SERVICE MANUAL USE

Screw Compressor

Model: M 52

GL – Nr.: 1_9953_00440 – US 02

Serial No.: .....

KAESER COMPRESSORS

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1 Technical Specification

1.1 Compressor Unit

Model	M 52	
Maximum working pressure	100/125/145/190	psig
Free air delivery at max. working pressure	185/164/153/127	cfm
Temperature at the airend discharge port (at 68°F ambient)	185	°F
Weight, empty	2046	lbs
Weight, operational	2156	lbs
Maximum gross weight (axle load)	2200	lbs
Tongue weight (dep. on adjustment)	110–165	lbs
Tires	185 R 14	
Recommended tire pressure	58	psi
Air outlet valves	3x G 3/4	

Drawings:

Dimensional diagram	T 9371.2
P & I flow diagram (Pipework and instrument flow diagram)	FFMM52SO–00266.00
Electrical diagram	SFA52.ZJD–00953.00
Fuel circulation schematic diagram	KFMM52JD–00019.00

1.2 Compressor

Single stage screw compressor with oil injection	Sigma 12 G	
Total volume of oil in circulation	2.6	gal
Oil carryover in the air at the discharge port	approx. 5	ppm

1.3 Engine

Make/Model	John Deere 3029DF 150	
Rated power	57.7	HP
Speed under full–load running	2500	rpm
Speed under idle running	1800	rpm
Fuel consumption under full–load running	2.5	gal/h
Diesel fuel tank capacity	15.6	gal
Quantity of coolant in the engine cooling system	2.8	gal

1.4 Battery

Voltage	12	V
Capacity	88	Ah
Cold test current	395	A

1.5 Setting Value of the Safety Relief Valve

Blow–off pressure . . . . . 140/175/190/218 psig

1.6 Installation Requirements

Max. altitude above sea level of the place of use . . . . . 3000 ft.

Min. ambient temperature* . . . . . 14 ˚F

Max. ambient temperature . . . . . 122 ˚F

*When operating the compressor at temperatures generally below 32 ˚F, observe the points detailed in chapter 8.5!

1.7 Recommended Oils

Assembly	Contents	For ambient temperatures from	Product / Make
Engine	1.6 gal	5˚F to 32˚F 32˚F to –4˚F 14˚F to 122˚F 68˚F to 122˚F –4˚F to 86˚F	SAE 10 W SAE 20 W Synthetic SAE 15W/40 SAE 40 Synthetic SAE 5W/30
Compressor	2.6 gal	5˚F to 32˚F 32˚F to 122˚F	KAESER SIGMA S–320 Compressor Oil KAESER SIGMA S–460 Compressor Oil
Axle			Shell RETINAX AM
Conserving oil for long term compressor shut-down			Shell ENSIS Motor oil 30

Note regarding engine oil:

The above oils are recommended in addition to the oils recommended in the engine service manual.

The engine is filled with SAE 5W/30 synthetic oil at the factory before delivery.

Check the engine oil level and the oil separator oil level daily.

Notes regarding compressor oil filled at the factory:

KAESER screw compressors are filled with the following cooling oil. This oil is highly suited for operation in KAESER compressors:

KAESER SIGMA S – 460 Compressor Oil

This oil is also recommended for unsuitable operating conditions such as minor gaseous contamination of the inlet air and for high ambient temperatures.

Topping off the oil:

Always use the same manufacture and type of oil (see label on the oil separator tank).

Oil change and changing type of oil:

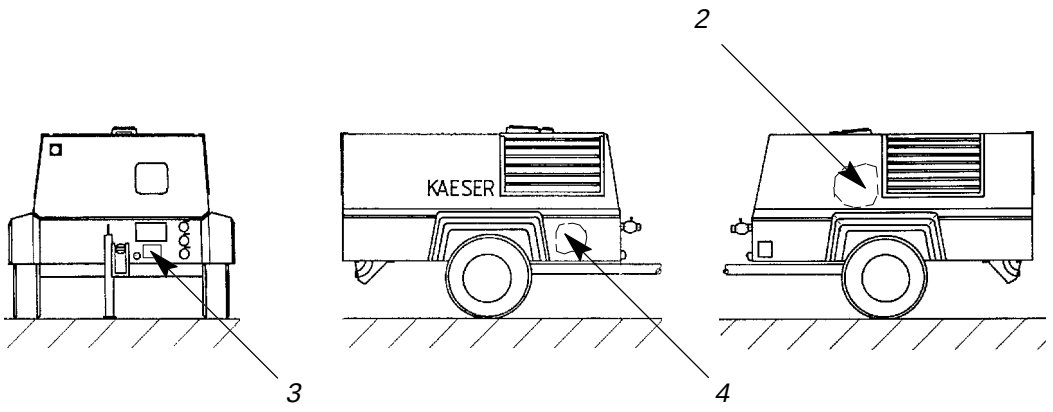
The compressor unit must be completely drained of all oil before an oil change or changing the type of oil. Remove all scale and deposits by hand. For hard to reach areas, an appropriate compressor flush is recommended. It is possible that the oil separator cartridge will need to be changed soon after changing the oil. This is due to the new oil's ability to clean up existing oil deposits.

A Material Safety Data Sheet covering this cooling oil can be requested from KAESER.

1.8 Sound Pressure Level

Noise level to US EPA at 7 m distance . . . . . 76 dB (A)

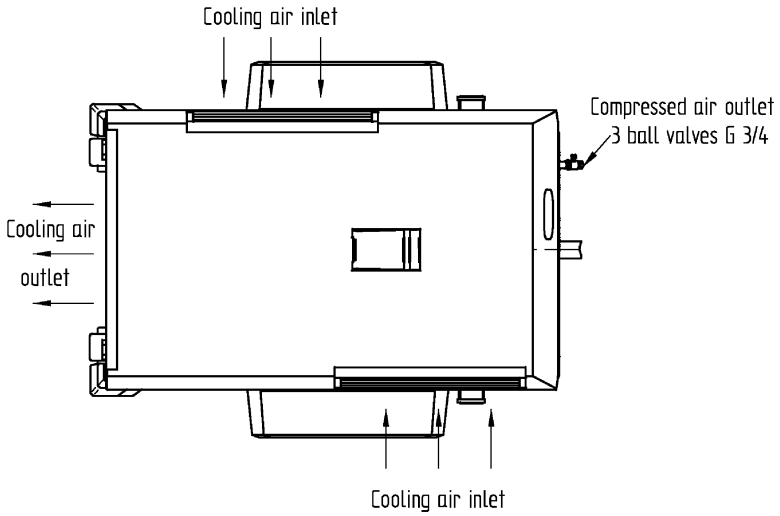
1.9 Identification

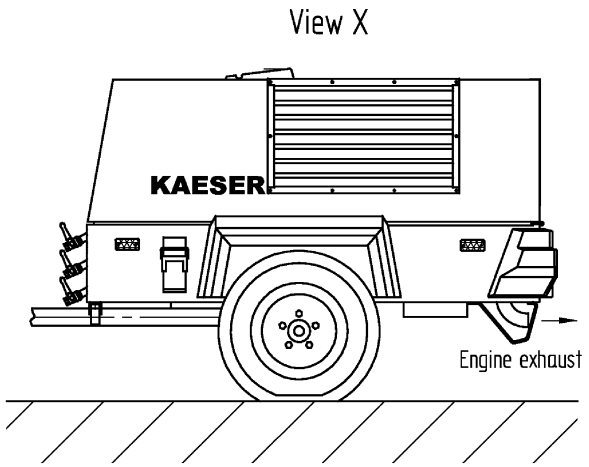


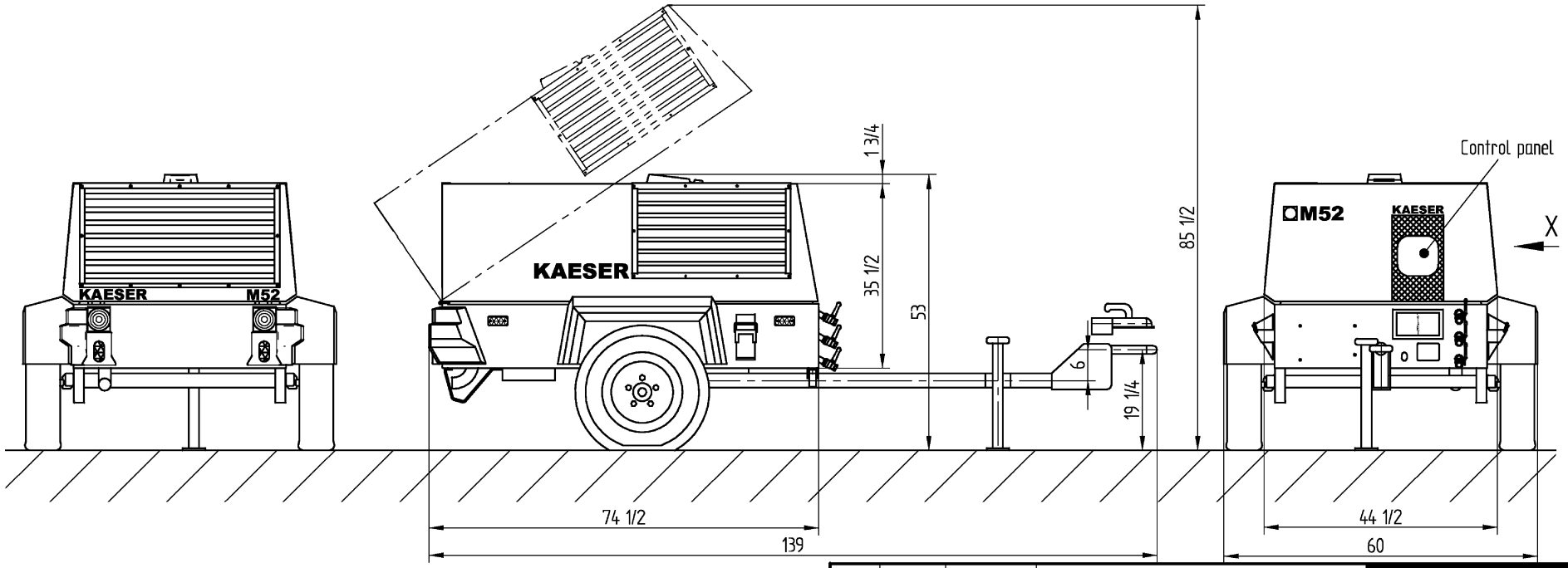
2 Engine number
(see nameplate on the engine block)
3 Unit number
(see nameplate)
4 Compressor number
(see nameplate on the airend)

1.10 Dimensional Diagram

(see following page)







All dimensions are in inches

1999	Tag	Name	Portable compressor M 52 USA
Gez.	03.02.	Friedenstab	
Gepr.			
Freigeg.		Friedenstab	
Maßstab		0002601	Ersatz für T 9371.1 from 11.01.1999

KAESER KOMPRESSOREN

T 9371.2 USE

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2 Safety Regulations

Read this service manual and the engine service manual carefully and observe cautionary references before putting this mobile compressor unit into operation and before carrying out any maintenance on the unit.

2.1 Explanation of Symbols and References

This symbol is placed before all references to safety where danger to life and limb can occur during work . It is especially important that these rules are observed and that extreme care is taken in these cases. For their own protection, inform all other users of these safety rules. Observe all general safety and accident prevention regulations as well as the safety rules laid down in this service manual.

Attention! **This symbol identifies recommendations, regulations, references and correct sequence of work to prevent damage and/or destruction of the compressor unit and/or other equipment.**

This symbol identifies environmental concerns.

☞ **This symbol indicates operations and actions to be carried out by the operator or service technician.**

- **This bullet identifies listings.**

Explanation of prohibiting and warning notices on the compressor unit:

Prohibiting:
Do not operate the portable compressor unit with the canopy or panels open.
Hood can close unexpectedly!

Warning:
Hot or dangerous gases exhaust into the normal work area.
Only use in well ventilated areas or only operate compressor outdoors.

Warning:
Do not touch hot surfaces.


WARNING
DEATH OR SERIOUS INJURY CAN OCCUR FROM INHALING COMPRESSED AIR WITHOUT USING PROPER SAFETY EQUIPMENT.
SEE OSHA STANDARDS ON SAFETY EQUIPMENT.
5.4885.0

Optional:


WARNING
CONNECT AIR HOSES ONLY IN FULL COMPLIANCE WITH OSHA STANDARD 29 CFR 1926,302 (bX7).
THE REQUIRED SAFETY DEVICES SHOULD BE TESTED IN ACCORDANCE WITH THEIR MANUFACTURER'S RECOMMENDATIONS TO VERIFY THAT THEY REDUCE PRESSURE IN CASE OF HOSE FAILURE AND WILL NOT NUISANCE TRIP WITH THE HOSE AND TOOL COMBINATIONS IN USE.
5.4884.0


WARNING
Do not operate without fan guard in place.
5.4882.0


WARNING
Keep clear of unguarded moving parts.
5.4881.0

2.2 General Safety Instructions

During installation, operation, maintenance and repair of the compressor unit, OSHA Standards or any applicable Federal, State and Local codes, standards and regulations must be complied with.

Users of compressor units are obliged to comply with the safety and accident prevention regulations concerning the compressor unit that are valid in the country of use. If necessary, corresponding measures must be taken to ensure compliance with these national regulations before the compressor unit is put into operation.

Also, the following instructions must be complied with:

- Never use the compressor in enclosed spaces because the exhaust gases contain deadly carbon monoxide! If it is absolutely necessary to operate the portable compressor in an enclosed space then the exhaust gases must be fed to the open air via a suitably sized pipe (at least 4” dia.).
- Fire hazard!
  Never refuel with the compressor running!
  Keep fuel away from hot components such as air discharge pipes or engine exhaust pipes. If an automatic pump is used to refuel the compressor unit a ground must be connected to discharge any static electricity that may build up. Never allow fuel, oil, coolant or cleaning agents to spill over and never leave spilled remains inside the compressor unit.
- Scalding hazard!
  Always allow the compressor unit to cool down before removing a pressurized cap on engines with a sealed cooling system.
- While welding on or near the compressor unit, ensure that sparks, open flames, or high temperatures cannot cause fire or explosion.
- Ensure that the compressor unit is fed with clean intake air. Operation of the unit in environments containing ammonia or other harmful gases may damage the unit and should be avoided.
- Do not operate the unit in ambient temperatures exceeding recommended levels (see chapter 1.6), for operation in higher ambient temperatures, please consult the manufacturer.

