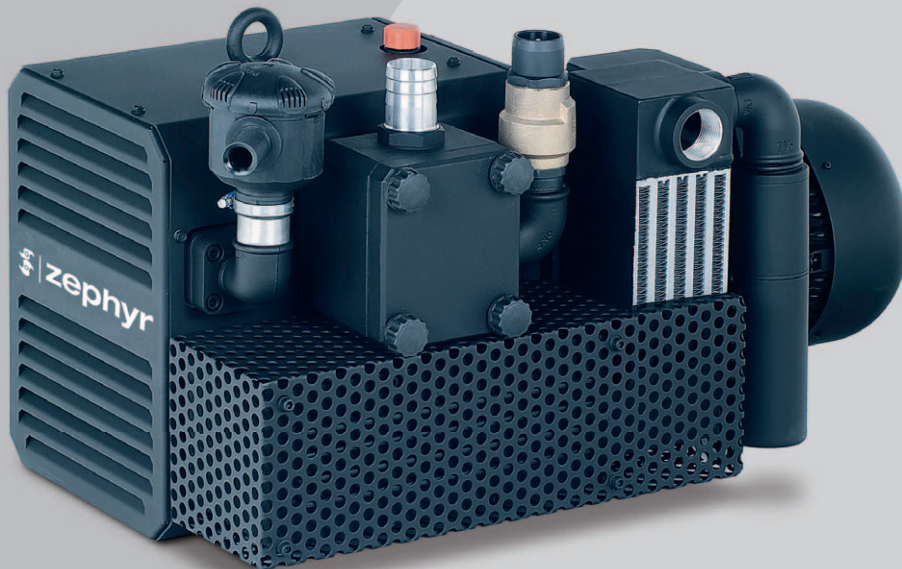


# Original Operating Instructions C-KLR

C-KLR 80 | 140



**Elmo  
Rietschle**  
*A Gardner Denver Product*



**C-Serie  
C-Series**

**Klaue  
Claw**



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## Foreword

### 1 Foreword

#### 1.1 Principles

These operating instructions:

- are a part of the following contact free running claw pressure/vacuum pumps, models C-KLR 80 and C-KLR 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 Zulieferdokumentation und mitgeltende Dokumente

Document	Contents	No.
Supplier documentation	Operating Instructions	BA 883-EN
	Declaration of Conformity	C 0078-EN
	Declaration of harmlessness	7.7025.003.17
Spare parts' list	Spare parts' document	E 883
Data sheet	Technical data	D 883
Info sheet	Storage guidelines for machines	I 150
Manufacturer's declaration	EU Directive 2002/95/EG (RoHS)	—




#### 1.4 Abbreviations

Fig.	Figure
C-KLR	Pressure/vacuum pump
m <sup>3</sup> /h	Flow rate Compressed air/ intake air
bar	Excess pressure/ negative pressure

#### 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

Terms	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.
Claw	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. Contraventions will lead to claims for damages.

## 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:
  - 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, water vapour, liquids or solid materials
- 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
- 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 eyebolts (Fig. 1/1) firmly.
- b) The machine must be suspended on the eyebolt using the lifting device for lifting and transporting.

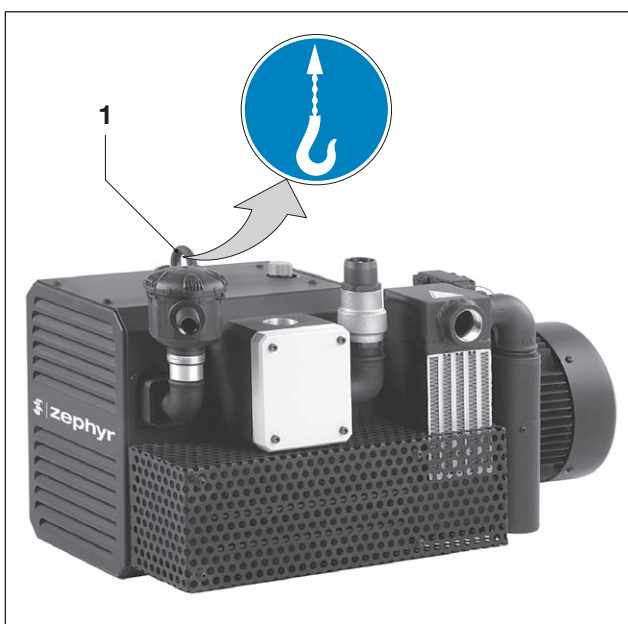


Fig. 1 Lifting and transporting

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%
Storage temperature	-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

