

# Operator Manual

Portable Rotary Screw Compressor

**MOBILAIR M82 SIGMA CONTROL SMART**

No.: 901783 09 USE



## WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- > Always start and operate the engine in a well-ventilated area.
- > If in an enclosed area, vent the exhaust to the outside.
- > Do not modify or tamper with the exhaust system.
- > Do not idle the engine except as necessary.

For more information go to [www.P65warnings.ca.gov/diesel](http://www.P65warnings.ca.gov/diesel).

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Original instructions  
/KKW/M82 2.09 en Z1 SBA-MOBILAIR

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# 1 Regarding this Document

## 1.1 Using this document

The operating manual is a component of the product. It describes the machine as it was at the time of first delivery after manufacture.

- Keep the operating manual in a safe place throughout the life of the machine.
- Supply any successive owner or user with this operating manual.
- Please insert any amendment or revision of the operating manual sent to you.
- Enter details from the machine nameplate and individual items of equipment in the table in chapter 2.

## 1.2 Further documents

Further documents included with this operating manual are:

- Certificate of acceptance / operating instructions for the pressure vessel
- Declaration of Conformity in accordance with the applicable directive
- Chassis operating instructions (where applicable).
- SIGMA CONTROL SMART operating manual

Missing documents can be requested from KAESER.

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

## 1.3 Copyright

This operator manual is copyright protected. Queries regarding use or duplication of the documentation should be referred to KAESER. Correct use of information will be fully supported.

## 1.4 Symbols and labels

- Please note the symbols and labels used in this document.

### 1.4.1 Warnings

Warning notices indicate risks potentially resulting in personal injury, if the measures specified are not taken.

Warning notices indicate three levels of danger identified by the corresponding signal word:

Signal word	Meaning	Consequences of ignoring the warning
DANGER	Warns of an imminent danger	Will very likely result in death or severe injury
WARNING	Warns of a potentially imminent danger	May result in death or severe injury

## 1 Regarding this Document

### 1.4 Symbols and labels

Signal word	Meaning	Consequences of ignoring the warning
CAUTION	Warns of a potentially dangerous situation	May result in a moderate physical injury

Tab. 1 Danger levels and their definition (personal injury)

Some warning notes may precede a chapter. They apply to the entire chapter including all subsections.

Example:

**DANGER**

*The type and source of the imminent danger is shown here!*

*The possible consequences of ignoring a warning are shown here.*

*The word "DANGER" indicates that death or severe injury can very likely result from ignoring the warning.*

➤ *The measures required to protect yourself from danger are shown here.*

Warning notes referring to a subsection or the subsequent action are integrated into the procedure and numbered as an action.

Example:

1. **WARNING** *The type and source of the imminent danger is shown here!*

*The possible consequences of ignoring a warning are shown here.*

*The word "WARNING" indicates that death or severe injury may result from ignoring the warning.*

➤ *The measures required to protect yourself from danger are shown here.*

2. Always read and comply with warning instructions.

### 1.4.2 Potential damage warnings

Contrary to the warnings shown above, damage warnings do not indicate a potential personal injury.

Damage warnings have only one danger level, identified with this signal word:

Signal word	Meaning	Consequences of non-compliance
NOTE	Warns of a potentially dangerous situation	Damage to property is possible

Tab. 2 Danger levels and their definition (damage to property)

Example:

**NOTICE**

*The type and source of the imminent danger is shown here!*

*Potential effects when ignoring the warning are indicated here.*

➤ *The protective measures against the damages are shown here.*

➤ Carefully read and fully comply with warnings against damages.

**1.4.3 Other alert notes and their symbols**

This symbol indicates particular 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.  
The conditions relevant to safety shown here will help you to avoid dangerous situations.

► This symbol is placed by lists of actions comprising one step of a task.

1. In process instructions with several steps ...
2. ... the sequence of steps is numbered.

**Result** Shows the expected conclusion of the previous action.

**Option da** ► Information relating to one option only is marked with an option code (e.g., "option da" means that this section is only valid for machines with the air treatment components "aftercooler and centrifugal separator"). Option codes used in this operating manual are explained in chapter 2.3.



Information referring to potential problems is 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** Further topics are introduced here.

## 2 Technical Data

### 2.1 Nameplate

The machine's nameplate provides the model designation and important technical information.

The nameplate is located on the outside of the machine (see illustration in chapter 13.1).

► Enter the nameplate data here as a reference:

Feature	Value
Vehicle Identification No.	
Permissible total weight	
Permissible coupling load	
Permissible axle load	
Portable compressor	
Part no.	
Serial no.	
Year of manufacture	
Total weight	
Lifting point load capacity	
Rated engine power	
Engine speed	
Maximum working pressure	

Tab. 3 Nameplate

### 2.2 Vehicle identification number

The vehicle identification number (VIN) is the only unmodifiable and therefore the most important identification feature on the machine.

The vehicle identification number remains associated with the machine throughout the entire duration of its service life. The vehicle identification number is stamped into the bodywork of the machine.

Further information For the location of the VIN stamp, see chapter 13.1.

### 2.3 Options – options label

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

The nameplate is to be found:

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



The following table lists all possible options.  
Only the codes for those options fitted appear on the nameplate.

da df dc dd __	* r1 - r5 = place holders for chassis options:
ea __ ec __ __	■ r1 = rb; rc; rd
fa __ fc __ __	■ r2 = rk; rl
__ __ __ __	■ r3 = rm; ro
__ __ __ __	■ r4 = rr; rs; rt
ba bb __ __	■ r5 = rw; rx
la __ __	
ga __ __ __	
__ ob oc od oe	
__ __ __ __	
__ __ __ __	
[r1 r2 r3 r4 r5 *)	
ta tb tc __ te	
sf sg __ __ __	
	02-M0277

Tab. 4 Extract from the options label

- Take a list of fitted options from the options label and enter the fitted options as reference.

#### 2.3.1 Option da, df, dc, dd

##### Compressed Air treatment devices

Option	Option code	Provided?
Aftercooler and cyclone separator	da	
Heat exchanger (with bypass)	df	
Fresh air filter	dc	
Filter combination	dd	

Tab. 5 Air treatment options

#### 2.3.2 Option ea, ec

##### Tool lubricator

Option	Option code	Available?
Tool lubricator (with option fa)	ea	
Tool lubricator (with option fc)	ec	

Tab. 6 Tool lubricator option

#### 2.3.3 Option fa, fc

##### Compressed air distributor

Option	Option code	Available?
Non-separated compressed air distribution line	fa	
Separated compressed air distribution lines, downstream of the option	fc	

Tab. 7 Compressed air distributor option

**2.3.4    Option ba**  
**Low temperature equipment**

Option	Option code	Available?
Low temperature equipment	ba	
Engine coolant pre-heating	bb	

Tab. 8 Low temperature equipment options

**2.3.5    Option la**  
**Equipment for fire hazard areas**

Option	Option code	Available?
Spark arrestor	la	

Tab. 9 Optional equipment for fire hazard areas

**2.3.6    Option ob, od**  
**Automatic engine start/stop**

Option	Option code	Available?
Automatic engine start/stop	ob	
Trickle charging for starter batteries	od	

Tab. 10 Automatic engine start/stop

**2.3.7    Option oc**  
**GSM/GPS unit**

Option	Option code	Available?
GSM/GPS unit	oc	

Tab. 11 GSM/GPS unit

**2.3.8    Option ta, tb, tc, te**  
**Lighting**

Option	Option code	Available?
None (stationary)	ta	
Reflective warning triangle	tb	
EG - 12 V	tc	
USA - 12 V (DOT conformity)	te	

Tab. 12 Lighting options

**2.3.9 Option ga  
Generator**

Option	Option code	Available?
Generator	ga	

Tab. 13 Generator option

**2.3.10 Option oe  
Closed floor pan**

Option	Option code	Available?
Closed floor pan	oe	

Tab. 14 Closed floor pan option

**2.3.11 Option sf  
Anti-theft device**

Option	Option code	Available?
Anti-theft device	sf	

Tab. 15 Anti-theft device option

**2.3.12 Option sg  
Pedestrian protection**

Option	Option code	Available?
Pedestrian protection	sg	

Tab. 16 Pedestrian protection option

**2.4 Machine (without options)**
**2.4.1 Sound pressure level**

Sound pressure levels comply with the American EPA Standard.  
Measurement distance: 23 ft

M82	
Guaranteed sound pressure level <sup>(1)</sup> [dB(A)]	76
<sup>(1)</sup> Applies exclusively to machines lined with sound proofing material.	

Tab. 17 Sound pressure level

## 2.4.2 Tightening torque

### 2.4.2.1 Tightening torques for screws



Overview:

- Standard values for M4–M8 screws
    - Surface finish: zinc plated (bright)
  - Standard values for M10–M24 screws
    - Surface finish: zinc flake coating (matte).
- Set the torque as appropriate for the surface finish and friction coefficient.

**Standard values for M4–M8 screws with steel grade 8.8:**

Thread	M4	M5	M6	M8
Torque [lbf-in]	26.6	52.2	88.5	216.8

Surface finish: zinc plated (bright)

Standards based on VDI 2230.

Tab. 18 Torques for M4–M8 screws

**Standard values for M10–M24 screws with steel grade 8.8:**

Thread	M10	M12	M14	M16	M20	M24
Torque [lbf-in]	354.0	620.0	929.3	1460	2832.2	4867.9

Surface finish: zinc flake coating (matte).

Standards based on VDI 2230.

Tab. 19 Torques for M10–M24 screws

### 2.4.2.2 Tightening torques for lifting eye

Recommended values for screws by strength class:

Screws	Strength class	Thread	Torque [lbf in]
Hex-head bolt	8.8	M12	266
Hex-head bolt	8.8	M16	1770

Tab. 20 Torques for lifting eye screws

### 2.4.2.3 Torque cover fixing screws oil separator tank

Recommended values for screws corresponding to the strength category:

Screws	Strength category	Thread	Torque [lbf in]
Hex-head screw	8.8	M16	1770

Tab. 21 Torque cover fixing screws oil separator tank

### 2.4.3 Ambient conditions

Positioning	Limit value
Maximum altitude amsl* [ft]	3000
Minimum ambient temperature [°F]	14
Maximum ambient temperature [°F]	122

\* Higher altitudes are permissible only after consultation with the manufacturer.

Tab. 22 Ambient conditions

### 2.4.4 Additional specifications

For specifications, according to the machine's operating license, such as:

- dimensions,
- track width,
- footprint,

can be found in the dimensioned drawings in Chapter 13.3.



The dimensional drawings also show the position of the following inlets and outlets:

- Cooling air inlet
- Cooling air outlet
- Compressed air outlet
- Exhaust

## 2.5 Chassis

### 2.5.1 Chassis options

- See the technical data relating to the chassis in the separate document "Chassis Operating Manual".

## 2.6 Machines with stationary frame design

### 2.6.1 Option rw, rx

#### Weight of machines with stationary frame design

Actual weight of individual machines is dependent on equipment fitted (see machine nameplate).

- Enter the actual overall weight\* from the nameplate into the table below for reference.

Option	rw	rx
Type of stationary frame design	Skids	Frame
Actual total weight [lb]*		

\*Enter here for reference, the actual total weight taken from the nameplate of the machine.

Tab. 23 Weight of the machine

## 2.7 Compressor

### 2.7.1 Working gauge pressure and volumetric flow rate

Maximum working pressure [psi]	100	145	174	203
SIGMA airend	27-G			
Flow rate [cfm]	297	240	215	194
Flow rate as per ISO 1217:2009. Annex D				

Tab. 24 Working gauge pressure and volumetric flow rate

### 2.7.2 Compressed air outlet

Outlet valve ["]	Number
G 3/4	3
G 1 1/2	1

Tab. 25 Compressed air distributor

### 2.7.3 Safety valves

Maximum working pressure: see machine nameplate

Maximum working pressure [psi]	Activating pressure [psi]
100	145
145	189
174	218
203	231

Tab. 26 Safety valve opening pressure

### 2.7.4 Temperature

Required temperatures readiness to switch to LOAD mode	Values
Airend discharge temperature (ADT) [°F]	68
The engine coolant temperature (ECT) [°F]	68

Tab. 27 Required temperatures readiness to switch to LOAD mode

Airend discharge temperature	Values
Typical airend discharge temperature during operation [°F]	167 ..... 212
Maximum airend discharge temperature (automatic safety shut-down) [°F]	243

Tab. 28 Airend discharge temperature

### 2.7.5 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.

#### Cooling oils for general applications

	<b>SIGMA FLUID</b>		
	MOL	S-460	S-570
Description	Mineral oil	Synthetic oil	Synthetic oil
Application	Standard oil for all applications except in connection with processing of food products.  Particularly suitable for machines with a low duty cycle.	Standard oil for all applications except in connection with processing of food products.  Particularly suitable for machines with a high duty cycle. Not suitable for East and Southeast Asia.	Special oil for ambient conditions with high temperatures and humidity.  Standard oil for all applications except in connection with foodstuffs.  Particularly suitable for machines with a high duty cycle.
Viscosity at 104 °F	0.07 in <sup>2</sup> /s (D 445; ASTM test)	0.07 in <sup>2</sup> /s (D 445; ASTM test)	0.08 in <sup>2</sup> /s (D 445; ASTM test)
Viscosity at 212 °F	0.01 in <sup>2</sup> /s (D 445; ASTM test)	0.01 in <sup>2</sup> /s (D 445; ASTM test)	0.01 in <sup>2</sup> /s (D 445; ASTM test)
Flash point	446 °F (D 92; ASTM test)	484 °F (D 92; ASTM test)	496 °F (D 92; ASTM test)
Density at 59 °F	54.2 lb/ft <sup>3</sup> (D 4052; ASTM test)	53.7 lb/ft <sup>3</sup> (D 4052; ASTM test)	54.2 lb/ft <sup>3</sup> (D 4052; ASTM test)
Pour point:	-22 °F (D 97; ASTM test)	-16.6 °F (D 97; ASTM test)	-65 °F (D 97; ASTM test)

Tab. 29 Cooling oil recommendation

#### Cooling oils for applications in food processing

	<b>SIGMA FLUID</b>	
	FG-460	FG-680
Description	Synthetic oil	Synthetic oil
Application	Specifically for machines in applications where the compressed air may come into contact with foodstuff.	Special oil for ambient conditions with high temperatures and humidity.  Specifically for machines in applications where the compressed air may come into contact with foodstuff.
Approval	USDA H1, NSF approved for the manufacture of food packaging, meat and poultry processing and other food processing applications.	USDA H1, NSF approved for the manufacture of food packaging, meat and poultry processing and other food processing applications.
Viscosity at 104 °F	0.07 in <sup>2</sup> /s (D 445; ASTM test)	0.10 in <sup>2</sup> /s (D 445; ASTM test)

<b>SIGMA FLUID</b>		
	FG-460	FG-680
Viscosity at 212 °F	0.01 in <sup>2</sup> /s (D 445; ASTM test)	0.02 in <sup>2</sup> /s (D 445; ASTM test)
Flash point	475 °F (D 92; ASTM test)	460 °F (D 92; ASTM test)
Density at 59 °F	54.5 lb/ft <sup>3</sup> (D 4052; ASTM test)	53.3 lb/ft <sup>3</sup> (D 4052; ASTM test)
Pour point:	-38.2 °F (D 97; ASTM test)	-38.2 °F (D 97; ASTM test)

Tab. 30 Cooling oil recommendation (food processing)

### 2.7.6 Cooling oil charge

<b>Cooling oil</b>	<b>Fluid volume [gal]</b>
Machine	5.81
Compressor unit + heat exchanger (Option db)	6.60

Tab. 31 Cooling oil charge

## 2.8 Engine

### 2.8.1 Engine specification

Engine specification (EU emission level V)

<b>Feature</b>	<b>Specification</b>
Make/model	Kubota / V 3307-CRT
Exhaust gas after-treatment <sup>(1)</sup>	DOC + DPF
Engine control	Electronic
Fuel injection	Common rail system
Rated engine power [hp]	54.6
Speed at LOAD operation [rpm]	2400
Speed at IDLE operation [rpm]	1900
Type of fuel	Diesel
Fuel consumption in LOAD operation [gal/h]	3.7
Engine oil consumption relative to fuel consumption [%]	Approx. 0.5

<sup>(1)</sup> DOC = Diesel Oxidation Catalytic converter; DPF = Diesel Particulate Filter

Tab. 32 Kubota / V 3307-CRT Engine specifications

**Carbon dioxide emissions:**

Definition of CO<sub>2</sub> emissions:

CO<sub>2</sub> emissions are the mass of carbon dioxide produced when substances containing carbon are combusted.

Units for CO<sub>2</sub> emissions:

- g/km
- g/kWh\*
- lb/hp·h\*\*

CO <sub>2</sub> measurement	Value
CO <sub>2</sub> emissions [g/kWh]	807.2
corresponds to [lb/hp·h]	1.33

\* ≈ Unit employed in this operating manual; \*\* converted to US Customary Units

Tab. 33 Engine specifications

Further information These CO<sub>2</sub> measurements result from the testing of a (parent) engine over a fixed test cycle under laboratory conditions. The engine is representative of the engine family and shall not imply or express any guarantee of the performance of a particular engine.

### 2.8.2 Oil recommendation

The engine oil must meet the following classification:

- ACEA, class E9
- API, class CJ-4



- Use only engine with low white ash build up.
- Engine oils that do not conform to the above can shorten the useful life of the engine!
- The use of unlisted engine oils requires prior authorization by KAESER.
- Please contact an authorized KAESER service representative.

**Viscosity:**

For selecting the appropriate viscosity class, you must take the ambient temperature at the installation site or the machine deployment area into account. Excessively high viscosity can cause starting difficulties, while a viscosity that is too low reduces the lubricating capacity and may cause very high oil consumption.

Viscosity is classified by SAE.



- Always use multi-grade lubricating oils!
- Always ensure the prescribed lubricating oil quality when selecting the viscosity class!

Ambient temperatures [°F]	Viscosity class
> 77	SAE 30
	SAE 10 W-30
	SAE 15 W-40

Ambient temperatures [°F]	Viscosity class
14 ..... 77	SAE 10 W-30 SAE 15 W-40
-4 ..... 104	SAE 10W-40
< 14	SAE 10 W-30

Tab. 34 Engine oil recommendation

**Initial engine oil quantity:**

The engine is filled initially with the following engine oil:

Ambient temperatures [°F]	Viscosity class
-4 ..... 104	SAE 10W-40

Tab. 35 Initial engine oil quantity

### 2.8.3 Fuel recommendation

To comply with emission regulations, diesel engines fitted with an exhaust gas treatment system must be operated only with a sulphur-free diesel fuel. Compliance with the emission requirements but also the durability of the individual exhaust gas treatment components is not assured if this requirement is ignored!

The diesel fuel must meet the requirements of EN 590 and ASTM D975 respectively.

The use of other fuels as well as the mixing with additives is only permitted after consultation with the engine manufacturer.

The following fuel specifications are approved:

- Diesel fuels according to EN 590
  - ( $\leq 0.0010\%$  Sulphur – EU: Level IIIB and higher)

For the US market the use of extremely low-sulphur diesel fuel is required by law:

- Diesel fuels according to ASTM D975
  - ( $\leq 0.0015\%$  Sulphur – EPA: Tier 4 interim and higher)



Never store fuel in galvanized containers!

**Biodiesel:**

According to EN 590 and ASTM D975, a specific portion of biodiesel is permitted in the fuel.

Depending on the country of origin, biodiesel can be produced from different plant materials and thus have different properties.

Affected by temperature, atmospheric oxygen and time, these biodiesel components in the fuel may decompose in the fuel and thus cause damages within the fuel system.



The fuel must be filtered before it is filled into the machine when it has been supplied in barrels or canisters. This procedure prevents malfunctions in the fuel system caused by contamination.

### 2.8.4 Engine coolant recommendation

In fluid-cooled engines, the cooling fluid must be treated and monitored to prevent engine damage.

#### Water quality

An important factor for treating the cooling fluid is the correct water quality.

As a rule, clear and clean fresh water, as soft as possible, complying with the following analysis values must be used:

Feature	Value
pH value	6.5 - 8.0
Chlorine (Cl) [mg/l] [ppm]	max. 80
Chloride + Sulfate [mg/l] [ppm]	max. 160
Alkaline ground ions	mmol/l
Hardness	°dH

$1^{\circ}\text{dH} = 0.1783 \text{ mmol/l}$ ; alkaline ground ions =  $7.147 \text{ mg/l Ca}^{2+}$  or  $4.336 \text{ mg/l Mg}^{2+}$

Tab. 36 Water quality parameters for cooling water

Contact the local water utilities for information regarding water quality. If the water does not meet the parameters above, it must be treated.

If no suitable water is available, distilled or demineralized water shall be used for preparing the coolant. Seawater, brackish water, brines and industrial wastewater are not suitable. Salts may promote corrosion or disruptive deposits.

#### Coolant quality

Within the scope of further technical development, new corrosion inhibitors/antifreeze have been approved by the engine manufacturer.

Compared to the previously approved corrosion inhibitors/antifreeze, they feature the following advantages:

- Fewer deposits in the engine cooling system
- Improved heat flow
- Higher environmental sustainability

The coolant (cooling fluid) is treated by adding anti-freeze with corrosion protection additives on the basis of ethylene glycol to the water.

Coolant must meet the operating instructions of the engine manufacturer KUBOTA.

- Do not use a corrosion inhibitor/antifreeze that has not been approved by the engine manufacturer.
- Do not use any impermissible mixing ratios of corrosion inhibitor/antifreeze and water.

Further information See chapter 10.4.1.3 for information on preparing/mixing the coolant to be used.

**Initial filling of corrosion inhibitor/antifreeze**

For the initial filling, the coolant cooler is filled with a mixture of the following liquid components:

Components	Description	Percentages [% vol.]
Corrosion inhibitor/antifreeze	KAESER FLUID ENGINE ANTIFREEZE / (Glysantin® G40®)	50
Water		50

Tab. 37 Initial filling of engine water cooler

**Miscibility with other corrosion inhibitors/antifreeze agents**

We do not recommend mixing with different corrosion inhibitors/antifreeze agents even if from the same manufacturer. This can result in significantly reduced corrosion protection/antifreeze and may damage the engine cooling system and consequently the engine. Mixtures of different corrosion inhibitors/antifreeze agents generally provide a lower performance than the specially balanced active components of one coolant type.



Therefore, the use of different corrosion inhibitors/antifreeze agent is only allowed after consulting with and approval from the engine manufacturer!

**2.8.5 Fluid volumes**

Description	Fluid volume [gal]
Engine oil	2.90
Fuel	37.00
Coolant	4.22

Tab. 38 Fluid volumes

**2.8.6 Batteries**

Feature	Value
Voltage [V]	12
Capacity [Ah]	135
PTC testing current [A] (according to EN 50342)	1000

Tab. 39 Batteries

## 2.9 Options

### 2.9.1 Air treatment options

#### 2.9.1.1 Option ea, ec

Tool lubricator

Name	Temperature range [°F]	Fluid volume [gal]
Special road breaker lubricant	-13 ..... 122	0.66

Tab. 40 Road breaker lubricant recommendation

#### 2.9.1.2 Option dc

Fresh air filter

Feature	Value
Maximum working pressure [psig]	142
Minimum ambient temperature [°F]	34.7
Maximum ambient temperature [°F]	86

Tab. 41 Fresh air filter conditions

#### 2.9.1.3 Air quality at the compressed air outlets

Interrelation between compressed air treatment and compressed air quality:

Air treatment		Compressed air quality	
Option designation	Components	Characteristics	Abbreviation
da	<ul style="list-style-type: none"> <li>■ Aftercooler</li> <li>■ Centrifugal separator</li> </ul>	cool and condensate-free	A
da + df	<ul style="list-style-type: none"> <li>■ Aftercooler</li> <li>■ Centrifugal separator</li> <li>■ Heat exchanger</li> </ul>	dry and warmed	W
da + dd	<ul style="list-style-type: none"> <li>■ Aftercooler</li> <li>■ Centrifugal separator</li> <li>■ Filter combination</li> </ul>	dry and technically oil-free	F
da + dd + df	<ul style="list-style-type: none"> <li>■ Aftercooler</li> <li>■ Centrifugal separator</li> <li>■ Filter combination</li> <li>■ Heat exchanger</li> </ul>	technically oil-free and warmed	G
ea ec	Tool lubricator	Lubricated	E

Tab. 42 Interrelation between compressed air treatment and compressed air quality



The compressed air outlets at the air distributor are labelled with the identifiers of compressed air quality.

### 2.9.2 Option ba Low temperature equipment

#### 2.9.2.1 Ambient conditions

Installation	Limit value
Maximum elevation ASL* [ft]	3000
Minimum ambient temperature [°F]	-13
Maximum ambient temperature [°F]	122

\* Higher altitudes are permissible only after consultation with the manufacturer

Tab. 43 Ambient conditions, low temperature equipment

#### 2.9.2.2 Option bb Engine coolant pre-heating

Further information Section 2.9.3 provides the data for the coolant pre-heating system of the diesel engine.

### 2.9.3 Option bb; od Auxiliary electrical systems

Power supply connection details:

Mains supply	Value
Mains voltage [V / 1-phase / N / PE]	230
Frequency [Hz]	60
Supply cable cross-section [AWG] (Cu multicore)	16
User's fusing [A]	16

Tab. 44 Power supply connection details

#### Option bb Diesel engine coolant pre-heating:

Coolant pre-heating device	Value
Voltage [V]	230
Power [W]	600

Tab. 45 Technical data – Coolant pre-heating device

#### Option od Battery charger:

Battery charger	Value
Type	12V DC / 4A
Charging voltage [V]	13.3 – 13.8
Charging current [A]	>0.5

Battery charger	Value
Maximum charging current [A]	4
Protection class	IP 65

Tab. 46 Battery charger specification

#### 2.9.4 Option ga Generator

##### Generator specification

Characteristics	400V, 3-phase		230V, 3-phase		115V, 2-phase
Rated power [kVA] 3-phase/2-phase	13.0	8.5	13.0	8.5	7.0
Rated power [kVA] single-phase	7.0	5.0	7.5	5.0	5.0
Voltage constant [%] balanced load			±5		
Voltage constant [%] single-phase, unbalanced load			+6/-10		
Rated power [kVA] 3-phase/2-phase	18.8	12.3	32.6	21.0	31.0
Rated current [A] single-phase	30.0	21.7	32.6	21.0	45.0
Rated current [A] Short-circuit (0.3s / 170V)	300.0	260.0	330.0	330.0	420.0
Power factor (cos phi)			0.8 – 1		
Frequency [Hz]			50		
Speed [rpm]			3000		
Distortion factor [%]			<5		
Type	Synchronous internal pole (electronically controlled)				
Enclosure protection	IP 54				

Tab. 47 Generator specification

##### Reduced compressed air flow rate

Maximum working pressure [psi]	100	145	175	203
SIGMA airend	27-G			
Flow rate [cfm]	81 – 296	63 – 240	56 – 215	93 – 194
* value depending on current supply				

Tab. 48 Flow rate in generator mode

**Connections**

Type	400V, 3-phase	230V, 3-phase	115V, 2-phase
Power sockets	Number		
16 A; 230V / 1~ / N / PE	3	–	–
16 A; 400V / 3~ / N / PE	1	–	–
16 A; 230V / 2~ / PE	–	2	–
32 A; 230V / 3~ / PE	–	1	–
16 A; 230V / 3~ / PE	–	1	–
32 A; 115V / 2~ / PE	–	–	1
16 A; 115V / 2~ / PE	–	–	2

Tab. 49 Connection sockets

**Circuit breaker**

Type	400V, 3-phase	230V, 3-phase	115V, 2-phase
Safety cut-out [A]	Number:		
16	1	1	2
32	–	1	1

Tab. 50 Circuit breaker

**Operating limits**

(to EN 60034-22, page 10, table)

Characteristics	Value
Design category	G3
Voltage adjustment range [%]	±5
Static voltage deviation [%]	1
Maximum dynamic voltage drop [%]	-15
Maximum dynamic voltage rise [%]	20
Maximum voltage settling time [ms]	1500
Maximum voltage asymmetry [%]	1

Tab. 51 Generator operating limits

**Maximum power loading by consumers**

Resistive consumers include lamps and heaters, for example.

Electric motors and transformers are inductive consumers.

**Nominal rating conditions**

- Ambient temperature: 77 °F
- Max. height above sea level of the place of installation: 3000 ft

**Three-phase power supply**

Generator		400V, 3-phase		230V, 3-phase	
Rated power [kVA]		13.0	8.5	13.0	8.5
Resistive consumers [kVA]	–	13.0	8.5	12.7	8.5
Inductive consumers [kW]	Rated power	7.5	5.0	12.7	8.5

Tab. 52 Maximum three-phase mains loading

**Single phase**

Generator		400V, 3-phase		230V, 3-phase		115V, 2-phase
Rated power [kVA]		13.0	8.5	13.0	8.5	7.0
Resistive consumers [kVA]	per phase	3.5	–	3.5	–	–
	total	10.5	5.0	10.5	5.0	5.0
Inductive consumers [kW]	Rated power per phase	3.5	–	3.5	–	–
	Rated power total	10.5	5.0	10.5	5.0	5.0

Tab. 53 Maximum single-phase mains loading

**Power reduction at elevated ambient temperatures**

Ambient temperature [°F]	Generator power
≤86	Full power available
>86	Reduction of 10 % for each temperature rise of 50 °F.

Tab. 54 Power reduction at elevated ambient temperatures

**2.9.5 Option oc  
GSM/GPS unit**

Feature	Specification
Supplier/Manufacturer	Proemion
Type	CANlink mobile 3653

Tab. 55 GSM/GPS unit

## 3 Safety and Responsibility

### 3.1 Basic instructions

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.



Disregard of warning or safety instructions can cause serious injuries!

- 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 from incorrect use. 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 air for any application that will bring it into direct contact with food products unless it is specifically treated.

### 3.3 Incorrect Use

Improper usage can cause damage to property and/or (severe) injuries.

- Only use the machine as intended.
- Never direct compressed air at persons or animals.
- Do not use untreated compressed air for breathing purposes.
- Do not allow the machine to take 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 effect.

### 3.4 User's Responsibilities

#### 3.4.1 Observe statutory and universally accepted regulations

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

**3.4.2 Determining 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 maintenance,
- are completely familiar 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 familiar 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.
- Ensure that personnel entrusted with operation, maintenance and transporting are qualified and authorized to carry out their tasks.

**3.4.3 Complying with inspection schedules and accident prevention regulations**

The machine is subject to local inspection schedules.

- Have the pre-commissioning inspection carried out according to the Ordinance on Industrial Safety and Health, §15.
- Carry out recurring inspections:  
The user must ensure that the machine's safety devices are checked for function as required or at least annually.
- Carry out oil changes:  
The user must ensure that the cooling oil is changed as required or at least annually and the oil change must be documented. Intervals may be varied if an analysis proves that the oil is still usable.

### 3 Safety and Responsibility

#### 3.4 User's Responsibilities

- Keep to inspection intervals in accordance with the Ordinance on Industrial Health and Safety with maximum intervals as laid down in §16:

Inspection	Inspection interval	Inspection authority
Equipment inspection	Before commissioning	Approved supervisory body.
Internal inspection	Every 5 years after commissioning or the last inspection	Contact an authorized KAESER service representative.
Strength test	Every 10 years after commissioning or the last inspection	Contact an authorized KAESER service representative.

Tab. 56 Inspection intervals according to Ordinance on Industrial Health and Safety

#### Checking the lifting point

The user is responsible for ensuring that the machine's lifting point and fixings are inspected according to national regulations for wear and damage.

- Have lifting point checked.  
Lifting point is not in order: The machine must not be transported by crane. Have the machine repaired immediately.

#### 3.4.4 Taking the machine for general inspection

To ensure safety on public roads, every vehicle owner is obliged to have his vehicle inspected in regular intervals. A trailer will be inspected to determine if it is road-worthy and compliant with safety standards.

Take the machine as trailer to an approved inspection authority in specified intervals for general inspection pursuant to Section 29 of the German Road Traffic Safety Act (or the corresponding national authority).

These intervals are determined by:

- Date of initial registration of the machine as trailer on public roads
- Permissible overall weight of the trailer

1. Take the machine for general inspection at due date.

General inspection intervals:

Machine weight [lb]	≤ 1650	< 7700	> 7700
<b>1. Inspection interval after initial registration</b>			
Interval [months]	36	24	12
<b>Further inspection intervals</b>			
Interval [months]	24	24	12

Tab. 57 General inspection intervals

### 3.4.5 Documenting the mileage of the machine as trailer

The miles of the machine actually travelled as a trailer with the towing vehicle are the determining factor for maintenance tasks at the chassis. To record the actually travelled mileage, we recommend that you maintain a logbook for the machine. This allows you document the actually travelled mileage of the machine as trailer even when different towing vehicles are used and to complete any maintenance tasks in a timely manner.

1. Create a logbook for the machine as trailer.
2. Enter all longer transports of the machine in a logbook.
3. Carry out (or have carried out) maintenance of the chassis according to the corresponding maintenance plan.

## 3.5 Dangers

### Basic instructions

The following describes the various forms of danger that can occur during machine operation. 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

The following describes the various forms of danger that can occur during machine operation.

#### Exhaust fumes

Exhaust gases from combustion engines contain carbon monoxide, a color- and odor- less but highly toxic gas. The inhalation of minute quantities can be lethal.

Furthermore, diesel exhaust contains soot particles, some of which are noxious.

- Do not inhale exhaust fumes.
- Park the machine in such a manner that the exhaust cannot blow towards the operators.
- Never use the machine in enclosed spaces, only in the open.

#### Fire and explosion

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

- Do not allow open flames or sparks at the place of use.
- Do not smoke while refueling.
- Never refuel the machine when it is running.
- Do not allow fuel to overflow.
- Wipe up spilled fuel immediately.
- Provide a fire extinguisher in the immediate vicinity.
- For operation in combustible environment, fit the machine with an exhaust silencer (Option Ia).

#### Hot coolant

The cooling system of a liquid-cooled engine at running temperature is under high pressure. Coolant can spray out when the filler cap is opened causing severe burns.

- Let the machine cool down before opening the cooling system.
- Unscrew the filler cap carefully by a quarter to half a turn at first. Remove the filler cap only when pressure has escaped completely.

### **Electricity**

Touching voltage-carrying components can result in electric shocks, burns, or death.

- 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 proper condition.
- Switch off any external power sources.  
For example, the connections to the electrical engine cooling water pre-heater.

### **Forces of compression**

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following information concerns work on components that could be under pressure.

- Wait until the compressor has automatically vented. (Check the pressure gauge: it must read 0 psig!)
- Then open an outlet valve carefully to ensure that the line between the minimum pressure / check valve and the compressed air outlet is vented.
- 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.

### **Compressed air quality**

The composition of the compressed air must be suitable for the actual application in order to preclude health and life-threatening dangers.

- Use appropriate systems for air treatment before using the compressed air from this machine as breathing air (fresh air reinforcement) and/or for the processing of food products.
- Use food-grade cooling oil whenever compressed air is to come into contact with food products.

### **Spring forces**

Springs under tension or compression store energy. Uncontrolled release of this energy can cause serious injury or death.

Minimum pressure / check valves, safety relief valves, and inlet valves are powerfully spring-loaded.

- Do not open or dismantle any valves.

### **Rotating components**

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

- Do not open the access doors or panels while the machine is running.
- Switch off and lock out the machine and check that no voltage is present before opening the access doors or canopy.

### 3 Safety and Responsibility

#### 3.5 Dangers

- Wear close-fitting clothes and a hair net if necessary.
- Ensure that all covers and safety guards are in place and secured before restarting.

#### Temperature

The operation of the combustion engine and the compression generate high temperatures. Touching hot components may cause injuries.

- Avoid contact with hot components.  
These include, for example, engine, compressor airend, oil and compressed air lines, coolers, and oil separator tank. Any objects in or near the flow of exhaust gas or discharged cooling air will become very hot.
- Wear protective clothing.
- Wear protective gloves when connecting or disconnecting compressed air hoses.
- Allow the machine to cool down before commencing any maintenance work.
- If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting oil vapors or parts of the machine.

#### Noise

The enclosure absorbs the machine noise to a tolerable level. This function will be effective only if the bodywork is closed.

- Operate the machine only with closed bodywork and intact sound insulation.
- Wear hearing protection if necessary.  
The blowing-off of the safety relief valve can be particularly loud.
- Never generate compressed air without air consumers being connected.

#### Operating fluids/materials

The used operating fluids and materials can cause adverse health effects. Suitable safety measures must be taken in order to prevent injuries.

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

#### Unsuitable spare parts

Unsuitable spare parts compromise the safety of the machine.

- Use only spare parts approved by the manufacturer for use in this machine.
- Use only genuine KAESER replacement parts on pressure bearing parts.

#### Conversion or modification of the machine

Modifications, additions to, or conversions of the machine can result in unpredictable hazards.

- Do not convert or modify the machine!

- Do not install any non-approved additional components.
- Do not make any changes to the machine that will increase its weight beyond the permissible limit and/or endanger its safe use or transportation.
- Obtain written approval by the manufacturer prior to any technical modification or expansion of the machine or controller.

### **3.5.2 Safe machine operation**

The following is information supporting you in the safe handling of the machine during individual product life phases.

#### **Personal protective equipment**

When working on the machine you may be exposed to dangers that can result in accidents with severe adverse health effects.

- Wear protective clothing as necessary.

Suitable protective clothing (examples):

- Safety work wear
- Protective gloves
- Safety boots
- Eye protection
- Ear protection

#### **3.5.2.1 Transport**

The weight and size of the machine require safety measures during its transport to prevent accidents.

- 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.

#### **Transport as trailer**

Non-compliance with the basic rules for a safe trailer operation may cause severe accidents during machine transport.

- The maximum permissible load for the towing vehicle coupling and the maximum coupling load given for the machine must not be exceeded.
- Avoid causing a shift in the centre of gravity by an excessive or incorrectly distributed load.
- Do not tow in such a way as to impose excessive stress on the machine or chassis.
- Adjust towing speed to accommodate ground and weather conditions. This applies particularly to unpaved roads and when taking curves.
- The towbar must be parallel with the ground otherwise towing instability can develop, resulting in damage to the machine and/or towing vehicle.
- Before moving the machine, make sure any security devices (e.g. anti-theft chain) are released.

#### **Transport as trailer on public roads**

- Do not tow machines without service brake on public roads.

- Do not tow machines without illumination and signaling equipment on public roads.
- Ensure all running gear, including chassis, wheels, brakes, signalling and lighting, is in safe condition.
- The local laws and regulations regarding the use of public roads must be observed.

**Transporting with a crane**

Non-compliance with the safety regulations for load suspension and hoisting equipment may cause severe accidents during lifting and moving the machine with cranes.

- Do not enter the danger zone while the machine is being lifted.
- Never lift and move the machine over people or occupied buildings.
- Avoid extreme weight shifting caused by additional loads or additions (tilting).
- Do not exceed the lifting capacity on the machine's lifting point (lifting eye).
- Only the designated lifting point should be used to attach lifting gear and under no circumstances are handles, tow-bar or other components to be used.
- Use only hooks and shackles that comply with local safety regulations
- Do not attach cables, chains or ropes directly to the machine's lifting eye.
- Do not manipulate the crane suspension system, in particular the holding points of the crane lifting eye.
- If screwed crane fixings had to be removed, please use only new self-locking nuts when installing.
- Avoid jerking when lifting, as this may damage components.
- Loads must be slowly lifted and carefully set down.
- Never allow the load to hang from the crane longer than necessary.



The following are forbidden:

- Air transport of the machine by slinging beneath a helicopter.
- Dropping the machine by parachute.

**3.5.2.2 Installation**

The operator must ensure that only authorised personnel has access to the machine.

**General instructions**

A suitable installation location for the machine prevents accidents and faults.

- Do not position the machine under roofs or coverings. A build up of heat from the exhaust can damage the machine.
- Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.
- Do not operate in areas in which specific requirements with regard to 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 adequate ventilation.
- Place the machine in such a manner that the working conditions in its environment are not impaired.
- Comply with limit values for ambient temperature and humidity.

### 3 Safety and Responsibility

#### 3.5 Dangers

- The intake air must not contain any damaging contaminants,

Damaging contaminants are for instance:

- Exhaust gases from combustion engines,
- Combustible, explosive or chemically unstable gases or vapours,
- Acid- or base-forming chemicals such as ammonia, chlorine, or hydrogen sulphide.

- Do not position the machine in the warm exhaust air flow from other machines.
- Keep suitable fire extinguishing agents ready for use.

#### Parking the machine:

Improper parking and use of the parked machine endangers personnel and material.

- To park the machine, select an even and solid surface which is capable of bearing the machine's weight.
- Move the machine only with a towing vehicle.
- Secure the parked machine:
  - Lower the prop stand / wind down the jockey wheel.
  - Chock the wheels to prevent unwanted movement.
    - Place chocks under the wheels.
    - Pull on the parking brake.
- Unauthorised persons must not be present in the parking area of the machine. The parking area must be properly secured.
- The machine – the chassis and the towing mechanism in particular – must not be stepped on or used for sitting.
- Do not place additional loads on the machine (e.g. excavator bucket as anti-theft measure).

#### 3.5.2.3 Commissioning, operation and maintenance

During commissioning, operation and maintenance you may be exposed to dangers resulting from, e.g., electricity, pressure and temperature. Careless actions can cause accidents with severe adverse effects for your health.

- Allow maintenance work to be carried out only by authorised personnel.
- Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.
- Switch off the machine and lock out the supply disconnecting device.
- De-pressurise all pressurised components and enclosures.
- Wait until the machine has automatically vented.
- Carefully open the compressed air outlet valve.
- Check: The pressure gauge must read 0 psig!
- For maintenance and repair work, isolate machines with "automatic start/stop" (Option ob) from the compressed air network and secure against automatic start.
- Allow the machine to cool down.
- Do not open the body while the machine is switched on.
- Do not open or dismantle any valves.
- Use only spare parts approved by KAESER for use in this machine.

- Operate the machine only in technically sound condition.
- Carry out regular inspections:
  - for visible damage and leakage,
  - of safety devices,
  - of the EMERGENCY STOP device,
  - of parts needing monitoring.
- Pay particular attention to cleanliness during all maintenance and repair work. Cover components and openings with clean cloths, paper or tape to keep them clean.
- 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 attempt to open or destroy any components taken from the machine.
- Self-locking nuts removed for the installation must not be reused but replaced by new nuts, because the non-positive safety is no longer ensured.
- Use only suitable compressed air hoses.

Compressed air hoses must meet the following requirements:

- they are of the right type and size for the highest permissible machine working pressure,
- they are not damaged, worn or of reduced quality,
- they have couplings and connections of the right type and size.
- Wear protective gloves when connecting or disconnecting compressed air hoses.
- Make sure compressed air hoses are de-pressurised before disconnecting from the machine.
- Secure the open end of an air hose before applying air pressure. An unsecured hose may whip and cause injury.
- At working pressures >100 psi, compressed air hoses should be secured by a cable to their respective outlet valves.
- Connect and operate only suitable air tools.
- The air tools must meet the set output pressure of the machine.
- Use a pressure reducer for air tools requiring a lower pressure.
- Use compressed air tools only with the pressure appropriate for its purpose (tool working pressure).

#### **3.5.2.4 De-commissioning, storage and disposal**

Improper handling of old operating fluids and components represent a danger for the environment.

- Drain off fluids and dispose of them according to environmental regulations.  
These include, for example, fuel, engine oil and compressor cooling oil and engine 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.	Maintenance personnel
	Within a 3 ft radius of the machine.	
Operation	Within a 3 ft radius of the machine.	Operating personnel
Maintenance	Within the machine.	Maintenance personnel
	Within a 3 ft radius of the machine.	

Tab. 58 Danger areas

### 3.6 Safety devices

Safety devices ensure safe working with the machine.

- Do not change, bypass or disable safety devices.
- Regularly check safety devices for their correct function.
- 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 4.5.

### 3.7 Safety signs

The tables list the various safety signs used and their meanings. The figures show the position of the safety signs on the machine, inside and outside.



During cleaning or maintenance work, a check should be made that safety signs have not been removed or obliterated. Have missing or illegible signs replaced!

### 3 Safety and Responsibility

#### 3.7 Safety signs

##### Safety signs outside

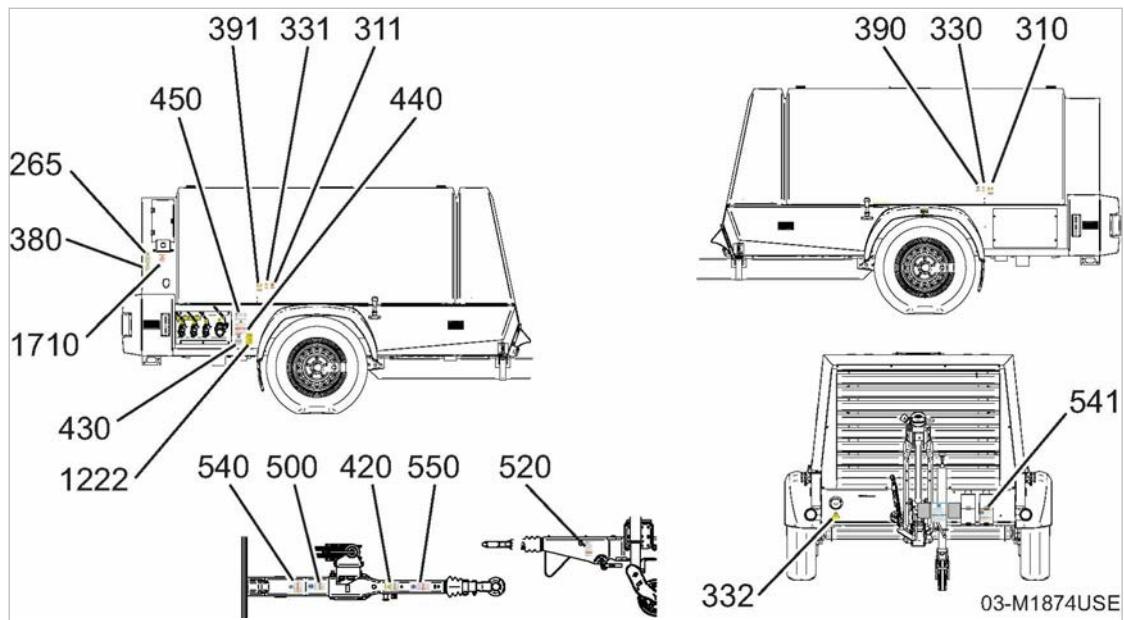


Fig. 1 Location of safety signs (outside)

Location	Sign	Meaning
265		<p>Caution!</p> <p>Injury and/or machine defects caused by improper use!</p> <ul style="list-style-type: none"> <li>➢ Maintenance should be performed by properly trained personnel only.</li> <li>➢ Read and understand manual and all safety labels before switching the machine on.</li> <li>➢ Never remove or cover safety labels.</li> </ul>
310		<p>Warning!</p> <p>Injury or damage from open machine!</p> <ul style="list-style-type: none"> <li>➢ Operate the machine only when closed.</li> <li>➢ Transport the machine only when closed.</li> </ul>
330 331 332		<p>Caution!</p> <p>Hot surface!</p> <p>Risk of burns caused by contact with hot components!</p> <ul style="list-style-type: none"> <li>➢ Do not touch the surface.</li> <li>➢ Let the machine cool down.</li> <li>➢ Wear long-sleeved garments (no synthetics such as polyester) and protective gloves.</li> </ul>

(1) Only portable machines

(2) Only machines with option dc,

(3) Only machines with option ob

### 3 Safety and Responsibility

#### 3.7 Safety signs

Location	Sign	Meaning
380		<p>Danger!</p> <p>Toxic gases in work area!</p> <ul style="list-style-type: none"> <li>➢ Operate machine outdoors only.</li> <li>➢ Ensure exhaust gases are vented to the outdoors.</li> <li>➢ Do not inhale dangerous gases.</li> </ul>
390 391		<p>Warning!</p> <p>Rotating fan blades and V-belt drive!</p> <p>Severe injury could result from touching the fan blades and V-belt drive while it is rotating.</p> <ul style="list-style-type: none"> <li>➢ Never switch the machine on without guard in place over the fan blade.</li> <li>➢ Isolate completely from the power supply (battery isolating switch) and ensure the supply cannot be switched on again.</li> </ul>
420		<p>Caution!</p> <p>Injury or damage can result because tongue weight on this equipment may be heavy!</p> <ul style="list-style-type: none"> <li>➢ Do not lift drawbar by hand if weight is more than you can safely handle.</li> <li>➢ See safety section of service manual.</li> </ul>
430		<p>Warning!</p> <p>Connect air hoses only in full compliance with OSHA standard 29 CFR 1926.302 (bX7).</p> <p>The required safety devices should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use.</p>
440		<p>Danger!</p> <p>Compressed air quality!</p> <p>Injury and/or contamination can result from breathing compressed air.</p> <p>Contamination of food can result from using untreated compressed air for food processing.</p> <ul style="list-style-type: none"> <li>➢ Never breathe untreated compressed air!</li> <li>➢ Air from this compressor must meet OSHA 29 CFR 1910.134 and FDA 21 CFR 178.3570 standards, if used for breathing or food processing. Use proper compressed air treatment.</li> <li>➢ Food grade coolant must be used for food processing.</li> </ul>
450		<p>Warning!</p> <p>Loud noise and compressed air blast!</p> <p>Damage to hearing and injury if ball valve is opened without a compressed air hose being connected.</p> <ul style="list-style-type: none"> <li>➢ Connect a compressed air hose.</li> <li>➢ Open the ball valve.</li> </ul>

(1) Only portable machines

(2) Only machines with option dc,

(3) Only machines with option ob

### 3 Safety and Responsibility

#### 3.7 Safety signs

Location	Sign	Meaning
500		<p>Warning!</p> <p>Drawbar load and ground clearance!</p> <p>Danger of fishtailing, incorrect towing vehicle load, damage to the machine caused by rollover or contact with the ground.</p> <p>► Always line up the drawbar so that the machine is level with the ground.</p>
520		<p>Warning!</p> <p>Always use safety chains!</p> <p>Chains hold trailer if connection fails.</p> <p>→ You must:</p> <ul style="list-style-type: none"> <li>■ Cross chains underneath coupling.</li> <li>■ Allow slack for trailer to turn.</li> <li>■ Attach chain hooks securely to tow vehicle frame.</li> </ul>
540 <sup>(1)</sup>		<p>Warning!</p> <p>Machine without breaks!</p> <p>Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks.</p> <p>► Always use chocks before uncoupling and generally when the unit is not in motion.</p> <p>► Do not move unit manually.</p>
541 <sup>(1)</sup>		<p>Warning!</p> <p>Missing chock!</p> <p>Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks.</p> <p>► Always fix chock for proper storage.</p> <p>► Always replace missing chock immediately.</p>
550		<p>Danger!</p> <p>Uncontrolled tensioning of the breakaway cable!</p> <p>Danger of accident caused by travelling with the trailer parking brake applied.</p> <p>► Never attach the breakaway cable to anything but the tow coupling to prevent unintentional tensioning when under way.</p> <p>► Make sure the breakaway cable is not under tension.</p> <p>► Ensure that the breakaway cable is fed through the cable guide.</p>
1222 <sup>(2)</sup>		<p>Danger!</p> <p>Fresh air filter.</p> <p>Death or serious injury can result from breathing CO, CO<sub>2</sub> and toxic gas.</p> <p>► Draw in only surrounding air of breathing quality.</p>

<sup>(1)</sup> Only portable machines

<sup>(2)</sup> Only machines with option dc,

<sup>(3)</sup> Only machines with option ob

### 3 Safety and Responsibility

#### 3.7 Safety signs

Location	Sign	Meaning
1710 <sup>(3)</sup>		<p>Caution!</p> <p>Machine starts automatically!</p> <p>Severe injury can result from rotating components, electrical voltage and air pressure.</p> <ul style="list-style-type: none"> <li>➢ Isolate completely from the power supply (battery isolating switch) and ensure the supply cannot be switched on again (lock out).</li> <li>➢ Check that no voltage is present.</li> </ul>

<sup>(1)</sup> Only portable machines

<sup>(2)</sup> Only machines with option dc,

<sup>(3)</sup> Only machines with option ob

Tab. 59 Safety signs

#### Safety signs inside

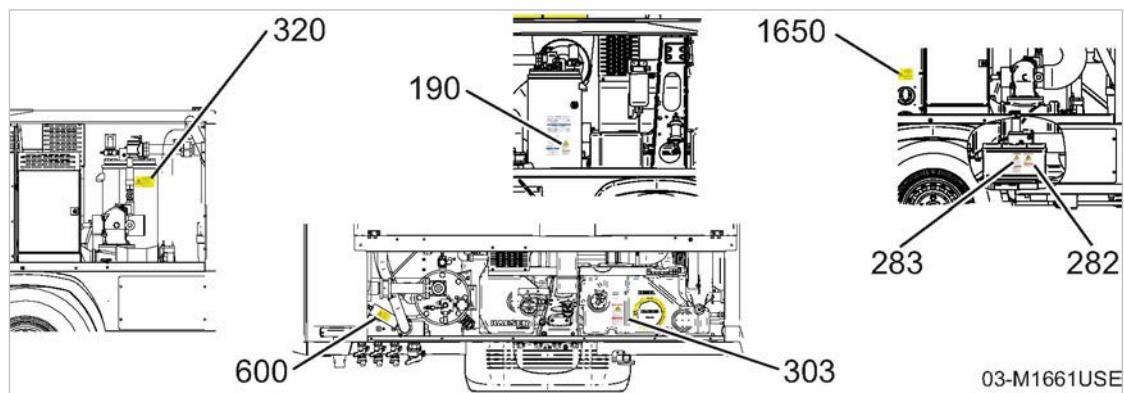


Fig. 2 Location of safety signs (inside)

Location	Sign	Meaning
190		<p>Caution!</p> <p>Wrong cooling oil level!</p> <p>Risk of machine defects or rising oil consumption (oil content for pure air).</p> <ul style="list-style-type: none"> <li>➢ Check cooling-oil level.</li> <li>➢ Run the machine only with proper cooling-oil level.</li> </ul>
282		<p>Danger!</p> <p>Explosive hydrogen gas!</p> <p>Severe injury or death could result from exploding gas.</p> <ul style="list-style-type: none"> <li>➢ Keep flames, sparks and other sources of ignition away.</li> </ul>
283		<p>Warning!</p> <p>Battery contains acid!</p> <p>Severe injury result from contact with battery acid.</p> <ul style="list-style-type: none"> <li>➢ Do not allow battery acid to contact eyes, skin, clothing or painted surfaces.</li> <li>➢ Do not attempt to jump-start if battery fluid is frozen.</li> <li>➢ Due to risk of explosion, please ensure that you bring the battery up to a temperature of at least 60°F before attempting a jump start.</li> </ul>

Location	Sign	Meaning
303		<p>Danger!</p> <p>Fire or explosion caused by refueling!</p> <p>Severe injury or death result from inflaming fuel.</p> <ul style="list-style-type: none"> <li>➢ Use diesel fuel only.</li> <li>➢ NEVER attempt to refuel the compressor while it is operating.</li> <li>➢ Always replace fuel filter cap after refueling.</li> <li>➢ Always wipe up fuel spills which may occur inside the compressor enclosure and allow the machine to ventilate.</li> </ul>
320		<p>Warning!</p> <p>Loud noise and oil mist when safety relief valve opens!</p> <p>Ear damage and burns can result.</p> <ul style="list-style-type: none"> <li>➢ Wear ear protection and protective cloths.</li> <li>➢ Close all maintenance doors and cover panels.</li> </ul>
600		<p>Warning!</p> <p>Pressure and spring force!</p> <p>Serious injury or death can result from loosening or opening component that is under pressure and heavily spring loaded.</p> <ul style="list-style-type: none"> <li>➢ Never open (dismantle) valve.</li> <li>➢ Contact an authorized KAESER service representative.</li> </ul>
1650		<p>Notice!</p> <p>Damage can occur if the switch is operated with the engine running!</p> <ul style="list-style-type: none"> <li>➢ The «battery isolating switch» must only be operated with the engine stopped.</li> <li>➢ Do not use the «battery isolating switch» as a main or emergency switch.</li> </ul>

Tab. 60 Safety signs

### 3.8 Noise control requirements



Tampering with the noise control system is prohibited!

Federal law prohibits the following acts or causing thereof:

- The removal or rendering inoperative by any persons, other than for purposes of maintenance, repair, or replacement, of any devices or element of design incorporated into any new compressor for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or
- the use of the compressor after such device or element of design has been removed or rendered inoperative by any person.

Among those acts included in the prohibition against tampering are the acts listed below:

- Removing any facing (doors, hood, service panels).
- Modifying the air inlet and outlet louvers.
- Modifying the air intake channels or hoses (if applicable).

- Modifying the air filter enclosure.
- Modifying the exhaust air silencer.
- Manipulating the machine's control and regulation system.

## **3.9 Option ga Generator operation**

### **3.9.1 Comply with the protective measures against dangerous electric current**

Protection against dangerous electric current is regulated by the "Low-voltage current generating installations" directive IEC 60364-5-551 (DIN VDE 0100-551).

The protective measure concerning "isolation, insulation monitoring and shut-down" is applied. The generator is equipped with an automatic mains cut-out with overcurrent release and insulation monitoring in accordance with this protective measure.

- Observe and follow the regulations concerning protection against dangerous electric current when using the generator.

### **3.9.2 Safe generator operation**

Take note of the following to ensure the safe operation of the machine with a generator:

- Check correct function of the insulation monitoring device daily.
- Do not earth the neutral line (N) or connect it to the common protective earth/equipotential bonding (PE).
- Make sure the equipotential bonding to earth is properly carried through (mains and machine through cable to consumer).
- If the generator feeds a network (TN network), let the network's protective measures remain effective or create another protective measure that is effective.
- Adjust the protective measures accordingly if the generator feeds a different network.
- Only a qualified electrician is allowed to carry out work on the generator or generator control box. The electrician is responsible for the effectiveness of the protective measures provided.
- Do not use the generator for feeding the construction current distribution.
- A generator with insulation monitoring must not be connected to another insulation monitoring device as these monitoring devices can then have counter effects.
- Ground fault current (F1) protection switches do not function in unearthing networks (IT network such as provided by the generator). The isolation provided by the generator, however, makes a further ground fault current protection switch unnecessary.
- Follow the regulations of the local electricity supply utility and obtain any necessary permits.
- When cleaning the inside of the machine do not direct water or steam jets directly at the generator or terminal box.
- Check regularly that all electrical connections are tight and in proper condition.

### **3.9.3 Connecting extension cables**

- When operating the generator, observe the regulations regarding the connection of extension cables.

### 3 Safety and Responsibility

#### 3.10 Emergencies

Bear in mind:

- In IT networks, the total length of power cables may not exceed 250 m (DIN VDE 0100, Part 728 / IEC 60364-5-551).
- Use at least H07RN-F cables to DIN VDE 0282 Part 4 (IEC 60245-4 / HD 22.4) as non-fixed extension cables.

#### 3.9.4 Do not exceed the maximum supply system load

- When operating the generator, do not exceed the maximum supply system load due to connected consumers.

Bear in mind:

- The power consumption values of simultaneous consumers are added.
- The maximum continuous power loading on the generator by the connected consumers is limited by the safety cut-out.

#### 3.9.5 Perform regular generator inspections

To ensure a safe operation, the machine must be subjected to regular inspections.

Daily inspection prior to activating the device by authorised operating personnel:

- Insulation monitor function check.

Annual inspection by trained and authorised electrician:

- Inspect the generator and generator control cubicle for mechanical damages.
- Inspect the protective conductor.
- Measure the dielectric resistance.
- Measure the substitute leakage current.
- Test the generator functionality.
- Test the proper functioning of the generator fan and clean, if required.
- Clean the cooling air openings.
- Check and tighten the screw connections at the generator and the generator control cubicle.
- Check covers and power socket caps for damage and good sealing.
- Check the completeness of labeling and warning labels.

### 3.10 Emergencies

#### 3.10.1 Correct actions in the event of a fire

Suitable extinguishing media:

- Foam
- carbon dioxide
- Sand or earth

Unsuitable extinguishing agents:

- Strong jet of water

1. Keep calm.
2. Give the alarm.

### 3 Safety and Responsibility

#### 3.11 Warranty

3. If possible: Turn off engine using control devices.
4. Make safe:
  - Warn persons in danger
  - Help incapacitated persons
  - Close the doors
5. When trained accordingly: Attempt to extinguish the fire.

#### 3.10.2 Treating injuries from handling operating fluids/materials

The following operating fluids/materials are in the machine:

- Fuel
- Lubricating oils
- Compressor cooling oil
- Engine coolant
- Battery electrolyte
- tool lubricant (option e)

##### **Eye contact:**

Fuel, oil and other fluids/materials can cause irritation.

- Rinse eyes thoroughly with lukewarm water and seek medical assistance immediately.

##### **Skin contact:**

Fuel, oil and other fluids/materials may irritate after prolonged contact.

- Wash thoroughly with skin cleaner, then with soap and water.
- Contaminated clothing should be intensively cleaned before reuse.

##### **If inhaled:**

Fuel and oil vapours impair breathing.

- Clear the respirator tract from fuel or oil vapour.  
Any difficulty with respiration: seek immediate medical help.

##### **If swallowed:**

- Wash out the mouth immediately.
- Do not induce vomiting.
- Seek medical aid.

#### 3.11 Warranty

This operator 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,

### 3 Safety and Responsibility

#### 3.12 Identifying the effects of improper 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.

##### 3.11.1 Noise emissions warranty

The manufacturer warrants to the ultimate purchaser and each subsequent purchaser that this air compressor was designed, built, and equipped to conform, at the time of sale to the first retail purchaser, with all applicable American EPA noise control regulations.

This warranty is not limited to any particular part, component, or system of the air compressor.

Defects in the design, assembly, or in any part, component, or system of the compressor which, at the time of sale to the first retail purchaser, caused noise emissions to exceed Federal standards are covered by this warranty for the life of the air compressor.

#### 3.12 Identifying the effects of improper modifications

The machine and various modules are designed according to applicable regulations and are submitted for approval procedures by the relevant authorities (where applicable).

Concerned modules include:

- Engine
- Fuel system
- Exhaust system
- Chassis (if available)
- Compressor
- Pressure-bearing components (e.g., valves, vessels, pipelines)

Remodeling or modifications can have the result that the interaction of the individual modules according to regulations is no longer ensured. Thus, the prerequisites required for approval by the authorities may no longer be given.

The concerned directives and regulations can be:

- Machinery directive
- Pressure vessel directive
- EMC directive
- Directive on environmental noise

In machines requiring a national road traffic permit, remodeling or modifications may adversely affect their approval for road traffic.

- Exhaust emission limits may not be met.
- The prerequisites for approval are no longer given.

Remodeling or modifications restrict the service work that can be performed for you (examples):

- Warranty (if directly and originally affected by the remodeling or modification)
- Reduced replacement part supply (scope, delivery times)
- SIGMA CONTROL SMART:  
Program changes result in a reduced capability of software updating.

### **3.13 Environmental protection**

The operation of this machine may cause dangers for the environment.

- Do not allow operating materials to escape into the environment or into the sewage system.
- Store and dispose of operating materials and replaced parts in accordance with local environmental protection regulations.
- Observe relevant regulations.  
This applies particularly to parts contaminated with fuel, oil, coolants and acids.

## 4 Design and Function

### 4.1 Bodywork

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

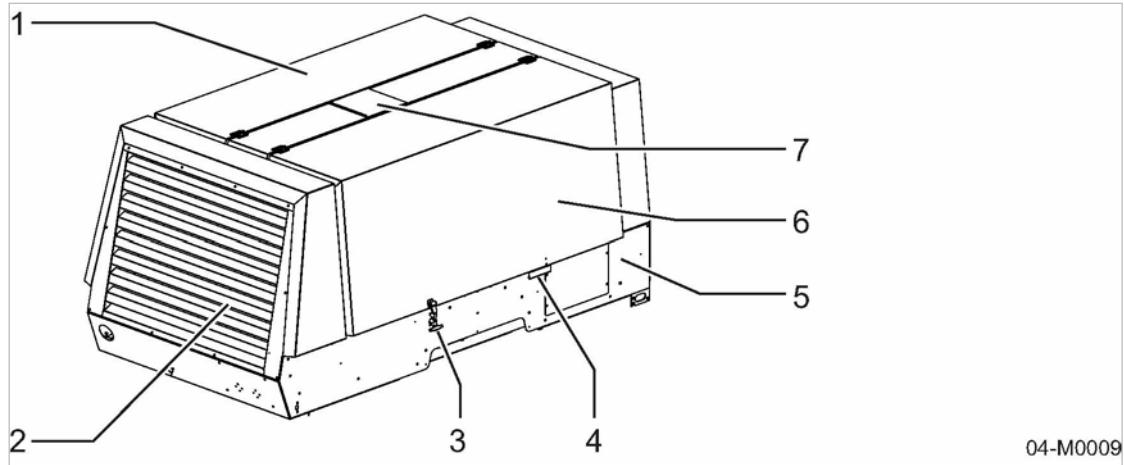


Fig. 3 Overview of bodywork

- |     |                                    |     |                       |
|-----|------------------------------------|-----|-----------------------|
| [1] | Right-hand wing door               | [5] | Lower part            |
| [2] | Sound insulating louver for cooler | [6] | Left-hand wing door   |
| [3] | Snap fastener                      | [7] | Cover for lifting eye |
| [4] | Handle                             |     |                       |

The bodywork has several functions when it is closed:

- Weather protection
- Sound insulation
- Guarding against touching
- Cooling air flow

The bodywork is not suitable for the following uses:

- Persons walking, standing or sitting on the machine.
- Use as a resting place or storage of any kind of load.

#### **⚠ CAUTION**

*Pinch hazard!*

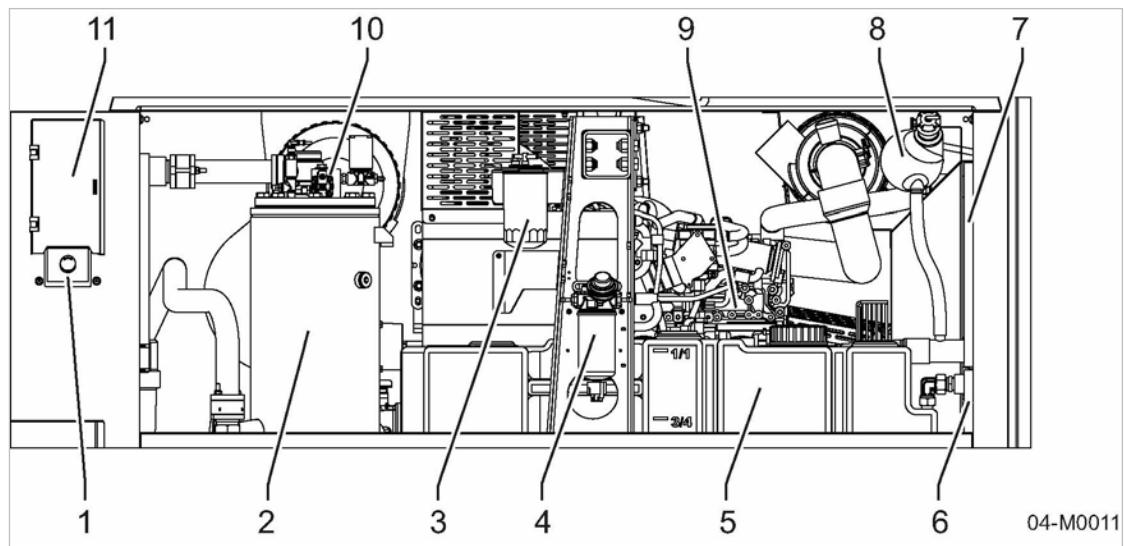
*Risk of serious pinch injury to fingers when closing doors and covers.*

- *Work with caution.*
- *Wear protective gloves as necessary.*

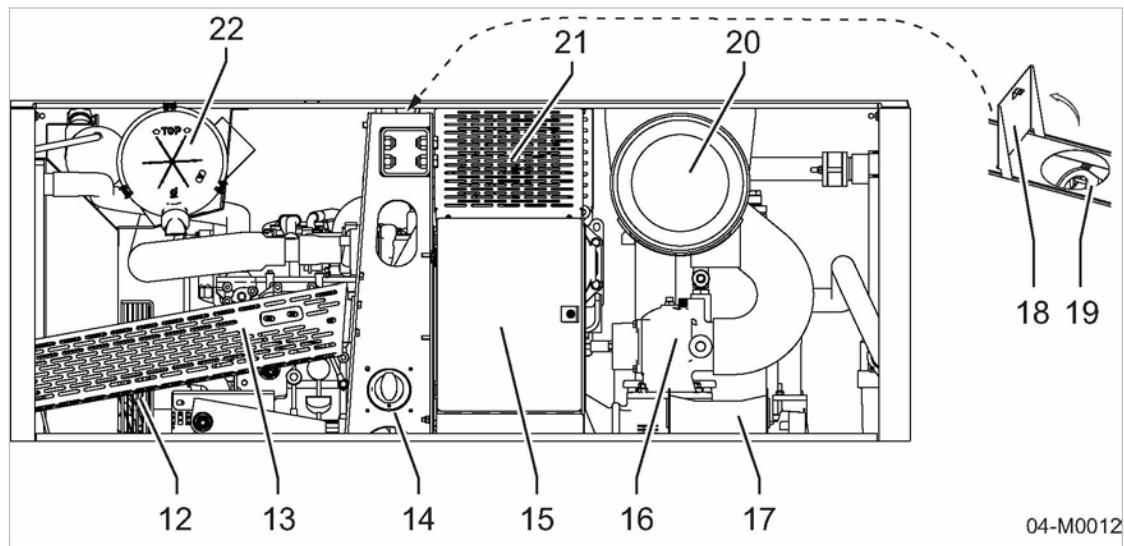
Safe and reliable operation is only ensured when the bodywork is closed.

The wing doors are provided with handles for opening. Release the doors by the snap fasteners.

The doors are held open by gas springs.

**4.2 Machine layout**

**Fig. 4 Right-hand door opened**

- |   |                                  |   |  |
|---|----------------------------------|---|--|
| ① | «EMERGENCY STOP» push button     | ⑦ | Coolant cooler (engine)                    |
| ② | Oil separator tank               | ⑧ | Coolant expansion tank                     |
| ③ | Fuel filter                      | ⑨ | Drive motor/engine                         |
| ④ | Fuel filter with water separator | ⑩ | Control valve with proportional controller |
| ⑤ | Fuel tank                        | ⑪ | Instrument panel (cover closed)            |
| ⑥ | Compressor oil cooler            |   |  |


**Fig. 5 Left-hand door opened**

- |   |                               |   |  |
|---|-------------------------------|---|--|
| ⑫ | Fan                           | ⑯ | Lifting eye cover                          |
| ⑬ | Heat protection, exhaust pipe | ⑯ | Lifting eye                                |
| ⑭ | Battery isolating switch      | ⑰ | Compressor air filter                      |
| ⑮ | Control cabinet               | ⑱ | Heat protection, diesel particulate filter |
| ⑯ | Inlet valve                   | ⑲ | Engine air filter                          |
| ⑰ | Airend                        |   |  |

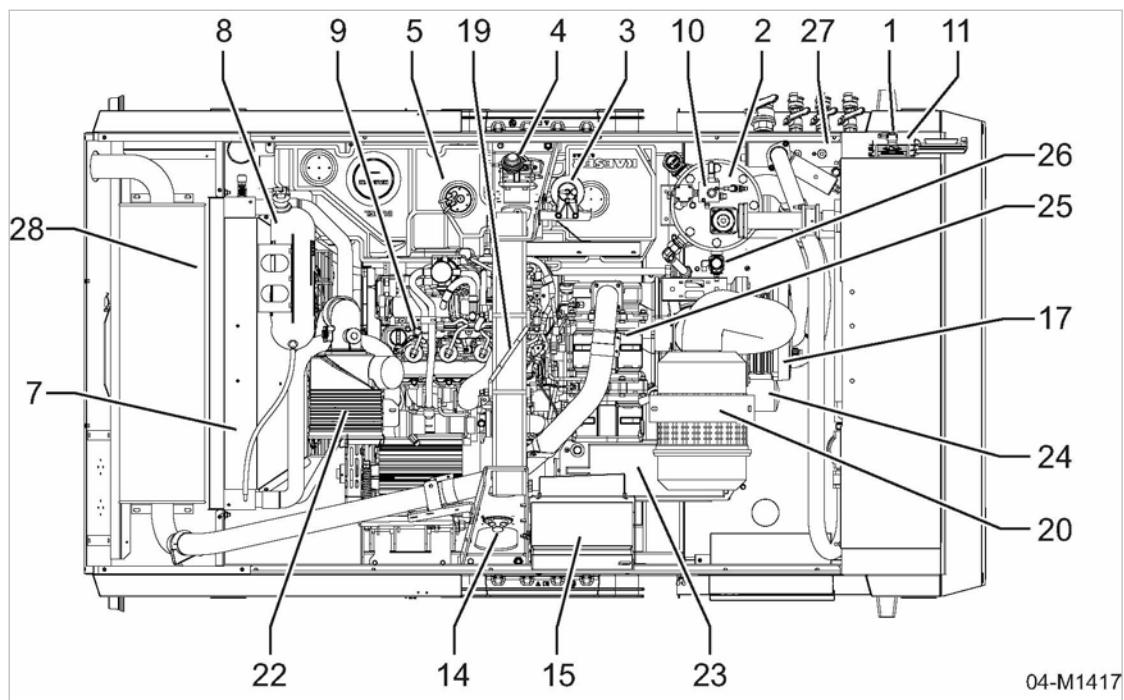


Fig. 6 View from above, machine roof removed

- |   |   |
|---|---|
| 1 «EMERGENCY STOP» push button<br>2 Oil separator tank<br>3 Fuel filter<br>4 Fuel filter with water separator<br>5 Fuel tank<br>7 Coolant cooler (engine)<br>8 Coolant expansion tank<br>9 Drive motor/engine<br>10 Control valve with proportional controller<br>11 Instrument panel (cover opened)<br>14 Battery isolating switch | 15 Control cabinet<br>17 Compressor block<br>19 Lifting eye<br>20 Compressor air filter<br>22 Engine air filter<br>23 Battery<br>24 Compressor oil filter<br>25 Diesel particulate filter<br>26 Safety valve<br>27 Air distributor<br>28 Exhaust silencer |
|---|---|

### 4.3 Machine function

Machine function (without options)

Item numbers correspond to the pipe and instrument flow diagram (P&ID) in chapter 13.2.

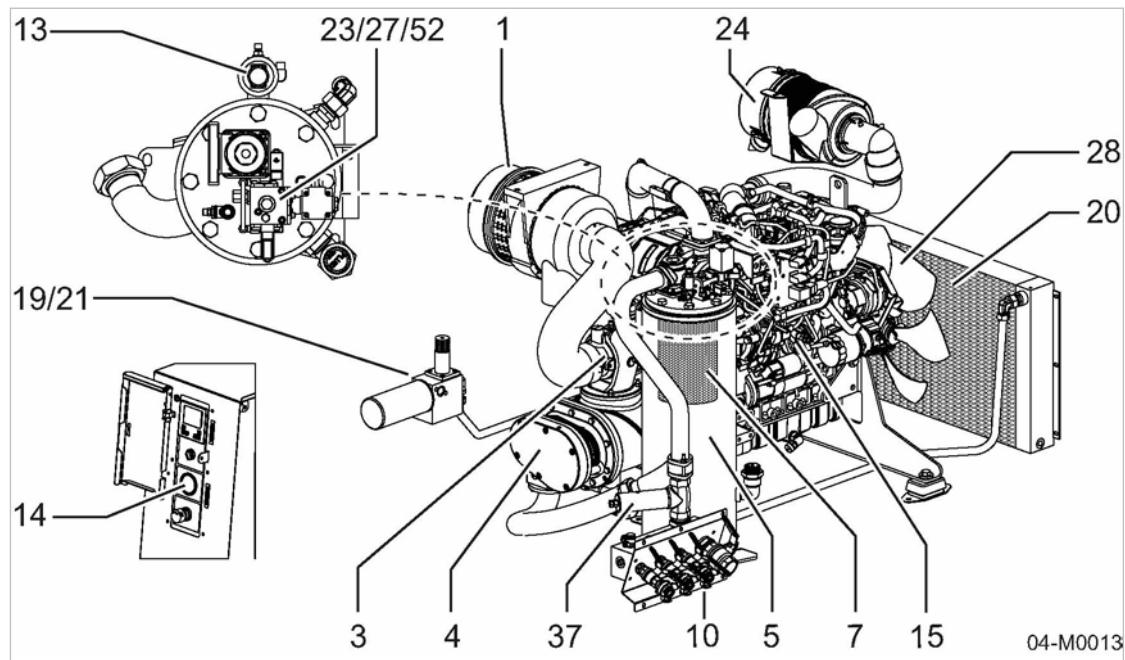


Fig. 7 Machine overview

①	Compressor air filter	⑯	Thermostatic valve (oil temperature control)
③	Inlet valve	⑯	Oil cooler
④	Airend	⑯	Oil filter
⑤	Oil separator tank	⑯	Proportional controller
⑦	Oil separator cartridge	⑯	Engine air filter
⑩	Air distributor	⑯	Venting valve
⑬	Pressure relief valve	⑯	Fan
⑭	Pressure gauge (on the instrument panel)	⑯	Minimum pressure check valve
⑮	Drive motor	⑯	Control valve

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 ⑯.

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 ⑯. The oil then flows through the oil filter ⑯ and back to the point of injection. Air pressure within the machine keeps the oil circulating. A separate pump is not necessary. A thermostatic valve ⑯ regulates and optimises the cooling oil temperature.

Compressed air, freed of cooling oil in the oil separator tank ⑤, flows through the minimum pressure / check valve ⑯ into the air distributor ⑩. The minimum pressure/check valve ensures sufficient internal pressure to maintain cooling oil circulation.

The cooling fan ⑯ ensures optimum cooling of all components within the enclosure.

## 4.4 Operating modes and control mode

### 4.4.1 Machine operating modes

The machine operates in the following modes:

- WARM-UP
  - The inlet valve is nearly fully closed.
  - The minimum intake air volume escapes via the venting valve.
  - The engine runs at minimum speed.
- LOAD
  - The inlet valve is open.
  - The engine runs at maximum speed.
  - The airend delivers compressed air.
- MODULATING
  - With the help of a control valve (the proportional controller) the degree of opening of the inlet valve is continuously varied in response to the air demand.
  - The load and fuel consumption of the engine rises and falls with the air demand.
  - The airend delivers compressed air.
- IDLE
  - The inlet valve is closed.
  - The control valve opens, allowing pressure in the oil separator tank to be applied to the inlet valve.
  - Compressed air then flows in a closed circuit through the airend, the oil separator tank and the control valve.
  - The pressure in the oil separator tank remains constant.
  - The engine runs at minimum speed.
- RUN-ON-PHASE/READY (Standstill, shut down)
  - The inlet valve closes.
  - The venting valve opens to depressurize the machine.
  - Machine cools down.
  - The engine stops.

### 4.4.2 MODULATING control

The control system regulates the volume of air generated to match the actual demand. The machine keeps the working pressure constant by continuously varying the volumetric flow rate within the machine's regulating range, independent of the air demand.

With the help of an electrical control valve (the proportional controller), the opening and closing of the inlet valve is continuously varied in response to the actual air demand. The airend provides compressed air for connected consumers.

This continuous delivery regulation minimizes the fuel consumption of the engine. The load and fuel consumption of the engine rises and falls with the air demand.

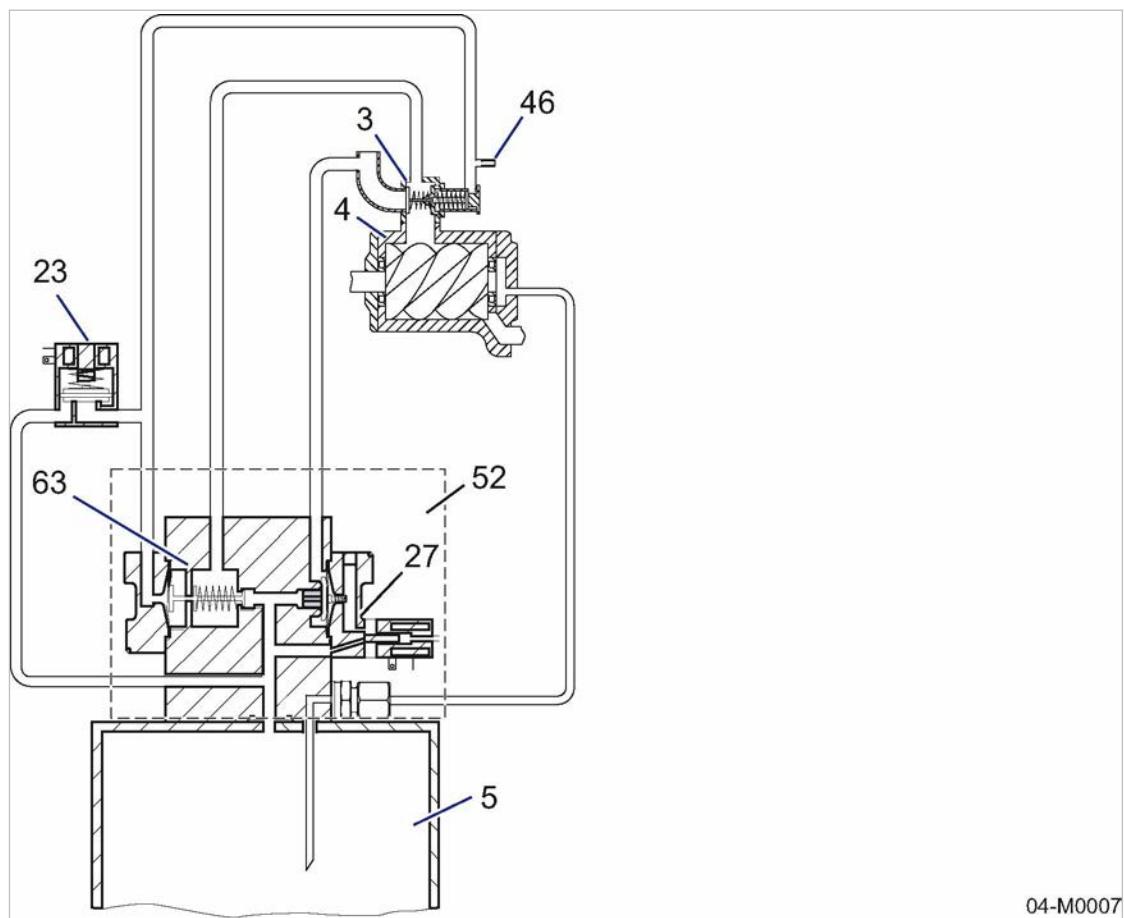


Fig. 8 Continuous regulation of volumetric flow (standstill)

③	Inlet valve	②7	Venting valve
④	Airend	④6	Nozzle
⑤	Oil separator tank	⑤2	Control valve
②3	Proportional controller (electric)	⑥3	Control valve (proportional valve)

## 4.5 Safety devices

### 4.5.1 Monitoring functions with shut-down

The SIGMA CONTROL SMART monitors important machine parameters. The machine is automatically shut down if an alarm occurs.

The SIGMA CONTROL SMART saves the alarm message in its event memory.

Further information Further information on alarm messages at the controller is provided in chapter 9.2.1.

### 4.5.2 Further safety devices

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

- «EMERGENCY STOP» push button
  - :«The EMERGENCY STOP» push button is for immediate shut-down of the machine. The engine comes to a stop. The pressure system is vented.

- Safety relief valves:  
Safety protect the system against unacceptable pressure rise. They are factory set.
- Housing and covers for moving parts and electrical connections:  
Protect against accidental contact.

#### 4.5.3 Battery isolating switch

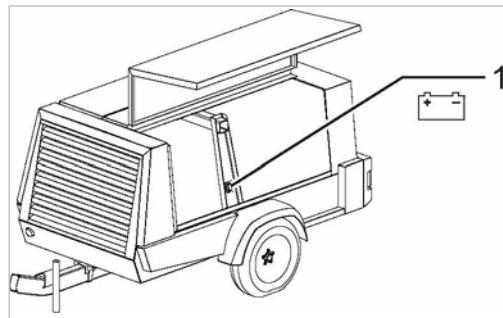
The «battery isolating switch» disconnects the battery completely from the machine's electrical system (electronic controller protection, fire protection, battery discharge protection).

##### NOTICE

*Danger of short circuit!*

*Damage to the machine's electrical system is possible.*

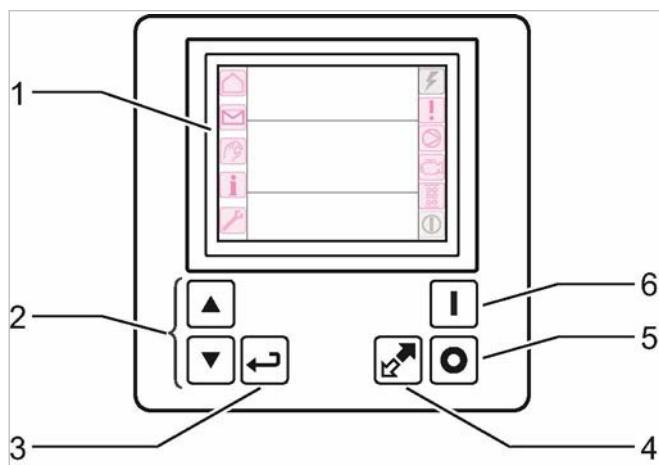
- Use the «battery isolating switch» only when the machine is switched off.
- Do not use the «battery isolating switch» as a main or emergency switch.



04-M0022

Fig. 9 Battery isolating switch  
① «Battery isolating switch»

#### 4.6 SIGMA CONTROL SMART control panel



04-M0341

Fig. 10 SIGMA CONTROL SMART operator panel – overview

Item	Sign	Designation	Function	Background LED
1	-	Indicator field or display	Graphic display	-
2		«Up» and «Down» keys	<ul style="list-style-type: none"> <li>■ Scrolls upwards or downwards through the menu options.</li> <li>■ Enter settings.</li> <li>■ Change values.</li> <li>■ Switch between menu pages.</li> </ul>	-
3		«Enter» key	<ul style="list-style-type: none"> <li>■ Jumps to the selected menu option.</li> <li>■ Finish an entry.</li> <li>■ Activate the input.</li> <li>■ Acknowledges/resets maintenance tasks.</li> <li>■ Returns to the superordinate menu item (quick touch)</li> <li>■ Closes the menu (press for at least two seconds)</li> </ul>	-
4		Key «LOAD/IDLE»	Toggles the compressor between LOAD and IDLE operating modes.	Flashes when ready for switching to LOAD mode. Continuous light when the machine is running under LOAD.
5		«STOP» key	<ul style="list-style-type: none"> <li>■ Stops the machine.</li> <li>■ Acknowledges/resets maintenance tasks.</li> </ul>	Continuous light when a fault has occurred.
6		«START» key	Start the machine.	Flashes when ready to start. Lights continuously, when the engine is running.

**Tab. 61** Instrument panel keys and displays

Further information For more information about the controller's functionality, please see the separate SIGMA CONTROL SMART user manual.

## 4.7 Exhaust gas after-treatment

The exhaust from a diesel engine contains invisible particles that are dangerous to health.

State-of-the-art engine technologies are used to reduce the emission of pollutants and to meet the tighter exhaust standards.

For a proper balance, all parameters affecting combustion must be optimally adjusted to each other. In interaction with injection and turbo-charging in particular, the exhaust gas recirculation allows for combustions with significantly less nitrogen oxides.

Furthermore, all engines are fitted with various after-treatment facilities. The total of these measures contribute to the protection of human health and the environment.

### **4.7.1 Engine optimisation**

The engine series is equipped with a common rail diesel injection system and exhaust gas return. The engines are set to a maximum of efficiency and low particle emissions.

#### **Electronic engine management:**

The engine system is equipped with an electronic engine management that communicates with the system controller SIGMA CONTROL SMART.

In addition to monitoring the engine and exhaust gas treatment, the engine control unit (ECU) also monitors itself. Any faults or malfunctions are stored as fault codes in the alarm memory and forwarded to the SIGMA CONTROL SMART controller.

#### **Common rail injection system:**

The engine is fitted with a common rail injection system for mixture preparation. It is a high-pressure accumulator injection system for diesel engines. The common rail injection allows you to optimise the combustion process so that fewer contaminants are generated whilst consuming less fuel. The fuel is injected into the combustion chamber from a highly pressurised joint distributor pipe (common rail). The common rail injection system is controlled by the engine control unit.

#### **Exhaust gas return:**

Exhaust gas recirculation is a measure to reduce the emissions of nitrogen oxides. At high combustion temperatures, damaging nitrogen oxides ( $\text{NO}_x$ ) increasingly develop in the engine. To reduce these levels, the combustion temperature must be lowered. The cooled and controlled exhaust gas recirculation circulates a portion of the exhaust gas back to the inlet side of the engine where it is added to the inlet air. This reduces the available oxygen volume and thus the combustion temperature. Both measures reduce the development of nitrogen oxides.

Exhaust gas recirculation occurs only in the partial load area of the engine because the engine runs particularly lean in this area. Exhaust gas recirculation is not practical in cold start, warm-up and full load.

#### **Exhaust gas turbo-charging:**

The performance of the combustion engine can be enhanced by means of turbo-charging. A turbocharger compresses the air to allow more oxygen to flow into the combustion chamber. As a result, more fuel can be combusted and the engine performance increases accordingly. The turbocharger is driven by exhaust gas which makes turbocharged engines very efficiently.

### **4.7.2 Exhaust gas treatment system**

The exhaust gas treatment system primarily contributes to limiting the exhaust gas emissions of the machine.

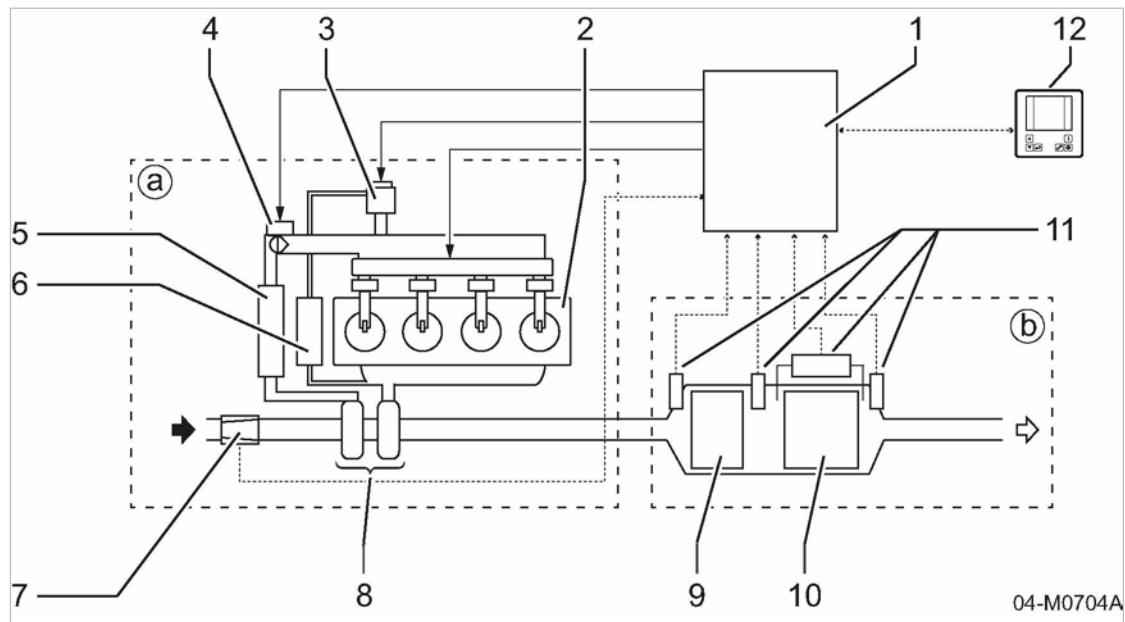


Fig. 11 Principle of treatment devices

- |                                   |  |
|-----------------------------------|--|
| ① Engine control unit (ECU)       | ⑦ Air flow meter                             |
| ② Common rail system              | ⑧ Turbocharger                               |
| ③ Engine block                    | ⑨ Exhaust gas treatment system               |
| ④ Exhaust gas return valve (EGR)  | ⑩ Diesel oxidation catalytic converter (DOC) |
| ⑤ Inlet throttle                  | ⑪ Diesel particulate filter (DPF)            |
| ⑥ Intercooler                     | ⑫ Sensors                                    |
| ⑦ Cooler exhaust gas return (EGR) | ⑬ SIGMA CONTROL SMART controller             |

#### Diesel oxidation catalytic converter (DOC):

The diesel oxidation catalytic converter uses the fuel which has not been burnt during final injection for the active regeneration of the diesel particulate filter. The diesel oxidation catalytic converter serves a source of heat for the regeneration of the diesel particulate filter.

#### Diesel particulate filter (DPF):

The diesel particulate filter is used for reducing the particulate present in the diesel engine exhaust (fine solids and mostly soot). Nearly all of these particles are trapped in the filter and burnt to CO<sub>2</sub> at high exhaust gas temperature.

At a low exhaust gas temperature when the particulate does not burn spontaneously, a pressure difference occurs between inlet and outlet of the diesel particulate filter. This initiates a regeneration of the filter,

during which the soot is removed. Regeneration is activated when the filter medium is saturated with soot to a certain degree.

## 4.8 Options

The options available for your machine are described below.

### 4.8.1 Option da, dc, dd, df; ea, ec Air treatment options

For some applications, the compressed air generated by this machine must be treated before use. The following describes the possible air treatment options that may be fitted to the machine.

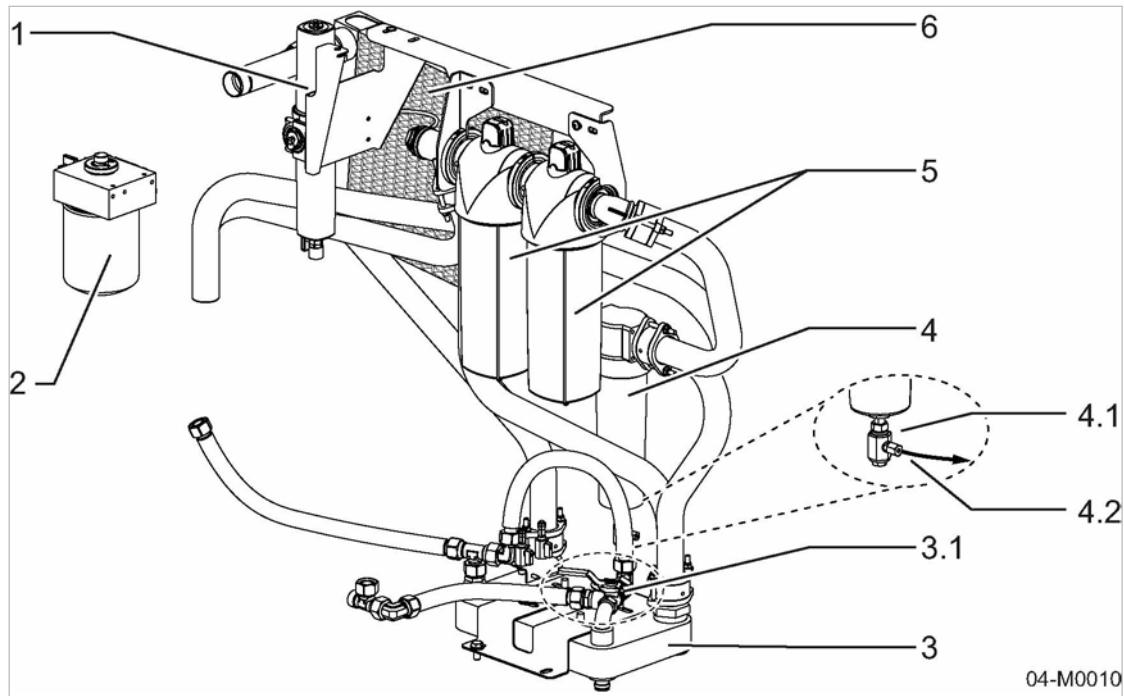


Fig. 12 Compressed air options

- |   |   |
|---|---|
| [1] Fresh air filter (Option dc)            | [4.1] Dirt trap (option da)                                 |
| [2] Tool lubricator (option ea, ec)         | [4.2] Condensate drain pipe to exhaust gas pipe (option da) |
| [3] Heat exchanger (Option df)              | [5] Filter combination (Option dd)                          |
| [3.1] Bypass for heat exchanger (Option df) | [6] Compressed air aftercooler (Option da)                  |
| [4] Centrifugal separator (Option da)       |   |

#### 4.8.1.1 Option da Compressed air aftercooler

The compressed air after-cooler lowers the compressed air temperature to only 5 K to 10 K above the ambient temperature. The exchange of heat lowers the compressed air temperature and the water and oil mist contained in the air precipitates to condensate. Most of the moisture carried in the air is removed in the after-cooler. This condensate, mixed with oil particles, has to be drained by a separator.

#### 4.8.1.2 Option da Centrifugal separator

A centrifugal separator is used to isolate the condensate from the compressed air. The centrifugal separator sets the compressed air that still contains moisture into a circular movement (turbulence). The heavy dirt particles and water droplets combined in the condensate are thrown to the outside and run down against the wall of the separator. The accumulating condensate collects at the bottom of the centrifugal separator.

**4.8.1.3 Option da****Dirt trap with condensate drain pipe**

A dirt trap is located at the bottom end of the centrifugal separator. While the condensate flows through the dirt trap, existing dirt particles are retained.

Subsequently, the condensate flows through the connected condensate drain pipe to the exhaust gas pipe. Due to the high exhaust temperatures during engine operation, the condensate evaporates completely.

**4.8.1.4 Option df****Heat exchanger**

The oil/compressed air heat exchanger is fed with hot compressor cooling oil that warms the outgoing moisture-reduced compressed air.

This warm, dry compressed air is ideal for sand blasting, for example.

**Option df Compressed air quality with/without heat exchanger:**

If heating is not required, you can use the bypass to bridge the heat exchanger.

Option designation	Heat exchanger	Compressed air quality
da + df	activated	heated and dry
	Bridged	cool and condensate-free
da + dd + df	activated	heated and technically oil-free
	Bridged	cool and technically oil-free

Tab. 62 Compressed air quality with/without heat exchanger

**4.8.1.5 Option dd****Filter combination**

To obtain oil-free compressed air, the dried compressed air passes through a pre-filter and micro-filter combination and emerges oil-free and free from solid particles.

**4.8.1.6 Option dc****Fresh air filter**

Compressed air from oil-injected compressors may not be used directly as breathing air.

The concentration of contaminants will increase during the compression of the intake ambient air, and cooling oil and abraded particles can enter the compressed air. This requires a subsequent treatment of the pre-filtered compressed air.

Air must be filtered to remove all contaminants, such as fine dust and oil as well as odors, before it can be used for breathing purposes.

To achieve this, part of the compressed air output from the compressor is passed through a combination of micro-filter and activated carbon filter.

The connection to air treated in this way is specially marked. It is designed as a quick-release coupling next to the outlet valves on the compressed air distributor.

**⚠ DANGER**

*Danger from toxic air!*

*Danger of respiratory arrest because the filter does not remove CO/CO<sub>2</sub>, methane or other toxic gases or vapors.*

- *Never use the machine in enclosed spaces, only in the open.*
- *Clean inlet air without hazardous contaminants. Engine exhaust fumes must not be drawn into the compressor.*



The treated air does not meet the local standards for 'Compressed air for breathing apparatus'. Therefore, it must not be used as pure breathing air, but may be used to reinforce the flow of fresh air when working in dusty or dirty conditions such as sand blasting.

