

Operating Manual

PFT Air Compressor LK 402 IV

Safety

Overview – Operation – Spare Parts Lists



Item number of operating manual: 00 25 52 64

Item number of the machine parts list: 00 23 31 74



Read the operating manual prior to beginning any work!

© Knauf PFT GmbH & Co.KG
Postfach 60 97343 Iphofen
Einersheimer Straße 53 97346 Iphofen
Germany

Tel.: +49 (0) 93 23/31-760
Fax: +49 (0) 93 23/31-770
Technical hotline: +49 9323 31-1818

info@pft.net
www.pft.net

1	General information.....	4		
1.1	Information on the safety instructions.....	4	4.1	What to do.....
1.2	Keep the manual for later use	4	4.2	What to refrain from
1.3	Symbols	5	4.3	Removing the packaging.....
1.4	Limitation of liability	6	4.4	Disposal of packaging
1.5	Copyright protection	7	5	Start-up.....
1.6	Spare parts	7	5.1	Set-up.....
1.7	Customer service.....	7	5.2	installation
2	Safety	8	5.3	Switching on.....
2.1	Owner responsibility	8	5.4	Motor protection switch
2.2	Operating personnel	9	5.5	Setting the operating pressure
2.3	Proper use of the machine	10	6	Maintenance.....
2.4	Personal protective equipment.....	12	6.1	Note
2.5	Special dangers	13	6.2	Check after 50 operating hours.....
2.6	Safety devices	16	6.3	Weekly inspection
2.7	Dealing with dangerous situations and accidents.....	17	6.4	Monthly inspection or more frequently.....
2.8	Signs.....	17	6.5	Half-yearly oil change.....
3	Operation	20	6.6	Cleaning
3.1	Preliminary remark	20	6.7	Maintenance program
3.2	Description.....	21	6.8	Electrical data
3.3	Proposed scope of application	21	7	Solution
4	General safety standards.....	21	8	Spare parts diagram.....
			9	Index



1 General information

1.1 Information on the safety instructions

These safety instructions give important notes and instructions on the correct use of the equipment. Adherence to all defined safety and handling instructions is a prerequisite for a safe working environment.

Additionally, the on-site accident prevention regulations and general safety guidelines for the equipment must be followed at all times.

Read the manual carefully before starting any work! It is an integral part of the product and must be kept near the machine and accessible to operators at all times.

Always include the operating manual when transferring the machine to third parties.

The diagrams and illustrations shown in the manual are intended for better understanding of tasks and descriptions. They are not necessarily shown to the correct scale and may vary slightly from the actual equipment used.

1.2 Keep the manual for later use

The operating manual must be available during the entire service life of the product.

1.3 Symbols

Warning symbols

Warnings are shown by symbols in this manual. The warnings themselves open with signal words that express the seriousness of the danger.

Adhere to these warnings at all times to avoid accidents, personal injury and equipment damage.



DANGER!

... Indicates an immediate dangerous situation that will lead to death or serious injury if it is not avoided.



WARNING!

... Indicates a potentially dangerous situation that can lead to death or serious injury if it is not avoided.



CAUTION!

... Indicates a potentially dangerous situation that can lead to minor or slight injury if it is not avoided.



CAUTION!

... Indicates a potentially dangerous situation that can lead to material damage if it is not avoided.

Tips and recommendations



NOTE!

... Contains useful tips and recommendations, plus further information on efficient and problem-free operation.

Special safety instructions

The following symbols are used in conjunction with safety instructions in order to illustrate certain types of danger:



DANGER!

Danger of death due to electric current!

... Indicates a potentially life-threatening situation caused by electricity in the affected area.

Non-compliance with the safety instruction could lead to death or serious injury.

Work on electrical systems may only be carried out by specialist electricians.

1.4 Limitation of liability

All specifications and instructions in this manual have been compiled according to the currently valid norms and instructions, up-to-date technology and our many years of experience in the branch.

The manufacturer accepts no liability for damages caused under the following conditions:

- Failure to follow the instructions
- Non-intended use
- Deployment of untrained personnel
- Unauthorised conversions
- Technical modifications
- Use of non-approved spare parts

The actual scope of delivery may vary from the explanations and diagrams detailed here due to special models, additional order options and technological changes.

Additionally, the obligations defined in the delivery contract, the general terms and conditions, the delivery requirements of the manufacturer and the valid regulations at the time of contract conclusion all apply.

1.5 Copyright protection

Keep the manual and its contents confidential. It is only to be used by personnel who actively use the machine. Forwarding of the manual to third-parties without prior written permission from the manufacturer is not permitted.



NOTE!

The contents, texts, drawings, pictures and other representations are protected by copyright and are subject to industrial property rights. Any improper use shall be liable to prosecution.

All forms of reproduction – both in whole and in part – plus the utilisation or publication of the manual contents are not permitted without prior written approval by the manufacturer. Violation of these terms can lead to claims for compensation. We reserve all other further rights.

1.6 Spare parts



WARNING!

Danger of injury due to incorrect spare parts!

Incorrect or defective spare parts can lead to damage, improper functionality or complete system breakdowns. They can also negatively affect system safety.

Therefore:

- Only use original spare parts from the manufacturer.

Only purchase spare parts from approved dealers.

1.7 Customer service

Our customer hotline is available in case of technical queries.

Information on the respective contact partners can be found by telephone, fax, e-mail or on the Internet. The address of the manufacturer can be found on page 2.

Our employees are always happy to receive new information resulting from practical operation. This information may be used for future product improvements.



2 Safety

This section provides an overview of all important safety aspects. These offer optimal levels of safety for personnel and safe and problem-free operation.

Significant danger may result from non-compliance with the operating steps and safety instructions detailed in this manual.