- Ensure that the compressor unit cannot be inadvertently started before carrying out any repair work. Remove the starter battery or place insulating caps over the battery terminals. A notice with the words *''This machine is under repair, do not start!''* must be attached to the compressor unit.
- Change the oil at the recommended interval (see chapter 9.2) or once a year, whichever occurs first.
- Do not mix cooling oils of different types. Be careful not to accidentally add compressor oil to the engine, or engine oil to the compressor.
- During operation, maintain the proper operating temperature as stipulated in the manufacturer's specifications to avoid build–up of condensate in the oil circulation (due to low operating temperatures) or other damage (due to high operating temperatures).
- Use only cooling oils as recommended by the manufacturer.
- If maintenance work is carried out on any part of the oil circulation system, remember to refill the oil in the separator tank to the maximum level. Run the compressor and keep it under constant observation for a short period. Re–check the oil level again and add oil if necessary.
- Re–use of the filter cartridge located inside the oil separator tank is permitted as long as the pressure drop across the filter is below 15 psi. Check the pressure drop regularly.
- To reduce strain at the compressor outlet valves, do not connect accessories such as lubricators, water separators, etc. to the outlet valves. Do not pull on the air hoses when they are connected to the outlet valves.

2.3 Regular Check of Hoisting gear

Attention! **It is recommended that the hoisting gear on the compressor package is checked at least annually.**

2.4 Road Traffic Act Regulations

Attention! **Observe all Federal, State, and Local laws while towing this equipment.**

The maximum permissible trailer weight for the towing vehicle and the maximum permissible weight at the trailer coupling may not be exceeded! See rated limit in tow vehicle Operator's Manual and review its instructions and other requirements for safe towing.

The speed limit for towed vehicles as prescribed by Federal, State, and Local laws shall not be exceeded.

Use wheel chocks to secure the compressor unit against possible movement before uncoupling from the towing vehicle.

This equipment may be tongue heavy.
DO NOT attempt to raise or lower the drawbar by hand if the weight is more than you can safely handle.

2.5 General References

Work on power driven systems may only be carried out by trained or specialized personnel.

Splashing oil can cause injuries and fires.

☞ Check all pipes, hoses and screw fittings for leaks and visible damage every three to four weeks. Repair any damage immediately!

Inspect the electrical equipment of the compressor unit every three to four weeks. Defects, such as loose connections and/or overheated cable should be repaired immediately.
Carry out the following precautions before working on the electrical system:

Disconnect the battery, the ground cable first and then the positive cable.
When reconnecting the battery, attach the positive cable first, then the ground cable.

☞ Check all screw connections and cables of the electrical system. Repair any faults, such as loose connections and/or overheated cable immediately.

Attention! **Any alterations or reconstruction performed without the previous written consent of KAESER COMPRESSORS may void the warranty.**

2.6 Environmental Protection

Maintenance materials/wear items/replacement parts

Ensure that all wear items,maintenance and replacement parts accumulating during operation of the compressor unit are disposed of according to environmental regulations!

2.7 Spare Parts

Safe and reliable operation of the compressor unit is guaranteed only with KAESER original spare parts and KAESER SIGMA compressor oil.

3 General

Attention! **The service manual must be kept with the compressor at all times.**

This service manual refers to portable screw compressors only.

Kaeser Compressors, Inc., reserves the right to change specifications affecting this service manual without notification.

3.1 Operation According to Regulations

This compressor unit is intended solely for the purpose of compressing air. Any other use of this purpose is not recommended and may violate safety regulations. The manufacturer cannot accept liability for any damage caused by such incorrect use; the user alone is liable for any risks incurred.

Use of the compressor according to regulations also encompasses adherence to the installation, removal, commissioning, operational and maintenance conditions laid down by the manufacturer.

3.2 Improper Use

Never direct compressed air toward persons. Compressed air is a concentrated form of energy which may cause injury or death.

DO NOT use air from this compressor for respiration (breathing) except in full compliance with OSHA Standards 29 CFR 1920 and any other Federal, State or Local codes or regulations.

Death or serious injury may occur from inhaling compressed air without using proper safety equipment.

3.3 Compressed Air Treatment

Never use compressed air from oil injected compressor units for breathing purposes or production methods where the air has direct contact with food, without subjecting the compressed air to additional treatment.

3.4 Copyright

4 Transport

4.1 Transport of the Mobile Compressor Unit as a Towed Vehicle on the Road

Attention! **When towing the compressor unit with a towing vehicle observe the road traffic regulations (see chapter 2.4).**

Precautions to be taken before towing the compressor unit:

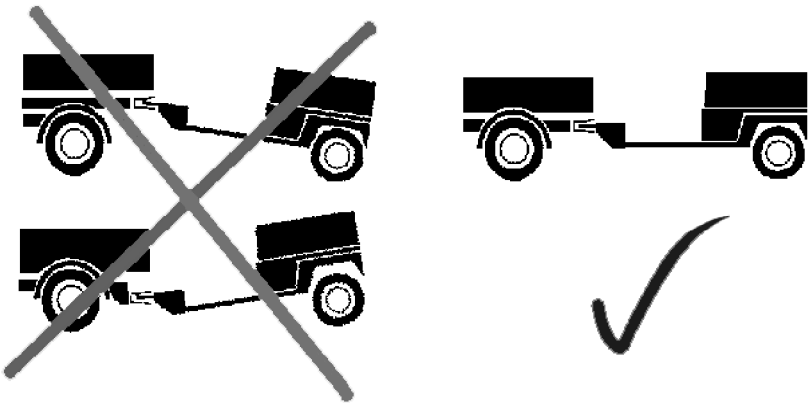
☞ Check that the compressor unit is shut down and secured against accidental restarting. If necessary, carry out the following:

☞ Loosen and remove all connecting lines to the compressor unit.

☞ Close and lock the canopy.

Attention! **Check that the towing vehicle coupling is compatible with the compressor towing eye or coupling.**
The compressor drawbar must be horizontal when towing.
If the compressor tilts forward or backward the dynamics of towing can lead to damage.

☞ Place the compressor drawbar in horizontal position to the towing vehicle coupling.



☞ Hook up the compressor unit to the towing vehicle.

Attention! **After hooking up the mobile compressor unit, check that the safety locking device on the tow-bar coupling is engaged.**

☞ Lift the jack support and secure with the clamp.

☞ Install the lighting and indicator systems.

☞ Check that the wheel bolts are tight and the tires are in good condition.

☞ Check the tire pressures.

Attention! **The portable compressors are designed for a maximum road speed of 55 mph.**
The regulations of the road traffic act specific to the country of use must be observed.

4.2 Removing the Compressor Unit from Towing Vehicle

Work to be done after transporting the mobile compressor unit as a towed vehicle on the road:

☞ Lower and secure the support.

Attention! **When uncoupling on a slope or hill secure the compressor unit against movement.**

☞ Uncouple the compressor unit from the towing vehicle.

☞ Remove the lighting and indicator systems.

4.3 Transporting with a Crane or Helicopter

Attention! **Always comply with the safety regulations concerning load suspension devices and lifting appliances when transporting a portable compressor unit by means of a crane.**

In any event, lift only in full compliance with OSHA Standards 29 CFR 1910 subpart N or any other Local, State, Military and Federal regulations that may apply.

Do not stand under compressor unit while it is suspended.

The maximum permissible weight of the compressor unit (see chapter 1.1) should not be exceeded when transporting with the lifting eye.

Never lift compressor while running!

Do not lift or lower the compressor unit with a jerk because of the danger of damage to components.

Do not tamper with the mounting points of the lifting eye.

For transport with a helicopter instead of a crane the compressor must be supported by slings!

A lifting eye is provided for transport with a crane. This lifting eye is accessible through the canopy (see illustration in chapter 5.3).

☞ Check that the compressor is shut down and secured against accidental restarting. Carry out this measure, if necessary.

☞ Release and remove all connection lines from the uncoupled compressor unit.

☞ Close and lock the canopy.

☞ Open the rubber cover in the top of the canopy.

☞ Hook the crane hook into the lifting eye.

4.4 Packaging and shipping as freight

The transport route is a deciding factor for the type of packaging and for securing. KAESER KOMPRESSOREN always tries to transport goods directly to the customer. Our packaging and securing methods are always selected such that, assuming proper handling, the goods arrive in perfect condition at the customer's premises.

Dispose of the packaging according to environmental regulations and where possible, recycle.

Attention! **The freight is to be secured against rolling, tipping and slipping.**

Chocks, restraints or squared timber must be used for securing freight. If required, guys should be tightened across the chassis and the towbar. It is not permitted to tighten guys or straps across the bodywork!

On rented, hired or trade fair packages the transport restraints should be used again for the return journey.

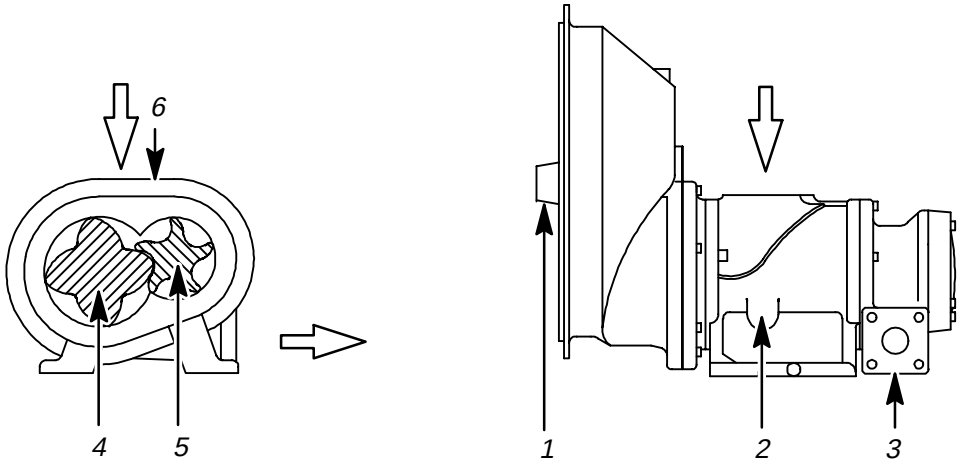
KAESER KOMPRESSOREN will be pleased to answer any queries with regard to transport and securing of equipment. KAESER KOMPRESSOREN can accept no liability whatsoever for damages arising through incorrect transport methods or insufficient or wrong securing of freight.

Always observe valid accident and safety regulations when transporting equipment!

5 Construction and Operation

5.1 Principle of Compression

The portable **Mobilair** compressor unit is fitted with a single stage, oil injected airend. Two rotors, the driven male rotor and the female rotor, both mounted in roller bearings, are fitted into the airend. As the rotors rotate, air is drawn into the upper side through the inlet and is compressed on the lower side. The oil that is injected into the lower side absorbs heat generated by compression, prevents metallic contact between the rotors, seals the rotors and the housing from each other and also lubricates the roller bearings. The compressed air and oil mixture leaves the airend via the discharge outlet.



☞ Hook up the compressor unit to the towing vehicle.

1 Drive shaft
2 Oil injection
3 Discharge port
4 Male rotor
5 Female rotor
6 Air inlet port

5.2 Brief Description

The rotary screw compressor airend is driven through gearing and a flexible coupling by an air–cooled three cylinder diesel engine (see chapter 1.3).

An oil separator cartridge providing practically oil–free compressed air is built into the oil separator tank.

The compressor oil is recommended for the lubrication of tools connected to the compressor. If necessary, a tool lubricator should be fitted for this purpose.

The compressor control ensures that the compressed air generated is matched to the actual compressed air demand.

A safety shut–down system protects the engine, compressor and the unit by automatically stopping the diesel engine if important systems fail.

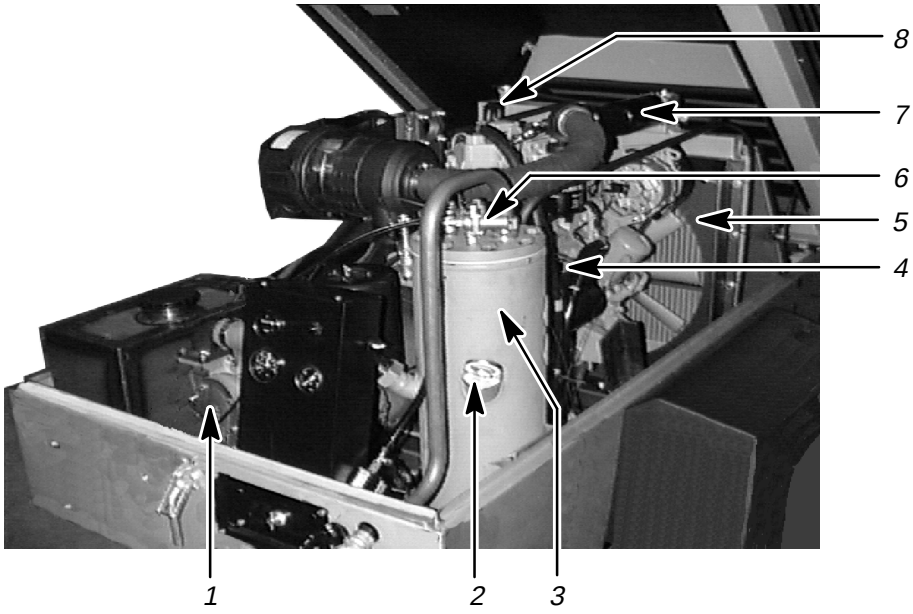
The built–in fan provides optimum cooling of all components with the body work closed.

The chassis is fitted with torsion bar axle suspension.

