SERVICE MANUAL

Screw Compressor

M 13 / 15 / 17

No.: 9_6983 01 USE

KAESER COMPRESSORS

Contents

Contents

Contents

List of Illustrations

List of Illustrations

List of Tables

List of Tables

1 Regarding this Document

1.1 Using the Document

The service manual is part of the machine.

- ➢ Keep the service manual in a safe place throughout the life of the machine.
- ➢ Pass the manual on to the next owner/user of the machine.
- ➢ Ensure that all amendments received are entered in the manual.
- ➢ Enter details from the machine nameplate and individual items of equipment in the table in chapter 2.

1.2 Further Documents

Included with this service manual are additional documents intended to assist in the safe operation of the machine:

- Certificate of acceptance / operating instructions for the pressure vessel
- Manufacturer's declaration / declaration of conformity in accordance with applicable directives
- Engine documentation (not electric-motor-driven machines)

Missing documents can be requested from KAESER.

- ➢ Make sure all documents are complete and observe the instructions contained in them.
- ➢ Make sure you give the data from the nameplate when ordering documents.

1.3 Copyright

1.4 Symbols and Identification

1.4.1 Warnings

Warning notices indicate three levels of danger signified by the signal word.

- DANGER
- WARNING
- CAUTION

DANGER
These show the kind of danger and its source!
The possible consequences of ignoring a warning are shown here.
The word "Danger" indicates that death or severe injury can result from ignoring the instruction.

- ➢ The measures required to protect yourself from danger are shown here.

➢ Always read and comply with warning instructions.

Signal word	Meaning	Consequences of non-observance
DANGER	Warns of an imminent threat of danger	Death or serious injury may result
WARNING	Warns of possible danger	Death or serious injury are possible
CAUTION	Warns of a possibly dangerous situation	Light injuries or material damage are possible

Tab. 1 The levels of danger and their meaning

1.4.2 Other instructions and symbols

This symbol refers to particularly important information.

Material Here you will find details on special tools, operating materials or spare parts.

Precondition Here you will find conditional requirements necessary to carry out the task.
Here conditions relevant to safety are named that will help you to avoid dangerous situations.

Option H1 ➢ This bullet is is placed by lists of actions comprising one stage of a task.
In lists of actions with several stages the sequence of actions is numbered.
Information that refers to only one option is marked with an indicator (e.g.: H1 means that this section is only valid for machines with adjustable machine mountings). Option indicators used in this service manual are explained in chapter 2.2 .

Information referring to potential problems are identified by a question mark.
The cause is named in the help text ...
➢ ... and a remedy given.

This symbol refers to important information or measures concerning environmental protection.

Further information Here, your attention is drawn to further topics.

2 Technical Data

2.1 Nameplate

The model designation and important technical information are given on the machine's nameplate.
The nameplate is located on the outside of the machine (see illustration in chapter 13.1)

➢ Enter the data from the nameplate here as a reference.

Attribute	Value
Options	
Vehicle identity no.	
Compressor model	
Material number	
Serial number	
Year of manufacture	
Lifting point load capacity	
Engine power	
Engine speed	
Maximum working pressure	

Tab. 2 Nameplate

2.2 List of Options

A list of the options fitted to your machine helps to relate the information in this service manual. Options fitted to the machine are listed on the nameplate (code letters).

The nameplate is to be found

- on the outside of the machine
- on the front (see chapter 13.1)

Only the codes for those options fitted appear on the label.

➢ Read off the options fitted from the nameplate.

2.2.1 Option da Compressed air treatment plant

➢ Enter the fitted options as reference.

Option	Option code	Exists?
Aftercooler and cyclone separator	da	

Tab. 3 Compressed air treatment plant

2.2.2 Option sa, sc Chassis

➢ Enter the fitted option as reference.

Option	Option code	Exists?
Chassis	sa	
Stationary	sc	

Tab. 4 Chassis

2.3 Machine (without options)

2.3.1 Sound emission

2.3.1.1 Model classification

Model	M 13				M 15	M 17	
Working pressure [psig]	100	145	175	190	100	100	217
Sound power level according to Directive 2000/14/EC	x	x	x	x	–	–	x

x ≙ yes
– ≙ no

Tab. 5 Model classification

2.3.1.2 Sound emission

Model	M 13	M 15	M 17
Emission sound pressure level* [dB(A)] according to EN ISO 11203: 1995 number 6.2.3.d.	82.5	–	82.5

*Calculated from the guaranteed sound power level (Directive 2000/14/EC, sound emission basic Standard ISO 3744)
Measuring distance: d = 1 m
Logerithmic surface ratio: Q2 = 14.7 dB(A)

Tab. 6 Emission sound pressure level

Model	M 13	M 15	M 17
Guaranteed sound power level [dB(A)] according to Directive 2000/14/EC	97	–	97

Tab. 7 Guaranteed sound power level

2.3.2 Torques

Recommended values for hexagonal bolts of strength category 8.8

Hex-head screws							
Thread	M6	M8	M10	M12	M14	M16	M18
Torque [Nm]	9.5	23	46	80	127	195	280

Tab. 8 Torques for hex-head screws

2.3.3 Ambient conditions

Positioning	Limit value
Maximum altitude AMSL* [ft]	3000
Minimum ambient temperature [°F]	14
Maximum ambient temperature [°F]	104
* Higher altitudes are permissible only after consultation with the manufacturer.	

Tab. 9 Ambient conditions

2.3.4 Dimensions and locations

Dimensions and function-relevant locations are found in the dimensional drawing in chapter 13.3.

Examples of function-relevant locations are:

- compressed air outlet,
- exhaust,
- instrument panel

2.4 Chassis

2.4.1 Weights

The loading capacity of the lifting frame (see machine nameplate) corresponds to the **total weight** of the machine.

The weight of the machine is also given on a label to the right of the operating hours counter.

Characteristic	Chassis	Stationary
Load capacity of the lifting frame [lb]*		
* Enter here, for reference, the load capacity of the lifting frame taken from the nameplate.		

Tab. 10 Machine weights

2.4.2 Tires

	M 13	M 15	M 17
Tire size	10 1/4 x 3 3/8	10 1/4 x 3 3/8	10 1/4 x 3 3/8
Recommended tire pressure [psig]	36	36	36

Tab. 11 Tires

2.4.3 Wheel fixing

	Dimensions	Quantity
Spacer	Ø 33 x Ø 25 x 1.0	2
Circlip	25 x 1.2	1

Tab. 12 Wheel fixing

2.5 Compressor

2.5.1 Free air delivery

	Free air delivery [cfm]		
Maximum working pressure [psig]	M13	M15	M17
100	42	50	60
145	35	–	–
175	32	–	–
190	30	–	–
217	–	–	35

Tab. 13 Free air delivery

2.5.2 Compressed air outlet

Model	M 13				M 15	M 17	
Working pressure [psig]	100	145	175	190	100	100	217
Number of outlet valves	1	1	1	1	1	1	1
Outlet valve G 1/2	x	x	x	x	–	–	x
Outlet valve 1/2 NPT	–	–	–	–	x	x	–

x ≙ fitted
– ≙ not fitted

Tab. 14 Compressed air distributor

2.5.3 Safety relief valve

Further information Maximum working pressure: see nameplate

Maximum working pressure [psig]	Relief valve blow-off setting* [psig]
100	130
145	175
175	217
190	217
217	232
* on the oil separator tank	

Tab. 15 Safety relief blow-off setting

2.5.4 Temperature

Machine temperatures	Values
Recommended airend discharge temperature for switching to load [°F]	86
Typical airend discharge temperature during operation [°F]	167 – 212
Maximum airend discharge temperature (automatic safety shut-down) [°F]	230

Tab. 16 Machine temperatures

2.5.5 Cooling oil recommendation

A sticker showing the type of oil used is located near the oil separator tank filler.

Information on ordering cooling oil is found in chapter 11.

Characteristic	SIGMA FLUID	
Oil grade	S–460	MOL
Classification	Silicone-free, synthetic oil	Mineral oil
Application	Standard oil for all applications except in connection with food products. Particularly suitable for machines with a high duty cycle.	Standard oil for all applications except in connection with food products. Particularly suitable for machines with a low duty cycle.
Approval	—	—
Viscosity at 40 °C	46 cSt (D 445; ASTM test)	44 cSt (D 445; ASTM test)
Viscosity at 100 °C	7.2 cSt (D 445; ASTM test)	6.8 cSt (D 445; ASTM test)

Characteristic	SIGMA FLUID	
Oil grade	S–460	MOL
Flash point	470 °F (D 92; ASTM test)	428 °F (ISO 2592)
Density at 60 °F	7.1 lb/gal (ISO 12185)	–
Pour point	-60 °F (D 97; ASTM test)	-27 °FC (ISO 3016)
Demulsibility at 129 °F	40/40/0/10 min (D 1401; ASTM test)	–

Tab. 17 Cooling oil recommendation

2.5.6 Cooling oil charge

	M 13	M 15	M 17
Total charge [qt]	4.8	4.8	4.8

Tab. 18 Cooling oil charge

2.6 Engine

2.6.1 Engine specification

	M 13	M 15	M 17	
Engine	Honda GX–620		Honda GX–670	
Engine power [hp] * (at maximum speed)	18	18	20.5	
Maximum speed [rpm]	3600	3600	3600	
Speed under full load [rpm]	2500	3000	3300	2300
Idling speed [rpm]	2200	2200	2200	2000
Fuel consumption under full load [qt/h]	4.0	5.0	6.3	5.9
Type of fuel	Lead-free petrol	Lead-free petrol	Lead-free petrol	Lead-free petrol
Required octane rating	≥86			
Oil consumption related to fuel consumption [%] (approx.)	0.2			

* The performance data of the engine given in this document is according to SAE J1349, taken from a production series engine at a specified speed. Data of individual engines may vary slightly. The performance of an engine in a finished machine may vary according to factors such as engine speed, environmental influences, the quality of maintenance, etc.

Tab. 19 Engine specification

2.6.2 Oil recommendation

The engine is filled initially with engine oil of viscosity class SAE 10 W.

Ambient temperature [°F]	Viscosity class
68 – 122	SAE 40
32 – 68	SAE 20 W
5 – 32	SAE 10 W

Tab. 20 Engine oil recommendation

2.6.3 Fluid volumes

Name	Fluid volume [qt]
Engine oil	1.2
Engine oil (with additional filter change)	1.5
Fuel	21.1

Tab. 21 Fluid volumes

2.6.4 Battery

Characteristic	Value
Voltage [V]	12
Capacity [Ah]	18
PTC testing current [A] (according to EN 50342)	90

Tab. 22 Battery

3 Safety and Responsibility

3.1 Basic Information

The machine is manufactured to the latest engineering standards and acknowledged safety regulations. Nevertheless, dangers can arise through its operation:

- danger to life and limb of the operator or third parties,
- impairments to the machine and other material assets.

DANGER
Disregard of these instructions can result in serious injury.
➢ Read the service manual carefully and take note of the contents for safe machine operation.

➢ Use this machine only if it is in a technically perfect condition and only for the purpose for which it is intended; observe all safety measures and the instructions in the service manual.

➢ Immediately rectify (have rectified) any faults that could be detrimental to safety.

3.2 Specified Use

The machine is intended solely for generating compressed air for industrial use.
Any other use is considered incorrect. The manufacturer is not liable for any damages that may result there from. The user alone is liable for any risks incurred.

➢ Keep to the specifications listed in this service manual.

➢ Operate the machine only within its performance limits and under the permitted ambient conditions.

➢ Do not use compressed air for breathing purposes unless it is specifically treated.

➢ Do not use compressed for any application that will bring it into direct contact with food products unless it is specifically treated.

3.3 Improper Use

➢ Never direct compressed air at persons or animals.

➢ Do not use untreated compressed air for breathing purposes.

➢ Do not allow the machine to breathe in toxic, acidic, flammable or explosive gases or vapors.

➢ Do not operate the machine in areas in which specific requirements with regard to explosion protection are in force.

3.4 User's Responsibilities

3.4.1 Observe statutory and universally accepted regulations.

These are, for example, nationally applied European directives and/or valid national legislation, safety and accident prevention regulations.

➢ Observe relevant statutory and accepted regulations during operation, transporting and maintenance of the machine.

3.4.2 Defining personnel

Suitable personnel are experts who, by virtue of their training, knowledge and experience as well as their knowledge of relevant regulations can assess the work to be done and recognize the possible dangers involved.

Authorized operators possess the following qualifications:

- are of legal age,
- are familiar with and adhere to the safety instructions and sections of the service manual relevant to operation,
- have received adequate training and authorization to operate vehicles and electrical and compressed air devices.

Authorized maintenance personnel possess the following qualifications:

- are of legal age,
- have read, are familiar with and adhere to the safety instructions and sections of the service manual applicable to installation and maintenance,
- are fully conversant with the safety concepts and regulations of motor vehicle, electrical and compressed air engineering,
- are able to recognize the possible dangers of motor vehicle, electrical and compressed air devices and take appropriate measures to safeguard persons and property,
- have received adequate training in and authorization for the safe installation and maintenance of this machine.

Authorized transport personnel possess the following qualifications:

- are of legal age,
- are familiar with and adhere to the safety instructions and sections of the service manual relevant to transporting,
- are trained and authorized in safe vehicle transporting,
- are conversant with the safety regulations relating to handling motor vehicles and transport goods,
- are able to recognize the possible dangers of motor vehicles and take appropriate measures to safeguard persons and property.

DANGER
There is danger of fatal injury caused by contact with live components.
➢ Only qualified electricians may work on the installation, maintenance and repair of the machine's electrical assemblies. This includes work on current-carrying components.

➢ Ensure that personnel entrusted with operation, maintenance and transporting are qualified and authorized to carry out their tasks.

3.5 Dangers

Basic Information

Information concerning the various forms of danger that can arise during machine operation are found here.

Basic safety instructions are found in this service manual at the beginning of each chapter in the section entitled 'Safety'.

Warning instructions are found before a potentially dangerous task.

3.5.1 Safely dealing with sources of danger

Information is found here concerning how to counter the various forms of danger that can arise during machine operation.

Exhaust fumes

Exhaust fumes from combustion engines contain carbon monoxide; this gas is odorless and can cause death.

- ➢ Never use the machine in enclosed spaces, only in the open.
- ➢ Do not inhale exhaust fumes.
- ➢ Direct the exhaust fumes to the open air with a pipe (Ø > than 4 in).

Fire and explosion

Spontaneous ignition and combustion of fuel can result in serious injury or death.

- ➢ Allow no open flames or sparks at the place of use.
- ➢ Do not smoke while refuelling.
- ➢ Never refuel the machine when it is running.
- ➢ Do not allow fuel to overflow.
- ➢ Wipe up spilled fuel immediately.
- ➢ Keep fuel away from hot machine parts.
- ➢ Make sure that the ambient temperature at the machine's place of use is within permissible limits.

Forces of compression

Escaping compressed air can cause serious injury. The following information concerns work on components that could be under pressure.

- ➢ Wait until the machine has automatically vented (check that the pressure gauge indicates 0 psig).
- ➢ Do not carry out welding, heat treatment or mechanical modifications to pressurized components (e.g. pipes and vessels) as this influences the component's resistance to pressure.
  The safety of the machine is then no longer ensured.

Spring force

Sudden release of spring force can cause serious energy.

Check valves, pressure relief valves and inlet valves are powerfully spring-loaded.

- ➢ Do not open or dismantle any valves.

Compressed air quality

- ➢ Never directly inhale compressed air.
- ➢ Use appropriate systems for air treatment before using the compressed air from this machine as breathing air and/or for the processing of foodstuffs.
- ➢ Use food-grade cooling oil whenever compressed air is to come into contact with food products.

Rotating components

Touching the fan wheel, the coupling or the belt drive while the machine is running can result in serious injury.

- ➢ Operate the machine only with closed safety guards, access doors and panels.
- ➢ Shut down the machine before opening a door or canopy.
- ➢ Wear close-fitting clothes and a hair net if necessary.
- ➢ Fit all safety devices and panels before starting the engine.

Electricity

- ➢ Allow only qualified and authorized electricians or trained personnel under the supervision of a qualified and authorized electrician to carry out work on electrical equipment according to electrical engineering regulations.
- ➢ Check regularly that all electrical connections are tight and in order.

High temperature

- ➢ Avoid contact with hot components. These include, for example, engine, compressor airend, oil and compressed air lines, coolers and oil separator tank.
- ➢ Wear protective clothing.
- ➢ If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting fuel or oil vapors or parts of the machine.

Noise

- ➢ Operate the machine only with intact soundproofing.
- ➢ Open canopy for checks for a short period only.
- ➢ Wear hearing protection if necessary. The safety relief valve blowing off, for example, can be particularly loud.

Operating materials

- ➢ Strictly forbid fire, open flame and smoking.
- ➢ Follow safety regulations when dealing with fuel, lubricants and chemical substances.
- ➢ Avoid contact with skin and eyes.
- ➢ Do not inhale fumes or aerosols from fuel or oil.
- ➢ Do not eat or drink while handling fuel, cooling and lubricating fluids.
- ➢ Keep suitable fire extinguishing agents ready for use.
- ➢ Use only KAESER approved operating materials.

Unsuitable spare parts

- ➢ Use only spare parts approved by the manufacturer for use in this machine. Unsuitable spare parts compromise the safety of the machine.
- ➢ Use only genuine KAESER pressure components.

Conversion or modification of the machine

- ➢ Do not permit conversion or modification of the machine as this can compromise function and safe working.

3.5.2 Safe machine operation

Information on conduct that will help in handling the machine safely is listed here.

Transport

- ➢ Shut down and fully disconnect the machine before transporting it.
- ➢ Allow transport only by personnel trained in safely dealing with motor vehicles and the transport of goods.
- ➢ Ensure that no persons are on the machine when transporting.

Positioning

- ➢ Do not position the compressor directly against a wall. A build up of heat from the exhaust can damage the machine.
- ➢ Do not operate in areas in which specific requirements regarding explosion protection are in force.
- ➢ Ensure adequate ventilation.
- ➢ Ensure that required ambient conditions are maintained with regard to:
  - ■ ambient temperature,
  - ■ clean inlet air with no damaging contaminants,
  - ■ inlet air free of explosive or chemically unstable gases or vapors,
  - ■ inlet air free of exhaust gasses from internal combustion engines,
  - ■ inlet air free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulfide.
- ➢ Do not position the machine in warm exhaust air from other machines.
- ➢ Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.
- ➢ Chock the wheels to prevent unwanted movement.

Operation

- ➢ Keep the canopy closed for safety and to ensure correct cooling function.
- ➢ Carry out regular inspections:
  - ■ for visible damage and leakage,
  - ■ of safety devices,
  - ■ of components needing to be monitored.
- ➢ Never operate machines without an air filter when drawing in air from the surroundings.

Maintenance

- ➢ Make sure the machine is shut down, cooled down and pressure-free before starting any maintenance work.
- ➢ Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.
- ➢ Do not leave any loose components, tools or cleaning rags on or in the machine.
- ➢ Components removed from the machine can still be dangerous.
  Do not open or destroy removed components as some (inlet valves, for instance) are powerfully spring-loaded.

Decommissioning, storage, disposal

- ➢ Drain out fluids and dispose of according to environmental regulations. These include, for example, fuel, engine and compressor oil and coolant.
- ➢ Dispose of the machine in accordance with local environmental regulations.

3.5.3 Organizational Measures

- ➢ Designate personnel and their responsibilities.
- ➢ Give clear instructions on reporting faults and damage to the machine.
- ➢ Give instructions on fire reporting and fire-fighting measures.

3.5.4 Danger areas

The table gives information on areas dangerous to personnel.

Only authorized personnel may enter these areas.

Task	Danger area	Authorized personnel
Transport	Within a 10 ft radius of the machine.	Operating personnel to prepare for transport. No personnel during transport.
	Beneath the lifted machine.	No personnel!
Commissioning	Within the machine. Within a 3.5 ft radius of the machine.	Maintenance personnel
Operation	Within a 3.5 ftradius of the machine.	Operating personnel
Maintenance	Within the machine. Within a 3.5 ft radius of the machine.	Maintenance personnel

Tab. 23 Danger areas

3.6 Safety Devices

Safety devices ensure safe working with the machine.

- ➢ Do not change, bypass or disable safety devices.
- ➢ Check safety devices for correct function regularly.
- ➢ Do not remove or obliterate labels and notices.
- ➢ Ensure that labels and notices are clearly legible.

Further information More information on safety devices is contained in chapter 4, section 4.5.

3.7 Safety Signs

The diagram shows the positions of safety signs on the machine. The table lists the various safety signs used and their meanings.

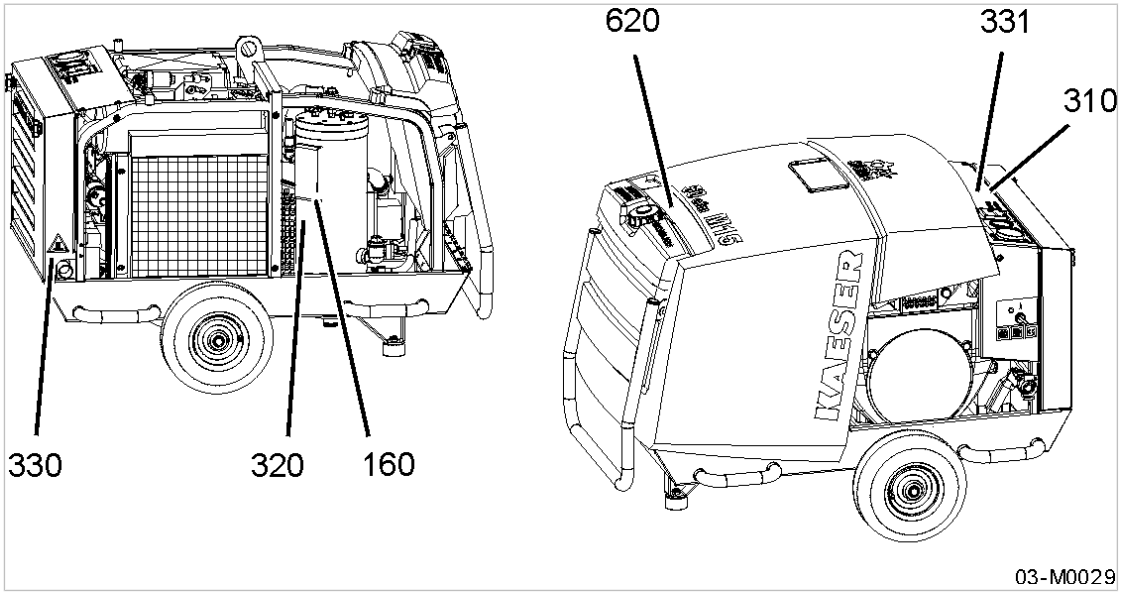


Fig. 1 Location of safety signs

Item	Sign	Meaning
310 311		It is forbidden to run the machine with open access doors or panels. Personal injury or machine damage can result from an open machine enclosure. ➢ Operate only with the enclosure fully closed. ➢ Transport only with the enclosure fully closed.
332		Hot surfaces and dangerous gases Burning, from contact with hot components or gases. ➢ Do not touch the surface. ➢ Wear long-sleeved garments (not synthetics such as polyester) and protective gloves. ➢ Noxious gases; do not inhale.
330 331		Hot surface! Risk of burns caused by contact with hot components ➢ Do not touch the surface. ➢ Wear long-sleeved garments (not synthetics such as polyester) and protective gloves.
620 621		Risk of serious lacerations or even severing of extremities (fingers) from rotating components. ➢ Operate the machine only with closed safety guards, access doors and panels. ➢ Shut down the machine before opening a door or canopy.
* Location within the machine		

Item	Sign	Meaning
600*		Risk of fatal injury caused by dismantling valves (spring-loaded or under pressure) ➢ Do not open or dismantle valves. ➢ Call an authorized Service Technician if a fault occurs.
160*		Incorrect oil levels can cause damage to the machine or excessive oil content in the compressed air. ➢ Check the oil level regularly and correct as necessary.
320*		Loud noise and oil mist. Hearing damage and burning by relief valve blowoff. ➢ Wear hearing protectors and protective clothing. ➢ Close the canopy or doors. ➢ Work with caution.
* Location within the machine		

Tab. 24 Safety Signs

3.8 In Emergency

3.8.1 Correct fire fighting

Suitable extinguishing agents:

- Foam
- Carbon dioxide
- Sand or dirt

Unsuitable extinguishing agents:

- Strong jet of water

1. Keep calm.
2. Give the alarm.
3. Shut down the machine from the instrument panel if possible.
4. Move to safety.
   - Warn persons in danger.
   - Help incapacitated persons.
5. Try to extinguish the fire if you have the skill to do so.