2.1 Owner responsibility

The equipment is intended for industrial use. The owner of the equipment is therefore subject to the statutory health and safety regulations.

Apart from the work safety instructions detailed in this manual, all valid safety, accident prevention and environmental protection guidelines for the equipment must be adhered to. This especially applies to the following:

- The owner must be aware of the valid health and safety regulations and is responsible for carrying out a hazard analysis in order to determine additional dangers resulting from the individual working conditions on the operating site of the device. These additional dangers must be summarised as operational instructions for the correct use of the equipment.
- During the entire operation time of the device, the owner is responsible for coordinating the operating instructions with the current operational status and for adapting them as required.
- The owner is responsible for clearly allocating and defining the responsibilities for installation, operation, maintenance and cleaning.
- The owner must ensure that all employees handling the device have read and understood the operating manual. In addition he must train the personnel at regular intervals and inform them of the dangers associated with equipment use.

The owner is also responsible for the technical functionality and condition of the equipment. The following rules apply here:

- The owner must ensure that the maintenance intervals detailed in this operating manual are observed.
- The owner must have all safety devices regularly checked for functionality and completeness.
- The owner must make the requisite safety equipment available to personnel.

2.2 Operating personnel

2.2.1 Requirements

**WARNING!****Risk of injury due to lack of qualification!**

Improper use of the equipment can lead to serious personal injury and material damage.

- Only have certain tasks carried out by the responsible persons detailed in the individual chapters of this manual.
- Contact specialists in case of doubt.

The following qualifications are specified for various tasks within this manual:

- **Instructed person** has been instructed by the operator about the tasks assigned to him and possible dangers in the event of improper behaviour.
- **skilled personnel** is, due to his technical training, knowledge and experience as well as knowledge of the relevant regulations, in a position to carry out the work assigned to him and to recognise possible dangers independently.
- **qualified electrician** is able to carry out work on electrical systems and to recognise possible dangers independently due to its technical training, knowledge and experience as well as knowledge of the relevant standards and regulations.

Electricians are specially trained for the work environment in question and are aware of the relevant standards and instructions.

Only persons that carry out their work responsibly are permitted to work with the system. Persons with impaired reactions (e.g. due to drugs, alcohol or medication) are not permitted.

Observe the specific business and age regulations when selecting personnel on-site.

2.2.2 Unauthorised individuals



WARNING! Unauthorised individuals are put at risk!

Unauthorised individuals who do not fulfil the requirements here are not fully aware of the dangers in the work area.

- Keep unauthorised persons away from the work area.
- In case of doubt, ask the persons involved and guide them away from the work area.
- Stop operation as long as unauthorised individuals are found within the work area.

2.2.3 Inspection

The compressor must be inspected by a specialist once a year. The test must be documented.

This inspection must be carried out once a year by a specialist in accordance with BGR 183 (German Association for Health and Safety at Work). As validation of this test, the compressor receives a test badge. The inspection protocol is to be presented on demand.

2.3 Proper use of the machine

The equipment has been designed and constructed only for the intended use described below.

The compressor may only be used as a source of compressed air, any other application is excluded.



WARNING!

Danger due to improper use of the machine!

Improper or unauthorised additional use of the system can lead to dangerous situations.

Therefore:

- Only use the machine as intended.
- Always observe all processing guidelines from the material manufacturer.
- Adhere to all specifications in this operating manual to the letter.
- In particular, do not use the device for the following purposes. They are not considered as intended:
 - Do not use for food or pharmaceutical industry
 - Do not climb on the machine

We accept no responsibility for damages caused by improper or unauthorised use.

The owner is solely liable for all damage or injury caused by improper or unauthorised use.

2.4 Personal protective equipment

In order to minimise negative effects on personal health, personal protective equipment must be worn during operation.

- Always wear the protective equipment required for the work in question during work.
- Observe signs for personal protective equipment in the work area.

Always wear



Always wear the following during all work:

Protective work clothing

The protective work clothing is tight-fitting, rips easily if caught, has narrow sleeves and has no protruding parts. It is primarily intended as protection from being caught by moving machine parts.

Do not wear rings, chains and other jewellery.



Safety shoes

Protect against heavy falling parts and slipping on slippery surfaces.



Safety goggles

Protect the eyes from flying projectiles and splashing liquids.



Light breathing protection

Protects against dangerous dust.



Ear protection

Protects against damage caused by loud noises.



Safety helmet

Protects against falling and flying parts and materials.



Safety gloves

Protect hands from friction, scraping, punctures or deeper injuries as well as from contact with hot surfaces.

Wear for special tasks



Special protective equipment is necessary for certain specialist tasks. These are specially indicated in the individual manual chapters. These special pieces of equipment are as follows:

Face guard

Protects the eyes and face from flames, sparks or embers as well as from hot particles or exhaust gases.

2.5 Special dangers

The following section details other elements of risk that can occur according to the risk assessment.

Pay attention to the safety instructions and warnings in the other chapters of this manual in order to reduce health risks and avoid dangerous situations.

Electric current



DANGER!

Danger of death due to electric current!

Contact with live components can lead to death or serious injury. Damage to electrical insulation or individual components can be potentially life-threatening.

Therefore:

- If the insulation is damaged, switch off the power supply immediately and have it repaired.
- Work on the electrical system must only be carried out by qualified electricians.
- When carrying out any work on the electrical system, switch it off and check that it is voltage-free.
- Before maintenance, cleaning and repair work, switch off the power supply and secure it against being switched on again.
- Do not bypass or disable any fuses. Pay attention to the correct amperage when replacing fuses.
- Keep moisture away from live parts. This can lead to a short-circuit.

Escaping material



DANGER!
Danger of injury due to escaping material!

Escaping material can cause injuries to the eyes and face.