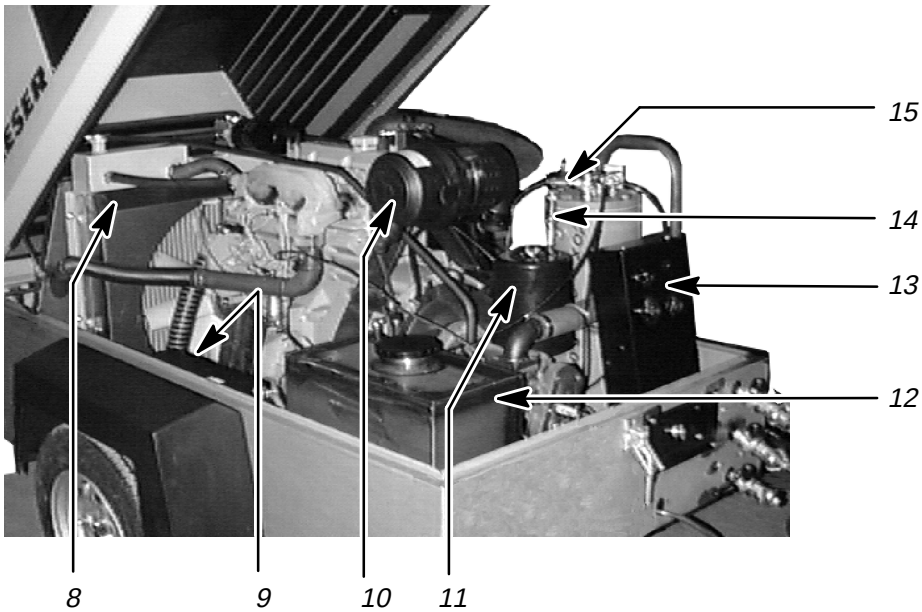
A lifting eye is provided for transport using a crane or helicopter (see chapter 4.3).

5.3 Identification of the Components

Position details in ( ) correspond with the Pipe and Instrument Flow Diagram (P & I Diagram)



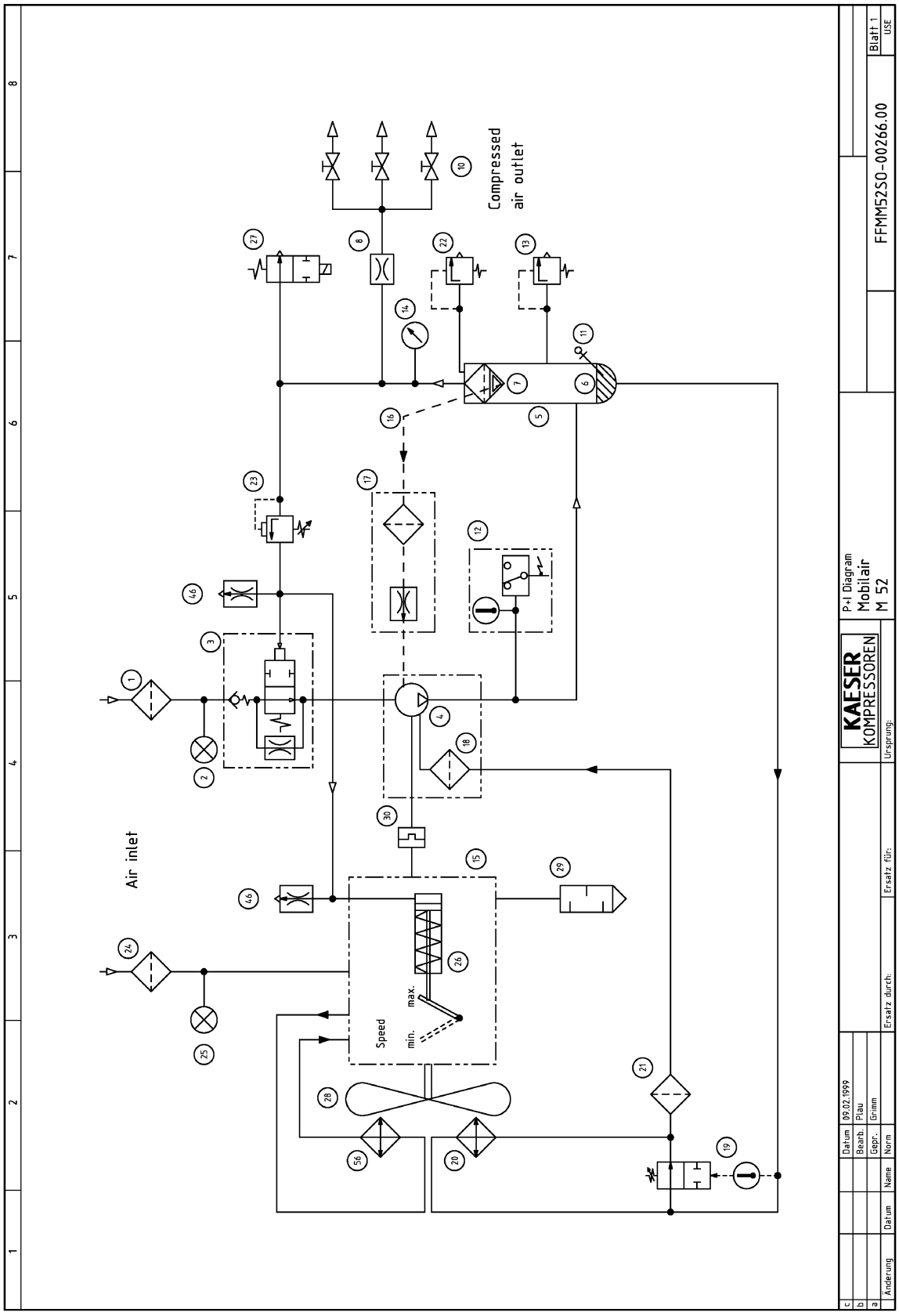
1 *Compressor airend*
2 *Oil filler with dipstick (11)*
3 *Oil separator tank (5)*
4 *Engine*
5 *Oil cooler for compressor (20)*
6 *Proportional controller (22)*
7 *Oil filter (21)*
8 *Lifting eye*



8 *Radiator for engine*
9 *Battery*
10 *Engine air filter (24)*
11 *Compressor air filter (1)*
12 *Fuel tank*
13 *Control panel*
14 *Safety relief valve (13)*
15 *Vent valve (22)*

5.4 Piping and Instrument Flow Diagram (P & I Diagram)

(see following pages)


Compressed air outlet
Air inlet
Speed
max.
min.
FFMM52SO-00266.00
P+I Diagram
Mobilair
M 52
KAESER KOMPRESSOREN

1	2	3	4	5	6	7	8

1	Compressor - Air filter
2	Contamination indicator, Compressor - Air filter
3	Inlet valve
4	Airend
5	Oil separator tank
6	Oil reserve
7	Oil separator cartridge
8	Minimum pressure nozzle
10	Compressed air distributor 3 x R 3/4
11	Oil filler neck with dip-stick
12	Temperature gauge switch
13	Safety relief valve
14	Pressure gauge - Control panel
15	Diesel engine
16	Oil return line
17	Dirt trap with nozzle
18	Strainer
19	Combination valve - Oil temperature controller
20	Oil cooler
21	Oil filter
22	Blow-off valve
23	Proportional controller
24	Motor - Air filter
25	Contamination indicator, Motor - Air filter
26	Engine speed adjusting piston
27	Vent valve
28	Fan
29	Muffler
30	Coupling
46	Nozzle (Secondary side Proportional controller)
56	Water cooler

c				Datum	09.02.1999		KAESER KOMPRESSOREN	P+I Diagram legend Mobilair M 52	
b				Bearb.	Plau				
a				Gepr.	Grimm				
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung:	FFMM52SO-00266.00	Blatt 2 USE

5.5 Description of the Piping and Instrument Flow Diagram

Details in ( ) correspond to the component identification number on the P & I Diagram.
Details in [ ] correspond to the component identification symbol on the Electrical Diagram

5.5.1 Air Circulation

The ambient intake air flows through the inlet air filter (1) of the compressor, the inlet valve (3) and is compressed in the airend (4).

The oil injected into the compression chamber absorbs the heat generated during compression, seals the gap between the rotors and the airend housing and simultaneously lubricates the airend bearings of the rotors.

The air and oil mixture is forced into centrifugal movement by a 90˚ deflector in the oil separator tank (5). A preliminary separation of oil and air takes place under the influence of the centrifugal force and the force of gravity. The remaining oil carry–over in the compressed air is filtered out by the oil separator cartridge (7). The oil accumulating in the oil separator tank (5) is returned to the compressor airend (4).

The compressed air then passes through a nozzle (8) to the air discharge coupling (10). The nozzle regulates the pressure in the oil separator (5) required to guarantee the oil supply to the compressor airend.

5.5.2 Oil Circulation

The oil flows from the oil separator tank (5) to the combination valve (19). The thermostatic piston in the combination valve by–passes cool oil around the oil cooler via the oil filter (21) and feeds it directly to the compressor airend (4). If the oil is hot, this by–pass closes and all the oil flows through the oil cooler (20).

Contaminants in the oil are filtered out by the oil filter (21) and the screen filter (18) of the compressor airend. Subsequently, the oil is injected into the airend again.

The oil accumulating in the oil separator cartridge (7) is returned to the compressor air–end via the oil return line (16) and the dirt trap with jet (17).
(The oil is forced to circulate throughout the compressor by the pressure produced by the airend. Therefore, a separate oil pump is not required).

5.5.3 Safety System

Safety Relief Valve (13):

The air compressor is protected from excessive pressure by a safety relief valve. If a defect causes the pressure to increase to 30 psig above the maximum gauge working pressure (see chapter 1.1 for values), then the compressed air is blown off via the safety relief valve. The opening pressure (see chapter 1.5) is preset at the safety valve. Do not alter this setting.

Blowoff Valve (22):

When the compressor idles a small amount of air is drawn in and compressed to endure continued oil flow. The blowoff valve prevents an inadmissible increase of pressure in the oil separator tank (5) and blows off at approximately 7 psig above the maximum working pressure. (see chapter 1.1) for values.

Temperature gauge switch (12)/[–B9):

The temperature gauge switch shuts down the compressor unit if the compressor discharge temperature reaches 230˚F.

Oil–Pressure switch -- Motor [–B0]:

If the oil pressure in the diesel motor drops below the permissible minimum pressure (approximately 15 psig), the oil pressure switch will shut the compressor down.

Fuel level switch -- Fuel tank [--B9]:

If the fuel in the fuel tank sinks below the permissible minimum level, the compressor shuts down.

5.5.4 Partial Load Control
Description of the operating modes

Full Load:

If the compressor's discharge remains approximately 7 psig below the maximum compressor working pressure (see chapter 1.1 for the value) the compressor will remain fully loaded. The pressure in the control line from the proportional controller (23) is still so slight that the inlet valve (3) is open and the engine speed adjustment lever is in the "max. speed" position.

If the compressed air demand is higher than the maximum air delivery of the compressor unit, the compressor will remain fully loaded, however the working pressure will remain less than the working pressure mentioned above. Should the working pressure drop too low the minimum pressure nozzle (8) ensures that the pressure in the oil separator tank (5) cannot fall below 35 psig. This minimum pressure is necessary to ensure sufficient lubrication of the compressor airend (4).

Partial Load:

If the compressed air demand is lower than the maximum air delivery of the compressor unit, then the pressure in the oil separator tank rises, whereby the pressure in the control line from the proportional controller (23) also rises. The increased pressure in this control line initially activates the piston in the inlet valve (3) and with further increase in pressure the engine speed adjustment cylinder (26) is also activated. By these means the volume of air entering the compressor is initially reduced and subsequently the engine speed is reduced.

Idle:

If the air demand reduces to zero, then the pressure in the control line increases, the proportional controller (23) opens and adjusts the the engine speed to idle speed via the engine speed adjustment cylinder and closes the inlet valve (3). A minimum volume of air is drawn into the compressor via the off–load running borehole in the inlet valve to ensure oil circulation. This minimum volume of air is blown off via the blowoff valve (22) when the maximum gauge working pressure is exceeded (see chapter 1.1 for the value).

6 Installation

6.1 Setting Up Instructions

Observe the following instructions when setting up the compressor unit:

- Maintain sufficient distance (at least 5 ft.) to building trenches, banks, ramps, etc.
- Locate the compressor unit on a flat, horizontal surface (max. 15° slope in the longitudinal or cross direction!).
- Do not set up the compressor unit so that the wind blows in the direction of the cooling air outlet.
- Do not allow exhaust gases and heated cooling air to be sucked into the compressor.

See chapter 1.6 for ambient temperatures required for operation of the compressor unit.

See chapter 4.2 for setting up instructions after transport of the compressor unit.

7 Putting into Operation

7.1 Points to be Observed before Putting into Operation

Every compressor unit is test run in the factory and carefully checked before shipment. The test run confirms that the compressor unit conforms to the specification data and runs perfectly. However, independent of the checks made at the factory, the compressor unit could be damaged during transport. For this reason, we recommend that the compressor unit is examined for such possible damage. Observe the compressor unit carefully during the first hours of operation for any possible malfunction.

Attention!

Important functional components in the compressor unit (such as safety relief valve and inlet valve) are properly adjusted at the factory to meet safety regulations.
Do not make alterations to the safety relief valve or inlet valve without first consulting the manufacturer.

The safety relief valve and inlet valve are spring loaded.

DO NOT use air at pressures higher than 30 psig for cleaning purposes, and then only with effective chip guarding and personal protective equipment per OSHA Standard 29 CFR 1910.242(b) or any applicable Federal, State and Local codes, standards and regulations.

7.2 Points to be Observed before Starting the Compressor:

NON--OBSERVANCE OF THESE OR OTHER INSTRUCTIONS (WARNING; ATTENTION) CAN LEAD TO ACCIDENTS CAUSING INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

It is not allowed to operate the compressor within an enclosed space because of the danger of toxic exhaust gases.

Do not operate the compressor with the open doors because of the dangers associated with hot surfaces, rotating parts, electrical shock hazards. Open doors will also adversely affect the compressor's cooling system.

☞ Remove all packing material, tools and transport securing devices on and in the compressor.

