

Original Operating Instructions V-VTR

V-VTR 100 | 140



**V-Serie
V-Series**
Drehschieber
Rotary Vane



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Foreword

1 Foreword

1.1 Principles

These operating instructions:

- are a part of the following dry running rotary vane vacuum pumps V-VTR 100 and V-VTR 140.
- describe how to use them safely and properly in all life phases.
- must be available where the equipment is used.

1.2 Target group

The target group for these instructions is technically trained specialists.

1.3 Supplier documentation and accompanying documents

Document	Contents	No.
Supplier documentation	Operating Instructions	BA 261-EN
	Declaration of Conformit	C 0075-EN
	Declaration of harmlessness	7.7025.003.17
Spare parts' list	Spare parts' document	E 261
Data sheet	Technical data and graphs	D 261
Info sheet	Storage guidelines for machines	I 150
Manufacturer's declaration	EU Directive 2002/95/EG (RoHS)	—

1.4 Abbreviations

Fig.	Figure
V-VTR	Vacuum pump
m ³ /h	Pumping capacity
mbar (abs.)	Final vacuum, operating vacuum

1.5 Directives, standards, laws

See Conformity Declaration

1.6 Symbols and meaning

Symbol	Explanation
▷	Condition, pre-requisite
####	Instructions, action
a), b),...	Instructions in several steps
⇒	Results
 [-> 14]	Cross reference with page number
	Information, note
	Safety symbol Warns of potential risk of injury Obey all the safety instructions with this symbol in order to avoid injury and death.

1.7 Technical terms and meaning

Term	Explanation
Machine	Pump and motor combination ready to be connected
Motor	Pump drive motor
Vacuum pump	Machine to create a vacuum
Rotary vane	Machine's design or active principle
Pumping capacity	Vacuum pump volume flow related to the condition in the suction connection
Final pressure (abs.)	The maximum vacuum that a pump reaches when the suction opening is closed. Given as absolute pressure.
Permanent vacuum	The vacuum or the suction range at which the pump operates permanently. The permanent vacuum or intake pressure is $\geq$ than the final vacuum and $<$ than the atmospheric pressure..
Noise emission	The noise emitted at a specific loading given as a figure, sound pressure level dB(A) as per EN ISO 3744.

1.8 Copyright

Passing on or copying this document, using and providing information on its contents are prohibited unless expressly permitted.

2 Safety

The manufacturer is not responsible for damage if you do not follow all of this documentation.

2.1 Warning instruction markings

Warning	Danger level	Consequences if not obeyed
 DANGER	immediately imminent danger	Death, severe bodily injury
 WARNING	possible imminent danger	Death, severe bodily injury
 CAUTION	possible hazardous situation	Slight bodily injury
 NOTICE	possible hazardous situation	Material damage

2.2 General

These operating instructions contain basic instructions for installation, commissioning, maintenance and inspection work which must be obeyed to ensure the safe operation of the machine and prevent physical and material damage.

The safety instructions in all sections must be taken into consideration.

The operating instructions must be read by the responsible technical personnel/ operator before installing and commissioning and must be fully understood. The contents of the operating instructions must always be available on site for the technical personnel/ operator. Instructions fixed directly onto the machine must be obeyed and must always remain legible. This applies for example to:

- Symbols for connections
- Data and motor data plate
- Instruction and warning plates

The operator is responsible for observing local regulations.

2.3 Designated use

The machine must only be operated in such areas as are described in the operating instructions:

- only operate the machine in a technically perfect condition
- do not operate the machine when it is only partially assembled
- the machine must only be operated at an ambient temperature and suction temperature of between 5 and 40°C. Please contact us for temperatures outside this range.
- the machine may convey, compress or extract the following media:
 - convey air with a relative humidity of 30 - 90%
 - all non-explosive, non-inflammable, non-aggressive and non-poisonous dry gases and gas air mixtures

2.4 Unacceptable operating modes

- extracting, conveying and compressing explosive, inflammable, aggressive or poisonous media, e.g. dust as per ATEX zone 20-22, solvents as well as gaseous oxygen and other oxidants, extremely damp air, water vapour, traces of oil, oil vapour and grease
- using the machine in non-commercial plants if the necessary precautions and protective measures have not been taken in the plant
- installing in environments that are at risk of explosions
- using the machine in areas with ionising radiation
- back pressures on the outlet side of more than +0,1bars
- modifications to the machine and accessories

2.5 Personal qualifications and training

- Ensure that people entrusted with working on the machine have read and understood these operating instructions before starting work, particularly the safety instructions for installation, commissioning, maintenance and inspection work.
- Manage the responsibilities, competence and monitoring of staff
- all work must only be carried out by technical specialists:
 - Installation, commissioning, maintenance and inspection work
 - Working with electricity
- personnel being trained to work on the machine must be supervised by technical specialists only

2.6 Safety-conscious work

The following safety regulations apply in addition to the safety instructions and intended use listed in these instructions:

- Accident prevention regulations, safety and operating regulations
- the standards and laws in force

2.7 Safety notes for the operator

- hot parts of the machine must not be accessible during operation or must be fitted with a guard
- People must not be endangered by the free extraction or discharge of pumped media
- Risks arising from electrical energy must be eliminated.

