



**Translation of the
Original Operating Manual**

VADS 250 (Standard 400/480 V)
VADS 250/2 (seal gas)
VADS 250/4 (200/208 V)

28100052100 04/16



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1 General

This operating manual contains basic information on transport, handling, storage, setting up, installation, start-up, shut-down, decommissioning, maintenance, repair and disposal of the VADS 250 vacuum pump, summarised by the term “handling” in the following. It describes the safe and proper handling of the vacuum pump.

2 Safety information

Please read the operating instructions in this operating manual carefully and make sure that all instructions and notices are complied with. Disregarding the safety instructions can lead to the loss of all liability claims. Comply with Accident Prevention Regulations BGV A1 “Compressors”, in particular Section IIIc “Installation” and IV “Operation”, as well as BGV A3 “Electrical Equipment and Devices”.

In addition to the mentioned regulations, pertinent special local and general regulations, as well as certain national requirements and regulations have to be observed during installation and operation of the vacuum pump.

Retrofitting or modifications to the vacuum pump require the permission of Gebr. Becker GmbH.

2.1 Identification of notes

The safety information in this operating manual is specially marked as follows.

	<p>General danger for persons Non-observance <u>can cause severe injuries</u>.</p>
	<p>Hot surfaces Non-observance <u>can cause severe burns</u>.</p>
	<p>General danger for the vacuum pump Non-observance can cause damage to the vacuum pump.</p>

2.2 Personnel qualifications

The personnel for connection, operation and maintenance must have the necessary qualifications for such work. They must have informed themselves about the properties of the device by thoroughly studying the operating manual.

NOTICE: This operating manual must always be available at sites where the vacuum pump is used, in a language understood by the employees operating it.

For all questions regarding safety and handling of the vacuum pump, please contact Gebr. Becker GmbH.

2.3 Safety information for connection and maintenance work

As a general rule, work on the vacuum pump may be done only when it is turned off.

All safety and protective devices have to be enabled immediately after maintenance has been completed.

3 Configuration and function

The following depictions and images explain the designations and connection points of the vacuum pump.

3.1 Description of the vacuum pump

The VADS 250 is an oil-free spindle screw vacuum pump; named for its two screw-shaped, toothed rotors. These rotors are intermeshing and rotate parallel to each other in a close-fitting enclosure. The screw clearances of the “screws” create individual compression chamber volumes in combination with the enclosure walls. When the rotors turn, there are cyclic changes of the compression chamber volumes. On the inlet side, the gas to be conveyed is drawn in and fills the opening being created (vacuum connection). Upon further rotation, the gas is transported around the rotor in the direction of the pressure side, compressed and then forced out on the outlet side (exhaust connection).

A timing gear ensures contact-free rotation of the “screws”.

Since it is “oil-free”, oil is absent in the compression chamber. The relatively tight component tolerances (small gap) compensate for the sealing function that would otherwise be provided by the oil.

The spindle screw vacuum pump is cooled by an air stream that is generated by the fan on the oil-air heat exchanger. Through the heat exchanger, this air stream cools the oil used to lubricate the bearings and the timing gear as well as the oil used for cooling the rotors and the motor enclosure. Additionally, the air stream cools the entire pump enclosure. The flow of pumped gas also performs a cooling function at certain operating points.

The frequency converter is cooled by a separate integrated fan.

