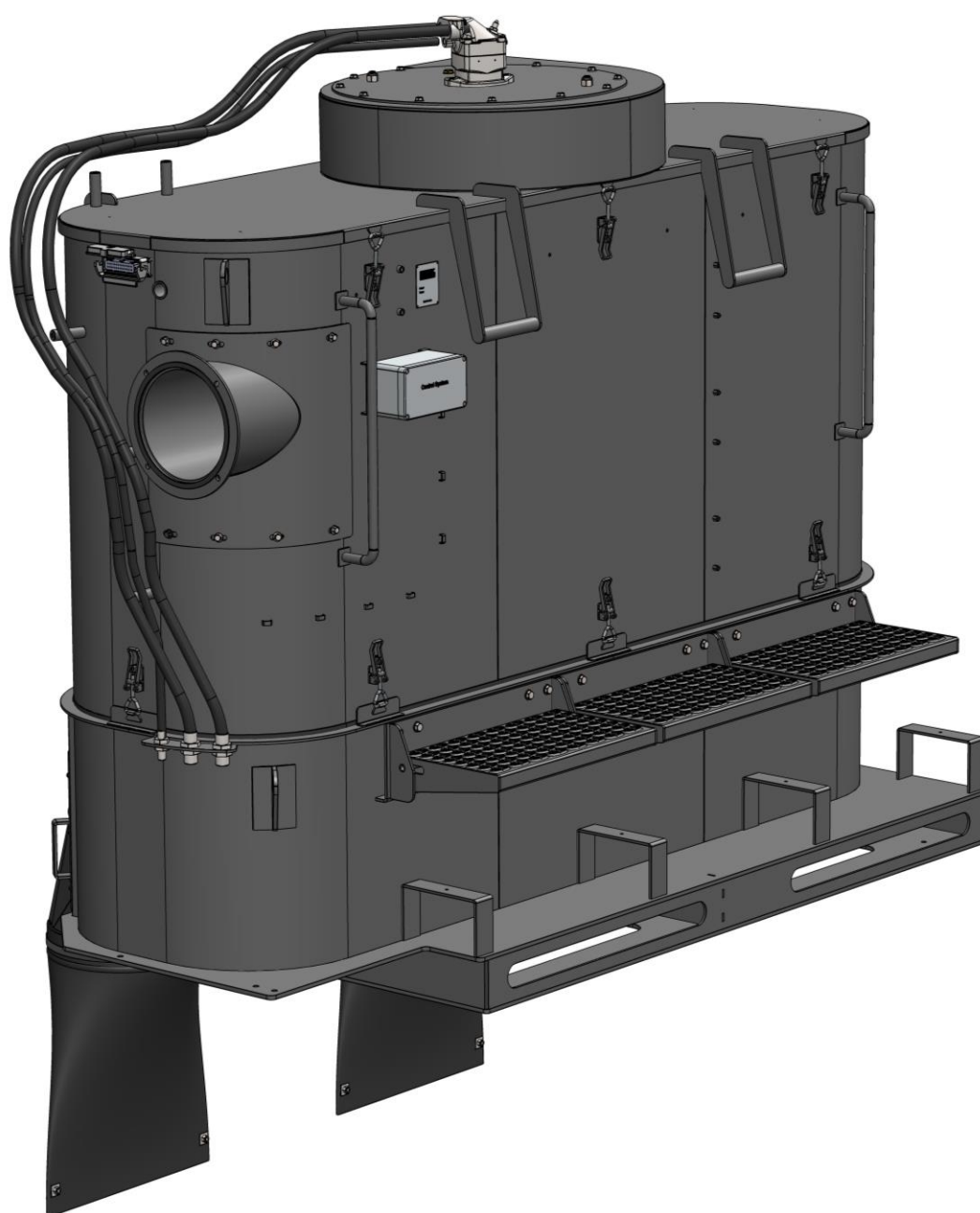




XR-300

Dust Collector System Installation and operating instructions





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 XR-300 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 XR-250 off while moving the equipment. Quick movements of the XR-300 can cause excessive forces on the suction fan. This can cause severe damages



Warning

The XR-300 contains rotating and moving parts. When servicing the XR-300 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 XR 300 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 alert on 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 you 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 without reach of children
- Make sure that all equipment is maintained in the right way
- Make sure that warning signs and decals is readable and maintained.
- Make sure that unauthorized personnel never comes within the working area of the equipment
- Keep the workspace free from foreign objects
- Never point compressed air against yourself or anybody else. To avoid damages, never use compressed air to clean your clothes form dust and other dirt.