2.8 Safety instructions for installing, commissioning and maintenance

- The operator will ensure that any installation, commissioning and maintenance work is carried out by authorised, qualified specialists who have gained sufficient information by an in-depth study of the operating instructions.
- Only work on the machine when it is idle and cannot be switched on again
- Ensure that you follow the procedure for decommissioning the machine described in the operating instructions.
- Fit or start up safety and protective devices again immediately after finishing work.
- Conversion work or modifications to the machine are only permissible with the manufacturer's consent.
- Only use original parts or parts approved by the manufacturer. The use of other parts may invalidate liability for any consequences arising.
- Keep unauthorised people away from the machine

2.9 Guarantee conditions

The manufacturer's guarantee or warranty will no longer apply in the following cases:

- Improper use
- Not complying with these instructions
- Operation by insufficiently qualified staff
- Using spare parts that have not been approved by **Gardner Denver Schopfheim GmbH**
- Unauthorised modifications to the machine or the accessories supplied by **Gardner Denver Schopfheim GmbH**

3 Transport, storage and disposal

3.1 Transportation

3.1.1 Unpack and check the delivery condition

- a) Unpack the machine on receipt and check for transport damage.
- b) Notify the manufacturer of transport damage immediately
- c) Dispose of the packaging in accordance with the local regulations in force.

3.1.2 Lifting and transporting



WARNING

Death or limbs crushed as a result of the items being transported falling or tipping over.

- ▷ When transporting with the lifting device remember:
 - a) Select the lifting device suitable for the total weight to be transported.
 - b) Ensure that the machine cannot tip and fall.
 - c) Do not stop under a suspended load.
 - d) Put the goods to be conveyed on a horizontal base.

Lifting device/ Transporting with a crane



WARNING

Bodily injury resulting from improper operation

- a) Loads crosswise to the ring level are not permitted.
 - b) Avoid impact stress.
-
- a) Tighten the fixing screw (Fig. 1/2) tightly to the transport shackle (Fig. 1/1) .
 - b) The machine must be suspended on the transport shackle using the lifting device for lifting and transporting.

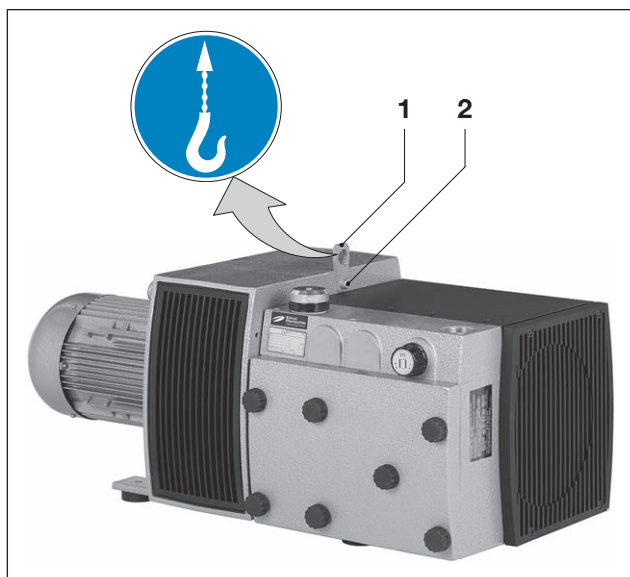


Fig. 1/1 Lifting and transporting

- 1 Transport shackle
- 2 Fixing screw

3.2 Storage

NOTICE

Material damage caused by improper storage.

- ▷ Ensure that the storage area meets the following conditions:
 - a) dust free
 - b) vibration free

3.2.1 Ambient conditions for storage

Ambient conditions	Value
Relative humidity	0 % to 80 %
Lagertemperatur	-10°C to +60°C



The machine must be stored in a dry environment with normal air humidity. It should not be stored for more than 6 months.

📄 see Info "Machine storage guidelines", Page 4

3.3 Disposal



WARNING

Danger from inflammable, corrosive or poisonous substances.

Machines that come into contact with hazardous substances must be decontaminated before disposal.

- ▷ When disposing ensure the following:
 - a) Collect oils and grease separately and dispose of in accordance with the local regulations in force.
 - b) Do not mix solvents, limescale removers and paint residues
 - c) Remove components and dispose of them in accordance with the local regulations in force.
 - d) Dispose of the machine in accordance with the national and local regulations in force.
 - e) Parts subject to wear and tear (marked as such in the spare parts list) are special waste and must be disposed of in accordance with the national and local waste laws.

