

Original Operating Instructions V-KTA

V-KTA 60/1 - 140/1 | 60/2 - 140/2

V-KTA 60/3 - 140/3 | 80/5



**Elmo
Rietschle**
A Gardner Denver Product



**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 pressure vacuum pumps models V-KTA 60/1 to V-KTA 140/3 and V-KTA 80/5.
- 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 450-EN |
| | Declaration of Conformit | C 0074-EN |
| | Declaration of harmlessness | 7.7025.003.17 |
| Spare parts' list | Spare parts' document | E 450, E 456, E 459 |
| Data sheet | Technical data and graphs | D 452, D 453 |
| Info sheet | Storage guidelines for machines | I 150 |
| Manufacturer's declaration | EU Directive 2002/95/EG (RoHS) | — |

1.4 Abbreviations

| | |
|-------------------|-------------------------------------|
| Fig. | Figure |
| V-KTA | Pressure vacuum pump |
| m ³ /h | Volume flow compressed/ suction air |
| bar | Overpressure/ 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 |
| Pressure vacuum pump | In combined use the machine may produce a vacuum and excess pressure at the same time. |
| Rotary vane | Machine's design or active principle |
| Volume flow | A pressure vacuum pump's suction air or compressed air. |
| Overpressure (pressure) | Difference in pressure compared with atmospheric pressure. The corresponding working pressure is greater than the atmospheric pressure. |
| Under pressure (vacuum) | Difference in pressure compared with atmospheric pressure. The corresponding working pressure is lower 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 |
|---|------------------------------|-----------------------------|
|  | immediately imminent danger | Death, severe bodily injury |
|  | possible imminent danger | Death, severe bodily injury |
|  | possible hazardous situation | Slight bodily injury |
|  | 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. Vor Wiederinbetriebnahme die aufgeführten Punkte für die Inbetriebnahme beachten
- 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 eyebolts (Fig. 1/1) firmly.
- b) The machine must be suspended on the eyebolt using the lifting device for lifting and transporting.