Specification XR-300 Dust Collector System

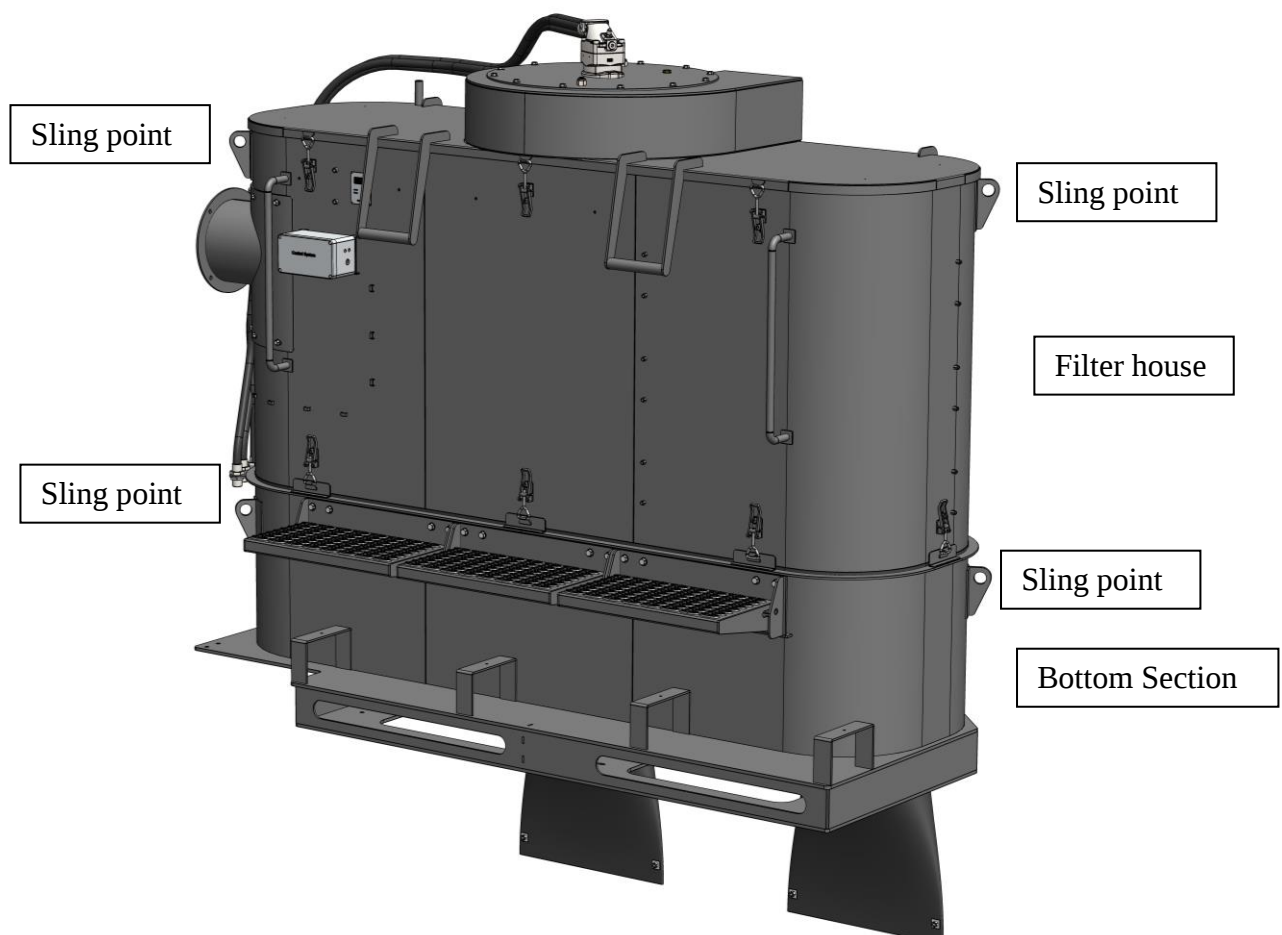
Specification:

Weight kg	750
Number of filters	6
Oil flow requirement l/min	75
Oil pressure requirement Bar	200
Compressed air requirement Bar (PSI)	7 (100)
Rated suction capacity m ³ /s (CFM)	3,4 (7200)

Installation

Mechanical installation

Make sure the mechanical bracket used for the XR 300 is sufficient to carry the full weight of the dust collector in rock drilling applications. Correct mounting is as close to the feed beam/ rock drill as possible to reduce the suction hose length. The suction hose should be as straight as possible. The dust collector is heavy. When installing it on the machine divide the bottom section from the filter house part in two and use the sling points. When the bottom part is installed on the machine, install the filter house part.



Hydraulic installation

- Contact a hydraulic specialist to design the hydraulic circuit for your application.
- The hydraulic hoses for the pressure and return line must have the capacity of 75 l/min and 200 Bar pressure without excessive counter pressure.
- The drain line size is recommended to be $\varnothing \frac{1}{4}"$ or $\varnothing 6\text{mm}$ and connected directly to tank. No backpressure is allowed. With too high back pressure in the drain line the hydraulic motor axle gasket will be damaged and leakage will occur.



Warning

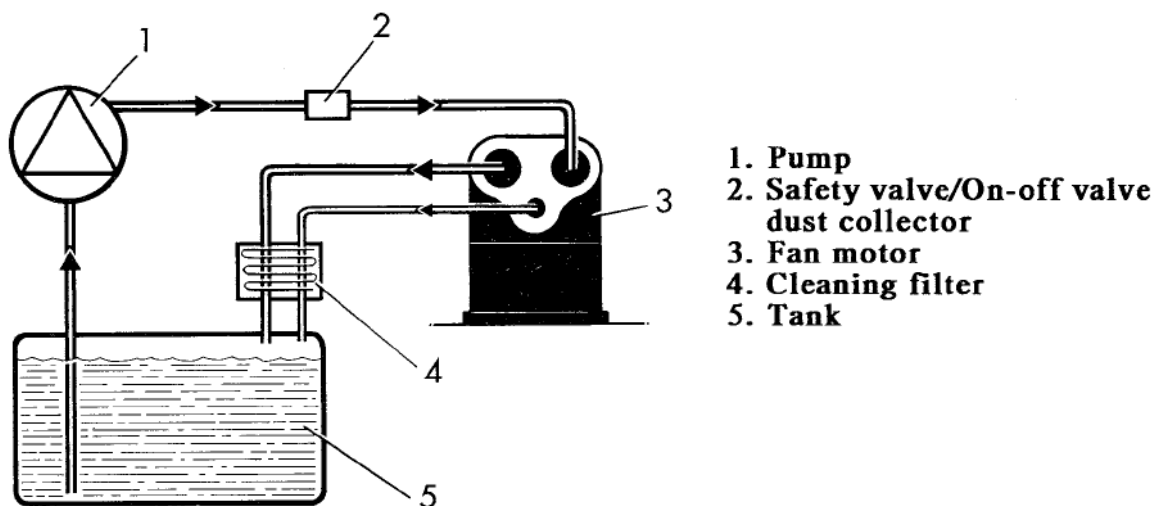
Always use proper quality of hydraulic hoses and fittings to reduce risk of leakage. Hydraulic pressure can cause severe damages.



Caution

Hydraulic oil leakages have a negative effect on the environment.