- It is expected that the operator employs safe working techniques and that all lawful operating and safety regulations are followed when operating this compressor.
- The user of this compressor is responsible for its safe operating condition.
- Do not operate this compressor in environments where heavy dust conditions, toxic or flammable gases could exist.

Before starting the unit, check the following:

☞ Check the oil level in the oil separator tank (see chapter 9.3.1).

☞ Check the engine oil level (see engine service manual).

☞ Check the engine coolant level (see chapter 9.3.8).

☞ Check the fuel level (see engine service manual).

7.3 Storage

7.3.1 Short term storage (less than four months)

- ☞ Disconnect the battery (first the negative cable, then the positive cable).
- ☞ Seal the air intake openings of the engine, the air intake openings of the compressor and the engine exhaust with plastic foil and moisture resistant adhesive tape.
- ☞ Secure a warning notice on the instrument panel stating the actions taken to store the unit and the date.

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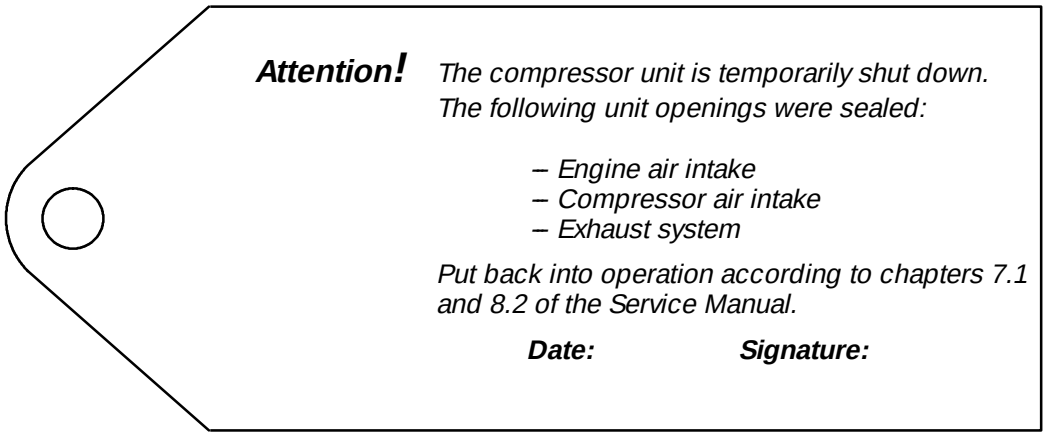

Example of a warning notice informing of temporary shutdown measures

7.3.2 Long term storage (more than four months)

- ☞ Check the engine coolant (see chapter 9.3.8).
- ☞ Drain the engine oil, the oil in the oil separator tank and the oil in the oil cooler with the compressor at operating temperature (see chapter 9.3.2 and the engine service manual).
- ☞ Fill the engine and the oil separator tank with preserving oil (see engine service manual and chapter 1.7, 'Oil Recommendations').
- ☞ Fill up the fuel tank to the filler neck with fuel together with approximately 10% preserving oil (see chapter 1.7 for the type of oil).
- ☞ Run the compressor for approximately 10 minutes to distribute a film of oil (see chapter 8.2 for starting and stopping the compressor).
- ☞ Disconnect the battery (first the negative cable and then the positive cable).
- ☞ Check the level of electrolyte in the battery (see chapter 9.3.10 for battery maintenance).
- ☞ Check the battery charge monthly and recharge if necessary. Otherwise there is danger of the electrolyte freezing under cold conditions.
- ☞ Clean the battery connections and grease with acid resistant grease.
- ☞ Close the air discharge valves.

- ☞ Place a bag of desiccant (silica gel) in the air intake filter opening and secure with adhesive tape if necessary.
- ☞ Seal the air intake openings of the engine, the air intake openings of the compressor and the engine exhaust with plastic foil and moisture resistant adhesive tape.
- ☞ Clean the bodywork and then treat with a preserving agent.
- ☞ Secure a warning notice on the instrument panel informing of the shutdown measures taken.

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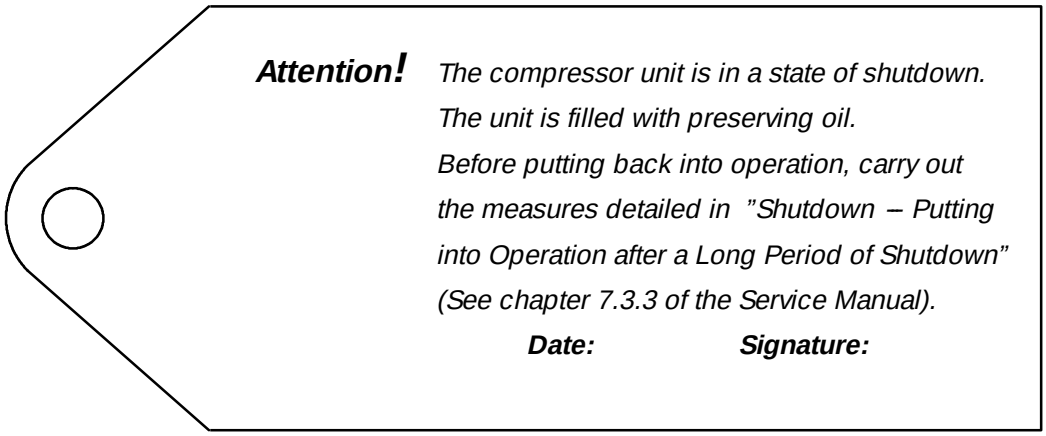


Example of a warning notice informing of shutdown measures

Store the compressor unit in a dry environment subject to consistent temperatures.

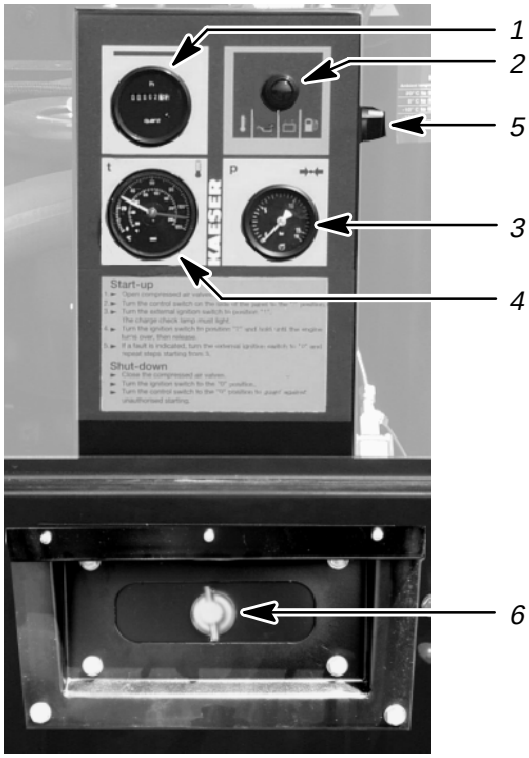
7.3.3 Starting after a long term storage

- ☞ Check the tire pressures (see chapter 1.1).
- ☞ Clean the bodywork with a grease and dirt solvent.
- ☞ Remove the plastic foil and adhesive tape from the intake air opening of the engine, air intake opening of the compressor and the engine exhaust.
- ☞ Remove the desiccant (silica gel) bags from the openings of the air intake filters of motor and compressor.
- ☞ Drain the preserving oil from the engine (see engine service manual).
- ☞ Carry out a visual inspection of the air and oil filters. Replace, if necessary (see engine service manual and chapters 9.3.5 and 9.3.3).
- ☞ Fill with engine oil (see engine service manual).
- ☞ Fill with compressor oil (see chapter 9.3.2).
- ☞ Check the engine coolant (see chapter 9.3.8).
- ☞ Check the state of battery charge. Recharge, if necessary (see chapter 9.3.10).
- ☞ Check all fuel lines, engine oil lines and compressor oil lines for leaks, loose connections, wear and damage.
- ☞ Repair any damaged components immediately!
- ☞ Put the compressor into operation as described in chapter 7.1 and 8.2.
- ☞ Check operating conditions (see chapter 8.3).

8 Operation

Details in ( ) correspond to the component identification number on the P & I Diagram.
Details in [ ] correspond to the component identification symbol on the Electrical Diagram.

8.1 Operating Controls



1 Operating hours meter [– P8]
2 Charging indicator lamp [– H0]
3 Pressure gauge
4 Temperature gauge switch [– B6]
5 “Control On” switch [– S01] (at the side)
6 *Ignition switch [– S1]*

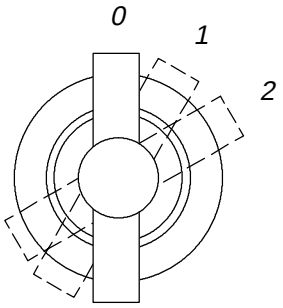
8.2 Starting and Stopping the Compressor Unit

Items in ( ) correspond to the previous illustration.
Items in [ ] correspond to the component identification symbol in the Electrical Diagram.

8.2.1 Starting

☞ Disconnect all air users.

☞ Open outlet valves.



Ignition switch [–S1]
0 Off position
1 On position
2 Start position

☞ Raise the canopy.

☞ Set the “Control On” switch (5)/[–S01] inside the compressor unit to ‘‘I’’.

☞ Turn the ignition switch (6)/[–S1] clockwise (half a turn) to the “1” position. The charging indicator lamp (2)/[–HO] must illuminate.

Attention! **Never operate the ignition switch with the motor running. Do not turn and hold the ignition switch for longer than 30 seconds. Wait for a few minutes after each attempt to start the engine. The ignition switch [–S1], must be returned to the ”0” (vertical) position before every attempt to start because of the integrated start repeat inhibit.**

☞ Turn the ignition switch (6)/[–S1] clockwise to the “2” position and hold, the starter is thus energized. Release the switch as soon as the motor starts. Supplementary fuel is automatically injected into the engine during the start.

When the engine starts and runs normally, the charging indicator lamp (2)/[–HO] should go out after a few seconds.

Attention! **If the indicator lamp does not go out then a malfunction has occurred. (see chapter 8.3 and 8.6.7.)**

☞ Lower and secure the canopy.

☞ Close the outlet valves.

The compressor unit is ready for operation and the supply of compressed air is available.

8.2.2 Stopping

☞ Turn the ignition switch (6)/[–S1] to the ‘‘0’’ position (vertical).

Complete shutdown:

☞ Raise the canopy.

☞ Secure the compressor against unauthorized starting by setting the control switch (5)/[–S01] inside the compressor unit counterclockwise to the ‘‘0’’ position.

☞ Lower and secure the canopy.

8.3 Operational Description

8.3.1 Stationary unit

- The solenoid venting valve (27)/[–Y2] is open and de–energized, the compressor unit vents.
- The fuel shut off valve [–Y1] is closed and de–energized.
- The inlet valve (3) is without control pressurization, open and not under pressure.
- The engine speed governor is set to the “maximum speed” position by the spring in the speed governor cylinder (26).

8.3.2 Start procedure:

☞ Set the “Control On” switch [–S01] to the ‘‘I’’ position.

☞ Turn the ignition switch [–S1] to the ‘‘1’’ position (clockwise).

- Terminal [15] on the ignition switch is supplied with power.
- The charging indicator lamp [–HO] illuminates.

☞ Turn the ignition switch [–S1] to the ‘‘2’’ position (clockwise to the stop).

- Terminals [15] and [50] on the ignition switch are supplied with power.
- The fuel shut–off device [–Y1], the venting valve [–Y2],supplementary fuel injection valve [–Y4] and the starter [–M1] are energized via terminal [50] on the ignition switch.
- Supplementary fuel is injected during start.
- The starter turns.
- When an oil pressure of approximately 1.0 bar has built up in the diesel engine, the oil pressure switch [–B0] closes.
- The fuel shut–off device [–Y1] and the venting valve [–Y2] are now energized via terminal [15] of the ignition switch.
- After a successful start the ignition switch [–S1] is released and returns to the ‘‘1’’ position under spring pressure. In this position, terminal [15] of the ignition switch is still under power.
- The starter disengages.
- As soon as the alternator starts charging the battery [–G1], the charging indicator lamp [–HO] goes out.
- The relay [–K4] is now energized via terminal [D+] of the regulator and changes over relay contact.
- The supplementary fuel injection valve [–Y4] closes.

8.3.3 Stopping the compressor unit:

☞ Turn the ignition switch [–S1] to the ‘‘0’’ (vertical) position.

- When the ignition switch [–S1] is turned to the ‘‘0’’ position the power supply to the fuel shut–off device [–Y1] and to the venting valve (27)/[–Y2] is interrupted.
- The fuel shut–off device [–Y1] closes and the engine (15) stops.
- The venting valve [–Y2] opens and vents the compressor unit.
- During the venting procedure the inlet valve (3) is closed by its nonreturn function and seals the inlet cavity between the compressor airend (4) and the inlet air filter (1). This prevents an air/oil mixture from entering the air filter (1) and emerging to the open air.

☞ Set the “Control On” switch [–S01] to the ‘‘0’’ position.

8.3.4 Function of the safety chain:

If the regulator output [–D+] of the engine alternator [–G2] is shorted to earth or one of the [–B0] (engine oil pressure), [–B6] (discharge temperature) or [–B9] (fuel level switch) contacts open during operation, relay [–K4] is de–energized. Its relay contact changes over and the fuel shut–off device [–Y1] closes. The engine (15) runs down to a standstill and the venting valve (27)/[–Y2] vents the compressor unit.

8.4 Checks during Operation

Raise the canopy for short periods -- only e.g., while checking the oil and temperature.

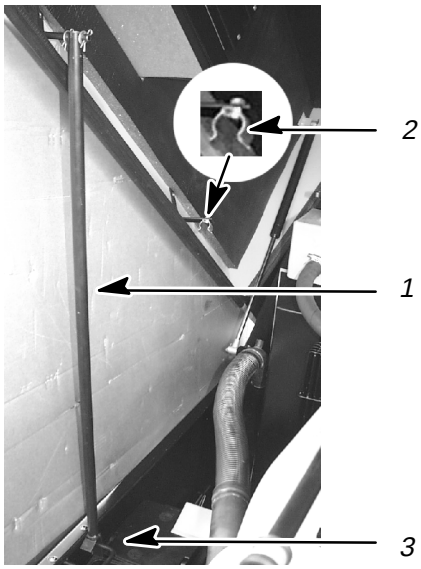
Do not operate the compressor with the canopy open because of the risk of personal injury associated with hot surfaces, rotating parts, or electrical shock hazards.

