manual **MAN_MDB_##__(until_2022)**^{**) (**) that is available on our website:}

<https://www.plymovent.com/en/service/manuals>



The standard (round) outlets are mounted on the rear of the MDB unit.

A number of MDB units is optionally available with side outlets. This means that they are supplied with:

- square inlets; and
- cylindrical outlets

It concerns the following MDB units, all in both GO and PRO^{***)} types:

Type ^{****)}	Duct connection:	
	square inlet	cylindrical outlet
MDB-4	Ø 400 mm	Ø 400 mm
MDB-6	Ø 400 mm	Ø 400 mm
MDB-8/V	Ø 500 mm	Ø 500 mm
MDB-10/V	Ø 500 mm	Ø 500 mm

For installation of the cylindrical outlet, refer to the instruction sheet that is supplied with the product.

^{*)} Refer to the image on the cover of this document

^{**)} ## = language code

^{***)} Refer to paragraph 1.3.3; including dustbin level switch

^{****)} Refer to Table I on page 17 for the article numbers



MDB is a modular concept. This means that you can install any combination of inlets and outlets;

Inlet	Outlet		Configuration
	Shape	Position	
square	round	rear	"standard"
cylindrical	cylindrical	side	"previous"
square	cylindrical	side	
cylindrical	round	rear	

For installation of the cylindrical inlets and outlets, refer to the instruction sheet that is supplied with the product.

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 MDB is a central filter system that consists of modular components. The position of the air inlet and air outlet modules is variable. Dust collection in a dustbin underneath each stack of filter modules.

Filter cartridges, extraction fan and control equipment are not included and must be selected and ordered separately.

1.3 Product combinations

1.3.1 Filter cartridges

To operate the system, selection of filter cartridges is required. The following types are available:



Filter:			
type	surface		material
	m ²	sq.ft.	
CART-D:			
Premium Plus	15	161	BiCo spunbond polyester
Premium	15	161	spunbond polyester
Economy	15	161	cellulose
CART-C	15	161	BiCo spunbond polyester, antistatic
CART-E	15	161	BiCo spunbond polyester + PTFE impregnation
CART-PTFE	10	108	BiCo spunbond polyester + PTFE membrane
	15	161	
CART-MB	10,7	115	cellulose with polypropylene microfiber overlay, electrostatically charged

The specific product type (MDB-4, MDB-12, etc.) corresponds with the required number of filter cartridges.

Precoat

To enhance the efficiency and lifespan of the filter cartridges, it is strongly recommended to add precoat material (PRECO-N). This applies to all types of filter cartridges, except for CART-PTFE and CART-MB.

Dosing per filter cartridge: 500 g (1 lbs.).

1.3.2 Extraction fan

The required capacity of the extraction fan depends on the size of the MDB system, the required filter performance and the permitted air flow through the filter cartridges.

Table II on page 17 gives an overview of the minimum and maximum airflow per MDB type, as well as the minimum and maximum motor power of the fan.

1.3.3 Control equipment

There are two ways to control the filter cleaning system of the MDB and the connected fan.

Filter system	Control equipment	Description
MDB GO	ControlGo	Intelligent control panel for basic fan/filter control

MDB PRO	ControlPro	Intelligent control panel with HMI with extensive feature package for fan/filter control; remote access via network
<i>Supplied including dustbin level switch</i>		

1.3.4 OilShield | Limestone feeder

Combined with an OilShield you can use the MDB for:

- oil mist
- heavy oil mist in welding fume

1.4 Options and accessories

The following products are available as an option and/or accessory:

Type	Description
DB-TROLLEY/80	Dustbin trolley
0000111622	Lid for dustbin DB-80
BPF	Prefilter module
CAR-KIT	Compressed air regulator
MRD-315 MRD-400 MRD-500	Manual damper with cut-off blade to regulate the airflow
PRECO-N	Precoat material for use with filter cartridges CART-D, -C and -E (refer to paragraph 1.3.1)

1.5 Technical specifications



General	
Material of housing	electro-zinc coated steel (according to DIN EN 10152)
- steel grade	DC01+ZE
- steel grade no.	1.0330
Capacity of dustbin	80 litres (21 gallon)
Noise level	<i>depends on the selected extraction fan</i>
Max. height (frame + 4 filter modules MDB-BM/4 + inlet module)	4964 mm (16½ ft)
Max. width (4 filter modules MDB-BM/4 + inlet modules)	3770 mm (12½ ft)
Compressed air system	
Contents compressed air tank; filter module:	approx.:
- MDB-BM/2	- 10 litres (2½ gallon)
- MDB-BM/4	- 20 litres (5 gallon)
Required compressed air quality	dry and oil-free according to ISO 8573-3 class 6
Required pressure	4-5 bar (60-75 PSI)
Compressed air connection	push-in fitting: - in: ¾ in. - out: 12 mm
Compressed air consumption	40-50 nl/pulse (1½-1¾ ft³/pulse)
Electrical data	
Input voltage for magnetic valves	24 VDC

Approvals and certifications

CE	
MDB + CART-PTFE/10	W3 compliant (according to EN-ISO 21904-2:2020)
MDB + CART-PTFE/15	
For details about the welding fume class related to the product type, the number of filter cartridges and the filter surface, refer to Table II on page 17.	

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

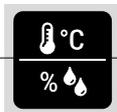
1.6 Dimensions

For dimensions of the separate filter modules and the frame, refer to Fig. I on page 18.



Refer to the available product data sheet for dimensions of entire MDB systems.

1.7 Ambient and process conditions



Process temperature:	
- min.	5°C (41°F)
- nom.	20°C (68°F)
- max.	70°C (158°F)
Max. relative humidity	90%
Storage conditions	5-45°C (41-113°F) relative humidity max. 80%
Outdoor use allowed	yes

1.8 Transport of the system

You cannot hold the manufacturer liable for any transportation damage after delivery of the product. Handle the system and the accompanying options and/or accessories, if any, with care.

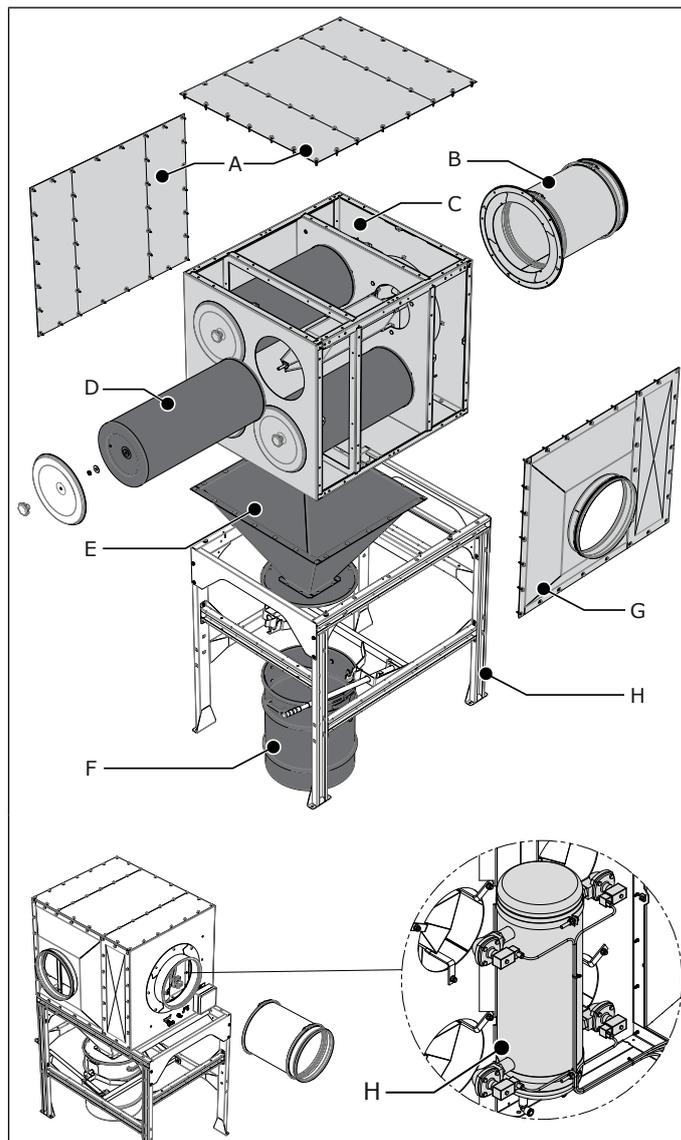


Fig. 2.1 Main components and elements

2 PRODUCT DESCRIPTION

2.1 Components

The system consists of the following main components and elements:

Fig. 2.1

- A Cover plates
- B Air outlet module(s) (MDB-OUTLET round)
- C Filter module(s) (MDB-BM/2 and/or MDB-BM/4)
- D Filter cartridges (CART)
- E Hopper (MDB-HOPPER)
- F Dustbin (DB-80)
- G Air inlet module(s) (MDB-INLET square)
- H Mounting frame (MDB-FRAME)
- I RamAir™ pulse amplifier (filter cleaning system consisting of compressed air tank + magnetic valves)

2.2 Operation



The polluted air is extracted through the air inlet module(s). The air then passes the filter cartridges inside the housing. The filtered air leaves the filter system through the outlet module(s) and can either be recirculated or exhausted to the atmosphere.

The filter cartridges are cleaned individually from the inside out by compressed air pulses. This filter cleaning system is called the RamAir™ pulse amplifier. The dust and dirt particles are collected in the dustbin.

Deflector plates behind each air inlet module balance the dust load on the filter cartridges. They operate as spark arresters at the same time.

2.2.1 Control

There are two ways to activate the filter cleaning system of the MDB and to control the connected fan.

- MDB GO: [ControlGo](#) | Intelligent control panel for basic fan/filter control
- MDB PRO: [ControlPro](#) | Intelligent control panel with HMI with extensive feature package for fan/filter control; remote access via network

3 SAFETY



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. Obey 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.
- Always keep the manual with the product.

Pictograms and instructions on the product (if present)

- 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.

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.
- 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 use¹

The product has been designed exclusively for filtering fumes and particles which are released during the most common welding and cutting 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.

Technical specifications

Do not change the specifications given in this manual.

1. "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.

Modifications

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

Product combinations

If the product is used in combination with other products or machines, the safety instructions in the documentation of these products also apply.