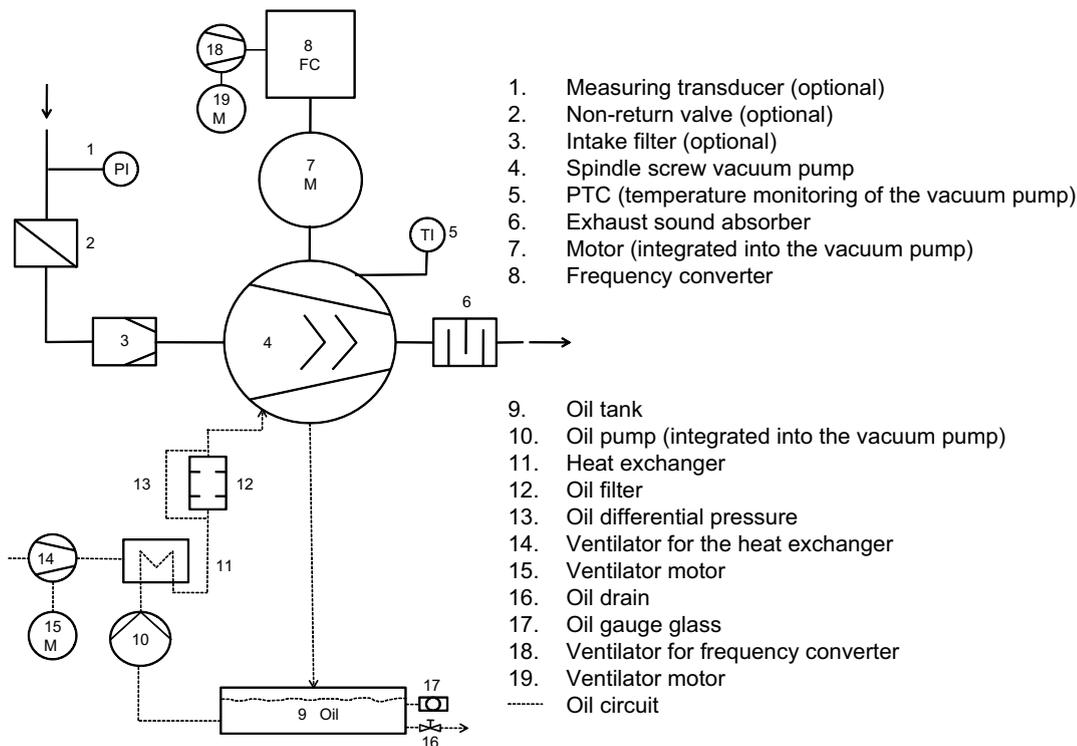


Figure 1: Schematic diagram of the vacuum pump

3.1.1 Views with sound enclosure

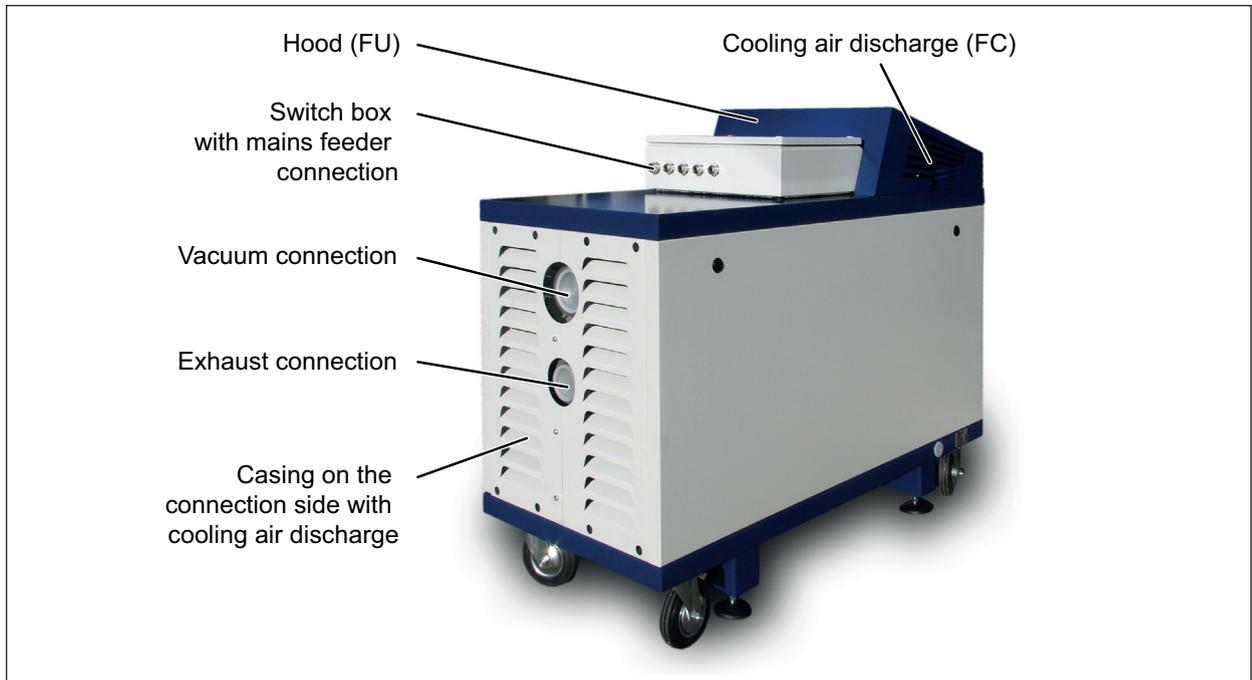


Figure 2: Diagonal view, rear right

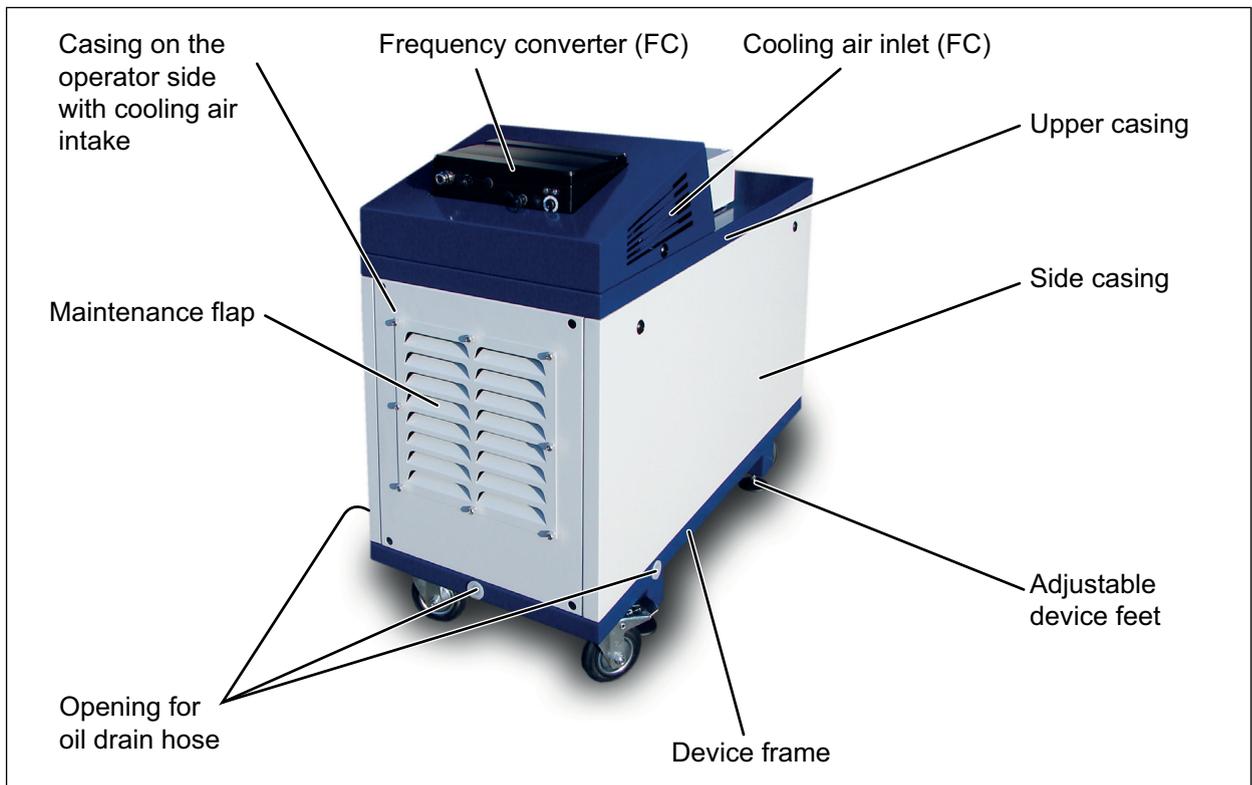


Figure 3: Diagonal view, front left

3.1.2 Side views without side casing

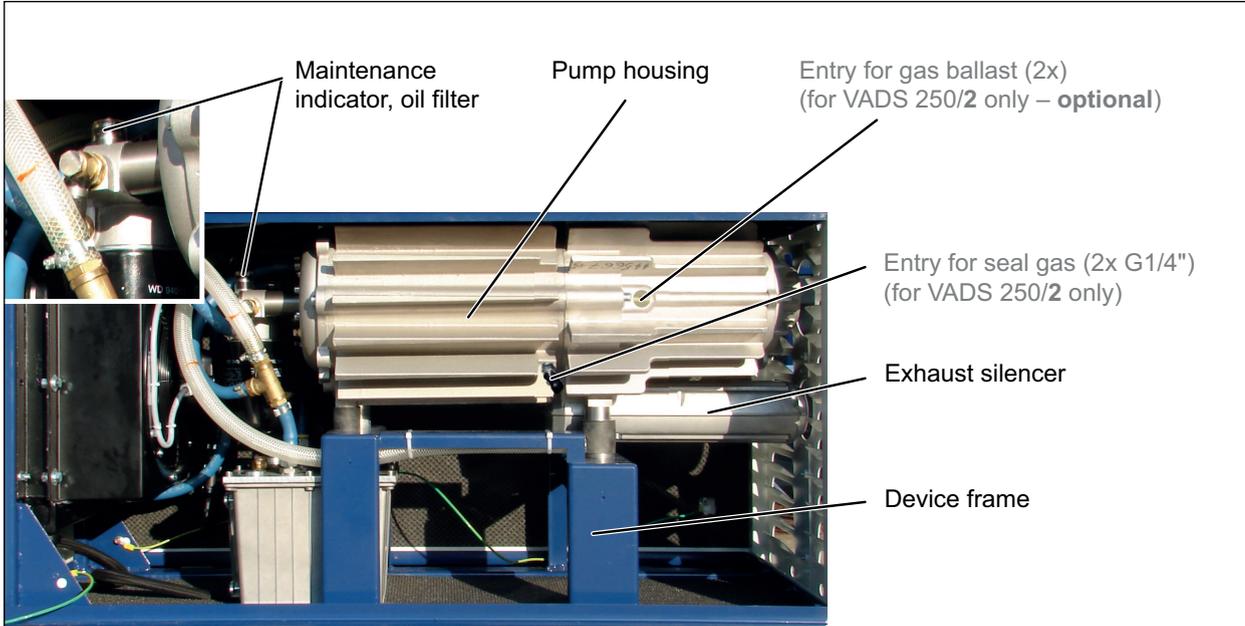


Figure 4: View without side casing

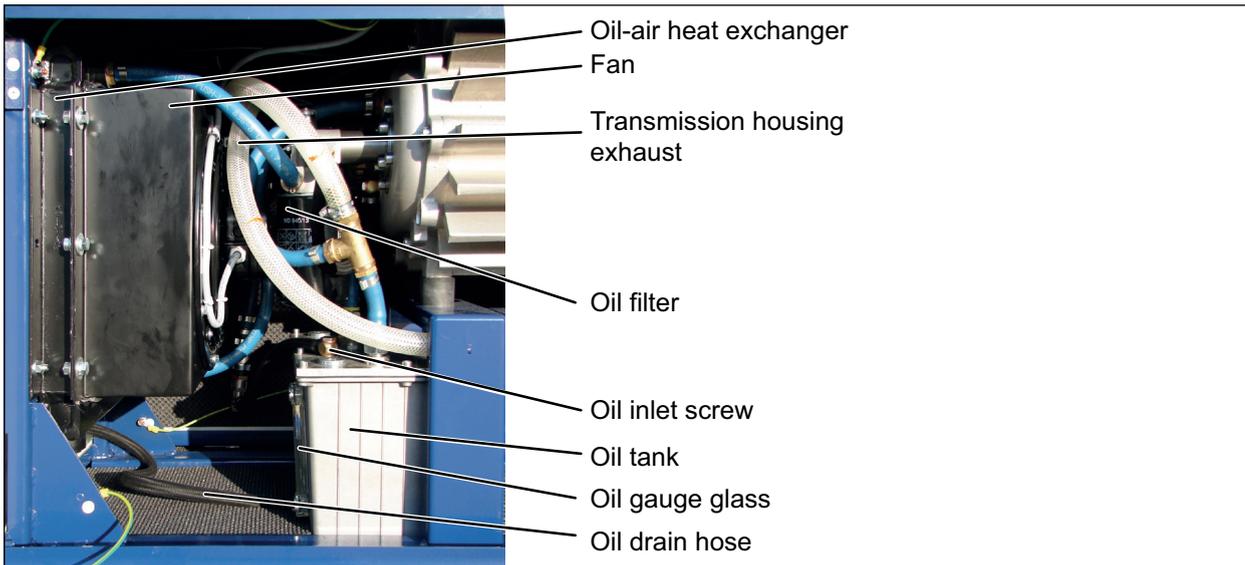


Figure 5: Detail view

4 Operating instructions

4.1 Intended use

The intended use of the VADS 250 oil-free vacuum pump from Gebr. Becker GmbH is to generate vacuum. The setting up of the vacuum pump in explosive areas (EX zones, especially as defined by the German Explosionsschutzverordnung (Explosion Protection Act)) as well as the use of the vacuum pump in areas with ionised radiation is not permitted.

If dust is conveyed through the pump, appropriate filters should be installed.

4.1.1 VADS 250 (standard model) and VADS 250/4 (200V version)

It is designed for conveying normal atmospheric air. Conveying fluids or particles can damage the vacuum pump.

4.1.2 VADS 250/2 (seal gas model)

It is designed for conveying normal atmospheric air, water vapour, and other non-combustible, non-aggressive media in their vapour phase. (A specific list of gases and media is in preparation.)

In the event of potential condensation of fluids in the compression chamber, we recommend fitting/retrofitting the pump with gas ballast valves (available as an option).

	<p>The vacuum pump is not suitable for conveying:</p> <ul style="list-style-type: none"> - Flammable gases or vapours - Corrosive media - Explosive gases or vapours - Radioactive or toxic media - Pyrophoric substances
	<p>Prior to starting up the vacuum pump, check that the media to be pumped by the vacuum pressure are compatible with one another, to ensure that no dangerous conditions can occur.</p>
	<p>Avoid pumping vapours that could condense to liquid during compression in the vacuum pump.</p>

If the pump is used properly and the instructions in this operating manual are followed, the vacuum pump will operate safely.

4.2 Transport and storage

The vacuum pump must be stored in a dry place and protected against splashing water.

The vacuum pump is equipped with a device frame that enables safe transport. When transporting it with a fork lift, make sure that the fork tines are as far apart as possible (> 50 cm), as the centre of gravity is not at the centre of the vacuum pump. Carrier rollers are optionally available from Gebr. Becker GmbH for the device frame.

	<p>To transport or lift the vacuum pump, use only approved means of transport. The means of transport must have an adequate carrying capacity to support the weight of the vacuum pump (see “Technical specifications”).</p> <p>The vacuum pump needs to be hoisted by the device frame to be transported. This serves as a hoisting point.</p>
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	<p>The unit must be kept level during transport.</p> <p>Prior to transport, the oil must be drained, otherwise it may leak from the transmission housing into the rotor housing, and thus into the compression chamber of the vacuum pump.</p> <p>At delivery, the vacuum pump does not contain any oil.</p>
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4.3 Setting up

When setting up, keep in mind that the unit must be easily accessible for future maintenance tasks.

