

COMPRESSED AIR
PUSHING YOU FORWARD

OPERATING INSTRUCTIONS

RS-PRO



TRANSLATION OF THE ORIGINAL OPERATING INSTRUCTIONS



25025_EN_06



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1 GENERAL INFORMATION

1.1 FOREWORD

These operating instructions apply for the following compressors:

- RS-PRO; RSF-PRO
 - RSK-PRO; RSKF-PRO
 - RSD-PRO; RSDF-PRO
 - RSDK-PRO; RSDKF-PRO
 - RSDKM-PRO; RSDKMF-PRO
- Performance class 3,0 – 11,0; 2-11,0 – 18,5; 2-15,0 – 37,0; 2-30,0 – 55,0 kW

Illustrations are for basic understanding and may differ from the actual design.

1.2 TARGET GROUP

These operating instructions are intended for all persons who work with or on the compressor.

1.3 MANUFACTURER

RENNER GmbH Kompressoren
Emil-Weber-Straße 32
D-74363 Güglingen
Tel.: +49 7135 93193 0
Fax: +49 7135 93193 50
www.renner-kompressoren.de

1.4 INFORMATION ON THE OPERATING INSTRUCTIONS

1.4.1 SAFE-KEEPING AND COMPLETENESS

These operating instructions are part of the compressor and must be readily available to authorised personnel at all times.

Never remove pages from these operating instructions. Missing operating instructions or missing pages must be replaced immediately.

1.4.2 COPYRIGHT

These operating instructions and the supplier documents contain information protected by copyright. Without prior consent of the manufacturer, this information must not be photocopied, duplicated, translated or put on data carriers, neither as a whole or in extracts.

The manufacturer reserves all other rights.

1.4.3 LIMITATION OF LIABILITY

All information and instructions in these operating instructions have been compiled on the basis of the applicable standards and regulations, the latest standards of technology and many years of knowledge and experience.

The general terms and conditions of the manufacturer apply. Furthermore, the manufacturer assumes no liability for damage due to:

- Failure to observe the operating instructions
- Improper use
- Use of untrained personnel
- Inadequate maintenance, care and repair
- Unauthorised modifications
- Technical changes
- Failure to use safety-relevant original spare parts

1.4.4 SUPPLIER DOCUMENTS

The following documents are part of these operating instructions:

- Operating instructions for the control system incl. circuit diagram
- Frequency converter operating instructions
- Control system frequency converter operating instructions
- Refrigeration dryer operating instructions
- Container papers

1.5 IDENTIFICATION OF THE COMPRESSOR

The compressor is identified by the name plate attached to the housing.

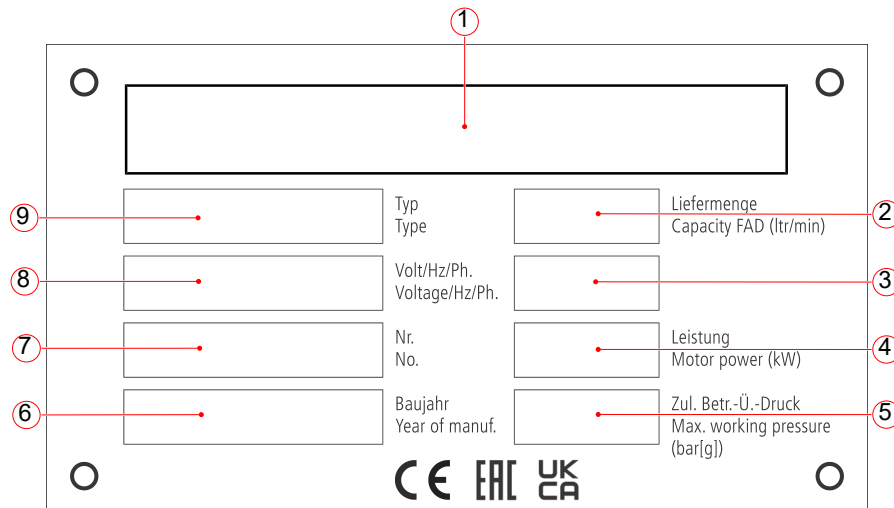


Illustration 1: Name plate

- | | | | |
|---|--|---|----------------------|
| 1 | Manufacturer | 2 | Capacity |
| 3 | Additional information (optional) | 4 | Power requirement |
| 5 | Maximum permissible operating pressure | 6 | Year of construction |
| 7 | Serial number | 8 | Power supply |
| 9 | Compressor type | | |

1.6 MODIFICATIONS

For safety reasons, modifications or alterations are only permitted with the agreement of the manufacturer.

After compressor conversion, it may be necessary to repeat the procedure for conformity assessment according to the Machinery Directive 2006/42/EC and the risk and hazard assessment.

1.7 SERVICE

Please contact an authorised dealer if you have any technical issues or questions about ordering spare parts, maintenance and repairs.

Have the operating hours and the following compressor information to hand:

- Compressor type.
- Serial number.
- Year of construction.

These characteristics are stated on the compressor's name plate.

Contact an authorised dealer



NOTICE!

Exclusively use original replacement parts and lubricants

Only original spare parts and lubricants meet the highest quality standards. They ensure safe operation and a long service life for the compressor. Spare parts and lubricants can be ordered from an authorised dealer.

2 SAFETY ADVICE

**WARNING!****Risk of injury in case of insufficient qualification**

Improper handling can lead to considerable personal injury and property damage.

- Only allow activities to be carried out by the persons named in these operating instructions.

**NOTICE!****Comply with accident prevention regulations and laws**

It should be understood that the following safety advice is in addition to the national accident prevention regulations and laws that currently apply.

Existing accident prevention regulations and laws must be complied with at all times.

The compressor has been built according to the latest technical standard and according to recognised safety regulations and is equipped with protective devices. However, residual dangers cannot be excluded.

The compressor should only be operated if:

- The required technical qualifications are met.
- Complete instructions have been received from the operator.
- The operating instructions were completely read and understood.

2.1 HAZARD CATEGORIES

**DANGER!****Danger**

Warns of imminent danger that can lead to death or serious injury if not avoided.

**WARNING!****Warning**

Warns of a potential imminent danger that can lead to death or serious injury and/or serious damage to the compressor if not avoided.






**CAUTION!****Caution**

Warns of a potentially hazardous situation that can result in minor personal injury or damage to the compressor if not avoided.






**NOTICE!****Advice**

Indicates particularly important information.

2.2 PICTOGRAMS

	Danger This pictogram warns of an imminent danger.
	Electrical hazard This pictogram warns of an imminent electrical hazard.
	Thermal hazard This pictogram warns of an imminent thermal hazard.
	Automatic mode This pictogram indicates that the compressor is remotely operated and can start without warning.
	Advice This pictogram indicates particularly important information.

2.3 PERSONAL PROTECTIVE EQUIPMENT

	Protective clothing Wear protective clothing to protect against harmful influences.
	Ear protection Wear ear protection to protect hearing from loud noises.
	Safety shoes Wear safety shoes to protect feet from harmful influences.
	Safety goggles Wear eye protection to protect eyes from harmful influences.
	Protective gloves Wear protective gloves to protect hands from harmful influences.

2.4 GENERAL HAZARDS

2.4.1 MECHANICAL HAZARDS

**WARNING!****Risk of injury from moving or ejected parts**

Moving or ejected parts can lead to injuries if protective devices are missing or open.

- Only trained personnel are allowed to clean and maintain the compressor.
- Only remove protective devices to perform the necessary cleaning and maintenance.
- Do not reach into moving parts during operation.
- Check the drive belt tension and the alignment of the pulley discs regularly.
- Remove loose objects on or in the compressor immediately.
- Wear personal protective equipment.

**WARNING!****Danger of injury due to suspended loads**

Suspended loads can cause injuries.

- Only qualified personnel are allowed to move the compressor.
- Use suitable lifting equipment.
- Do not remain in the danger area longer than necessary.
- Secure all loose and swinging parts of the compressor.
- Wear personal protective equipment.

**WARNING!****Risk of injury from high pressure fluid jet**

Components and fluids, which can be under pressure even when the compressor is switched off, can cause injuries.

- Vent the compressor before starting work.
- Do not remove protective devices.
- Check fittings and connections regularly for tight fit.
- When performing cleaning and maintenance, slowly dismantle the fittings.
- Wear personal protective equipment.

**CAUTION!****Property damage due to overloading**

Overloading can damage the compressor.

- Do not exceed the technical limits.

**CAUTION!****Danger of injury due to slipping**

Fluid accumulation in the floor area of the compressor can lead to slipping.

- Remove any accumulations of fluids.
- Wear personal protective equipment.

**CAUTION!****Danger of injury due to tripping.**

Surrounding tools or lines can cause tripping.

- Keep the workplace clean.
- Lay the cables in such a way that no tripping hazards arise.

**CAUTION!****Danger of injury due to sharp edges and sharp corners**

Sharp edges and corners can cause cuts.

- Wear personal protective equipment.

**CAUTION!****Risk of injury from the safety valve**

When safety valves blow off air, hot air can escape under high pressure.

- Do not remain in the danger area longer than necessary.
- Wear personal protective equipment.

2.4.2 ELECTRICAL HAZARDS



DANGER!

Danger to life due to live parts

There is an immediate danger of electrocution in the event of contact with live parts.

- Disconnect the compressor from the power supply before starting any work.
- Before starting any work, make sure there is no line voltage.
- Before starting any work, flip the main switch and secure it from being switched on again by third parties.
- Disconnect external voltage sources.
- Put up corresponding prohibition and warning signs for third parties.
- Secure live cables against contact.
- Do not touch live cables.
- Report defective lines and replace them to the extent possible.
- Keep the door E-box closed.
- Only qualified electricians are allowed to perform electrical work.
- Wear personal protective equipment.



DANGER!

Danger due to unexpected starting of the compressor

This compressor is controlled remotely and can start without warning.

- Disconnect the compressor from the power supply before starting any work.
- Before starting any work, flip the main switch and secure it from being switched on again by third parties.
- Put up corresponding prohibition and warning signs for third parties.
- Before starting any work, check that there is no line voltage.

2.4.3 THERMAL HAZARDS

**WARNING!****Danger of burns due to hot surfaces**

When working on the compressor, burns can occur due to hot surfaces.

- Do not touch surfaces immediately after opening the doors.
- Allow compressor to cool.
- Wear personal protective equipment.

**WARNING!****Danger of burns due to hot oil**

Unscrewing the oil plug may cause burns.

- Allow compressor to cool.
- Unscrew the oil plug slowly.
- Wear personal protective equipment.

**WARNING!****Danger of burning due to hot oil / air mixture**

When opening the cover of the safety valve, burning due to hot oil / air mixture may occur.

- Allow compressor to cool.
- Wear personal protective equipment.

**WARNING!****Danger of burns due to spewing oily condensate**

When working on the compressor, burns can occur due to contact with hot oily condensate.

- Allow compressor to cool.
- Vent the compressor before starting work.
- Wear personal protective equipment.

2.4.4 DANGER DUE TO NOISE

**WARNING!****Danger due to high sound pressure level during operation**

The high sound pressure level during operation can cause hearing damage.

- Do not remain in the danger area longer than necessary.
- Do not remove protective devices during operation.
- Wear personal protective equipment.

2.4.5 DANGER DUE TO MATERIALS AND OTHER SUBSTANCES

**WARNING!****Danger of injury from compressed air**

- Injuries can occur during cleaning and maintenance that require compressed air.
- Never aim compressed air at humans or animals.

**CAUTION!****Danger due to flammable materials**

- The compressor has hot surfaces on which flammable materials can ignite.
- Flammable materials must not be near the compressor.

**CAUTION!****Danger of injury due to contact with liquids**

- Injuries can occur through contact with oils and oily condensate during work.
- Wear personal protective equipment.
 - Clean affected areas immediately.
 - In case of contact with eyes or mucous membranes, rinse thoroughly with water and, if necessary, consult a doctor.

2.5 INTENDED USE AND PREDICTABLE MISUSE

**WARNING!****Danger due to misuse**

Misuse of the compressor can lead to dangerous situations.

- Only operate the compressor for its intended use.

INTENDED USE

For the intended use of the compressor, observe the following:

- Use the compressor only to compress technically pure air without harmful or explosive impurities.
- Maintain the surrounding boundaries at the installation site.
- Work with or on the compressor may only be carried out by authorised persons.
- The compressor may only be operated with the installed safety and protective devices.
- The safety advice and operating information must be observed.
- The operating instructions of the operator must be observed.
- The legal accident prevention regulations must be complied with.

PREDICTABLE MISUSE

Foreseeable misuse includes:

- Operation of the compressor by unauthorised persons.
- Operation with missing, modified or defective safety and protective devices.
- Operation in disregard of the safety advice and operating regulations.
- Operation without additional treatment of the compressed air in the foodstuffs and breathing air sector.
- Operation in an explosive environment.

2.6 AUTHORISED PERSONS

Persons are regarded as authorised when they have been appointed with certain work on or with the compressor as instructed. Only authorised persons may gain access to the key for the protective devices.

2.7 RESPONSIBILITY OF THE OPERATOR

When using the compressor in a commercial setting, the operator is subject to the statutory obligations for occupational safety in accordance with the BetrSichV (Operational Safety Ordinance).

In addition to the safety advice in these operating instructions, the applicable safety, accident prevention and environmental protection regulations must be observed. In particular, the following applies:

The operator must inform themselves of the applicable occupational health and safety regulations and, in a risk assessment, determine additional dangers that result from the special working conditions at the location of the compressor. The operator must implement these in the form of operating instructions for the operation of the compressor.

In Germany, compressors are subject to the professional association rules and regulations DGUV Rule 100 - 500, Chapter 2.11. These rules and regulations govern the installation, operation and testing.

PROTECTION OF PERSONNEL

The operator must ensure that the required personal protective equipment is available for the authorised persons and used.

SAFETY OF THE COMPRESSOR

The operator must ensure that:

- The compressor is only used as intended.
- The compressor is only operated in a faultless and fully functional condition.
- The integrated safety devices are regularly checked and maintained.
- Only adequately qualified and authorised personnel operate, clean, test and service the compressor.

INSTRUCTION AND TRAINING

The operator must ensure that:

- Prior to initial start up, personnel are instructed in all relevant issues of work safety and environmental protection.
- The personnel is regularly trained to work with or on the compressor.
- The personnel has read and understood the operating instructions and the supplier documents.
- The operating instructions and supplier documents are always in a legible state and are fully available at the installation site of the compressor.
- The attached warning information is not removed and remains legible.

2.8 PERSONNEL REQUIREMENTS

Safety risks during use and malfunctions of the compressor can often be traced back to inadequate care or improper operation.

The following qualifications are named for various areas of activity:

- Person trained in operation and care as well as simple regular maintenance has been instructed by the operator about the work assigned to them and the possible dangers.
- Qualified personnel and authorised specialist dealers for maintenance and repairs are, on the basis of their training, able to carry out the work assigned to them and to recognise dangers independently.