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 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.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (local restrictions may apply).
- Do not install the product in front of entrances and exits which must be used for emergency services.
- Mind any gas and water pipes and electric cables.
- 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
- filtering flammable, glowing or burning particles or solids or liquids
- filtering of aggressive fumes (such as hydrochloric acid) or sharp particles
- filtering dust particles which are released when welding surfaces treated with primer
- 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:

- extraction of hot gases (more than 70°C/158°F continuously)
- flame spraying

- 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).
- Do not leave any tools or other objects in or on the unit.
- The welding current return circuit between the workpiece and the welding machine has a low resistance. Thus avoid connection between the workpiece and the MDB, so that there is no possibility of the welding current flowing back to the welding machine via the protective earth conductor of the MDB.

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.
- Safety features which have been removed for service, maintenance or repairs, must be put back immediately after finishing these jobs and it must be checked that they still function properly.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (local restrictions may apply).
- Clean the area afterwards.

4.3 Mounting frame (MDB-FRAME)

Fig. 4.1

- Assemble the mounting frame² with the bolts M8x16 (A) and washers (B). Tighten the bolts *loosely*.

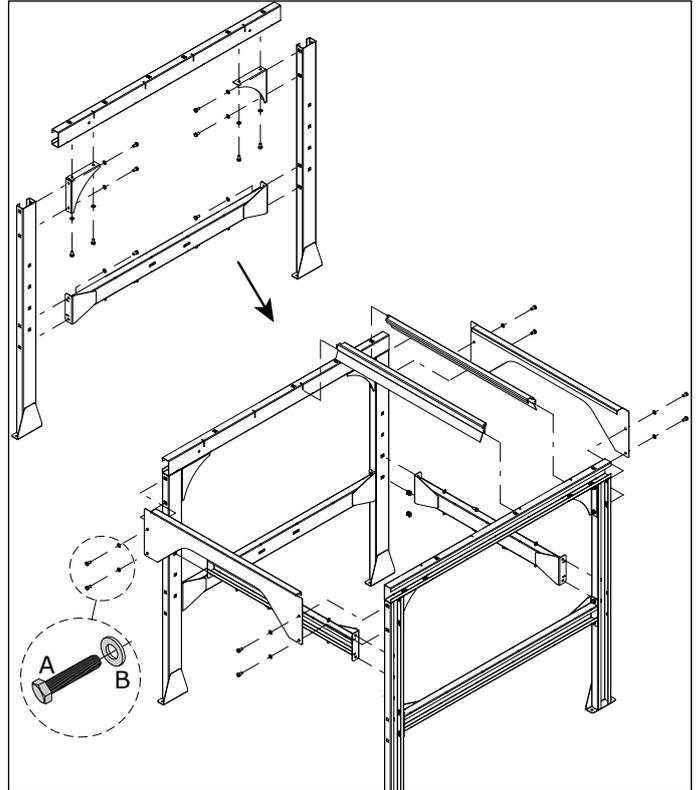


Fig. 4.1 Assembly of the mounting frame

4.3.1 Cover plate and hopper

Fig. 4.2

Hopper (MDB-HOPPER)

- Put the hopper (B) on the frame.

Cover plate (MDB-COVER/U)

- Put the cover plate (A) on the frame.

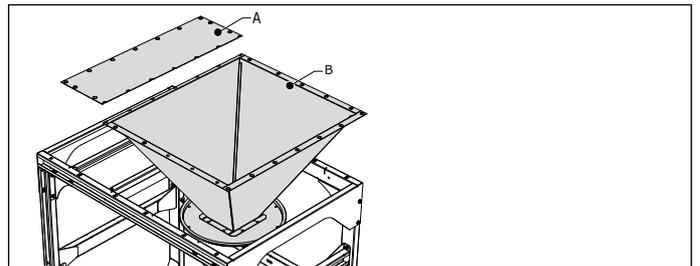


Fig. 4.2 Hopper + cover plate

Fastening

- Tighten the bolts of the entire frame (refer to Fig. 4.1).

Fig. 4.3

Dustbin lift

- Install the dustbin lift (B) to the frame. Put the bolts M10x40 (A) from the inside into the slotted holes³.

- Note: the "open" sides of the bars are on the outside
- No nuts involved. The dustbin lift has some tolerance



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 carrying out service, maintenance and/or repair jobs:

- disconnect the connected control equipment from the mains
- disconnect the compressed air supply
- de-energize any connected external device



Personal protective equipment (PPE)

Wear respiratory protection and protective gloves during service, maintenance and repairs.



WARNING

The industrial vacuum cleaner used 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 filter system:

- basic tools
- lifting equipment (e.g. a forklift truck)
- duct tape



4.2 Unpacking

Refer to Fig. II on page 19 for the scope of supply of each modular component package.



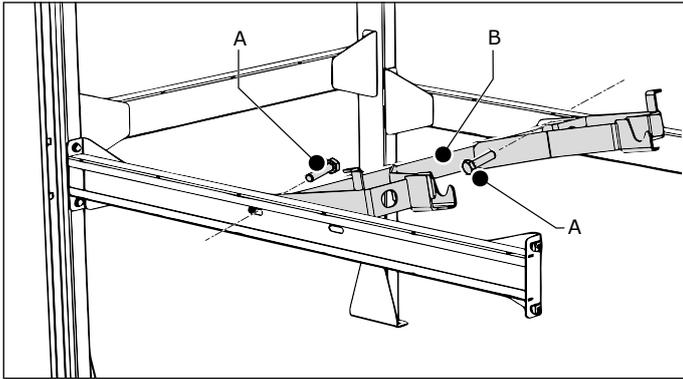


Fig. 4.3 Dustbin lift

Fig. 4.4

- Install the locking device (A) with 2 washers and 2 bolts.

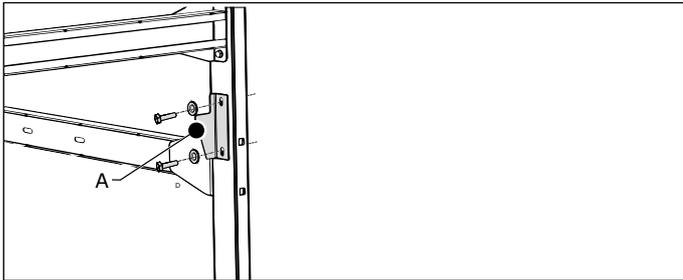


Fig. 4.4 Locking device

Fig. 4.5

- Put the lifting pin (B) through the holes and attach it with 2 cotter pins (A).
- Put the extension pin with handle (C) into the lifting pin.

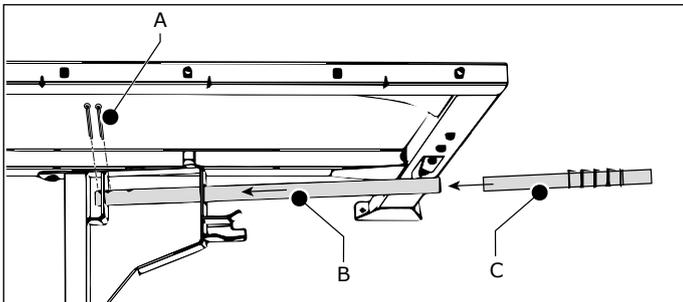


Fig. 4.5 Lifting pin

Fig. 4.6

Sealing (MDB seal assembly set) - AllTight™ type

How to apply the seals:  How to use SealApplicator: 

- Remove dust, if any, from the upper frame.
- Lay the seals loosely on the frame and put them together⁴.
- Make sure that the jigsaws tightly fit.

4. Do not worry about a slight misalignment of the seal holes

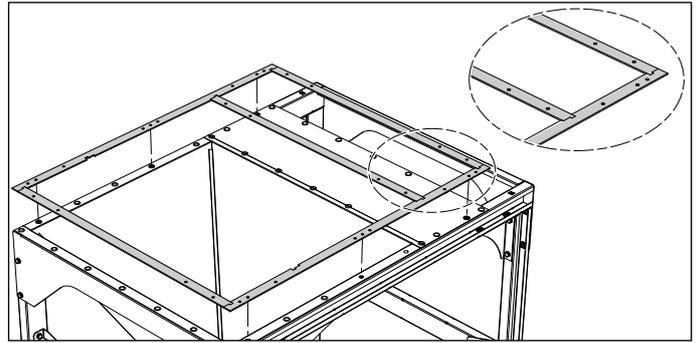


Fig. 4.6 Seals on frame

One strip 846 mm (33.3 in.) is redundant.

Fig. 4.7

- Start with a **long** seal (1046 mm).
- Try to avoid touching the sticky side with your fingers.
- Make sure that you attach the seal in the **centre** of the frame edges and that the jigsaws fit together.

- Peel approx. 50 mm of the backing material (A) and stick the seal on the frame. Draw the backing material to the *inside* of the frame.
- Continue to peel and stick the seal in steps of approx. 50 mm according to the indicated sequence (B).

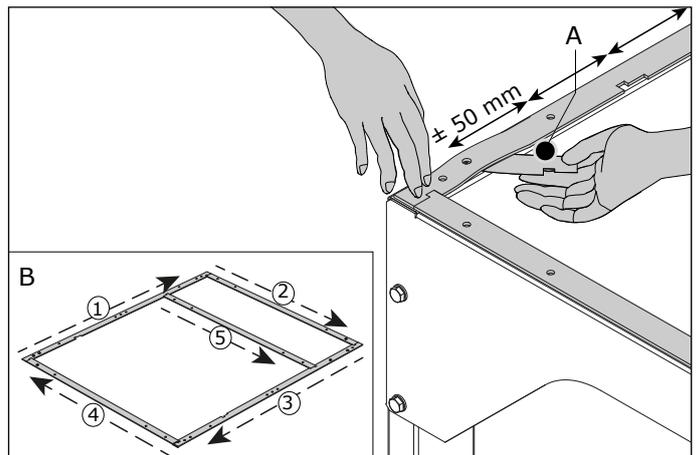


Fig. 4.7 Removal of backing material

4.4 Filter modules (MDB-BM/2 and/or MDB-BM/4)

MDB filter systems often consist of more than one filter module. You must assemble the system layer by layer from left to right.

- Fig. III on page 20 shows an example of the correct sequence.
- If applicable: install the MDB-BM/2 module(s) first.