Therefore:

- Always wear protective goggles
- Always position the machine so that you cannot be hit should mortar escape.

Noise



WARNING!
Danger of damage to hearing!

The loud noises associated with the work area can cause serious damage to hearing.

Therefore:

- Always wear ear protection when working.
- Only remain in the danger zone for as long as absolutely necessary.

Hazardous dust



WARNING!
Danger of health problems due to dust!

Inhaled dust can lead to long-term lung damage or other health problems.

Therefore:

- Wear light respiratory protection for all work in the danger area.

Moving parts



WARNING!

Danger of injury due to moving parts!

Rotating and oscillating parts can cause serious injuries.

Therefore:

- Do not reach into or handle moving parts during operation.
- Do not open covers during operation.
- Observe the run-down time:
Before opening covers, ensure that parts are no longer moving.
- Wear close-fitting protective clothing in the danger zone.

Dirt and objects lying around



CAUTION!

Risk of tripping due to dirt and obstacles lying around!

Dirt and other impedances can form a slipping or tripping hazard, and can lead to significant injuries.

Therefore:

- Always keep the work area clean.
- Remove objects when they are no longer needed.
- Indicate tripping hazards with yellow and black tape.

2.6 Safety devices



WARNING!

Danger of death due to non-functioning safety devices!

Safety devices provide the highest possible levels of operational safety. Even if safety devices make work processes more complicated, they must never be disabled. Safety is only assured when the safety devices are intact.

Therefore:

- Check that the safety devices are functional and correctly installed before starting work.
- Never disable safety devices.
- Do not obstruct access to safety devices such as emergency stop buttons, ripcords, etc.

The following safety device is installed:

Main switch

The main switch (1) is also designed as an emergency stop switch. By pressing the main switch, the power supply is switched off immediately and an emergency stop is triggered.



Fig. 1: Main switch



WARNING!

Danger of death due to uncontrolled reactivation!

Uncontrolled reactivation can lead to serious injury or death!

Therefore:

- Before switching the system back on, ensure that the cause of the emergency stop has been solved and the safety devices are attached and fully functional.

2.7 Dealing with dangerous situations and accidents

Preventative measures

- Always be prepared for accidents or fire!
- Keep first aid equipment (first aid kit, blankets, etc.) and fire extinguishers handy.
- Familiarise personnel with accident reporting, first aid and rescue equipment.
- Keep access roads clear for rescue vehicles.

In an emergency: Act correctly

- Trigger emergency stop immediately.
- Initiate first aid measures.
- Rescue people from the danger zone.
- Inform supervisors at the site.
- Alert doctor and/or fire brigade.
- Clear access roads for rescue vehicles.

2.8 Signs

The following symbols and notices are located in the work area. They refer to the immediate vicinity in which they are attached.



WARNING!

Danger of injury due to illegible symbols!

Over the course of time, labels and signs can become dirty or unreadable.

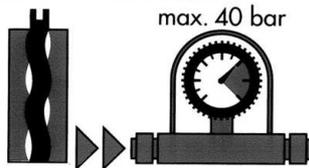
Therefore:

- Always maintain all safety, warning and operating notices in legible condition.
- Replace damaged signs or stickers at once.



Running machine

Do not reach into the machine while it is running.



Maximum pressure

Do not exceed the maximum pressure.



Hand injury

Keep hands away from areas displaying this warning symbol.

There is a risk of hands becoming crushed, drawn in or otherwise injured.



Automatic startup

Machine starts up automatically.



Electrical voltage

Only electricians may work in areas with this designation.

Unauthorised individuals may not enter such designated work areas or open cabinets with this designation.



Moving machine parts

Maintenance work on opened machines may only be performed by specially trained technicians. There is a risk of injury while the machine is moving.



Compressed air

Warns about the presence of compressed air.



Danger point

Warns about a danger point in work areas.



Safety gloves

Protect hands from friction, scraping, punctures or deeper injuries as well as from contact with hot surfaces.



Observe the operating manual

Only use the designated object after reading the operating manual.



Face guard

Protects the eyes and face from flames, sparks or embers as well as from hot particles or exhaust gases.



Running machine

Do not reach into the machine while it is running.



Safety devices

Use safety devices.



Rotating parts

Do not reach into rotating parts.



No maintenance work

Do not perform any maintenance while the machine is running.



Touching prohibited

Touching containers or parts may destroy them.



3 Operation

3.1 Preliminary remark

This manual is an integral part of the compressor and must be kept with it.

Keep the manual in a suitable place and be careful not to damage it.

If the compressor is sold, the manual must be handed over to the new owner who needs the information it contains.

Read this manual carefully and familiarise yourself with its contents before operating the compressor.

If you have any questions about operation, please consult the manual immediately.

This manual contains important safety information describing special measures that may result in personal injury or damage to equipment if not followed. In addition, you will find useful information to facilitate the use and maintenance of the machine.

If the manual is lost, please request a copy.

Customer service and spare parts service

Only use original spare parts for servicing the compressor.

Non-original spare parts involve risks that may cause personal injury. In order to guarantee a faultless service, as well as for each request, please always indicate the model, type and identification number of your compressor. You will find this information on the compressor nameplate.

Product identification

The product you purchase is marked with a CE label providing the following data:

1. Manufacturer data,
2. CE mark – year of construction,
3. TYPE = Designation of the compressor,
CODE = Compressor identification number,
SERIAL N. = Serial number of the acquired
compressor
(Always specify in case of customer service requests).
4. Air generation of the compressor measured in (l/min) and (cfm).
5. Max. Operating pressure (bar and PSI) – Compressor sound pressure dB(A).
6. Electrical data: Supply voltage (V/ph), frequency (Hz), consumption (A) – Power (PS and kW), U./min (Rpm).
7. Any other approval symbols.