3.8.2 Contact with operating materials

The following operating materials are in the machine:

- fuel
- battery electrolyte
- lubricating oil
- compressor cooling oil

If necessary, request a copy of the safety data sheet for KAESER SIGMA FLUID.

- ➢ Eye contact:
  rinse thoroughly with lukewarm water and seek medical assistance.
- ➢ Skin contact:
  wash off immediately.

3.9 Warranty

This service manual contains no independent warranty commitment. Our general terms and conditions of business apply with regard to warranty.

A condition of our warranty is that the machine is used for the purpose for which it is intended under the conditions specified.
Due to the multitude applications for which the machine is suitable the obligation lies with the user to determine its suitability for his specific application.

In addition, we accept no warranty obligation for:

- the use of unsuitable parts or operating materials,
- unauthorized modifications,
- incorrect maintenance,
- incorrect repair.

Correct maintenance and repair includes the use of original spare parts and operating materials.

- ➢ Obtain confirmation from KAESER that your specific operating conditions are suitable.

3.10 Environmental Protection

- ➢ Store and dispose of operating materials and replaced parts in accordance with local environmental protection regulations.
- ➢ Observe relevant national regulations.

This applies particularly to parts contaminated with fuel, oil, coolants and acids.

- ➢ Do not allow operating materials to escape to the environment or into the sewage system.

4 Design and Function

4.1 Bodywork

Bodywork is understood to be the exterior of the machine mounted on the chassis.

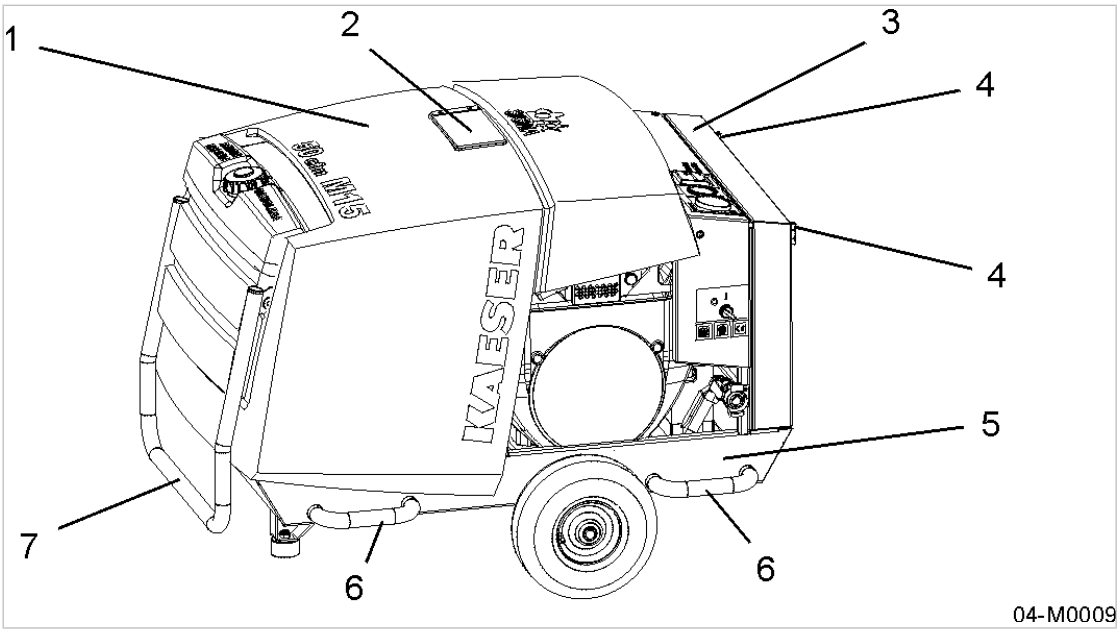


Fig. 2 Bodywork

1 Canopy
2 Lifting eye cover
3 Rear panel
4 Rear panel locks
5 Lower body
6 Lifting handle
7 Maneuvering handle

Safe and reliable operation is only ensured when the bodywork is closed.
The bodywork has several functions when it is closed:

- weather protection
- sound insulation
- guarding against touching
- cooling air flow control.

The canopy 1 can be opened.

The maneuvering handle 7 is folding.

When the locks 4 are opened, the rear panel 3 can be removed.

The lifting handles 6 allow the machine to be carried by at least 4 people.

4.2 Component identification

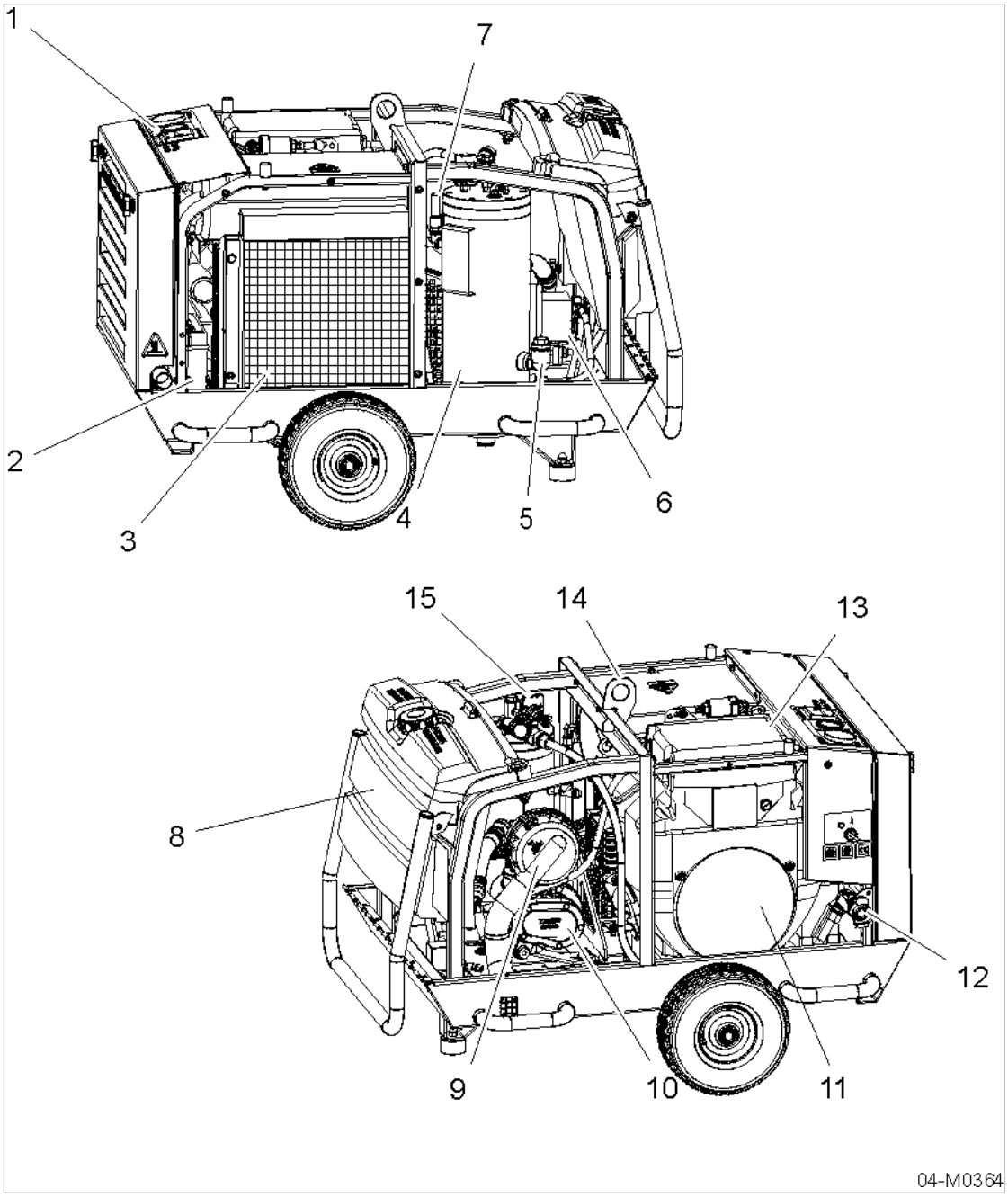


Fig. 3 Side view (canopy removed)

1 Instrument panel
2 Battery
3 Oil cooler
4 Oil separator tank
5 Oil filler port with plug
6 Combination valve
7 Pressure relief valve
8 Fuel tank
9 Compressor air filter
10 Airend
11 Engine
12 Compressed air outlet valve
13 Engine air filter
14 Lifting eye
15 Proportional controller

4.3 Machine function

Machine function (without options)

Item numbers correspond to the pipe and instrument flow diagram in chapter 13.2.

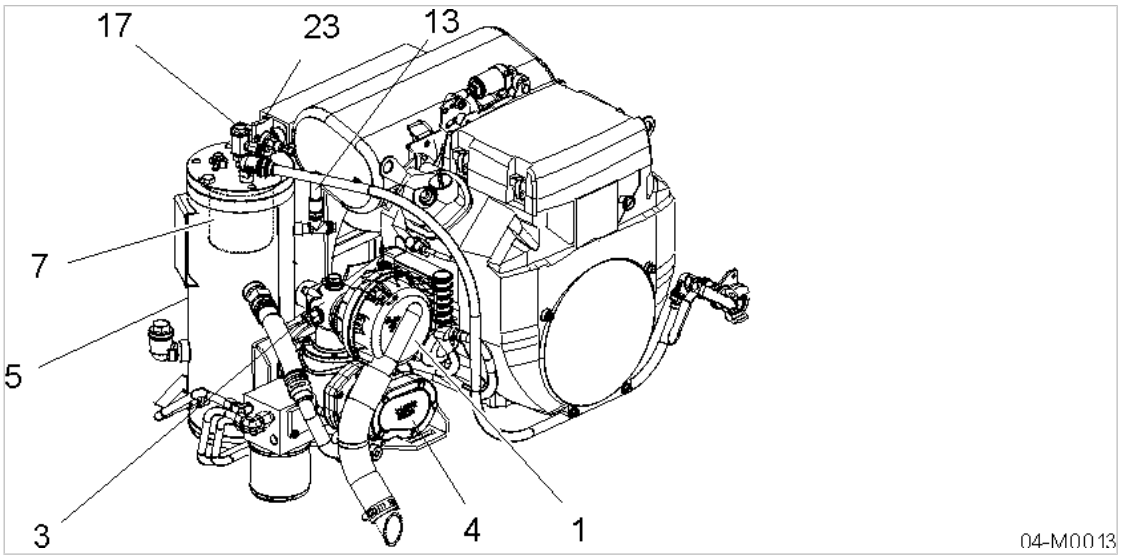


Fig. 4 General arrangement (01)

1 Compressor air filter
3 Inlet valve
4 Airend
5 Oil separator tank
7 Oil separator cartridge
13 Pressure relief valve
17 Dirt trap
23 Proportional controller

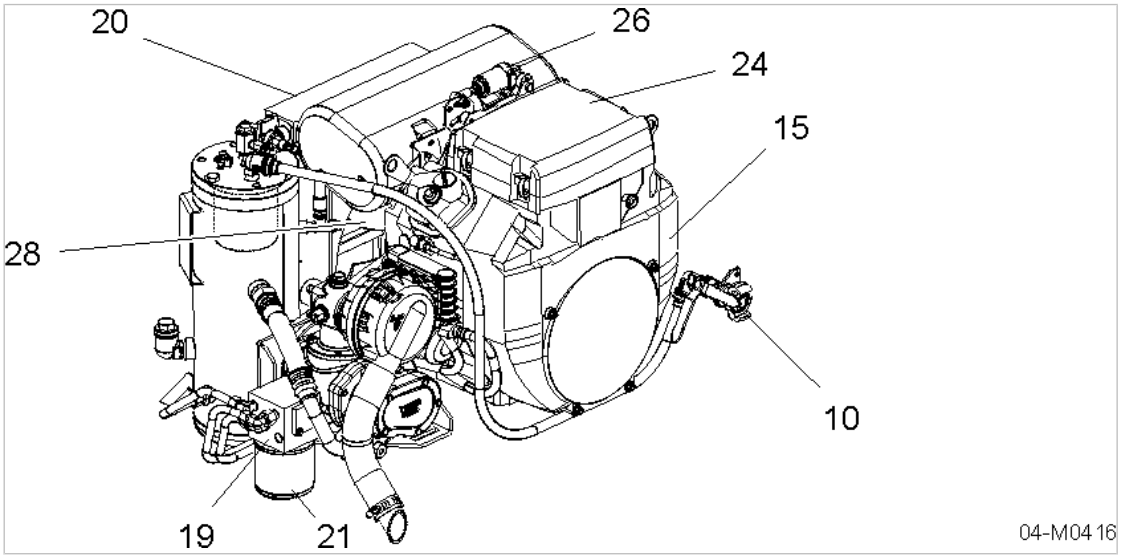


Fig. 5 General arrangement (02)

10 Compressed air distributor
15 Engine
19 Combination valve (oil temperature thermostat)
20 Oil cooler
21 Oil filter
24 Engine air filter
26 Engine speed control cylinder
28 Fan

Ambient air is cleaned as it is drawn in through the filter 1.

The air is then compressed in the airend [4].

The airend is driven by an internal combustion engine.

Cooling oil is injected into the airend. It lubricates moving parts and forms a seal between the rotors themselves and between them and the airend casing. This direct cooling in the compression chamber ensures a very low airend discharge temperature.

Cooling oil recovered from the compressed air in the oil separator tank [5] gives up its heat in the oil cooler [20]. The oil then flows through the oil filter [21] and back to the point of injection. Pressure within the machine keeps the oil circulating. A separate pump is not necessary. The combination valve [19] maintains optimum cooling oil temperature.

Compressed air, freed of cooling oil in the oil separator tank [5], flows through the minimum pressure nozzle [8] into the air distributor [10]. The minimum pressure nozzle ensures that there is always a minimum internal air pressure sufficient to maintain cooling oil circulation in the machine.

The cooling fan [28] ensures optimum cooling of all components within the enclosure.

4.4 Operating modes and control modes

Further information Pipe and Instrument Diagram (P & I Diagram) see chapter 13.2.

4.4.1 Operating modes

The machine operates in the following modes:

- LOAD
  - The inlet valve is open.
  - The engine speed control cylinder is at maximum speed.
  - The airend provides compressed air for connected consumers.
  - The minimum pressure nozzle ensures that the pressure in the oil separator tank cannot fall below the set minimum. The minimum pressure ensures continuous circulation of cooling oil through the machine.
- MODULATING
  - With the help of a control valve; the proportional controller, the opening and closing of the inlet valve is continuously varied in relation to the actual air demand.
  - Engine speed is also varied accordingly by the control cylinder.
  - The airend provides compressed air for connected consumers.
  - This MODULATING control ensures minimum fuel consumption during times of low demand. The load and fuel consumption of the engine rises and falls with the air demand.
  - The control valve is factory set. The setting should not be changed without consultation with KAESER Service.
- NO-LOAD/IDLE
  - The engine speed control cylinder is at minimum speed.
  - The inlet valve is closed.
  - The minimum pressure nozzle maintains minimum internal pressure.

4.5 Safety devices

4.5.1 Monitoring functions with shutdown

The following functions are monitored automatically.

- Engine oil pressure
- Coolant temperature
- Airend discharge temperature
- Engine alternator

Ignition is cut when a fault occurs. The engine comes to a stop and the venting valve releases pressure from the machine.

4.5.2 Further safety devices

The following safety devices are provided and may not be modified in any way.

- Pressure relief valve:
  This valve protects the system from excessive pressure. It is preset at the factory.
- «EMERGENCY STOP» button:
  The «EMERGENCY STOP» button stops the machine immediately without run-on.
- Enclosures and covers over moving parts and electrical connections:
  These protect against accidental contact.

4.6 Air treatment options

The following is a description of the possible air treatment options that may be fitted to the machine.

4.6.1 Option da
External compressed air treatment

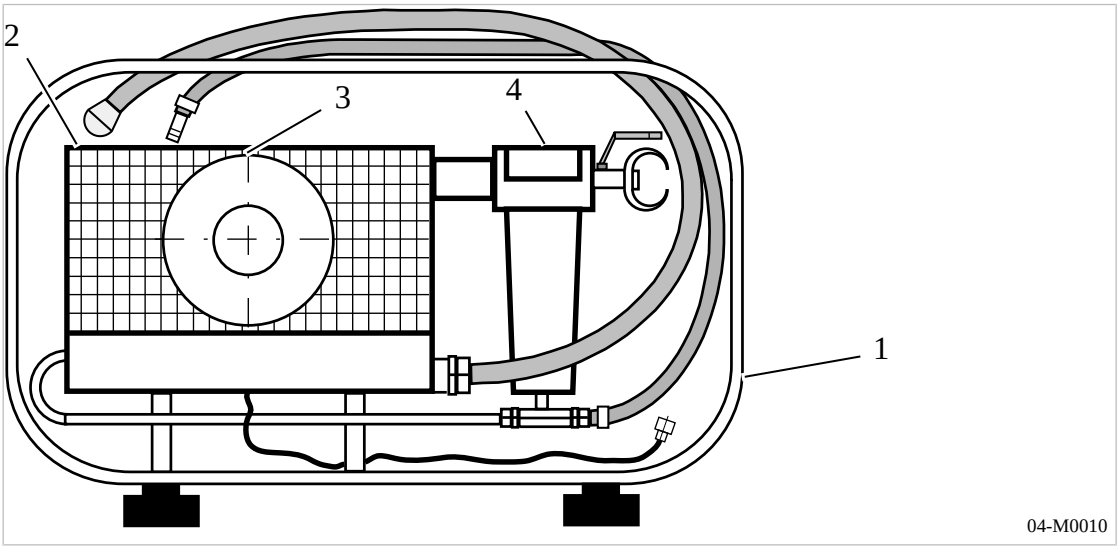


Fig. 6 Air treatment options

1 Frame
2 Compressed air cooler (option da)
3 Fan
4 Cyclone separator (option da)

Compressed air cooler

The cooler brings down the compressed air temperature to only 9 F to 18 Fabove ambient. Most of the moisture carried in the air is removed during this cooling process.

Cyclone separator

Condensate accumulating during the air cooling process is separated, fed to the exhaust gas silencer and evaporated there.

Further information

See chapter 6.3 for installation of external air treatment units.

5 Installation and Operating Conditions

5.1 Safety

- ➢ Strictly forbid fire, open flame and smoking.
- ➢ If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting fuel or oil vapors or parts of the machine.
- ➢ The machine is not explosion-proof!
  Do not operate in areas in which specific requirements regarding explosion protection are in force. For instance, the requirements of ATEX directive 94/9/EC "Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres".
- ➢ Ensure that required ambient conditions are maintained with regard to:
  - ambient temperature,
  - clean inlet air with no damaging contaminants,
  - inlet air free of explosive or chemically unstable gases or vapors,
  - inlet air free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulfide.
- ➢ Keep suitable fire extinguishing agents ready for use.

5.2 Machine placement

Precondition The ground at the machine's location must be level, firm and able to take the machine's weight (not more than 15° inclination in any direction).

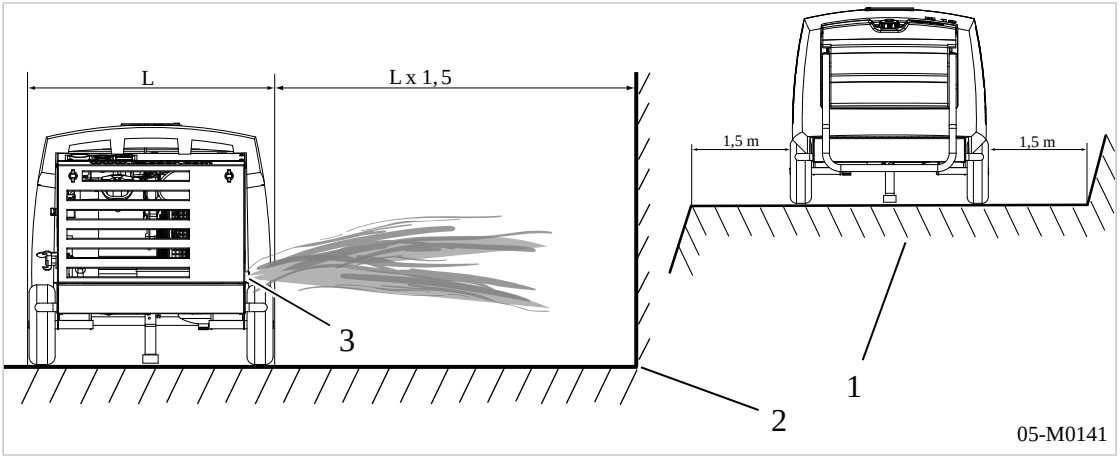


Fig. 7 Minimum distance from excavations/slopes and walls

[1] Distance from excavations/slopes
[2] Required wall distance
[3] Side exhaust outlet, see also chapter 13.3.

1. Keep sufficient distance (at least 5 feet) from the edges of excavations and slopes, see Fig. 7, item [1].
2. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

CAUTION
Danger of burning from build up of heat and hot exhaust.
Insufficient distance from a wall may well cause heat build-up that could damage the machine.
- ➢ Do not position the machine directly against a wall.
- ➢ Ensure always sufficient ventilation space around the machine.

3. Locate the machine with maximum possible distance from any wall, see Fig. 7, item 2.
4. Ensure there is enough free space around and above the machine.
5. Keep room ventilation openings free of obstructions so that the cooling air can flow freely through the room.
6. Do not allow wind to blow into the cooling air outlet.
7. Do not allow exhaust gases and heated cooling air to be drawn into the compressor.
8. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

CAUTION
Ambient temperature too low.
Frozen condensate and highly viscous engine or compressor oil can cause damage when starting the machine.
- ➢ Use winter grade engine oil.
- ➢ Use low viscosity compressor oil.
- ➢ Allow the machine to warm up in idle, see chapter 8.1.2.

9. At ambient temperatures below 32 °F, follow instructions in chapter 7.5.

6 Installation

6.1 Safety

Follow the instructions below for safe installation.

Warning instructions are located before a potentially dangerous task.

Basic safety instructions

1. Follow the instructions in chapter "Safety and Responsibility".
2. Installation work may only be carried out by authorized personnel.

Further information

Information on authorized personnel are found in chapter 3.4.2.

Information on dangers and their avoidance are found in chapter 3.5.

6.2 Reporting Transport Damage

1. Check the machine for visible and hidden transport damage.
2. Inform the carrier and the manufacturer in writing of any damage found.

6.3 Option da
Connecting an external air treatment unit

The machine may be connected to an external compressed air cooler and cyclone separator to treat the air.

Precondition

The machine is switched off.

The machine is fully vented, the pressure gauge reads 0 psig.

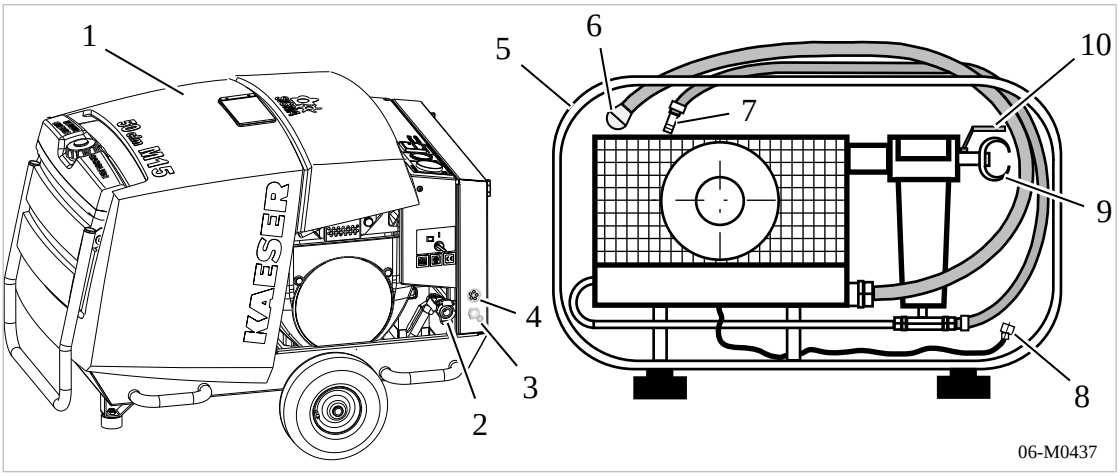


Fig. 8 Connecting the air treatment unit

1. Machine
2. Claw coupling (machine)
3. Male hose coupling for condensate drainage
4. Socket for the fan
5. External air treatment unit
6. Hose coupling (compressed air inlet)
7. Hose coupling for condensate drainage
8. Plug for fan
9. Claw coupling (treated air)
10. Compressed air outlet valve

Making necessary connections

1. Connect the hose [6] to the point [2] on the machine [1].
2. Connect the hose [7] to the point [3] on the machine [1].
3. Connect the plug [8] to the point [4] on the machine [1].
4. Connect the consumer hose to the claw coupling [9].
5. Check if the following components are correctly connected:
   - Compressed air hose
   - Condensate drainage
   - Electrical power cable for the fan

Result The external air treatment unit is completely connected.