Specially constructed seals (MDB seal assembly set) between the frame, the individual filter modules, the air inlet/outlet modules and the cover plates are necessary to make the entire MDB system airtight. The top and right side of each filter module are already provided with seals. Only the filter modules on the *left* side of the MDB system must be provided with additional seals. The number depends on the system configuration.

Fig. 4.8

- Count the number of horizontal rows of the filter system to know on how many filter modules you must put the additional seals.

Example: MDB-24/V → 3 filter modules

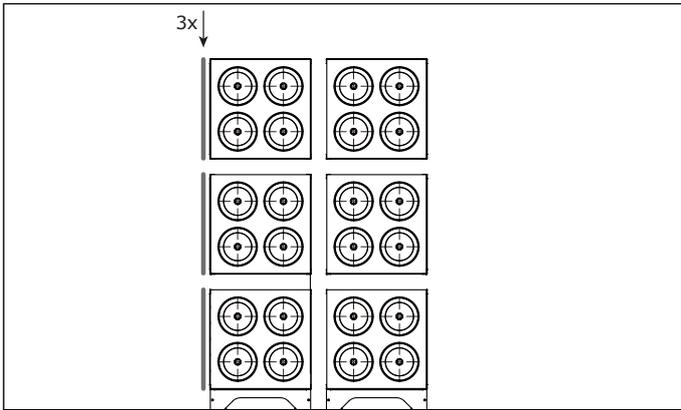


Fig. 4.8 Additional seals on # filter modules

To put additional seals on the left side of a filter module, do the following.

Fig. 4.9

- Remove the cardboard box and the plastic bag from the filter module⁵.
- Lift and turn the filter module 90° in its original packing⁶.

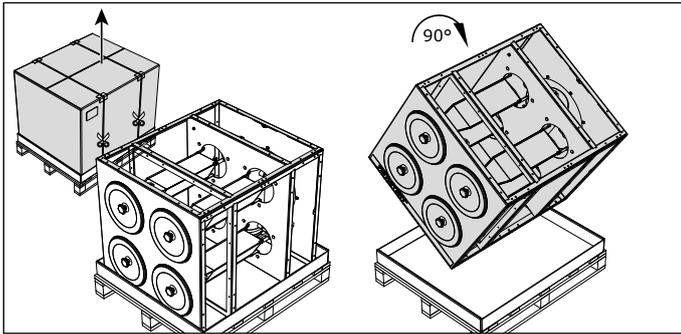


Fig. 4.9 Unpacking

Fig. 4.10

- Remove dust, if any, from the edge surfaces of the filter module.
- Lay the seals loosely on the filter module and put them together⁷.
- Make sure that the jigsaws tightly fit.

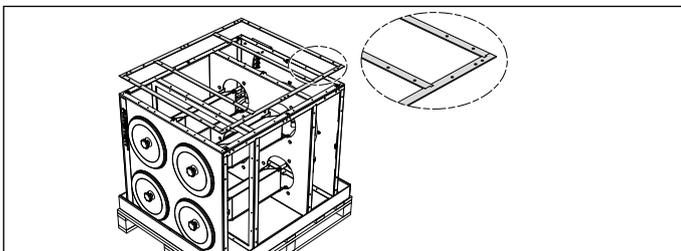


Fig. 4.10 Seals on filter module

- Leave the filter module on the pallet to avoid damage
- Do **not** shift the filter module to avoid damage to the seals and backing material
- Do not worry about a slight misalignment of the seal holes

Fig. 4.11

- Start with a **long** seal (1046 mm).
- Try to avoid touching the sticky side with your fingers.
- Make sure that you attach the seal in the **centre** of the edges and that the jigsaws fit together.

- Peel approx. 50 mm of the backing material (A) and stick the seal on the filter module. Draw the backing material to the *inside* of the filter module.
- Continue to peel and stick the seal in steps of approx. 50 mm according to the sequence below.

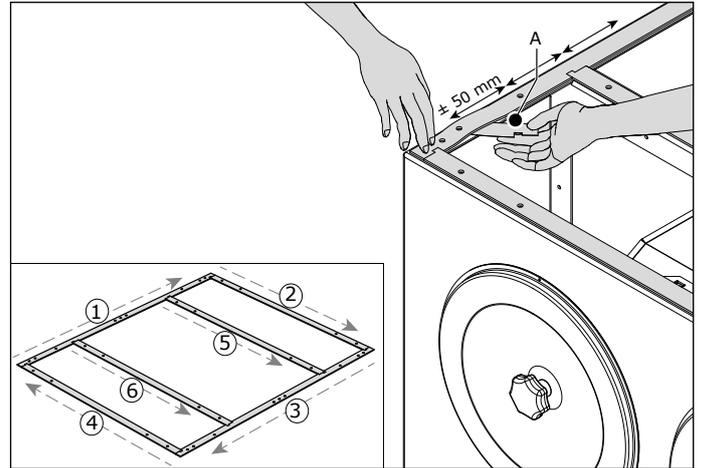


Fig. 4.11 Removal of backing material

Fig. 4.12

- Lift and turn the filter module back to its original position.
- Repeat the procedure for the remaining filter modules (refer to Fig. 4.8 for the number).

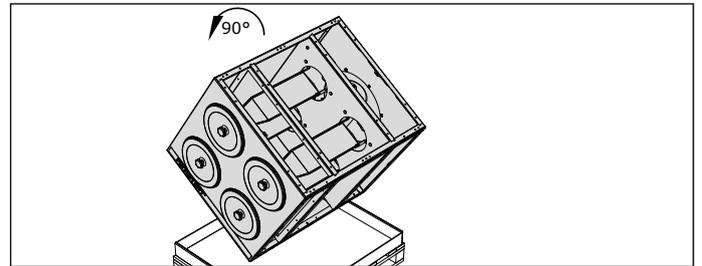


Fig. 4.12 Turning back

- To replace a damaged or incorrectly applied seal, do the following.
 - Remove the damaged or incorrectly applied seal.
 - Preferably: remove the remains of glue, if any, from the filter module (e.g. with sticker remover). Make sure that you do not damage the undamaged seals.
 - Apply a spare seal according to the above instructions.

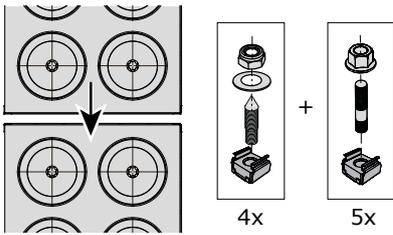


ATTENTION

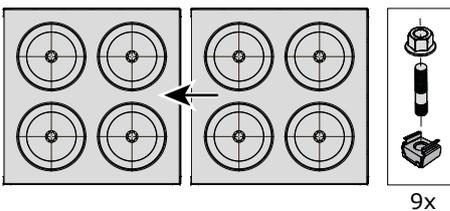
General installation instructions

- Remove the backing material **before** you put the pointed positioning studs on the frame and filter module. Try to avoid touching the sticky seals with your fingers.
- Always use SealApplicator lubricant on the sealing material before you connect any component of the MDB system⁸. By the use of SealApplicator you can slightly shift the filter module to get the right position. After approx. 60 seconds the lubricant is dry so you cannot shift anymore.
- Install one filter module at a time. After spraying, immediately position the filter module or any other component⁹.

Vertical connection of filter modules



Horizontal connection of filter modules



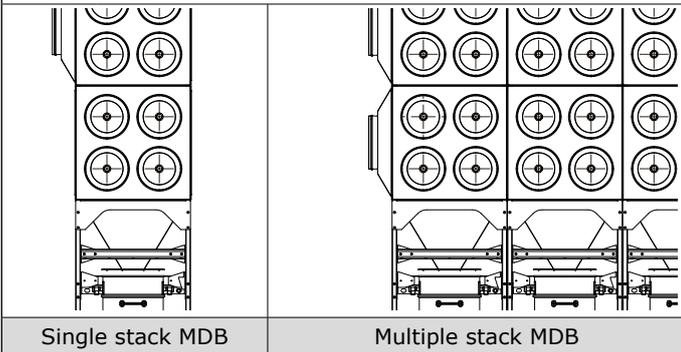
Refer to Fig. III on page 20 for instructions about the assembly sequence.



Remove the filter lids and the round cover plates on the back to have an easier access to the inside of the filter modules for connection purposes.



The installation instructions that follow concern both single and multiple stack MDB systems. Some instructions apply to single or multiple stack MDB systems only. This is clearly indicated in the text.



Single stack MDB

Multiple stack MDB

4.4.1 Filter module on frame

Fig. 4.13

- Put the MDB-FRAME (A) in fully horizontal position.
- Multiple stack MDB system only:
Put the other frame(s) (B) next to it.

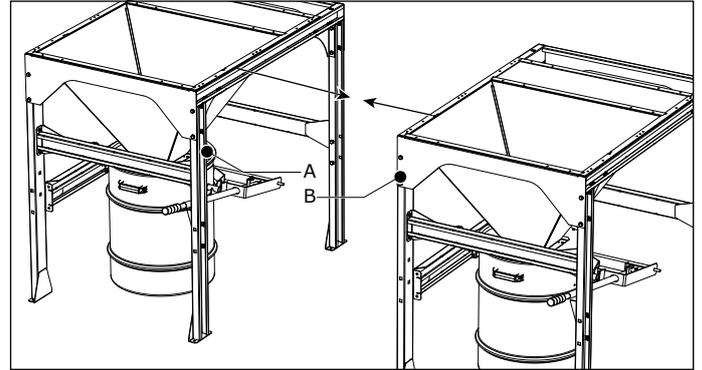


Fig. 4.13 Frames

Fig. 4.14

- (1) Remove the backing material of the seals.
- (2) Put 4 positioning studs in the upper cage nuts of the mounting frame (corner positions).
- (3) Spray SealApplicator lubricant on the seals.
- (4) Put the filter module **within 60 seconds** on the frame.
- (5) Put a washer + locknut on the positioning studs and tighten them.

