



Service Manual ILMEG Dry Drilling Dust Control System

CDC 2000-X-200

CDC 2000-X-200

Cuttings container

P/N 22303631

Remote control system

P/N 22300298



Content.

1. Introduction3-4

2. Safety5-6

3. CDC 2000-X-200 Dust Collector P/N 22303932
Cuttings Container P/N 22303631
Remote Control System P/N 22300298

 3.1 Technical specification.....7
 3.2 Installation and operators manual..... 8-12
 3.3 Maintenance and service instruction.....13-18
 3.4 Spare parts list.....19-30

4. Electric System31-35

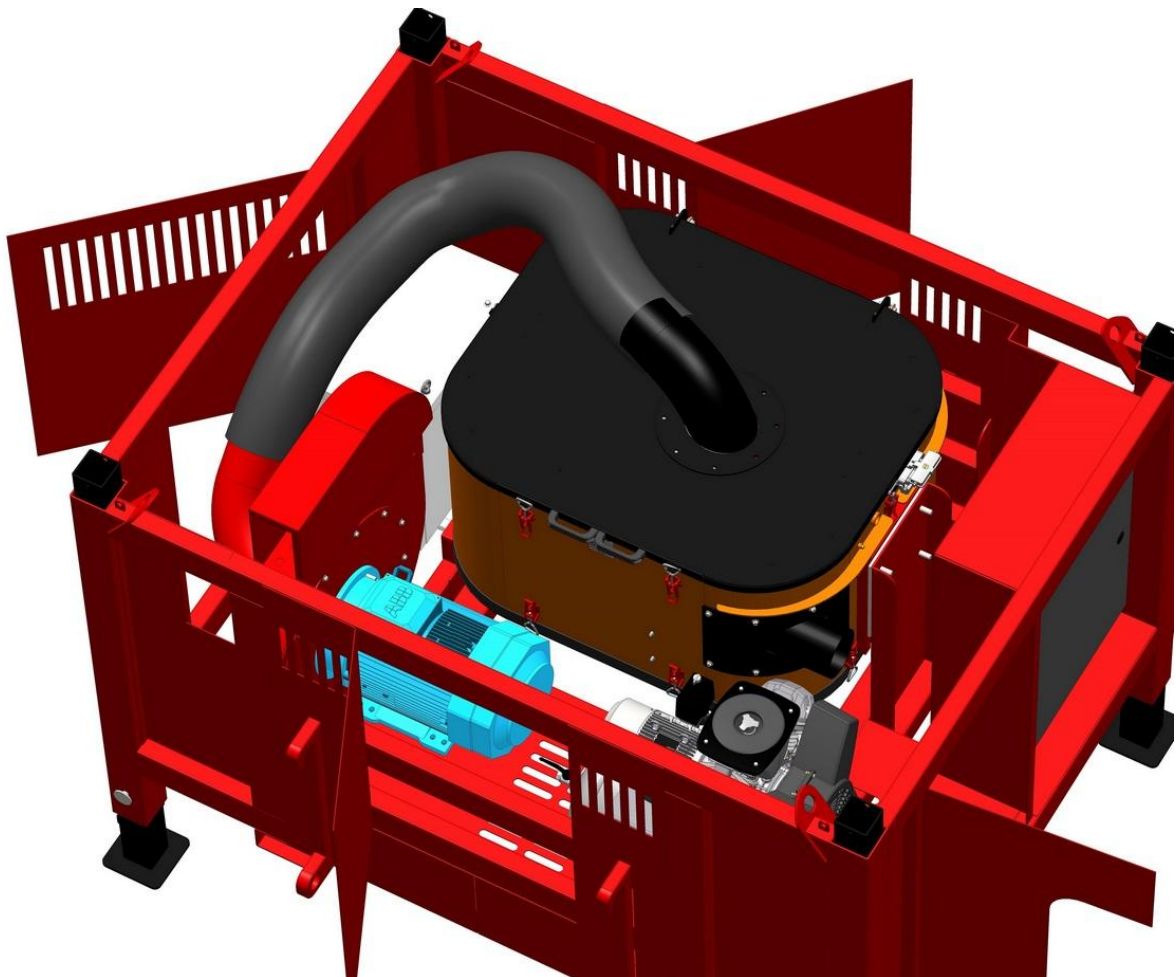
1. Introduction

Congratulations to your new ILMEG dry drilling dust control system. This manual is intended to describe the system how to install, operate, service and maintain the system.