4 Set up and operation

4.1 Setup

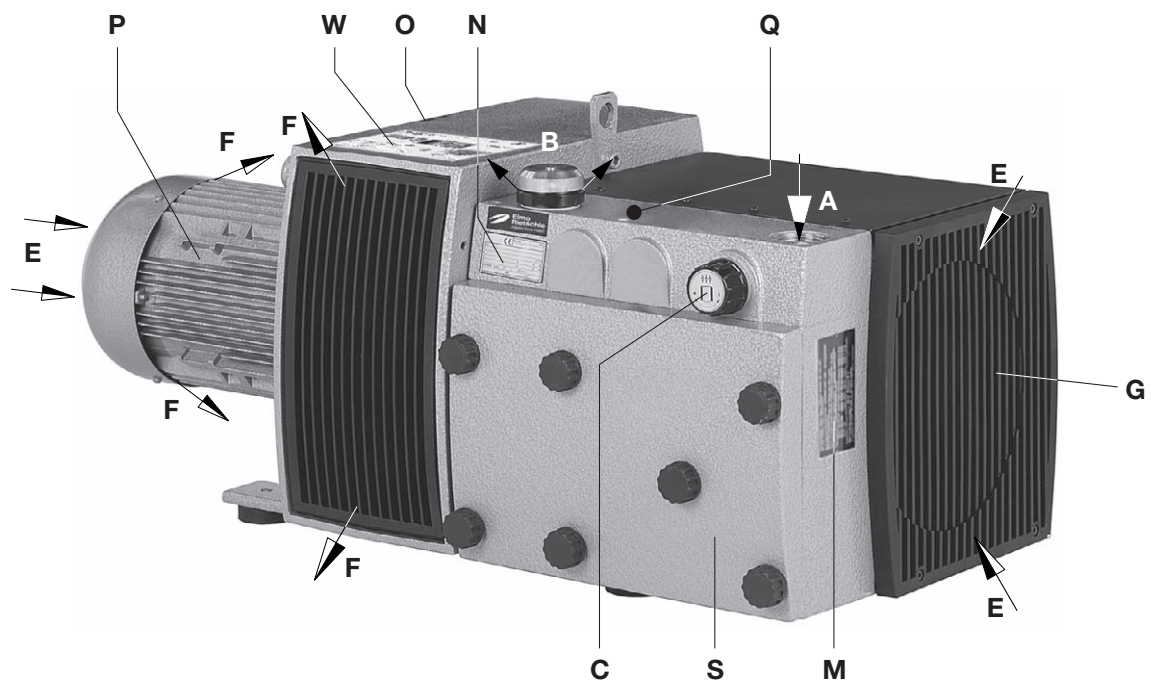


Fig. 2 Vacuum pump V-VTR 100 / V-VTR 140

A	Vacuum connection	N	Data plate
B	Exhaust air outlet	O	Rotation direction plate
C	Vacuum regulating valve	P	Drive motor
E	Cooling air inlet	Q	hot surfaces > 70°C
F	Cooling air outlet	S	Filter housing
G	Inlet grating	W	Maintenance plate
M	Greasing plate		

4.1.1 Data plate

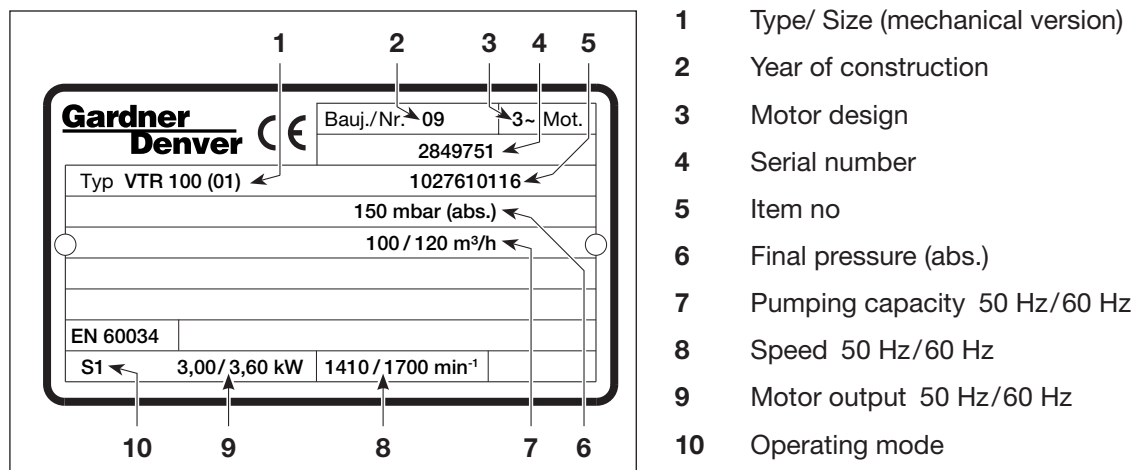


Fig. 3 Data plate

4.2 Description

The V-VTR model range has a connecting thread on the suction side and an exhaust silencer on the pressure side. The aspirated air is cleaned by an inbuilt fine micro filter. The carbon dust caused by the scoring of the blades can be separated by an integral filter if necessary. A fan between the compressor housing and the motor provides intensive air cooling. The compressor housing is located in a sound cover.

The machines are driven by standard flanged three-phase motors using a coupling.

A vacuum regulating valve (Fig. 2/C) is used to set the vacuum to the required values with an upper limit.

4.3 Areas of application

These dry running rotary vane vacuum pumps V-VTR 100 and V-VTR 140 are suitable for evacuating closed systems and for a permanent vacuum in the intake pressure range 150 - 1000 mbar (abs.).

The pumping capacity with unrestricted suction is 100 and 140 m³/h at 50 Hz. Data sheet D 261 shows the dependency of the pumping capacity on the intake pressure.

These dry running machines are suitable for conveying air with a relative humidity of 30 - 90%.



If the unit is switched on more frequently (at regular intervals of about 10 times an hour) or at higher ambient temperatures and intake temperatures, the excess temperature limit of the motor winding and the bearings may be exceeded.

Please contact the manufacturer should the unit be used under such conditions



If it is installed in the open air the unit must be protected from environmental influences, (e.g. by a protective roof).

5 Installation

5.1 Preparing for installation

Check the following points:

- Machine freely accessible from all sides
- Do not close ventilation grids and holes
- Sufficient room for installing and removing pipes and for maintenance work, particularly for installing and dismantling the machine
- No external vibration effects
- Do not suck any hot exhaust air from other machines into the cooling system.



The filter housing (Fig. 2/S) should be easily accessible. The cooling air inlets (Fig. 2/E) and the cooling air outlets (Fig. 2/F) must be at least 30 cm away from adjacent walls. Cooling air coming out must not be sucked in again.. or maintenance work there must be a minimum of 40 cm in front of the filter housing (Fig.. 2/S) and the inlet grating (Fig.. 2/G).

5.2 Installation

NOTICE

The machine may only be operated when it is set up horizontally.