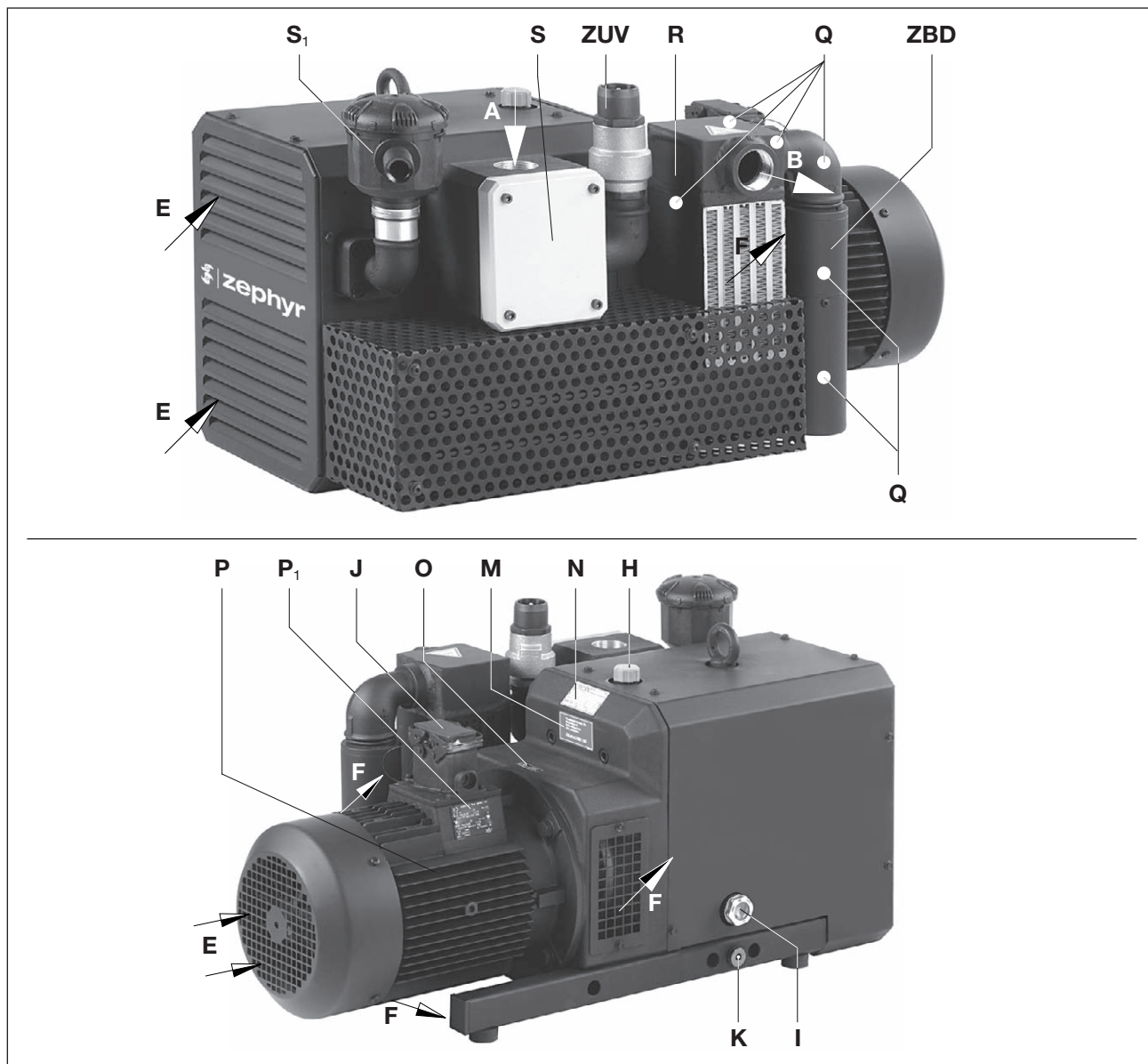


Fig. 2 Pressure vacuum pump C-KLR 80

- |          |                          |                      |                                  |
|----------|--------------------------|----------------------|----------------------------------|
| <b>A</b> | Vacuum connection        | <b>O</b>             | Rotation direction plate         |
| <b>B</b> | Pressure connection      | <b>P</b>             | Drive motor                      |
| <b>E</b> | Cooling air inlet        | <b>P<sub>1</sub></b> | Motor data plate                 |
| <b>F</b> | Cooling air outlet       | <b>R</b>             | Compressed air aftercooler       |
| <b>H</b> | Oil filling point        | <b>S</b>             | Suction filter ' suction air     |
| <b>I</b> | Oil sight glass          | <b>S<sub>1</sub></b> | Suction filter' Interim charging |
| <b>J</b> | Plug-connector           | <b>Q</b>             | hot surfaces > 70°C              |
| <b>K</b> | Oil discharge point      | <b>ZBD</b>           | Pressure relief valve            |