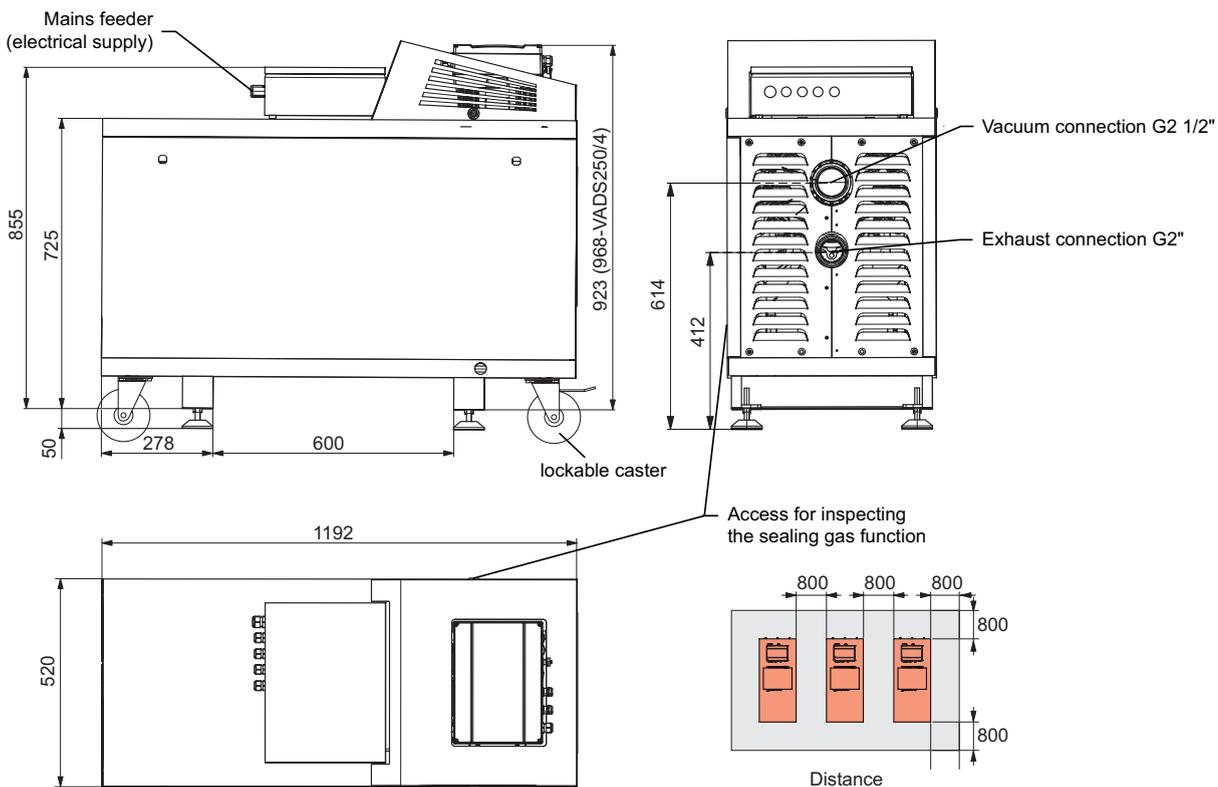


Figure 6: Dimensions

The installation location must be dry and the foundation must provide a stable support for the system. The vacuum pump can be aligned by means of height-adjustable feet. For this purpose, mount the feet included in the scope of delivery to the device frame.

For future maintenance tasks, the side casing and in some cases the maintenance flap can be removed.

	<p>To avoid hindering the air flow of the cooling air, a distance of at least 80 cm must be kept from the casing segments with the cooling air vents.</p> <p>Discharged cooling air should be directed away.</p> <p>The cooling air vents in the hood (FC) must not be blocked.</p>
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A min. distance of approx. 80 cm must be kept from the side panels to enable removal of the side panels for maintenance tasks, and to provide adequate room to move when performing maintenance tasks; see figure 6.



Use a spirit level to ensure the level installation of the vacuum pump.
Precise alignment is of utmost importance. To this end, use the four height-adjustable feet below the device frame.

4.4 Ambient temperatures



The ambient temperatures in the installation area of the vacuum pump should be between 5 °C and 40 °C. Depending on the ambient temperature, it can take approx. 30-50 minutes until the vacuum pump reaches its “normal” operating temperatures.

During this time, until reaching the “normal” operating temperatures, the oil temperature is comparatively low and the oil viscosity comparatively high. This leads to an increased power consumption by the vacuum pump so that the maximum speed, operating point-dependent, may possibly only be reached when a sufficiently high oil temperature and thus the required low oil viscosity have been reached.

At ambient temperatures below 10 °C, the vacuum pump first has to be run at minimum speed for about 10 minutes to make sure that the bearings are adequately lubricated. High ambient temperatures and a dirty oil-air heat exchanger can cause unacceptably high pump temperatures. An integrated temperature sensor then switches the vacuum pump off by means of the frequency converter. If the ambient temperatures are high, the air-oil heat exchanger has to be checked for dirt frequently and cleaned if necessary. The FC fan under the hood also needs to be cleaned regularly to prevent overheating of the FC; see Section 7.1.

5 Installation

The protective caps at the vacuum connection and at the exhaust connection must be removed prior to startup. The vacuum pump must not under any circumstances be operated with a closed exhaust line; see Section 5.1.

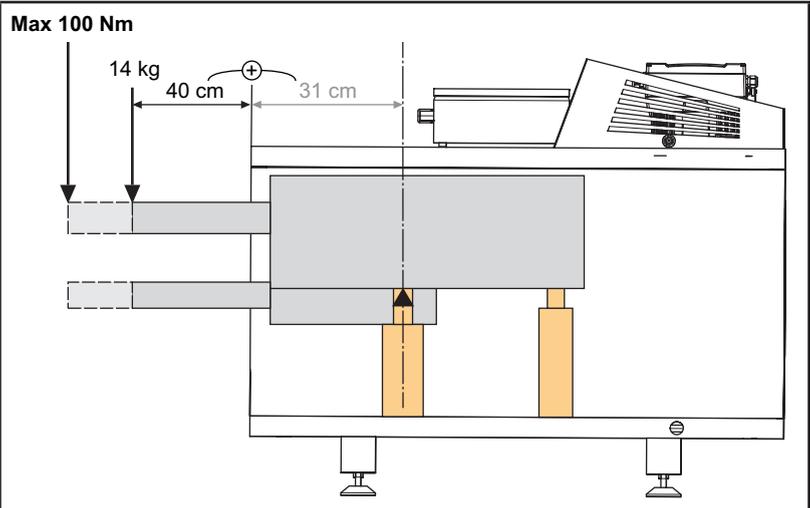
5.1 Mechanical vacuum pump connection



The air connections including the attachments must not be subjected to a load of more than **100 Nm**, as otherwise damage to the bearings might occur.

Example: Max. load after
40 cm (71 cm) → 14 kg

Higher loads need to be supported.



When connecting the intake line and the exhaust line (if necessary), ensure proper sizing of the piping. This also applies to all the components in the lines, e.g., valves, filters and bends.

The diameter of the lines must, at a minimum, be the same as the nominal diameter of the respective intake or exhaust connection. For lines longer than 2 m, the next greater diameter size should be used.

	<p>The media temperature at the vacuum connection must lie between 5 °C and 40 °C.</p>
	<p>The air outlet (exhaust connection) must not be throttled, closed or used as compressed air connection, as this could lead to unacceptably high pressures, which could damage the vacuum pump and in some cases result in damage to nearby objects or hazard to persons. Make sure that no pressure higher than 1.2 bar [abs.] can occur at the pump outlet.</p>
	<p>The pipes that are to be connected as wells all parts fitted on the suction side and pressure side must be clean, and free of welding debris, chips, hardware, washers, screws or similar parts or dirt. Therefore use a strainer at the vacuum connection of the vacuum pump. The connections must be kept clean of oil, grease, water or other dirt. This also applies to any accessories and fittings that are used. Mechanical stress or forces on the intake or exhaust side of the vacuum pump must be prevented by means of expansion joints.</p>
 	<p>Do not operate the vacuum pump without an intake line or dummy flange on the vacuum side, to prevent human body parts being exposed to the vacuum. Never reach into the vacuum connection flange of the vacuum pump while the vacuum pump is running! The vacuum, exhaust connection, connection lines and the frequency converter are hot! There is a risk of burn injuries.</p>
	<p>The exhaust line must be operated with the piping sloped away from the vacuum pump if possible, to prevent any condensed vapour from flowing back into the vacuum pump. Alternatively, a condensate trap should be installed. Its fill level must be checked regularly. To drain condensate, it might be necessary to install a valve to isolate the vacuum pump from the process.</p>