2.9 PROTECTIVE DEVICES

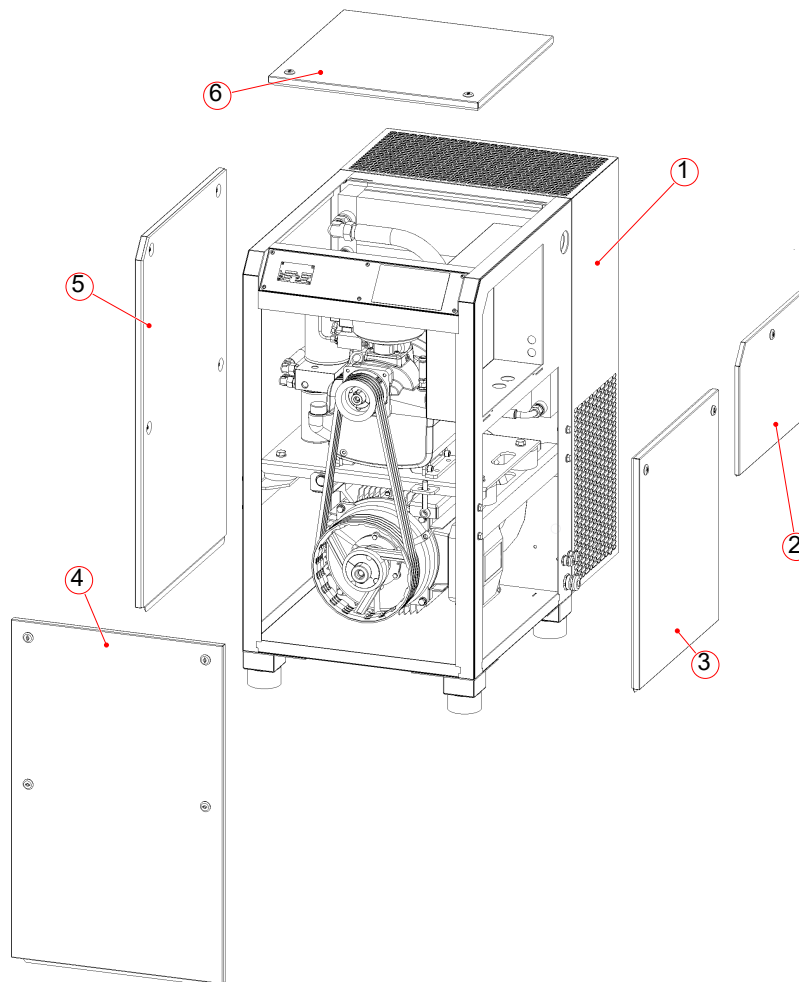


Illustration 2: Protective devices

- | | |
|----------------------|--------------|
| 1 Rear duct silencer | 2 Door E-box |
| 3 Door right | 4 Front door |
| 5 Door left | 6 Top door |



NOTICE!

Do not remove protective devices

The protective devices must not be removed during operation. Only authorised persons may gain access to the key for the protective devices.

2.9.1 DOORS

The doors provide protection against unauthorised access to the interior of the compressor and reduce the sound pressure level during operation.

Only authorised persons may gain access to the key for the protective devices.

2.9.2 REAR DUCT SILENCER

The rear duct silencer reduces the sound pressure level during operation.

2.10 SAFETY DEVICES

2.10.1 SAFETY VALVE

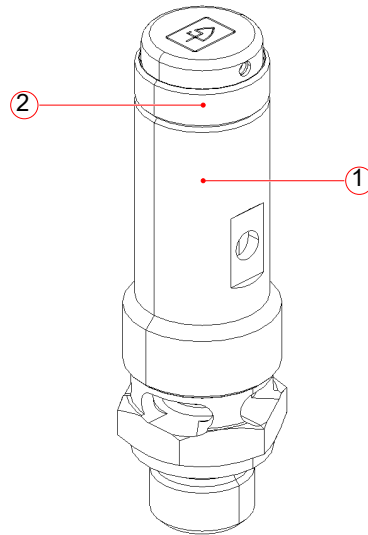


Illustration 3: Safety valve

1 Safety valve

2 Cover

The safety valve blows off in the event of an impermissible pressure increase in the compressor.

2.10.2 EMERGENCY STOP BUTTON

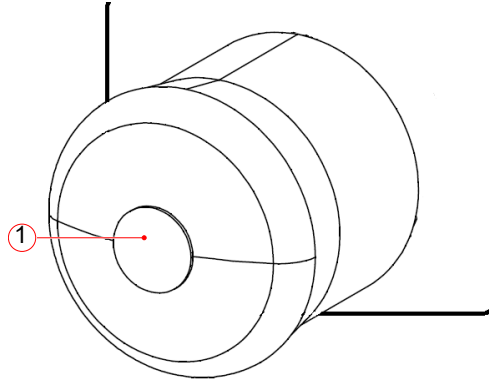


Illustration 4: Emergency stop button

1 Emergency stop button

In an emergency, the compressor can be stopped using the emergency stop button.



NOTICE!

Install the mains disconnection device on-site

The compressor can be disconnected from the supply voltage and switched off for decommissioning via the mains isolating device installed by the customer (e.g. main switch).

The mains isolating device for the electrical energy supply must comply with EN 60204-1!

3 TRANSPORT, STORAGE, INSTALLATION

**WARNING!****Danger of injury due to suspended loads**

Suspended loads can cause injuries.

- Only qualified personnel are allowed to move the compressor.
- Use suitable lifting equipment.
- Do not remain in the danger area longer than necessary.
- Secure all loose and swinging parts of the compressor.
- Wear personal protective equipment.

**CAUTION!****Risk of injury during transport and installation**

During transport and installation of the compressor, parts of the body may be crushed by its own weight. The compressor can tilt at an inclination of more than 10°.

- Loading and transport only by qualified personnel.
- Use suitable lifting and transport equipment.
- Note the centre of gravity.
- Secure the compressor against slipping and tipping over.
- Do not remain in the lifting area.
- Install the compressor on level, firm ground.
- Wear personal protective equipment.

3.1 TRANSPORT

The compressor is delivered on a pallet. The compressor is packed in a labelled foil, possibly in a cardboard box.

To rule out transport damage to the compressor, the overall condition of the compressor must be checked and noted on delivery.

**NOTICE!****Report transport damage immediately**

Transport damage must be immediately reported and noted on the delivery note.

3.2 STORAGE

For correct storage of the compressor, observe the following:

- Store the compressor - if possible in its original packaging - and protect it from UV radiation.
- Do not store the compressor outdoors without weather protection.
- Store the compressor at an ambient temperature below 40 °C.
- Store the compressor at a relative humidity below 60 % in order to avoid the formation of condensation and mould.
- To avoid corrosion damage, do not cover the compressor airtight.
- If present, slacken the drive belt.
- Place the compressor on level, firm ground.
- The motor and air end shaft must be turned by hand once a month and brought to a stop in a different position than at the beginning. Five turns in the direction of rotation are sufficient.
- Connect compressors with frequency converters to the power supply once a year to maintain the charge of the capacitors.
- After 6 months of storage, contact the authorised specialist dealer for preservation.

3.3 INSTALLATION

For installation of the compressor, observe the following:

- Maintain the surrounding boundaries at the installation site.
- Ambient temperature min. +2 °C / max. +40 °C.
- Absolute humidity of the intake air max. 20 g/m³.
- Installation site up to 1000 m above sea level.
- Deviations are possible for special designs. See the data sheet for the compressor.
- The intake air must be clean, dust-free and free of corrosive media.
- Set up the compressor on level, solid ground and protect it against tipping.
- Observe the load-bearing capacity of the building ceilings due to the weight.
- Set up the compressor in low-humidity environments in order to avoid the formation of condensation and mould.
- Do not use the compressor outdoors without weather protection.
- When installing several compressors, make sure no compressor can draw in the heated exhaust air of another compressor.
- Ensure adequate ventilation at the installation site. An exhaust air duct must have at least the cross section of the radiator outlet surface at a length of max. 3 m including a 90° bend. With a longer exhaust duct, an additional fan with 20% more power than the one already installed should be used.
- The air inlet and outlet must be free.
- A distance of at least 0.8 m must be maintained on all sides in order to carry out maintenance.
- Arrange air inlet in a position where loose objects cannot be drawn in.
- Ensure that there is sufficient lighting at the installation site for optimum operation and maintenance.

3.4 CONNECTIONS

The compressor is piped and wired ready for operation.

3.4.1 COMPRESSED AIR SUPPLY

When connecting to the compressed air supply, note the following:

- Connect the compressor to the compressed air supply with the power off and with vibration isolation. As a result of heating, the connection between the compressed air outlet and the compressed air supply can expand. A hose should therefore be fitted.
- Remove all covers before installing the pipeline.
- Use fittings and connections suitable for the operating pressure. The operating pressure can be found on the name plate.
- A ball valve should be attached to the compressed air outlet to make inspections and maintenance easier. This means the compressed air supply does not have to be depressurised.
- A non-return valve is already installed in the compressor.

3.4.2 POWER SUPPLY



DANGER!

Danger to life due to live parts

There is an immediate danger of electrocution in the event of contact with live parts.

- Disconnect the compressor from the power supply before starting any work.
- Before starting any work, make sure there is no line voltage.
- Before starting any work, flip the main switch and secure it from being switched on again by third parties.
- Disconnect external voltage sources.
- Put up corresponding prohibition and warning signs for third parties.
- Secure live cables against contact.
- Do not touch live cables.
- Report defective lines and replace them to the extent possible.
- Keep the door E-box closed.
- Only qualified electricians are allowed to perform electrical work.
- Wear personal protective equipment.

For safe connection to the power supply, observe the following:

- Connection to the power supply may only be carried out by a qualified electrician.
- Only connect the compressor to the voltage specified on the name plate.
- Consider electrical data and do not exceed limit values [► 10].
- Information on cable cross-sections are correct for the following conditions of use:
 - Ambient temperature = 30 °C
 - Operating temperature = 70 °C
 - Laying type C
 - Fuse protection = specification in technical data [► 10].
- If higher protection is used, adjust the cable cross-section.
- Install an isolation device (e.g. main switch) that can switch at least 1.1-fold of the motor's rated output and that is uniquely assigned to the compressor.
- Route the cable so that there is no danger of tripping.
- Insert the cable with the conductors L1, L2, L3 and PE through the fitting into the terminal box. Connect the conductors to the terminals.
- Observe the direction of rotation using the arrow.
- Observe the 5 safety rules.

5 safety rules

Before starting work:

- Unlock
- Secure against restart
- Make sure there is no line voltage
- Earth and short-circuit
- Cover or restrict adjacent live parts



NOTICE!

Power supply

The electrician must ensure a sufficient power supply, taking the conditions of use into account.

4 LAYOUT AND FUNCTION

4.1 GENERAL OVERVIEW

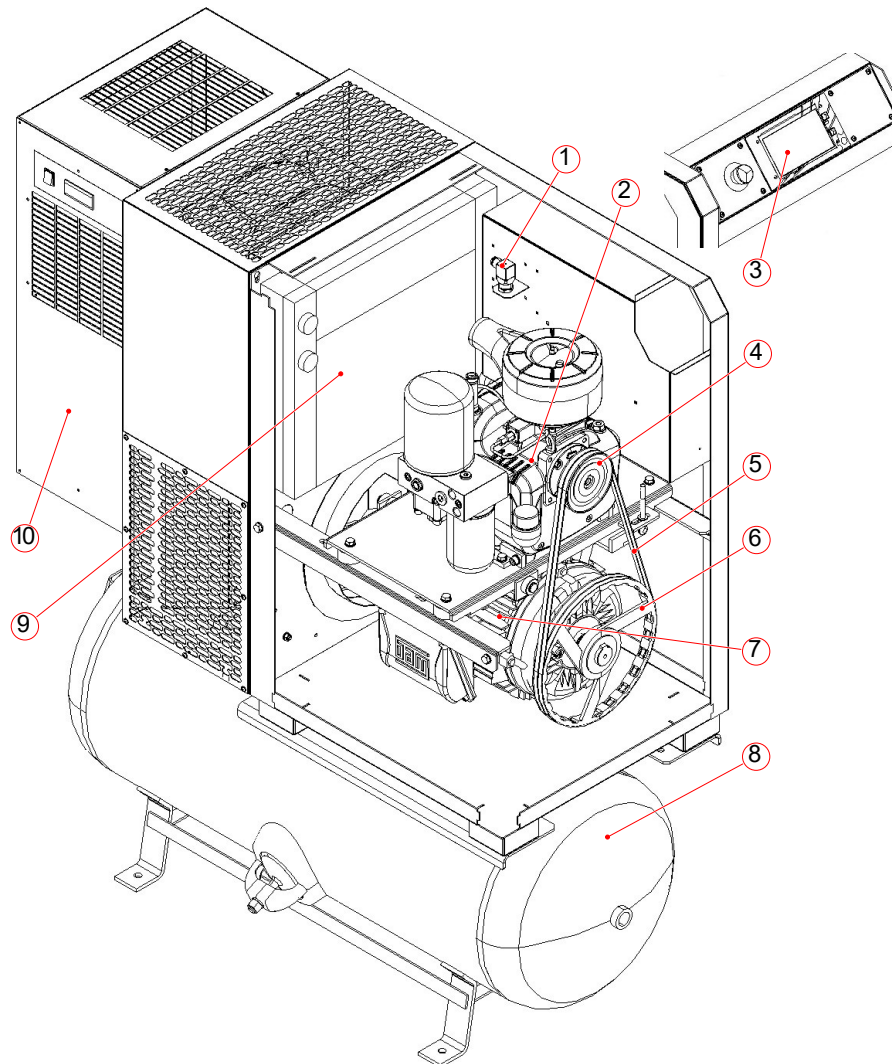


Illustration 5: General overview

- | | |
|-----------------------------------|-----------------------------------|
| 1 Pressure switch/pressure sensor | 2 Air end |
| 3 Control system | 4 Drive elements - air end side |
| 5 Drive belt | 6 Drive elements - motor side |
| 7 Motor | 8 Air receiver (optional) |
| 9 Cooler | 10 Refrigeration dryer (optional) |

4.2 AIR END

AIR END PRO1-NK, PRO2-NK

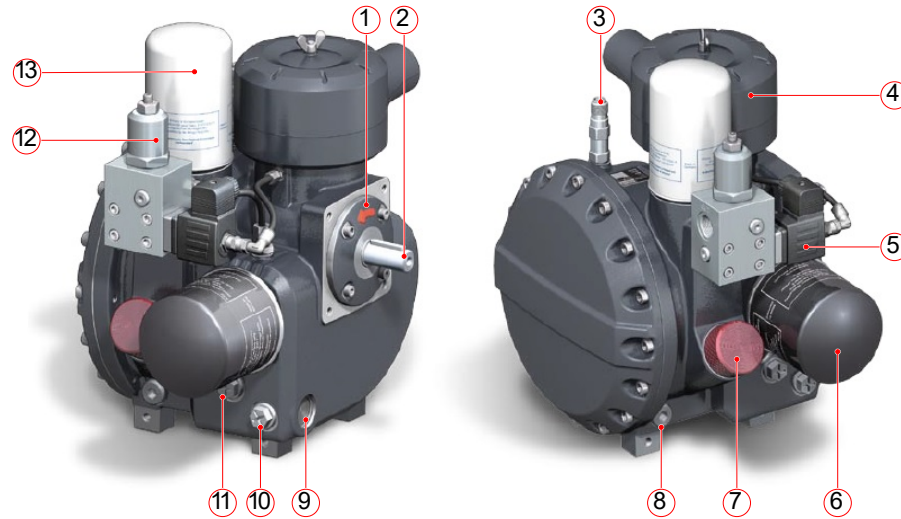


Illustration 6: Air end PRO1-NK, PRO2-NK

- | | |
|--|-------------------------------|
| 1 Arrow for checking the direction of rotation | 2 Air end shaft |
| 3 Safety valve | 4 Air filter |
| 5 Solenoid valve | 6 Oil filter |
| 7 Oil filler plug | 8 Oil drain |
| 9 Thermovalve | 10 Residual oil return outlet |
| 11 Residual oil return inlet | 12 Minimum pressure valve |
| 13 Oil separator cartridge | |

AIR END PRO3-NK

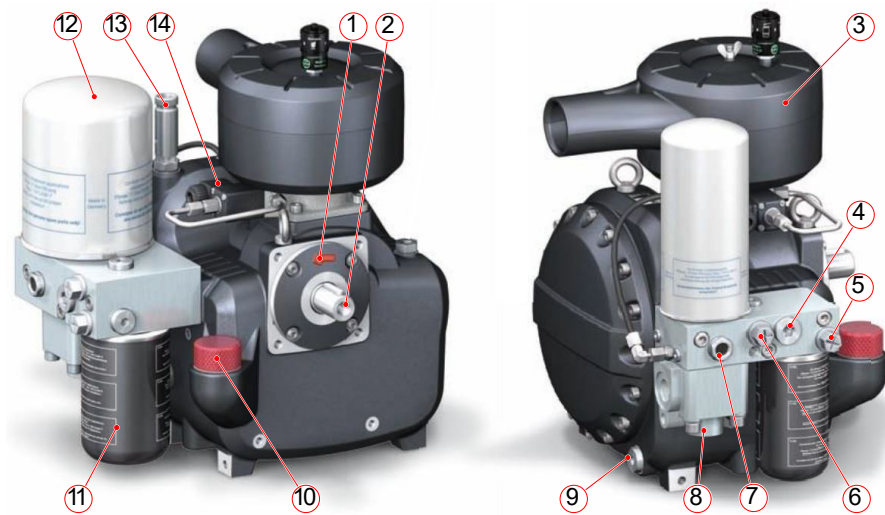


Illustration 7: Air end PRO3-NK

- | | |
|--|----------------------------------|
| 1 Arrow for checking the direction of rotation | 2 Air end shaft |
| 3 Air filter | 4 Thermovalve |
| 5 Residual oil return inlet | 6 Residual oil return outlet |
| 7 Oil return sight glass | 8 Minimum pressure valve |
| 9 Oil drain | 10 Oil filler plug |
| 11 Oil filter | 12 Oil separator cartridge |
| 13 Safety valve | 14 Control unit + solenoid valve |