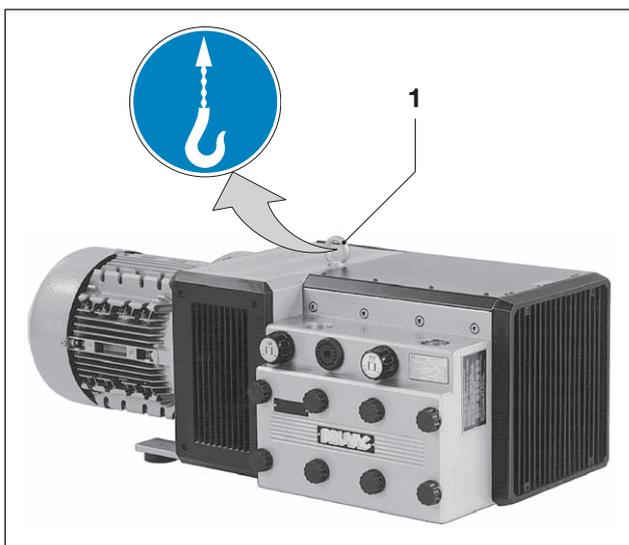


Fig. 1 Lifting and transporting

1 Eyebolt

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

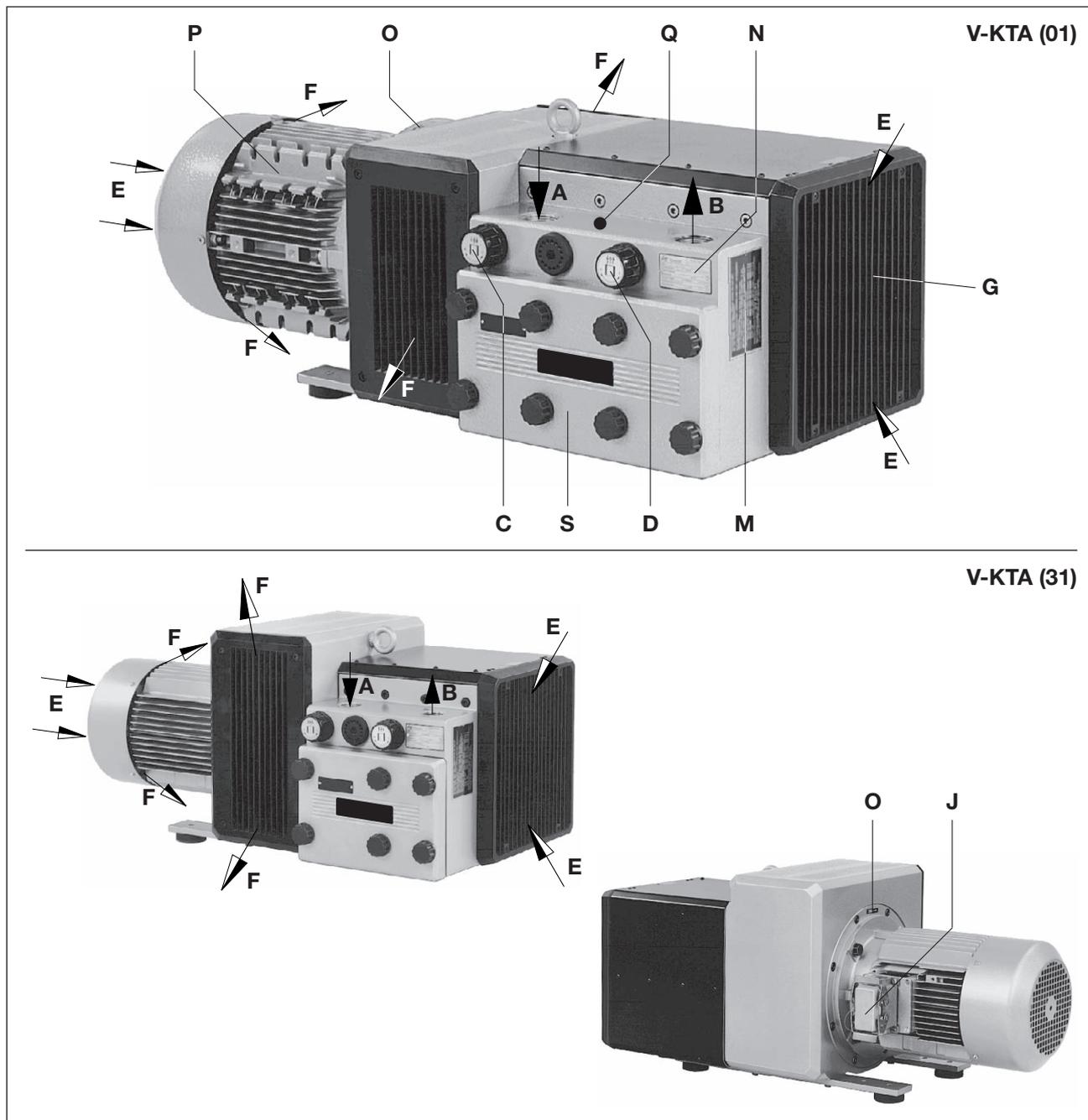


Fig. 2 Pressure vacuum pump V-KTR 100 / V-KTR 140

- | | | | |
|----------|---------------------------|----------|--------------------------|
| A | Vacuum connection | J | Plug-connector |
| B | Pressure connection | M | Greasing plate |
| C | Vacuum regulating valve | N | Data plate |
| D | Pressure regulating valve | O | Rotation direction plate |
| E | Cooling air inlet | P | Drive motor |
| F | Cooling air outlet | Q | hot surfaces > 70°C |
| G | Inlet grating | S | Filter housing |