5.2 Oil filling

	 <p>At delivery, the vacuum pump does not contain any oil. To operate the vacuum pump, mineral oil, type Becker Lube G 70 has to be used.</p>
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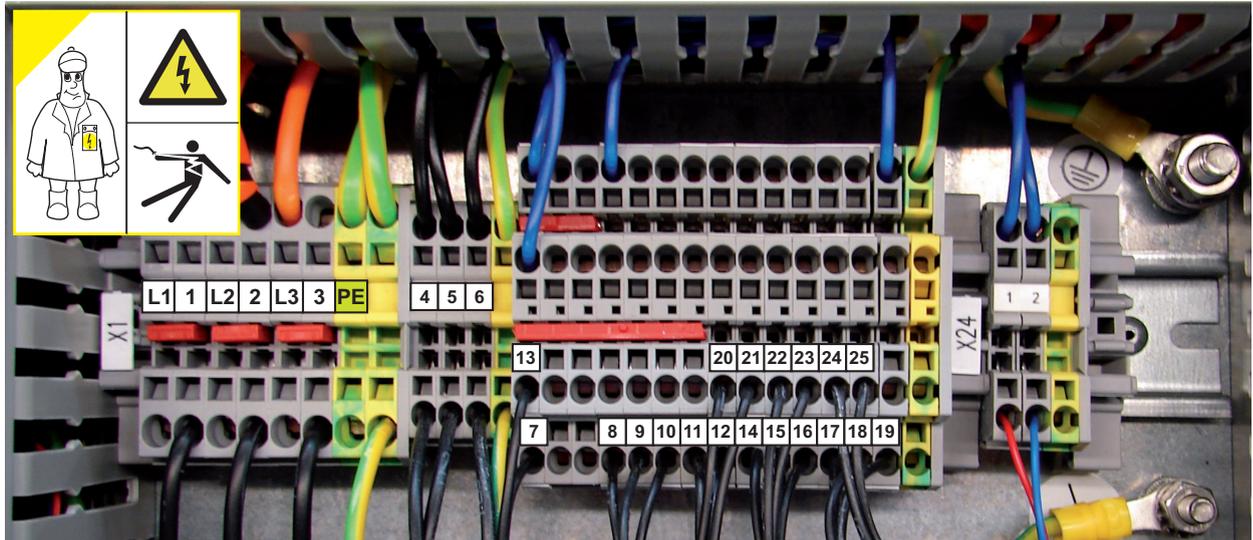
To fill the pump with oil, first turn off the vacuum pump; then remove the plug at the oil tank (see figure 5, page 6) and carefully pour the oil into the tank. Check the oil level in the oil gauge glass. The oil level must not exceed the upper marking when the vacuum pump is standing still (pump switched off). This equals a filling amount of about 8 litres. Afterwards, insert the plug back into the oil tank.

When filling with oil, make sure that the tools used are clean to prevent the oil from being contaminated.

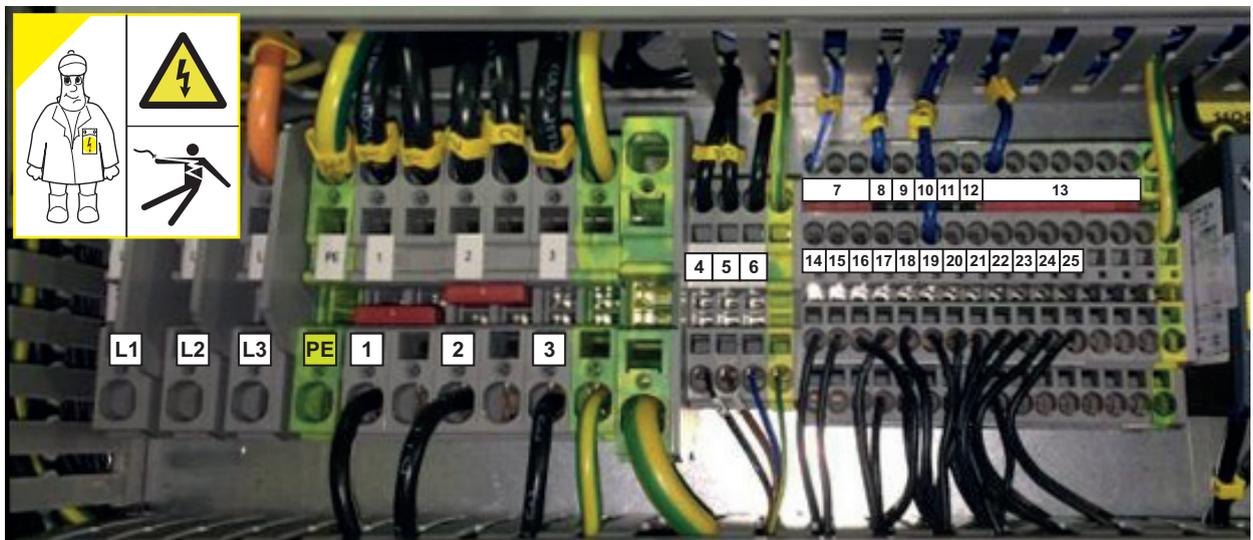
5.3 Electrical vacuum pump connection

The connection to the electrical supply must be made in compliance with all pertinent and relevant codes and regulations. EN60204 T1 must be observed.

The vacuum pump must be connected to the switch box by a qualified electrician, in accordance with the wiring diagram. The connection voltage, the rated current and the frequency must be observed; see “Technical specifications”, Section 10, page 17 and the motor’s type plate.



Electrical connections (3AC 400/480V)



Electrical connections (3AC 200/208V)

Terminal	Connection
L1, L2, L3	Mains feeder phase L1, L2, L3
PE	Mains feeder earth line PE
(1), (2), (3)	Frequency converter connection/internal
(4), (5), (6)	External ventilator connection (oil cooler)/internal
(13) +24 V	Enable
(9) Digital IN 1	

For operation of the pump, terminals 9+13 must be bridged/wired up.

The electrical connection (mains feeder phase and protective conductor PE) must be connected to the intended through terminal by a tension spring connection. Suitable tools should be used for this.



Check the direction of rotation of the oil-air heat exchanger fan.

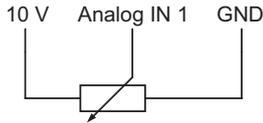
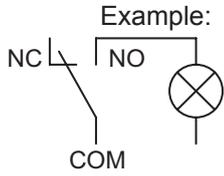
This is best done after connecting the mains feeder, but before wiring the enable line. When the mains voltage is applied, the fan starts up briefly.

Check whether air is being drawn in at the cooling air intake of the sound enclosure (e.g. by means of a piece of paper). If this is not the case, the direction of rotation is wrong. Then two phases of the feeder on the terminal strip (X1) in the switch cabinet need to be exchanged.

The direction of rotation of the vacuum pump does not need to be checked. It has been checked during the final acceptance inspection of the vacuum pump.

The vacuum pump is delivered without an ON/OFF switch. Control of the pump is part of installation set up by the operator.

The following connections can be used **optionally**:

Terminal	Connection	
(13) +24 V	Pressure sensor connection (0– 1,000 mbar).	
(16) Analog IN 2		
(7) GND	External setpoint connection	
(18) +10 V		
(17) Analog IN 1		
(20) Rel1/Com	Error message	
(21) Rel1/NC		
(22) Rel1/NO		
(23) Rel2/Com	Operating message	
(24) Rel2/NC		
(25) Rel2/NO		

5.4 Note on reducing noise and vibrations

The vacuum pump is equipped with a sound enclosure as a standard feature; this feature is necessary for safe operation. Always operate the pump with the sound enclosure closed.



When the unit is operated at ultimate pressure with sound enclosure and connected exhaust line, the noise level is < 68 dB(A)¹⁾. Other operating conditions and equipment can cause higher values. Use of hearing protection equipment is therefore recommended.

¹⁾ Measurement process acc. to DIN EN ISO 3744, averaged sound pressure level (A rated, KpA=3 dB(A)), individual measurement at the standard device at medium load, inlet and discharge piped away, max. speed.

5.5 Supply of seal gas (for VADS 250/2 only)

For the VADS 250/2 (seal gas version), compressed air is required to separate the motor from the pump's suction chamber. It should be supplied from a conventional compressed air network, a bottle or from a dedicated compressor.

The seal gas must meet the following requirements:

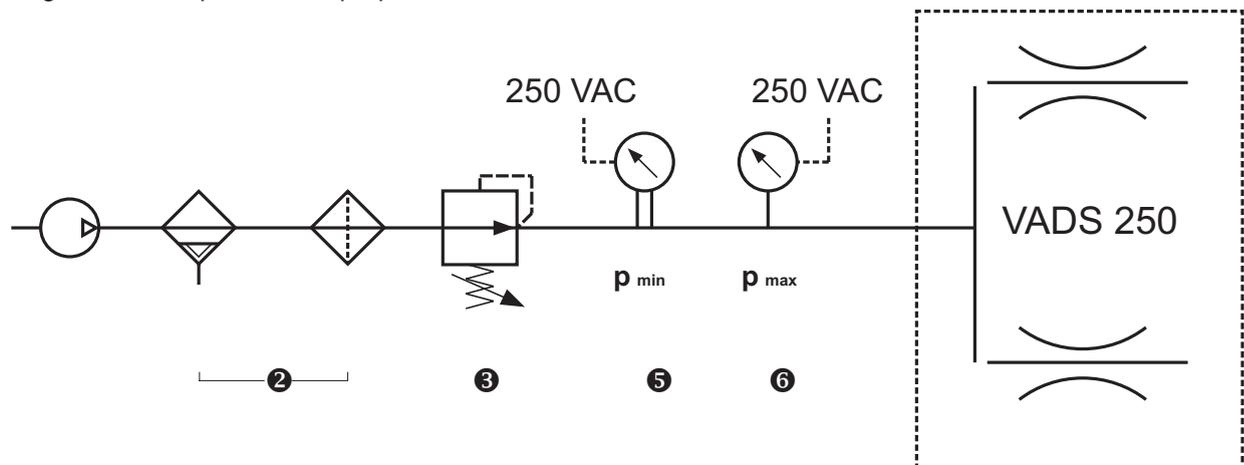
- Atmospheric air
- Temperature 5–60 °C
- Pressure: 50 mbar ±5 mbar
- Filtered – maximum particle size 5 µm
- Dry – condensate from the feeder line is removed from the flow of seal gas via a condensate trap.

