

HIGH-VACUUM UNIT



MANUAL — HIGH-VACUUM UNIT

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TECHNICAL DESCRIPTION

The unit is suitable for conveying dust and material. The temperature of the conveyed gas must not exceed 80°C. The unit must not be used in environments where:

The temperature exceeds 40°C or is below -20°C, or in potentially explosive atmospheres.

The unit must not be rebuilt or modified in any other way.

Special versions for other applications can be quoted on request.

READ THIS MANUAL CAREFULLY BEFORE INSTALLATION AND OBSERVE ALL INSTRUCTIONS, ESPECIALLY THOSE RELATING TO SAFETY.

THIS MANUAL IS NOT A REPAIR MANUAL AND MUST NOT
BE USED AS SUCH.

Failure to follow this manual will invalidate the warranty and may result in personal injury and damage to the machine.

1 SAFETY INSTRUCTIONS

1.1 Electrical safety

- Electrical equipment may only be installed by authorised personnel.
- Ensure that the safety isolator is always switched off and locked when work is carried out on the unit,
and/or that the mains plug has been disconnected.
- Local electrical safety regulations also apply to operation of the system.

1.2 Crushing hazard

- When changing bags, removing the drum or changing the filter, the safety isolator must always be switched off and locked.
- The unit must be anchored in accordance with the installation instructions.

1.3 Hazardous dust

- When handling collected dust and/or changing the filter, respiratory protection, safety goggles and gloves must be worn.
- Also check local environmental and health regulations.

1.4 Vacuum injuries

- Never place a suction opening against bare skin, as the high vacuum may cause blood vessels to rupture.

1.5 Noise

- Hearing protection must be worn when working near an operating unit without an acoustic enclosure.

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- Be aware that nozzles and suction openings may also generate harmful noise.
- Also check local regulations concerning noise.

1.6 Pneumatics

- Never direct compressed air at bare skin or use compressed air to clean yourself or your work clothes.
- Filter cleaning must not be started while the cyclone top is removed.

1.7 Other equipment

- After use, hang up hoses and cleaning equipment to prevent tripping accidents.

2 MACHINE OPERATION

Ce unit

The central unit consists of one direct-driven side-channel blower mounted on a frame together with a filter cyclone and control cabinet.

The blower operates at flow rates and vacuum levels specified by us to achieve optimum performance.

The filter cyclone separates material in two stages: first by cyclone action, which removes the heaviest and coarsest particles, and then through a pleated cartridge filter, which removes all fine particles. The filter material has been tested and approved in accordance with DIN 28184.

The electrical control system for starting, stopping and filter cleaning is housed in an enclosure bolted to the machine chassis.

A drum for collecting extracted material is fitted beneath the cyclone.

Various discharge options may also be provided, such as an airlock, bottom flap or rotary valve.

Operation

The unit starts when any suction outlet is activated. When all outlets are closed, the unit stops after the preset time (approx. 5 minutes with star-delta starting and 10 seconds with variable-frequency control), and the filter is cleaned by 4–5 air pulses over approximately 30 seconds.

3 3 INSTALLATION INSTRUCTIONS

- Anchor the unit at the chassis mounting points.
- Electrical and other connections must be made in accordance with the enclosed wiring diagrams by authorised personnel.
- Connect clean, dry compressed air at the correct pressure (5 bar).
- Also ensure that the air quality is sufficient to prevent malfunctions caused by dirt or water.
- If the unit is installed outdoors, antifreeze should be injected into the compressed-air supply.
- Connect the unit only to pipe systems designed for the vacuum level produced by the unit.

4 4 INITIAL START-UP INSTRUCTIONS

- Check that the electrical connections have been made correctly. (To be performed by authorised personnel.)
- Check that the compressed air is connected and the pressure is set correctly (5 bar); higher pressure must not be connected, as this may damage the filter and cleaning system.
- Ensure that a container is fitted beneath the cyclone.
- Check that the pneumatic connections are leak-tight.
- Check that the connections to the pipe system are securely tightened.

Start/Stop

- **Turn the safety/service isolator to position 1.**
- Turn the control switch on the front of the cabinet to position 1.
- Activate one of the suction outlets and check that the suction unit starts.
- Check the direction of rotation: clockwise.