4.1.1 Data plate

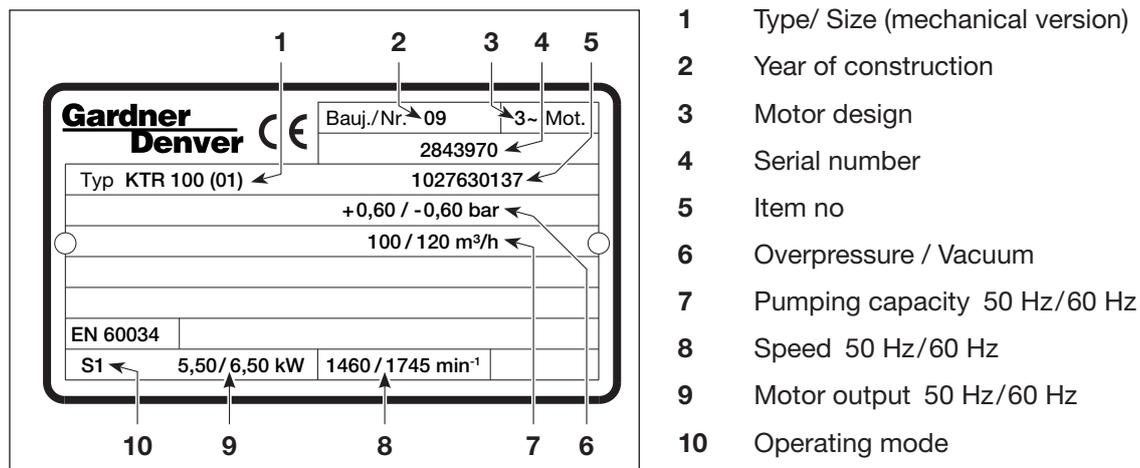


Fig. 3 Data plate (example)

4.2 Description

The V-KTA range has a connecting thread on the pressure side and on the suction side. The aspirated air is cleaned by an inbuilt fine micro filter. The carbon dust caused by the scoring of the discs can also 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 compressed air is cooled by a cooling segment.

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

Pressure and vacuum can be adjusted to the required levels, however, they are limited to a maximum point. Versions (01) to (30) have cooling exits from two sides whilst versions (31) to (60) have cooling exits on one side only.

4.3 Areas of application

These dry running rotary vane pressure vacuum pumps models V-KTA 60/1 to V-KTA 140/3 and V-KTA 80/5 are suitable for creating pressure and vacuum at the same time. Constant operation is permissible.

All models have nominal capacities of 60, 80, 100 and 140 m³/hr operating at 50 cycles. The pressure and vacuum limits (bar) are indicated on the data plate (Fig. 2/N). The tables showing capacity against pressure and vacuum can be seen in data sheets D 452 and D 453.

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 12 times (V-KTA 60/80) resp. 10 times (V-KTA 100/140) 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 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) and pressure connection at (Fig. 2/B).

NOTICE

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

Long and/or small bore pipework should be avoided as this tends to reduce the capacity of the machine.

- b) Check to ensure the intake line and pressure line are 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 3 m 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 valves

The required pressure and vacuum ranges can be set with the pressure regulating valve (Fig. 2/D) and the vacuum regulating valve (Fig. 2/C) as shown on the symbol plate attached to the rotary knob.

NOTICE

Do not operate without the standard control and relief valves.

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 (Fig. 2/J) 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

Trockenbeutel

The desiccant bags in the filter housing (Fig. 2/S) must be removed before initial start-up.

Wait until the machine stops.

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

Commissioning and decommissioning

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 valves 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. | — |
| 4.000 h - 10.000 h | Lubricate the bearing on the side facing away from the motor. | 7.2.1 |
| 4.000 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

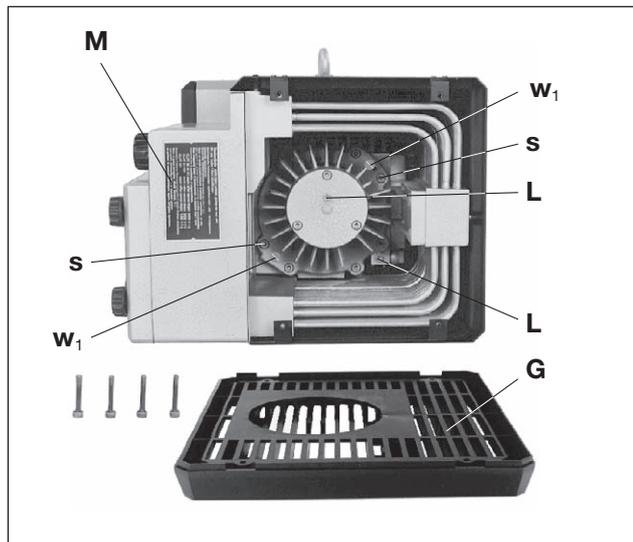


Fig. 4 Lubrication/ Blades

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

The bearings must be greased at the 2 greasing points (Fig. 4/L) with 6 g per point, after the following recommended operating hours or at the latest one year operation:

- 50 Hz: V-KTA 60 - 100 → 10.000 h and V-KTA 140 → 6.000 h
- 60 Hz: V-KTA 60/80 → 10.000 h, V-KTA 100 → 8.000 h and V-KTA 140 → 4.000 h

NOTICE

These greasing instructions are valid for operation at 20°C ambient temperature. At 40°C these should be reduced by 50 %.