Material damage resulting from the machine tipping over and falling.

When installed at more than 1000 m above sea level a reduction in power is noticeable. In this case we would ask you to contact us.

Ensure that the foundation complies with the following conditions:

- Level and straight
- The bearing surface must be at least the same size as the machine
- The bearing surface must be able to bear the weight of the machine



It is possible to install the machine on a firm base without anchoring. When installing on a substructure we recommend fixing with flexible buffers

5.3 Connecting pipes

- a) Vacuum connection at (Fig. 2/A)

NOTICE

Material damage resulting from the forces and torques of the pipes on the unit being too high.
Only screw pipes in by hand.

Bei zu enger und/oder langer Saugleitung vermindert sich das Saugvermögen der Vakuumpumpe.

- b) Check to ensure the suction pipe is connected correctly

NOTICE

Length of the connection pipes

With connection pipes that have the same pipe cross section as the machine connection and are more than 3m long, a non-return valve especially for the purpose must be installed in order to avoid reverse operation when the machine has stopped.

5.4 Control and relief valve

The vacuum can be set by turning the control knob (Fig. 2/C) as shown on the symbol fitted to the button.

NOTICE

Do not operate without the standard control and relief valve.

If the permissible final compression pressure is exceeded (see data plate) the machine may be damaged.

5.5 Connecting the motor



DANGER

Danger of death if the electrical installation has not been done professionally.

The electrical installation may only be done by a specialist electrician observing EN 60204. The operating company has to provide the main switch.

- a) The motor's electrical data is given on the data plate (Fig. 2/N) or on the motor data plate. The motors comply with DIN EN 60034 and are in protection class IP 55 and insulation class F. The appropriate connection diagram is located in the motor's terminal box (not for the plug connection version). Compare the motor data with the data of the existing mains network (current type, voltage, network frequency, permitted current value).
- b) Connect the motor via plug-connector if fitted or via the motor protection switch (for safety reasons, a motor protection switch is required and the connecting cable must be installed via a cable fitting to provide strain relief).
We recommend using motor protection switches with delayed switch off, depending on possible excess current. Temporary excess current can occur when the machine is started cold.

NOTICE

Power supply

The conditions at the installation location must match the information on the motor data plate. Without derating the following is permissible:

- $\pm 5\%$ voltage deviation
- $\pm 2\%$ frequency deviation

6 Commissioning and decommissioning

6.1 Commissioning



WARNING

Improper use

May lead to severe or fatal injuries. Therefore be sure to obey the safety instructions.



CAUTION

Hot surfaces

When the machine is at operating temperature the surface temperatures on the components (Fig. 2/ Q) may go above 70°C. You must avoid touching the hot surfaces (marked with warning plates).



CAUTION

Noise emission

The highest noise pressure levels measured as per EN ISO 3744 are given in Section 9. When spending a long time in the vicinity of the running machine use ear protectors to avoid permanent damage to your hearing.

NOTICE

Wait until the machine stops.

The machine must only be switched on again after it stops.

6.1.1 Checking the rotation direction

- ▷ The drive shaft direction of rotation is shown by the rotation direction arrow (Fig. 2/O) on the motor flange.
- a) Start the motor briefly (max. two seconds) to check the direction of rotation. When looking at the motor fan, it must rotate clockwise.



NOTICE

Incorrect direction of rotation

Running the machine in reverse for a long time may cause damage to the blades which may lead to the blades breaking. Use a phase sequence indicator to check the direction of rotation (**anti-clockwise rotating field**).

6.2 Decommissioning/ storing

Stop the machine

- a) Switch the machine off.
- b) If available close the cut off device in the suction and pressure pipe.
- c) Disconnect the machine from the electricity source.
- d) Depressurise the machine:
Open the pipes slowly.
⇒ The pressure reduces slowly.
- e) Remove the pipes and hoses.
- f) Seal the connections for suction and pressure nozzles using adhesive foil.
- g) Insert the desiccant bag into the filter housing
- 📄 see also Section 3.2.1, Page 11

6.3 Re-commissioning

- a) Check the condition of the machine (cleanliness, cabling etc.).
- b) Remove the desiccant bag from the filter housing.
- 📄 For installation see Section 5 Page 14
- 📄 For commissioning see Section 6.1 Page 17

7 Maintenance and repair



DANGER

Danger of death from touching live parts.

Before maintenance work disconnect the machine by pressing the main switch or unplugging it and ensure that it cannot be turned on again.



WARNING

Hot surfaces

During maintenance work there is the danger of getting burnt on hot components (Fig. 2/Q) of the machine.

Wait for the machine to cool down.

7.1 Ensuring operational safety

Regular maintenance work must be carried out in order to ensure operational safety.

Maintenance intervals also depend on the operational demands on the machine.

With any work observe the safety instructions described in Section 2.8 “Safety notes for installation, commissioning and maintenance”.

The whole unit should always be kept in a clean condition.