7 Initial Start-up

7.1 Safety

Here you will find instructions for safe commissioning of the machine.

Warning instructions are located before a potentially dangerous task.

Basic safety instructions

1. Follow the instructions in chapter "Safety and Responsibility".
2. Commissioning work may only be carried out by authorized operating and maintenance personnel.

Further information

Information on authorized personnel are found in chapter 3.4.2.

Information on dangers and their avoidance are found in chapter 3.5.

7.2 Instructions to be observed before commissioning or recommissioning

The initial start-up of every machine takes place at the factory. Every machine is also given a trial run and passes a careful check.

Incorrect or improper commissioning can cause injury to persons and damage to the machine.

- ➢ Commissioning may only be carried out by authorized installation and service personnel who have been trained on this machine.
- ➢ Remove all packing materials and tools on and in the machine.
- ➢ Observe the machine during the first few hours of operation to ensure that it is operating correctly.

7.3 Checking positioning and operating conditions

- ➢ Check and confirm all the items in the checklist before starting the machine.

Task	See chapter	Confirmed?
➢ Are the operators fully familiar with safety regulations?	–	
➢ Have all the positioning conditions been fulfilled?	5	
➢ Is there sufficient cooling oil in the separator tank?	10.4.1	
➢ Is there sufficient oil in the engine?	Engine SM	
➢ Is there sufficient fuel in the fuel tank?	Engine SM	
➢ Canopy closed and all panels in place?	–	
➢ Are the tire pressures OK?	–	
Engine SM ≙ engine manufacturer's service manual.		

Tab. 25 Positioning and operating conditions checklist

7.4 After storing the machine for a long period

➢ Carry out the following before every re-commissioning after a long period of storage.

Storage period longer than	Action
5 months	➢ Remove the desiccant from the openings in the air intake filters of the engine and compressor. ➢ Check the air and oil filters. ➢ Drain the preserving oil from the separator tank. ➢ Fill with compressor oil. ➢ Drain the preserving oil from the engine. ➢ Fill up with engine oil. ➢ Check the battery charge. ➢ Re-connect the battery. ➢ Check all fuel lines, engine oil lines and compressor oil lines for leaks, loose connections, wear and damage. ➢ Clean the bodywork with a grease and dirt cleansing agent. ➢ Check the tire pressure.
36 months	➢ Have the overall technical condition checked by an authorized KAESER Service Technician.

Tab. 26 Measures for re-commissioning the compressor after a long period of storage

7.5 Low-temperature operation (winter)

The machine's electrical equipment is designed for starting at ambient temperatures as low as 14 °F.

➢ At temperatures below 0 °F use:
- winter-grade engine oil
- low viscosity compressor oil
- stronger battery

Use air hoses that are as short as possible under extremely cold conditions.

Machine operational state

CAUTION
Problems with pneumatic control at low temperatures.
Damage to the machine may be caused by ice particles in the pneumatic control and feedback systems.

➢ Let the machine warm up in idle to ensure trouble-free regulation.

➢ Allow the machine to warm up in idle with open air outlet valves until an airend discharge temperature of +86 °F is reached. The airend discharge temperature is shown by the temperature gauge switch.

7.5.1 Starting assistance

If the machine's starter batteries are discharged, it can be started by jump-starting from the battery of another engine-driven machine or vehicle.

Material Jumper cables

Precondition The machine is standing firm and level.

DANGER
Fire and explosion hazard.
High currents caused by short-circuited battery. Shorted batteries can catch fire or explode. Battery casing may crack and allow acidic fluid to spray out.
- ➢ Observe the instructions provided with the battery jumper cables.
- ➢ Do not connect the battery jumper cables to the negative pole of the discharged battery or to the bodywork of the machine.

- ➢ Follow the safety rules when dealing with batteries:
  - Connect batteries of the same voltage only.
  - The starting machine and machine to be started must not touch.
  - Do not bend over the battery when attaching jumper cables.
  - Only use battery jumper cables of sufficient cross-sectional area and with insulated terminal clamps.
  - Observe the instructions provided with the battery jumper cables.
  - Keep jumper cables away from rotating parts.
  - Do not attempt to start the machine if its battery is frozen. Allow the battery to thaw first.
  - Do not try to start the machine with a boost charger.

Connecting the battery jumper cables

1. Stop the engine of the assisting vehicle.
2. Switch off all power consumers.
3. Connect positive battery poles.

DANGER
Explosion hazard.
Danger of sparks igniting an explosive gas mixture.
- ➢ Do not, under any circumstances, connect the negative (-) pole of the assisting machine to the negative (-) pole of the battery in the machine to be started (connecting or disconnecting may cause sparking).

4. Connect the negative (-) pole of the assisting battery to a bare metal point on the compressor engine to be started as far away from the battery as possible.

Starting the engine

1. Start the engine of the assisting vehicle and operate at high speed.
2. Start the compressor engine.

Let both engines run for approximately 3 minutes.

Disconnecting the battery jumper cables

1. Stop the engine of the assisting vehicle.
2. Disconnect the jumper cables in the reverse order, first negative (-) then positive (+).

If the compressor engine stops as soon as the cables are disconnected, it can mean serious damage to the alternator or battery and it should be handed over to a specialized workshop.

8 Operation

8.1 Starting and stopping

Precondition
No personnel are working on the machine
The «QUICK STOP» button is unlatched.

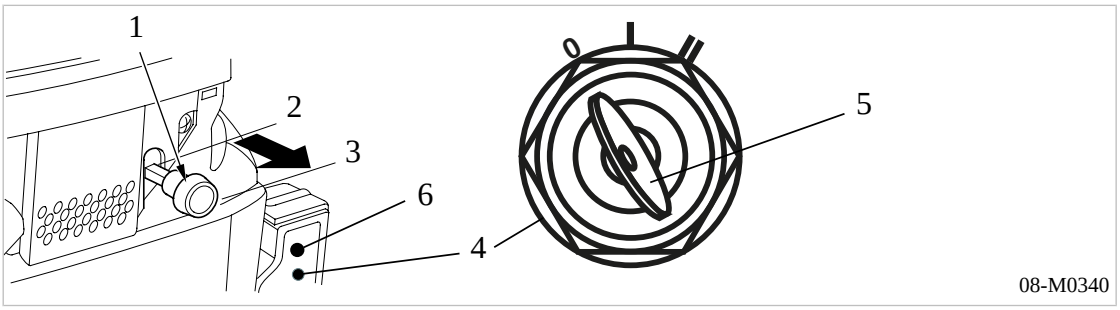


Fig. 9 Starting elements

1. Choke
2. Choke open
3. Choke closed
4. Starter key:
   0: position OFF
   I: position RUN
   II: position START
5. Starter key
6. «QUICK STOP» button

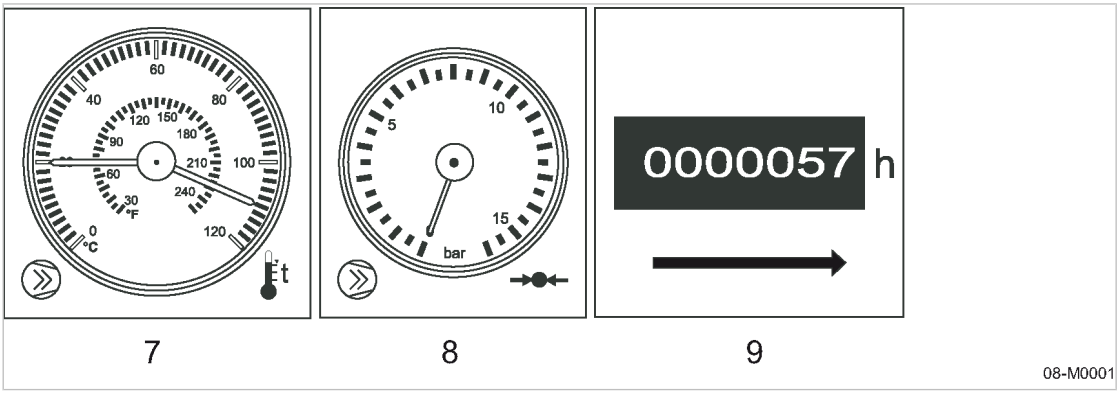


Fig. 10 Instruments

7. *Temperature gauge switch*
8. *Compressed air outlet pressure gauge*
9. *Operating hours counter*

8.1.1 Starting

CAUTION
Serious damage to engine from the use of cold starting sprays.
The use of ether or other cold start sprays can cause serious damage to the engine.
➢ Do not use cold start sprays.

CAUTION
Destruction of the starter.
Improper operation could destroy the starter.
- ➢ The starter must not operate while the engine is running.
- ➢ The starter key must not be held in the start position longer than 5 seconds.
- ➢ Wait 10 seconds between starting attempts.
- ➢ Turn the starter key back to the "0" position between each starting attempt (repeat-start inhibit).

1. Disconnect air consumers.
2. Open air outlet valve.
3. Insert the starter key [5].
   The starter switch is in the "0" position.
4. Pull out the choke [1] to position [3] (mixture enrichment) for every start.
5. Turn the starter switch [5] to the "I" position.
   The starter switch is in the run position.
6. Turn the starter key [5] to the ”II” position and release it as soon as the engine starts.
   The starter switch [4] springs back to the ”I” (run) position.
7. When the engine is running smoothly, push in the choke [1] slowly to the [2] position.

8.1.2 Allow the machine to run up to operating temperature

To avoid unnecessary wear, the engine should be run in idle until the airend discharge temperature reaches +86 °F. The airend discharge temperature is shown by the temperature gauge switch [7].

➢ Allow the machine to warm up in idle.

8.1.3 Shutting down

For minimum wear shut-down:
Allow the machine to run in idle before shutting down.

1. Run the machine in slow-speed idle.
2. Turn the starter key [5] to the "0" position.
3. Wait until the machine has automatically vented (pressure gauge [8] reads 0 bar).
4. Close the compressed air outlet valve.
5. Withdraw the starter key [5] from the starter switch [4] and secure in a safe place.

8.1.4 Emergency shutdown

Press the «QUICK STOP» [6] button to bring the machine to a stop as quickly as possible in an emergency. The «QUICK STOP» button is located immediately above the starter switch [4], see Fig. 9.

After the «QUICK STOP» button has been pressed:
- All rotating machine parts come to rest.
- The «QUICK STOP» button remains latched in.
- The machine cannot be started.

➢ Press the «QUICK STOP» button.
The machine is stopped and cannot be restarted.

➢ When the machine can be safely restarted, turn the «QUICK STOP» button to unlatch it and turn the starter key to the "0" position.

8.2 Option da
Operating the external air treatment unit

Precondition The machine is warmed up (see chapter 8.1.2).
The installation tasks described in chapter 6.3 have been carried out.

1. Start the machine (see chapter 8.1).
2. Open the compressed air outlet valve on the compressor.
3. Open the compressed air outlet valve on the external air treatment unit.

Result Consumers are supplied with treated compressed air.

9 Fault Recognition and Rectification

9.1 Basic instructions

The following tables are intended to assist in fault finding and rectification.

1. Do not attempt fault rectification measures other than those given in this manual.
2. Inform KAESER Service if the fault cannot be removed by the action suggested.

Further information Observe the instructions in chapter "Safety" and prevailing local safety regulations when rectifying faults and malfunctions.

9.2 Engine faults and alarms

Further information See also the engine service manual.

9.2.1 Engine refuses to start or comes to a stop

Possible cause	Action	Where can I get help?		
		Special-ized work-shop	KAESER Service	Engine service manual
Defective starter.	Exchange.	X	–	–
The fuel cut-off device has not opened.	Check the coil and electrical components and exchange if necessary.	X	–	–
Fuel tank empty.	Fill up the fuel tank	–	–	–
Airlock in the fuel line between fuel tank and carburetor.	Bleed the fuel line.	–	–	X
Fuel filter clogged.	Clean or change.	–	–	–
Fuel line broken.	Change.	X	–	–
Defective control fuse or relay.	Change.	X	X	–
Airend discharge temperature too high.	Have adjusted.	–	X	–
Defective temperature gauge switch giving no enable signal.	Change.	–	X	–
Defective starter switch.	Change.	X	–	X
Defective spark plug connector.	Change.			
Defective spark plug.	Check and adjust gap or change.	–	–	X
Electrical connections and/or ca-bles loose or broken.	Tighten connection or replace ca-ble.	X	–	–
Defective battery or low charge.	Maintain battery, see chapter .	–	–	–
Defective alternator.	Change.	X	–	X
Defective alternator regulator.	Change.	X	–	X

Possible cause	Action	Where can I get help?		
		Special-ized work-shop	KAESER Service	Engine service manual
Oil pressure switch sensing in-sufficient oil pressure.	Check the engine oil pressure. Have the engine repaired or ex-changed.	X	–	X

Tab. 27 Alarm: Engine refuses to start or comes to a stop.

9.2.2 Engine does not reach full speed.

Possible cause	Action	Where can I get help?		
		Special-ized work-shop	KAESER Service	Engine service manual
Airlock in the fuel line between fuel tank and carburetor.	Bleed the fuel line.	–	–	X
Fuel filter clogged.	Clean or change.	–	–	–
Fuel line broken.	Change.	X	–	–
Speed adjustment cylinder mal-adjusted or defective.	Repair or replace if necessary.	–	X	–

Tab. 28 Alarm: Engine does not reach full speed.

9.3 Compressor faults and alarms

9.3.1 Working pressure too high

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Proportional controller malad-justed or defective.	Check the diaphragm and clean the nozzle or replace proportional controller if necessary.	–	X
Inlet valve not closing.	Check the controller, the control air line and the inlet valve and re-place if necessary.	–	X
Pressure gauge giving false reading.	Change.	–	X
Venting valve does not blow off.	Check the connections and func-tion and repair or replace as nec-essary.	–	X

Tab. 29 Alarm: "Working pressure too high"

9.3.2 Working pressure too low.

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Proportional controller maladjusted or defective.	Check the diaphragm and clean the nozzle or replace proportional controller if necessary.	–	X
Inlet valve not opening or only opening partially.	Repair or replace if necessary.	–	X
Pressure gauge giving false reading.	Change.	–	X
Pressure relief valve maladjusted and/or leaking.	Replace if necessary.	–	X
Venting valve does not close.	Check the connections and function and repair or replace as necessary.	–	X
Engine not running at full speed.	See chapter 9.2.	–	–
Engine air filter and/or compressor air filter clogged.	Clean or change, see chapters 10.3.1 and 10.4.6.	–	–
Oil separator cartridge heavily clogged.	Change, see chapter 10.4.5.	–	–

Tab. 30 Alarm: "Working pressure too low"

9.3.3 Safety relief valve blowing off

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Oil separator cartridge heavily clogged.	Change, see chapter 10.4.5.	–	–
Inlet valve not closing.	Check the controller, the control air line and the inlet valve and replace if necessary.	–	X
Safety relief valve maladjusted and/or leaking.	Replace if necessary.	–	X

Tab. 31 Alarm: "Safety relief valve blowing off"

9.3.4 Machine overheating

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Defective cooling fan.	Replace blades or the complete fan wheel.	–	X

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Oil cooler clogged.	Clean surface, see chapter 10.4.8.	–	–
Defective working element in the combination valve.	Change.	–	X
Working pressure too high (proportional controller maladjusted).	Reset to the permissible value or replace.	–	X
Oil separator cartridge heavily clogged.	Measure the pressure differential and change the cartridge if greater than 1 bar (see chapter 10.4.5).	–	X
Oil filter cartridge heavily contaminated. (at 217 psig working pressure)	Measure the pressure differential and change the cartridge if greater than 11 psig (see chapter 10.4.5).	–	X
Compressor oil filter clogged.	Change, see chapter 10.4.4.	–	–
Compressor oil level too low.	Top up, see chapter 10.4.2.	–	–
Oil pipes leaking.	Seal leaks or change pipes.	X	X
Defective engine cooling fan.	Repair.	X	X
Ambient temperature too high.	See conditions given in chapter 5.2.	–	–

Tab. 32 Alarm: "Machine overheating"

9.3.5 Too much oil residue in the compressed air

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Oil separator cartridge scavenge line clogged.	Clean the strainer in the separator cartridge dirt trap or change if necessary (see chapter 10.4.5).	–	X
Fractured oil separator cartridge.	Change, see chapter 10.4.5.	–	–
Compressor oil level too high.	Reduce to maximum level, see chapters 10.4.1 and 10.4.3.	–	–

Tab. 33 Alarm: "Too much oil residue in the compressed air"

9.3.6 Oil flows from the compressor air filter after shutdown

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Defective non-return function of the inlet valve.	Repair or replace if necessary.	–	X

Tab. 34 Alarm: "Oil flows from the compressor air filter after shutdown"

9.4 Faults and alarms on external air treatment units

9.4.1 The temperature of the treated air is too high

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
The air treatment unit fan is faulty.	Check connecting cables and change if necessary. Check plug connections.	–	–

Tab. 35 Alarm: "Air temperature too high"

9.4.2 Outflow of condensate

Possible cause	Action	Where can I get help?	
		Specialized workshop	KAESER Service
Condensate drain is faulty or incorrectly connected.	Check condensate feed hoses and connections for leaks and tightness.	–	–

Tab. 36 Alarm: "Outflow of condensate”

10 Maintenance

10.1 Safety

Follow the instructions below to ensure safe machine maintenance.
Warning instructions are located before a potentially dangerous task.

Basic safety instructions

1. Follow the instructions in chapter 'Safety and Responsibility'.
2. Maintenance work may only be carried out by authorized personnel.
3. Before restarting the machine, make sure that:
   - no personnel are working on the machine,
   - all protective guards and cover panels are screwed back on,
   - all tools have been removed from the machine.

Working on pressure systems

1. Disconnect all air consumers.
2. Wait until the machine is automatically vented (check that the pressure gauge indicates 0 psig).
3. Do not open or dismantle any valves.

Working on the drive system

1. The negative cable to the battery is disconnected.
2. The machine has cooled down.

Further information

Details of authorized personnel are found in chapter 3.4.2.
Details of dangers and their avoidance are found in chapter 3.5.

10.2 Maintenance schedules

The maintenance schedules provide an overview of the maintenance instructions for the machine.

➢ Read the relative section before undertaking maintenance.

10.2.1 Logging maintenance work

The maintenance intervals given are those recommended for average applications and operating conditions.
Maintenance schedules may be modified to take into account the application, the environment and the quality of maintenance.

WARNING
Wear and machine damage through unusual applications or operating conditions.

➢ Maintenance tasks must be carried out more frequently when operating conditions are unfavorable (e.g. dusty atmosphere) or when the equipment is in constant use.

➢ Adjust the maintenance intervals with regard to local installation and operating conditions.

➢ Keep a log of all properly carried out maintenance and service work.
This enables the frequency of individual maintenance tasks and deviations from our recommendations to be determined.

Further information A prepared list is provided in chapter 10.7.

10.2.2 Compressor maintenance schedule

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Daily before the first compressor use	Check the oil level	10.4.1
	Check the air filter	10.4.6
50 h after initial start-up	Change the compressor oil filter.	10.4.4
Every 6 months (every 200–250 h)	Clean or change the air filter.	10.4.6
	Clean the oil cooler.	10.4.8
Annually in addition (every 400–500 h)	Have the pressure relief valve(s) checked.	10.4.7
	Change the oil.	10.4.3
	Change the compressor oil filter.	10.4.4
Every 2 years	Change the air filter.	10.4.6
	Change the oil separator cartridge in the oil separator tank.	10.4.5
h ≙ operating hours		

Tab. 37 Regular compressor maintenance tasks

10.2.3 Engine maintenance schedule

Engine maintenance

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Daily before the first compressor use	Check the oil level	Engine SM
	Check the air filter	10.3.1
20 hours after initial start-up	Change the engine oil	10.3.2 Engine SM
50 hours after initial start-up	Check belt tension and re-tension if necessary.	10.3.3 Engine SM
Every 6 months (every 200–250 h)	Clean or change the air filter.	10.3.1
	If fitted: Clean the engine oil cooler.	Engine SM
	Check belt tension and re-tension if necessary.	10.3.3 Engine SM
h ≙ operating hours Engine SM ≙ engine manufacturer's service manual		

Interval	Maintenance task	See chapter
Annually in addition (every 400–500 h)	Adjust the valve clearance.	Engine SM Specialist workshop
	Change the engine oil.	10.3.2 Engine SM
	Change the engine oil filter.	Engine SM
	Grease the regulating rods (engine speed).	–
	Change the spark plugs.	Engine SM
Every 1000 h	Change the drive belts.	10.3.3 Engine SM
Every 1500 h	Adjust the valve clearance.	Engine SM Specialist workshop
Every 2 years	Replace the air filter.	10.3.1
h ≙ operating hours Engine SM ≙ engine manufacturer's service manual		

Tab. 38 Regular engine maintenance tasks

The most important information on engine maintenance is contained in the maintenance schedule. Full information on engine maintenance is found in the engine manufacturer's service manual.

Fuel system maintenance

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Daily	Fill up the fuel tank.	–
Every 50 h	Check fuel pipes and replace if necessary.	Engine SM
Annually (every 400–500 h)	Clean or change the fuel filter.	Engine SM
	Clean the tank fuel strainer.	
	Clean the fuel tank.	–
	Check fuel pipes and replace if necessary.	Engine SM
h ≙ operating hours; Engine SM = engine manufacturer's service manual		

Tab. 39 Regular fuel system maintenance tasks

Battery maintenance

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Weekly (every 40 h)	Check the battery fluid level and connections.	10.3.4
h ≙ operating hours		

Tab. 40 Regular battery maintenance tasks

10.2.4 Chassis maintenance schedule

Chassis maintenance

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Weekly	Check the tire pressures.	–
Annually	Check the condition of the locking rings.	–

Tab. 41 Regular chassis maintenance tasks

Checking the lifting eye

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Annually (every 400–500 h)	Have checked.	Specialized workshop
h ≙ operating hours		

Tab. 42 Lifting eye check

Checking lifting handles

➢ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Annually (every 400–500 h)	Check secure attachment.	–
h ≙ operating hours		

Tab. 43 Lifting handle check

Canopy maintenance

➤ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Every 6 months (every 200–250 h)	Check all screw connections, hinges, locks, catches and handles for wear and secure fixing.	–
Annually (every 400–500 h)	Grease the canopy hinges.	–
h ≙ operating hours		

Tab. 44 Regular canopy maintenance tasks

10.2.5 Other maintenance tasks

➤ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Annually (every 400–500 h)	Check all accessible fittings, screw connections, pipes and clamps for wear and tightness.	–
	Check hoses for leaks and wear.	–
	Check that all electrical connections are tight.	–
h ≙ operating hours		

Tab. 45 Other maintenance tasks

10.2.6 Maintenance schedules for options

Option da Cyclone separator maintenance schedule

➤ Carry out maintenance tasks according to the following schedule.

Interval	Maintenance task	See chapter
Annually	Clean the dirt trap.	10.6.1

Tab. 46 Cyclone separator maintenance schedule

10.3 Engine

➤ Carry out maintenance tasks in accordance with the schedules in chapter 10.2.3.

10.3.1 Air filter maintenance

Material
Damp cloths
Warm soapy water
Non-flammable solvent
Compressed air for blowing out
Spare parts (as required)

Precondition
The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.

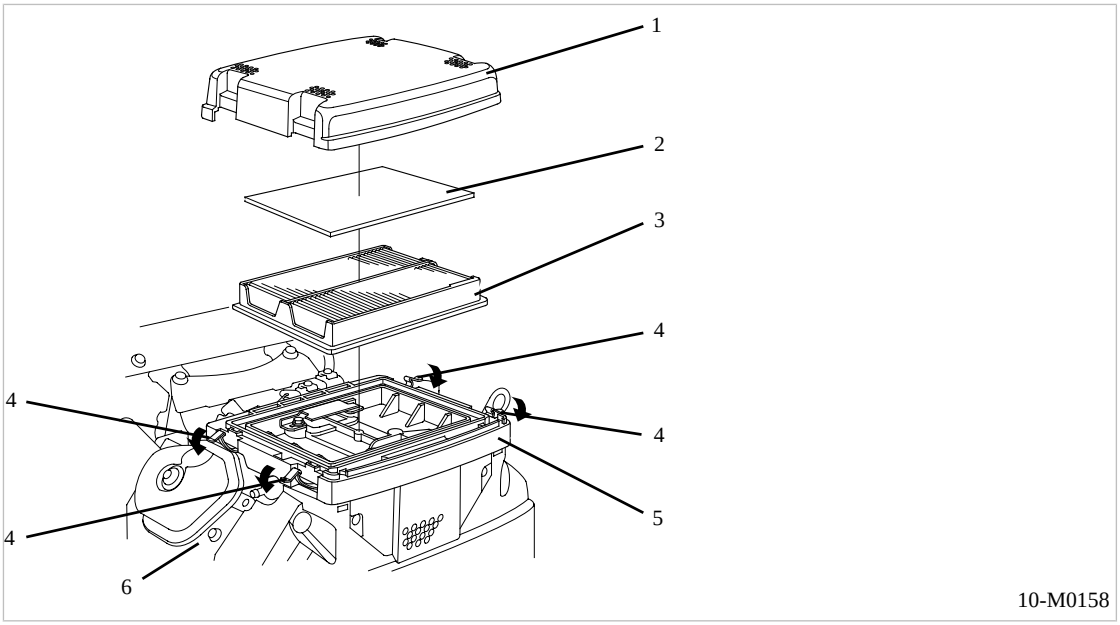


Fig. 11 Engine air filter maintenance

1 Filter cap
2 Foam element
3 Paper element
4 Retaining clip
5 Filter housing
6 Engine

Checking contamination of the air filter

Both filter elements should be checked daily before first use of the compressor.