The ILMEG dust collector CDC 2000-X-200 is designed to be used in production drilling underground.

The dust collector system consists of an electrically driven dust collector suction fan connected to the X-200 filter house. The filters are cleaned with compressed air created by the on board compressor. The cleaning function is controlled by the on board PLC-based control system. The system is be equipped with radio remote controlling the on/off of the suction function.



2. SAFETY INSTRUCTION

To reduce the risk of serious injury (or even death) for yourself and others, you should read these safety instructions carefully before using the equipment.

These warnings should be visible on the workplace, copies should be distributed to the employees and everyone needs to read the safety instructions before operating or servicing the machine. Follow all safety instructions in the manual. All the safety instructions follow EU applicable laws and directives. You must also comply with any additional national / regional directives. In countries outside the EU apply the local laws and Regulations. Any additional regional laws and regulations must followed.

Safety Symbols Used

The instructions **Danger**, **Warning** and **Caution** have the following meanings:

Danger

Indicates a hazardous situation that, if not avoided, will result in death or serious injury

Warning

Indicates a hazardous situation that, if not avoided, could result in death or serious injury

Caution

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury

Caution

The components are heavy. To avoid injury during transport to the work area: Use a cart or ask a colleague for help in transportation.

Warning

A sudden or unexpected movement of the machine may occur during use, which can cause injury.

Additionally, you can hurt yourself if this movement makes you lose balance or slip. To reduce the risks, make sure you always stand steady, with your feet as wide apart as your shoulders and with your body in balance. Stand firmly and always hold the machine with both hands.

Warning

To accidentally start the machine can result in injuries.

Keep hands away from the pressure until you are ready to begin work.

Warning

A compressed air hose that comes off can break loose and cause injury or death.

To reduce the risks:

Check that air hoses and connectors are not damaged.

Check all air connections are correctly connected.

Never attempt to disconnect an air hose that is pressurized

Warning

There is a risk that objects are drawn into or trapped in a rotating drill steel. This can cause serious injury. Never grab or touch a rotating drill steel. Do not wear clothing that could get caught. If you have long hair, use a hair net.

Warning

When drilling or working with certain materials sparks can occur which may ignite explosive gases and cause explosions. Explosions could result in serious injury or death. To reduce the risk of explosions:

Never use the machine in explosive environments.

Do not use the machine near flammable materials, flammable vapors or combustible dust.

Ensure that there are no unknown gas wells.

Danger

The machine is not electrically insulated. If the machine comes in contact with electricity it may result in serious injury or death. To reduce the risk of personal injury or death, never use the machine near the power lines or other electrical sources. Make sure there are no hidden wires or other electrical sources.



Warning

Drilling may cause personal injuries caused by splinters or other particles from the work material which fly and hit the machine operator or other persons. Use approved personal protective equipment, including impact-resistant safety glasses with side shields, to reduce the risk of injury from flying objects



Warning

High noise levels can cause permanent hearing damage. Use hearing protection in accordance with the existing Regulations for Health and Safety at Work.