The device is equipped on each side with a G1/4" inlet for the seal gas. When the device is delivered, the threaded holes are closed off with plugs. We recommend the use of push-fit couplings and PA hoses with an internal diameter of at least 8 mm. The two feeders can be joined and fed from a single compressed air source.

An appropriate compressed air supply unit is available in the accessories for VADS250/2: either external as a wall-mounted or free-standing unit, or installed internally inside the sound enclosure (available from 07/2014).

	<p>The operator must ensure that seal gas is present during the operation of the pump, otherwise the VADS250 may cease to function.</p>
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Diagram for compressed air preparation:



6 Operation

6.1 Start-up

Make sure that the intake line is connected and that there is oil in the oil tank.

	<p>Never run the vacuum pump with the pump housing open. There is a high risk of injury.</p>
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	<p>Make sure that the vacuum pump does not run for extended periods of time (> 5 min) with any of the side panels of the sound enclosure removed, as this negatively affects a steady flow of the cooling air.</p>
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When the vacuum pump is started up after an extended time off (cold start), higher noise levels might occur for the first few minutes. This is caused by air in the oil circuit and a high oil viscosity combined with a low oil temperature, among other factors. The noise does not negatively affect the operational safety of the vacuum pump.

Operation of the frequency converter is described in separate operating instructions.

6.2 Operation modes

The pump must not be switched on and off more than 5 times per hour. During process interruptions, it is preferable to run the vacuum pump with the inlet closed. When the vacuum pump is operated at ultimate pressure, its power consumption is minimal. The operational safety is guaranteed at all permissible operating points.

Two operation modes are possible:

- Speed-controlled mode with setpoint specified by one of the following:
 - a) Potentiometer on the FC
 - b) Analog input 1 (Analog IN 1) 0–10 V
 - c) Analog input 1 (Analog IN 1) 4–20 mA
- Vacuum controlled operation (with optional pressure transducer) regulated by:
 1. Pressure sensor (actual value)
 - a) Analog input 2 (Analog IN 2) 0–10 V
 - b) Analog input 2 (Analog IN 2) 4–20 mA
 2. Setpoint:
 - a) Internal potentiometer
 - b) Analog input 1 (Analog IN 1) 0–10 V
 - c) Analog input 1 (Analog IN 1) 4–20 mA

The operation mode is factory set. Changes to the factory settings can only be made by trained employees of Gebr. Becker GmbH. For information on operating the vacuum pump within the scope of the VARIAIR concept, please contact Gebr. Becker GmbH.

6.3 Safety devices

The vacuum pump features the following safety devices:

- Temperature: If a maximum permissible temperature is exceeded, the vacuum pump is switched off.
- Oil filter monitoring: A visual maintenance indicator warns when a filter change is necessary (red marking visible at the indicator).

6.4 Outlet counterpressure

The pressure at the outlet must not be lower than the ambient pressure of the vacuum pump.

VADS 250 (standard) and VADS 250/4

The maximum permitted outlet pressure, relative to the ambient pressure of the vacuum pump, is +200 mbar or 1,200 mbar abs.

VADS 250/2 (seal gas version)

The maximum permitted outlet pressure, relative to the ambient pressure of the vacuum pump, is +100 mbar or 1,100 mbar abs.

6.5 Air cooling

The vacuum pump is cooled by a generously-ribbed pump housing, with the aid of the fan of the oil-air heat exchanger.

	<p>During and after operation, surface temperatures of more than 80 °C can occur on the pump housing as well as on the vacuum and exhaust connection. There is a risk of burn injuries when touched.</p> <p>Wear appropriate protective clothing.</p>
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	<p>It is important to ensure that the cooling air flow is not hindered during vacuum pump operation. Do not hinder the flow of cooling air.</p> <p>The vacuum pump can be damaged if the air cooling is not functioning properly. Clean the ribs and the surfaces of the vacuum pump if they get dirty.</p>
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The cooling air openings on the sound enclosure and the FC hood need to remain free. The airflow through the fan must not be impeded.

In the event that the pump housing has not cooled down sufficiently, the oil temperature could also be unacceptably high. Therefore the oil temperature can provide an indication that the pump housing has not cooled down sufficiently; see Section 6.6 of this operating manual.

The frequency converter is cooled by a separate, integrated fan.

To ensure sufficient cooling, removing the frequency converter cover on models of the vacuum pump equipped with this cover is not permitted.

The ventilation elements must not be removed or modified.

6.6 Oil temperature

The temperature of the oil is influenced by the operating status of the vacuum pump, the ambient temperature, the cleanliness of the air-oil heat exchanger and the housing surfaces, as well as the air supply to the vacuum pump.

At low oil temperatures, dependent on the operations conditions, it can take approx. 30-50 minutes until the vacuum pump reaches its "normal" operating temperatures, which ensure optimum lubrication of the bearings and the synchronous gear.

If the oil temperature is low and the oil viscosity high, then the vacuum pump has a high power consumption. Under these conditions, the vacuum pump can only be operated at maximum speed, operating point-dependent, when a sufficiently high oil temperature and thus the required low oil viscosity have been reached. The frequency converter protects the vacuum pump against an excessive power consumption.

An increased power consumption by the vacuum pump at a low oil temperature is caused by higher friction in the bearings and in the synchronous gear due to the higher oil viscosity.

The oil temperature is measured indirectly by means of a temperature sensor. If a threshold is exceeded, the pump switches off. The following points need to be checked:

- Ambient temperature
- Dirt on the cooling surfaces of the oil-air heat exchanger
- Dirt on the cooling ribs of the vacuum pump
- Interference with the inflow/outflow at the hood

6.7 Oil level

Perform oil level checks only when the machine is running. To do so, briefly remove the front side panel and remount again after checking the oil level. The oil level must reach the middle of the gauge glass. If this is not the case, turn off the pump and fill up the oil to the required level (see Section 5.2).

The oil level of the vacuum pump can fluctuate significantly when the pump is switched on and off. Depending on the down-time of the vacuum pump, it takes a while after pump startup until a constant oil level has been established.

6.8 Ventilation of the compression chamber

When the vacuum pump is switched off, the pressure in the vacuum pump quickly increases to the outlet pressure (normally = ambient pressure). The vacuum pump is not equipped with a vacuum regulator valve. On the intake side, install a non-return valve (check valve) that automatically closes the intake line when the pump is not running, if necessary.

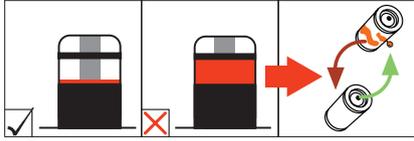
	<p>It is mandatory to use a check valve if a pressure difference > 50 mbar is possible between the intake side and pressure side when the vacuum pump is off.</p>
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7 Maintenance

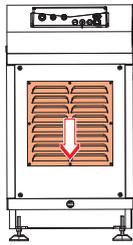
Regular maintenance of the vacuum pump ensures best operation. The maintenance intervals depend on the application and the ambient conditions.

7.1 Routine checks

For safe operation, the following checks must be performed regularly:

	<ul style="list-style-type: none"> • Check the oil level (when the vacuum pump is running, the oil level should not drop below the middle of the oil gauge glass). For this, the right side casing has to be temporarily removed. <p>Notice: It is not permissible to remove any hood or enclosure parts, other than the side casing panels (depending on the installation situation).</p> <ul style="list-style-type: none"> • Check the oil-air heat exchanger for dirt. • Check the contamination indicator at the oil filter.
<p>Weekly:</p>	
<p>Monthly:</p>	<p>Check the vacuum pump, all cooling air openings and the hood fan for dirt build up and clean if necessary.</p>

The intervals between the routine checks depend on the ambient and operating conditions. As experience with operating the pump increases and if the conditions are favourable, the interval durations can be extended. If there is a significant amount of dust at the vacuum pump's installation location, the oil-air heat exchanger has to be checked for dirt or debris build up more frequently.



As a dirty oil-air heat exchanger can cause oil and component temperatures that are unacceptably high, it is important to keep it clean. The vacuum pump must be shut down for cleaning. Make sure that the surfaces have cooled down sufficiently to exclude the risk of burns.



After the maintenance flap has been removed, the heat exchanger can be carefully blasted clean with compressed air.



To refill the pump with oil, the vacuum pump must be shut down and secured against unintentional restart. After the vacuum pump has cooled down, the inlet cap can be opened and oil can be poured into the tank. Under normal operating conditions, the oil level should not drop below the min. mark during continuous operation of the vacuum pump. If this does occur, contact Gebr. Becker GmbH.

7.2 Maintenance tasks



Before starting maintenance or service tasks, disconnect power from the vacuum pump and prevent unintentional restart.

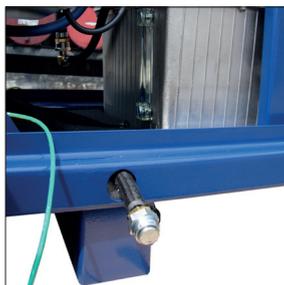
Also make sure that no flow through the inlet line towards the outlet side or in the opposite direction is possible, because this could cause the rotors to rotate. Unintentional turning of the rotors must be prevented by venting the inlet side or by using an appropriate non-return valve in the inlet line (see Section 6.8).

Keep in mind that the pump surface can get very hot. Allow the vacuum pump to cool down prior to maintenance tasks or wear appropriate protective clothing.

7.2.1 Oil change



An oil change must be performed every 8,000 operating hours or at least once a year. The above-mentioned measures must be taken.



It is recommended to drain the oil while it is at operating temperature. Keep in mind that there is a risk of burn injuries from hot surfaces and possibly from oil at operating temperature. The used oil can be drained into an appropriate container by means of the hose connected to the tank. To do so, remove the plug at the device frame.

Used oil has to be disposed of in compliance with all laws and regulations; under no circumstances may it enter the wastewater.