Attach the pressure line to the port marked B and the return line to the port marked A.
Connect the drain line to the drain port on the hydraulic motor as shown on the sketch below.
The Hydraulic motor has the displacement of 19 CC/rev



The recommended speed for the fan is 3800 rpm which corresponds to appr 75 l/min hydraulic flow.
Maximum speed is 4200 rpm

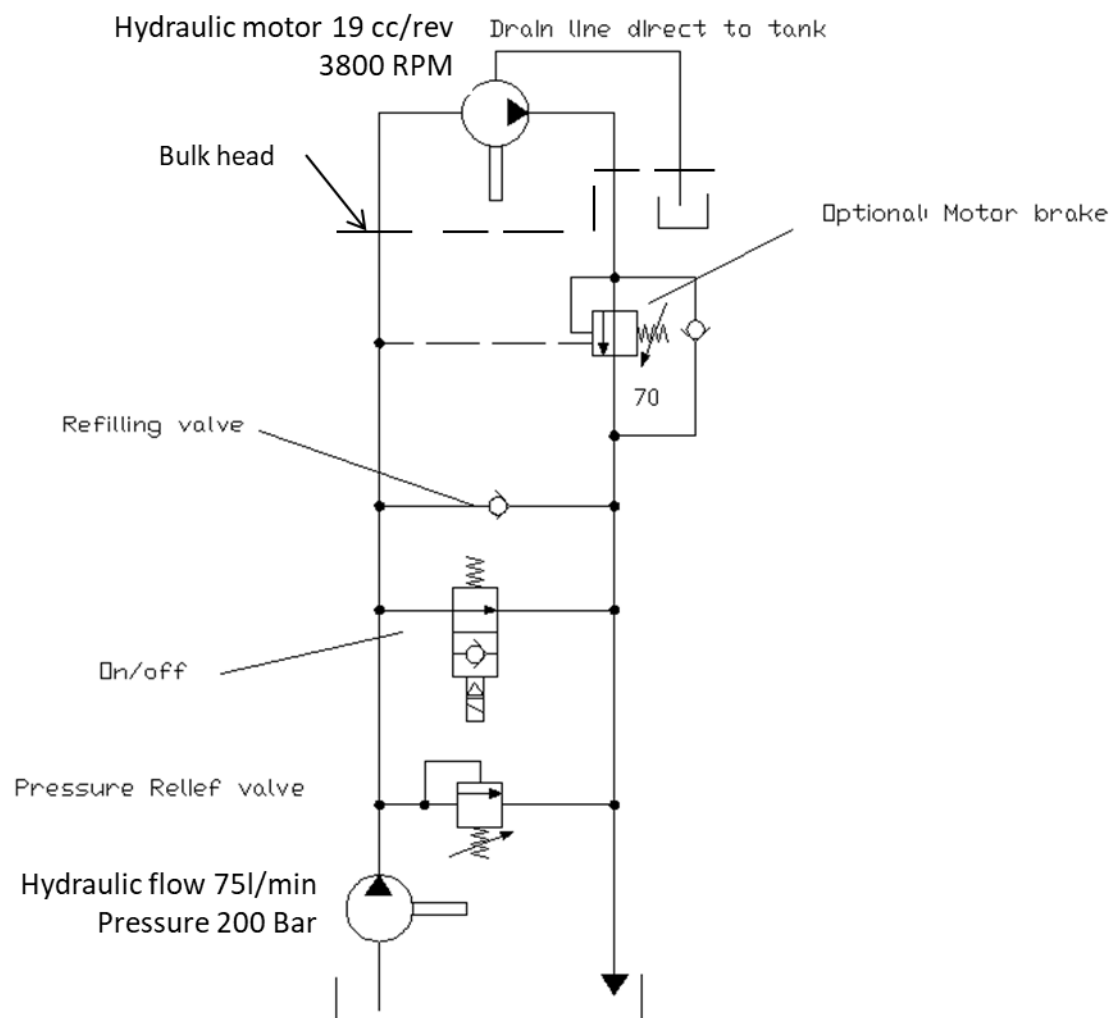


Warning

Do not install more hydraulic flow than specified. Over-speed of the fan can cause severe damages to the suction fan.

A generic proposal for hydraulic installation

It is recommended to install a refilling check valve in the hydraulic circuit to avoid cavitation in the motor.



Air pressure installation for the filter cleaning system

Connect air supply for the filter cleansing function of the dust collector. Recommended pressure is 7 BAR or 100 PSI. To safeguard full filter cleansing effect a $\varnothing$ 1" or $\varnothing$ 25 mm hose is recommended.



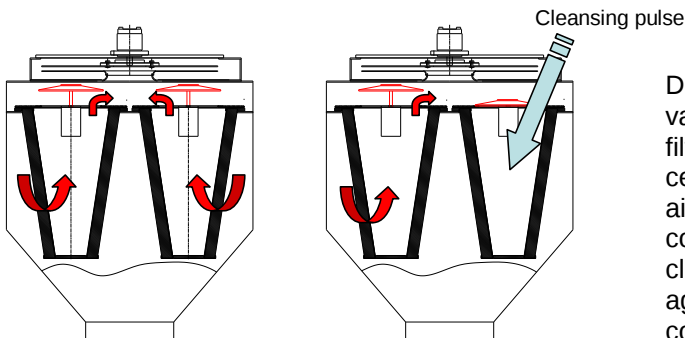
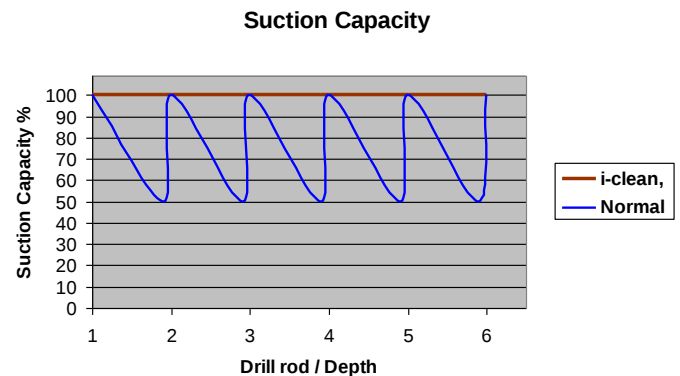
Warning

Always use proper quality of pneumatic hoses and fittings to reduce risk of leakage. Pneumatic pressure can cause severe damages.