Hearing protection should be worn when operating the compressor with the canopy raised.

☞ Check the air intake filter maintenance indicator. If the red cylinder is visible in the window, clean or renew the filter cartridge (see chapter 9.3.5 and 9.3.6).

Attention!

The pressure generated by the compressor unit should never exceed the stated maximum working pressure (see chapter 1.1 for the value) under any operational condition.
The maximum temperature of the compressed air at the discharge port may not be exceeded (see chapter 1.1 for the value).



1 Safety pole
2 Holder
3 Holder

Always secure the canopy with the safety pole (1).

☞ Pull the safety pole (1) out of the holder (2).

☞ Put the safety pole (1) to the holder (3).

Attention! **Always secure the safety pole to the holder (2) when closing the canopy.**

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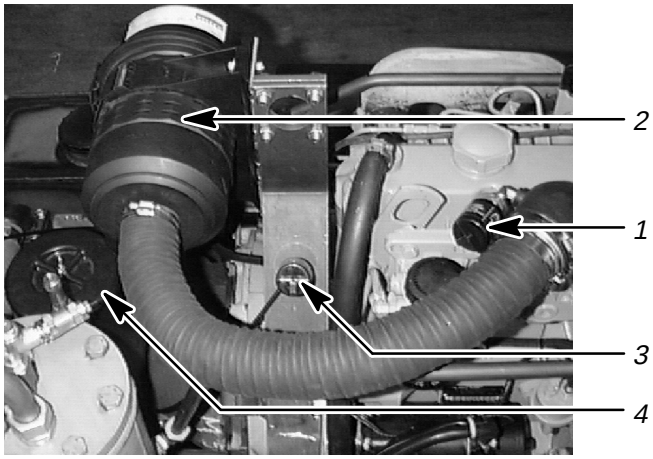


1 Maintenance indicator, engine air filter

2 Engine air filter

3 Maintenance indicator, compressor air filter

4 Compressor air filter

8.5 Operating the Unit in Freezing Conditions (Winter Operation)

The electrical system starts the unit without problem at temperatures down to 17.6˚F.

Attention! **If the compressor is operated at ambient temperatures below 32˚F, then the following points must be observed:**

-- Use winter engine oil (see service manual for the engine).
-- Use low viscosity compressor oil (see chapter 1.7).
-- Use winter diesel fuel.
-- Fit a heavy duty winter battery (see chapter 9.3.10).

Attention! **The pneumatic control of the compressor unit can stop working under ambient temperatures below 32˚F. This could be caused by small particles of ice forming in the control and regulation devices.**
To ensure faultless regulation allow the compressor to run up to operational temperature with the outlet valves open.

8.5.1 Starting unit when battery charge is low

If the starter battery is discharged, the compressor unit can be started with the help of another 12V battery in another vehicle or another portable compressor.

Attention!

- **Connect batteries of the same voltage only. (see chapter 1.4 for the voltage).**
- **Only use battery jumper cables of sufficient gauge wire and with insulated pole clamps.**
- **Arrange the jumper cables so that they cannot be caught up by rotating parts of the compressor unit or the assisting vehicle.**

Connecting the battery jumper cables:

☞ Park the assisting vehicle as near to the battery in the portable compressor as possible and stop the engine. Switch off all unnecessary power consumers.

☞ Connect the first jumper cable to the "+" terminal of the discharged battery and the "+" terminal of the battery in the assisting vehicle.

☞ Connect one end of the second jumper cable to the negative "–" terminal of the battery in the assisting vehicle and the other end to a metal part of the engine in the portable compressor.
(Do not connect the jumper cable to the "–" terminal of the discharged battery in the portable compressor!)

Starting the engine:

☞ Start the engine of the assisting vehicle and hold at fast idle.

☞ Start the engine of the portable compressor.

When the portable compressor has successfully started, allow both the portable compressor and the assisting vehicle to run with the jumper cables still connected for approximately 3 minutes.

Removing the jumper cables:

☞ Remove the jumper cable from the metal part of the engine in the portable compressor and from the negative "–" terminal of the battery in the assisting vehicle.

☞ Remove the jumper cable from the "+" terminal of the battery in the portable compressor and the "+" terminal of the battery in the assisting vehicle.

8.6 Trouble shooting

When attempting to repair a malfunction, the instructions in the 'Safety' chapter and the appropriate local safety regulations (see chapter 2) must be complied with!

Re-starting after a malfunction:

See chapter 7.2 'Putting into Operation' and chapter 8.2.1 'Starting'.

Explanation of symbols for the following fault finding help:

✳1 – have checked by a specialist.

✳2 – call KAESER authorized distributor.

✳3 – see motor service manual.

8.6.1 Engine will not start

See also engine service manual.

Possible cause:	Remedy:
Fuel tank empty.	Refill.
Defective starter.	Replace; ✳1.
Fuel shut–off device has not opened.	Check the solenoid and electrics, replace if necessary; ✳1.
Airlock in the pipe between the tank and injection pump.	Bleed the fuel pipe; ✳3.
Fuel filter blocked.	Clean or replace.

Possible cause:	Remedy:
Fuel line defective.	Replace; ⁎1.
Control fuse or relay defective.	Replace; ⁎1 or ⁎2.
Defective remote contact thermometer providing no enable signal.	Replace; ⁎2.
Start switch defective.	Replace; ⁎1 or ⁎3.
Connections and/or cable in the electrical wiring loose or open circuit.	Tighten, if necessary, replace; ⁎1.
Battery voltage too low.	Carry out battery maintenance, see chapter 9.3.10.
Oil pressure switch indicating insufficient oil pressure.	Check the engine oil pressure. Replace, if necessary, have the engine repaired; ⁎3 or ⁎1.

8.6.2 Motor does not reach full speed

See also motor service manual

Possible cause:	Remedy:
Air lock in the fuel pipeline from the tank to the injection pump.	Bleed the pipeline; ⁎3.
Fuel filter blocked.	Clean, replace if necessary; ⁎3.
Fuel pipeline fractured.	Replace; ⁎1.
Speed adjustment cylinder misadjusted or defective.	Repair, replace if necessary; ⁎2.

8.6.3 Working pressure too high

Possible cause:	Remedy:
Proportional controller misadjusted or defective.	Check the diaphragm, clean the jet, replace the proportional controller if necessary; ⁎2.
Blowoff valve not working.	Repair, replace if necessary; ⁎2.
Inlet valve not closing.	Repair, replace if necessary.
Pressure gauge showing false pressure.	Replace; ⁎2.
Venting valve not blowing.	Check the connections and the function, repair or replace if necessary; ⁎2.

8.6.4 Working pressure too low

Possible cause:	Remedy:
Consumption too high.	Close discharge valves.
Proportional controller misadjusted or defective.	Check the diaphragm, clean the nozzle, replace proportional controller if necessary; ⁎2.
Blowoff valve venting.	Repair, replace if necessary; ⁎2.
Inlet valve not opening or only opening partially.	Repair, replace if necessary; ⁎2.

Possible cause:	Remedy:
Pressure gauge indicating false pressure.	Replace; ⁎2.
Safety relief valve venting.	Leaky or maladjusted, replace if necessary; ⁎2.
Venting valve venting.	Check the connections and function, if necessary, repair or replace; ⁎2.
Motor not running at full speed.	See chapter 8.6.2.
Motor air filter contaminated.	Clean or replace, see chapter 9.3.6.
Compressor air filter contaminated.	Clean or replace, see chapter 9.3.5.
Oil separator cartridge contaminated.	Replace, see chapter 9.3.4.

8.6.5 Safety relief valve blowing

Possible cause:	Remedy:
Oil separator cartridge heavily contaminated.	Replace, see chapter 9.3.4.
Inlet valve not closing.	Check the controller, control line and inlet valve, replace if necessary; ⁎2.
Safety relief valve maladjusted or leaky.	Replace; ⁎2.

8.6.6 Compressor unit overheating

Possible cause:	Remedy:
Low oil level.	Top off, see chapter 9.3.1.
Compressor unit fan wheel damaged or malfunctioning.	Replace blades or the complete fan wheel; ⁎2.
Compressor oil cooler surface contaminated.	Clean the surface, see chapter 9.3.7.
Working element of the combination valve faulty.	Replace; ⁎2.
Working pressure too high (proportional controller maladjusted).	Reset to the permissible value or replace; ⁎2.
Compressor oil separator cartridge contaminated.	Measure the differential pressure, if it is higher than 14.5 psig, replace (see chapter 9.3.4.)
Compressor oil filter cartridge contaminated.	Replace, see chapter 9.3.3.
Leaky oil pipes.	Seal the pipes or replace; ⁎1 oder ⁎2.
Engine cooling fan damaged or malfunctioning.	Repair; ⁎3 oder ⁎1.
Ambient temperarture too high.	See installation requirements, chapter 1.6.

8.6.7 Control lamps always illuminated

Possible cause:	Remedy:
Connections or cable in the electrical wiring loose or open circuit.	Tighten or replace if necessary; ⁎1.
Malfunctioning engine generator.	Replace if necessary; ⁎3 oder ⁎1.
Malfunctioning engine voltage regulator.	Replace if necessary; ⁎3 oder ⁎1.
Engine oil level low.	⁎3 or ⁎1.

8.6.8 High concentration of oil in the compressed air

Possible fault:	Remedy:
Scavenger line of the oil separator cartridge blocked.	Clean the filter screen in the dirt trap of the oil separating cartridge and check the nozzle, replace if necessary (see chapter 9.3.4); otherwise ⁎2
Oil separator cartridge of the compressor fractured.	Replace, see chapter 9.3.4.
Compressor oil level too high.	Reduce to max. level, see chapter 9.3.1.

8.6.9 Oil runs out of the compressor air filter after switching off

Possible fault:	Remedy:
Check function of the inlet valve defective.	Repair, replace if necessary; ⁎2
Wrong type of oil (excess foaming).	Drain the oil and refill with oil conforming to the oil recommendations (see chapter 1.7 for oil types).

9 Maintenance

9.1 Observe the following rules during all maintenance and servicing:

Only specialized or trained personnel may work on power driven equipment.

Before starting work, disconnect the negative terminal of the battery to prevent an inadvertent start of the compressor unit.

DO NOT remove caps, plugs, and/or other components when compressor is running or pressurized. Stop compressor and relieve all internal pressure before doing so.

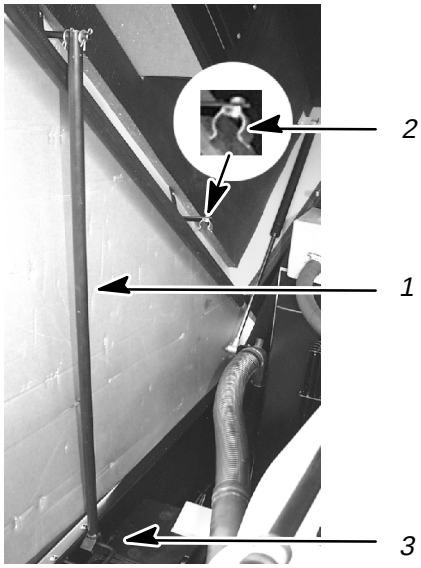
Before starting the compressor unit, ensure that:

1. No maintenance personnel are working on the compressor unit.

2. All protective guards and cover panels are screwed back on.

3. All tools are removed from the compressor unit.

☞ See chapter 8.2 to start the compressor unit.



1 Safety pole
2 Holder
3 Holder

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☞ Put the safety pole (1) to the holder (3).

Attention! **Always secure the safety pole to the holder (2) when closing the canopy.**

9.2 Regular Maintenance

Interval	Maintenance	see chapter
daily	check the oil separator tank oil level	9.3.1
	check the engine oil level	engine SM
	check the maintenance indication of the air filters (compressor and engine)	8.4
	check the battery electrolyte level and pole connectors	9.3.10
	top off the fuel tank	engine SM
	check the engine air filter, clean if necessary	9.3.6
	check the engine coolant level	9.3.8+ engine SM
50 hours after putting into operation for the first time	replace the compressor oil filter	9.3.3
	change the fuel filter	engine SM
	check the engine valve clearance	engine SM
	check the V–belt tension	engine SM
	tighten the following bolts on the engine: oil pan, engine mounts, air inlet and exhaust pipe	engine SM
100 hours after putting into operation for the first time	change the engine oil and replace the engine oil filter	engine SM
every 125 hours	clean the compressor air filter*	9.3.5
	clean the oil cooler*	9.3.7
	clean the engine cooling fins*	engine SM
	check the wheel nuts for tightness	
	check the tire pressures	1.1
	grease the regulating rod	
	clean / change the engine air filter	9.3.6
	clean / change the compressor air filter	9.3.5
every 250 hours	change the engine oil and replace the engine oil filter	engine SM
	check the engine V–belt tension	
	check all accessible screw connections, pipelines and clamps for wear and tightness	engine SM
400 hours after putting into operation for the first time	check the engine valve clearance	engine SM

Interval	Maintenance	see chapter
every 500 hours	change the compressor oil filter* change the engine oil (at least once annually) change the engine oil filter* change the compressor air filter* check the pressure differential of the oil separator cartridge (max. 12 psi)	9.3.3 engine SM engine SM 9.3.5
every 600 hours	check the engine coolant level clean crankcase vent tubes replace fuel filter element verify engine coolant has sufficent anti–freeze check air intake hoses, conection, and system replace air cleaner elements	9.3.8+ engine SM engine SM engine SM engine SM engine SM engine SM
every 1000 hours	change the compressor oil (at least once annually)*	9.3.2
every 1200 hours	Have your authorized servicing dealer or engine distributor adjust valve clearance Flush cooling system Have your authorized servicing dealer or engine distributor test overall cooling system and cap.	engine SM engine SM engine SM
every 1500 hours	have the starter motor and alternator checked change the oil separator cartridge in the oil separator	 9.3.4

* The maintenance intervals given are recommended intervals and could shorten considerably under unsuitable ambient or operational conditions.