AIR END PRO6-NK

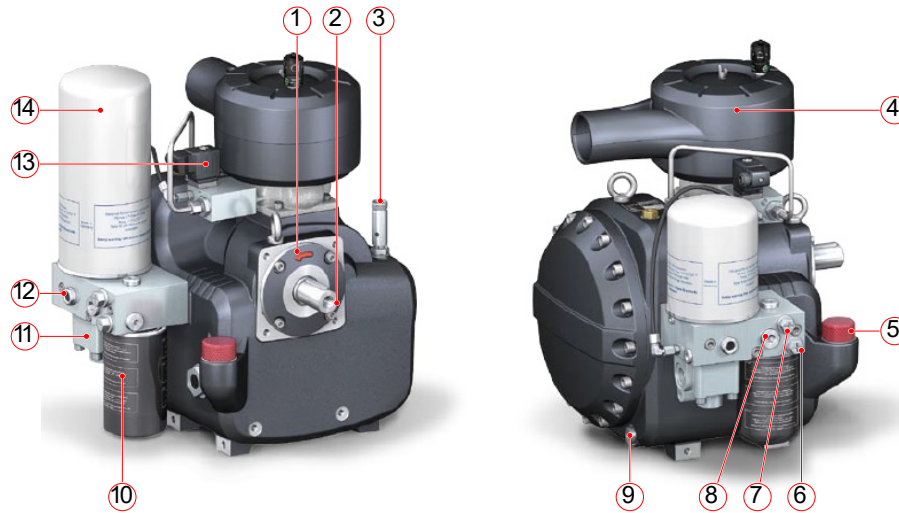


Illustration 8: Air end PRO6-NK

- | | |
|--|-----------------------------|
| 1 Arrow for checking the direction of rotation | 2 Air end shaft |
| 3 Safety valve | 4 Air filter |
| 5 Oil filler plug | 6 Residual oil return inlet |
| 7 Residual oil return outlet | 8 Thermovalve |
| 9 Oil drain | 10 Oil filter |
| 11 Minimum pressure valve | 12 Oil return sight glass |
| 13 Control unit + solenoid valve | 14 Oil separator cartridge |

AIR END PRO9-NK

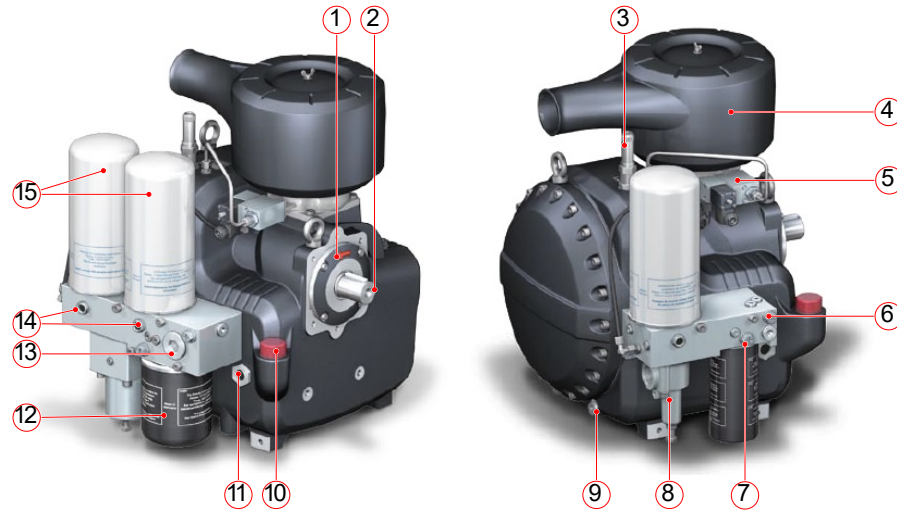


Illustration 9: Air end PRO9-NK

- | | |
|--|------------------------------|
| 1 Arrow for checking the direction of rotation | 2 Air end shaft |
| 3 Safety valve | 4 Air filter |
| 5 Control unit + solenoid valve | 6 Residual oil return outlet |
| 7 Residual oil return inlet | 8 Minimum pressure valve |
| 9 Oil drain | 10 Oil filler plug |
| 11 Oil level sight glass | 12 Oil filter |
| 13 Thermovalve | 14 Oil return sight glass |
| 15 Oil separator cartridge | |

The screws inside the air end compress the drawn-in air. This creates compressed air.

Viewed from the air end shaft, the air end direction of rotation is counter-clockwise. An arrow for checking the direction of rotation is attached to the air end.

4.2.1 AIR FILTER ELEMENT

The air filter element cleans the ambient air that is drawn in.

4.2.2 OIL SEPARATOR CARTRIDGE AND SUCTION PIPE

The oil separator cartridge is mounted on the oil separator cartridge head using a suction pipe. In the oil separator cartridge, the remaining oil is separated from the compressed air.

4.2.3 OIL FILTER

The oil filter cleans the oil.

4.2.4 MINIMUM PRESSURE VALVE

The minimum pressure valve has two functions:

- The minimum pressure valve prevents a pressure drop in the compressed air supply under the minimum excess pressure in the compressor in the absence of counterpressure. This ensures the separation of the oil in the oil separator cartridge and thus the oil supply to the air end screws.
- As a non-return valve, the minimum pressure valve also prevents the reverse flow of the compressed air from the compressed air supply into the air end. As a result, the entire compressor can be vented when shut off.

4.2.5 THERMOVALVE

The generation of compressed air generates heat, which is dissipated by the oil. The thermostatic valve regulates the oil circuit and stops the system from overheating:

- Excessively hot oil is cooled in the cooling system and then directed into the air end.
- Cold oil is directed into the air end.

4.2.6 SUCTION REGULATOR, CONTROL UNIT, SOLENOID VALVE

The suction regulator has two functions, which are controlled by a control unit with a solenoid valve:

- The intake air flow is controlled by the suction regulator.
- The suction cross-section is completely opened for a min. pressure drop in full-load operation. When the compressor stops, the entire intake cross-section is closed quickly and automatically.

4.2.7 SAFETY VALVE

The safety valve blows off in the event of an impermissible pressure increase in the air end.

4.2.8 OIL DRAIN

A ball valve is mounted on the oil drain to make it easier to empty the compressor.

4.2.9 RESIDUAL OIL RETURN

An oil/air mixture is created during the generation of compressed air. In the oil separator cartridge, the fine oil mist is separated from the compressed air and fed back into the air end via the residual oil return.

4.2.10 OIL FILLER PLUG

Oil is filled in via the oil plug. It is provided with a side safety hole through which a low residual pressure can slowly dissipate upon loosening the screws.

The oil plug can be replaced by an assembly aid for maintenance.

4.2.11 OIL LEVEL SIGHT GLASS

The oil level in the compressor is checked via the oil level sight glass.

4.2.12 OIL RETURN SIGHT GLASS

The oil return sight glass indicates the oil separated in the oil separator cartridge. The oil return sight glass will be filled with oil when the compressor is at a standstill. A mixture of oil and air will be seen in the oil return sight glass when the compressor is switched on. A lack of visible oil could be result of damage in the oil separator cartridge and compressed air containing oil escaping from the system.

4.3 DRIVE

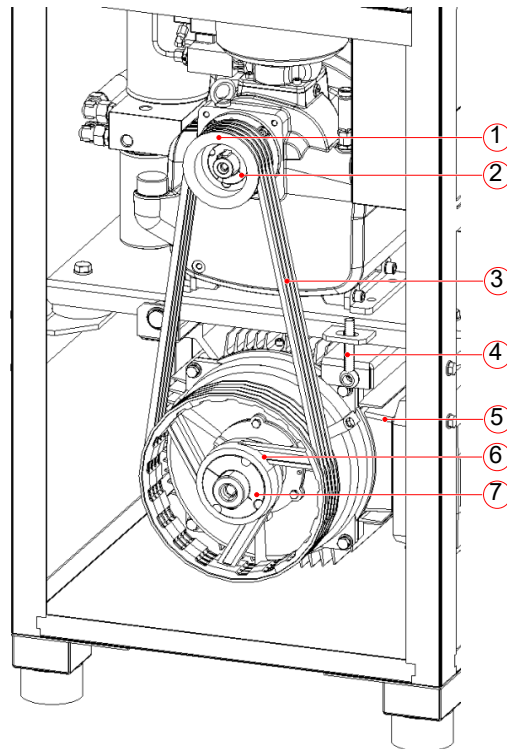


Illustration 10: Drive

- | | |
|---------------|------------------|
| 1 Pulley disc | 2 Taper lock |
| 3 Drive belt | 4 Clamping screw |
| 5 Motor | 6 Pulley disc |
| 7 Taper lock | |

The motor is driven by drive belts that are inserted into pulley discs.

The tension of the drive belt is adjusted with a clamping screw on the motor rocker.



NOTICE!

Permanently lubricated and relubricated deep groove ball bearings

Motors ≤ 37 kW are equipped with permanently lubricated deep groove ball bearings. Motors > 37 kW are equipped with relubrication devices on the deep groove ball bearings.

4.4 COOLING SYSTEM

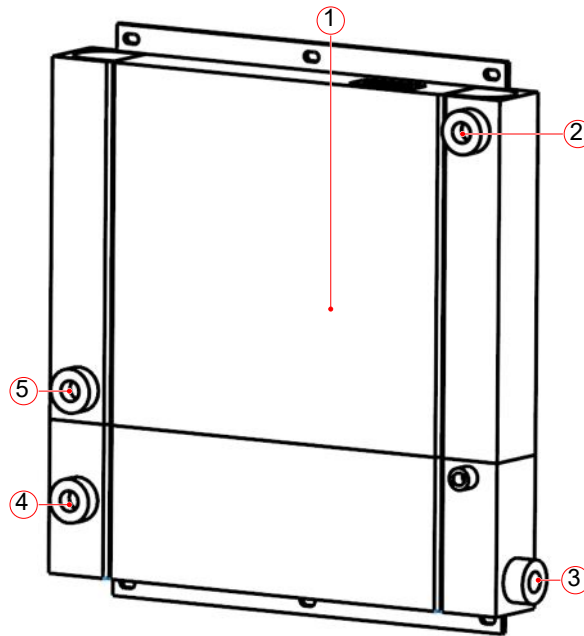


Illustration 11: Cooling system

- | | |
|-------------------------|------------------------|
| 1 Gill | 2 Oil inlet |
| 3 Compressed air outlet | 4 Compressed air inlet |
| 5 Oil outlet | |

Ambient air flows through the cooler gills. The cooler consists of two separate sections:

- Cooling of the oil on the oil side. The oil is fed back into the air end.
- Cooling of the compressed air on the air side. The compressed air then leaves the compressor.

4.5 SENSORS AND SWITCHES

4.5.1 TEMPERATURE SENSOR

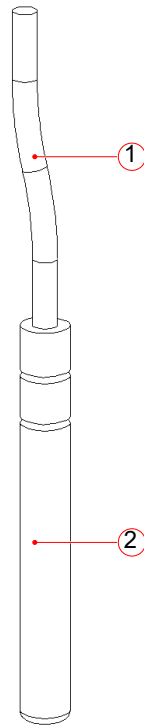


Illustration 12: Temperature sensor

1 Line

2 Temperature sensor

The temperature sensor monitors the temperature of the oil / air mixture in the air end.

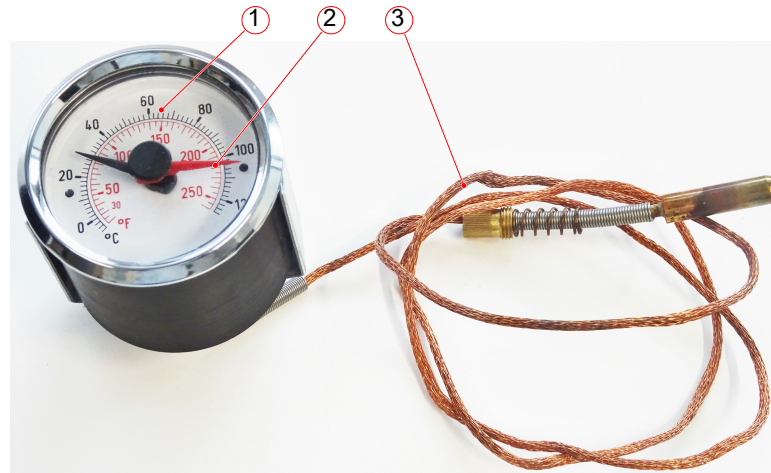


Illustration 13: Temperature sensor with RENNERLogic

- | | |
|-----------------------|------------|
| 1 Temperature display | 2 red mark |
| 3 Connecting line | |

The temperature sensor is a temperature indicator and switching device. The compressor switches off if the adjusted allowable max. operating temperature (red mark) is reached. Do not kink the connection line (capillary) between the air end and the temperature sensor, otherwise the function may be impaired.

4.5.2 PRESSURE SENSOR

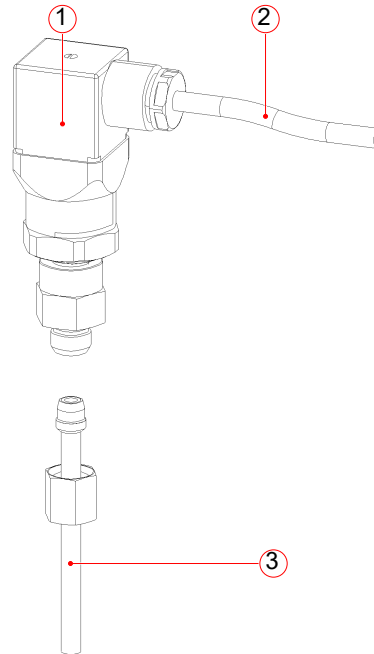


Illustration 14: Pressure sensor

1 Pressure sensor
3 Hose

2 Line

The pressure sensor monitors the network pressure / system pressure in the air end.

4.5.3 PRESSURE SWITCH

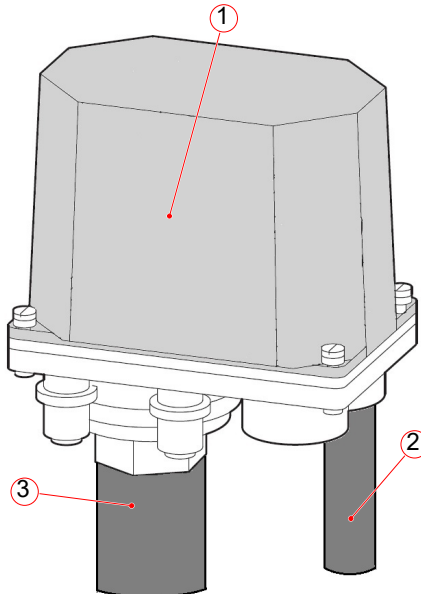


Illustration 15: Pressure switch

1 Pressure switch
3 Hose

2 Line

The pressure switch regulates the switch-on/switch-off pressure.