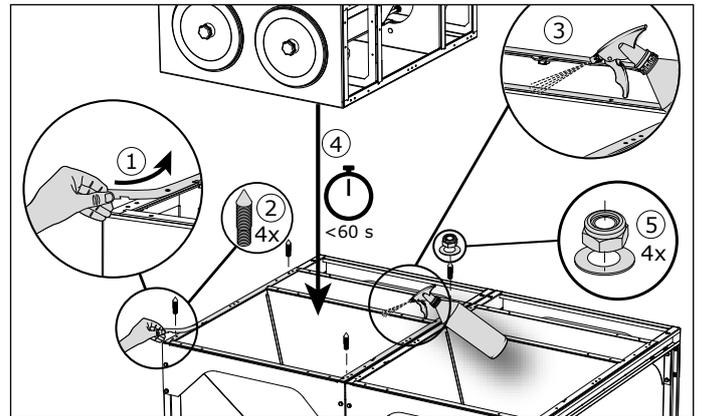


Fig. 4.14 Filter module on first frame

Fig. 4.15

- Put studs in the remaining 2 cage nuts and tighten them with a flange nut (B).

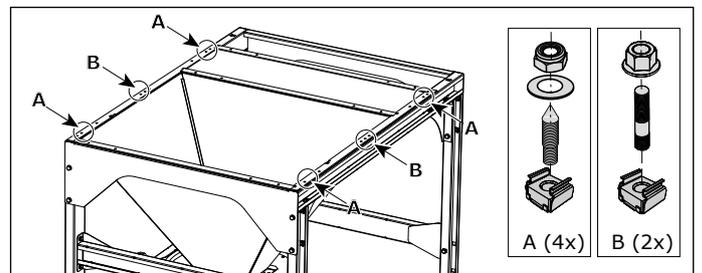


Fig. 4.15 Position of studs

Fig. 4.16

Multiple stack MDB system only:

- (1) Remove the backing material of the seals:
 - on the frame
 - on the vertical side of the filter module
- (2) Put 4 positioning studs in the upper cage nuts of the mounting frame (corner positions).

8. The seals are extremely adhesive; without the use of SealApplicator, components might stick together in the wrong position and cannot be disconnected without damage.

9. After approx. 60 seconds SealApplicator lubricant loses its functions and you cannot shift anymore. Therefore, do not install multiple filter modules or stacks of filter modules. This takes simply too much time.

- (3) Spray SealApplicator lubricant on the seals (of frame + side of filter module)¹⁰.
- (4) Put the filter module **within 60 seconds** on the frame.
- (5) Put a washer + locknut on the positioning studs and tighten them.

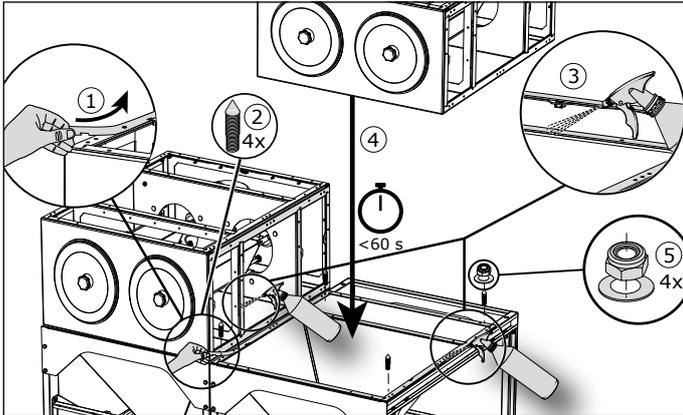


Fig. 4.16 Filter module on second frame

Fig. 4.17

Multiple stack MDB system only:

- Put studs in the 9 (filter module) + 2 (frame) cage nuts and tighten them with a flange nut.

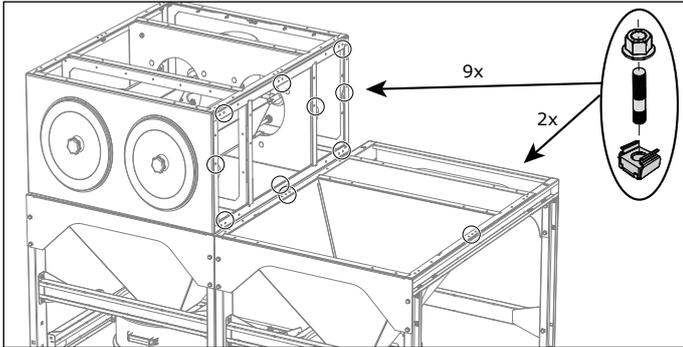


Fig. 4.17 Position of studs

Fig. 4.18

- (1) Remove the backing material of the seals.
- (2) Put 4 positioning studs in the upper cage nuts of the first filter module (corner positions).
- (3) Spray SealApplicator lubricant on the seals.
- (4) Put another filter module (A) **within 60 seconds** on the previous one.
- (5) Put a washer + locknut (B) on the positioning studs and tighten them.

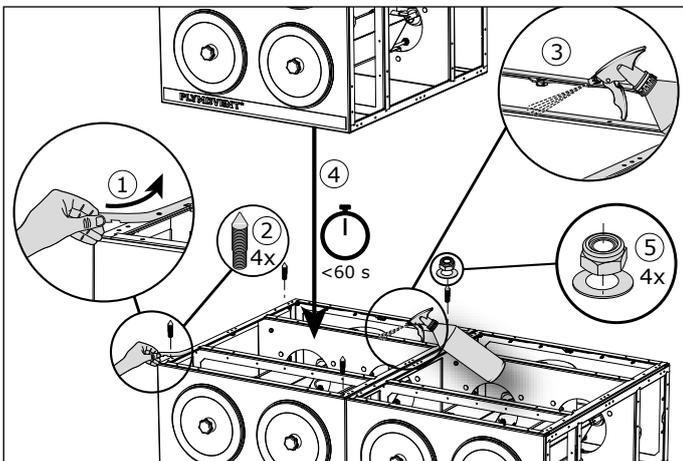


Fig. 4.18 Filter module on first filter module

10. Start with the horizontal surfaces

Single stack MDB system only:

- If applicable: repeat the instructions of Fig. 4.18.

Fig. 4.19

- Put studs in the remaining 5 cage nuts between the filter modules and tighten them with a flange nut (B).

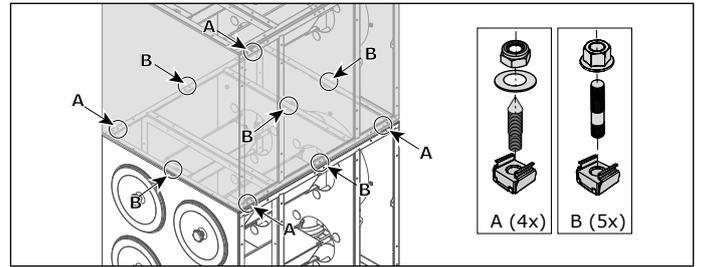


Fig. 4.19 Position of studs

Fig. 4.20

Multiple stack MDB system only:

- (1) Remove the backing material of the seals (horizontal + vertical side of filter modules).
- (2) Put 4 positioning studs in the upper cage nuts of the filter module (corner positions).
- (3) Spray SealApplicator lubricant on the seals (horizontal + vertical side of filter modules)¹⁰.
- (4) Put the filter module **within 60 seconds** on the previous one.
- (5) Put a washer + locknut on the positioning studs and tighten them.

Vertical connection

- Put studs in the remaining 5 cage nuts and tighten them with a flange nut.

Horizontal connection

- Put studs in the 9 cage nuts and tighten them with a flange nut.

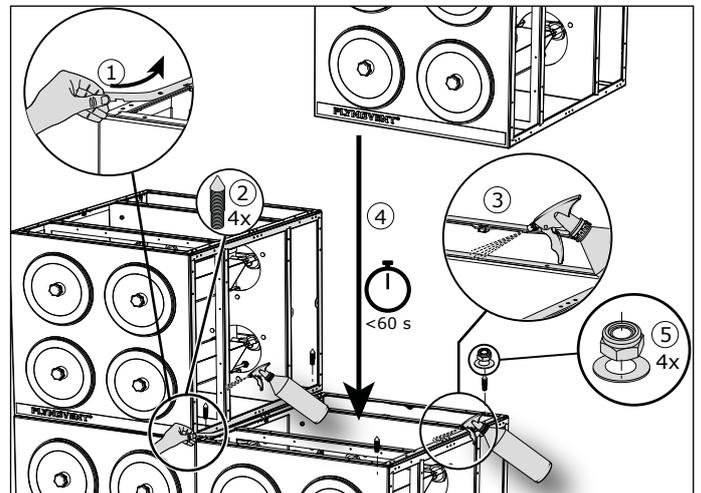


Fig. 4.20 Filter module on second filter module

- If applicable, repeat the instructions of Fig. 4.18 and Fig. 4.19 to extend the MDB system (max. 4 filter modules on top of each other).

4.5 Air inlet (MDB-INLET square) and outlet modules (MDB-OUTLET round)

The MDB system is supplied with inlets and outlets to connect it to extraction and exhaust ducting. The inlets and outlets are available in different diameters¹¹, depending on the size of the MDB system.

 Refer to Fig. IV on page 20 for possible inlet and outlet positions.

4.5.1 Deflector plates

To optimize the airflow and to protect the filter cartridges, you must install two deflector plates behind each air inlet module.

Fig. 4.21

- Determine the preferred position of the air inlet module (either *left*, *right* or *top*).
- Install the deflector plates (C) inside the filter module at that position with the flange screws (A) and the bolt (B) with washer and nut.

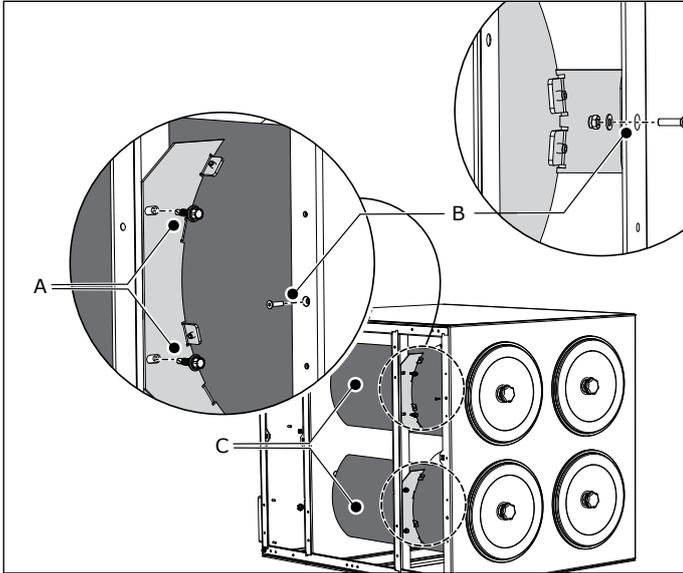


Fig. 4.21 Deflector plates

4.5.2 Air inlet module (square)

To install the air inlet module, do the following.