The XR-300 filter cleansing system

i-clean a quantum leap when it comes to suction capacity in drilling applications.

The new filter cleansing function, i-clean, ensures high suction efficiency, even under severe drilling conditions. The system cleans each filter independently and continuously during the drilling sequence. The suction capacity remains regardless of drill rod length and rock conditions. The need for a pre-skimmer is reduced.



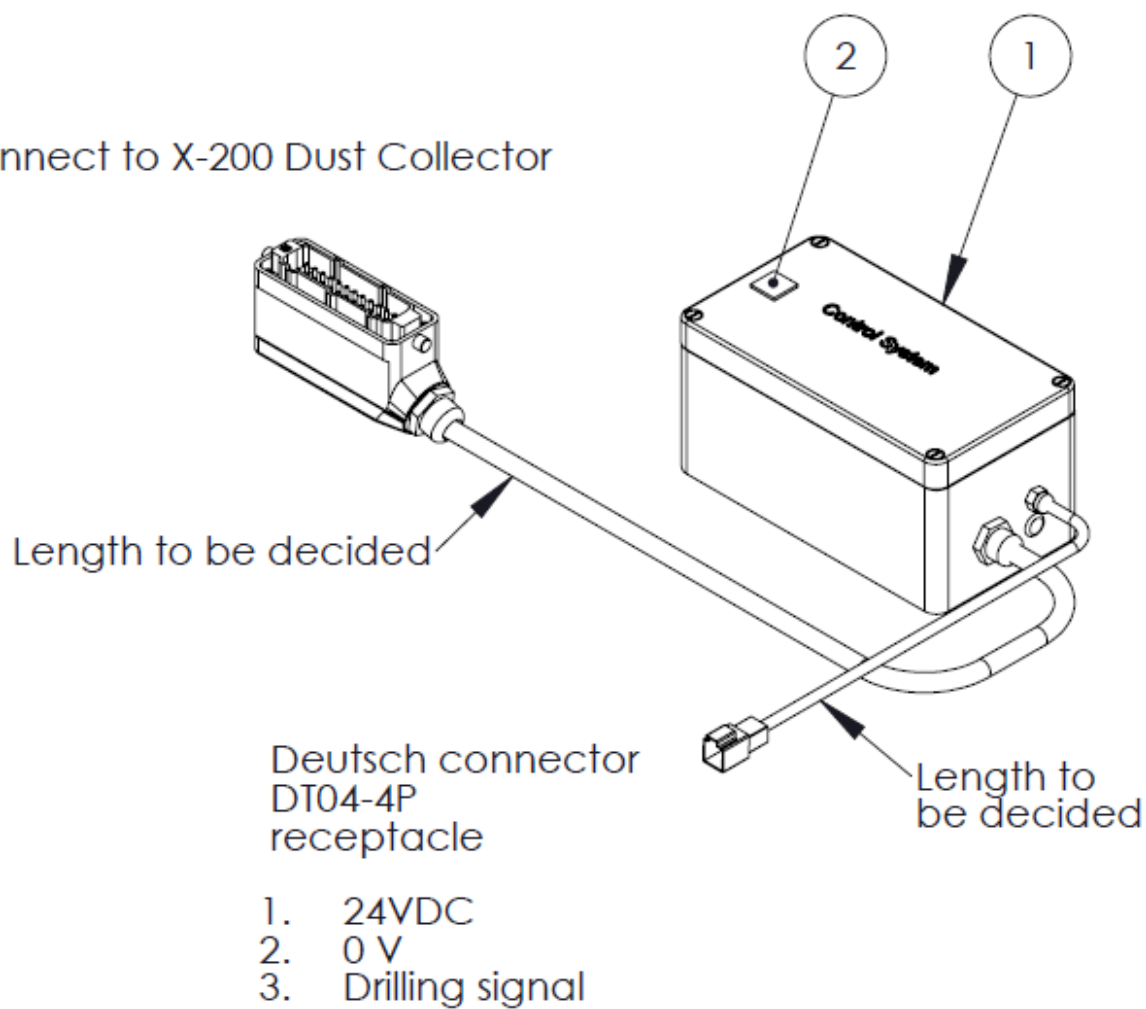
During the drilling sequence the closing valves are open, thus letting air through the filters creating the required suction. With certain intervals one valve closes and a short air pulse is introduced in the closed filter compartment to clean the filter. After the cleansing sequence both valves are open again until the next cleansing sequence comes in action on the next filter.

Electrical installation

The electric control system controls the cleansing sequence and opens and closes the air valves in the dust collector

Connect the control box to 24 V DC and connect the drilling signal to the system giving 24 V DC as "Operation signal " i.e. the dust collector should suction.

Connect to X-200 Dust Collector





The control system is programmable and during operations the cleaning times can be changed.

How to adjust the cleaning pulses and pauses between the pulses in the control system:

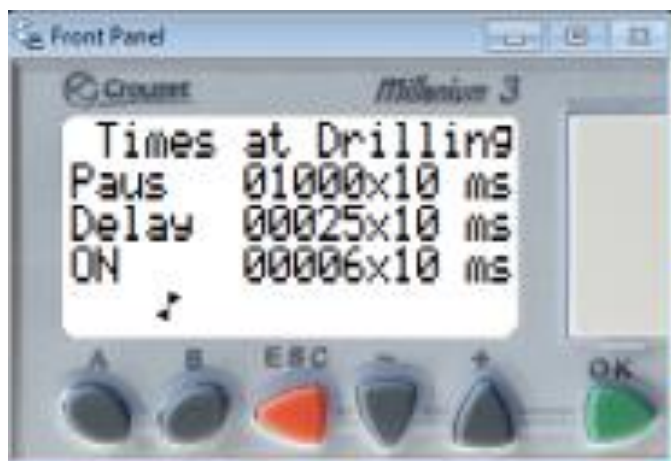
To change parameters

Select menu with the "A" button. Toggle up and down on the screen with "+" or "-" and select parameter. Press "OK" and increase or decrease parameter with the "+" or "-" button. Press "OK" again to confirm the new parameter.