| <b>M</b> | Oil recommendation plate | <b>ZUV</b>           | Vacuum relief valve              |
| <b>N</b> | Data plate               |                      |                                  |

### 4.1.1 Data plate

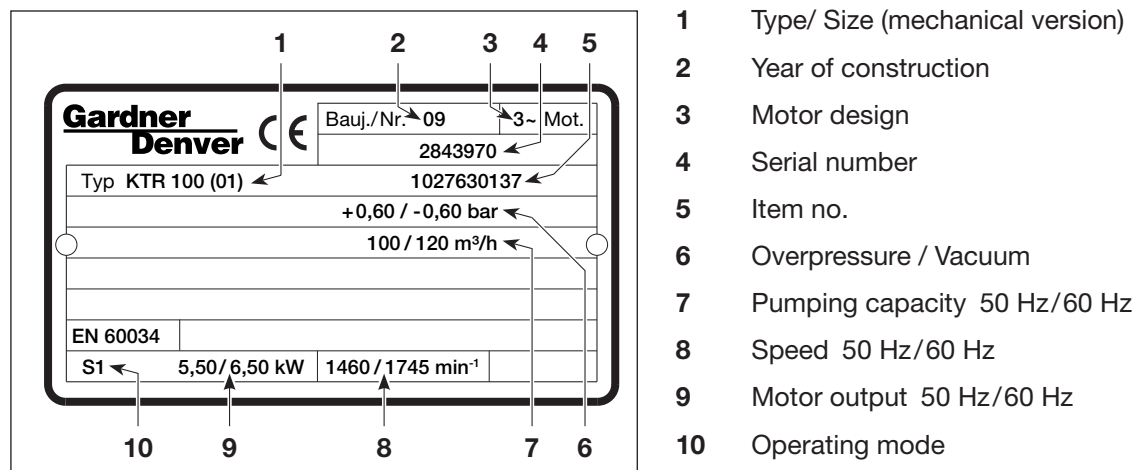


Fig. 3 Data plate (example)

### 4.2 Description

The ZEPHYR C-KLR is a double shaft rotary piston pressure vacuum pump in which the claws roll off against each other contact free and dry. The counter-rotating claw rotors are synchronised by a gear pair in the gearbox. The synchronous gearbox gear wheels and the bearing on the motor side are lubricated with oil. These components are in a gearbox that also contains the oil supply. Oil conveying devices always ensure that the bearings and the gear wheels are sufficiently supplied with oil at all permissible speeds. The feed chamber has no sealants or lubricants. The gearbox and the compression chamber are separated from each other by special seals. The gearbox is sealed from the outside with piston sealing rings and O rings, the compressor chamber with piston rings.