Fig. 4.22

- (1) Remove the backing material of the seals at the position of the air inlet module.
- (2) Spray SealApplicator lubricant on the seals.
- (3) Put the air inlet module **within 60 seconds** on the filter module.
- (4) Attach the air inlet module with the flange screws.

If applicable:

- Repeat this procedure for the other air inlet module(s).

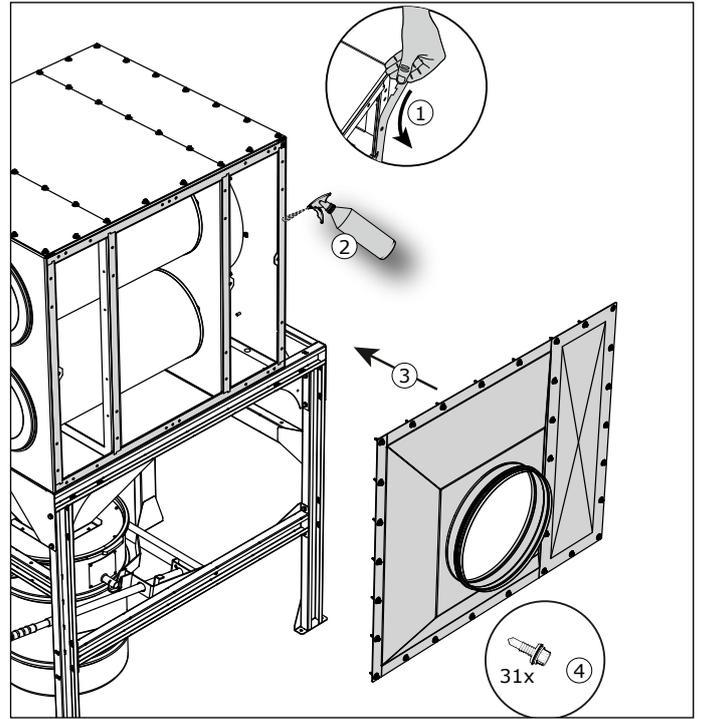


Fig. 4.22 Air inlet module(s)

4.5.3 Air outlet (round)

The air outlet comes instead of the round cover plate at the back of the filter module.

To install the air outlet, do the following.

Fig. 4.23

- Loosen the flange screws and remove the cover plate (B)¹². Keep the flange screws¹³.
- Remove the sealing tape (A) from the unit (both rows).

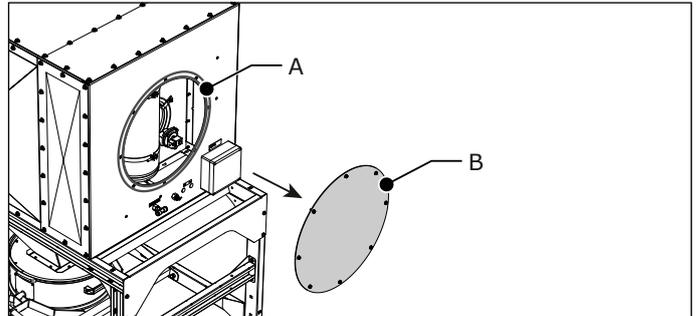


Fig. 4.23 Round cover plate

Fig. 4.24

The air outlet is pre-assembled and consists of a flange (A), a piece of duct (C) and an outlet connection with KEN-LOK sealing (D). The duct is connected with two hose clamps (B).

The flange is provided with AllTight™ sealing material.

Fig. 4.24

- Loosen the flange (A) from the assembly.
- Remove the backing material of the AllTight™ seals.
- Spray SealApplicator lubricant on the seals.
- Put the flange **within 60 seconds** on the filter module.
- Attach the flange with the flange screws.
- Assemble the air outlet (E).

11. Inlet: Ø 400 mm | Ø 500 mm | Ø 630 mm | Ø 16 in. | Ø 20 in. | Ø 24 in.
Outlet: Ø 400 mm | Ø 500 mm | Ø 20 in. | Ø 24 in.

12. The round cover plate becomes redundant

13. You need them to install the air outlet

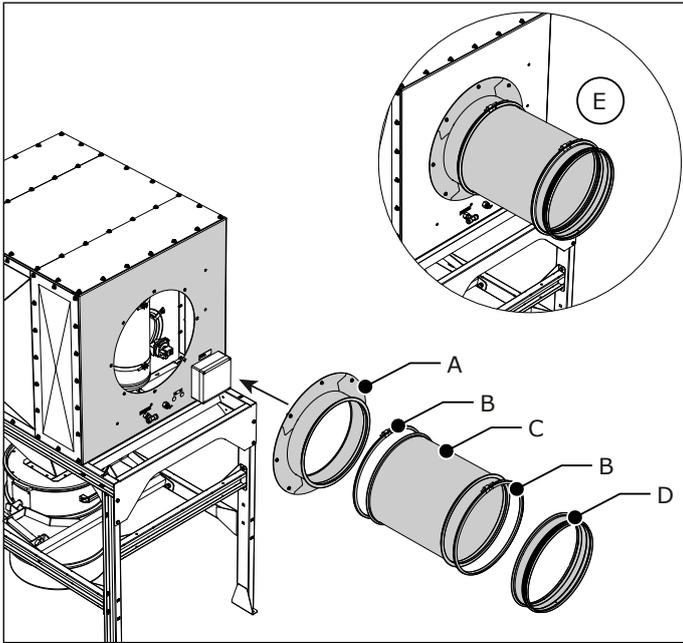


Fig. 4.24 Air outlet

4.6 Compressed air connection

Each filter module contains one pressure hose with a T-connector.



Fig. 4.25

- Put each T-connector (C) in the back of each filter module.
- Connect the hoses in series.
- Put an end plug (A) in the last T-connector.
- Install a compressed air regulator (CAR-KIT or similar) (B) on the mounting frame. Set it to 5 bar.
- Connect the loose end of the pressure hose to the compressed air regulator. Make sure that the airflow direction through the regulator is correct; this is indicated by the arrow on the back side.
- Connect the compressed air regulator to the compressed air supply.

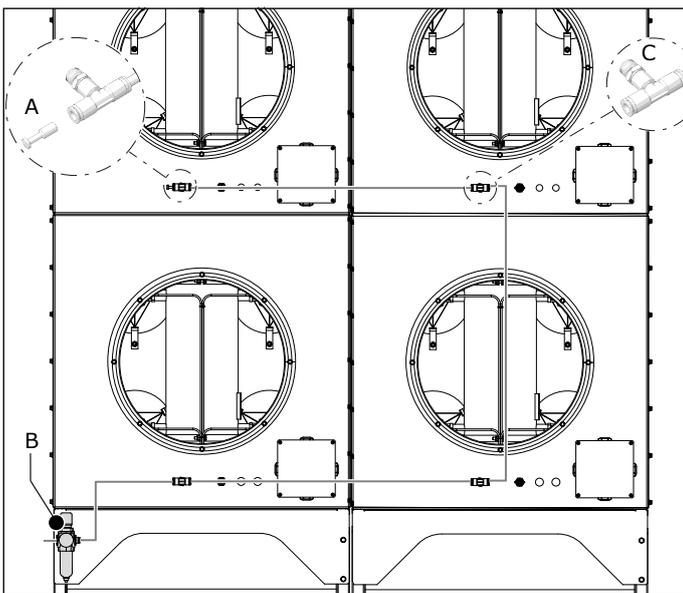


Fig. 4.25 Pressure hose

4.7 Cover plates

Fig. 4.26

- Make additional holes in the seals. They must correspond with the holes in the filter module.
- (1) Remove the cage nuts from the top side of the filter module(s).
- (2) Remove the backing material of the seals.
- (3) Spray SealApplicator lubricant on the seals.
- Put one cover plate within 60 seconds on the filter module.
- (4) Attach the cover plate with the flange screws.
- Repeat this procedure for the remaining cover plates.

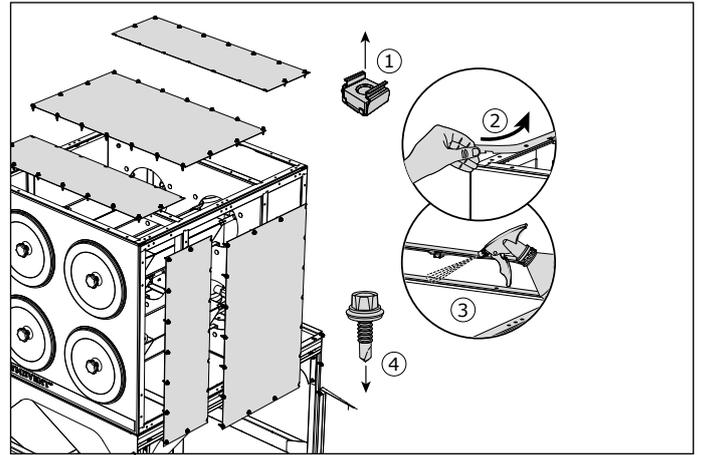


Fig. 4.26 Cover plates

4.8 Filter cartridges

To install the filter cartridges, do the following.

Fig. 4.27

- Loosen the star knob (F) and disassemble the cover plate (E), the nut (D) and the metal washer (C).
- Put the filter cartridge (B) on the cartridge holder (A).
- Install the removed parts in reverse order.