➢ Check the degree of contamination of the filter elements.

1. Release all retaining clips 4.
2. Take off the filter cap 1.
3. Withdraw the foam element 2 from the housing 1.

4. Check the foam element 2.

Visually check for:

- Damage
  The foam filter element 2 must be replaced if it is damaged (see section on replacing the foam filter element).
- Excessive dirt contamination
- Large dirt particles
  If it can be seen that the foam element 2 can be reused after cleaning, it should be cleaned according to the instructions "*Cleaning the foam filter element*".

5. Withdraw the paper element 3 from the housing 5.
6. Check the paper element 3.

Visually check for:

- Damage
  The paper filter element 3 must be renewed if it is damaged (see "*Renewing the paper filter element*").
- Excessive dust clogging
  If it can be seen that the paper filter element 3 can be reused after cleaning, it should be cleaned according to the instructions "*Cleaning the paper filter element*".

7. If cleaning of the elements is not necessary, they should be correctly re-installed.
   - Insert the paper element 3 in the housing 5.
   - Insert the foam element 2 in the housing 1.
   - Replace the filter cap 1 on the housing 5.
   - Secure all retaining clips 4.

Renewing the foam filter element

1. Release all retaining clips 4.
2. Take off the filter cap 1.
3. Withdraw the foam element 2 from the housing 1.
4. Clean all sealing faces with a damp cloth.
5. Insert the new foam element 2 in the housing 1.
6. Replace the filter cap 1 on the housing 5.
7. Secure all retaining clips 4.

Cleaning the foam filter element

1. Release all retaining clips 4.
2. Take off the filter cap 1.
3. Withdraw the foam element 2 from the housing 1.
4. Clean the foam element 2 in warm soapy water or non-flammable solvent.
5. Allow the foam element 2 to dry out (*do not* apply oil).
6. Clean all sealing faces with a damp cloth.
7. Insert the foam element 2 in the housing 1.
8. Replace the filter cap 1 on the housing 5.
9. Secure all retaining clips 4.

Renewing the paper filter element

1. Release all retaining clips [4].
2. Take off the filter cap [1].
3. Withdraw the paper element [3] from the housing [5].
4. Clean all sealing faces with a damp cloth.
5. Insert the new paper element [3] in the housing [5].
6. Replace the filter cap [1] on the housing [5].
7. Secure all retaining clips [4].

Cleaning the paper filter element

1. Release all retaining clips [4].
2. Take off the filter cap [1].
3. Withdraw the paper element [3] from the housing [5].
4. Clean all sealing faces with a damp cloth.
5. Dislodge dirt from the element [3] by tapping against a firm surface or by blowing out with compressed air (max 30 psig), **do not** attempt to brush the dirt out.
6. Insert the paper element [3] in the housing [5].
7. Replace the filter cap [1] on the housing [5].
8. Secure all retaining clips [4].

10.3.2 Changing the engine oil

The engine oil should be changed:

- according to the maintenance schedule,
- according to the degree of contamination of the intake air,
- at least once a year.

Material
Engine oil
Receptacle
Cleaning rags
Funnel

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
Engine at operating temperature.
All compressed air consumers are disconnected and the air outlet valve is open.
Rear panel removed.
The negative cable to the battery is disconnected.

CAUTION
Danger of burns from hot components and escaping engine oil.
➢ Wear long-sleeved clothing and gloves.

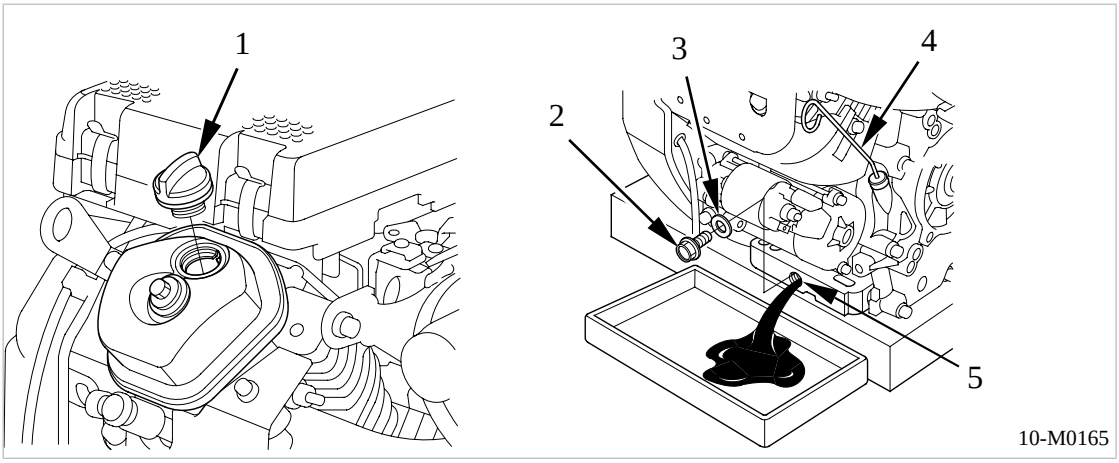


Fig. 12 Changing the engine oil

1 Filler cap
2 Drain screw
3 Gasket
4 Oil dipstick
5 Drain hole

Changing the engine oil

The engine manufacturer's handbook gives instructions on oil changing.

1. Place the receptacle below the drain hole 5.
2. Change the engine oil in accordance with the manufacturer's handbook.
3. Reconnect the negative cable to the battery again.
4. Replace the machine rear panel.
5. Engage locks.

Dispose of old oil and oil-soaked working materials according to environmental protection regulations.

Further information See engine manual for oil change under dusty conditions.

Starting the machine and carrying out a trial run

1. Start the machine and allow it to idle for at least 5 minutes.
2. Check the engine oil level in accordance with the manufacturer's handbook.
   Top up as necessary.
3. Carry out a visual check for leaks.
4. Shut down the machine.

10.3.3 Checking the drive belts

The life of the drive belts is influenced by belt tension.

- Slack belts can slip and become damaged.
- Over-tight belts stretch and fatigue quicker. Furthermore, over-tight belts place unnecessary stress on bearings and shorten their life.

Material Belt tension measuring device
Spares

Precondition The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.
Rear panel removed.
The negative cable to the battery is disconnected.

WARNING
Beware of rotating pulleys and moving belts.
There is danger of serious injury from pinching.
- ➢ Never check the drive belts unless the engine is at standstill.
- ➢ Never run the machine without a belt guard.

➢ Heed the safety instructions in chapter 3.5.

10.3.3.1 Visual check

1. Remove the belt guard, if fitted.
2. Check the belts thoroughly for cracks, fraying or stretching.
   Change damaged belts immediately.
3. Reconnect the negative cable to the battery.

10.3.3.2 Checking belt tension

Belt tension can be checked with a measuring device or by hand.

Precondition Check belt tension when the belts are warm but not hot (temperature variations cause variations in length).

Fig. 13 Belt tension checking by hand
(A) Permissible movement
(*) Approximate pressure exerted: 16.5 lb
Permissible movement: 0.4–0.5 in

Checking belt tension with a measuring device	Belt tension checking by hand
1. Check belt tension with the tension measuring device. 2. Tighten loose belts (see chapter 10.3.3.3) 3. Replace the belt guard. 4. Reconnect the negative cable to the battery.	Press the belts in with the thumb at the mid-point between pulleys. 1. Check belt tension by hand (see Fig. 13). 2. Tighten loose belts (see chapter 10.3.3.3) 3. Replace the belt guard. 4. Reconnect the negative cable to the battery.

10.3.3.3 Belt tensioning

For simple belt tensioning, the airend [5] is mounted on an adjustable tensioning device (see Fig. 14). The nuts [2] clamp the airend to the tensioning device and allow adjustment of the distance between the engine and airend pulleys. The nuts [2] are accessible from above.

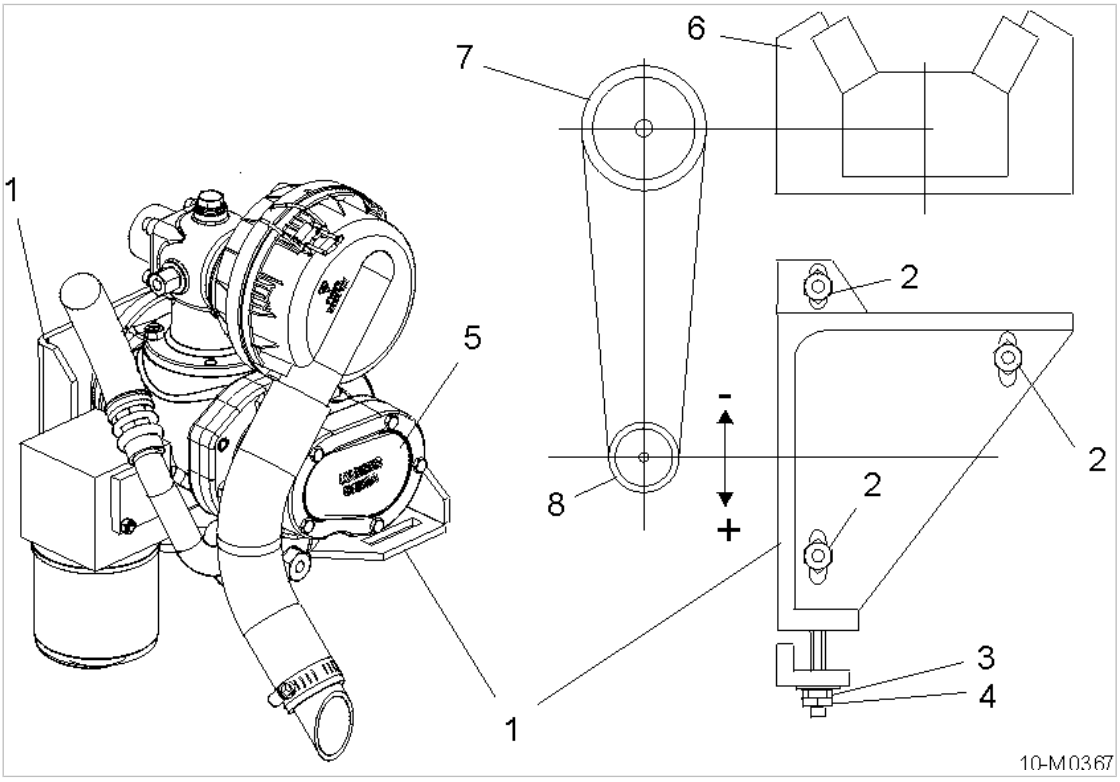


Fig. 14 Belt tensioning

[1] Belt tensioning device
[+] more tension
[–] less tension
[2] Clamping nut
[3] Adjusting nut
[4] Locknut
[5] Airend
[6] Engine
[7] Engine pulley
[8] Airend pulley

Tension is adjusted by turning the adjusting nut [3]:

- Clockwise ≙ more tension [+]
- Anticlockwise ≙ less tension [–]

It is not necessary to secure the bolts while loosening the nuts [2].

1. Use a socket wrench to loosen all nuts [2].
2. Loosen the locknut [4].
3. Turn the adjusting nut [3] to increase or decrease belt tension as required.
4. Check belt tension.
   Repeat steps 3 and 4 if tension is still not correct.
5. Hold the adjusting nut [3] in position with a wrench while tightening the locknut [4].
6. Tighten all clamping nuts [2].
   The machine is ready for further operation.

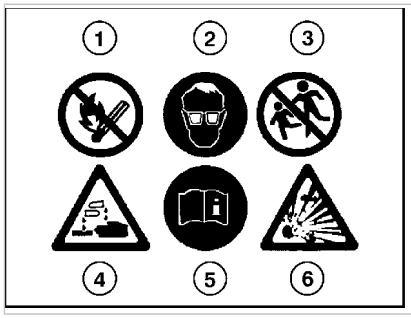
10.3.4 Battery maintenance

➢ Check the charging system if the battery discharges without reason.

10.3.4.1 Safety

WARNING
Danger of acid burns from escaping electrolyte.
➢ Wear appropriate protective clothing including acid-proof rubber gloves.
➢ Always wear eye and face protection.
➢ Do not tip the battery. Electrolyte may run out of the vent holes.
➢ Work with caution.

Observe the following points when working on the batteries:



10-M0167

Fig. 15 Warning stickers on the battery

[1] Fire, sparks, open flame and smoking are forbidden.
[2] Wear eye and face protection. Danger of acid burn.
[3] Keep children well away from batteries and acid.
[4] Batteries are filled with caustic electrolyte.
[5] Observe the battery manufacturer's instructions.
[6] Explosion hazard.

➢ Take heed of any safety symbols on the battery labels.

Further instructions on working with batteries:

1. Do not remove battery terminal covers unnecessarily.

2. Do not lay tools on the battery. These can lead to short-circuiting, overheating and battery bursting.
3. Take particular care when the battery has been in service for a long time or has just been charged as highly explosive gas is emitted.
   Ensure adequate ventilation.

10.3.4.2 Battery checking and care

Even so-called 'maintenance-free' batteries need a degree of care to obtain their maximum operational life.
The outside of the battery and the terminals should be cleaned regularly with a soft cloth. This avoids current leaks and minimizes the discharge rate.

Material
Terminal grease
Distilled water
Cleaning rags
Protective gloves

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
Machine cooled down.

1. Clean the casing and terminals.
2. Lightly grease the terminals to prevent corrosion.
3. Check that connections are tight and tighten if necessary.

Check the battery electrolyte level.

The electrolyte level must be checked weekly The level should be up to the mark, 0.4 in above the plates.

If a battery casing leaks fluid, the battery must be replaced immediately.

WARNING
Battery destruction!
Topping up with pure acid will increase the electrolyte concentration and can destroy the battery.
➢ Top up only with distilled water.

➢ Check the electrolyte level

If the level does not reach the mark -
➢ top up with distilled water.

Winter operation

Batteries are particularly stressed in winter. Only a fraction of the normal starting energy is available at low temperatures.

CAUTION
Danger of batteries freezing.
Discharged batteries are subject to frost damage and can freeze at 14 °F.
- ➢ Check battery charge with a specific gravity tester.
- ➢ Recharge the battery
- ➢ Clean the battery terminals and wipe with grease.

1. Check the battery charge weekly.
   Recharge as necessary.
2. If the machine is to be unused for a number of weeks, remove the battery and store in a frost proof room.

In extreme cases, the use of heavy-duty cold-start batteries (to DIN 75311) and/or additional batteries is recommended.

10.3.4.3 Battery removal and installation

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.

Removing the battery

WARNING
There is danger of batteries bursting.
If a battery is short-circuited it will overheat and can burst.
Battery electrolyte will be sprayed out in such an event.
- ➢ Never short-circuit a battery (e.g. with a hand tool).
- ➢ Always wear protective gloves.

CAUTION
Excessive voltage produced by the alternator.
Voltage peaks can destroy the alternator regulator and diodes.
- ➢ The battery serves as a buffer and must not be disconnected while the engine is running.

1. Remove the machine rear panel.
2. Disconnect the negative cable first, then the positive cable.
3. Unscrew the battery fixing clamp.
4. Remove the battery from the machine.

Battery replacement

If the battery is to be replaced, the new battery should have the same capacity, current rating and shape as the original battery.
- ➢ Always replace a battery with one of the same type.

Installing the battery

1. Place the battery in the machine.

2. Tighten the battery fixing clamp.
3. Connect first the positive cable, then the negative cable.
4. Replace the machine rear panel.
5. Engage locks.

The old battery is special waste and must be disposed of correctly in accordance with local environment protection regulations.

10.4 Compressor

➢ Carry out maintenance tasks in accordance with the schedule in chapter 10.2.2.

10.4.1 Checking cooling oil level

The oil level is checked at the oil separator tank filling port. Oil must be visible in the port when the filler plug is removed.

Material: Wrench
Cleaning rags

Precondition: The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
All compressed air consumers are disconnected and the air outlet valve is open.

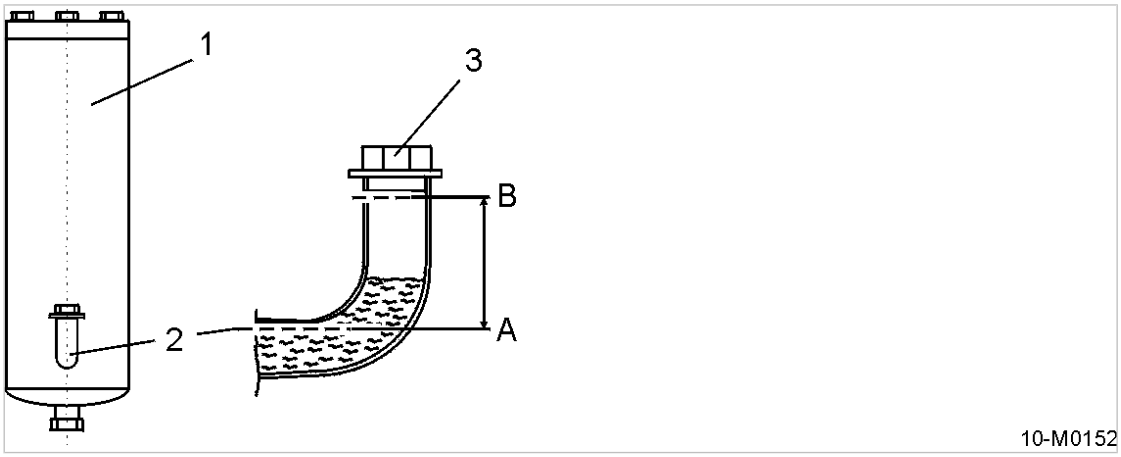


Fig. 16 Checking cooling oil level

[1] Oil separator tank
[2] Oil filler port
[3] Screw plug
[A] Mark for *minimum oil level*
[B] Mark for *maximum oil level*

1. Slowly unscrew and withdraw the plug [3] from the oil filler port.
2. Check that oil is visible.
   Top up if no oil is visible.
3. Replace the filler plug [3].

10.4.2 Topping up the cooling oil

Material
Cooling oil
Funnel
Wrench
Cleaning rags

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.
The negative cable to the battery is disconnected.

Filling with cooling oil

A sticker on the oil separator tank specifies the type of oil used.

CAUTION
The machine could be damaged by unsuitable oil.
- ➢ Never mix incompatible types of oil.
- ➢ Never top up with a different type of oil to that already used in the machine.

1. Slowly unscrew and withdraw the plug from the oil filler port.
2. Top up the cooling oil to the maximum level with the help of a funnel.
3. Check the oil level
4. Check the filler plug gasket for damage.
   Change a damaged gasket immediately.
5. Replace the plug in the filler port.
6. Reconnect the negative cable to the battery.

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the compressed air outlet valve.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valve.
6. Check the oil level after about 5 minutes.
   Top up if necessary.
7. Carry out a visual check for leaks.

10.4.3 Changing the cooling oil

Drain all cooling-oil from:

- the oil separator tank,

- the oil cooler,
- the oil pipes.

Material
Cooling oil
Receptacle
New gasket for the drain plug
Funnel
Cleaning rags

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine is at operating temperature.
All compressed air consumers are disconnected and the air outlet valve is open.
The negative cable to the battery is disconnected.

CAUTION
There is risk of burns from hot components and escaping oil.
➢ Wear long-sleeved clothing and gloves.

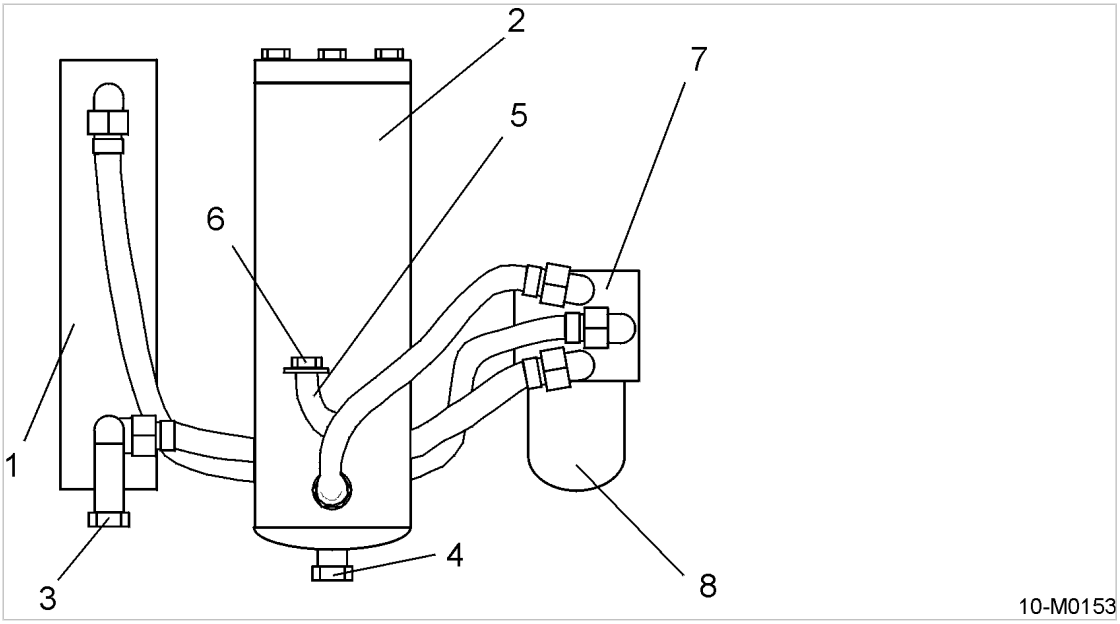


Fig. 17 Changing the cooling oil

1 the oil cooler,
2 the oil separator tank,
3 Oil cooler drain plug
4 Oil separator tank drain plug
5 Oil filler port
6 Oil filler plug
7 Combination valve
8 Oil filter
9 Airend

Changing the cooling oil

1. Remove the plug 6 from the oil separator tank 2 filling port.
2. Position the receptacle below the separator tank drain plug 4.

3. Unscrew the drain plug and allow the oil to drain into the receptacle.
4. Fit a new gasket on the drain plug [4] and screw it back in again.
5. Place the receptacle beneath the oil cooler [1].
6. Unscrew the drain plug [3] and allow the cooling oil to drain into the receptacle.
7. Fit a new gasket on the drain plug [3] and screw it back in again.
8. Fill up the cooling oil using a funnel.
9. Check the cooling oil level.
10. Check the filler plug [6] gasket for damage.
    Change a damaged gasket immediately.
11. Replace the plug in the filler port [5].
12. Reconnect the negative cable to the battery.

Dispose of used oil and oil-contaminated working materials according to environment protection regulations.

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the compressed air outlet valve.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valve.
6. Check the oil level after about 5 minutes.
   Top up if necessary.
7. Carry out a visual check for leaks.

10.4.4 Changing the oil filter

Material
Spares
Receptacle
Cleaning rags

Precondition
The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.
Rear panel removed.
Negative cable to the batteries disconnected.

CAUTION
There is risk of burns from hot components and escaping oil.
➢ Wear long-sleeved clothing and gloves.