4.6 CONTROL SYSTEM

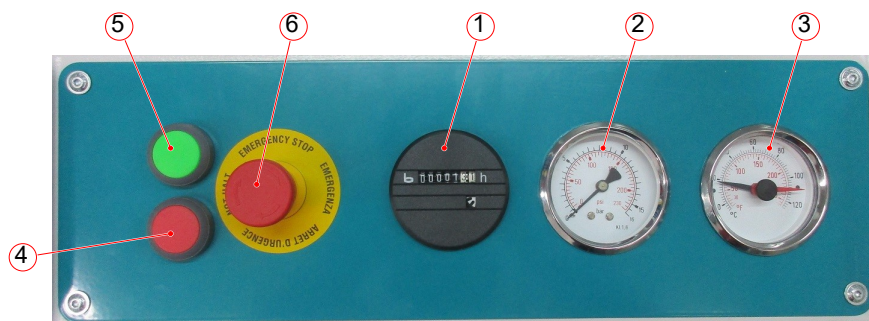


Illustration 16: RENNERlogic PRO control system

- | | |
|-----------------------------------|-------------------------|
| 1 Hour meter | 2 Pressure gauge |
| 3 "Combistat" temperature display | 4 Stop button |
| 5 Start button | 6 Emergency stop button |

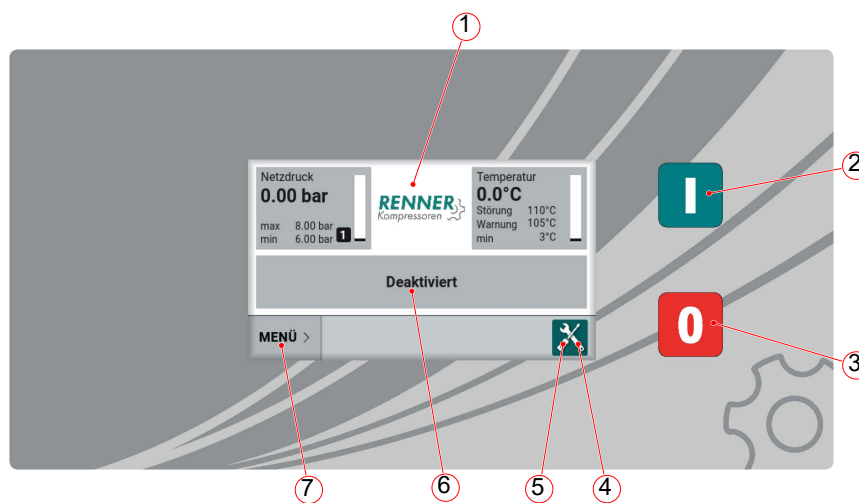


Illustration 17: RENNERtronic Touch control system

- | | |
|----------------------|----------------------|
| 1 Display | 2 Start button |
| 3 Stop button | 4 Acknowledge button |
| 5 Maintenance button | 6 Status display |
| 7 Menu button | |

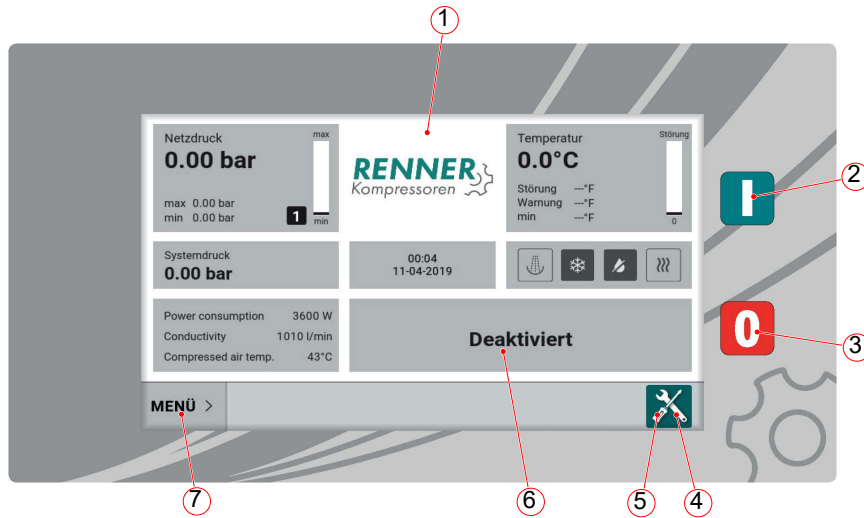


Illustration 18: RENNERtronic Plus Touch control system

- | | |
|----------------------|----------------------|
| 1 Display | 2 Start button |
| 3 Stop button | 4 Acknowledge button |
| 5 Maintenance button | 6 Status display |
| 7 Menu button | |

The compressor control system monitors the entire operation of the compressor.



NOTICE!

Supplier documents

Further information can be found in supplier documents.

4.7 AIR RECEIVER

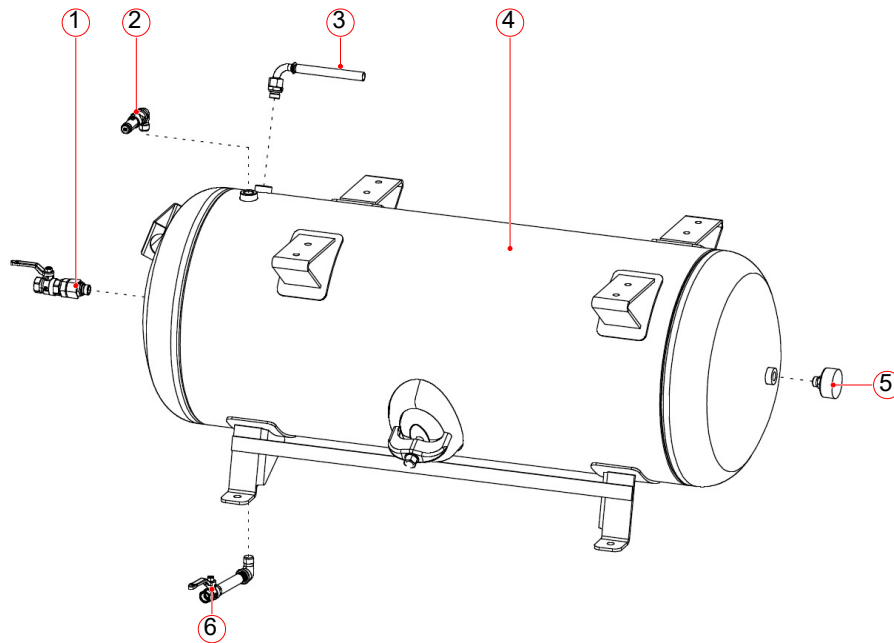


Illustration 19: Air receiver

- | | |
|-------------------------|--------------------|
| 1 Compressed air outlet | 2 Safety valve |
| 3 Compressed air inlet | 4 Air receiver |
| 5 Pressure gauge | 6 Condensate drain |

The air receiver is used to store the compressed air generated.



NOTICE!

Connection compressed air outlet standard version

Without compressed air preparation = connection to the compressed air supply
 With compressed air preparation = connection to the compressed air preparation input.
 Deviations possible with special designs.



NOTICE!

Supplier documents

Further information can be found in supplier documents.

4.8 FREQUENCY CONVERTER

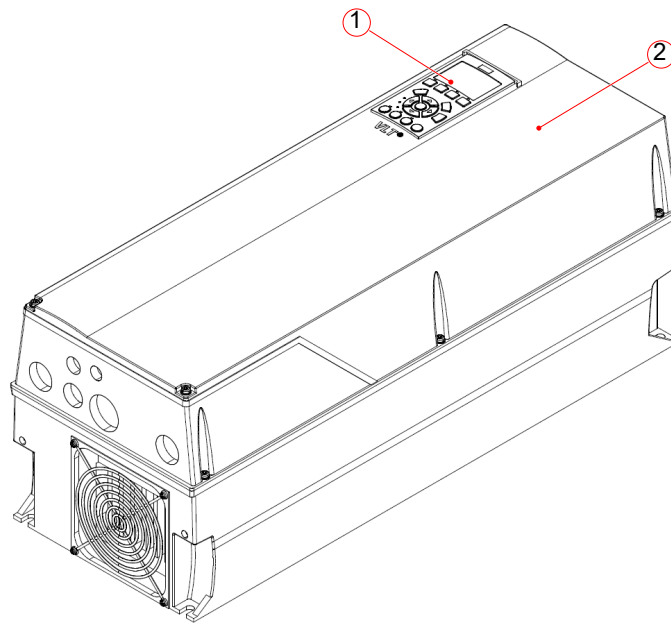


Illustration 20: Frequency converter

1 Control system

2 Frequency converter

The frequency converter is an electronic engine controller for:

- Control of engine speed in response to system feedback or remote commands from external controllers. A drive train consists of the frequency converter, the motor and all devices driven by the engine.
- Monitoring of system and engine status.



NOTICE!

Supplier documents

Further information can be found in supplier documents.

4.9 REFRIGERATION DRYER

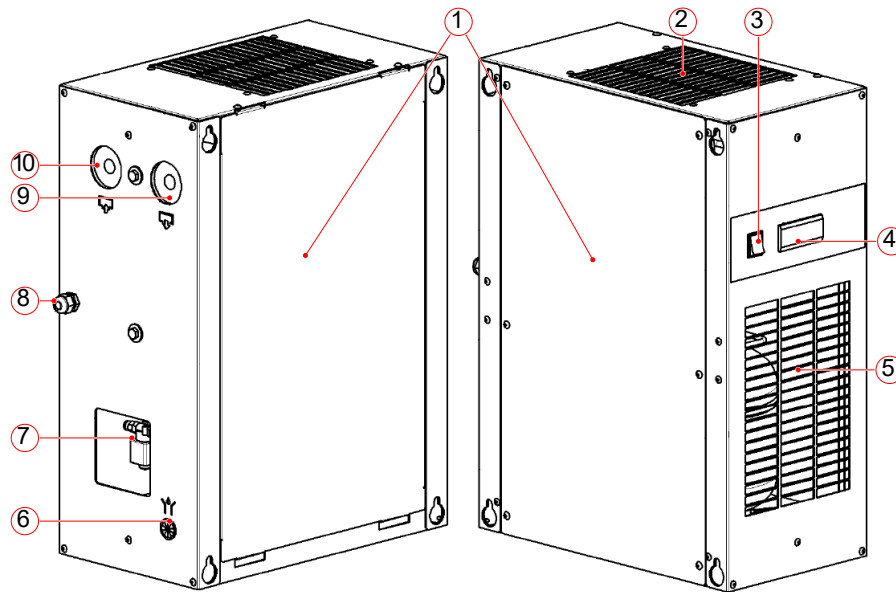


Illustration 21: Refrigeration dryer

- | | |
|------------------------|--|
| 1 Refrigeration dryer | 2 Cooling air outlet |
| 3 Switch | 4 Electronic controller / pressure dew point display |
| 5 Cooling air inlet | 6 Condensate drain |
| 7 Condensate trap | 8 Electrical connection |
| 9 Compressed air inlet | 10 Compressed air outlet |

The refrigeration dryer is used to dehumidify and cool the compressed air.



NOTICE!

Supplier documents

Further information can be found in supplier documents.

4.10 MOVABLE REFRIGERATION DRYER



Illustration 22: Movable refrigeration dryer for RSDKM(F)-PRO

- | | |
|---------|--------|
| 1 Lever | 2 Bolt |
| 3 Slot | |

The refrigeration dryer can be moved to remove the doors in order to perform maintenance on the compressor.



CAUTION!

Danger of injury due to crushing

When moving the refrigeration dryer, there is a danger of crushing between the compressor and the refrigeration dryer.

- When moving, no part of the body may be between the refrigeration dryer and the compressor.
- Always lock the maintenance and operating position with a lever.
- Wear personal protective equipment.

MOVE THE REFRIGERATION DRYER INTO THE MAINTENANCE POSITION:

1. Lift the lever.
2. Turn and set down the lever.
3. Move the refrigeration dryer.
4. Turn the lever until the bolt engages in the slot.

MOVE THE REFRIGERATION DRYER INTO THE OPERATING POSITION:

1. Lift the lever
2. Turn and set down the lever
3. Move the refrigeration dryer to the middle
4. Turn the lever until the bolt engages in the slot

5 COMMISSIONING

Every component of the compressor has been checked by the manufacturer and the compressor has been tested in continuous operation. This ensures that the components comply with the specified data and are in perfect working order.

**NOTICE!****Commissioning and re-commissioning by specialist dealers**

Commissioning and re-commissioning may only be carried out by an authorised specialist dealer.
Re-commissioning must take place after 3 months of decommissioning or storage of the compressor.

**NOTICE!****Commissioning protocol**

The commissioning protocol (annex Commissioning protocol) must be completed during commissioning and then returned to the manufacturer.

6 OPERATION

**WARNING!****Risk of injury from high pressure fluid jet**

Components and fluids, which can be under pressure even when the compressor is switched off, can cause injuries.

- Vent the compressor before starting work.
- Do not remove protective devices.
- Check fittings and connections regularly for tight fit.
- When performing cleaning and maintenance, slowly dismantle the fittings.
- Wear personal protective equipment.

**WARNING!****Danger of burns due to hot surfaces**

When working on the compressor, burns can occur due to hot surfaces.

- Do not touch surfaces immediately after opening the doors.
- Allow compressor to cool.
- Wear personal protective equipment.

**WARNING!****Property damage due to condensation**

The formation of condensation leads to corrosion damage to the air end and seizure of moving parts. If the operating temperature of the compressor is below the pressure dew point, condensate forms, which mixes with the oil and has a negative impact on its lubrication properties. If the intake air exceeds the absolute humidity of 20 g/m³, contact the authorised specialist dealer.

- The operating temperature of the compressor must be at least 5 K above the pressure dew point.
- The ambient temperature, relative humidity and maximum operating pressure must be taken into account.

6.1 SWITCHING THE COMPRESSOR ON AND OFF



Illustration 23: RENNERlogic PRO control system

1 Start button

2 Stop button



Illustration 24: RENNERtronic Touch control system

1 Start button

2 Stop button



Illustration 25: RENNERtronic Plus Touch control system

1 Start button

2 Stop button

SWITCHING ON THE COMPRESSOR

To switch on the compressor, proceed as follows:

1. Switch on compressor by pressing the Start button.
2. Check operation parameters.
 - ⇒ The operating pressure may not exceed the maximum permitted value indicated on the name plate.
 - ⇒ The operating temperature may not exceed 110 °C.
 - ⇒ The operating temperature of the compressor must be at least 5 K above the pressure dew point [► 10.3].
3. Contact the authorised specialist dealer in the event of a fault [► 1.7].



NOTICE!

Selection of the operation parameters

All existing operation parameters can be selected at any time by pressing the Menu button.



NOTICE!

Network pressure/system pressure

The operating pressure of the compressor is displayed as "network pressure".

The system pressure display field shows the current internal compressor pressure.

SWITCH OFF THE COMPRESSOR

To switch off the compressor, proceed as follows:

1. Switch off the compressor by pressing the Stop button.
⇒ Compressor goes into no-load operation and then switches off automatically.
2. Switch main switch.
3. Secure the main switch against restart.
4. Switch compressor off.
5. Allow compressor to cool.
6. Vent the compressor ► 6.2].



NOTICE!

Do not switch off the compressor directly via the main switch, emergency stop button or an impermissible remote switch-off

If the pressurised compressor is switched off immediately, hot oil can foam up in the air end and get into the compressed air; this could damage the oil separator cartridge.

Oil may also leak out via the suction regulator and the air filter element.

6.2 VENTING THE COMPRESSOR



WARNING!

Risk of injury from high pressure fluid jet

Components and fluids, which can be under pressure even when the compressor is switched off, can cause injuries.

- Vent the compressor before starting work.
- Do not remove protective devices.
- Check fittings and connections regularly for tight fit.
- When performing cleaning and maintenance, slowly dismantle the fittings.
- Wear personal protective equipment.



WARNING!

Danger of burns due to hot oil

Unscrewing the oil plug may cause burns.

- Allow compressor to cool.
- Unscrew the oil plug slowly.
- Wear personal protective equipment.

The compressor vents automatically when switching off. However, if there is a fault, the compressor may remain pressurised even after being switched off. Since this cannot be seen from the outside, the compressor must always be vented via the oil filler plug before all tasks. This reduces the system pressure.