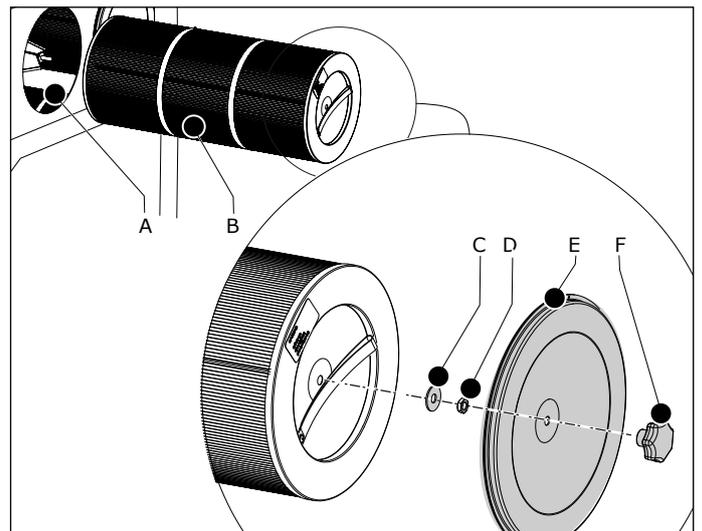
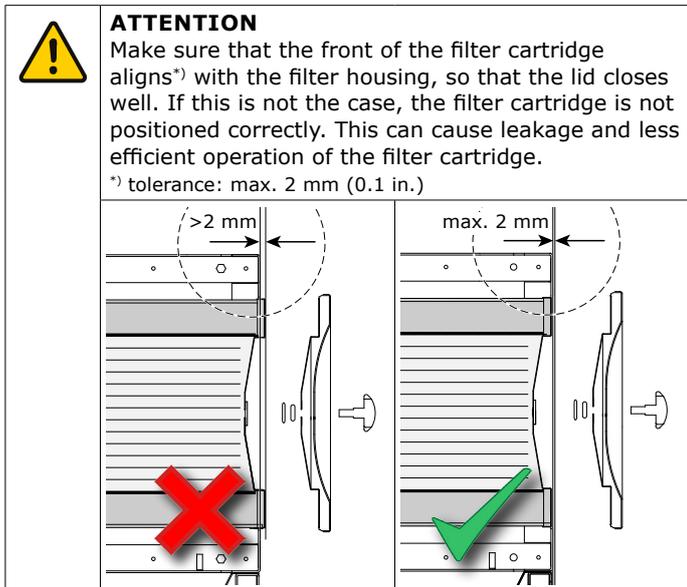


Fig. 4.27 Installation of the filter cartridges



- Do the same procedure for the remaining filter cartridge(s).

4.9 Dustbin

Fig. 4.28

- Put the dustbin (D) below the hopper (A).
- Use the handle (C) to lift the dustbin and put it in the right position.
- Attach the dustbin to the hopper with the quick connect clamp (B).

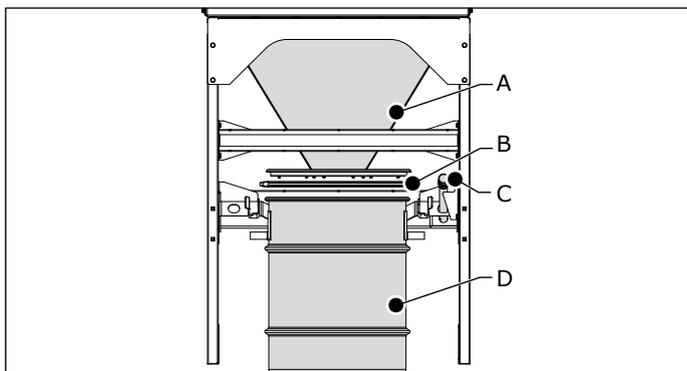
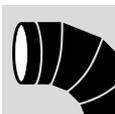


Fig. 4.28 Dustbin

4.10 Duct connection

You must connect the MDB system to ductwork with an appropriate diameter.



Min. duct diameter: Ø 400 mm (Ø 16 in.) / Ø 500 mm (Ø 20 in.) / Ø 630 mm (Ø 24 in.), depending on the size of the configuration.

4.10.1 Inlet duct

- Connect the air inlet module to an extraction duct.
- Make sure that all connections are airtight.

4.10.2 Outlet duct

For service purposes, it is possible to remove the piece of duct of the air outlet to have access to the filter module. For this reason, you must support the outlet duct to avoid damage when you have disconnected the air outlet.

- Install a support construction for the outlet duct.
- Connect the air outlet to an exhaust duct.
- Make sure that all connections are airtight.

4.11 Electric connection

For the electric connection of the filter cleaning system and the fan, refer to the installation manual of the control equipment ControlGo or ControlPro, that is supplied with the product.



4.12 Options

4.12.1 Balancing damper MRD-315/400/500

- Install the damper at an appropriate position in the inlet duct.

4.12.2 PRECO-N (precoat material)



Personal protective equipment (PPE)
Wear respiratory protection and protective gloves when you apply precoat material.

- Disconnect the compressed air supply.
- Put the precoat material in a bucket.
- Remove the dustbin.
- Start the connected fan. It must run at full speed.
- Gradually¹⁴ add the precoat material into the hopper.
- Stop the fan.
- Install the dustbin.

4.13 Installation checklist



#	Check	OK
1.	Have you tightened all bolts of the mounting frame?	
2.	Are all connections airtight?	
3.	Is 4-5 bar of compressed air available?	
4.	Are the filter cartridges installed in the right way?	
5.	Is the dustbin correctly installed? Is it attached to the hopper with the quick connect clamp?	
6.	Is the rotation direction of the connected extraction fan correct?	
7.	Is the air volume in the extraction system in accordance with the design specifications?	

5 USE



WARNING!

Fire hazard! Do **not** use the product for polishing applications in combination with grinding, welding or any other application that generate sparks.
Refer to chapter 3 / Use.

5.1 Control

The way to control the MDB system, depends on the selected MDB type;

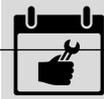
- MDB GO: refer to the *installation and user manual* of the [ControlGo](#)
- MDB PRO: refer to the *installation manual* and the *online user manual* of the [ControlPro](#)

14. Dosing speed: approx. 1 kg (2 lbs.) per minute

6 MAINTENANCE



WARNING!
Overdue maintenance can cause fire.



6.1 Periodic maintenance

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

Component	Action	Frequency: every X months	
		X=3	X=12
Dustbin	Empty; refer to paragraph 6.2 *)		
Compressed air regulator (option)	Drain	X	
Housing	Make sure that there is no air leakage		X
Compressed air system	Make sure that the connection is correct		X
	Make sure that the pressure is correct (4-5 bar / 60-75 PSI)		X
	Make sure that the valves and membranes are not damaged		X
Filter cartridges	Make sure that the position is correct; refer to paragraph 4.8		X
Bolts	Make sure all bolts are correctly tightened		X

*) During use, you must check the level of contents in the dustbin regularly. The emptying frequency depends on the intensity of use and will be a matter of experience. In the initial stage, do a check on the level of contents of the dustbin *two times per week*.

6.2 Emptying the dustbin



Personal protective equipment (PPE)
Wear respiratory protection and protective gloves when you empty the dustbin.



WARNING
Do **not** remove the dustbin while the fan is running.

Fig. 6.1

- Disconnect the compressed air supply.
- Loosen the drain valve (A) to empty the compressed air tank.
- Tighten the drain valve.

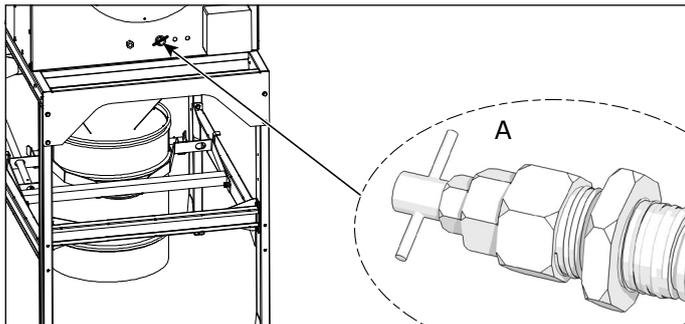
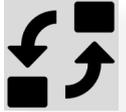


Fig. 6.1 Drain valve

- Loosen the quick release clamp.
- Release the lifting pin and lower the dustbin.
- Pull the dustbin forward.
- Seal the disposal sack securely and take it out.
- Place a new disposal sack in the dustbin.
- Install the dustbin in reverse order.
- Dispose of the full sack in accordance with state or local regulations.
- Connect the compressed air.

6.3 Filter replacement

Replace all filter cartridges at the same time.



Personal protective equipment (PPE)
Wear respiratory protection and protective gloves when you replace the filter cartridges.



WARNING
Do **not** replace the filter cartridges while the fan is running.

To replace the filter cartridges, do the following.

- Disconnect the compressed air.
- Loosen the drain valve (refer to Fig. 6.1A) to empty the compressed air tank.
- Tighten the drain valve.
- Disconnect the connected control equipment from the mains.

Fig. 6.2

- Loosen the star knob (F) and disassemble the cover plate (E), the nut (D) and the metal washer (C).
- Remove (one of) the upper filter cartridge(s)¹⁵ (B) and put it in the plastic sack in which the replacement filter cartridge is supplied.
- Seal the sack securely.
- Put a new filter cartridge on the cartridge holder (A) and attach it with the disassembled parts.
- Do the same procedure for the lower filter cartridges.
- Connect the compressed air.
- Energize the system.
- Dispose of the used filter cartridges in accordance with federal, state or local regulations.
- Clean the environment of the system.

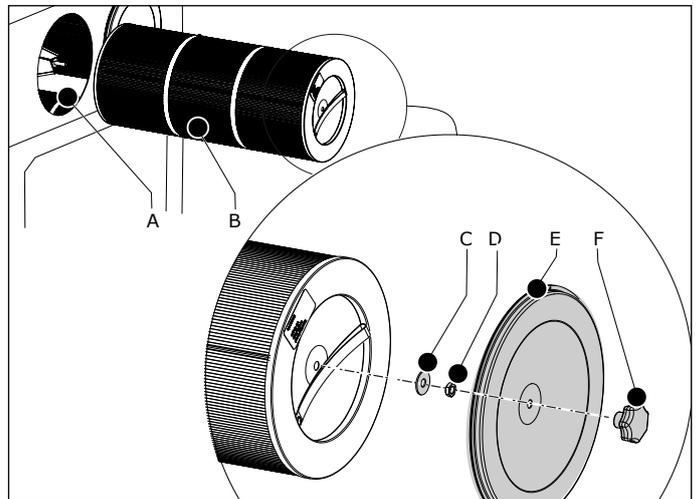
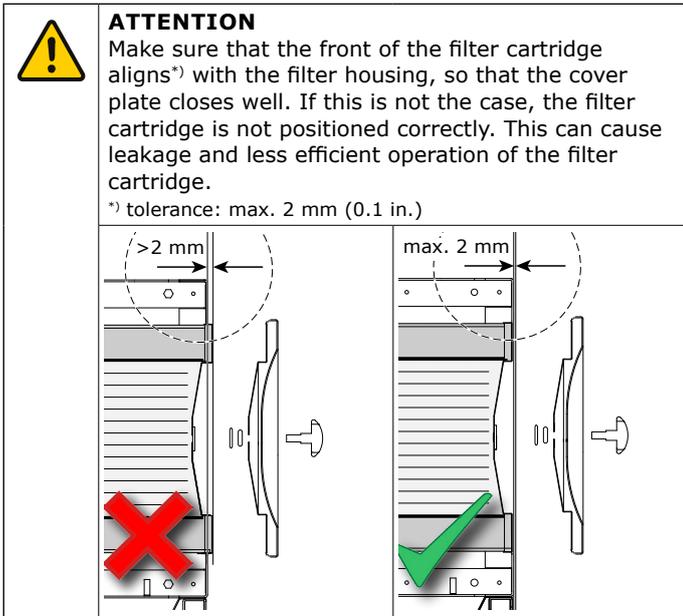


Fig. 6.2 Filter replacement

15. Removing the upper filter cartridges first, keeps the release of dust to a minimum



6.4 Access from the back

For service purposes, it is possible to have access to the filter module from the back. To get access, do the following.