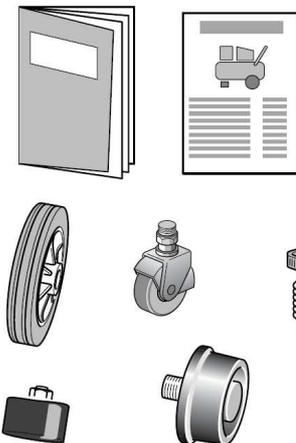
3.2 Description

The compressor described in this manual has been specially developed and manufactured for all applications. Simple operation, compact design, low weight and adequate performance for universal use.

They are intended for DIY enthusiasts and craftsmen who need compressed air for a wide variety of purposes. This category includes compressors with a maximum pressure of 10 bar and an output of up to 2.9 kW.

All UE compressors are equipped with compressed air tanks in accordance with EC Directive 87/404. The compressors equipped with pump units FD2000, FD2500, OL185, OL195, OL230, MK6, FD9200 and FD9300 are designed and manufactured for switching operation. Although they are protected against overheating by a motor-protective circuit-breaker which automatically triggers when the safety limits are reached, it is recommended not to use the compressor to more than 50% of its capacity and not to keep it in continuous operation for more than 15 minutes.

3.3 Proposed scope of application



The compressor must not be exposed to moisture.

Only use the compressor in well-ventilated rooms.

Various accessories for blowing out, cleaning and painting as well as pneumatic tools can be connected to the compressor.

For the technical characteristics and instructions for correct use, please read the manual of the accessory in question carefully.

Standard accessories (Fig. 2)

- Operation and Maintenance Manual
- Oil level dipstick
- Wheels, vibration dampers, intake filters (if not already mounted)
- Technical data sheets (dimensions and weights).

Fig. 2: Main switch

4 General safety standards



Please read the Operation and Maintenance Manual carefully before operating the compressor.

The machine has been developed, constructed and secured for the functions described below. Any other use is not permitted. The MANUFACTURER cannot be held liable for improper use or use not in accordance with the operating instructions described in this manual.



4.1 What to do

Find out how to switch off the compressor quickly and how all controls work.

Before any intervention, empty the compressor tank and disconnect the power supply in order to prevent the unit from being switched on accidentally.

After every maintenance work, make sure that all components have been correctly reinstalled.

To ensure safe operation, always carry out the checks described in the “Commissioning” chapter before starting up the compressor.

Keep children and animals away from the work area to avoid injury from equipment connected to the compressor.

Read the instructions for the assembled accessory carefully. Especially when using the spray gun, make sure that the working area is sufficiently ventilated.

For the three-phase models, it is essential to always use the main switch on the wall to switch the compressor on and off.

If you are working constantly near the compressor, it is recommended to use sound insulation measures.

4.2 What to refrain from

Do not work in closed rooms or near open flames.

Do not touch the cylinder head, cooling fins or pressure hose, as these parts reach very high temperatures during operation and retain them for some time after shutdown.

Do not place flammable objects or nylon or fabric parts near the compressor.

Do not move the compressor when the container is under pressure.

Do not start the compressor if the power cable is damaged or the power connection is not secure.

Never aim the compressed air jet at persons or animals.

Ensure that no one can operate the compressor without first receiving appropriate instructions.

Do not hit the handwheel or fan wheels with pointed or metallic objects. These could break during operation.

Do not operate the compressor without an air filter.

Do not carry out any adjustment or repair work on the safety valve or the tank.

Do not use the compressor in a potentially explosive environment.

Never connect a line to the air tap with a maximum flow rate below that of the compressor.

Never operate the compressor at temperatures below 0°C (temperature limits +5°C / + 45°C) should be used.

4.3 Removing the packaging

Machine with tank with capacity up to 50 litres:

No special device is required to move the packaging. To lift, grasp the slots in the carton with your hands. Put on protective gloves and use scissors or pliers to cut the strapping of the box. Use the pliers to remove the metal clamps, if present. Open the upper tabs, carefully lift out the compressor and place it on the work surface. For compressors with a capacity of more than 25 litres, this should be done by two persons.

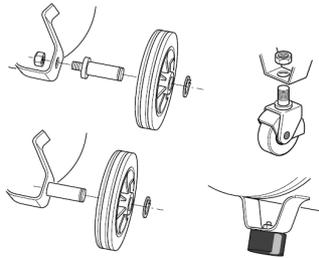


Fig. 3: Packaging

Machine with tank over 50 litres capacity:

Using protective gloves and scissors, cut the strapping and pull the carton off the top of the machine.

Lift the compressor using a lifting device with a suitable load capacity (see table "Technical data").

Fit the wheels or vibration dampers.

Pay attention to the enclosed accessories and check that the compressor is undamaged.

4.4 Disposal of packaging

The packaging material should be stored in a suitable place for possible future transport or at least for the duration of the warranty period. This facilitates the dispatch to the service point in case of need. Later, please hand over the packaging to the company or authority responsible for disposal.

5 Start-up

5.1 Set-up

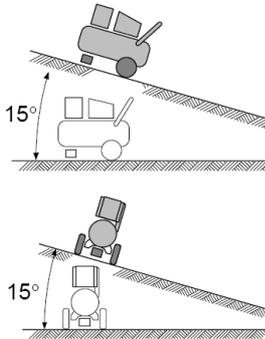


Fig. 4: Set up

To avoid damage to the compressor, it must never be operated with a transverse or longitudinal inclination of more than 15°.

To ensure proper ventilation, the compressors must be positioned so that the rear ventilation grille is at least 50 cm from any obstacle to the airflow and that cleaning and maintenance are easy.