To lubricate the inlet grating (Fig. 4/G) must be unscrewed.

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

7.2.2 Blades

Blade check:

All V-KTA models have 6 carbon blades, except the V-KTA /5 which has 8 carbon blades that gradually wear out during operation.

First check after 4,000 operating hours and then every 1,000 operating hours or, depending on the height (Fig. 5/X) earlier.

Remove inlet grating (Fig. 4/G). To remove the end cover (Fig. 5/b) from the housing, the bolt (Fig. 5/a) located in the centre of the bearing cover (Fig. 5/c) should be removed. To achieve this one of the fixing bolts (Fig. 5/s) from the housing cover should be screwed into the thread in the centre of the bearing cover. 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 38 mm.

The blades must only be changed as a set.



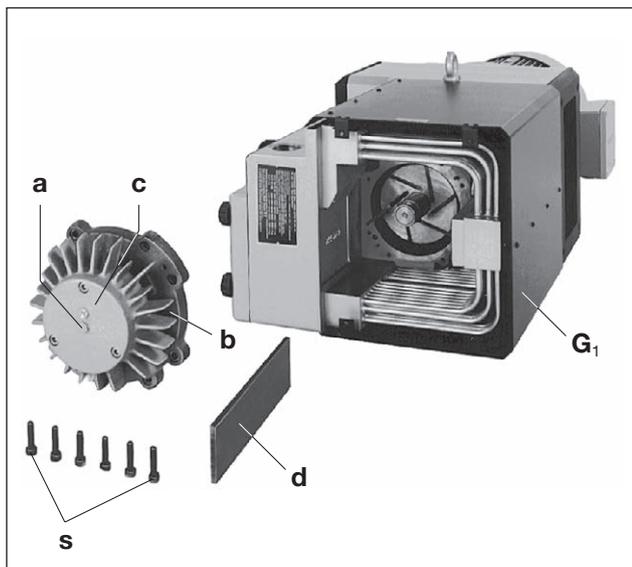


Fig. 5 Lubrication/ Blades

- G₁** Protective cover
- a** Bolt
- b** Housing lid
- c** Bearing cover
- d** Blade
- s** Screws

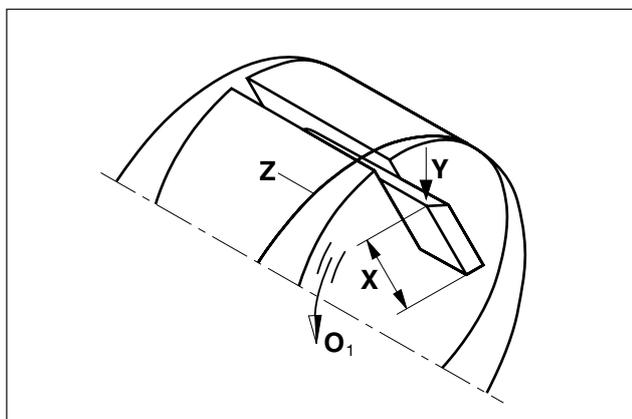


Fig. 6 Blades

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

Changing blades:

If the minimum height has already been reached or if the blades have fallen below this level 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.

Before refitting the blades clean out the housing and the rotor slots with compressed air. Place the blades, with the radius outwards (Fig. 6/Y), such that the bevel is in the direction of rotation (Fig. 6/O₁) and corresponds with the radius of the housing (Fig. 6/Z).

Before refitting the end cover (Fig. 5/b) redistribute the grease from the bearing cover (Fig. 5/c) on to the appropriate bearing. It is important that the shaft end is completely clean so that no grease can enter the housing, this could mix together with carbon dust and give a viscous paste which would result in the blades becoming stuck in the rotor slots.

When re-fitting the end cover tighten the bolts evenly so that the end cover fits correctly onto the fixing pins. As soon as the cover is almost touching the housing, we recommend during further tightening of the bolts, the fan is moved in both directions. This can be achieved by taking the grill at the cooling air exit (F) away. This then ensures that the blades are sitting correctly in their slots and avoids any edge damage. Refit the suction grid (Fig. 4/G).