7.2 Maintenance work

Interval	Maintenance to be carried out	Section
monthly	Check the pipes and screws for leaks and to ensure they are seated properly and if necessary seal again or tighten up.	—
monthly	Check the terminal box and cable inlet holes for leaks and if necessary re-seal.	—
monthly	Clean the regulating valve and ventilation slots on the machine and the motor cooling ribs. If there is a great deal of dust in the spaces on the cooling ribs and cooling pipes after removing the inlet grating (Fig. 2/G) and the protective cover (Fig. 5/G1) clean by blowing through.	—
20.000 h	Change the bearing on the motor side.	7.2.1
3.000 h	Lubricate the bearing on the side facing away from the motor.	
3.000 h - 1.000 h	Check blades ⇔ Replace blades	7.2.2
monthly / every 6 months	Clean or replace filter cartridges	7.2.3
at least once a year	Check for coupling wear	7.2.4

7.2.1 Lubrication

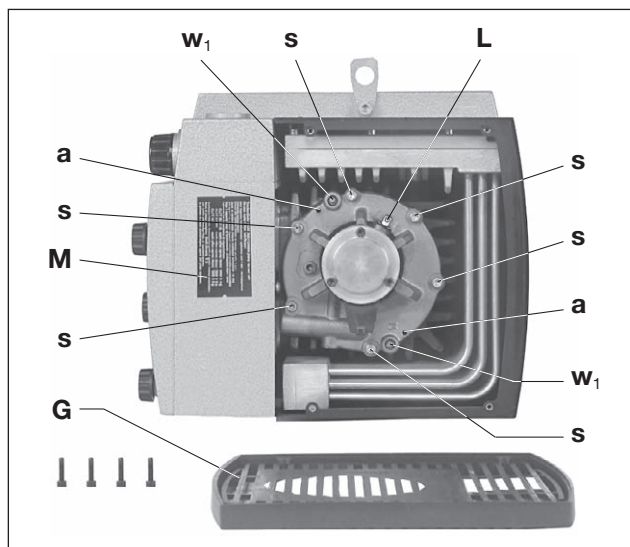


Fig. 4 Lubrication/ Discs

- G** Inlet grating
- L** Grease nipple
- M** Grease recommendation plate
- a** Thread hole
- s** Screws
- w₁** Slotted nut

7.2.2 Blades

A bearing (motor side)

The A bearing (motor side) has life long lubrication and is therefore maintenance free. After 20,000 operating hours or 2½ years (3- shift operation), the A bearing must be replaced by a qualified professional or by our authorised workshops.

B bearing (side facing away from the motor)

The B bearing (on the side facing away from the motor) must be lubricated on the grease nipple (Fig. 4/ L) with 4g of grease after 3,000 operating hours but no later than after one year. To lubricate the inlet grating (Fig. 4/G) must be unscrewed.

NOTICE

Do not overfill the **grease reservoir** (Fig. 5/c) on the B bearing.

We recommend the following brands of grease: KlüberPetamoGY193 or other equivalent greases (see also grease recommendation plate (Fig. 4/M)).

Blade check:

V-VTR models have 4 carbon blades that gradually wear out during operation.

First check after 3,000 operating hours and then every 1,000 operating hours or, depending on the height (Fig. 6/X) earlier.

Remove inlet grating (Fig. 4/G) as well as screws (Fig. 5/s). To lift the housing lid (Fig. 5/b) from the housing two screws (Fig. 5/s) must be screwed into the two tapped holes (Fig. 4/a) on the housing lid evenly. Remove the blades (Fig. 5/d) to be checked. All blades on the machine must have a minimum height (Fig. 6/X) of more than 26 mm (V-VTR 100) and 32 mm (V-VTR 140) and a minimum thickness (Fig. 6/W) of more than 2.5 mm.

The blades must only be changed as a set.



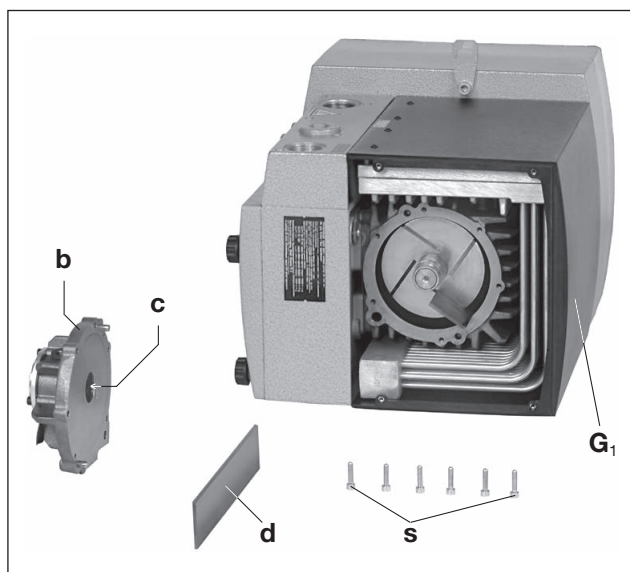


Fig. 5 Lubrication/ Blades

- G₁** Protective cover
b Housing lid
c Grease store
d Blade
s Screws

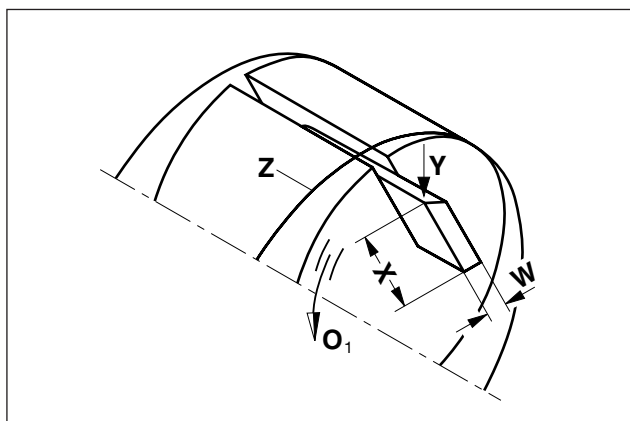


Fig. 6 Blades

- O₁** Direction of rotation
W Minimum thickness
X Minimum height
Y Slanting side of the blade
Z Drilled holes in the housing

Changing blades:

If the minimum height or the minimum thickness has already been reached or if the blades have fallen below these levels the whole blade set must be changed.