The ZEPHYR C-KLR is enclosed in an insulation hood. In order to dissipate compression heat, the cooling air is sucked through between the machine and the hood using drum fan that sucks in the fresh cooling air (Fig. 2/E) and discharges the heated air out of the cooling air outlet (Fig. 2/F). The compressed air aftercooler (Fig. 2/R) provides a low blowing air temperature. The ZEPHYR C-KLR is driven by standard flanged three-phase motors via a coupling (with an elastomer component).

Relief valves (Fig. 2/ZUV) and (Fig. 2/ZBD) are installed as standard to protect against overload..

### 4.3 Areas of application

These contact free running claw pressure vacuum pumps models C-KLR 80 and C-KLR 140 are suitable for creating pressure and vacuum at the same time. Constant operation is permissible.

The nominal flow rate is 80 and 140 m<sup>3</sup>/h at 50 Hz. The load limits (bars) on the intake and pressure sides are specified on the data plate (Fig. 2/N). Data sheet D 883 shows the dependency of the flow rate on the excess pressures.



If the unit is switched on more frequently (at regular intervals of about 12 times (C-KLR 80) or 10 times (C-KLR 140) per 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 oil filling point (Fig. 2/H), oil sight glass (Fig. 2/I) and the oil outlets (Fig. 2/K) must be easily accessible. The cooling air inlets (Fig. 2/E) and the cooling air outlets (Fig. 2/F) must be at least 20 cm away from adjacent walls. Cooling air coming out must not be sucked in again. For maintenance work there must be a minimum of 40 cm in front of the inlet filters (Fig. 2/S, 2/S<sub>1</sub>).

#### 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:

- Even and level
- The bearing surface must be designed to be able to take the weight of the machine



It is possible to install the machine on a firm base without anchoring. When installing on a sub-structure 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.

**The pumping capacity of the machine is reduced if the suction pipe is too narrow and/or too long.**

- b) Check to ensure the intake line and pressure connection 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 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 Relief valves

As a protection against overload safety valves (Fig. 2/ZUV) and (Fig. 2/ZBD) are installed as standard.

#### NOTICE

**Do not operate without standard relief valves.**  
If the permissible final compression pressure and the permissible vacuum are exceeded (see data plate) the machine may be damaged.

## Installation

### 5.5 Filling with lubricating oil

- a) Fill the lubricating oil (for suitable types see „Maintenance“) for the gear wheels and bearings at the oil filling point (Fig. 2/H) up to the middle of the sight glass (Fig. 2/I).
- b) Close the oil filling point.

### 5.6 Connecting the motor



#### **DANGER**

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

The electrical installation must only be done by a qualified 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 (Fig. 2/P<sub>1</sub>). The motors comply with DIN EN 60034 and are in protection class IP55 and insulation class F. The appropriate connection diagram is located in the motor's terminal box (not for the plug connection version). The motor data must be compared with the data of the existing mains network (current type, voltage, network frequency, permitted current value).
- b) Connect the motor via the plug connection (Fig. 2/J) or a motor protection switch (for safety reasons a motor protection switch is required and cable fitting must be provided to provide strain relief for the connection cable). We recommend using motor protection switches with delayed switch off, depending on possible excess current. Temporary excess current may 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:

- ± 5% Voltage deviation
- ± 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.

## Commissioning and decommissioning

### 6.1.1 Checking the rotation direction

- ▷ The intended direction of rotation of the drive shaft is shown by the rotary 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 anti-clockwise.



#### NOTICE

##### **Incorrect direction of rotation**

Running in reverse for a long time may damage the machine.