Engine SM ⇒ refers to engine service manual.

We urgently recommend that a record is kept of all maintenance carried out. A sample maintenance record form is shown in chapter 11.3.

9.3 Maintenance Instructions

The maintenance instructions for the diesel engine are found in the diesel engine service manual!

☞ Before starting repair work or maintenance clean the compressor unit, especially connections and screw joints of all oil, diesel fuel or protective agents (preservation grease, etc).

☞ Do not use aggressive cleaning materials! Use non–fibrous cloth!

Attention! **Always tighten down any screw connections that have been loosened during maintenance work.**

Ensure that waste operational and maintenance materials, replaced parts, etc. are disposed of according to environmental regulations!

9.3.1 Check/top off the oil in the oil separator tank

Check the oil level daily before starting the compressor unit.

Carry out the check with the compressor unit standing horizontally, with the compressor unit switched off and with the oil separator tank vented.

Oil level check:

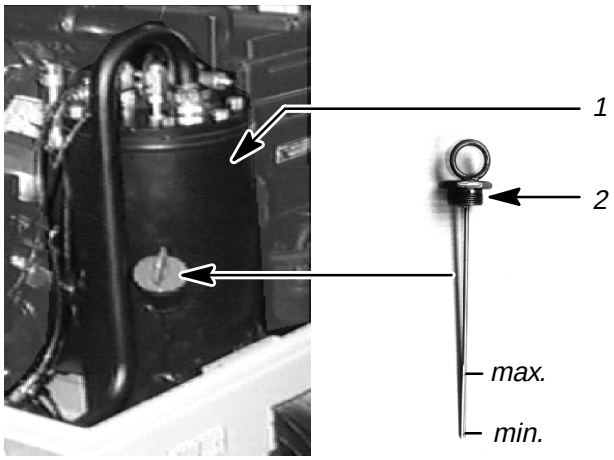
☞ Switch off the compressor unit (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge indicates zero psig)!

☞ Open the canopy

☞ Disconnect the negative cable of the battery.

☞ Uncouple all pneumatic tools and open the discharge valve.



1 Oil separator tank
2 Oil filler plug with measuring stick

Detail:
max. maximum oil level
min. minimum oil level

Oil measuring stick withdrawn

☞ Unscrew the oil filler plug and remove together with the plug or cap with dipstick. Clean the dipstick with non–fibrous cloth and screw in the filler plug again completely.

☞ Unscrew the filler plug again and read off the oil level on the dipstick.

The oil level must be between the markings on the dipstick. If the level is below the lower mark, immediately top off with compressor oil!

Top off the oil:

Attention! **The oil should never exceed the normal quantity otherwise operational malfunctions could occur. If too much oil is added, oil will enter the air control valve upon restarting, cause malfunctioning regulation and enrichment of the compressed air with excess oil.**

Attention! **Always use the same type of oil (see label on the oil separator tank, or chapter 1.7).**
Contrary to the diesel motor, a mixture of different oils for compressor lubrication may never be used!

☞ Top off with oil to the maximum mark using an oil funnel.

☞ Check the oil level again.

☞ Check the sealing ring of the oil filler plug and then screw in tightly.

☞ Connect the negative cable of the battery again.

Exact check of oil level and for leaks :

There is danger of injury through contact with:
-- very hot surfaces.
-- rotating parts.
-- electrical components.

Hearing protection should be worn when operating the compressor with its canopy raised.

☞ Start the compressor unit and allow to run until the operating temperature (see chapter 1.1) is reached (the cooling oil then starts to circulate).

Check the oil level again as follows:

☞ Run the compressor in ‘idle’ (with no air users connected) and close the outlet valves (maximum system pressure).

☞ Shut down the compressor (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge reads zero psig).

Check the oil level (see ‘Oil Level Check’, chapter 9.3.1).

☞ Correct the oil level if necessary.

☞ Carry out a visual check for leaks.

☞ Close the canopy.

9.3.2 Compressor oil change (oil separator tank and oil cooler)

Change the oil after approximately 1000 operating hours, depending on the degree of pollution of the intake air, but at least once annually.

Change the oil with the compressor unit at operational temperature.

The compressor oil can get very hot, beware of scalding!

☞ Switch off the compressor unit (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge indicates zero psig)!

☞ Open the canopy

☞ Disconnect the negative cable of the battery.

☞ Uncouple all pneumatic tools and open the discharge valve.

☞ Unscrew the oil filler plug.

Capture the used oil in a suitable container and dispose according to environmental regulations!

☞ Drain the oil separator tank by unscrewing the oil drain plug, located on the underside of the tank (accessible from underneath through the access hole in the floor panel).

☞ Drain the oil cooler by unscrewing the separate drain plug, located on the bottom left of the oil collection box (accessible from underneath through the access hole in the floor panel).

Attention! **Drain the oil from the oil separator tank, oil cooler and the oil pipelines completely.**

☞ Change the oil filter cartridge if necessary (see chapter 9.3.3).

☞ Fit new ring seals on both drain plugs and screw them back in again.

☞ Top off with new oil using a funnel (see label on the oil separator tank or chapter 1.7 for the type of oil used).

Attention! **Never exceed the maximum oil quantity, otherwise damage may occur.**

☞ Check the oil level (see chapter 9.3.1).

☞ Screw in the oil filler plug again and tighten down.

☞ Reconnect the negative cable of the battery.

Exact check of oil level and for leaks :

There is danger of injury through contact with:
-- very hot surfaces.
-- rotating parts.
-- electrical components.

Hearing protection should be worn when operating the compressor with its canopy raised.

☞ Start the compressor unit and allow to run until the operating temperature (see chapter 1.1) is reached (the cooling oil then starts to circulate).

Check the oil level again as follows:

☞ Run the compressor in ‘idle’ (with no air users connected) and close the outlet valves (maximum system pressure).

☞ Shut down the compressor (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge reads zero psig).

Check the oil level (see ‘Oil Level Check’, chapter 9.3.1).

☞ Correct the oil level if necessary.

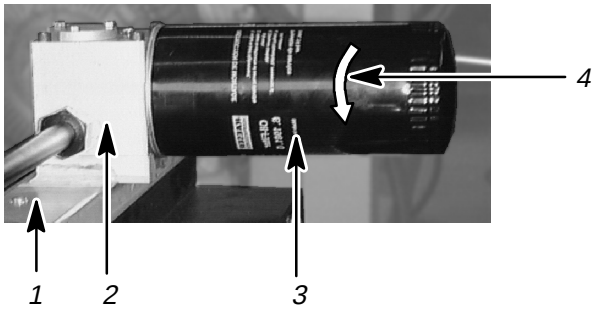
☞ Carry out a visual check for leaks.

☞ Close the canopy.

9.3.3 Compressor oil filter cartridge change

Replace the oil filter cartridge after approximately 50 operating hours. It is recommended that the oil filter cartridge is then changed every 500 operating hours.

The compressor oil can get very hot, beware of scalding!



1 Oil cooler
2 Combination valve
3 Oil filter
4 Direction of rotation for oil filter removal

☞ Switch off the compressor unit (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge indicates zero psig)!

☞ Open the canopy

☞ Disconnect the negative cable of the battery.

☞ Uncouple all pneumatic tools and open the discharge valve.

Dispose of the old oil filter and any used, accumulated oil according to environmental regulations!

☞ Unscrew the contaminated oil filter cartridge counter–clockwise and dispose of (if the filter cartridge is seized, use an appropriate tool to remove).

☞ Capture and dispose of any leaking oil.

☞ Carefully clean sealing surfaces using non–fibrous cloth.

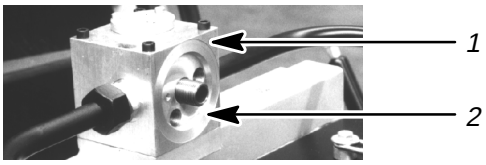
Lightly oil the sealing gasket of the new oil filter cartridge, using fresh oil.

☞ Use your fingers to apply a light coat of fresh oil to the seal of the new cartridge.

Attention! **Do not use a filter wrench when installing a new oil filter cartridge. Hand--tighten only!**

☞ Screw on the new oil filter cartridge by hand until the gasket is firmly seated.

☞ Firmly hand–tighten the new cartridge.



1 Combination valve
2 Sealing surface

☞ Check the oil level in the oil separator tank (see chapter 9.3.1).

☞ Reconnect the negative cable of the battery.

Exact check of oil level and for leaks :

There is danger of injury through contact with:
-- very hot surfaces.
-- rotating parts.
-- electrical components.

Hearing protection should be worn when operating the compressor with its canopy raised.

☞ Start the compressor unit and allow to run until the operating temperature (see chapter 1.1) is reached (the cooling oil then starts to circulate).

Check the oil level again as follows:

☞ Run the compressor in 'idle' (with no air users connected) and close the outlet valves (maximum system pressure).

☞ Shut down the compressor (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge reads zero psig).

Check the oil level (see 'Oil Level Check', chapter 9.3.1).

☞ Correct the oil level if necessary.

☞ Carry out a visual check for leaks.

☞ Close the canopy.

9.3.4 Oil separator cartridge change

References to numbers in ( ) refer to the numbers in the following illustration.

Replace the oil separator cartridge at the latest every 1500 operating hours, or after a maximum of 2 years. The differential pressure across the cartridge may not exceed 15 psig.

☞ Switch off the compressor unit (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge indicates zero psig)!

☞ Open the canopy

☞ Disconnect the negative cable of the battery.

☞ Uncouple all pneumatic tools and open the discharge valve.

☞ Unscrew the clamping nut (1) of the scavenger line and remove the plastic piping.

☞ Remove the dirt trap by unscrewing the clamping nut (5).

☞ Remove the control line at the blowoff valve by unscrewing the clamping nut (8).

☞ Remove the Tecalan line and the control line at the proportional controller by unscrewing the clamping nuts (13) and (14).

☞ Unscrew the clamping nut (6) and remove the compressed air hose (7).

☞ Unscrew the cover plate clamping bolts (4) and remove the cover plate (9).

The metal parts of the oil separator cartridge are electrically grounded using special gaskets. The gaskets (10) are fitted with a staple (12) that fulfils this requirement and provide an electrical path from the oil separator tank to the frame of the compressor unit.
Do not remove the staples!

☞ Extract the used oil separator cartridge (11), with gaskets (10) and clean the sealing surfaces.

Attention! **When cleaning the sealing surfaces take care that nothing falls (dirt particles) into the oil separator tank.**

Dispose of the used oil separator cartridge according to environmental regulations!

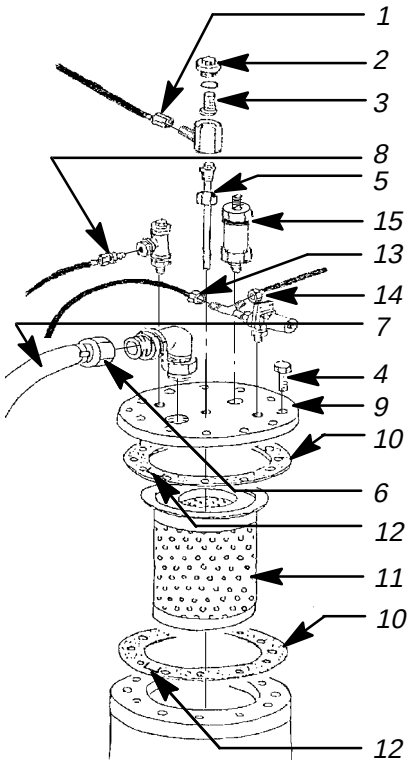
☞ Dispose of the used oil separator cartridge.

☞ Insert the new oil separator cartridge (11), with new gaskets (10) and screw down the cover plate (9) with the cover plate clamping bolts (4).

☞ Change the strainer (3) and the O ring (2) in the dirt trap together with the oil separator cartridge.

☞ Reassemble in the reverse order.

☞ Reconnect the negative cable of the battery.



1 Clamping nut for the scavenger line
2 O–ring
3 Strainer
4 Cover plate clamping bolt
5 Clamping nut for dirt trap
6 Clamping nut for discharge hose
7 Discharge hose
8 Control line venting valve clamping nut
9 Cover plate
10 Gaskets
11 Oil separator cartridge
12 Staples
13 Clamping nut, control line, prop. controller
14 Clamping nut, control line, prop. controller
15 Blowoff valve

Exact check of oil level and for leaks :

There is danger of injury through contact with:
-- very hot surfaces.
-- rotating parts.
-- electrical components.

Hearing protection should be worn when operating the compressor with its canopy raised.

☞ Start the compressor unit and allow to run until the operating temperature (see chapter 1.1) is reached (the cooling oil then starts to circulate).

Check the oil level again as follows:

☞ Run the compressor in ‘idle’ (with no air users connected) and close the outlet valves (maximum system pressure).

☞ Shut down the compressor (see chapter 8.2).

☞ Wait until the compressor has automatically vented (check that the pressure gauge reads zero psig).

Check the oil level (see 'Oil Level Check', chapter 9.3.1).

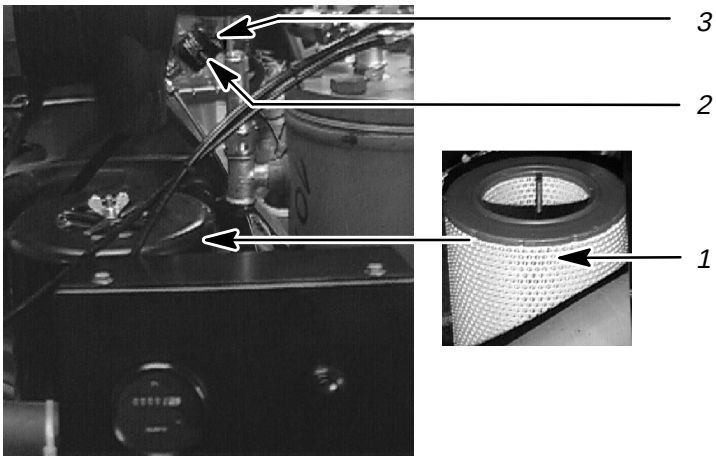
☞ Correct the oil level if necessary.