Fig. 6.3

- Loosen the hose clamps (A+C).
- Take out the piece of duct (B). Make sure that the exhaust duct is well supported.

Now you can inspect the inside of the filter module.

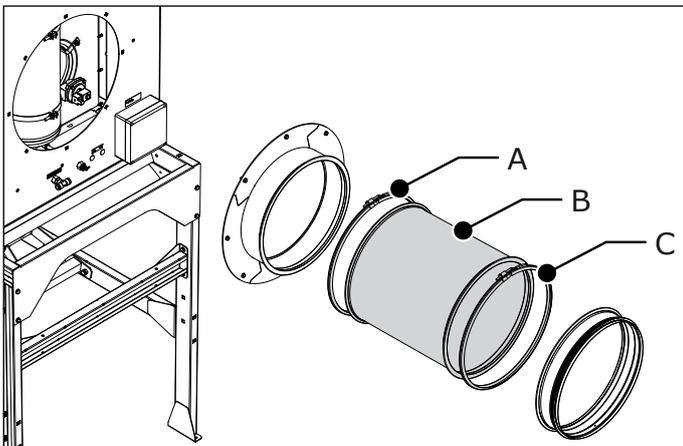


Fig. 6.3 Back access to the filter module

7 TROUBLESHOOTING

If the system 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.



WARNING
Obey the safety regulations that are written in chapter 3 when you carry out the activities below.

Symptom	Problem	Possible cause	Solution
Poor extraction capacity	The system does not function properly	Clogged filter cartridges	Replace the filter cartridges
		Inverted direction of rotation of the motor of the connected fan	Change the direction of rotation
Pollution of the facility	Filter cartridge(s) ripped or placed incorrectly	Replace the filter cartridge(s) or place them correctly (ref. paragraph 6.3)	
No filter cleaning	Loose compressed air connection	No compressed air available or air pressure too low	Repair the compressed air supply
		Membrane valve(s) defective	Replace the membrane valve(s)
		Drain valve is loose	Tighten the drain valve
No pressure in the compressed air tank	Tank not connected to compressed air supply	Membrane valve(s) defective or worn	Replace the membrane valve(s)
		Wrong or damaged wiring	Correct or repair the wiring

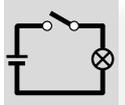
8 SPARE PARTS

Refer to the exploded view Fig. V on page 21.



9 ELECTRICAL DIAGRAM

Refer to the electrical diagram that is supplied with the control equipment.



10 DISPOSAL

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



Personal protective equipment (PPE)
Wear respiratory protection and protective gloves when you dismantle and dispose of the system.

10.1 Dismantling

To safely dismantle the filter system, obey the safety instructions that follow.

- Before dismantling of the filter system:
- disconnect it from the mains
 - disconnect it from the compressed air
 - clean the outside

During dismantling of the filter system:

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

After dismantling of the filter system:

- 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, the Netherlands, herewith declare, on our own responsibility, that the product:

- MultiDust Bank (MDB)

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

Alkmaar, Netherlands, 1 December 2022

A handwritten signature in black ink, appearing to be 'M.S.J. Ligthart', written over a horizontal line.

M.S.J. Ligthart
Product Manager

*An **installation** is defined as a combination of several finished products or components that are assembled by an installer at a given place. The various parts of the installation are intended to operate together in a particular environment and to perform a specific task. The entire installation must comply with the relevant directives and standards. The assembly instructions given by the manufacturer, as well as the whole method of installation, must be in accordance with good engineering practices within the context of installations, as well as installation rules. Considering the above, the installer will be responsible for completing the installation and issuing the final CE Declaration of Conformity.*

Table I MDB with side outlet (square inlets / cylindrical outlets)

Type		Article no.
MDB-4	GO	0000120938
	PRO	0000120934
MDB-6	GO	0000120939
	PRO	0000120935
MDB-8/V	GO	0000120940
	PRO	0000120936
MDB-10/V	GO	0000120941
	PRO	0000120937

Table II Details per product type

Type	Filter cartridges		Welding fume class W3 according to ISO 15012-1 Dust class M									
	No.	Type	Filter surface		Filter load				Motor power			
			m ²	ft ²	m ³ /h		CFM		kW		HP	
					min.	max.	min.	max.	min.	max.	min.	max.
MDB-4	4	PTFE/10	40	431	1200	3200	706	1884	1,1	3,7	1.5	5
		PTFE/15	60	646	1800	4800	1059	2825				
MDB-6	6	PTFE/10	60	646	1800	4800	1059	2825	3	7,5	4	10
		PTFE/15	90	969	2700	7200	1589	4238				
MDB-8	8	PTFE/10	80	861	2400	6400	1413	3767	3	7,5	4	10
		PTFE/15	120	1292	3600	9600	2119	5651				
MDB-10	10	PTFE/10	100	1076	3000	8000	1766	4709	3	11	4	15
		PTFE/15	150	1615	4500	12000	2649	7063				
MDB-12	12	PTFE/10	120	1292	3600	9600	2119	5651	5,5	15	7.5	20
		PTFE/15	180	1938	5400	14400	3178	8476				
MDB-16	16	PTFE/10	160	1722	4800	12800	2825	7534	5,5	18,5	7.5	25
		PTFE/15	240	2583	7200	19200	4238	11301				
MDB-18	18	PTFE/10	180	1938	5400	14400	3178	8476	7,5	18,5	10	25
		PTFE/15	270	2906	8100	21600	4768	12714				
MDB-20	20	PTFE/10	200	2153	6000	16000	3552	9418	7,5	22	10	30
		PTFE/15	300	3229	9000	24000	5297	14126				
MDB-24	24	PTFE/10	240	2583	7200	19200	4238	11301	11	30	15	40
		PTFE/15	360	3875	10800	28800	6357	16952				
MDB-32	32	PTFE/10	320	3445	9600	25600	5651	15068	15	30	20	40
		PTFE/15	480	5167	14400	38400	8476	22602				
MDB-36	36	PTFE/10	360	3875	10800	28800	6357	16952	15	37	20	50
		PTFE/15	540	5813	16200	43200	9535	25428				
MDB-48	48	PTFE/10	480	5172	14400	38400	8476	22602				
		PTFE/15	720	7758	21600	57600	12714	33903				
MDB-64	64	PTFE/10	640	6896	19200	51200	11301	30136				
		PTFE/15	960	10344	28880	76800	16952	45204				

Fig. I Dimensions

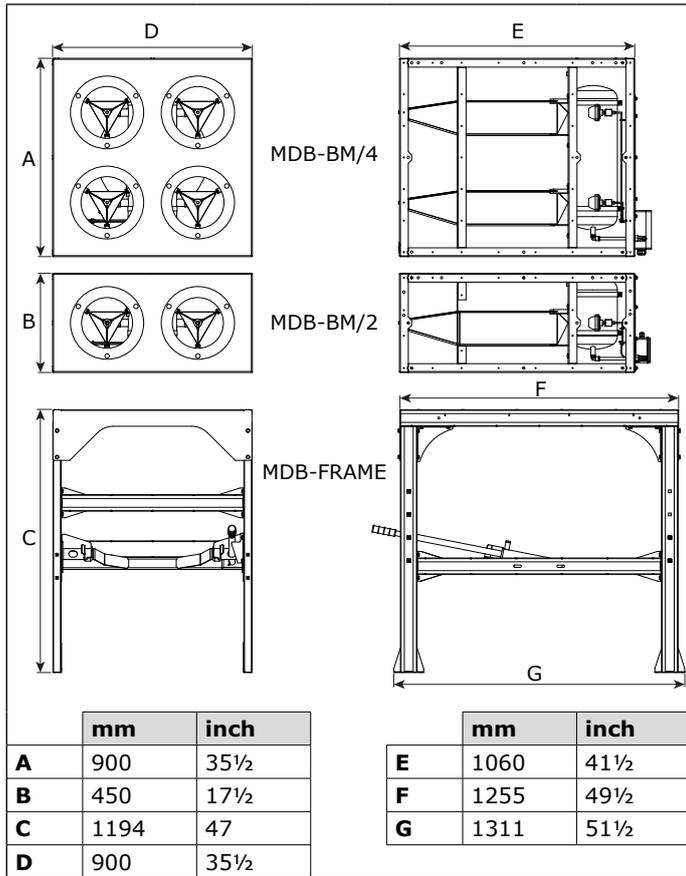


Fig. II Scope of supply

MDB-FRAME	
MDB-BM/2	
MDB-BM/4	
MDB-COVER/S	
MDB-COVER/M	
MDB-COVER/2	
MDB-COVER/U	
MDB-INLET/315 MDB-INLET/400 MDB-INLET/500 MDB-INLET/16 MDB-INLET/20 MDB-INLET/24 (square)	
MDB-OUTLET/400 MDB-OUTLET/500 MDB-OUTLET/16 MDB-OUTLET/20 (round)	
MDB JOIN KIT	

MDB-HOPPER	
DB-80	
MDB seal assembly set	<p>Seal set MDB-BM/2</p> <p>Seal set MDB-BM/4</p> <p>Spare seal set MDB</p>
SealApplicator	