The new parameter is now active and stored in the memory of the XR 300 Control system



Open the cover of the control system.
The display shows: Press "A" to set parameters and "ESC" to go back
By pressing multiple on "A" you will toggle between the menus.



By pressing once on "A" the menu for setting the parameters / times during the drilling operation appears.

Pause means the time between the cleaning pulses. (see i-clean above)

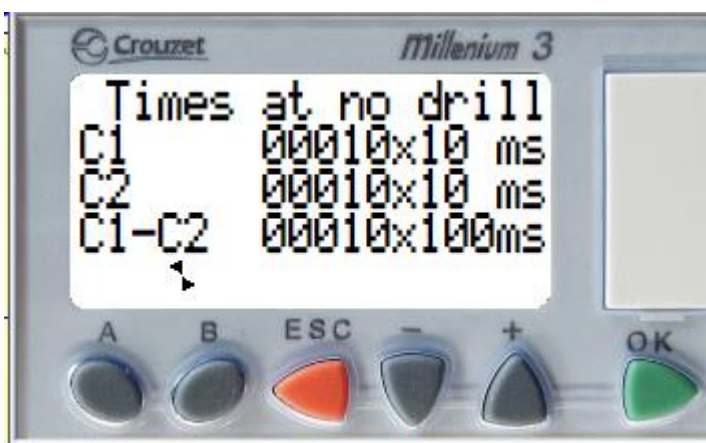
Factory setting is:

Pause: $1000 \times 10\text{ms} = 10\text{ seconds}$

Delay means time to close one of the air valves.

Factory setting $25 \times 10\text{ ms} = 0,25\text{ seconds}$

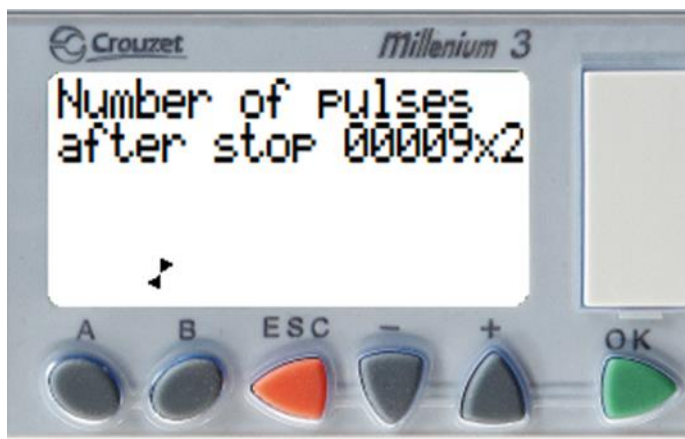
ON Means the cleaning pulses length
Factory setting $6 \times 10\text{ ms} = 0,06\text{ seconds}$



By pressing "A" once again you enter the menu defining parameters when not drilling. C1 = cleaning pulse length for filter 1, 3 and 5 and C2 = cleaning pulse length for filter 2, 4 and 6.

Factory setting for both is $10 \times 10\text{ ms} = 0,1\text{ second}$.

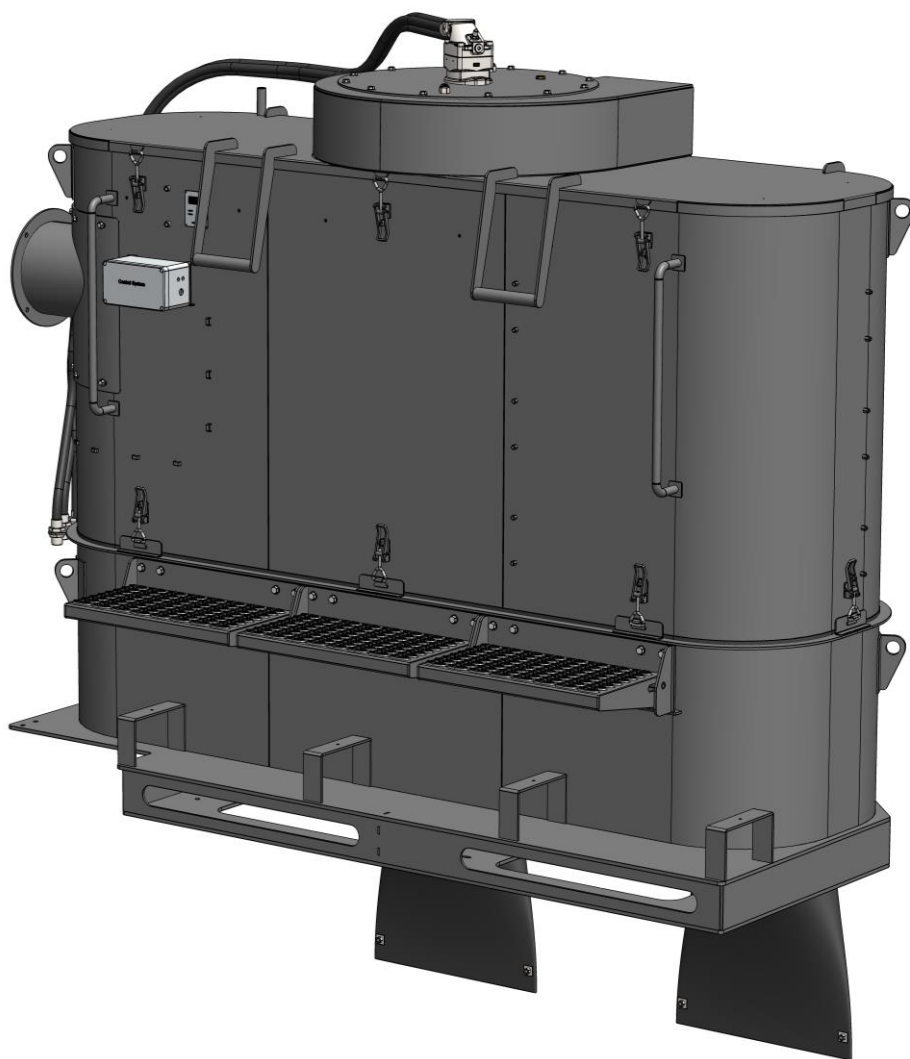
C1-C2 = time between cleaning pulses
Factory setting is $10 \times 100\text{ ms} = 1,0\text{ seconds}$