Additional Safety Instructions

- Machinery and accessories may only be used for the purpose they are intended.
- Only qualified and trained personnel should operate or perform maintenance on the machine.
- Learn how the machine is switched off in case of emergency.
- The maximum allowable air pressure of the machine must not be exceeded.
- Always inspect the equipment before use.
- Do not use if you suspect that it is damaged.
- Always use your common sense and good judgment.
- Stay alert and watch what you are doing.
- Do not use the machine if you are tired or under the influence of drugs, alcohol or other substances that can affect your vision, your reactions and your judgment.
- Participate in safety training and other educational programs.
- Never strike the equipment and not abuse it.
- Store the machine and cutting tools in a secure place that is locked and out of reach of children.
- Make sure that all connected and related equipment is properly maintained.
- Signs and stickers that are important for your safety and the operation of the machine are supplied with every machine.
- Make sure that the signs are always readable. New signs and decals can be ordered using the spare parts list.
- Ensure that unauthorized personnel do not enter the work area.

- Keep work area clean and free of foreign objects.
- Never point an air hose at yourself or anyone else. To avoid injury, never use compressed air to blow away e.g. dust, dirt, etc. from the clothes

Safety Equipment

Always use approved safety equipment. Machine users and all other persons in the work area must wear protective gear as a minimum consist of the following: Safety helmet

Ear plugs

Impact resistant eye protection with side shields

Respiratory protection, when needed

Gloves

Safety Shoes

Welding / cutting

Electrical equipment may be destroyed when welding and cutting in the machine.

Use the equipment necessary to protect the machine.

CDC 2000-X-200 Dust Collector System

The CDC 2000-X-200 is an electrically powered Dust collector system specially designed for extreme demands on dust control. Typical applications are construction sites in residential areas or construction sites close to buildings in sensitive environments. Other applications are quarries, open pit mining or underground tunnelling and mining with high demands on dust control in rock drilling or rock cutting operations.

The system suction drill cuttings and dust from the pick-up-hood housing, through the dust collector to finally dump them either on the ground or in a separate container. Up to 20m of suction hose can be used to connect the system with the drilling or cutting machines. The filter cleansing system, based on reversed air technology, can be operated through radio signals. The stand, which carries the dust collector, is equipped with fork lift grips and sling points for increased mobility.

Technical specifications:

CDC 2000-X-200, for one rock drill up to 200 mm hole diameter in surface drilling application or up to 120 mm for underground production drilling application.

Suction fan:	X-200, Electric drive 22 kW, 400 volt
Filter body:	X-200
Inlet size:	200 mm (8") max 20 m hose length.
Filter cleansing system	i-clean including 24 V control system (PLC based)
Compressor:	Integrated for filter cleaning
Electric power system:	Starter cabinet with Frequency converter. 63 Amp connection

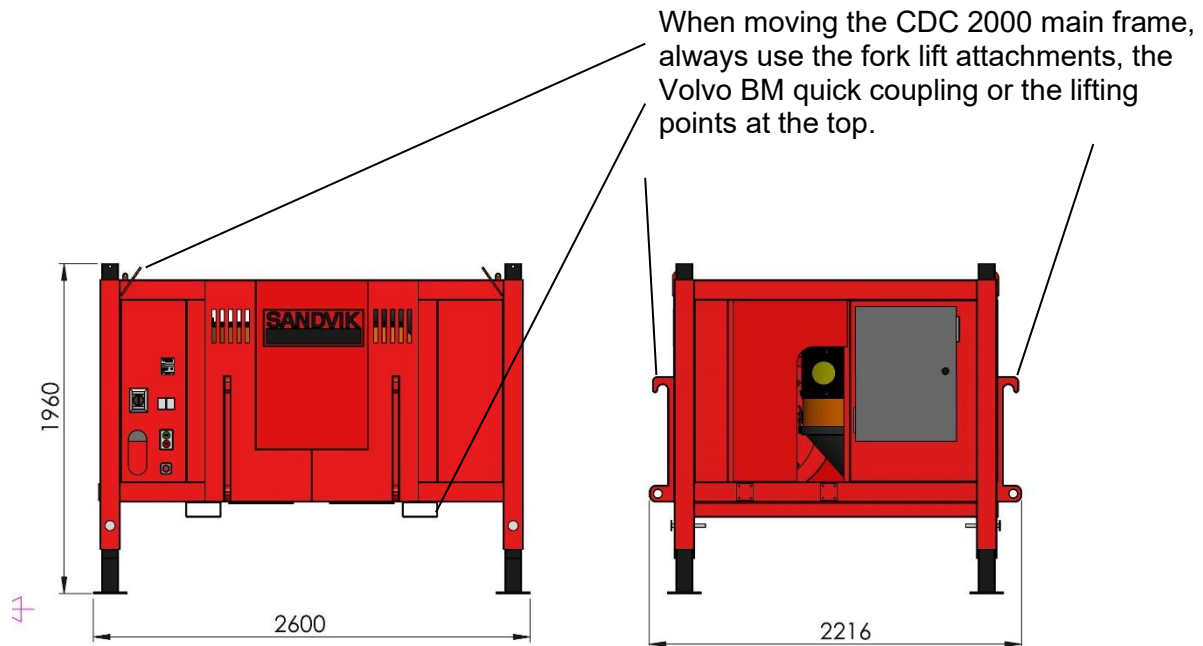
Optional equipment:

- 1000V to 400V Transformer
- Radio Remote control
- Sealed cuttings container

3.2 CDC 2000-X-200 Dust collector P/N 22303932 Installation and operators manual

Installation

The CDC 2000-X-200 is a stand-alone unit that can work with for instance one production drilling rig.



Weight of the main frame is approximately 2200 kg



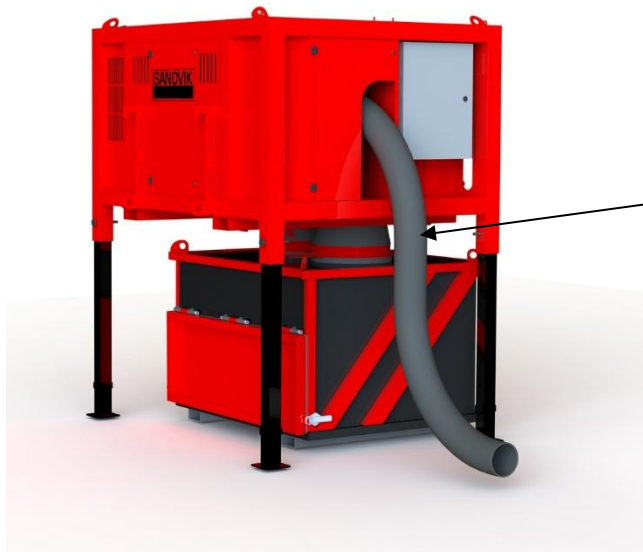
Find a flat horizontal space as close as possible to the drilling rig.
Lift up the main frame using the appropriate lifting device and remove the locking pins (4x)

Lift the frame approx 1,5 m and secure the support jacks with the locking pins (4x) in the top position.



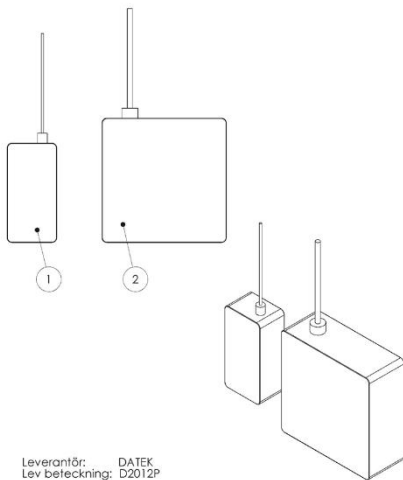
Danger

Never be under the CDC 2000 without securing the support jacks with the locking pin



Connect the suction hoses to the inlet on the filter house. (Suction hose diameter = 200 mm ID or 8")

Connect the power supply,



Leverantör: DATEK
Lev beteckning: D2012P

Radio transmitter/receiver.