Further information See Chapter 2.9.1.2 for ambient conditions under which the fresh air filter can be used.

Further information See DIN EN 12021 for more information regarding permissible limit values for hazardous contaminants in breathing air.

#### 4.8.1.7 Option ea, ec Tool lubricator

Compressed air containing lubricating oil is needed for the lubrication of certain air tools. The tool lubricator introduces a fine oil mist into the compressed air for this purpose.

A metering valve on the lubricator regulates the amount of oil in the compressed air:

- minimum oil to lubricate the tools and prevent corrosion,
- more oil for cleaning and to prevent wear in the tools.

The oil flow can be stopped by a shut-off valve.

The oil flow adjusts automatically to changes in air demand (one or more tools/consumers on line).

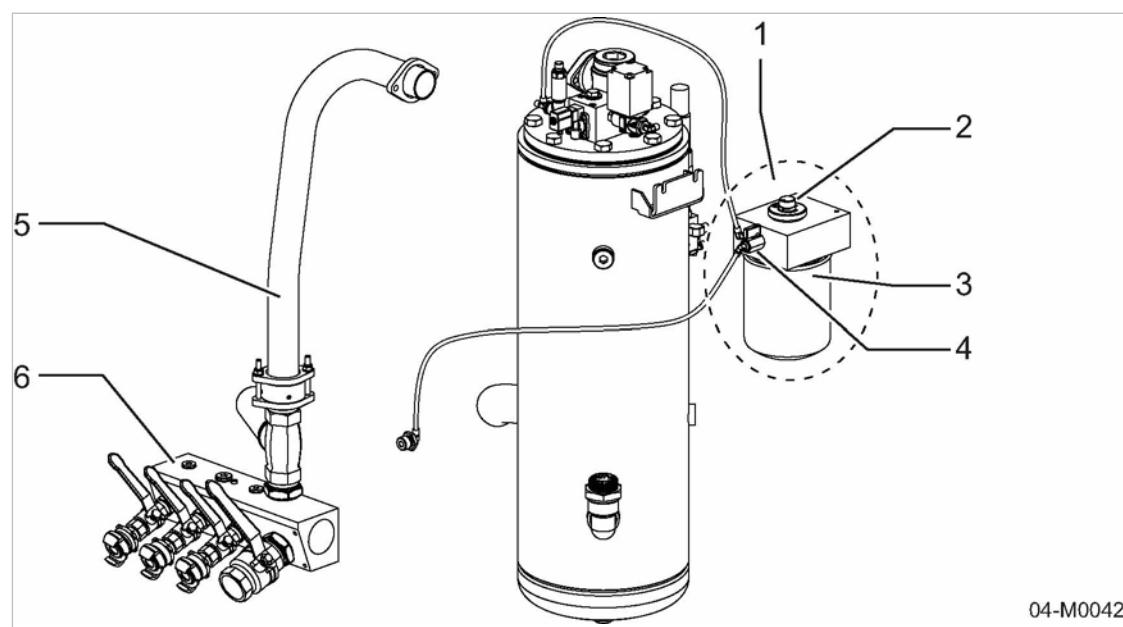


Fig. 13 Tool lubricator

- |   |                 |   |                     |
|---|-----------------|---|---------------------|
| ① | Tool lubricator | ④ | Shut-off ball valve |
| ② | Metering knob   | ⑤ | Air line            |
| ③ | Oil tank        | ⑥ | Air distributor     |

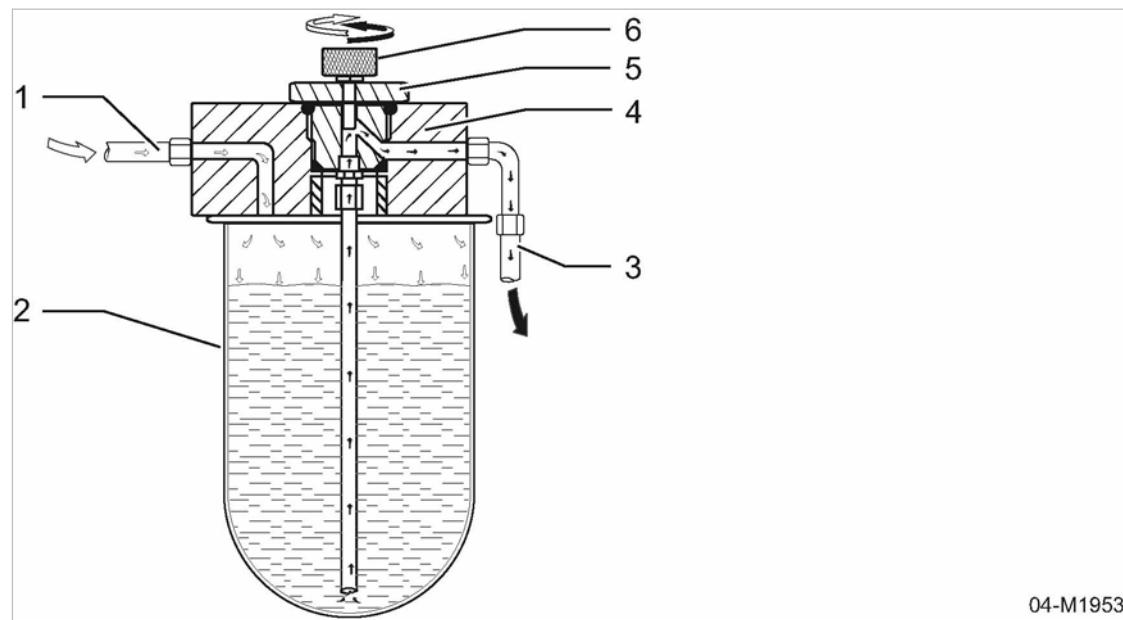


Fig. 14 Principle tool lubricator

- |   |                      |   |   |
|---|----------------------|---|---|
| ① | Compressed air input | ④ | Tool lubricator top with filler plug                |
| ② | Oil tank             | ⑤ | Filler plug with dipstick and integrated riser tube |
| ③ | Tool oil output      | ⑥ | Metering knob                                       |

**Option fc Points to be observed with separate compressed air lines:**

**NOTICE**

*Lubrication with tool oil.*

*Air tools that must not be lubricated can be damaged.*

*➢ Blow any residual oil out of the line before connecting such an air tool.*

### **4.8.2 Option bb; od Auxiliary electrical systems**

The following auxiliary electrical equipment is provided in the machine:

- Coolant pre-heating for diesel engine
- Battery charger for automatic start/stop

The auxiliary electrical equipment is pre-wired for operation. A separate mains power connection provides power.

A flexible power cable (supplied) connects the machine's power plug to the user's power socket.

**Option bb Coolant pre-heating for diesel engine:**

The engine's coolant should be pre-heated in order to protect the engine at low temperatures. A coolant pre-heating system is installed for this purpose. The coolant pre-heating works according to the principle of self-circulation.

**Option od Battery charger for automatic start/stop:**

The start/stop automatism can be set in the SIGMA CONTROL SMART controller for automatic machine start. The engine's starting battery must be sufficiently charged at any time, in order for the drive engine to be started even after longer standstill times. Use a battery charger.

### **4.8.3 Option ba Low temperature equipment options**

Special equipment is provided for operation in extremely low temperatures.

This equipment assures trouble-free operation in ambient temperatures from -13°F to 122°F. The electrical system will reliably start the engine at ambient temperatures to -4°F.

**Option bb Coolant pre-heating:**

The engine coolant can be pre-heated to improve starting under cold conditions.

The ideal coolant pre-heating period is 2-3 hours before the machine is started. A pre-heating period of more than 3 hours is not necessary, as the maximum effect has already been achieved within this period (thermal balance).

Continuous operation of maximum 6 hours must be followed by a rest period of approximately 3 hours.

#### 4.8.4 Option Ia

##### Options for operating in fire hazard areas

Diesel motors represent a potential source of ignition in environments with concentrations of gas, vapor or dust, and may cause major fires with disastrous consequences for people, the environment, and production.

For the operation in fire hazard areas, the machine is equipped with the following accessories:

- Spark arrestor

##### 4.8.4.1 Option Ia

###### Spark arrestor

Sparks in exhaust fumes represent a considerable risk in environments with flammable materials. Flying sparks combined with flammable materials may cause fires and explosions.

A spark arrestor on the exhaust silencer is required when operating a diesel engine in a fire hazard area and in forestry and agricultural applications. In such applications, a spark may ignite flammable materials.

The spark arrestor prevents the exhaust silencer emitting any glowing fuel residue.

#### 4.8.5 Option ga

##### Generator option

A generator is installed to provide a power supply to electrical consumers. The generator is driven from the engine by a drive belt. A tensioning device automatically ensures optimum belt tension.

##### 4.8.5.1 Operating modes

The compressor works with the normal flow rate regulation and generates electrical power at the same time.

The generator can work in two modes. These are selected by the mode switch:

- Automatic cut-in
- Continuous load

Generator power supply isolating device	Mode selector switch	What is provided?
OFF	-	Compressed air
ON	 Position 1 (automatic start mode)	Compressed air and electrical power
		Electrical power and compressed air

Tab. 63 Generator / compressor operation

Operating mode	Automatic cut-in	Continuous load
Switch position	Position 1	Position 2
Engine speed	Electrical power consumption > 100 VA: automatic maximum speed	Permanent maximum speed (engine under full load)
	Power consumption below minimum value: Engine run-on time of approximately 2 minutes at maximum speed	
Advantages	Fuel saving Constant oscillation between maximum and minimum speed avoided	Continuous generator power available without delay

Tab. 64 Generator operating modes

#### 4.8.5.2 Operating controls

The switches, fuses and outlet sockets for electrical consumers are located on the generator control box. Individual consumers are connected only by these outlet sockets.

##### Generator 400/230 V/3~; 13 kVA:

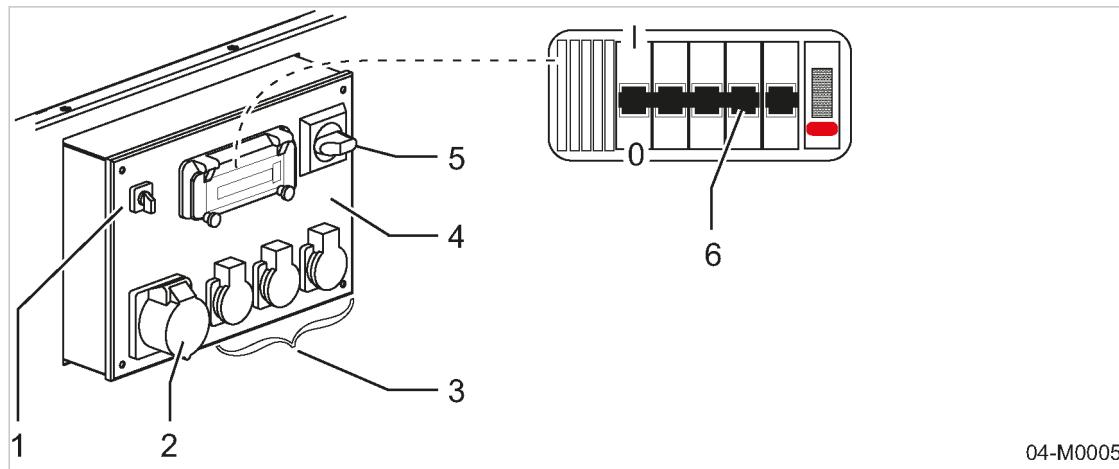
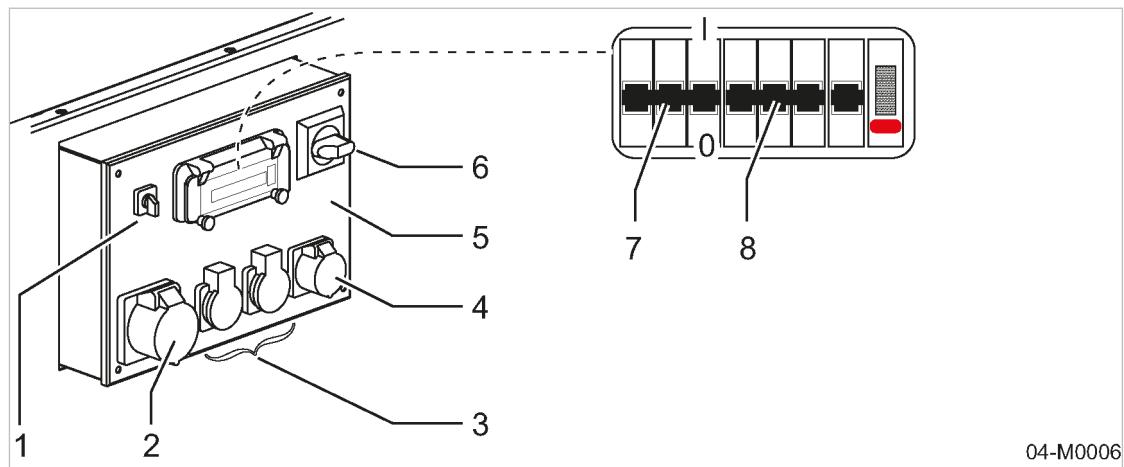
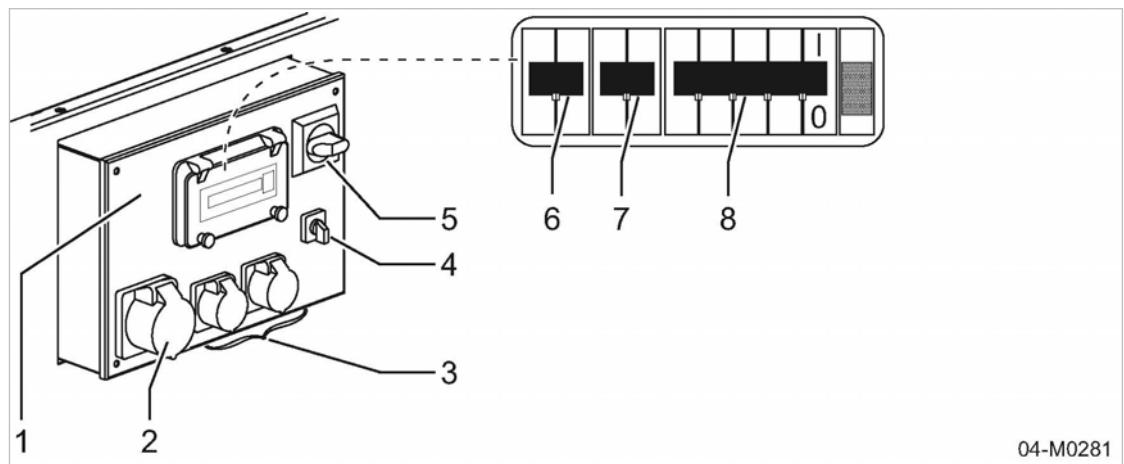


Fig. 15 Instrument panel – generator control box, 400 V three phase

- |                                     |  |
|-------------------------------------|--|
| [1] «Mode selector switch»          | [4] Generator control box                            |
| [2] Power socket 400 V / 3 / N / PE | [5] «Generator main switch»                          |
| [3] Power sockets 230 V AC/1/N/PE   | [6] «Safety cut-out»<br>(with shunt opening release) |

**Generator 230 V/3~; 13 kVA:**

**Fig. 16** Instrument panel – generator control box, 230 V three phase

- |   |                                      |   |  |
|---|--------------------------------------|---|--|
| ① | «Mode selector switch»               | ⑤ | Generator control box                            |
| ② | Power socket 230 V / 3~ / PE (32 A)  | ⑥ | «Generator main switch»                          |
| ③ | Power socket 230 V AC / 2-phase / PE | ⑦ | «Safety cut-out»                                 |
| ④ | Power socket 230 V / 3~ / PE (16 A)  | ⑧ | «Safety cut-out»<br>(with shunt opening release) |

**Generator 115 V/2~; 7 kVA:**

**Fig. 17** Control panel, generator control box, 115 V AC

- |   |  |   |  |
|---|--|---|--|
| ① | Generator control box                          | ⑤ | «Generator main switch»                          |
| ② | Power socket 230 V AC / 2 phase / PE<br>(32 A) | ⑥ | «Safety cut-out»                                 |
| ③ | Power socket 230 V AC / 2 phase / PE<br>(16 A) | ⑦ | «Safety cut-out»                                 |
| ④ | «Mode selector switch»                         | ⑧ | «Safety cut-out»<br>(with shunt opening release) |

#### 4.8.5.3 Note when operating the generator

##### Do not exceed the maximum supply system load

- When operating the generator, do not exceed the maximum supply system load due to connected consumers.

Bear in mind:

- The power consumption values of simultaneous consumers are added.
- The maximum continuous power loading on the generator by the connected consumers is limited by the safety cut-out.

#### Connect electrical consumers

**DANGER**

*Devices start automatically without warning.  
Serious injury and damage to property is possible.*

- *Make sure that electric consumers are switched off.*

Before connecting electrical consumers, carry out the following:

- Read the technical specification for the generator before connecting voltage-sensitive equipment.
- Check that electric consumers and their connecting cables are in perfect condition.
- Plug in and switch on consumers one-by-one.
- Consumers with unfavourable on/off characteristics (e.g. high starting current) should be started first.

Do not allow the rated current for each electrical socket and for the generator to be exceeded.

#### Switch off the generator

Before deactivating the generator, carry out the following:

- Switch off electrical consumers and unplug them one-by-one.
- Switch off consumers drawing the highest current last.
- Check that the protective covers on the power sockets are correctly closed.
- Run the engine for a further 2 minutes after switching off the generator to allow the generator to cool down.

#### 4.8.6 Option ob, od

##### Start/stop/automatic options

###### Option ob Automatic engine start/stop

The start/stop automatism can be set in the SIGMA CONTROL SMART controller for automatic machine start.

###### Option od Trickle charging of starter batteries

The engine's starting batteries must be sufficiently charged at any time, in order for the engine to be started even after longer standstill times. Use a battery charger.

#### 4.8.7 Option oc

##### GSM/GPS unit

The machine is equipped with a GSM/GPS unit. This is equipped with a SIM card and provides fleet management capability for the customer.

The GSM/GPS unit comprises:

- GSM modem
- GPS receiver



Please observe all information from the manufacturer regarding functionality, operation and service!

Further information Dealer/manufacturer and GSM/GPS unit model information can be found in chapter 2.9.5.

#### 4.8.8 Transport options



See the separate document "Chassis Operating Manual" for information on the design of the individual chassis.

#### 4.8.9 Frame design options for stationary machines

##### 4.8.9.1 Option rw; rx

Frame types of stationary machines

Option	Designation	Characteristics
rw	Skid	<ul style="list-style-type: none"><li>■ Frame designed as skid</li><li>■ Use as stationary machine</li><li>■ Mounted on truck/trailer platform</li></ul>
rx	Frame	<ul style="list-style-type: none"><li>■ The mounting assembly is designed as a frame.</li><li>■ Use as stationary machine</li><li>■ Mounted on truck/trailer platform</li></ul>

Tab. 65 Stationary machines

Further information See chapter 13.3 for the dimensional drawings of machines with stationary frame designs.

#### 4.8.10 Option oe Closed floor pan option

The machine is fitted with a closed floor pan catching liquids in the event of leaks. Thus, direct contamination of the floor is prevented.



The closed floor pan:

- Cannot catch all liquids contained in the machine, but is intended only to capture small leaks in the vicinity of endangered components.
- Is equipped with service openings which are closed with bungs. These openings must be tightly re-closed after performing any cleaning work.

When other components are removed from the closed floor pan (for example the sheet metal cover), they must be properly re-sealed prior to installation.

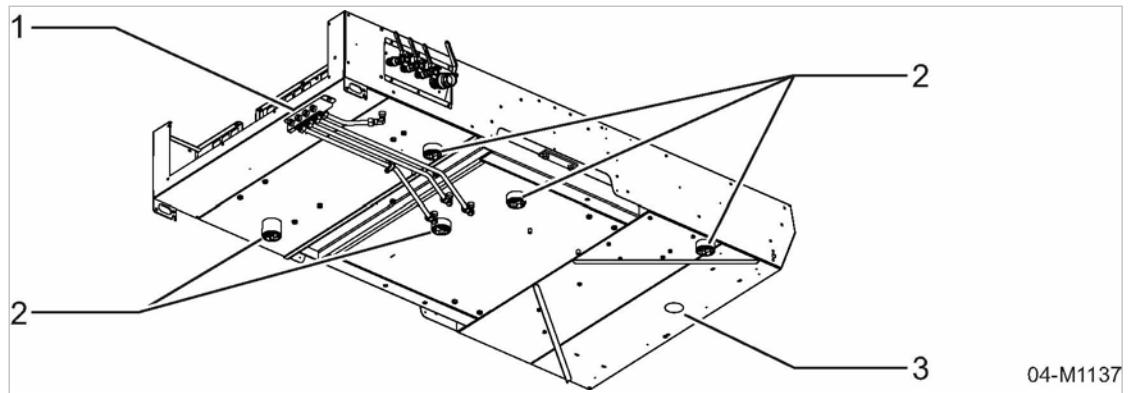
**Position of service openings in the closed floor pan:**


Fig. 18 Position of service openings in the closed floor pan

- ① Central drain point for oil/coolant
- ② Cleaning opening closed with bung
- ③ Spark arrestor in the service opening, closed with bung

The drain points for compressor cooling oil and engine coolant are led to a central point outside.

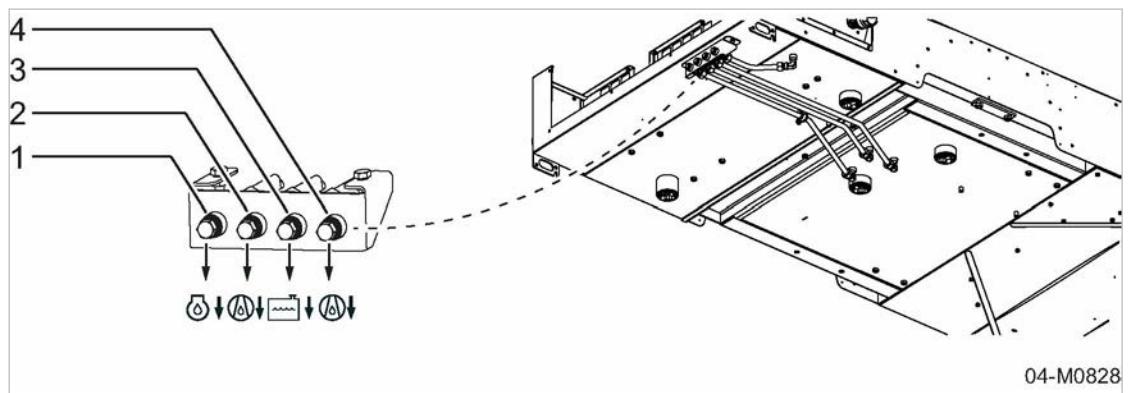
**Option oe, rw, rx Position of drains for oil and coolant from engine and compressor:**


Fig. 19 Drain points for oil and coolant from engine and compressor

- |   |   |
|---|---|
| ① Engine oil drain device                 | ③ Coolant drain - coolant cooler - engine             |
| ② Coolant drain - oil cooler - compressor | ④ Coolant oil drain - oil separator tank - compressor |

#### 4.8.11 Option sg Pedestrian protection option

The machine is fitted with a special protective guard that prevents pedestrians from being run over.

## 5 Installation and Operating Conditions

### 5.1 Ensuring safety

The conditions in which the machine is installed and operated effect the safety of personnel and surroundings.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety warnings

Disregard of safety warnings can cause unforeseeable dangers!

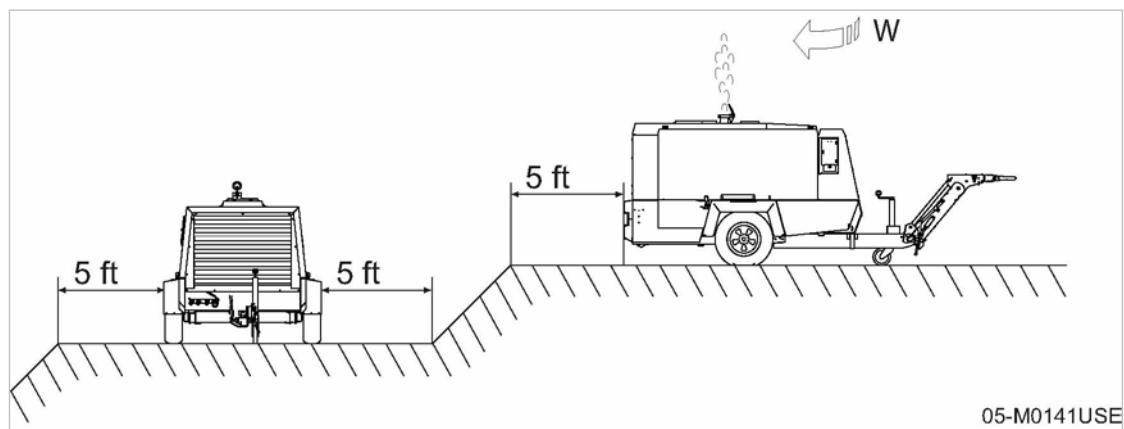
- Strictly forbid fire, open flame and smoking.
- If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting fuel or oil vapors or parts of the machine.
- Do not store any flammable materials in the vicinity of the machine.
- The machine is not explosion-proof!  
Do not operate in areas in which specific requirements with regard to explosion protection are applied.
- Keep suitable fire extinguishing agents on hand and ready for use.
- Ensure that required ambient conditions are maintained.

Required ambient conditions may be:

- A specific ambient temperature range
- Air composition at the installation site:
  - clean with no damaging contaminants (e.g., dust, fibers, fine sand)
  - free of explosive or chemically-unstable gases or vapors
  - free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulfide.

### 5.2 Installation conditions

Precondition The floor must be level, firm and capable of bearing the mass of the machine.



05-M0141USE

Fig. 20 Minimum distance from excavations/slopes and walls

Wind direction

## 5 Installation and Operating Conditions

### 5.3 Machine with stationary frame structure

1. Keep sufficient distance (at least 5 ft) from the edges of excavations and slopes.
2. Ensure that the machine is as level as possible.



The machine can be temporarily operated on a slope of not more than 15°.

3. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance. The operator panel with the «EMERGENCY STOP» push button must be accessible and within reach at any time.
4. **NOTICE** *Fire hazard from build-up of heat and hot exhaust system!*  
*Insufficient clearance above the machine may well cause heat build-up that could damage the machine.*
  - Do not position the machine directly under a low roof or covering.
  - Ensure always sufficient ventilation space around the machine.
5. Ensure there is enough free space all round and above the machine.
6. Keep air inlet and outlet openings free of obstructions so that the cooling air can flow freely through the machine.
7. Install the machine ensuring that
  - exhaust gases and heated exhaust air can escape freely.
  - Do not allow exhaust gases and heated cooling air to be drawn into the compressor.  
Note the wind direction! (see figure 20)
  - Ensure the unimpeded intake of fresh air (air intake, cooling air).
8. **NOTICE** *Ambient temperature too low.*  
*Frozen condensate and highly viscous engine or compressor cooling oil can cause damage when starting the machine.*
  - Use winter grade engine oil.
  - Use winter diesel fuel.
  - Use low viscosity compressor cooling oil.
9. At ambient temperatures below 32 °F, follow the instructions in chapter 7.4.

### 5.3 Option rx

#### Machine with stationary frame structure

Stationary machines mounted on a frame may be installed on the load platforms of trucks.

For safe footing, the machine must be fixed to the load platform via bolt-down anti-vibration mounts (bonded rubber/metal elements) for safe footing.

##### Prerequisites for the installation on truck platforms:

1. Follow the vehicle manufacturer's loading guidelines for safe operation and transportation.
2. Ensure there is enough free space around and above the machine.
3. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance. The operator panel with the «QUICK STOP» push-button must be accessible and within reach at any time.
4. Keep air inlet and outlet openings free of obstructions so that the cooling air can flow freely through the machine.

## 6 Installation

### 6.1 Ensuring safety

Follow the instructions below for safe installation.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety warnings

Disregard of safety warnings can cause unforeseeable dangers!

- Follow the instructions in chapter 3 "Safety and Responsibility".
- Installation work may only be carried out by authorized personnel.
- Replace self-locking nuts that have been removed, do not reuse old ones. The nut is no longer self-locking once it has been unscrewed.

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.
---------------------	---

### 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 Perform regular maintenance on the chassis

- See the separate document "Chassis Operating Manual" for instructions regarding maintenance on the chassis.

### 6.4 Option rx

#### Installing a machine with stationary frame superstructure on a truck platform

For safe footing, attach the machine frame with screw-in machine mounts on the load platform. See the dimensional drawing in chapter 13.3 for position and dimensions of the machine mounts.

These machine mounts are either supplied with the machine or can be ordered separately from KAESER.

Material	Bolt-down machine feet (anti-vibration elements) Fixing screws Wrench
----------	---

Precondition	The machine is switched off.
--------------	------------------------------

**Installing the machine mounts on the frame:**

- Fasten the machine mounts (anti-vibration elements) at the frame:

**Fasten the machine on the load platform:**

- Precondition The bolt-down machine mounts are attached to the machine.
1. Position the machine on the loading platform according to chapter 5.3, Installation conditions.
  2. Use suitable screws to fasten the machine with the bolt-down machine feet to the loading platform.

**6.5 Option ob****Have the «Remote ON Contact» of the automatic start/stop system connected**

In order to operate the machine controller with the “automatic start/stop” option, you must connect the machine to the controller system provided by the customer. This activity must be performed by a certified electrician.

- Have the customer's connection cable connected to the «Remote ON Contact» in the machine's control cabinet.

- Result The machine's SIGMA CONTROL SMART controller is connected to the customer's control system and is ready to start in automatic mode.

**6.6 Option od****Electrical connection of the battery charger**

A battery charger is used to ensure trickle charging of the starter batteries for the machine's “start-stop device” at all times. This battery charger must be connected to the user-end power supply network.

This battery charger is designed for operation in an industrial environment with a dedicated power supply network, separated from the public power supply network by a transformer or a generator. The operator must ensure that the battery charger is operated exclusively with a power supply network which meets these requirements.

- Connect the battery charger to a user-end power supply network which is separated from the public power supply network.

## 7 Initial Start-up

### 7.1 Ensuring safety

Follow the instructions below for safe commissioning of the machine.  
Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety warnings

Disregard of safety warnings can cause unforeseeable dangers!

- Follow the instructions in chapter 3 “Safety and Responsibility”.
- Commissioning work may only be carried out by authorized personnel!
- Make sure that no one is working on the machine.
- Ensure that all service doors and panels are locked.

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.

### 7.2 Before initial start-up (or recommissioning)

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

#### 7.2.1 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.

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

### 7.2.2 Special measures for recommissioning after storage

- Carry out the following before every start-up after long period of storage:

Storage period longer than:	Remedy
5 months	<ul style="list-style-type: none"> <li>➤ Remove the desiccant from the openings in the air intake filters of the engine and compressor.</li> <li>➤ Check the air and oil filters.</li> <li>➤ Drain the preserving oil from the separator tank.</li> <li>➤ Fill with cooling oil.</li> <li>➤ Drain the preserving oil from the engine.</li> <li>➤ Fill with engine oil.</li> <li>➤ Check the engine coolant</li> <li>➤ Check the battery charge.</li> <li>➤ Re-connect the battery (batteries).</li> <li>➤ Check all fuel lines, engine oil lines and compressor cooling oil lines for leaks, loose connections, wear and damage.</li> <li>➤ Clean the bodywork with a grease and dirt dissolving agent.</li> <li>➤ Check the tire pressures.</li> </ul>
36 months	<ul style="list-style-type: none"> <li>➤ Have the overall technical condition checked by an authorized KAESER service representative.</li> </ul>

Tab. 66 Measures for recommissioning the compressor after a long period of storage

### 7.3 Checking installation and operating conditions

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

Check	See chapter	Confirmed?
➤ Are the operators fully conversant with safety regulations?	–	
➤ Have all the positioning conditions been fulfilled?	5	
➤ Is there sufficient cooling oil in the separator tank?	10.6.1	
➤ Is there sufficient oil in the engine?	10.4.4	
➤ Is the maintenance indicator on the air intake filters (engine and compressor) OK?	10.4.2, 10.6.7	
➤ Is there sufficient coolant in the coolant expansion tank?	10.4.1	
➤ Is there sufficient fuel in the fuel tank?	–	
➤ Is there sufficient tool oil in the tool lubricator? (option ea, ec)	10.15.1	
➤ Are the access doors closed and all body panels in place?	–	
➤ Are the tire pressures OK?	–	

Tab. 67 Positioning and operating conditions checklist

## 7.4 Low-temperature operation (winter)

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

- In temperatures below 32 °F, use the following operating materials/components:
  - Winter grade engine oil
  - Low viscosity cooling oil for the compressor
  - Winter grade diesel fuel
  - Stronger battery



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

### 7.4.1 Jump starting the machine

If the machine's starter batteries are discharged, the machine can be jump-started with the batteries of another vehicle or engine-driven machine.

Material	Jumper cables
Precondition	The machine is disconnected from the towing vehicle and safely parked.

#### **⚠ WARNING**

*Fire and explosion hazard.*

*Short-circuit 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.*
- *Work with caution.*

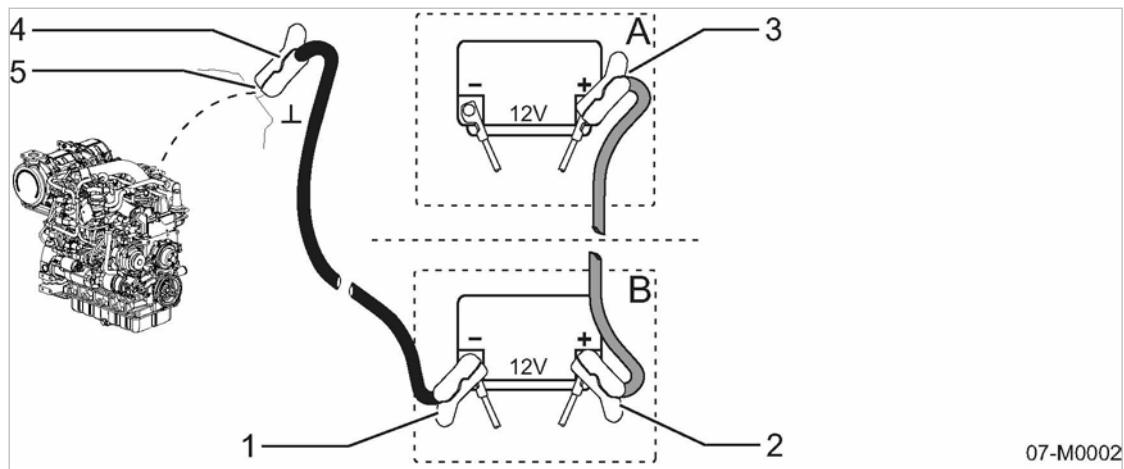


Fig. 21 Jumper cable connection diagram

- |     |  |     |   |
|-----|--|-----|---|
| [A] | Machine batteries (receiving battery)                            | [3] | Positive pole clamp (red) on machine battery      |
| [B] | Assisting vehicle batteries (externally provided battery)        | [4] | Negative pole clamp (black/blue) on machine earth |
| [1] | Negative pole clamp (black/blue) on battery of assisting vehicle | [5] | Bare metal point on the airend (earth)            |
| [2] | Positive pole clamp (red) on battery of assisting vehicle        |     |   |

**Complying with safety notes:**

1. **⚠ WARNING** *Fault in jump-start process!*
  - Connect batteries of the same nominal voltage only.
  - Ensure that machine and assisting vehicle do not touch.
  - Switch off all consumers prior to connecting and disconnecting the batteries.
  - Only use battery jumper cables of sufficient diameter and with insulated terminal clamps.
  - Observe the instructions provided with the battery jumper cables.
  - Keep jumper cables away from rotating parts.
  - Avoid short-circuits due to incorrect poling and/or bridging with tools.
  - Do not bend over the batteries when attaching jumper cables.
  - 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.
2. Comply with the safety instruction listed when jump-starting and using starter batteries.

**Preparations:**

1. Park the assisting vehicle in close distance to the engine, without their bodywork coming into contact with each other.
2. Stop the engine of the assisting vehicle.
3. Open the accesses to the batteries (remove maintenance panels/bonnet and pole caps).
4. Switch off all power consumers.

**Connecting the battery jumper cables:**

1. Clamp the first terminal clamp ③ of the red jumper cable to the positive pole of the machine's battery.
2. Clamp the second terminal clamp ② of the red jumper cable to the positive pole of the assisting vehicle's battery.
3. **DANGER** *Explosion hazard!*  
*A spark may ignite 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 jump-started.*  
*Sparks may be caused when connecting and disconnecting.*
  - *Work with caution.*
4. Connect the first pole clamp ④ of the black jumper cable to the engine block or a connected, solid and unpainted metal component of the machine ⑤ (as distant as possible to the battery).
5. Clamp the second terminal clamp ① of the black jumper cable to the negative pole of the assisting vehicle's battery.

**Starting the engine:**

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



Upon a successful start, run both engines run for approximately 10 - 15 minutes.

This is important, in particular for fully discharged batteries. In the beginning, they will only pick up little current and have a high internal resistance. Any voltage peaks occurring in the engine generator in this state can be attenuated only by the batteries of the assisting vehicle. In particular the engine electronics of the machine are sensitive to overvoltages and could be damaged easily.

**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 (+) poles.
3. Replace the pole caps.
4. Close the maintenance panels and/or bonnet.



If the compressor engine stops as soon as the cables are disconnected, this could indicate major damage (e.g., to the engine generator or batteries) which must be repaired by a specialised workshop.

**7.4.2 Option ba****Starting up low-temperature equipment****Option bb Starting the engine coolant pre-heating:**

The engine coolant can be pre-heated to improve starting under cold conditions.

- Start the coolant pre-heating as described in chapter 7.5.

## 7.5 Option bb; od Commissioning electrical equipment

The auxiliary electrical equipment is pre-wired for operation. A separate mains power connection provides power. A common device plug is provided at the lower part of the machine, beneath the operator panel, for the connection with the supplied power cable.

The supply voltage must be permanently connected as long as the compressor is to be operated in standby mode. Trickle charging the battery ensures that it is always in a condition to start the portable compressor.

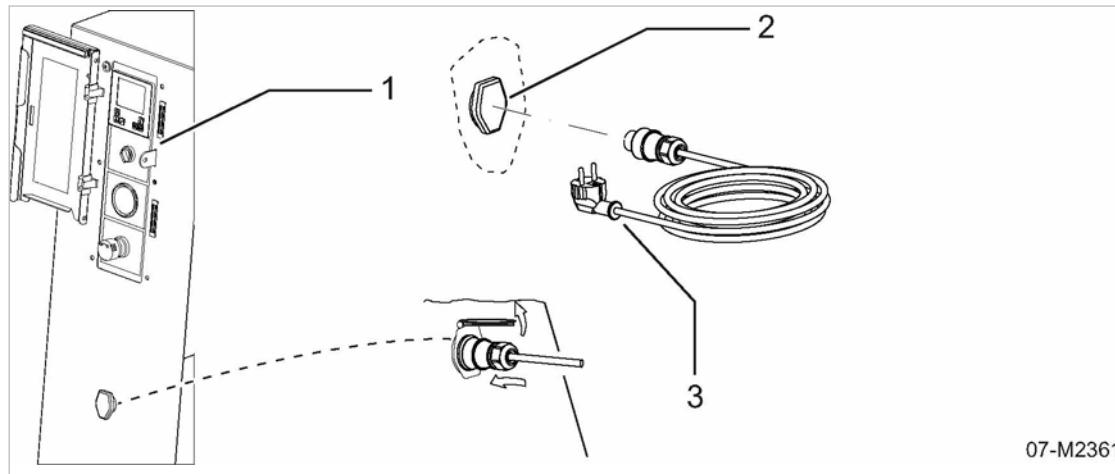


Fig. 22 Connect auxiliary electrical systems

- ① Operating panel
- ② Device connector (plug) for auxiliary electrical systems
- ③ Power cable

1. **DANGER** *Danger of fatal injury from electric shock!*  
*Serious injury or death can result from a short-circuit in the electrical equipment.*
  - The power cable for the electrical equipment may only be plugged into an electrical socket fitted with a protective earth.
  - Have the electrical equipment and associated wiring checked according to the maintenance schedule.
2. Connect the power cable with the user's power outlet.

Further information Chapter 4.8.2 gives an overview of the electrical equipment.

## 7.6 Option ga Activating the generator

### 7.6.1 Checking the generator

The generator can be operated without earthing.

Test the insulation monitoring daily with the engine running before putting the generator into operation.

**Generator 400 V/3~; 13 kVA:**

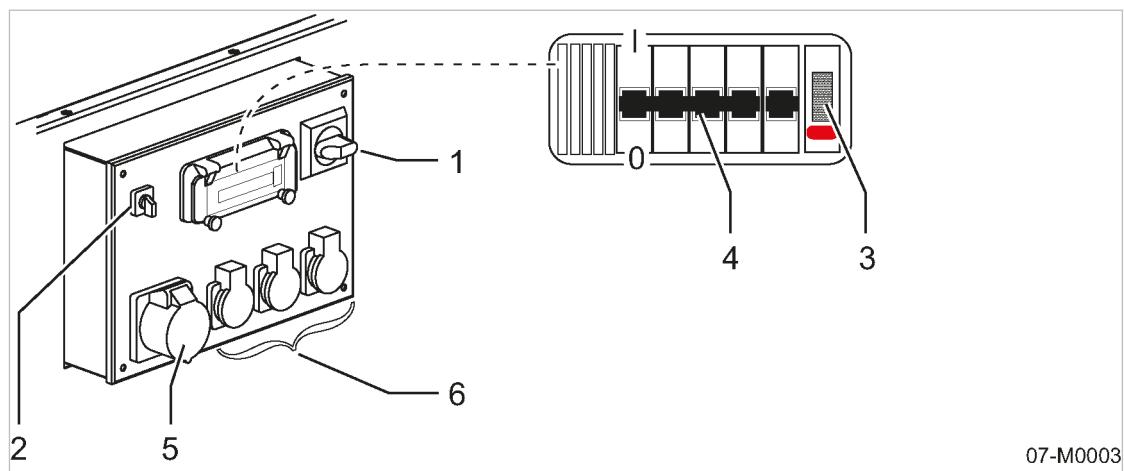


Fig. 23 Insulation monitoring – 400 V three-phase Generator

**Generator 230 V/3~; 13 kVA:**

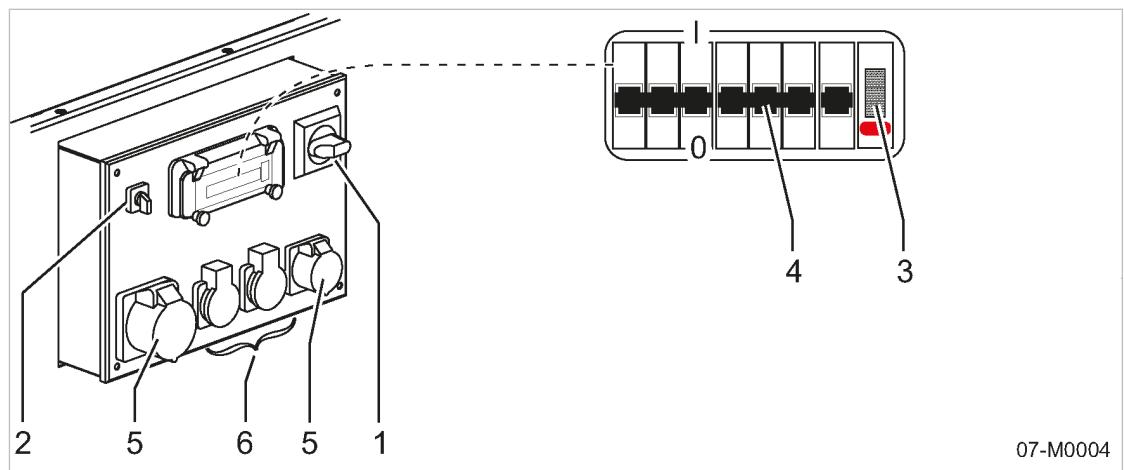


Fig. 24 Insulation monitoring – 230 V three-phase Generator

- |   |  |
|---|--|
| ① «Generator main switch»<br>② «Mode selector switch»<br>③ Test button with <i>earth leak</i> warning lamp<br>for «insulation monitoring» | ④ «Mains circuit breaker»<br>(«Circuit breaker» designed as automatic<br>circuit-breaker with shunt trip)<br>⑤ Three-phase AC power sockets<br>⑥ Single-phase AC power sockets |
|---|--|

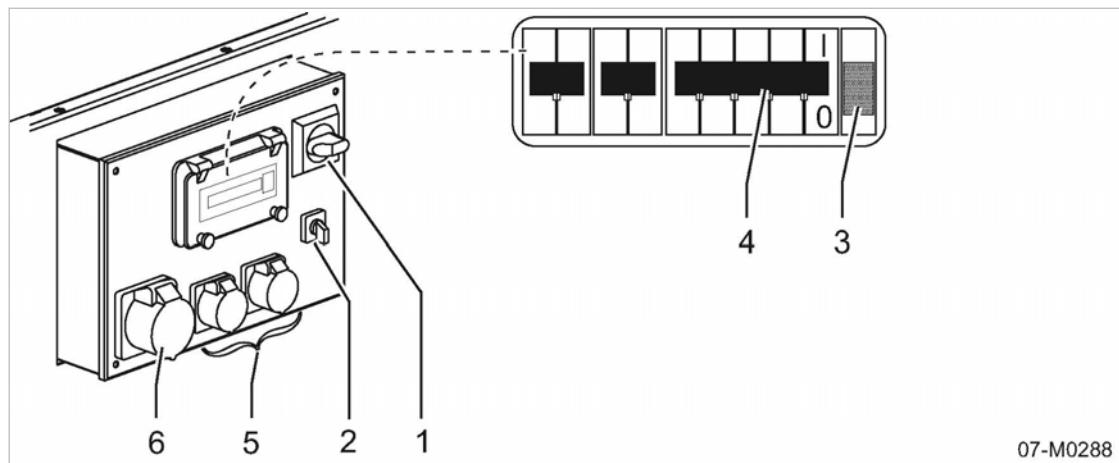
**Generator 115 V/2~; 7 kVA:**


Fig. 25 Insulation monitoring - 115 V single phase generator

- |   |   |
|---|---|
| <span style="border: 1px solid black; padding: 2px;">1</span> «Generator main switch»<br><span style="border: 1px solid black; padding: 2px;">2</span> «Mode selector switch»<br><span style="border: 1px solid black; padding: 2px;">3</span> Test button with <i>earth leak</i> warning lamp<br>for «insulation monitoring» | <span style="border: 1px solid black; padding: 2px;">4</span> «Mains circuit breaker»<br>«Circuit breaker» designed as automatic<br>circuit-breaker with shunt trip)<br><span style="border: 1px solid black; padding: 2px;">5/6</span> Single-phase AC power sockets |
|---|---|

1. Start the machine.
2. **DANGER** *Risk of fatal injury caused by contact with live components!*
  - *The generator may only be used if the «circuit breaker» («mains circuit breaker») has tripped during the test!*
3. Check the insulation monitor according to instructions:



Checking instructions are given on the label attached to the generator control box.

**DANGER!**
**Electrical power**

Risk of fatal injury caused by contact with live components!

- Test the «mains circuit breaker» each day while the machine is running.
- The generator may only be operated if the «mains circuit breaker» is functioning correctly.

**Checking the «safety cut-out»:**

- Switch on the «mains circuit breaker» for the generator.
- Press and hold the «test button» for 3 seconds.

The «mains circuit breaker» trips out.

Problem: The «mains circuit breaker» does not trip out.

- Shut down the generator and call KAESER SERVICE.

Tab. 68 Test instructions for a generator with an earth leak detection device.

## 8 Operation

### 8.1 Ensuring safety

Follow the instructions below for safe operation.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety warnings

Disregard of safety warnings can cause unforeseeable dangers!

- Follow the instructions in chapter 3 “Safety and Responsibility”.
- Make sure that no one is working on the machine.
- Ensure that all service doors and panels are closed and secured.

#### Preventing accidental contact

Intensely heated, rotating, or electrically-live components can cause severe injuries.

- Ensure that all doors, canopy and panels are closed.
- Do not carry out any checks or settings while the machine is running.
- Shut down the machine before opening any doors/canopy.

#### When working on live components

Touching voltage-carrying components can result in electric shocks, burns or death.

- Work on electrical equipment may only be carried out by authorized electricians.

#### Safe working with compressed air tools and hoses

Open pressurized compressed air hoses move erratically and can cause serious injury to people.

- Pressurize compressed air hoses only after the tool has been connected.
- Do not pressurize open compressed air hoses.
- Detach compressed air hoses only after the hose has been purged of compressed air.
- At working pressures >100 psig, compressed air hoses should be secured by a cable to their respective outlet valves.

#### Condensate formation in compressed air hoses

Use the shortest possible compressed air hoses to minimize the temperature difference between the machine's compressed air outlet and the air tool. The hose length represents a cooling section. With increasing cooling, the compressed air gives off moisture capable of damaging the air tool.

- Use short compressed air hoses.

**Condensate formation in compressed air receivers**

Compressed air stored in a containers will cool down. The compressed air precipitates moisture that collects at the container's bottom. Corrosion may damage the container.

- Regularly drain the condensate.

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.
---------------------	---

## 8.2 Starting and stopping

Precondition	No personnel are working on the machine. Service doors and panels are locked.
--------------	--

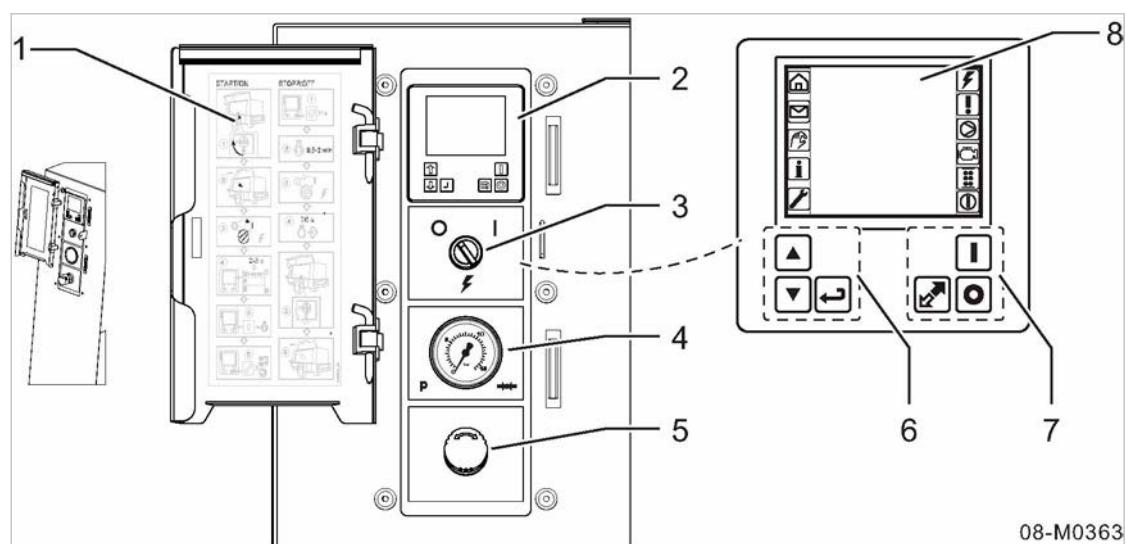


Fig. 26 Starting instruments

- |          |  |          |                              |
|----------|--|----------|------------------------------|
| <b>①</b> | Instrument panel cover, with adhesive label providing brief instructions | <b>⑤</b> | «EMERGENCY STOP» push button |
| <b>②</b> | Operating panel of the SIGMA CONTROL SMART controller                    | <b>⑥</b> | «Menu bar navigation» keys   |
| <b>③</b> | «Controller ON/OFF» switch   | <b>⑦</b> | Operation keys               |
| <b>④</b> | Compressed air outlet pressure gauge                                     | <b>⑧</b> | Display                      |

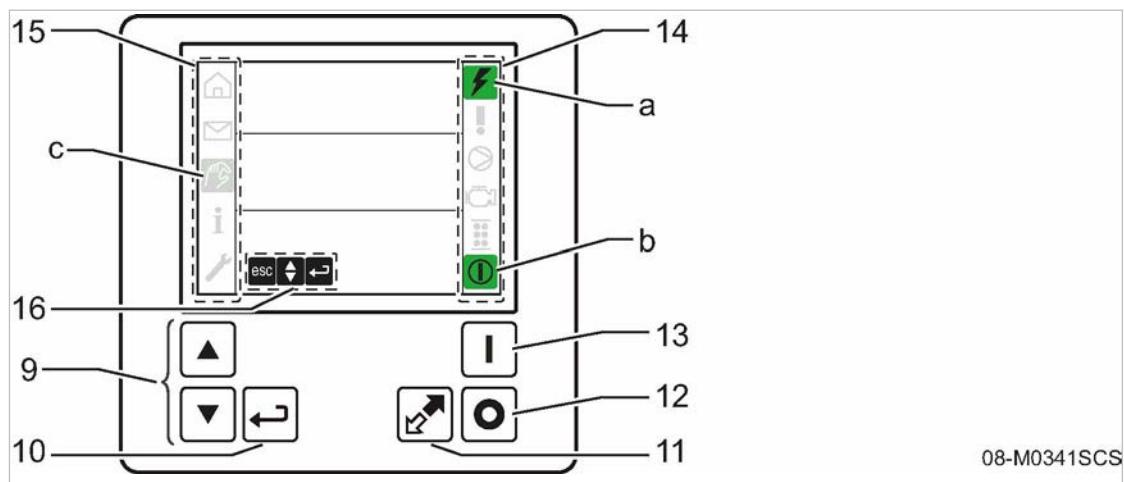


Fig. 27 Instrument panel keys and indicators

[9] «Up» and «Down» keys	a Controller power ON
[10] «Enter» key	b READY (flashes)
[11] «LOAD/IDLE» toggle key	15 Menu bar
[12] «STOP» key	c Settings menu
[13] «START» key	16 Navigation menu
[14] Status bar	

#### 8.2.1 Follow the brief operating instructions

Brief instructions containing symbolic information on starting and stopping are attached at the inside of the instrument panel cover.

##### Starting sequence

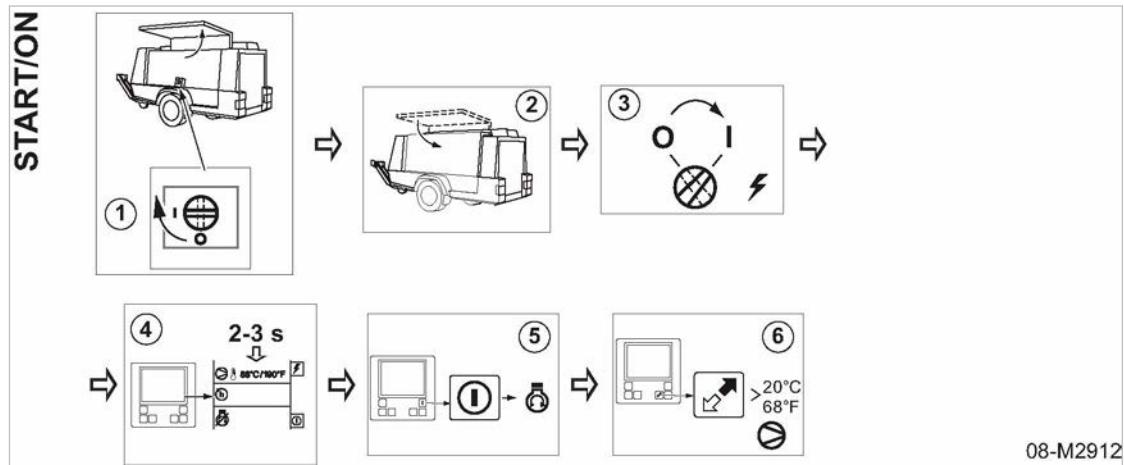


Fig. 28 Brief instructions on starting procedure

- Open the instrument panel cover and follow the brief instructions on the starting procedure attached at the inside.

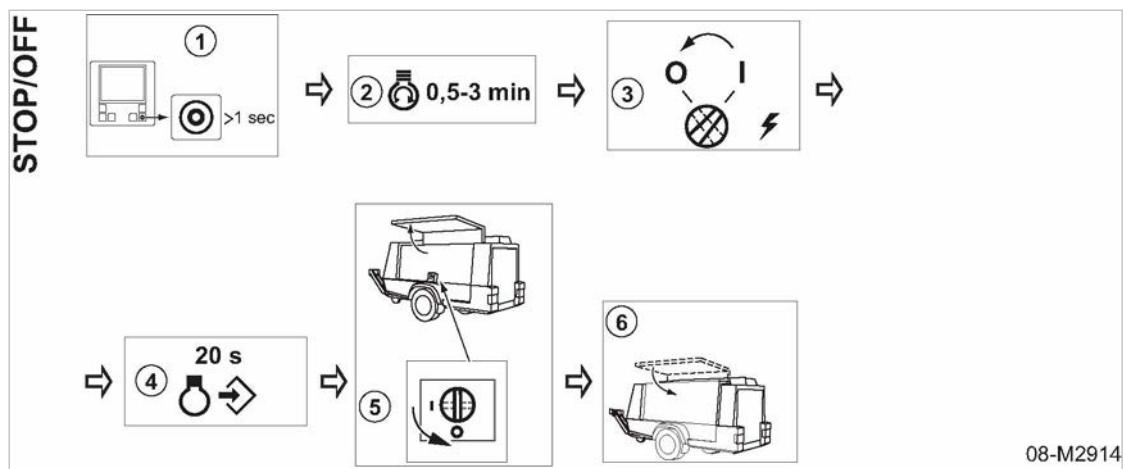
**Shut-down sequence**

Fig. 29 Brief instructions on stopping procedure

- Open the instrument panel cover and follow the brief instructions on the stopping procedure attached at the inside.



The individual steps are fully explained below.

### 8.2.2 Commissioning the machine

#### Notes concerning snow and ice

Considerable snow or ice may build up on the machine under low temperature conditions.

- Remove any snow and ice from the machine before operating.

As a safety measure, check the function of the «EMERGENCY STOP» push button.

1. **⚠ WARNING** «EMERGENCY STOP» push button locked out.

*The machine cannot be stopped quickly in an emergency.*

- Check the function of the «EMERGENCY STOP» push button.

- Do not operate the machine if the «EMERGENCY STOP» push button does not work.

2. Push the «EMERGENCY STOP» push-button.

The «EMERGENCY STOP» push-button cannot be pressed or does not engage: Defrost the «EMERGENCY STOP» push-button.

3. Disengage the «EMERGENCY STOP» push-button again.



The «EMERGENCY STOP» push-button still does not function after defrosting.

- Have the «EMERGENCY STOP» push-button replaced.

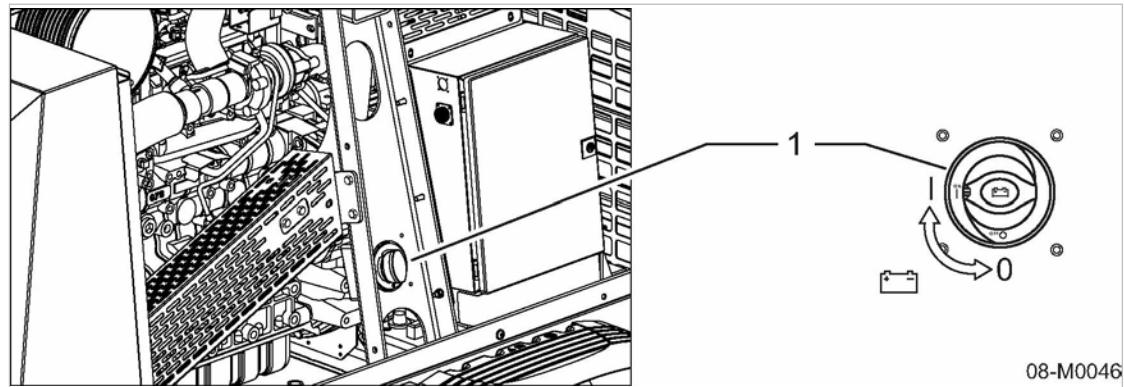


Fig. 30 «Battery isolating switch»

① «Battery isolating switch»

I – On

0 – Off

1. Open the left-hand door.
2. Turn on the «battery isolating switch».  
The battery is now connected to the machine's electrical system.
3. Close the door.  
The machine can now be started.

#### 8.2.3 Starting the machine

##### **NOTICE**

*Serious damage to the engine from cold starting sprays!*

*Cold-start assists, such as ether or other sprays, can cause severe engine damage.*

► *Do not use cold start sprays.*

##### **Preparing the start:**

1. Open the control panel cover.
2. Switch the «Controller ON/OFF» key to ON.
  - The controller boots up and the operating indicators appear on the display.
  - The *Ready* indicator flashes if the controller has no fault.

##### **Starting the engine:**

- Press the «START» button.
- The machine automatically preheats; the preheating time depends on the ambient temperature.
  - The engine is started
  - The machine is in *warm-up phase* and runs at IDLE speed.



- The machine is ready to be switched to LOAD as soon as the specified *airend discharge temperature (ADT)* is attained.  
(for temperature settings, see chapter 2.7.4)
- If the starting sequence fails or is interrupted by pressing the «EMERGENCY STOP» push-button, the “re-start inhibitor” is activated for 20 seconds. The display shows the remaining time before another start can be attempted.



Despite "preheating", the engine does not start in cold weather.

The engine is still too cold.

- Restart the controller.

1. Switch off the «Controller ON/OFF» switch.
2. Switch on the «Controller ON/OFF» switch.
3. Press the «START» button.

Result The engine preheats once again.

#### Switching the machine to LOAD operation:

Precondition Specified value for the *engine coolant temperature (ECT)* is attained:

- Press «LOAD/IDLE» key.  
The machine switches to LOAD mode and is ready to deliver compressed air.

Precondition Specified value for the *engine coolant temperature (ECT)* is not attained:

- Press «LOAD/IDLE» key.
  - The load demand is saved.
  - The engine runs up.
  - As soon as the specified *engine coolant temperature (ECT)* is attained, the machine automatically switches to LOAD and is ready for operation.

#### 8.2.4 Setting the compressed air discharge pressure

The compressed air discharge pressure can be modified only when this option is activated in the machine controller.

(Separate user manual for the SIGMA CONTROL SMART controller).

The compressed air discharge pressure (nominal pressure) can be set when the engine is in standstill (with the controller activated) or during operation (with the machine running).

- The pressure can only be set lower than the maximum working pressure (nominal pressure) of the machine.
- You can adjust the settings in increments of 0.1 bar or 1 psi.
- The adjustment appears on the display.

**⚠ CAUTION**

Danger from incorrectly set pressure!

Danger from malfunctioning or not functioning compressed air tools when the machine's discharge pressure is set incorrectly.

- Use connected compressed air tools only with the pressure appropriate for its purpose (tool working pressure).
- Comply with the information and notes provided in the compressed air tool's operating instruction.

The Settings menu for the compressed air discharge pressure can be reached in two ways:

- Quick access from the main menu
- Access via menu structure

Precondition The controller is switched on  
The pressure adjustment option is enabled.  
➤ Select the access type.

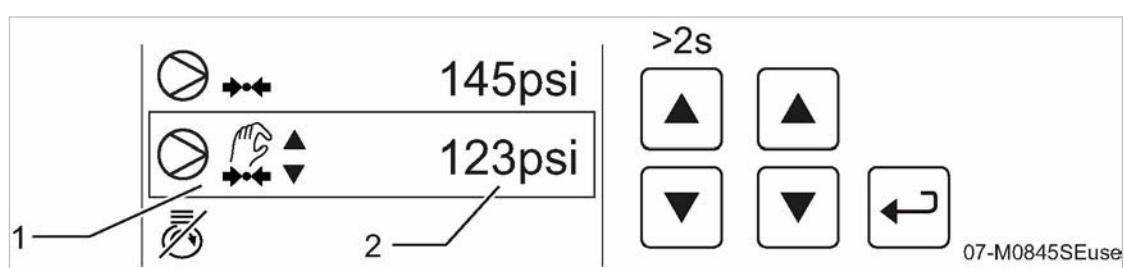
**Quick access from the main menu:**

Fig. 31 Quick access adjustment compressed air output pressure

- ① Symbol for setting the compressed air discharge pressure
- ② Set value

1. Press «Up» or «Down» for more than two seconds and release.  
The display immediately jumps to the line for "Setting the compressed air discharge pressure".  
The Settings menu has a flashing frame.
2. Press the «Up» and/or «Down» keys to select the required pressure.  
The set value for the compressed air discharge pressure is immediately active and remains saved.
3. Press «Enter».  
The frame disappears.
4. Press «Enter».  
Jumps back to the menu bar, the "Main menu" symbol appears with a black background.

**Access via menu structure:**

Precondition The Settings menu (hand symbol) is selected.

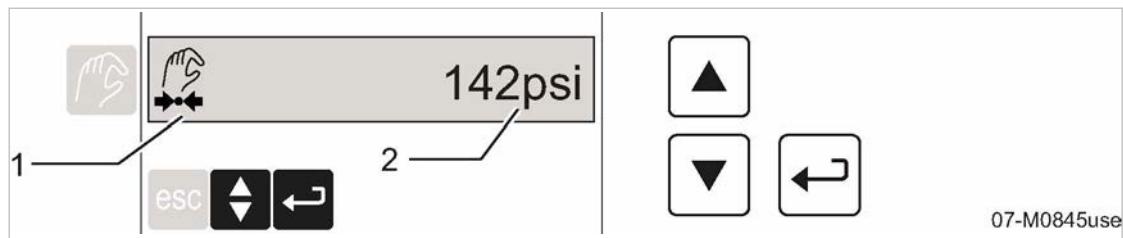


Fig. 32 Setting the compressed air discharge pressure

- ① Adjustment of compressed air discharge pressure  
② Set value

1. Press «Down» for a short time.  
The "Setting compressed air discharge pressure" line is framed.
2. Press «Enter».  
The frame flashes and thus signals that input is possible.  
You can set the required compressed air discharge pressure.
3. Press the «Up» and/or «Down» keys to select the required pressure.  
The set value for the compressed air discharge pressure is immediately active and remains saved.
4. Press «Enter».  
The frame stops flashing.
5. Press «Enter» for at least two seconds.  
Jump back to the menu bar, the "Settings menu" symbol is shown with a black background.  
*or as an alternative:*

1. Press «Up» or «Down» until all lines of the Settings menu no longer have a frame.
2. Press «Enter» briefly.

Jump back to the menu bar, the "Settings menu" symbol receives a black background.



The modification of the pressure setting at the display can be blocked upon the entry of the Customer password (password level 1). The last setting of the compressed air discharge pressure is retained.

### 8.2.5 Shutting down the machine

#### NOTICE

*Thermal overload of the turbocharger!*

*Abrupt stopping of the engine under load can cause a fault or damage to the turbo charger.*

- *Run the motor/engine a few minutes in idle before shutting down to allow the turbocharger to cool.*
- *Use the controller to shut down the machine as normal; do not use the «EMERGENCY STOP» push button to save time.*

**Switching the machine to the run-on phase:**

1. Press «LOAD/IDLE» key.
  - The machine switches to *unloaded run-on*.
    - The engine runs at IDLE speed.
    - The inlet valve closes.
    - Oil separator tank (OST) is vented.
  - after approx. 3 minutes, the machine has cooled down enough so that the motor/engine can be shut down.
2. Press and hold the «OFF» key for more than one second.
  - The engine switches off.

**Shutting the engine down:**

Turn the engine off after the cooling-down phase.

- Press and hold the «OFF» key for more than one second.
- The machine switches to *unloaded run-on*.
    - The engine runs at IDLE speed.
    - The inlet valve closes.
    - Oil separator tank (OST) is vented.
    - The engine switches off, controlled by a timer.
  - The controller display shows *back pressure* if the pressure in the oil separator tank is still >1 psi.
  - When the machine is fully vented, the display changes to *READY*.
  - When all pressure is vented from the OST after shut down, the restart inhibitor is activated and is indicated by the timer counting down from 20 seconds.

**Switch the controller off:**

1. **NOTICE** *Memory fault!*  
*Damage to the machine electronics and/or controller is possible.*

➤ Shut down the controller only after the engine control unit has completed save process.
2. Wait for approx. 30 seconds until saving is complete.
3. Switch off the «Controller ON/OFF» key.

**Shutting down the machine:**

If the machine is not to be used again, the «Battery isolating switch» should be switched off.

1. **NOTICE** *Danger of short circuit!*  
*Damage to the machine electrics is possible.*

➤ Use the «battery isolating switch» only when the machine is at standstill.

➤ Do not use the «battery isolating switch» as a main or emergency switch.
2. Wait for approx. 20 seconds until saving process of engine electronics is complete.
3. Turn off the «battery isolating switch».
  - The battery(ies) is/are disconnected from the machine's electrical system.

4. Close all «compressed air outlet valves» on the air distributor.
5. Close the operating panel cover and all doors. Lock if necessary.

### **8.2.6 Shutting down in an emergency**

Stop the machine in case of danger by pressing the «EMERGENCY STOP» push button.



Use the «EMERGENCY STOP» push button to stop the machine only in **emergencies**.

#### **Quick shut-down**

- Press the «EMERGENCY STOP» push button.
  - The engine stops immediately.
  - The «EMERGENCY STOP» push-button remains locked after being pressed.

#### **Put the machine back into operation**

When the fault has been cleared, the machine must be reset.

Precondition Fault rectified.

- Disengage «EMERGENCY STOP» push button.
- Confirm the message with the «Enter» key .  
The machine can now be restarted.

## **8.3 Confirming alarm and warning messages**

- The information evaluated in the controller is stored in the event memory.
- The warning and alarm messages are shown on the display.
- The message is stored in the controller's event memory at the same time.

### **8.3.1 Confirming alarm messages**

An alarm message is displayed and

- the machine is shut down and cannot be restarted.
- The associated signal indicator illuminates red.

Precondition Fault rectified.

- Confirm the message with the «Enter» key.  
The alarm indicator is extinguished.  
The alarm symbol in the status bar remains active.



If the fault is not yet rectified:  
The message line in the event memory features a coloured (red) frame.

#### 8.3.2 Confirming warning messages

Before an alarm, the system displays a warning and the following happens at the same time:

- The assigned signal indicator illuminates orange.

Precondition The cause of the warning is rectified

- Confirm the message with the «Enter» key.

The warning message is extinguished.

The warning symbol in the status bar remains active.



If the potential fault is not yet rectified:

The message line in the event memory features a coloured (orange) frame.

#### Acknowledging the message:

The Status bar of the event memory continues to display the confirmed message.

Upon rectification of the fault, the message must be acknowledged by restarting the controller.

Precondition Machine shut down

The fault is rectified.

- Switch on the «Controller ON/OFF» key.

■ The acknowledged message is deleted.

■ The machine can be started.

Further information For more information about the event memory and resetting the maintenance timer, see the separate user manual of the SIGMA CONTROL SMART

## 8.4 Operating the options

- Comply with all instructions.

### 8.4.1 Option ob

#### Operating the machine with the "Automatic start/stop" option

If you purchased a machine with the "Automatic start/stop" option, the operator can select between running the controller in *automatic* or *manual* mode. The machine is factory-set for *manual* operation when you switch the machine on. The machine can be controlled in *manual* mode as usual during normal operation.



The respective current setting is saved.



The battery can deplete if the controller stays continuously switched on (readiness for automatic machine start). The starting voltage is insufficient to start the engine when needed. Moreover, exhaustive discharge of the battery can result in battery damage.

A battery trickle charging device is recommended.

Precondition No personnel are working on the machine

Maintenance doors/panels are locked

**Preparing readiness to start:**

- Switch on the «Controller ON/OFF» switch.
  - The controller boots up and the operating indicators appear on the display.
  - If necessary, the engine control unit decides to automatically preheat the engine with the glow plug.
  - The *READY* indicator flashes if the controller has no fault.

**Waiting for start command:**

After switching on the machine (with automatic mode active) the «START» key must be pressed once to *Prepare start*.

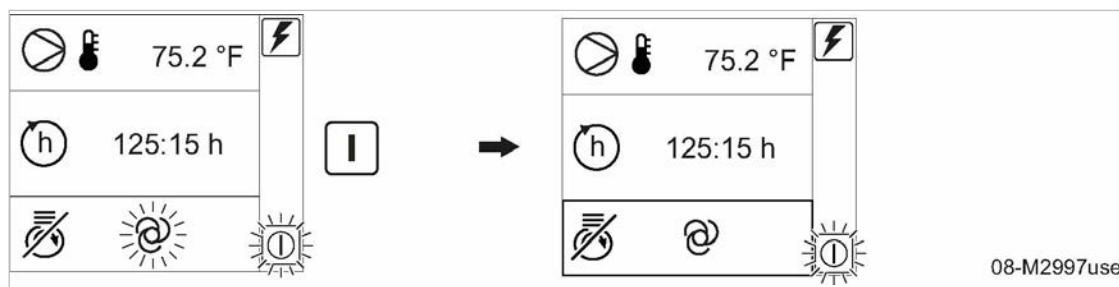


Fig. 33 Preparing start of the "Automatic start/stop"

- Press the «START» button.



The machine is ready to start.

The remote contact of the master control system signals the compressed air demand to the controller:

- The motor/engine is automatically started.
- The controller switches the machine to LOAD as soon as the required airend discharge temperature (ADT)\* has been attained.
- If the starting sequence fails or is interrupted by pressing the «EMERGENCY STOP» push-button, the “re-start inhibitor” is activated for 20 seconds. The display shows the remaining time before another start can be attempted.

Further information \* For temperature settings, see chapter 2.7.4

#### 8.4.1.1 Suspend automatic mode for operating cycle (forced manual operation)

The automatic operation can be cancelled when the machine is standing still or running!

If the «START» or «STOP» buttons are pressed for longer than two seconds, the controller switches to manual operation (manual mode) for this operating cycle.

- Push the «START», or «STOP» button longer than 2 seconds.

The machine can be controlled as usual in normal operation.



The forced manual mode applies only to the current operating cycle. After shut-down and re-start of the machine, the *Automatic* mode is automatically reselected.

#### 8.4.1.2 Shutting down the machine

When the compressed air demand via the remote contact of the master controller stops, the machine shuts down as follows:

1. The machine switches to *run-on phase*:

- The engine runs at IDLE speed.
- The inlet valve closes.
- Oil separator tank (OST) is vented.



When there is a new compressed air demand, the machine starts and goes into LOAD mode.

2. The machine switches to *engine run-on*:

- The engine cools down.
- The engine switches off.



Starting is not possible; the machine switches off and is subsequently restarted.

#### Switch the controller off:

1. **NOTICE** *Memory fault!*

*Damage to the machine electronics and/or controller is possible.*

➤ *Shut down the controller only after the engine control unit has completed its save process.*

2.

Wait for approx. 30 seconds until saving is complete.

3. Switch off the «Controller ON/OFF» switch.

#### Further information

Please see the separate operating manual of the SIGMA CONTROL SMART for details on changing the parameters of the "Start-stop automatic" and for changing the operating mode to *manual mode*.

#### 8.4.2 Option ea, ec Operating the tool lubricator

Precondition The machine is switched off.

Tool lubricator is filled with oil

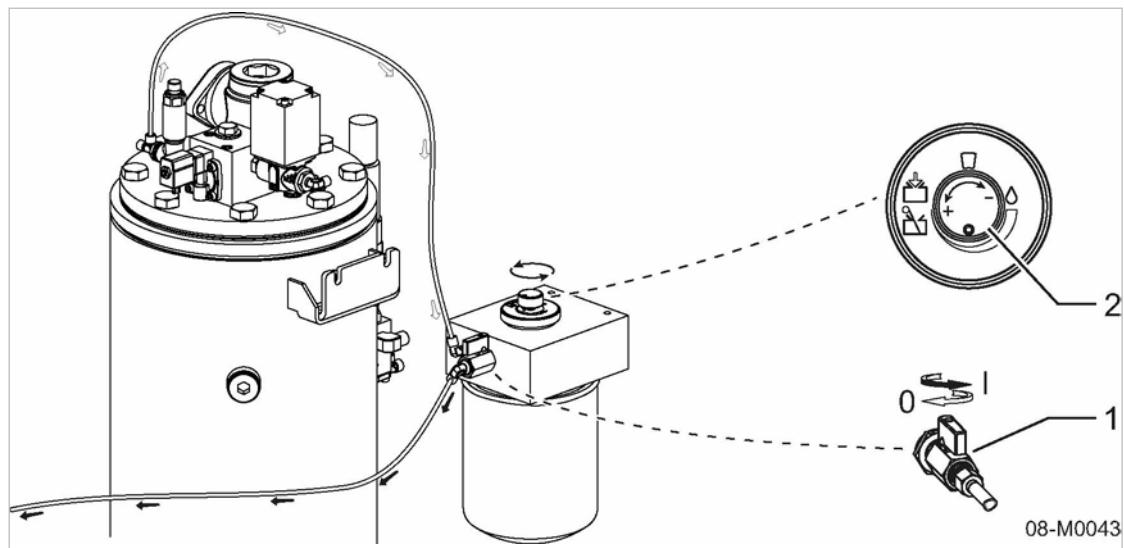


Fig. 34 Setting the tool lubricator

- ① Shut-off valve
  - I – open
  - 0 – closed
- ② Metering knob

➤ Open the right-hand access door.

#### Adding lubricating oil

1. Open the shut-off valve.
2. Close the access door.

#### Setting the oil flow

The amount of oil the compressed air should contain depends on the application and must be determined by the user. It depends on the nature of the air consumers and the supply hoses.

The metering valve controls the flow of oil into the air.

- Clockwise adjustment reduces the oil flow.
- Counter-clockwise adjustment increases the oil flow.

1. Set the required oil flow.
2. Close the access door.

Further information Fill the tool lubricator with suitable oil (see chapter 10.15.1)

#### Shutting off lubricating oil

1. Close the shut-off valve.
2. Close the access door.

#### 8.4.3 Option ba Using the low-temperature equipment

Option bb Pre-heating the engine coolant:

- Start the engine coolant pre-heating as described in chapter 7.5.

#### 8.4.4 Option da/df, da/dd/df Bypassing and activating the heat exchanger

A heat exchanger reheats the treated compressed air. This reheating unit can be bridged via bypass realized with a directional control valve. An intermediate position between the "I" - Open (red marking) and "0" - Closed (blue) positions is also possible. This enables a rough predetermination of the temperature of the produced compressed air.

The bypass enables infinitely variable setting of the compressed air discharge temperature from 44.6 °F above ambient temperature to approx. 185 °F

- Open the left-hand door.

##### 8.4.4.1 Option da/df Selecting either B or A compressed air quality

You can choose between the following options provided for compressed air treatment:

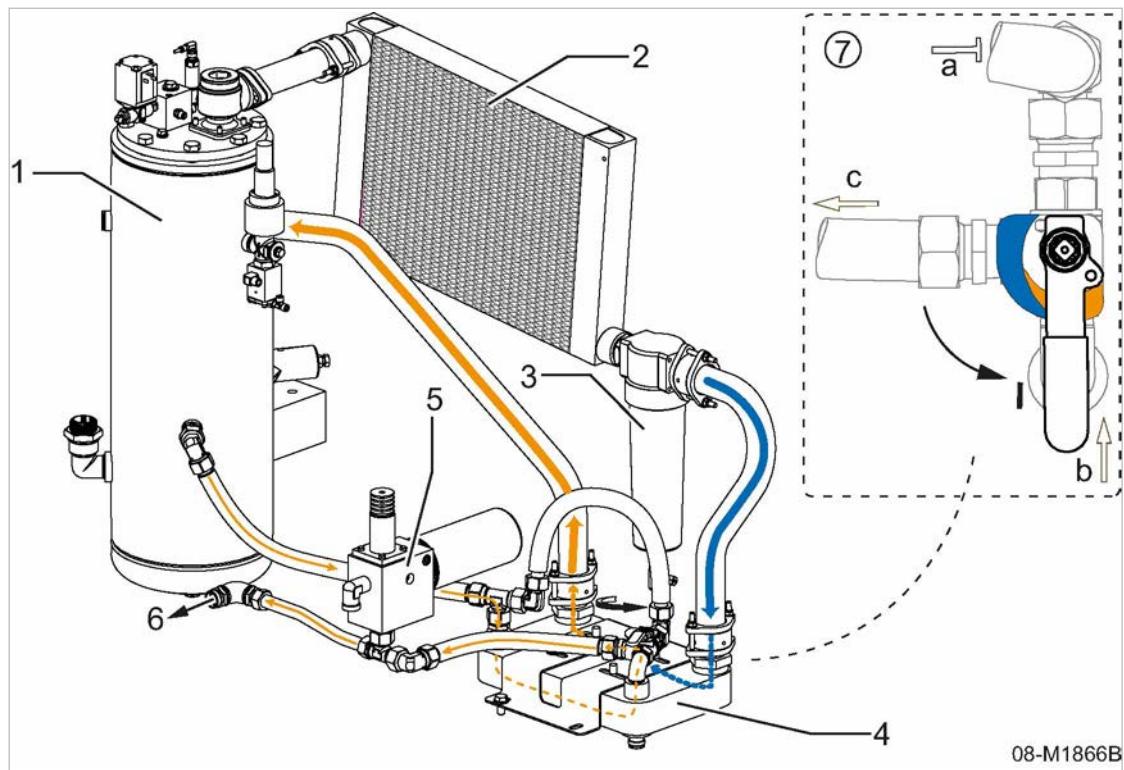
- Condensate-free and also heated compressed air
  - Compressed air quality B
- Condensate-free compressed air only
  - Compressed air quality A

Heat exchanger shut-off valve	Compressed air quality at the compressed air outlet	Compressed air quality, abbreviation
I	Condensate-free and heated compressed air	W
0	Condensate-free compressed air	A

I - Shut-off valve open; 0 - Shut-off valve closed

Tab. 69 Shut-off valve position and selected compressed air quality

Precondition Machine shut down

**Activating the heat exchanger:**

**Fig. 35 Heat exchanger without bypass operation (with compressed air heating)**

- |     |                                    |     |  |
|-----|------------------------------------|-----|--|
| [1] | Oil separator tank                 | [6] | Connection to the oil cooler                                     |
| [2] | Compressed air aftercooler         | [7] | Shut-off valve (3-way cock)<br>"I" - Open position (red marking) |
| [3] | Centrifugal separator              | [a] | Oil via bypass blocked   |
| [4] | Heat exchanger                     | [b] | Oil from heat exchanger open                                     |
| [5] | Thermostatic valve with oil filter | [c] | Oil to thermostatic valve/oil filter                             |

► Open the shut-off valve at the heat exchanger (position I) → red marking.

- Result** The cooling oil flows directly from [b] to [c]. The direct connection between [a] and [c] is closed. The oil/compressed air heat exchanger is part of the compressor's oil circuit. The compressed air fed through the heat exchanger is heated by the hot cooling oil of the compressor. "Condensate-free and heated compressed air" is available at the compressor air distributor.

**Deactivating the heat exchanger:**

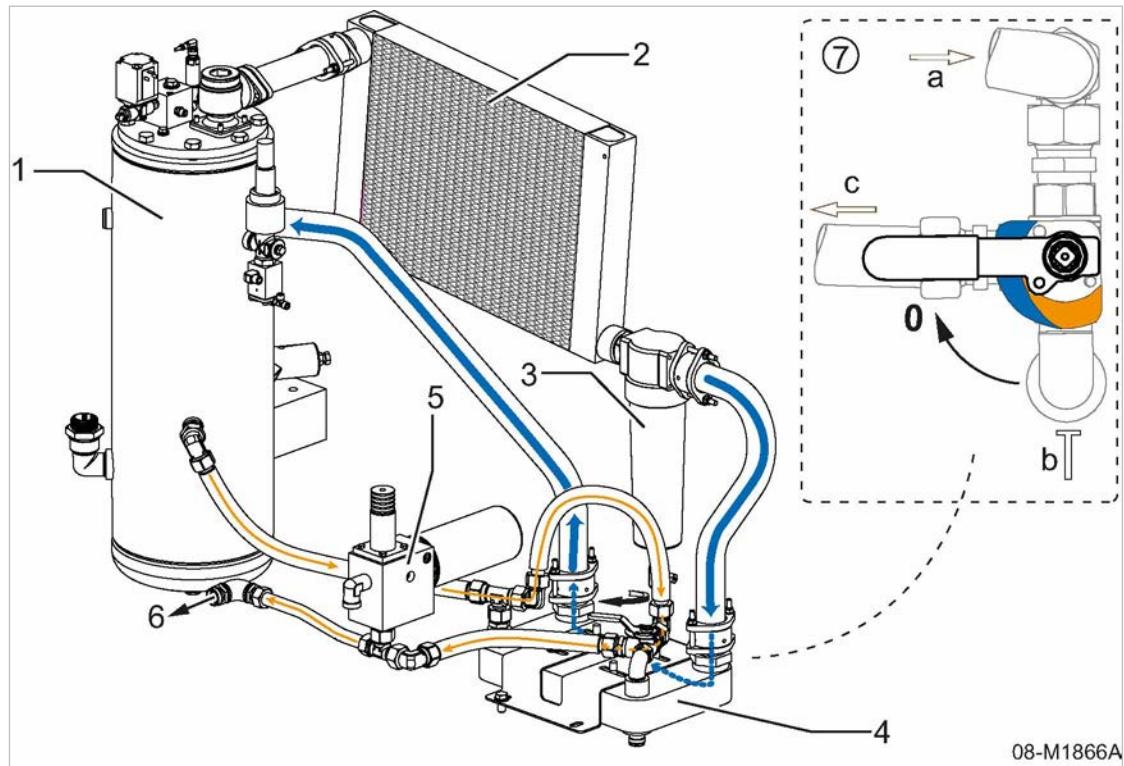


Fig. 36 Heat exchanger with bypass operation (no compressed air heating)

- |   |                                    |                                      |                                      |
|---|------------------------------------|--------------------------------------|--------------------------------------|
| ① | Oil separator tank                 | ⑥                                    | Connection to the oil cooler         |
| ② | Compressed air aftercooler         | ⑦                                    | Shut-off valve (3-way cock)          |
| ③ | Centrifugal separator              | "0" - Closed position (blue marking) |                                      |
| ④ | Heat exchanger                     | a                                    | Oil via bypass open                  |
| ⑤ | Thermostatic valve with oil filter | b                                    | Oil from heat exchanger blocked      |
|   |                                    | c                                    | Oil to thermostatic valve/oil filter |

- Close the shut-off valve at the heat exchanger (position 0) → blue marking.

**Result** The cooling oil flows from **a** to **c**. The connection between **b** and **c** is closed. The bypass line bridges the oil/compressed air heat exchanger and is not part of the compressor's oil circuit. The compressed air fed through the heat exchanger is not heated. Only "condensate-free compressed air" is then available at the compressed air distributor.

- Close the door.

#### 8.4.4.2 Option da/dd/df

##### Selecting either G or F compressed air quality

You can choose between the following options provided for compressed air treatment:

- Moisture-reduced, oil-free and also heated compressed air  
→ Compressed air quality G
- Moisture-reduced, oil-free compressed air only  
→ Compressed air quality F

Heat exchanger shut-off valve	Compressed air quality at the compressed air outlet	Compressed air quality, abbreviation
I	Moisture-reduced, technically oil-free and heated compressed air	G
0	Moisture-reduced, technically oil-free compressed air	F

I - Shut-off valve open; 0 - Shut-off valve closed

Tab. 70 Shut-off valve position and selected compressed air quality

**Activating the heat exchanger:**



For details about the 3-way cock, see Fig. 35, item 7.

- Open the shut-off valve at the heat exchanger (position I) → red marking.

**Result** The cooling oil flows directly from **[b]** to **[c]**. The direct connection between **[a]** and **[c]** is closed. The oil/compressed air heat exchanger is part of the compressor's oil circuit. The compressed air fed through the heat exchanger is heated by the hot cooling oil of the compressor. "Technically oil-free, dry and heated compressed air" is available at the compressed air distributor.

**Deactivating the heat exchanger:**



For details about the 3-way cock, see Fig. 36, item 7.

- Close the shut-off valve at the heat exchanger (position 0) → blue marking.

**Result** The cooling oil flows from **[a]** to **[c]**, **[b]** is closed. The bypass line bridges the oil/compressed air heat exchanger and is not part of the compressor's oil circuit. The compressed air fed through the heat exchanger is not heated. "Technically oil-free and dry compressed air" is available at the compressed air distributor.

- Close the door.

**8.4.5 Option ga  
Generator operation**

**DANGER**

*Risk of fatal injury caused by contact with live components!*

- Check correct function of the insulation monitoring device daily (see chapter 7.6).
- Have the generator and control box checked annually by a qualified electrician (see chapter 3.9.5).

**8.4.5.1 Switch on the generator**

**Precondition** LOAD operation.

Read and follow the instructions on generator operation in chapter 4.8.5.3.

1. Turn the «generator main switch » to the "I" position.

2. Set the «automatic circuit-breaker(s)» to the "I" position.
3. Turn the mode selector switch to the required mode of operation.

Further information See chapter 4.8.5.2 for generator controls.  
See chapter 4.8.5.1 for generator operating modes.

#### 8.4.5.2 Switch off the generator

Precondition Read and follow the instructions on switching off the generator in chapter 4.8.5.3.

1. **NOTICE** *Thermal overload of the turbo generator.*  
*Stopping the machine abruptly after the generator has been in operation for some time can cause heat damage to the generator.*  
➤ Allow the engine to run for about 2 minutes in idle before shutting down to allow the generator to cool down.
2. Set the «automatic circuit breaker(s)» to the "0" position.
3. Turn the «generator main switch» to the "0" position.
4. Press «LOAD/IDLE» key.
  - The machine switches to *unloaded run-on*, that is:
    - The engine runs at IDLE speed.
    - The Oil separator tank (OST) is vented.
    - The machine cools down.
  - After running about 2 minutes in IDLE, the generator has cooled down enough so that the engine can be stopped.

### 8.5 Cleaning the machine after operation

Material High-pressure cleaner

Precondition The machine is switched off.  
The machine has cooled down.  
The machine is fully vented, the pressure gauge reads 0 psig.  
All compressed air consumers are disconnected and the air outlet valves are open.

Maintain the following minimum distances to the object to be cleaned in order to prevent damages to the machine when cleaning with the high-pressure cleaner.

- Circular section jets: approximately 2.3 ft
- Fan jets: approximately 1 ft
- Dirt blasters: approximately 1 ft



Keep the water jet in permanent motion during the cleaning process. You prevent damage.



Cleaning with dry-ice jets is strictly forbidden as it could cause unforeseeable damages.

1. **NOTICE** *Machine damage caused by strong water jet!*  
*Direct water jets can damage or even destroy sensitive components.*
  - *Do not directly focus a strong water jet towards sensitive components.*
  - *Work carefully.*
2. Carefully clean the machine with the high-pressure cleaner.



Water has accumulated in the closed floor pan.

- Drain the water.



Catch the liquid and dispose in accordance with applicable environmental regulations.

Further information See chapter 10.15.7 for information to the draining of liquids within the machine.

## 8.6 Refuelling the machine

In order to avoid accidents caused by igniting fuel, special caution must be exercised when filling the fuel tank.

### **⚠ DANGER**

*Fuel constitutes a fire hazard!*

*Overflowing or spilled fuel can ignite upon contact with hot engine parts, open flames or sparks, resulting in serious burns.*

- *Only refuel the machine after switching it off and allowing it to cool down.*
  - *Never refuel the machine in the vicinity of open flames or sparks.*
  - *Do not allow fuel to spill or overflow.*
  - *Do not smoke.*
- Follow all instructions carefully.

### 8.6.1 Use the correct type of fuel

The use of incorrect fuels in modern diesel engines may – in the most serious cases – result in a total loss of the injection system and engine.

In the worst case scenario, irreparable damage occurs when a modern diesel engine is started with petrol or premium-grade petrol in the fuel tank. Because these fuels lack the special lubricating properties of diesel fuel, it is primarily the precision components in the injection system that are destroyed. Secondary damage may occur to the drive engine.

Example: Machine with diesel engine	Measures
<ul style="list-style-type: none"><li>■ Fuel tanks are filled with petrol or premium-grade fuel.</li><li>■ Error is noticed.</li><li>■ Drive engine is <b>not</b> started.</li></ul>	<ul style="list-style-type: none"><li>➤ Do not start the engine under any circumstances.</li><li>➤ Arrange for the incorrect fuel to be drained / pumped out from the tanks.</li><li>➤ Arrange for the fuel tanks to be cleaned.</li><li>➤ Fill the tanks with diesel fuel.</li></ul>

Example: Machine with diesel engine	Measures
<ul style="list-style-type: none"> <li>■ Fuel tanks are filled with petrol or premium-grade fuel.</li> <li>■ Error is <b>not</b> noticed.</li> <li>■ Drive engine is started.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Switch off the drive engine immediately.</li> <li>➤ Contact a specialist workshop.</li> <li>➤ Arrange for the incorrect fuel to be drained / pumped out from the tanks.</li> <li>➤ Arrange for the fuel tanks to be cleaned.</li> <li>➤ Arrange for the fuel system to be cleaned.</li> <li>➤ Have the injection system checked/replaced.</li> <li>➤ Arrange for the drive engine to be checked / replaced.</li> <li>➤ Fill the tanks with diesel fuel.</li> </ul>

Tab. 71 Measures required should the fuel tanks be filled with the incorrect fuel type

The manufacturer shall not be liable for any damage caused due to filling the tanks with the incorrect fuel type.

The fuel tanks must be filled exclusively with liquid fuel of the correct type and the recommended specification.

A label placed on the fuel tank in the vicinity of the filler neck indicates the correct fuel type, see Figure 37.

#### NOTICE

*Operating the machine with the incorrect fuel type will result in damage to the injection system and the drive engine!*

- Arrange for the fuel tank to be emptied and cleaned.
- Arrange for the entire fuel system to be cleaned.
- If necessary, replace the injection system/drive engine.
- Only fill the fuel tank with diesel that complies with the recommended fuel specifications.

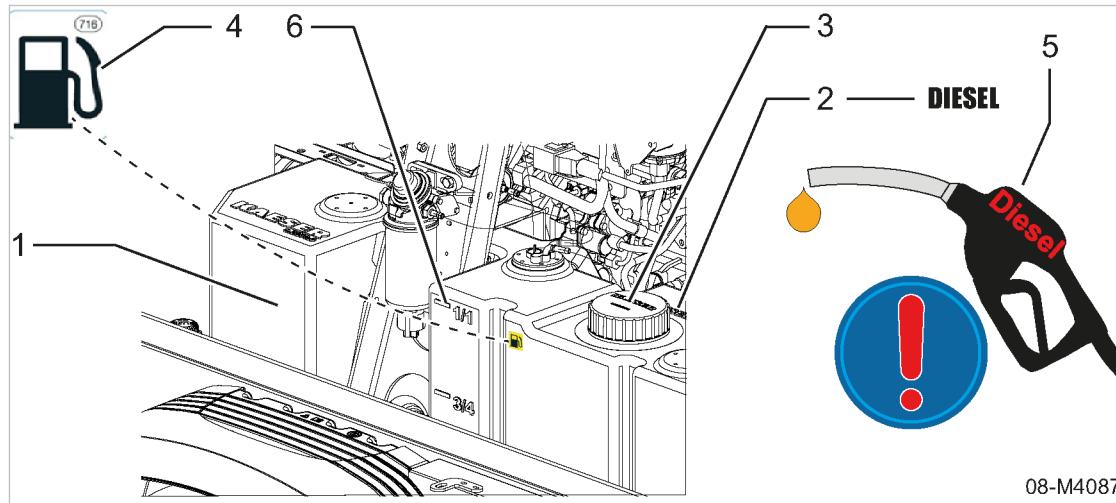


Fig. 37 Filling the tank with the correct fuel type

- |                     |                              |
|---------------------|------------------------------|
| ① Fuel tank         | ④ Refuelling label           |
| ② Correct fuel type | ⑤ Diesel fuel nozzle         |
| ③ Fuel tank cap     | ⑥ Maximum fill level marking |

- Check the correct fuel type and specifications by referring to Table 72.

Fuel type/fuel specification	Designation/standard
Fuel type	Diesel fuel
Recommended fuel specification	EN590 <sup>(1)</sup>
	ASTM D975 <sup>(2)</sup>

(1) △ Sales region Europe, (2) △ Sales region USA

Tab. 72 Fuel type/fuel specification



Fuel type / specification does not comply with regulations.

- Under no circumstances must the fuel tank be filled with the incorrect fuel type.

Further information For more details on the correct fuel specification, see Chapter 2.8.3.

#### 8.6.2 Filling the fuel tank at a pump by means of a refuelling nozzle



Liquid fuels expand at high ambient temperatures. To prevent overflowing, the fuel tanks must not be filled to the brim.

The *maximum fill level* is indicated on the fuel tank.

Precondition The machine is switched off.

The machine is standing level.

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

The machine has cooled down.

All compressed air consumers are disconnected and the air discharge valves are open.

The «battery isolating switch» is switched off.

The selected fuel meets the requirements specified in Table 72.

1. Open the right-hand door.
  2. Loosen and remove the fuel tank cap.
  3. Insert the diesel fuel nozzle into the filler port.
  4. Activate the fuel nozzle.
- Refuelling begins.
5. Wait until the maximum fill level of the fuel tanks has been reached.
  - Sufficient expansion volume remains.
  6. Shut off and remove the fuel nozzle.
  7. Close the filler port with the cap.



Dispose of any spilled fuel and fuel-contaminated working materials in accordance with applicable environmental regulations.

#### Preparing for operation

1. Close the door.

#### 8.6.3 Filling the fuel tank on a construction site by means of a canister



Liquid fuels expand at high ambient temperatures. To prevent overflowing, the fuel tanks must not be filled to the brim.

The *maximum fill level* is indicated on the fuel tank.

Material Funnel

Precondition The machine is switched off.  
The machine is standing level.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected and the air discharge valves are open.  
The «battery isolating switch» is switched off.  
The selected fuel meets the requirements specified in Table 72.

1. Open the right-hand door.
2. Loosen and remove the fuel tank cap.
3. Insert the funnel into the filler port.
4. Carefully pour the contents of the canister into the funnel.
5. Do not allow any fuel to spill or overflow.
6. Fill the tank to the *maximum fill level* marking.  
Sufficient expansion volume remains.
7. Remove the funnel.
8. Close the filler port with the cap.



Dispose of any spilled fuel and fuel-contaminated working materials in accordance with applicable environmental regulations.

#### Preparing for operation

1. Close the door.

## 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. In all other cases:  
Have the fault rectified by an authorized KAESER service representative.

Further information Observe the instructions in chapter 3 "Safety and Responsibility" and prevailing local safety regulations when rectifying faults and malfunctions.  
Comply with local applicable safety provisions!

### 9.2 Analysing SIGMA CONTROL SMART messages

There are three types of message:

- Alarm messages, see chapter 9.2.1
- Warning messages, see chapter 9.2.2
- Maintenance messages, see chapter 10.2

The messages valid for your machine are dependent on the controller factory settings and individual equipment with which the machine is provided.

#### 9.2.1 Alarm messages on the controller (machine off)

Fault with automatic deactivation of the machine.



You must acknowledge the alarm message upon correction of the fault before you can restart the machine.

Further information Further information on the acknowledgement of alarm messages can be found in Chapter 8.3.