NOTICE

Care should be taken that the bearing does not become contaminated.

7.2.3 Air filtering

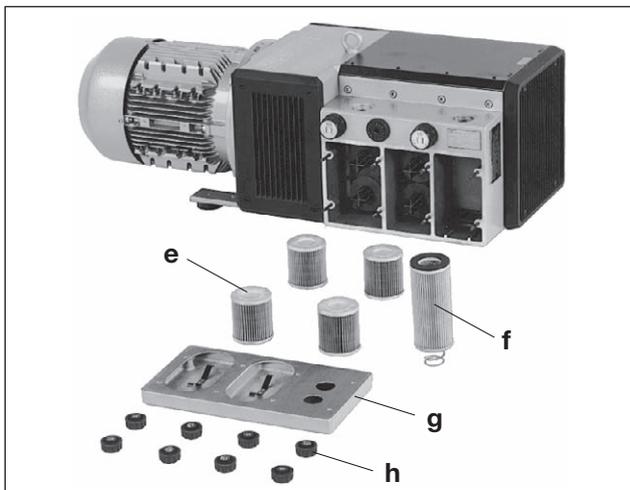


Fig. 7 Air filtering

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

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.

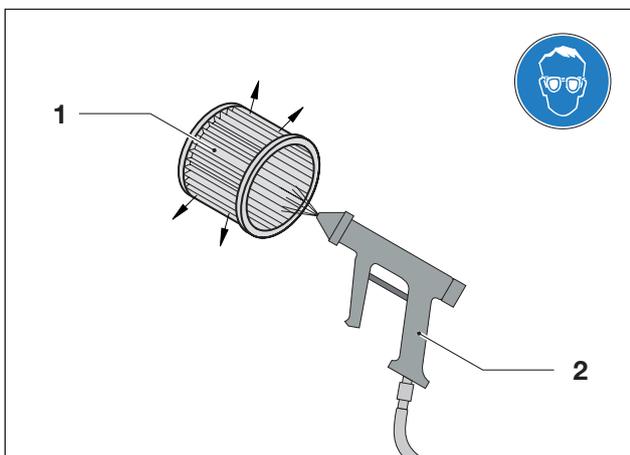


Fig. 8 Purging filter cartridge

- 1 Filter cartridge
- 2 Compressed air

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

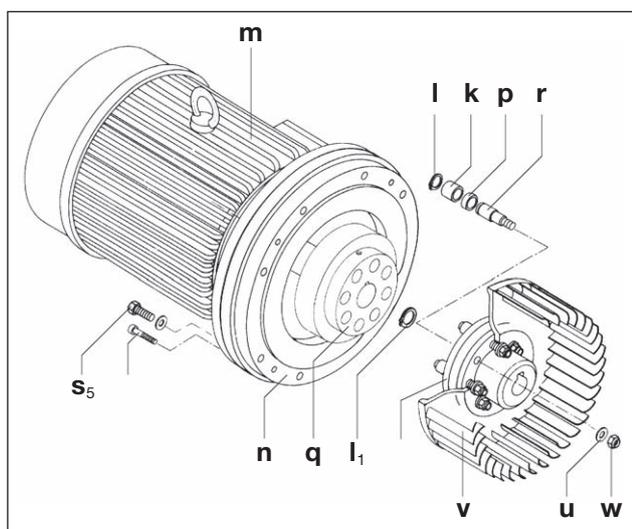


Abb. 9 Coupling

| | |
|----------------------|--------------------------|
| k | Coupling rubber |
| l | Circlip |
| l₁ | Circlip |
| m | Motor |
| n | Motor flange |
| p | Spacer |
| q | Motor side coupling half |
| r | Coupling bolt |
| s₅ | Screws |
| u | Washer |
| v | Fan |
| w | Nut |

The coupling rubbers (bb. 9/k) are wearing parts and should be checked regularly. When the coupling rubbers are worn this can be detected by a knocking sound when the pump is started.

CAUTION

Defected coupling rubbers

Defected coupling rubbers can cause extensive damage and even in some extreme cases break the rotor shaft.