Fig. III Assembly sequence

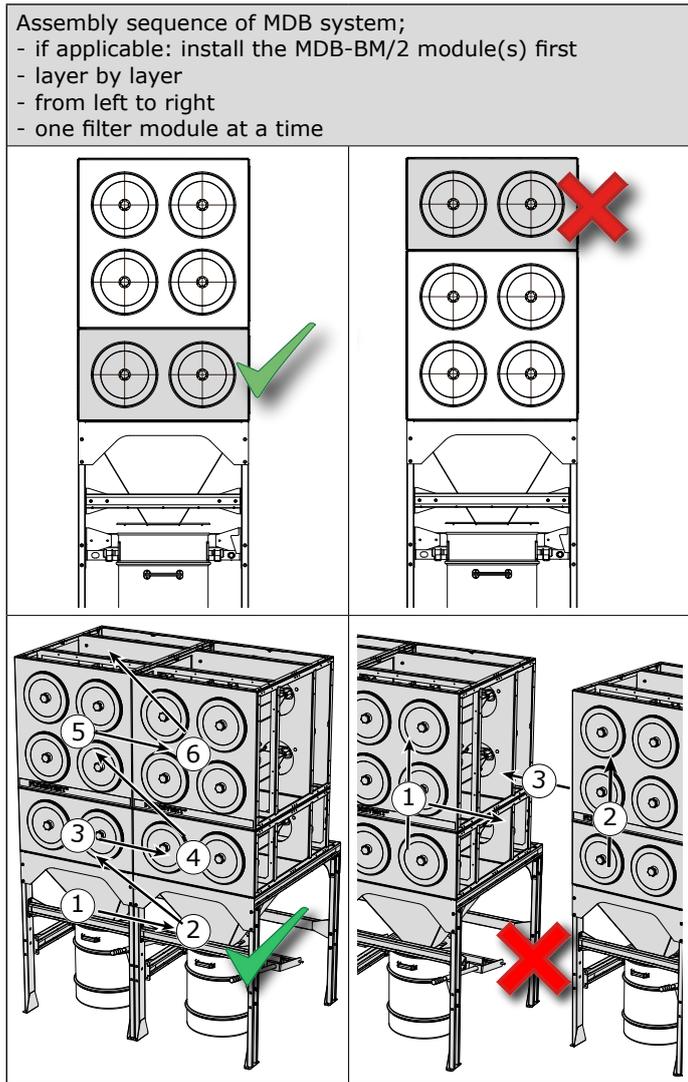


Fig. IV Inlet and outlet positions

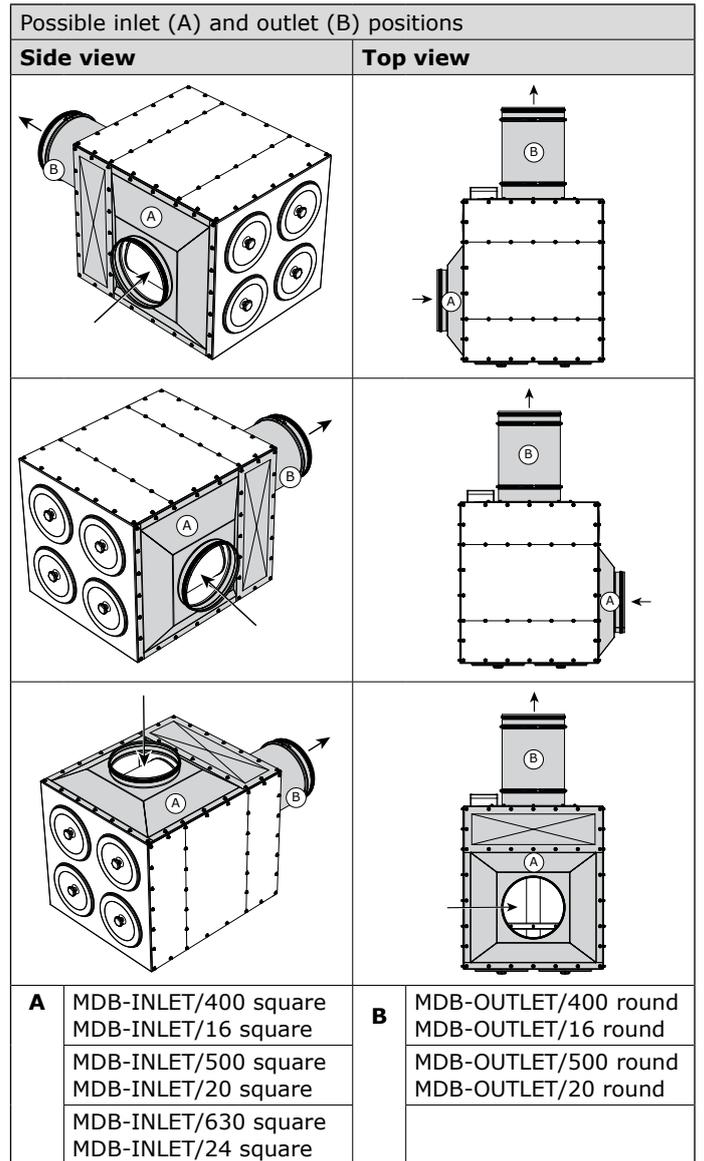
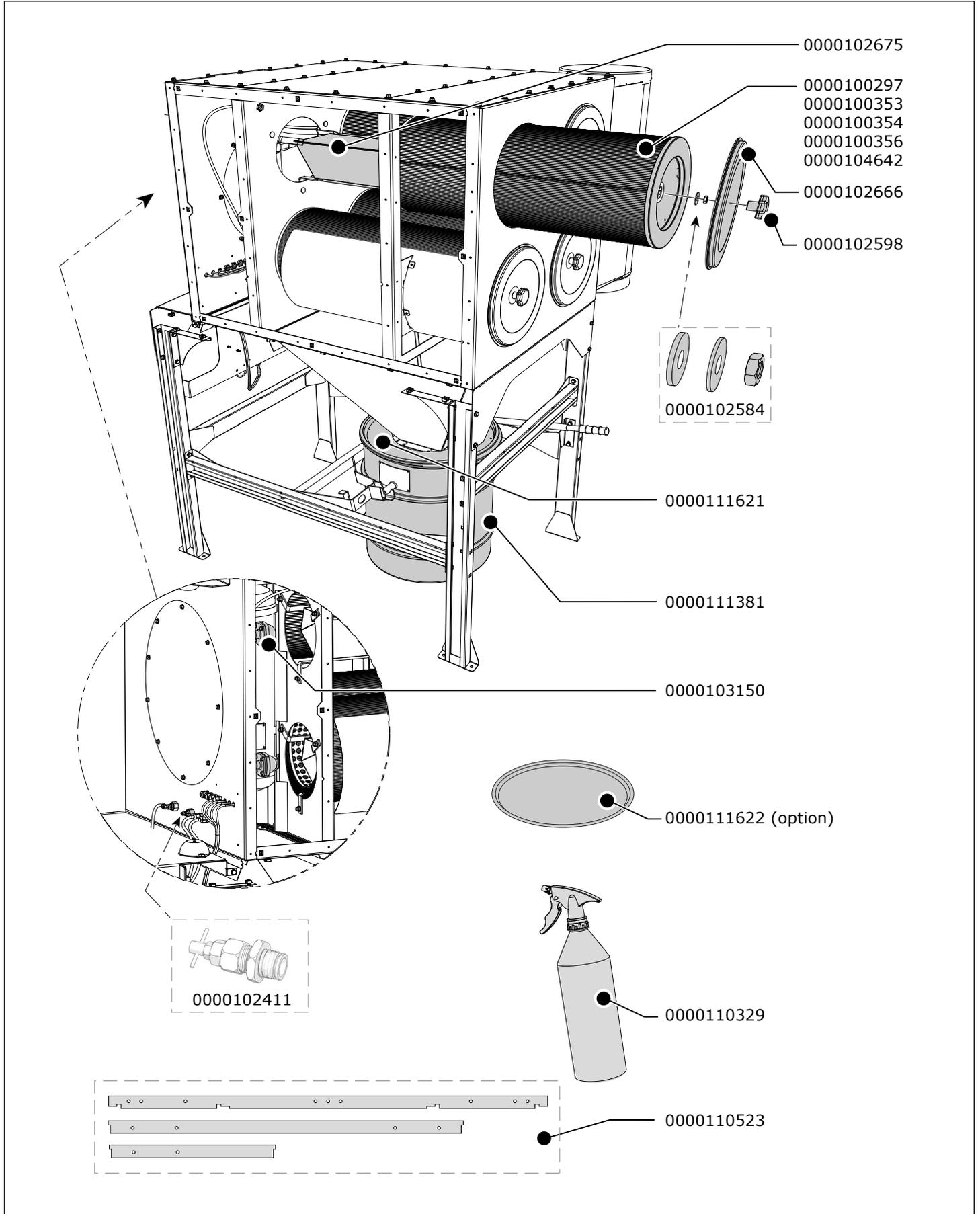


Fig. V Exploded view



Article no.	Description
0000100297	CART-PTFE/10 / Filter cartridge ^{*)}
0000100353	CART-C / Filter cartridge ^{*)}
0000100354	CART-E / Filter cartridge ^{*)}
0000100356	CART-D Premium Plus / Filter cartridge ^{*)}
0000102315	CART-MB / Filter cartridge ^{*)}
0000102411	Drain valve ½ inch
0000102584	Lock kit for CART filter cartridge
0000102598	Star knob M12
0000102666	Cover plate for filter cartridge CART
0000102675	Filter cartridge holder
0000103150	Magnetic valve MDB, incl. 24V DC coil and 3 m cable
0000104642	CART-PTFE/15 / Filter cartridge ^{*)}
0000110003	CART-D Premium / Filter cartridge ^{*)}
0000110004	CART-D Economy / Filter cartridge ^{*)}
0000110329	SealApplicator 1000 ml
0000110523	Spare seal set MDB
0000111621	Lid for connection of DB-80 to HOPPER
0000111381	DB-80 / Dustbin 80 litres, incl. lifting pin and handles

^{*)} Filter cartridge, incl. facemask, disposable gloves and plastic sack with seal for collection and disposal of the used filter cartridge