5.2 installation

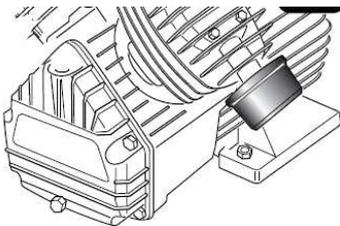


Fig. 5: Installation

Every compressor is not delivered until it has successfully passed a series of functional tests by the manufacturer. For optimum operation, please observe the measures and recommendations listed below.

- Fit the wheels and anti-vibration protection (Fig.3), remove the plug from the compressor head and fit the intake filter if it is not already fitted (Fig.5).

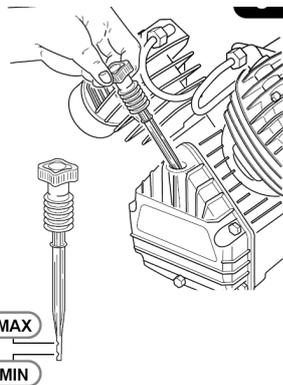


Fig. 6: Test rod

Remove the cap from the housing and insert the oil level dipstick (Fig.6).

- Carefully ensure that the oil level is between the minimum and maximum value of the test rod (Fig. 6).

- After the first 5 hours of operation, change the oil completely with one of the oil types listed in the table (see point 6.3).

- Check the compressor voltage and make sure that the supply network is protected by a magnetic heat insulator and has an earth connection.

The compressor is equipped with a mains plug type CEE 7. Have the plug replaced by qualified personnel if necessary or to adapt it to local regulations.

5.3 Switching on

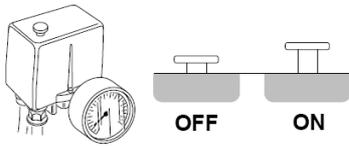


Fig. 7: Ready for operation

After installation, the compressor is ready for operation.

Make sure that the switch is in the “OFF” position (Fig. 7). Insert the plug into the socket and set the pressure switch switch to “ON” (Fig.7).

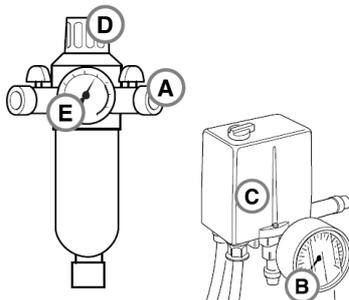


Fig. 8: Switch on

- At the first start-up, run the compressor for ten minutes with the air release valve A fully open (Fig.8). Then close valve A and check that the container fills up and that the compressor switches off automatically when the maximum pressure indicated on the label is reached (indicated on manometer B, Fig.8).

- Now you can convince yourself of the extraordinarily simple functioning of the compressor. Operation is controlled by the pressure switch C (Fig. 8), which stops the motor when the maximum pressure is reached and restarts it automatically when the pressure drops to the minimum value (about 2 bar below the maximum value).

- To switch off the compressor, never pull the plug out of the socket, but always switch the switch on the pressure switch to the “OFF” position (Fig.7). This allows the compressed air contained in the head to be discharged and facilitates subsequent switching on. The correct operation of the compressor is indicated as follows:

- a) By a compressed air outlet each time the engine is switched off,
- b) A longer compressed air outlet (approx. 20-30 sec.) at each switch-on, if the container is not under pressure.

5.4 Motor protection switch

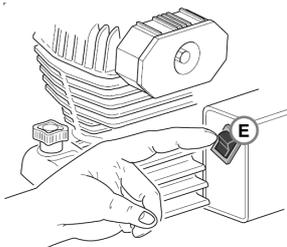


Fig. 9: Motor protection switch

The compressor is equipped with a motor protection and safety device (motor protection switch E):

This device is triggered when the motor overheats, which can be caused by malfunctions. The motor protection switch automatically trips and switches off the power supply in order to avoid possible damage to the motor.

It is recommended to wait a few (about 5) minutes before manually resetting the motor protection switch.

The compressor can then be switched on again.

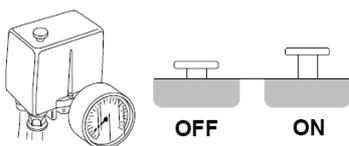


Fig. 10: Switch off

If this protection device trips again when switched on again, the main switch must be set to “0” OFF and the power supply switched off. Then contact the technicians at our contract service centres.

5.5 Setting the operating pressure

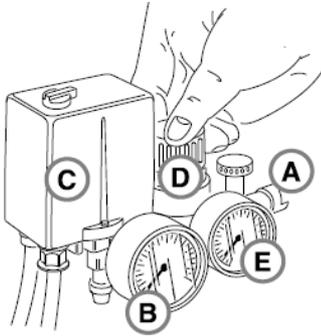


Fig. 11: Operating pressure

For correct operation, refer to the appropriate manual for the optimum pressure of the accessory to be used.

The pressure reducer **D** is used to adjust the air pressure to the desired value.

Simply turn the knob clockwise to increase pressure or counterclockwise to decrease pressure. The pressure can be read off the manometer **E**.

After use, the pressure value should be reset to zero to prevent damage to the pressure reducer.

6 Maintenance

6.1 Note



NOTE!

In order to keep the compressor in perfect condition at all times, some periodic maintenance is required. Before carrying out any maintenance work, switch off the compressor and let the air out of the tank.

6.2 Check after 50 operating hours

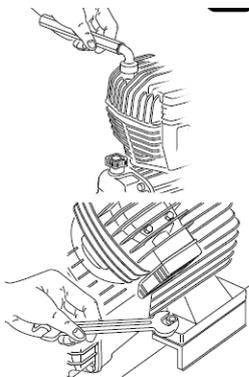


Fig. 12: Operating hours

Check the fastening of all screws, in particular those of the head and the base (Fig.12).

Completely replace the lubricant (see point 6.3) with one of the protective oils listed in the table.