**Alarm codes, range 1100 – 1199 “Motor/engine faults”:**

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1100	Fault - motor/engine oil pressure (p76) low.	Check the engine oil level.	10.4.4	-	-
		Have the engine oil pressure checked.	-	X	-
		Have the oil pressure switch checked.	-	X	X

SW = specialised workshop; KS = KAESER SERVICE; DPF = Diesel particulate filter

SCS - SIGMA CONTROL SMART; ECU - engine control unit

## 9 Fault Recognition and Rectification

### 9.2 Analysing SIGMA CONTROL SMART messages

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1110	Fault – coolant temperature (T70) high.	Check the coolant level.	10.4.1	–	–
		Clean the cooler.	10.7	–	–
		Have the coolant cooling checked.	–	X	X
1111	Fault – coolant level too low.	Check the coolant level.	10.4.1	–	–
1121	Fault – turbo air temperature (T73) high.	Check setup conditions. Allow the machine to cool down.	5.2	–	–
1124	Fault - motor/engine fault air flow meter.	Have checked.	–	X	X
1130	Fault – fuel level too low.	Refuel.	–	–	–
1132	Fault – fuel pressure low.	Have checked.	–	–	–
1135	Fault – fuel pump.	Have checked.	–	X	X
1136	Fault – floor pan fluid level.	Drain the liquid.	10.15.7	–	–
1137	Fault - fuel solenoid.	Have checked.	–	X	X
1140	Fault - motor/engine generator does not charge.	Have checked.	–	X	X
1150	Fault – ECU other faults.	Have checked.	–	X	X
1151	Fault – ECU-SCS communication.	Have it checked.	–	X	X
1160	Fault – rail pressure sensor.	Have checked.	–	X	X
1161	Fault – speed sensor.	Have checked.	–	X	X
1162	Fault - drive engine speed high.	Have it checked.	–	X	X
1164	Fault - fuel system.	Have it checked.	–	X	X
1165	Fault - drive motor/engine speed low.	Have checked.	–	X	X
1170	Fault – automatic start mode fault.	Have it checked.	–	X	X
1180	Fault – fault in emission treatment.	Check DPF.	–	X	X
1186	Fault message emission treatment – temperature high.	Check DPF.	–	X	X

SW = specialised workshop; KS = KAESER SERVICE; DPF = Diesel particulate filter

SCS - SIGMA CONTROL SMART; ECU - engine control unit

Tab. 73 Alarm messages and actions concerning the motor/engine.

Alarm codes, range 1200 – 1299 “Compressor faults”:

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1200	Fault - ADT high.	Check operating conditions.	5.2	-	-
		Allow the machine to cool down.		-	-
		Check the cooling oil level.		10.6.1	-
1201	Fault - OST pressure high.	Clean the cooler.	10.7	-	-
		Have it checked.		-	X

SW = specialised workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator cartridge

Tab. 74 Alarm messages and actions concerning the compressor unit

Alarm codes, range 1300 – 1399 “Controller faults”:

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1300	Fault – PLC memory error	Have it checked.	-	-	X
1302	Fault PLC – HMI communication.	Have it checked.	-	-	X
1303	Fault PLC – temperature high.	Check setup conditions. Allow the machine to cool down.	5.2	-	-
1304	Fault – PLC power supply.	Have it checked.	-	-	X
1306	PLC - ECU communication fault.	Have checked.	-	-	X
1310	Fault – Fault in Watch-dog.	Have it checked.	-	-	X
1311	I/O module fault.	Have it checked.	-	-	X

SW = specialised workshop; KS = KAESER SERVICE

PLC = Programmable logic controller; HMI = Human-machine interface; Watchdog = Function monitoring; ECU - Motor electronic

Tab. 75 Alarm messages and actions concerning the controller.

**Alarm codes, range 1400 – 1499 "General faults":**

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1400	Fault - EMERGENCY STOP.	Unlock.	8.2.6	-	-
		Have it checked.	-	-	X
1410	Fault - OST pressure sensor open circuit.	Have it checked and repaired.	-	-	X
1412	Fault – inlet valve pressure transducer open circuit.	Have it checked and repaired.	-	-	X
1414	Fault – ADT sensor open circuit.	Have it checked.	-	-	X
1416	Fault – fuel level sensor open circuit.	Have it checked.	-	-	X
1420	Fault – venting valve open circuit.	Have it checked and repaired.	-	-	X
1424	Fault – inlet valve control valve open circuit.	Have it checked.	-	-	X
1450	Fault - GSM module control locked.	Have the GSM modem unlocked.	-	-	X

SW = specialised workshop; KS = KAESER SERVICE

GSM = Global system for mobile communications; OST = Oil separator tank

ADT = Airend discharge temperature

Tab. 76 Alarm messages and troubleshooting in "General faults"

### 9.2.2 Warning messages on the controller

The machine is not shut down.



- In the case of an over-temperature warning, the machine switches automatically to IDLE mode to cool down.
- The warning message must be confirmed after remedying the fault.

Further information

Further information on the acknowledgement of warning messages can be found in chapter 8.3.

**Message codes, range 3100 – 3199 "Engine warning":**

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3112	Warning - sensor coolant temperature (T70) faulty.	Have it checked.	-	-	-
3120	Warning - turbo air pressure fault.	Have the turbo air pressure sensor checked.	-	X	X

SW = Specialized workshop; KS = KAESER SERVICE

DPF = Diesel particulate filter; ECU = Electronic Control Unit

UM SCS = Separate user manual for the SIGMA CONTROL SMART controller

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3124	Warning - air flow meter fault.	Have it checked.	-	X	X
3130	Warning – fuel level low.	Refuel.	-	-	-
3135	Warning - fuel pump.	Have it checked.	-	X	X
3136	Warning - fuel filter water level.	Empty the fuel filter water trap.	10.4.3	-	-
3150	Warning - ECU miscellaneous error.	Have it checked.	-	-	-
3154	Warning – drive engine sensor fault.	Have it checked.	-	X	X
3155	Warning – drive engine actuator fault.	Have it checked.	-	X	X
3164	Warning - fuel system fault	Have it checked.	-	X	X
		Clean / replace the fuel filter.	10.4.3	-	-
3185	Warning message - fault in emission treatment.	Check DPF.	-	X	X
3188	Warning - emission treatment - regeneration necessary.	Initiate parked regeneration.	UM SCS	-	-

SW = Specialized workshop; KS = KAESER SERVICE

DPF = Diesel particulate filter; ECU = Electronic Control Unit

UM SCS = Separate user manual for the SIGMA CONTROL SMART controller

Tab. 77 Warning messages and measures relating to the engine.

**Message codes, range 3200 – 3299 “Compressor unit warnings”:**

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3200	Warning – ADT high.	Check setup conditions. Allow the machine to cool down.	5.2	-	-
		Check the cooling oil level.	10.6.2	-	-
		Clean the cooler.	10.7	-	-
3201	Warning – OST pressure high.	Have it checked.	-	-	X

SW = Specialized workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator tank

Tab. 78 Warning messages and measures relating to the compressor

Alarm codes, range 3300 – 3399 “Controller warnings”:

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3303	Warning - PLC temperature high.	Check setup conditions. Allow the machine to cool down.	5.2	–	–
3313	Warning - HMI temperature high.	Check setup conditions. Allow the machine to cool down.	5.2	–	–

SW = Specialized workshop; KS = KAESER SERVICE

PLC - Programmable logic controller; HMI = Human-machine interface

Tab. 79 General warning messages and measures

### 9.3 Evaluating engine faults and alarms

#### 9.3.1 Engine refuses to start or does not turn over

Possible cause	Remedy	Where can I get help?	
		SW	KS
«EMERGENCY STOP» push button activated.	Unlatch the «EMERGENCY STOP» push button, see chapter 8.2.6.	–	–
Defective starter.	Have it checked.	X	–
Engine electrical fault.	Have it repaired/changed.	X	–
Fuel tank empty.	Fill up the fuel tank.	–	–
Airlock in the fuel line between fuel tank and injector pump.	Bleed the fuel line (see chapter 10.4.3).	–	–
Fuel filter clogged.	Clean or replace, see chapter 10.4.3.	–	–
Fuel line broken.	Have it checked.	X	–
Defective control fuse or relay.	Have it repaired or replaced if necessary.	X	X
Discharge temperature too high.	Have it checked.	–	X
SIGMA CONTROL SMART defective.	Have it repaired/changed.	–	X
Electrical connections and/or cables loose or broken	Tighten the connection or have the cable replaced.	X	–
Defective battery or low charge.	Maintain battery, see chapter 10.11.	–	–
Motor alternator defective.	Have it checked.	X	–
Defective alternator regulator.	Have it checked.	X	–

SW = Specialized workshop; KS = KAESER SERVICE

## 9 Fault Recognition and Rectification

### 9.4 Analysing compressor faults and alarms

Possible cause	Remedy	Where can I get help?	
		SW	KS
Oil pressure switch indicating insufficient oil pressure.	Check the engine oil level (see chapter 10.4.4).	–	–
	Have the engine repaired or exchanged.	X	–

SW = Specialized workshop; KS = KAESER SERVICE

Tab. 80 Fault: engine refuses to start or comes to a stop

#### 9.3.2 Engine does not reach full speed

Possible cause	Remedy	Where can I get help?	
		SW	KS
Airlock in the fuel line between fuel tank and injector pump.	Bleed the fuel line (see chapter 10.4.3).	–	–
Fuel filter clogged.	Clean or replace, see chapter 10.4.3.	–	–
Fuel line broken.	Have it changed.	X	–
Engine electrical fault.	Have it repaired/changed.	X	–
SIGMA CONTROL SMART defective.	Have it repaired/changed.	–	X

SW = Specialized workshop; KS = KAESER SERVICE

Tab. 81 Alarm: "engine does not reach full speed"

## 9.4 Analysing compressor faults and alarms

### 9.4.1 Working pressure too high

Possible cause	Measure	Where can I get help?	
		SW	KS
Proportional controller defective.	Have repaired or replaced if necessary.	–	X
Inlet valve does not close.	Check the controller, control line and inlet valve and replace if necessary.	–	X
Pressure gauge indicating incorrect reading.	Have it repaired or replaced if necessary.	–	X
Venting valve does not blow off.	Check the connections and function and have it repaired or replaced as necessary.	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 82 Fault: working pressure too high

### 9.4.2 Working pressure too low

Possible cause	Measure	Where can I get help?	
		SW	KS
Proportional controller defective.	Have repaired or replaced if necessary.	–	X
Inlet valve not opening or only opening partially.	Repair or have it replaced if necessary.	–	X
Pressure gauge indicating incorrect reading.	Have it repaired or replaced if necessary.	–	X
Safety valve maladjusted and/or leaking.	Have it repaired or replaced if necessary.	–	X
Venting valve blowing off.	Check the connections and function and have it repaired or replaced as necessary.	–	X
Engine does not run at maximum speed (in LOAD mode).	See chapter 9.3	X	X
Engine air filter and/or compressor air filter clogged.	Clean or change, see chapters 10.4.2 and 10.6.7.	–	–
Oil separator cartridge heavily clogged.	Change, see chapter 10.6.6.	–	–

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 83 Fault: working pressure too low

### 9.4.3 Safety valve blows off

Possible cause	Measure	Where can I get help?	
		SW	KS
Oil separator cartridge heavily clogged.	Change, see chapter 10.6.6.	–	–
Inlet valve does not close.	Check the controller, control line and inlet valve and replace if necessary.	–	X
Safety valve maladjusted and/or leaking.	Adjust or have it replaced if necessary.	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 84 Fault: safety valve blowing off

### 9.4.4 Machine overheating

Possible cause	Measure	Where can I get help?	
		SW	KS
Defective cooling fan.	Have the blades or the complete fan wheel replaced.	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Possible cause	Measure	Where can I get help?	
		SW	KS
Oil cooler surface clogged.	Clean surface, see chapter 10.7.	–	–
The working element of the thermostatic valve not working.	Have it repaired or replaced if necessary.	–	X
Working pressure too high (proportional controller maladjusted).	Reset to the permissible value or have it replaced.	–	X
Oil separator cartridge heavily clogged.	Measure the pressure differential and change the cartridge if greater than 1 bar. Change, see chapter 10.6.6.	–	X
Compressor oil filter cartridge clogged.	Change, see chapter 10.6.4.	–	–
Compressor cooling oil level too low.	Replenish, see chapter 10.6.2.	–	–
Oil pipes leaking.	Seal leaks or have pipes changed.	X	X
Engine coolant cooling or engine cooling fan defective.	Have it repaired.	X	X
Ambient temperature too high.	See installation conditions in chapter 5.2.	–	–

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 85 Fault: machine overheating

#### 9.4.5 Too much oil residue in the compressed air

Possible cause	Measure	Where can I get help?	
		SW	KS
Oil separator cartridge oil return line of compressor clogged.	Clean the oil separator cartridge dirt trap or replace the strainer and nozzle if necessary. See chapter 10.6.5	–	X
Cracked oil separator cartridge.	Change, see chapter 10.6.6.	–	–
Oil level in the oil separator tank too high.	Reduce to maximum level, see chapters 10.6.1 and 10.6.3.	–	–

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 86 Alarm: "Too much oil residue in the compressed air"

**9.4.6 Oil flows from the compressor air filter after shutdown**

Possible cause	Measure	Where can I get help?	
		SW	KS
Defective non-return function of the inlet valve.	Repair or have it replaced if necessary.	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 87 Alarm: "Oil flows from the compressor air filter after shutdown"

**9.4.7 Option da, db, dc, dd**
**High moisture content in the compressed air**

Possible cause	Measure	Where can I get help?	
		SW	KS
Blocked condensate drain on the cyclone separator.	Clean the cyclone separator dirt trap or replace the strainer and nozzle if necessary. See chapter 10.15.2	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 88 Fault: high moisture content in the compressed air

**9.5 Option ga**
**Generator faults and alarms**
**9.5.1 No voltage or too low a voltage from the generator**

Possible cause	Remedy	Where can I get help?	
		Specialized workshop	KAESER Service
Defective drive belt.	Have replaced.	X	X
Generator / regulator defective	Have repaired.	X	X
Overload protection switch triggered because of overload or defect.	Check the power requirement of the connected consumers and reduce if necessary; check the consumers for short circuits.	X	–
	Check the overload protection switch and have changed if necessary.	X	X
Engine speed too low.	Have reset to rated speed.	X	X
Generator not switched in.	Switch in the generator.	–	–
The compressor's working pressure is set too high, engine overloaded, speed drops off	Have the working pressure adjusted.	X	X

Possible cause	Remedy	Where can I get help?	
		Specialized workshop	KAESER Service
The engine power is reduced because of climatic conditions or other effects.	Keep the generator and compressor load below the rated power	–	–

Tab. 89 Fault: No voltage or too low a voltage from the generator

### 9.5.2 Generator voltage too high

Possible cause	Remedy	Where can I get help?	
		Specialized workshop	KAESER Service
Generator / regulator defective	Have repaired.	X	X
Engine speed too high.	Have reset to rated speed.	X	X

Tab. 90 Fault: Generator voltage too high

# 10 Maintenance

## 10.1 Ensuring safety

Follow the instructions below to ensure safe machine maintenance.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

### Complying with safety notes

Disregard of safety notes can cause unforeseeable dangers!

- Follow the instructions in chapter 3 'Safety and Responsibility'.
- Maintenance work may only be carried out by authorized personnel.
- Do not reuse removed self-locking nuts but replace with new ones. The non-positive safety against loosening is no longer ensured when the nut is unscrewed.
- Use one of the safety signs below to advise others that the machine is currently being serviced:

Sign	Meaning
	Don't activate the machine.
	Warning: The machine is being serviced.

Tab. 91 Advise others that the machine is being serviced.

- Before switching on, make sure that:
    - nobody is working on the machine,
    - all protective guards and cover panels are attached,
    - all doors, canopy, and panels are closed,
    - all tools have been removed from the machine.
  - Do not perform any checks or maintenance while the machine is running.
- The access doors are held up by gas struts.
  - Check that the doors remain open.If door does not remain opened: Have the gas-filled spring changed.

### When working on the compressed air system

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following safety concerns relate to any work on components that could be under pressure.

- Disconnect the air consumers.
- De-pressurise all pressurised components and enclosures.
- Wait until the machine has automatically vented.

- Carefully open the compressed air outlet valve.
- Check: The pressure gauge must read 0 psig!
- Do not open or dismantle any valves.

#### When working on the drive system

Touching rotating, very hot or current-carrying components can cause severe injuries.

- Shut down the machine before opening any doors/canopy.
- Switch the «battery isolating switch» to the 'off' position.
- Ensure that the machine has cooled down.

Further information	Details of authorised personnel are found in chapter 3.4.2. Details of dangers and their avoidance are found in chapter 3.5.
---------------------	---

## 10.2 Note the maintenance messages on the controller

The SIGMA CONTROL SMART displays selected maintenance intervals for the machine. Display begins 25 hours before the interval will expire.

Upon activation of the controller, the symbols for the component to be services are prominently displayed at the controller.

The operating hours of the maintenance to be performed and message code of the service task are displayed below.



Upon maintenance, the maintenance interval counter must be reset.

- Read the message code from the controller's display.

### 10.2.1 Evaluating the maintenance message

- Determine any due maintenance tasks using the table below and perform the maintenance according to the maintenance schedule shown in chapter 10.3.4.1.

Code	Meaning	Remedy	see chapter
<b>Message code, range 2100 – 2199 “engine maintenance”</b>			
2100	Maintenance - change engine oil filter (500h)	Change the engine oil filter.	10.4.7
2101	Maintenance - clean or change the engine air filter (500h)	Clean or change air filter.	10.4.2
2102	Maintenance - change engine oil (500h)	Change the engine oil.	10.4.6
<b>Message codes, range 2200 – 2299 “compressor unit maintenance”</b>			
2200	Maintenance - change compressor oil filter (1000h)	Change the compressor oil filter.	10.6.4
2201	Maintenance - clean or change the compressor air filter (250h)	Clean or change air filter.	10.6.7
h - operating hours			

Code	Meaning	Remedy	see chapter
2202	Maintenance - change compressor cooling oil (1000h)	Change the cooling oil.	10.6.3

h - operating hours

Tab. 92 Maintenance messages and required actions

### 10.2.2 Concluding the maintenance

#### Resetting the maintenance interval counter

Precondition Maintenance is carried out

- Reset the maintenance timer as described in the separate operating manual for the SIGMA CONTROL SMART controller, chapter "Reset maintenance timer".

## 10.3 Maintenance schedules

### 10.3.1 Logging maintenance work



The maintenance intervals given are those recommended for KAESER original components with average operating conditions.

- In adverse conditions (e.g. oil and filter changes), perform maintenance work at shorter intervals.

Adverse conditions are, e.g.:

- poor fuel quality
- high/low temperatures
- a lot of dust
- frequent use

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

- Logging all maintenance work.

This enables the frequency of individual maintenance tasks and deviations from our recommendations to be determined.

Further information A list is given in chapter 10.16.

### 10.3.2 Preventive maintenance

Preventive maintenance begins with a daily check of the machine.

- Before starting the machine, check for the following:
  - increased consumption of oil, coolant or fuel
  - loose components or leakage
  - worn or damaged drive belts
  - worn or defective cable assemblies
  - smell of fuel
  - electrical smell
- When the motor is running, be alert for unusual system noises that may indicate the need for servicing or maintenance work.

**Result** When problems occur, take appropriate action to address malfunctions or contact KAESER SERVICE.

### 10.3.3 Maintenance tasks after commissioning

The table below lists maintenance tasks required after commissioning (initial start-up).

#### 10.3.3.1 Maintenance tasks on the machine after commissioning

- Carry out maintenance tasks according to the following schedule:

Component: Task	E10	E50	See Chapter	Note
<b>Engine:</b>				
Check the fuel lines and clamps. If necessary, tighten the hose clamps.			X	10.4.8 KS; SW
<b>Option ga – Generator:</b>				
Check/adjust belt tension.	X		10.15.6	

E10 = after the first 10 operating hours; E50 = after the first 50 operating hours  
 KS = Contact KAESER SERVICE; SW = Contact specialized workshop

Tab. 93 Maintenance tasks on the machine after commissioning

### 10.3.4 Regular maintenance tasks

The following table lists the various maintenance intervals.

Maintenance interval	Short description
Daily	–
Every 250 h, at least annually.	A250
Every 500 h, at least annually.	A500
Every 1000 h, at least annually.	A1000
Every 1500 h, at least annually.	A1500
Every 2000 h, at least every two years.	A2000

Maintenance interval	Short description
Every 3000 h, at least every 3 years.	A3000
Every 36000 h, at least every 6 years.	A36000

Tab. 94 Maintenance intervals and regular maintenance tasks

The table below lists regular maintenance tasks.

1. Carry out maintenance tasks punctually taking ambient and operating conditions into consideration.
2. Change consumables and operating fluids according to each site.

#### 10.3.4.1 Machine maintenance schedule

► Carry out maintenance tasks on time in accordance with the following schedule:



(\*) Observe national regulations.

In Germany: Adhere to the maintenance interval for "Compressor oil change" as per DGUV Regulation 100 - 500, Chapter 2.11. Oil change as required but at least once a year.

(\*\*) Observe national regulations.

In Germany: As per DGUV Regulation 113-020, it is recommended to change the pressure hoses for the compressor after 6 years.

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See Chapter	Note
<b>Engine:</b>										
Clean dust evacuator valve on engine air filter.	X								10.4.2	
Check engine air filter maintenance indicator.	X								10.4.2	
Check engine oil level.	X								10.4.4	
Clean engine air filter.		X							10.4.2	
Replace the engine oil.			X						10.4.6	
Replace the engine oil filter.			X						10.4.7	KS; SW
Check/adjust the drive belt tension.		X							10.4.8	KS; SW
Replace the drive belt.			X						10.4.8	KS; SW
Replace engine air filter.				X					10.4.2	
Check the intake air line between the air filter and engine.		X								KS; SW
Arrange for valves to be adjusted.				X						KS; SW

KUBOTA = is serviced by a representative from the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See Chapter	Note
Arrange to have the turbocharger checked.					X					KS; SW
Check engine coolant level.	X								10.4.1	
Clean cooler.		X							10.7	
Check the coolant antifreeze.		X							10.4.1	KS; SW
Change coolant.						X			10.4.1	KS; SW
Fill fuel tank.	X									
Check/empty the fuel water separator.	X								10.4.3	
Replace fuel prefilter (*).		X							10.4.3	
Replace the fuel filter (*).		X							10.4.3	KS; SW
Clean the fuel tank.		X								
Clean tank strainer.		X								
Arrange for the injection valve tip to be checked.				X						KS; SW
Arrange to have the fuel injection pump checked.						X				KS; SW
Check battery electrolyte level and service cable connections.		X							10.4.9	
Change the oil separator element				X					10.4.10	
Have venting valve of crankcase checked.				X						KS; SW
<b>Exhaust gas treatment:</b>										
Check the exhaust system for leaks, including the exhaust gas after-treatment components.	X									
Service the exhaust gas after-treatment components.		X							10.5	
Arrange for the DPF to be cleaned.						X				KUBOTA
Arrange for all lines to and from the DPF to be checked.		X								KUBOTA
Arrange for the exhaust gas recirculation system to be checked.			X							KUBOTA

KUBOTA = is serviced by a representative from the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See Chapter	Note
Arrange for all lines to and from the exhaust gas recirculation system to be checked.		X								KUBOTA
Arrange for the exhaust gas recirculation on the cooler to be checked.			X							KUBOTA
<b>Compressor:</b>										
Check compressor air filter maintenance indicator.	X								10.6.7	
Check cooling oil level.	X								10.6.1	
Clean compressor air filter.		X							10.6.7	
Clean compressor oil cooler.	X								10.7	
Check/clean the dirt trap in the oil separator tank (*).		X							10.6.5	
Replace compressor air filter.			X						10.6.7	
Change cooling oil (*).			X						10.6.3	
Replace compressor oil filter.			X						10.6.4	
Change oil separator cartridge in oil separator tank.					X				10.6.6	
<b>Safety functions:</b>										
Check EMERGENCY STOP device.	X								10.14.1	
Arrange for EMERGENCY STOP device to be tested.		X								KS; SW
Arrange for safety valve(s) to be checked.		X							10.14.2	KS
Arrange for excess temperature safety shutdown to be tested for proper function.		X							10.14.3	KS
<b>Bodywork/chassis:</b>										
Check wing doors.			X						10.9	KS
Check screw connections.		X							10.8	
Check sound insulation material.		X							10.10	KS
Service rubber sealing strips.		X							10.11	
Arrange for crane suspension to be checked.		X								KS; SW

KUBOTA = is serviced by a representative from the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See Chapter	Note
<b>Pipes and hose lines (fuel hoses, pressure hoses):</b>										
Check all pipes and hose lines on the machine are tightly fitted and without leaks or wear; replace if necessary (**).			X						10.13	KS; SW
<b>Further maintenance tasks:</b>										
Check engine interior for foreign substances, remove if necessary.	X									
Check all accessible screw connections, pipes and clamps in machine are securely fitted and free from wear.		X								
Check all electrical connections for tightness.			X							
Check lighting system function.	X									

KUBOTA = is serviced by a representative from the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Tab. 95 Regular machine maintenance tasks

#### 10.3.4.2 Maintenance schedule options

- Carry out maintenance tasks according to the following schedule:



The maintenance work marked with (\*) in the tables must additionally be carried out every 6 months if the annual operational performance is more than 500 operational hours.

Option: Task	Daily	A250	A500	A1000	A2000	A20000	See chapter	Note
<b>Option ea, ec - tool lubricator:</b>								
Check the oil level in the tool lubricator.	X						10.15.1	
<b>Option da, df, dc, dd – Centrifugal separator:</b>								
Clean and check the dirt trap (*).			X				10.15.2	
<b>Options da, df, dc, dd – compressed air aftercooler:</b>								
Clean the cooler.		X					10.7.2	
EL = qualified electrician								
KS = Contact KAESER SERVICE; SW = Contact specialised workshop								

Option: Task	Daily	A250	A500	A1000	A2000	A20000	See chapter	Note
<b>Option dd – Filter combination:</b>								
Drain condensate.	X						10.15.3	
Change the filter elements (*).			X				10.15.3	
<b>Option dc – Fresh air filter:</b>								
Drain condensate.	X						10.15.4	
Check the oil level indicator.	X						10.15.4	
Change the filter elements (*).			X				10.15.4	
<b>Option bb; od – Auxiliary electric devices:</b>								
Have the coolant pre-heating, battery charger and connection cable checked.			X					EL KS; SW
<b>Option la – spark arrestor:</b>								
Clean the spark arrestor.		X					10.15.5	
Blow out the spark arrester with compressed air.			X					
<b>Option ga – Generator:</b>								
Carry out visual check of drive belt.		X					10.15.6	
Have the generator and generator control box checked.			X				13.9	EL
Replace the drive belt.					X		10.15.6	
Have the generator bearings checked.				X				KS; SW
Have the generator bearings changed.						X		KS; SW
<b>Option oe – sealed floor pan:</b>								
Check the machine interior for liquid accumulations and drain, if required.	X						10.15.7	

EL = qualified electrician

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

Tab. 96 Regular maintenance task options

## 10.4 Drive engine maintenance

- Carry out maintenance according to the schedules in chapter 10.3.4.1.

### 10.4.1 Coolant cooler maintenance

Material	Coolant Coolant tester Receptacle Funnel Cleaning cloth
Precondition	The machine is switched off. The machine is standing level. The machine is fully vented, the pressure gauge reads 0 psig. The machine has cooled down. All compressed air consumers are disconnected and the air discharge valves are open.

#### **⚠ WARNING**

*Risk of scalding from hot coolant!  
Serious injuries can be caused by hot coolant.*

- *Allow the machine to cool down before opening the cooling system.*

#### **⚠ CAUTION**

*Risk of chemical burns from coolants containing antifreeze!*

- *Avoid eye and skin contact with coolant. In case of contact, rinse immediately with running water.*
- *Wear protective glasses and gloves.*

#### **NOTICE**

*Insufficient coolant in the cooling circuit can damage the machine!*

*Insufficient coolant will cause the engine to overheat. Overheating can result in significant damage to the engine.*

- *Check the coolant level daily.*
- *Top up the coolant as necessary.*

- Open the right-hand access door.

#### 10.4.1.1 Checking coolant level

The coolant level in the engine cooling circuit must be checked daily prior to start-up.

The level is checked on the coolant expansion tank:

- The tank is semi-transparent so the coolant level can be seen from outside.
- The level should be between the *minimum and maximum markings* when the engine has cooled down.

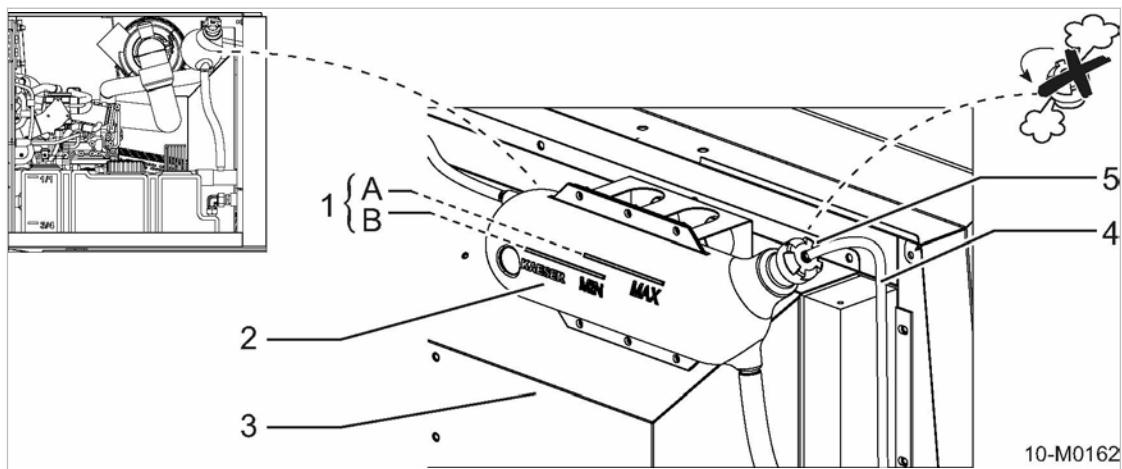


Fig. 38 Checking the coolant level

- |                          |                        |
|--------------------------|------------------------|
| ① Coolant level          | ③ Fan casing           |
| Ⓐ Maximum mark (FULL)    | ④ Overflow             |
| Ⓑ Minimum mark (LOW)     | ⑤ Filler neck with cap |
| ② Coolant expansion tank |                        |

1. Check the level of coolant in the expansion tank.  
When the coolant level falls below the *minimum mark* Ⓑ: Replenish the coolant.
2. Close the door.



Determine the cause for the coolant loss and rectify.

#### 10.4.1.2 Checking the coolant

The coolant should be checked in line with the maintenance schedule to ensure quality and long service life.

Coolant quality can be determined by the following parameters:

- Visual check
- Measuring the concentration of the antifreeze
- Unscrew and remove the expansion tank filler cap ⑤.

##### Performing a visual check:

The coolant should be checked for discolouration and any floating particles (flocculation).

- Take a coolant sample and analyse it.

If the coolant is heavily discoloured and/or contains floating particles: Change the coolant.

##### Measuring the concentration of the antifreeze:

An instrument (e.g. refractometer) is used to check the antifreeze concentration of the coolant.

Maximum frost protection is ensured with an antifreeze concentration of 55% volume, as frost protection and heat transfer properties deteriorate beyond this point. A higher concentration also leads to higher operating temperatures.

1. **NOTICE** *The engine can be damaged if the antifreeze concentration is insufficient.*  
*Corrosion.*  
*Damage to the cooling system.*  
*Engine housing fracture.*
  - Check coolant.
  - Protect the coolant against freezing.
  - Replenish immediately if necessary.
2. To test the coolant, use the coolant tester as instructed by the manufacturer.  
Concentration of antifreeze is too low: Change the coolant.

**Performing final work steps:**

1. Screw the cover back on again.
2. Close the door.

**10.4.1.3 Mixing the coolant**

The coolant is a mixture of clean, fresh water and an antifreeze containing added anti-corrosion agent.

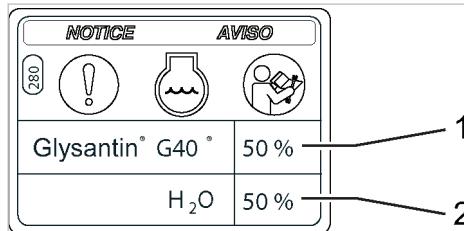
Never use water without added coolant. Water alone is corrosive at engine operating temperatures. Water alone does not offer sufficient protection from boiling or freezing of the coolant.

To protect against corrosion and raise the boiling point, the coolant must remain in the cooling system throughout the year.

The maximum permissible service life for the coolant is 3 years.



An adhesive label with the recommended mixture ratio for the coolant is fitted by the coolant expansion tank, see Figure 39.



10-M3215-US

Fig. 39 Recommended mixture ratio for coolant

- [1] Water
- [2] Anti-corrosion agent/antifreeze

- Observe the coolant recommendations given in Chapter 2.8.4!

**Preparing the coolant:**

Precondition The coolant used must meet the specification of ASTM D4985.

- The coolant should be mixed in the proportions specified by the manufacturer.

Coolant mixture table:

Percentages [% vol.]	Frost protection up to approx. [°F]
Corrosion inhibitor/anti-freeze	Water
50	50

Tab. 97 Coolant mixture table



Do not use a higher concentration than 55% vol. of anti-corrosion agent/antifreeze, even at extremely low ambient temperatures. Maximum frost protection is achieved with 55% vol. of anti-corrosion agent/antifreeze. This corresponds to frost protection down to approx. -49°F. The concentration of antifreeze should not be less than 33%, since corrosion protection can no longer be guaranteed and heat transfer properties deteriorate beyond this point!

#### 10.4.1.4 Filling/refilling the coolant

In order to ensure optimum frost/corrosion protection and prevent the build-up of deposits (sludge) in the cooling circuit, the proportion of antifreeze in the coolant should not be permitted to fall below 33%. Replenishing solely with water dilutes the antifreeze concentration and is therefore prohibited.



Ensure that there is sufficient space for the coolant to expand without overflowing when hot.

Precondition The «battery isolating switch» is turned off.

1. Twist and remove the coolant expansion tank filler cap.
2. Mix a quantity of coolant according to the table and replenish to the mark.  
Replenish the coolant just below the *maximum mark* A.
3. Screw on the filler cap.
4. Turn on the «battery isolating switch».
5. Close the door.
6. Start the engine and allow to IDLE for about 1 minute.
7. Stop the engine.
8. Open the right-hand access door.
9. Check the coolant level.  
If the coolant level in the expansion tank has decreased: Replenish the coolant.
10. Visually inspect for leaks.
11. Close the door.

#### 10.4.1.5 Draining the coolant

Precondition The machine has cooled down.

The «battery isolating switch» is turned off.

**Draining the coolant (machine with chassis):**

In machines with chassis (no closed floor pan, no stationary machine), the entire coolant of the cooling circuit is drained directly at the engine's coolant cooler. Draining is carried out via a shut-off valve by means of a separate drain hose.

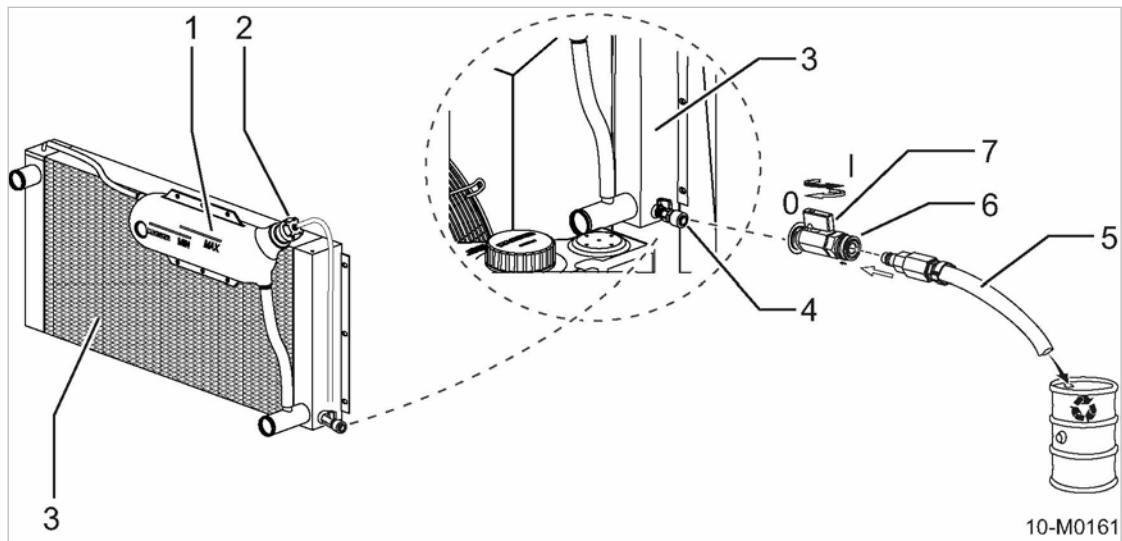


Fig. 40 Draining the coolant from the engine coolant cooler

1	Coolant expansion tank	5	Drain hose with male fitting
2	Filler cap	6	Quick-release coupling
3	Coolant cooler	7	Shut-off valve (ball valve)
4	Coolant drain		I - Open 0 - Closed

1. Unscrew and remove the expansion tank filler cap **2**.
2. Position a collecting vessel beneath the water cooler drain point (hole in the floor panel).
3. Connect a suitable drain hose **5** to the coolant cooler quick-release coupling **6**.
4. Place the free end of the hose in the receptacle and secure.
5. Open the shut-off valve **7** and catch the draining coolant.
6. Close the shut-off valve and remove the drain hose.
7. Screw on the filler cap.
8. Close the door.

➤ Dispose of used coolant in accordance with environmental protection regulations.

**Option oe, rw, rx Draining the coolant (closed floor pan/stationary machine):**

On stationary machines and machines with closed floor pan, lines draining oil and coolant from the motor and compressor are led to a central point outside the machine. The coolant is drained via a pipe which is screwed into the drain opening of the cooler and closed with a shut-off valve. The pipe is sealed with a screw plug at the drain end.

Option oe, rw, rx

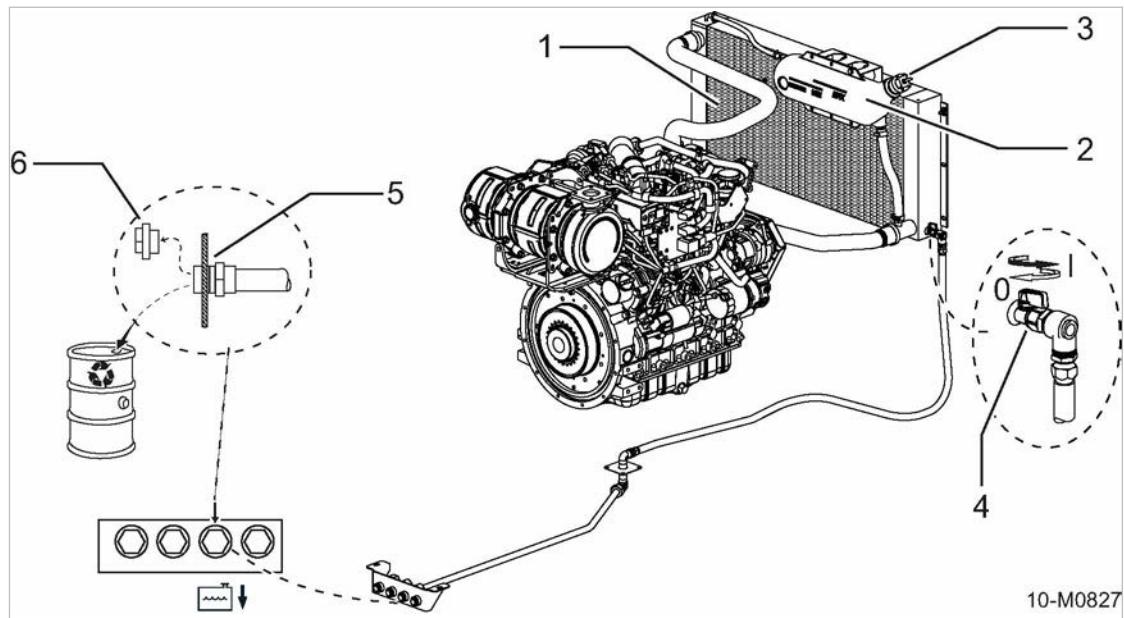


Fig. 41 Draining the coolant from the engine coolant cooler (closed floor pan/stationary machine)

- |   |                        |   |                             |
|---|------------------------|---|-----------------------------|
| ① | Coolant cooler         | ④ | Shut-off valve (ball valve) |
| ② | Coolant expansion tank |   | I - Open                    |
| ③ | Filler cap             |   | 0 - Closed                  |
| ⑤ | Coolant drain          |   |                             |
| ⑥ | Screw plug             |   |                             |

1. Unscrew and remove the expansion tank filler cap.
2. Position a receptacle beneath the drainage location of the coolant cooler.
3. Unscrew the screw plug ⑥ at the coolant drain.
4. Open the shut-off valve ④ at the water cooler and catch any draining coolant.
5. Close the shut-off valve and replace the screwed sealing cap.
6. Screw in the filler cap.
7. Close the door.



- Dispose of used coolant in accordance with the applicable environmental protection regulations.

#### Removing scaling from inside the coolant cooler

After extended periods of use, scaling may form inside the cooling circuit and in particular in the coolant cooler. Due to the resulting reduction in heat transfer, the engine may overheat.

1. **NOTICE** *Scaling in the cooling circuit!*  
*Damage caused by engine overheating.*
  - *Use a cooler cleaning agent to remove scaling from inside the coolant cooler.*
2. Read and observe the manufacturer's instructions regarding the use of cooler cleaning agent.
3. Having drained the coolant, use a coolant cleaning agent to descale the water cooler.

### 10.4.2 Engine air filter maintenance

Clean the air filter in accordance with the maintenance table, or at the latest when the corresponding maintenance indicator shows it to be necessary.

As well as the filter element the filter contains a safety element.

The filter element can be cleaned and reused up to six times.

The safety element cannot be cleaned and must be replaced after every third cleaning of the filter element.



- To meet the legally stipulated exhaust gas standards, the use of genuine KAESER filter elements is mandatory.
- Operating the engine without an air filter insert installed is not permitted!
- Do not use filter elements with damaged pleats or seals.
- The use of an unsuitable air filter can permit dirt to enter the engine and cause premature wear and damage.

Material Compressed air for blowing out

Spare part (if required)

Cleaning cloth

Precondition The machine is switched off.

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

The machine has cooled down.

All compressed air consumers are disconnected, the discharge valves are open.

#### NOTICE

*Damaged air filter insert.*

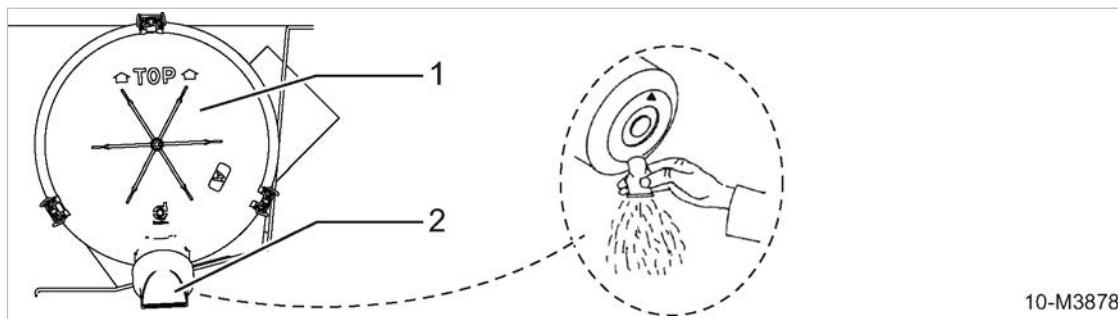
*Engine wear from intake of contaminated air.*

- *Do not try to clean the filter element by striking or tapping it.*
  - *Do not wash the filter element.*
- Open both doors.

#### Cleaning the dust evacuator valve:

The intake air is set into a rotating motion inside the filter housing. The resulting centrifugal forces expel heavy dust particles outwards to the filter housing wall, where they are discharged via the dust evacuator valve at the base of the housing.

Remove any dust build-up by squeezing the rubber lips of the valve together.



10-M3878

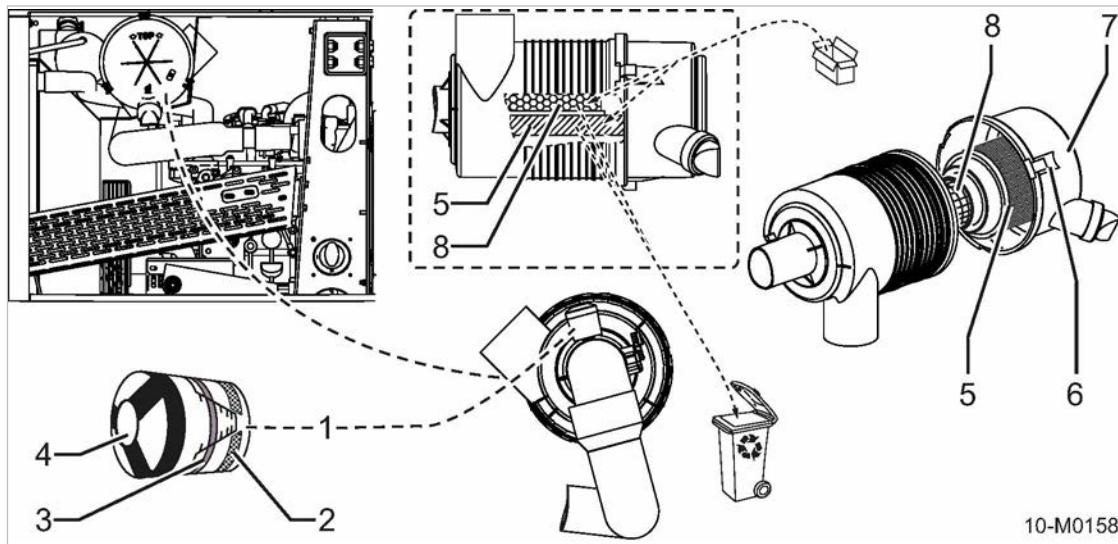
**Fig. 42 Cleaning the dust evacuator valve**

- ① Filter cap  
 ② Dust evacuator valve

- Squeeze the rubber lips on the valve.  
The evacuator outlet opens.  
Coarse dirt particles and accumulated dust are expelled.

**Checking the air filter contamination level:**

Air filter maintenance is required when the yellow piston inside the maintenance indicator reaches the red zone.



10-M0158

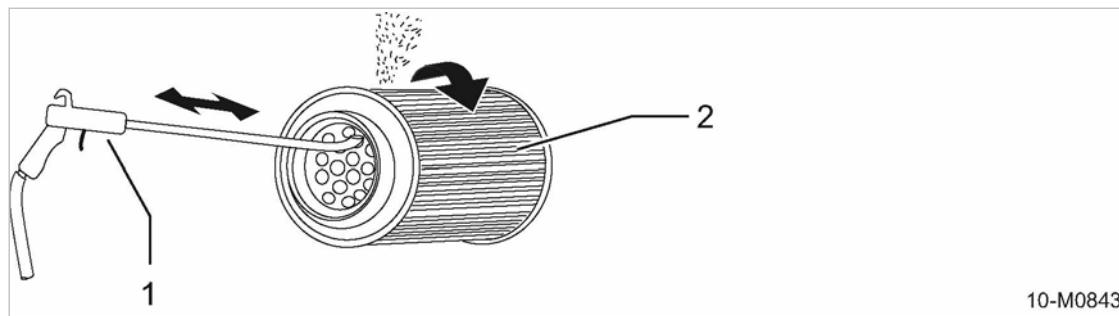
**Fig. 43 Engine air filter maintenance**

- |  |  |
|--|--|
| ① Maintenance indicator                          | ⑤ Filter element (main filter element) |
| ② Red zone, indicator scale                      | ⑥ Retaining clip                       |
| ③ Indicating piston of the maintenance indicator | ⑦ Filter cap                           |
| ④ Reset knob of the maintenance indicator        | ⑧ Safety element                       |

- Check the air filter maintenance indicator.  
If the yellow piston has reached the red zone: Clean or replace the filter element.

**Air filter maintenance (cleaning the filter element)**

These tasks must be carried out **every** time maintenance is performed on the air filter.



10-M0843

Fig. 44 Cleaning the filter element

- ① Compressed air gun with blast pipe (bent to approx. 90° at the end)  
② Filter element

1. Release the retaining clip. Remove the filter cap and take out the filter element.
2. Carefully clean the inside of the filter housing, the cap and sealing faces with a damp cloth.
3. Cleaning the filter element:
  - Use dry compressed air ( $\leq 30 \text{ psil}$ ) at an angle to blow dust from the element from inside to outside until no more dust appears.
  - The blast pipe must be long enough to reach the bottom of the element.
  - The tip of the blast pipe must not touch the filter element.
  - Clean the sealing faces.
4. Inspect the element carefully for any damage.  
If the filter element is damaged: Replace the filter element.
5. Insert the cleaned or new filter element into the filter housing. Make sure it is properly secured and its gaskets are sealed.
6. Replace the cap and secure with the clips.

#### Replacing the safety element:

These tasks must be carried out every **third** time the air filter is maintained.

1. Remove the safety element and dispose of it.
2. Use duct tape to seal off the engine air intake port to prevent ingress of dirt.
3. Remove the tape after the filter housing has been cleaned.
4. Fit the new safety element.
5. Insert the cleaned or new filter element into the filter housing.
6. Check that the filter element and safety element are inserted correctly and the seals can function properly.

#### Resetting the maintenance indicator:

- Press the reset button on the maintenance indicator repeatedly.  
The yellow piston inside the indicator is reset and the maintenance indicator is ready for use again.
- Close the doors.



Dispose of old parts and contaminated materials in accordance with environmental regulations.

### 10.4.3 Fuel system maintenance

Make sure no dirt enters the fuel system during maintenance. Clean components and their surroundings before dismounting.

Material	Spare parts Collecting vessel Cleaning cloth
Precondition	The machine is switched off. The machine is standing level. The machine is fully vented, the pressure gauge reads 0 psig. The machine has cooled down. All compressed air consumers are disconnected and the air outlet valves are open. The «battery isolating switch» is turned off.

#### **DANGER**

*Fire hazard from spontaneous ignition of fuel!*

*Serious injury or death could result from the ignition and combustion of fuel.*

- *Allow no open flames or sparks at the place of use.*
- *Ensure that the maximum ambient temperature is not exceeded at the place of use.*
- *Shut down the engine.*
- *Wipe up escaped fuel.*
- *Keep fuel away from hot machine parts.*

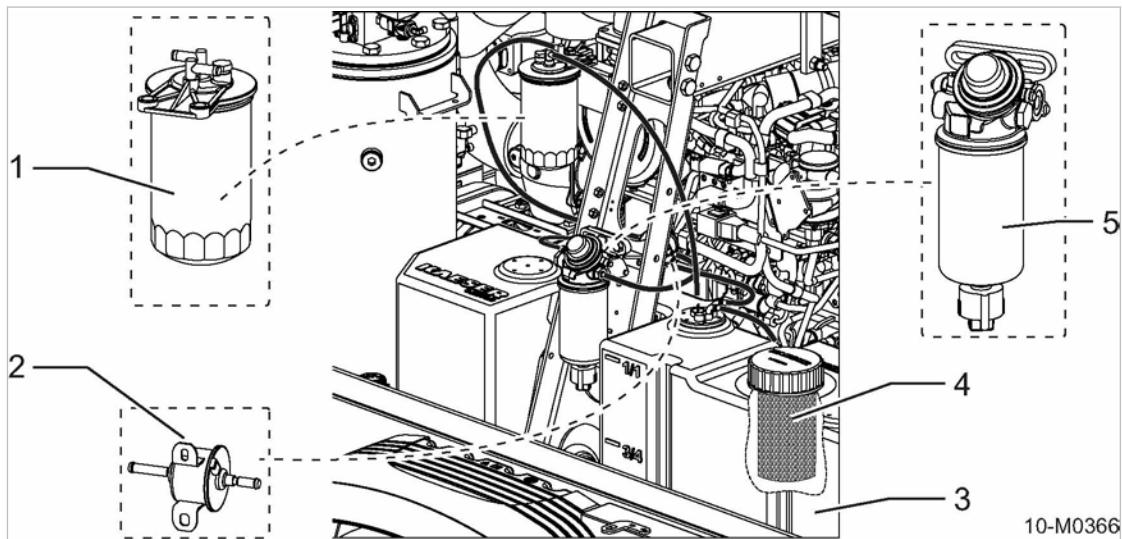


Fig. 45 Service fuel system

- |   |             |   |  |
|---|-------------|---|--|
| ① | Fuel filter | ④ | Fuel strainer                                  |
| ② | Fuel pump   | ⑤ | Fuel prefilter with integrated water separator |
| ③ | Fuel tank   |   |  |

- Open the right-hand access door.

## 10.4.3.1 Bleeding the fuel system

Air can enter the fuel system if the fuel tank is empty after a fuel filter change or when carrying out work on the fuel lines.

If the engine refuses to start despite a full tank, bleed the fuel system.

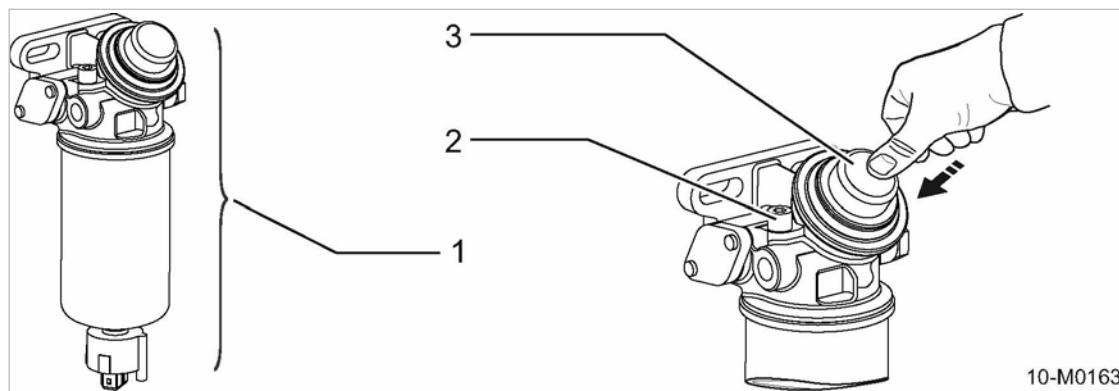


Fig. 46 Bleeding the fuel system

- ① Fuel prefilter with integrated water separator
- ② Bleed screw
- ③ Manual fuel pump

1. Place a receptacle beneath the fuel pre-filter housing.
2. Open the bleed screw at the filter head.
3. Actuate the manual fuel pump until the bleed screw does no longer emit air bubbles.
4. Close the bleed screw at the filter head.
5. Remove the receptacle.
6. Open the left-hand door.
7. Turn on the «battery isolating switch».
8. Close the doors.



Start the engine as soon as the fuel system has been bled and allow to run for at least 5 minutes in IDLE.

9. Open the right-hand access door.
10. Check the fuel prefilter for leaks.

Fuel has escaped: Re-tighten filter cartridge and all screw connections.

11. Close the door.

## 10.4.3.2 Fuel pre-filter maintenance

**Emptying the fuel water separator:**

The fuel pre-filter is equipped with an integrated water separator. Contaminants in the water are trapped in the water receptacle of the filter cartridge.

The water separator is connected by a sensor to the controller. If the water in the separator reaches a set level, the controller displays a warning.

The display indicates water in the fuel filter by showing *Fuel filter water level*.



The water separator must be emptied immediately when this warning is displayed.

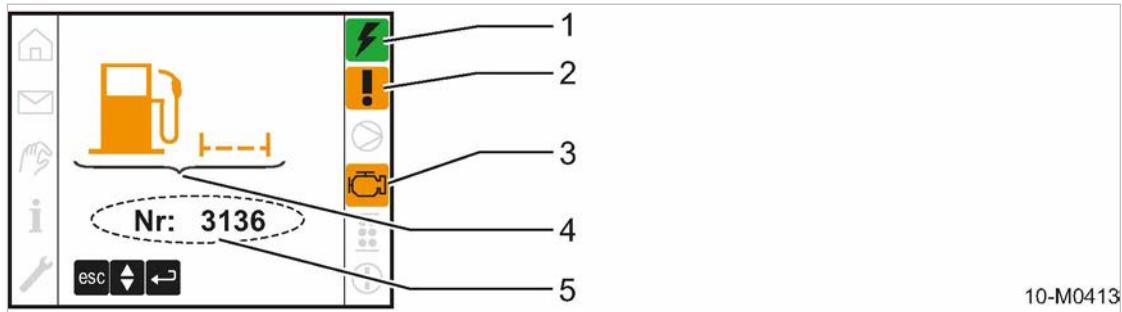


Fig. 47 Warning message: Fuel filter water level

- |  |  |
|--|--|
| ① Controller voltage ON (green) indicator<br>② Warning indicator (orange)<br>③ Engine (orange display indicates a warning) | ④ Symbols for fault localisation (Fuel + level) (orange display indicates warning)<br>⑤ Fault code |
|--|--|

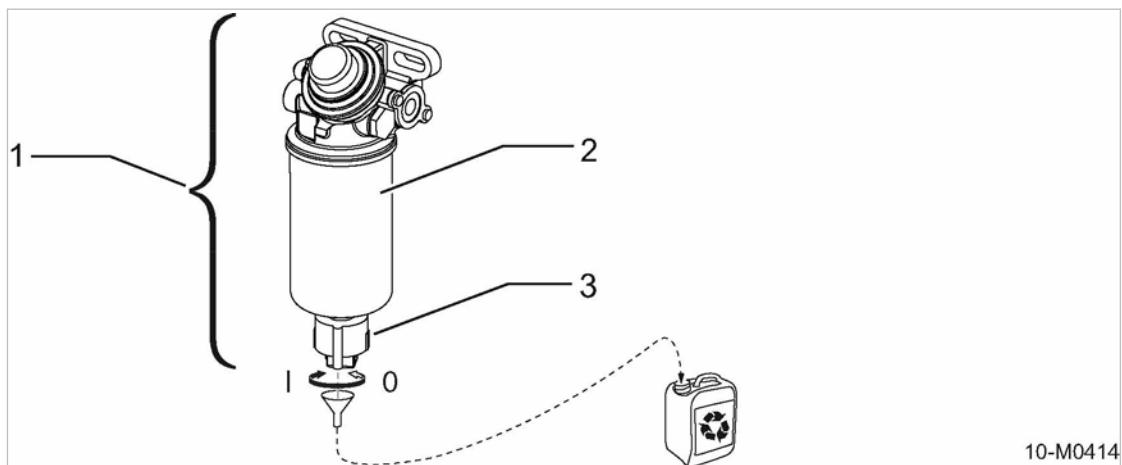


Fig. 48 Empty the fuel prefilter and water separator

- |   |
|---|
| ① Fuel prefilter<br>② Filter cartridge with integrated water receptacle<br>③ Water draining stopper with integrated level sensor<br>I - open<br>0 - close |
|---|

1. Place a receptacle beneath the fuel pre-filter housing.
2. Unscrew the draining stopper on the bottom of the filter cartridge (2 turns max.) and drain water and contamination.
3. Close the draining stopper.
4. Close the door.

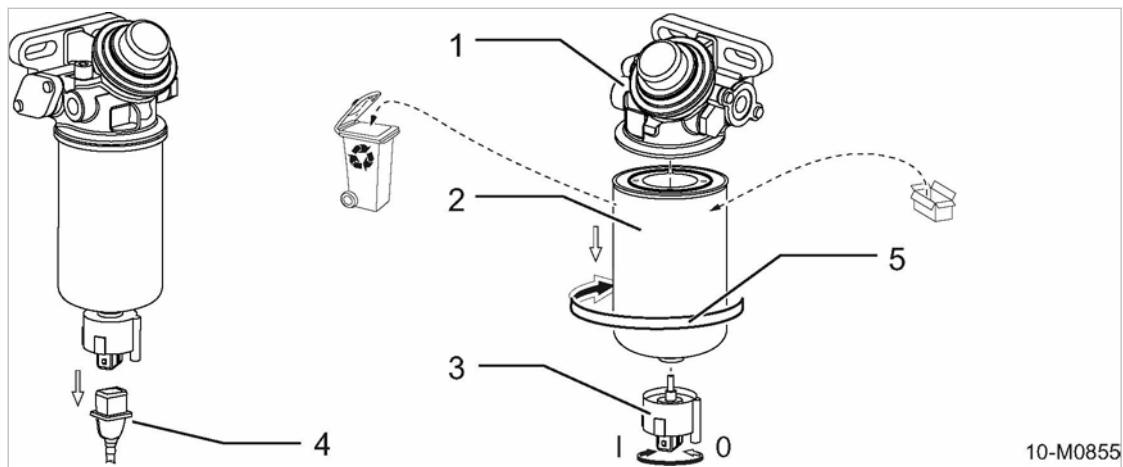
Warning must be acknowledged after the water separator has been emptied.

Precondition The water separator is drained.

- Confirm the warning with the «Enter» key.



The mixture of fuel and water and any materials contaminated with fuel must be disposed of in accordance with environmental protection regulations.

**Changing the filter cartridge:**

**Fig. 49 Change the fuel prefilter cartridge**

- |  |  |
|--|--|
| <b>①</b> Filter head<br><b>②</b> Filter cartridge with integrated water receptacle<br><b>③</b> Draining stopper with integrated level sensor | <b>④</b> Water level sensor connecting plug (fuel filter maintenance)<br><b>⑤</b> Direction of rotation to unscrew the filter cartridge and the water trap |
|--|--|

1. Place a receptacle beneath the fuel prefilter housing.
2. Unscrew the draining stopper on the bottom of the filter cartridge (2 turns max.) and drain water and contamination.
3. Remove the connecting plug of the water level sensor.
4. Use a standard wrench to loosen and unscrew (counter-clockwise) the filter cartridge.
5. Empty any remaining fuel into a receptacle.
6. Unscrew the draining stopper of the filter cartridge and clean with lint-free cloth.
7. Check the seal of the draining stopper.  
Seal damaged: replace seal.
8. Screw the draining stopper to a new filter cartridge.
9. Clean the sealing faces of the filter cartridge and filter head with a lint-free cloth.
10. Mount the filter cartridge to the filter head:
  - Moisten the sealing faces of the new filter cartridge with some fuel.
  - Manually screw the filter cartridge to the filter head (clockwise), until seal is tight.
  - Continue to manually turn until the filter cartridge is seated tightly ( $\frac{3}{4}$  turn approximately).
11. Fasten the connecting plug of the water level sensor.
12. Open the left-hand door.
13. Turn on the «battery isolating switch».
14. Close the doors.



The fuel system must be bled after the filter cartridge has been changed.



Dispose of fuel and any materials and components contaminated with it in accordance with environmental protection regulations.

## 10.4.3.3 Fuel filter maintenance

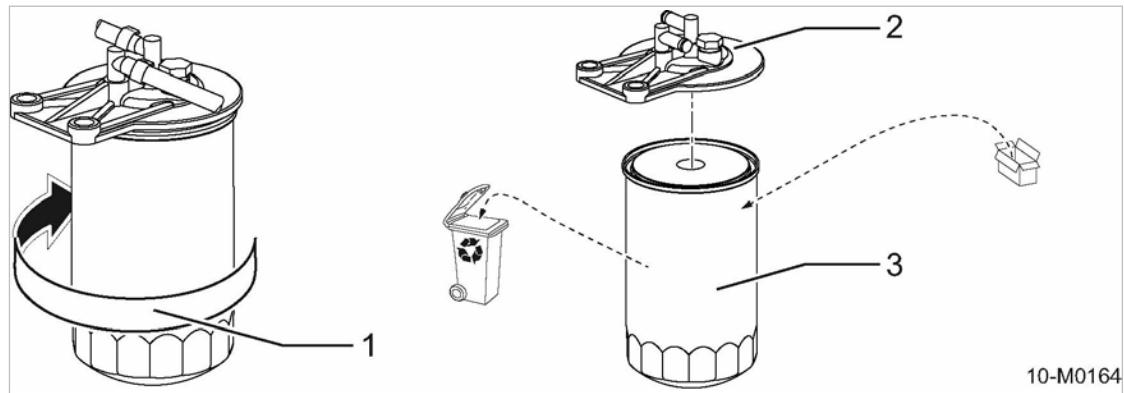


Fig. 50 Fuel filter maintenance

- ① Direction of rotation to unscrew the filter cartridge
- ② Filter holder
- ③ Filter cartridge

1. Place a receptacle beneath the fuel filter housing.
2. Use a filter wrench to loosen then unscrew the filter cartridge. Collect any escaping fuel.
3. Clean the sealing faces of the new filter cartridge and the opposite side of the filter holder with a lint-free cloth.
4. Mount the filter cartridge to the filter holder:
  - Moisten the rubber seals of the filter holder and the sealing faces of the new filter cartridge with some fuel.
  - Manually screw the filter cartridge to the filter head (clockwise), until seal is tight.
  - Continue to manually turn until the filter cartridge is seated tightly ( $\frac{1}{2}$  to  $\frac{3}{4}$  turn approximately).
5. Open the left-hand door.
6. Turn on the «battery isolating switch».
7. Close the doors.



The fuel system must be bled after the filter cartridge has been changed.



Dispose of fuel and any materials and components contaminated with it in accordance with environmental protection regulations.

**Starting the machine and performing a test run:**

1. Switch the machine on and run it in IDLE mode for approx. 1 minute.
2. Shut down the machine.
3. Open the right-hand access door.
4. Visually check the fuel system for leaks.
5. Tighten all screw connections.
6. Close the door.

#### 10.4.4 Checking the engine oil level

The engine oil is indicated by a dipstick in the oil sump. The oil level should ideally be between the two marks on the dipstick. The oil level should not be allowed to fall below the *minimum level*.

Material	Cleaning cloths
Precondition	<p>The machine is switched off.</p> <p>The machine is standing level.</p> <p>The machine is fully vented, the pressure gauge reads 0 psig.</p> <p>Engine cooled down.</p> <p>All compressed air consumers are disconnected and the air outlet valves are open.</p>

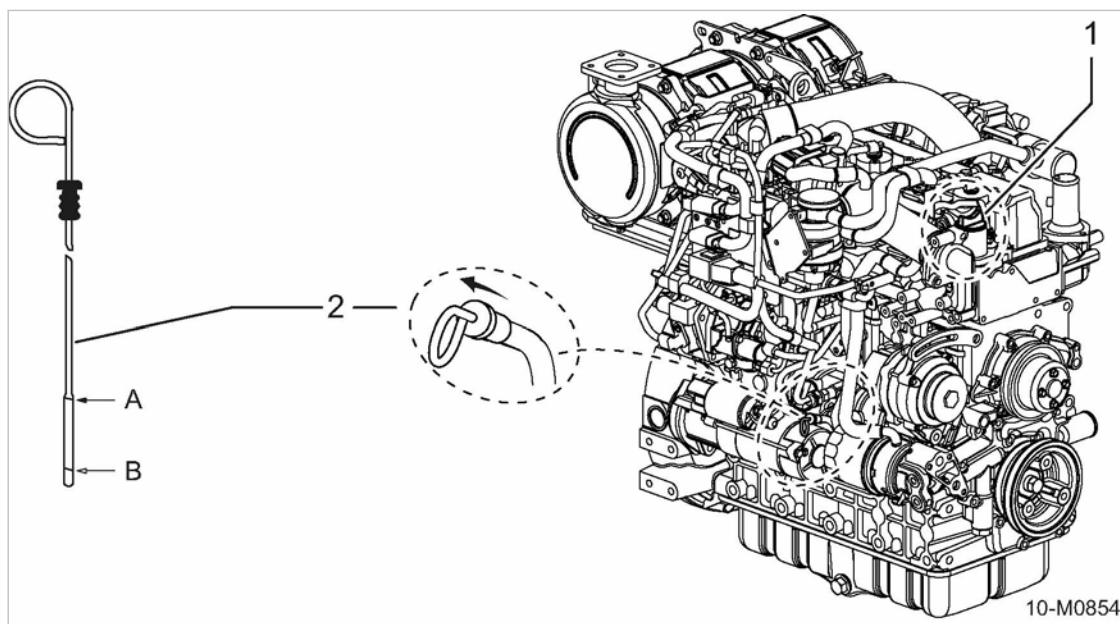


Fig. 51 Checking the engine oil level

- ① Oil filler neck cover, engine oil  
② Dip-stick

- A Mark for *maximum oil level*  
B Mark for *minimum oil level*

1. Open the left-hand door.
2. Withdraw the dipstick, wipe with a lint-free cloth and insert fully.
3. Withdraw the dipstick once more and read off the oil level.  
Oil level between both markings: Oil level OK.  
The level has reached the *minimum level* or is below the mark: Replenish engine oil.
4. Close the door.



The marked *maximum oil level* should not be exceeded in order for the level of oil in the crankcase not to reach the crankshaft. If this were to occur, it could create oil bubbles that would reduce the oil's lubricating capability and impair engine performance.

**10.4.5 Engine oil filling and topping up**

Material Engine oil

Cleaning cloths

Funnel

Precondition The machine is switched off.

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 valves are open.

The «battery isolating switch» is turned off.

**Filling with engine oil**

See chapter 2.8.5 for engine oil filling volume.

The oil dipstick is marked with the «maximum oil level».

1. Open the right-hand access door.
2. Remove the filler cap and fill with fresh oil.
3. Wait 5 minutes then check the oil level.



It takes a few minutes for oil to reach the sump.

- Low oil level: Replenish engine oil.
4. Replace the plug in the filler port.
  5. Turn on the «battery isolating switch».
  6. Close the door.

**Starting the machine and performing a test run:**

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.  
Pressure gauge reads 0 psig!
4. Open the right-hand access door.
5. After approximately 5 minutes: Check the engine oil level.  
Low oil level: Replenish engine oil.
6. Visually inspect for leaks.
7. Close the door.

**10.4.6 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 Oil receptacle Wrench Drain hose with quick-release coupling (provided with the machine) Cleaning cloths
Precondition	The machine is switched off. 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 valves are open. The «battery disconnect switch» is turned off.

**⚠ CAUTION**

*Danger of burns from hot components and escaping engine oil!*

► Wear long-sleeved clothing and gloves.

**Draining the engine oil (machines with chassis):**

In machines with chassis (no stationary machine), the engine oil is drained directly at the machine's oil pan. This is done from a drain valve with the aid of a separate drain hose.

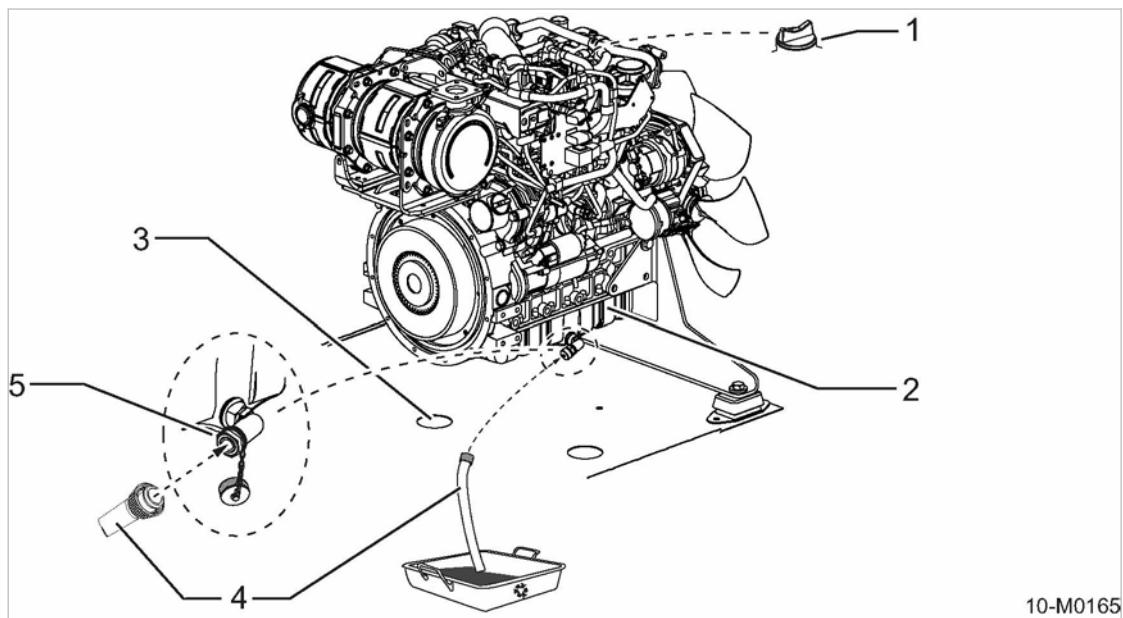


Fig. 52 Draining the engine oil

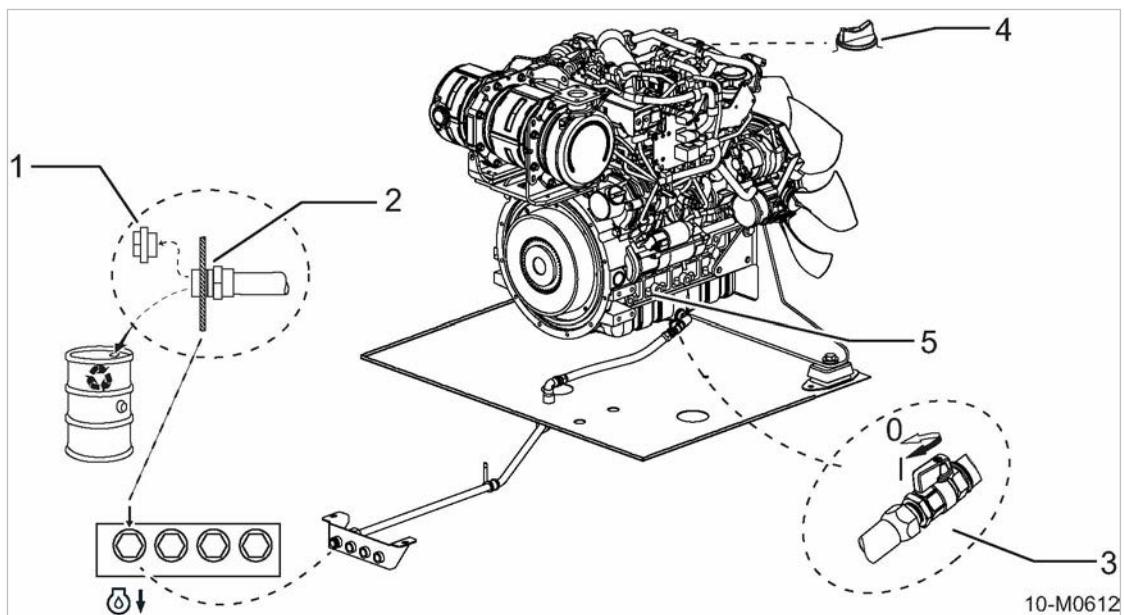
- |   |                                   |   |  |
|---|-----------------------------------|---|--|
| ① | Oil filler neck cover, engine oil | ④ | Drain hose with quick-release coupling |
| ② | Engine oil sump                   | ⑤ | Oil drain valve                        |
| ③ | Drain hole in the floor pan       |   |  |

1. Open the left-hand door.
2. Remove the oil filler cover.
3. Place the oil receptacle below the corresponding drain hole ③ in the floor pan.

4. Lead the free end of the drain hose ④ through the hole in the floor pan and into the receptacle.
5. Remove the protective cap from the oil drain valve ⑤.
6. Screw the drain hose with quick-release coupling onto the oil drain valve.  
The valve opens and oil drains through the hose.
7. When all the oil has drained out, uncouple and remove the drain hose.
8. Replace the protective cap on the oil drain valve.
9. Replace the plug in the filler port.
10. Close the door.

**Option rw, rx Draining the engine oil (stationary machine):**

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines. The engine oil is drained via a hose line which is screwed into the drain opening of the engine block and closed with a shut-off valve. The hose is sealed with a screwed sealing plug at the drain end.


**Fig. 53 Draining the engine oil (stationary machine)**

①	Screw plug	④	Oil filler neck cover, engine oil
②	Engine oil drain	⑤	Engine oil sump
③	Shut-off valve (ball valve)		
I - open			
0 - closed			

1. Open the left-hand door.
2. Remove the oil filler cover.
3. Place the oil receptacle below the drain point.
4. Unscrew the filler plug ① at the oil drain.
5. Open the shut-off valve ③ at the engine's oil pan and catch the engine oil.
6. Close the shut-off valve and replace the screwed sealing cap.
7. Replace the plug in the filler port.
8. Close the door.



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

Further information See chapter 10.4.5 for engine oil filling.

#### 10.4.7 Replace the engine oil filter

Material Spare part

Filter wrench

Cleaning cloths

Oil receptacle

Precondition The machine is switched off.

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

Engine cooled down.

All compressed air consumers are disconnected and the air outlet valves are open.

The «battery disconnect switch» is turned off.

##### CAUTION

*Danger of burns from hot components and escaping engine oil!*

- Wear long-sleeved clothing and gloves.

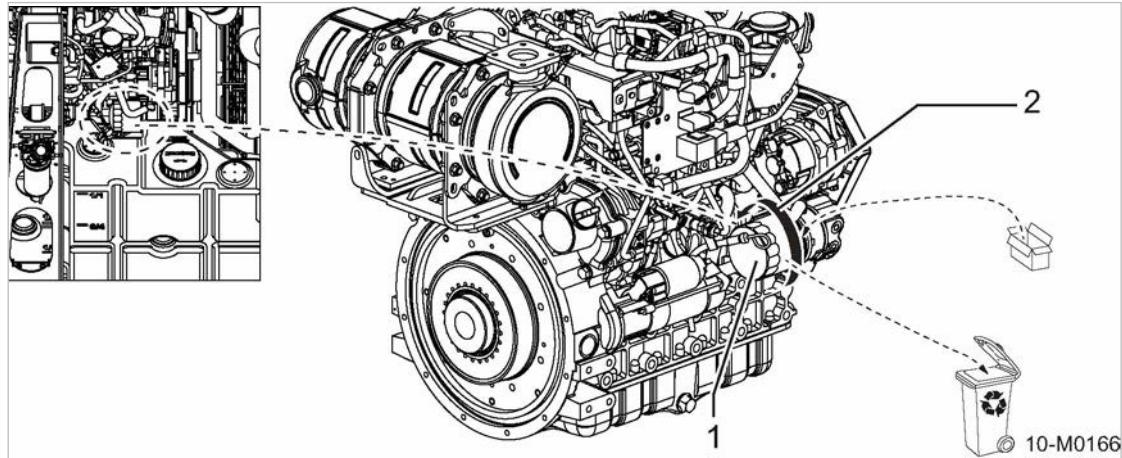


Fig. 54 Change the oil filter

- ① Oil filter
- ② Direction of rotation to unscrew the filter

1. Open the right-hand access door.
2. Prepare a receptacle.
3. Use a filter wrench to loosen and unscrew the filter. Catch any escaping oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter's gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the engine oil level.  
Low oil level: Replenish engine oil.
8. Open the left-hand door.

9. Turn on the «battery disconnect switch».

10. Close the doors.



Dispose of old oil filter, old oil and materials contaminated with oil according to environmental protection regulations.

#### 10.4.8 Drive belt maintenance

The lifespan of the drive belts is affected by belt tension.

- Slack belts can slip and become damaged and may result in engine overheating.
- Over-tight belts stretch and fatigue quicker. Over-tight belts also place unnecessary stress on bearings and shorten their life.

Material      Wrench

Suitable clamping lever (short, thin rod)

Spare part

Precondition      The machine is switched off.

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

The machine has cooled down.

All compressed air consumers are disconnected and the air outlet valves are open.

The «battery disconnect switch» is turned off.

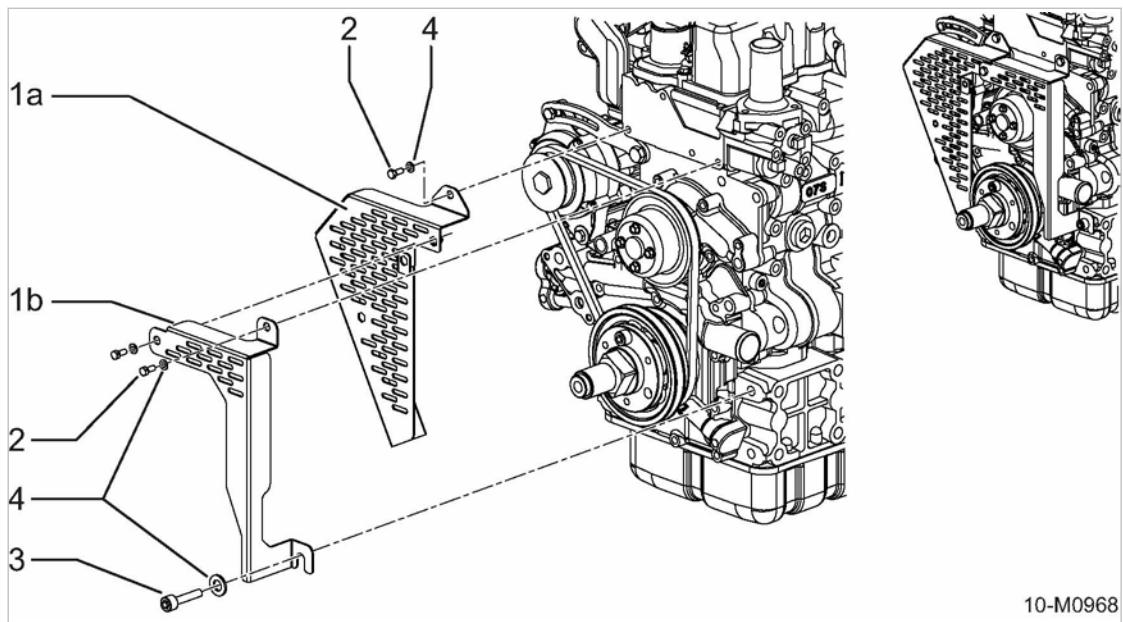
#### **⚠ WARNING**

*Beware of rotating pulleys and moving belts.*

*There is danger of serious injury from pinching.*

- *Never check the drive belt unless the engine is at standstill.*
- *Never run the machine without a belt guard.*

- Open both doors.

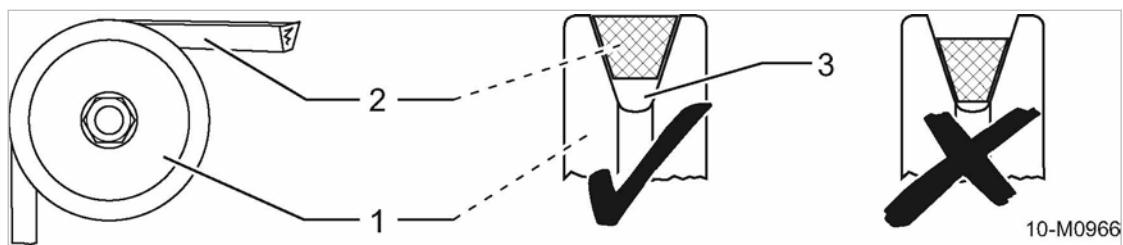
**Removing the belt guard:**

**Fig. 55 Belt guard attachment**

- |   |
|---|
| <span style="border: 1px solid black; padding: 2px;">1</span> Belt guard (2-part)<br><span style="border: 1px solid black; padding: 2px;">2</span> Hexagon bolt<br><span style="border: 1px solid black; padding: 2px;">3</span> Hex. socket head screw<br><span style="border: 1px solid black; padding: 2px;">4</span> Washer |
|---|

► Unscrew the fixing screws of both belt guard components and remove the belt guard.

**10.4.8.1 Carry out visual check**
**Visual inspection for damages:**

- Check the belt thoroughly for cracks, fraying or stretching.  
 When damaged or worn: Replace the drive belt immediately.

**Check the belt seating**

**Fig. 56 Checking the drive belt seating**

- |   |
|---|
| <span style="border: 1px solid black; padding: 2px;">1</span> Belt pulley<br><span style="border: 1px solid black; padding: 2px;">2</span> Drive belt<br><span style="border: 1px solid black; padding: 2px;">3</span> Pulley guidance groove |
|---|

► Check the drive belt seating.

Belt is positioned too deeply in the guidance groove: Replace the drive belt immediately.

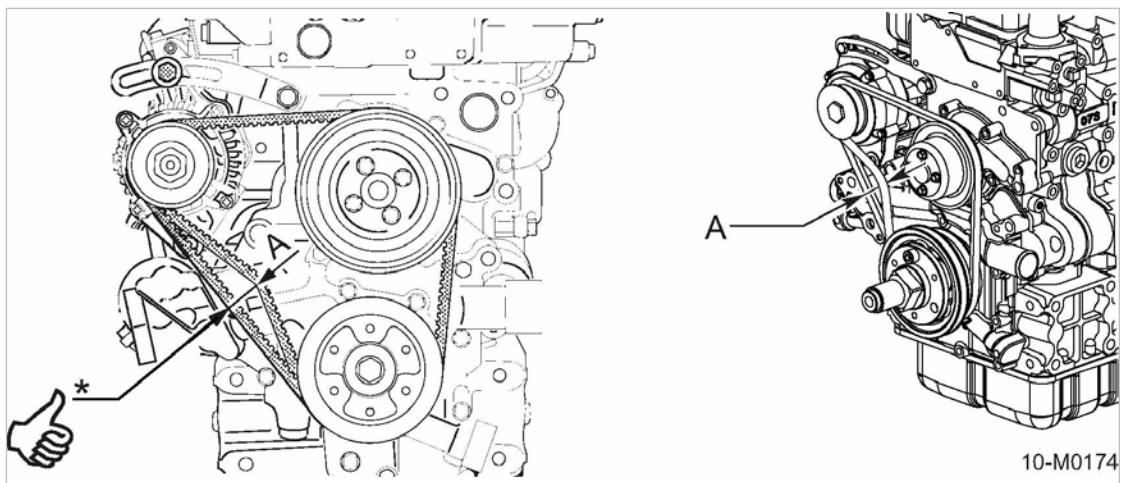
1. Replace the belt guard.

2. Turn on the «battery disconnect switch».
3. Close the doors.

#### 10.4.8.2 Checking belt tension

Check belt tension when they are warm, not hot, to avoid length variations through temperature.

The belt tension can be checked by hand: To check the tension, press the belt inwards with the thumb at the mid-point between pulleys.



- Ⓐ Drive belt testing position  
ⓐ - Compressive load approximately: 22 lb  
- Play approximately: 0.4 – 0.5 in

1. Check belt tension by hand (see Fig. 57).
2. Increase the tension on a loose belt.
3. Replace the belt guard.
4. Turn on the «battery disconnect switch».
5. Close the doors.

#### 10.4.8.3 Tension the belt

The drive belt is tensioned via the screw fastening of the alternator.

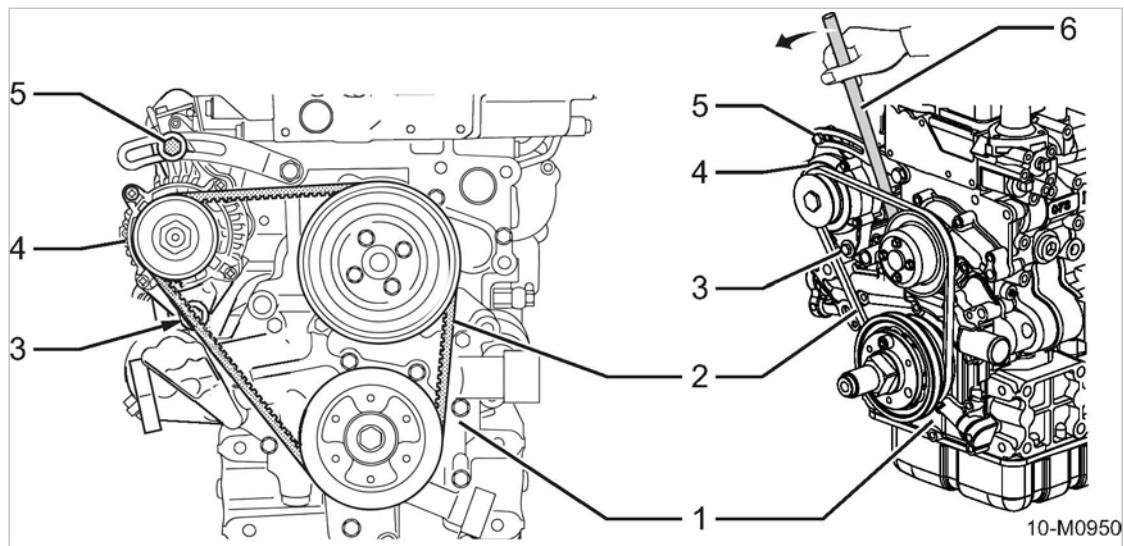


Fig. 58 Tension the belt

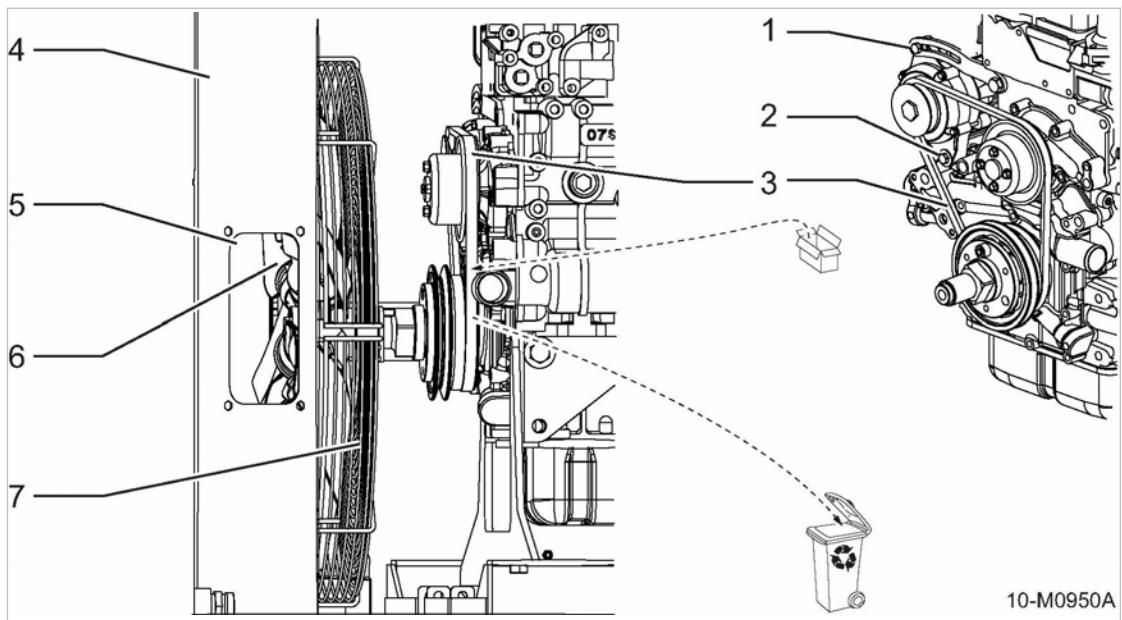
- |                                    |                                      |
|------------------------------------|--------------------------------------|
| [1] Engine block                   | [4] Alternator                       |
| [2] Drive belt                     | [5] Hexagon screw (tensioning screw) |
| [3] Hexagon screw (securing screw) | [6] Lever                            |
1. Loosen the alternator securing screw and clamping screw.
  2. Place a suitable lever between the alternator and engine block.
  3. Gently push the alternator in the direction of the arrow (outwards) using the lever until the drive belt is tensioned.
  4. Re-tighten the securing screw and clamping screw.
  5. Remove the lever.
  6. Check the belt tension (see Fig. 57).
 

Belt tension too low: Press the alternator further into arrow direction.  
 Belt tension too high: Slightly swivel the alternator against the arrow direction.
  7. Replace the belt guard.
  8. Turn on the «battery disconnect switch».
  9. Close the doors.

#### 10.4.8.4 Replace the drive belt



For machines with alternator, remove the alternator drive belt before replacing the drive belt.  
 See chapter 10.15.6 for more information about removing and replacing the generator drive belt.



10-M0950A

Fig. 59 Replace the drive belt

- |   |                                  |   |                                 |
|---|----------------------------------|---|---------------------------------|
| <span style="border: 1px solid black; padding: 2px;">1</span> | Hexagon screw (tensioning screw) | <span style="border: 1px solid black; padding: 2px;">5</span> | Service opening (without cover) |
| <span style="border: 1px solid black; padding: 2px;">2</span> | Hexagon screw (securing screw)   | <span style="border: 1px solid black; padding: 2px;">6</span> | Fan                             |
| <span style="border: 1px solid black; padding: 2px;">3</span> | Drive belt                       | <span style="border: 1px solid black; padding: 2px;">7</span> | Fan guard                       |
| <span style="border: 1px solid black; padding: 2px;">4</span> | Fan casing                       |   |                                 |

#### Removing the drive belt:

1. Remove the cover of the service opening at the fan casing.
2. Loosen the alternator securing screw and clamping nut until the drive belt can be taken off the pulleys.
3. Pull off the drive belt and push it through the fan guard opening into the fan casing space.
4. Lift the drive belt over the fan blades and remove it through the service opening from the fan casing.
5. Check the pulleys for dirt and wear.  
Dirty pulley: Clean pulley.  
Worn pulley: Have the pulley changed.

#### Installing a drive belt:

1. Push the new drive belt through the service opening of the fan casing and lift it over the fan blades.
2. Push the drive belt through the fan guard opening in direction of the belt pulleys.
3. Manually route the drive belt over the pulleys without using force.
4. Tension the drive belt. Ensure that the drive belt is correctly positioned in its guide.



A belt that has been replaced may not be used again.

After running for two to three hours, check the belt tension again.



Old belts should be disposed of in accordance with the latest environmental regulations.

**Putting in operation:**

1. Install the cover of the service opening.
2. Replace the belt guard.
3. Turn on the «battery disconnect switch».
4. Close the doors.

**10.4.9 Battery maintenance**

- Check the charging system if the batteries discharge without obvious reason.

**10.4.9.1 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 escape from vent holes.
- Work with caution.

**When working on batteries, comply with the following safety signs:**

A warning label with safety signs is attached to the battery.



10-M0167

Fig. 60 Safety signs - warning labels on the battery

- Take heed of any safety signs on the battery warning label.

The individual safety signs have the following meaning:

- ① – Fire, sparks, open flame and smoking are forbidden!
- ② – Eye and face protection must be worn because of the danger of acid burns.
- ③ – Keep children well away from batteries and acids!
- ④ – Wear protective gloves, batteries are filled with caustic electrolyte!
- ⑤ – Observe the battery manufacturer's instructions!
- ⑥ – Follow the safety rules, explosion hazard!

**Further instructions on working with batteries:**

- Do not remove battery terminal covers unnecessarily.

- Do not lay tools on the battery. This can lead to short circuiting, overheating and battery bursting!
- 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!

#### 10.4.9.2 Ensuring the batteries are charged

The battery may be subject to self-discharge if the machine has been out of operation for an extended period. The starting voltage is insufficient to start the engine when needed. Moreover, exhaustive discharge of the battery can result in battery damage.



*Always consider the following for starter batteries:*

Recharge if stored for 30 days or longer!

The current charge level of the starter battery can be read from the operating mode *Battery voltage* at the SIGMA CONTROL SMART display.

**Starter battery charge level:**

Charge level [%]	Voltage display [V]	Electrolyte density [lb/gal]	Notes
100	12.7 - 12.85	10.60	Battery OK, fully charged.
75	12.5	10.35	Recharging required!
65	12.4	10.18	
50	12.3	10.09	Limit of starting capacity!
25	12.0	9.68	Battery discharged below permitted discharge limit.
20	11.9	9.51	
0	11.6	9.09	Battery permanently damaged due to total discharge!

Values 77° F

Tab. 98 Starter battery charge level

- Check battery charge and recharge with appropriate charging device, if necessary.

#### 10.4.9.3 Battery removal and installation

- Precondition
- The machine is switched off.
  - The machine is standing level.
  - The machine is fully vented, the pressure gauge reads 0 psig.
  - The machine has cooled down.
  - The «battery disconnect switch» is turned off.

1. **⚠ CAUTION** *There is danger of batteries bursting!*  
*A short-circuited battery heats up quickly and can burst.*
  - *Never short-circuit a battery (e.g. with a hand tool).*
  - *Wear gloves and eye protection.*

2. **NOTICE** Excessive voltage produced by the engine generator!  
Voltage peaks can destroy the alternator regulator and diodes.
  - The batteries serve as a buffer and must not be disconnected while the engine is running.
  - Perform work on batteries only when the machine is switched off.
3. Open the left-hand door.
4. Disconnect the negative cable first, then the positive cable.
5. Unscrew the battery fixing clamp.
6. Replace in the reverse order.
7. Make sure the battery is properly secured.
8. Turn on the «battery disconnect switch».
9. Close the door.

**Battery replacement:**

Replacement batteries must have the same capacity, current strength and form as the original batteries.

- Always replace batteries with the same type.



Old batteries are hazardous waste and must be disposed of correctly in accordance with local environmental protection regulations.

#### 10.4.10 Change the oil separator cartridge

Material Spare part

Cleaning cloths

Precondition The machine is switched off.

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

Engine cooled down.

All compressed air consumers are disconnected and the air outlet valves are open.

The «battery disconnect switch» is turned off.

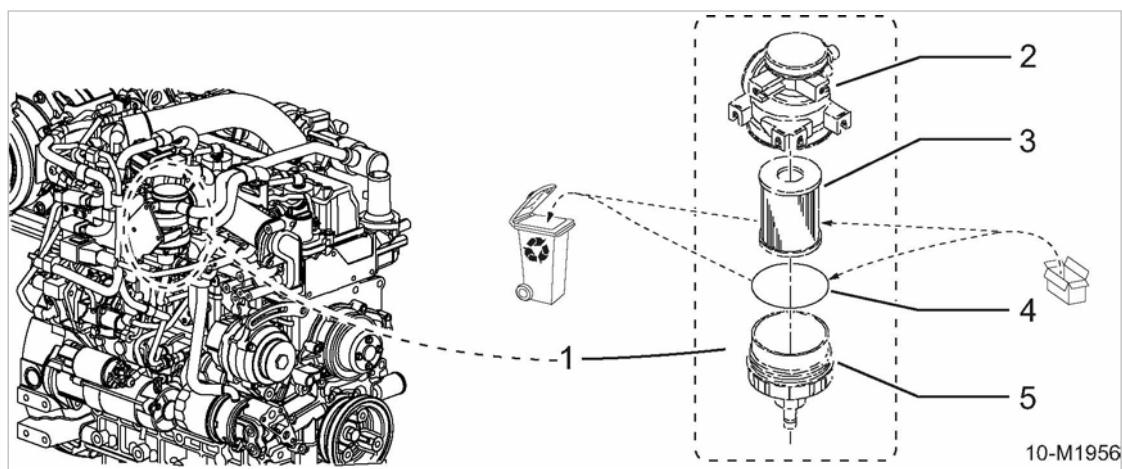


Fig. 61 Change the oil separator cartridge

① Oil separator assembly

④ Sealing ring

② Body

⑤ Enclosure

③ Oil separator cartridge

1. Open the left-hand door.
2. Unscrew the housing.
3. Remove the oil separator element and the sealing ring.
4. Clean the contact surfaces of enclosure and cover with a lint-free cloth and remove any adhering oil and grease residue.
5. Insert a new oil separator element and new sealing ring.
6. Manually screw the cover on.
7. Turn on the «battery disconnect switch».
8. Close the door.



Dispose of the old oil separator element, sealing ring and contaminated resources according to applicable environment protection regulations.