To start/stop the suction of the CDC 2000 Radio control is used. The transmitter is electrically connected to the air flushing signals / 24V DC on the machine. The receiver is below the electric cabinet





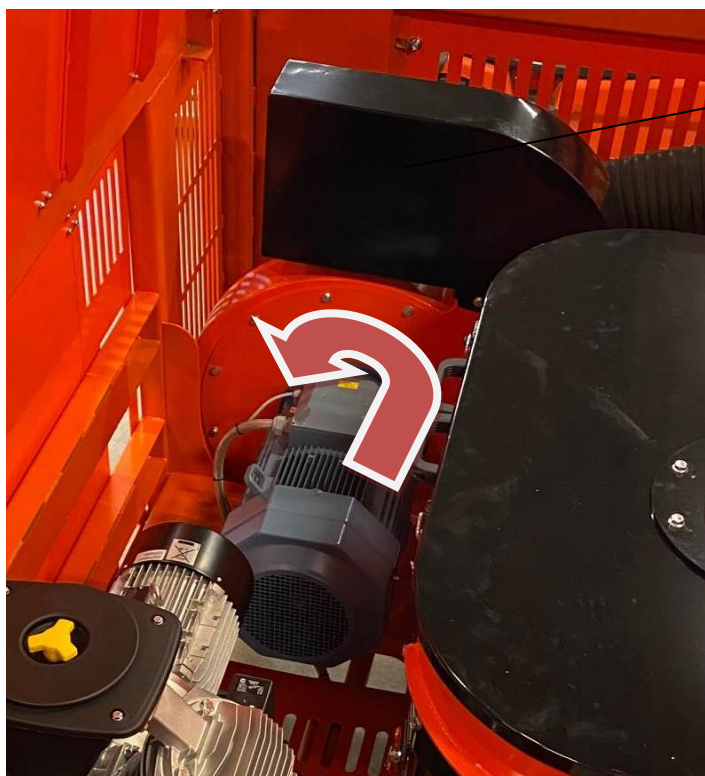
When the electric power is connected and the safety switch is turned on, it is possible to start the system

Make sure the emergency stop is not activated.

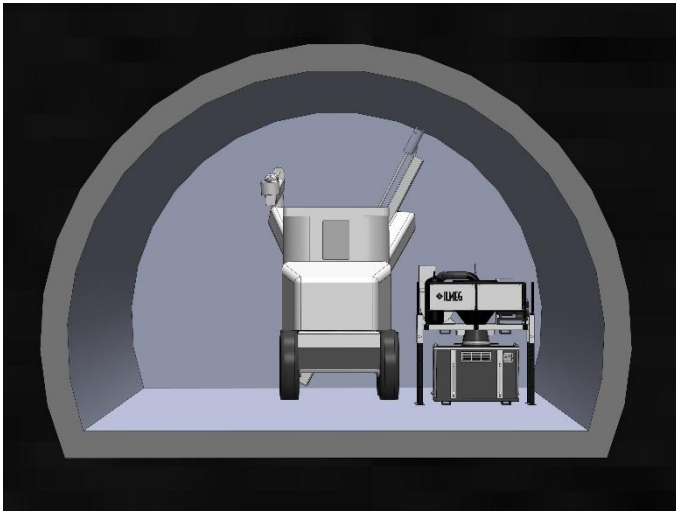
Press the start button

The compressor starts immediately to charge air receiver with 8 Bar pressure. When reached the working pressure the compressor stops. If the compressor does not start, it is already charged to 8 Bar or the switch on the control box on the compressor is turned off.

After approximately 20 seconds, the main electric motor for the fan starts to rev up.



Please check the rotation direction of the motor. (should be same as the arrow, anti clockwise)



The position of the CDC 2000 can either be at the side or behind the drilling rig.