Never mix different types of oil.

Non-cleaning oils or oils of poor quality are not recommended as they do not have adequate lubricating properties.

Oil pollutes the environment. For disposal, contact the responsible authority.

6.3 Weekly inspection

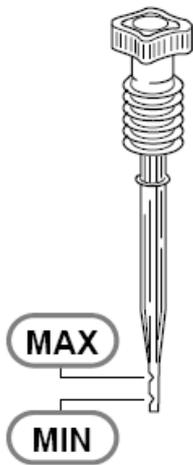


Fig. 13: Oil level

Check the oil level and top up if necessary, but do not exceed the maximum level (Fig. 13). An oil level below the minimum can lead to serious damage.

PROTECTIVE OILS FOR RECIPROCATING COMPRESSORS

(for room temperatures from +5C to +25C)

SHELL Rimula D Extra 15W-40

AGIP Dicrea 100 API CM-8X

BP Energol CS100 CASTROL Aircol PD100

ESSO Exxc Olub H150 MOBIL Rarus 427

IP Calatia Oil ISO 100 TOTAL Dacnis P100

FUCHS Renolin 104L VG100

At room temperature below +5C°: ISO 68

At room temperature above +25°C: ISO 150

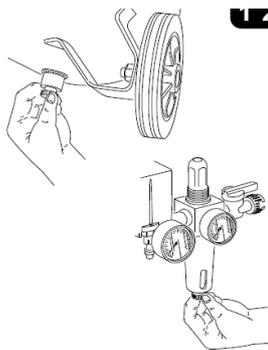


Fig. 14: Condensate

Open the valve under the tank and under the pressure reducer – if installed (Fig. 14) – to drain the condensate water.

As soon as the air begins to flow out, close the valve again.

6.4 Monthly inspection or more frequently

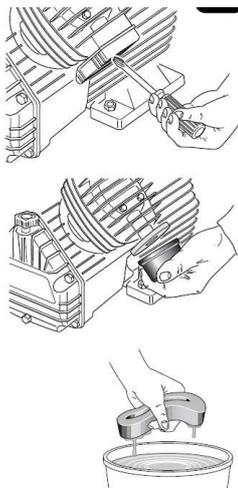


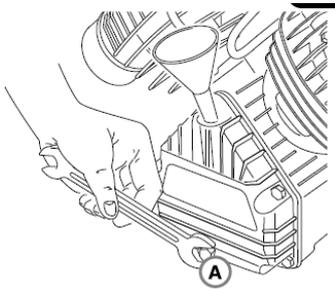
Fig. 15: Intake filter

When operating the compressor in a particularly dusty environment, remove the suction filter and replace or clean the filter element (Fig. 15).

Never operate the compressor without an intake filter.

The ingress of foreign bodies or dust can seriously damage the internal components.

6.5 Half-yearly oil change



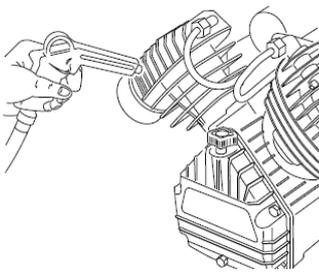
Change the oil:

To do this, pull out the oil level dipstick, loosen screw **A** (Fig. 16) and allow the oil to flow into a container. Screw screw **A** back on and fill until the maximum level is reached. The required oil quantities are taken from the data table supplied with the instructions.

Oil pollutes the environment. For disposal, contact the responsible authority.

Fig. 16: Oil changes

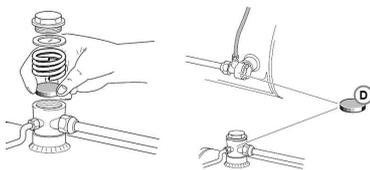
6.6 Cleaning



Clean all ribbed parts of the compressor.

This keeps the cooling system efficient and extends the service life of the machine.

Fig. 17: Cleaning



Every 2 years:

- Check the non-return valve and replace the sealing element **D** if necessary.
- Check the suction and discharge valves.

Fig. 18: Cleaning

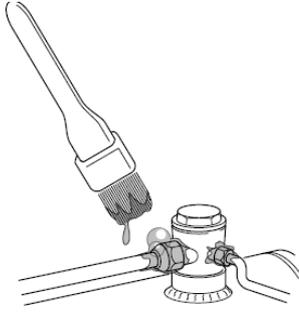
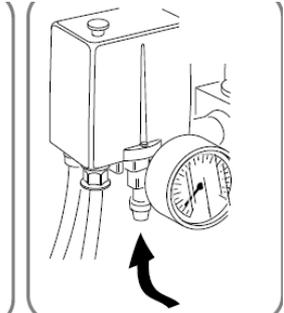
6.7 Maintenance program

Maintenance task	Every week	Every month	Every 6 hours	Every year
Oil level check	X			
Condensation drain	X			
Cleaning the suction filter		X		
General cleaning of the compressor	X			X
Oil changes				X