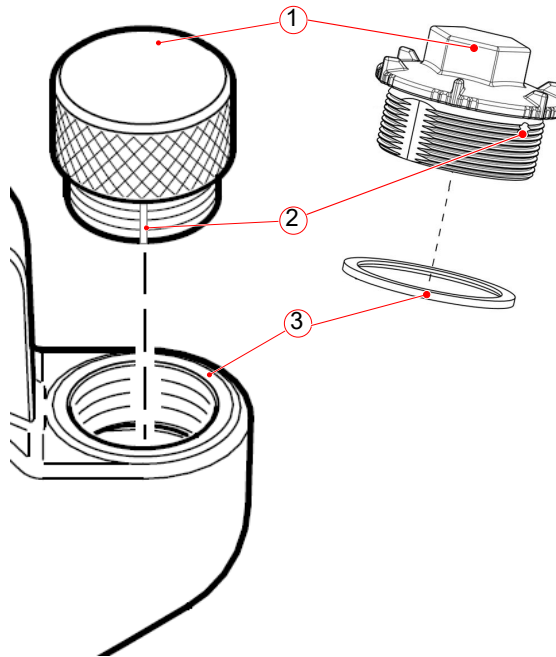


Illustration 26: Venting the compressor

1 Oil filler plug
 3 Seal

2 Bore

To vent the compressor, proceed as follows:

1. Switch off the compressor [▶ 6.1].
2. Min. wait 3 minutes.
 ⇒ The compressor is vented during this time.
3. Open doors.
4. Unscrew the oil plug slowly.
 ⇒ Residual pressure can escape through the bore on the side.
5. Wait until all system pressure has dissipated.
6. Screw in the oil plug.
7. If components are defective, contact the authorised specialist dealer [▶ 1.7].
8. Close doors.

7 CLEANING, INSPECTION, MAINTENANCE

**WARNING!****Danger of burns due to hot surfaces**

When working on the compressor, burns can occur due to hot surfaces.

- Do not touch surfaces immediately after opening the doors.
- Allow compressor to cool.
- Wear personal protective equipment.

**WARNING!****Danger of burns due to hot oil**

Unscrewing the oil plug may cause burns.

- Allow compressor to cool.
- Unscrew the oil plug slowly.
- Wear personal protective equipment.

**WARNING!****Danger of burning due to hot oil / air mixture**

When opening the cover of the safety valve, burning due to hot oil / air mixture may occur.

- Allow compressor to cool.
- Wear personal protective equipment.

**WARNING!****Danger of burns due to spewing oily condensate**

When working on the compressor, burns can occur due to contact with hot oily condensate.

- Allow compressor to cool.
- Vent the compressor before starting work.
- Wear personal protective equipment.

**CAUTION!****Danger of injury due to contact with liquids**

Injuries can occur through contact with oils and oily condensate during work.

- Wear personal protective equipment.
- Clean affected areas immediately.
- In case of contact with eyes or mucous membranes, rinse thoroughly with water and, if necessary, consult a doctor.

7.1 INSPECTION AND MAINTENANCE PLAN

The operator must carry out the following work:

	daily	weekly
Check compressor for leaks ▶ 7.2]	✓	
Check oil level ▶ 7.3]	✓	
Drain condensate (if present) ▶ 7.8]	✓	
Check the function of the condensate drain (if present) ▶ 7.9]	✓	
Clean the housing ▶ 7.4]		✓
Clean the cooling system ▶ 7.5]		✓
Check air filter element ▶ 7.6]		✓
Check filter mats (if available) ▶ 7.7]		✓



NOTICE!

Regular maintenance by authorised specialist dealers

Maintenance must be performed on the compressor every 2000 operating hours or every year. To do this, contact the authorised specialist dealer in good time.



NOTICE!

Adjust maintenance intervals

The maintenance intervals are due either after the hours of operation or the years have been reached - whichever comes first. In the event of higher dirt and dust intensity, switch-on frequency and higher ambient temperatures, the maintenance intervals must be adjusted to the prevailing circumstances and environment.

7.2 CHECKING THE COMPRESSOR FOR OIL / AIR LEAKS

To check the compressor for oil leaks, proceed as follows:

1. Vent the compressor ▶ 6.2].
2. Open doors.
3. Visual inspection of the compressor for oil drops and damp spots.
4. In the event of leaks, contact the authorised specialist dealer ▶ 1.7].
5. Cleaning the housing ▶ 7.4].
6. Close doors.

7.3 CHECKING THE OIL LEVEL

CHECKING THE OIL LEVEL ON RS-PRO 3.0 - 11.0

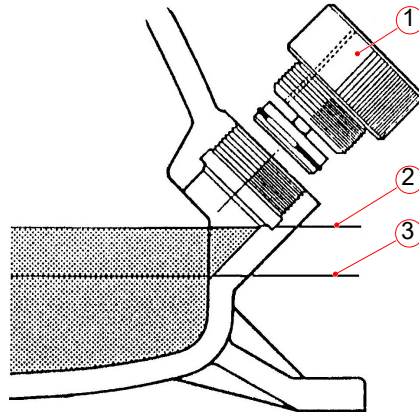


Illustration 27: Checking the oil level via the oil plug / air end PRO1, PRO2

- 1 Oil filler plug
- 2 max. oil level
- 3 min. oil level

CHECKING THE OIL LEVEL ON RS-PRO 2-11.0 – 18.5

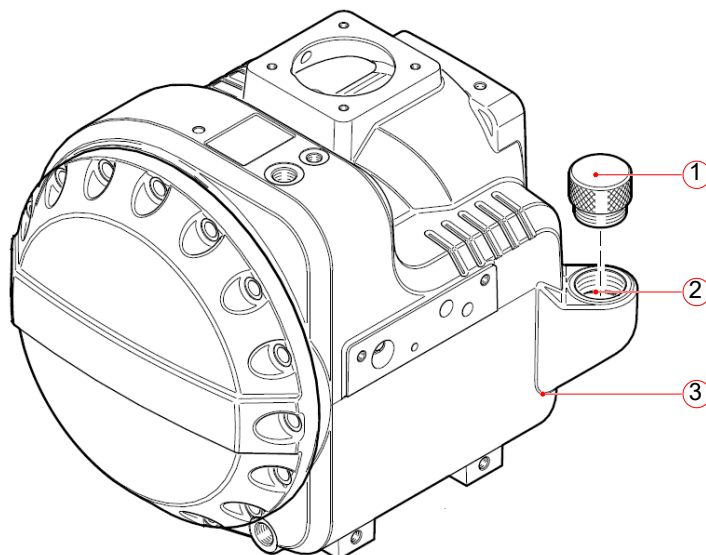


Illustration 28: Checking the oil level via the oil plug / air end PRO3

- 1 Oil filler plug
- 2 max. oil level
- 3 min. oil level

To check the oil fill level, proceed as follows:

1. Switch off the compressor. [► 6.1]
2. Open doors.
3. Unscrew the oil plug slowly.
4. Check oil level.
 - ⇒ Min. oil level: Oil is up to the kink.
 - ⇒ Max. oil level: Oil is up to the beginning of the thread.
5. If necessary fill or drain oil.
 - ⇒ If the oil level differs, contact the authorised specialist dealer [► 1.7].
6. Screw in the oil plug.
7. Close doors.

CHECKING THE OIL LEVEL ON RS-PRO 2-15.0 – 37.0

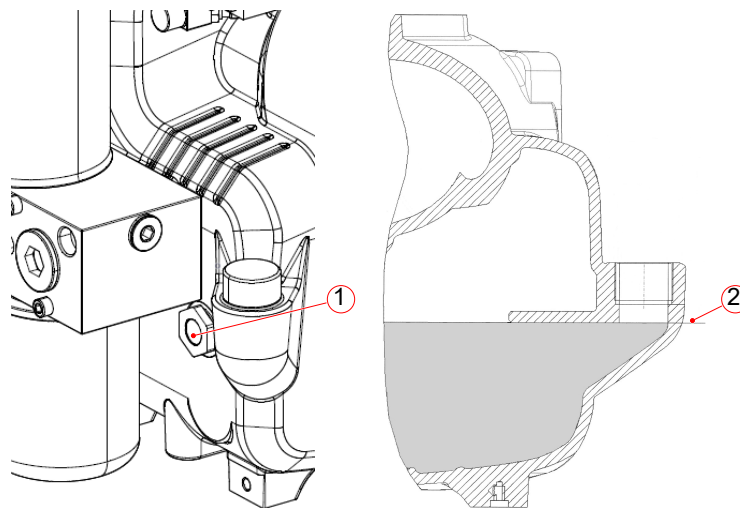


Illustration 29: Checking the oil level via the oil sight glass and oil plug / air end PRO6

1 min. oil level

2 max. oil level

To check the oil fill level, proceed as follows:

1. Switch off the compressor. [► 6.1]
2. Open doors.
3. Unscrew the oil plug slowly.
4. Check oil level.
 - ⇒ Min. oil level: Oil is up to the lower edge of the oil level sight glass.
 - ⇒ Max. oil level: Oil is up to the kink.
5. If necessary fill or drain oil.
 - ⇒ If the oil level differs, contact the authorised specialist dealer [► 1.7].
6. Screw in the oil plug.
7. Close doors.

CHECKING THE OIL LEVEL ON RS-PRO 2-30.0 – 55.0

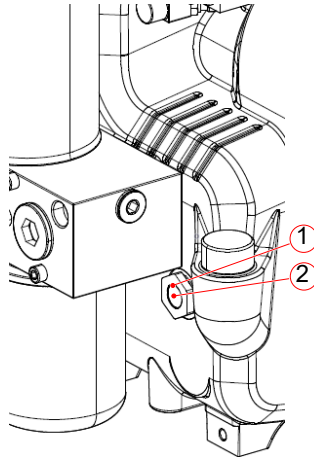


Illustration 30: Checking the oil level via the oil sight glass / air end PRO9

1 max. oil level

2 min. oil level

To check the oil fill level, proceed as follows:

1. Switch off the compressor. [► 6.1]
2. Open doors.
3. Check oil level.
 - ⇒ Min. oil level: Oil is up to the middle of the oil level sight glass.
 - ⇒ Max. oil level: Oil is completely in the oil level sight glass.
4. If necessary fill or drain oil.
 - ⇒ If the oil level differs, contact the authorised specialist dealer [► 1.7].
5. Close doors.


NOTICE!
Always check oil level at operating temperature!
After every oil change or refill, check the oil level as follows:

- Switch on the compressor.
- Switch off the compressor once the operating temperature (80 - 85°C) has been reached.
- Wait approx. 5 minute until the returning oil has collected in the air end.
- Check oil level. The oil level should be near the maximum but never above it.
- If necessary fill or drain oil.
- Repeat until oil level is correct.


NOTICE!
Suitable type and oil capacity

The compressor must be operated with the oil that is most suitable for operation. Information on the oil type and oil capacity can be requested from an authorised specialist dealer.

7.4 CLEANING THE HOUSING

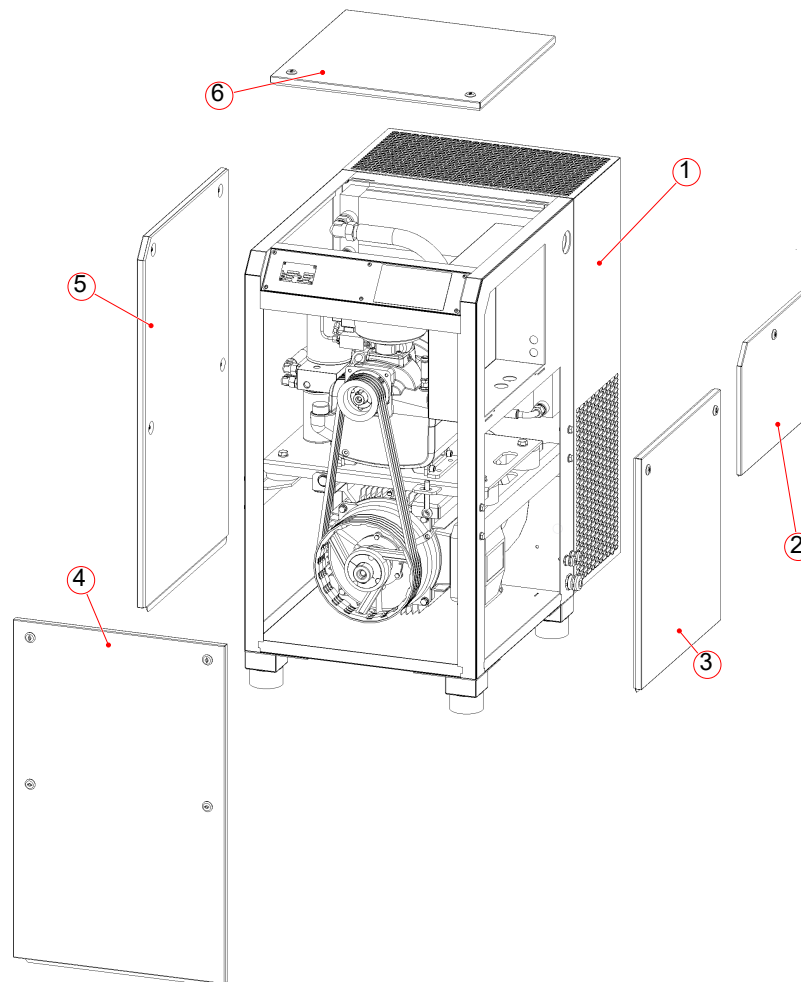


Illustration 31: Cleaning the housing

- | | |
|----------------------|--------------|
| 1 Rear duct silencer | 2 Door E-box |
| 3 Door right | 4 Front door |
| 5 Door left | 6 Top door |

To clean the housing, proceed as follows:

1. Vent the compressor [► 6.2].
2. Open doors.
3. Dismantle the rear duct silencer.
4. Clean all surfaces with a suitable cleaning agent.
5. Mount the rear duct silencer.
6. Close doors.

7.5 CLEAN THE COOLING SYSTEM

**WARNING!****Danger of injury from compressed air**

Injuries can occur during cleaning and maintenance that require compressed air.

- Never aim compressed air at humans or animals.

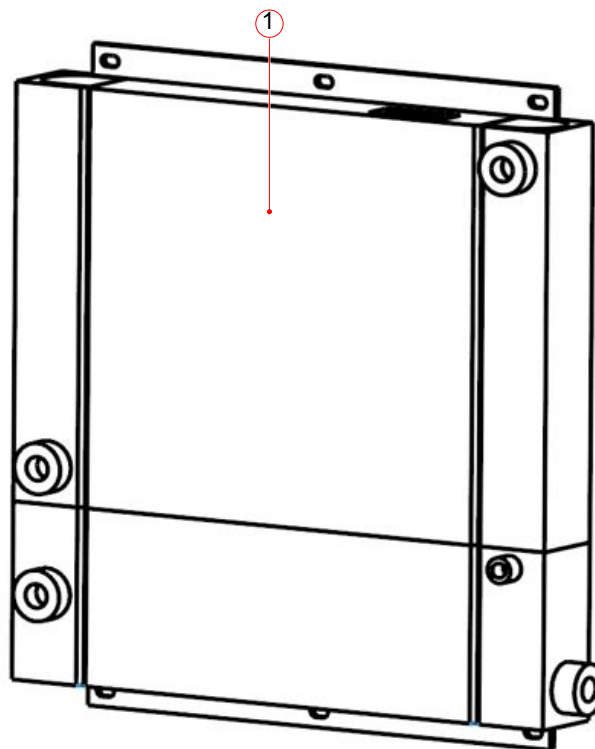


Illustration 32: Cleaning the cooler

1 Gill

To clean the cooler, proceed as follows:

1. Vent the compressor [▶ 6.2].
2. Open doors.
3. Blow out the cooler gills with max. 6.0 bar compressed air from the inside to the outside.
4. Cleaning the housing [▶ 7.4].
5. Close doors.

7.6 CHECKING AND REPLACING THE AIR FILTER ELEMENT

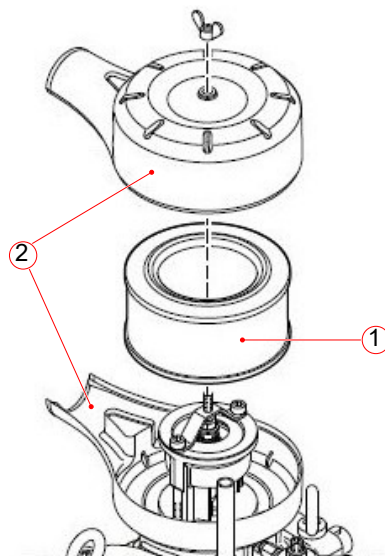


Illustration 33: Replacing the air filter element

1 Air filter element

2 Air filter housing

To check and replace the air filter element, proceed as follows:

1. Vent the compressor [▶ 6.2].
2. Open doors.
3. Open air filter housing.
4. Remove and check the air filter element.
5. Insert a new air filter element if necessary.
6. Close air filter housing.
7. Close doors.