NOTICE

Do not undo the **slotted nuts** (Fig. 4/w₁) on the housing lid (Fig. 5/b). Only the screws (Fig. 4/s) need to be removed to change the blades.

Blow out the housing and rotor slot. Insert the blades into the rotor slot. When doing this you must ensure that the blades with the sloping side (Fig. 6/Y) point outwards and the direction of rotation of these sloping sides (Fig. 6/O₁) matches that of the drilled holes for the housing (Fig. 6/Z). Before putting the housing cover (Fig. 5/ b) back onto the shaft end the excess grease in the grease store (Fig. 5/c) of the B bearing must be completely removed from the bearing cage. Also grease residue should be wiped off the end of the shaft and where the shaft passes through the housing lid. Otherwise this grease would get into the compressor housing and would mix with the blade wear debris to form a paste-like coating that could cause the blades to jam in the rotor slots.

When screwing the housing lid on the grease-free screws should be tightened alternately and evenly so that the lid does not get jammed on the locating pins. As soon as the lid is almost resting on the front of the housing, it is advisable to turn the fan to and fro (using a screw driver or similar) while you finish screwing in the screws. This will prevent the corners of the blades getting jammed and breaking away. Screw in the inlet grating (Fig. 4/G)

NOTICE

Ensure that no dirt gets into the bearing. At each blade change check the grease reservoir (Fig. 5/c) on the B bearing and top up if necessary.

7.2.3 Air filtering

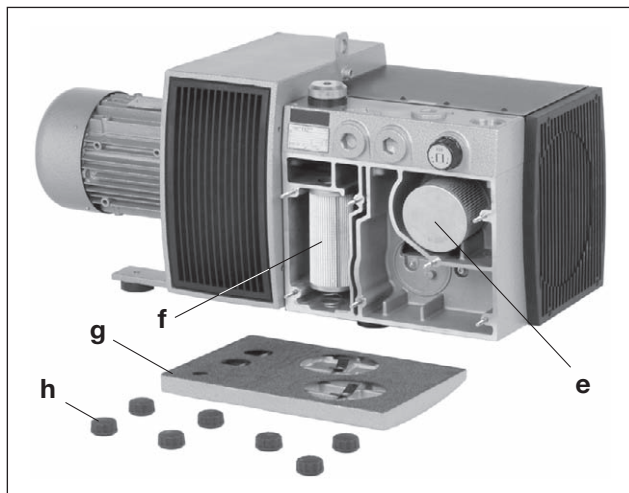


Fig. 7 Air filtering

- e** Filter cartridge (suction air)
- f** Filter cartridge (exhaust air, accessory)
- g** Filter housing cover
- h** Filter screw-in knobs

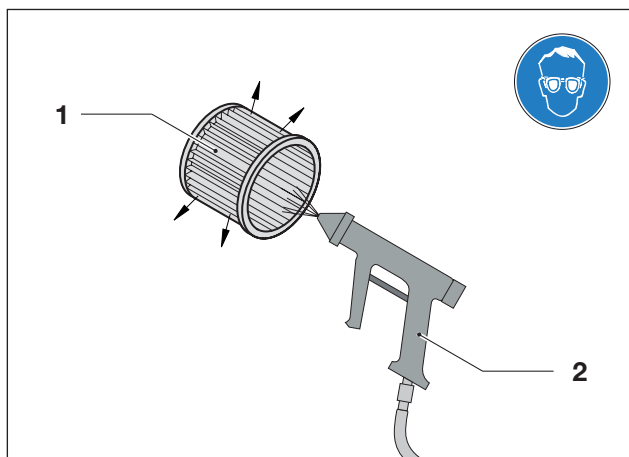


Fig. 8 Purging filter cartridge

- 1** Filter cartridge
- 2** Compressed air

NOTICE

Insufficient maintenance on the air filter

The power of the machine lessens and damage may occur to the machine.

The filter cartridges (Fig. 7/e) and (Fig. 7/f) must be cleaned by blowing through from the inside out once a month or more often depending on the level of contamination. In spite of cleaning the filters their separation efficiency will continue to deteriorate. Therefore the filters should be replaced every six months.

The filter cartridges (Fig. 7/e) and (Fig. 7/f) can be removed for cleaning after undoing the filter screw knobs (Fig. 7/h) and the filter housing cover (Fig. 7/g).

Clean the filter housing chambers too.

NOTICE

Do not damage the filter cartridges when cleaning them.

No dirt must get into the machine when cleaning the filter housing chambers.

WARNING

Danger of injury when dealing with compressed air.

When blowing through with compressed air, solid particles may be carried along or powder dust swirling around may cause injury to the eyes. Therefore, when cleaning with compressed air always wear goggles and a dust mask.

7.2.4 Coupling

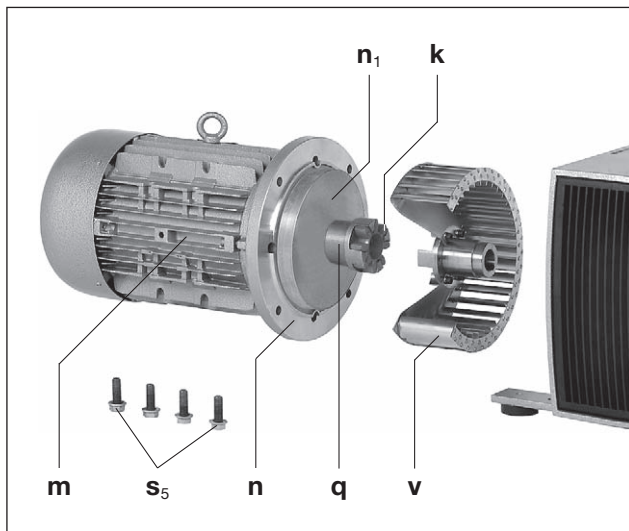


Fig. 9 Coupling

- k** Coupling sprocket
- m** Motor
- n** Motor flange
- n₁** Flywheel mass
- q** Coupling half on the motor side
- s₅** Screws
- v** Fan

The coupling sprocket (Fig. 9/k) is subject to wear and must be checked regularly (at least once a year).