Important is that the CDC 2000 is placed as close to the rig as possible to minimize the suction hose lengths.



Suction Fan with motor

Filter house

Compressor

Suction inlet 8"



Suction fan

Optional 1000V/400 V transformer
The 400V 50 HZ configuration has
the 63 A electrical inlet here.

3.2 Maintenance and service instruction

Safety regulations

These instructions contain important sections dealing with safety. Special attention must be paid to all framed safety text that begins with a warning symbol (triangle) followed by a signal word, as shown below.



Warning denotes a hazard or hazardous procedure which CAN lead to serious or life threatening injuries if the warning is not observed.



Caution denotes a risk or risky procedure which CAN lead to personal injury or damage to equipment if the warning is not observed.

Also observe the following general safety rules:

- Before starting the machine, read through **these instructions** carefully.
- Also read through the **safety instructions** before putting the machine to use.
- For reasons of product safety, the machine must not be modified.
- Use approved personal protective equipment.
- Use ILMEG Genuine Parts only.
- Always replace worn or damaged signs.



Warning

If the air coming out of the suction fan contains dust. Stop immediately the X-200 and check for leakages. Never operate with dust coming out of the suction fan since the suction fan will be worn out. This can cause severe damages.



Warning

Always turn the X-200 off while moving the equipment. Quick movements of the X-200 can cause excessive forces on the suction fan. This can cause severe damages



Warning

The X-200 contains rotating and moving parts. When servicing the X-200 make sure the hydraulic power is switched off, the pneumatic pressure is evacuated and the electric circuit is switched off.



Caution

Components are heavy. Please use lifting devices where necessary to avoid accidents and damages.

Further safety instructions

- The X-200 can only be used for what it is intended for
- Only qualified and trained personnel may operate the machine
- Practice how to turn off the machine in case of emergency
- The maximal air pressure cannot be exceeded
- Always inspect the equipment before use
- Never use the equipment if you suspect it is damaged
- Always use good practice and sound judgment

- Be aware of what you are doing
- Never use the equipment when you are tired or under the influence of drugs, alcohol or anything else that can affect your vision, your reactions or your judgment
- Participate in safety training and other trainings applicable
- Never hit the equipment and never misuse it
- Store the equipment in a safe place and out of reach for children
- Make sure that all equipment is maintained in the right way
- Make sure that warning signs and decals are readable and maintained.
- Make sure that unauthorized personnel never come within the working area of the equipment
- Keep the workspace free from foreign objects
- Never point compressed air towards yourself or anybody else. To avoid damages, never use compressed air to clean your clothes from dust and other dirt.

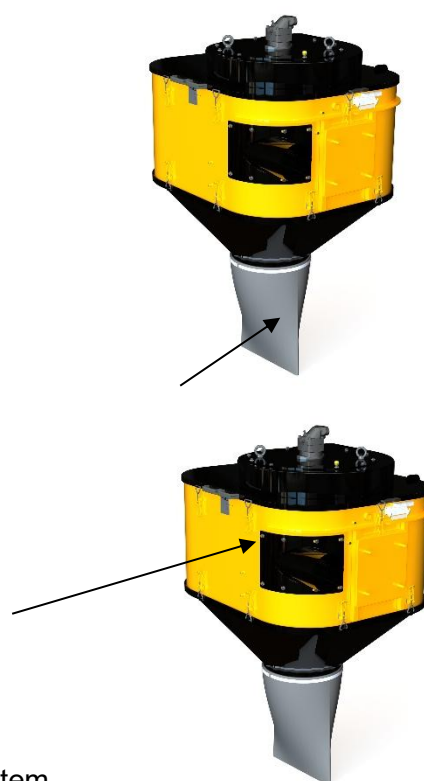
Service and Maintenance Schedule

To secure maximum productivity and avoid unnecessary downtime due to breakdown and repair activities, preventive maintenance in accordance with the schedule below is recommended.