To check the coupling, stop the motor (Fig. 9/m) and isolate. Remove the screws (Fig. 9/s₅) on the motor flange (Fig. 9/n). Pull off the motor together with the motor side coupling half (Fig. 9/q). If the coupling rubbers (k) are damaged remove the circlips (Fig. 9/l) from the coupling bolt (Fig. 9/r) and exchange the coupling rubbers (k). Leave the spacer (p) in place. Check the coupling bolts (Fig. 9/r) for any wear and replace if necessary. To replace, remove the circlip (Fig. 9/l₁), pull off the coupling and fan (Fig. 9/v) complete from the pumpshaft, remove the nut (Fig. 9/w) with washer (Fig. 9/u) and exchange the coupling bolts.

NOTICE

Frequent starting up and high ambient temperature

The service life of the coupling rubbers (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).

Fig. 10 Clearance certificate 7.7025.003.17

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.

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 valves are dirty so that the permissible vacuum value is exceeded. | Clean or replace the regulating valves | Section 7.2 Section 7.4 |
| Blowing capacity is insufficient | Intake filter and/or blow out filter are dirty | Clean or replace the intake filter | Section 7.2.3 Section 7.4 |
| | The pressure line 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 |
| | Discs are damaged | Replace discs | Section 7.2.2 Section 7.4 |

| Fault | Cause | Troubleshooting | Important |
|---|--|---|------------------------------|
| Overpressure or vacuum not achieved | Machine or system leaking | Check the pipework and screw connections for leaks and to ensure that they are firmly seated. | Section 7.2 |
| | Discs are worn or damaged | Replace discs | 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 is dirty. | Clean or replace the filter cartridges | Section 7.2.3 Section 7.4 |
| The regulating valves are dirty so that the permissible pressure and/or vacuum values have been exceeded. | Clean or replace the regulating valve | Section 7.2 Section 7.4 | |
| The machine makes a abnormal noise | The coupling rubbers are worn | Replace coupling rubbers | Section 7.2.4 Section 7.4 |
| | The compressor housing is worn (chatter marks) | Repair by manufacturer or authorised workshop | Elmo Rietschle Service |
| | A regulating valve is vibrating | Replace the valve | Section 7.4 |
| | Discs are damaged | Replace discs | 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-KTA | | | 60 | 80 | 100 | 140 |
|--|-------|-------|-----|-----|---------|---------|
| Sound pressure level (max.) EN ISO 3744 Tolerance ±3 dB(A) | dB(A) | 50 Hz | 76 | 78 | 79 | 81 |
| | | 60 Hz | 78 | 80 | 81 | 83 |
| Sound power level | dB(A) | 50 Hz | - | - | - | 90 |
| | | 60 Hz | - | 90 | 91 | 92 |
| Weight* | kg | | 92 | 101 | 127 | 160 |
| Length* | mm | | 771 | 788 | 975 | 975 |
| Width | mm | | 405 | 405 | 425 | 425 |
| Height | mm | (01) | 320 | 320 | 320 | 320 |
| | | (31) | 366 | 366 | 366 | 366 |
| Vacuum connection | | | G 1 | G 1 | G 1 1/4 | G 1 1/4 |
| Pressure connections | | | G 1 | G 1 | G 1 1/4 | G 1 1/4 |

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

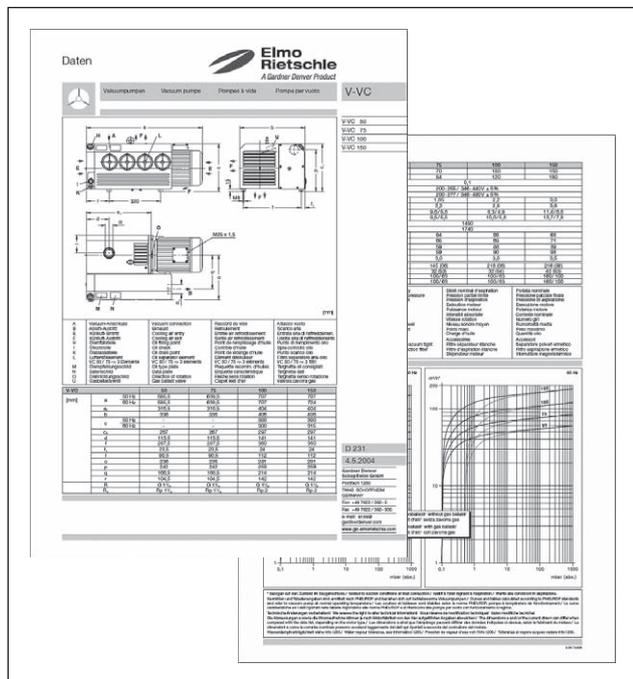


Fig. 13 Data sheet (example)