By Pressing "A" once again you enter the menu number of cleaning pulses after stop. Factory setting is 9 x 2 totally 3 pulses per filter or 18 in total.

Suction hose installation:

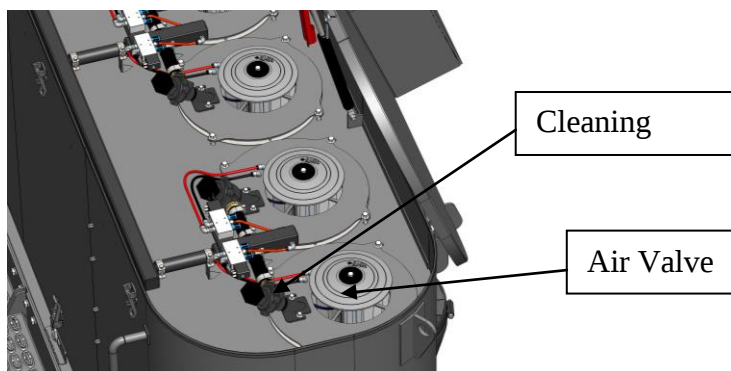
The suction hose recommended for the XR-300 is Ø 10" or Ø 250 mm. Mount the suction hose on the machine avoiding bends on the hose to secure the best suction capacity.



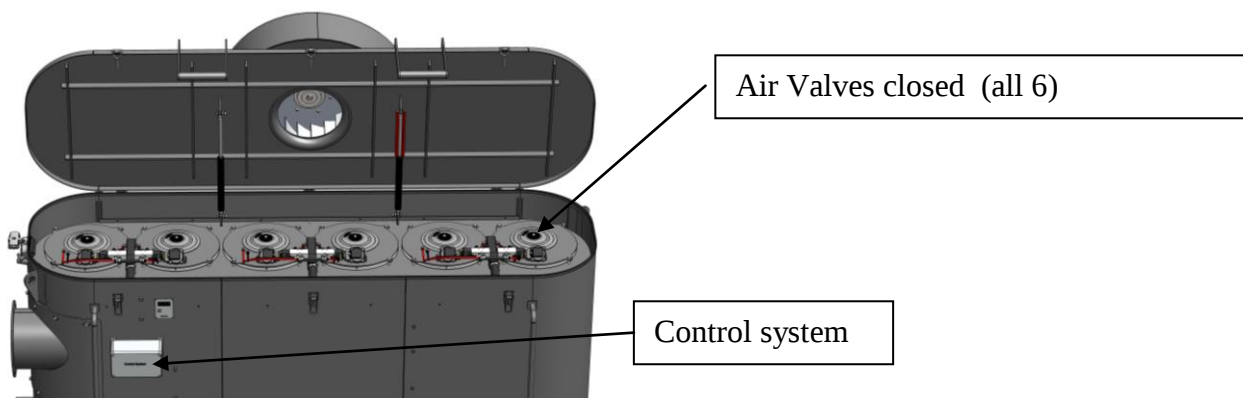


Factory check of the filter cleaning function in the Dust Collector XR 300.

The filter cleaning is carried out with compressed air pulses, Cleaning valves (6 pcs), with certain intervals in the clean side of the filter. The suction is controlled by open or close the Air Valves (6 pcs) Open the fan top and check the filter cleaning function as per below.

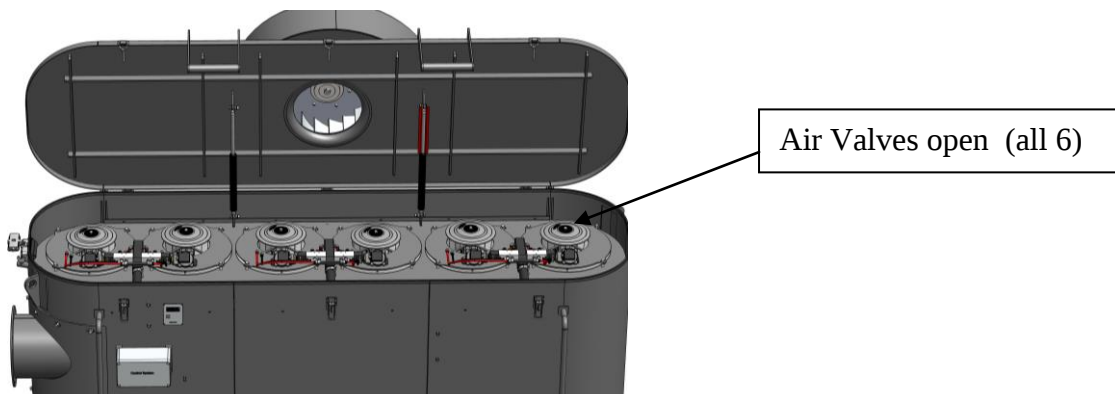


A.Starting position, dust collector not activated.