Service interval	Activity	Actions
During operation	Check for dust in the air from the suction fan	Stop immediately and check for leakages
Daily	Check the seals in the pick-up hood	Change seals if necessary
Daily	Check the suction hose for leakage or damage	Change the hose if necessary
Daily	Check for vibrations	Inspect the suction fan
Daily	Check for pneumatic leakages	Tighten leakages
Daily	Check the rubber dump valve	Change if broken
Daily	Check the hydraulic hoses and connections	Tighten or change hoses if necessary
Yearly or after 500 hours	Change filters and wear material	

Daily Maintenance

1. Start up the dust collector.
Let it run for a few minutes.
This will clean out any condensed water from the system and rinse any leftovers away from the filters before starting up the next operation.
2. Check that your dust collector sucks properly by looking at the rubber dump valve which shall quickly and strongly be sucked up against dust collector bottom.
3. Check that the fan wheel is not damaged by feeling at the filter housing for abnormal vibrations.

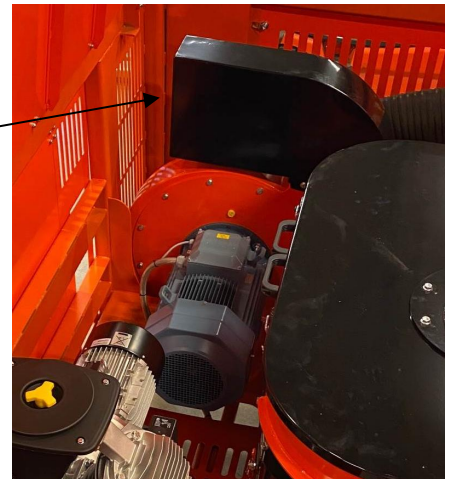


4. Check that suction hose is not damaged or bent
5. Check that the pneumatic hoses, electrical cables and connectors are not damaged.
6. Check that no dust is coming out through the fan while drilling. If dust is coming through, **stop the operation immediately**. A leakage in the filter house or a filter may be damaged and need to be replaced.



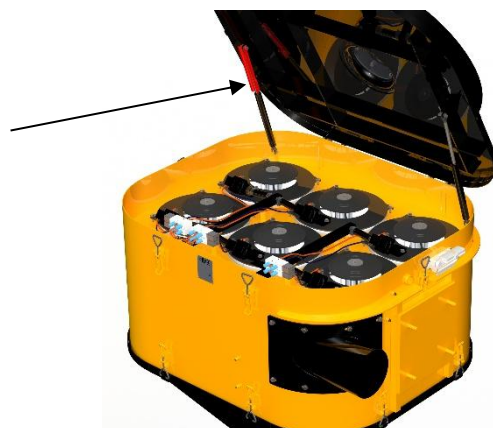
Warning

Never operate with dust coming through the suction fan since the suction fan will be worn out. This can cause severe damages.