- Close the outlet and check that filter cleaning continues for approximately 30 seconds.

Once these measures have been completed, the system is ready for use.

5 PERIODIC CARE/MAINTENANCE

BEFORE STARTING MAINTENANCE, READ THE APPLICABLE SAFETY REGULATIONS CAREFULLY.

Turbine/blower maintenance:

These are maintenance-free and normally require no servicing.

NOTE! THE SUCTION UNIT IS A PRECISION MACHINE. IT IS THEREFORE VERY IMPORTANT THAT THE FILTER IS IN PERFECT CONDITION AND THAT THE CLEAN SIDE IS KEPT FREE OF DIRT AND DUST.

Filter:

The central unit has a generously sized polyester filter and a highly efficient filter-cleaning system. Depending on the dust material, filter replacement is therefore rarely necessary.

When changing the filter:

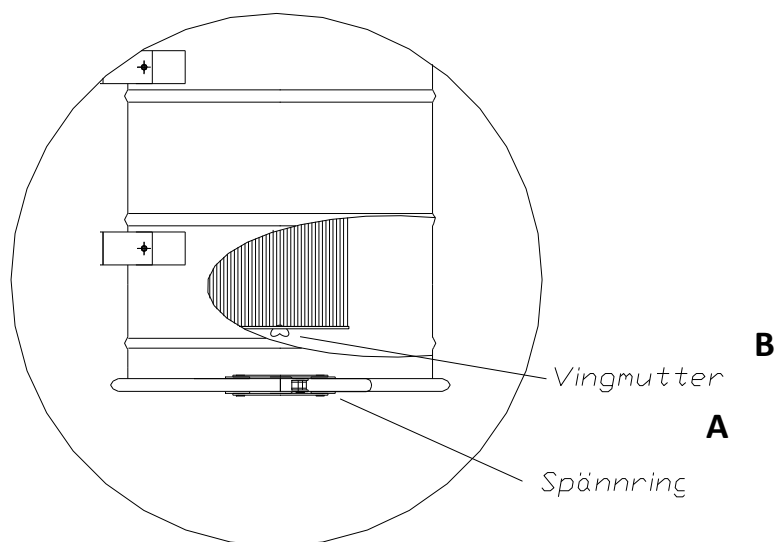
- Remove the waste drum and its retaining ring by releasing clamping ring A.
- Unscrew wing nut B at the bottom of the filter.
- Then carefully remove the filter and place it in a plastic bag.
- Fit the new (or cleaned) filter and tighten the wing nut (NOTE: do not use tools). Refit the retaining ring and waste drum or discharge system.

The central unit is now ready for operation again.

The polyester filter is washable and can be rinsed from the inside with lukewarm water, but replacement is recommended.

The filter material may be washed no more than three times, after which it must be replaced.

NOTE! DO NOT USE HIGH-PRESSURE CLEANING, AS THIS WILL DAMAGE THE FILTER MATERIAL.



6 TROUBLESHOOTING

If the system does not start

1. Check that the fuses are intact and that the power supply to the machine is correct.
2. Short-circuit the start loop at the connection point nearest the unit, or bridge it at the terminal block.
3. If the blowers start after the action in item 2, but not when an outlet is activated, check the microswitch/workstation switch and its wiring.