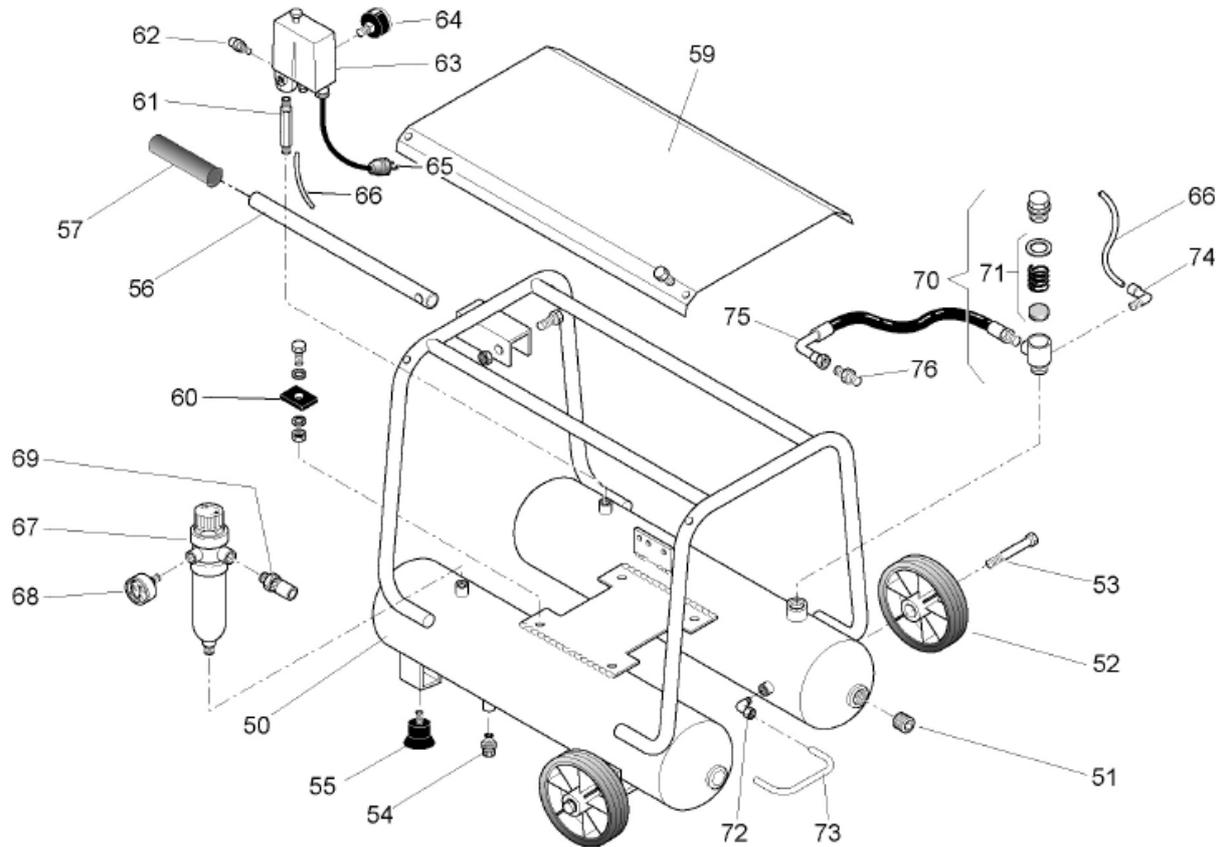
6.8 Electrical data

HP	Volts	Power consumption	Relays Setting Direct start	Relays Setting Start	Cables	Switches
HP	V	A	A	A	mm ²	A
2	230	6	6.5	-	1	10
	400	3.5	3.9	-	1	6
3	230	8.7	9.2	-	1.5	16
	400	5	5.4	-	1	10
4	230	12	12.6	7	1.5	30
	400	7	7.4	4	1	20