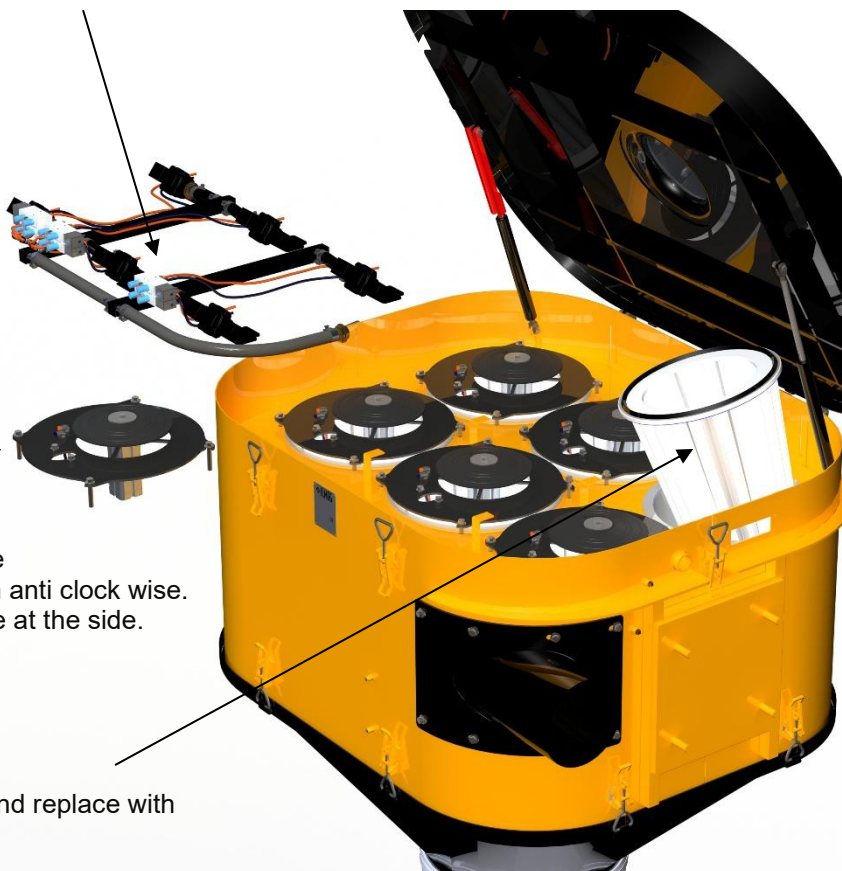


Filter change:

7. Open the fan top and secure it open with the metal holder.



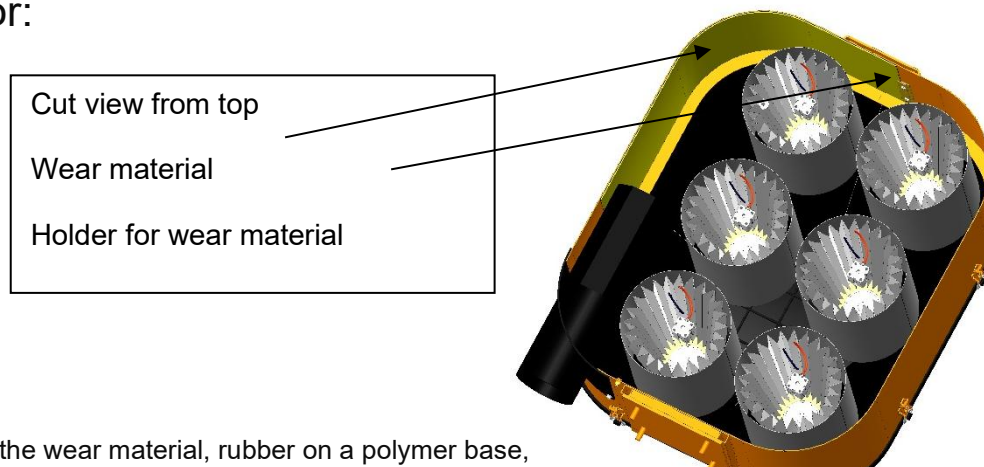
8. Loosen the bolts for the filter cleaning valves and remove the complete filter cleaning air system.



9. Loosen the bolts to the Filter top plate and turn anti clock wise. Place the filter top plate at the side.

10. Lift the filter upwards and replace with a new filter.

Change the Wear Material inside the dust collector:



11. To change the wear material, rubber on a polymer base, Remove the bottom cone. Loosen the two holders and change the wear material .

Changing inlet/diffuser if worn out.

12. Remove screws (N) holding the inlet.
13. Take out the whole inlet/diffuser (O), (it is one unit)
14. Check the gasket, if worn out - change, otherwise place it properly on the new inlet to prevent any leakage.
15. Tighten the screws (N) properly on the new inlet to prevent leakage.