If the system starts but suction is poor

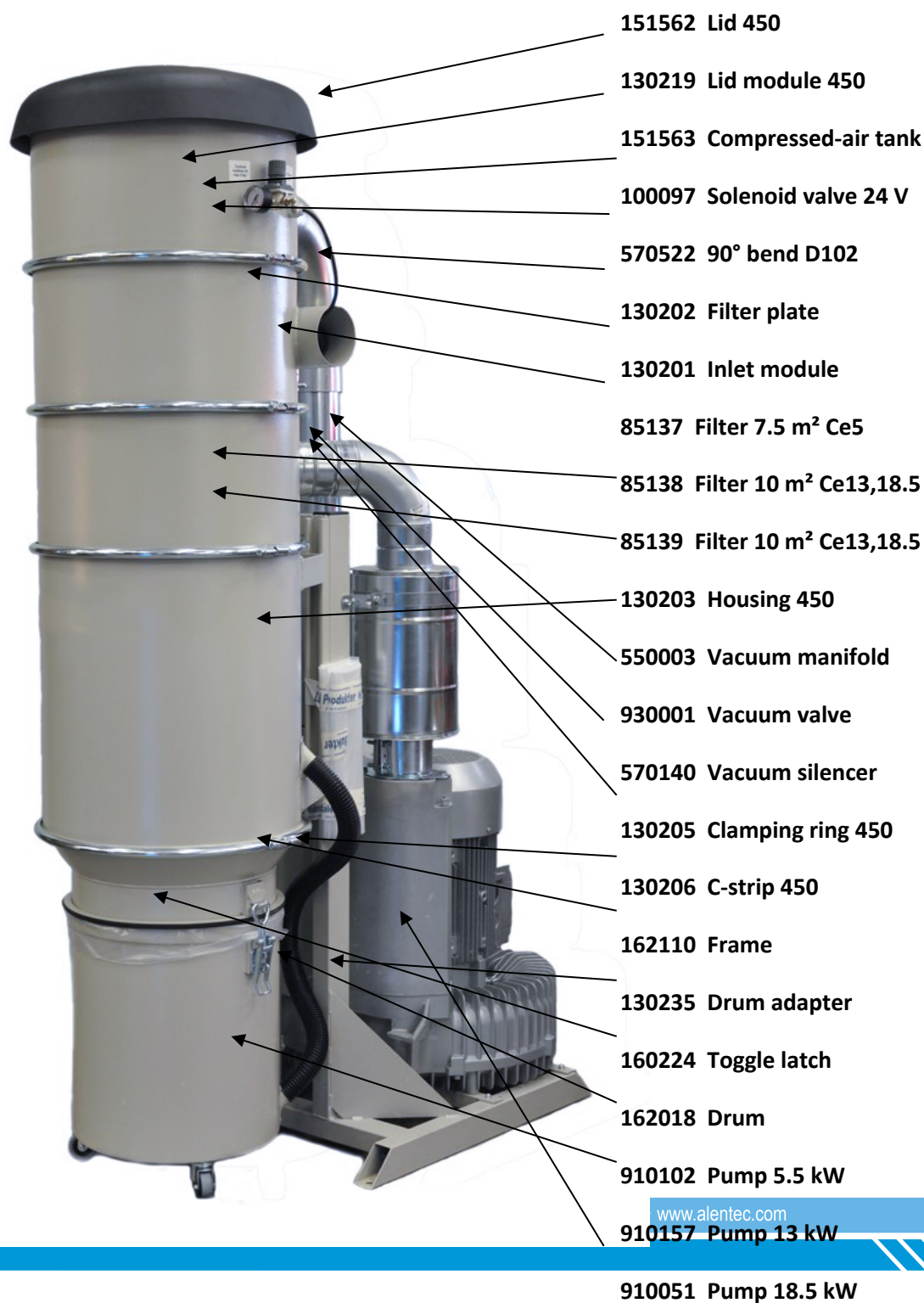
1. Check that there are no leaks in the pipe system, hoses or valves.
2. Check any bottom flaps on the filter cyclone and/or pre-separator to ensure

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that they close properly.

3. Remove the container or plastic bag, look up into the cyclone and determine whether it and/or the filter is full of dust.
4. Check for any blockage in the pipe system.

Spare parts list Ce5-13-18.5-450



TECHNICAL DESCRIPTION

EC Declaration of Conformity for Machinery

ORIGINAL

Authorised person:

Name: Johan Norman, Product Manager

Company name: Alentec & Orion AB

Address: Grustagsvägen 4, 138 40 ÄLTA

hereby declares that the machine

Unit:

Serial no.:

complies with all applicable provisions of the Machinery Directive 2006/42/EC

It is further declared that the machine complies with all applicable provisions of:

☒ EMC Directive 2004/108/EC

☐ ATEX Directive 2010/34/EU

and that the standards and/or technical specifications listed below have been applied:

Machinery Directive	EMC Directive	Low Voltage Directive

TECHNICAL DESCRIPTION

Place

Eskilstuna

Date

Signature



Johan Norman