CAUTION

Defective coupling sprocket.

Defective sprockets may lead to the rotor shaft breaking.

To check the coupling switch the motor (Fig. 9/m) off and ensure that it cannot be switched on again. Undo the screws (Fig. 9/s₅) on the motor flange (Fig. 9/n). Remove the motor axially with the half of the coupling on the motor side (Fig. 5/q) and suspend with the lifting device. If the sprocket (Fig. 9/k) is damaged or worn, then replace it. The fan (Fig. 9/v) should also be checked for damage from time to time and replaced if necessary.

NOTICE

Do not operate without the flywheel mass (Abb. 9/n₁)!

Frequent starting up and high ambient temperature.

The service life of the sprocket (Fig. 9/k) is reduced.

Re-assemble in reverse order.

7.3 Repair/ Service

- a) For on site repair work the motor must be disconnected from the mains by a qualified electrician so that it cannot be started up again accidentally. For repairs use the manufacturer, its branch offices or authorised dealers. Please contact the manufacturer for the address of the service centre responsible for you (see Manufacturer's address).

NOTICE

For each machine that is sent to an Elmo Rietschle Service centre for inspection, maintenance or repair, a fully completed, signed declaration of harmlessness must be enclosed. The declaration of harmlessness is part of the supplier's documentation.

- b) After a repair or re-commissioning, the actions listed under "Installation" and "Commissioning" must be carried out as for initial commissioning.

The form is a 'Gardner Denver' clearance certificate. It includes the following sections:

- Header:** Gardner Denver Schopfheim GmbH, Unbedenklichkeitsklärung für Vakuumpumpen und Komponenten, Formelart 7.7025.003.17, GDS, Seite 1 von 1.
- 1. Art der Vakuumpumpen / Komponenten:** Includes fields for type, model, and serial number.
- 2. Grund für die Einsetzung:** Includes fields for reason and date.
- 3. Zustand der Vakuumpumpen / Komponenten:** Includes checkboxes for 'Ja' and 'Nein' for various conditions.
- 4. Einsatzbedingte Kontamination der Vakuumpumpen / Komponenten:** Includes checkboxes for 'Ja' and 'Nein' for various contamination types.
- 5. Persönliche Schutzmaßnahmen:** Includes checkboxes for 'Ja' and 'Nein' for various safety measures.
- 6. Sachverständige Erklärung:** A section for a declaration of safety, signed by the responsible person.
- Footer:** Includes fields for the responsible person's name, position, and date.

Fig. 10 Clearance certificate
7.7025.003.17

7.4 Spare parts

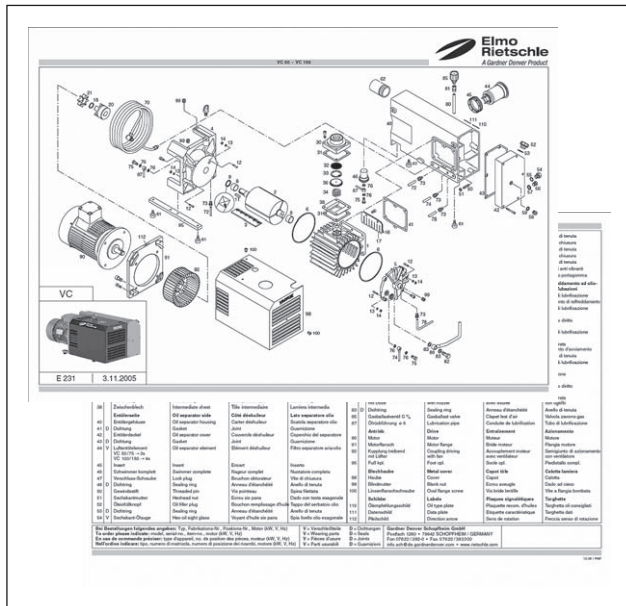


Fig. 11 Spare parts list (example)

Order spare parts in accordance with the:

- **Spare parts list:**
E 261 → V-VTR 100 / V-VTR 140
 - Download the PDF file:
<http://www.gd-elmorietschle.com>
 - Downloads
 - Product Documents
 - V-Series → Spare Parts
 - Parts subject to wear and gaskets are indicated separately on the list.
- **Web site:**
<http://www.service-er.de>
 - Select the type, size and design.

NOTICE

Only use original spare parts or parts approved by the manufacturer. The use of other parts may lead to malfunctions and invalidate liability or the guarantee for any consequences arising.