Use a phase sequence indicator to check the direction of rotation (**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.	—
monthly	Check the oil level	7.2.1
5.000 h	Changing the oil	
monthly/ every 6 months	Clean or replace filter cartridge	7.2.2
at least once a year	Check for coupling wear	7.2.3

7.2.1 Changing the oil

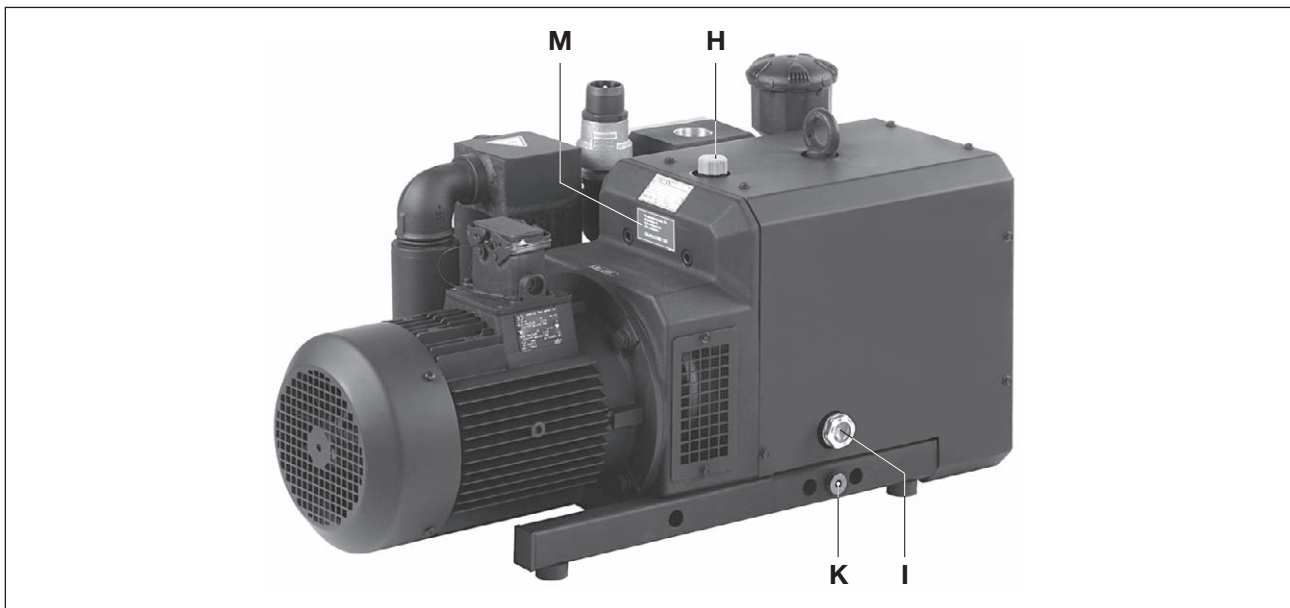


Fig. 4 Changing the oil

- H** Oil filling point
- I** Oil sight glass
- K** Oil discharge point
- M** Oil recommendation plate

**NOTICE**

Always change the oil when the machine is at operating temperature and in an atmospherically ventilated area. If it is not completely emptied the amount that can be refilled is reduced.

The waste oil must be disposed of in compliance with the local environmental protection regulations. If you change the type of oil, empty the oil tank completely.

The oil level in the sight glasses (Fig. 4/I) must be checked every month. The machine must be switched off and vented to atmospheric pressure to top up the oil. With clean operations the oil must be changed after every 5,000 operating hours. The oil viscosity must comply with ISO VG 150 as per DIN 51519. Designation as per DIN 51502: CLP HC 150. *We recommend the following oil brand: GEAR-LUBE 150 or equivalent oils by other manufacturers (also see oil recommendation plate (Fig. 4/M)).*