NOTICE!

Filter elements

Dirty filter elements impair the efficiency of the compressor.
Replacement is recommended if soiling is visible.



NOTICE!

Exclusively use original replacement parts and lubricants

Only original spare parts and lubricants meet the highest quality standards. They ensure safe operation and a long service life for the compressor. Spare parts and lubricants can be ordered from an authorised dealer.

7.7 CHECKING AND REPLACING THE FILTER MATS

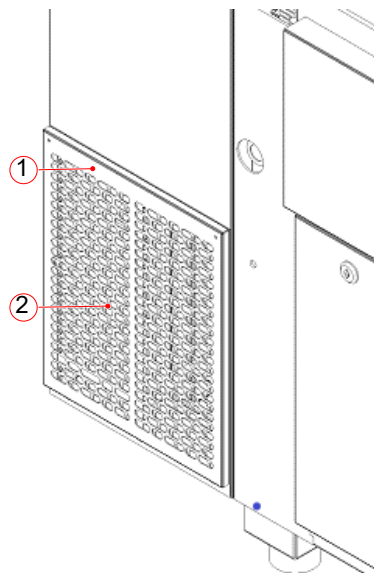


Illustration 34: Checking and replacing the filter mats

1 Pre-filter grid

2 Filter mat

To check and replace the filter mats, proceed as follows:

1. Vent the compressor ► 6.2].
2. Dismantle the pre-filter grid.
3. Remove and check filter mats.
4. Insert new filter mats if necessary.
5. Mount the pre-filter grid.



NOTICE!

Filter mats

Dirty filter mats reduce the cooling capacity and the efficiency of the compressor. Replacement is recommended if soiling is visible.



NOTICE!

Exclusively use original replacement parts and lubricants

Only original spare parts and lubricants meet the highest quality standards. They ensure safe operation and a long service life for the compressor. Spare parts and lubricants can be ordered from an authorised dealer.

7.8 DRAINING THE CONDENSATE



WARNING!

Danger of injury from compressed air

Injuries can occur during cleaning and maintenance that require compressed air.

- Never aim compressed air at humans or animals.



CAUTION!

Danger of injury due to contact with liquids

Injuries can occur through contact with oils and oily condensate during work.

- Wear personal protective equipment.
- Clean affected areas immediately.
- In case of contact with eyes or mucous membranes, rinse thoroughly with water and, if necessary, consult a doctor.

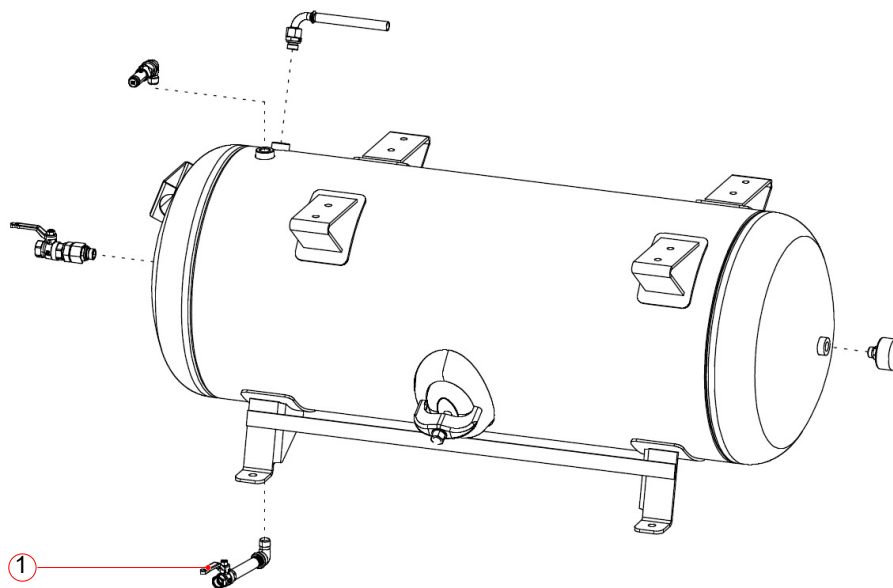


Illustration 35: Draining the condensate

1 Condensate drain

To drain the condensate, proceed as follows:

1. Vent the compressor ► 6.2].
2. Place a suitable container under the ball valve on the air receiver.
3. Open the ball valve carefully until condensate emerges.
4. Close ball valve.
5. Dispose of condensate in an environmentally sound manner.
6. If components are defective, contact the authorised specialist dealer ► 1.7].

7.9 CHECKING THE CONDENSATE DRAIN

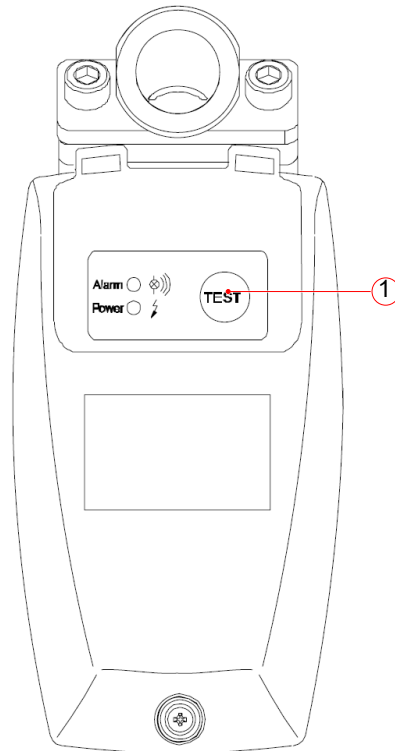


Illustration 36: Checking the condensate drain

1 Test button

To check the condensate drain, proceed as follows:

1. Trigger the condensate drain by pressing the Test button.
⇒ Condensate escapes at the condensate drain.
2. If components are defective, contact the authorised specialist dealer [► 1.7].

8 TROUBLESHOOTING

Fault	Possible cause	Remedy
Compressor does not start	No current available	Connect power supply
	Loose cables / fuses	Retighten cables / fuses
	Motor protection switch has switched off / is defective	Unlock motor protection switch, replace if necessary
	Temperature sensor has switched off / is defective	Check ventilation, replace temperature sensor if necessary
	Pressure is above start pressure	Release the pressure via the ball valve on the air receiver
Wait until the network pressure drops due to the consumer		
Fuses trigger	Air end damage	Check air end, replace if necessary
	Motor short circuit	Check motor, replace if necessary
	Protection incorrect	Check fuse (must be inert)
	Contactors faulty	Check contactors, replace if necessary
	Electrical connections loose	Retighten electrical connections with a suitable tool
	Difficulty when starting compressor	See fault "Difficulty when starting compressor"
Difficulty when starting compressor	YΔ connection incorrectly set, Relief time in no-load operation too short, compressor goes into load operation immediately after switching off	Check time setting, if necessary set to 3-6 sec on the relay
	Oil is foaming on the compressor screws. The compressor was disabled e.g. directly via the main switch, emergency stop button or an impermissible remote shutdown	Switch off the compressor by pressing the Stop button
	Air end not relieved	Check solenoid valve, control unit, replace if necessary
		Check minimum pressure valve, replace if necessary
	Oil too viscous due to too cold ambient temperatures	Comply with the prescribed environmental conditions
Use anti-condensation heating Use lower viscosity oil		
Minimum pressure valve stuck / defective	Check minimum pressure valve, replace if necessary	
The compressor switches off before reaching the maximum operating pressure	Short circuit in control line	Change fuses
	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	Pressure sensor incorrectly set / defective	Check pressure sensor, replace if necessary

Fault	Possible cause	Remedy
Operating temperature too high	Ambient temperature too high	Comply with the prescribed environmental conditions
	Intake air temperature too high	
	Motor protection switch has switched off / is defective	Unlock motor protection switch, replace if necessary
	Motor load too high	Check drive elements
	Phase failure	Check supply lines
	Temperature sensor has switched off / is defective	Check ventilation, replace temperature sensor if necessary
	Too little oil in the compressor	Check oil level, top up if necessary
	Pre-filter dirty / clogged	Replace pre-filter
	Oil filter dirty	Replacing the oil filter
	Therموالve defective (valve insert or complete)	Replacing the therموالve
	Incorrect therموالve installed	Install correct therموالve
	Motor fan and exhaust air duct for frequency-controlled compressors: Speed or cooling air flow too low	Increase cooling air flow
	Exhaust air duct too long, no additional fan	Use additional fan
	Fan installed upside down, wrong direction of fan rotation	Mount the fan the other way around, switch the fan supply line
	Cooling fan loose	Fasten cooling fan
	Frame not glued or glued incorrectly / poorly	Rectify
	Wrong transmission (speed too high, current values too high)	Use suitable transmission
Floors not closed	Close doors	
Cooling system dirty / clogged	Clean the cooling system	
Safety valve blows off (prematurely)	Safety valve faulty	Replacing the safety valve
	Wrong safety valve	Check safety valve, replace if necessary
	Suction regulator does not close completely when idling, the valve head can be turned	Check suction regulator, replace if necessary
	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	Oil separator cartridge dirty	Replace the oil separator cartridge
	Minimum pressure valve stuck / defective	Check minimum pressure valve, replace if necessary
	Pressure switch incorrectly set / defective	Check pressure switch, replace if necessary
Ball valve closed too quickly directly after the compressor	Slowly close ball valve	
Condensation in the oil	Duty cycle too short, operating temperature is not reached	Compressor should turn on 5-6 times per hour. For breaks of 1-2 minutes, a continuous run makes sense.
	Operating temperature too low, cooler / fan too big	Use a suitable cooler / fan
High oil consumption, oil in compressed air	Switching off the compressor via the main switch, emergency stop button, an impermissible remote shutdown, as a result of a power failure or an error message. Condensate accumulates.	Switch off the compressor by pressing the Stop button, rectify fault
	Oil separator cartridge dirty, saturated, old or defective	Replace the oil separator cartridge
	Too much oil in the compressor, oil gets into compressed air	Check oil level, drain if necessary
	Suction pipe in the oil separator cartridge holder is loose or not sealed	Retighten suction pipe, seal
	Residual oil return from air end blocked, no oil visible in the oil return sight glass	Clean the residual oil return, replace if necessary
	Non-return valve for residual oil return defective	Replace non-return valve
	Compressor was disabled before the end of no-load operation	Compressor goes into no-load operation and then switches off automatically
	Leaks in the compressor	Check compressor for leaks
Minimum pressure too low	Check minimum pressure valve, adjust if necessary	

Fault	Possible cause	Remedy
Oil in suction regulator	O-ring on suction regulator defective	Caution: Thin O-ring at the top in the groove, another thicker O-ring does not belong in the groove below, but in the air end housing (NK40)
	Oil coming out of suction regulator relief nozzle, non-return valve defective	Replace non-return valve
	Valve head loose, unscrewed, jammed	Check suction regulator, replace if necessary
	Switching off the compressor via the main switch, emergency stop button, an impermissible remote shutdown, as a result of a power failure or an error message.	Switch off the compressor by pressing the Stop button, rectify fault
Oil in the housing	Leaks in the compressor	Check compressor for leaks
	Switching off the compressor via the main switch, emergency stop button, an impermissible remote shutdown, as a result of a power failure or an error message.	Switch off the compressor by pressing the Stop button, rectify fault
	The safety valve has blown	Check pressure setting, adjust if necessary
		Check pressure switch, replace if necessary
Check solenoid valve, control unit, replace if necessary		
Oil mist in the housing	Safety valve blows off	Check safety valve, replace if necessary
	Minimum pressure valve stuck / defective	Check minimum pressure valve, replace if necessary
Compressor does not vent	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	The nozzle on the suction regulator is stuck / defective	Check suction regulator, replace if necessary
	Minimum pressure valve stuck / defective	Check minimum pressure valve, replace if necessary
The compressor vents constantly	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	Control air hose defective	Replace control air hose
	Auxiliary contact defective	Check the auxiliary contact, replace if necessary
No / insufficient capacity	Air filter element dirty / clogged	Clean the air filter element, replace if necessary
	Suction regulator stuck, does not open fully / defective	Check suction regulator, replace if necessary
	Non-return valve on suction regulator is stuck (NK60, 100, 160: Remove air filter, negative pressure must be noticeable at the brass nozzle)	Check non-return valve, replace if necessary
	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	Magnetic coil defective	Check electrical control unit, replace if necessary
	Safety valve defective / open	Check safety valve, replace if necessary
	Drive belt defective	Check drive belt tension and wear, replace drive belt if necessary
	Leaks in the compressor	Check compressor for leaks
Suction regulator does not close at max. operating pressure	Solenoid valve, control unit defective	Check solenoid valve, control unit, replace if necessary
	Suction regulator stuck / defective	Check suction regulator, replace if necessary
	Pressure switch incorrectly set / defective	Check pressure switch, replace if necessary
Compressor runs noisily	Drive belt tension set incorrectly	Check drive belt tension, adjust if necessary
	Pulley discs are not aligned with each other	Check the alignment of the pulley discs
	Motor bearings / compressor bearings defective	Replace motor bearings / air end bearings
Frequency converter	RENNERtronic control system display: "Frequency converter fault"	Read out errors on the frequency converter. See operating instructions for the frequency converter.



NOTICE!

Remedy of a fault

If the remedy for a fault is not described in these operating instructions, contact the authorised specialist dealer.

9 DECOMMISSIONING, DISPOSAL



WARNING!

Risk of injury from moving or ejected parts

Moving or ejected parts can lead to injuries if protective devices are missing or open.

- Only trained personnel are allowed to clean and maintain the compressor.
- Only remove protective devices to perform the necessary cleaning and maintenance.
- Do not reach into moving parts during operation.
- Check the drive belt tension and the alignment of the pulley discs regularly.
- Remove loose objects on or in the compressor immediately.
- Wear personal protective equipment.



WARNING!

Danger of injury due to suspended loads

Suspended loads can cause injuries.

- Only qualified personnel are allowed to move the compressor.
- Use suitable lifting equipment.
- Do not remain in the danger area longer than necessary.
- Secure all loose and swinging parts of the compressor.
- Wear personal protective equipment.



CAUTION!

Danger of injury due to contact with liquids

Injuries can occur through contact with oils and oily condensate during work.

- Wear personal protective equipment.
- Clean affected areas immediately.
- In case of contact with eyes or mucous membranes, rinse thoroughly with water and, if necessary, consult a doctor.



CAUTION!

Danger of injury due to sharp edges and sharp corners

Sharp edges and corners can cause cuts.

- Wear personal protective equipment.

9.1 DECOMMISSIONING

For a temporary decommissioning of less than 6 months, proceed as follows:

1. Vent the compressor [► 6.2].
2. To avoid corrosion damage, do not cover the compressor airtight.
3. Take note of the storage conditions [► 3.2].



NOTICE!

Decommissioning from 6 months by an authorised specialist dealer

The compressor may only be decommissioned for 6 months or more by an authorised specialist dealer.

9.2 RE-COMMISSIONING



NOTICE!

Commissioning and re-commissioning by specialist dealers

Commissioning and re-commissioning may only be carried out by an authorised specialist dealer.

Re-commissioning must take place after 3 months of decommissioning or storage of the compressor.

9.3 DISMANTLING

To dismantle the compressor, proceed as follows:

1. Vent the compressor [► 6.2].
2. Allow compressor to cool completely.
3. Disconnect power supply.
4. Disconnect compressed air supply.
5. Drain liquids.
6. Dismantle the compressor.
7. Dispose of components and liquids in an environmentally friendly manner.

9.4 DISPOSAL

The operator of the compressor must ensure that the regulations are adhered to correctly even where disposal is carried out by an authorised firm of specialists.

Dispose of all components of the compressor in a manner which rules out damage to health and the environment.