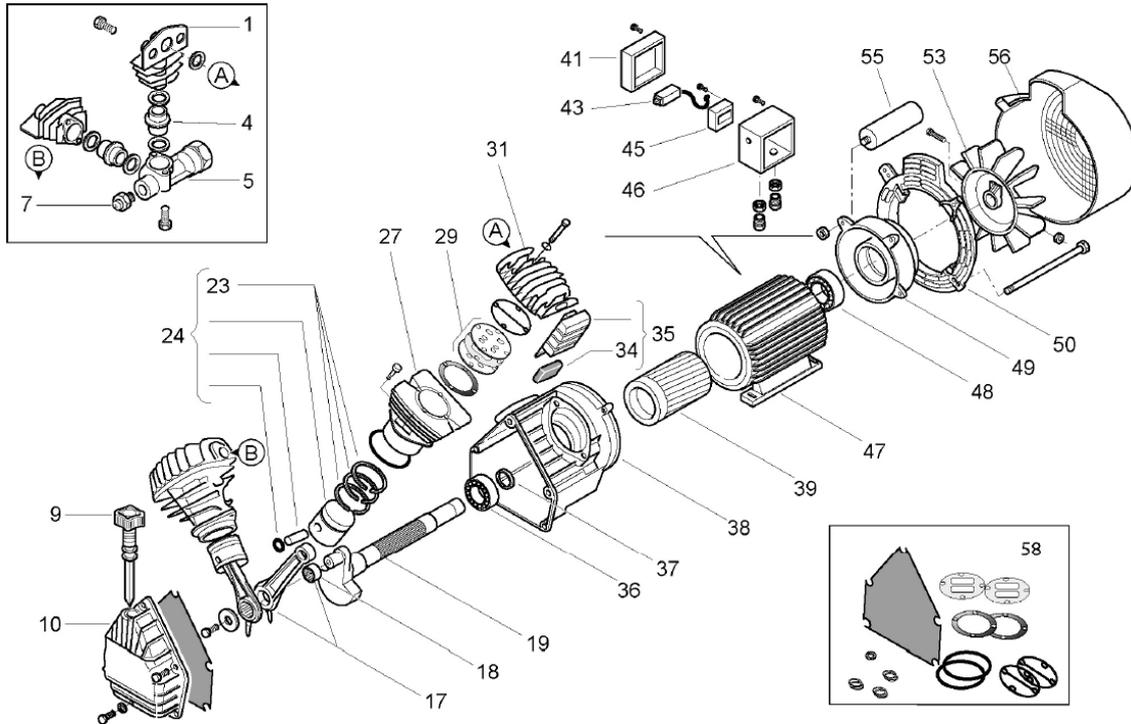
7 Solution

Malfunction	Cause	Correction
Pressure drop in the tank.	Air outlet from the connections.	Bring compressor to maximum pressure, switch off power and brush all connections with a brush soaked in soapy water. The air outlets become visible through air bubbles. Firmly tighten the relevant connections (Fig. 19). If air outlet persists, request service.
Air outlet from the pressure switch valve when the compressor is at a standstill.	Non-return valve leaking.	Drain the air from the tank, remove the non-return valve plug and thoroughly clean the valve seat. If necessary, replace sealing element D and reinstall everything (Fig. 18).
Air outlet from the pressure switch valve when the compressor is running for more than 1 minute.	Break of the idle valve.	Replace the valve (Fig. 20).  
The compressor switches off and does not restart.	Motor protection tripping due to motor overheating.	Switch off the power supply via the pressure switch and press the restart button (Fig.8). If the motor protection should respond again when the motor is restarted, qualified personnel must be consulted.
The compressor switches off and does not restart.	Winding blown.	Call in qualified personnel.
The compressor does not switch off when the maximum pressure is reached; the safety valve responds.	Malfunction or breakage of the pressure switch.	Call in qualified personnel.
The compressor does not charge and heats up excessively.	Breakage of the head gasket or a valve.	Switch off the compressor immediately and call in qualified personnel.
The compressor runs very loudly and with rhythmic, metallic beats.	Eating the bronze bearing or the bush.	Switch off the compressor immediately and call in qualified personnel.

8 Spare parts diagram



Pos.	Qty.	Designation	Pos.	Qty.	Designation
50	1	TANK	64	1	PRESSURE GAUGE
51	4	PLUG	65	1	POWER CABLE
52	2	WHEEL	66	0.7	RILSAN TUBE
53	2	WHEEL SPINDLE	67	1	PRESSURE REDUCER
54	2	DRAIN COCK	68	1	PRESSURE GAUGE
55	2	VIBRATION DAMPER	69	2	QUICK COUPLING
56	1	HANDLE	70	1	NON-RETURN VALVE
57	1	KNOB	71	1	VALVE MAINTENANCE KIT
59	1	UPPER PROTECTION	72	2	L-FITTING
60	4	VIBRATION DAMPER	73	1	COPPER PIPE
61	1	FITTING	74	1	ELBOW
62	1	SAFETY VALVE	75	1	DELIVERY TUBE
63	1	PRESSURE SWITCH	76	1	FITTING



Pos.	Qty.	Designation	Pos.	Qty.	Designation
1	2	AFTER COOLER	37	1	SEAL
4	2	SEALING COUPLING	38	1	CASING
5	1	MANIFOLD COUPLING	39	1	ROTOR (V230/50)
7	1	AUTOMATIC DISCH.VALVE		1	ROTOR (V230/60)
9	1	OIL DIPSTICK	41	1	TERMINAL BOARD COVER
10	1	CASING COVER	43	1	OVERLOAD CUTOUT
17	2	CON.ROD/BEARING	45	1	TERMINAL BOARD
18	2	ROLLER BEARING	46	1	TERMINAL BOARD BASE
19	1	CRANKSHAFT (230/50)	47	1	WOUND CASING (230/50)
	1	CRANKSHAFT (230/60)		1	WOUND CASING (230/60)
23	2	PISTON RING SET	48	1	BEARING
24	2	COMPLETE PISTON	49	1	REAR COVER
27	1	CYLINDER	50	1	HOOD SUPPORT
29	1	VALVE HOLDER PLATE	53	1	FAN
31	1	HEAD	55	1	CONDENSER (230/50)
34	2	FILTERING ELEMENT		1	CONDENSER (230/50)
35	2	INTAKE FILTER	56	1	AIR COWLING
36	1	BEARING	58	1	GASKETS SET

9 Index

A	
Accidents	17
C	
Check after 50 operating hours	26
Cleaning.....	28
Contact partner	7
Copyright protection	7
Customer service.....	7
D	
Dangerous situations	17
Dangers	13
Description.....	21
Dirt	15
Disposal of packaging	23
Dust	
hazardous to health	14
E	
Ear protection	12
Electric current.....	13
Electrical data	29
Electricians	9
F	
Face guard	13, 19
G	
General information	4
General safety standards	21
H	
Half-yearly oil change	28
I	
Inspection	10
installation.....	24
Instruction	9
Intended use	10
K	
Keep the manual for later use	4
L	
Labels	17
Liability	6
Light breathing protection	12
M	
Main switch	16
Maintenance	26
Maintenance program.....	28
Monthly inspection or more frequently.....	27
Motor protection switch.....	25
Moving parts	15
N	
Noise.....	14
Note	26
O	
Operating personnel	9
Operation	20
Owner	8
P	
Preliminary remark.....	20
Proposed scope of application.....	21
Protective equipment.....	12
Protective work clothing.....	12
R	
Removing the packaging	23
Requirements	9
S	
Safety.....	8
Safety devices	16
Safety gloves	12, 18
Safety goggles	12
Safety helmet.....	12
Safety instructions	4
Safety shoes	12
Setting the operating pressure.....	26
Set-up	24



Signs	17	Symbols in the manual.....	5
Solution	30	U	
Spare parts	7	Unauthorised individuals.....	10
Spare parts diagram	31	W	
Specialists	9	Weekly inspection	27
Start-up	24	What to do.....	22
Switching on.....	25	What to refrain from	22
Symbols in the danger zone	17		



PFT - THE FLOW OF PRODUCTIVITY



Knauf PFT GmbH & Co. KG
Postfach 60 97343 Iphofen
Einersheimer Straße 53 97346 Iphofen
Germany

Tel. +49 9323 31-760
Fax +49 9323 31-770
Technical hotline: +49 9323 31-1818

info@pft.net

www.pft.net