### 7.2.2 Air filtering

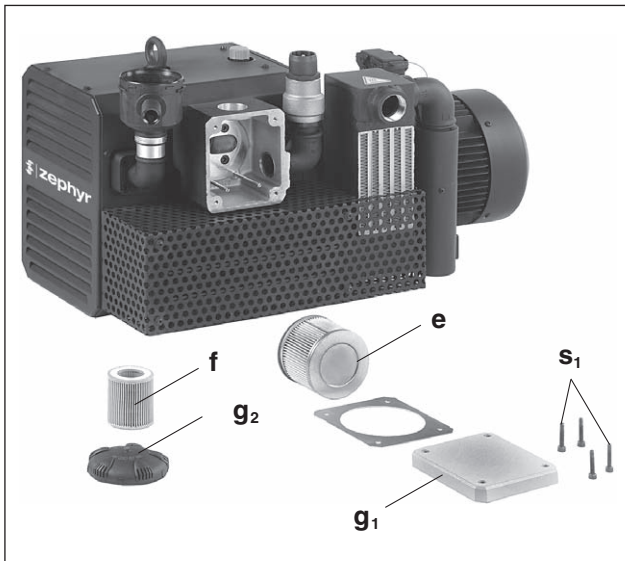


Fig. 5 Suction filter

- e Filter cartridge for inlet air
- f Filter cartridge interim charging
- g<sub>1</sub> Filter housing cover
- g<sub>2</sub> Suction filter cover
- s<sub>1</sub> Screws

#### NOTICE

##### Insufficient maintenance on the air filter

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

The filter cartridges (Fig. 5/e) for intake air and (Fig. 5/f) for interim charging must be cleaned by blowing through from the inside out depending on how dirty they are. In spite of cleaning the filter its separation efficiency will continue to deteriorate. Therefore the filters should be replaced every six months.

The filter cartridge (e) can be removed for cleaning after removing the screws (Fig. 5/s<sub>1</sub>) and the filter housing lid (Fig. 5/g<sub>1</sub>). The filter cartridge (f) can be removed for cleaning after unscrewing the suction filter cover (Fig. 5/g<sub>2</sub>).

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.**

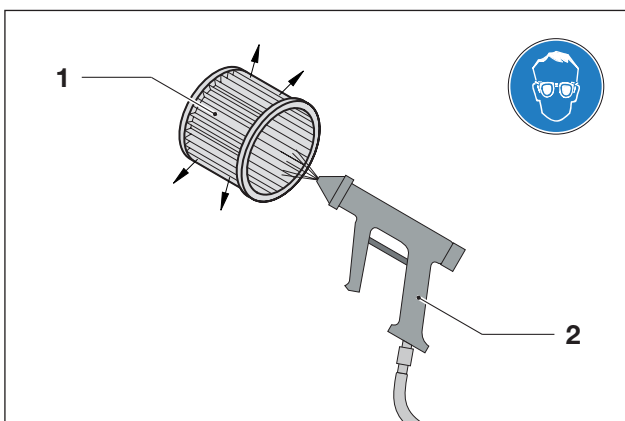


Fig. 6 Purging filter cartridge

- 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.

7.2.3 Coupling

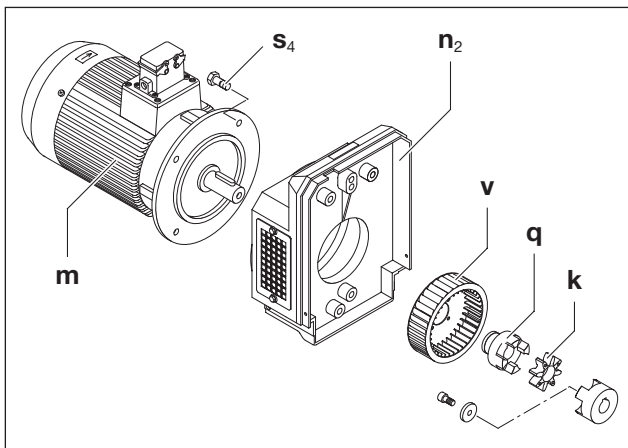


Fig. 7 Coupling C-KLR 80

- k** Coupling sprocket
- m** Motor
- n<sub>2</sub>** Fan housing
- q** Coupling half on the motor side
- s<sub>4</sub>** Screws
- v** Fan