## **10.5 Servicing the components of the emission after-treatment system**

- Perform maintenance tasks according to the schedule in chapter 10.3.4.1.

### **Check the housing of the diesel particulate filter:**

- Check the housing of the diesel particulate filter for proper seating and damage.  
The housing is damaged: Please contact KAESER SERVICE.

### **Check flange connection between exhaust manifold and diesel particulate filter:**

- Check flange connection between exhaust manifold and diesel particulate filter; if required, tighten the screw connection.  
The flange connection is damaged: Contact KAESER SERVICE or KUBOTA.

## **10.6 Compressor Maintenance**

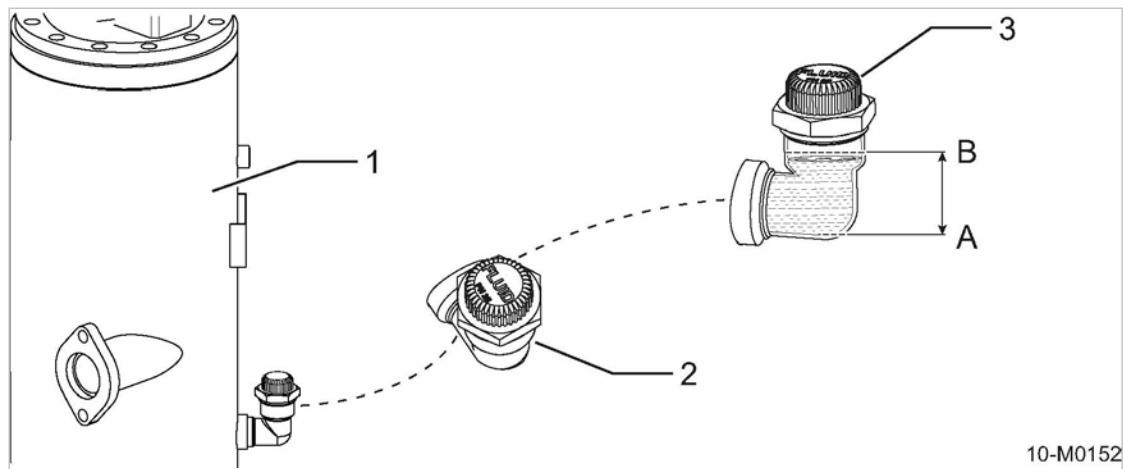
- Perform maintenance tasks according to the schedule in chapter 10.3.4.1.

### **10.6.1 Check the 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 cloths

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 valves are open.


**Fig. 62 Check the cooling oil level**

- |  |  |
|--|--|
| <span style="font-size: 1.5em;">①</span> Oil separator tank<br><span style="font-size: 1.5em;">②</span> Oil filler port<br><span style="font-size: 1.5em;">③</span> Screw plug | <span style="border: 1px solid black; padding: 2px;">A</span> Minimum level<br><span style="border: 1px solid black; padding: 2px;">B</span> Maximum level |
|--|--|

1. Open the right-hand access door.
2. Slowly unscrew and withdraw the plug from the oil filler port.
3. Check the cooling oil level.  
If oil is not visible: Top up the cooling oil.
4. Replace the plug in the filler port.
5. Close the door.

### 10.6.2 Cooling oil filling and topping up

Material Cooling oil

Funnel

Cleaning cloths

Wrench

Precondition The machine is shut down.  
The machine is standing level.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected and the air outlet valves are open.  
The «battery isolating switch» is turned off.

#### Filling with cooling oil

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

1. **NOTICE** *The machine could be damaged by unsuitable oil!*
  - Never mix different types of oil.
  - Never top up with a type of oil that differs from the one already used in the machine.
2. Open the right-hand access door.
3. Slowly unscrew and withdraw the plug from the oil filler port.

4. Top up the cooling oil to the maximum level **B** with the help of a funnel.
5. Check the oil level.
6. Check the filler plug gasket for damage.  
Damaged gasket: replace gasket.
7. Replace the plug in the filler port.
8. Turn on the «battery isolating switch».
9. Close the door.

**Starting the machine and performing a test run:**

1. Start the machine and run in IDLE until the operating temperature is reached.
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 valves.
6. Open the right-hand access door.
7. Check the oil level after about 5 minutes.  
Cooling oil level too low: Top up the cooling oil.
8. Visually inspect for leaks.
9. Close the door.

**10.6.3 Changing the cooling oil**

Drain the oil completely from the following components:

- Oil separator tank
- Oil cooler
- Oil pipes

➤ Always change the oil filter when changing the oil.

Material	Cooling oil Receptacle Drain hose with hose coupling is disconnectedly laying at the machine New gasket for the drain plug Funnel Cleaning cloth
----------	---

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 valves are open. The «battery isolating switch» is off.
--------------	---

**⚠ CAUTION**

*There is risk of burns from hot components and escaping oil.*

- Wear long-sleeved clothing and gloves.

- Open both doors.

#### 10.6.3.1 Draining the cooling oil (machine with chassis)

In machines with chassis (no closed floor pan, no stationary machine), the cooling oil is drained directly at the oil separator tank and the oil cooler.

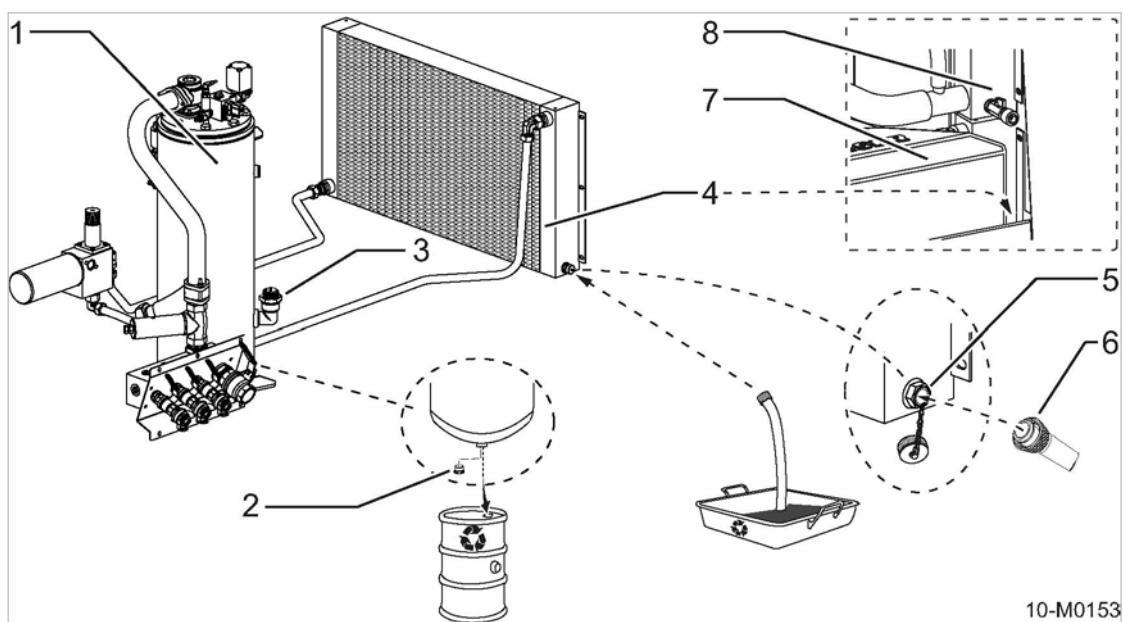


Fig. 63 Draining the compressor cooling oil

[1]	Oil separator tank	[5]	Oil drain valve
[2]	Oil separator tank drain plug	[6]	Drain hose with rapid action hose coupling
[3]	Oil filler plug	[7]	Fuel tank
[4]	Oil cooler	[8]	Coolant cooler (engine)

- Remove the plug [3] from the oil separator tank filling port.

#### Draining the cooling oil from the oil separator tank:

The oil separator tank can be drained from a point accessible through a hole in the floor panel.

1. Place the oil receptacle below the corresponding drain hole in the floor pan.
2. Unscrew the drain plug [2] and allow the cooling oil to drain into the receptacle.
3. Fit a new gasket on the drain plug and screw it back in again.

#### Draining the oil from the oil cooler

This is done from a oil drain valve with the aid of a separate drain hose.

1. Position a receptacle beneath the oil cooler drain point (accessible through a hole in the floor panel).
2. Lead the free end of the drain hose [6] through the hole in the floor pan and into the receptacle.

3. Remove the protective cap from the oil drain valve 5.
4. Screw the drain hose with quick-release coupling onto the oil drain valve.  
The valve opens and oil drains through the hose.
5. When all the oil has drained out, uncouple and remove the drain hose.
6. Replace the protective cap on the oil drain valve.

**Performing final work steps:**

1. Replace the plug in the oil separator tank filling port.
2. Close the doors.



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

Further information See chapter 10.6.2 for cooling oil filling.

**10.6.3.2 Option oe, rw, rx**
**Draining the cooling oil (closed floor pan - stationary machine):**

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines and machines with closed floor pan. The cooling oil is drained via pipes which are screwed into the drain openings of the oil separator tank and the airend and are closed with a shut-off valve. The pipes are sealed with a screwed sealing plug at the drain end.

Option oe, rw, rx

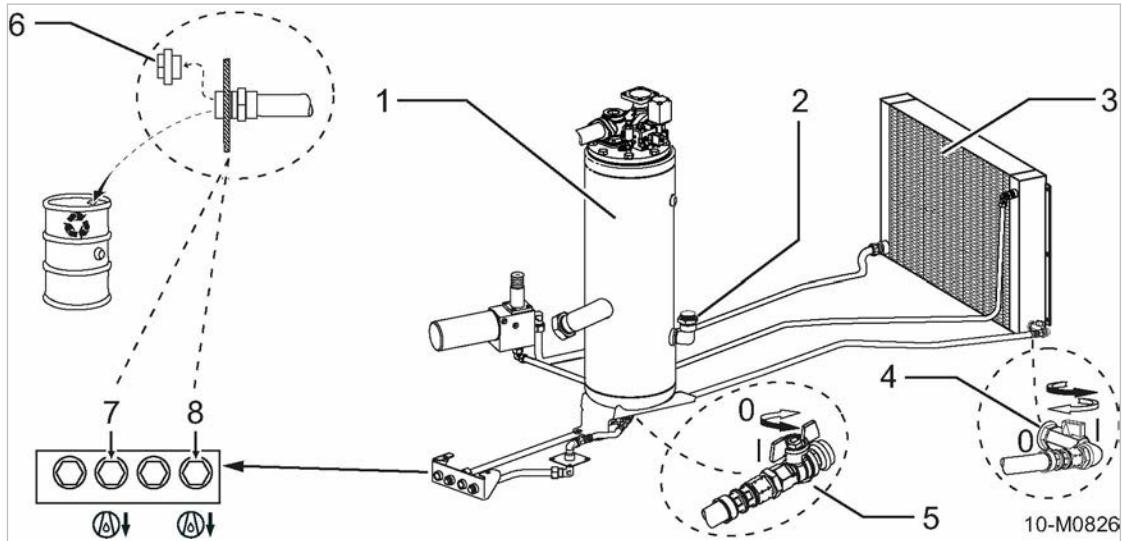


Fig. 64 Draining the cooling oil (closed floor pan - stationary machine)

- |     |   |   |   |
|-----|---|---|---|
| ①   | Oil separator tank                                    | ⑥ | Screwed sealing cap - cooling oil drain |
| ②   | Oil filler plug                                       | ⑦ | Oil cooler drain                        |
| ③   | Oil cooler  | ⑧ | Oil separator tank drain                |
| ④/⑤ | Shut-off valve (ball valve)<br>I - open<br>0 - closed |   |   |

➤ Remove the plug ② from the oil separator tank filling port.

**Draining the cooling oil from the oil separator tank:**

1. Position a receptacle beneath the oil drainage point for the oil separator tank's cooling oil ⑧.
2. Unscrew the corresponding screwed sealing cap at the cooling oil drain.
3. Open the shut-off valve ⑤ at the oil separator tank and catch any draining cooling oil.
4. Close the shut-off valve and replace the screwed sealing cap.

**Draining the oil from the oil cooler**

1. Position a receptacle beneath the oil drainage point for the oil cooler's cooling oil ⑦.
2. Unscrew the corresponding screwed sealing cap at the cooling oil drain.
3. Open the shut-off valve ④ at the oil cooler and catch any draining cooling oil.
4. Close the shut-off valve and replace the screwed sealing cap.

**Performing final work steps:**

1. Replace the plug ② to the filling port of the oil separator tank.
2. Close the doors.



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

Further information See chapter 10.6.2 for cooling oil filling.

#### 10.6.4 Replacing the compressor oil filter

Material Spare part  
Oil receptacle  
Cleaning cloths

Precondition The machine is switched off.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected and the air outlet valves are open.  
The «battery disconnect switch» is turned off.

**⚠ CAUTION**

*Danger of burning from hot components and oil.*

➤ *Wear long-sleeved clothing and gloves.*

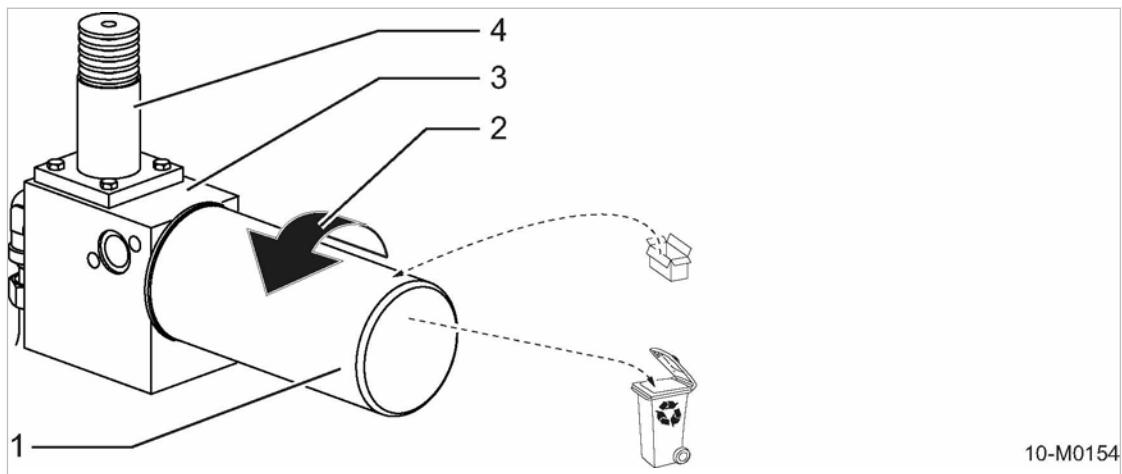


Fig. 65 Change the oil filter

- |  |   |
|--|---|
| ① Oil filter<br>② Direction of rotation to unscrew the oil filter. | ③ Thermostatic valve<br>④ Ambient temperature sensor (not with Option db) |
|--|---|

#### Changing the oil filter

1. Open the left-hand door.
2. Prepare a receptacle.
3. Loosen the filter by turning counter-clockwise and catch any escaping oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter's gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the oil level in the oil separator tank.  
Cooling oil level too low: Top off the cooling oil.
8. Turn on the «battery disconnect switch».
9. Close the door.



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

#### Starting the machine and performing a test run

1. Start the machine and run in IDLE until the operating temperature is reached.
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 valves.
6. Open the right-hand access door.
7. After approximately 5 minutes: Check the cooling oil level.  
Cooling oil level too low: Replenish with more cooling oil.
8. Visually inspect for leaks.
9. Close the door.

### 10.6.5 Oil separator tank dirt trap maintenance

The control valve is mounted on the oil separator tank cover. The control valve has two different dirt traps that must be cleaned at least once a year.

Material	Cleaning cloths Wrench Small screwdriver Maintenance kit, control valve Petroleum ether or spirit
Precondition	The machine is switched off. The machine is fully vented, the pressure gauge reads 0 psig. The machine has cooled down. All compressed air consumers are disconnected and the air outlet valves are open. The «battery isolating switch» is turned off.

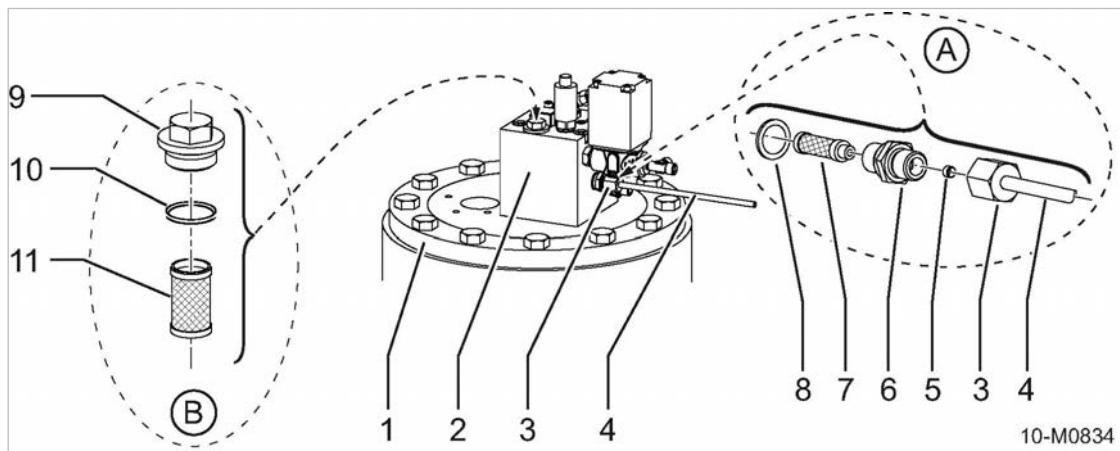


Fig. 66 Oil separator tank dirt trap maintenance

- |   |                          |   |  |
|---|--------------------------|---|--|
| ① | Oil separator tank cover | ⑦ | Strainer                                   |
| ② | Control valve            | ⑧ | Sealing ring                               |
| ③ | Union nut                | ⑨ | Detail: Dirt trap, proportional controller |
| ④ | Oil return line          | ⑩ | Screw plug                                 |
| ⑤ | Nozzle                   | ⑪ | O-ring                                     |
| ⑥ | Screw-in connector       |   | Strainer                                   |

- Open the right-hand access door.

#### 10.6.5.1 Oil return line dirt trap maintenance

See Fig. 66; Detail: A.

1. Undo the union nut ③ and bend the oil return line ④ to one side.
2. Unscrew the screw-in connector ⑥.
3. Unscrew the strainer ⑦ from the screw-in connector.
4. Use a screw driver to unscrew the nozzle ⑤ from the screw-in connector.
5. Clean the housing, strainer and sealing ring ⑧ with cleaning solvent or spirit.

6. Check the nozzle, strainer and sealing ring for wear.  
When clearly worn: replace components.
7. Fit the nozzle and strainer to the screw-in connector.
8. Screw in the connector making sure the sealing ring seats properly.
9. Refit the oil scavenge line.

**10.6.5.2 Maintenance of the proportional controller dirt trap**

See Fig. 66; Detail: B.

1. Unscrew the plug ⑨ and remove the strainer ⑪.
2. Clean the plug, strainer and O-ring ⑩ with cleaning solvent or spirit.
3. Check the strainer and O-ring for wear.  
When clearly worn: replace components.
4. Place the screw plug on the strainer.
5. Screw in the plug making sure the O-ring seats properly.

**Putting in operation:**

1. Turn on the «battery isolating switch».
2. Close the door.



Dispose of old parts and contaminated materials according to environmental regulations.

**Starting the machine and performing a test run:**

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.  
Pressure gauge reads 0 psig!
4. Open the outlet valves.
5. Open the right-hand access door.
6. Visually inspect for leaks.
7. Shut down the machine.
8. Close the door.

**10.6.6 Changing the oil separator cartridge**

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,
- and adherence to the changing intervals for:
  - Cooling oil
  - Oil filter
  - Air filter

Material	Spare part Cleaning cloths Wrench
Precondition	The machine is switched off. The machine is fully vented, the pressure gauge reads 0 psig. The machine has cooled down. All compressed air consumers are disconnected and the air outlet valves are open. The «battery isolating switch» is turned off.

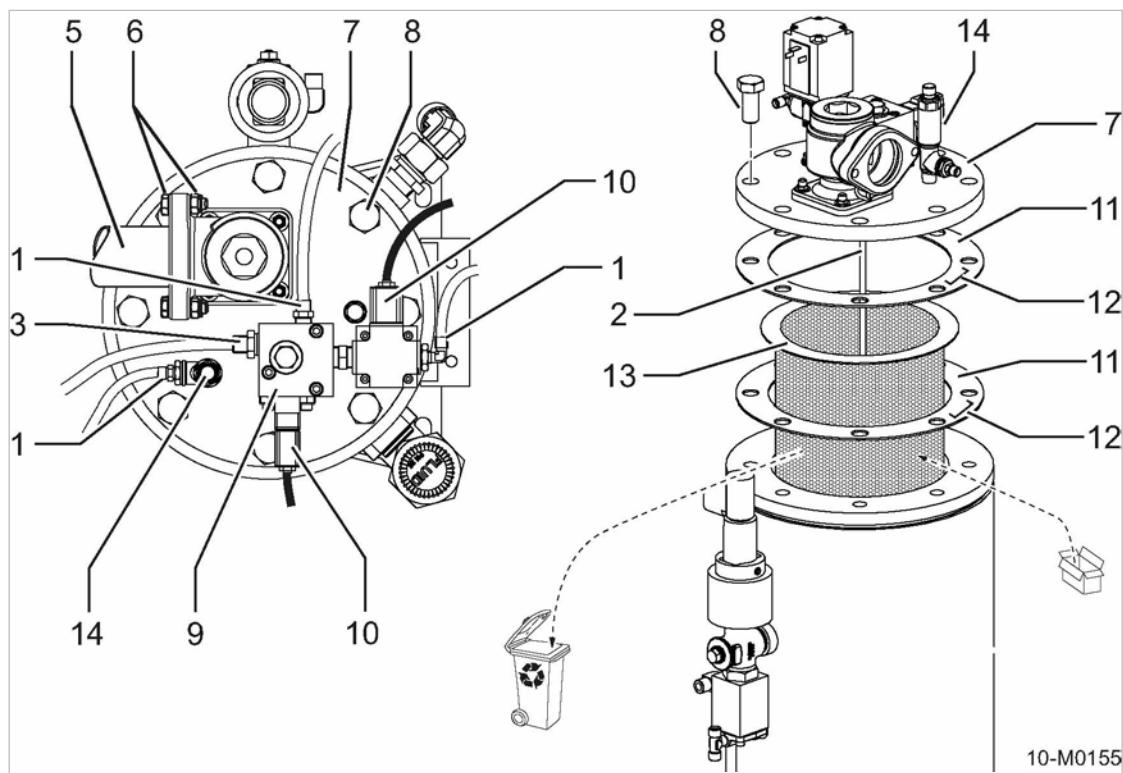


Fig. 67 Changing the oil separator cartridge

- |   |                              |
|---|------------------------------|
| [1] Control air line union nut  | [9] Control valve            |
| [2] Oil scavenge pipe (screwed to the cover)                              | [10] Solenoid valve plug     |
| [3] Oil scavenge pipe union nut (lower fitting, screwed to the dirt trap) | [11] Gasket                  |
| [5] Air pipe  | [12] Metal clip              |
| [6] Pipe fitting  | [13] Oil separator cartridge |
| [7] Cover   | [14] Pressure transducer     |
| [8] Fastening screw   |                              |

- Open the right-hand access door.

#### Changing the oil separator cartridge:

1. Unscrew the union nuts [1] and [3] and place the components with connections carefully to one side.
2. Pull out the plugs at the connection cables of the solenoid valves [10] and withdraw the cable.
3. Pull out the plug to the sensor [14] and withdraw the cable.

4. Unscrew the fitting **⑥** and turn the air pipe **⑤** to one side.
5. Remove the screws **⑧** securing the cover **⑦** of the oil separator tank.
6. Carefully lift the cover and put to one side.



Take care with the pipe of the oil return line **②** screwed under the cover.

7. Remove the old oil separator cartridge **⑬** and the gaskets **⑪**.
8. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.



Do not remove the metal clips!

The metal parts of the oil separator cartridge are electrically interconnected. The gaskets **⑪** are fitted with metal clips **⑫** that fulfil this requirement and provide an electrical path to the oil separator tank and to the frame of the machine.

9. Insert the new oil separator cartridge with gaskets and screw down the cover.
10. Re-position the air pipe **⑤**.
11. Replace and tighten all loosened fittings.
12. Reconnect cables.
13. Check the oil level in the oil separator tank.  
Cooling oil level too low: Top up the cooling oil.



The dirt trap at the oil separator receptacle must also be serviced, whenever the oil separator cartridge is changed.

Further information Information on control valve dirt trap maintenance is given in chapter 10.6.5.

#### Putting in operation:

1. Turn on the «battery isolating switch».
2. Close the door.



Dispose of old parts and contaminated materials according to environmental regulations.

#### Starting the machine and performing a test run:

1. Start the machine and run in IDLE until the operating temperature is reached.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.  
Pressure gauge reads 0psig!
5. Open the outlet valves.
6. Open the right-hand access door.
7. After approximately 5 minutes: Check the cooling oil level.  
Cooling oil level too low: Top up the cooling oil.
8. Visually inspect for leaks.
9. Close the door.

### 10.6.7 Compressor air filter maintenance

Clean the filter according to the maintenance schedule or if the maintenance indicator shows this to be necessary.

Replace the air filter element after 2 years or after it has been cleaned 5 times.



- Using the machine without an air filter element is not permitted!
- Do not use a filter element with damaged folds or gasket.
- The use of an unsuitable air filter can permit dirt to ingress the pressure system and cause premature wear and damage to the machine.

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

Precondition      The machine is switched off.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected and the air outlet valves are open.

#### NOTICE

*Damaged air filter element.*

*Machine damage due to contaminated intake air.*

- *Do not try to clean the filter element by striking or knocking it.*
- *Do not wash the filter element.*

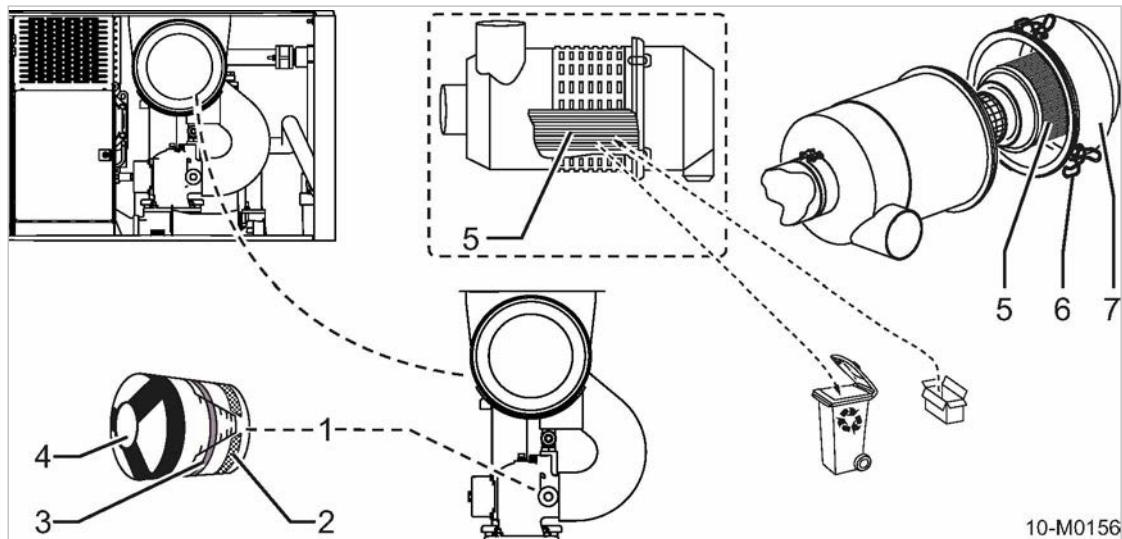
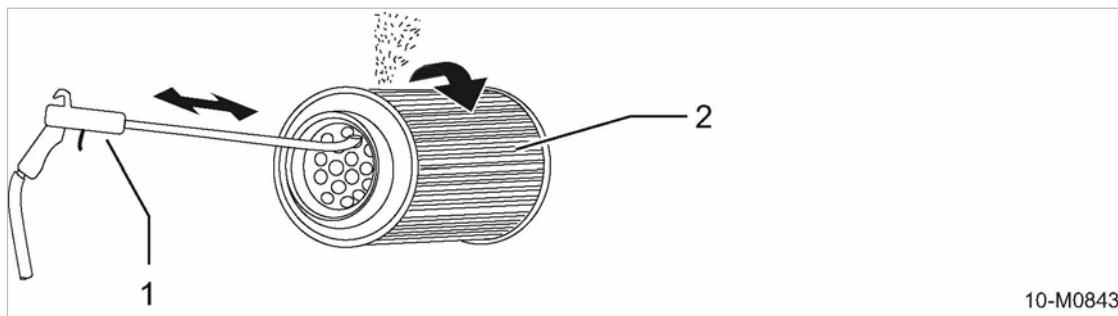


Fig. 68 Compressor air filter maintenance

- |  |                    |
|--|--------------------|
| [1] Maintenance indicator                          | [5] Filter element |
| [2] Red zone indicator scale                       | [6] Retaining clip |
| [3] Indicating piston of the maintenance indicator | [7] Filter cap     |
| [4] Reset knob maintenance indicator               |                    |



10-M0843

Fig. 69 Cleaning the filter element

- ① Compressed air gun with blast pipe bent to 90° at the end
- ② Filter element

► Open both doors.

#### Checking the contamination level of the air filter

Air filter maintenance is necessary when the yellow piston inside the maintenance indicator reaches the red zone.

- Check the air filter maintenance indicator.  
If the yellow piston reaches the red zone, Clean or replace the filter element.

#### Cleaning the air filter

1. Release the retaining clamps, lift off the cap and extract the air filter.
2. Carefully clean the inside of the housing, the cover and sealing faces with a damp cloth.
3. Cleaning the filter element:
  - Use dry compressed air ( $\leq 30$  psi!) at an angle to blow dust from the element from inside to outside until no further dust develops.
  - The blast pipe must be long enough to reach the bottom of the element.
  - The tip of the blast pipe must not touch the element.
  - Clean sealing faces.
4. Inspect the element carefully for any damage.  
Damaged filter element: Replace filter element.
5. Insert the cleaned or new filter element into the filter housing. Make sure it is properly in place and sealed by its gaskets.
6. Replace the cap and secure with the clip.

#### Resetting the maintenance indicator

- Repeatedly press the reset knob on the maintenance indicator.  
The yellow piston within the indicator is reset and the maintenance indicator is ready for use again.
- Close the doors.



Dispose of old parts and contaminated materials according to environmental regulations.

## 10.7 Cleaning the cooler

The frequency of cleaning is mainly dependent on local operating conditions.  
Severe clogging of the coolers causes overheating and machine damage.  
Check coolers regularly for clogging.  
Avoid creating dust swirls. Wear breathing protection if necessary.  
Do not clean the coolers/radiators with a sharp instrument as they may be damaged.  
A severely contaminated cooler/radiator should be cleaned by KAESER SERVICE.

Material	Compressed air Breathing mask (if necessary) Water or steam jet blaster
Precondition	The machine is placed over a washing station equipped with an oil separator. The machine is switched off. The machine has cooled down. The machine is fully vented, the pressure gauge reads 0 psig. All compressed air consumers are disconnected and the air outlet valves are open. The «battery isolating switch» is turned off.

### NOTICE

*Damage can be caused to the machine by water or steam jets!  
Direct water or steam jets can damage or destroy electrical components and display instruments.*

- *Cover up electrical components such as the control cabinet, generator, starter and display instruments.*
  - *Do not direct water or steam jets at sensitive components such as the generator, starter or indicating instruments.*
  - *Deploy the extension pole of the pressure washer at a distance of at least 20 inches and at an approximate 90° angle to the cooler/radiator surface.*
- Open both doors.

### 10.7.1 Cleaning the compressor cooler and engine radiator

The compressor oil cooler and engine coolant radiator are combined in a single cooler block.

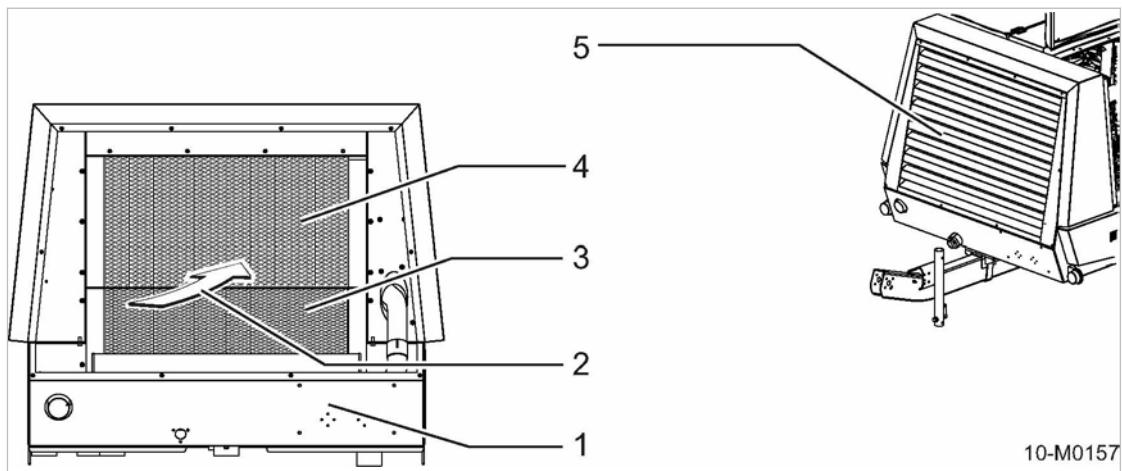


Fig. 70 Cleaning the compressor cooler and engine radiator

- |  |  |
|--|--|
| ① Front end of machine, sound insulation (radiator grill) removed<br>② Direction of impacting water or steam jet (from outside to inside)<br>③ Oil cooler (compressor) | ④ Coolant cooler (engine)<br>⑤ Sound damping louvres |
|--|--|

**Cooler cleaning:**

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.
2. Remove the sound damping louvres in front of the cooler/radiator.
3. Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from outside to inside).
4. Replace the sound damping louvre.
5. Remove the protective coverings from the air filters.
6. Turn on the «battery isolating switch».
7. Close the doors.
8. Start the machine and run up to operating temperature so that excess water is evaporated.

**Check the cooler for leaks:**

1. Open both doors.
2. Visually inspect for leaks. Is oil/coolant leaking out?



Is a cooler leaking?

➤ Have the defective cooler repaired or replaced immediately by KAESER SERVICE.

➤ Close the doors.



Clean the cooler fins only in a washing area equipped with an oil separator!

### 10.7.2 Option da, df, dc, dd

#### Cleaning the compressed air after-cooler

The compressed air after-cooler is located near the air treatment devices.

Option da, df, dc, dd

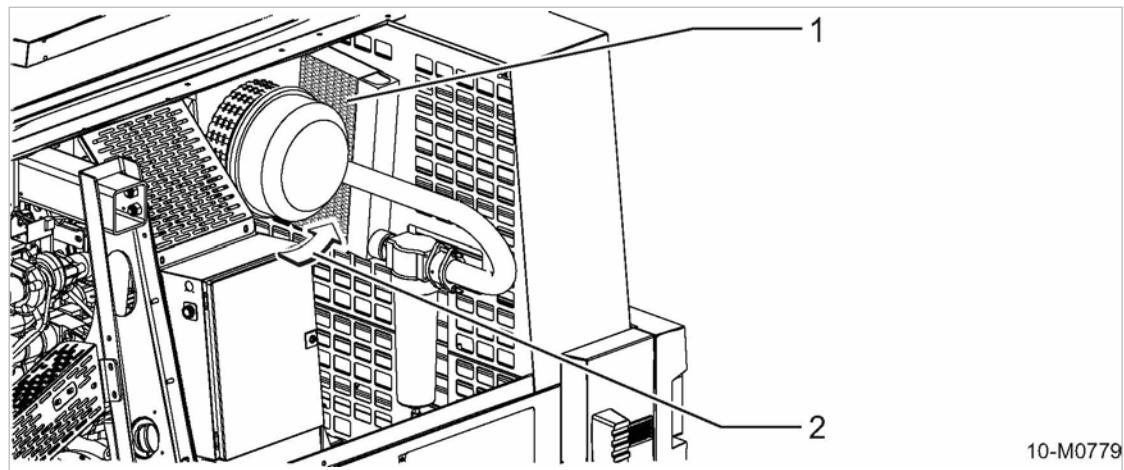


Fig. 71 Cleaning the compressed air after-cooler

- ① Compressed air after-cooler
- ② Direction of impacting water or steam jet (from inside to outside).

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.
2. Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from inside to outside).
3. Remove the protective coverings from the air filters.
4. Turn on the «battery isolating switch».
5. Close the doors.
6. Start the machine and run up to operating temperature so that excess water is evaporated.



Clean the cooler fins only in a washing area equipped with an oil separator!

## 10.8 Checking screw connections

Overview:

- Guideline values for tightening torques.
    - General guideline values for tightening torques.
    - Specific guideline values for tightening torques.
  - Sealed screw connections.
- Follow all instructions carefully.

### General guideline values for tightening torques:

Guideline values for the required tightening torques are dependent upon the size of the screw connection, the strength class of the screw material and the friction coefficient.

1. **NOTICE** *Damage to the machine from insufficient clamping force at screw connections*
  - *Tighten all screw connections with the defined tightening torque.*
2. Determine the thread size for the screw connection.

3. For determining the defined torque, see chapter 2.4.2.
4. Tighten all screw connections with the defined torque.

**Specific guideline values for tightening torques:**

Screw connections for components that are either safety-related or under particular stress must be tightened with specific tightening torques.

Examples:

- For details of specific tightening torques, see chapter 2.4.2.
    - E.g. Screw connections on lifting eyes.
  - Values for further specific tightening torques are provided in the section covering the relevant maintenance task.
1. **NOTICE** *Damage to the machine from insufficient clamping force at screw connections*
    - *Screw connections for components that are either safety-related or under particular stress must be tightened exclusively with the correct specific tightening torque.*
  2. Determine the correct specific tightening torque.
  3. Tighten the screw connections with the specific tightening torque.

**Sealed screw connections:**

Screw connections which must not be adjusted are sealed with a coloured locking varnish.

1. **NOTICE** *Damage to the machine caused by adjusting the settings*
  - *Leave sealed screw connections in their original condition.*
2. Do not loosen or adjust sealed screw connections.

 Failure to comply with these instructions will invalidate all warranty claims.

## 10.9 Check wing doors



The closed wing doors perform the following functions when the machine is running: Protection against contact, cooling air flow, sound proofing and weather protection.

To ensure these functions at all times, the doors and their connecting elements must always be in perfect working condition.

Material Acid-free oil

Precondition The machine is switched off.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected, the discharge valves are open.

**Check function of wing doors:**

1. Close all wing doors.
2. Close all catches.



One or more wing doors are not resting properly on the body or cannot be latched.

- Contact authorised KAESER SERVICE.

**Checking connecting elements of wing doors:**

The connecting elements of the wing doors may include:

- Screw connections
- Hinges
- Handles
- Latches
- Snap fasteners
- Gas struts

1. Check all connecting elements of the wing doors for damage, wear and firm seating.
2. If necessary, grease the hinges.
3. Clean gas struts.
4. Check that gas struts will open the unlocked wing doors properly.  
Wing doors open independently to the maximum opening angle.
5. Check that open wing doors remain open at maximum angle.



Wing doors do not open properly or do not stay open.

- Replace defective gas struts.

**10.10 Check sound proofing material**

In order to limit the machine's noise emissions to a minimum the sound proofing material that has been built into the enclosure must be checked regularly. Damaged sound proofing material must be replaced immediately.

- Check sound proofing material inside the enclosure for condition, fastening, and dirt.



The sound proofing material is porous, cracked, no longer exists, or severely contaminated with oil, fuel, or cleaning agent.

- Have an authorized KAESER service representative replace the sound proofing material that can no longer be used.

**10.11 Maintenance of rubber sealing strips**

The rubber sealing strips between the body panels and the access doors serve both as a sound-proofing measure and to prevent ingress of rain water.

Care of the rubber sealing strips is especially necessary in winter to prevent the strips from sticking and tearing when the access panels are opened.

Material	Cleaning cloth Silicone or Vaseline
Precondition	The machine is shut down. The machine is fully vented, the pressure gauge reads 0 psig. Machine is cooled down. All compressed air consumers are disconnected and the air outlet valves are open.
	1. Open all the doors. 2. Clean the rubber sealing strips with a lint-free cloth and check for cracks, holes and other damage. Have any damaged gasket replaced. 3. Properly grease the rubber strips. 4. Close the doors.

## 10.12 Performing maintenance tasks on the chassis

### Perform maintenance tasks on the chassis:

- See the separate document "Chassis Operating Manual" for instructions regarding maintenance tasks on the chassis.

### Performing maintenance tasks on the chassis:

- Carry out maintenance tasks according to maintenance schedule 10.3.4.1 "Machine's Maintenance Schedule".

## 10.13 Check/replace hose lines

Overview of hose lines of machine:

- Fuel lines of the drive engine
- Pressure hoses of the drive engine
- Pressure hoses of the compressor



The hose lines are subject to natural aging regardless of proper storage or permitted utilization during machine operation. This aging changes the material and compound properties and reduces the performance capability of the hose lines. As a result the period of use for hose lines is limited.

The operator must ensure that all hose lines are checked at reasonable intervals and are replaced if required, see maintenance schedule 10.3.4.1

- Comply with all instructions!

### 10.13.1 Replace the fuel lines of the drive engine

- Have an authorized KAESER service representative replace the fuel lines of the drive engine.

### 10.13.2 Replace the pressure hoses of the engine



Overview of all pressure hoses at engine:

- Engine oil
- Coolant for the water cooler
- Charge air (if available)

➤ Have an authorized KAESER service representative replace the pressure hoses of the engine.

### 10.13.3 Replace the pressure hoses of the compressor



Overview of all pressure hoses on the compressor:

- Cooling oil
- Compressed air
- Control air
- Condensate

➤ Have an authorized KAESER service representative replace the pressure hoses of the compressor.

## 10.14 Check safety functions

➤ Perform inspection tasks/have them performed according to the maintenance schedule in chapter 10.3.4.1.

### 10.14.1 Check the EMERGENCY STOP push button

In order to shut down the machine in the event of danger, the machine is equipped with an EMERGENCY STOP push button. The EMERGENCY STOP push button of the machine is referred to as «EMERGENCY» push button

The position of the «EMERGENCY-STOP» push button is shown in Chapter 4.2 "Machine Design".



Use the «EMERGENCY STOP» push button to stop the machine only in emergencies!

Check the mechanical function of the «EMERGENCY STOP» push button daily with the machine shut down.

#### **WARNING**

*«EMERGENCY STOP» push button locked out!*

*The machine cannot be stopped quickly in an emergency.*

- *Check the function of the «EMERGENCY STOP» push button.*
- *Do not operate the machine if the «EMERGENCY STOP» push button does not work.*

Precondition The machine is switched off.

The drive motor stands still.

1. Push the «EMERGENCY STOP» push button.
2. Check if «EMERGENCY STOP» push button locks properly and remains locked.
3. Check if the «EMERGENCY STOP» push button unlocks by turning it in the direction of the arrow.



The «EMERGENCY STOP» push button cannot be pressed or does not engage.

- Do not start the machine.
- Have the «EMERGENCY STOP» push button replaced.

#### 10.14.2 Have the actuating pressure of the safety relief valve checked

The machine should shut down if the actuating pressure of the safety relief valve reaches a maximum of  $P_{max}$ . ( $P_{max}$  see table 99).



Check in accordance with section: "Check actuating pressure of safety relief valve" in the separate operating manual for the SIGMA CONTROL SMART controller, chapter "Have safety functions checked".

Maximum working pressure: see machine nameplate

Maximum working pressure [psi]	Activating pressure [psi]
100	145
145	189
174	218
203	231

Tab. 99 Safety valve actuating pressure

- Material    Hearing protection  
              Eye protection

#### WARNING

*Risk of hearing damage when air is blown out through the safety relief valve!*

- Close all the doors/enclosure.
- Wear hearing protection.

#### WARNING

*Risk of burns due to released cooling oil and compressed air when blowing off the safety relief valve!*

- Wear eye protection.

- Have the actuating pressure of the safety relief valve checked.

- Result    When the "activating pressure" is reached, the pressure release valve actuates (blows off).



When the "activating pressure" is reached, the pressure release valve does not actuate (blow off).

- Immediately shut down the machine and cease any further operation.
- Request an inspection and/or replacement of the safety valve.

#### 10.14.3 Having excessive temperature shut-down function checked

The machine should shut down if the discharge temperature reaches a maximum of  $T_{max}$ . ( $T_{max}$  [ $^{\circ}$ F] see table 100).



Check in accordance with section: "Check safety shut-down at excessive airend discharge temperature" in the separate operating manual for the SIGMA CONTROL MOBIL controller, chapter "Have safety functions checked".

Machine temperature	Value
Maximum airend discharge temperature (automatic safety shut-down) [°F]	243

Tab. 100 Safety shut-down at excessive airend discharge temperature

- Have shut-down at excessive airend discharge temperature checked.

Result When the maximum airend discharge temperature is exceeded, the SIGMA CONTROL MOBIL controller switches the machine off.



The machine does not shut down?

The excessive temperature shut-down function is no longer ensured.

- Immediately shut down the machine and cease any further operation.
- Have machine checked.

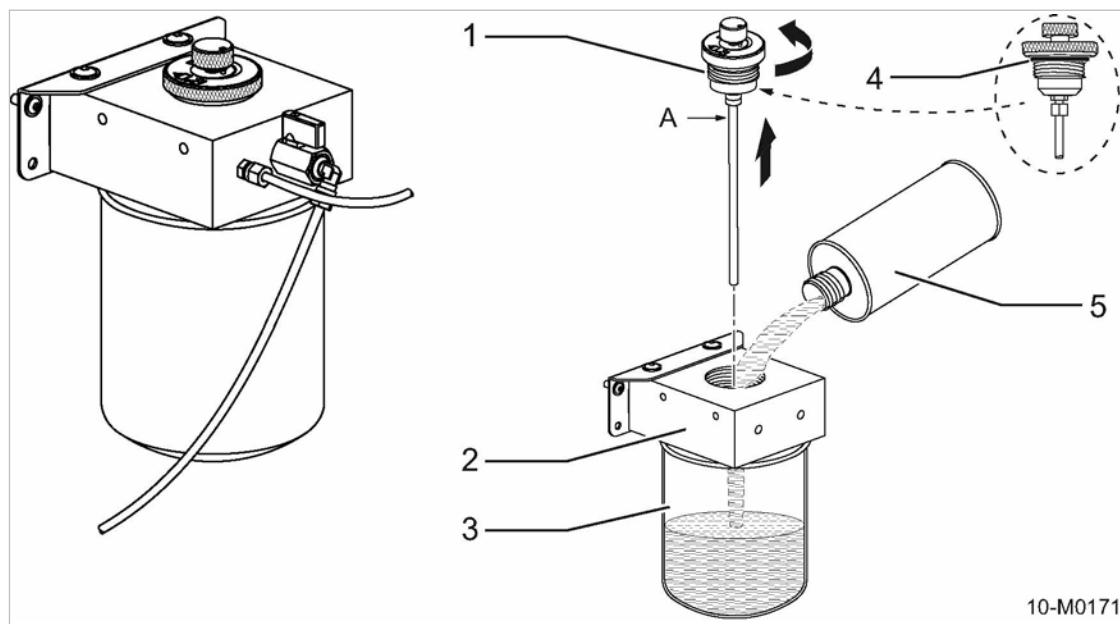
## 10.15 Maintenance for Optional Items

- Perform maintenance tasks according to the schedule in chapter 10.3.4.2.

### 10.15.1 Option ea, ec Tool lubricator maintenance

Material Tool oil (special lubricant for road breakers),  
Funnel  
Cleaning cloths

Precondition The machine is switched off.  
The machine is standing level.  
The machine is fully vented, the pressure gauge reads 0 psig.  
The machine has cooled down.  
All compressed air consumers are disconnected and the air outlet valves are open.



10-M0171

Fig. 72 Tool lubricator maintenance

- |   |   |   |          |
|---|---|---|----------|
| ① | Filler plug with dipstick and integrated riser tube | ③ | Oil tank |
| Ⓐ | Minimum and recommended oil level                   | ④ | O-ring   |
| ② | Tool lubricator upper part with oil filling port    | ⑤ | Tool oil |

- Open the right-hand access door.

#### Checking the tool lubricator oil level

Check the oil level daily.

A dip stick is attached to the underside of the oil filler plug with which to measure the oil level.

The oil level should be in the upper third of the dipstick.

1. Slowly unscrew and withdraw the oil filler plug.
2. Wipe off the dipstick with a lint-free cloth or rag and screw the plug fully in again.
3. Unscrew and withdraw the plug once more and read off the oil level on the dipstick.  
Oil level at the upper third of the dip stick: Oil level is correct.  
If oil does not reach this level: Immediately replenish tool oil.
4. Close the door.

#### Filling and topping off with tool lubricator oil

1. Slowly unscrew and withdraw the oil filler plug.
2. Use a funnel to pour in the oil to the maximum level (0.4 - 0.6 inches below the top of the tank).
3. Check the oil level.
4. Check the filler plug O-ring for external damage.  
Damaged O-ring: replace the O-ring.

5. Insert the plug in the filler port.
6. Close the door.

Further information See chapter 2.9.1.1 for suitable oil grade and volume.

### 10.15.2 Option da, df, dc, dd Centrifugal separator maintenance

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

Material	Cleaning cloth Wrench Small screwdriver Dirt trap maintenance kit Petroleum ether or spirit
Precondition	The machine is switched off. The machine has cooled down. The machine is fully vented, the pressure gauge reads 0 psig. All compressed air consumers are disconnected and the air outlet valves are open. The «battery disconnect switch» is turned off.

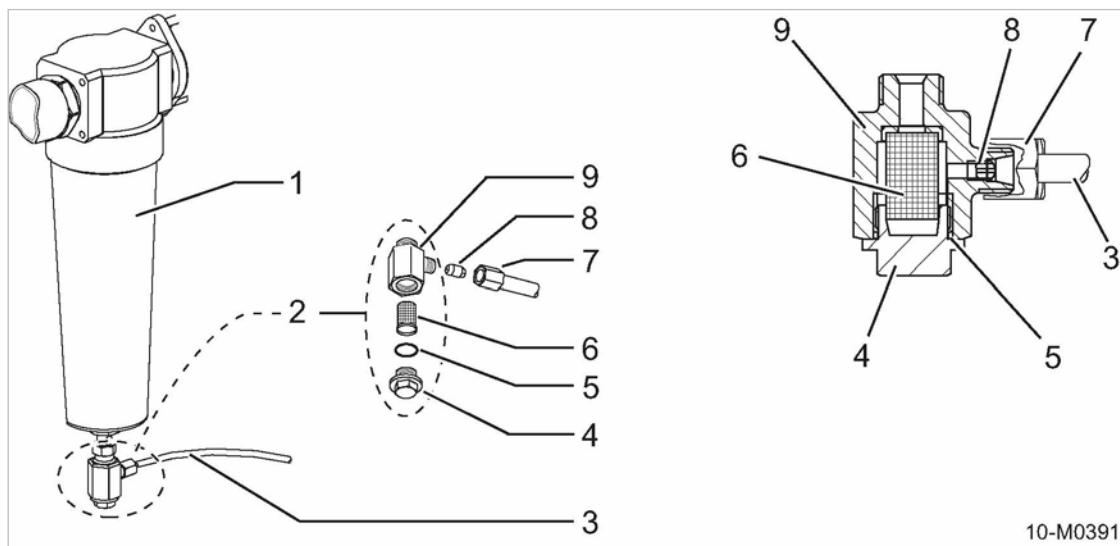


Fig. 73 Cleaning the condensate drain

- |                           |                                     |
|---------------------------|-------------------------------------|
| [1] Centrifugal separator | [6] Strainer                        |
| [2] Dirt trap             | [7] Union nut condensate drain hose |
| [3] Condensate drain hose | [8] Nozzle                          |
| [4] Screw plug            | [9] Dirt trap housing               |
| [5] O-ring                |                                     |

- Open the left-hand door.

#### Clean the dirt trap

1. Unscrew the plug [4] and remove the strainer.
2. Loosen the union nut [7] and detach the condensate drain hose [3] from the dirt trap

3. Use the small screwdriver to unscrew the nozzle **⑧** from the dirt trap housing.
4. Clean the nozzle, strainer, screw plug, O-ring **⑤** and dirt trap housing **⑨** with cleaning solvent or spirit.
5. Check the nozzle, strainer and O-ring for wear.  
When heavily worn: replace components.
6. Place the strainer on the screw plug.
7. Screw in the plug making sure the O-ring seats properly.
8. Screw in the nozzle and re-attach the condensate drain hose.

**Putting in operation**

1. Turn on the «battery disconnect switch».
2. Close the door.

**Starting the machine and performing a test run**

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.  
Pressure gauge reads 0 psig!
4. Open the outlet valves.
5. Open the left-hand door.
6. Check the centrifugal separator housing and hose line for leaks.
7. Close the door.

**10.15.3 Option dd****Combination filter maintenance**

Precondition The machine is switched off.  
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 valves are open.

**⚠ WARNING**

*Danger of injury from compressed air!*

*Filter combination is pressurised during operation. Serious injury can result from loosening or opening components under pressure.*

- *Wait until the machine has automatically vented (check: pressure gauge reads 0 psig)!*
- *De-pressurise the combination filter.*

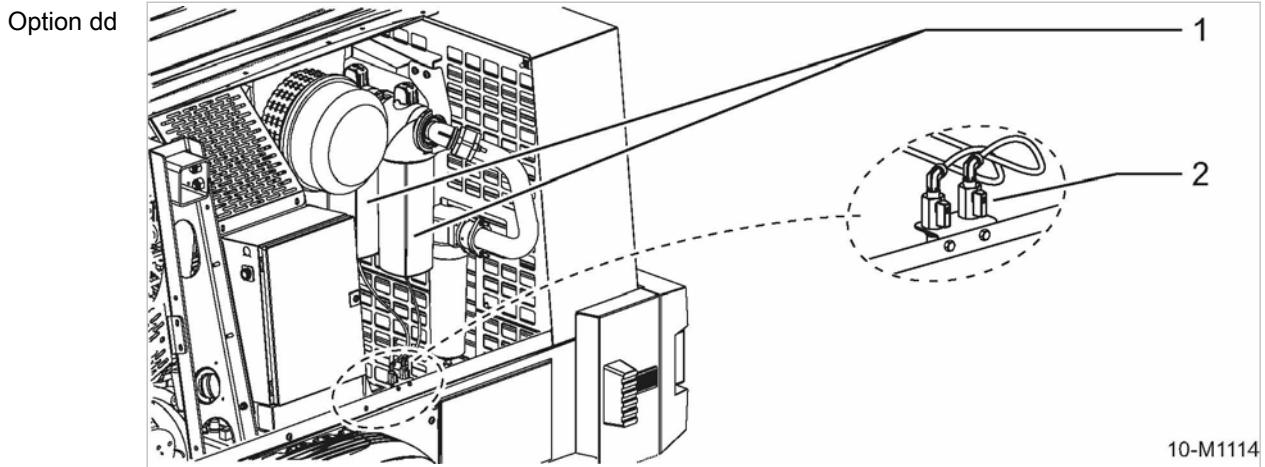


Fig. 74 Filter combination

- ① Filter combination
- ② Shut-off valve condensate drain

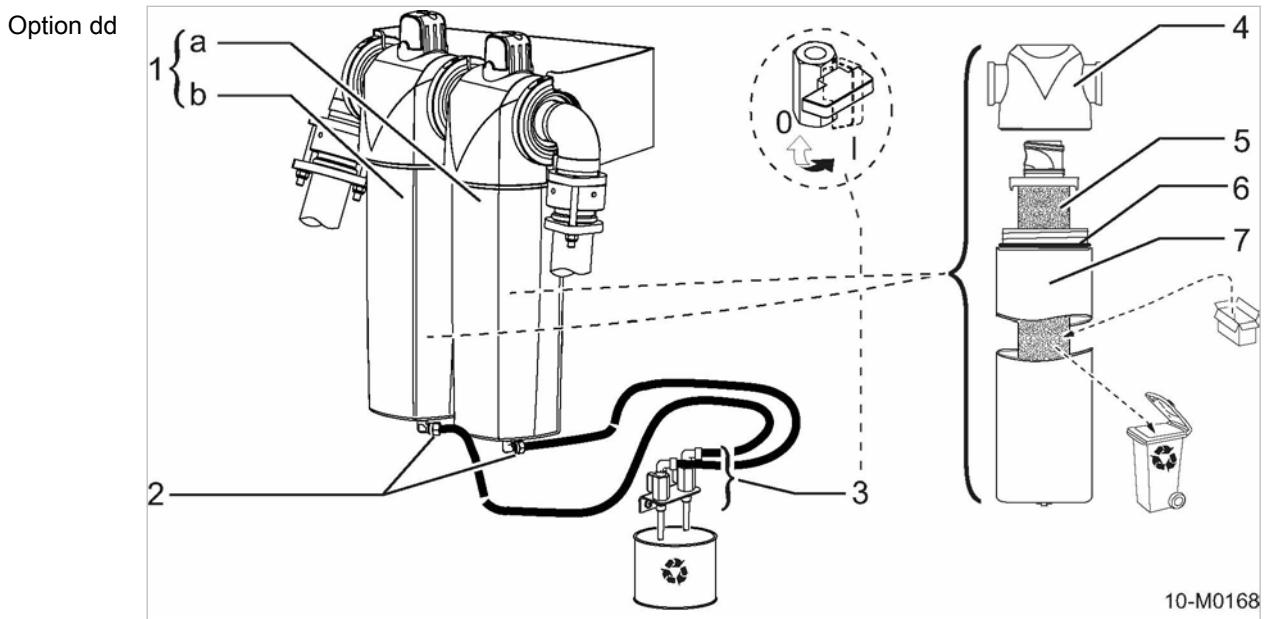


Fig. 75 Combination filter maintenance

- |   |                  |
|---|------------------|
| ① Filter combination                                | ④ Filter head    |
| a Prefilter   | ⑤ Filter element |
| b Microfilter                                       | ⑥ Casing gasket  |
| ② Condensate drain hose fitting                     | ⑦ Filter housing |
| ③ Shut-off valves (ball valve) for condensate drain |                  |
- 0 – Closed  
1 – Open

► Open the left-hand door.

**10.15.3.1 Drain condensate**

Material Oil receptacle

Cleaning cloths

1. Place the receptacle under the combination filter hose lines.
2. Open the pre-filter and micro-filter condensate drain shut off valves.
3. Close the door.
4. Start up the machine and run in IDLE.  
The condensate collecting in the filter housings is blown out.
5. Stop the compressor as soon as air escapes.
6. Open the left-hand door.
7. Close the shut-off valve.
8. Close the door.



Condensate must be stored in suitable containers and disposed of in accordance with local environmental regulations.

**10.15.3.2 Changing the filter elements**

The pre-filter and microfilter contain different elements and these must be changed as a pair. Note location!



Using the combination filter without an element installed is not permitted.

Handle new filter elements only with clean fabric gloves. Do not touch the new filter elements with bare fingers – Contamination risk!

Material Spare parts

Filter wrench

Wrench

Cleaning cloths

Clean fabric gloves

Precondition The machine has cooled down.

The «battery isolating switch» is turned off.

**Ensure that the combination filter is not under pressure.**

- Slowly open the pre-filter and micro-filter condensate drain shut off valves.  
Remaining pressure escapes.

**Gaining access to the filter housing**

- Loosen the screw fitting of the condensate drain hoses from the filter housings of pre-filter and micro-filter and remove the drain hoses.

**Changing the prefilter element**

1. Unscrew the filter housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the filter head, housing and sealing surface with a lint-free cloth.

4. Check the housing gasket.  
Housing gasket is damaged: replace gasket.
5. Insert a new filter element.



Wear gloves!

6. Screw on the filter housing clockwise.

**Changing the pre-filter element**

1. Unscrew the filter housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the filter head, housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.  
Housing gasket is damaged: replace gasket.
5. Insert a new filter element.



Wear gloves!

6. Screw on the filter housing clockwise.

**Putting in operation:**

1. Screw the condensate drain hoses to the housings of the pre-filter and the micro-filter.
2. Close the condensate drain shut-off valves.
3. Tighten the filter combination fittings.
4. Turn on the «battery isolating switch».
5. Close the door.



Dispose of old parts and contaminated materials according to environmental regulations.

Further information

Further information on changing elements can be found in the filter instructions in chapter 13.7.

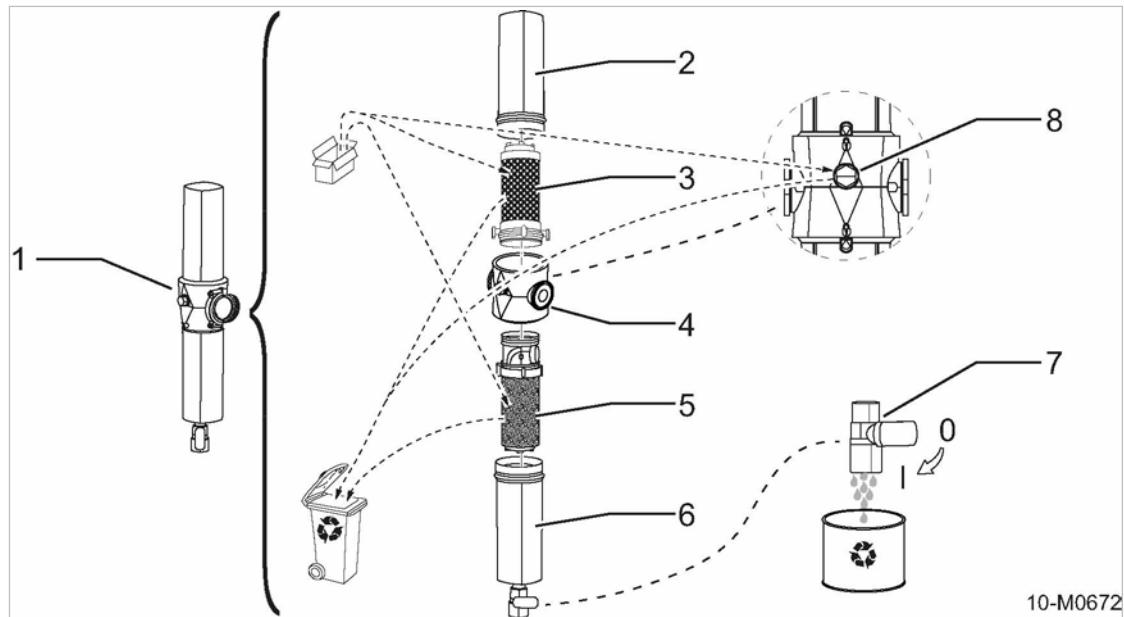
**Starting the machine and performing a test run:**

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.  
Pressure gauge reads 0 psig!
4. Open the outlet valves.
5. Open the left-hand door.
6. Check the combination filter housing and hose lines for leaks.
7. Close the door.

**10.15.4 Option dc**
**Fresh air filter maintenance**

Before commencing work on the fresh air filter, read and understand the operating instructions given in chapter 13.8.

- Precondition
- The machine is switched off.
  - 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 valves are open.

**Option dc**

**Fig. 76 Fresh air filter maintenance**

- |  |  |
|--|--|
| [1] Fresh air filter                   | [5] Lower filter element (high capacity element)       |
| [2] Upper housing                      | [6] Lower housing                                      |
| [3] Upper element (adsorption element) | [7] Drain valve (condensate drain for manual draining) |
| [4] Body                               | 0 - Closed<br>1 - Open                                 |
|  | [8] Oil indicator                                      |

- Open the left-hand door.

**10.15.4.1 Drain condensate**

- Material
- Oil receptacle
  - Cleaning cloths

1. Place the receptacle below the fresh air filter condensate drain point.
2. Open the condensate drain valve.
3. Close the door.

4. Switch the machine on and run it in IDLE mode for approx. 2 minutes.

The condensate collecting in the filter housings is blown out.

5. Shut down the machine.

6. Open the left-hand door.

7. Close the drain valve.

8. Carefully remove the receptacle.

9. Close the door.



Condensate must be stored in suitable containers and disposed of in accordance with local environmental regulations.

#### 10.15.4.2 Check the oil indicator

The fresh air filter is fitted with an oil indicator. When the indicator is blue, the filtration function can no longer be ensured and the filter must not be used. Both filter elements and the oil indicator must be changed (regardless of the maintenance schedule).

The oil indicator must be checked at least once daily.



The oil indicator does not give information on the filter element changing interval.

- Check the oil indicator.

Indicator is blue: Replace both filter elements + oil level indicator.

#### 10.15.4.3 Changing consumable parts

The fresh air filter contains two different elements which must be changed as a pair. Note location!



Using the fresh air filter without installed filter elements is not permitted!

Handle new filter elements only with clean fabric gloves. Do not touch the new filter elements with bare fingers – Contamination risk!

Material	Spare parts Filter wrench Wrench Cleaning cloths Clean fabric gloves
----------	--

Precondition	The machine has cooled down. The «battery isolating switch» is turned off.
--------------	---

##### Ensure the fresh air filter is de-pressurised:

- Open the fresh air filter drain tap to release any remaining pressure.

##### Change the lower filter element (high performance element)

1. Unscrew the lower housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the lower housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.

Housing gasket is damaged: replace gasket.

5. Insert a new lower filter element.



Wear gloves!

6. Screw on the lower housing clockwise.

**Change the upper filter element (adsorption insert):**

1. Unscrew the upper housing counter-clockwise.
2. Draw the filter element up and out.
3. Clean the lower housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.  
Housing gasket is damaged: replace gasket.
5. Insert a new filter element.



Wear gloves!

6. Screw on the upper housing clockwise.

**Replace the oil indicator:**

1. Unscrew the oil indicator.
2. Clean the housing and sealing surface with a lint-free cloth.
3. Screw in the new oil indicator.

**Putting in operation:**

1. Close the drain valve.
2. Turn on the «battery isolating switch».
3. Close the door.



Dispose of old parts and contaminated materials according to environmental regulations.

**Further information**

Further information on changing elements can be found in the operating instructions for pressurised air filters (fresh air filters) in chapter 13.8.

**Starting the machine and performing a test run:**

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.  
Pressure gauge reads 0 psig!
4. Open the outlet valves.
5. Open the left-hand door.
6. Check the fresh air filter housing and hose line for leaks.
7. Close the door.

### 10.15.5 Option Ia Spark arrestor maintenance

The spark arrestor must be cleaned of any soot residue every two months to prevent the emission of glowing particles from the exhaust silencer.

Material	Suitable rubber hose Soot receptacle Cleaning cloth Protective gloves Eye protection
Precondition	The machine is shut down. The machine is standing level. The machine is fully vented, the pressure gauge reads 0 psig. Machine is cooled down. All compressed air consumers are disconnected and the air outlet valves are open.

#### **⚠ DANGER**

*Danger of suffocation from toxic exhaust fumes.*

*Exhaust fumes from internal combustion engines contain carbon monoxide, which is odorless and deadly.*

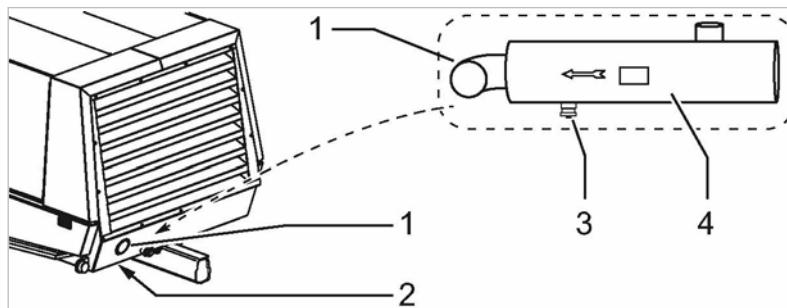
- *Never use the machine in enclosed spaces, only in the open!*
- *Do not inhale exhaust fumes.*

#### **⚠ CAUTION**

*Danger of burns from hot components and sparks.*

- *Wear long-sleeved clothing and gloves.*
- *Wear eye protection.*

#### Cleaning the spark arrestor (floor pan with service openings)



10-M0385

Fig. 77 Cleaning the spark arrestor (floor pan with service openings)

- |   |   |   |   |
|---|---|---|---|
| ① | Exhaust silencer end pipe                   | ③ | Soot drain port with plug                       |
| ② | Opening in floor panel to access drain port | ④ | Exhaust silencer with integrated spark arrestor |

1. Unscrew the soot drain plug.
2. Push one end of the hose over the drain port and place the other end in the receptacle.

3. Start the compressor engine.
4. In order to increase the pressure in the exhaust system, partially cover the exhaust discharge pipe with a fire-proof object.  
Soot will drain through the hose into the receptacle.
5. Shut down the engine.
6. Remove the hose and replace the plug.



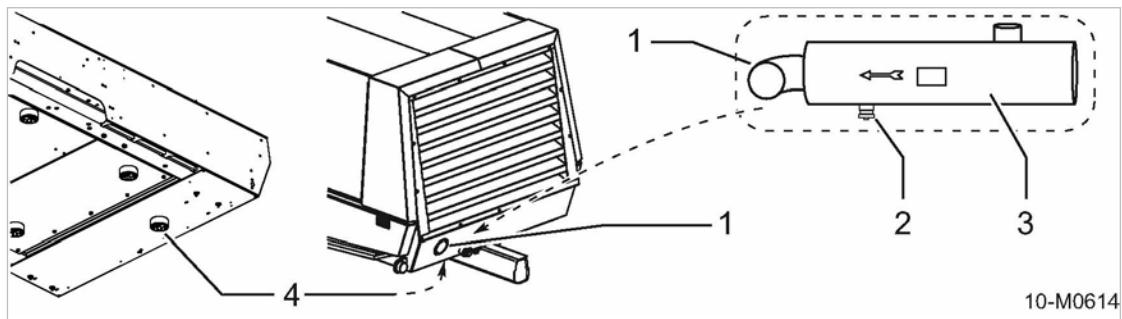
It is recommended to blow out the spark arrestor with compressed air once a year.



Dispose of soot according to environmental protection regulations.

**Option oe Cleaning the spark arrestor (sealed floor pan)**

In machines with a sealed floor pan, the service openings are closed with plugs. In order to access the port of the soot drain, you must remove the appropriate plug.

**Option oe**


10-M0614

Fig. 78 Cleaning the spark arrestor (sealed floor pan)

- |   |                           |   |  |
|---|---------------------------|---|--|
| ① | Exhaust silencer end pipe | ③ | Exhaust silencer with integrated spark arrestor          |
| ② | Soot drain port with plug | ④ | Service opening, closed with plug (access to drain port) |

1. Unscrew the service opening plug.
2. Unscrew the soot drain plug.
3. Push one end of the hose over the drain port and place the other end in the receptacle.
4. Start the compressor engine.
5. In order to increase the pressure in the exhaust system, partially cover the exhaust discharge pipe with a fireproof covering.  
Soot will drain through the hose into the receptacle.
6. Shut down the engine.
7. Remove the hose and replace the plug.
8. Screw the service plug back into the floor pan.



It is recommended to blow out the spark arrestor with compressed air once a year.



Dispose of soot according to environmental protection regulations.

### 10.15.6 Option ga

#### Maintaining the generator drive belt

Correct belt tension is extremely important for the function of the generator and the operational life of the belt itself. The lifespan of the drive belts is affected by belt tension.

- Slack V-belts can cause belt slip and damage to the belts.
- Over-tight belts stretch and fatigue quicker. Over-tight belts also place unnecessary stress on bearings and shorten their life.

Material Wrench

Spare parts (if required)

Precondition The machine is switched off.

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

The machine has cooled down.

All compressed air consumers are disconnected and the air outlet valves are open.

The «battery isolating switch» is turned off.

#### **WARNING**

*Beware of rotating pulleys and moving belts.*

*Touching the moving drive belt may result in severe bruising or even loss of limb or extremities.*

- *Check the belt only when the compressor is shut down.*
- *Never run the machine without a belt guard.*

- Open both doors.

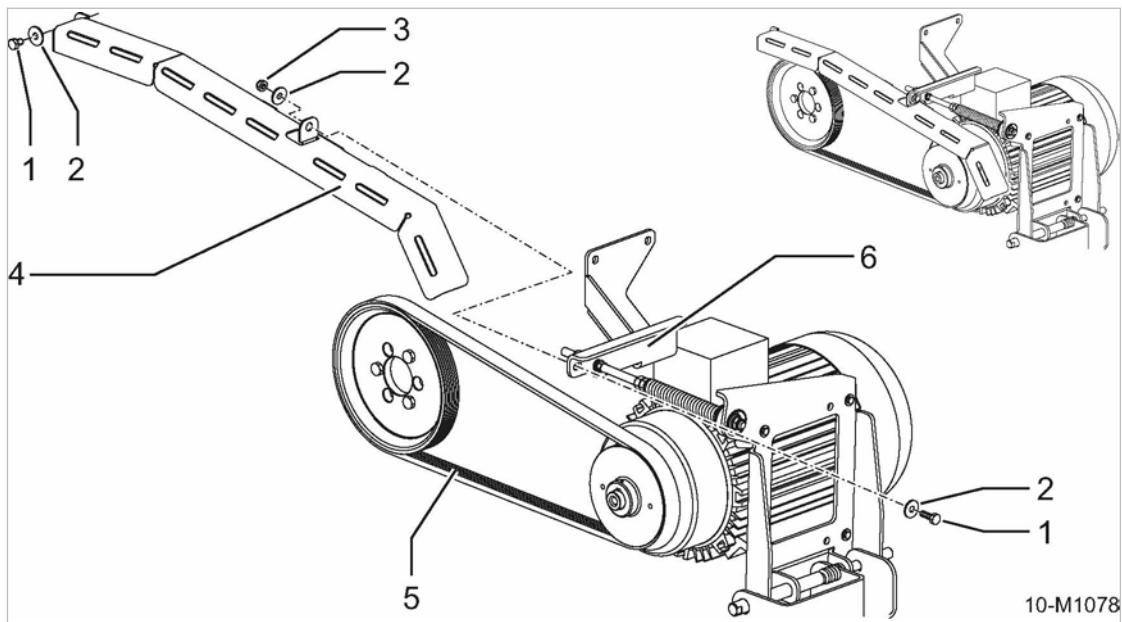
**Removing the belt guard:**


Fig. 79 Securing the belt guard at the generator

- |   |  |
|---|--|
| ① Hexagon bolt<br>② Washer<br>③ Hexagonal nut | ④ Belt guard<br>⑤ Generator belt<br>⑥ Support for belt tensioner |
|---|--|

► Unscrew the securing screws of the belt guard and remove the belt guard.

#### 10.15.6.1 Carry out visual check

- Check the belt thoroughly for cracks, fraying or stretching.  
When damaged or worn: Replace the drive belt immediately.

#### 10.15.6.2 Checking belt tension



Check belt tension when they are warm, not hot, to avoid length variations through temperature.

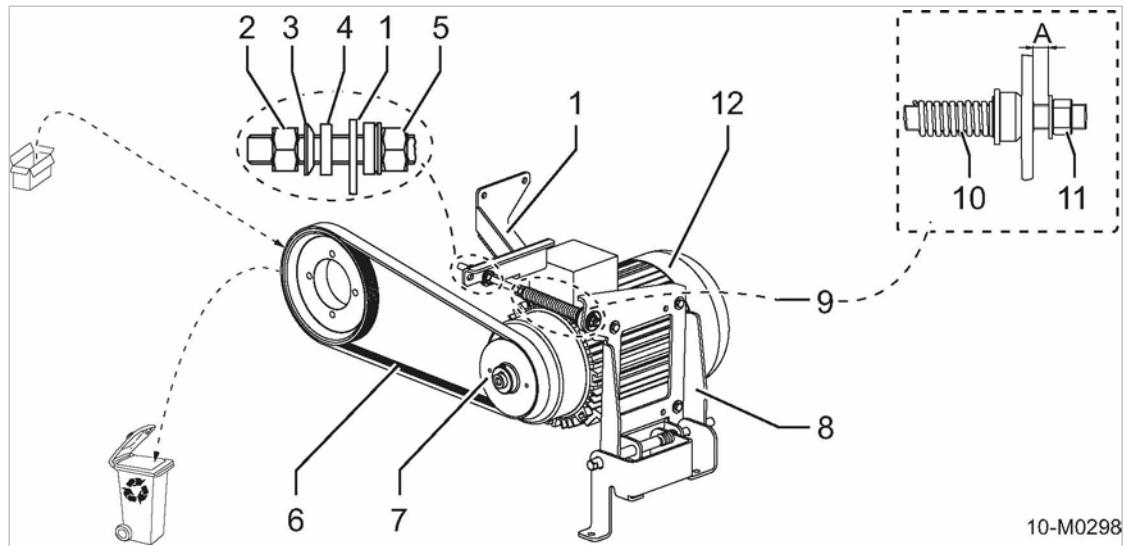
The tensioning device uses spring force to apply correct tension to the belts over a certain range. The tensioning dimension **A** is controlled by adjusting the belt (see fig. 80).

Tensioning dimension:

- **Setting distance:** 0.4 mil
- **Minimum distance:** 0.2 mil

► Check the tensioning distance **A** at the belt adjustment **9**.

Tensioning distance under minimum distance: Re-tension the belt.

**10.15.6.3 Changing/tensioning the drive belt**


10-M0298

**Fig. 80 Tighten the generator drive belt**

- |     |                            |      |                            |
|-----|----------------------------|------|----------------------------|
| [1] | Support for belt tensioner | [8]  | Generator swing frame      |
| [2] | Hexagonal nut              | [9]  | Belt adjustment            |
| [3] | Spherical seat washer      | [10] | compression spring         |
| [4] | Conical seat washer        | [11] | Hexagon nut (self locking) |
| [5] | Hexagon nut (locknut)      | [12] | Generator                  |
| [6] | Drive belt                 | [A]  | Tensioning dimension       |
| [7] | Generator drive pulley     |      |                            |

**Tensioning the drive belt:**

1. Loosen the nut [2].
2. Turn the tensioning nut [5] to tighten the drive belt [6] until the tensioning dimension [A] matches the setting distance.
3. Tighten the nuts [2] and [5].

**Changing the belts**

1. Loosen the nut [5] until the drive belt [6] can be slipped off the pulleys.
2. Remove the belt.
3. Check the pulleys for dirt and wear.  
Dirty pulley: Clean pulley.  
Worn pulley: Have the pulley changed.
4. Without using force, place the new belt over the engine and generator pulleys.
5. Turn the tensioning nut [5] to tighten the drive belt [6] until the tensioning dimension [A] matches the setting distance.
6. Tighten the nuts [2] and [5].
7. Putting in operation.
8. Run the compressor under LOAD operation for 15–20 minutes.
9. Check the belt again and re-tension if necessary.



- Check the belt again after a further 2 operating hours.
- A belt that has been replaced may not be used again.



Old belts should be disposed of in accordance with the latest environmental regulations.

**10.15.6.4 Putting in operation:**

1. Replace the belt guard.
2. Turn on the «battery isolating switch».
3. Close the doors.



A belt that has been replaced may not be used again.



Old belts should be disposed of in accordance with the latest environmental regulations.

**10.15.7 Option oe****Draining liquid accumulation within the machine**

The so-called "closed floor pan" contributes to the protection of the environment by preventing a contamination of the soil in the event of leaking operating fluids.

Liquid accumulations within the machine's body can also cause corrosion or electrical faults.

Liquid accumulations must be removed as quickly as possible to avoid any faults of the machine. For draining the liquid, maintenance openings have been added to the floor panel of the machine which are closed with bungs.



In order to clean the machine, see chapter 4.8.10 for the location of the service openings.

Material Oil receptacle

Cleaning cloths

Precondition The machine is switched off.

The machine is standing level.

The machine is secured against moving.

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

The machine has cooled down.

All compressed air consumers are disconnected and the air outlet valves are open.

► Open all doors.

**Checking the machine interior for liquid accumulations:**

1. Check the machine interior for liquid accumulations.  
If liquid is present in the floor pan: Drain the liquid.
2. Close the doors.

**Draining the liquid:**

1. Place a receptacle underneath the service opening(s).

2. Unscrew and remove the bung(s) from the service openings.  
The liquid will drain.
3. Clean the bungs and service openings.
4. Close all service openings with bungs.  
The machine body is sealed.
5. Using the cleaning cloth, remove any dirt within the machine.
6. Close the doors.



Dispose of collected liquid and contaminated working materials according to environmental protection regulations.

## 10.16 Documenting maintenance and service work

Machine model/part number:

- Enter maintenance and service work carried out in this list.

Tab. 101 Maintenance log

# 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 fluids/materials

KAESER consumable parts and operating materials are original products. They are specifically selected for use in our machines and ensure trouble-free operation.

Unsuitable or poor-quality consumable parts and operating fluids/materials may result in damage to the machine or significantly impair its proper function.

Personal injury may result from damage.

### **WARNING**

*There is risk of personal injury or damage to the machine resulting from the use of unsuitable spares or operating fluids/materials!*

- Use only original parts and operating fluids/materials.
- Do not use alternative consumable parts and operating fluids and materials.

### Compressor

Name	Number/quantity	Number
Air filter element	1	1260
Compressor oil filter	1	1210
Oil separator cartridge (complete set)	1	1450
Cooling oil	1	1600

Tab. 102 Compressor consumables

### Kubota engine parts

Name	Number/quantity	Number
Air filter insert (kit)	1	1280
Fuel prefilter	1	1910
Fuel filter (cartridge)	1	1920
Fuel water separator	1	1980
Engine oil filter (cartridge)	1	1905
Oil drain seal	1	4496
Injector nozzle	1	4475
Injector nozzle seal	1	4476
Engine belt	1	4470

Name	Number/quantity	Number
Glow plug	1	4466
Engine oil	1	1925

Tab. 103 Consumable engine parts

**Option dd Filter combination**

Name	Number/quantity	Number
Filter element for prefilter	1	1550
Filter element for micro-filter	1	1551
Casing gasket	2	1548

Tab. 104 Replacement parts, combination filter

**Option dc Fresh air filter**

Name	Number/quantity	Number
Filter elements, fresh air filter (Filter kit)	1	1549
Indicator insert	1	3930

Tab. 105 Replacement parts, fresh air filter

### 11.3 KAESER AIR SERVICE

KAESER 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 KAESER AIR SERVICE maintenance agreement.

The advantages:

Lower costs and higher compressed air availability.

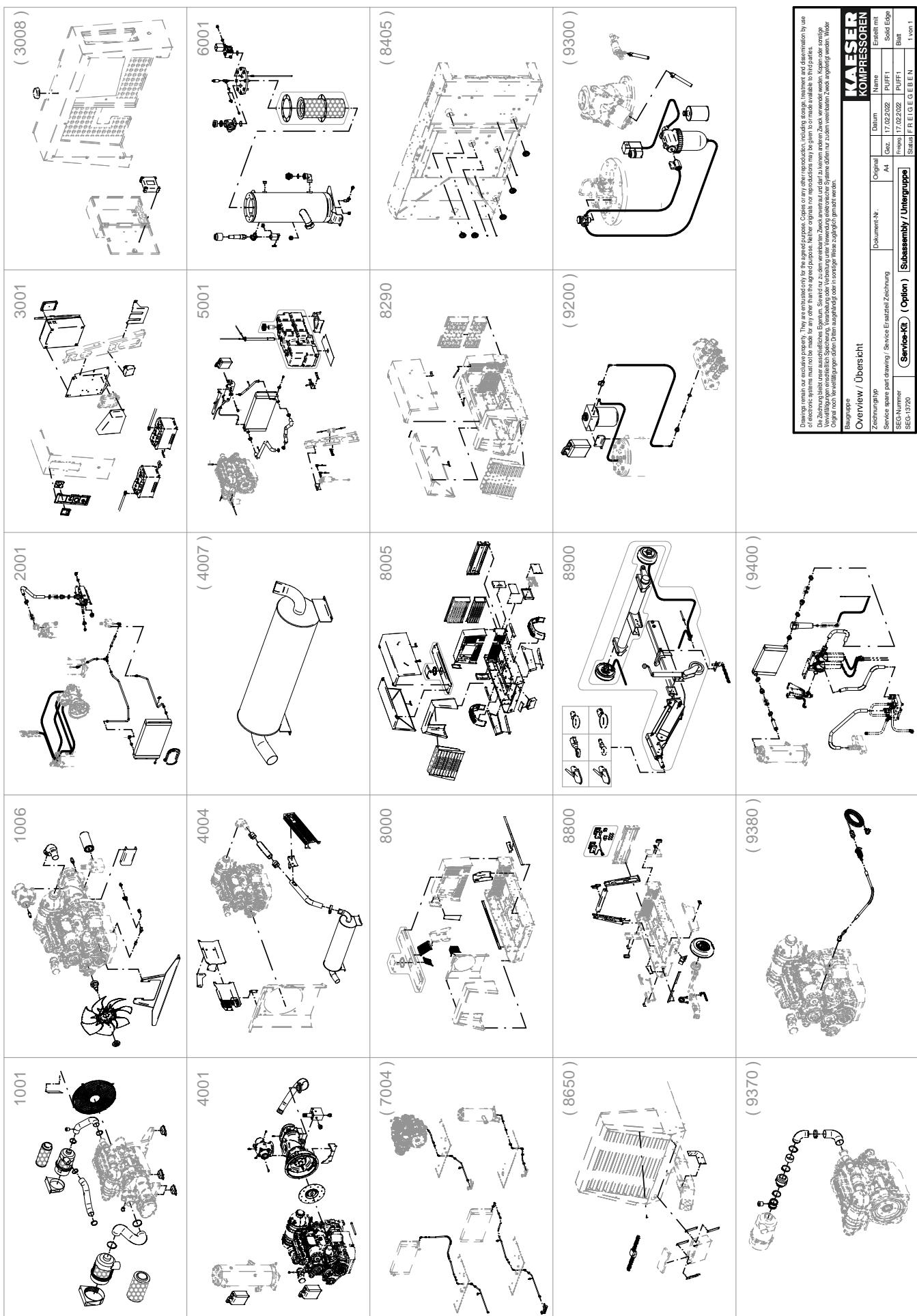
### 11.4 Replacement parts for service and repair

With the help of the below spare 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 incorrect working on the machine!  
Incorrect inspection, service or repair can damage the machine or severely impair its function. Personal injury may result from damage.*

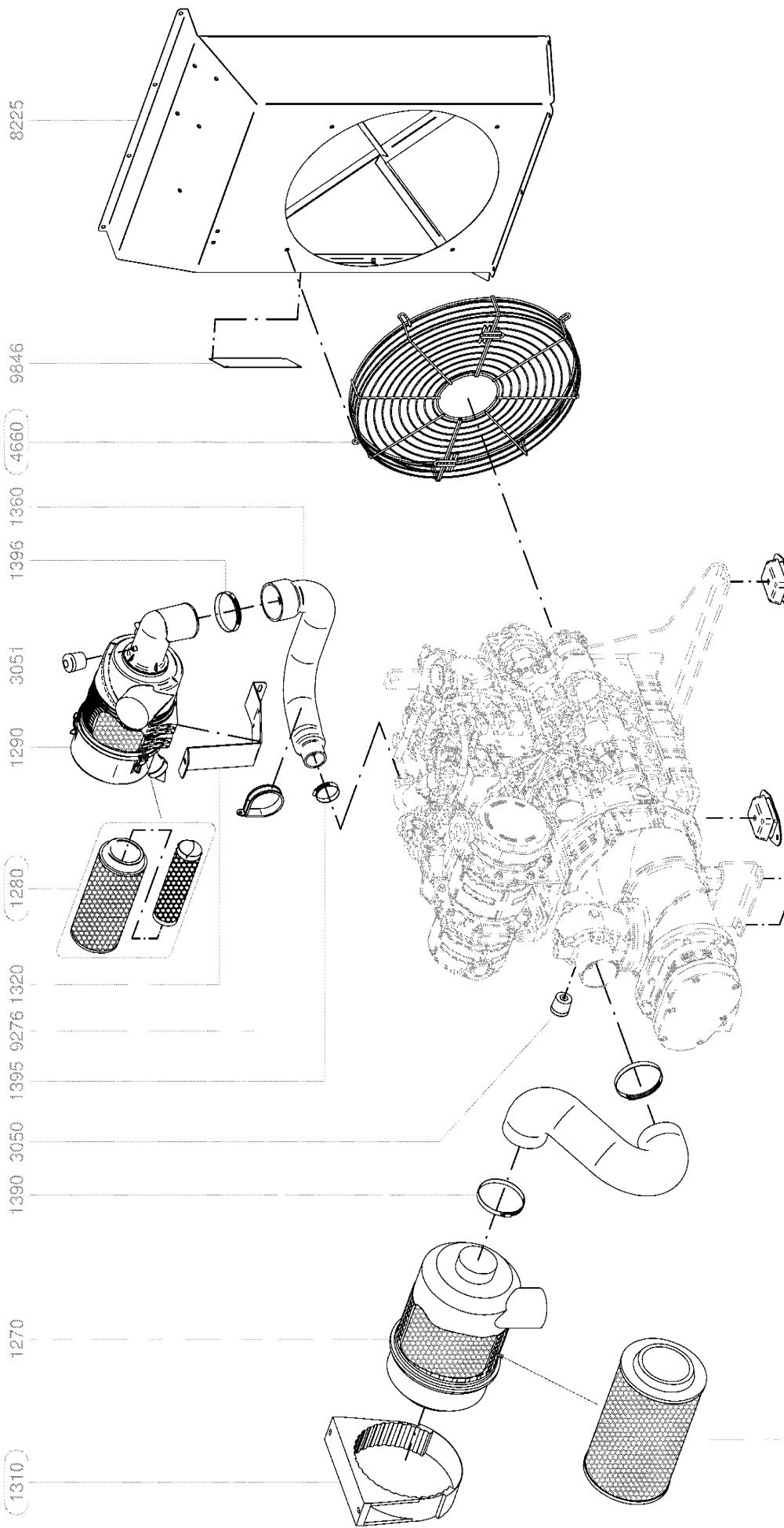
- *Inspections, preventive maintenance or repair tasks not described in this manual must not be carried out by unqualified personnel.*
- *Have further tasks, not described in this operating manual, carried out by motor vehicle workshops or KAESER SERVICE.*



**KAESER**  
**KOMPRESSOREN**

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 Vervielfältigung, Verbreitung oder Weiterleitung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck erfolgen.  
 Zeichnungen  
 Baugruppe  
 Overview / Übersicht

Zeilenummer	Zeichnungsnr.	Service-Satz	Part Drawing	Service-Ersatzteil-Zeichnung	Document-Nr.	Original	Datum	Ersatzteil mit
SEG-Nummer	SEG-Nummer	Service-KIT	( Option )	Subassembly / Untergruppe	A4	Czez:	17.02.2022	PUFFI
SEG-3720						Freige	17.02.2022	Batt
							Status	F R E I G E S E E B E N
								1 von 1



Dawn 2010 was due to be dry, there were no problems in finding oil in those Green or yellowish impoundments which I thought had been flooded by the heavy rain in the previous 2 days. No holes or sprouts had been found as a result.

KAESER KOMPRESSOREN						
Bestell-Nr.	Name	Ersatzteil-Nr.	Bestell-Nr.	Bestell-Nr.	Bestell-Nr.	Bestell-Nr.
1001 - Inlet air/Cooling air/Exhaust air/Kühlluft/Argas						
Sachverständiger: p	Dokument-Nr.	Urtyp	Ortsam.	Geb.	Puff11	
Sachverständiger: p	Service-Nummer	Zeichnung				
Service-Kit	Service-Kit	Subassembly / Unterguppe				
SC1001	SC1001					

3

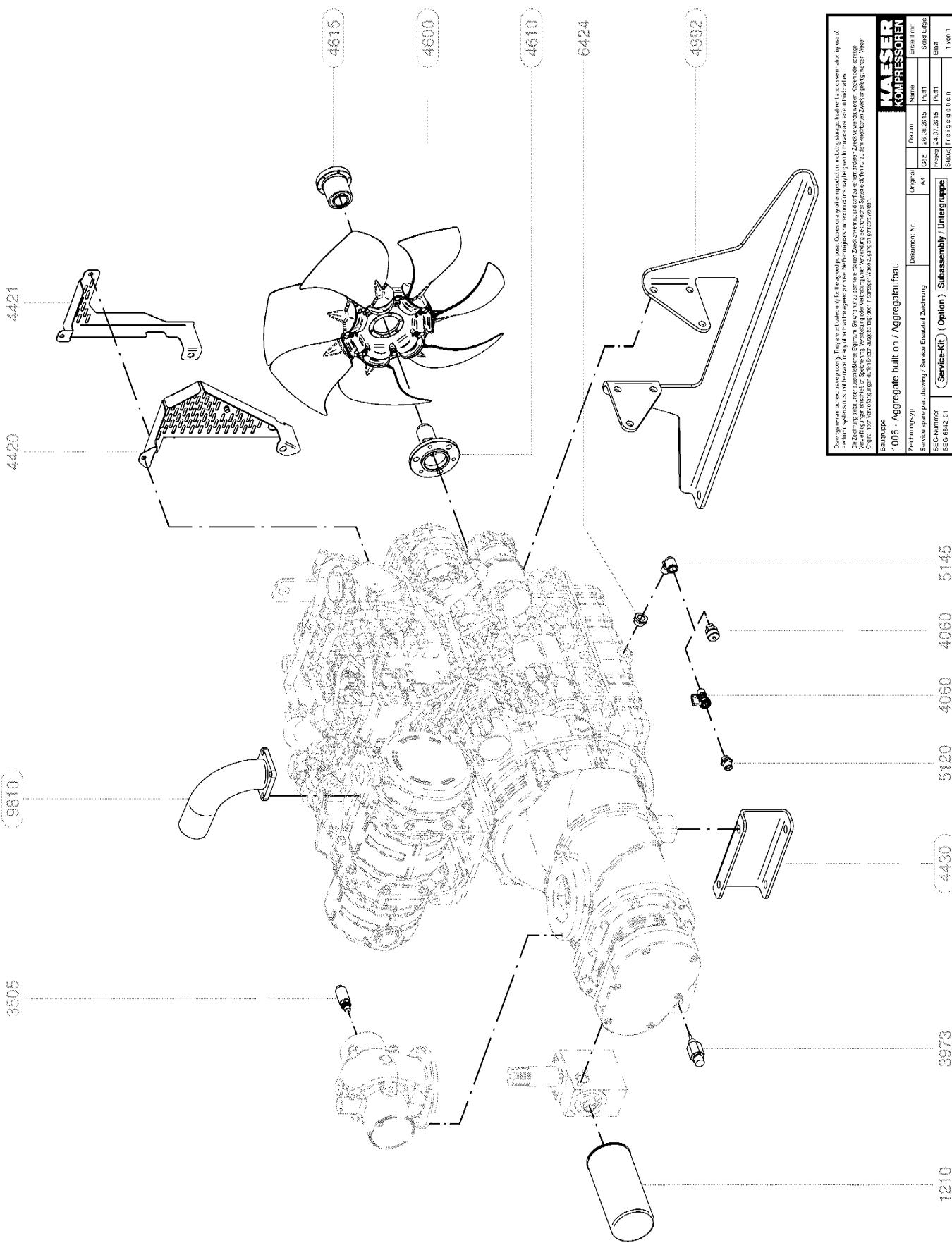
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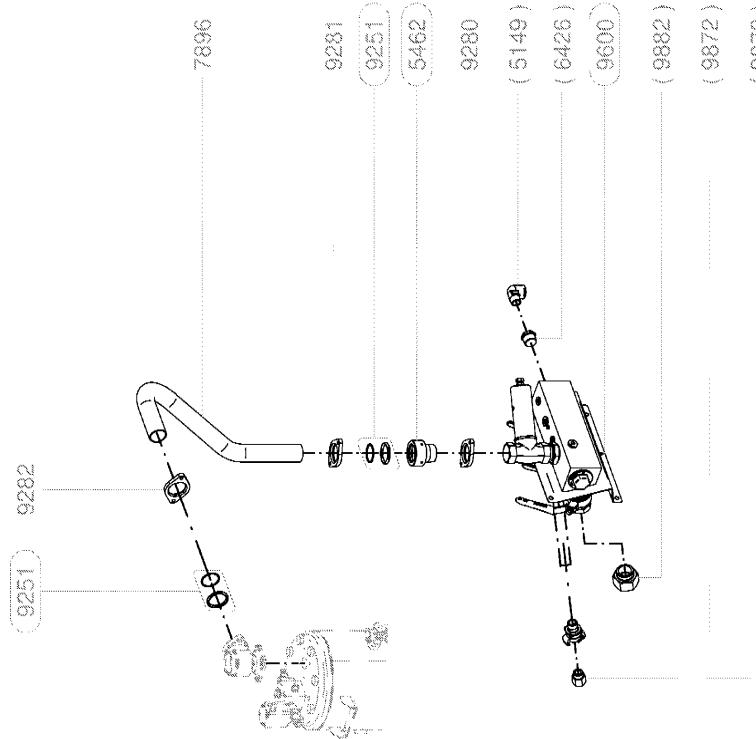
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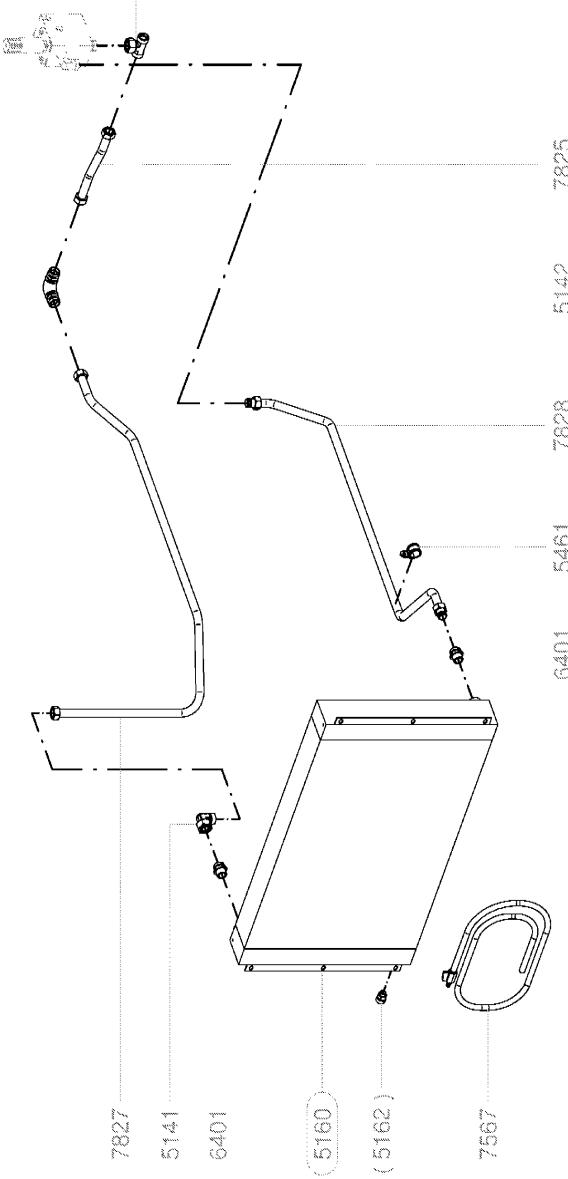


#### **11.4 Replacement parts for service and repair**



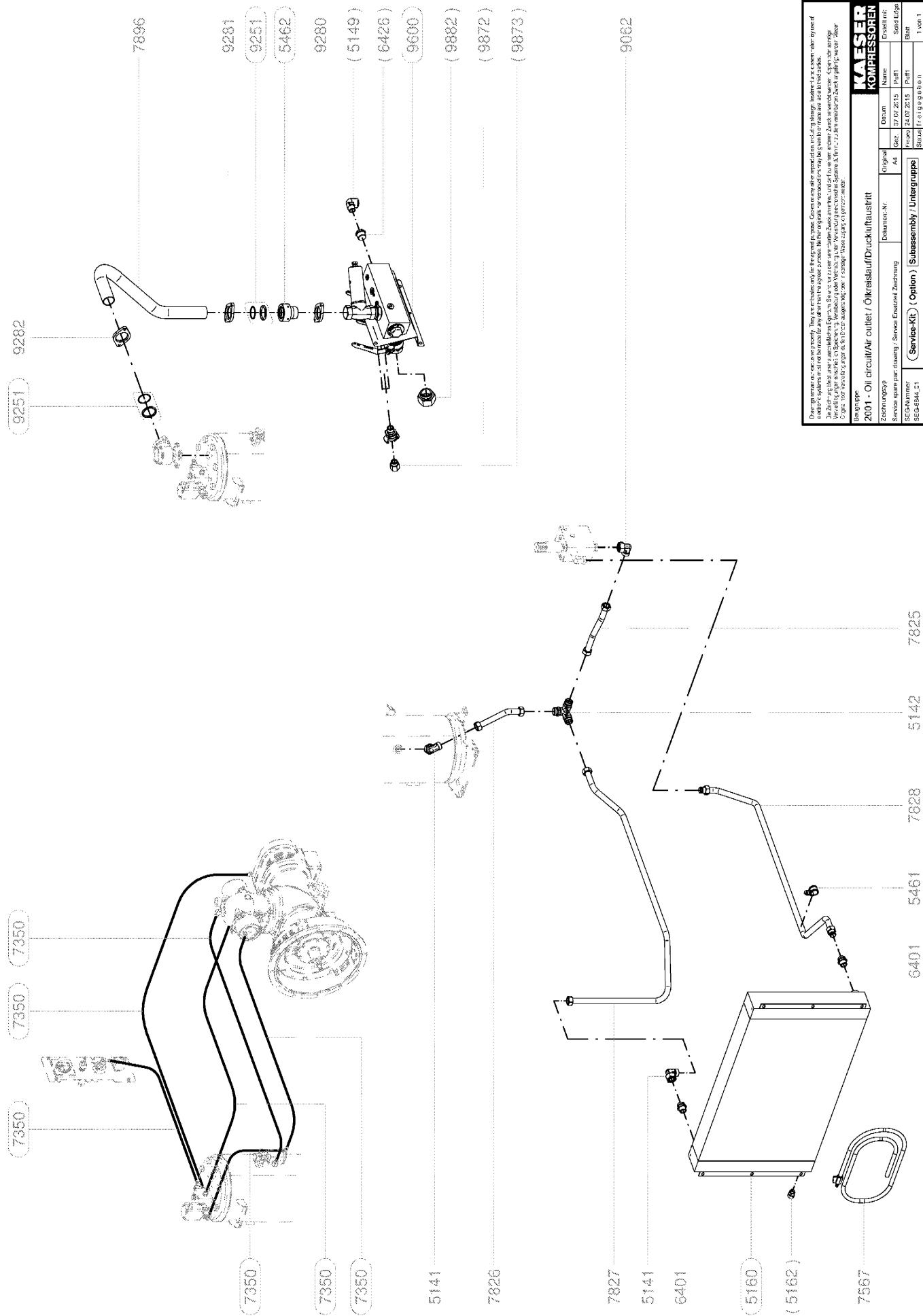
During the first year of the study, the mean number of days with a minimum temperature below 0°C was 11.1, and the mean number of days with a maximum temperature above 20°C was 11.5. The mean number of days with a minimum temperature below 0°C was 11.1, and the mean number of days with a maximum temperature above 20°C was 11.5.