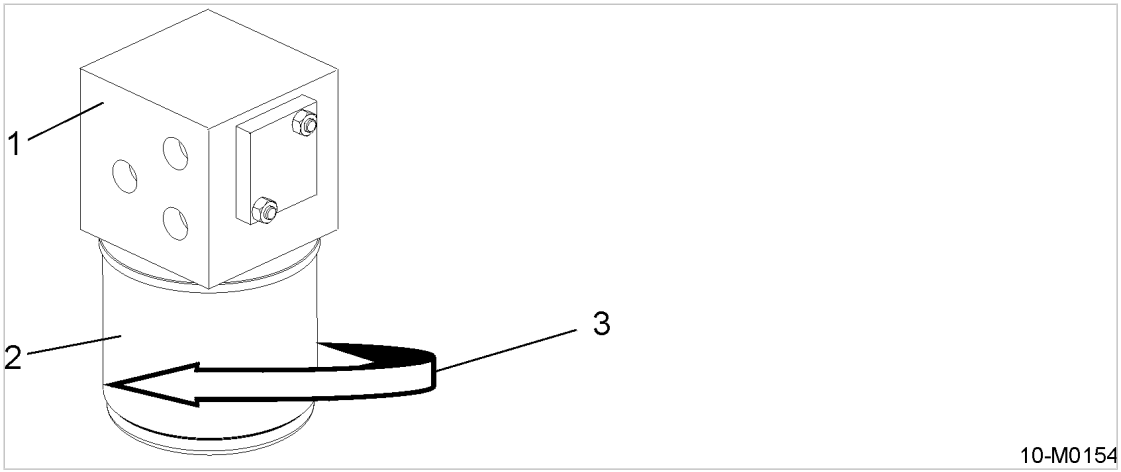


Fig. 18 Changing the oil filter

[1] Combination valve
[2] oil filter
[3] Direction of rotation to unscrew the oil filter.

Changing the oil filter

1. Prepare a receptacle.
2. Loosen the filter [2] by turning counter-clockwise [3] and catch any escaping oil.
3. Carefully clean sealing surfaces using lint-free cloth.
4. Lightly oil the new filter's [2] gasket.
5. Turn the oil filter [2] clockwise by hand to tighten.
6. Check the oil level in the oil separator tank.
   Top up if necessary.
7. Reconnect the negative cable to the battery.
8. Replace the machine rear panel.
9. Lock the rear panel closed.

Dispose of old cooling oil and any materials or parts contaminated with oil according to environment protection regulations.

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valve.
6. Check the oil level after about 5 minutes.
   Top up if necessary.
7. Carry out a visual check for leaks.

10.4.5 Changing the oil separator cartridge

If the safety relief valve blows off during operation of the machine, the pressure drop over the oil separator cartridge is too high (see chapter 9.3).

➢ The oil separator cartridge must be changed immediately.

The oil separator cartridge cannot be cleaned.

The life of the oil separator cartridge is influenced by:

- Contamination in the air drawn into the compressor.
- Adherence to the changing intervals for:
  - Cooling oil
  - Oil filter
  - Air filter

Material: Spares
Cleaning cloths

Precondition: The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.
Rear panel removed.
The negative cable to the battery is disconnected.

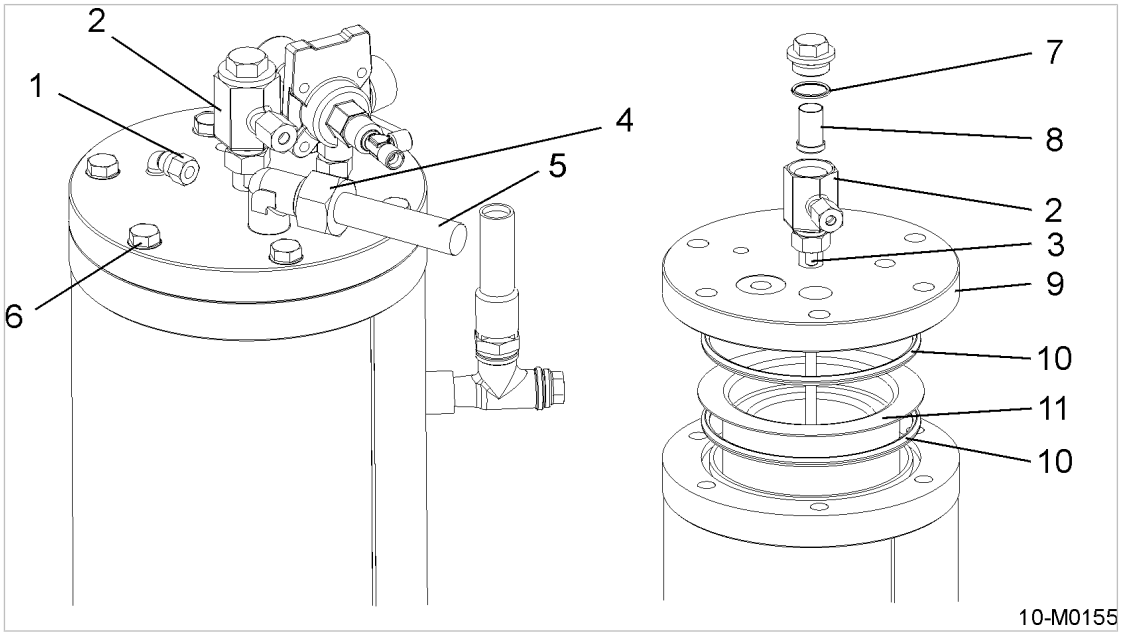


Fig. 19 Changing the oil separator cartridge

1 Control air line union nut
2 Dirt trap
3 Oil scavenge pipe
4 Compressed air hose fitting
5 Compressed air hose
6 Fixing screws
7 O-ring
8 Strainer
9 Cover
10 O-ring
11 Oil separator cartridge

Changing the oil separator cartridge

1. Unscrew the union nut [1] and carefully put the parts to one side, then pull out the copper pipe [3] at item [2].
2. Unscrew the fitting [4] at [5] and take off the compressed air hose.
3. Remove the cover fixing screws [6] and carefully place the cover [9] to one side.
4. Take out the old cartridge [11] and gaskets [10].
5. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.
6. Insert the new oil separator cartridge [11] with new gaskets [10] (O-rings) and screw down the cover.
7. Renew the strainer [8] and O-ring [7] of the dirt trap [2].
8. Replace and tighten all fittings .
9. Check the oil level in the oil separator tank.
   Top up if necessary.
10. Reconnect the negative cable to the battery.
11. Replace the machine rear panel.
12. Engage locks.

Dispose of the old separator cartridge and gaskets, along with any working materials contaminated with cooling oil, in accordance with environment protection regulations.

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the compressed air outlet valve.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valve.
6. Check the oil level after about 5 minutes.
   Top up if necessary.
7. Carry out a visual check for leaks.

10.4.6 Air filter maintenance

Material
Cleaning cloths
Compressed air for blowing out
Spare parts (as required)

Precondition
The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Machine cooled down.
All compressed air consumers are disconnected and the air outlet valve is open.
Canopy open.

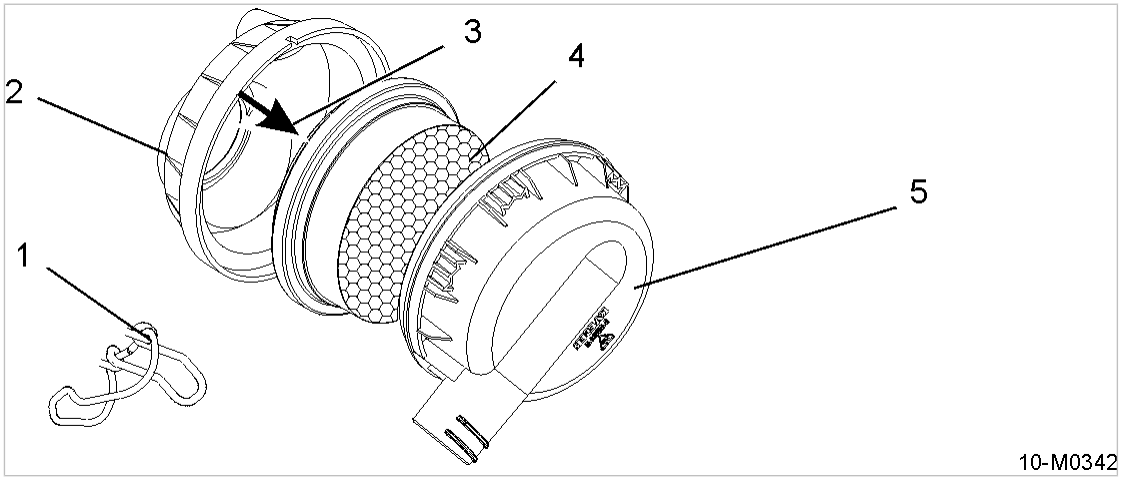


Fig. 20 Compressor air filter maintenance

1 Retaining clip
2 Air filter housing
3 Direction of air blast
4 Air filter element
5 Filter cap

Checking contamination of the filter element

The filter element should be checked visually for contamination.

Checking should be carried out according to the compressor maintenance schedule in chapter 10.2.2.

➢ Check the filter element.

1. Release both retaining clips 1.
2. Take off the filter cap 5.
3. Withdraw the element 4 from the housing 2.
4. Check the filter element 4.

Visually check for:

- Damage
  The element 4 must be replaced if it is damaged (see section on replacing the air filter element).
- Excessive dirt contamination
- Large dirt particles
  If it can be seen that the element 4 can be reused after cleaning, it should be cleaned according to the given instructions.

5. If cleaning is not necessary, the element should be correctly re-installed.
   - Insert the element 4 in the housing 2.
   - Replace the filter cap 5.
   - Secure the cap 5 with the two retaining clips 1.

Renewing the filter element

1. Release both retaining clips 1.
2. Take off the filter cap 5.
3. Withdraw the filter insert 4.

4. Clean the air filter cap [5] and housing [2].
5. Clean all sealing faces.
6. Insert the new element [4] in the housing [2].
7. Replace the filter cap [5].
8. Secure the cap [5] with the two retaining clips [1].

Cleaning the filter element by gently tapping

Gently tapping the element will remove coarse dirt.

1. Carry out element renewal steps 1 to 5.
2. Tap the inlet side of the filter element a number of times against the palm of the hand.
   Coarse dirt particles are freed from the element.
3. Insert the cleaned element in the housing.
4. Carry out element renewal steps 7 and 8.

Blowing the filter element clean

- Use compressed air at less than 73 psig.
- The direction of air blast [3] through the element is always contra to the intake direction.

Contamination in the filter element can be blown out with compressed air.

1. Carry out element renewal steps 1 to 5.
2. Blow out the filter element with compressed air.
   Dirt particles are freed from the element.
3. Insert the cleaned element in the housing.
4. Carry out element renewal steps 7 and 8.

10.4.7 Checking the safety relief valve

➢ Have pressure relief valves checked by KAESER Service in accordance with the maintenance schedule.

10.4.8 Cleaning coolers

The frequency is mainly dependent on local operating conditions.

Heavily clogged coolers cause oil circuit overheating.

Check coolers regularly for clogging.

Avoid dust. Wear breathing protection if necessary.

Do not clean the coolers with a sharp instrument, otherwise they could be damaged.

A severely contaminated cooler should be cleaned by KAESER Service.

Material Compressed air
Water or steam jet blaster

Precondition Machine placed over a washing point equipped with an oil separator.
The machine is shut down.
Machine cooled down.
The machine is fully vented, the pressure gauge reads 0 psig.
All compressed air consumers are disconnected and the air outlet valve is open.
Rear panel removed.
The negative cable to the battery is disconnected.

CAUTION
Damage to the machine can be caused by water or steam jets.
Direct water or steam jets can damage or destroy electrical components and indicating instruments.
- ➢ Cover up electrical components such as the alternator, starter and instruments.
- ➢ Do **not** direct water or steam jets at sensitive components such as the starter or instruments.

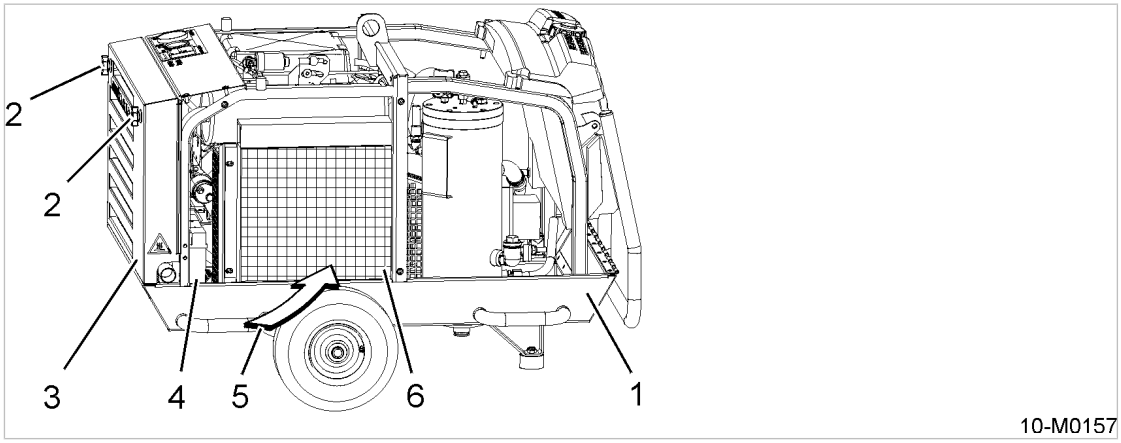


Fig. 21 Cleaning coolers

1. Side view, canopy removed
2. Rear panel locks
3. Rear panel
4. Battery
5. Direction of impacting water or steam jet (from outside to inside).
6. Cooler

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.
2. Clean the cooler with compressed air, water or steam jet in the opposite direction to the cooling air flow.
3. Remove the protective coverings from the air filters.
4. Reconnect the battery 4.
5. Replace the machine rear panel 3.
6. Engage locks 2.
7. Start the machine and run up to operating temperature so that excess water is evaporated.

Clean the coolers only in a washing area equipped with an oil separator.

10.5 Wheel checks

Material Tire pressure gauge

Precondition The machine is switched off.

1. Check that the wheel fixings are tight (visual check of locking ring)
2. Check tires for wear and damage and change as necessary.
3. Check the tire pressures.

10.6 Options

➢ Carry out maintenance tasks in accordance with the schedules in chapter 10.2.6.

10.6.1 Option da
Cyclone separator maintenance

Clean the cyclone separator dirt trap if the moisture content in the compressed air is too high.

Material Cleaning cloths
Dirt trap maintenance kit

Precondition The machine is shut down.
Machine cooled down.
The machine is fully vented, the pressure gauge reads 0 psig.
All compressed air consumers are disconnected and the air outlet valve is open.

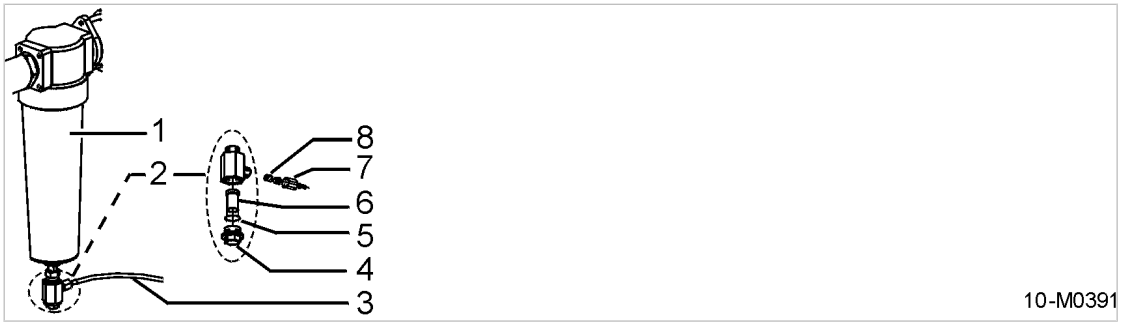


Fig. 22 Cleaning the dirt trap

1 Cyclone separator
2 Dirt trap
3 Condensate drain hose
4 Screw plug
5 Sealing ring
6 Strainer
7 Condensate drain hose union nut
8 Nozzle

Cleaning the dirt trap

1. Unscrew the plug 4 and remove the strainer 6 from the dirt trap 2.
2. Loosen the union nut 7 and detach the condensate drain hose 3 from the dirt trap
3. Unscrew the nozzle 8 from the dirt trap housing and clean.
4. Check the nozzle for function and wear.
   Renew if non-functional.
5. Clean the dirt trap housing, plug and sealing ring 5.

6. Clean the strainer.
7. Check the strainer and sealing ring for function and wear.
   Renew if non functional.
8. Replace the strainer in the dirt trap and screw in the plug.
9. Screw in the nozzle and re-attach the condensate drain hose.

Function and leakage check

1. Start the machine and run for approximately 5 minutes.
2. Check the cyclone separator housing and hose line for leaks.

10.7 Document maintenance and service work.

Machine number:

➢ Enter maintenance and service work carried out in the list.

Date	Maintenance task carried out	Operating hours	Signature

Tab. 47 Logged maintenance tasks

11 Spares, Operating Materials, Service

11.1 Note the nameplate

The nameplate contains all information to identify your machine. This information is essential to us in order to provide you with optimal service.

➢ Please give the information from the nameplate with every inquiry and order for spares.

11.2 Ordering consumable parts and operating materials

KAESER consumable parts and operating materials are all genuine KAESER parts. They are selected for use in KAESER machines.

WARNING
There is risk of personal injury or damage to the machine resulting from the use of unsuitable spare parts or operating materials.
Unsuitable or poor quality consumable parts and operating materials may damage the machine or impair its proper function.
In the event of damage, personal injury may result.

➢ Use only genuine KAESER parts and operating materials.

➢ Have an authorized KAESER Service Technician carry out regular maintenance.

Compressor

Name	Quantity	Number
Air filter element	1	1260
Oil filter	1	1200
Oil separator cartridge set	1	1450
Cooling oil	1	1600

Tab. 48 Compressor consumables

Engine parts: HONDA

Name	Quantity	Number
Foam air filter element	1	1275
Paper air filter element	1	1280
Fuel filter	1	1910
Oil filter	1	1905
Oil drain plug sealing ring	1	4496
Spark plug	2	4467
Multi-ribbed belts	1	1801
Engine oil	1	1925

Tab. 49 Consumable engine parts

11.3 SIGMA AIR SERVICE

SIGMA AIR SERVICE offers:

- Authorized service technicians with KAESER factory training.
- Increased operational reliability ensured by preventive maintenance.
- Energy savings achieved by avoidance of pressure losses.
- The security of genuine KAESER spare parts.
- Increased legal certainty as all regulations are kept to.

➢ Why not sign a SIGMA AIR SERVICE maintenance agreement.
The advantages:
Lower costs and higher compressed air availability.

11.4 Service Addresses

Addresses of KAESER representatives are given at the end of this manual.

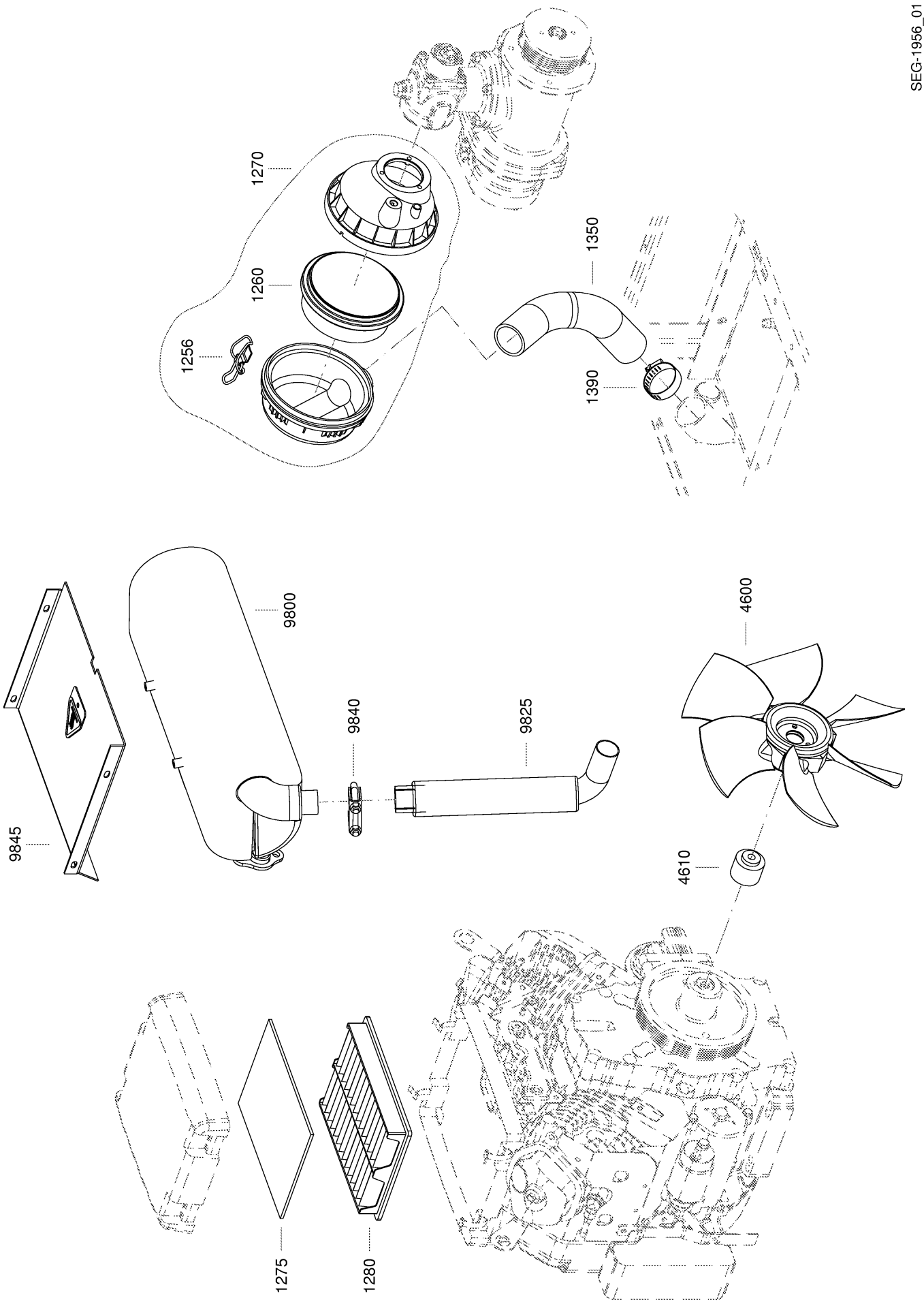
11.5 Spare parts for service and repair

With the help of this parts list you can plan your material requirement according to operating conditions and order the spare parts you need.

WARNING
Personal injury or machine damage due to correct working on the machine.
Incorrect inspection, service or repair can damage the machine or severely impair its function. In the event of damage, personal injury may result.

➢ Inspections, preventive maintenance or repair tasks not described in this manual must not be carried out by unqualified personnel.

➢ Have further tasks, not described in this service manual, carried out by specialist workshops or KAESER Service.