After the oil has been drained, the oil filter must be changed; see Section 7.2.2.

After a new oil filter has been installed, the pump can be re-filled. The procedure is the same as for the initial fill-up; see Section 5.2.

7.2.2 Oil filter change

The oil filter must be changed when the oil is changed.

If the contamination indicator at the oil filter indicates that the oil filter is too dirty prior to the normal oil change interval, the filter must be changed immediately and an oil change must be performed simultaneously. In such a case, the operating conditions must be checked to determine why the filter got too dirty prematurely.

The oil filter is an exchangeable filter that is screw-mounted directly to the oil distributor housing of the vacuum pump. Prior to removing the oil filter, completely drain the oil from the vacuum pump; see Section 7.2.1. The new oil filter has to be screwed onto the oil distributor housing before the vacuum pump is filled with new oil.

For the oil filter specifications, refer to the spare parts list.

7.2.3 Cleaning/Exchanging the intake filter



If, during operation of the vacuum pump, the pressure on the intake side increases or the required intake suction capacity is no longer achieved, a dirty intake filter (optional) might be the cause. In this case, the optional intake filter must be cleaned or if necessary, replaced.

The above-mentioned measures must be taken. After the lid of the intake filter housing has been opened, the filter can easily be removed for cleaning or be replaced by a new filter insert.

7.2.4 Cleaning vacuum pump and components



The vacuum pump, in particular/including oil tank and oil gauge glass, may be cleaned only with alcohol-free cleaning products.

Do not use alcohol-based cleaning products, because they attack and can damage the oil gauge glass in particular.

7.3 Maintenance/Service

The disassembly/assembly tasks that go beyond the maintenance tasks described in this operating manual have increased requirements that can be fulfilled only with appropriate aids and a lot of experience.

Service and maintenance tasks should therefore be carried out by employees from the service facilities of Gebr. Becker GmbH.

7.3.1 Bearing replacement

The vacuum pump bearings should be exchanged every 20,000 operating hours. This is done in the course of an inspection and can only be performed at authorised service facilities of Gebr. Becker GmbH. For this, the vacuum pump has to be sent in suitable transport packaging to the service facility.

The oil has to be drained before the vacuum pump is transported – see 7.2.1 – and the feet have to be removed from the device frame.

Before starting up the vacuum pump after a service, the measures listed under Setting up, Sect. 4.3, Installation, and Start-up, Sect. 6.1 need to be carried out just like for an initial start-up.

7.3.2 Safety during maintenance

Environmental protection as mandated by waste disposal laws and water protection laws obligate all commercial enterprises to protect their employees and, in broader terms, humans and the environment from harmful effects when handling hazardous materials.



Please make sure that the vacuum pump, in accordance with the intended use, does not come into contact with poisonous, explosive, microbiological, radioactive or other materials that are hazardous to health.

For the protection of our employees who are assigned the handling (goods receiving) and the repair of the vacuum pump, this is of utmost importance.

Ignoring these rules leads to liability on the part of the operator and recourse claims from Gebr. Becker. We also reserve the right to send back such pumps unrepaired.

8 Decommissioning

Switch off the vacuum pump and disconnect from the mains power supply.

Before separating the vacuum and exhaust connections, make sure that the connected lines have been vented to ambient pressure.

The openings for the vacuum and exhaust connections must be closed by plugs or adhesive tape.

Instructions in Sect. 4.2. must be observed for storage.

9 Disposal

The local national recycling laws and regulations must be observed when disposing of the vacuum pump or individual parts of the pump.

10 Technical specifications

VADS 250		Standard	VADS 250/2	VADS 250/4
Model type		Spindle screw vacuum pump, oil-free		
Cooling		Air		
Suction capacity	at atmospheric pressure	m ³ /h	240	
	peak volumetric flow		290	
Working vacuum (continuous operation)		mbar abs.	≤ 0.1	
Installed motor power		kW	7.5	
3AC 400–480 V ±10%, 50/60 Hz				
Rated current at 400 V 50 Hz		A	15	
Rated current at 480 V 60 Hz		A	12	
Recommended mains fuse (slow blow)		A	25	
Mains feeder connection, max. wire cross-section, wire cross-section flexible with wire-end ferrules		[mm ²]	4	
3AC 200–208 V +6%/-10%, 50/60 Hz				
Rated current at 200 V 50 Hz		A		28.3
Rated current at 208 V 60 Hz		A		28.8
Recommended mains fuse (slow blow)		A		35
Mains feeder connection, max. wire cross-section, wire cross-section flexible with wire-end ferrules		[mm ²]		10
Compressor speed		rpm	5,000 [min]–10,000 [max]	
A rated, emission noise level at max. speed, medium load, inlet and discharge piped away		dB(A)	68	72
Length		mm	1,192	
Width		mm	520	
Height		mm	973–1,033	1,018–1,078
Weight		kg	280	285
Oil filling		l	10	
Oil type		Becker Lube G 70		
Intake connection		G 2½"		
Exhaust connection		G 2"		
Materials		Aluminium, anodised aluminium, carbon steel, ... cast iron, Viton		
Installation dimensions		See Section 4.3		

Table 1:

11 Options

The following accessories are available for the vacuum pump and can be procured from Gebr. Becker GmbH.

Silencer

The vacuum pump is equipped as standard with a silencer that ensures a low sound pressure level. To reduce the sound pressure level even further, additional silencers can be optionally mounted on the exhaust side. Further information is available from Gebr. Becker GmbH.

K-flange adapter

The vacuum line can be attached via the G 2½" threaded connection to the vacuum connection of the vacuum pump. An ISO-K flange adapter for attaching an ISO-K screw-in flange to the vacuum pump is available as an option from Gebr. Becker GmbH.

12 Troubleshooting/Malfunctions

Problem	Possible cause	Repair
The vacuum pump cannot be put into operation.	The mains voltage/frequency does not conform to the vacuum pump specifications.	Adjust to the permitted vacuum pump specifications, refer to technical specifications, Sect. 8.
	The power cables are not attached properly.	Check the electrical vacuum pump connection on the switch box and connect according to the wiring diagram; see Sect. 5.3.
	The vacuum pump's fuse protection installed by the operator is not in order.	Check the vacuum pump's fuse protection installed by the operator and correct according to the pump's technical specifications if necessary; see Sect. 8.
	The connection cables have the wrong dimensions or are too long, which makes the voltage in the vacuum pump too low.	Use sufficiently dimensioned connection cables.
	The drive motor is defective.	Have the vacuum pump repaired by Gebr. Becker's Service Dept.
The vacuum pump will not rotate.	There are solids in the compression chamber of the vacuum pump.	Clean the rotors and the rotor enclosure. Please contact Gebr. Becker's Service Dept. for this.
	Corrosion has formed in the vacuum pump due to residual condensation.	Have the vacuum pump repaired by Gebr. Becker's Service Dept. Check the process and make sure that the vacuum pump is employed for the permitted use; see Sect. 4.1.
	One or more bearings are blocked.	Have the vacuum pump repaired by Gebr. Becker's Service Dept.

Problem	Possible cause	Repair
The vacuum pump starts up but does not reach the nominal speed.	Solids are in the compression chamber of the vacuum pump.	Clean the rotors and the rotor enclosure. Please contact Gebr. Becker's Service Dept. for this.
	Bearings are damaged.	Have the vacuum pump repaired by Gebr. Becker's Service Dept.
	The maximum frequency was modified in the parameter settings of the frequency converter.	Please contact Gebr. Becker's Service Dept.
The intake suction capacity is insufficient.	The intake lines are too long or have insufficient cross-sections.	Use intake lines with greater cross-sections or remove restrictions in the intake line; see Sect. 5.1.
	The intake filter (optional) is dirty or contaminated.	The vacuum pump has to be shut down and the intake filter cleaned; see Sect. 7.2.3.
	The maximum frequency is not reached. The maximum frequency was modified in the parameter settings of the frequency converter.	Please contact Gebr. Becker's Service Dept.
The end pressure is not reached.	There is a leak in the intake line of the vacuum pump or in the system.	Check the intake line and the system for leaks and reduce the leaking if necessary.
	There is a leak at the vacuum connection of the vacuum pump.	Check the connection for leaks and reduce the leaking if necessary.
		Use a K-flange connection with a K-flange adapter (optional).
	The rotors or the rotor housing are damaged due to inappropriate operating modes.	Have the vacuum pump repaired by Gebr. Becker's Service Dept.
	The maximum frequency is not reached. The maximum frequency was modified in the parameter settings of the frequency converter.	Please contact Gebr. Becker's Service Dept.
The vacuum pump switches off due to overtemperature on the enclosure.	The ambient temperature is too high.	Operate the vacuum pump only at permissible ambient temperatures; see Sect. 4.4.
	The temperature of the intake gases (feed medium) is too high.	Make sure that the temperature of the intake gases (feed medium) is within the permissible range; see Sect. 5.1.
	The oil-air heat exchanger is dirty or contaminated.	The vacuum pump has to be shut down and the heat exchanger cleaned; see Sect. 7.1.