KAESER KOMPRESSOREN						
Bestellgruppe	2801 - Oil circuit/Air outlet / Ölkreislauf/Druckluftausstuttt	Dokument-Nr.	Original-Nr.	Urgentam	Ersatzteil-Nr.	Ersatzteil
Sachverständiger: SGP	Servicekennzeichen: sparte: drawing : Service_Ersatzteil_Zeichnung	A4		37/17.2015	P011	Stellzugs
SECHSMMER	Service-Kit (Option)	Subassembly / Unterguppe		24.07.2015	P011	
SGP-C01						

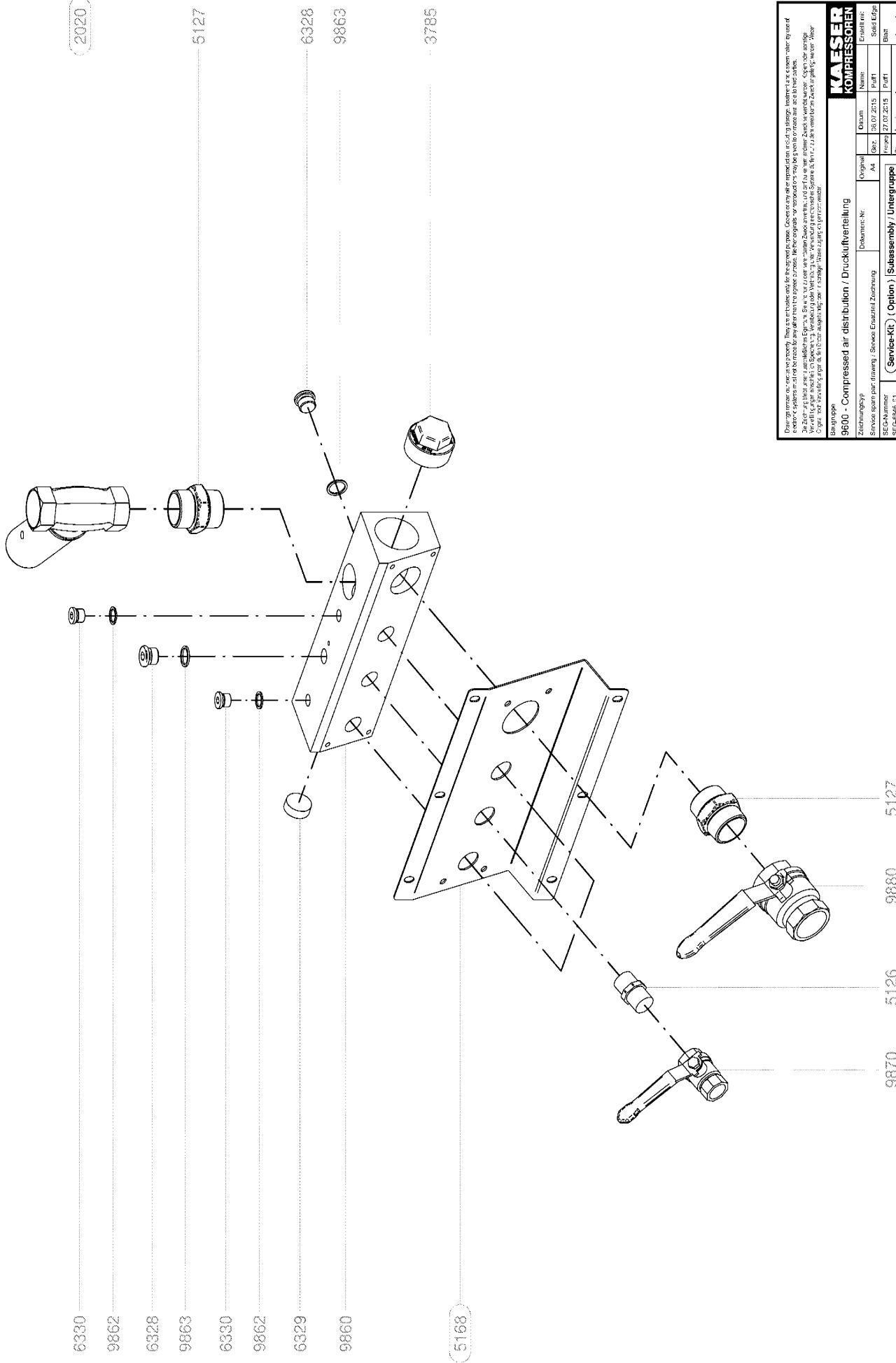


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MOBIL AIR M82 SIGMA CONTROL SMART

#### **11.4 Replacement parts for service and repair**







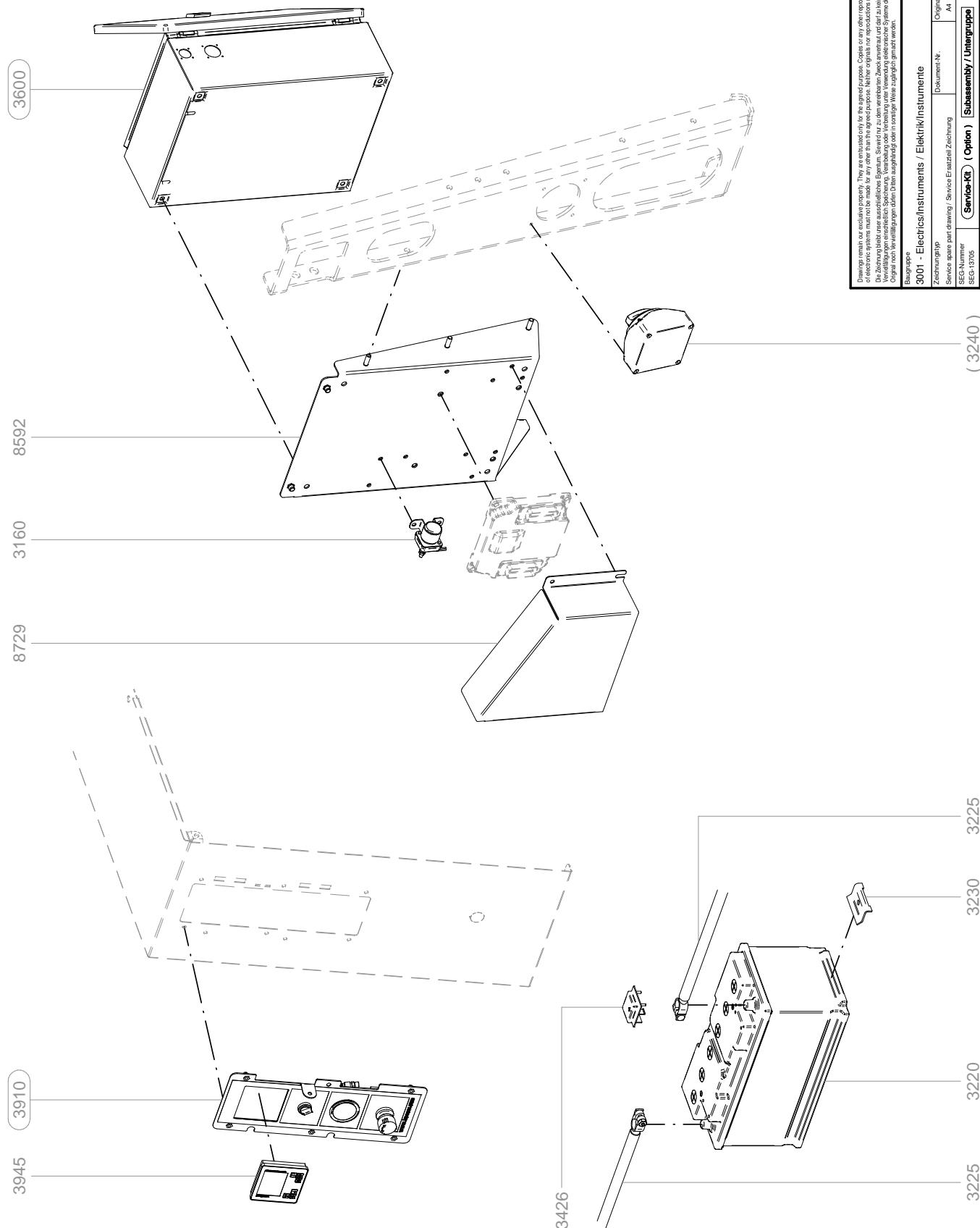
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Zulieferer-Nr.	Service-Earlier-Number	Dokument-Nr.	Name:
SEG-Gummier	Service-Earlier-Zeitraum	Art.	Extrakt-Nr.:
SEG-Gummier	27.07.2015 - 27.07.2015	Gr.:	Stück-Erl.:
SEG-Basis 21		Verspre.	Bauart
		Subassembly / Unterguppe	Stück (fr. 01.01.2015)
			1 von 1

Drawings serve for service purposes. They are to illustrate only the component(s) shown. Order or any other component in the catalog or from your supplier's catalog or website may not be identical. Please note that some parts may have been changed due to technical development. The drawings do not necessarily show the latest version of the parts. Please refer to the catalog or your supplier's catalog for the latest version of the parts. Changes in design, material, dimensions, etc., are reserved.

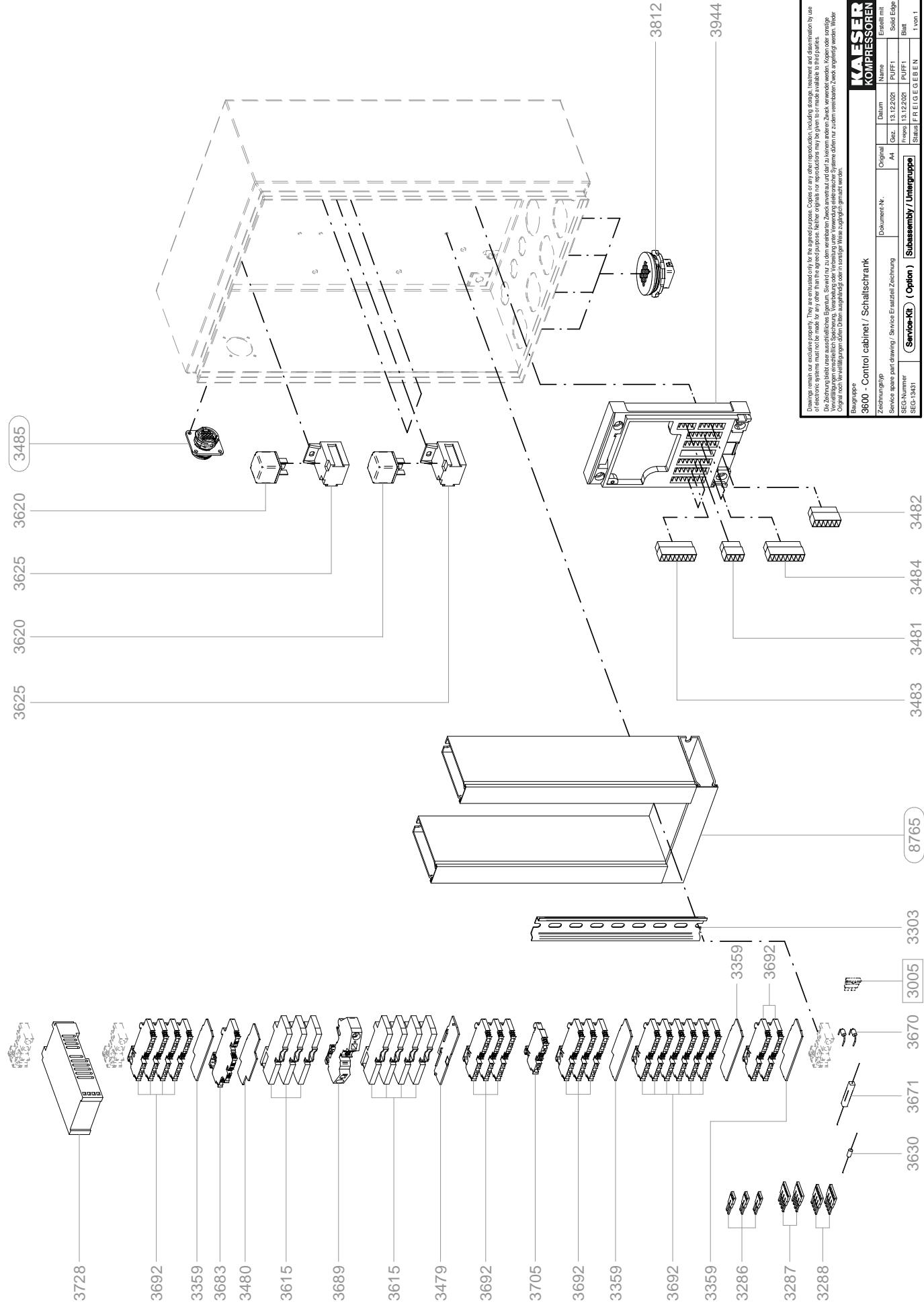
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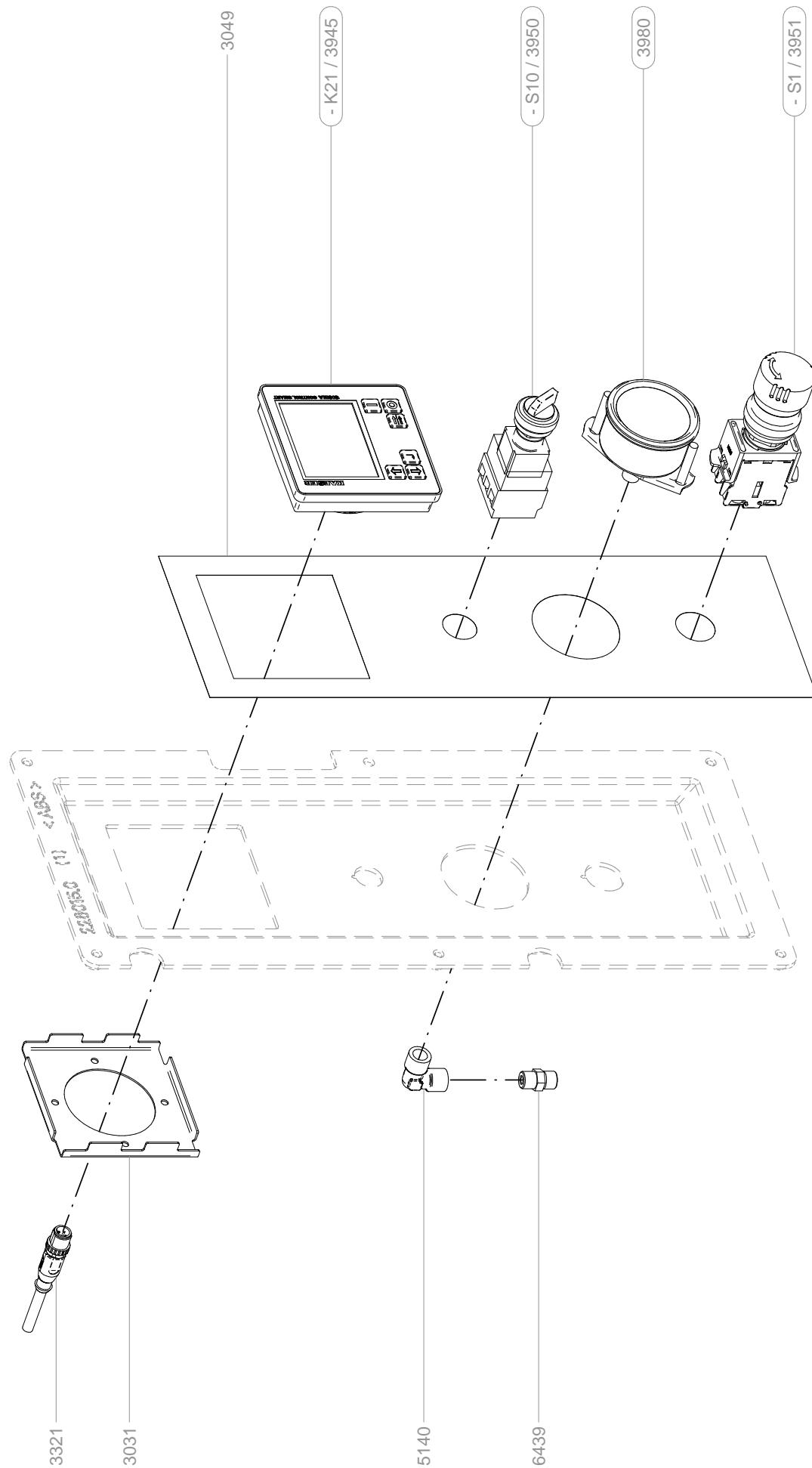
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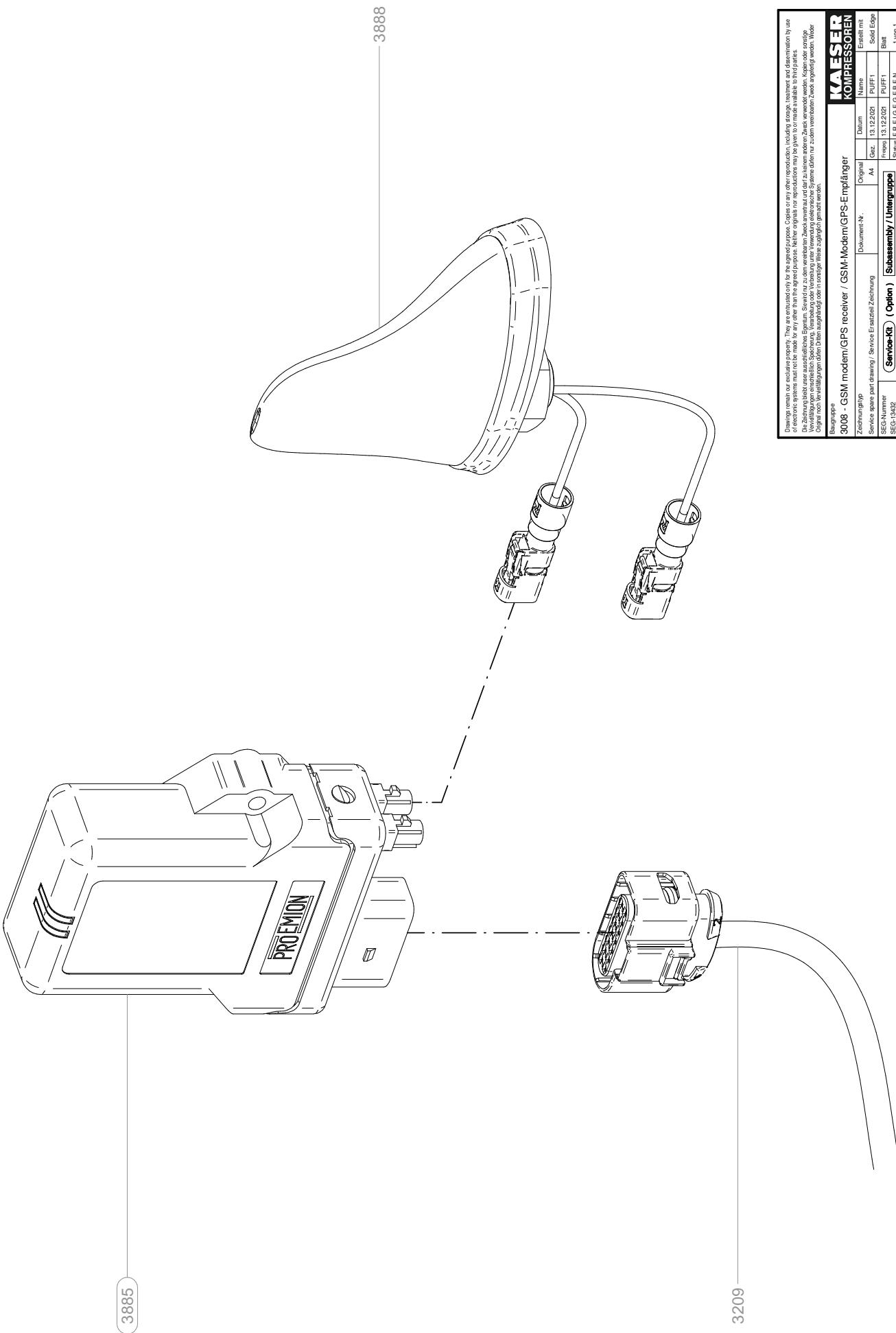
<b>KAESER</b> <b>KOMPRESSOREN</b>	
Draht-Zusammenfassung für alle Teile	Erhältlich mit Soil Edge
Die Zeichnungen dienen nur der Dokumentation. Sie dürfen nicht für andere Zwecke benutzt werden. Kopien oder sonstige Veränderungen sind untersagt.	Name Blatt
Originalzeichnung	Datum 15.02.2022
Service-Spareteile-Zeichnung	Zeichnung-Nr. A4
3001 - Elektroinstrumente / Elektrikinstrumente	Original PUFF1
3001 - Elektroinstrumente / Elektrikinstrumente	Dokument-Nr. Status: F E I G E E B E N
Baugruppe	SEG-13705
3240 )	SEG-13705

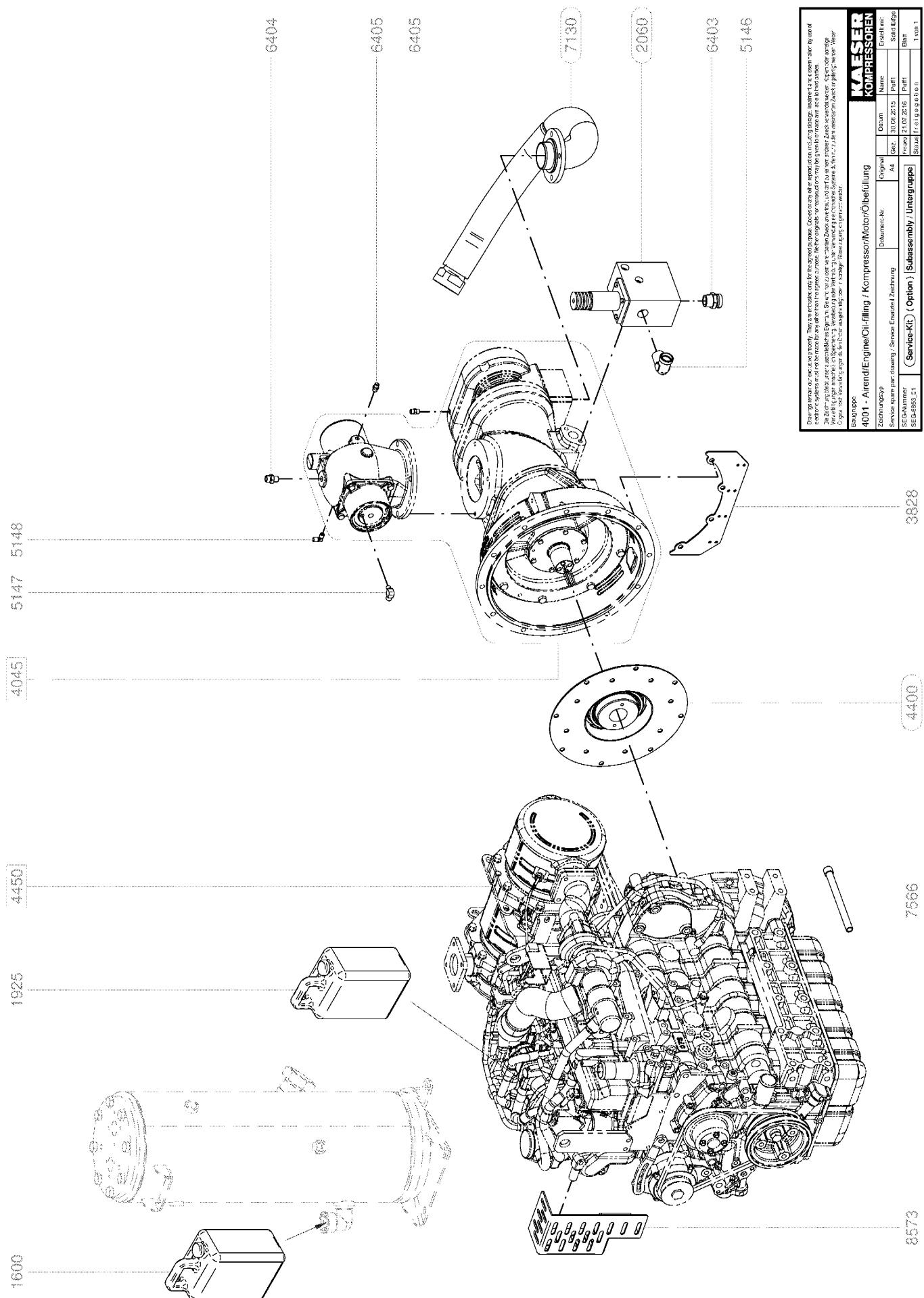


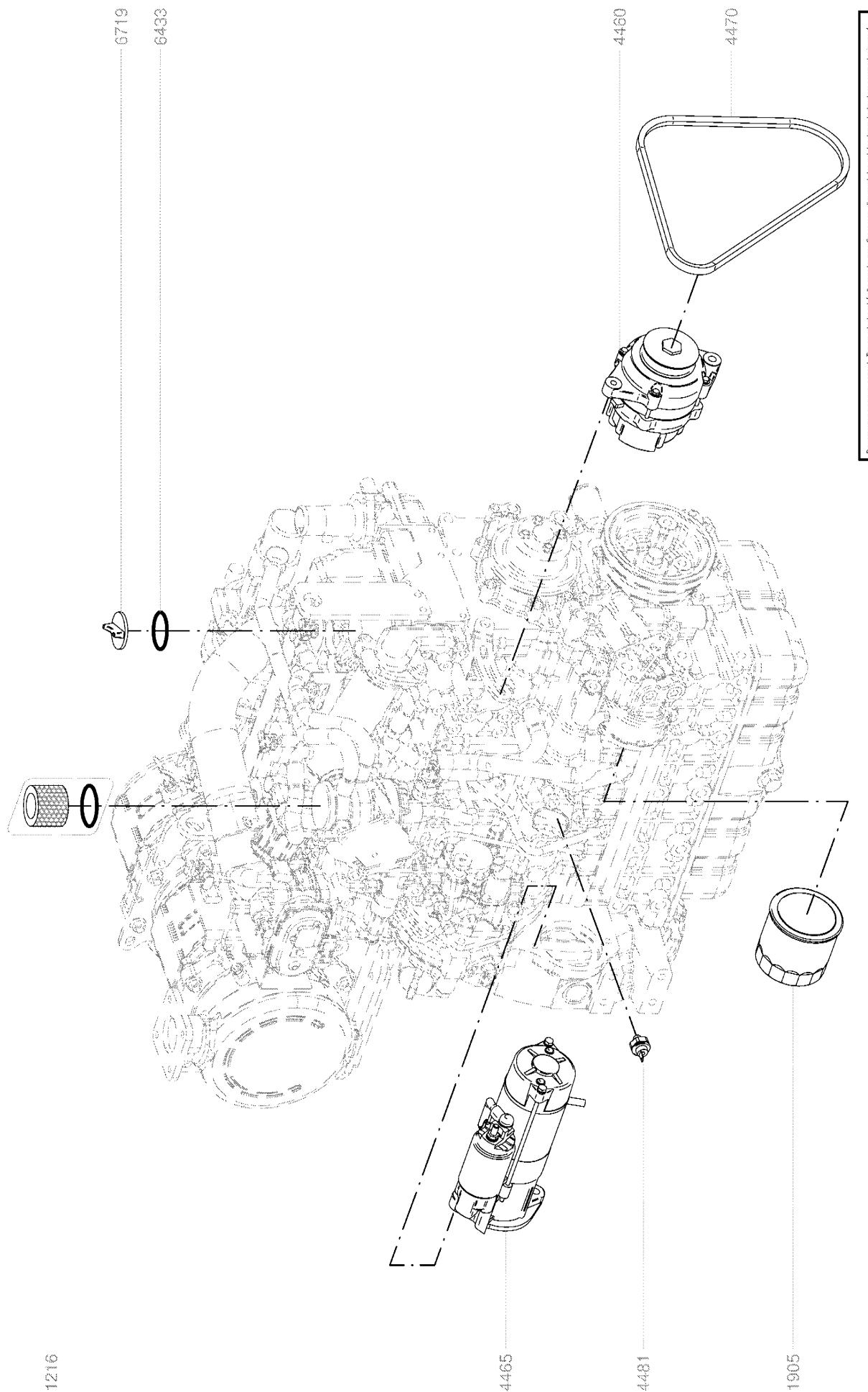
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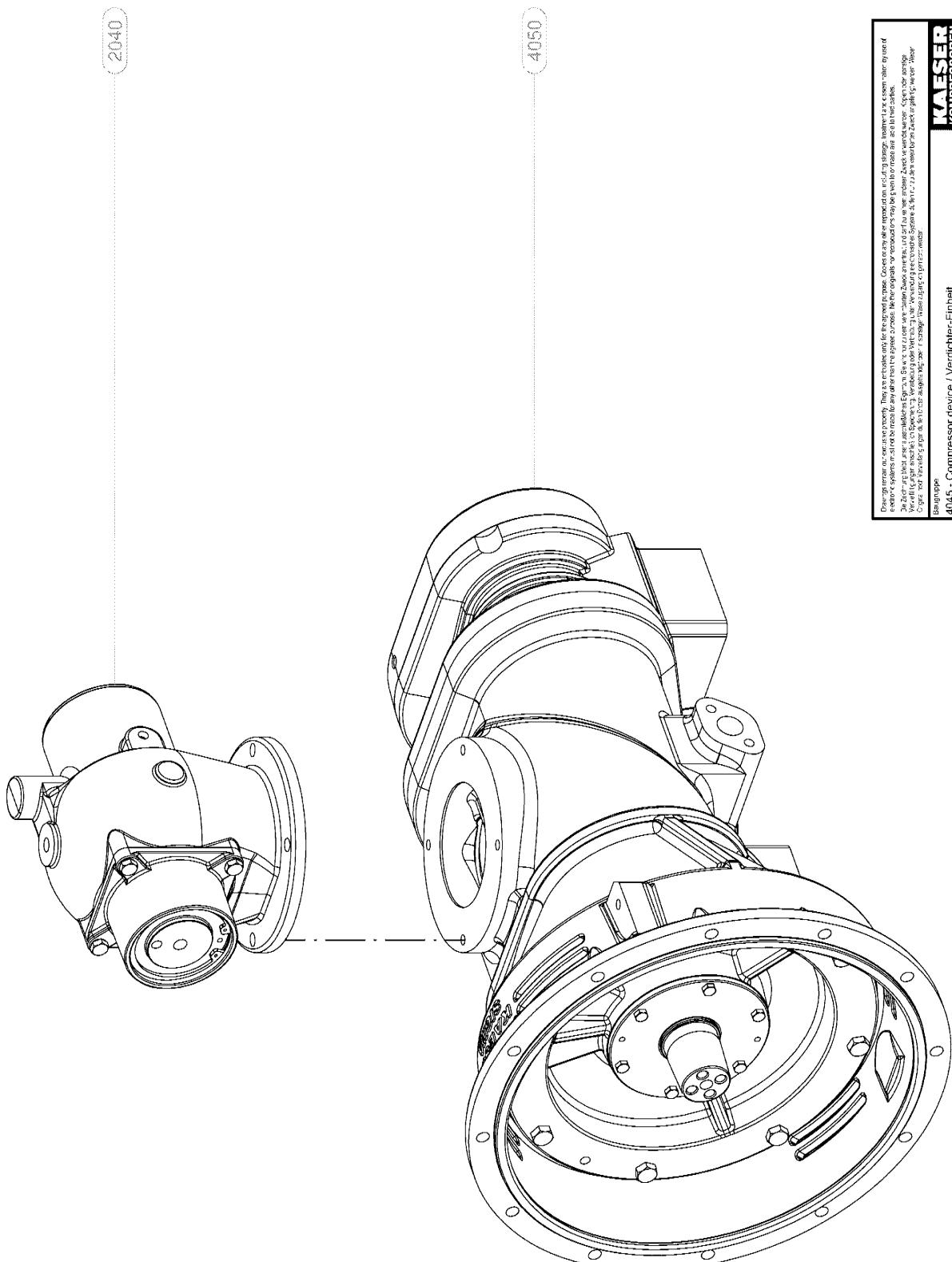
<b>KAESER</b> KOMPRESSOREN	
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Gez.	Ingress 11.06.2021
Stahl	Blatt
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Baugruppe	
Zeilenumgrupp	
Service spartei part drawing / Service Ersatzteil Zeichnung	Document-Nr.
SEG-Number	Original
SEG-12917	Aa
<b>Service-FIT (Option)</b>	<b>Subassembly / Untergruppe</b>





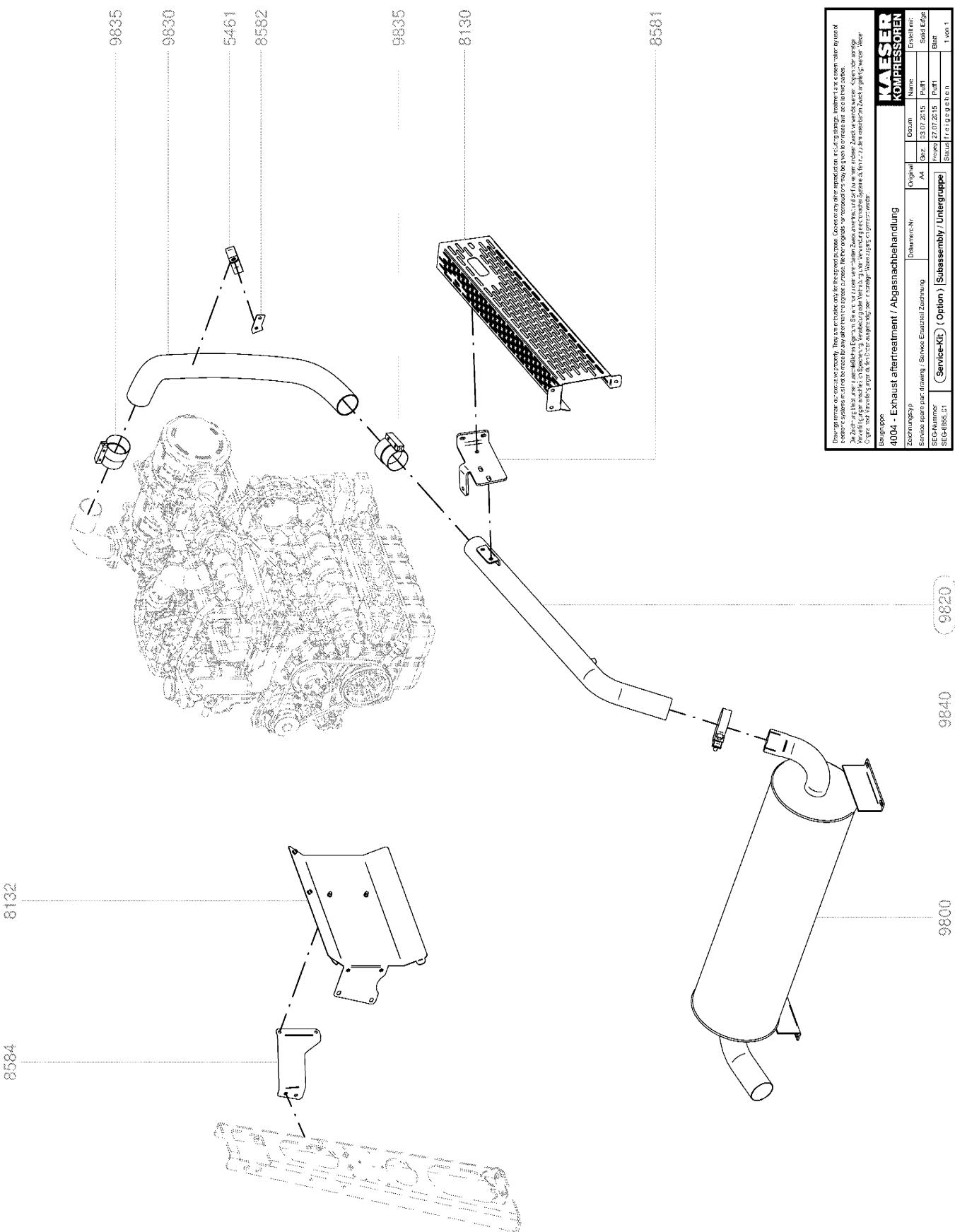


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Name:	Original	AA	Gez.	Datum	Ersatzteil:
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Service-Kartei					
Service-Ersatzteil-Zeichnung					
SEG-B6229	SEG-B6229	SEG-B6229	11		
4450 - Engine / Motor					
Baugruppe:					

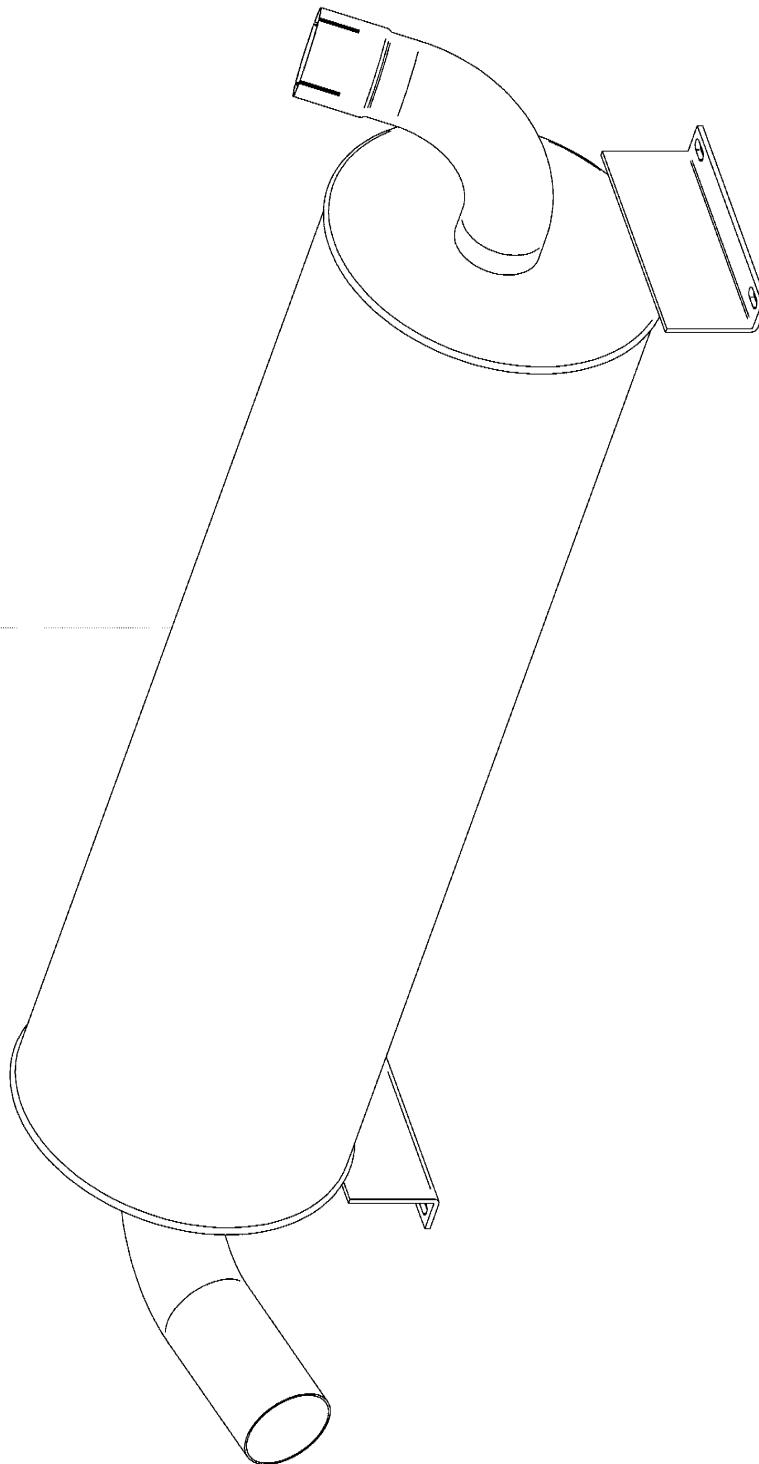


David Teller on one occasion pointed me out that there was only one for the proposed purpose. Once or any other application involving a change, instead of a system, all systems must be changed. In fact, it is not possible to change one system without changing all the others.

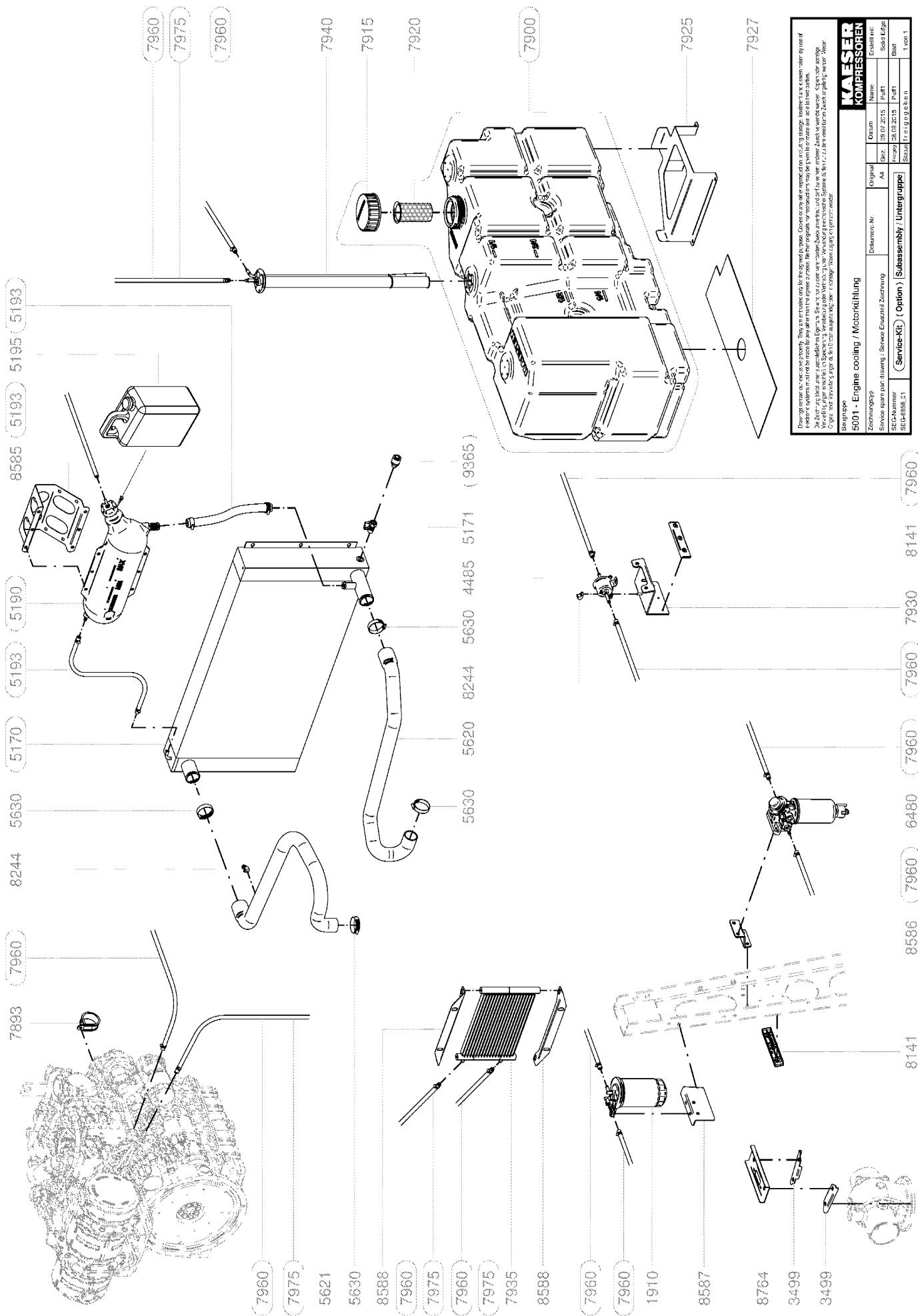
#### **11.4 Replacement parts for service and repair**



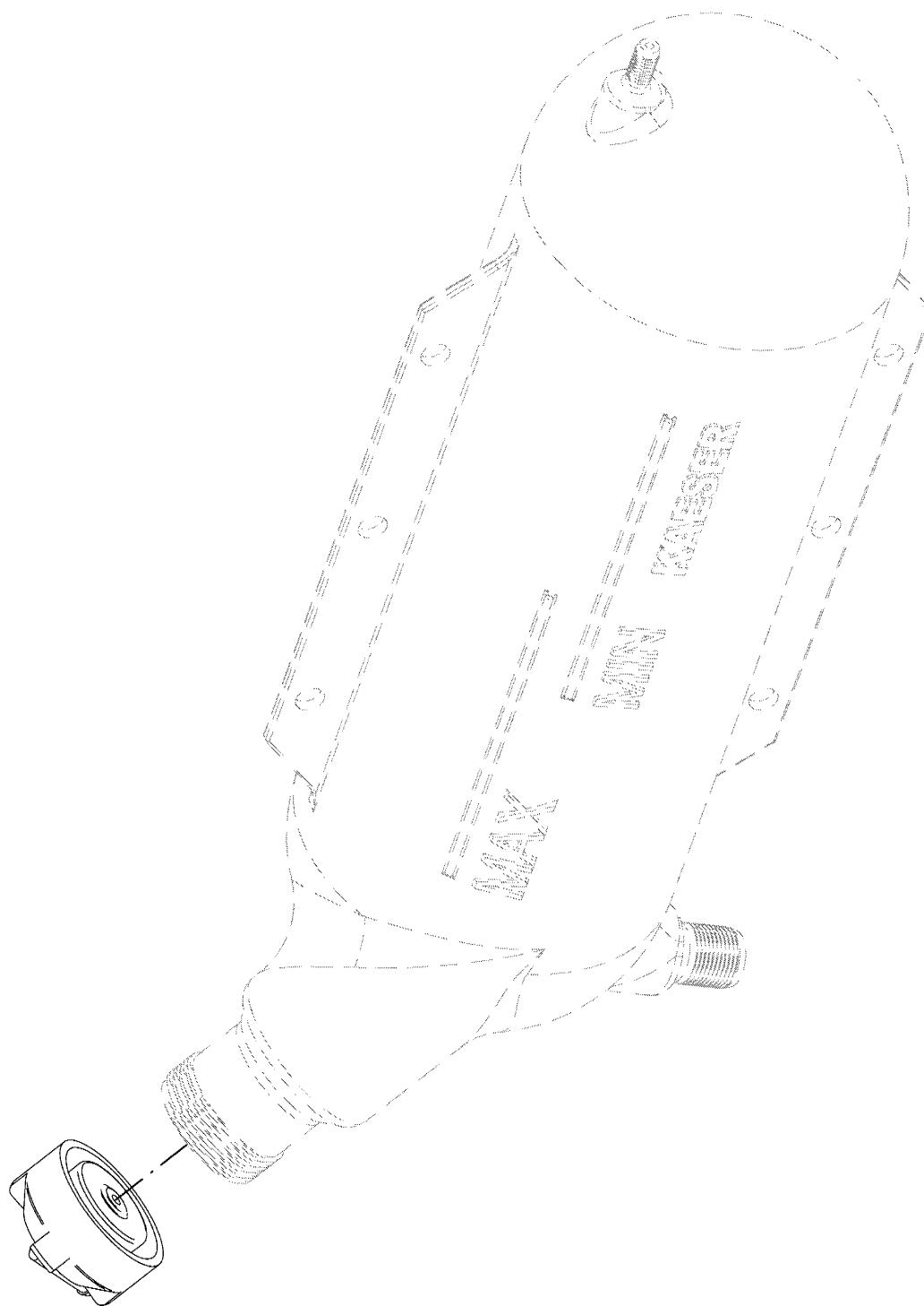
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Dave systematized his approach. That is to say, he had a protocol. Choices can only improve if one can learn from them. In other words, one needs to repeat what has been done, to see what worked and what did not work, and to make changes based on what was learned. This is how we can learn to do better.



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5190 - Expansion tank / Ausgleichsbehälter

Zzeichnung/SVP Service-Kit ( Option ) Subassembly / Untergruppe

SEG-Nr.: 9446.51

Service-Part-Number: 18.06.2015

Document-Nr.: 18.06.2015

Original: 18.06.2015

Gez.: 18.06.2015

Druck: 18.06.2015

Ersatz-Nr.: 18.06.2015

Solid Edge:

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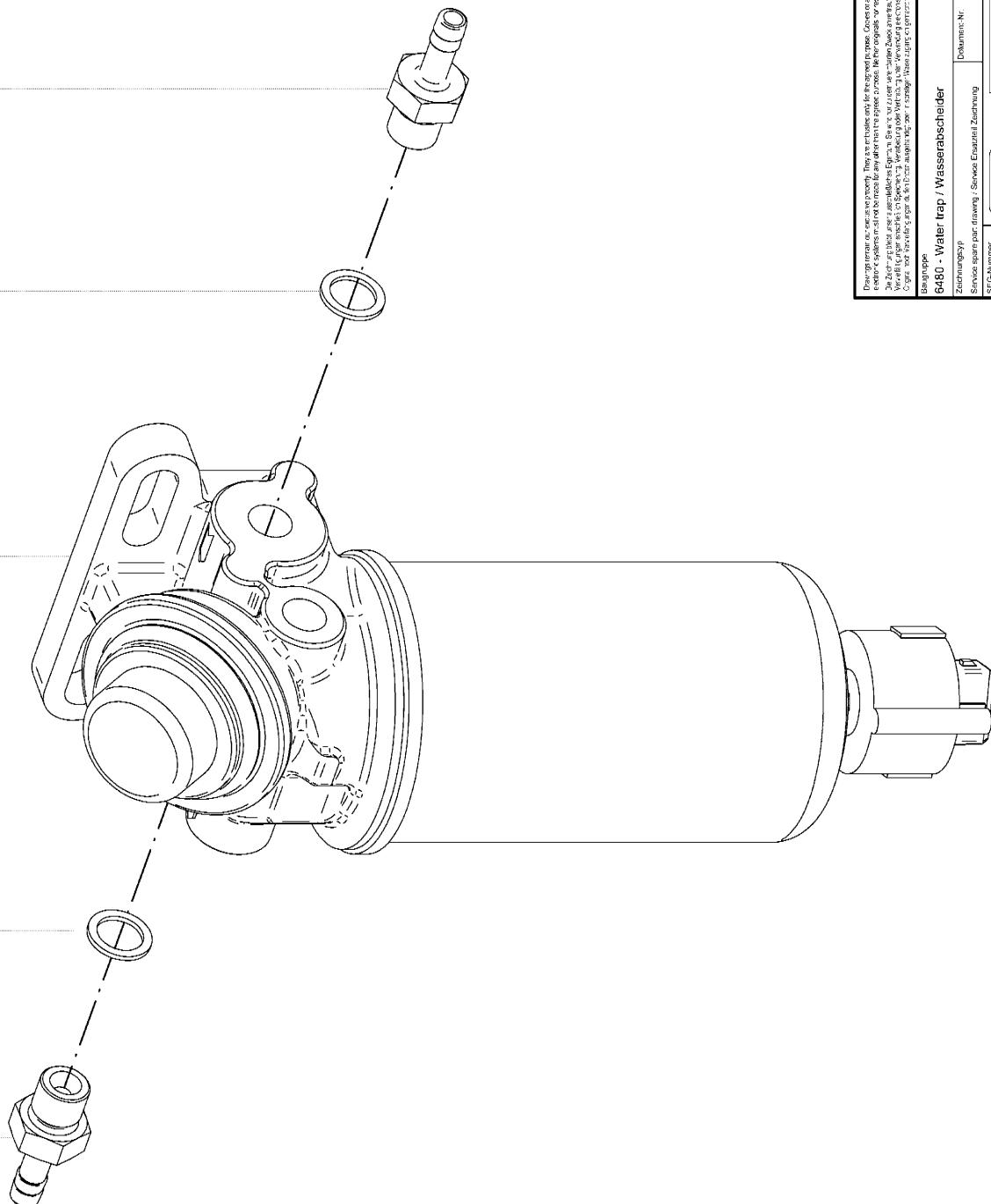
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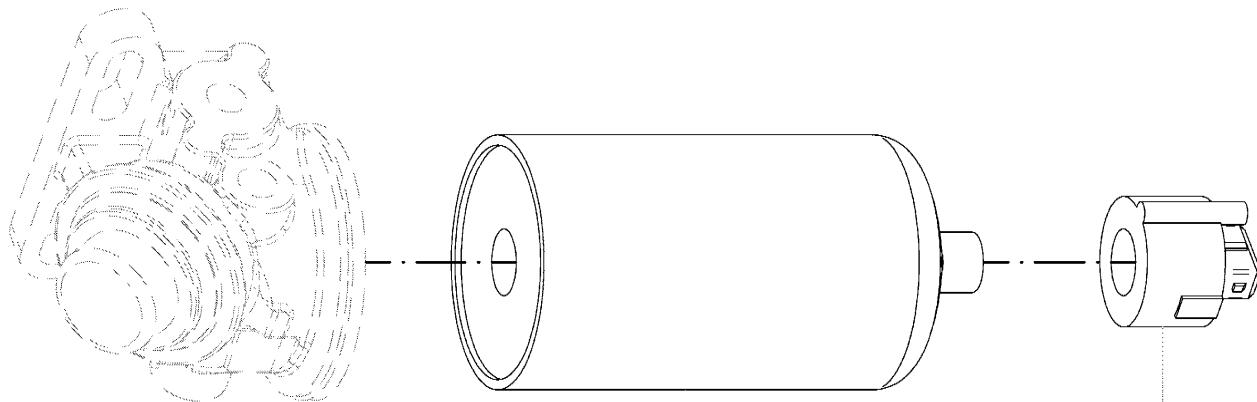
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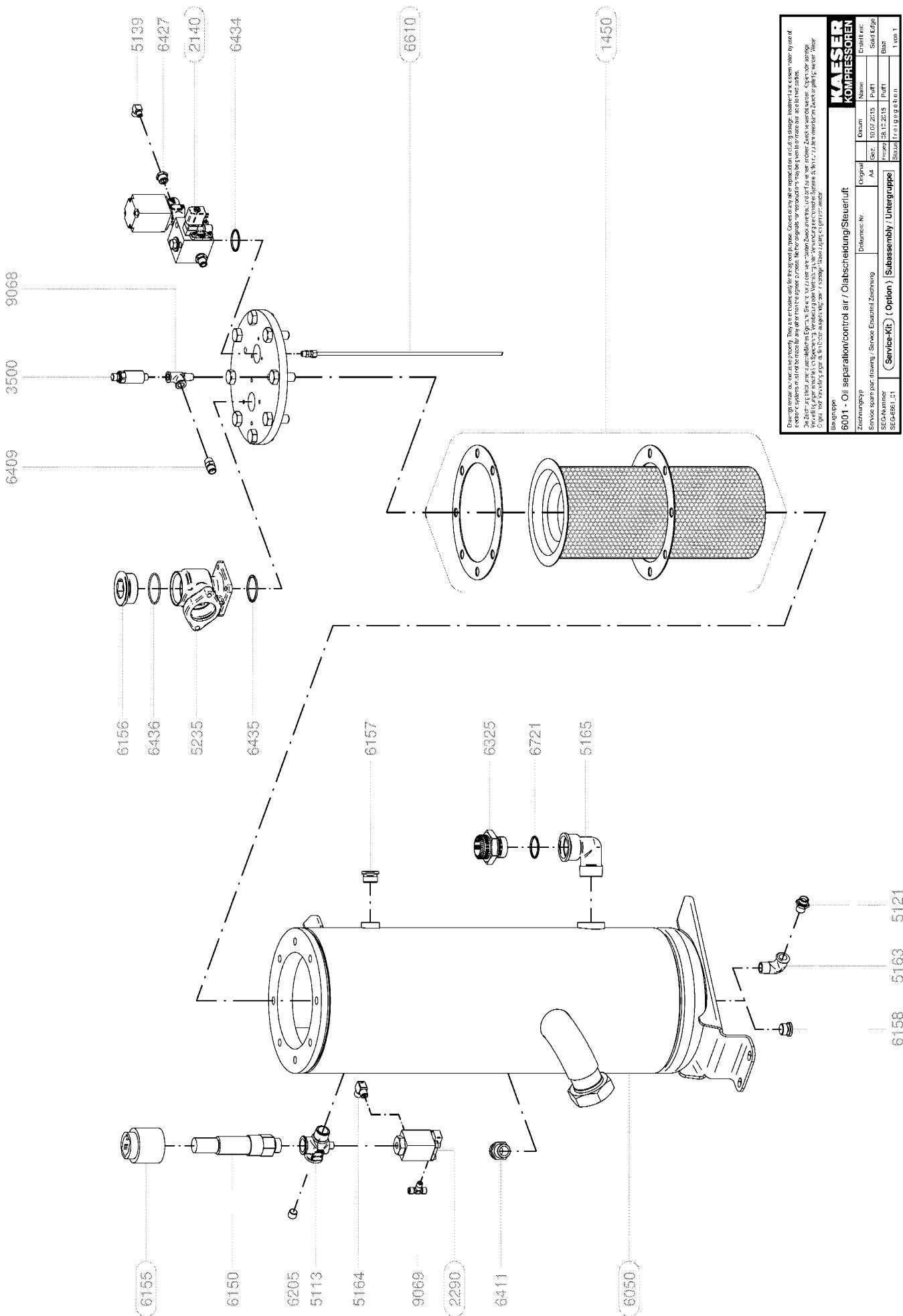


<b>6480 - Water trap / Wasserabscheider</b>	
Drawing details are descriptive only. They are not to scale and are not intended to include all manufacturing details. Order or any other information required in addition to drawing, please contact your distributor or KAESER's factory.	
Zzeichnungstyp:	Service Manual Zeichnung
Dokument-Nr.:	10.07.2015
Original:	Druck
A4:	Name:
Zeichner:	Extrakt-Nr.:
Gez.:	Seite/Länge:
Revisor:	Blaat:
(Service-Kit) ( Option )	27.07.2015
Subassembly / Unterguppe:	Puff
SE-G-Klammer	Status:
SE-G-8589-21	fr. 01.01.2016
<b>KAESER</b> <b>KOMPRESSOREN</b>	

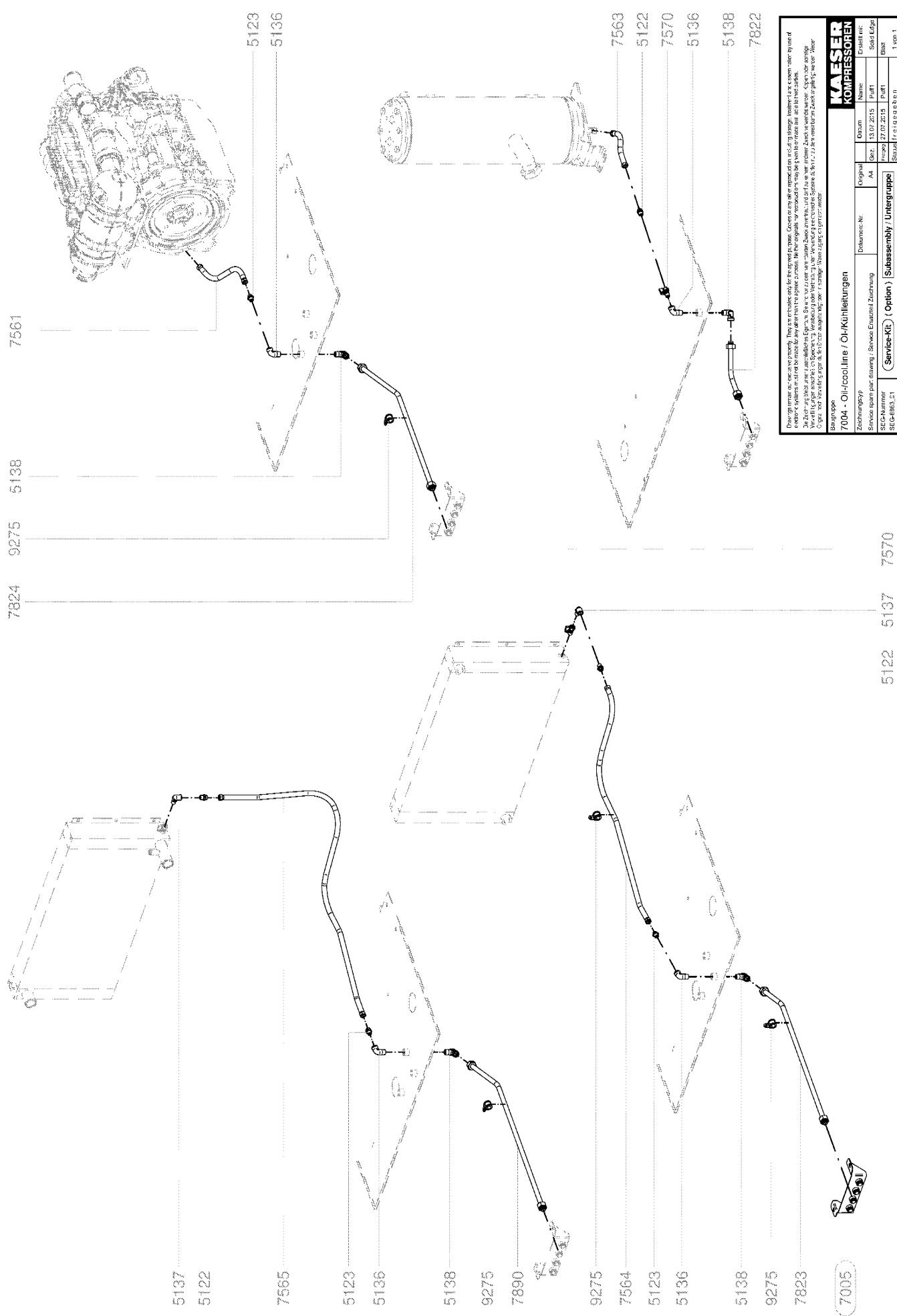


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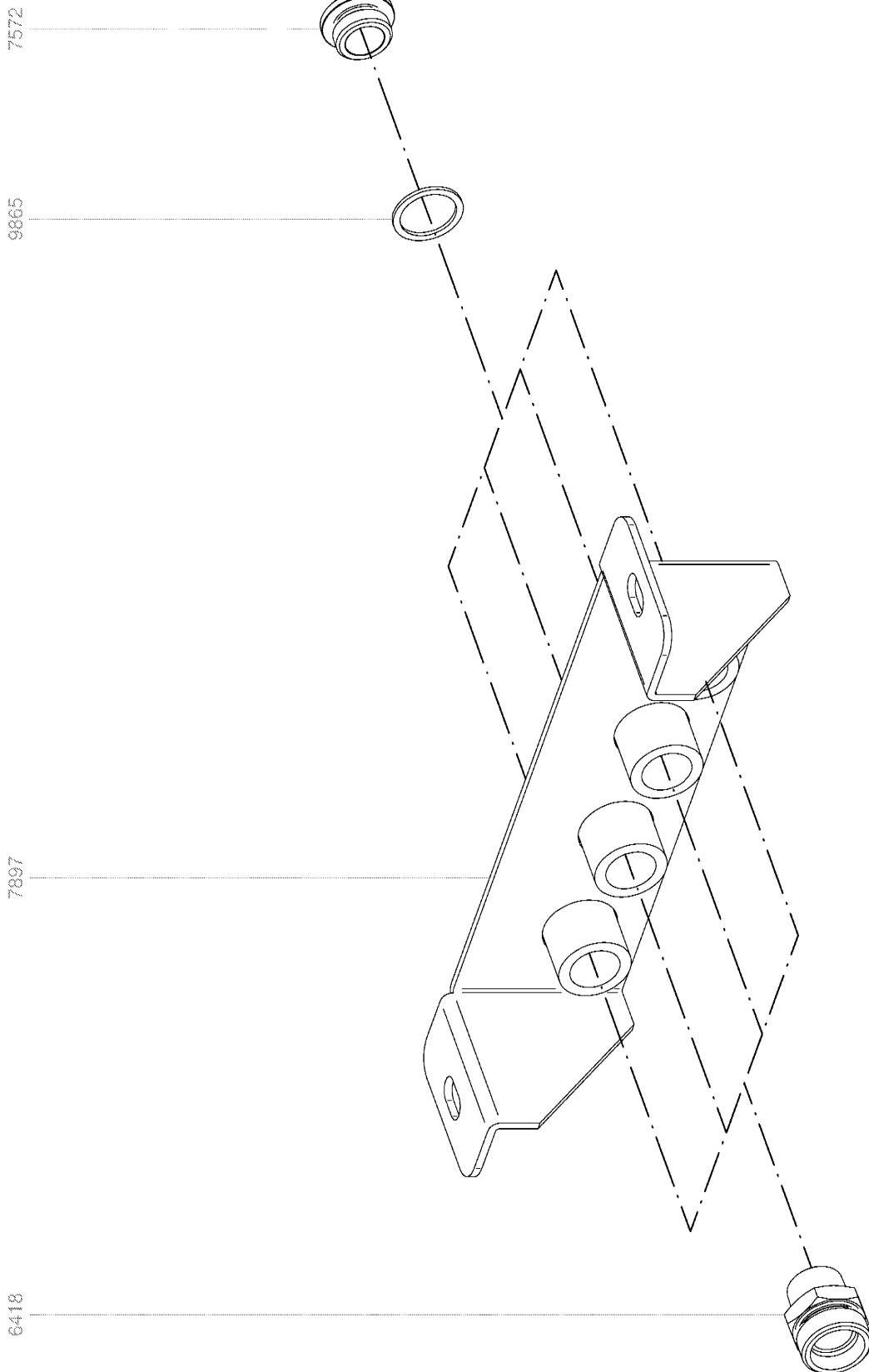


Operator Manual Portable Rotary Screw Compressor  
MOBIL AIR M82 SIGMA CONTROL SMART

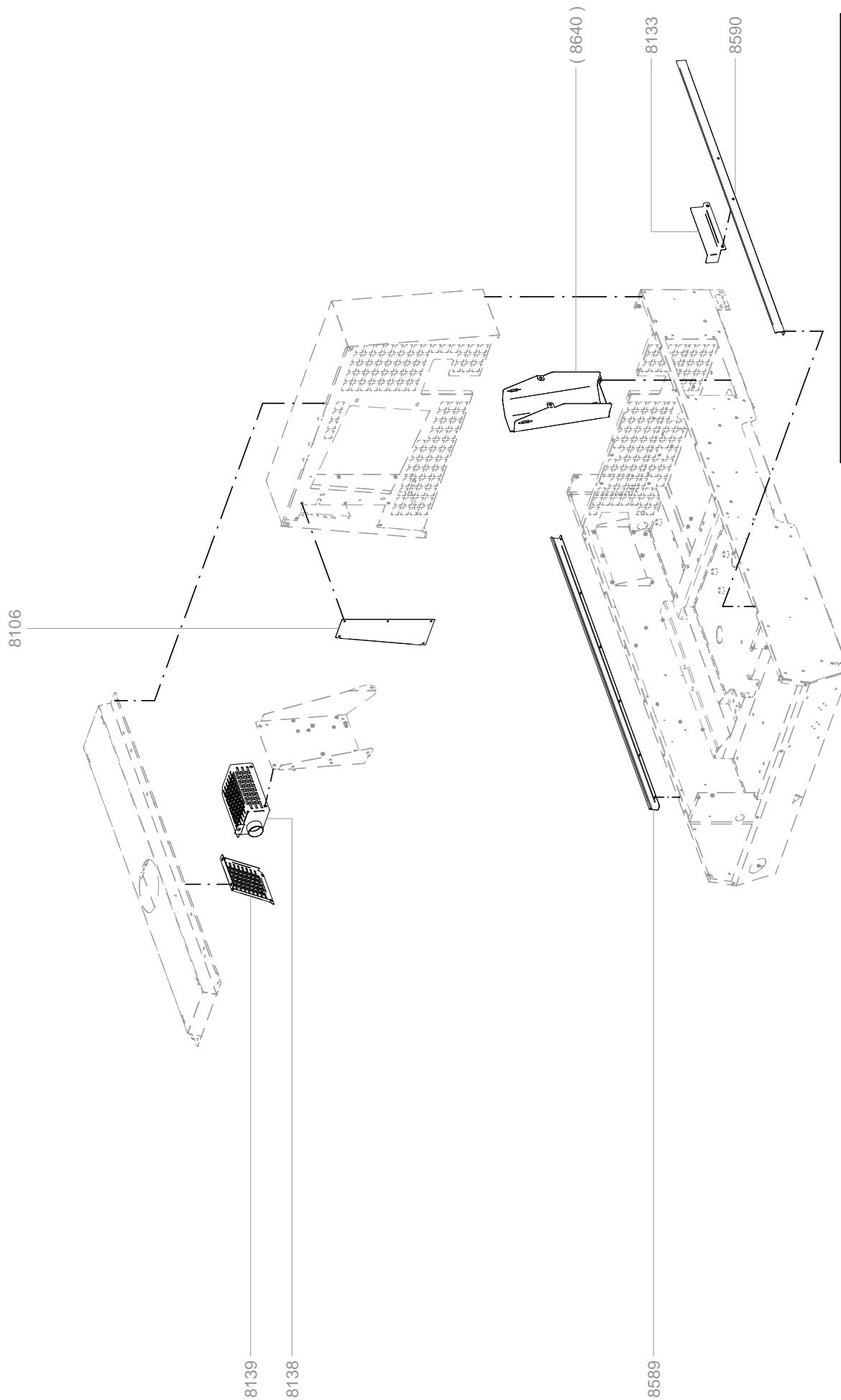


# Operator Manual Portable Rotary Screw Compressor

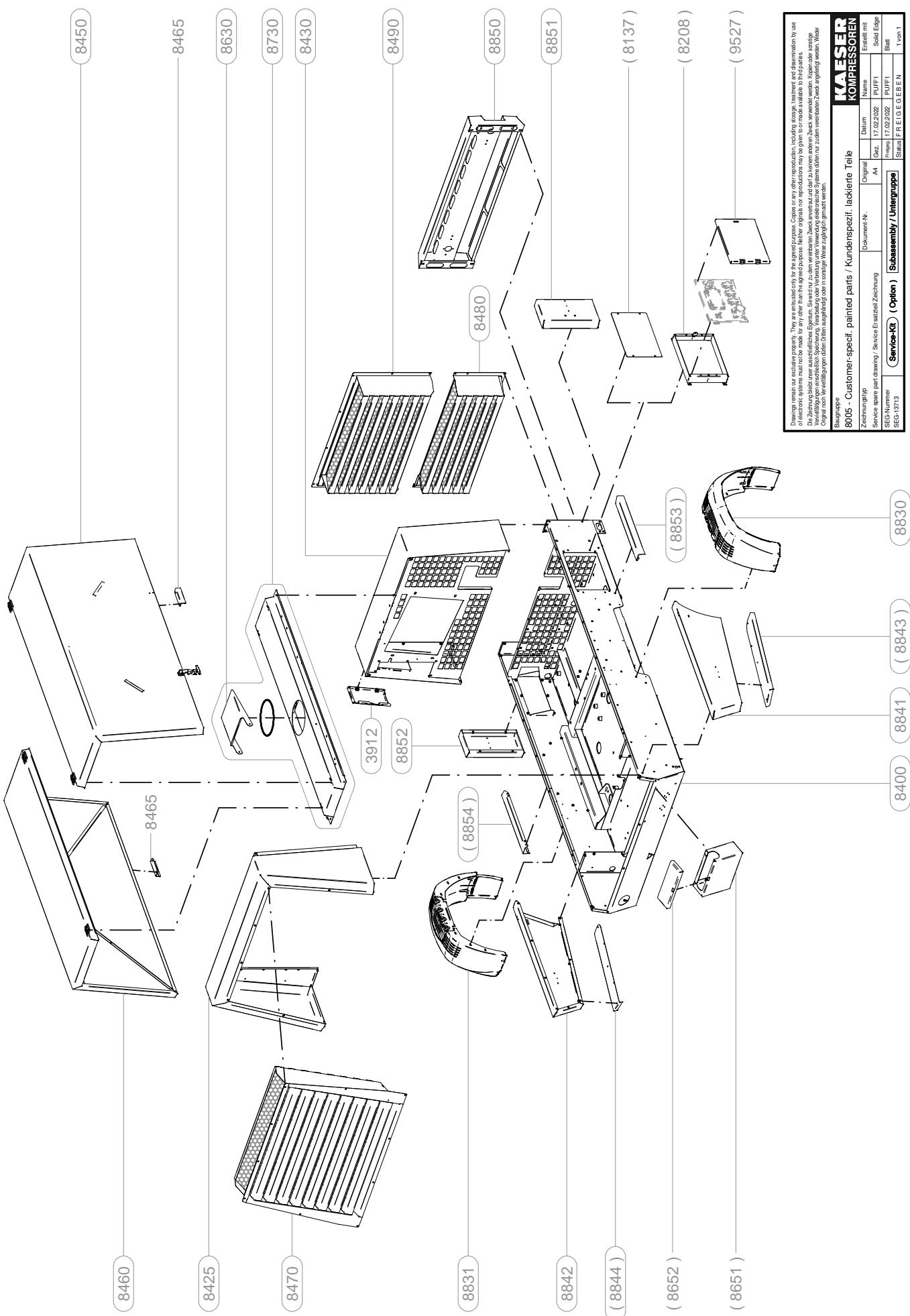
## MOBILAIR M82 SIGMA CONTROL SMART



<b>KAESER</b> KOMPRESSOREN	
Drawing details are descriptive only. They are not to scale and are not intended to include all manufacturing details. They are not to be used for assembly or for any other purpose. Order or any part or component in the drawing. Dealer or distributor's copy is not to be used.	
Zeilenummer	7005 - Oil-cooling outlet / Öl-/Kühlleitungen Ausgang
Dokument-Nr.	
Original	Zeichnung
A4	A4
Seite:	Seite
10.07.2015	27.07.2015
Zeichner:	Rever
Überprüfer:	
Service-Kit: ( Option )	Subassembly / Untergruppe
SEG-Gummier	Status
SEG-Abdeck. 21	(frei) gebaut
1 von 1	

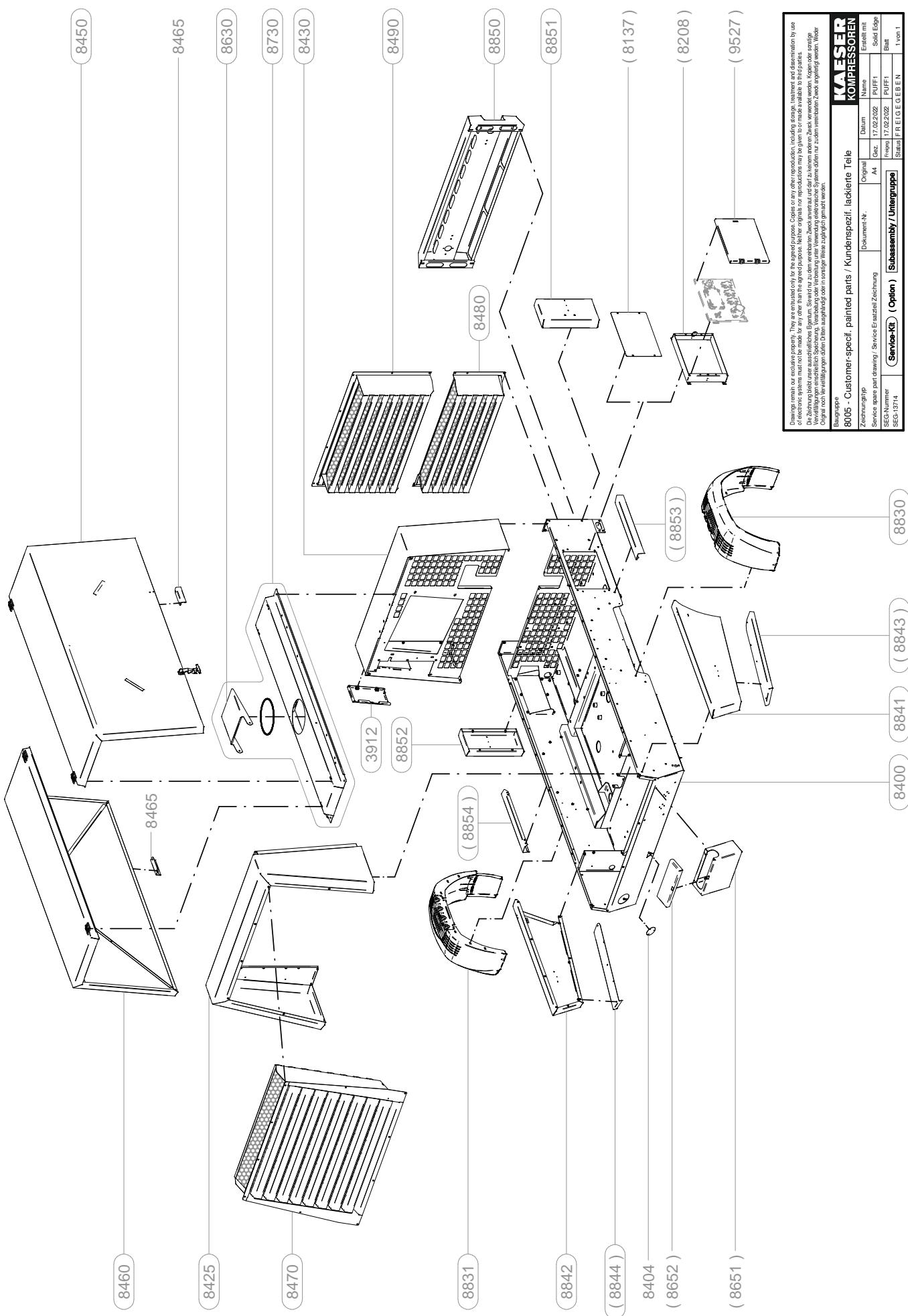


<b>KAESER</b> KOMPRESSOREN	
Erlaubt mit Soil Edge	Name
Batt	Datum
Original A4	Ges.
Service spares part drawing / Service Erl. satzteil Zeichnung	Impres. 15.02.2022
Service spares part drawing / Service Erl. satzteil Zeichnung	PUFF1
SEG-13702	Status: F E I G E G E B E N
Baugruppe	
8000 - Bodywork / Karosserie	



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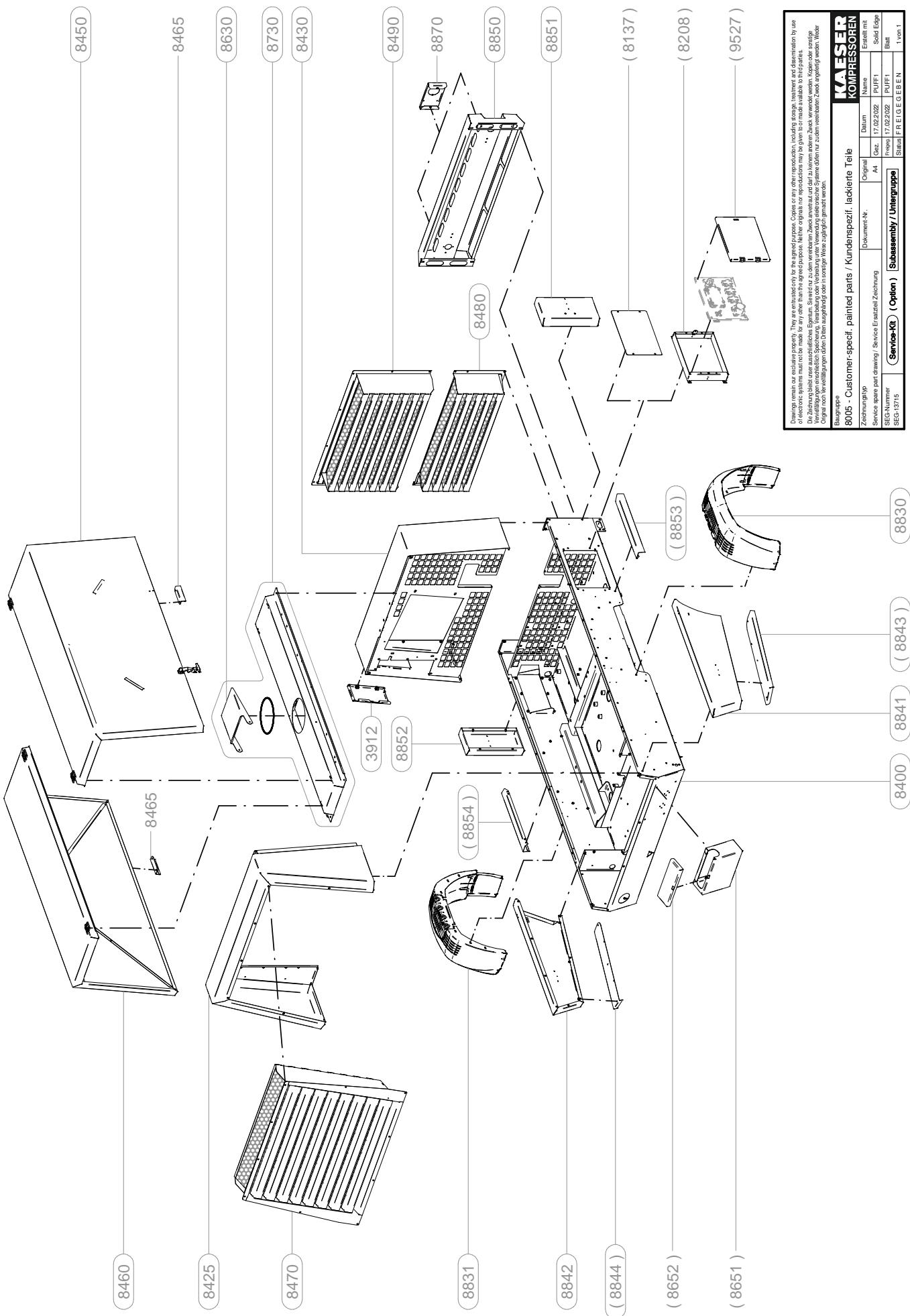
<b>8005 - Customer-specific, painted parts, Kunden spezif., lackierte Teile</b>	
Zzeichnungshyp	Service-Spare-Part-Zeichnung
SEG-Nummer	Document-Nr.
SEG-Nummer	Original
SEG-3713	A4
	Date
	17.02.2022
	PUFFI
	Blatt
	Folie
	17.02.2022
	PUFFI
	1 von 1
<b>KAESER</b>	<b>KOMPRESSOREN</b>
Service-KIT (Option)	Subassembly / Untergruppe



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<b>KAESER</b> KOMPRESSOREN	
Erlaubt mit Original A4	Datum Name
Erlaubt mit Zeichnungspf Service spares part drawing / Service Ersatzteil Zeichnung	Ges. 17.02.2022 Puffi
SEG-Nummer SEG-43714	Bauart Status F R E I G E G E B E N
<input checked="" type="checkbox"/> Service-Kit ( Option )	<input type="checkbox"/> Schraubenset / Unterlegscheiben

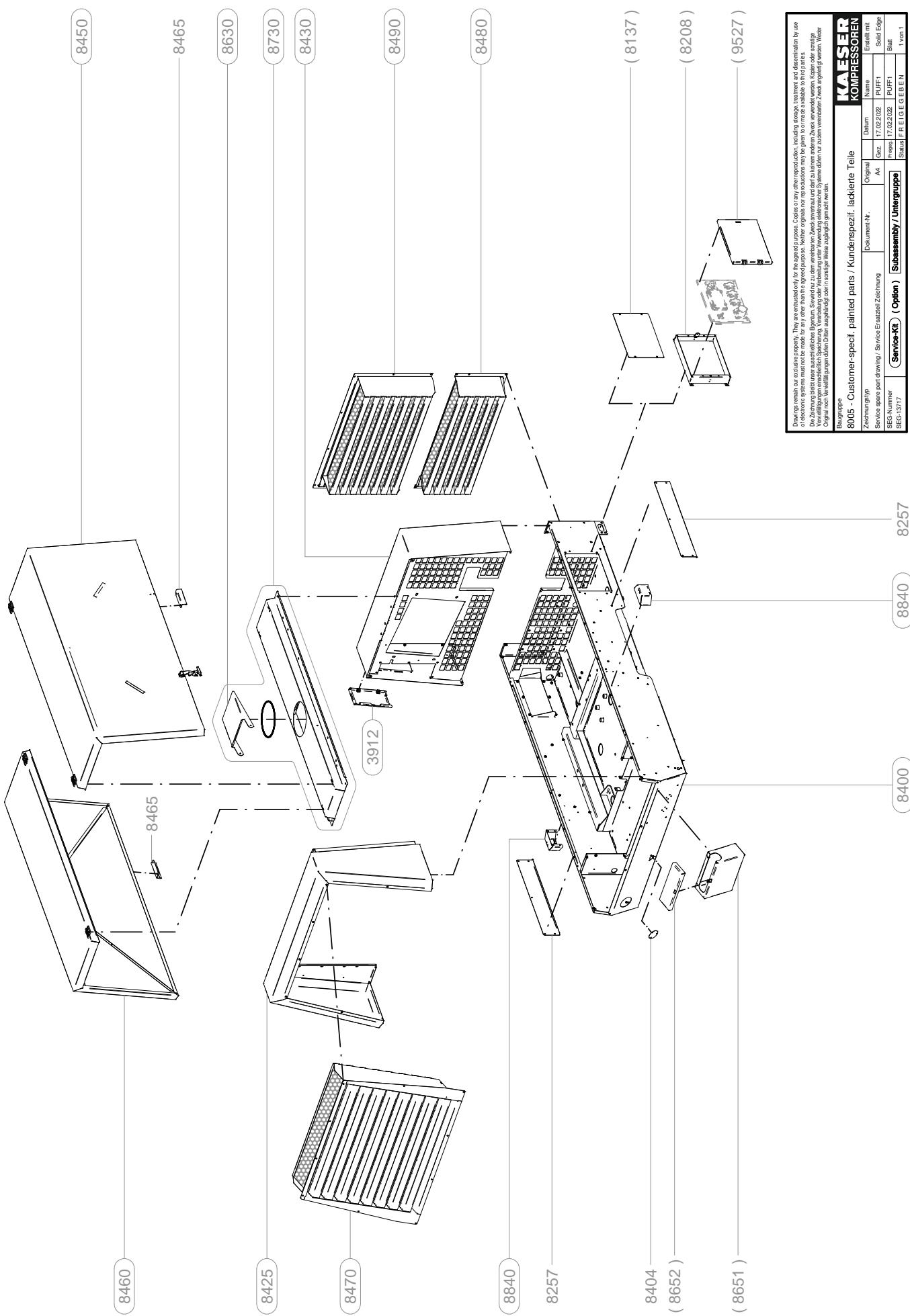
Original  
Bauart  
Status F R E I G E G E B E N  
1 von 1



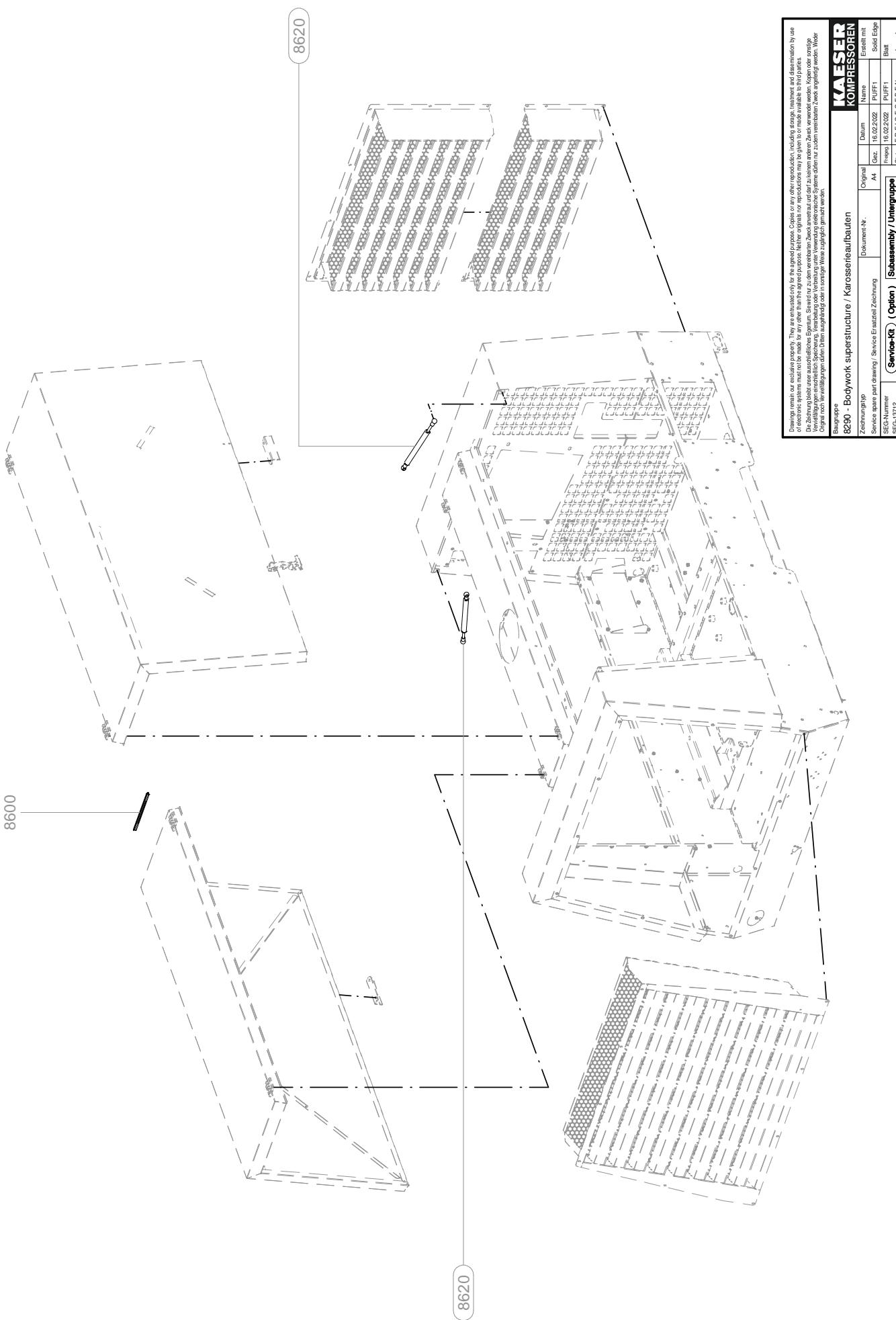
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Original noch herstellbarungen durch Dritten ausgeschlossen. In sonstiger Weise zugänglich gemacht werden.

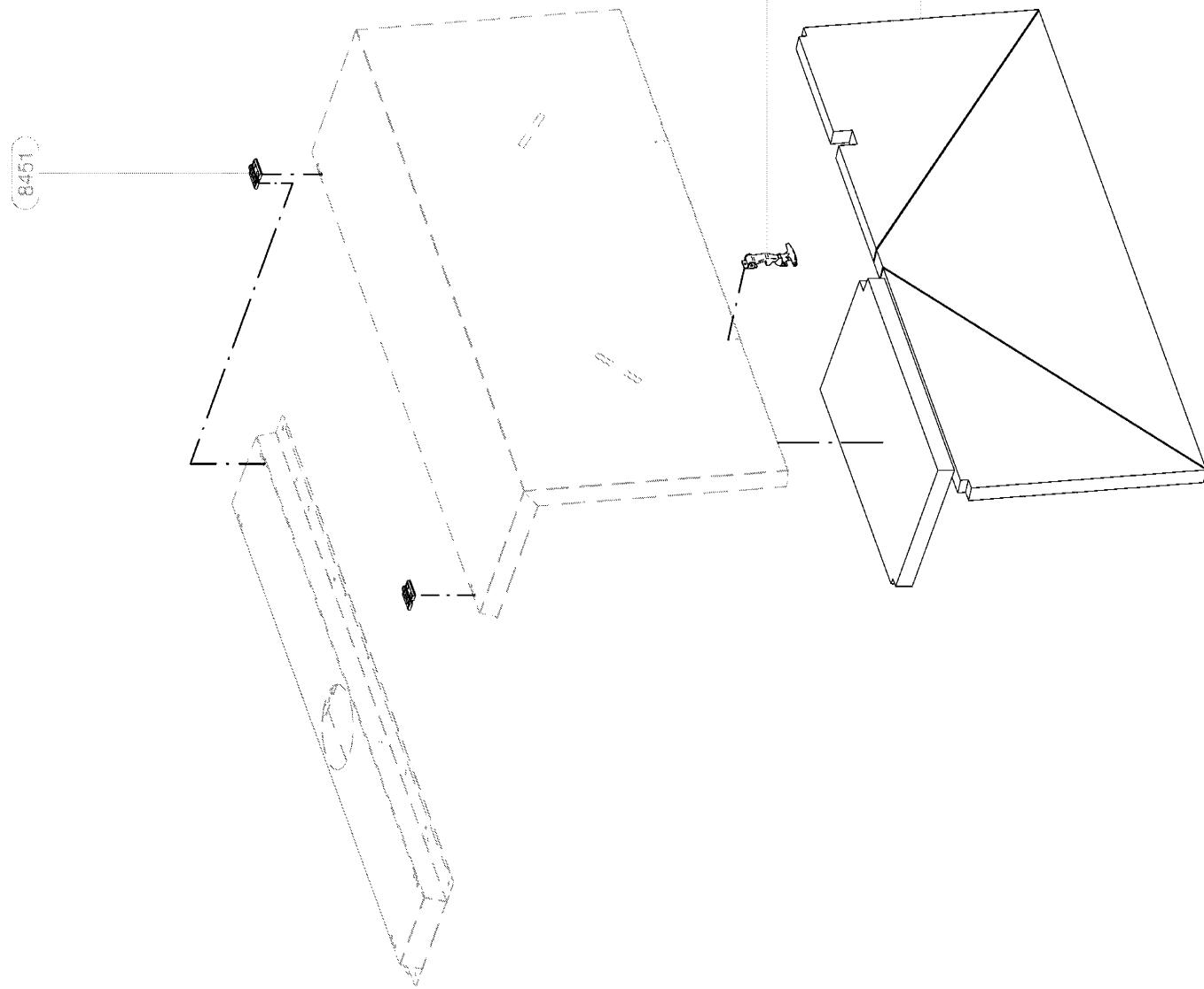
<b>8005 - Customer-specific, painted parts, Kunden spezif., lackierte Teile</b>	
Zzeichnungshyp	Service-Spare-Part-Zeichnung
SEG-Nummer	Document-Nr.
SEG-3715	Original
	Date
	Name
	Erstellt mit
	Software Edge
	Batt
<b>Service-KIT ( Option )</b>	<b>KOMPRESSOREN</b>
	Staus F R E I G E E B E N
	Version 1 von 1

#### **11.4 Replacement parts for service and repair**



Operator Manual Portable Rotary Screw Compressor  
MOBIL AIR M82 SIGMA CONTROL SMART





Drawing terms are explained in the glossary. They are used here and in the technical drawings. They are not to be understood as being defined in the general sense of the word. We reserve the right to make changes to the original drawings at any time without prior notice. This applies to all documents, including brochures, catalogues, price lists, etc. Technical drawings are not to be reproduced in whole or in part. They are not to be given to third parties.

Due to the high cost of individual parts, we do not supply individual parts. We will only supply complete units.

For Zünd- und Steuerungssysteme, see chapter 11.2.