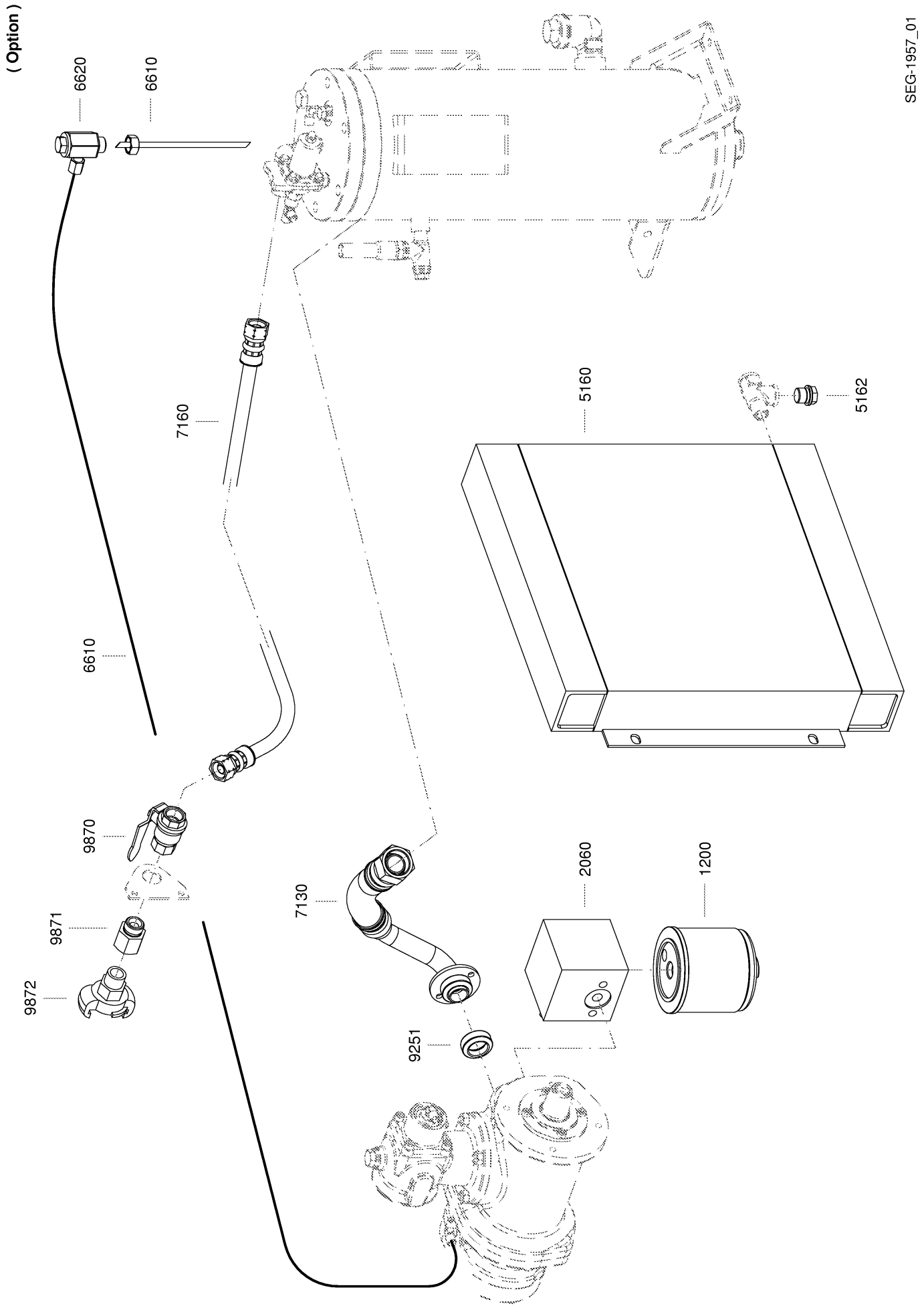

SEG-1956_01
1270
1260
1256
1350
1390
9800
9840
9825
9845
4600
4610
1275
1280

Legend	KAESER
Inlet air/Cooling air/Exhaust	SEL-1781_01E

Item	Name	Option
1256	Snap-lock	
1260	Compressor air intake filter (element)	
1270	Compressor air filter, complt.	
1275	Filter mat	
1280	Engine air filter (element)	
1350	Compressor intake hose	
1390	Hose clamp	
4600	Engine fan	
4610	Fan coupling	
9800	Exhaust silencer	
9825	Exhaust system	
9840	Exhaust pipe clamp	
9845	Guarding against touching	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

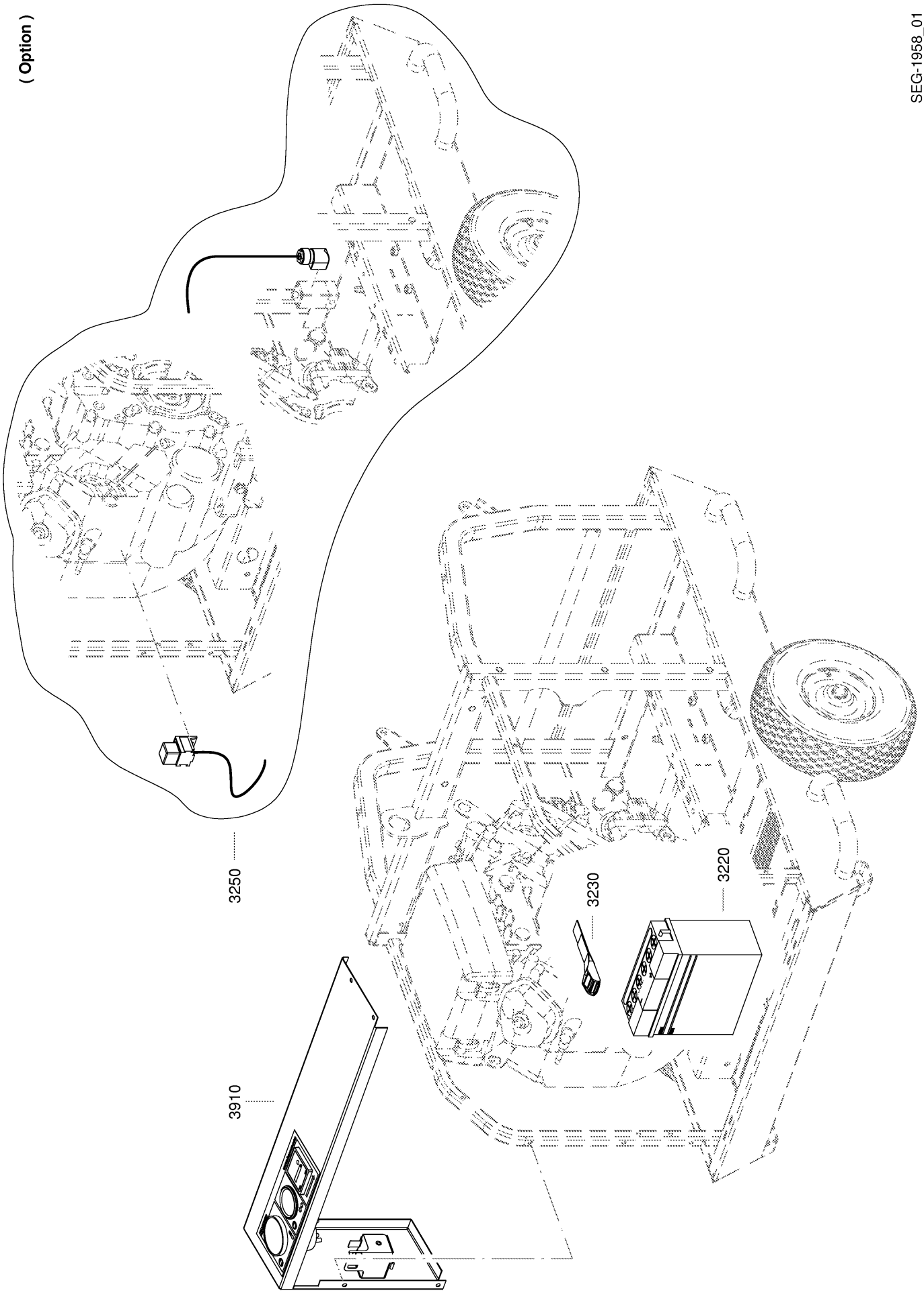

(Option)
6620
6610
SEG-1957_01
7160
5160
5162
6610
9870
9871
9872
7130
2060
1200
9251

Legend	KAESER
Oil circuit/Comprsd.air outlet	SEL-1783_01E

Item	Name	Option
1200	Oil filter	
2060	Combination valve	
2062	Maintenance kit, combi. valve	
2064	Overhaul kit, combination valve	
5160	Compressor cooler	
5162	Compressor oil cooler drain	
6610	Oil scavenge line	
6620	Dirt trap, oil scavenge line	
9416	Dirt trap maintenance kit	
7130	Prepared hose	
7160	Prepared hose	
9251	Pipe connection seal	
9870	Outlet valve	
9871	Claw coupling adapter	
9872	Claw coupling	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.


(Option)
SEG-1958_01
3250
3230
3220
3910

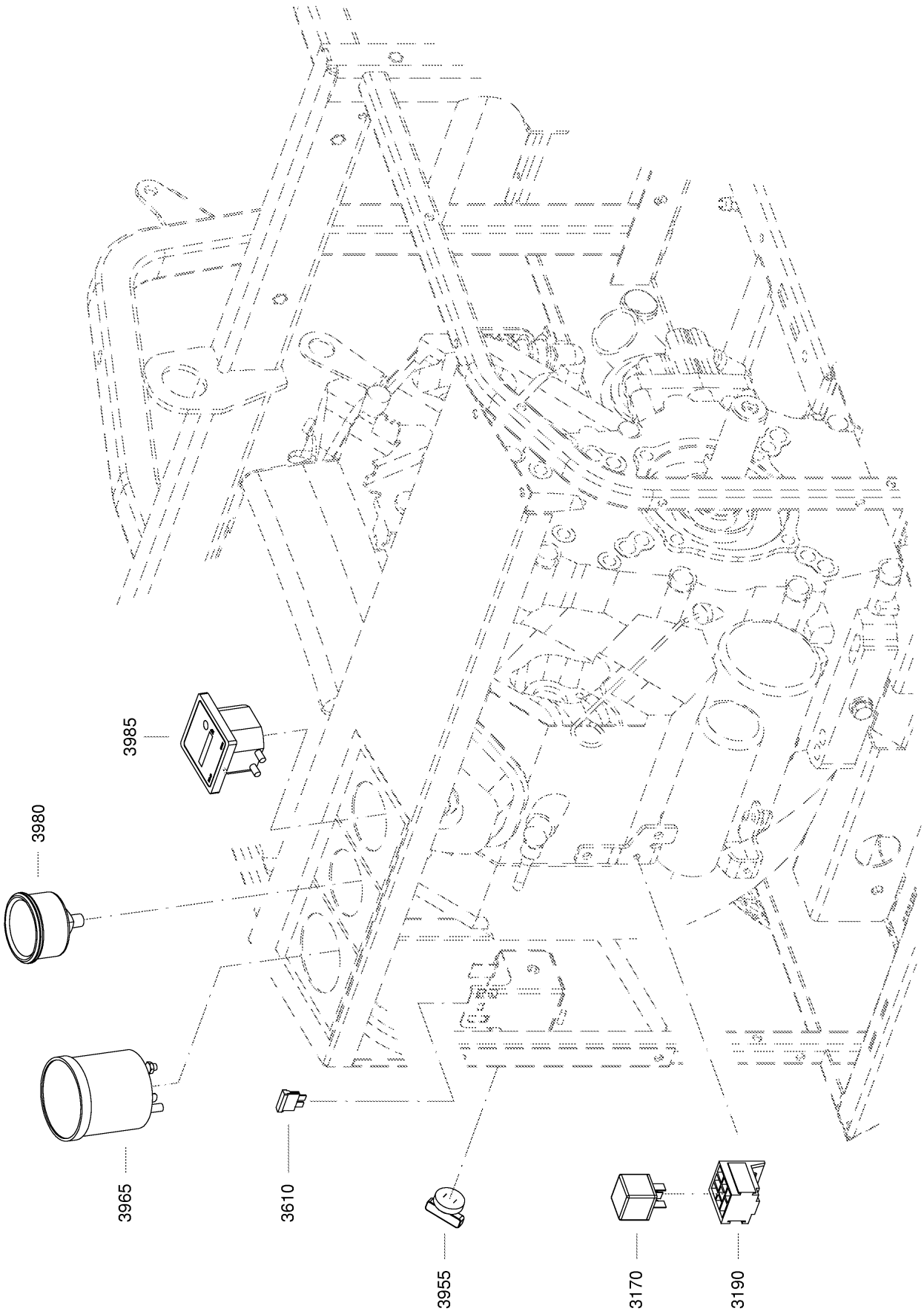
Legend	KAESER
Electrics/Instruments	SEL-1785_01E

Item	Name	Option
3220	Battery	
3230	Battery bracket	
3250	Mains supply cable set	
3910	Instrument panel	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

SEG-1959_01

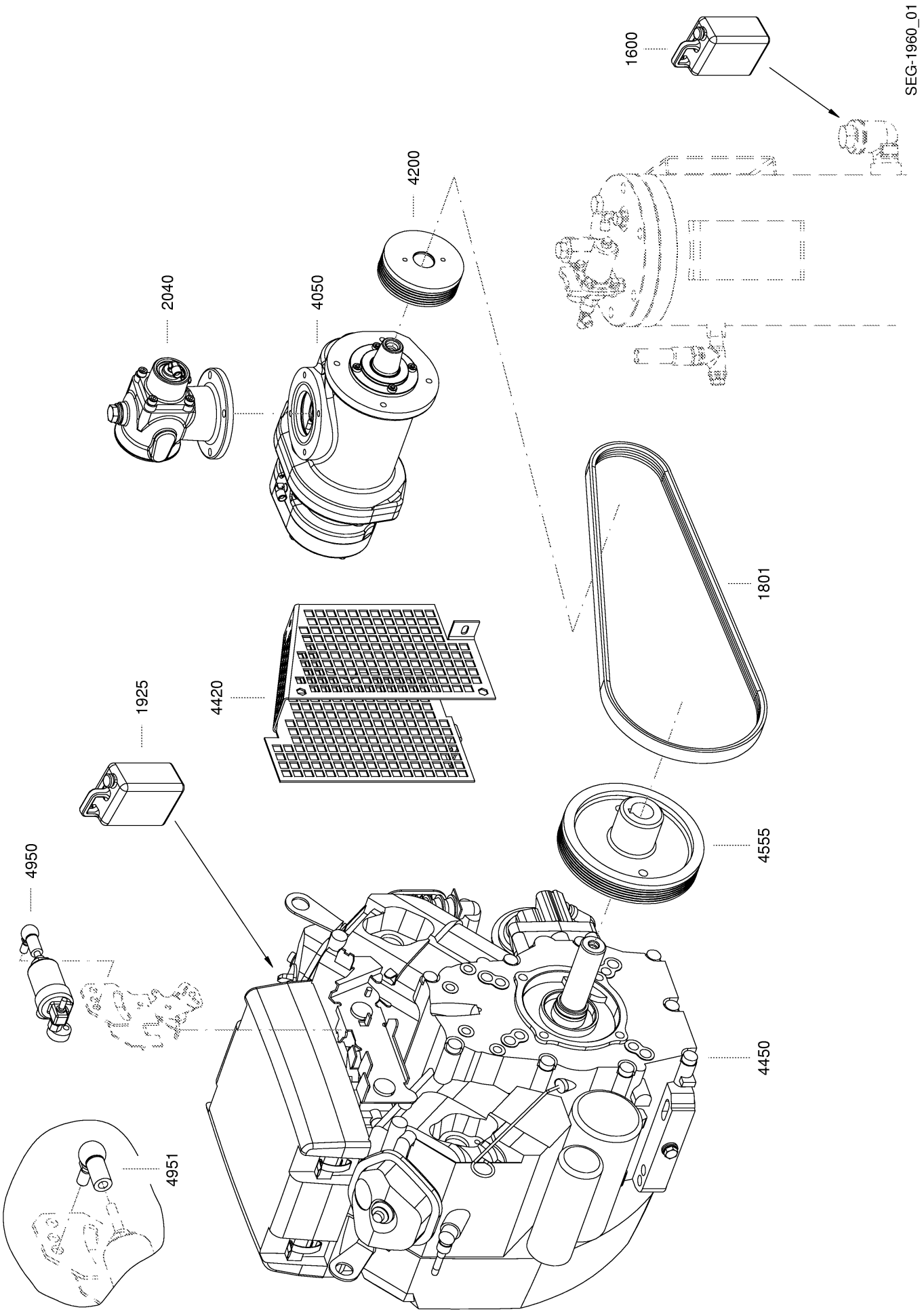


Legend	KAESER
Instrument panel	SEL-1787_01E

Item	Name	Option
3170	Starting relay	
3190	Power relay socket	
3610	Control fuse set	
3955	Starter switch	
3965	Temperature gauge	
3980	Pressure gauge, instrument panel	
3985	Operating hours counter	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.


SEG-1960_01
1600
4200
2040
4050
1801
4420
1925
4555
4950
4450
4951

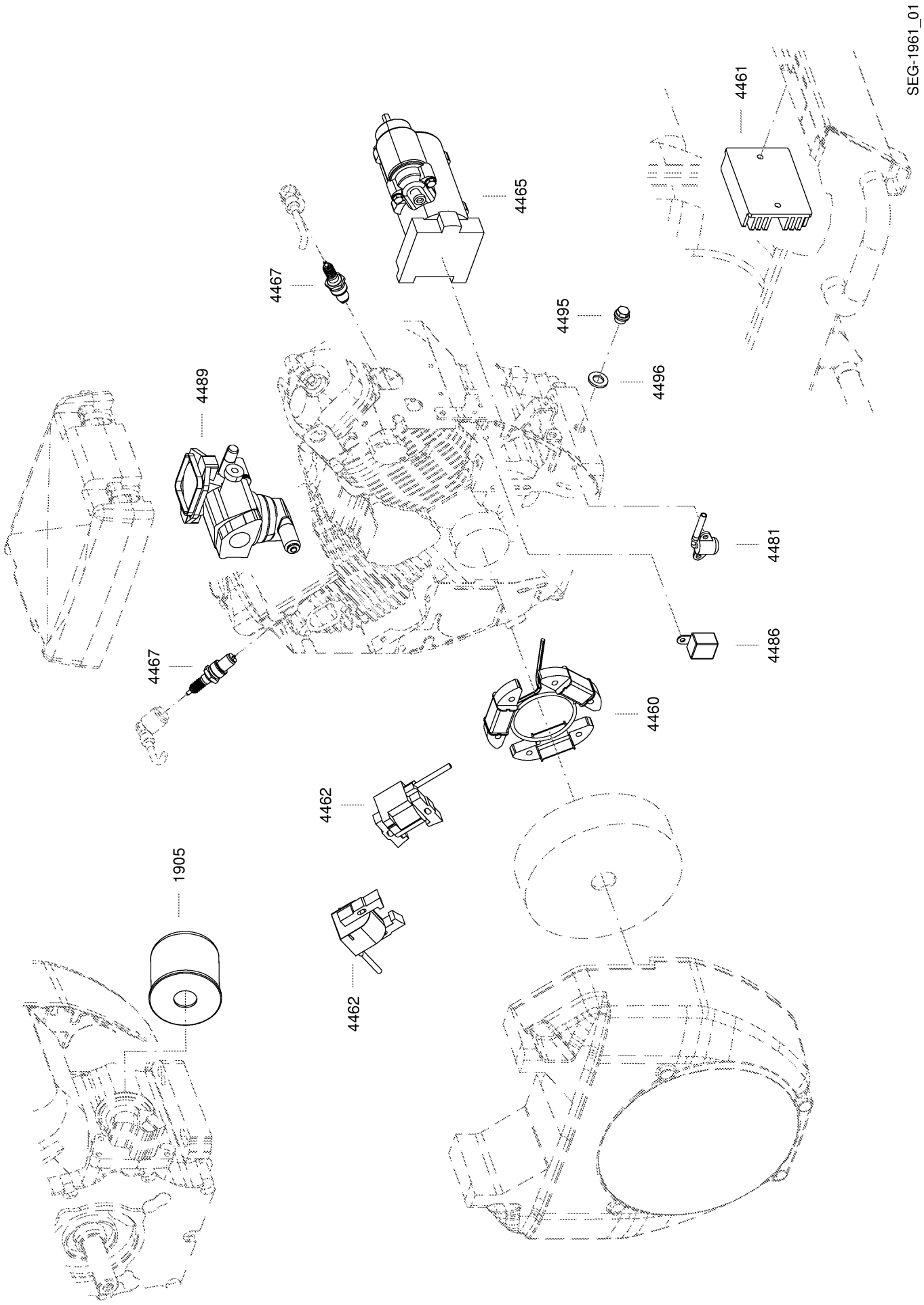
Legend	KAESER
Airend/engine	SEL-1789_01E

Item	Name	Option
1600	Sigma Fluid *)	
1801	Drive belt	
1925	Engine oil *)	
2040	Inlet valve	
2042	Maintenance kit, inlet valve	
2044	Overhaul kit, inlet valve	
4050	SIGMA exchange airend	
4200	Crankshaft pulley	
4420	Belt guard	
4450	Engine	
4555	Engine drive pulley	
4950	Speed adjusting cylinder	
4951	Swivel joint	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

*) see cooling oil/engine oil recommendations

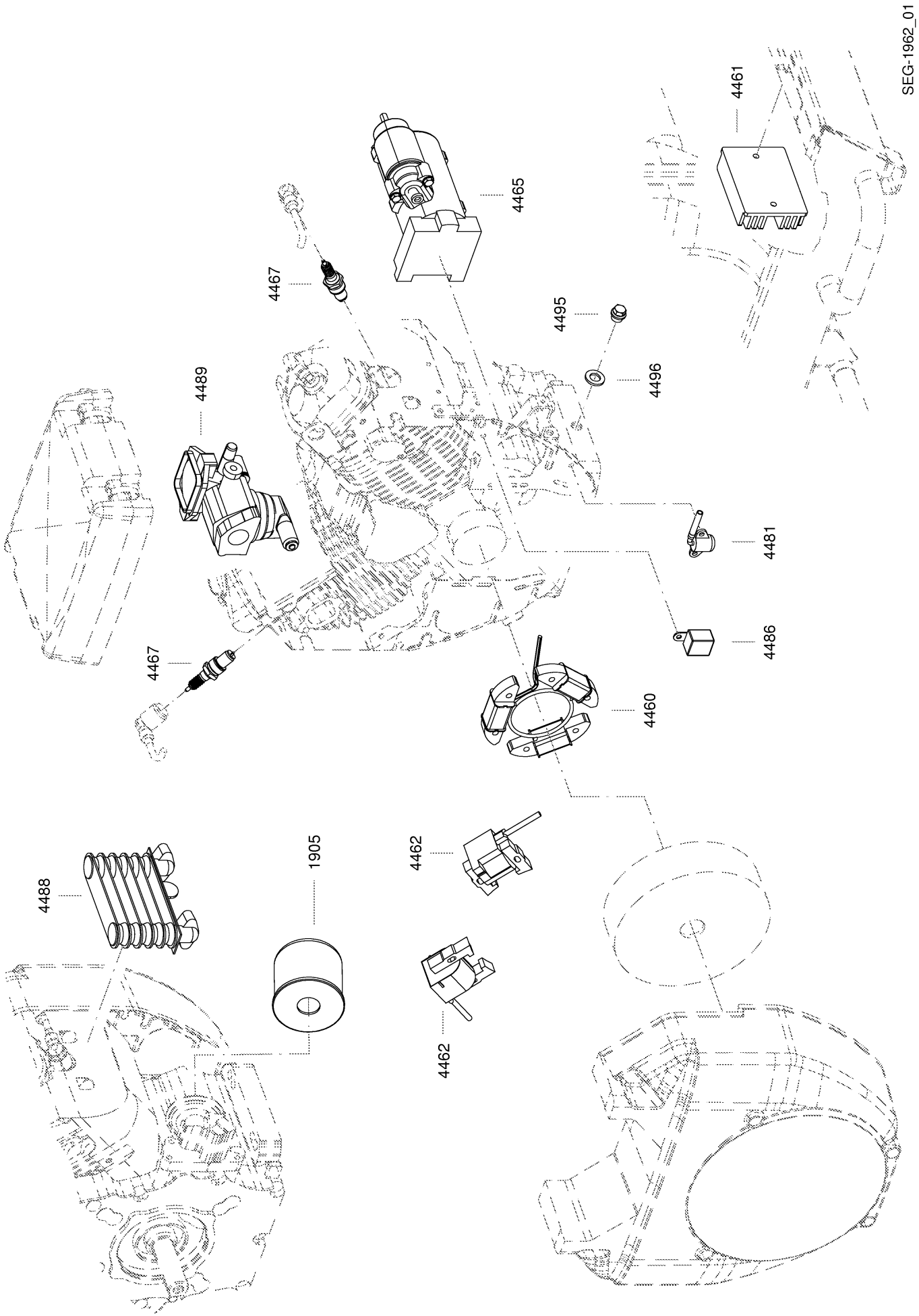

SEG-1961_01
4461
4465
4467
4495
4496
4489
4481
4486
4467
4460
4462
1905
4462

Legend	KAESER
Engine	SEL-1791_01E

Item	Name	Option
1905	Engine oil filter	
4460	Alternator	
4461	Alternator regulator	
4462	Ignition coil	
4465	Starter	
4467	Spark plug	
4481	Oil pressure switch	
4486	Fuel cut-off	
4489	Carburettor	
4495	Engine oil drain	
4496	Oil drain seal	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

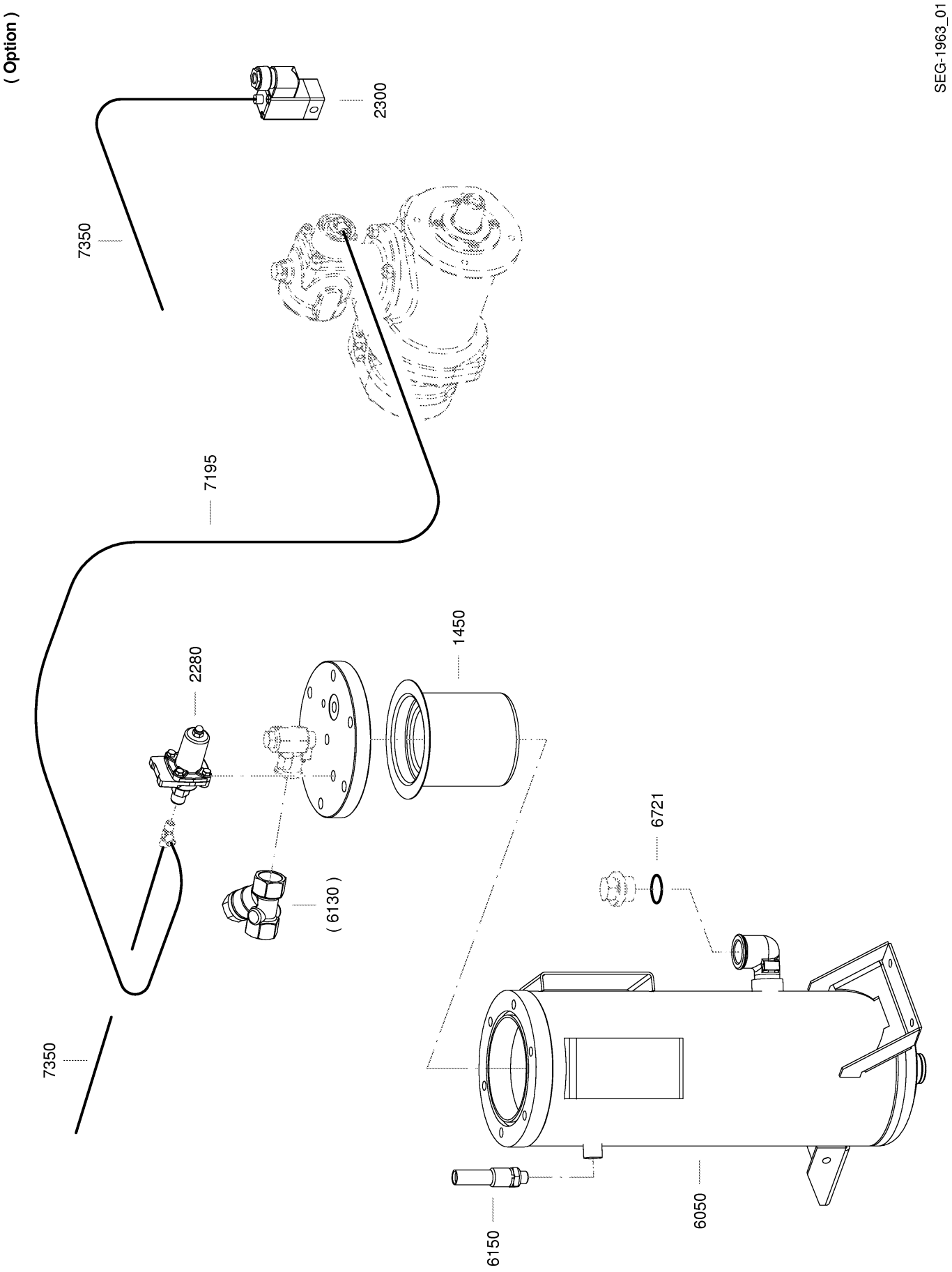

SEG-1962_01
4461
4465
4467
4495
4496
4489
4481
4486
4467
4460
4462
1905
4488
4462

Legend	KAESER
Engine	SEL-1793_01E

Item	Name	Option
1905	Engine oil filter	
4460	Alternator	
4461	Alternator regulator	
4462	Ignition coil	
4465	Starter	
4467	Spark plug	
4481	Oil pressure switch	
4486	Fuel cut-off	
4488	Engine oil cooler	
4489	Carburettor	
4495	Engine oil drain	
4496	Oil drain seal	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.