☞ Carry out a visual check for leaks.

☞ Close the canopy.

9.3.5 Clean / replace the compressor air intake filter

Clean the compressor air intake filter at least every 125 operating hours, at the latest when the maintenance indicator activates (see chapter 8.4).



1 Compressor air filter cartridge (filter cap removed)
2 Compressor air filter maintenance indicator
3 Reset button for the maintenance indicator

☞ Switch off the compressor unit (see chapter 8.2.2).

☞ Open the canopy.

To open the filter housing:

☞ Unscrew the wing nut on the cover assembly. Remove the cover assembly and gently pull out the air filter cartridge.

☞ Clean the filter housing, cover assembly and sealing surfaces.

Cleaning the air filter cartridge by tapping:

☞ Tap the air filter cartridge several times on the front with the ball of the hand so that the dust falls out.

Attention! **Do not use excessive force, otherwise the air filter cartridge may be damaged.**

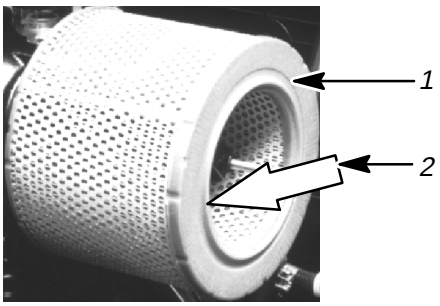
☞ Clean all seating surfaces.

Cleaning the air filter cartridge with compressed air:

☞ Blow dry compressed air at a pressure of not more than 30 psig at a slant from the inside to the outside of the air filter cartridge surfaces.

Do not direct compressed air toward any person. Compressed air is contained energy and as such may cause injury or death.

Attention! **Do not clean the air filter cartridge with fluids. If the air filter cartridge is heavily contaminated or has been cleaned several times (max. five times, or has not been replaced within one year) then it must be replaced.**



1 Air intake filter cartridge
2 Direction of blow out (from the inside to the outside!)

Resetting the maintenance indicator:

☞ When filter maintenance is finished, press the reset button of the maintenance indicator.

The maintenance indicator is ready for operation again.

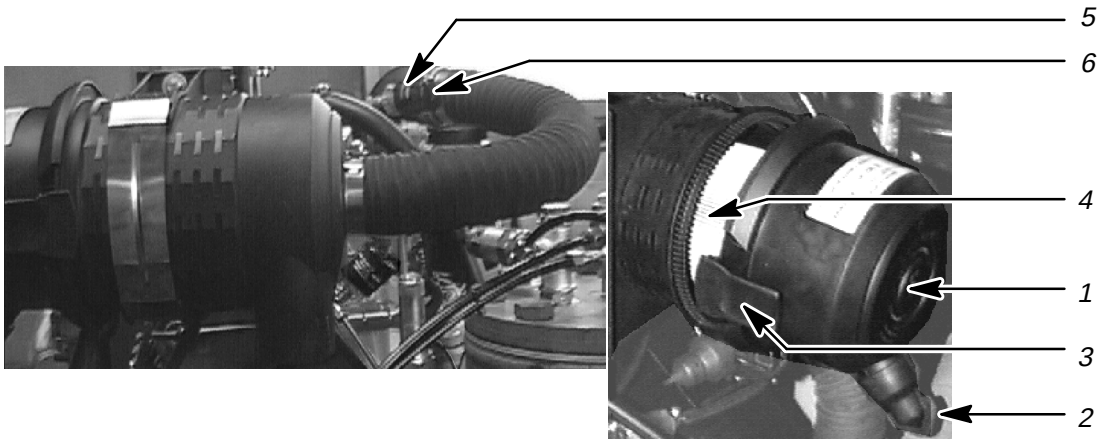
☞ Insert the cleaned or new air filter cartridge into the filter housing.

☞ Reassemble the air filter in the reverse order of opening (see ‘‘To open the filter housing’’).

☞ Close the canopy.

9.3.6 Clean/replace the engine air intake filter

Clean the engine air filter at least every 125 operating hours, at the latest when the maintenance indicator activates.



1 Filter cap
2 Dust evacuator valve
3 Spring retaining flaps
4 Motor air filter cartridge
5 Motor air filter maintenance indicator
6 Reset button for the maintenance indicator

☞ Shut down the compressor unit (see chapter 8.2.2).

To empty the dust evacuator valve:

☞ Empty the dust evacuator valve by pressing the valve orifice together at the ends.

☞ Clean the orifice.

☞ Remove any dust clumps that may have collected by pressing together the upper part of the valve.

Opening the filter housing:

☞ Press both spring flaps together, remove the cover and then the filter cartridge (note the position of the cover for the reassembly!).

☞ Clean the filter housing and the filter cover assembly.

Cleaning the air filter cartridge with compressed air:
(see also chapter 9.3.5)

Do not direct compressed air toward any person. Compressed air is contained energy and as such may cause injury or death.

☞ Blow dry compressed air at a pressure of not more than 30 psig at a slant from the inside to the outside of the air filter cartridge surfaces.

Attention! **Do not clean the air filter cartridge with fluids. If the air filter cartridge is heavily contaminated or has been cleaned several times (max. five times, at the latest after a period of one year) then it must be changed.**

Cleaning the filter cartridge by tapping with the hand:
(see also chapter 9.3.5)

☞ Tap the air filter cartridge several times on the front with the ball of the hand so that the dust falls out.

Attention! **Do not use excessive force, otherwise the air filter cartridge may be damaged.**

Resetting the maintenance indicator:

☞ When filter maintenance is finished, press the reset button of the maintenance indicator.

The maintenance indicator is ready for operation again.

☞ Insert the cleaned or new air filter cartridge into the filter housing.

☞ Reassemble the air filter in the reverse order of opening (see ‘‘To open the filter housing’’).

☞ Close the canopy.

9.3.7 Cleaning the oil cooler and radiator

Check the oil and water coolers for clogging at least every 125 operating hours as heavy clogging of the cooler grill and honeycomb can cause excess temperatures within the oil circulation system and overheating of the engine.

☞ Shut down the compressor unit (see chapter 8.2.2) and allow to cool.

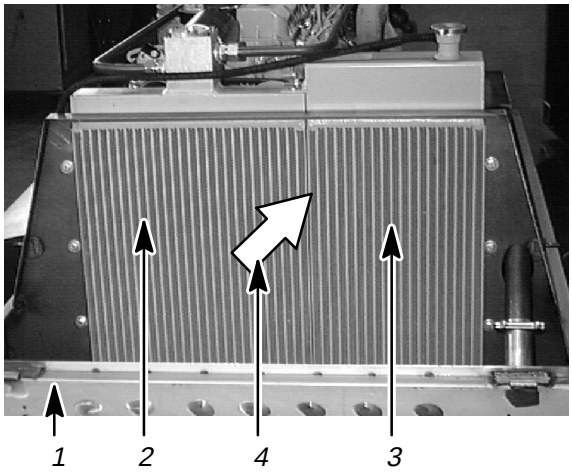
☞ Open the canopy.

☞ Disconnect the battery (see chapter 9.3.10).

☞ Close up the air intakes of the engine and compressor air filters (see chapter 7.3.1).

☞ Cover electrical components such as the alternator, starter or instruments.

☞ Unscrew and remove the sound proofing from the air outlet.



1 Rear panel of compressor package, with foam soundproofing removed
2 Compressor oil cooler air outlet
3 Engine radiator air outlet
4 Direction of water or steam jet for cleaning purposes (outside to inside)

Do not direct compressed air, water or steam jets toward any person. These represent contained energy and as such may cause injury or death.

The soiled cooler must be cleaned with water or steam jet at cleaning points with oil separators suited for such purpose only!

Attention! **Do not direct water or steam jets directly at sensitive components such as the alternator, starter or the instruments.**

☞ Clean the cooler with compressed air, water or steam jet in the opposite direction to the cooling air flow.

☞ Screw on the soundproofing again.

☞ Open the inlets of the air filters again.

☞ Reconnect the battery.

☞ Close the canopy.

☞ Put the compressor into operation (see chapter 8.2.1) and run up to operating temperature so that any accumulated water evaporates.

9.3.8 Checking the Engine Coolant

Check the engine coolant daily before putting the compressor into operation.

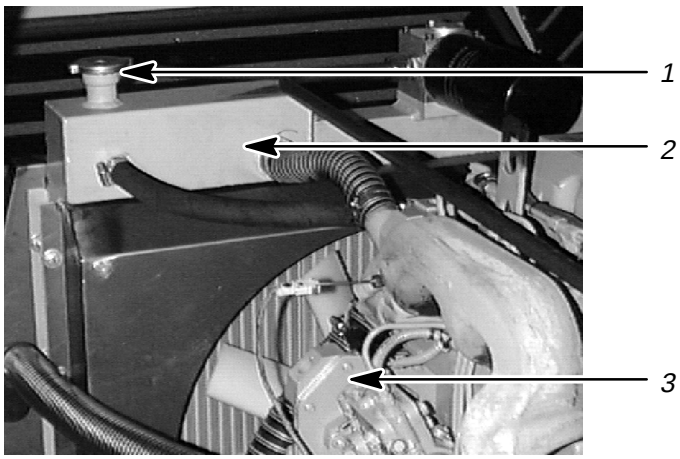
The coolant is a mixture of water, antifreeze and corrosion inhibitor. The anti–freeze and corrosion inhibitor must remain in the cooling system year round. The coolant must be replaced every two years to provide proper corrosion protection to increase the boiling point and to ensure proper engine protection.

☞ Shut down the compressor (see chapter 8.2)

☞ Wait until the compressor has automatically vented (the pressure gauge must show zero psig!)

See chapter 1.3 for the quantity of coolant.

The expansion tank is located directly above the radiator.



1 Filler with cap
2 Coolant expansion tank
3 Fan

☞ Open the canopy

Attention!

Explosive release of fluids from pressurized cooling system can cause serious burns.
Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

Danger of acid burns! Do not allow coolant to come into contact with the eyes or skin. If the coolant comes into contact with the eyes rinse immediately with running water.

☞ Turn the filler cap on the coolant filler neck to the first stop, allow pressure to escape.

☞ Remove the filler cap.

Checking the coolant level / adding coolant:

The component of antifreeze/corrosion inhibitor agent in the coolant should not fall below 40 % antifreeze (corresponds to antifreeze protection down to approx. −13˚F).

When adding coolant (after loss of coolant) an antifreeze/corrosion inhibitor component of at least 50 % antifreeze (corresponds to antifreeze protection down to approx. −35˚F) must be ensured.

The component should not exceed 55 % antifreeze (corresponds to antifreeze protection down to approx.−49˚F = max. antifreeze protection), because below this ratio the anti-freeze properties are reduced and heat dissipation worsens.

To ensure that the coolant does not overflow during expansion caused by heat, sufficient space must be left.
Do not fill to more than1 inch below the filler neck.

☞ Check the level of the coolant

☞ Mix a quantity of antifreeze and top up to the mark

☞ Screw on the filler cap

☞ Start the engine and run for approx. one minute

☞ Stop the engine

☞ Turn the filler cap to the first stop, allow pressure to escape

☞ Remove the filler cap

☞ Top up the coolant to the mark again

Checking the antifreeze / corrosion inhibitor in the coolant:

The antifreeze protection must be –35˚F throughout the whole year.

☞ Check the component of antifreeze agent in the coolant with an antifreeze tester

If the antifreeze component is below 40% then top up with pure antifreeze agent or change the coolant.

☞ To drain the coolant see engine service manual.

The drain plug is located at the bottom left of the radiator.

☞ Close the canopy

9.3.9 Rubber sealing strip maintenance

The rubber sealing strips between the lower body and the canopy serve as both sound-proofing and protection against weather.

Care of the rubber sealing strips is especially necessary during the winter months to prevent the strips from sticking and thus tearing when the canopy is opened.

☞ Grease the rubber sealing strips regularly with silicon oil.

9.3.10 Battery maintenance

Care of the battery:

Keep the battery dry and clean!

When working on the battery, observe the following points:

1. **Gases emanating from the battery are explosive.**
2. **Avoid sparks or open flame close to the battery, do not smoke.**
3. **Avoid contact of electrolyte or acid with the hand or clothing because of the danger of acid burns.**
4. **Always wear protective goggles.**
5. **Do not lay tools on the battery because of the danger of short circuiting the battery, heat build-up and battery explosion.**

☞ Disconnect the dirty battery connectors.

☞ Clean the battery terminals (+ and –) and the battery connectors, then grease with acid–proof grease.

☞ Check that a good connection is made when reconnecting the battery terminals and tighten the connector bolts hand tight only.

Battery electrolyte level check and top--off:

☞ Check the level of the electrolyte daily.

The electrolyte level can be checked externally. It must always lie between the horizontal max./min. lines on the long side of the battery.

☞ Top off with distilled water via the screw cap opening if the level of the electrolyte lies below the min. mark.

☞ Replace the screw cap.

Winter operation:

Be advised that the available battery power is lower during the winter. Only a fraction of the original starting energy is available at low temperatures.

Attention! **A discharged battery is endangered by freezing temperatures and could freeze at a temperature of 14 °F.**

☞ Check the battery charge with a hydrometer before the start of the cold season and recharge, if required. At the same time, clean and grease the poles with acid–proof grease, if necessary.

In extreme cases, the use of a high performance cold–start battery or an additional battery is recommended.

Shutdown of the compressor unit for several weeks under freezing conditions:

☞ Remove the battery and store in a warm place to prevent the battery freezing!

Battery removal:

Never short circuit the battery (e.g. with a tool) because the battery heats excessively under short circuit conditions and could explode.

Attention! **Do not disconnect the battery with the engine running otherwise the regulator and the generator diodes could be destroyed.**
If the battery discharges for no apparent reason, check the charging system.

☞ First disconnect the negative cable and then the positive cable, then unscrew the battery clamping system.

☞ Reassemble in the reverse order.