The following parts are available as individual parts:

• Gelenkzapfen für Flügeldeckel (Part No. 8450)

• Gelenkzapfen für Flügeldeckel (Part No. 8451)

• Gelenkzapfen für Flügeldeckel (Part No. 8452)

Callouts  
8451  
8452

8450 - Left-hand wing door / Flight door links

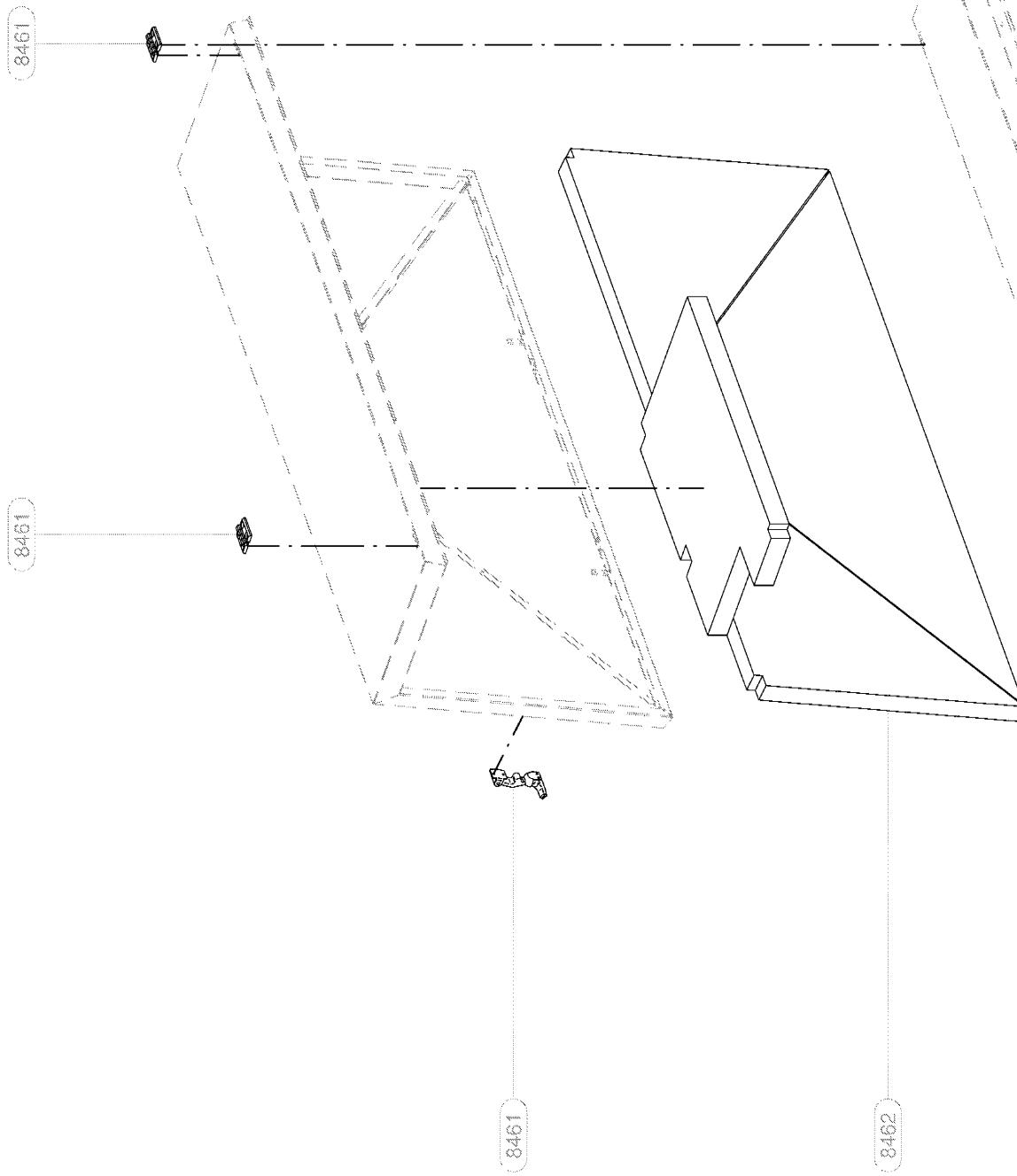
Zeilung/Syp		Document-Nr.	Original	Drawn	Name:
Service-Kit	(Option)		Aa	15.07.2015	Puff
SE-G-868-31				Revised	27.07.2015
					Blast

KAESER  
KOMPRESSOREN

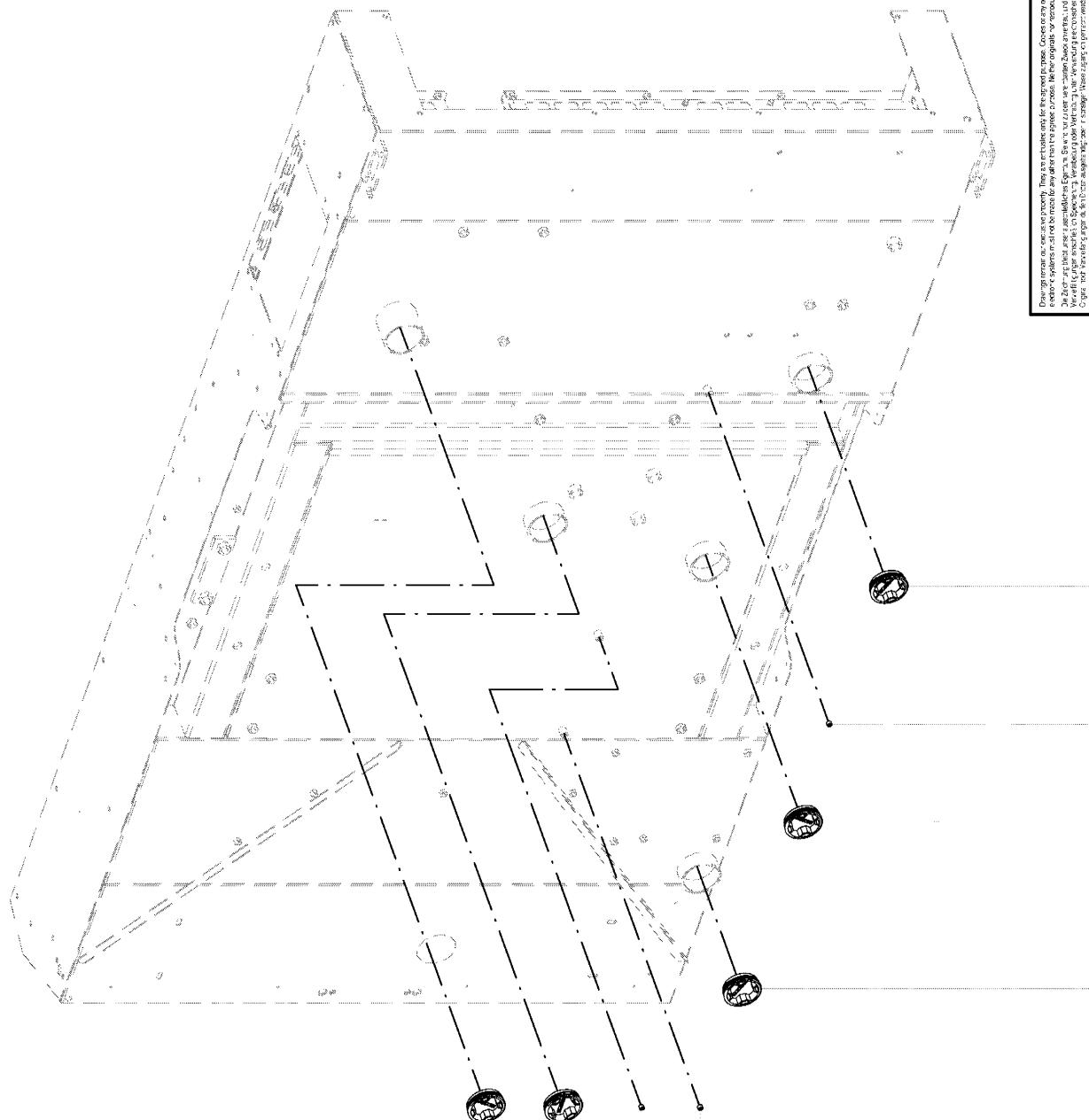
Ersatzteil-Nr.: 8450  
Name: Gelenkzapfen für Flügeldeckel

Bestell-Nr.: 8450

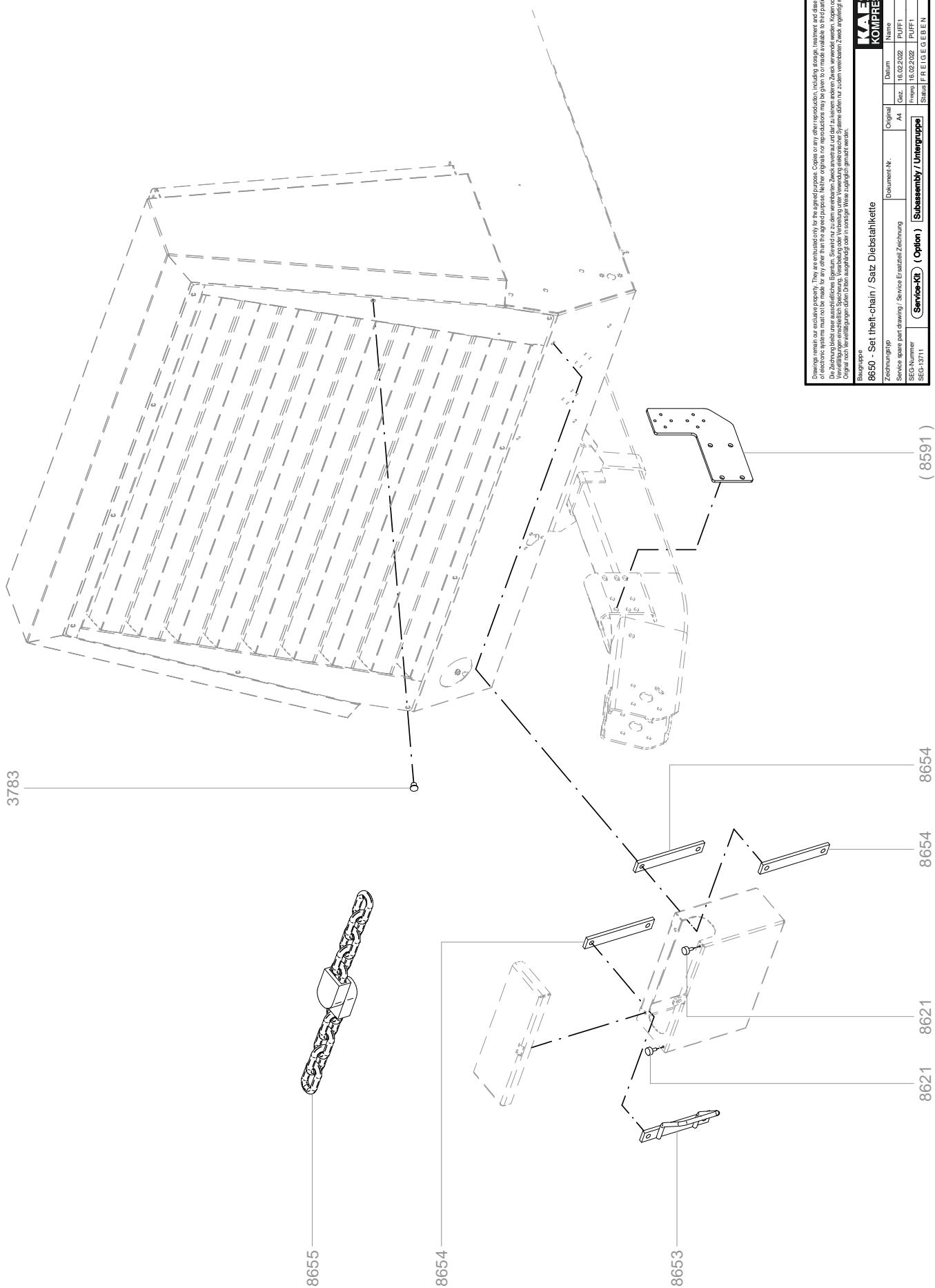
Seite 1 von 1



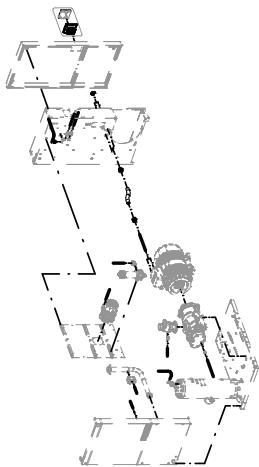
<b>KAESER</b> KOMPRESSOREN	
Zeilenummer:	Dokument-Nr.:
Service-Kit für Montage, Service-Ersatzteil-Zerlegung	Original
SEG-Gummier	A1
SEG-Gummier	Gez.
SEG-Gummier	Reparatur
SEG-Gummier	Subassembly / Unterguppe
SEG-Gummier	Status
SEG-Gummier	fr. Gerät erhalten
SEG-Gummier	1 von 1



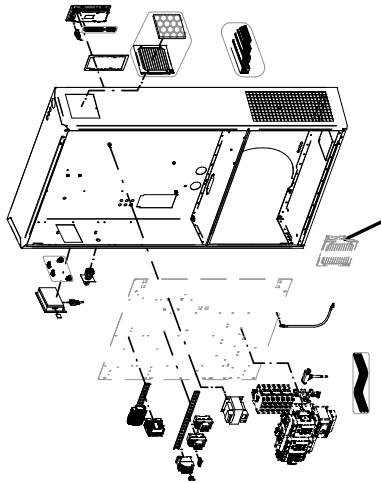
<b>KAESER</b> <b>KOMPRESSOREN</b>	
Zeilenummer:	SG-G870_01
ZeichnungSPN:	( 3784 )
Service-Kitt:	( 3782 )
Subassembly / Untergruppe:	( 3784 ) ( 3782 )
Stanz ( Präzision ):	( 3784 )
Erstellt am:	15.07.2015
Gez.:	Aa
Datum:	15.07.2015
Name:	Flansch
Solid Edge:	Basis
Blatt:	1 von 1



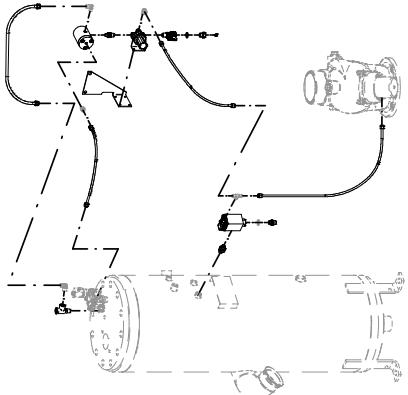
3003



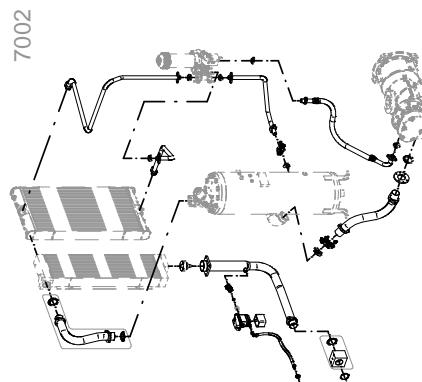
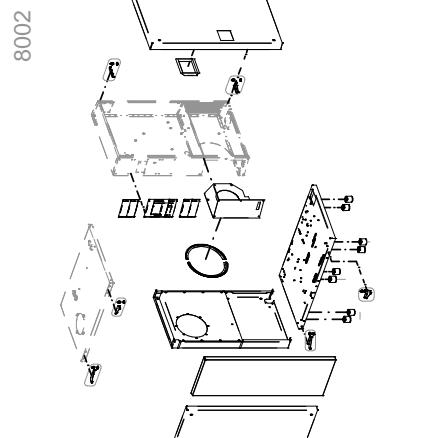
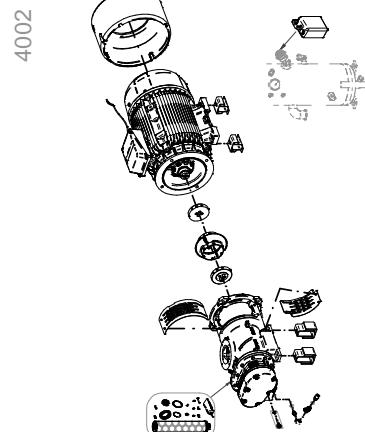
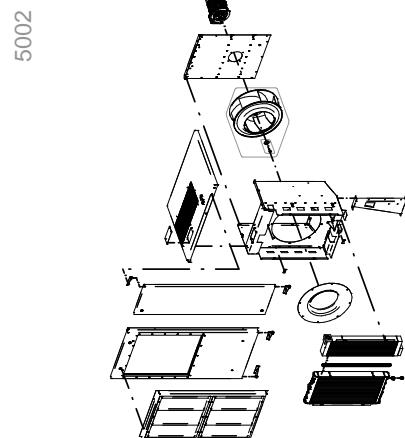
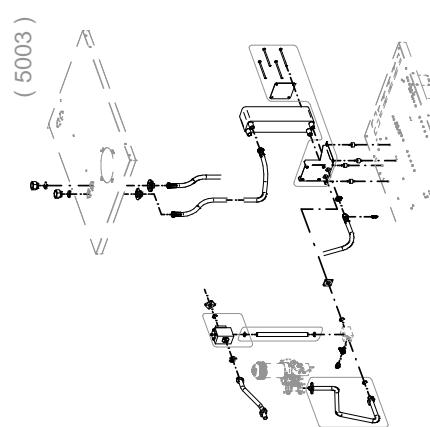
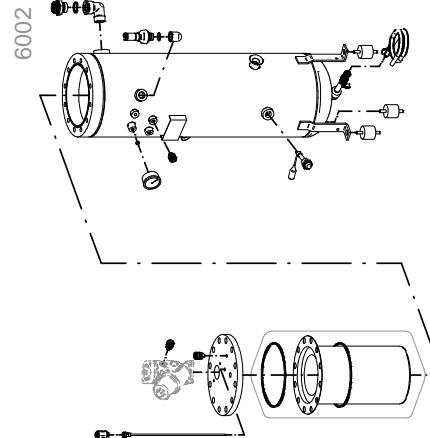
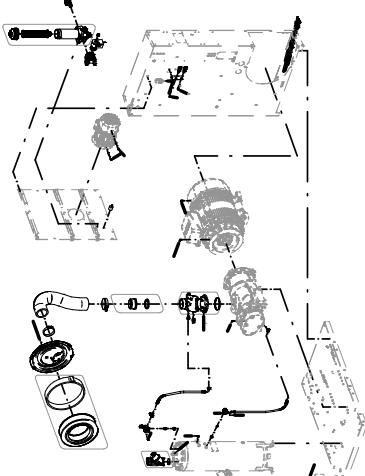
3002



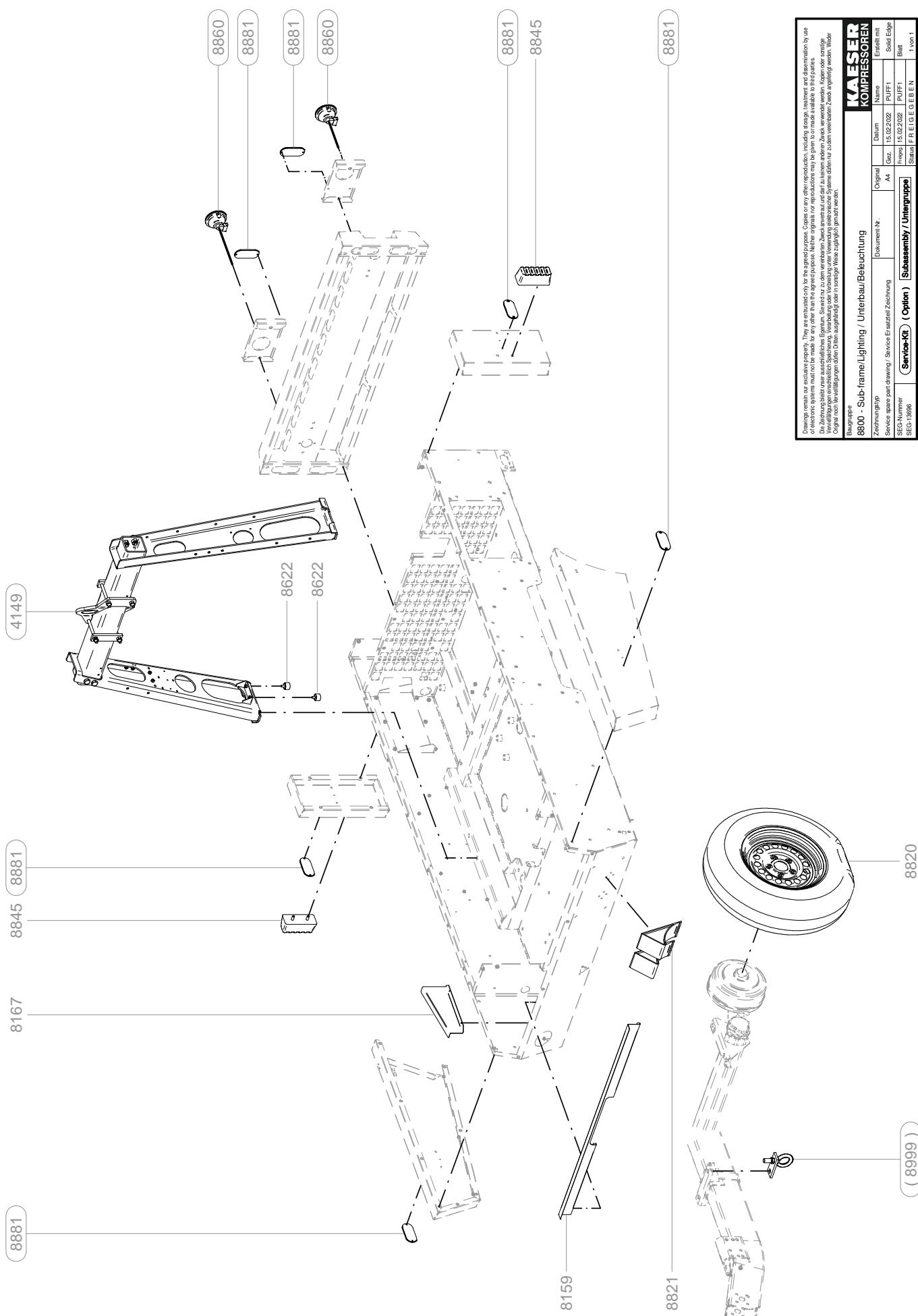
(2004)

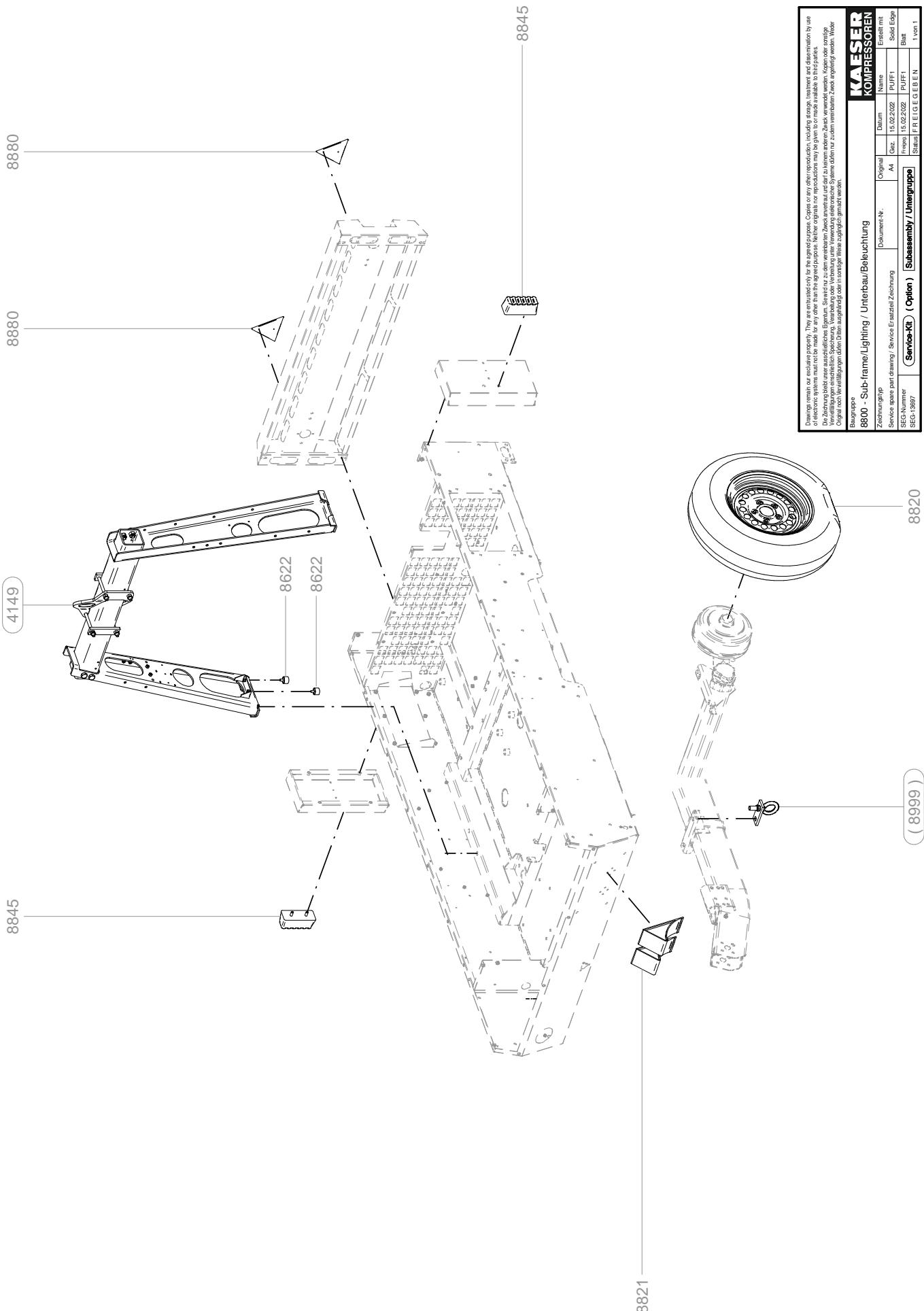


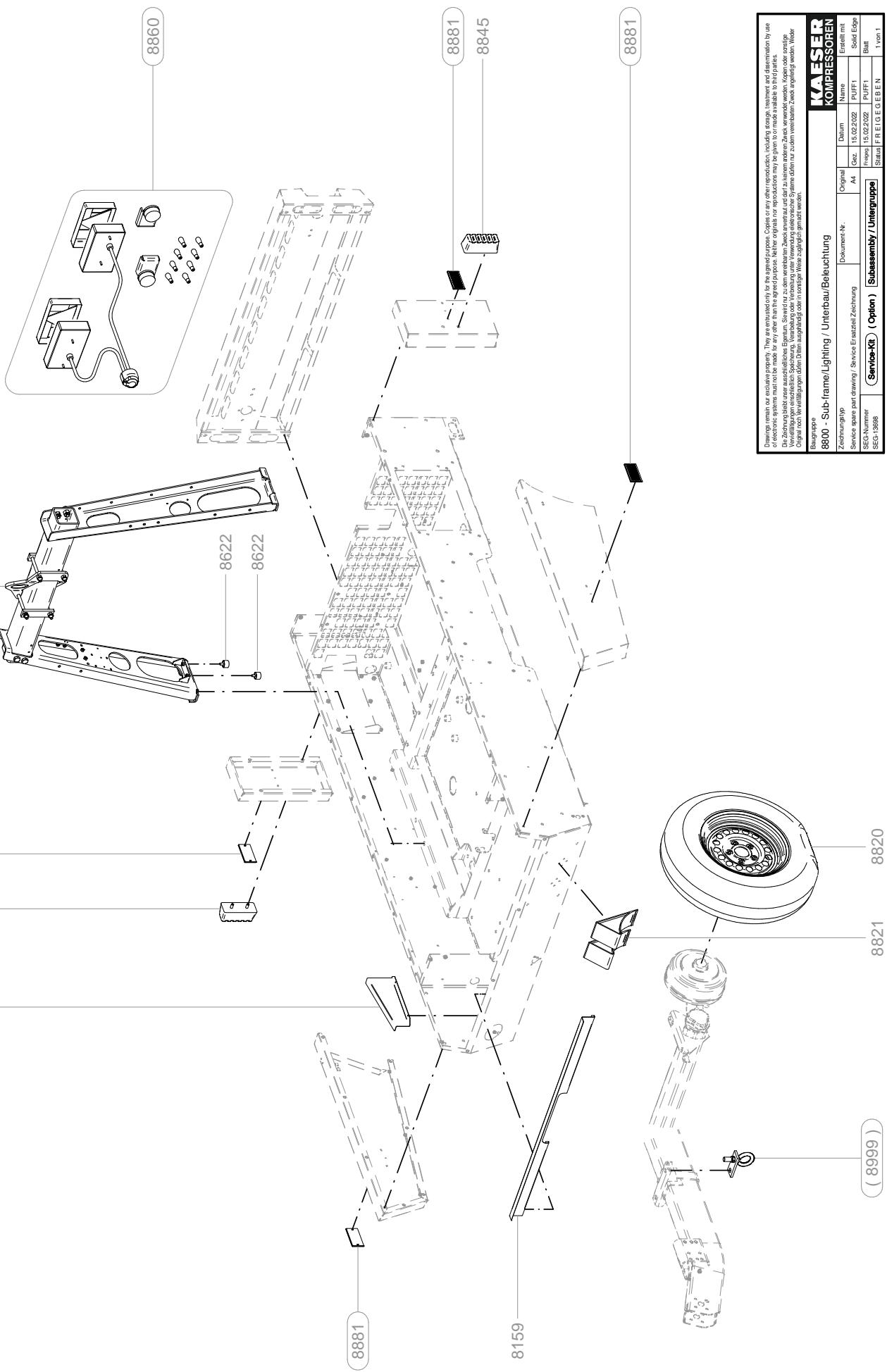
2002



<b>KAESER</b> KOMPRESSOREN	
Drahtseil zum Betrieb der Zündkerze ist nicht für den Betrieb mit einem elektronischen Zündgerät bestimmt. Sie wird nur zum Betrieb mit einem mechanischen Zündgerät und darf nicht an einem elektronischen Zündgerät verwendet werden. Kopien oder sonstige Veränderungen des Dokuments sind verboten.	Erhältlich mit Name Datum Zeichnung mit Aa Gas Datum Infras. 04/02/2022 Status: F E I G E G E B E N
Das Zeichnungsblatt ist ausschließlich für den Betrieb mit einem mechanischen Zündgerät bestimmt. Sie darf nicht an einem elektronischen Zündgerät verwendet werden. Kopien oder sonstige Veränderungen des Dokuments sind verboten.	Name DUFFI Soil Edge Bauart Status: F E I G E G E B E N
Original Document-N. 04/02/2022 Service part drawing / Service Teil-Zeichnung SEG-Number SEG-13659	Original Document-N. 04/02/2022 Service part drawing / Service Teil-Zeichnung SEG-Number SEG-13659
<b>Overview</b> <b>Übersicht</b>	<b>Baugruppe</b>



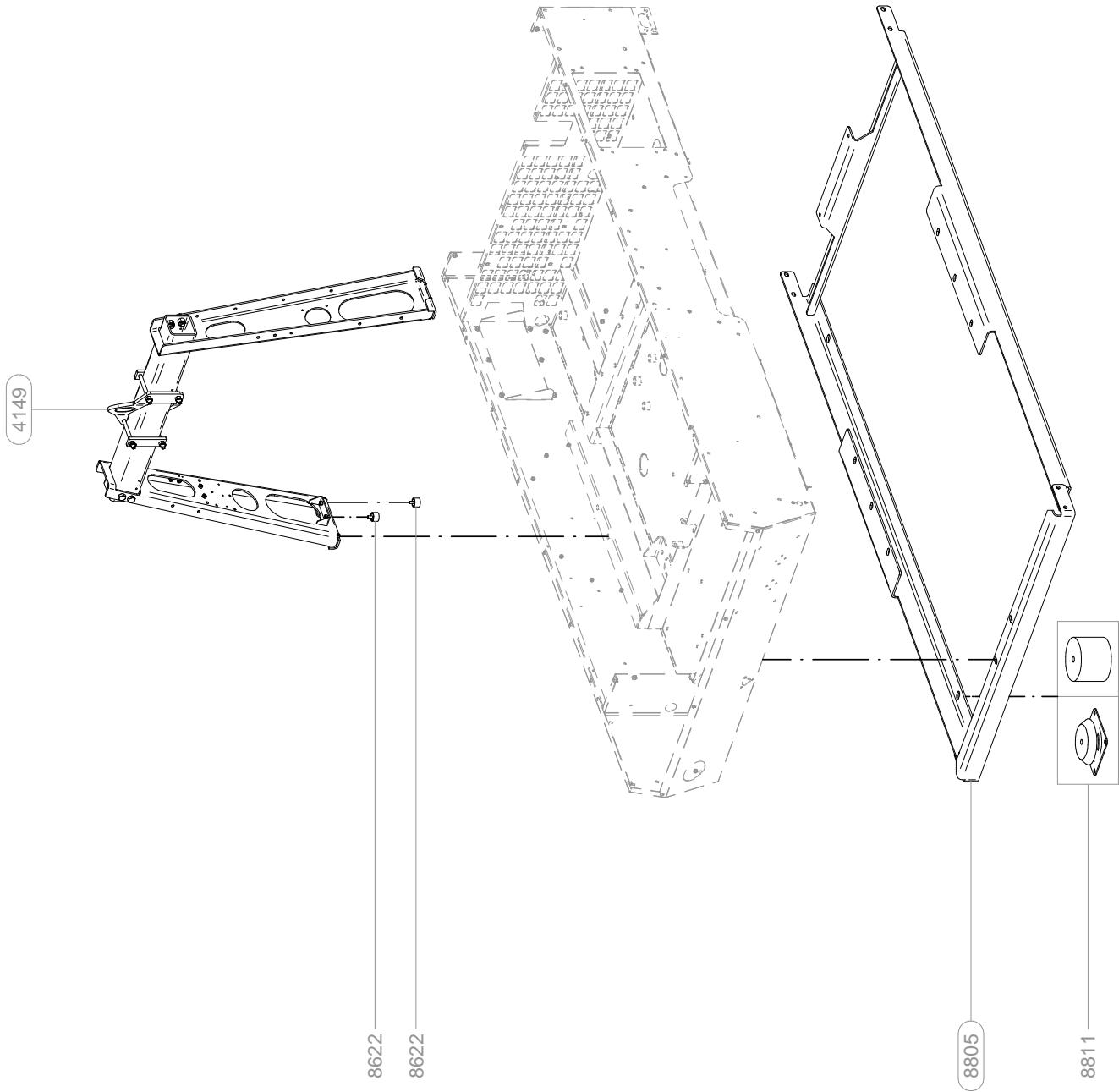




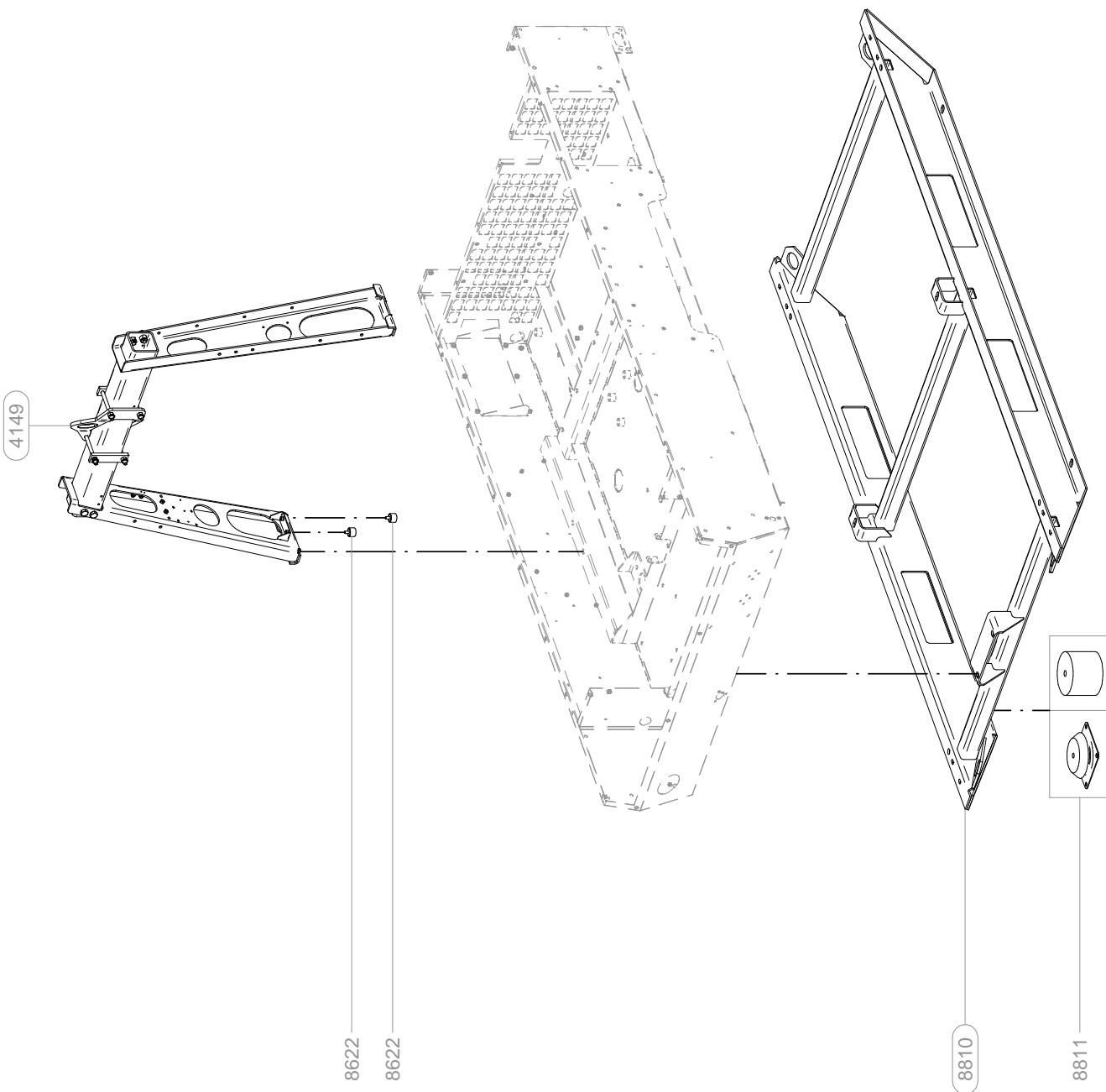
Dimmung von ein- oder ausschließlich per Touch. Dies ist unbedingt für die Lampenfassaden. Controls can also be other technologies including storage, weather and illumination by use of electronic systems must not be made for any other purpose. In case of a repair or replacement it is required to make or to make available to the public in its place. Die Beleuchtung muss nicht nur für den Einsatz im Bereich der Ausstellungsräume bestimmt sein. Sie kann auch im Bereich der Verkaufsräume eingesetzt werden. Dabei erweist es sich als Vorteil, wenn die Beleuchtung auf einen anderen Zweck umgestellt werden kann. Gehen oder sonstige Vorstellungen einschränkend Spezifische, Verbaute und verwendete elektronische Systeme können zu zudem vereinbarten Zweck angepasst werden. Weder eine Art Volumen noch die Art und Weise wie die Beleuchtung gestaltet werden darf.

**KAESER**  
KONZERN

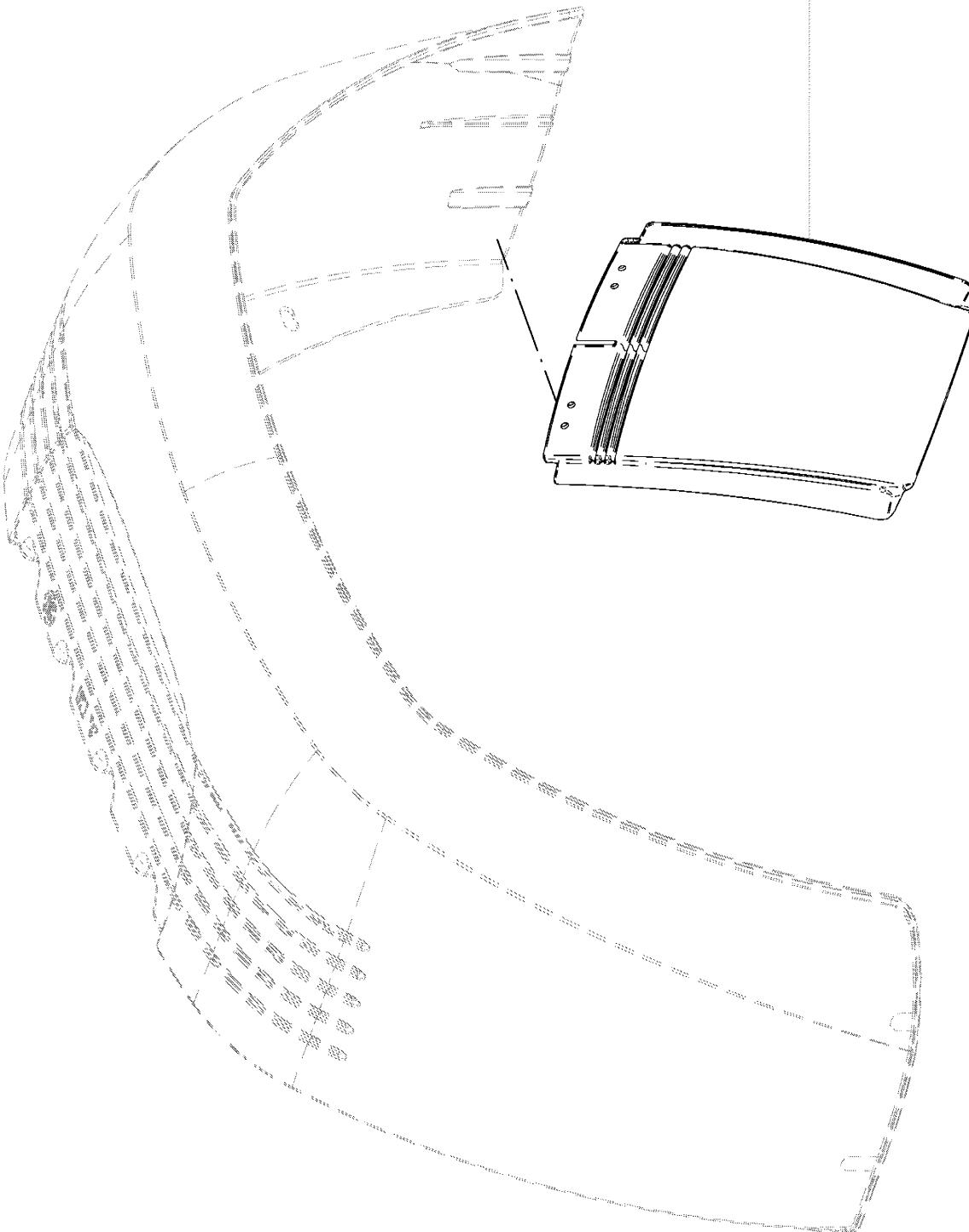
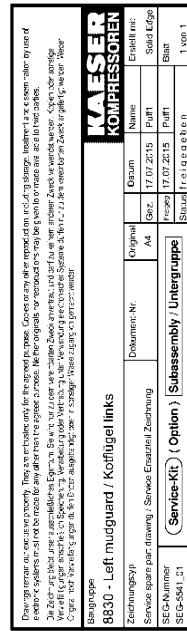
Zeichnungtyp		Dokument-Nr.		Name	
Service gate print drawing	Service Editorial Zeichnung	Original	Datum	Erstellt mit	
SEG-Nummer	Service-Kit	A4	Gaz.	PUFFI 1	Solid Edge
SEG-1899	( Option )		15.08.2022	PUFFI 1	Blaat
	Subassembly / Untergruppe			C D E F G H I J K L M	Version 1

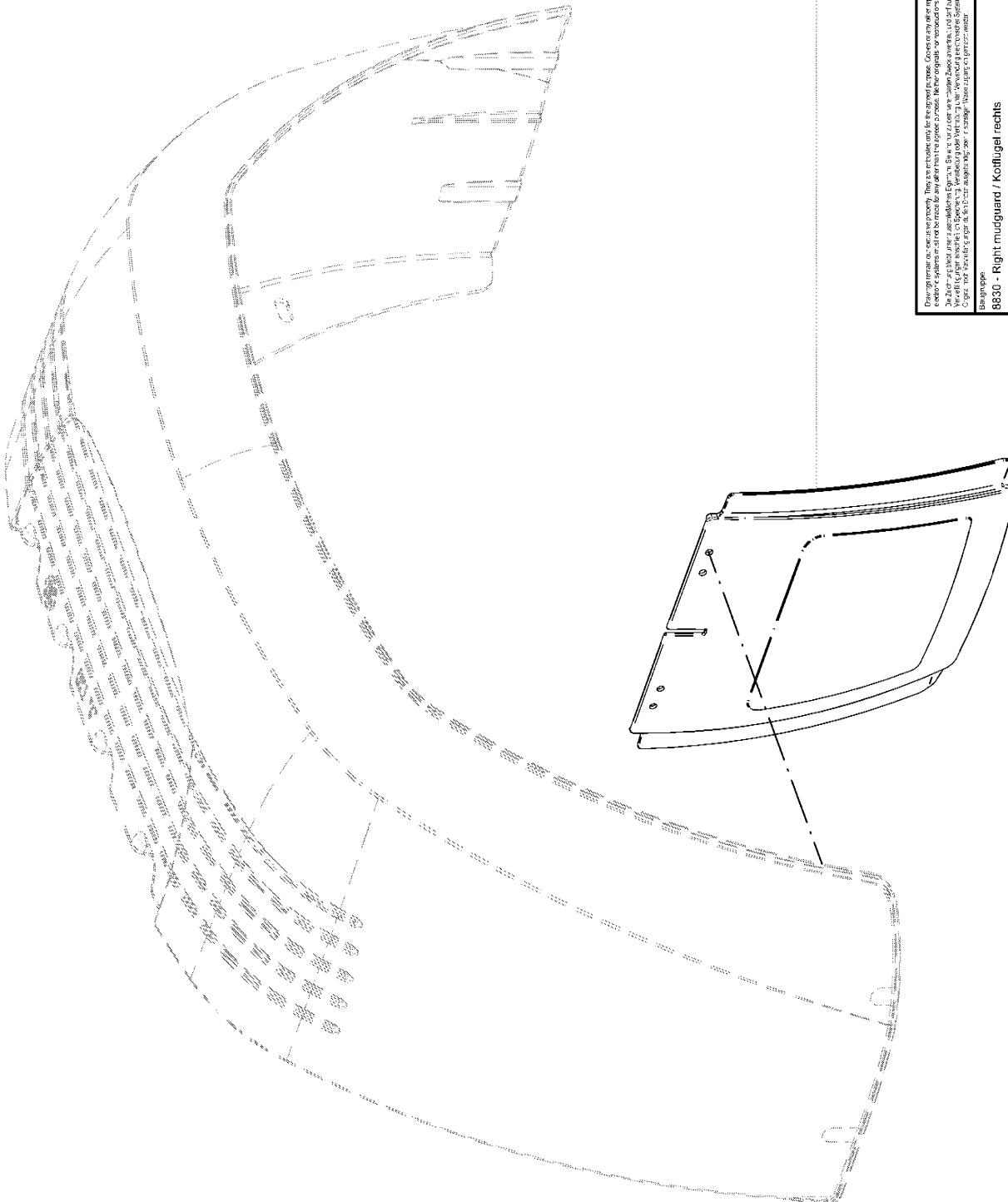


<b>KAESER</b>		<b>KOMPRESSOREN</b>	
Zeichnungshinweis			
Zeilenumfang			
Service-Spare-Part-Zeichnung			
Document-Nr.			
Original			
A4			
Czeichn.			
Datum			
15.02.2022			
Name			
PUFFI			
Ersatzteil mit			
Solide Edgen			
Bauart			
1 von 1			
<b>8800 - Sub-frame Lighting / Unterbau/Beleuchtung</b>			
<b>Bauartgruppe:</b>			
8800			
<b>Service-Kit ( Option )</b>			
<b>Subassembly / Untergruppe:</b>			
SEG-Number			
SEG-13700			
Status F R E I G E B E N			



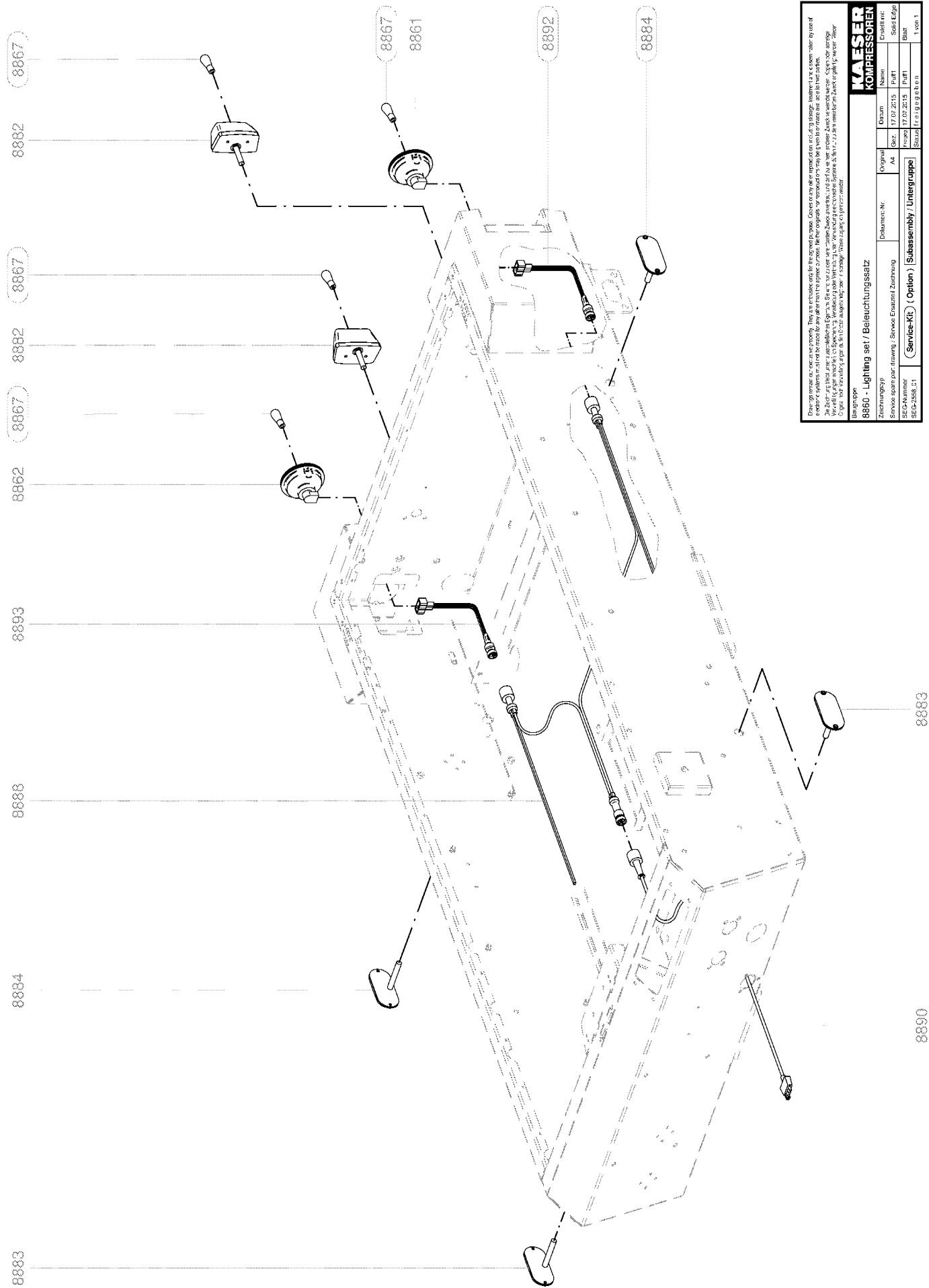
50





<b>KAESER</b> KOMPRESSOREN	
Zeilenumbersp	Document-Nr.
Service-Kit für Montage, Service-Ersatzteil-Zeichnung	Original
SEG-Gummier	Alt
SEG-5842.21	Sec.
(Service-Kit) ( Option ) Subassembly / Untergruppe	Versp
Status	Puff
	Bauj
	1 von 1

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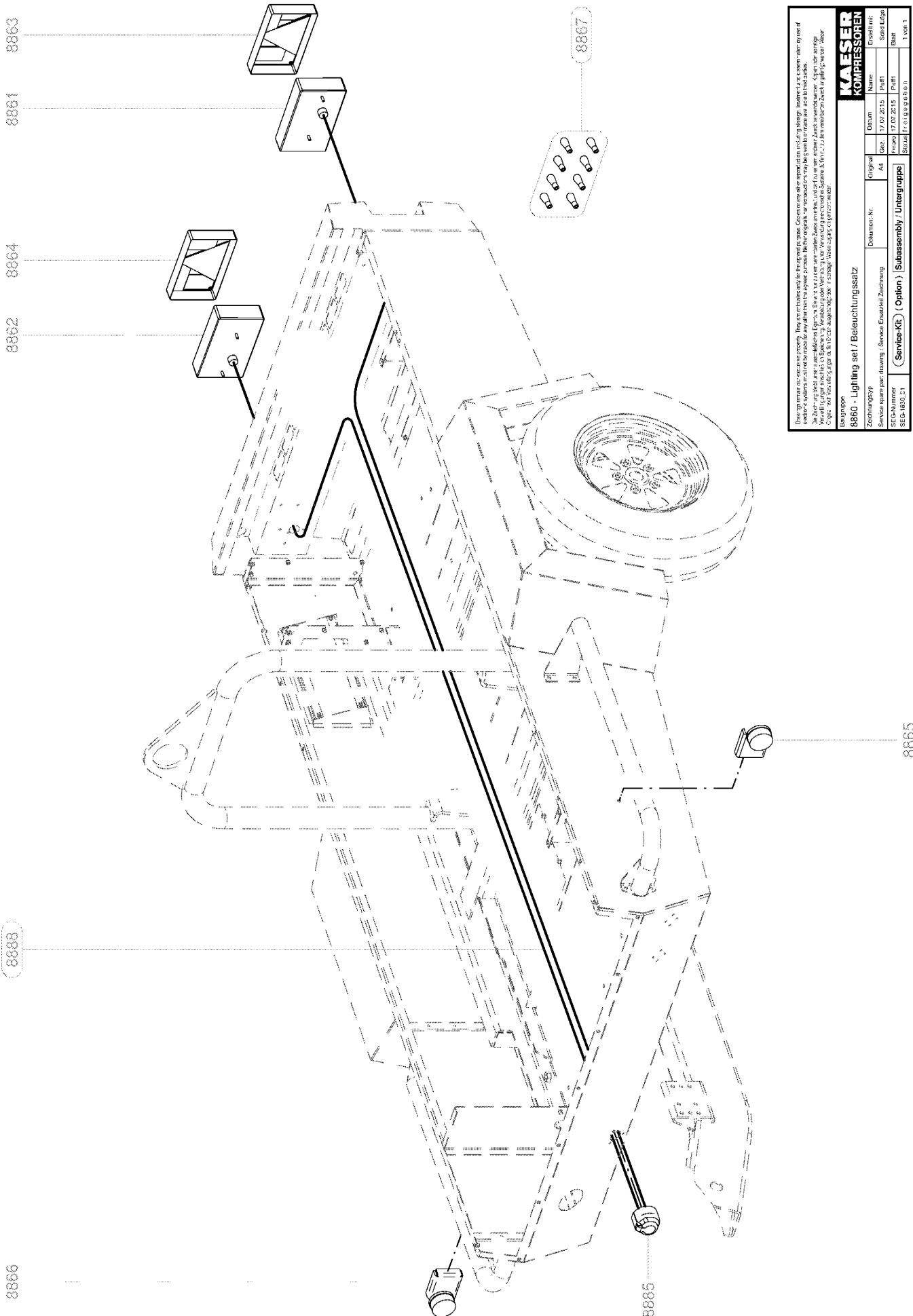
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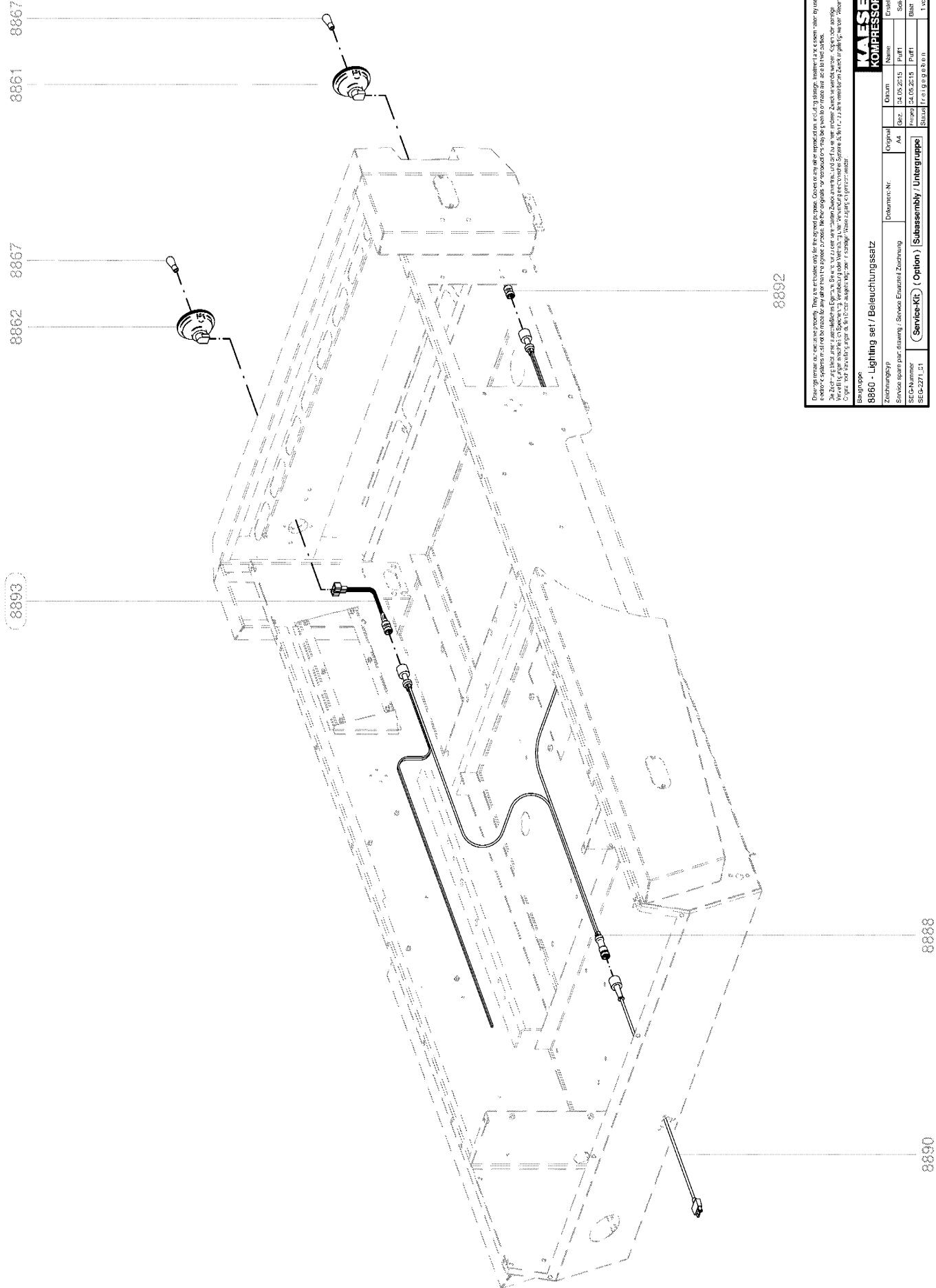
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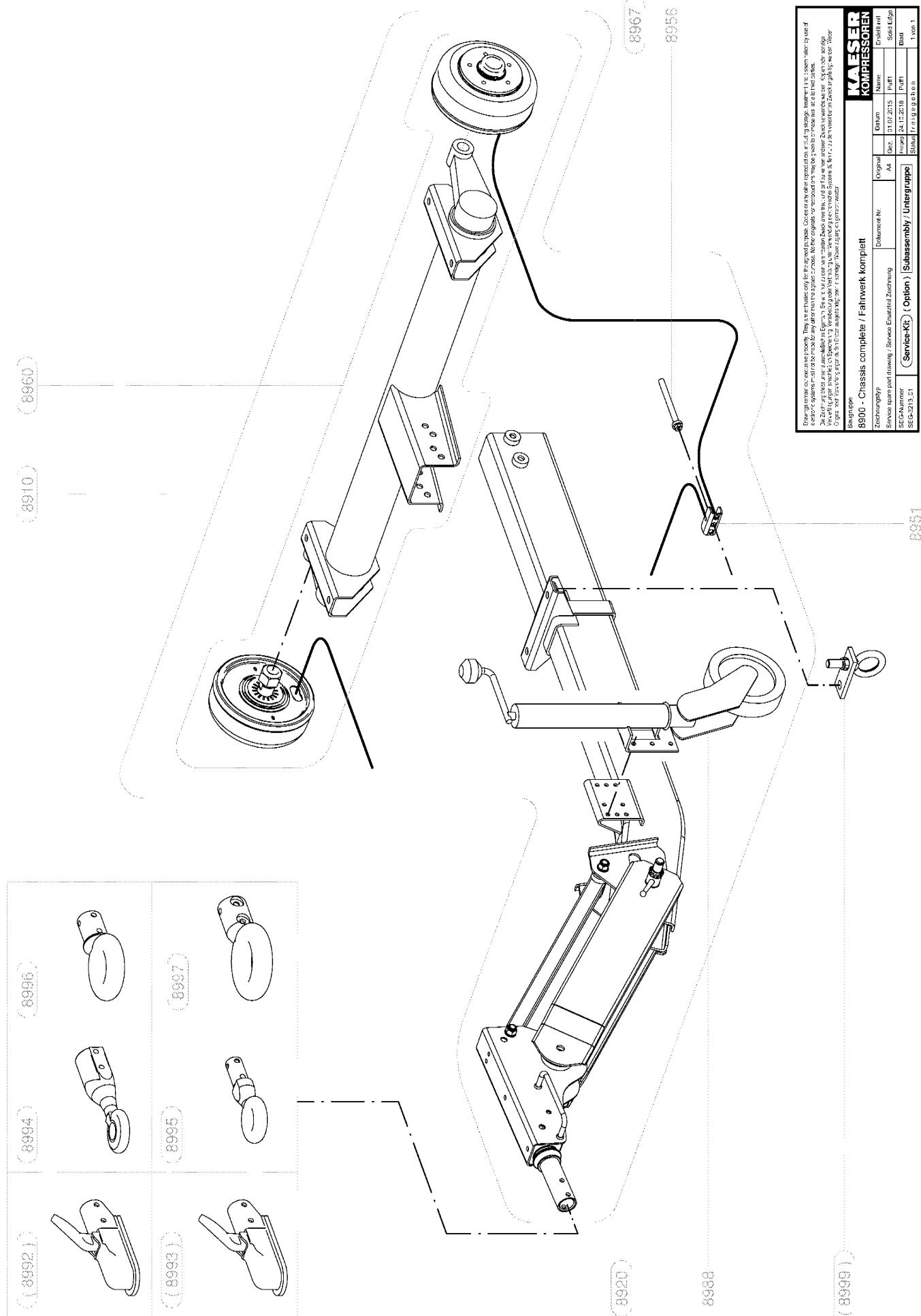
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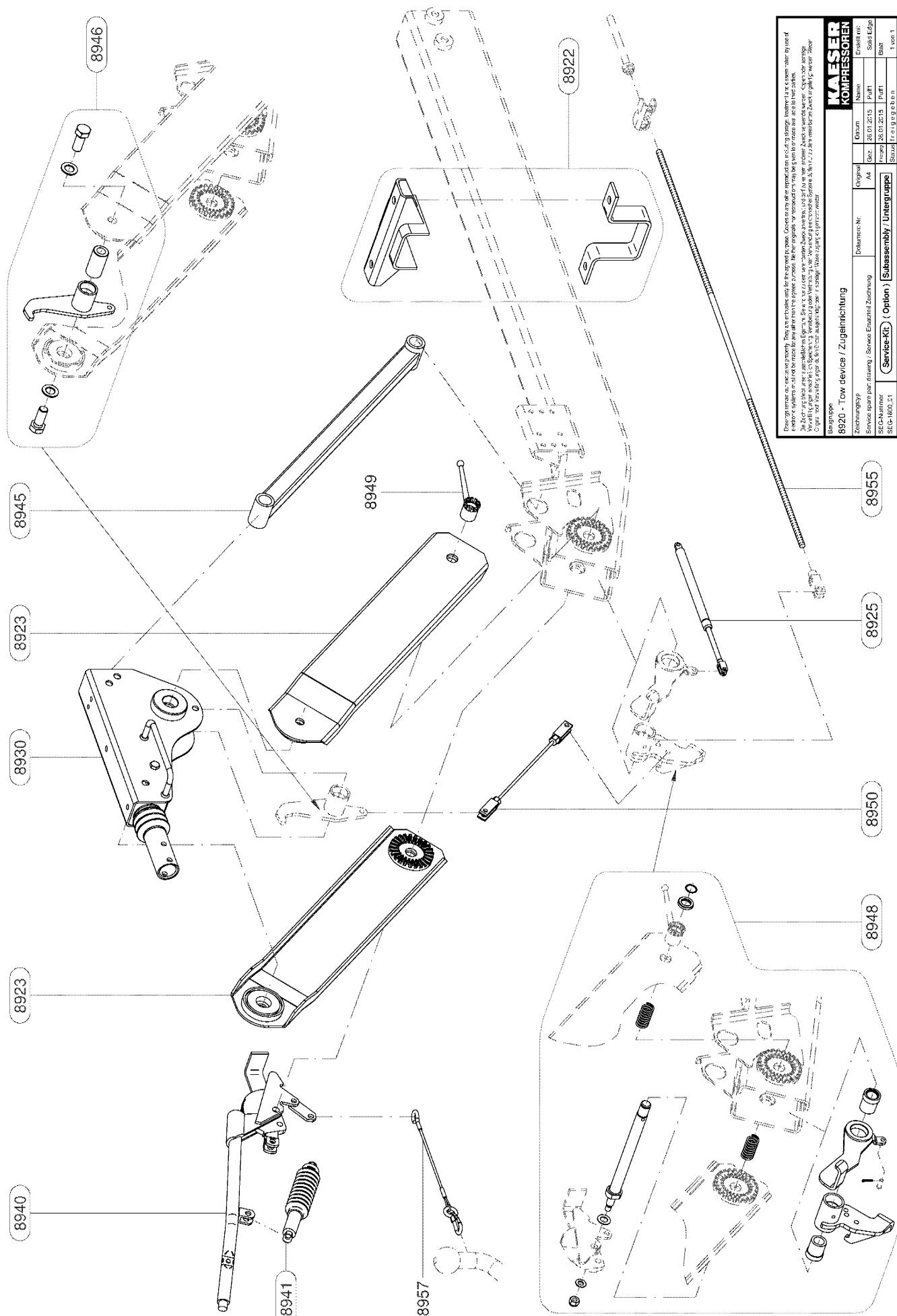
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8860 - Lighting set / Beleuchtungssatz		Document-Nr.	Original	Draw	Name:
SG-Nr.: 24586	51	Service-Kit	( Option )	Subassembly / Untergruppe	
SG-Nr.: 24586	51	17.07.2015	Aa	17.07.2015	Puff
					Bauart
					1 von 1







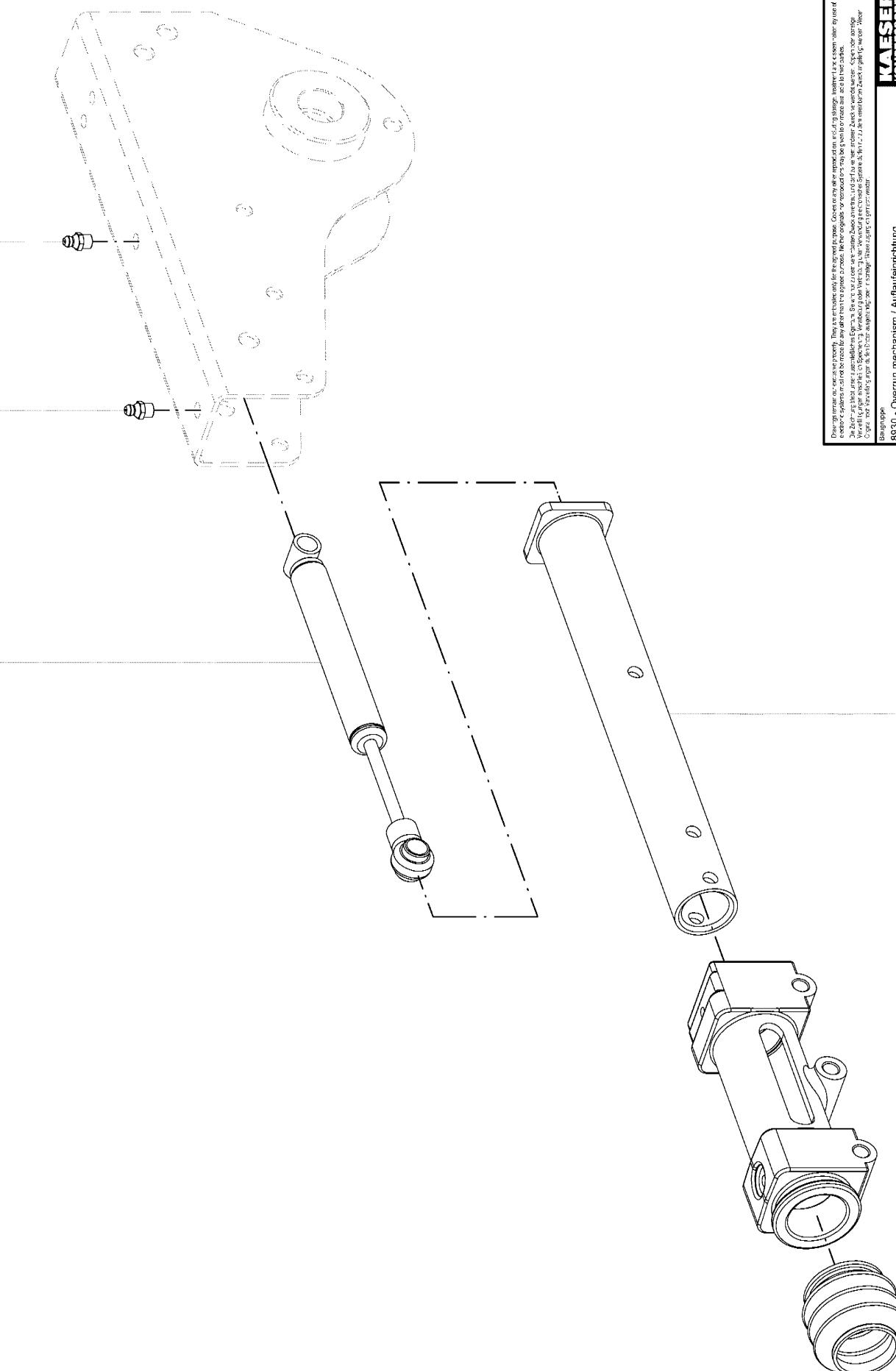


Operator Manual Portable Rotary Screw Compressor  
MOBIL AIR M82 SIGMA CONTROL SMART

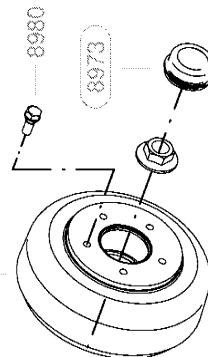
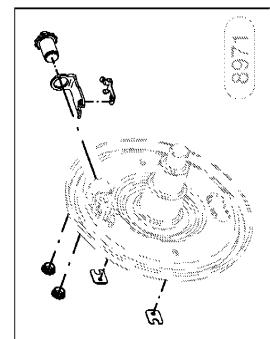
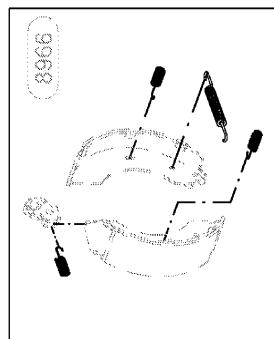
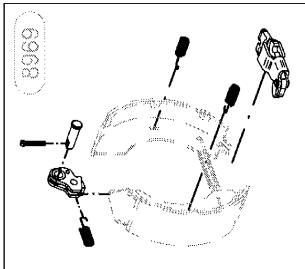
8931

8931

8937

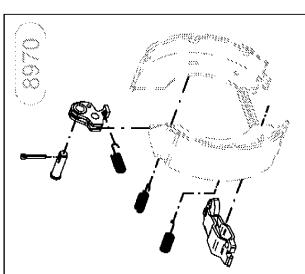
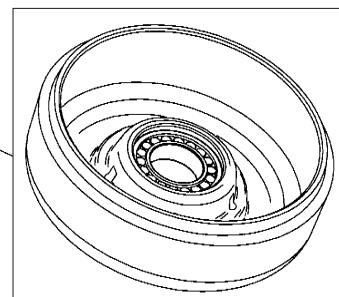
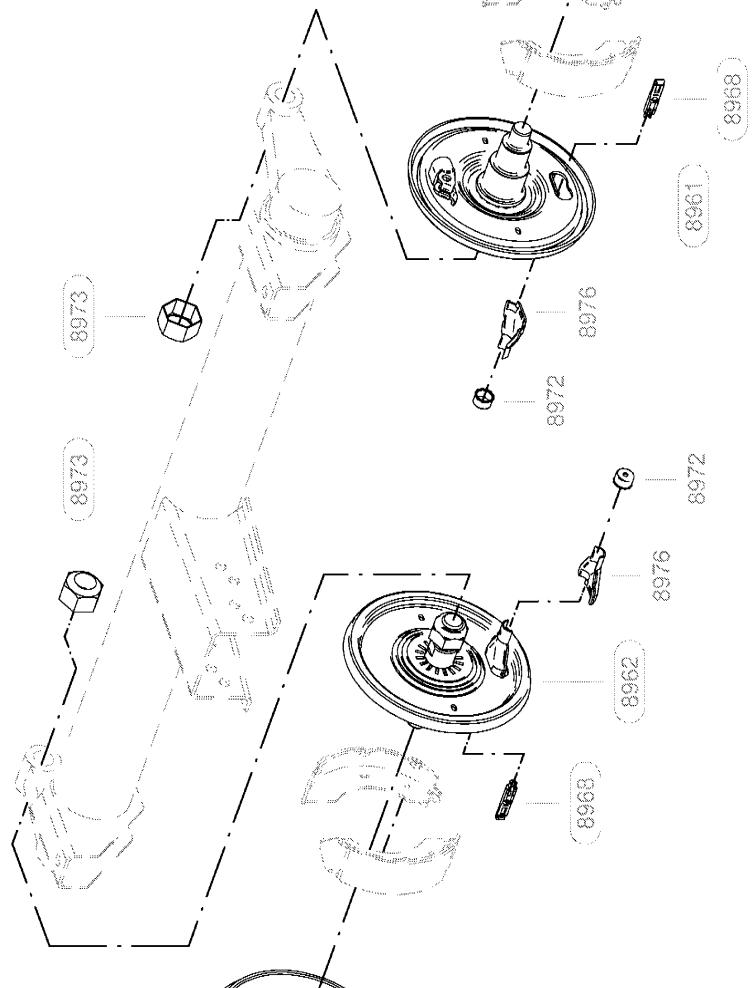
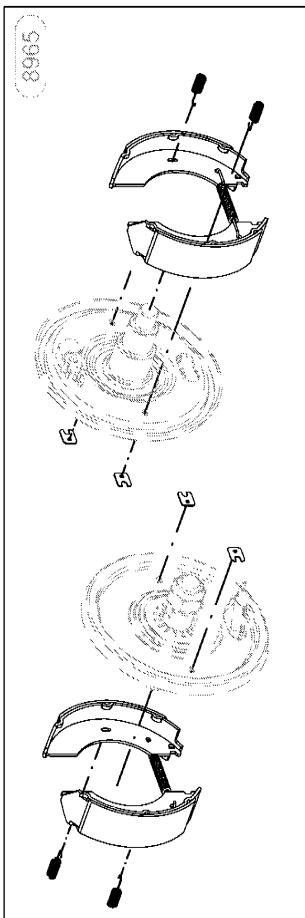


<b>KAESER</b> <b>KOMPRESSOREN</b>	
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Zeichnungsnr.	Dokument-Nr.
8930 - Overrun mechanism / Auflaufeinrichtung	Original
	A4
	Seite:
	1 von 1
Extrakt-Nr.: Datum: 21.07.2015 Serie: 1 Zeichner: S. G. Hammer Seriennummer: SEG-180.51	
Bauart: Cyl. rod, lever system Überlaufvorrichtung für Auftriebszylinder Überlaufrohr	
(Service-Kit) ( Option ) Subassembly / Untergruppe	
Status: fr. 03.03.2015	

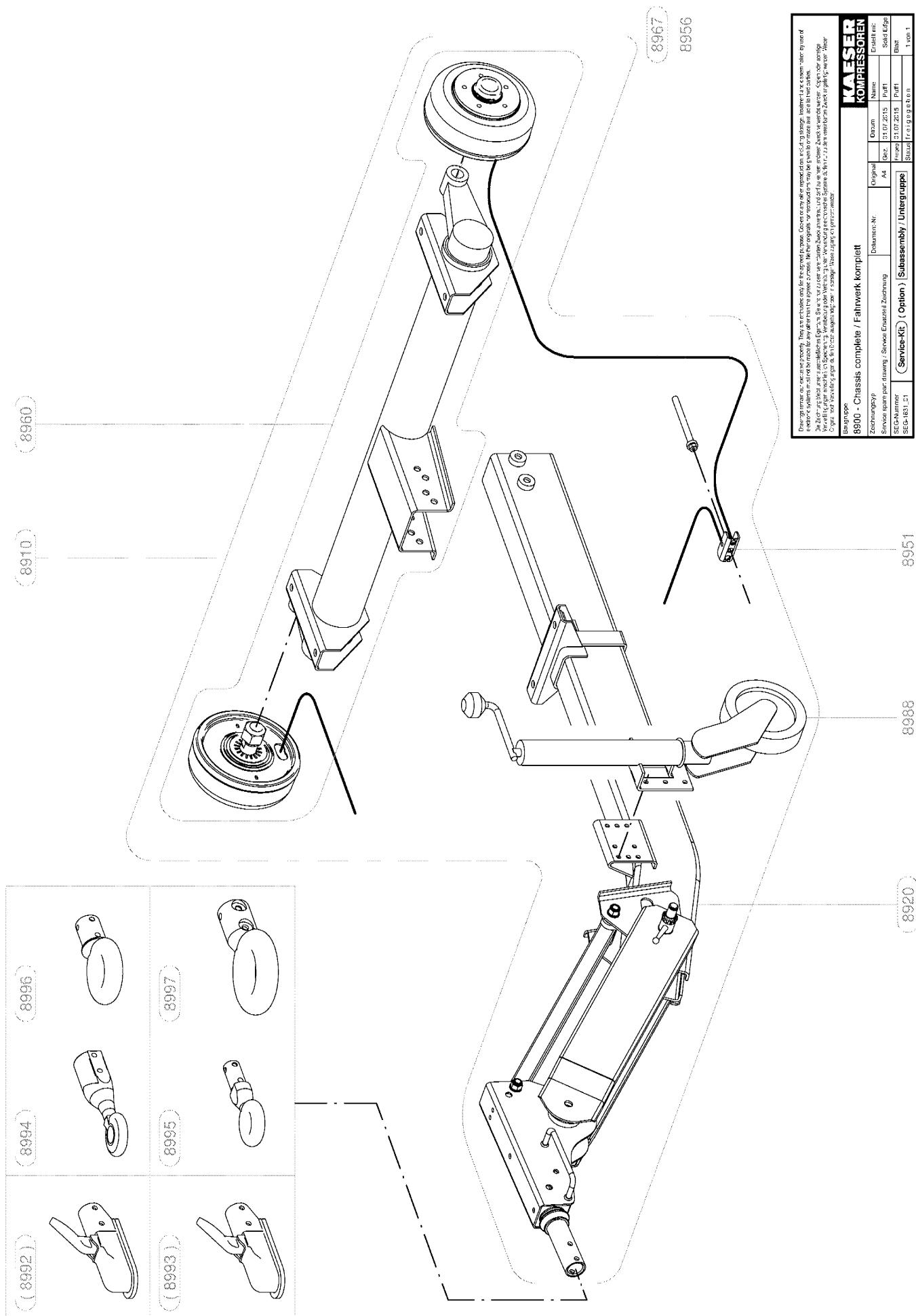


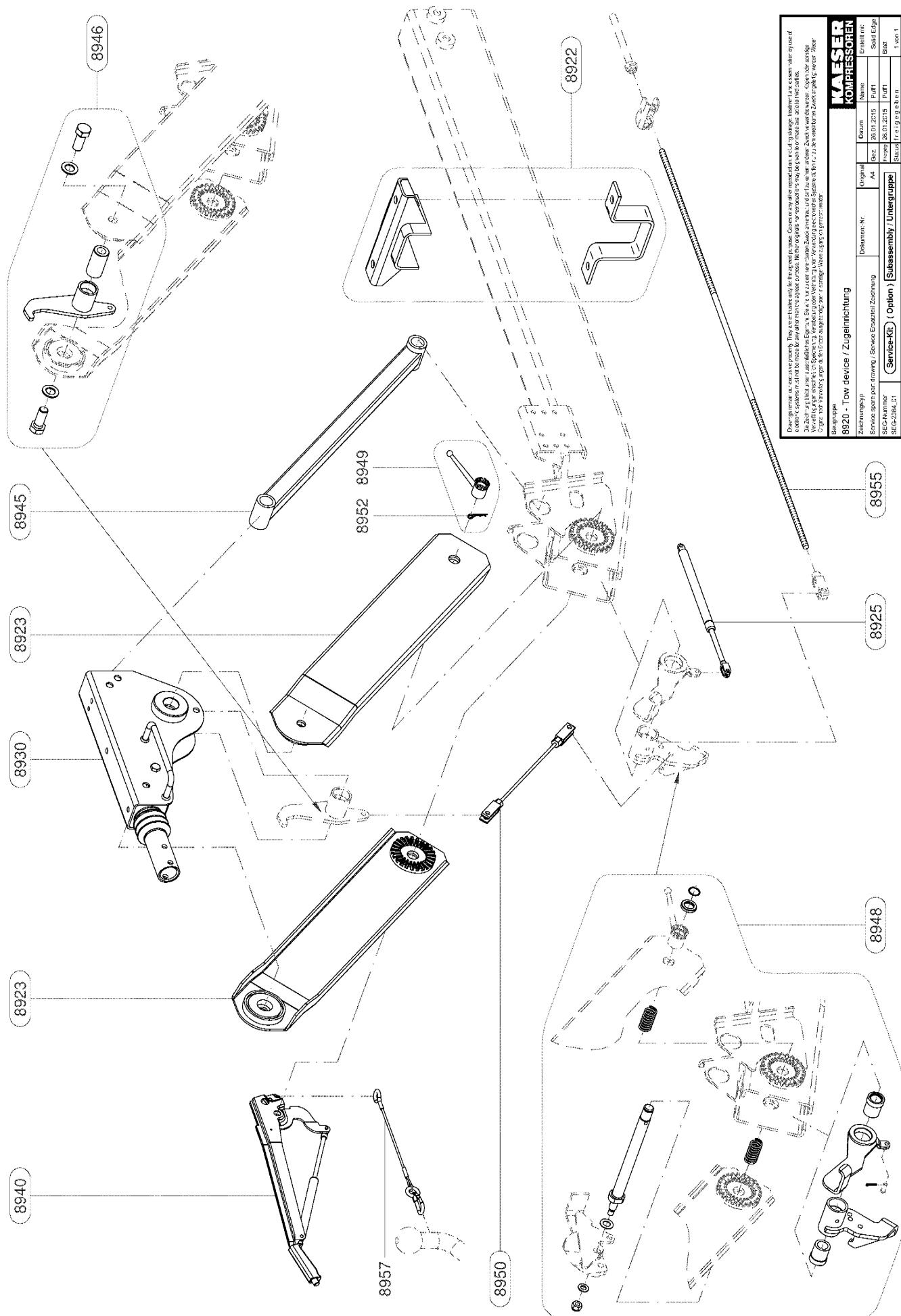
120

Draw informal sketches and briefly describe them as they appear to you in the field. These sketches or any notes you may have from the field should be included in your report. No formal drawings or maps are required.



Operator Manual Portable Rotary Screw Compressor  
MOBIL AIR M82 SIGMA CONTROL SMART

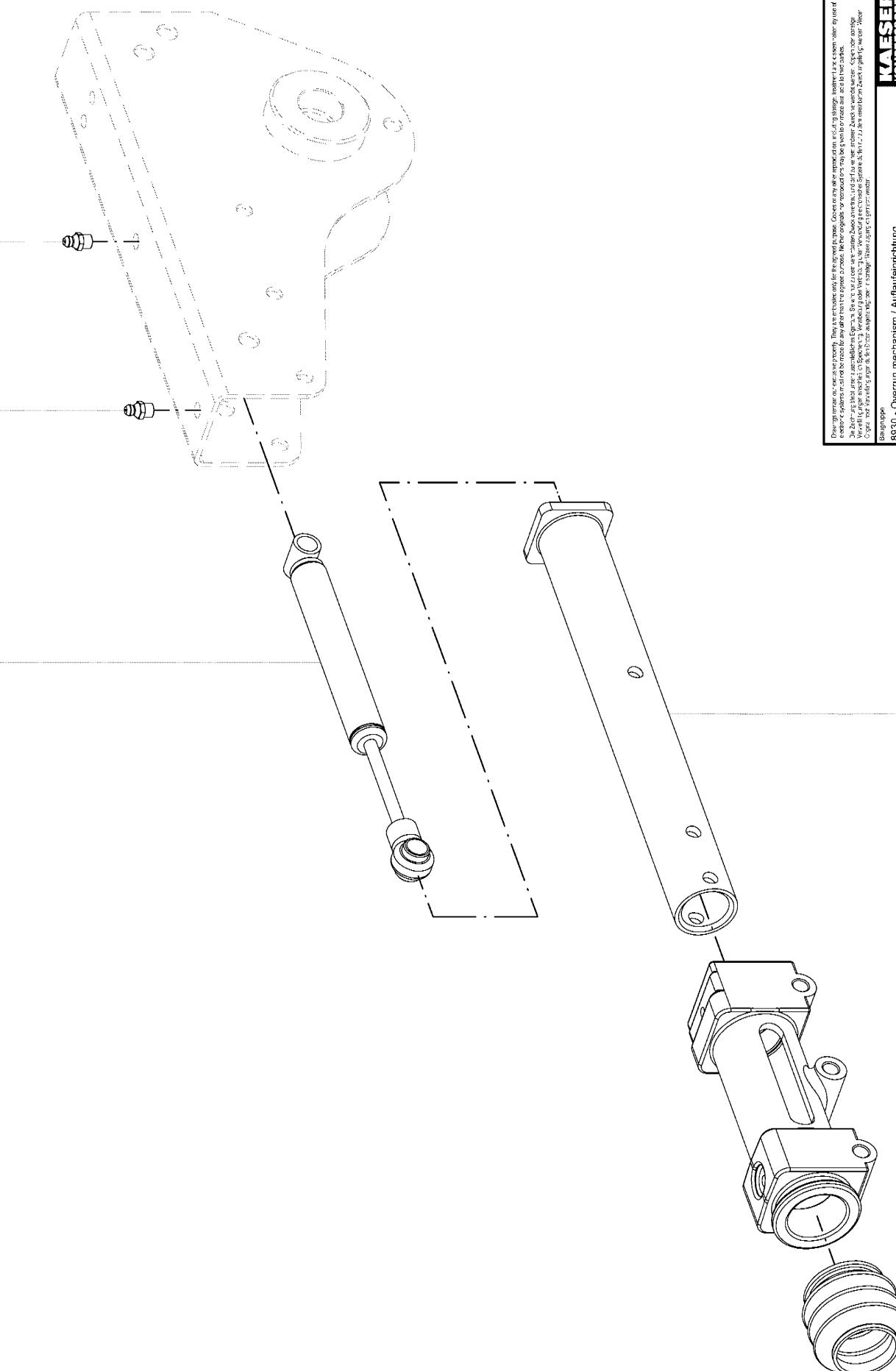




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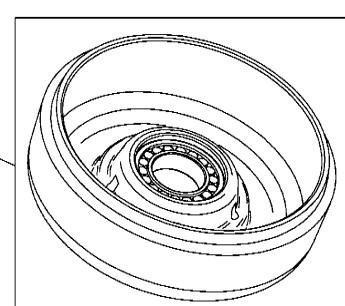
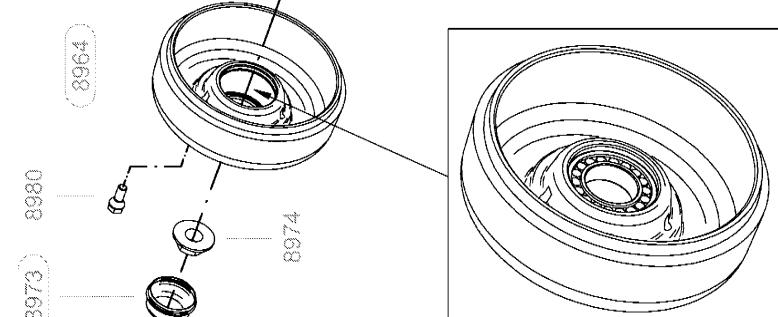
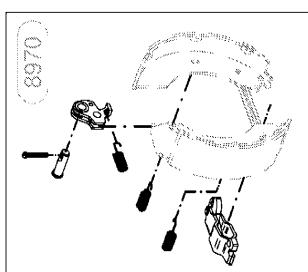
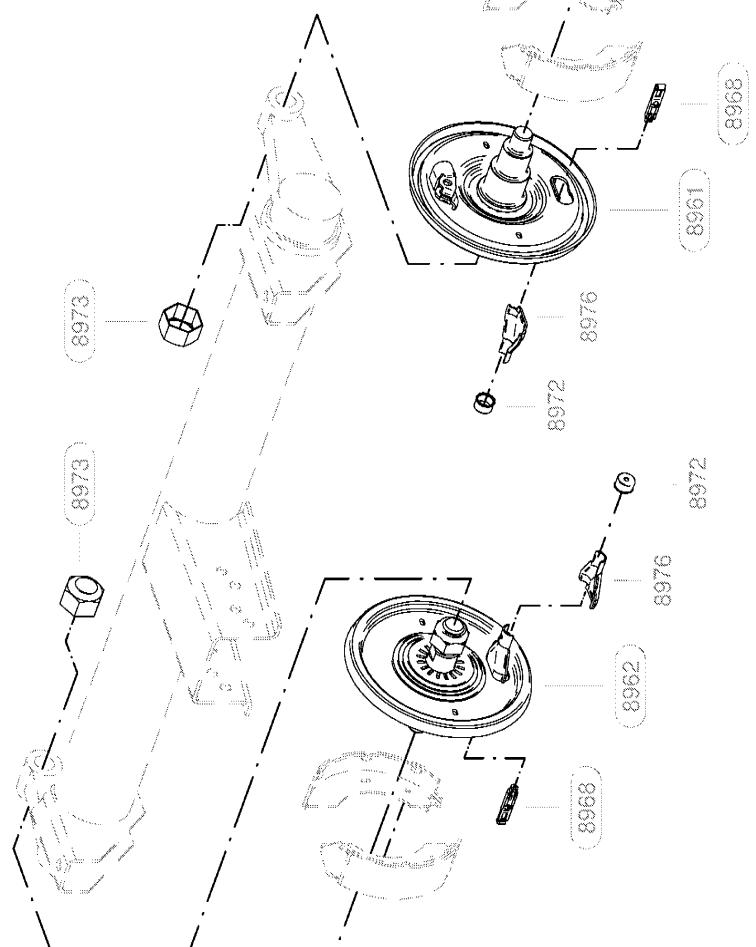
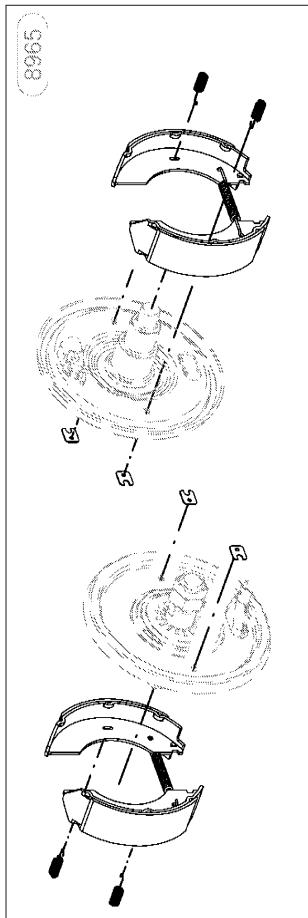
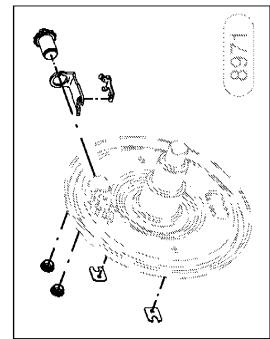
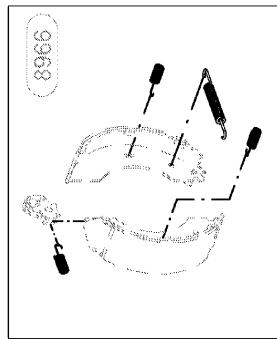
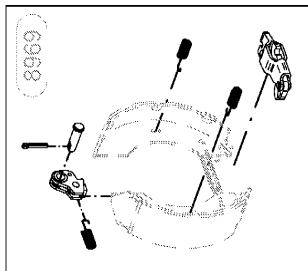
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Zeichnungsyp	Original-Nr.
Service-Karte par l'entretien, Service-Ersatzteil-Zeichnung	A4
SEG-Gummier	Gez.
SEG-160,51	11.07.2015
Drawing type:	
8930 - Overrun mechanism / Auflaufeinrichtung	Part
Drawing date:	
8930 - Overrun mechanism / Auflaufeinrichtung	Valid until:
Service-Kit! ( Option )	21.07.2015
Subassembly / Unterguppe	Puff
Status:	
fr. 01.01.2016	1 von 1

## 11.4 Replacement parts for service and repair



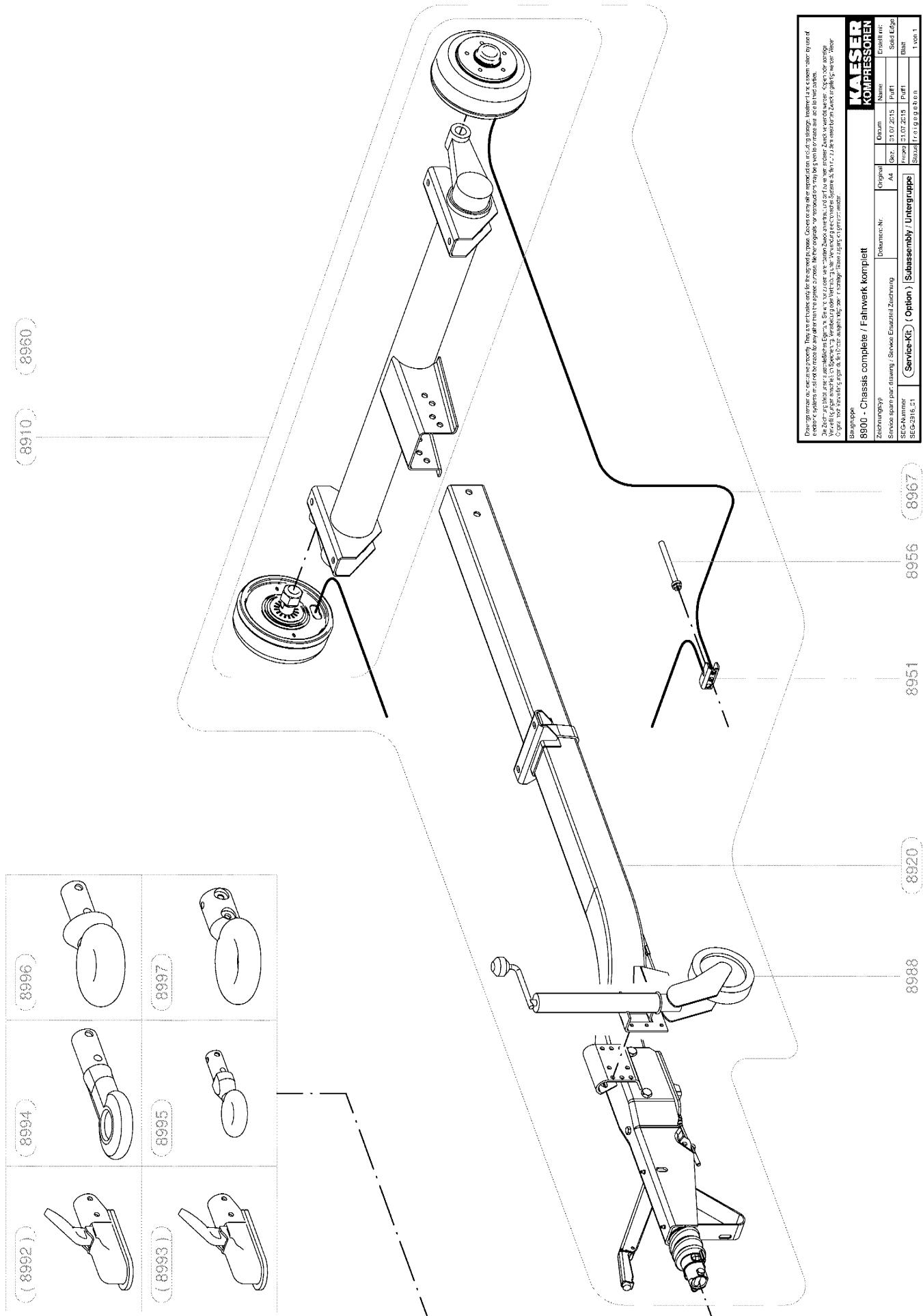
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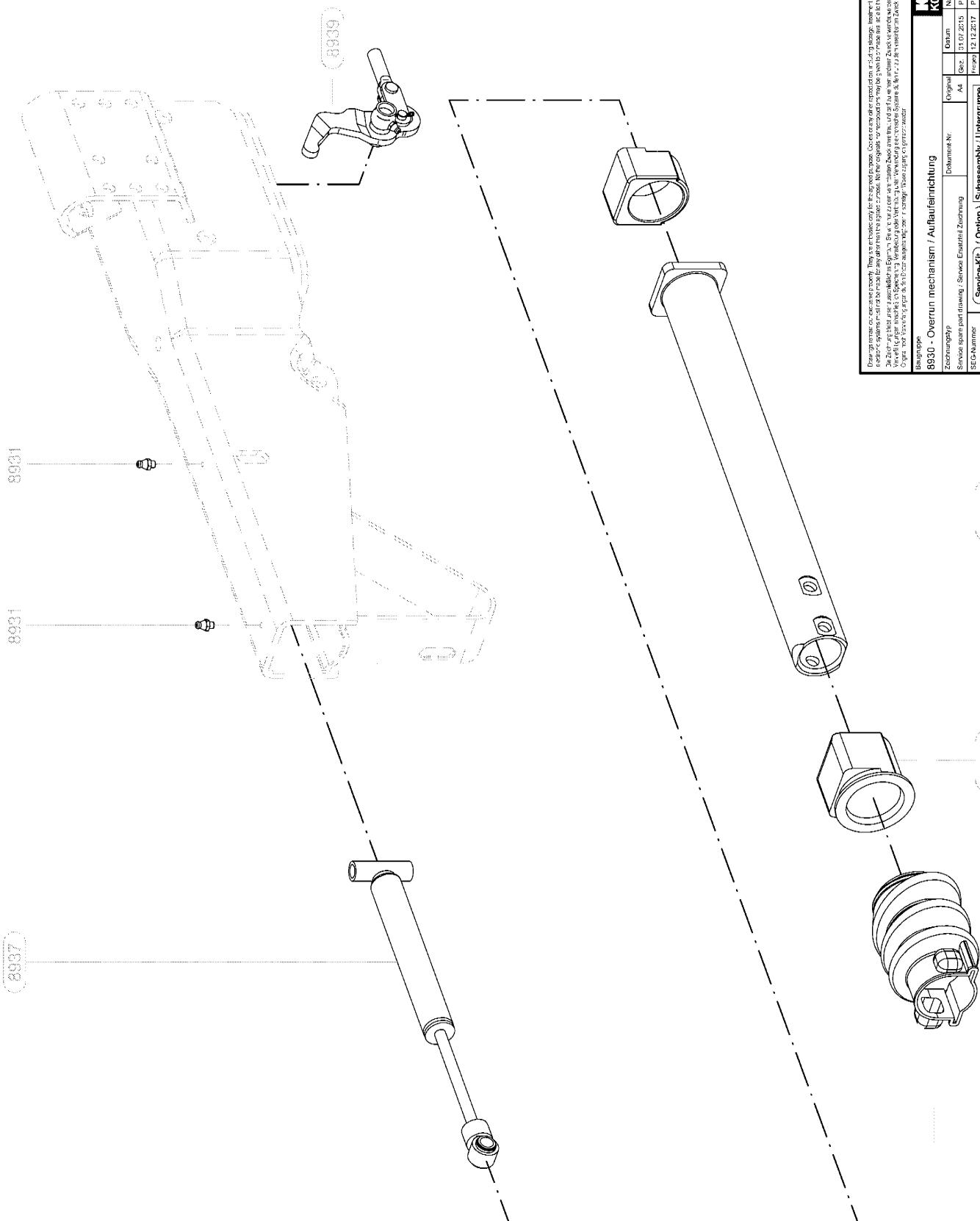
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8960 - Axle / Achse	
Zeilungspyp	
SE-G-KR2-21	<a href="#">Service-Kit</a>   Option   Subassembly   Untergruppe
SE-G-KR2-21	<a href="#">Service-Kit</a>   Option   Subassembly   Untergruppe
SE-G-KR2-21	<a href="#">Service-Kit</a>   Option   Subassembly   Untergruppe