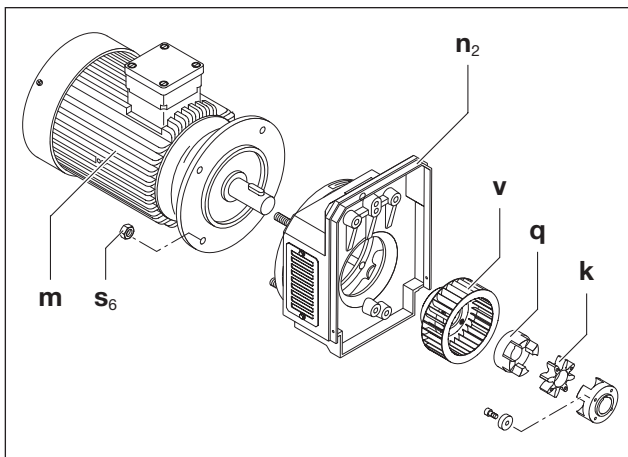


Fig. 8 Coupling C-KLR 140

- k** Coupling sprocket
- m** Motor
- n<sub>2</sub>** Fan housing
- q** Coupling half on the motor side
- s<sub>6</sub>** Hexagonal nut
- v** Fan

The coupling sprocket (Fig. 7/k, 8/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. 7/m, 8/m) off and ensure that it cannot be switched on again.

**C-KLR 80**

Undo the screws (Fig. 7/s<sub>4</sub>) on the motor flange. Remove the motor with the coupling half on the motor side (Fig. 7/q) from the fan housing (Fig. 7/n<sub>2</sub>) axially and suspend using a lifting tool. If the sprocket (Fig. 7/k) is damaged or worn, then replace it. The fan (Fig. 7/v) should also be checked for damage from time to time and replaced if necessary.

**C-KLR 140**

Undo the hexagonal nuts (Fig. 8/s<sub>6</sub>) on the motor flange. Remove the motor with the coupling half on the motor side (Fig. 8/q) from the fan housing (Fig. 8/n<sub>2</sub>) axially and suspend using a lifting tool. If the sprocket (Fig. 8/k) is damaged or worn, then replace it. The fan (Fig. 8/v) should also be checked for damage from time to time and replaced if necessary.

**NOTICE**

**Frequent starting up and high ambient temperature**

The service life of the sprocket (Fig. 7/k, 8/k) is reduced.

Re-assemble in reverse order.

7.3 Reparatur/ 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. 9 Clearance certificate 7.7025.003.17

**NOTICE**

For each machine that is sent to an Elmo Riet-schle 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.

7.4 Spare parts

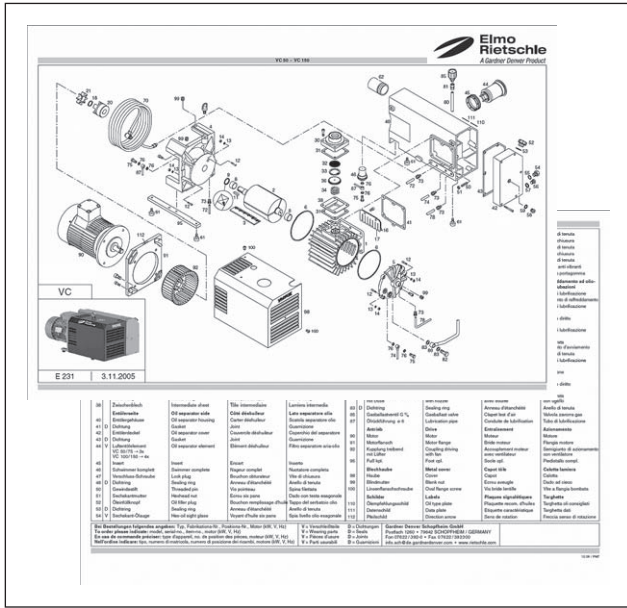


Fig. 10 Spare parts list (example)

Order spare parts in accordance with the:

- Spare parts list :  
 E 883/1 → C-KLR 80  
 E 883/2 → C-KLR 140
- Download the PDF file:  
<http://www.gd-elmorietschle.com>  
 → Downloads  
 → Product Documents  
 → C-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. 11 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 suction filter cartridges are dirty	Clean or replace the filter cartridges	Section 7.2.2 Section 7.4
	The relief valves are dirty so that the permissible pressure and/or vacuum values have been exceeded.	Clean or replace the regulating valves	Section 7.2 Section 7.4
Intake or blowing power is not sufficient	The suction filter cartridges are dirty	Clean or replace the filter cartridges	Section 7.2.2 Section 7.4
	Lines are 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