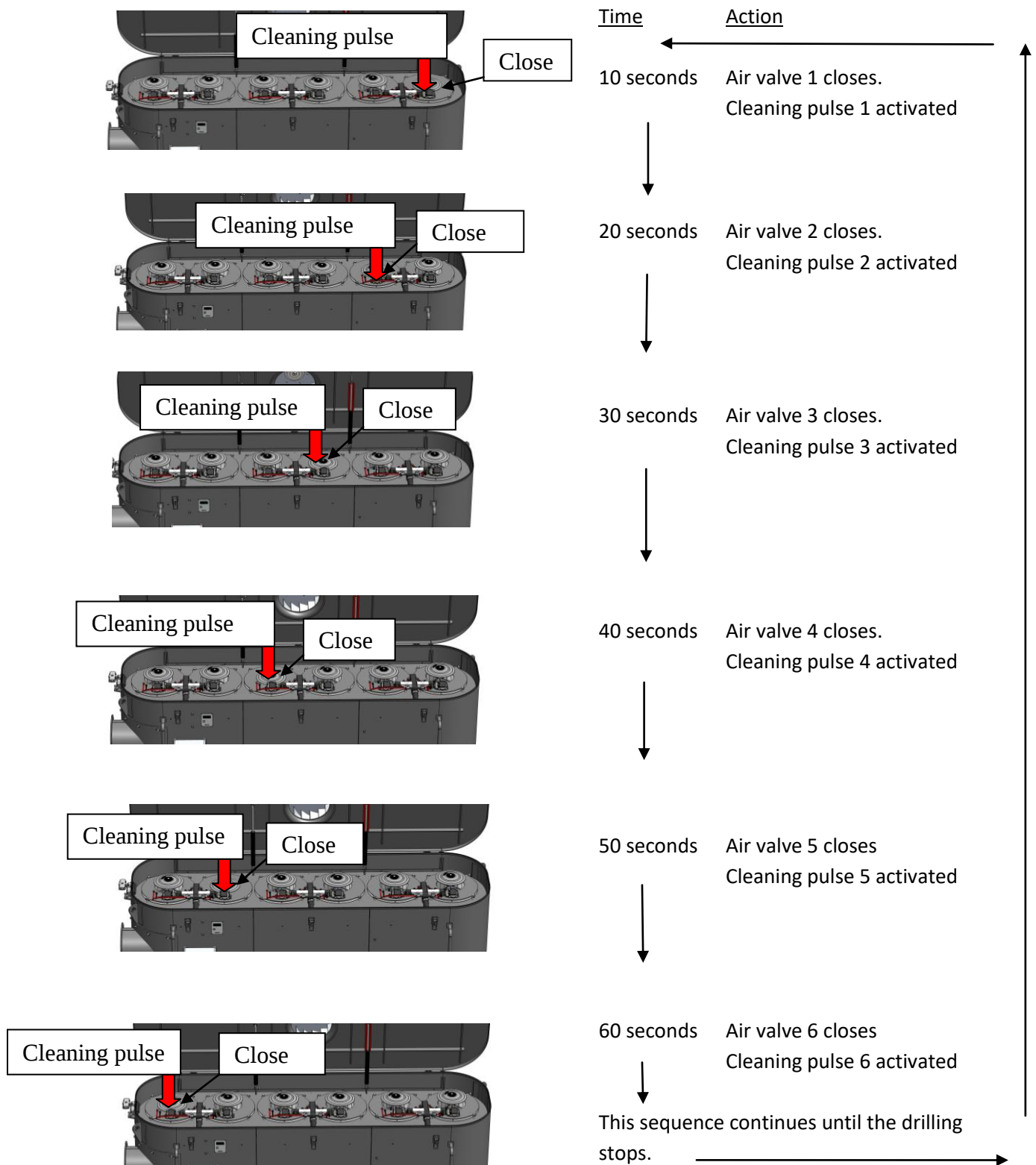


All 6 Air valves are closed, no activation of the cleaning pulses. Power is connected to control system and compressed air 7 Bar is connected to the dust collector.