Problem	Possible cause	Repair
	The cooling air intake is obstructed.	Clean the cooling slits of the casing on the operator's side.
		Maintain the required minimum clearance from obstructions; see Sect. 4.3.
		Ensure sufficient air supply.
	The cooling air discharge is obstructed.	Clean the cooling slits of the casing on the side of the connections.
		Maintain the required minimum clearance from obstructions; see Sect. 4.3.
	The vacuum pump is excessively dirty or contaminated.	Clean the cooling ribs (channels) of the vacuum pump.
	The fan runs in the wrong direction of rotation.	Exchange two phases of the electrical vacuum pump connection; see Sect. 5.3.
	The fan is dirty or contaminated.	Clean the fan.
	The fan has malfunctioned.	Please contact Gebr. Becker's Service Dept.
	There is too little oil in the vacuum pump.	Check the oil level and refill oil if necessary; see Sect. 7.1.
	The vacuum pump is operated with excessive pressure at the pump outlet.	Make sure that the permitted pressure at the pump outlet is not exceeded; see Sect. 5.1.
		Use exhaust lines with greater cross-sections or remove restrictions in the exhaust line.
	The oil filter is blocked.	Check the maintenance indicator at the oil filter. Carry out an oil change and an oil filter change if the indicator on the maintenance indicator is completely "red".
	Cooling is no longer sufficient because the oil is too contaminated.	Check the colour of the oil in the oil gauge glass. Do an oil change and oil filter change if dirt can be clearly seen.
	The mains voltage or the mains frequency is outside of the permitted range.	Make sure that the electrical supply is within the permissible range.

Problem	Possible cause	Repair
The vacuum pump switches off due to overtemperature at the frequency converter.	The ambient temperature is too high.	Operate the vacuum pump only at permissible ambient temperatures; see Sect. 4.4.
	The cooling air openings on the FC cover are blocked.	Clean the cooling air openings or remove the obstructions.
	The cooling surfaces of the frequency converter are dirty or contaminated.	Clean the cooling surfaces on the frequency converter.
	The mains voltage is outside of the permitted range.	Please contact Gebr. Becker's Service Dept. (internal note: use mains filter.)
An abnormal noise can be heard or the vacuum pump is too loud.	Deposits have formed on the rotors or in the compression chamber of the vacuum pump.	Clean the rotors and the rotor enclosure. Please contact Gebr. Becker's Service Dept. for this.
	There are particles in the compression chamber of the vacuum pump.	Make sure that the intake line is equipped with a sieve; insert an intake filter in the intake line; remove the particles from the compression chamber of the vacuum pump. Please contact Gebr. Becker's Service Dept. for this.
	The oil supply of the bearings is insufficient.	Check the oil level and refill oil if necessary; see Sect. 7.1.
	The timing gear is damaged due to operation with too little oil.	Have the pump repaired by Gebr. Becker's Service Dept.
	Bearings are damaged (e.g. due to operation with too little oil).	Have the pump repaired by Gebr. Becker's Service Dept.
	The vacuum or the pressure line has contact to the casing of the sound enclosure, which transfers vibrations.	Compensators need to be installed on the vacuum or exhaust connection to relieve the connections from tension or (weight) force.
	The support bearings are damaged.	Replace the support bearings. Please contact Gebr. Becker's Service Dept.
Oil is leaking from the vacuum pump.	The vacuum pump is operated with excessive pressure at the pump outlet.	Make sure that the permitted pressure at the pump outlet is not exceeded; see Sect. 5.1.
		Use exhaust lines with greater cross-sections or remove restrictions in the exhaust line.