The compressor primarily consists of the following materials:

Material	Component
Batteries Ni -Cad -/Li battery pack	Control system
Copper	Cables
Steel	Housing Doors Motor Mechanical components
Plastic Rubber PVC	Seals Hoses
Tin Polyester	Circuit boards
Oil	Air end Air end components Motor Cooling system Pipe/flexible hose connections

The following components must be disposed of separately:

Disposal	Component
LC displays	Display devices LC displays contain highly toxic liquids
Electronic waste	Cable Lines Control system Circuit boards
Oil	Air end Air end components Motor Cooling system Pipe/flexible hose connections

10 TECHNICAL DATA

10.1 TECHNICAL DATA RS-PRO

TECHNICAL DATA

Compressor type	Air end	Capacity				Power	Start	Sound pressure level ¹	Oil content of the compressor	Cooling air required	Compressed air outlet	Fuse protection	Section of electrical cable	Dimensions ^{1,2}	Weight ^{1,2}										
		m ³ /min														kW	-	dB(A)	l	m ³ /h	-	A	mm ²	mm	kg
		7.5bar	10bar	13bar	15bar																				
RS-PRO 3,0	PRO1-NK	0,54	0,41	0,29	0,24	3,0	direct	63	1,95	300	1/2"	16	2,5	740 x 553 x 1014	167										
RS-PRO 4,0	PRO1-NK	0,69	0,55	0,44	0,37	4,0	direct	63	1,95	340	1/2"	16	2,5	740 x 553 x 1014	167										
RS-PRO 5,5	PRO1-NK	0,91	0,78	0,61	0,51	5,5	YΔ	63	1,95	560	1/2"	16	2,5	740 x 553 x 1014	186										
RS-PRO 7,5	PRO2-NK	1,25	1,09	0,86	0,79	7,5	YΔ	63	3,15	980	1/2"	25	4	740 x 553 x 1014	212										
RS-PRO 11,0	PRO2-NK	1,61	1,56	1,29	1,11	11,0	YΔ	70	3,15	1950	1/2"	35	6	740 x 553 x 1014	230										
RS-PRO 2-11,0	PRO3-NK	1,88	1,61	1,30	1,12	11,0	YΔ	69	4,5	1950	3/4"	35	6	1078 x 684 x 1131	337										
RS-PRO 15,0	PRO3-NK	2,67	2,31	1,86	1,69	15,0	YΔ	72	4,5	2710	3/4"	35	6	1078 x 684 x 1131	350										
RS-PRO 2-15,0	PRO6-NK	2,72	2,37	1,92	1,62	15,0	YΔ	68	9,5	2710	1"	35	6	1160 x 747 x 1270	436										
RS-PRO 18,5	PRO3-NK	2,82	2,45	1,96	1,78	18,5	YΔ	74	4,5	3170	3/4"	50	10	1078 x 684 x 1131	371										
RS-PRO 2-18,5	PRO6-NK	3,41	2,91	2,40	2,06	18,5	YΔ	73	9,5	3170	1"	50	10	1160 x 747 x 1270	466										
RS-PRO 22,0	PRO6-NK	3,93	3,44	2,72	2,51	22,0	YΔ	76	9,5	3950	1"	50	10	1160 x 747 x 1270	494										
RS-PRO 26,0	PRO6-NK	4,43	3,88	3,26	2,95	26,0	YΔ	73	10	5050	1 1/4"	63	16	1240 x 792 x 1372	605										
RS-PRO 30,0	PRO6-NK	5,15	4,51	3,97	3,38	30,0	YΔ	74	10	5700	1 1/4"	63	16	1240 x 792 x 1372	605										
RS-PRO 2-30,0	PRO9-NK	5,22	4,61	3,59	3,29	30,0	YΔ	74	30	5700	1 1/4"	63	16	1305 x 830 x 1640	746										
RS-PRO 37,0	PRO6-NK	5,54	5,23	4,39	4,08	37,0	YΔ	78	10	6700	1 1/4"	80	25	1240 x 792 x 1372	624										
RS-PRO 2-37,0	PRO9-NK	6,36	5,58	4,66	4,10	37,0	YΔ	77	30	6700	1 1/4"	80	25	1305 x 830 x 1640	762										
RS-PRO 45,0	PRO9-NK	7,70	6,92	5,71	4,99	45,0	YΔ	77	35	8100	1 1/2"	100	35	1485 x 880 x 1760	939										
RS-PRO 55,0	PRO9-NK	9,02	7,94	6,93	6,09	55,0	YΔ	79	35	9900	1 1/2"	125	50	1485 x 880 x 1760	1017										
RSK-PRO 3,0	PRO1-NK	0,54	0,41	0,29	0,24	3,0	direct	63	1,95	600	1/2"	16	2,5	994 x 553 x 1014	203										
RSK-PRO 4,0	PRO1-NK	0,69	0,55	0,44	0,37	4,0	direct	63	1,95	640	1/2"	16	2,5	994 x 553 x 1014	203										
RSK-PRO 5,5	PRO1-NK	0,91	0,78	0,61	0,51	5,5	YΔ	63	1,95	860	1/2"	16	2,5	994 x 553 x 1014	222										
RSK-PRO 7,5	PRO2-NK	1,25	1,09	0,86	0,79	7,5	YΔ	63	3,15	1280	1/2"	25	4	994 x 553 x 1014	251										
RSK-PRO 11,0	PRO2-NK	1,61	1,56	1,29	1,11	11,0	YΔ	70	3,15	2250	1/2"	35	6	994 x 553 x 1014	269										
RSK-PRO 2-11,0	PRO3-NK	1,88	1,61	1,30	1,12	11,0	YΔ	69	4,5	1950	3/4"	35	6	1423 x 684 x 1131	376										
RSK-PRO 15,0	PRO3-NK	2,67	2,31	1,86	1,69	15,0	YΔ	72	4,5	2710	3/4"	35	6	1423 x 684 x 1131	389										
RSK-PRO 2-15,0	PRO6-NK	2,72	2,37	1,92	1,62	15,0	YΔ	68	9,5	2710	1"	35	6	1505 x 747 x 1270	492										
RSK-PRO 18,5	PRO3-NK	2,82	2,45	1,96	1,78	18,5	YΔ	74	4,5	3170	3/4"	50	10	1423 x 684 x 1131	430										

¹with Rear duct silencer (SDB)

²Please refer to data sheet or price list for compressors with air receivers

Compressor type	Air end	Capacity				Power	Start	Sound pressure level ¹	Oil content of the compressor	Cooling air required	Compressed air outlet	Fuse protection	Section of electrical cable	Dimensions ^{1,2}	Weight ^{1,2}										
		m ³ /min														kW	-	dB(A)	l	m ³ /h	-	A	mm ²	mm	kg
		7.5bar	10bar	13bar	15bar																				
RSK-PRO 2-18,5	PRO6-NK	3,41	2,91	2,40	2,06	18,5	YΔ	73	9,5	3170	1"	50	10	1505 x 747 x 1270	524										
RSK-PRO 22,0	PRO6-NK	3,93	3,44	2,72	2,51	22,0	YΔ	76	9,5	3950	1"	50	10	1510 x 747 x 1270	571										
RSK-PRO 26,0	PRO6-NK	4,43	3,88	3,26	2,95	26,0	YΔ	73	10	5650	1 ¼"	63	16	1590 x 792 x 1372	682										
RSK-PRO 30,0	PRO6-NK	5,15	4,51	3,97	3,38	30,0	YΔ	74	10	6400	1 ¼"	63	16	1590 x 792 x 1372	683										
RSK-PRO 2-30,0	PRO9-NK	5,22	4,61	3,59	3,29	30,0	YΔ	74	30	6400	1 ¼"	63	16	1654 x 830 x 1640	829										
RSK-PRO 37,0	PRO6-NK	5,54	5,23	4,39	4,08	37,0	YΔ	78	10	7400	1 ¼"	80	25	1590 x 792 x 1372	709										
RSK-PRO 2-37,0	PRO9-NK	6,36	5,58	4,66	4,10	37,0	YΔ	77	30	7400	1 ¼"	80	25	1654 x 830 x 1640	845										
RSK-PRO 45,0	PRO9-NK	-	6,92	5,71	4,99	45,0	YΔ	77	35	8800	1 ½"	100	35	1834 x 880 x 1760	1022										

¹with Rear duct silencer (SDB)

²Please refer to data sheet or price list for compressors with air receivers

10.2 TECHNICAL DATA RSF-PRO

Compressor type	Air end	Capacity							Power	Start	Sound pressure level ¹	Oil content of the compressor	Cooling air required	Compressed air outlet	Fuse protection	Section of electrical cable	Dimensions ^{1,2}	Weight ^{1,2}										
		m ³ /min																	kW	-	dB(A)	l	m ³ /h	-	A	mm ²	mm	kg
		6bar	7bar	8bar	9bar	10bar	13bar	15bar																				
RSF-PRO 5,5	PRO1-NK	0,29 - 0,98	0,28 - 0,96	0,28 - 0,90	0,27 - 0,85	0,27 - 0,78	0,31 - 0,61	0,26 - 0,51	5,5	controlled	62	1,95	560	1/2"	16	2,5	824 x 553 x 1014	215										
RSF-PRO 7,5	PRO2-NK	0,42 - 1,37	0,41 - 1,30	0,39 - 1,24	0,36 - 1,18	0,33 - 1,09	0,43 - 0,86	0,40 - 0,79	7,5	controlled	62	3,15	980	1/2"	25	4	824 x 553 x 1014	237										
RSF-PRO 11,0	PRO2-NK	0,45 - 1,64	0,44 - 1,62	0,44 - 1,60	0,43 - 1,58	0,42 - 1,56	0,65 - 1,29	0,56 - 1,11	11,0	controlled	69	3,15	1950	1/2"	35	6	824 x 553 x 1014	263										
RSF-PRO 2-11,0	PRO3-NK	0,59 - 2,04	0,58 - 1,93	0,57 - 1,82	0,55 - 1,70	0,53 - 1,61	0,71 - 1,30	0,67 - 1,12	11,0	controlled	68	4,5	1950	3/4"	35	6	1078 x 684 x 1131	373										
RSF-PRO 15,0	PRO3-NK	0,76 - 2,74	0,75 - 2,69	0,74 - 2,57	0,72 - 2,44	0,71 - 2,31	0,93 - 1,86	0,84 - 1,69	15,0	controlled	71	4,5	2710	3/4"	35	6	1078 x 684 x 1131	397										
RSF-PRO 2-15,0	PRO6-NK	1,37 - 3,18	1,35 - 2,96	1,33 - 2,78	1,32 - 2,59	1,30 - 2,37	1,19 - 1,95	1,13 - 1,70	15,0	controlled	65	9,5	2710	1"	35	6	1243 x 747 x 1270	490										
RSF-PRO 18,5	PRO3-NK	0,94 - 2,82	0,93 - 2,75	0,91 - 2,64	0,90 - 2,54	0,88 - 2,45	0,98 - 1,96	0,89 - 1,78	18,5	controlled	73	4,5	3170	3/4"	50	10	1078 x 684 x 1131	418										
RSF-PRO 2-18,5	PRO6-NK	1,42 - 3,98	1,41 - 3,76	1,40 - 3,55	1,38 - 3,39	1,36 - 3,20	1,21 - 2,57	1,17 - 2,27	18,5	controlled	70	9,5	3170	1"	50	10	1243 x 747 x 1270	524										
RSF-PRO 22,0	PRO6-NK	1,38 - 4,40	1,37 - 4,24	1,36 - 3,99	1,34 - 3,74	1,32 - 3,54	1,24 - 2,93	1,18 - 2,68	22,0	controlled	73	9,5	3950	1"	50	10	1243 x 747 x 1270	581										
RSF-PRO 26,0	PRO6-NK	1,97 - 4,90	1,96 - 4,68	1,96 - 4,44	1,95 - 4,37	1,94 - 4,09	1,91 - 3,39	1,84 - 3,02	26,0	controlled	70	10	5050	1 1/4"	63	16	1388 x 792 x 1372	687										
RSF-PRO 30,0	PRO6-NK	2,10 - 5,60	2,10 - 5,37	2,09 - 5,09	2,07 - 4,88	2,05 - 4,51	1,92 - 3,90	1,84 - 3,54	30,0	controlled	71	10	5700	1 1/4"	63	16	1388 x 792 x 1372	687										
RSF-PRO 2-30,0	PRO9-NK	1,69 - 5,11	1,68 - 5,08	1,67 - 4,89	1,65 - 4,64	1,61 - 4,42	1,01 - 3,59	0,85 - 3,29	30,0	controlled	69	30	5700	1 1/4"	63	16	1400 x 830 x 1640	850										
RSF-PRO 37,0	PRO6-NK	2,05 - 5,77	2,03 - 5,67	2,02 - 5,49	1,99 - 5,46	1,98 - 5,30	1,94 - 4,60	1,89 - 4,16	37,0	controlled	75	10	6700	1 1/4"	80	25	1388 x 792 x 1372	708										
RSF-PRO 2-37,0	PRO9-NK	2,18 - 6,82	2,16 - 6,60	2,14 - 6,28	2,12 - 6,06	2,08 - 5,82	1,33 - 4,66	1,11 - 4,10	37,0	controlled	72	30	6700	1 1/4"	80	25	1400 x 830 x 1640	880										
RSF-PRO 45,0	PRO9-NK	2,64 - 8,32	2,61 - 7,90	2,58 - 7,63	2,56 - 7,23	2,52 - 6,86	1,69 - 5,71	1,45 - 4,99	45,0	controlled	74	35	8100	1 1/2"	100	35	1680 x 880 x 1760	1120										
RSF-PRO 55,0	PRO9-NK	2,97 - 8,79	2,95 - 8,58	2,91 - 8,27	2,87 - 8,01	2,84 - 7,74	2,01 - 6,93	1,73 - 6,09	55,0	controlled	76	35	9900	1 1/2"	125	50	1680 x 880 x 1760	1198										
RSKF-PRO 5,5	PRO1-NK	0,29 - 0,98	0,28 - 0,96	0,28 - 0,90	0,27 - 0,85	0,27 - 0,78	0,31 - 0,61	0,26 - 0,51	5,5	controlled	62	1,95	860	1/2"	16	2,5	1079 x 553 x 1014	215										
RSKF-PRO 7,5	PRO2-NK	0,42 - 1,37	0,41 - 1,30	0,39 - 1,24	0,36 - 1,18	0,33 - 1,09	0,43 - 0,86	0,40 - 0,79	7,5	controlled	62	3,15	1280	1/2"	25	4	1079 x 553 x 1014	273										
RSKF-PRO 11,0	PRO2-NK	0,45 - 1,64	0,44 - 1,62	0,44 - 1,60	0,43 - 1,58	0,42 - 1,56	0,65 - 1,29	0,56 - 1,11	11,0	controlled	69	3,15	2250	1/2"	35	6	1079 x 553 x 1014	299										
RSKF-PRO 2-11,0	PRO3-NK	0,59 - 2,04	0,58 - 1,93	0,57 - 1,82	0,55 - 1,70	0,53 - 1,61	0,71 - 1,30	0,67 - 1,12	11,0	controlled	68	4,5	1950	3/4"	35	6	1423 x 684 x 1131	412										
RSKF-PRO 15,0	PRO3-NK	0,76 - 2,74	0,75 - 2,69	0,74 - 2,57	0,72 - 2,44	0,71 - 2,31	0,93 - 1,86	0,84 - 1,69	15,0	controlled	71	4,5	2710	3/4"	35	6	1423 x 684 x 1131	456										
RSKF-PRO 2-15,0	PRO6-NK	1,37 - 3,18	1,35 - 2,96	1,33 - 2,78	1,32 - 2,59	1,30 - 2,37	1,19 - 1,95	1,13 - 1,70	15,0	controlled	65	9,5	2710	1"	35	6	1588 x 747 x 1270	546										
RSKF-PRO 18,5	PRO3-NK	0,94 - 2,82	0,93 - 2,75	0,91 - 2,64	0,90 - 2,54	0,88 - 2,45	0,98 - 1,96	0,89 - 1,78	18,5	controlled	73	4,5	3170	3/4"	50	10	1423 x 684 x 1131	477										
RSKF-PRO 2-18,5	PRO6-NK	1,42 - 3,98	1,41 - 3,76	1,40 - 3,55	1,38 - 3,39	1,36 - 3,20	1,21 - 2,57	1,17 - 2,27	18,5	controlled	70	9,5	3170	1"	50	10	1588 x 747 x 1270	582										
RSKF-PRO 22,0	PRO6-NK	1,38 - 4,40	1,37 - 4,24	1,36 - 3,99	1,34 - 3,74	1,32 - 3,54	1,24 - 2,93	1,18 - 2,68	22,0	controlled	73	9,5	3950	1"	50	10	1593 x 747 x 1270	658										
RSKF-PRO 26,0	PRO6-NK	1,97 - 4,90	1,96 - 4,68	1,96 - 4,44	1,95 - 4,37	1,94 - 4,09	1,91 - 3,39	1,84 - 3,02	26,0	controlled	70	10	5650	1 1/4"	63	16	1738 x 792 x 1372	764										