KAESER KOMPRESSOREN	
Ersatz-Nr:	Name:
51.07.2015	Original
51.07.2015	Gez.
51.07.2015	Punkt
Baujahr:	
1 von 1	







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Drawing details or descriptive text only. They are not to scale or to proportion. Colors or materials of components in drawing do not always reflect actual use.	Original parts can only be replaced by original parts. Original parts are guaranteed for 12 months from the date of delivery.
Dimensions in mm. Weight in kg. Technical drawings are not binding. They are only a guide for assembly. Dimensions in mm. Gewicht in kg. Technische Zeichnungen sind nicht bindend, sie dienen nur als Montageanleitung.	Delivery time: 4 weeks after receipt of order. Lieferzeit: 4 Wochen nach Eingang des Bestellens.
Order no. 901783 09 USE	Order no. 901783 09 USE
8930 - Overrun mechanism / Aufbaueinrichtung	1 von 1

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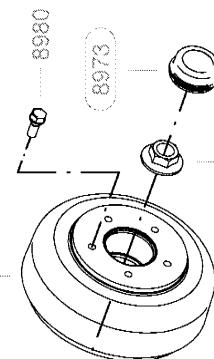
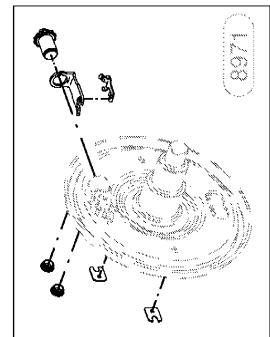
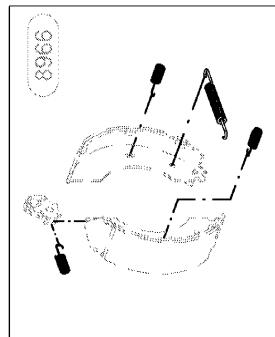
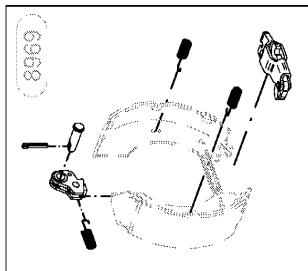
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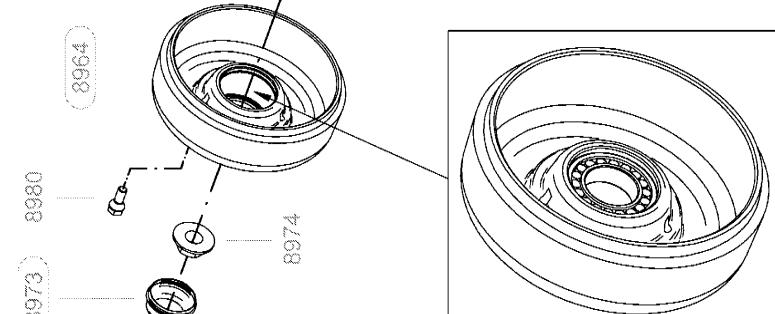
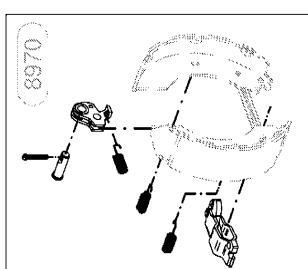
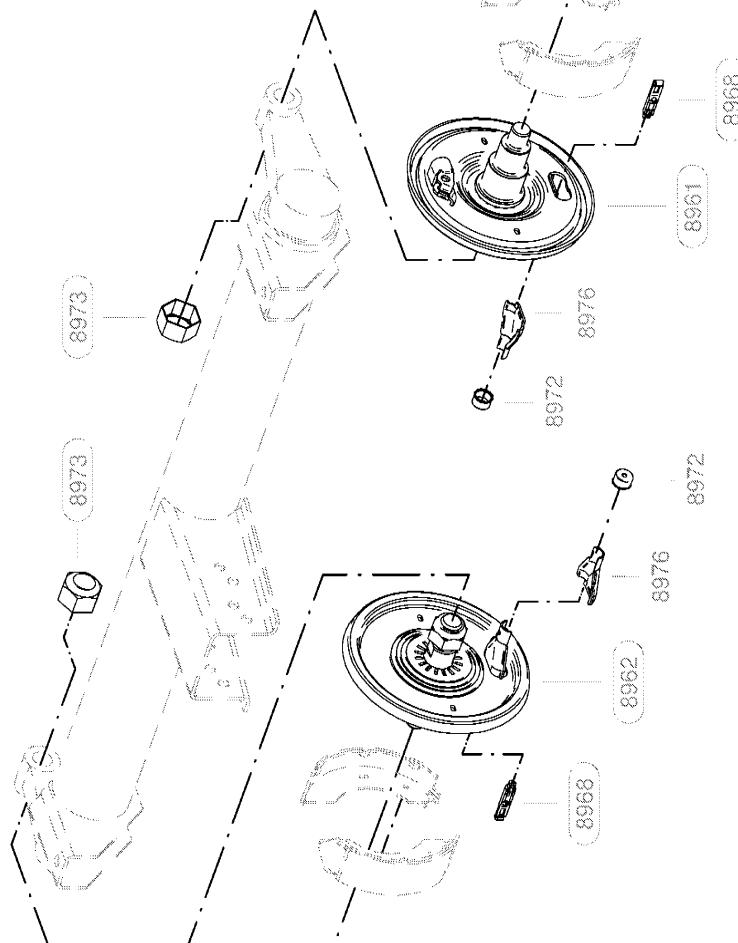
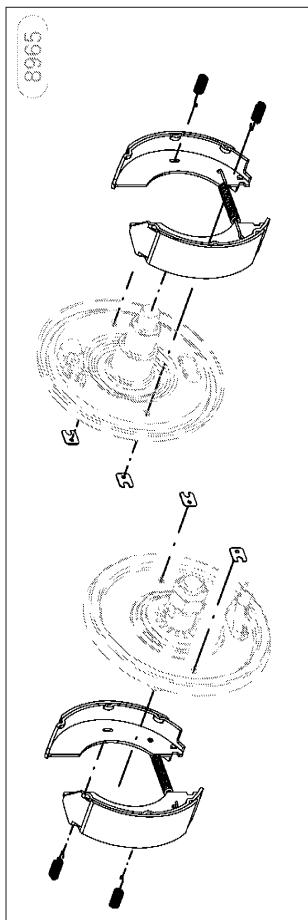
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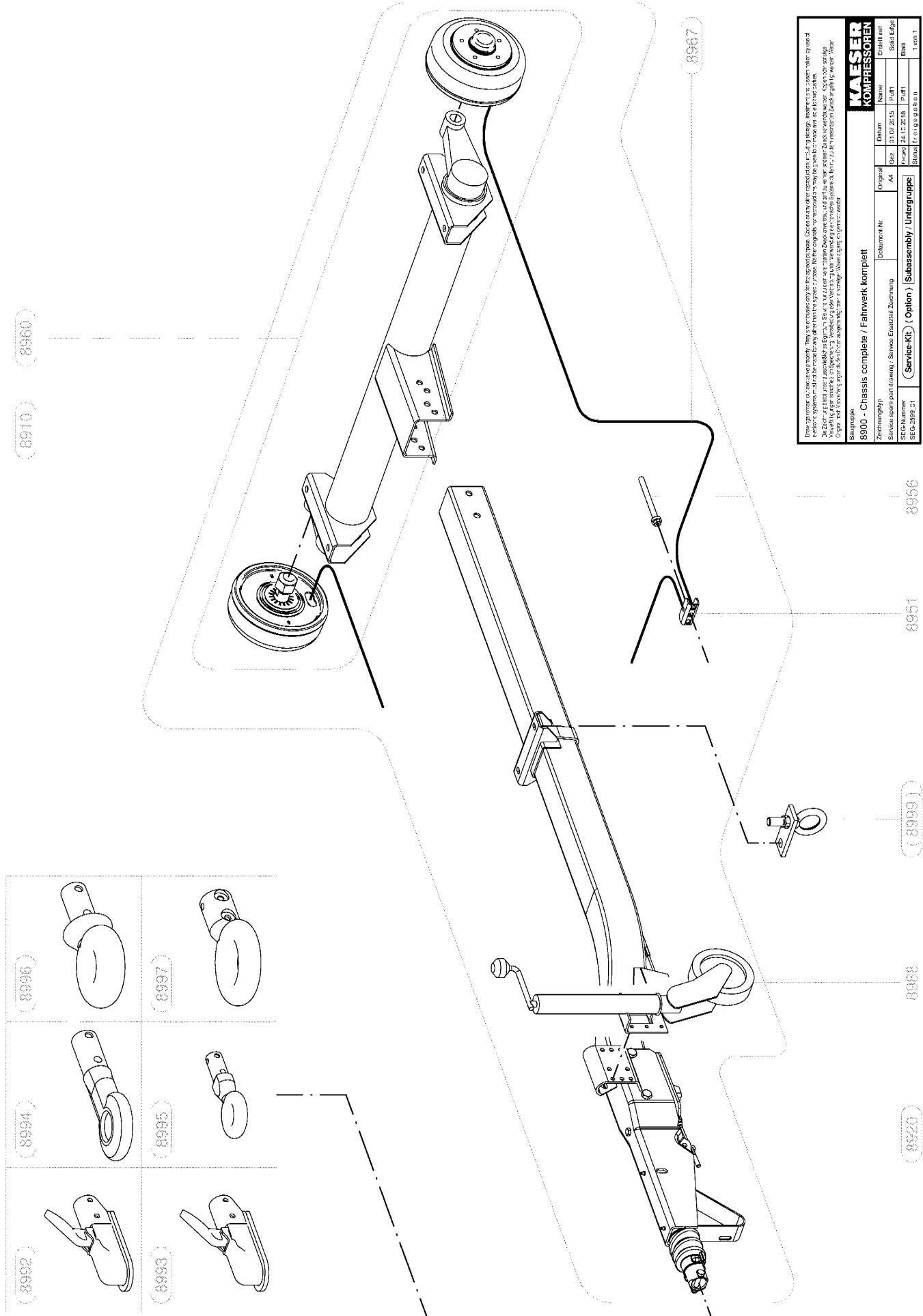
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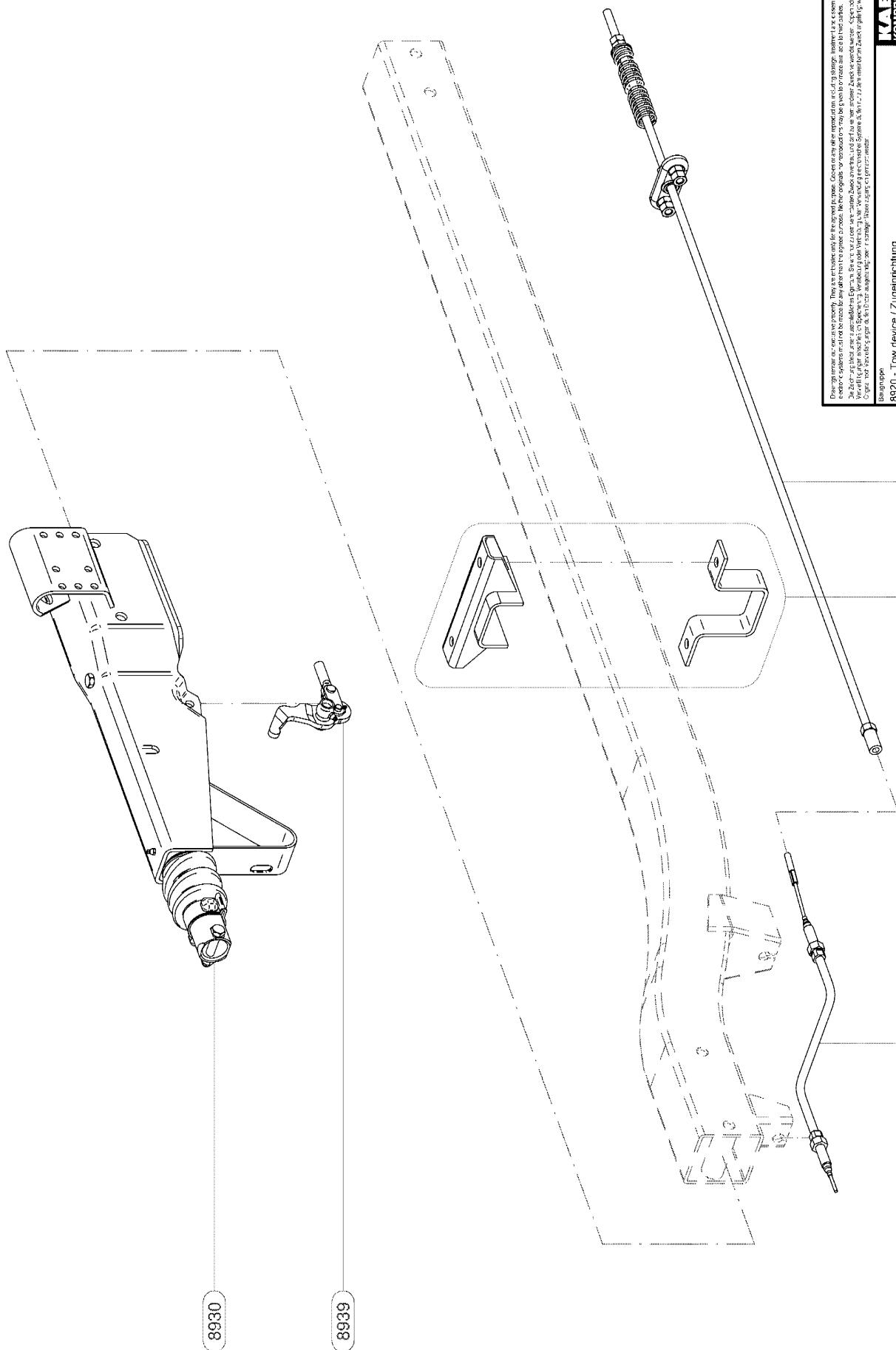


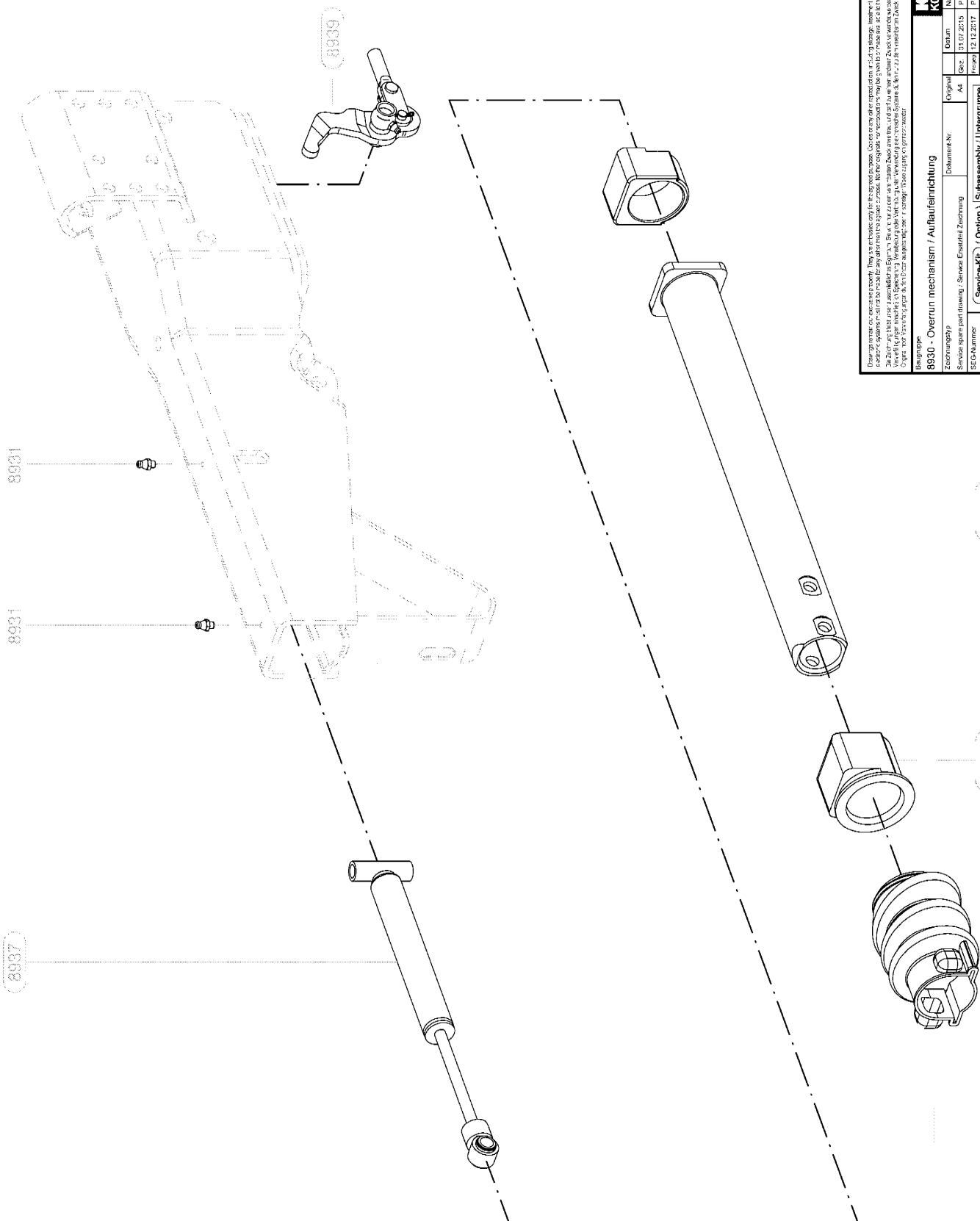
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P. J. H. VAN DER HORST, M. A. VAN DER HORST, AND J. G. VAN DER HORST, Department of Chemical Engineering, University of Groningen, Groningen, The Netherlands



Operator Manual Portable Rotary Screw Compressor  
MOBIL AIR M82 SIGMA CONTROL SMART







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**8930 - Overrun mechanism / Aufbaueinrichtung**

 Drawing type:  
 8930  
 Service-Kit

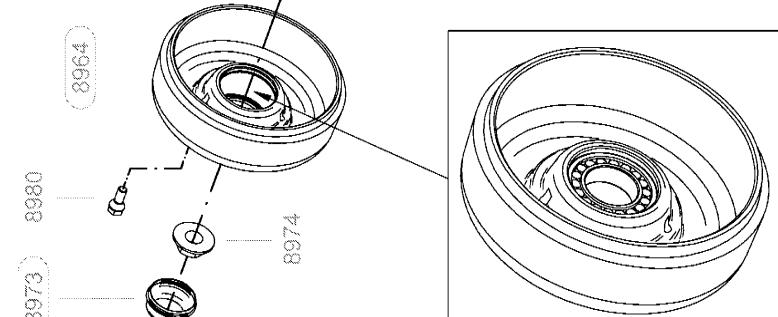
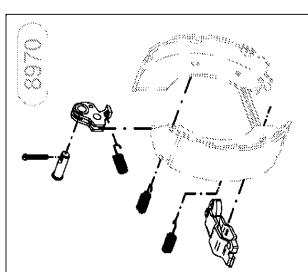
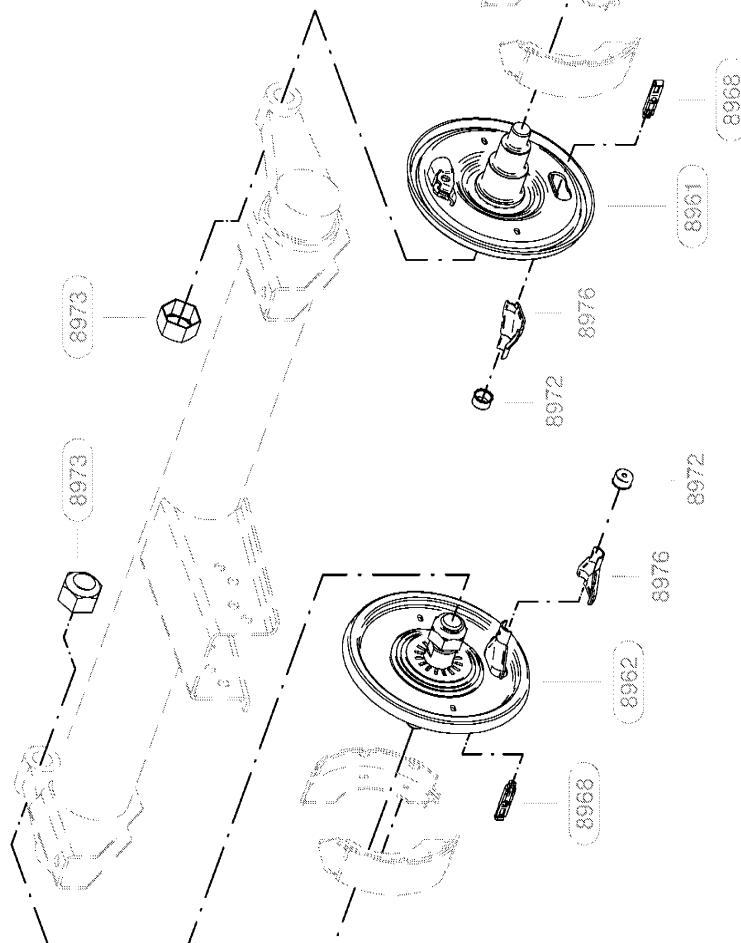
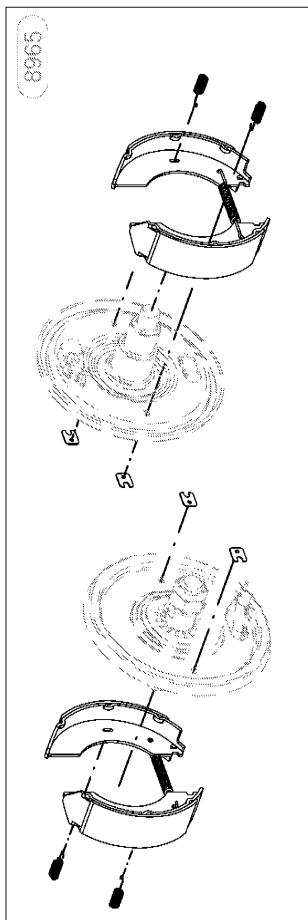
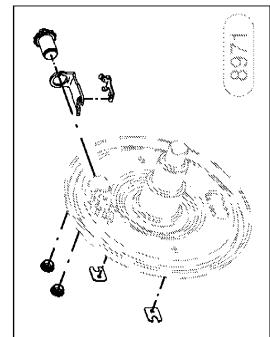
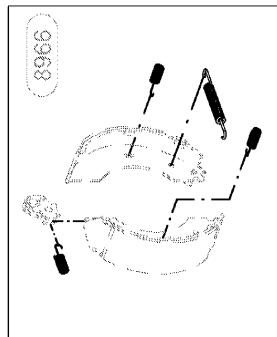
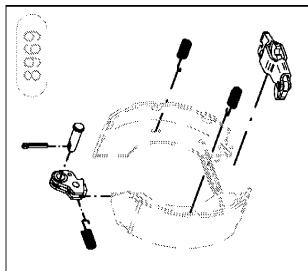
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 Dokument-Nr.:  
 11.07.2015

 Erstell. am:  
 12.02.2017

 Name:  
 Baut

 Sekt. Länge:  
 1 von 1



Drawings from the service manual. They are to indicate any damage or wear that may have occurred in order to change. Please note that the original parts are not to be used for any other purpose than to replace the original part. We recommend that you use KAESER parts. If you do not have access to a KAESER service center, we recommend that you contact your local distributor or authorized service center. If you are not sure about the correct part number, please contact our technical support team at +49 731 95 00 00 or via e-mail to [service@kaeser.com](mailto:service@kaeser.com). Our technical support team will help you find the correct part number.

<b>KAESER</b> KOMPRESSOREN	
Drawing No.: 8960-Axle / Axle	
Document-Nr.:	8960
Original-Gez.:	Aa
Original-Datum:	01.07.2015
Zeichner:	Puff
Ersatz-Gez.:	None
Ersatz-Datum:	None
Solid Edge:	None
Bild:	None
Name:	None

8960 - Axe / Achse

Zeilungspyp

Service-Kitt

(Option)

Subassembly 1 Undergruppe

Subassembly 1 von 1

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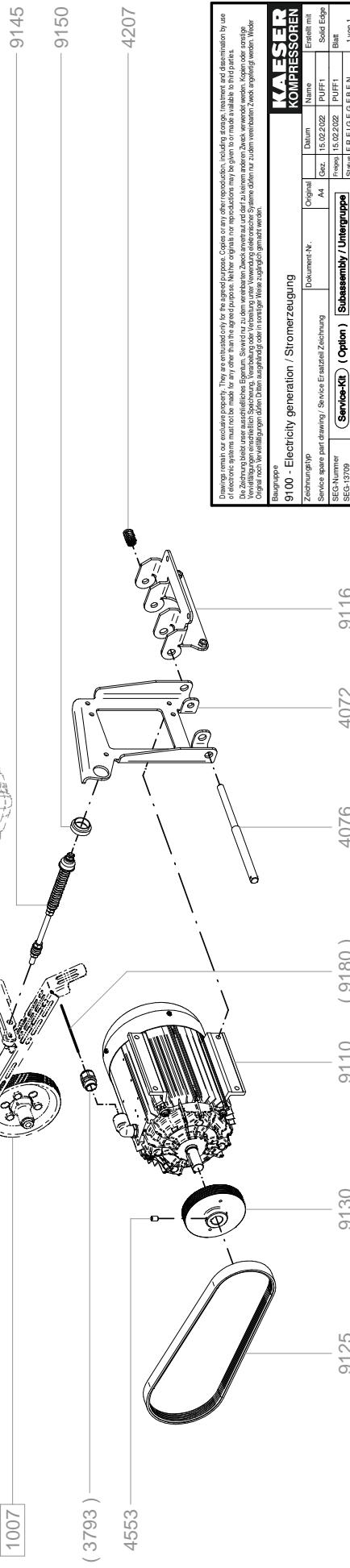
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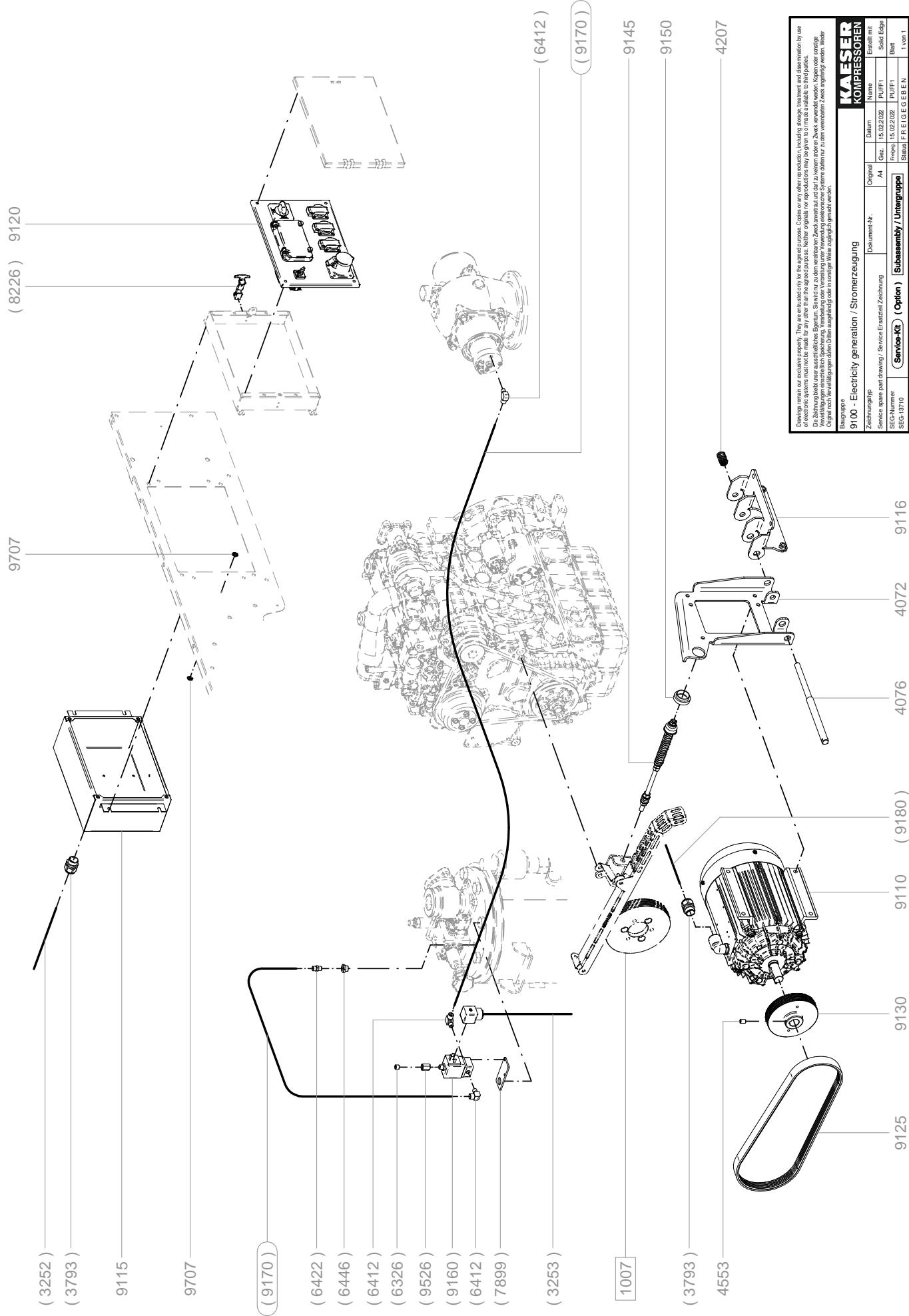
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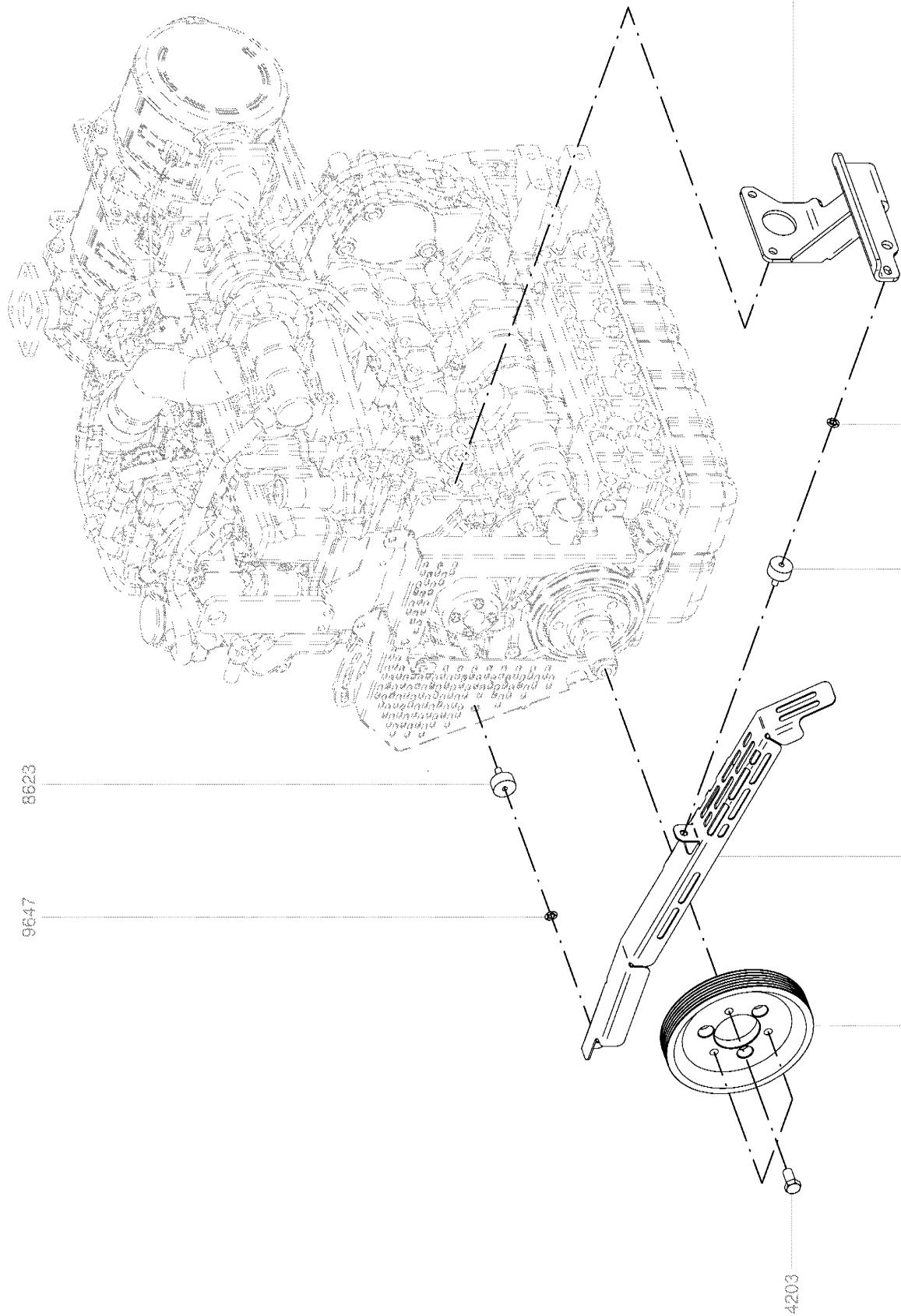
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<b>KAESER</b> <b>KOMPRESSOREN</b>	
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Zeichnungsnr.	9100 - Electricity generation / Stromerzeugung
Service-Satz-Nr.	9100 - Electricity generation / Stromerzeugung
SEG-Nummer	Document-Nr.
SEG-13709	Original A4
	Zeichnung Name
	15.02.2022 PUFFI
	Frueh 15.02.2022 PUFFI
	Status F R E I G E O E B E N
	1 von 1



Operator Manual Portable Rotary Screw Compressor  
MOBILAIR M82 SIGMA CONTROL SMART



# Operator Manual Portable Rotary Screw Compressor MOBILAIR M82 SIGMA CONTROL SMART

## 12 Decommissioning, Storage and Transport

### 12.1 Decommissioning

Decommissioning 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 decommissioning procedures.
2. Place a notice on the instrument panel describing the decommissioning procedures carried out.

#### 12.1.1 Temporary decommissioning

Decommissioning for about 4 months.

Material Plastic sheeting

Moisture-resistant adhesive tape

1. Disconnect the battery (the negative terminal first and then the plus terminal).
2. Close off the following openings with plastic foil and moisture-resistant adhesive tape.
  - Engine air inlet
  - Compressor air inlet
  - Exhaust silencer
3. Attach the following notice on the instrument panel showing the decommissioning measures taken.

#### Attention!

1. The machine is temporarily decommissioned.
  2. The following machine openings have been covered:
    - Engine air inlet
    - Compressor air inlet
    - Exhaust silencer
  3. Recommission according to service manual.
- Date / signature

Tab. 106 "Temporarily decommissioned" information notice

#### Decommissioning of the compressor for several weeks during severe frost

1. **NOTICE** *Danger of batteries freezing!*  
*Discharged batteries are subject to frost damage and can freeze at 14°F.*
  - *Store batteries in a frost-free place.*
  - *Store batteries preferably fully charged.*

## 12.1 Decommissioning

2. Remove the battery (batteries) and store in a frost-free room.
3. Make sure batteries are fully charged.

### 12.1.2 Long-term decommissioning and storage

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 and storage:

Long-term decommissioning and storage tasks	See chapter	Confirmed?
► Check engine coolant.	10.4.1	
► Drain the engine oil.	10.4.6	
► Drain the oil from the oil separator tank and the oil cooler.	10.6.3	
► Fill the separator tank and engine with preserving oil.	10.6.2	
	10.4.5	
► Run the machine for about 10 minutes to coat all parts with a protective oil film.	–	
► Disconnect the battery, the negative terminal first and then the plus terminal, and store in a frost-free room.	–	
► Check the battery fluid level.	10.11	
► Check the battery charge monthly and recharge if necessary to prevent the battery fluid freezing.	–	
► Clean the battery terminals and coat with acid-resistant grease.	–	
► Close the compressed air outlet valves.	–	
► Use plastic sheeting and moisture-resistant adhesive tape to seal off the following openings: <ul style="list-style-type: none"><li>■ Engine air inlet</li><li>■ Compressor air inlet</li><li>■ Exhaust silencer</li></ul>	–	
► Clean the bodywork and treat with preservative.	–	
► Hang a notice on the instrument panel to inform of the decommissioning measures taken.	–	

Tab. 107 Long-term decommissioning and storage checklist

- Attach the following notice on the instrument panel to inform of the decommissioning measures taken.

**Attention!**

1. The machine is decommissioned.
2. It is filled with preserving oil.
3. For recommissioning:
  - Take measures for recommissioning the compressor after a long period of storage.
  - Recommission according to service manual.

Date / signature

Tab. 108 Text for the long-term decommissioned and storage information notice

- Store in a dry place with constant temperatures.

## 12.2 Transport

Precondition	<p>Machine switched off and locked off («battery isolating switch» off)</p> <p>The machine is fully vented, the pressure gauge reads 0 psig.</p> <p>Machine is cooled down.</p> <p>All compressed air consumers are disconnected.</p> <p>All connecting lines and hoses disconnected and removed.</p> <p>Any loose or movable parts that may fall when transporting are removed or secured.</p>
--------------	---

### 12.2.1 Safety



Allow transportation only by personnel trained in safely dealing with motor vehicles and the transporting of goods.

1. **⚠ WARNING** *There is danger of being run over or crushed by an overturning vehicle. Death or serious injury can result from being crushed or run-over by a machine being towed.*
  - *Riding on the machine while it is being towed is strictly forbidden.*
2. Make sure the danger area is clear of personnel.

### 12.2.2 Transporting the machine as trailer

- Note the instructions in the separate document "Chassis Operating Manual" regarding the topic "transport of the machine as trailer".

### 12.2.3 Transporting the machine by crane

Precondition	<p>The machine is standing firm and level.</p> <p>The machine is switched off.</p> <p>The machine has cooled down.</p>
--------------	--

**Additional precautions for snow and ice:**

Significant snow or ice build-up can occur on the machine when operating in winter conditions. This may adversely affect the machine's centre of gravity (tilting).

This may cause the permissible load of the crane and machine hoists to be exceeded.

- Carry out the following preliminary tasks in conditions of snow and ice:
  - Remove any snow and/or ice from the machine before lifting by crane.
  - Make sure the lifting eye cover plate is freely accessible and can be opened.

**Perform the following tasks prior to moving the machine by crane:**

A lifting eye is provided for transportation by crane. The lifting eye is located beneath a lift-up cover plate in the centre of the enclosure.

**Risk of falling!**

For mobile machines, climbing aids (steps) must be used to safely reach the crane lifting eye!

Wear clean safety footwear!

Climbing onto the roof of the machine is prohibited!

1. **CAUTION** *Hot components in the machine interior!*
  - Allow the machine to cool down sufficiently.
2. **CAUTION** *Damage to the machine from jolting during lifting!*  
*Danger of components breaking.*
  - Lift the machine carefully.
3. Open one of the two doors.
4. Unlock the cover from the inside by actuating the built-in hand lever and lift up.
5. Close the door.
6. Position the crane hook vertically above the lifting eye.
7. Engage the crane hook in the eye.
8. Close and lock the access doors.
9. Lift and move the machine slowly and carefully.

**Take note when setting down the machine:**

1. **NOTICE** *Incorrect setting down can damage the machine!*  
*Machine components, particularly the chassis, can be damaged by incorrectly setting down the machine.*
  - Set the machine down carefully.
  - Do not set down unevenly.
2. Set the machine down slowly and carefully.
  1. Disengage the crane hook.
  2. Press the lifting eye cover down and close. Make sure it locks into place.

### 12.2.4 Option rw

#### Transporting the machine by forklift

Only stationary machines with skid-type frames may be lifted and locally transported with a forklift truck. Stationary frame-version machines specified with optional skids are equipped with two lifting pockets into which two lifting forks can be inserted.

- Precondition A suitable forklift (appropriate for the weight of the machine) is available.  
The machine is switched off.  
All connecting lines and hoses disconnected and removed.

#### **⚠ CAUTION**

*Incorrect lifting with a forklift can damage the machine!*

*The machine may fall or be damaged by the lifting forks.*

- Only machines equipped with lifting pockets may be lifted with the forklift.
- Do not use a forklift on portable machines or stationary machines with base frame (option rx).
- Lift the machine only from the side using the lifting pockets.

Option rw

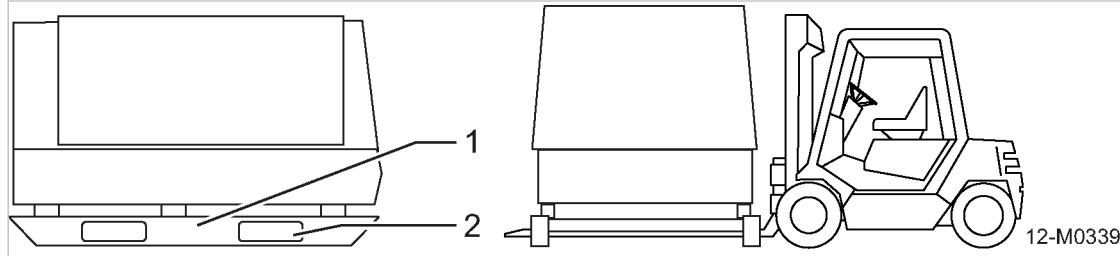


Fig. 81 Transporting using a forklift truck

- ① Skid
- ② Lifting lugs

- Follow all instructions carefully.
- 1. Close and lock the doors.
- 2. Position the fork truck to the side of the machine with the forks lined up with the lifting lugs.
- 3. Drive the forks fully through the lifting lugs as far as possible.  
The lifting forks are fully under the machine.
- 4. Carefully raise and transport the machine.

### 12.2.5 Transporting the machine as load

The medium 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.

Additional measures must be taken for the transport of machines by sea or air. Please contact KAESER SERVICE for more information.

- Material Chocks  
Stop blocks or squared timbers  
Bracing (tensioning straps)

## 12.2 Transport

**Notes on securing loads:**

- National directives and regulations for the securing of loads during transportation must be adhered to.
  - The load must be secured in such a manner that it cannot slide, fall, roll or cause avoidable noise in case of emergency braking or sudden turns. Recognised technical regulations should be observed (e.g. in Germany: VDI Directive 2700 ff).
  - Responsibility for proper securing of the load rests with the driver, owner and carrier.
1. **NOTICE** *Bracing or tensioning straps can damage the bodywork!*  
*Forces of movement during transportation can cause damage to the bodywork.*
    - Do not use bracing or tensioning straps over the bodywork.
    - Only attach bracing or tensioning straps using the lashing points welded to the base frame of the machine.
  2. Always observe the applicable accident prevention and safety regulations during transportation.
  3. Loads must be secured against rolling, tipping, slipping and falling.



Contact KAESER SERVICE with any questions regarding transport or securing loads.

KAESER accepts no liability and provides no warranty for damage arising from improper transportation or insufficient/incorrect load securing.

When transporting machines for the purposes of loans, rentals and trade shows, any transportation safety devices used for the delivery must also be used for the return transport.

**Load securing:**

The following instructions are intended only as an example for securing a machine as a load.  
Responsibility for proper securing of the load rests with the driver, owner and carrier.

Use chocks, stop blocks or squared timbers to secure the load.

**Precondition** The load bed must be suitable for the transportation (maximum load) and securing of the machine  
The surface of the load bed must be swept, clean and dry  
Tensioning straps must be free from damage and in working order

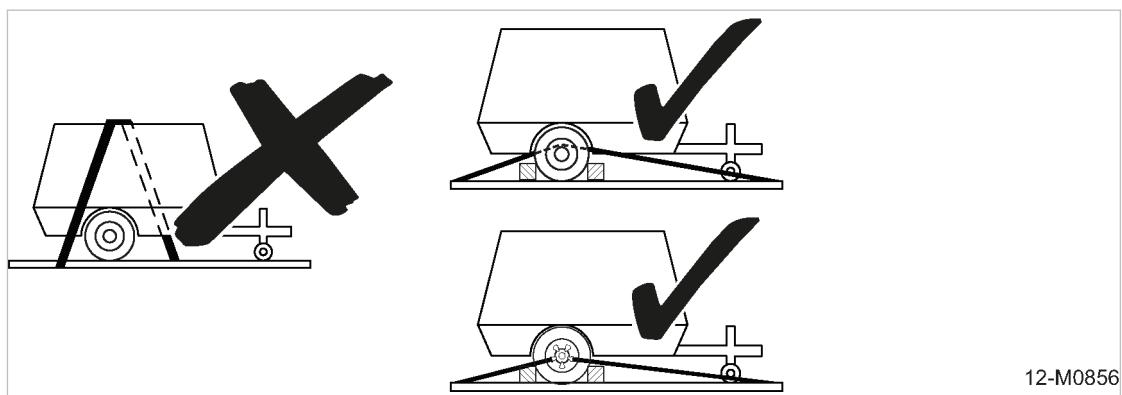


Fig. 82 Bracing to secure the load

1. Use a crane or forklift to place the machine in the centre of the load bed.
2. Apply the parking brake.

3. Position a squared timber in front of and behind the wheels to secure mobile machines against rolling.
4. Position a suitable squared timber by the jockey wheel beneath the drawbar tube to protect the jockey wheel against overloading.
5. Crank in the automatic jockey wheel to the stop point.
6. Fasten the machine with tensioning straps to the load bed of the vehicle:
7. Tension the straps.

The machine is secured against sliding, tipping over and rolling for transportation as a load.



The tension of the straps must be checked during transportation and retightened if necessary.

#### Before shipment as air freight:

The machine must be designated as hazardous goods for air freight purposes. Non-compliance may result in severe penalties!

1. **⚠ WARNING** *Risk of fire or explosion from operating fluids/materials!*  
*The machine is equipped with a combustion engine.*  
➤ *Any dangerous fluids/materials contained within the machine must be removed before transportation by air.*
2. Remove all dangerous fluids/materials.  
These include:
  - Residues of fuel and fuel vapours.
  - Lubricants in the engine and compressor.
  - Electrolyte in rechargeable batteries.
  - Residual quantities of tool lubricating oil in the tool lubricator (option ea, ec)

### 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.

The following measures also apply to machines not yet commissioned.



Please consult with KAESER if you have questions to the appropriate storage and commissioning.

#### NOTICE

*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



To dispose of the machine in accordance with environmental regulations, all batteries must be removed and delivered to a designated disposal system. Substances that are harmful to living things and the environment can thus be removed and disposed of efficiently or reprocessed. In particular, this procedure facilitates the recycling of batteries.

All operating fluids in the machine must be drained and disposed of in accordance with environmental regulations. All components contaminated with operating fluids must be removed and disposed of in accordance with environmental regulations.

Any residual quantities of condensate must be drained and disposed of in accordance with environmental regulations.

Once these conditions have been fulfilled, deliver the machine to an authorised disposal agent.

Overview:

- Remove all batteries.
  - Drain all operating fluids.
  - Drain the condensate.
  - Remove used filters/filter elements.
  - Deliver the machine to an authorized disposal agent.
- Follow all instructions carefully.

### 12.4.1 Removing the batteries

Overview:

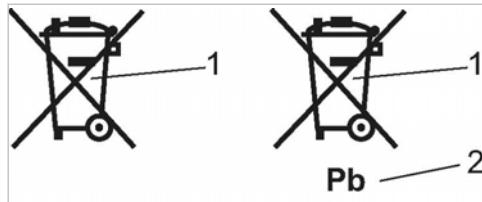
- Remove the batteries
  - Dispose of batteries in accordance with environmental regulations
1. Observe the safety instructions for handling batteries.
  2. Observe the safety signs on the battery.

Further information When handling batteries, observe the specific safety rules and safety signs, see chapter 10.4.9.  
➤ Remove all starter batteries from the internal combustion engine.

#### Disposing of batteries in accordance with environmental regulations:

Batteries contain substances that are harmful to living things and the environment. For this reason, batteries must not be disposed of with unsorted municipal waste.

Disposal facilities may be local recycling centers for used electrical devices and electronic waste, or the original points of sale.



12-A002674

Fig. 83 Battery labelling

- [1] Do not dispose of battery with municipal waste
- [2] Battery contains lead (if applicable)

1. Observe national disposal regulations!
2. Deliver batteries to the designated disposal system.



You actively contribute to the protection of the environment when you take used batteries to the designated disposal system.

#### 12.4.2 Draining operating fluids

Material    Receptacle  
              Cleaning cloth



To prevent it from accidentally igniting, always drain the fuel when working on the interior of the machine.

1. Drain and collect the following operating fluids from your machine.

Designation	Engine	Compressor
Fluid	Fuel	Cooling oil
	Engine oil	Transmission oil
	Coolant	Hydraulic oil
	Reduction agent additive from the exhaust gas after-treatment system	—

Tab. 109 Machine fluids

2. Drain and collect the following operating fluids from the options specified on your machine.

Designation	Low-temperature version option
Operating fluid	Antifreeze from the defroster

Tab. 110 Machine option fluids



Dispose of operating fluids and working materials and components contaminated with them in accordance with applicable environmental protection regulations.

#### 12.4.3 Draining condensate

Material    Receptacle  
              Cleaning cloth

1. Check compressed air options with condensate separation.
2. Drain and collect any residual quantities of condensate.



Dispose of any residual quantities of condensate and contaminated working materials in accordance with applicable environmental protection regulations.

#### 12.4.4 Removing filters/filter elements

Material Cleaning cloth  
Receptacle

1. Remove all filters/filter elements from the machine.

Designation	Engine	Compressor
Filters/filter elements	Oil filter	Oil filter
	Engine oil separator cartridge	Oil separator cartridge
	Filter/filter element, fuel prefilter	—
	Fuel filter	—
	Filter/filter element, fuel/water separator	—

Tab. 111 Machine filters/filter elements

2. Remove all filters/filter elements from the options specified on the machine.

Designation	Filter combination option	Fresh air filter option
Filters/filter elements	Prefilter	Adsorption filter element
	Fine filter	High-performance filter element

Tab. 112 Machine option filters/filter elements



Dispose of working materials and components contaminated with operating fluids in accordance with applicable environmental protection regulations.

#### 12.4.5 Disposing of the machine

- Precondition All batteries have been removed and delivered to the designated disposal system.  
All operating fluids have been drained and disposed of in accordance with applicable environmental regulations.  
Any residual quantities of condensate have been drained and disposed of in accordance with applicable environmental regulations.  
All used filters/filter elements have been removed and disposed of in accordance with applicable environmental regulations.
- Deliver the machine to an authorized disposal agent.

## 13 Annex

### 13.1 Identification

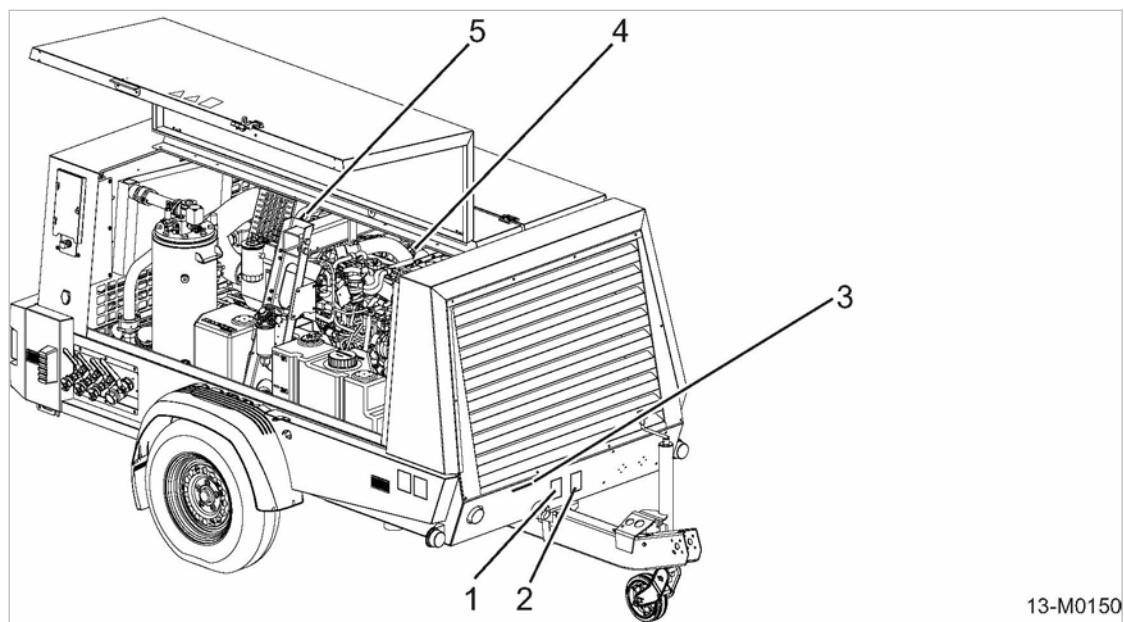
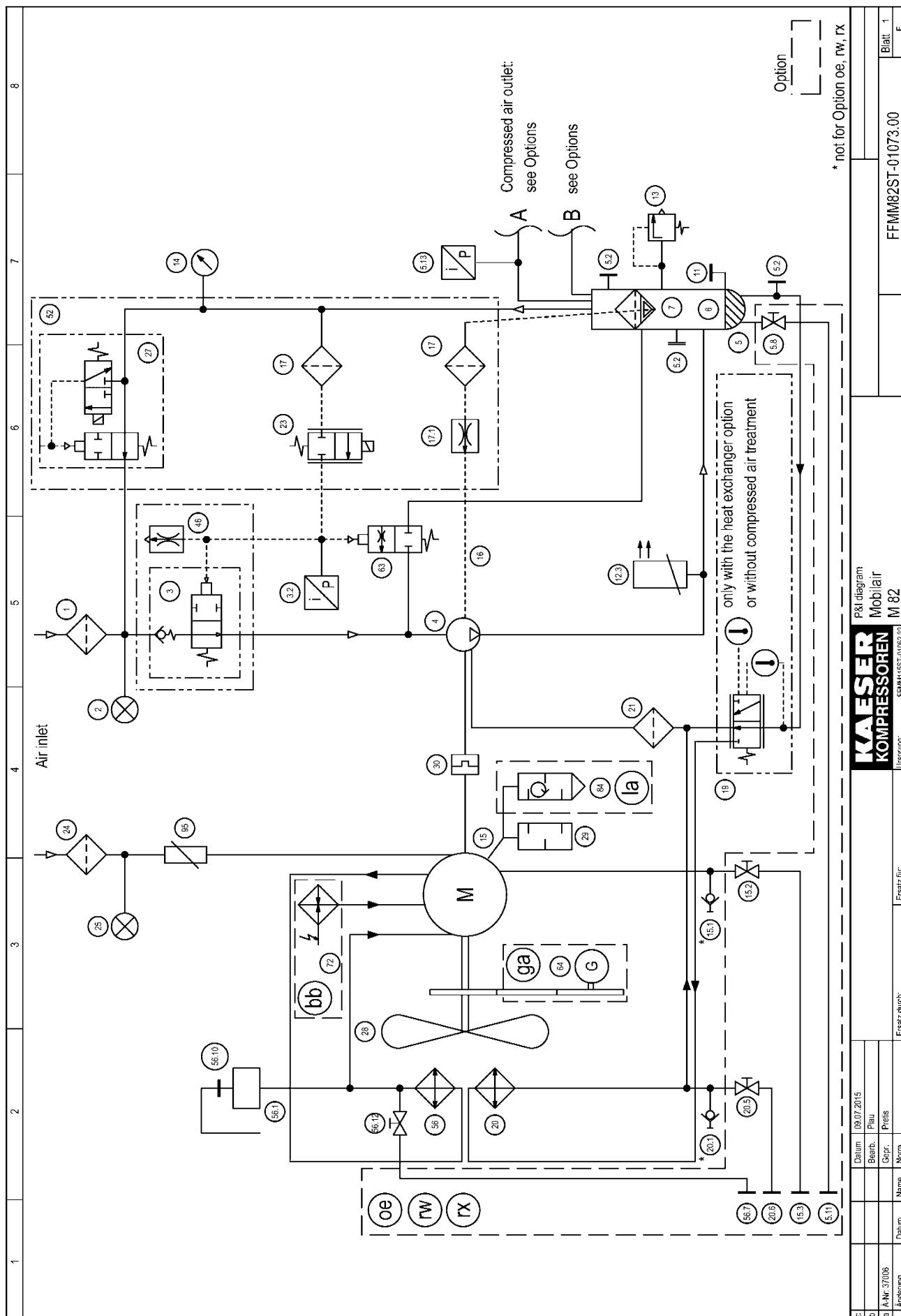


Fig. 84 Identification

- |     |                                      |                                |                                     |
|-----|--------------------------------------|--------------------------------|-------------------------------------|
| [1] | Machine nameplate with serial number | [4]                            | Diesel particulate filter nameplate |
| [2] | Options label                        | [5]                            | Engine nameplate with serial number |
| [3] | VIN* (stamped in the bodywork)       | *Vehicle Identification Number |                                     |

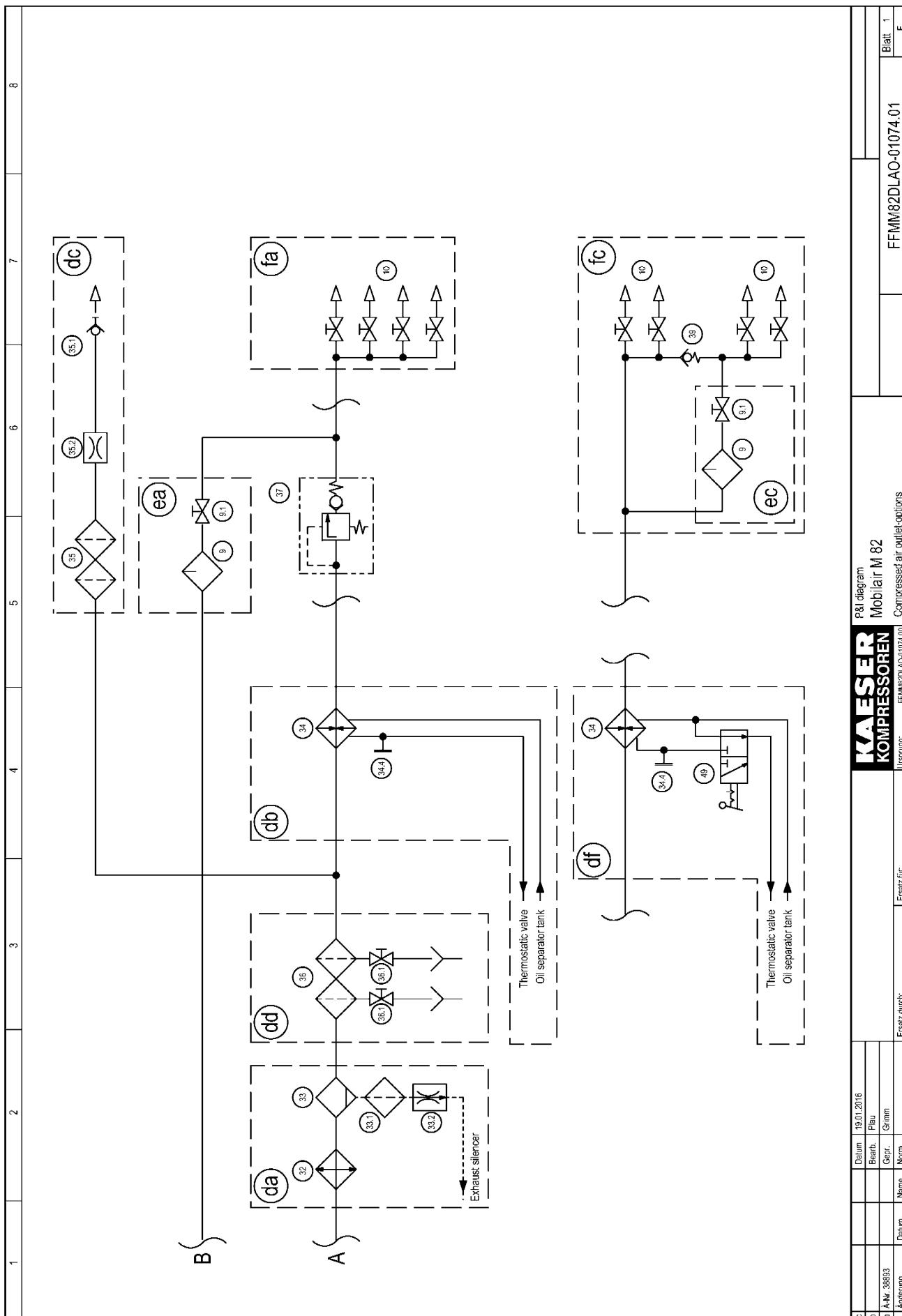
### 13.2 Pipeline and instrument flow diagram (P+I diagram)



1	Compressor - Air filter	21	Oil filter
2	Maintenance indicator, Compressor - Air filter	23	Electric proportional controller
3	Inlet valve	24	Motor - Air filter
3.2	Pressure transducer - Control pressure	25	Maintenance indicator, Motor - Air filter
4	Rotary screw airend	27	Venting valve
5	Oil separator tank	28	Fan
5.2	Screw plug	29	Exhaust silencer
5.8	Shut-off valve - Oil drain device	30	Coupling
5.11	Screw plug - Oil drain device	46	Nozzle (Secondary end Proportional controller)
5.13	Pressure transducer - Internal pressure	52	Control valve
6	Oil reserve	56	Water cooler
7	Oil separator cartridge	56.1	Cooling water expansion tank
11	Oil filler port with plug	56.7	Screw plug - Water drain device
12.3	Sensor - Airend discharge temperature	56.10	Water filling port with plug and pressure relief valve
13	Pressure relief valve	56.12	Shut-off valve - Water drain device
14	Pressure gauge Compressed air - Control panel	63	Regulating valve (Directional control valve)
15	Diesel engine	64	Generator
15.1	Hose coupling - Oil drain device*	72	Fail-safe heat exchangers
15.2	Shut-off valve - Oil drain device	84	Spark arrestor
15.3	Screw plug - Oil drain device	95	Air flow meter
16	Oil return line		
17	Dirt trap	Option	
17.1	Nozzle	bb	Coolant pre-heating
19	Thermostatic valve	ga	Generator
20	Oil cooler	la	Spark arrestor
20.1	Hose coupling- Oil drain device*	oe	Closed floor pan
20.5	Shut-off valve- Oil drain device	rw	stationary, on skids
20.6	Screw plug - Oil drain device	rx	stationary on frame

\* not for Option oe, rw, rx

c		Datum	08.07.2015	P&I diagram legend	
b		Berl.	Pau	Mobilair	
a		Gepr.	Pens	M 82	
Änderung	Datum	Name	Norm	Ersatz für:	FFMM82ST-01073.00
					FFMM82ST-01062.00
					Blaat 2
					E



1	2	3	4	5	6	7	8
9	Tool lubricator	37	Minimum pressure check valve				
9.1	Shut-off valve	39	Check valve				
10	Air distributor	49	3-Directional shut-off valve				
32	Compressed air cooler			Option			
33	Centrifugal separator			da	After-cooler + Centrifugal separator		
33.1	Dirt trap			db	Heat exchanger		
33.2	Nozzle			df	Heat exchanger with bypass		
34	Heat exchanger			dc	Fresh air filter		
34.4	Screw plug - Oil drain device			dd	Filter combination		
35	Fresh air filter			ea	Tool lubricator, with option fa		
35.1	Hose coupling			ec	Tool lubricator, with option fc		
35.2	Nozzle			fa	Direct air flow		
36	Filter combination			fc	Air flow split downstream of options		
36.1	Condensate drain shut-off valve						

c			Datum	19.01.2016			
b			Bearb.	Pflau			
a			Gepr.	Grimm			
Anforderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:		

P&I diagram legend  
**MOBILAIR M82**  
 Compressed air outlet-options  
 FFMM82DLAO-01074.01

Blatt 2  
 E

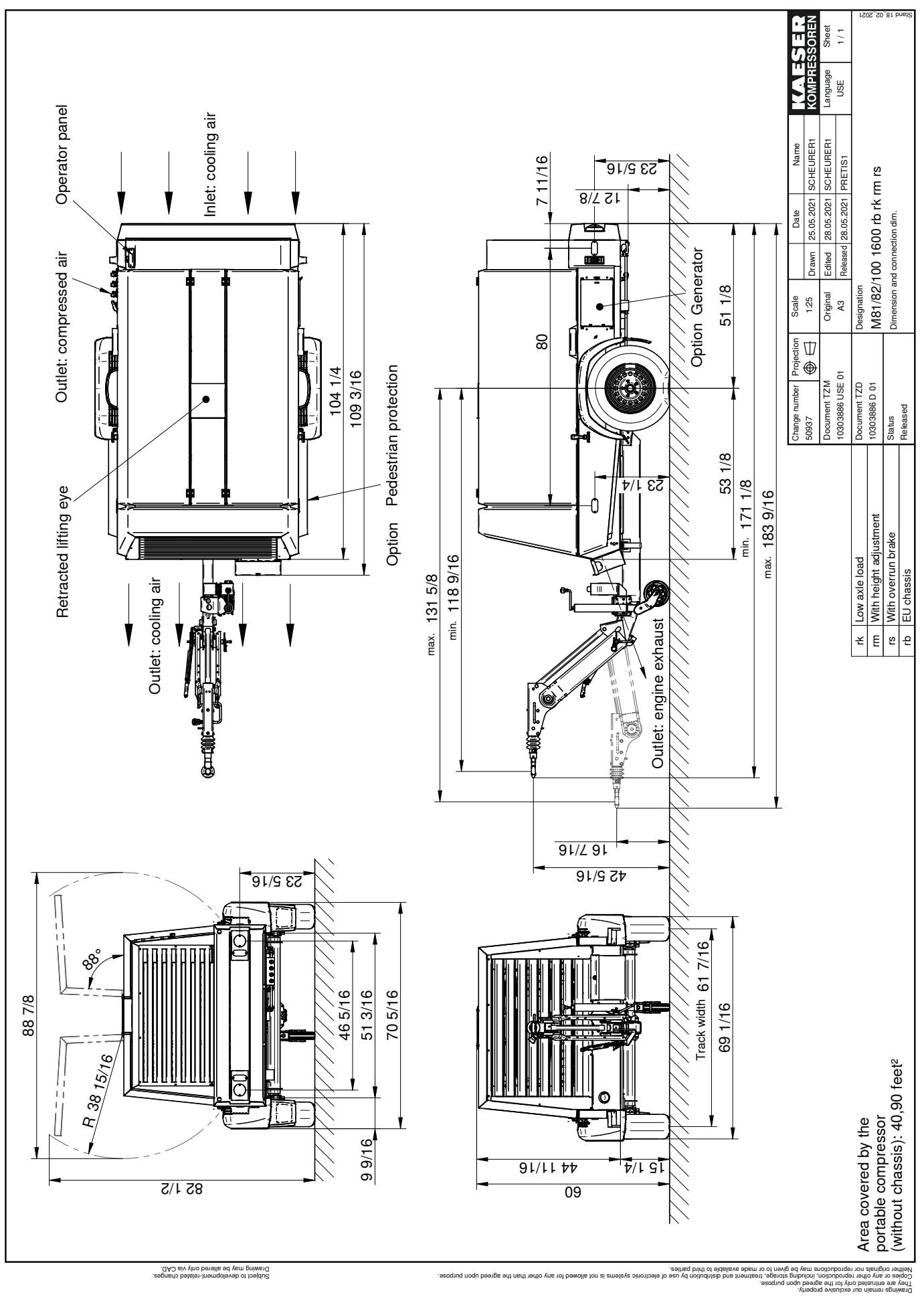
FFMM82DLAO-01074.00

### 13.3 Dimensional drawings

#### 13.3.1 Option rb/rk/rm/rs

##### Dimensional drawing – chassis

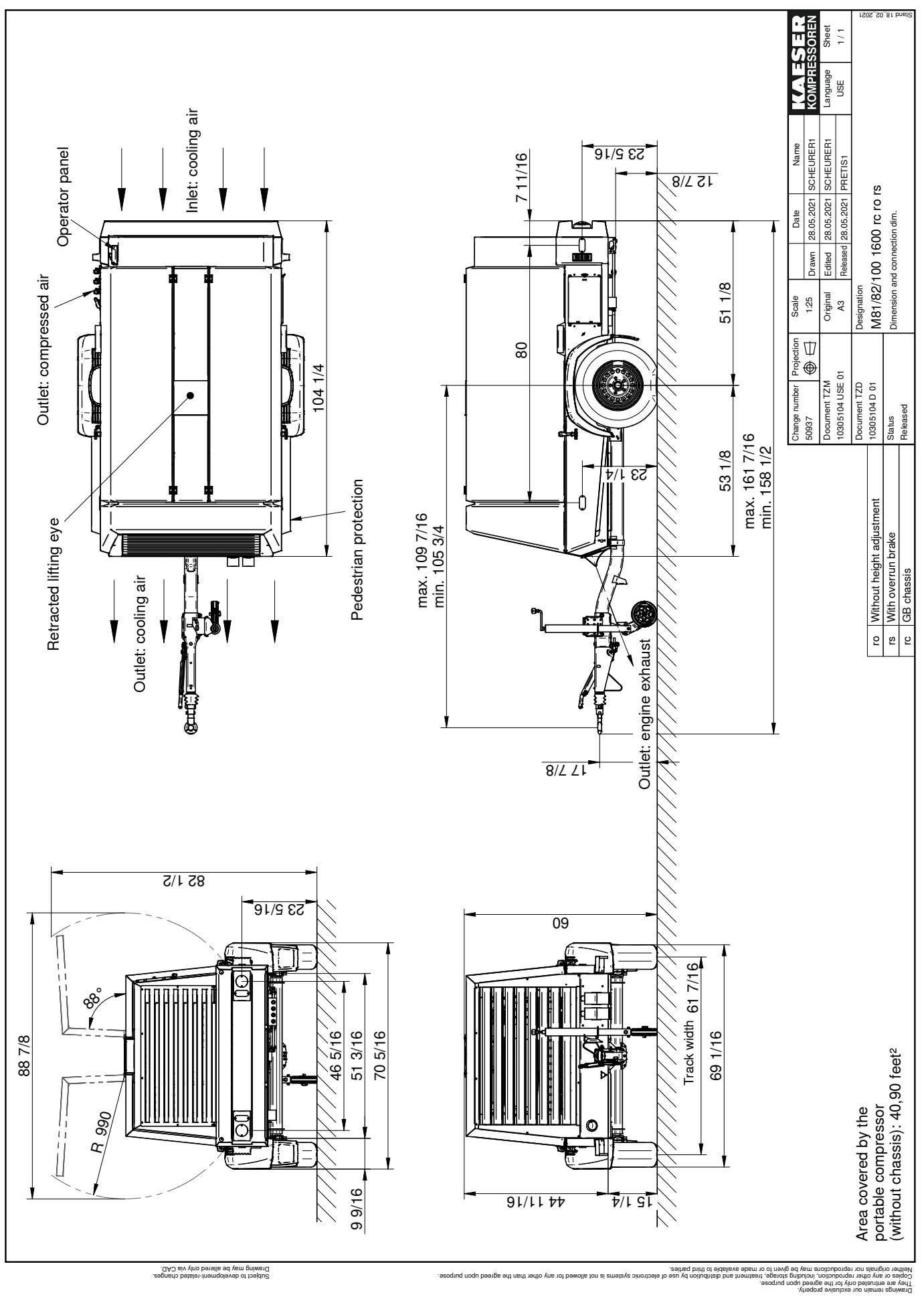
- Option rb - Chassis, EU type
- Option rk - Chassis with low axle load
- Option rm - Chassis with height adjustment
- Option rs - Chassis with overrun brake



## 13.3.2 Option rc/ro/rs

## Dimensional drawing, chassis options

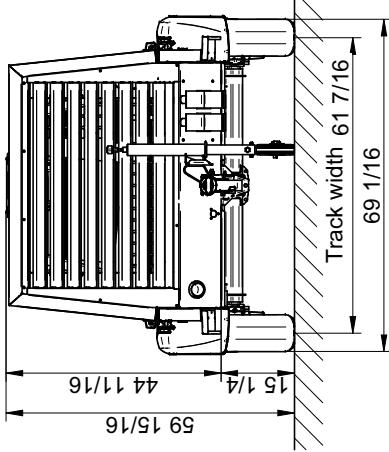
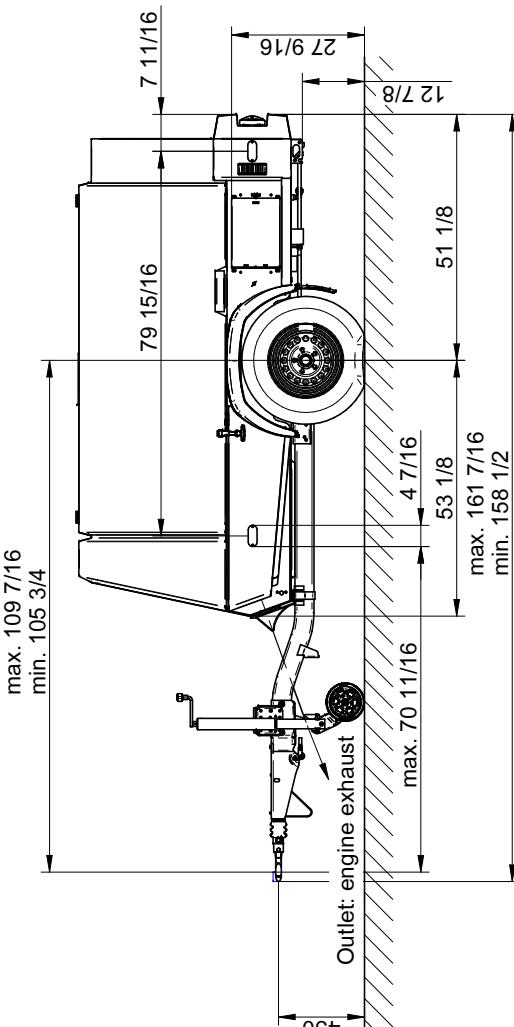
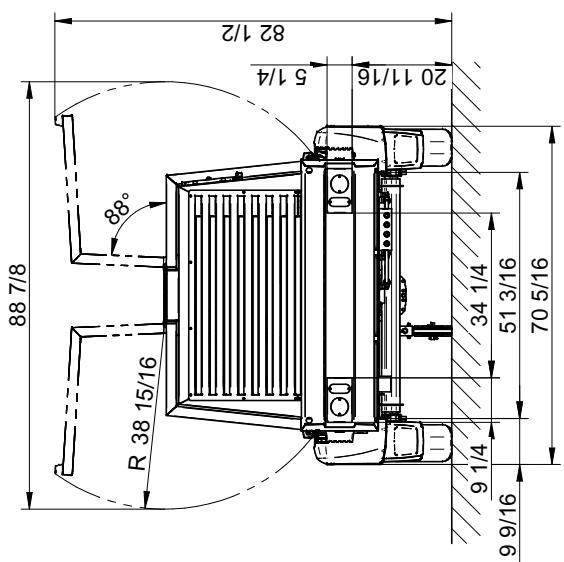
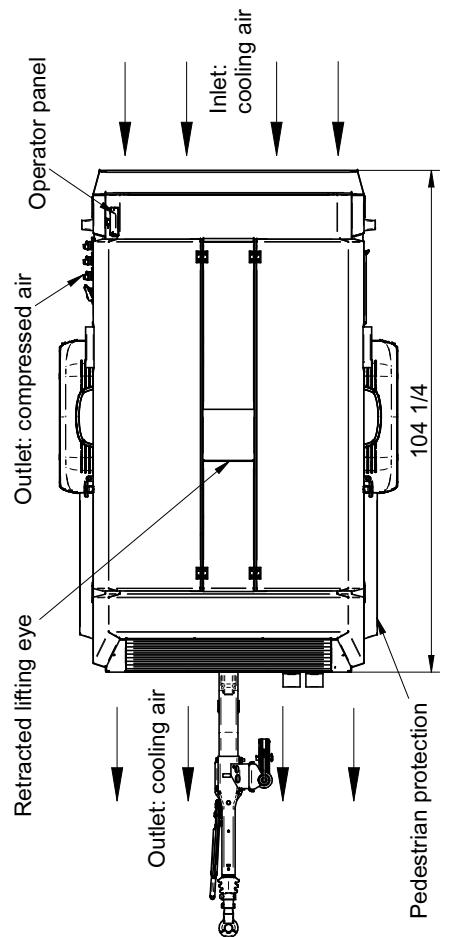
- Option rc - Chassis GB version
- Option ro - Chassis with fixed height towbar
- Option rs - Chassis with overrun brake



## 13.3.3 Option rd/ro/rs

## Dimensional drawing, chassis options

- Option rd - Chassis USA version
- Option ro - Chassis with fixed height towbar
- Option rs - Chassis with overrun brake



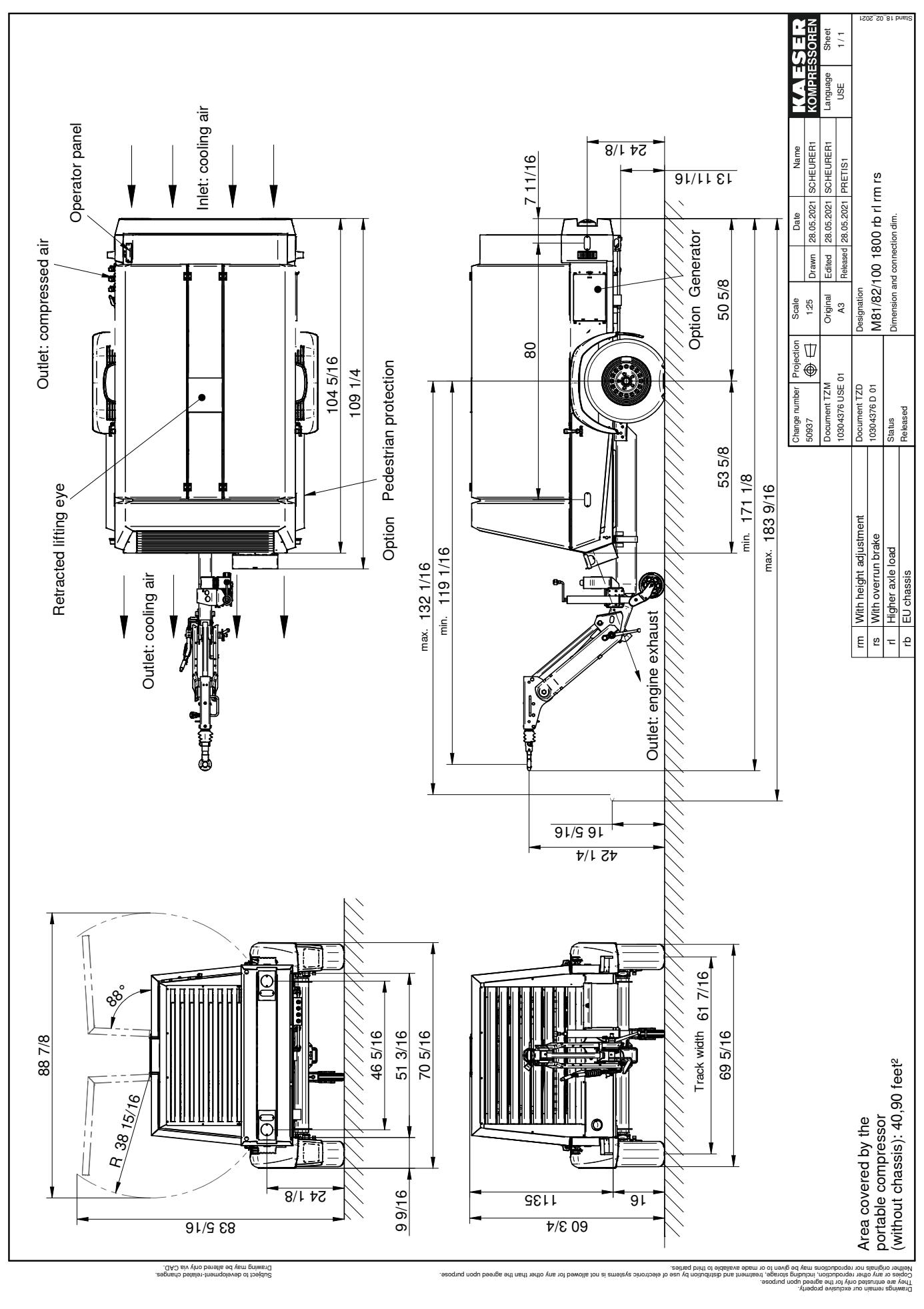
<b>KAESER</b> <b>KOMPRESSOREN</b>					
Change number	Projection	Scale	Date	Name	Sheet
Document TZM 10305186 USE 00	Original A3	1:25	01.07.2015	KNAUER5	Language USE
Document TZD 10305186 D 00	Released 08.07.2015			PRETISI	
ro Without height adjustment				Designation M 81/82/100.1 1600 rd ro rs	
rs With overrun brake					Dimension and connection dim.
rd US chassis					

The area covered by the portable compressor (without chassis): 40.80 feet<sup>2</sup>  
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 Copying or distribution of any documents or parts thereof, including storage in electronic systems, is not allowed for any other than the agreed upon purpose.

## 13.3.4 Option rb/rl/rm/rs

## Dimensional drawing, chassis options

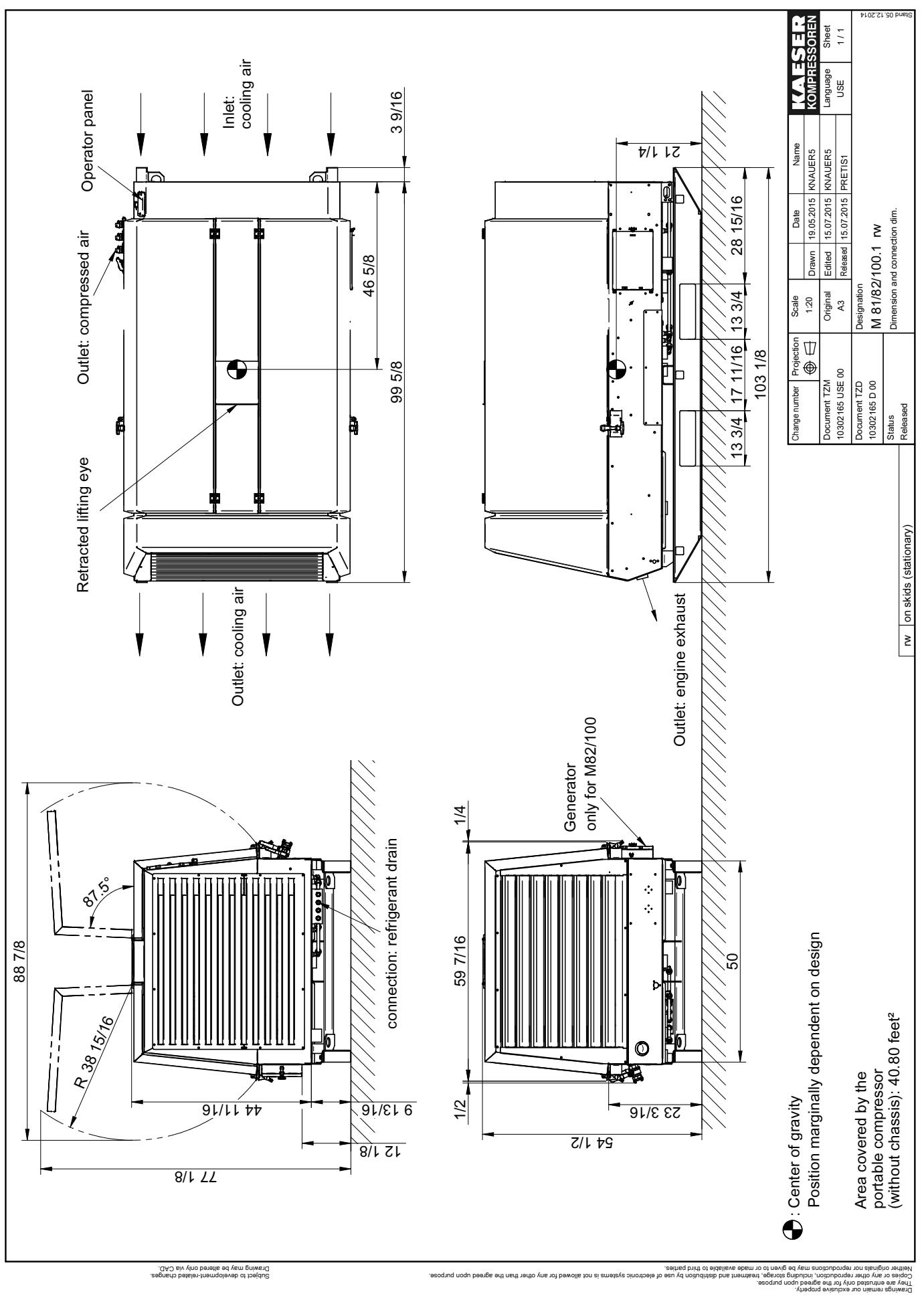
- Option rb - Chassis EU version
- Option rl - Chassis with higher axle load
- Option rm - Chassis with height-adjustable towbar
- Option rs - Chassis with overrun brake



## 13.3.5 Option rw

Dimensional drawing, stationary version

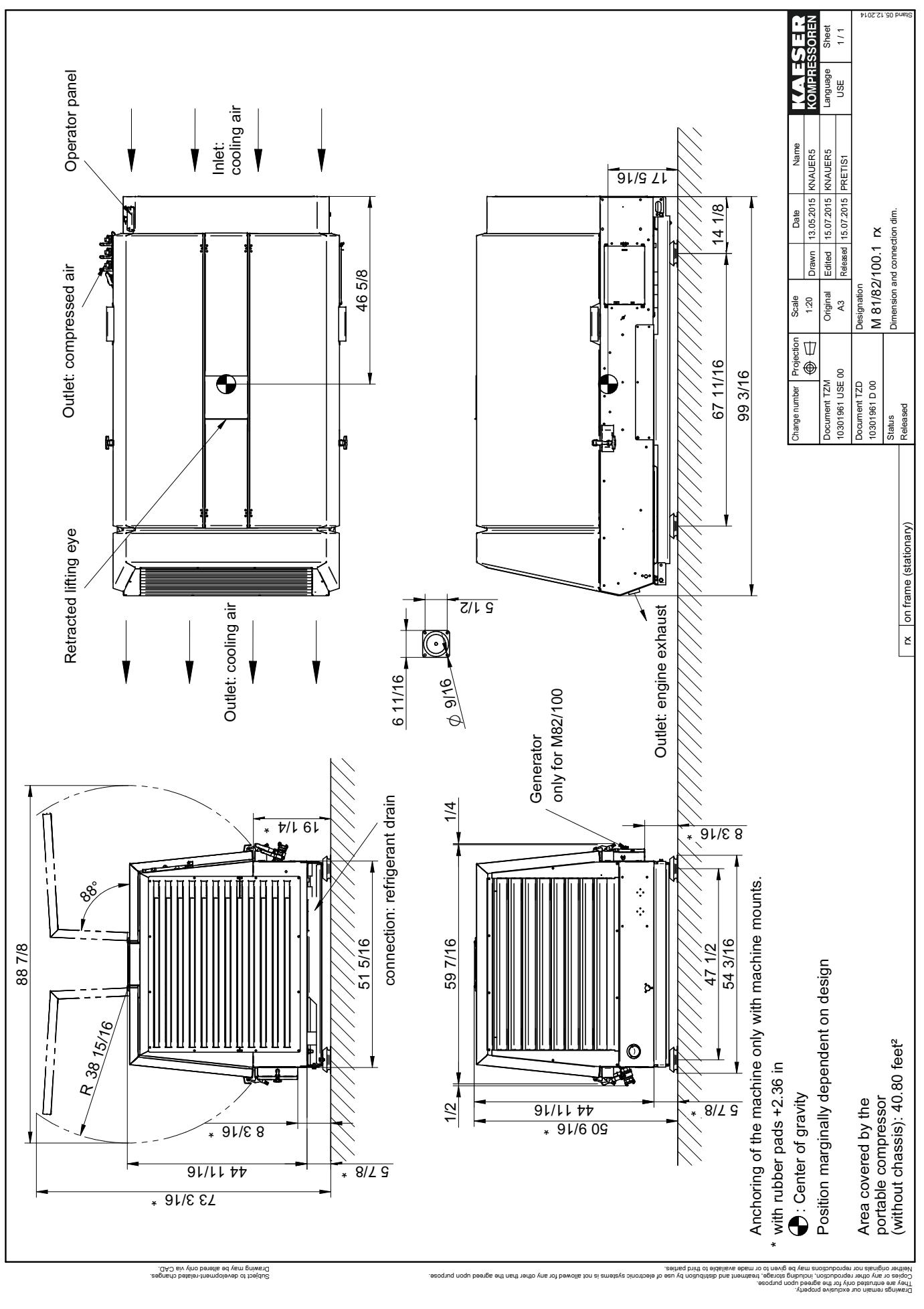
- Option rw - Skid frame on runners



## 13.3.6 Option rx

Dimensional drawing, stationary version

- Option rx - On frame



## 13.4 Wiring diagrams

### 13.4.1 Electrical Diagram

**Electrical diagrams****MOBILAIR M82 - SCS****KUBOTA - Engine Tier 4F / stage V**

Manufacturer: KAESER KOMPRESSOREN SE  
Postfach 2143  
96410 Coburg

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<b>KAESER</b> KOMPRESSOREN				Cover page MOBILAIR M82	=
c		Date	08.06.2022 E		+
b		Drawn	Silber/Taubmann		
a		Released	Fischer C.		
A Change	Date	Name		DFA82-03012.06	page 1 1 Sht.

Lfd. Nr. No.	Benennung Name	Zeichnungsnr. Kunde Drawing No. (customer)	Zeichnungsnr. Hersteller Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DFA82-03012.06	1	
2	List of contents		ZFA82-0-3012.06	1	
3	Block diagram		UFA82-03012.06	1	
4	Block diagram		UFA82-03012.06	2	
5	Block diagram		UFA82-03012.06	2	
6	Circuit diagram		SFA82.IKM-03012.06	1	=IKM
7	Circuit diagram	Cable set Engine	SFA82.IKM-03012.06	2	=IKM
8	Circuit diagram	Cable set Engine	SFA82.IKM-03012.06	3	=IKM
9	Circuit diagram	activation ECU	SFA82.SK-03012.06	1	=SK
10	Circuit diagram		SFA82.SK-03012.06	2	=SK
11	Circuit diagram		SFA82.SK-03012.06	3	=SK
12	Circuit diagram	analogue input building group	SFA82.SK-03012.06	4	=SK
13	Circuit diagram	analogue input building group	SFA82.SK-03012.06	5	=SK
14	Circuit diagram	analogue input building group	SFA82.SK-03012.06	6	=SK
15	Circuit diagram	Digital output assembly	SFA82.SK-03012.06	7	=SK
16	Circuit diagram		SFA82.SK-03012.06	8	=SK
17	Circuit diagram	GPS Modem - option oc	SFA82.SK-03012.06	9	=SK
18	Equipment parts list	Control cabinet	GF82-03012.06	1	
19	Equipment parts list	Control panel/unit components	GF82-03012.06	2	
20	Terminal schedule	Terminal strip -X1	KFA82-0-3012.06	1	=SK
21	Terminal schedule	Plug connection -X21	KFA82-0-3012.06	10	=SK
22	Terminal schedule	Plug connection-X24	KFA82-0-3012.06	11	=SK
23	Terminal schedule	Plug connection-X25	KFA82-0-3012.06	12	=SK
24	Terminal schedule	Plug connection -X31	KFA82-0-3012.06	20	=SK
25	Component layout	Control panel	AF82-0-3012.06	1	
26	Component layout	Control cabinet	AF82-0-3012.06	2	
27	Component layout	Control cabinet door / Control cabinet outer side bottom	AF82-0-3012.06	3	

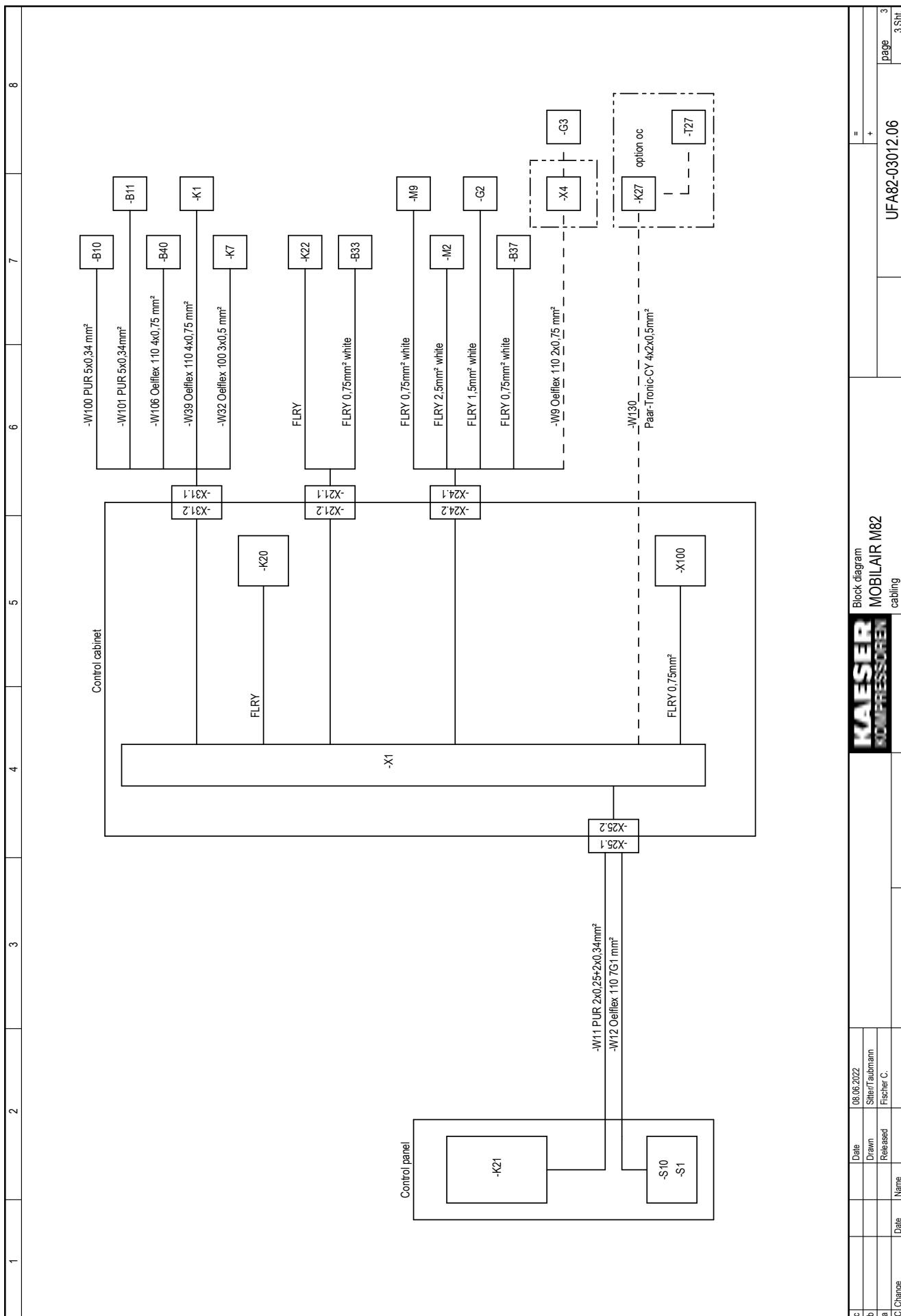
**KAESER**  
**KOMPRESSOREN**

List of contents  
MOBILAIR M82

c		Date	08.06.2022	=	
b		Drawn	Sitterlraubmann	+	
a		Released	Frischer C.		
B Change	Date	Name		page	1
					1 Sht.
				ZFA82-03012.06	

1	2	3	4	5	6	7	8
<b>General instructions</b>							
Control voltage 12V/DC							
All non-designated conductors FLRY 0,75mm <sup>2</sup> white							
All control lines marked a) are 1,5mm <sup>2</sup> FLRY white							
All control lines marked b) are 2,5mm <sup>2</sup> FLRY white							
All control lines marked c) are 0,75mm <sup>2</sup> FLRY brown							
potentials:							
15 switched plus + (unit ON)							
19 Preheat with glowplug							
30 + terminal (Battery)							
31 - terminal (Battery), earth							
Starter-Control							
wiring colors:							
BU = blue							
BN = brown							
YE = yellow							
GN = green							
GNYE = green-yellow							
GY = grey							
OG = orange							
PK = pink							
RD = red							
BK = black							
VT = violet							
WH = white							
option ga = generator							
option ob = Automatic-start-stop							
option oc = GPS Modem							
<b>KAESER</b> <b>KOMPRESSOREN</b>							
Block diagram MOBILAIR M82							
c		Date	08.06.2022			=	
b		Drawn	Silber/Taubmann			+	
a	Released		Fischer C.				
Cl Change	Date	Name					
						UFA82-03012.06	page 1
							3 Sht.