You will find more technical data on the data sheets **D 452** and **D 453**

- Download the PDF file:
D 452 → V-KTA 60/1 - V-KTA 80/3
D 453 → V-KTA 100/1 - V-KTA 140/3
- Download the PDF file
<http://www.gd-elmorietschle.com>
 → Downloads
 → Product Documents
 → V-Series → Data Sheets

NOTICE
 Subject to technical changes.



**Elmo
Rietschle**
A Gardner Denver Product

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Fax +49 7622 392-300

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 confirms: Gardner Denver Schopfheim GmbH
Postfach 1260
D-79642 Schopfheim

that the machine: of the: Dry running pressure/vacuum pump
Series: V-KTA
Type: V-KTA 40/1, V-KTA 50/1, V-KTA 60/1,
V-KTA 80/1, V-KTA 100/1, V-KTA 140/1
V-KTA 40/2, V-KTA 50/2, V-KTA 60/2,
V-KTA 80/2, V-KTA 100/2, V-KTA 140/2
V-KTA 60/3, V-KTA 80/3, V-KTA 100/3,
V-KTA 140/3
V-KTA 40/4, V-KTA 50/4, V-KTA 60/4,
V-KTA 80/4, V-KTA 100/4, V-KTA 140/4
V-KTA 80/5

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

Gardner Denver Schopfheim GmbH

Roggenbachstr. 58, 79650 Schopfheim Phone: +49/(0)7622/392-0 Fax: +49/(0)7622/392-300

Repairs and/or maintenance of vacuum pumps and components will only be carried out if a declaration has been filled in correctly and completely.

If not, the repair work cannot be started and delays will result.

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

| 1. Type of vacuum pumps/ components | 2. Reason for the submission |
|-------------------------------------|------------------------------|
| Type description: _____ | _____ |
| Machine number _____ | _____ |
| Order number: _____ | _____ |
| Delivery date: _____ | _____ |

| 3. Condition of vacuum pumps/ components | 4. Contamination of the vacuum pumps/ components when in use |
|--|--|
| Was this being operated? YES <input type="checkbox"/> NO <input type="checkbox"/> | Toxic YES <input type="checkbox"/> NO <input type="checkbox"/> |
| Which lubrication was used? _____ | Corrosive YES <input type="checkbox"/> NO <input type="checkbox"/> |
| Was the pump/ component emptied? (Product/Consumables) YES <input type="checkbox"/> NO <input type="checkbox"/> | Microbiological*) YES <input type="checkbox"/> NO <input type="checkbox"/> |
| Has the pump/ component been cleaned and decontaminated? YES <input type="checkbox"/> | Explosive*) YES <input type="checkbox"/> NO <input type="checkbox"/> |
| | Radioactive*) YES <input type="checkbox"/> NO <input type="checkbox"/> |
| | other YES <input type="checkbox"/> NO <input type="checkbox"/> |

Cleaning agent: _____

Cleaning method: _____

*) Microbiological, explosive or radioactively contaminated vacuum pumps/ components will only be accepted with proof that they have been cleaned properly.

Type of toxic substance or process-related, dangerous reaction products with which the vacuum pumps/ components came into contact:

| Trade name, manufacturer's product name | Chemical name | Hazard class | Action to be taken if toxic substances are released | First aid in the event of accidents |
|---|---------------|--------------|---|-------------------------------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

Personal protection measures: _____

Hazardous decomposition products when subjected to thermal load YES NO

Which? _____

5. Legally binding declaration

We swear that the information in this declaration is accurate and complete and that I, the undersigned, am in a position to judge this. We are aware that we are liable to the contractor for damage caused by incomplete and inaccurate information. We undertake to release the contractor from any damage claims from third parties arising from incomplete or incorrect information. We are aware that, regardless of this declaration, we are directly liable to third parties including in particular the contractor's staff entrusted with handling or repairing the product.

Company: _____

Street: _____ Post code/ Town: _____

Phone: _____ Fax: _____

Name (in capitals) _____ Position: _____

Date: _____ Company stamp: _____

Legally binding signature: _____