(Option)
SEG-1963_01
2300
7350
7195
1450
2280
6721
(6130)
7350
6150
6050

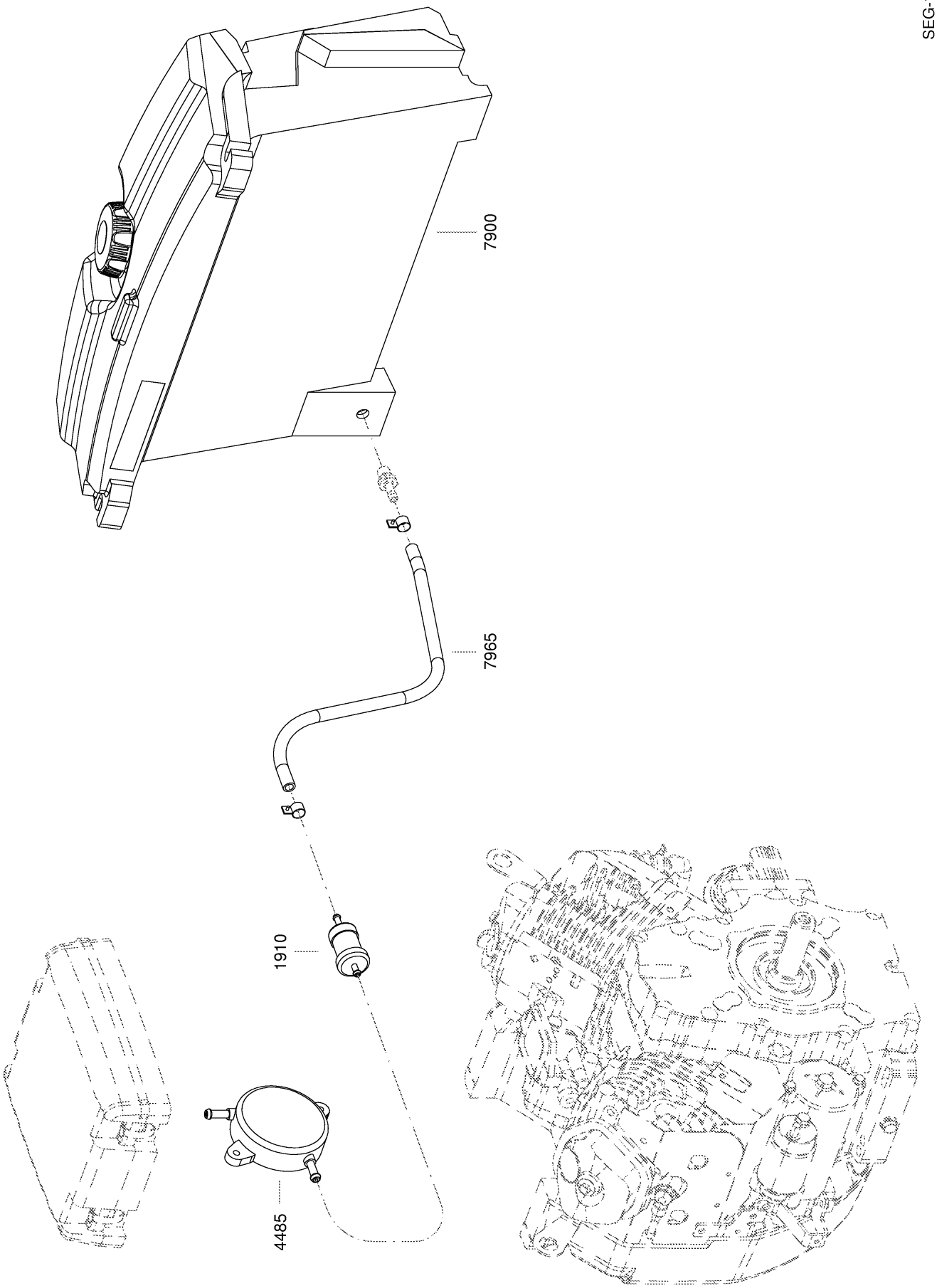
Legend	KAESER
Oil separation/control air	SEL-1795_01E

Item	Name	Option
1450	Oil separator cartridge	
2280	Proportional controller	
2282	Maintenance kit, proportional controller	
2300	Solenoid valve	
6050	Oil separator tank	
6130	Angle check valve	X
2412	Check valve overhaul kit	
6150	Pressure relief valve for oil separator tank	
6721	Oil filler seal	
7195	Prepared hose	
7350	Control line kit	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

SEG-1964_01

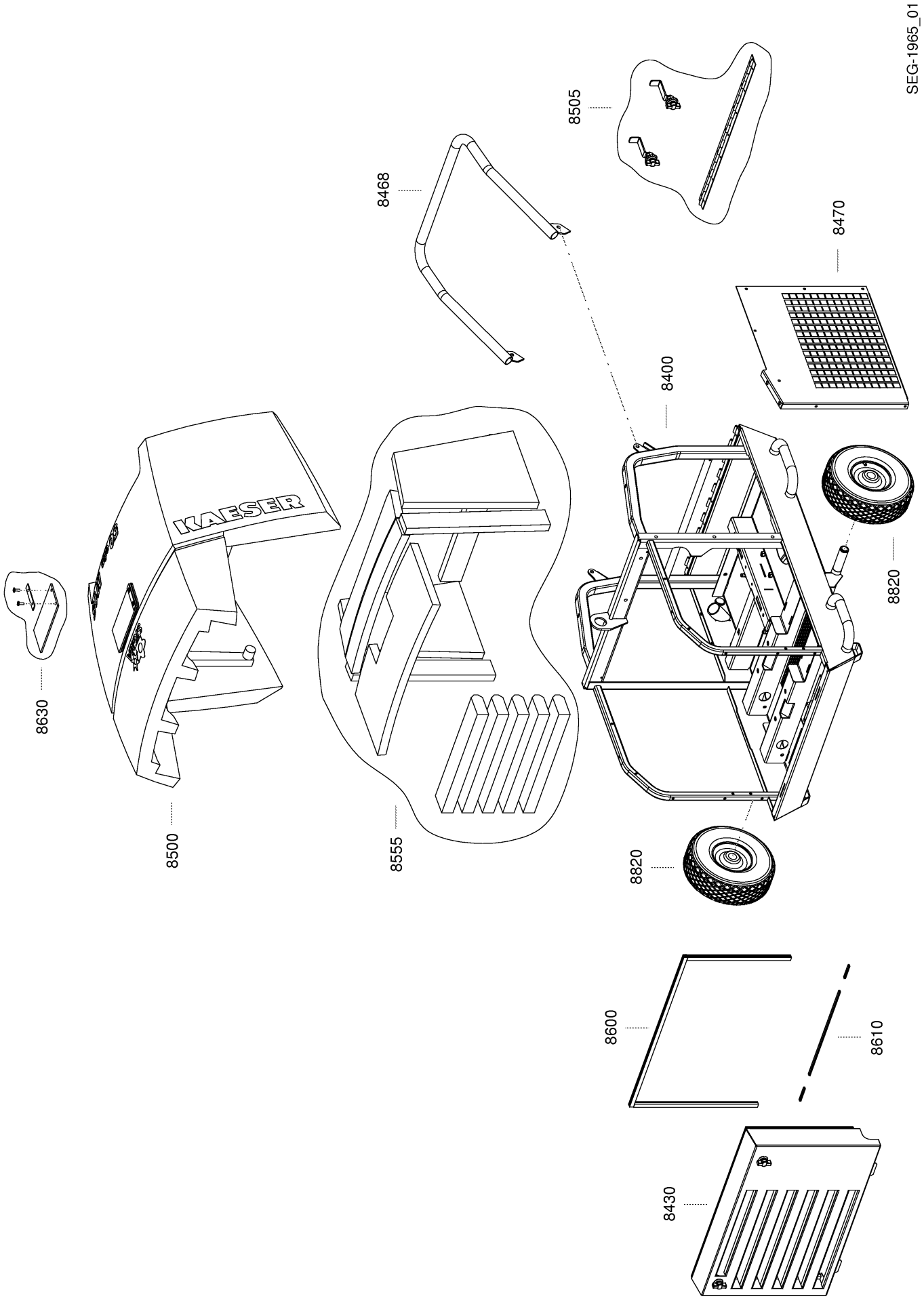


Legend	KAESER
Fuel supply	SEL-1797_01E

Item	Name	Option
1910	Fuel prefilter	
4485	Fuel pump	
7900	Fuel tank	
7965	Fuel line	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

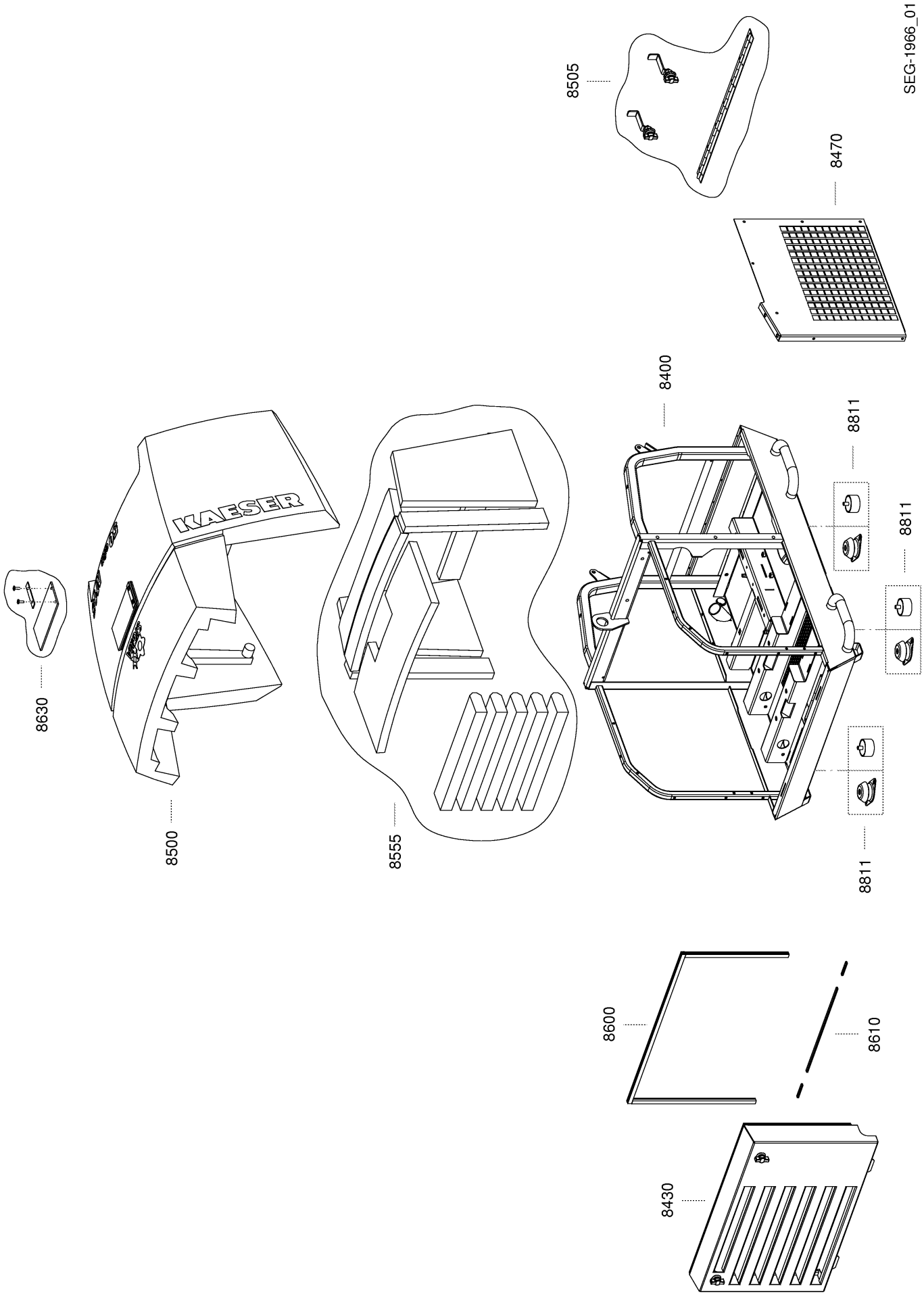

SEG-1965_01
8505
8468
8470
8400
8820
8630
8500
8555
8820
8600
8610
8430

Legend	KAESER
Bodywork	SEL-1799_01E

Item	Name	Option
8400	Lower bodywork	
8430	Canopy rear	
8468	Push-bar	
8470	Exhaust air grill	
8500	Canopy	
8505	Hinge/closure set	
8555	Sound damping louver kit	
8600	Sealing profile	
8610	Edge protecting strip	
8630	Cover for lifting eye	
8820	Wheel	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.


SEG-1966_01
8505
8470
8400
8811
8811
8811
8630
8500
8555
8600
8610
8430

Legend	KAESER
Bodywork	SEL-1801_01E

Item	Name	Option
8400	Lower bodywork	
8430	Canopy rear	
8470	Exhaust air grill	
8500	Canopy	
8505	Hinge/closure set	
8555	Sound damping louver kit	
8600	Sealing profile	
8610	Edge protecting strip	
8630	Cover for lifting eye	
8811	Machine mounting	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

12 Decommissioning, Storage and Transport

12.1 De-commissioning

De-commissioning is necessary, for example, under the following circumstances:

- The machine is temporarily not needed
- The machine will not be needed for a considerable time.
- The machine is to be scrapped.

Precondition The machine is shut down.
Machine dry and cool.

1. Carry out the following de-commissioning procedures.
2. Place a notice on the instrument panel describing the de-commissioning procedures carried out.

12.1.1 Temporary decommissioning

Decommissioning for about 4 months.

Material Plastic foil
Moisture-resistant adhesive tape

1. Disconnect the battery (the negative terminal first and then the positive terminal).
2. Close off the following openings with plastic foil and moisture-resistant adhesive tape.
   - Engine air inlet
   - Compressor air inlet
   - Exhaust
3. Place the following notice on the instrument panel informing of the decommissioning measurements taken.

Attention!

1. The machine is temporarily decommissioned.
2. The following machine openings have been covered:

- Engine air inlet
- Compressor air inlet
- Exhaust

3. Recommission according to service manual.

Date / signature

Tab. 50 "Temporarily decommissioned" information notice

Decommissioning of the compressor for several weeks during severe frost

CAUTION
Danger of batteries freezing.
Discharged batteries are subject to frost damage and can freeze at 14 °F.

➢ Store the battery in a frost-free place.
➢ Store the battery preferably fully charged.

1. Remove the battery and store in a frost-free room.
2. Make sure the battery is fully charged.

12.1.2 Long-term decommissioning

Decommissioning the machine for 5 months or longer.

Material
Receptacle
Preserving oil
Preservative
Desiccant
Plastic sheeting
Moisture-resistant adhesive tape

➢ The following measures must be taken for long-term decommissioning.

Long-term decommissioning tasks	See chapter	Confirmed?
➢ Drain the engine oil.	Engine SM	
➢ Drain the cooling oil from the separator tank and oil cooler.	10.4.3	
➢ Fill the engine and oil separator tank with preserving oil.	Engine SM 10.4.2	
➢ Run the machine for about 10 minutes to coat all parts with a protective oil film.	–	
➢ Disconnect the battery (batteries), the negative terminal first and then the positive terminal, and store in a frost-free room.	–	
➢ Check the battery fluid level.		
➢ Check the battery charge monthly and recharge if necessary to prevent the battery freezing.	–	
➢ Clean the battery terminals and coat with acid-resistant grease.	–	
➢ Close the air outlet valves.	–	
➢ Use plastic sheeting and moisture-resistant adhesive tape to seal off the following openings: – Engine air intake – Compressor air intake – Exhaust outlet	–	
➢ Clean the bodywork and treat with a preservative.	–	
➢ Place a notice on the instrument panel informing of the decommissioning measurements taken.	–	
Engine SM ≙ engine manufacturer's service manual.		

Tab. 51 Long-term decommissioning checklist

➢ Place the following notice on the instrument panel informing of the decommissioning measurements taken.

Attention!

1. The machine is decommissioned.
2. It is filled with preserving oil.
3. For recommissioning:

- Take measures for recommissioning after a long period of storage.
- Recommission according to service manual.

Date / signature

Tab. 52 Text for the long-term decommissioned information notice

➢ Store in a dry place with even temperature.

12.2 Transporting

Precondition Machine switched off and locked off.
All connecting lines and hoses disconnected and removed.
Any loose or movable parts that may fall when transporting, removed or secured.

➢ Make sure the danger area is clear.

12.2.1 Positioning on site

Maneuvering handles are provided for positioning the machine on an even location.

1. Pull down the maneuvering handles to the horizontal position for use.
2. Grasp the maneuvering handles.
3. Use the handles to maneuver the machine on site.
4. Move the machine to the new operating location.
5. Fold up the handles.
6. Chock the wheels if necessary to prevent unwanted movement.

12.2.2 Transporting with a crane

Additional precautions for conditions of snow and ice

Considerable snow or ice may build up on the machine under low temperature conditions.
This may adversely effect the machine's centre of gravity.
It is possible that the permissible loading on the crane or lifting eye is exceeded.

➢ Additional measures should be taken under conditions of snow or ice.
  - Remove any snow and ice from the machine before lifting by a crane.
  - Make sure the lifting eye cover plate is freely accessible and can be opened.

Carry out the following tasks before transporting the machine

A lifting eye is provided for transporting with a crane. The lifting eye is located beneath a lift-up cover in the centre of the canopy.

1. Open the lifting eye cover.
2. Position the crane hook vertically over the lifting eye.
3. Engage the hook in the eye.
4. Lift the machine carefully.

12.2.3 Transporting a stationary version with a forklift truck

Precondition The machine is shut down.

All connecting lines and hoses disconnected and removed.

CAUTION
Damage to the machine by incorrect lifting with a fork truck.
The machine may fall or be damaged by the forks.
- ➢ Do not use a fork truck to lift towable machines.
- ➢ Only stationary machines (without chassis and wheels) may be lifted with a fork truck.
- ➢ Lift the machine only from the side.

1. Close the canopy.
2. Be careful of protruding components within the canopy, e.g. the oil separator tank.
3. Drive the forks under the machine from the side and observe point 2 above regarding their positioning.
4. Drive the forks in as far as possible beneath the frame.

   The forks are fully under the machine.
5. Lift the machine carefully.

12.2.4 Transporting as a load

The method of transport determines the type of packing and securing.
Packing and securing methods must be such that, assuming proper handling, the goods arrive in perfect condition at the destination.

Consult KAESER Service for advice concerning sea or air transport.

Material Chocks

Restraints or timber balks

Straps (tie-downs)

Load securing devices

Use chocks, restrainers or wooden blocks for securing the load.
If necessary, use straps across the chassis and the tow-bar.

CAUTION
Straps can damage the bodywork.
Movement during transport can damage the bodywork.
- ➢ Do not use straps over the bodywork.
- ➢ Use straps only over the chassis.

1. Always observe valid accident and safety regulations when transporting.
2. The loads must be secured against rolling, tipping, slipping and falling.

Contact KAESER Service with any questions regarding transporting or load securing..
KAESER accepts no liability for damages arising through incorrect transport methods or insufficient or wrong securing of loads.
On rented, hired or exhibition machines, the transport securing devices should be re-used for the return journey.

Before shipment as air freight

The machine is designated as dangerous goods for air freight purposes; any disregard can result in a heavy fine.

DANGER
Danger of fire or explosion from operating materials.
The machine incorporates an internal combustion engine.
➢ Any dangerous materials contained within the machine must be removed before transport.

➢ Remove all dangerous materials.

These include:

- Residues of fuel or fuel vapors
- Lubricating and cooling oils in the engine and compressor unit
- Battery electrolyte.

12.3 Storage

Moisture can lead to corrosion, particularly in the engine, airend and oil separator tank.

Frozen moisture can damage components, valve diaphragms and gaskets.

Advice can be obtained from KAESER on storage and commissioning.

CAUTION
Moisture and frost can damage the machine.
➢ Prevent ingress of moisture and formation of condensation.
➢ Maintain a storage temperature of >32 °F.

➢ Store the machine in a dry place, free from frost if possible.

12.4 Disposal

When disposing of a machine, drain out all liquids and remove old filters.

Precondition The machine is decommissioned.

1. Completely drain the fuel from the machine.
2. Completely drain the cooling oil and engine oil from the machine.
3. Remove used filters and the oil separator cartridge.
4. Drain the coolant from water-cooled engines and systems.
5. Hand the machine over to an authorized disposal expert.

➢ Parts contaminated with cooling oil or engine oil must be disposed of in accordance with local environment protection regulations.