B.Drilling starts, suction is activated

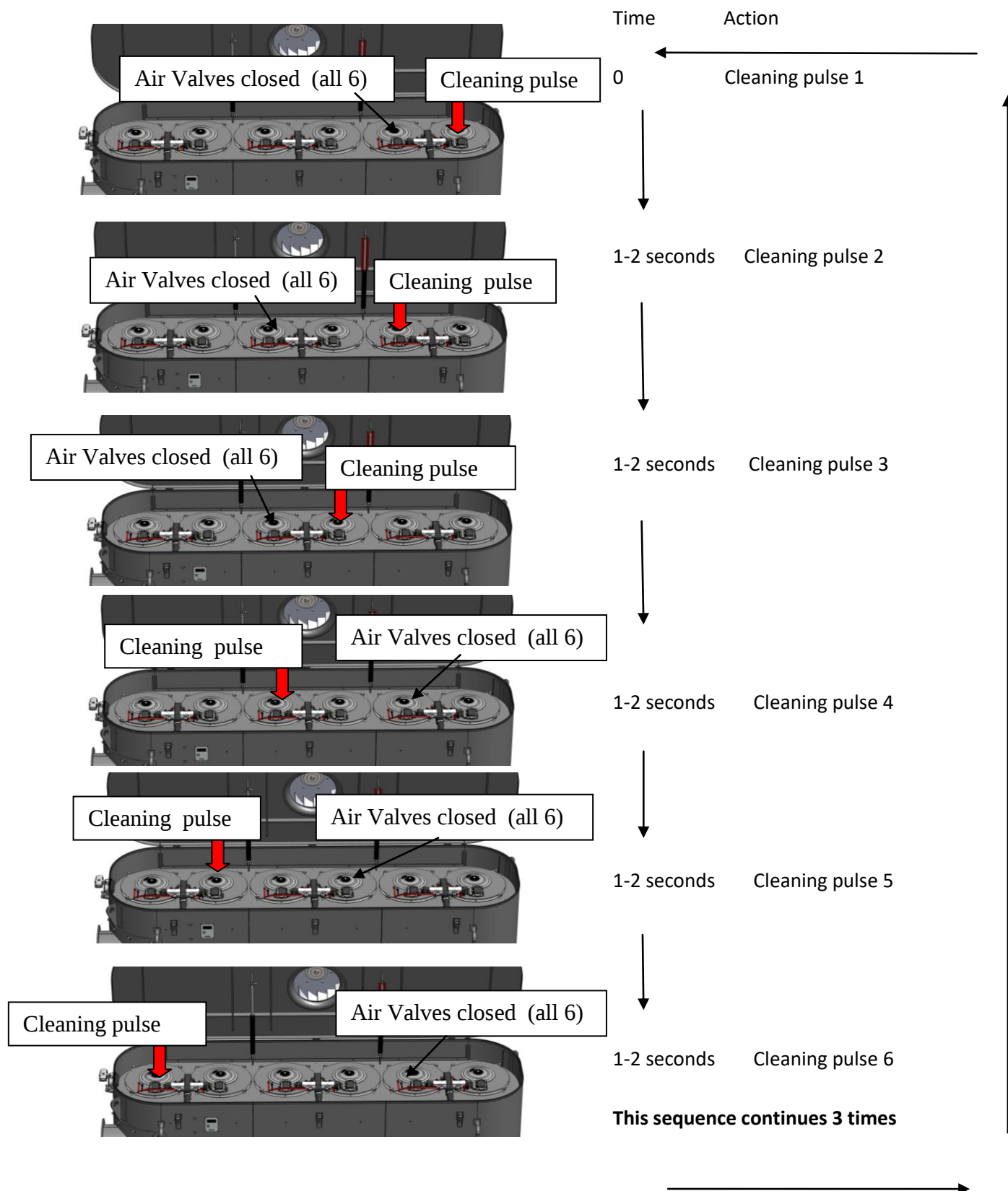


C. During drilling the filters are cleaned with 10 seconds intervals in accordance with sequence below:



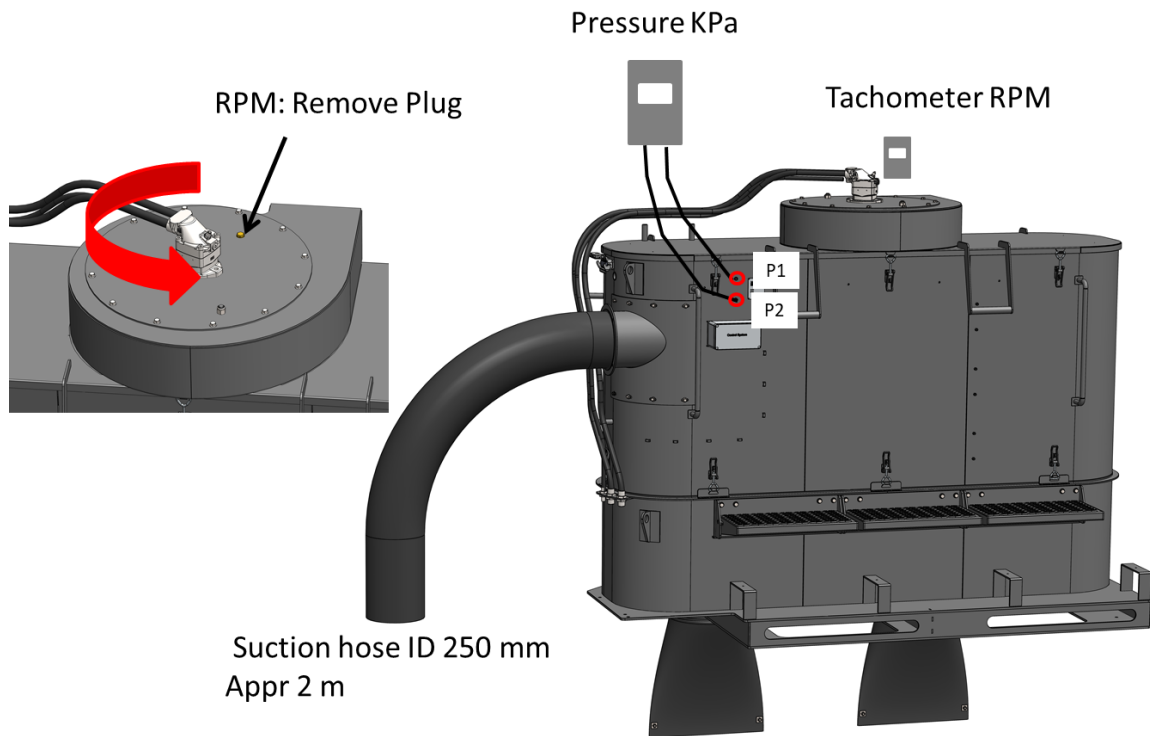
D. Drilling stops and the dust collector is shut off. All 6 Air Valves closes.

The filters are cleaned with pulses in sequence with a few seconds interval. At the same time the dust collector is emptied from dust through the outlet chute rubber valve.





Factory check of the RPM and Vacuum.



E. Check the fan speed with external Tachometer

- Remove the plug on the fan top.
- Check that the fan is running counter clock wise (seen from the top).
- Spray soft black paint while the fan is rotating.

The reason for the soft black paint is to establish only one glossy measuring point on the fan impeller.

- After drying, make a "scratch" in the paint with a screw driver to get a glossy measuring point for the tachometer.
- Measure the RPM while drilling (running at full speed).
- Nominal speed is 3800 rpm.

F. Check the vacuum pressure before and after the filters.

Install the pressure sensors in the measuring points as per picture above.

P1	Pressure downstream the filters
P2	Pressure before the filters
P2-P1 =	Pressure drop over the filters

1. Fan is not running:

P1 = P2 = 0 (Atmospheric)

2. Fan is running at 3800 RPM, no suction flow:

P1 = approximately -5 kPa (Fan stalling)

P2 = 0

3. Fan is running at 3800 rpm, full suction flow

P1 = Approximately - 1,7 kPa (new filters, never used, gives a small pressure drop))

P2= Approximately - 1,4 kPa (see picture below, note: calculated values)