Fig. 12 Web site
<http://www.service-er.de>

8 Malfunctions: Causes and elimination

Fault	Cause	Troubleshooting	Important
Machine is switched off by the motor protection switch	Mains voltage/ Frequency does not correspond with the motor data	Check by qualified electrician	Section 5.5
	Connection to motor terminal board is not correct		
	Motor protection switch is not set correctly		
	Motor protection switch is triggered too quickly	Use a motor protection switch with an overload-dependent delayed switch off that takes into consideration the short term excess current at start up (version with short circuit and overload trigger as per VDE 0660 Part 2 or IEC 947-4)	
	The blow out filter cartridge (accessory) is dirty.	Clean or replace the filter cartridges	Section 7.2.3 Section 7.4
	The regulating valve is dirty so that the permissible vacuum value is exceeded.	Clean or replace the regulating valve	Section 7.2 Section 7.4
Pumping capacity is insufficient	The intake filter is dirty	Clean or replace the intake filter	Section 7.2.3 Section 7.4
	The suction pipe is too long or too narrow	Check the hose or the pipe	Section 5.3
	Machine or system leaking	Check the pipework and screw connections for leaks and to ensure that they are firmly seated.	Section 7.2
	Blades are damaged	Replace blades	Section 7.2.2 Section 7.4

Fault	Cause	Troubleshooting	Important
Final pressure (max. vacuum) is not reached	Machine or system leaking	Check the pipework and screw connections for leaks and to ensure that they are firmly seated.	Section 7.2
	Blades are worn or damaged	Replace blades	Section 7.2.2 Section 7.4
Machine gets too hot	Ambient or intake temperature is too high	Ensure it is being used properly	Section 2.3
	Cooling air supply is obstructed	Check environmental conditions	Section 5.1
		Clean ventilation slots	Section 7.2
	The blow out filter cartridge (accessory) is dirty.	Clean or replace the filter cartridges	Section 7.2.3 Section 7.4
The machine makes a abnormal noise	The regulating valve is dirty so that the permissible vacuum value is exceeded.	Clean or replace the regulating valve	Section 7.2 Section 7.4
	The compressor housing is worn (chatter marks)	Repair by manufacturer or authorised workshop	Elmo Rietschle Service
	The regulating valve is vibrating	Replace the valve	Section 7.4
	Blades are damaged	Replace blades	Section 7.2.2 Section 7.4
Please contact Elmo Rietschle Service for other malfunctions or those that cannot be eliminated.			

9 Technical Data

V-VTR			100	140
Sound pressure level (max.) EN ISO 3744 Tolerance ± 3 dB(A)	dB(A)	50 Hz	82	87
		60 Hz	84	89
Sound power level	dB(A)	50 Hz	92	97
		60 Hz	96	99
Weight*	kg		122	127
Length*	mm		842	859
Width	mm		406	406
Height	mm		368	368
Vacuum connection			G 1 $\frac{1}{4}$	G 1 $\frac{1}{4}$

* The length and the weight may differ from the information listed here depending on the motor manufacturer.

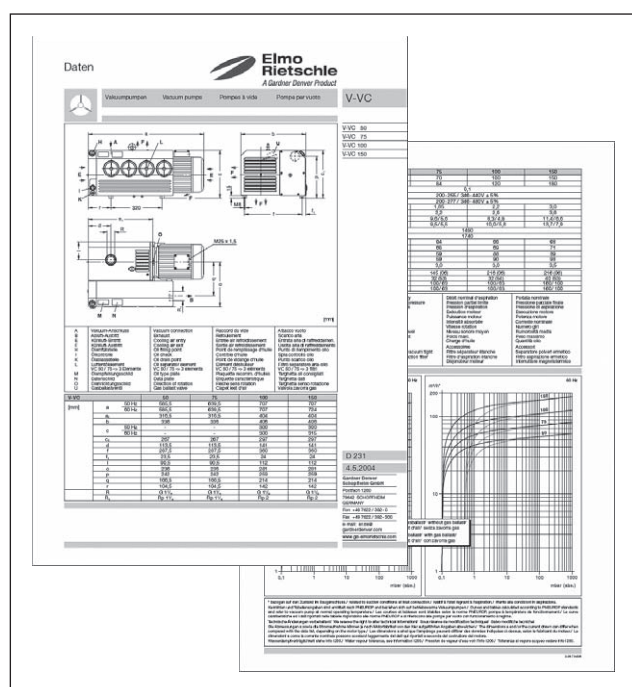


Fig. 13 Data sheet (example)

You will find more technical data on the data sheet **D 261**

- Download the PDF file:
D 261 → V-VTR 100 / V-VTR 140
- Download the PDF file
<http://www.gd-elmorietschle.com>
→ Downloads
→ Product Documents
→ V-Series → Data Sheets

NOTICE

Subject to technical changes.



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Gardner
Denver

Elmo Rietschle is a brand of
Gardner Denver's Industrial Products
Division and part of Blower Operations.

EC - declaration of conformity 2006/42/EC

Hereby the manufacturer Gardner Denver Schopfheim GmbH
confirms: Postfach 1260
D-79642 Schopfheim

that the machine: Dry running vacuum pump
of the: Series: V-VTR
Type: V-VTR 100, V-VTR 140

is conform to the regulations of the guideline indicated above.

The following harmonized and national standards and specifications are applied:

EN 1012-1:2010 Compressors and vacuum pumps — Safety requirements — Part 1:
Compressors

EN 1012-2:1996+A1:2009 Compressors and vacuum pumps — Safety requirements — Part 2:
Vacuum pumps

These declarations of conformity are invalid when the machine has been modified without prior approval by us and the approval has been documented in writing.

Name and address of the EC person in charge for documentation Gardner Denver Schopfheim GmbH
Postfach 1260
D-79642 Schopfheim

Gardner Denver Schopfheim GmbH
Schopfheim, 1.8.2011



Dr. Friedrich Justen, Director Engineering

Fax: +49/(0)7622/392-300

This declaration must only be filled in and signed by authorised qualified staff.