13 Annex

13.1 Marking

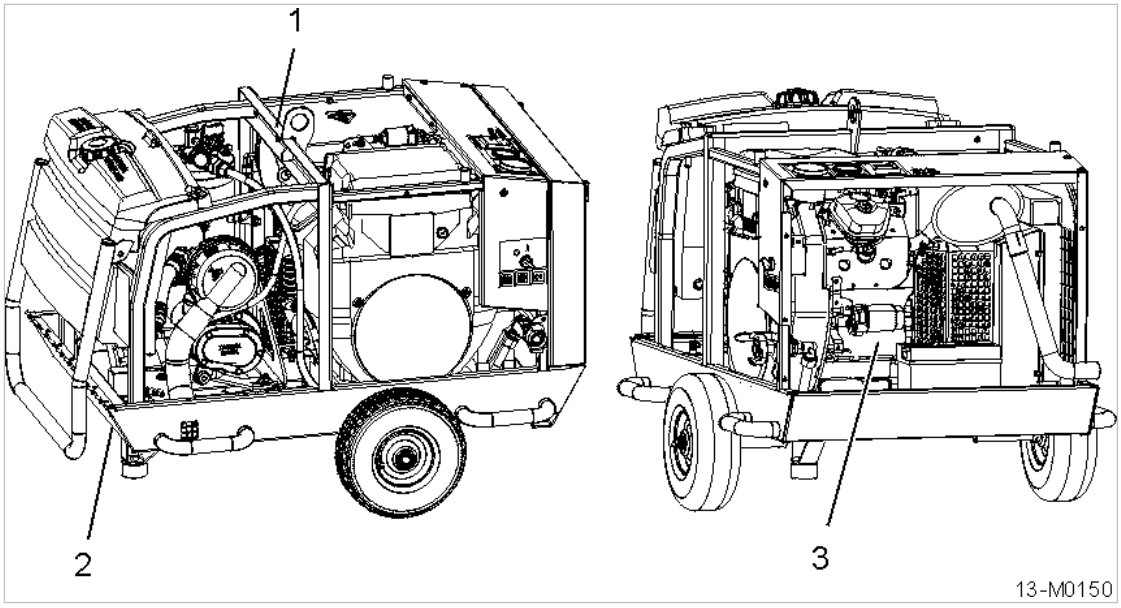
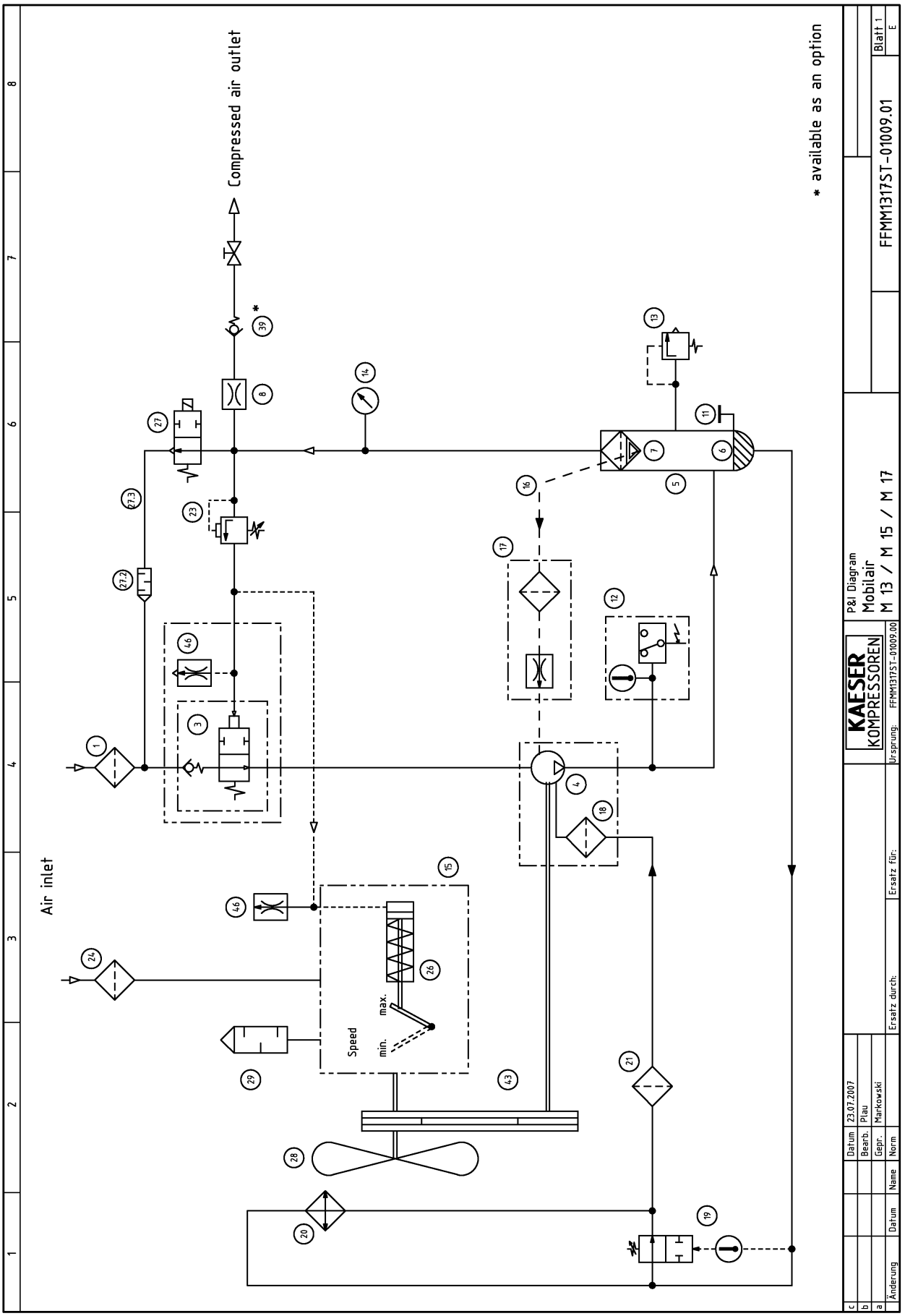


Fig. 23 Marking

1 VIN number (vehicle identification number)
2 Machine nameplate with serial number
3 Engine nameplate with serial number

13.2 Pipeline and instrument flow diagram (P+I diagram)


Compressed air outlet
* available as an option
Air inlet
Speed
max.
min.
P&I Diagram
Mobilair
M 13 / M 15 / M 17
FFM1317ST-01009.01
KAESER KOMPRESSOREN
Ursprung: FFM1317ST-01009.00
Ersatz für:
Ersatz durch:
Datum 23.07.2007
Bearb. Plau
Gepr. Markowski
Norm
Name
Datum
Änderung

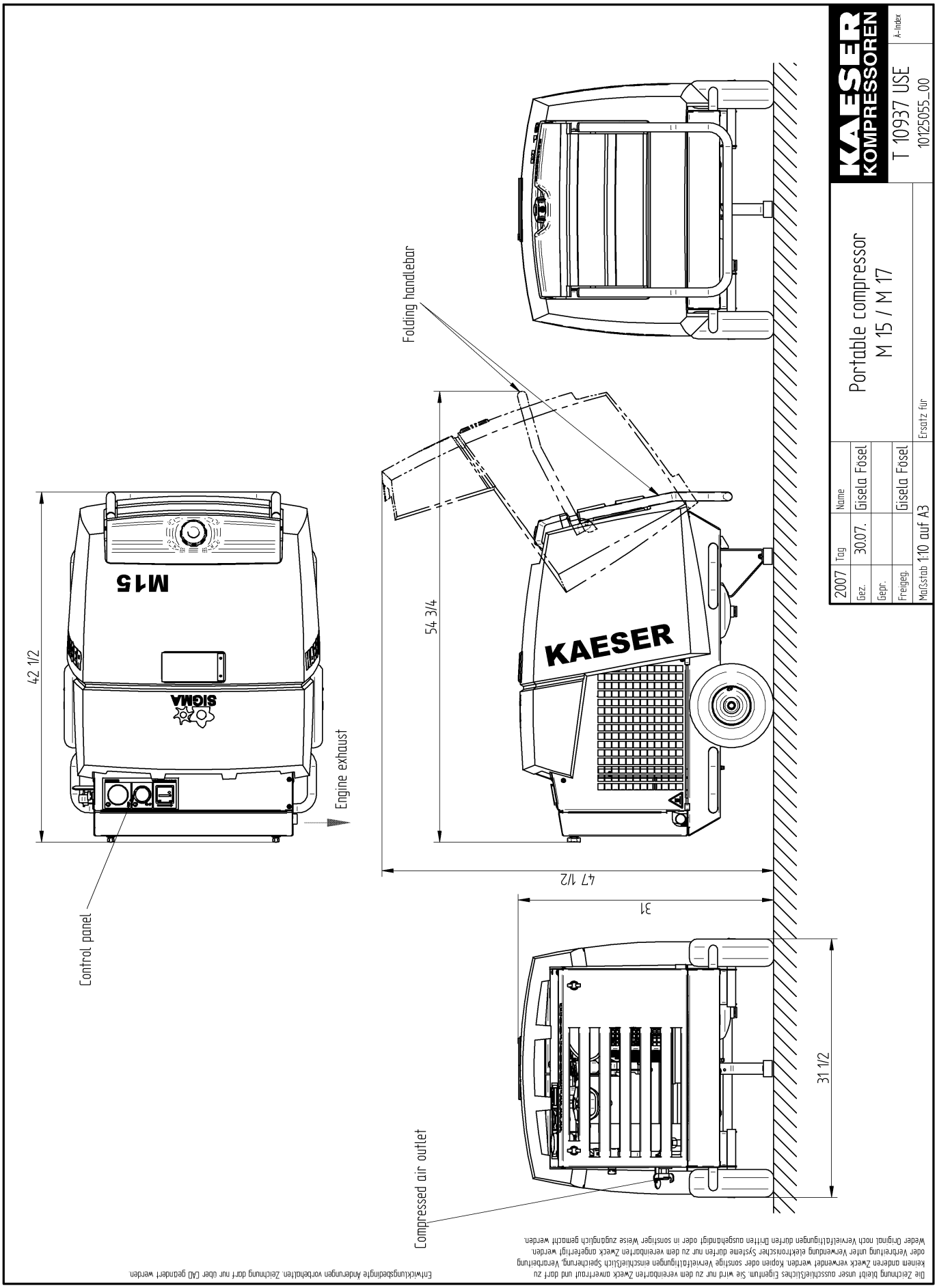
1	2	3	4	5	6	7	8

1	Compressor - Air filter			19	Combination valve - Oil temperature controller		
3	Inlet valve			20	Oil cooler		
4	Airend			21	Oil filter		
5	Oil separator tank			23	Proportional controller		
6	Oil reserve			24	Motor - Air filter		
7	Oil separator cartridge			26	Engine speed adjusting piston		
8	Minimum pressure nozzle			27	Venting valve		
11	Oil filler with screw plug			27.2	Silencer		
12	Temperature gauge switch			27.3	Air feedback on machines with working pressures > 10 bar		
13	Pressure relief valve			28	Fan		
14	Pressure gauge - Control panel			29	Exhaust silencer		
15	Motor			39*	Check valve		
16	Oil return line			43	V-belt		
17	Dirt trap with nozzle			46	Nozzle (Secondary end - Proportional controller)		
18	Strainer						

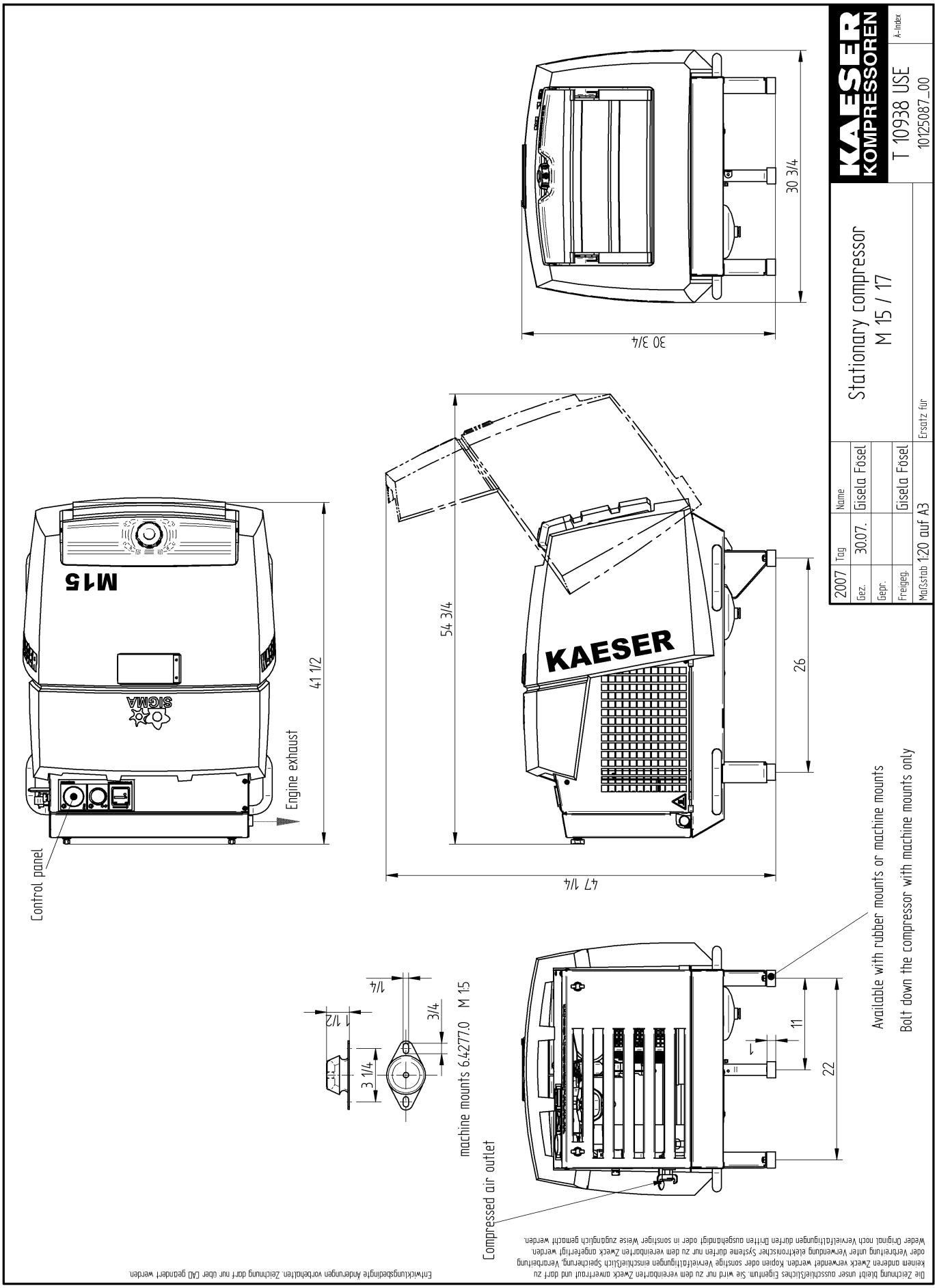
* available as an option

c				Datum	23.07.2007		KAESER KOMPRESSOREN	P&I Diagram legend			
b				Bearb.	Plau			Mobilair			
a				Gepr.	Markowski			M 13 / M 15 / M 17			
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: FFMM1317ST-01009.00		FFMM1317ST-01009.01	Blatt 2 E

13.3 Option sa
Dimensional drawing (version with chassis)



13.4 Option sc
Dimensional drawing, stationary version


KAESER KOMPRESSOREN
A-Index
T 10938 USE
10125087_00
Stationary compressor
M 15 / 17
2007 Tag Name
Gez. 30.07. Gisela Fösel
Gepr.
Freigeg. Gisela Fösel
Maßstab 120 auf A3
Ersatz für
30 3/4
30 3/4
54 3/4
47 1/4
26
M15
SIGMA
41 1/2
Engine exhaust
Control panel
Available with rubber mounts or machine mounts
Bolt down the compressor with machine mounts only
22
11
1
1/4
3/4
1 1/2
3 1/4
machine mounts 6.4277.0 M 15
Compressed air outlet
Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Wieder Originale nach Vervielfältigungen dürfen Dritten ausgehändigt oder in sonstiger Weise zugänglich gemacht werden.
Entwicklungsbedingte Änderungen vorbehalten. Zeichnung darf nur über CAD geändert werden.

13.5 Electrical Diagram

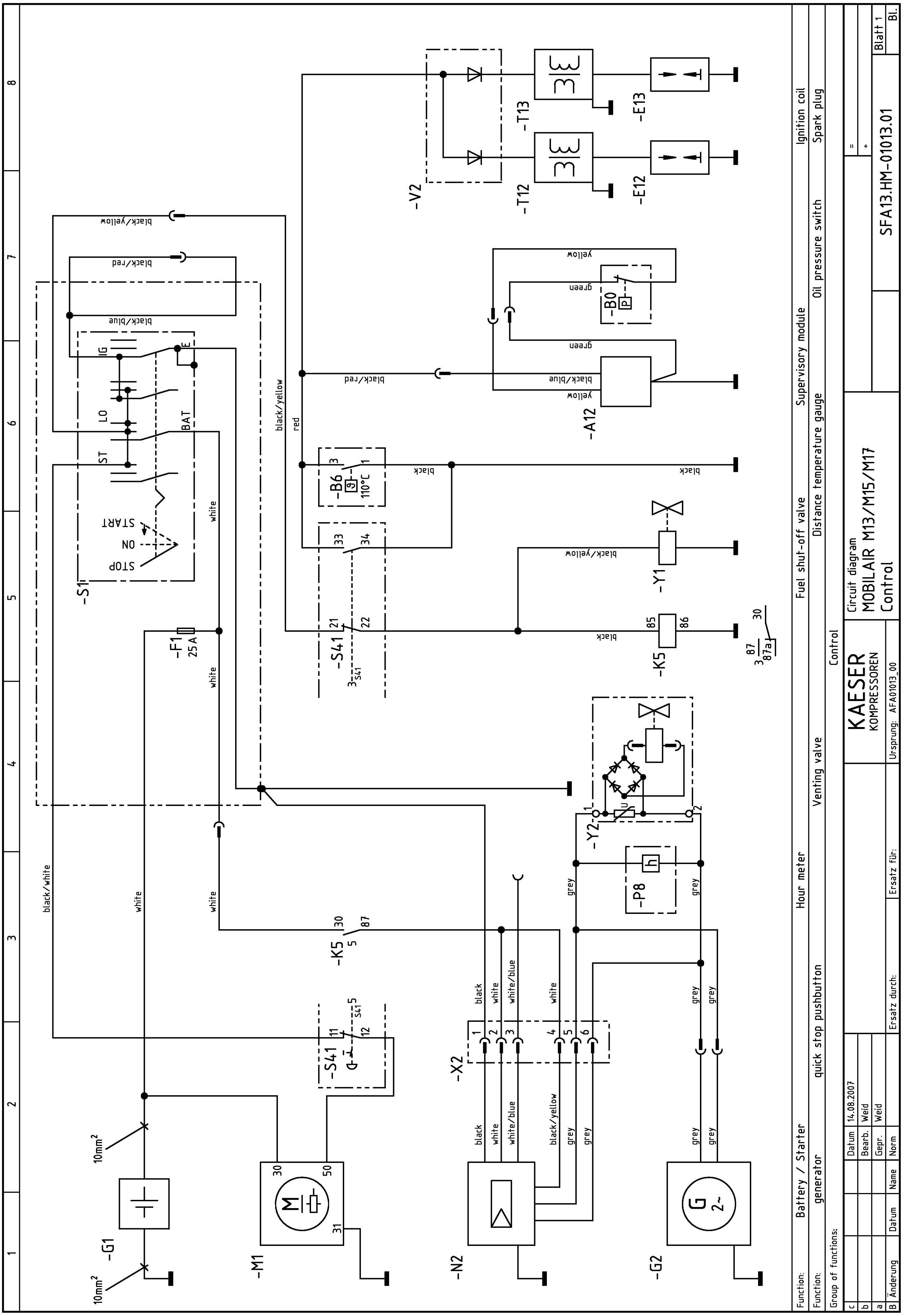
Electrical diagrams

MOBILAIR M13 / M15 / M17

with HONDA-Motor

Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

c				Datum	14.08.2007 E		KAESER KOMPRESSOREN	Cover page MOBILAIR M13/M15/M17	=
b				Bearb.	Weid				+
a				Gepr.	Weid				Blatt 1
A	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AFA01013_00	DFA13.HM-01013.01	Bl.

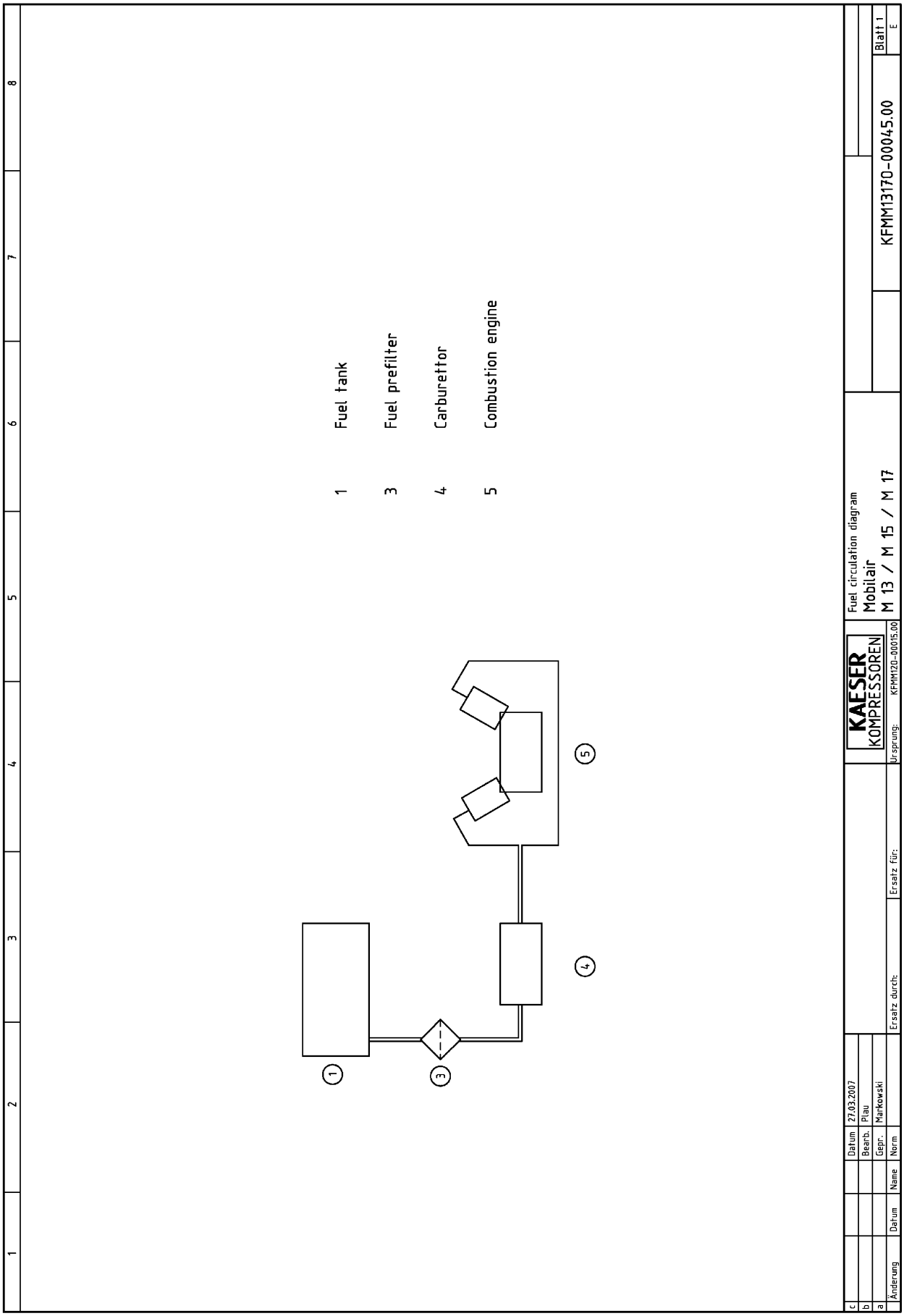

Battery / Starter
generator
quick stop pushbutton
Hour meter
Venting valve
Fuel shut-off valve
Distance temperature gauge
Supervisory module
Oil pressure switch
Ignition coil
Spark plug
Control
Circuit diagram
MOBILAIR M13/M15/M17
Control
SFA13.HM-01013.01
KAESER KOMPRESSOREN
14.08.2007
Weid

1	2	3	4	5	6	7	8

-A12	Supervisory module Oil pressure switch
-B0	Oil pressure switch/Motor
-B6	Distance temperature gauge/Compressor airend
-B8	Hour meter
-E12,-E13	Spark plug
-G1	Battery
-G2	single-phase-generator
-K5	Relay unit ON
-M1	Starter-Motor
-N2	Regulator
-S1	Ignition switch, STOP/ON/START
-S41	quick stop pushbutton
-T12,-T13	Ignition coil
-Y1	Fuel shut-off valve
-Y2	Venting valve

c				Datum	14.08.2007		KAESER KOMPRESSOREN	Electrical equipment identification MOBILAIR M13/M15/M17	=
b				Bearb.	Weid				+
a				Gepr.	Weid				Blatt 01
E	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AFA01013_00	SFA13.HM-01013.01	Bl.

13.6 Fuel circulation diagram


1 Fuel tank
3 Fuel prefilter
4 Carburettor
5 Combustion engine
1
3
4
5
KAESER KOMPRESSOREN
Fuel circulation diagram
Mobilair
M 13 / M 15 / M 17
KFMM13170-00045.00
Blatt 1
Datum 27.03.2007
Bearb. Plau
Gepr. Markowski
Name Norm
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: KFMM120-00015.00