## Malfunctions: Causes and elimination

Fault	Cause	Troubleshooting	Important
Excess pressure 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
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 suction filter cartridges are dirty	Clean or replace the filter cartridges	Section 7.2.2 Section 7.4
The relief valves are dirty so that the permissible pressure and/or vacuum values have been exceeded.	Clean or replace the regulating valves	Section 7.2 Section 7.4	
The machine makes an abnormal noise	Deposits on the rotary piston	Clean the working space and the rotary piston	Elmo Rietschle Service
	A relief valve is vibrating	Replace the valve	Section 7.4
<b>Please contact Elmo Rietschle Service for other malfunctions or those that cannot be eliminated.</b>			

## 9 Technical Data

C-KLR			80	140
Sound pressure level (max.) EN ISO 3744 Tolerance ± 3 dB(A)	dB(A)	50 Hz	83	85
		60 Hz	88	88
Sound power level	dB(A)	50 Hz	94	97
		60 Hz	99	99
Weight *	kg		120	160
Length *	mm		778	1016
Width	mm		387	355
Height	mm		415	500
Vacuum connection			G 1 1/4	G 1 1/2
Pressure connection			G 1 1/4	G 1 1/2
Correct amount of oil	l		0,55	0,60

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

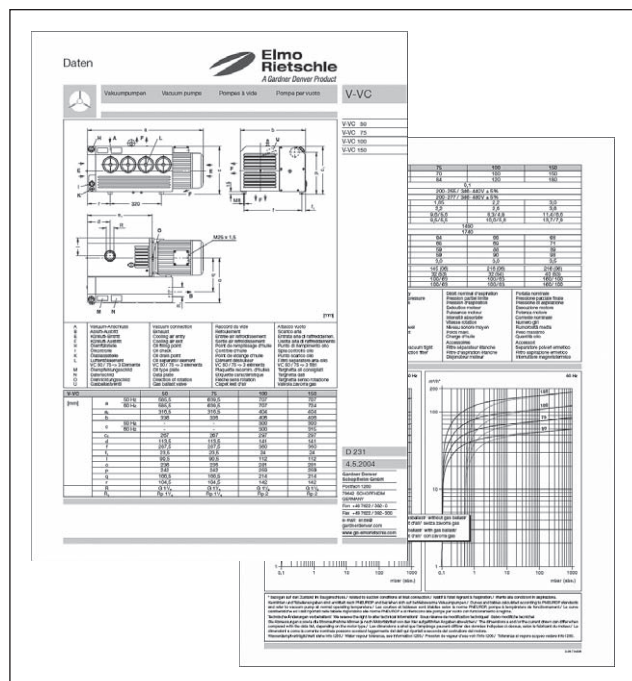


Fig. 12 Data sheet (example)

You will find more technical data on the data sheet **D 883**

- Download the pdf file:  
**D 883** → C-KLR 80 / C-KLR 140
- Download the pdf file:  
<http://www.gd-elmorietschle.com>  
→ Downloads  
→ Product Documents  
→ C-Series → Data Sheets

### NOTICE

Subject to technical changes.



**Elmo  
Rietschle**  
*A Gardner Denver Product*

[www.gd-elmorietschle.com](http://www.gd-elmorietschle.com)  
[er.de@gardnerdenver.com](mailto:er.de@gardnerdenver.com)

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**Gardner Denver  
Schopfheim GmbH**  
Roggenbachstraße 58  
79650 Schopfheim · Deutschland  
Tel. +49 7622 392-0  
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:** Claw pressure/vacuum pump

**of the:** Series: C-KLR  
Type: C-KLR 80, C-KLR 85, C-KLR 100,  
C-KLR 110, C-KLR 115, C-KLR 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, 01.8.2010

  
\_\_\_\_\_  
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: \_\_\_\_\_