<p>EC Declaration of Conformity according to 2006/42/EC (Machinery Directive)</p> <p>Manufacturer: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Documentation manager: Dr. Rudolf Bahnen</p> <p>We hereby declare that the machines of the model series:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>conform with all pertinent regulations of the EC Machinery Directive 2006/42/EC and the EMC Guideline 2014/30/EU.</p> <p>The following harmonised norms were applied:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 April 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Managing Director Sales Managing Director Engineering</p> <p><input type="checkbox"/> Original Declaration of Conformity <input checked="" type="checkbox"/> Translation of the Declaration of Conformity</p> <p style="text-align: center;">GB</p>	<p>EG-Konformitätserklärung nach 2006/42/EG (Maschinenrichtlinie)</p> <p>Hersteller: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Dokumentations- verantwortlicher: Dr. Rudolf Bahnen</p> <p>Hiermit erkläre ich, dass die Maschinen der Baureihen:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>mit allen einschlägigen Bestimmungen der EG-Maschinenrichtlinie 2006/42/EG und der EMV-Richtlinie 2014/30/EU in Übereinstimmung sind.</p> <p>Folgende harmonisierte Normen wurden angewendet:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 April 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Managing Director Sales Managing Director Engineering</p> <p><input type="checkbox"/> Original-Entsprechungserklärung <input checked="" type="checkbox"/> Übersetzung der Konformitätserklärung</p> <p style="text-align: center;">DE</p>	<p>Déclaration CE de conformité selon la Directive Machine 2006/42/CE</p> <p>Conteneur: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Mandataire de la documentation: Dr. Rudolf Bahnen</p> <p>Nous déclarons par la présente que les machines des séries:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>sont conformes aux dispositions applicables selon la Directive Machines 2006/42/CE et la Directive CEM 2014/30/UE.</p> <p>Les normes harmonisées suivantes ont été appliquées en particulier:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, le 20 avril 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Directeur général des ventes Directeur général de technique</p> <p><input type="checkbox"/> Original de la Déclaration CE de conformité <input checked="" type="checkbox"/> Traduction de la Déclaration CE de conformité</p> <p style="text-align: center;">FR</p>	<p>Dichiarazione di conformità CE sew alla Direttiva Macchine 2006/42/CE</p> <p>Fabbricante: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Responsabile per la documentazione: Dr. Rudolf Bahnen</p> <p>Con la presente si dichiara che le macchine serie:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>soddisfanno tutti i requisiti fissati dalla Direttiva Macchine 2006/42/CE e dalla Direttiva EMC 2014/30/UE.</p> <p>Sono state applicate inoltre le seguenti norme armonizzate:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 aprile 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Direttore generale vendite Direttore generale tecnico</p> <p><input type="checkbox"/> Originali dichiarazioni di conformità CE <input checked="" type="checkbox"/> Traduzione delle dichiarazioni di conformità CE</p> <p style="text-align: center;">IT</p>
<p>EU-Konformitätserklärung in Übereinstimmung mit der Richtlinie 2006/42/EG</p> <p>Produzent: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Dokumentations- answärtiger: Dr. Rudolf Bahnen</p> <p>Hiermit erkläre ich, dass die Maschinen der Baureihen:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>in Übereinstimmung mit allen relevanten Bestimmungen der EU-Maschinenrichtlinie 2006/42/EG und der EMC-Richtlinie 2014/30/UE.</p> <p>Der hier anwendbare folgende harmonisierte Normen sind:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 April 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Managing Director Sales Managing Director Engineering</p> <p><input type="checkbox"/> Original-Entsprechungserklärung <input checked="" type="checkbox"/> Übersetzung der Konformitätserklärung</p> <p style="text-align: center;">DK</p>	<p>EG-försäkran om överensstämmelse enligt maskindirektivet 2006/42/EG</p> <p>Tillverkare: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Dokumentations- ansvarig: Dr. Rudolf Bahnen</p> <p>Härmed försäkras vi att maskiner i serier:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>uppfyller alla gällande normer i EG-maskindirektiv 2006/42/EG och EMC-direktiv 2014/30/UE.</p> <p>Följande harmoniserade normer har använts:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 April 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Verköpsledande direktör försäljning Verköpsledande teknisk ledare</p> <p><input type="checkbox"/> Originalt försäkran om överensstämmelse <input checked="" type="checkbox"/> Översättning av försäkran om överensstämmelse</p> <p style="text-align: center;">SE</p>	<p>EY-vaatimustenmukaisuusvakuutus konformisuus 2006/42/EY määräysten kanssa</p> <p>Valmistaja: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Dokumentointivastava henkilö: Dr. Rudolf Bahnen</p> <p>Vakuutamme täten, että seuraavien mallisarjojen kuuluvat koneet:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>tyyttävät kaikki EY:n koneidirektiivin 2006/42/EY ja sähkömagnettisäätymisasetuksen (EMC) koskevan direktiivin 2014/30/EU asetuksella vaatimat.</p> <p>Sovelletut harmonisoidut standardit:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 huhtikuuta 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Toimittajapäällikö myynti Toimittajapäällikö tekninen</p> <p><input type="checkbox"/> Originalin vaatimustenmukaisuusvakuutus <input checked="" type="checkbox"/> Vaatimustenmukaisuusvakuutuksen käännös</p> <p style="text-align: center;">FI</p>	<p>EU-vaatimustenmukaisuusvakuutus suhteessa 2006/42/EY direktiiviin</p> <p>Tuotaja: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Valtuutettu dokumentointivastuu: Dr. Rudolf Bahnen</p> <p>Käsittelemme täten, että seuraavien mallisarjojen kuuluvat koneet:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>on koskissa 2006/42/EY koneidirektiiviä ja 2014/30/EU Elektromagnettisäätymisasetusta koskevia direktiiviä kaikki asetuksella säädettyjä vaatimukset.</p> <p>Käytetyt harmonisoidut normit olivat seuraavat:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20. huhtikuuta 2016.</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Toimittajapäällikö myynti Toimittajapäällikö tekninen</p> <p><input type="checkbox"/> Originalin vaatimustenmukaisuusvakuutus <input checked="" type="checkbox"/> Vaatimustenmukaisuusvakuutuksen käännös</p> <p style="text-align: center;">EE</p>
<p>EU atitiklės deklaracija pagal mašinos direktyvą 2006/42/EB</p> <p>Gamintojas: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Asmuo, įsipalūtinęs techninį dokumentaciją: Dr. Rudolf Bahnen</p> <p>Šiuo pareiškimu, kad šios serijos mašinos:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>atitinka EB mašinos direktyvos 2006/42/EB ir EMS direktyvos 2014/30/EB reikalavimus.</p> <p>Taikytos šioms mašinoms normos:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 2016 m. balandžio 20 d.</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Generinis direktorius pardavimai Generinis direktorius techninis</p> <p><input type="checkbox"/> Originali atitiklės deklaracija <input checked="" type="checkbox"/> Atitiklės deklaracijos vertimas</p> <p style="text-align: center;">LT</p>	<p>Declaracja zgodności WE wg Dyrektywy Maszynowej 2006/42/WE</p> <p>Producent: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Połącznik do dokumentacji: Dr. Rudolf Bahnen</p> <p>Niniejszym oświadczamy, że maszyny serii:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>spełniają wszystkie wymagania Dyrektywy Maszynowej 2006/42/WE oraz Dyrektywy EMC 2014/30/UE, dotyczącej kompatybilności elektromagnetycznej.</p> <p>Zastosowane następujące harmonizowane normy:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 kwietnia 2016 r.</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Twórca dokumentacji technicznej Twórca dokumentacji technicznej</p> <p><input type="checkbox"/> Originalna deklaracja zgodności <input checked="" type="checkbox"/> Tłumaczenie deklaracji zgodności</p> <p style="text-align: center;">PL</p>	<p>EZ izjava o skladnosti u skladu s 2006/42/EZ direktivom o strojevima</p> <p>Proizvođač: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Opunomoćni za dokumentaciju: Dr. Rudolf Bahnen</p> <p>Ovime izjavljamo da su strojevi serija:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>u skladu sa svim odgovarajućim odredbama EZ Direktive o strojevima 2006/42/EZ i Direktive o elektromagnetskoj kompatibilnosti 2014/30/EU.</p> <p>Primjenjene su sljedeće harmonizirane norme:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 travnja 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Managing Director Sales Managing Director Engineering</p> <p><input type="checkbox"/> Originalna izjava o skladnosti <input checked="" type="checkbox"/> Prijevod izjave o skladnosti</p> <p style="text-align: center;">HR</p>	<p>EK konformitási nyilatkozat a 2006/42/EK Gépészeti irányelvnek</p> <p>Gyártó: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Dokumentációs megnevezés: Dr. Rudolf Bahnen</p> <p>Jelen nyilatkozattal igazoljuk, hogy az alábbi gyártási sorozat gépei:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>a gépekre vonatkozó 2006/42/EK irányelv valamint a 2014/30/EU EMC-irányelv összes vonatkozó előírásának megfelelnek.</p> <p>Az alábbi harmonizált szabványok kerültek alkalmazásra:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 2016. április 20.</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Előzetes igazgató értékesítés Előzetes igazgató műszaki</p> <p><input type="checkbox"/> Original nyilatkozati nyilatkozat <input checked="" type="checkbox"/> A fordított nyilatkozati fordítás</p> <p style="text-align: center;">HU</p>
<p>Izjava o skladnosti, veljavna za EU po 2006/42/ES za stroje</p> <p>Proizvajalec: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Posobljeneži za podpis dokumentacije: Dr. Rudolf Bahnen</p> <p>Izjavljamo, da so stroji serije:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>skladni z vsemi zadanimi določili Direktive za stroje EU 2006/42/ES in Direktive EMV 2014/30/UE.</p> <p>Uporabljene so bili naslednje ustajane standardi:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 April 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Generalni direktor prodaje Generalni direktor razvoja</p> <p><input type="checkbox"/> Originalna izjava o skladnosti <input checked="" type="checkbox"/> Prijevod izjave o skladnosti</p> <p style="text-align: center;">SI</p>	<p>Prihlášení o zhode v zvezi s smernico 2006/42/ES o strojih in s smernico 2014/30/ES o elektromagnetni kompatibilnosti</p> <p>Vzročitelj: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Pracovnik pooblaščen za podpis dokumentacije: Dr. Rudolf Bahnen</p> <p>Vyhlašujemo, že stroje tipovih radov:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>spĺňajú všetky príslušné požiadavky smernice Európskeho parlamentu a Rady 2006/42/ES o strojových zariadeniach a 2014/30/ES o elektromagnetickej kompatibilnosti.</p> <p>Použili sme nasledujúce harmonizované normy:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal dňa 20. apríla 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Generálny riaditeľ predaja Generálny riaditeľ rozvoja</p> <p><input type="checkbox"/> Originalná predstava o zhode <input checked="" type="checkbox"/> Preklad</p> <p style="text-align: center;">SK</p>	<p>Declaratie de conformitate CE conform 2006/42/CE (Directiva Masini)</p> <p>Producător: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Împreună cu documentația: Dr. Rudolf Bahnen</p> <p>Declaram în prezenta că mașinile din serie:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>corespund tuturor dispozițiilor în vigoare din directiva CE privind echipamentele tehnice 2006/42/CE și directivei privind compatibilitatea electromagnetică 2014/30/UE.</p> <p>Au fost aplicate următoarele norme armonizate:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 aprilie 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Coordonator Director de vânzări Coordonator Director tehnic</p> <p><input type="checkbox"/> Originalul declarației de conformitate <input checked="" type="checkbox"/> Traducerea a declarației de conformitate</p> <p style="text-align: center;">RO</p>	<p>EO-Declaracija za skladnostevne conform 2006/42/EC Masine</p> <p>Proizvođač: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Opunomoćni ličnik za dokumentaciju: Dr. Rudolf Bahnen</p> <p>С настојом декларирамо, че машини из конструктивне серије:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>свакодневно поштују све захтеве из директиве о машини 2006/42/ЕО и из Директиве за ЕМЦ 2014/30/ЕУ.</p> <p>Исположено су следеће хармонизоване норми:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 aprila 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Prodavnik Generalni tehnički direktor</p> <p><input type="checkbox"/> Originalna Deklaracija za skladnostevne <input checked="" type="checkbox"/> Prevod na Deklaraciju za skladnostevne</p> <p style="text-align: center;">BG</p>
<p>Δήλωση συμμόρφωσης ΕΚ κατά την 2006/42/ΕΚ περί μηχανών</p> <p>Κατασκευαστής: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Επισημοποιημένος υπεύθυνος για την τεχνική документация: Dr. Rudolf Bahnen</p> <p>Με την παρούσα δήλωση πιστοποιώ ότι οι μηχανές της σειράς:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>αποτελούνται από στοιχεία που συμμορφώνονται με όλες τις απαιτήσεις της Οδηγίας 2006/42/ΕΚ περί μηχανών και της Οδηγίας 2014/30/ΕΚ περί ηλεκτρομαγνητικής συμβατότητας.</p> <p>Χρησιμοποιήθηκαν οι ακόλουθες αρμονισμένες προδιαγραφές:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 Απριλίου 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Ανώτατος Διευθυντής Πωλήσεων Ανώτατος Διευθυντής Τεχνολογίας</p> <p><input type="checkbox"/> Originalni δήλωση συμμόρφωσης <input checked="" type="checkbox"/> Μετάφραση της δήλωσης συμμόρφωσης</p> <p style="text-align: center;">GR</p>	<p>Declaratie de conformitate CE conform 2006/42/CE (Directiva Masini)</p> <p>Producător: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Împreună cu documentația: Dr. Rudolf Bahnen</p> <p>Declaram în prezenta că mașinile din serie:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>corespund tuturor dispozițiilor în vigoare din directiva CE privind echipamentele tehnice 2006/42/CE și directivei privind compatibilitatea electromagnetică 2014/30/UE.</p> <p>Au fost aplicate următoarele norme armonizate:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 aprilie 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Coordonator Director de vânzări Coordonator Director tehnic</p> <p><input type="checkbox"/> Originalul declarației de conformitate <input checked="" type="checkbox"/> Traducerea a declarației de conformitate</p> <p style="text-align: center;">RO</p>	<p>EO-Declaracija za skladnostevne conform 2006/42/EC Masine</p> <p>Proizvođač: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Opunomoćni ličnik za dokumentaciju: Dr. Rudolf Bahnen</p> <p>С настојом декларирамо, че машини из конструктивне серије:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>свакодневно поштују све захтеве из директиве о машини 2006/42/ЕО и из Директиве за ЕМЦ 2014/30/ЕУ.</p> <p>Исположено су следеће хармонизоване норми:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 aprila 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Prodavnik Generalni tehnički direktor</p> <p><input type="checkbox"/> Originalna Deklaracija za skladnostevne <input checked="" type="checkbox"/> Prevod na Deklaraciju za skladnostevne</p> <p style="text-align: center;">BG</p>	<p>Δήλωση συμμόρφωσης ΕΚ κατά την 2006/42/ΕΚ περί μηχανών</p> <p>Κατασκευαστής: Gebr. Becker GmbH Höfker Feld 29-31 D-42279 Wuppertal</p> <p>Επισημοποιημένος υπεύθυνος για την τεχνική документация: Dr. Rudolf Bahnen</p> <p>Με την παρούσα δήλωση πιστοποιώ ότι οι μηχανές της σειράς:</p> <p>VADS 250 VADS 650 VADS 1500</p> <p>αποτελούνται από στοιχεία που συμμορφώνονται με όλες τις απαιτήσεις της Οδηγίας 2006/42/ΕΚ περί μηχανών και της Οδηγίας 2014/30/ΕΚ περί ηλεκτρομαγνητικής συμβατότητας.</p> <p>Χρησιμοποιήθηκαν οι ακόλουθες αρμονισμένες προδιαγραφές:</p> <p>EN 1012-1/-2: 2011-12 EN ISO 12100: 2011-03 EN 60204-1: 2014-10 EN ISO 3744: 2011-02</p> <p>Wuppertal, 20 Απριλίου 2016</p> <p><i>Ulrich Wilkesmann</i> <i>Dr.-Ing. Sven Hilfert</i> Ανώτατος Διευθυντής Πωλήσεων Ανώτατος Διευθυντής Τεχνολογίας</p> <p><input type="checkbox"/> Originalni δήλωση συμμόρφωσης <input checked="" type="checkbox"/> Μετάφραση της δήλωσης συμμόρφωσης</p> <p style="text-align: center;">GR</p>