¹with Rear duct silencer (SDB)

²Please refer to data sheet or price list for compressors with air receivers

Compressor type	Air end	Capacity							Power	Start	Sound pressure level ¹	Oil content of the compressor	Cooling air required	Compressed air outlet	Fuse protection	Section of electrical cable	Dimensions ^{1,2}	Weight ^{1,2}										
		m ³ /min																	kW	-	dB(A)	l	m ³ /h	-	A	mm ²	mm	kg
		6bar	7bar	8bar	9bar	10bar	13bar	15bar																				
RSKF-PRO 30,0	PRO6-NK	2,10 - 5,60	2,10 - 5,37	2,09 - 5,09	2,07 - 4,88	2,05 - 4,51	1,92 - 3,90	1,84 - 3,54	30,0	controlled	71	10	6400	1 ¼"	63	16	1738 x 792 x 1372	765										
RSKF-PRO 2-30,0	PRO9-NK	1,69 - 5,11	1,68 - 5,08	1,67 - 4,89	1,65 - 4,64	1,61 - 4,42	1,01 - 3,59	0,85 - 3,29	30,0	controlled	69	30	6400	1 ¼"	63	16	1750 x 830 x 1640	933										
RSKF-PRO 37,0	PRO6-NK	2,05 - 5,77	2,03 - 5,67	2,02 - 5,49	1,99 - 5,46	1,98 - 5,30	1,94 - 4,60	1,89 - 4,16	37,0	controlled	75	10	7400	1 ¼"	80	25	1738 x 792 x 1372	793										
RSKF-PRO 2-37,0	PRO9-NK	2,18 - 6,82	2,16 - 6,60	2,14 - 6,28	2,12 - 6,06	2,08 - 5,82	1,33 - 4,66	1,11 - 4,10	37,0	controlled	72	30	7400	1 ¼"	80	25	1750 x 830 x 1640	963										
RSKF-PRO 45,0	PRO9-NK	2,64 - 8,32	2,61 - 7,90	2,58 - 7,63	2,56 - 7,23	2,52 - 6,86	1,69 - 5,71	1,45 - 4,99	45,0	controlled	74	35	8800	1 ½"	100	35	2030 x 880 x 1760	1203										

¹with Rear duct silencer (SDB)

²Please refer to data sheet or price list for compressors with air receivers

10.3 PRESSURE DEW POINT

The pressure dew point corresponds to the temperature to which the compressed air can be cooled without condensate precipitating.



WARNING!

Property damage due to condensation

The formation of condensation leads to corrosion damage to the air end and seizure of moving parts. If the operating temperature of the compressor is below the pressure dew point, condensate forms, which mixes with the oil and has a negative impact on its lubrication properties. If the intake air exceeds the absolute humidity of 20 g/m³, contact the authorised specialist dealer.

- The operating temperature of the compressor must be at least 5 K above the pressure dew point.
- The ambient temperature, relative humidity and maximum operating pressure must be taken into account.

Determination of the absolute humidity in the intake air [g/m³]

	Relative humidity							
	30%	40%	50% ¹⁾	60%	70%	80%	90% ²⁾	100%
50	24,7	32,9	41,1	49,4	57,6	65,8	74,0	82,3
45	19,5	25,9	32,4	38,9	45,4	51,9	58,4	64,9
40	15,2	20,3	25,3	30,4	35,5	40,5	45,6	50,7
35	11,8	15,7	19,6	23,6	27,5	31,4	35,4	39,3
30	9,0	12,0	15,0	18,1	21,1	24,1	27,1	30,1
25	6,9	9,1	11,4	13,7	16,0	18,3	20,6	22,8
20	5,1	6,9	8,6	10,3	12,0	13,7	15,4	17,2
15	3,8	5,1	6,4	7,6	8,9	10,2	11,5	12,7
10	2,8	3,7	4,7	5,6	6,6	7,5	8,4	9,4
5	2,0	2,7	3,4	4,1	4,8	5,4	6,1	6,8
0	1,5	2,0	2,4	2,9	3,4	3,9	4,4	4,9
-5	1,0	1,3	1,6	1,9	2,3	2,6	2,9	3,2
-10	0,7	0,9	1,1	1,3	1,5	1,7	1,9	2,2

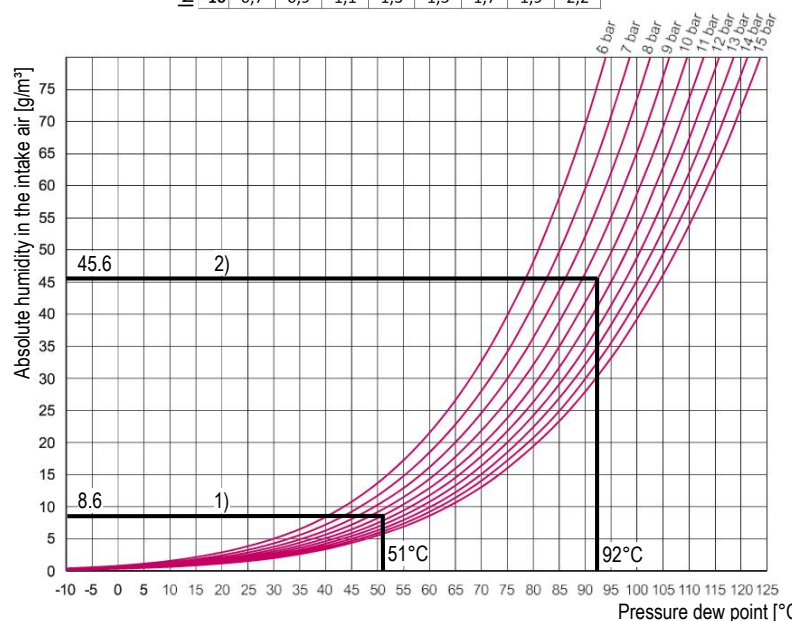


Illustration 37: Pressure dew point chart

		Example 1)	Example 2)
Intake air temperature	°C	20	40
Relative humidity	%	50	90
Absolute humidity	g/m ³	8.6	45.6
Pressure dew point at 10.0 bar	°C	approx. 51	approx. 92

11 ANNEX

11.1 EG DECLARATION OF CONFORMITY

EC Declaration of Conformity in accordance with the Machinery Guideline 2006/42/EC Annex II 1A

The manufacturer / distributor

RENNER Kompressoren GmbH
 Emil-Weber-Straße 32
 D-74363 Güglingen

hereby declares that the following product

Product designation: RENNER Screw Compressor
 Make: RENNER
 Serial number: 1000000 - 9999999
 Series/type designation: RS-PRO; RSF-PRO; RSK-PRO; RSD-PRO; RSDK-PRO; RSDF-PRO; RSKF-PRO; RSDKF-PRO 3,0 – 11,0; 2-11,0 – 18,5; 2-15,0 – 37,0; 2-30,0 – 55,0

Description:

Screw compressor for generating compressed air from 6 to 15 bar
 complies with all relevant conditions of the above guideline as well as other related
 guidelines (to follow) - including their requirements applicable at the time of the declaration.

The following additional EU guidelines were applied:

EMC Directive 2014/30/EU
 Directive 2014/29/EU
 RoHS Directive 2011/65/EU

The following harmonised standards were applied in their current version:

EN 1012-1 Compressors and vacuum pumps - Safety requirements - Part 1: Compressors
 EN 286-1 Simple unfired pressure vessels designed to contain air or nitrogen - Part 1: Pressure vessel for general purposes
 EN 60204-1 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
 EN ISO 12100 Machine safety - general design principles for risk assessment and risk reduction
 EN ISO 13849-1 Safety of machines - Safety-related parts of control systems - Part 1: General principles for design
 EN ISO 13849-2 Safety of machines - Safety-related parts of control systems - Part 2: Validation

Name and address of the person who is authorised to compile the technical documents:

Roland Frank
 RENNER Kompressoren GmbH
 Emil-Weber-Straße 32
 D-74363 Güglingen

Güglingen, 03 January 2022



Bernd Renner
 Managing Director



Roland Frank
 Authorised representative for the compilation of technical documents

11.2 UK DECLARATION OF CONFORMITY

according to Supply of Machinery (Safety) Regulations 2008 (SI 2008/1597)

The manufacturer / distributor

RENNER Kompressoren GmbH
 Emil-Weber-Straße 32
 D-74363 Güglingen

hereby declares that the following product

Product designation: RENNER Screw Compressor
 Make: RENNER
 Serial number: 1000000 - 9999999
 Series/type designation: RS-PRO; RSF-PRO; RSK-PRO; RSD-PRO; RSDK-PRO; RSDF-PRO; RSKF-PRO; RSDKF-PRO 3,0 – 11,0; 2-11,0 – 18,5; 2-15,0 – 37,0; 2-30,0 – 55,0

Description:

Screw compressor for generating compressed air from 6 to 15 bar
 complies with all relevant conditions of the above guideline as well as other related guidelines (to follow) - including their requirements applicable at the time of the declaration.

The following additional UK guidelines were applied:

Regulations 2016 (SI 2016/1091) Electromagnetic Compatibility
 Regulations 2016 (SI 2016/1092) Simple Pressure Vessels Safety
 Regulations 2012 (SI 2012/3032) The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

The following harmonised standards were applied in their current version:

BS EN 1012-1 Compressors and vacuum pumps - Safety requirements - Part 1: Compressors
 BS EN 286-1 Simple unfired pressure vessels designed to contain air or nitrogen - Part 1: Pressure vessel for general purposes
 BS EN 60204-1 Safety of machinery - Electrical equipment of machines - Part 1: General requirements
 BS EN ISO 12100 Machine safety - general design principles for risk assessment and risk reduction
 BS EN ISO 13849-1 Safety of machines - Safety-related parts of control systems - Part 1: General principles for design
 BS EN ISO 13849-2 Safety of machines - Safety-related parts of control systems - Part 2: Validation

Name and address of the person who is authorised to compile the technical documents:

Roland Frank
 RENNER Kompressoren GmbH
 Emil-Weber-Straße 32
 D-74363 Güglingen

Güglingen, 03 January 2022



Bernd Renner
 Managing Director



Roland Frank
 Authorised representative for the compilation of technical documents

11.3 COMMISSIONING PROTOCOL

Commissioning Report / Warranty Registration for Screw Compressors

Service-partner/ distributor:

Customer no: _____ **Customer:**
Name: _____
Street: _____
Zip code / City: _____

Compressor data:

Type: _____ kW _____ bar _____ Serial no: _____
Date of commissioning*: _____ Year of production: _____
Date of installation of compressor: _____ Operating hours: _____

New machine
Used compressor
Integrated in BLCO (Base Load Change Over)
Integrated in Interconnected intelligent control system with heat exchanger/box

* If commissioning is effected later than 3 months after delivery date please follow chapter 3... of the Instruction Manual.

Compressor installation conditions:

Location: Open area (hall, tent,...) Enclosed area (compressor room, container...) Ship Lorry/train Barn
Covered outdoor area Not covered outdoor area Factory/production Biogas plant Below ground Other

Ventilation: Exhaust duct (length: _____ m) Brackets/valves Air intake duct Booster fan

Ambient conditions: Clean Dusty Dirty Humid Vapors/chemical exposure

Check operations to be carried out:

BEFORE commissioning

Master switch/Circuit breaker available / installed

Tighten all oil hoses/air hoses/pipes

Check/tighten all electrical connections

Measure belt tension (N/Hz)

Electr. HRC fuse as stated in technical specifications: _____

BEFORE / DURING test run

Check oil level

Check direction of rotation

Maximum pressure bar _____ checked

Restarting pressure bar _____ checked

Check for oil/air leakages _____

_____ °C Oil temperature after 30 minutes load cycle

_____ °C Ambient temperature

AFTER test run

Check for air leakages

Check for oil leakages

Run-on time setting _____ sec

Belt tension after test run _____

Mains supply: _____ V (measured)
L1: _____ L2: _____ L3: _____

Power input in load cycle
L1: _____ L2: _____ A L3: _____ A

Power input in idle cycle:
L1: _____ L2: _____ A L3: _____ A

Extended warranty: 3 years 4 years 5 years

Filtration: Pre-filter Fine filter Active carbon filter Cyclone separator

Special application: Nitrogen Helium Other: _____

Dryer: Performance test Dew point monitoring int./ext. Dew point after 30min test run: _____

Information for customers:

- All handbooks and keys for doors handed to customer
- All the necessary functions of the compressor / control explained to customer
- Customer informed of the weekly necessary visual checks (leakages, oil level, pre-filter...)

Signature of customer (authorized person/engineer): _____

Signature of distributor/service partner: _____

Date: _____

Your signature confirms that the above mentioned RENNER compressor has been properly installed and that your compressor has been handed over and functions correctly!

11.4 FLOW DIAGRAM

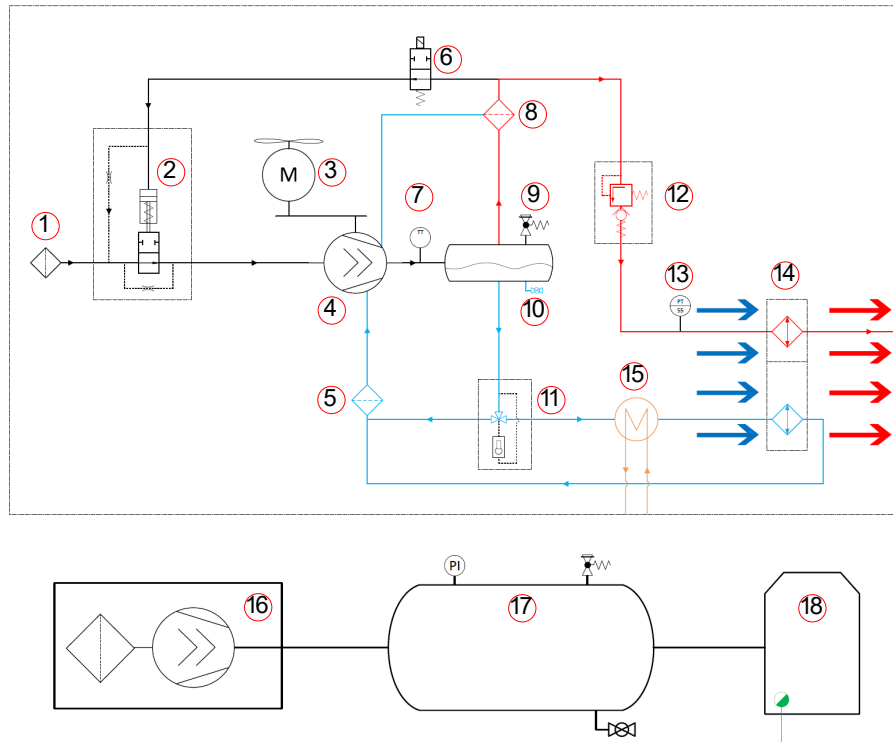


Illustration 38: Flow diagram

- | | |
|-----------------------------|-----------------------------------|
| 1 Air filter element | 2 Suction regulator |
| 3 Motor | 4 Air end |
| 5 Oil filter | 6 Solenoid valve |
| 7 Temperature sensor | 8 Oil separator cartridge |
| 9 Safety valve | 10 Oil drain |
| 11 Thermovalve | 12 Minimum pressure valve |
| 13 Pressure sensor | 14 Cooler |
| 15 Heat recovery (optional) | 16 Compressor |
| 17 Air receiver (optional) | 18 Refrigeration dryer (optional) |

GLOSSARY

°C

Degrees Celsius

AND/OR

and/or

BETRISCHV

Occupational Safety Ordinance

CAD

Cadmium

DGUV

German statutory accident insurance

E.G.

for example

EC

European Union

IF NECESSARY

if necessary

K

Kelvin

L1, L2, L3

Conductor

LC

Liquid crystal

LI

Lithium

M

Metres

MAX.

maximum

MIN

Minute

MIN.

minimum

MIN.

at least

NHN (SEA LEVEL)

Sea level (height above sea level)

NI

Nickel

PE

Protective conductor

PVC

Polyvinylchloride

SEC.

Second

YΔ

Star-delta