Battery replacement:

If the battery must be replaced, fit a new battery of equal capacity, current rating and shape as the original battery.

Dispose of the old battery according to environmental regulations!

9.3.11 Chassis maintenance

The chassis is maintenance–free.

Wheels:

Check the wheels for tightness, condition and tire pressures every 125 service hours.

☞ Check the tightness of the wheel nuts and the condition of the tires.

☞ Check the tire pressures with a tire pressure gauge (see chapter 1.1 for the tire pressure values).

9.3.12 Engine oil change

Change the engine oil, depending upon the contamination of the intake air, approximately every 250 operating hours, but at least annually.

Carry out the first oil change after approximately 100 operating hours.

Always change the oil with the engine at operational temperature.

Engine oil can be very hot, beware of scalding!

- ☞ Shut down the compressor unit (see chapter 8.2.2).
- ☞ Open the canopy.
- ☞ Disconnect the negative cable of the battery.

Catch the drained oil in a suitable container and dispose of according to environmental care regulations!

A square, funnel shaped drain opening is located in the floor panel directly below the oil drain plug. Place a suitable container underneath this opening to catch the used oil.

- ☞ Position the container.
- ☞ Carry out the oil change as described in the engine service manual.
- ☞ Reconnect the negative cable of the battery.

10 Spare Parts and After Sales Service

10.1 Service parts and expendable parts

Description	Qty.	Order no.
Compressor parts:		
Air filter cartridge	1	6.2044.0
Oil filter	1	6.1981.0
Oil seperator cartridge service kit	1	6.3525.0
Oil seperator cartridge	1	6.3524.00010
Gasket for oil filler plug	1	5.1455.0
Fuse	1	8.6500.0
Compressor oil:		
KAESER SIGMA FLUID S–460	20 l	9.0920.0
Engine parts (John Deere):		
Air filter cartridge	1	6.3532.0
Diesel oil filter	1	8.9602.0
Oil filter	1	8.9600.0
Gasket for oil filler plug	1	–
Gasket for injection nozzle	1	–
Injection nozzle service kit	1	–
V–belt	1	8.9603.0
Gaskets service kit	1	–

Please state the following data for all inqueries and spare parts orders (see also the nameplate):

- Compressor unit, model
- Serial number of the compressor unit
- Name of the part
- Order number of the part

In case of warranty, state the following information:

- Date of first putting into operation
- Serial number of the compressor unit
- Serial number of the engine

Important: Enter the data on the nameplate on the unit in the following illustrated nameplate!

KAESER COMPRESSORS

Model: _____ Works: _____

Serial No.: _____

Part No.: _____

Chassis No.: _____

Actual total weight: _____ lbs

Permissible axle load: _____ lbs

Working pressure: _____ psi

Air receiver capacity: _____ gal

Motor speed: _____ rpm

Year of manufacture _____

Attention! **Do not use inferior parts. Always order original spare parts from the compressor manufacturer to avoid lower quality spare parts in your own compressor unit.**

We must point out that service parts not delivered by Kaeser Compressors, Inc. are also not tested and cleared by us. The fitting and/or use of such products can, under certain circumstances, change constructional and conditional characteristics of the compressor unit negatively and therefore affect the active and/or passive safety of the unit.

KAESER COMPRESSORS is released from all liabilities and warranties for damages caused by the use of non–original KAESER COMPRESSORS parts and accessories.

10.2 Motor Servicing

A booklet giving the addresses and telephone numbers of authorized dealers providing service and spare parts is enclosed with the technical documents for the motor.

11 Appendix

11.1 Wiring Diagram

1	2	3	4	5	6	7	8

Electrical diagrams

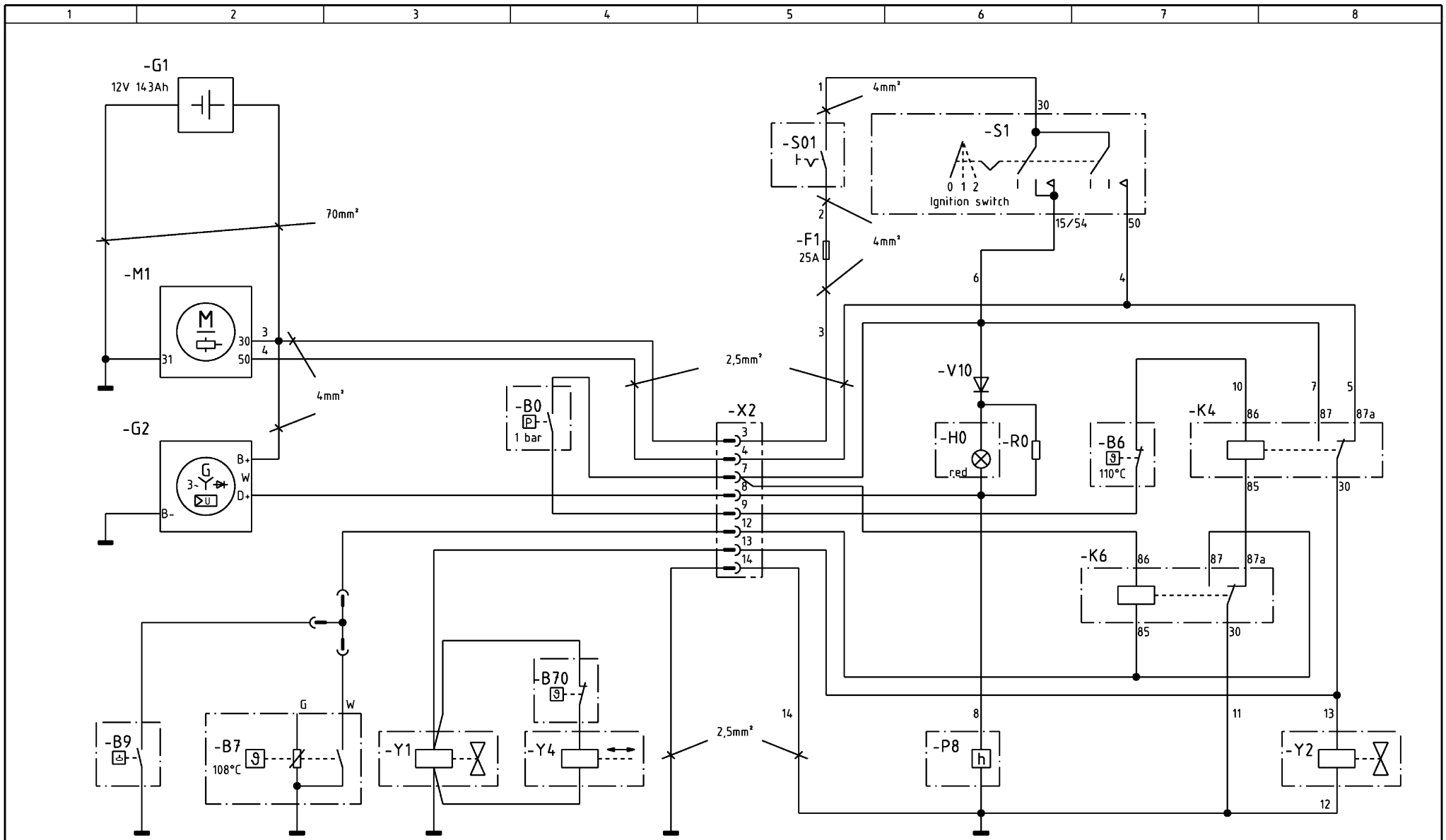
Mobilair M52

with Ignition switch and

John Deere-Motor, -Thermostat

Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

c				Datum	05.06.2001 E		KAESER KOMPRESSOREN	Cover page Mobilair M52		=	
b				Bearb.	Werner					+	
a				Gepr.	Schmidt					DFA52.ZJD-00953.00	Blatt 1
A	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AFA00902 (M52)			Bl.



Function:	fuel level low	Oil pressure	Supplementary fuel feed start valve	Control ON	Hour meter	Venting
Function:	Starter / generator	Fuel shut-off valve	coolant temperature	switching on		Safety chain
Group of functions:	unit components			Control panel		

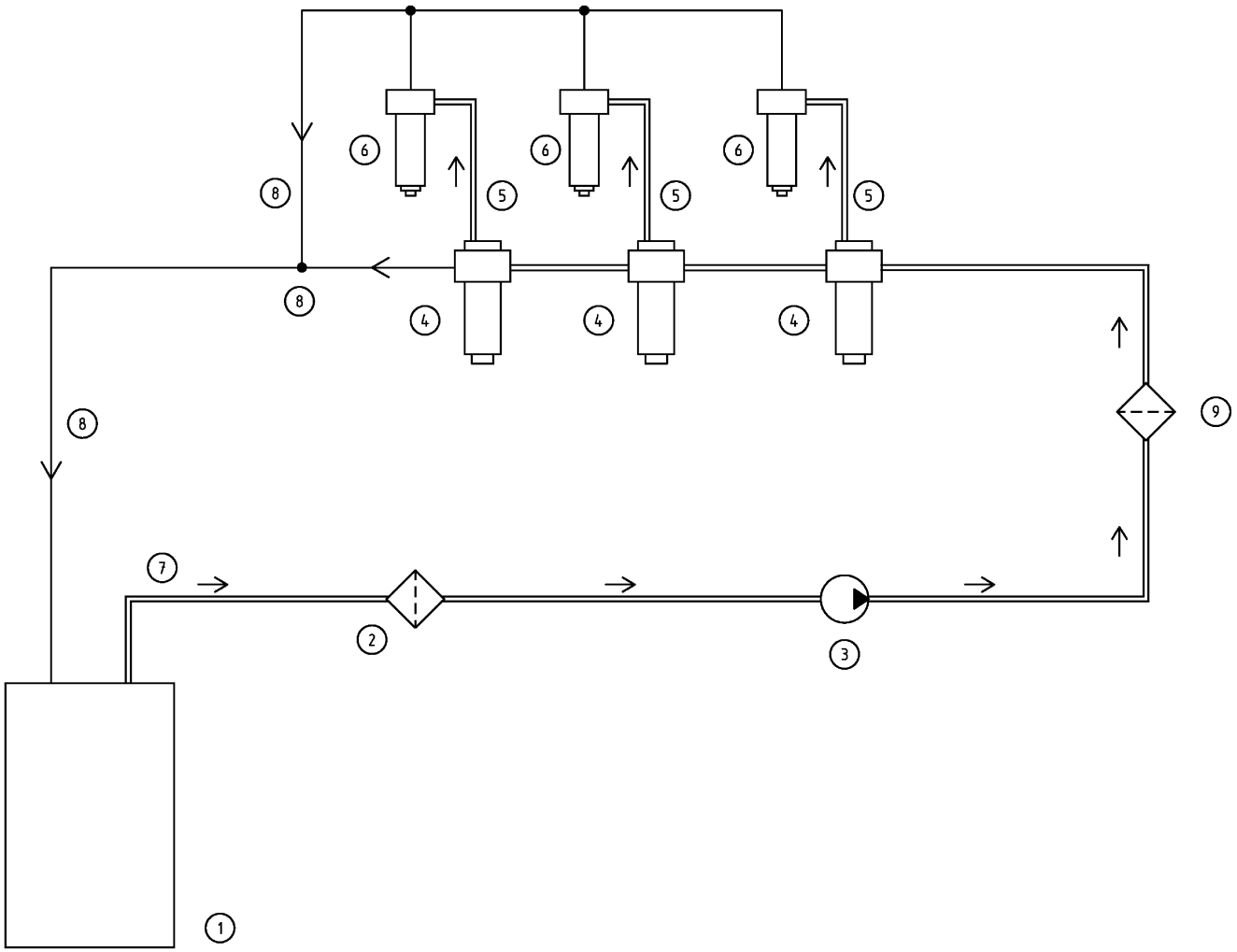
c				Datum	05.06.2001		KAESER KOMPRESSOREN	Circuit diagram Mobilair M52 Control	=
b				Bearb.	Werner				+
a				Gepr.	Schmidt				
B	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AFA00902 (M52)	SFA52.ZJD-00953.00	Blatt 1 Bl.

-B0	Oil pressure switch
-B6	Distance temperature gauge/Compressor airend
-B7,-B70	Thermostat, coolant
-B9	fuel level switch
-F1	Control fuse
-G1	Battery
-G2	Three-phase generator
-H0	Charging control lamp
-K4,-K6	Relay, Safety chain
-M1	Starter-Motor
-P8	Hour meter
-R0	Resistor
-S01	"Control On" switch
-S1	Ignition switch
-V10	Diode
-X2	Plug connection, Control panel
-Y1	Fuel shut-off valve
-Y2	Venting valve (electromagnetic)
-Y4	Supplementary fuel feed start valve

15	switched plus + (unit ON)
30	+ terminal (Battery)
31	- terminal (Battery), earth
50	Starter-Control

c				Datum	05.06.2001		KAESER KOMPRESSOREN	Electrical equipment identification Mobilair M52		=	
b				Bearb.	Werner					+	
a				Gepr.	Schmidt					SFA52.ZJD-00953.00	Blatt 2
E	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AFA00902 (M52)				Bl.

11.2 Fuel circulation schematic diagram



c				Datum	09.02.1999		KAESER KOMPRESSOREN	Fuel circulation diagram 3-Cylinder-diesel engine Mobilair M 52 (John Deere)
b				Bearb.	Plau			
a				Gepr.	Grimm			KFMM52JD-00019.00 Blatt 1
	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung:	USE

1	2	3	4	5	6	7	8

1	Fuel tank	6	Injection nozzle
2	Fuel filter	7	Fuel supply line
3	Fuel feed pump	8	Fuel return line
4	Injection pump	9	Fuel filter
5	Injection pipe		

c				Datum	09.02.1999		KAESER KOMPRESSOREN	Fuel circulation legend 3-Cylinder-diesel engine Mobilair M 52 (John Deere)	
b				Bearb.	Plau				
a				Gepr.	Grimm				
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung:	KFMM52JD-00019.00	Blatt 2 USE

11.3 Maintenance Schedule

Model: **Serial number of the compressor unit:**			
Date	Description of work	Operating hours	Signature