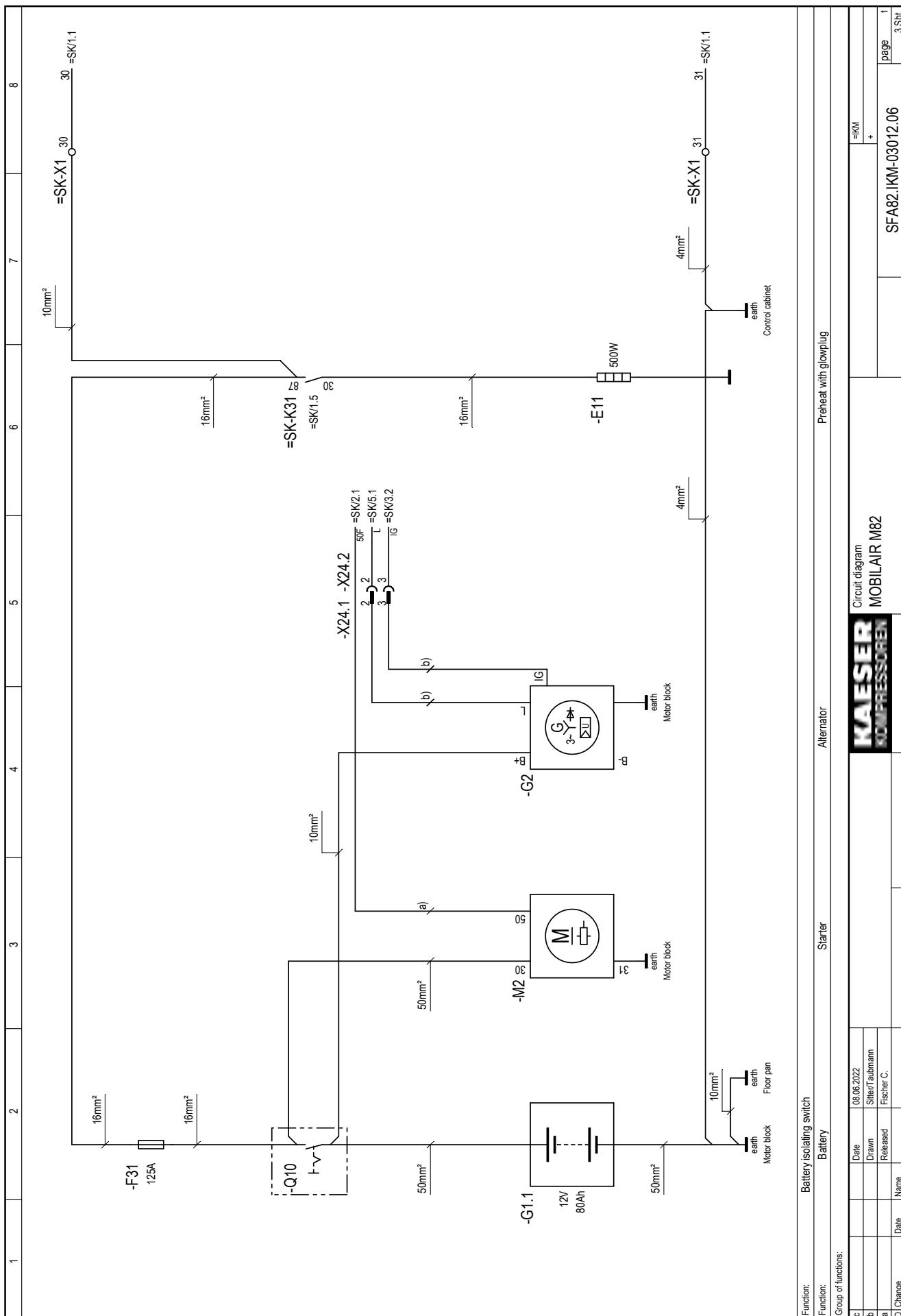


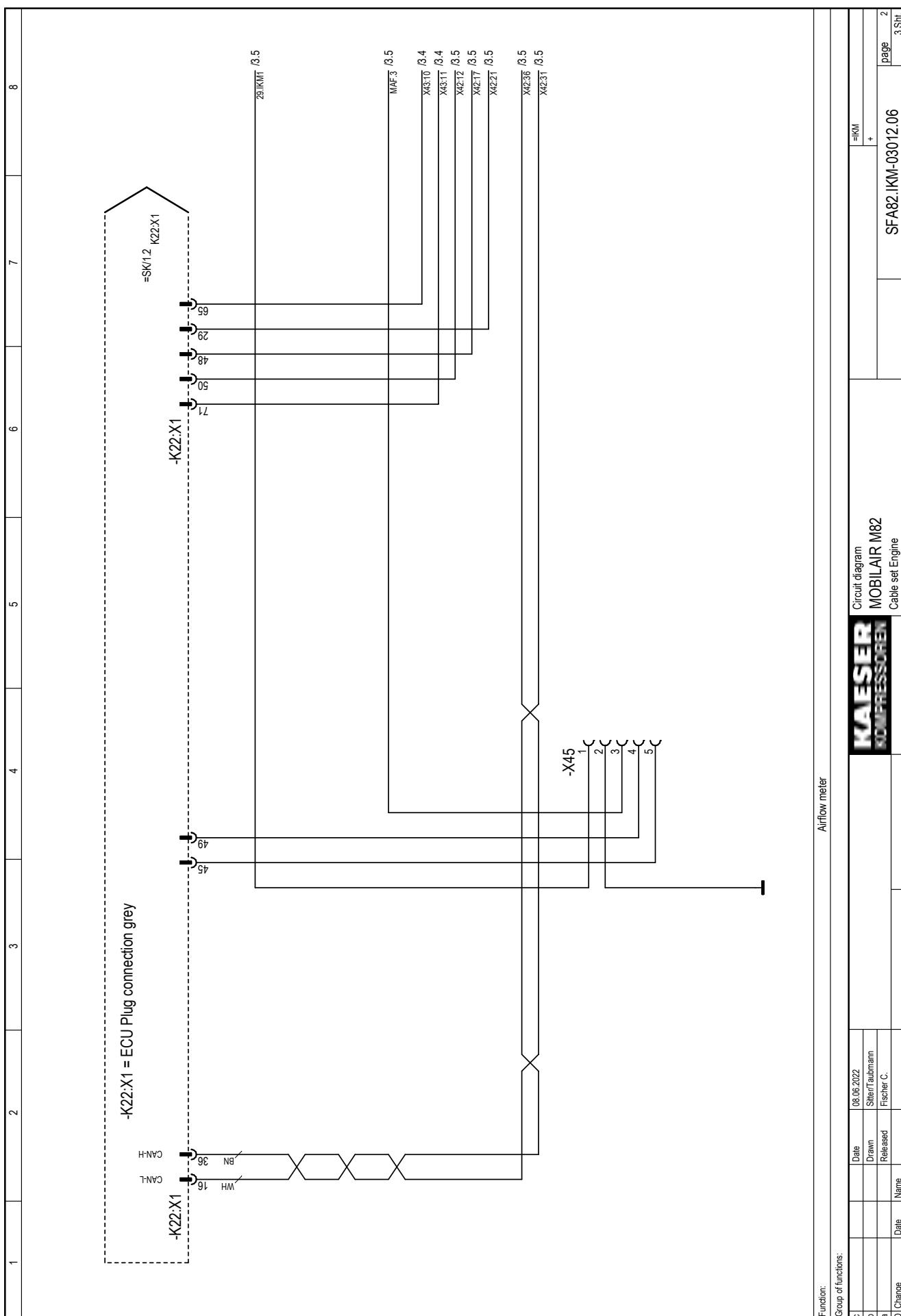


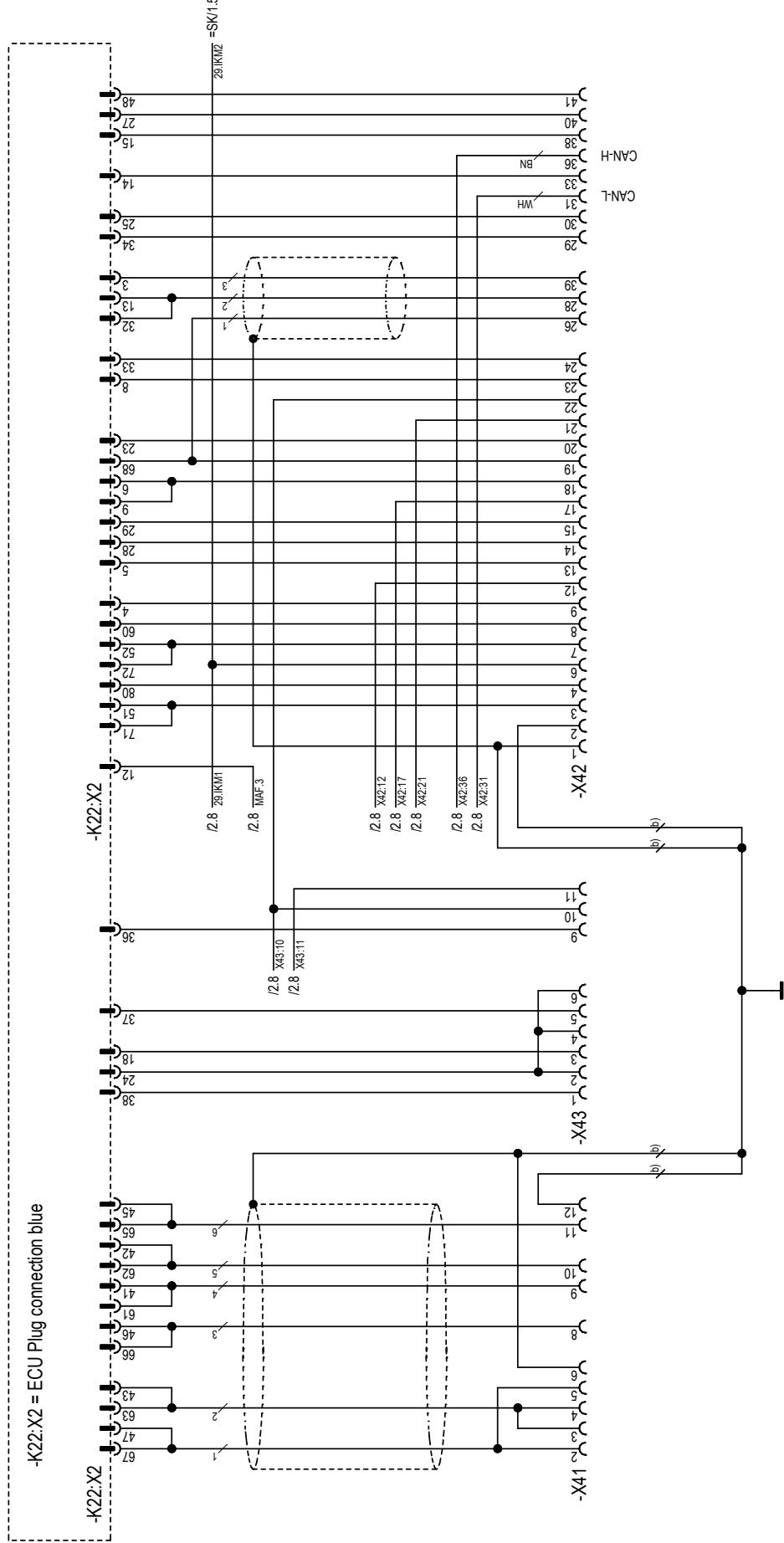
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b	Drawn	Stier/Taubmann	+
a	Released	Fischer C.	
C/Change	Date	Name	page 3 3 Sht.

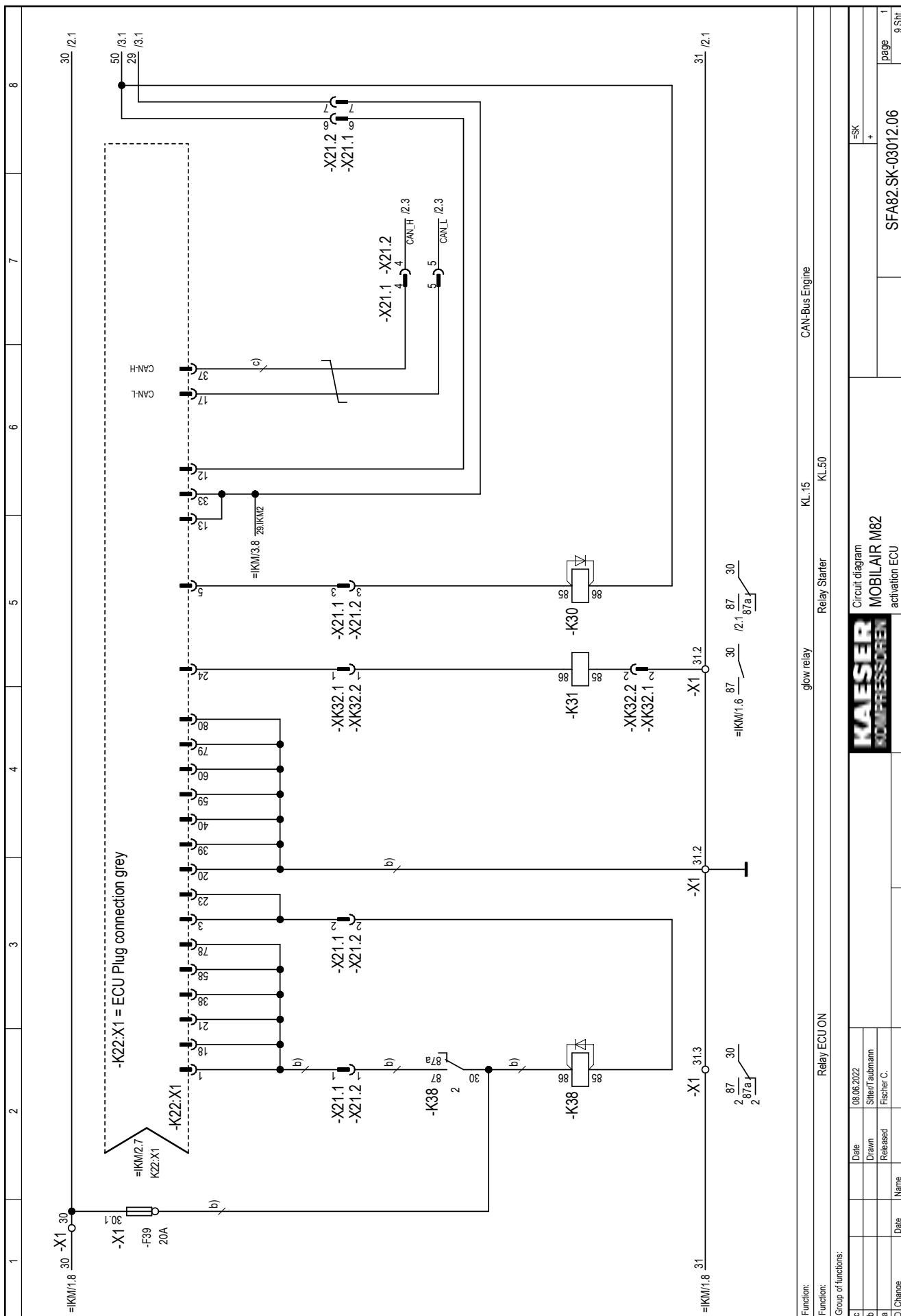
**KAESER**  
**KOMPRESSOREN**  
 Block diagram  
 MOBILAIR M82  
 cabling

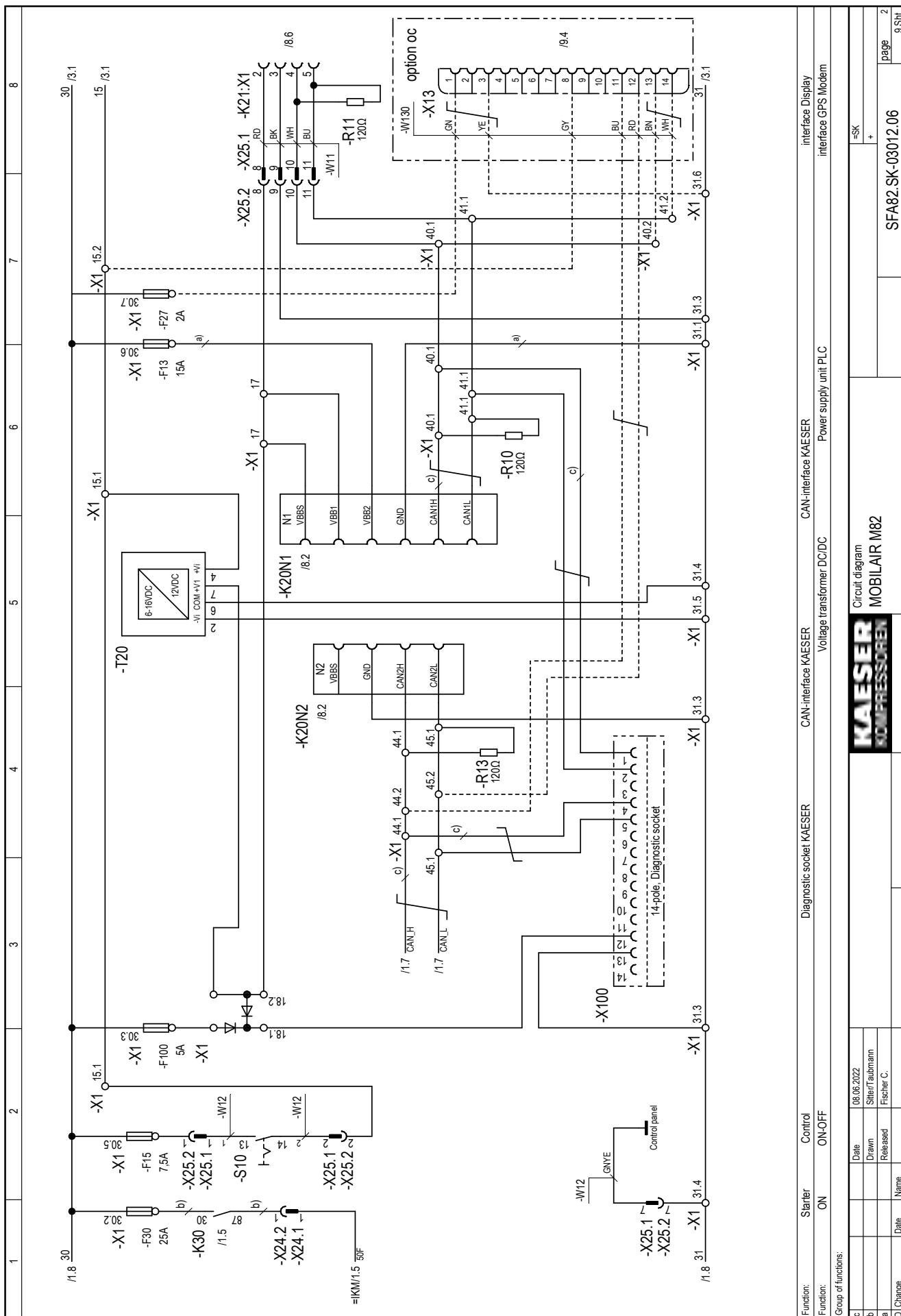
 UF482-03012.06  
 page 3  
 3 Sht.

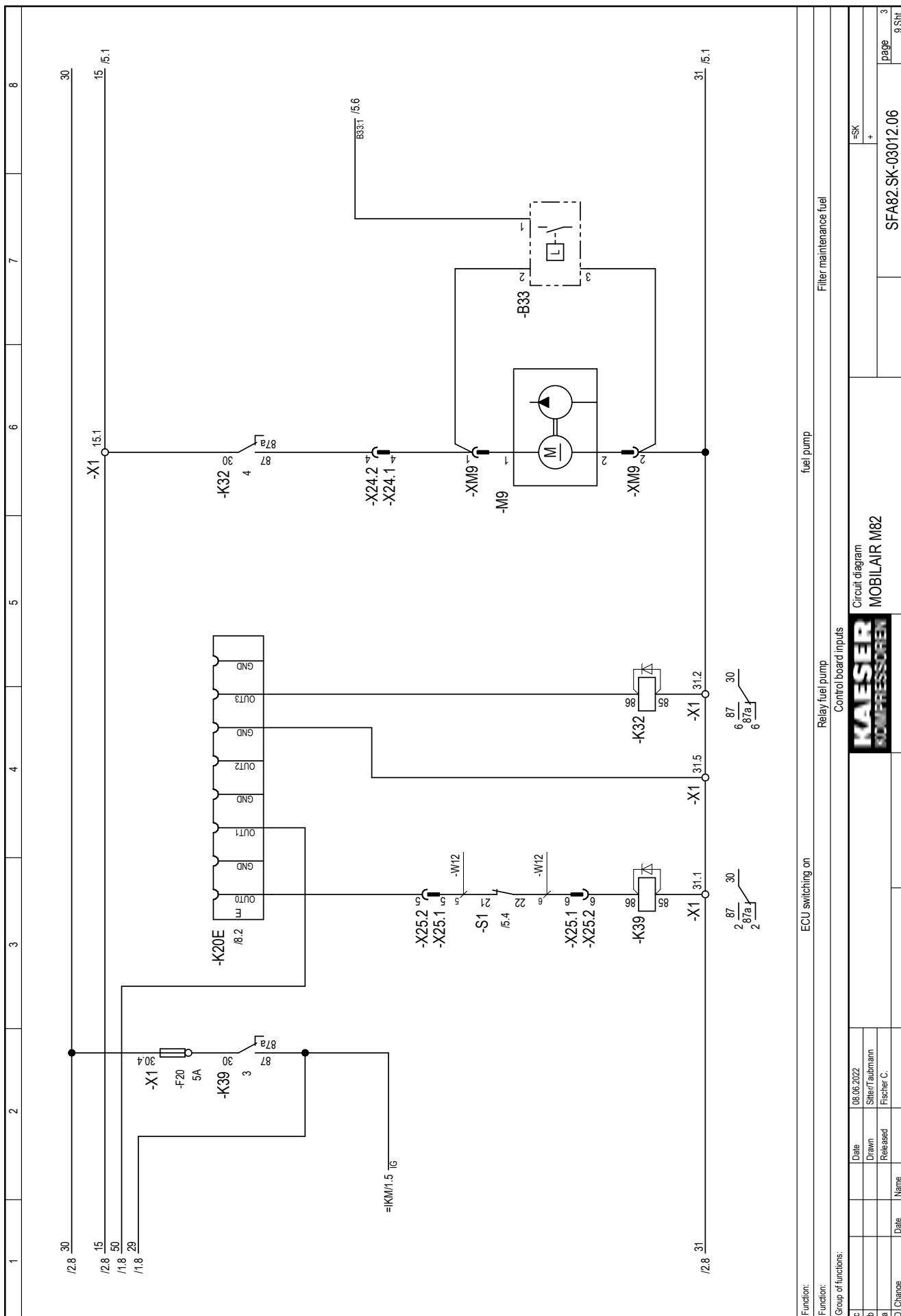


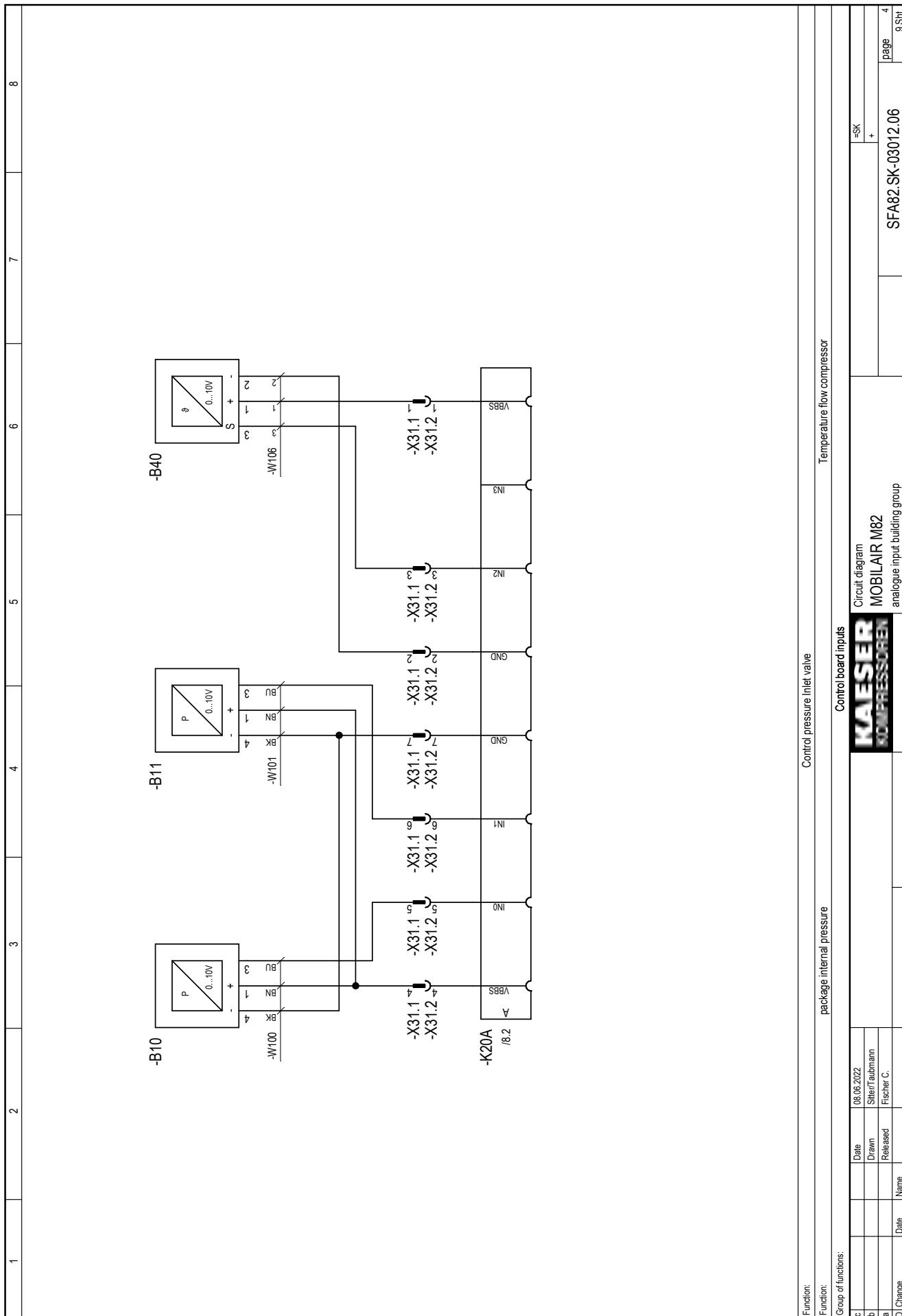


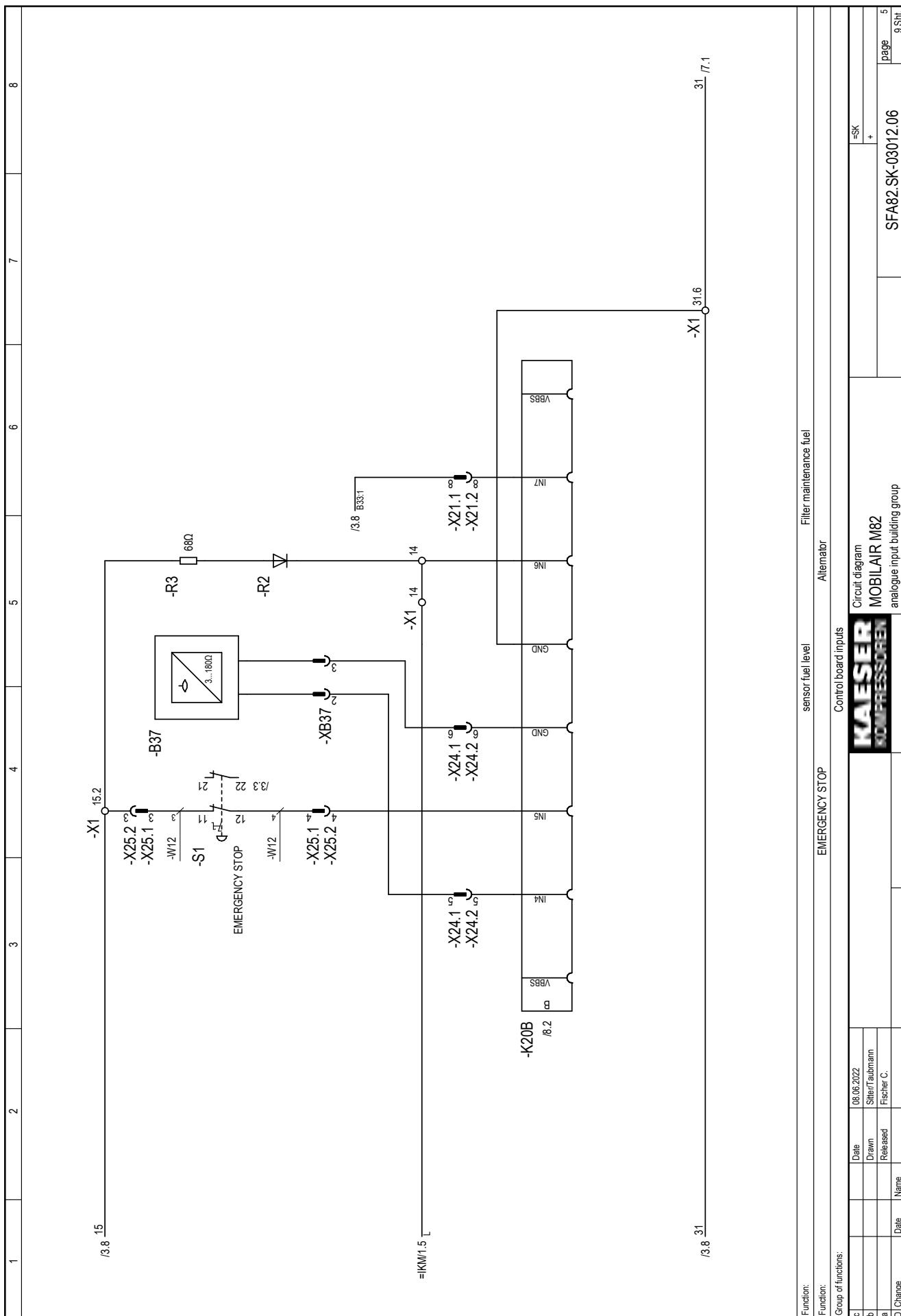


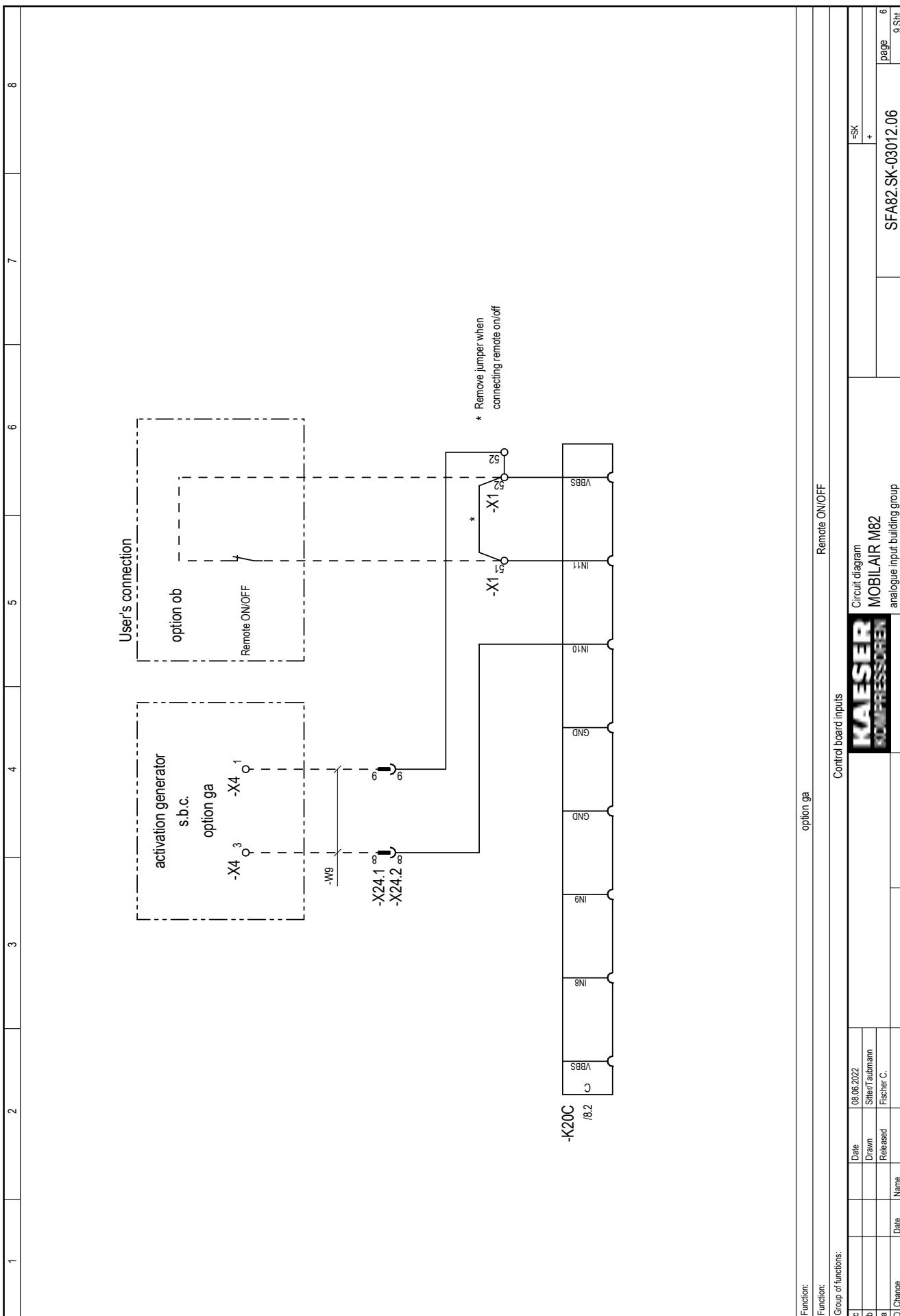




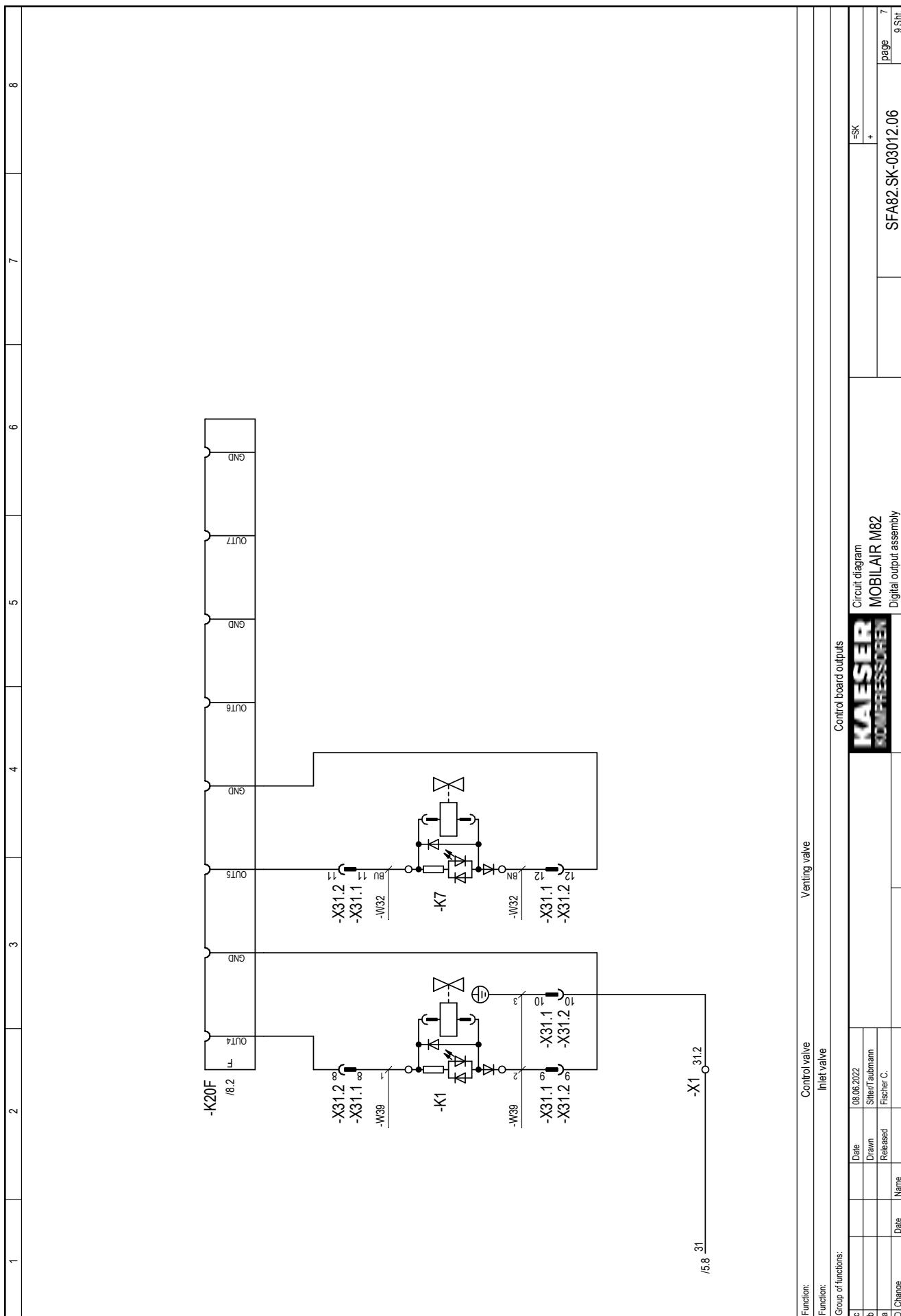




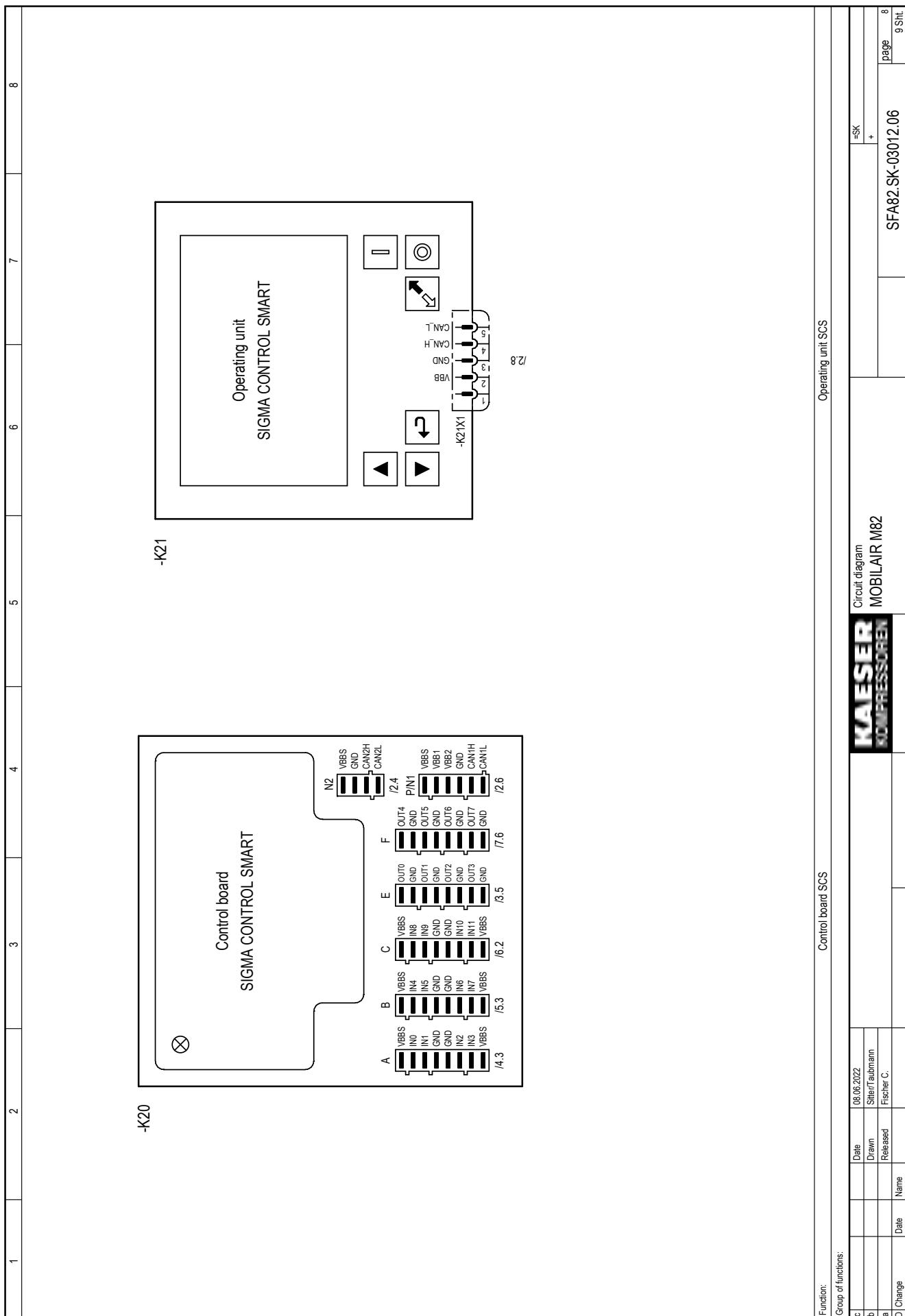




Function:	option ga	Control board inputs	Remote On/OFF
Function:			
Group of functions:			
c	Date	08.06.2022	=SK
b	Drawn	Silberlaubmann	+
a	Released	Fischer C.	
D Change	Date	Name	9 Sht.
			6
			SFA&2.SK-03012.06



Function:		Control board outputs	
Function:		Control valve	
Group of functions:		Inlet valve	
c		Date	08.06.2022
b		Drawn	Silber/Faubmann
a		Released	Fischer C.
d Change	Date	Name	
		SFA82.SK-03012.06	
		page 7	
		9 Sht.	



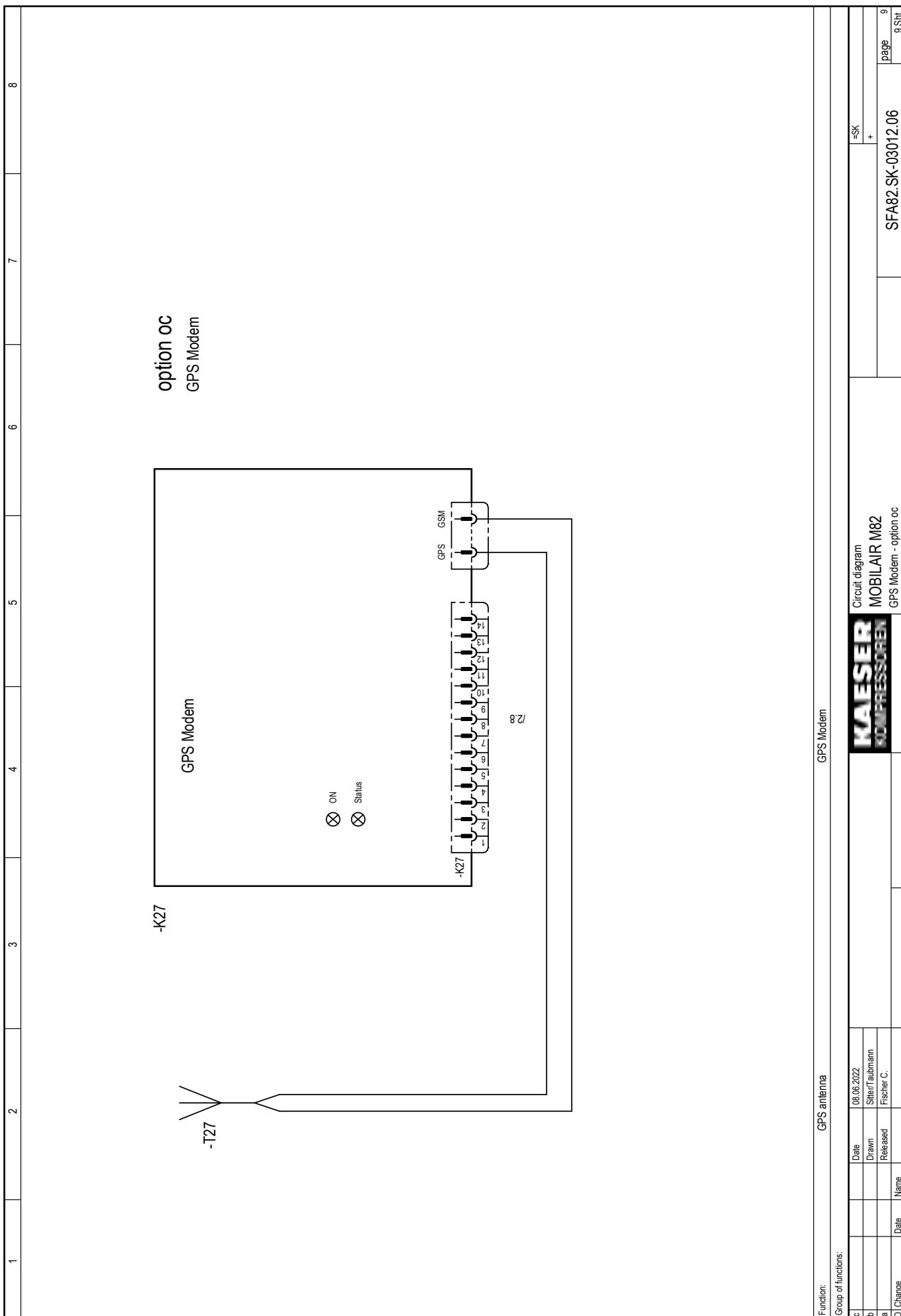
Function: Control board SCS

Operating unit SCS

Group of functions:		Operating unit SCS	
c		Date	08.06.2022
b		Drawn	Silberlaubmann
a		Released	Fischer C.
D Change	Date	Name	

Circuit diagram MOBILAIR M82		Page 8 9 Sht.
SFA&2.SK-03012.06		



Operator Manual Portable Rotary Screw Compressor  
MOBILAIR M82 SIGMA CONTROL SMART

No.: 901783 09 USE

A Stück- zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ, Anwendungsart, Daten (z.B. Steuerspannung, Frequenz, Einsatzbereich); Bestell-Nr., Hersteller Identification data Type, basic technical data (e.g. control voltage, frequency, adjustable range); Order No., manufacturer	D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No., section No.	G Einbauort Location	H Schabl. Nr.	I BZ- Pos.	J VA Kz. *)	K Eingangs- vermerk	L Wst.-Nr. Concerns only the manufacturer
<b>Control panel</b>											
1	Operating unit SCS	CR9047	7.9200.11010 ifm	-K21							
1	EMERGENCY STOP	QRUU	7.3217.0 Schlegel	-S1							
1	Switching element	MHT00	7.3218.0 Schlegel	-S1							
1	switch Control voltage ON/OFF	RKWA	7.9027.10050 Schlegel	-S10							
1	Switching element	BTL5 24VDC, 2A	7.9027.10030 Schlegel	-S10							
1	plug connection 12-pole	350735-1	7.6589.00500 Borsig	-X25							
<b>unit components</b>											
1	Pressure transducer	0...16 bar	7.9204.0 Huba	-B10							
1	Pressure transducer	-1...5 bar	7.9203.0 Huba	-B11							
1	Temperature probe	-30...+30 °C	7.9202.40010 Bedia	-B40							
1	sensor fuel level	sensor l=571mm	7.9254.20010 Euroswich	-B37							
1	Fuel filter		8.9038.0 KUBOTA	-B33							
1	Fuse	125A	7.6411.00025 FTM	-F31							
1	Heating	500W		KUBOTA	-E11						
1	Solenoid valve	12V DC G3/8 2/2W	7.7089.00010 Bürkert	-K1							
1	fuel pump		8.9164.0 KUBOTA	-M9							
1	Control board		Bosch	-J22							
<b>model-dependent components</b>											
1	GPS Modem	model 3659	7.9208.04000 Proemion	-K27							
1	GPS antenna	GFS	7.9208.03010 Proemion	-T27							
Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten aufzählten Daten in den Spalten D bis G ganz zusätzlich unter Nummer anzugeben, sowie sie die Beantwortung technischer Rückfragen erleichtern. Für Ersetzungsteile ist zusätzlich Erzeugniss genannt ist.											
In Zweifelsfällen gilt die deutsche Fassung.											
c		Date	08.06.2022								
b		Drawn	Silke Taubmann								
a		Released	Fischer C.								
F Change	Date	Name									

\*) Verbandschrift - Kennzeichen

B and C should be stated in  
this list of equipment, instead as  
also quote the serial No. of the

The German version applies in cases of doubt.

**KAESER**  
**KOMPRESSOREN**  
**MOBILAIR M82**  
Control panel/unit components

=	
+	
page	2
	2 Shl.

## 11) model-dependent components

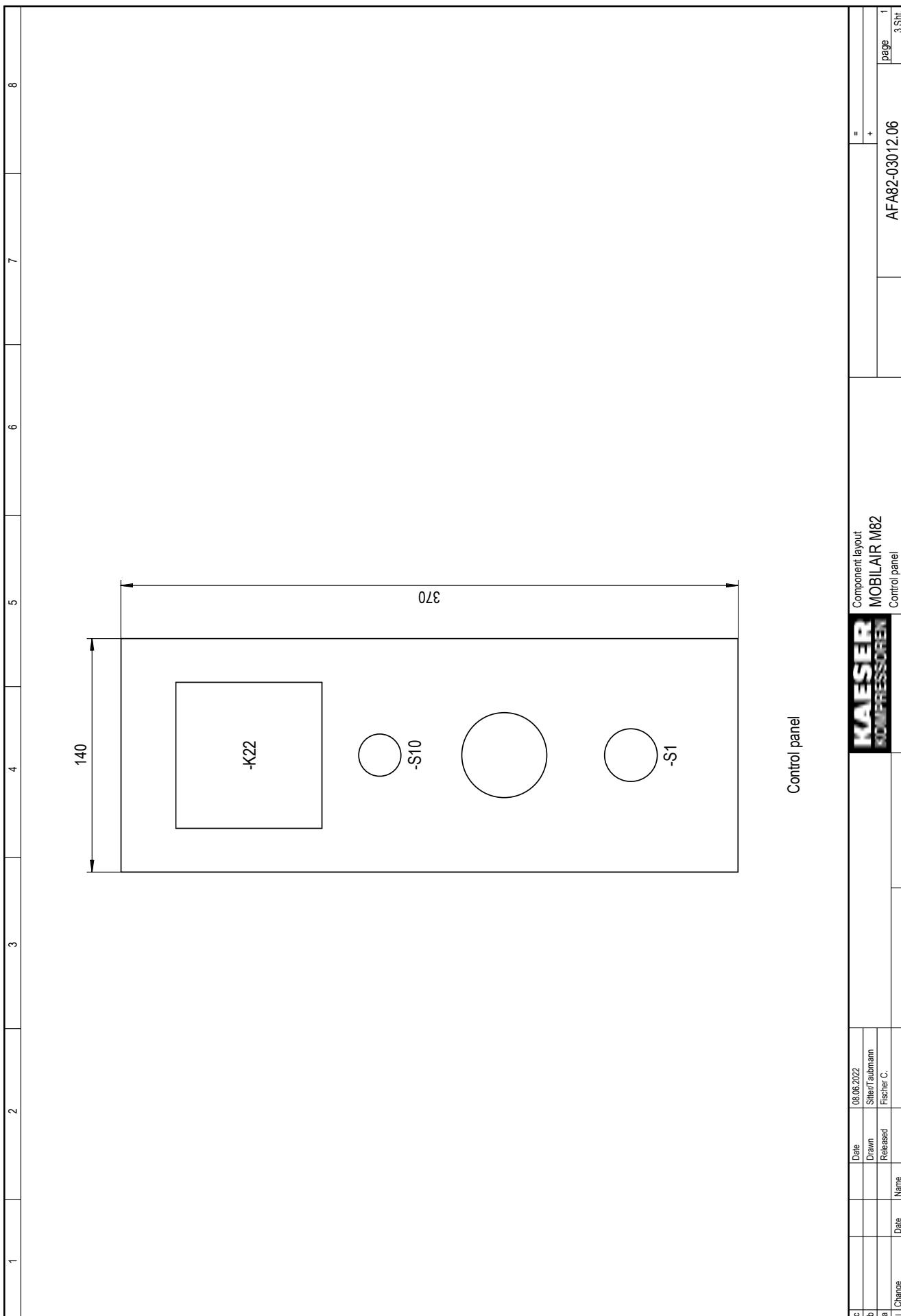
- 2) Remote ON/OFF (option oc)  
Remove jumper when connecting remote on/off

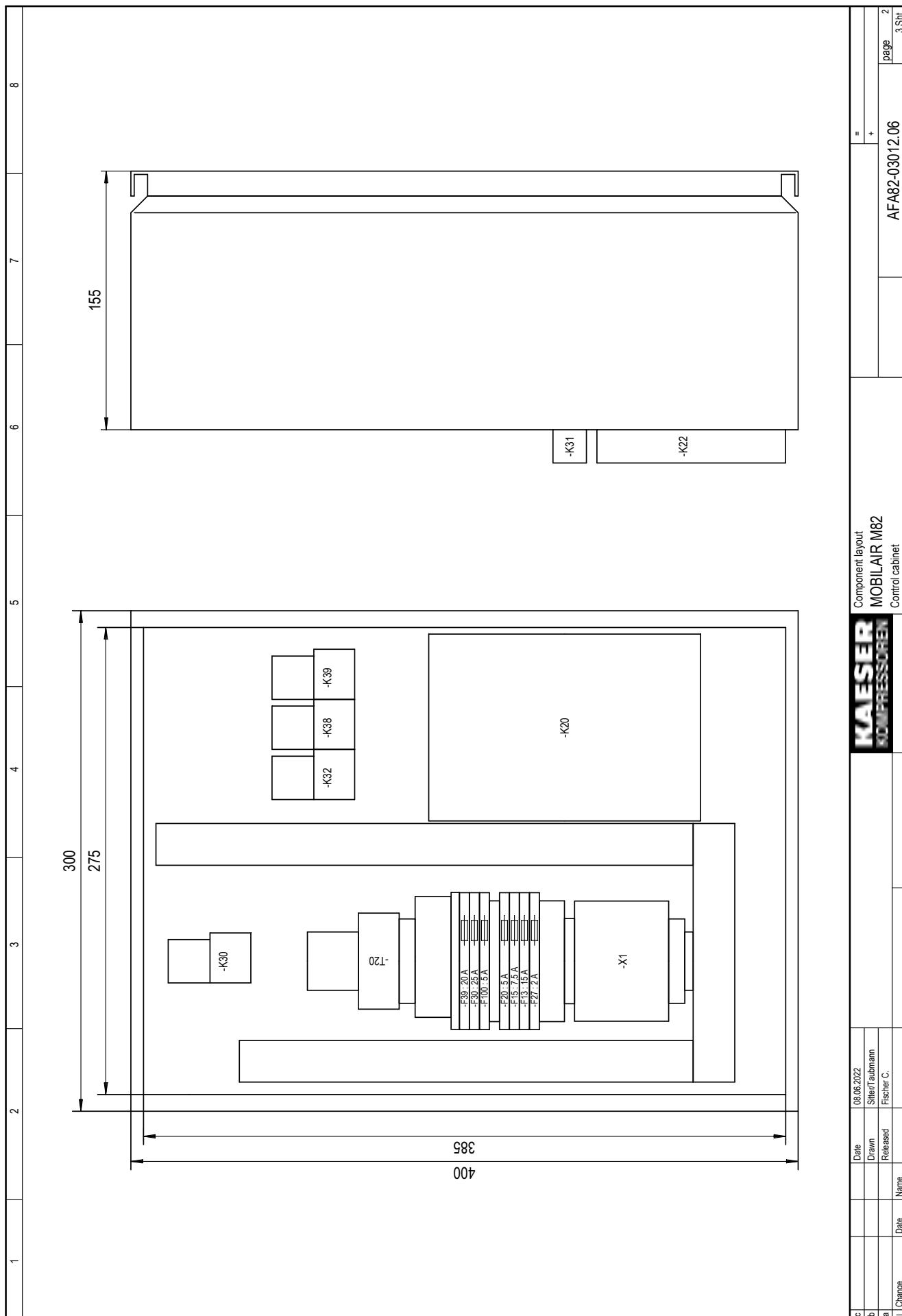


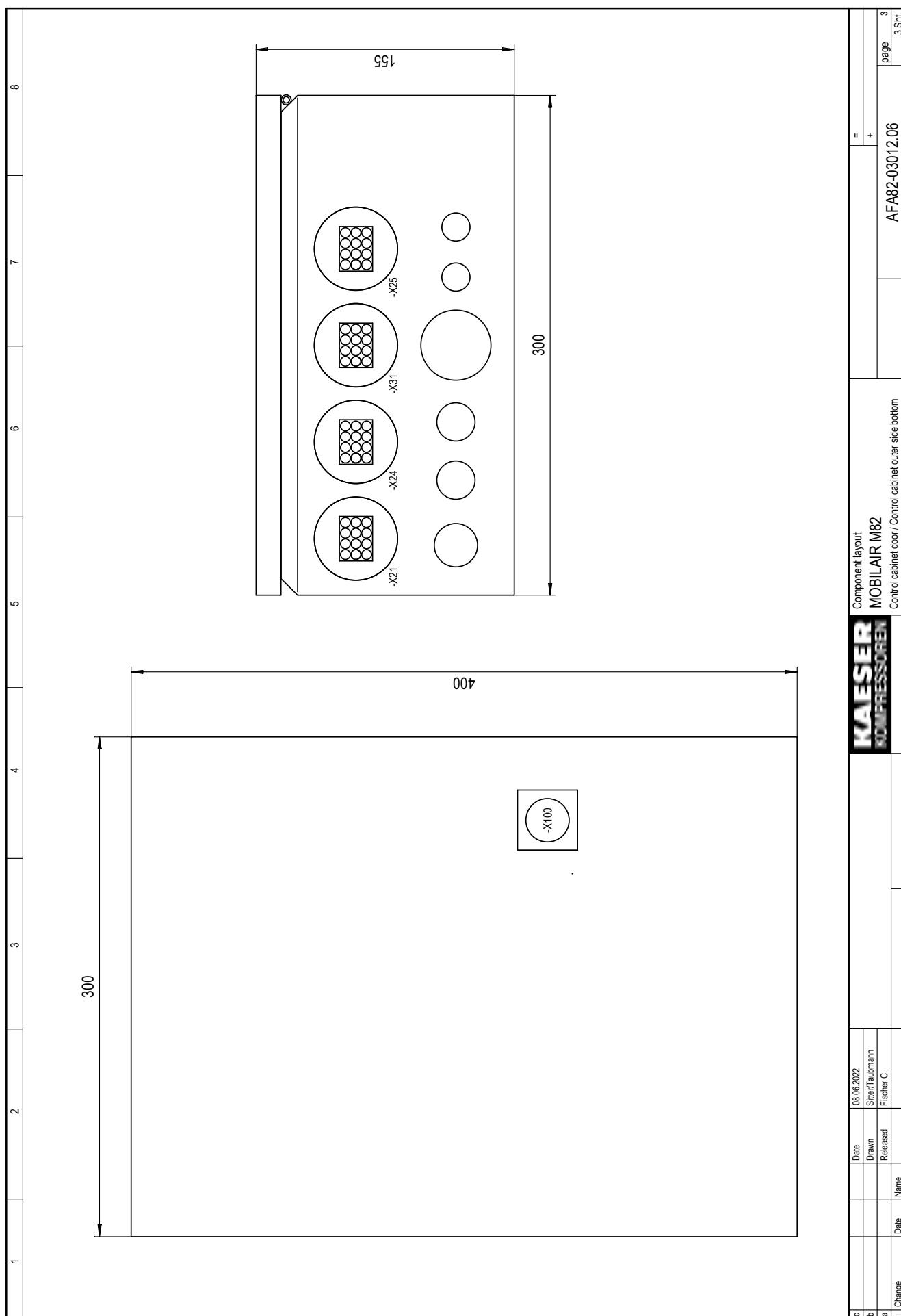




Connection number	Component identification	Location	Wire link	Terminal legend	Link	Terminal number	Component identification	Destination	Termination strip	Destination internal	Cable identification
Plug connection: X31.1											
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-B40	2	2									
-B40	3	3									
-B10	1	4									
-B10	1	4									
-B10	5	3									
-B11	1	6									
-B10	3	3									
-B10	4	4									
-B11	4	4									
-B10	5	5									
-B11	6	6									
-B10	7	7									
-B11	4	4									
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-B11	1	5									
-B10	1	6									
-B11	1	7									
-B10	4	8									
-B11	4	9									
-B10	3	10									
-B11	3	11									
-B10	4	12									
Plug connection: X31.2											
-B40	1	1									
-B40	2	2									
-B40	3	3									
-B10	1	4									
-B10	1	4									
-B10	5	5									
-B11	6	6									
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-B10	4	111									
-B11	3	112									
total 12 Terminals											
Plug connection: X31.2											
total 12 Terminals											
Plug connection: X31.1											
total 12 Terminals											
Plug connection: X31.2											
total 12 Terminals											
KFA82-03012.06											
KAESER KOMPRESSOREN											
MOBILAIR M82											
Plug connection X31											
Page 20 5 Sht											







c	Date	08.06.2022	Stefan Taubmann	=
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a	Released		Fischer C.	
I Change	Date	Name		page 3 3 Sht.

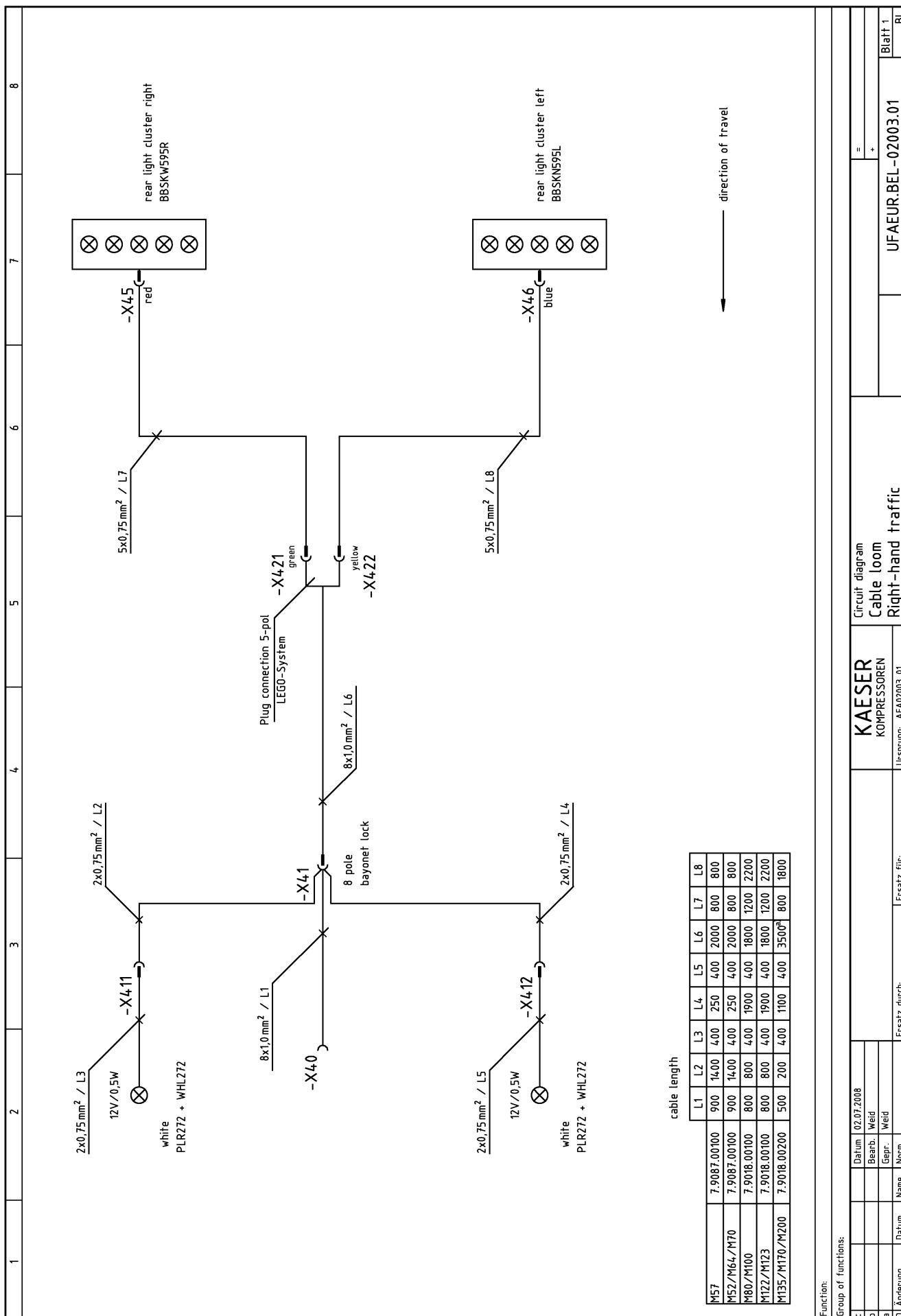
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KOMPRESSOREN

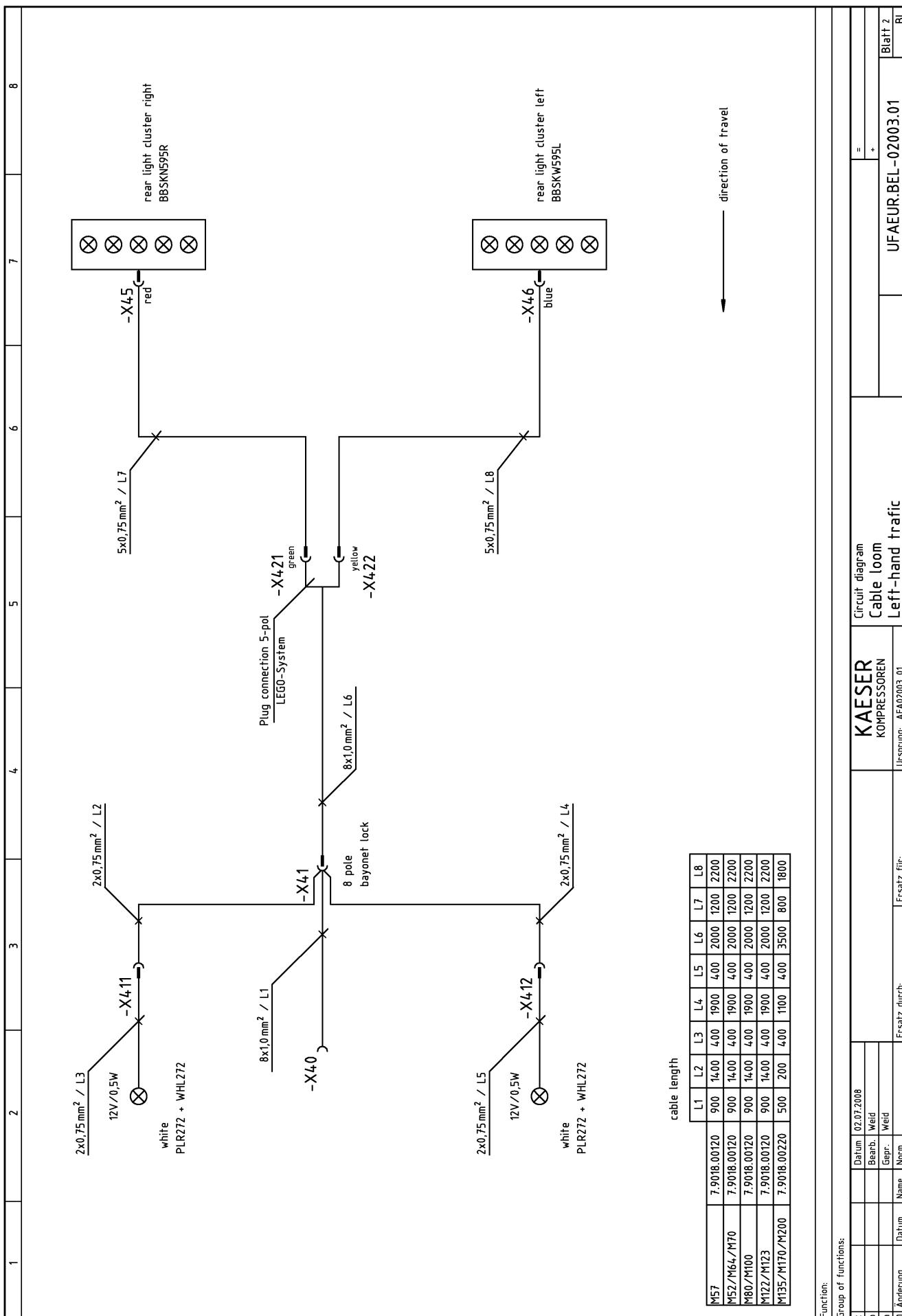
Component layout  
**MOBILAIR M82**  
Control cabinet door: Control cabinet outer side bottom

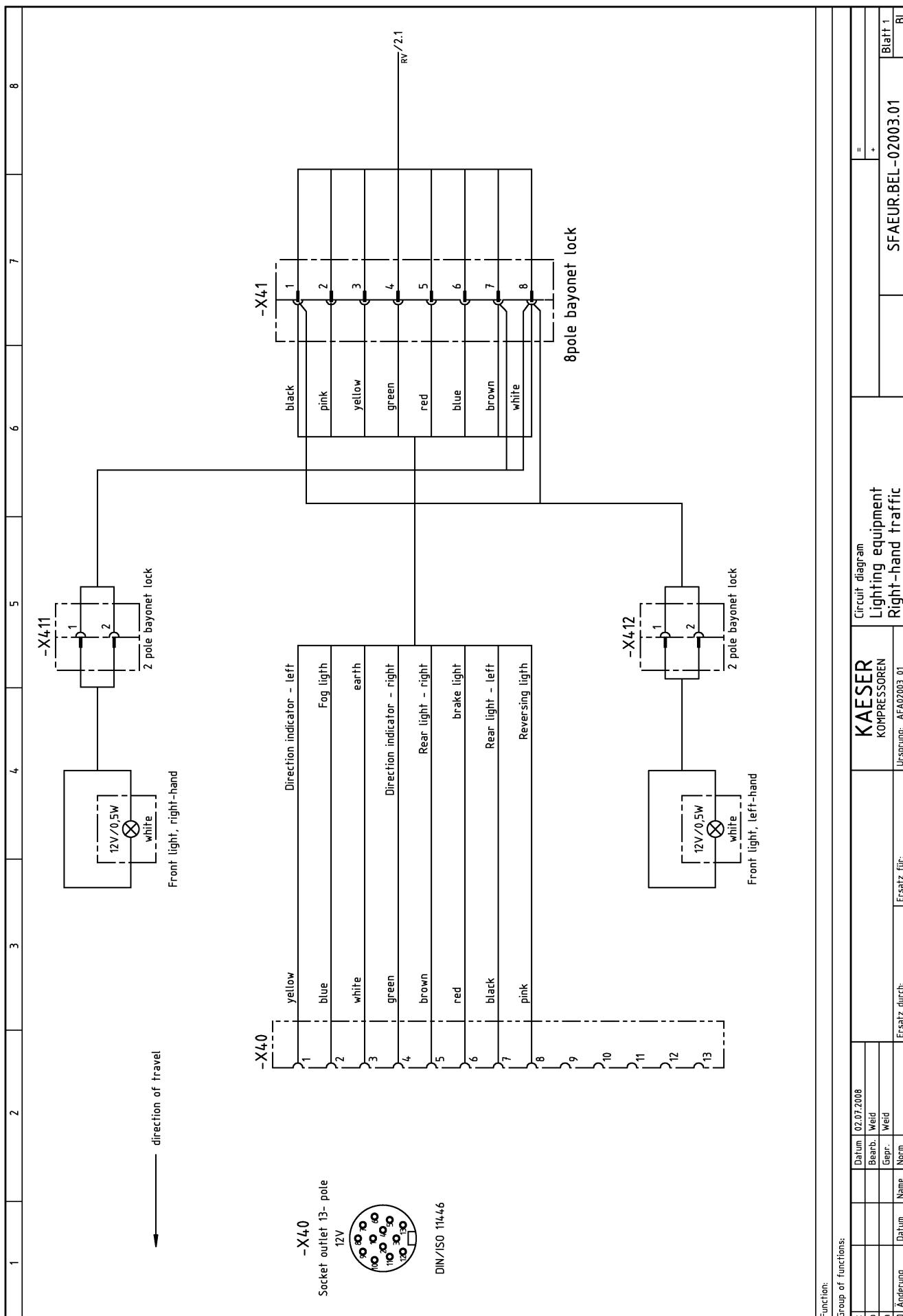
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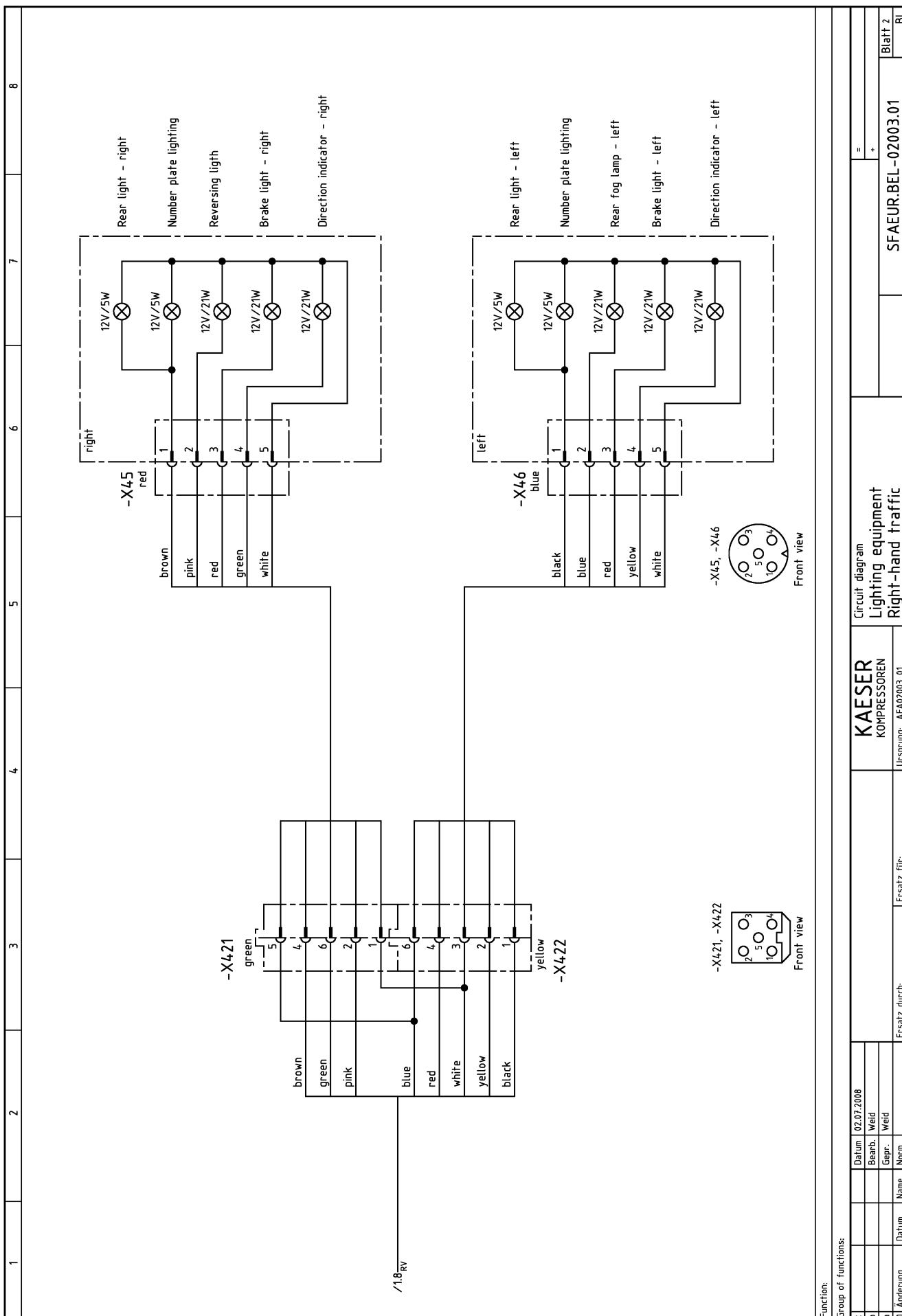
**13.4.2 Option tc**  
**Lighting and signaling system connection**

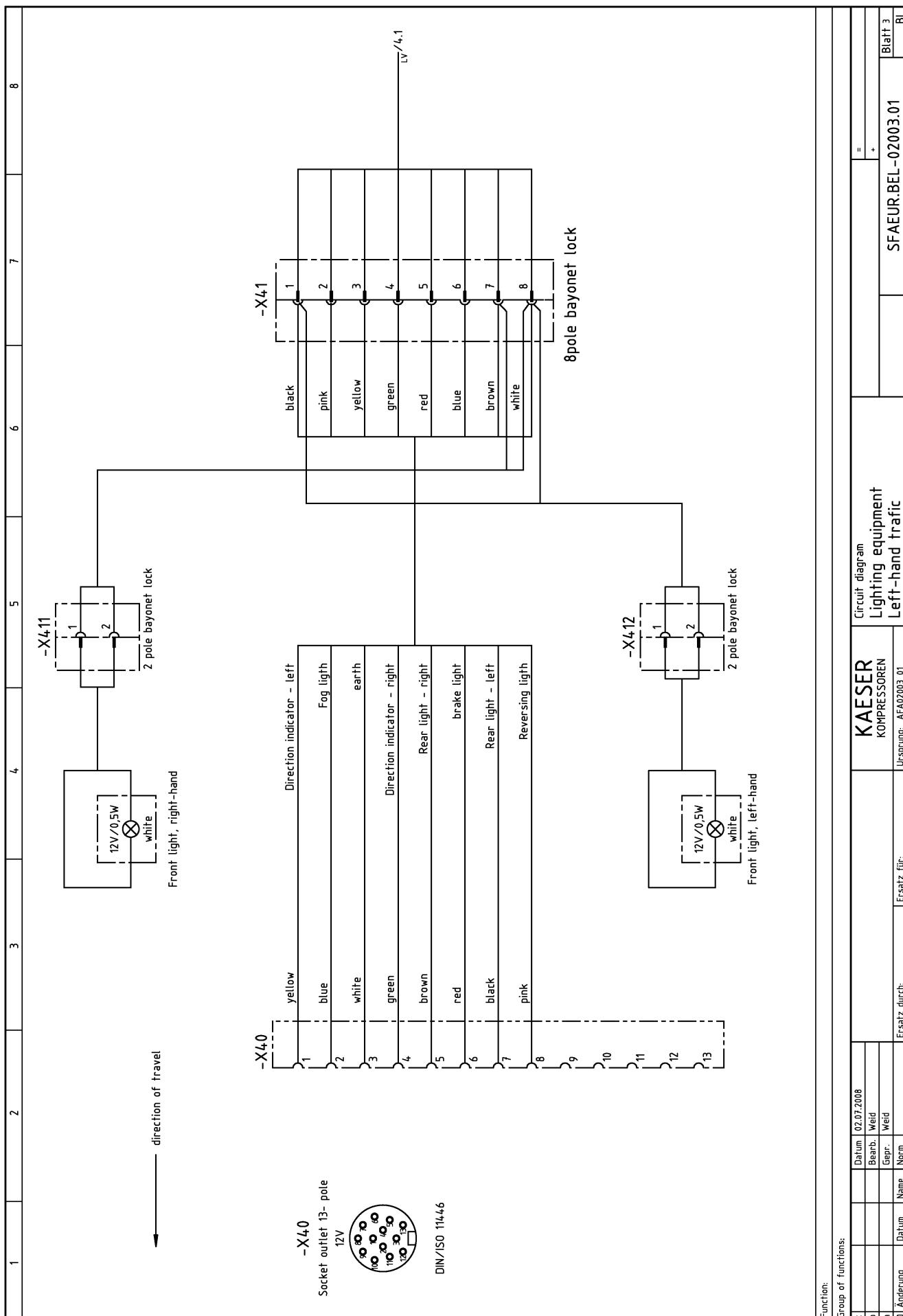
1	2	3	4	5	6	7	8																																								
<b>Electrical diagrams</b>																																															
<b>MOBILAIR</b>																																															
<b>Lighting equipment</b>																																															
<b>connection 12V/13-pole</b>																																															
<b>Manufacturer:</b> KAESER Kompressoren GmbH Postfach 2143 96410 Coburg																																															
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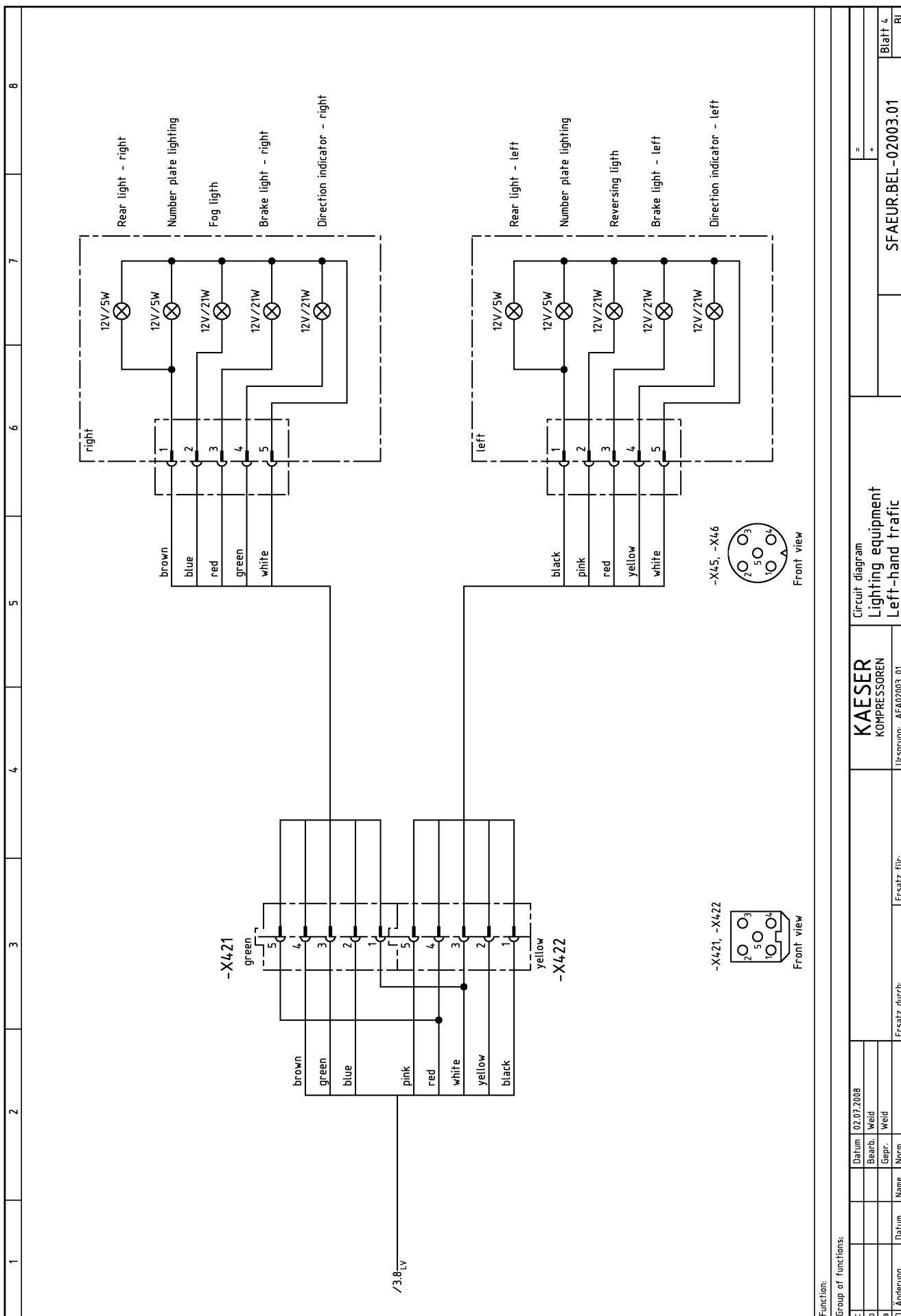












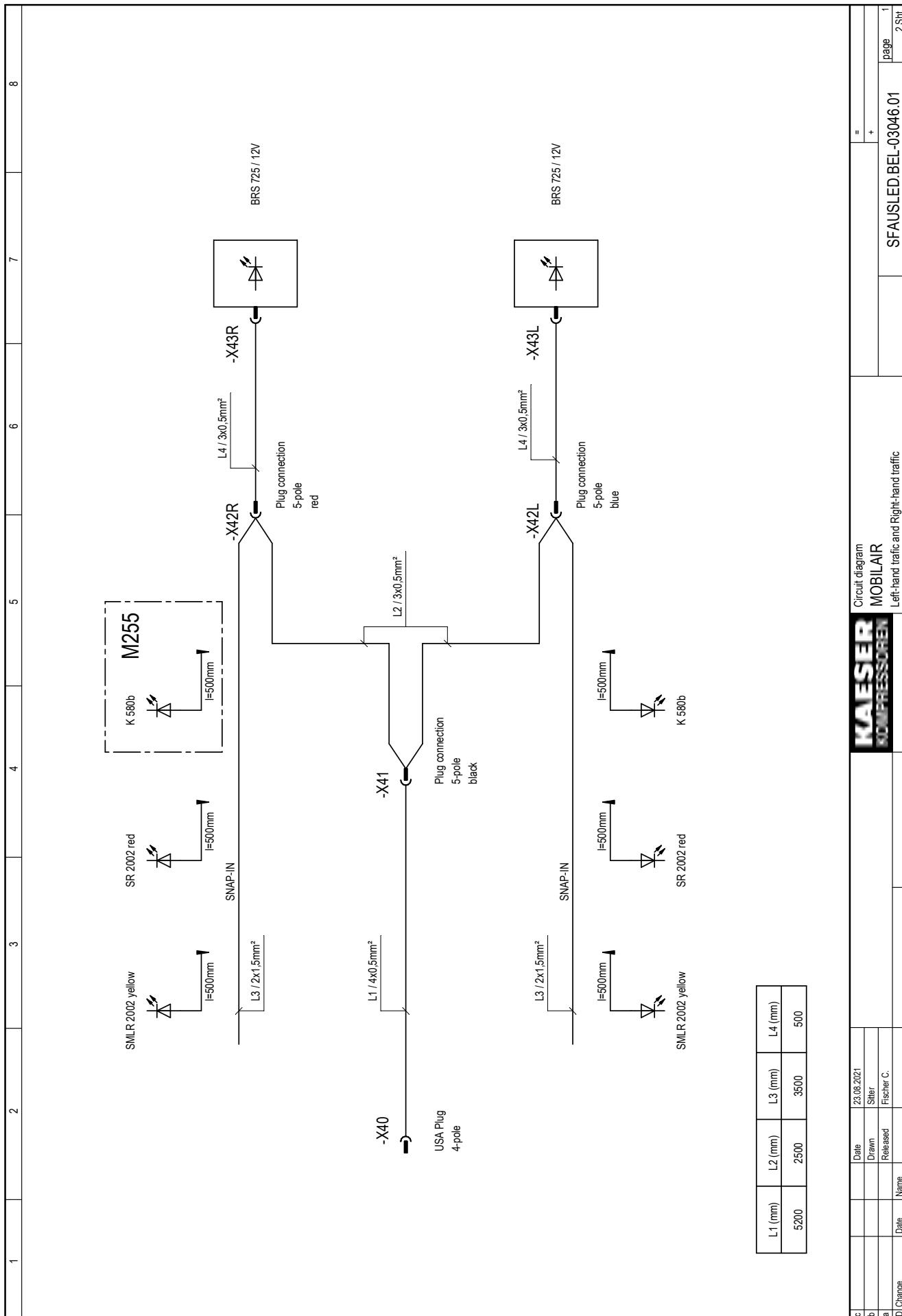
**13.4.3 Option te  
Lighting and signaling system connection**

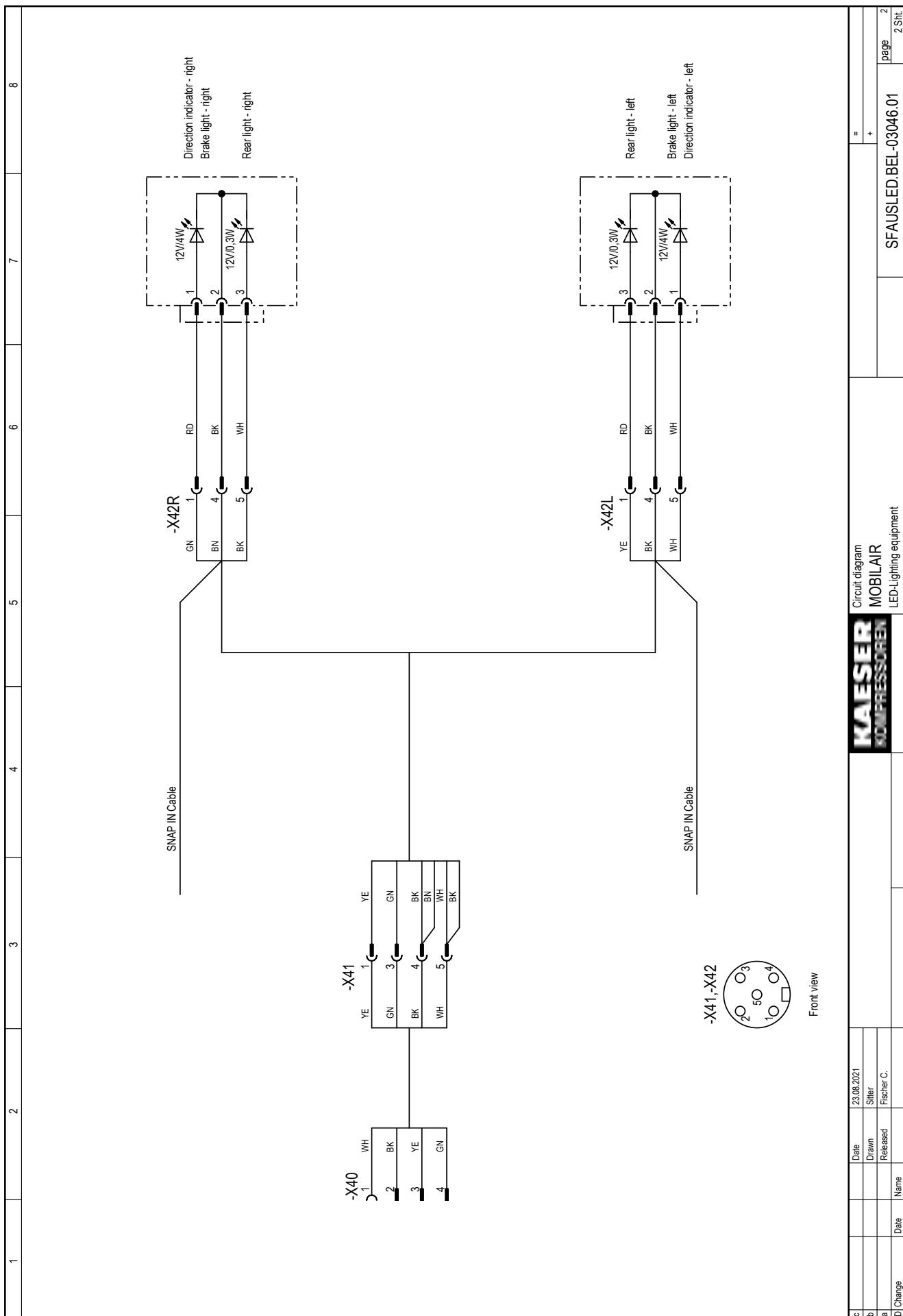
**Electrical diagrams****MOBILAIR****LED-Lighting equipment  
for USA / CAN**

Manufacturer: KAESER KOMPRESSOREN SE  
Postfach 2143  
96410 Coburg

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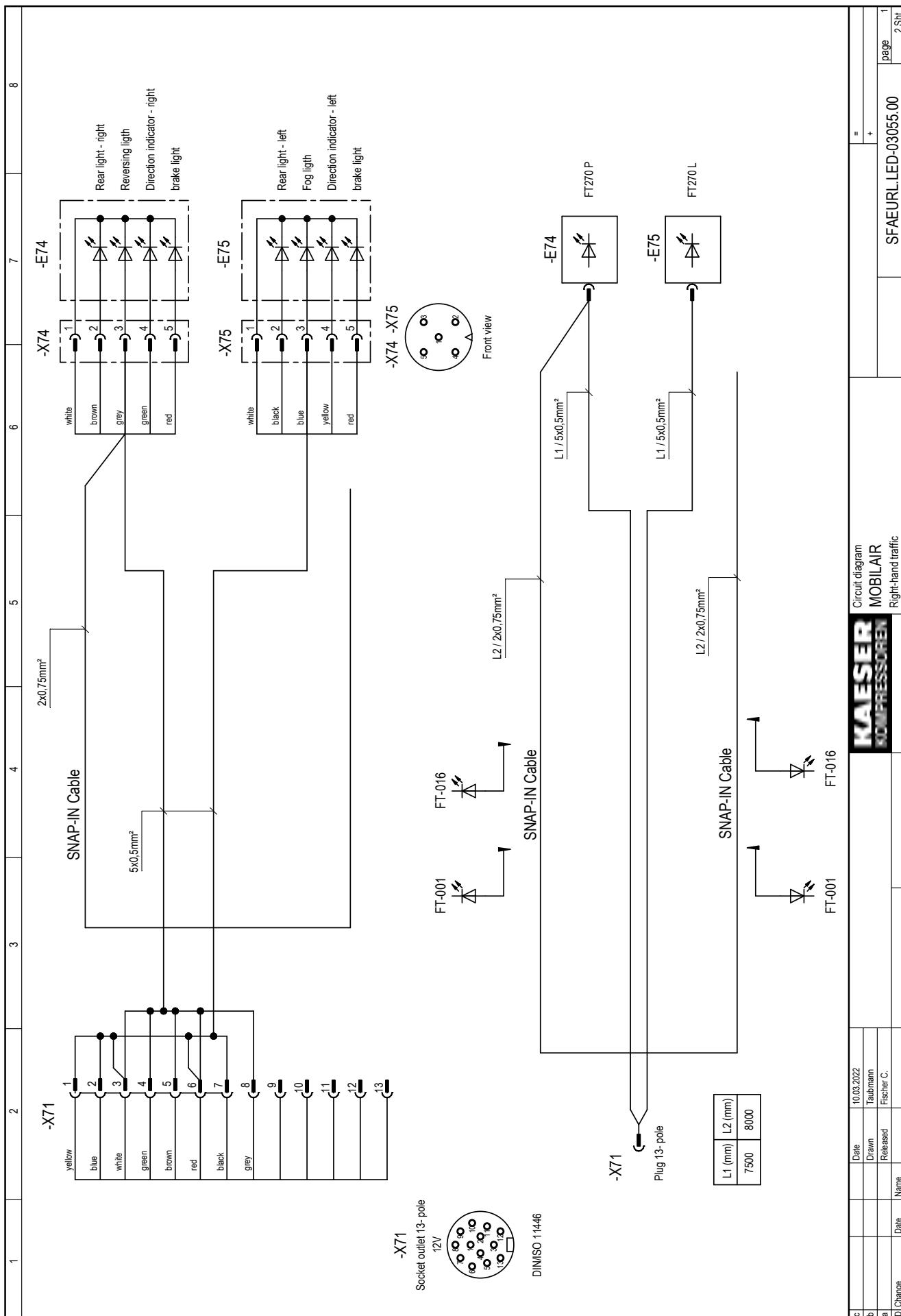
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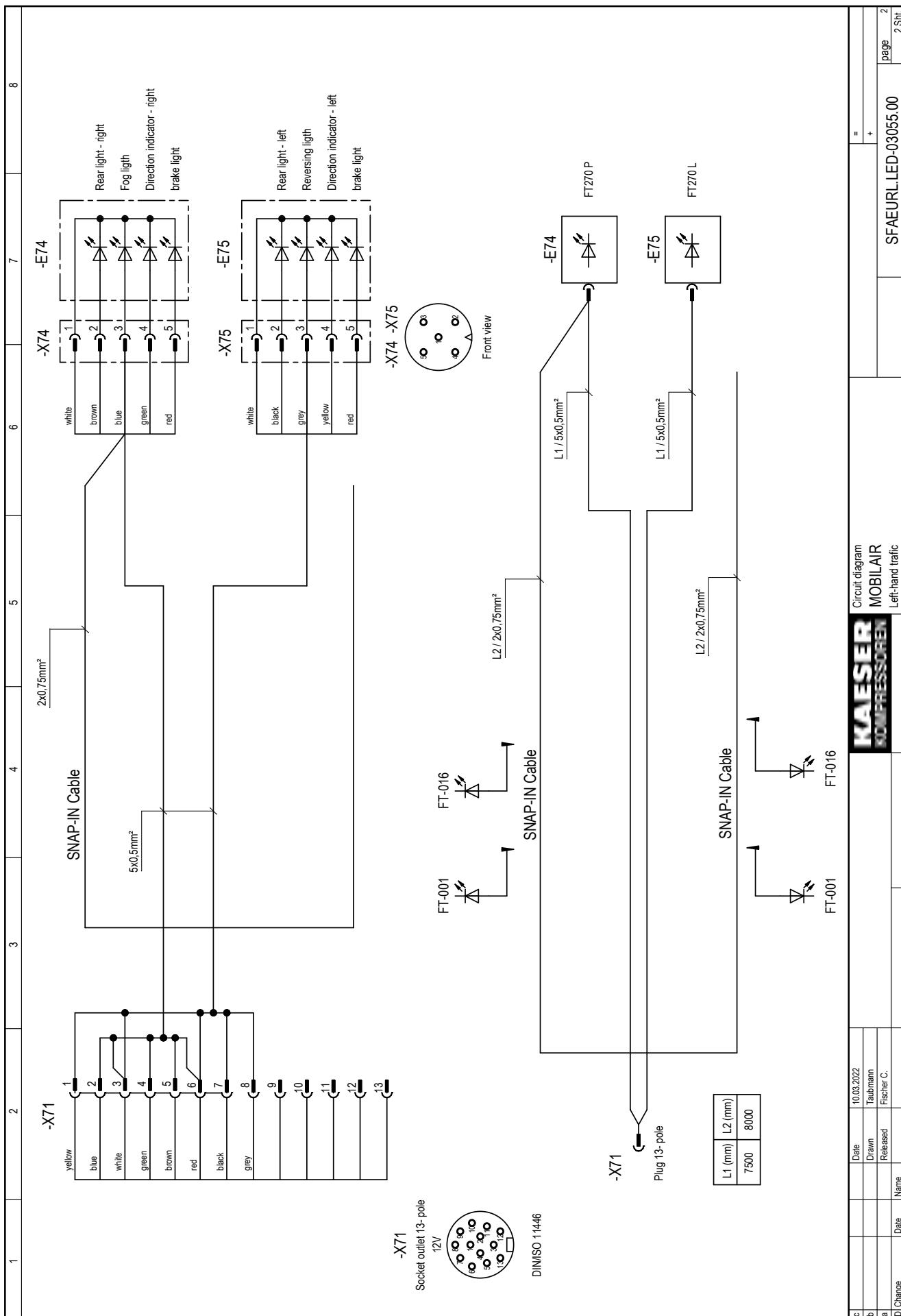




**13.4.4 Lighting and signalling system connection - special version**

1	2	3	4	5	6	7	8																																
<b>Electrical diagrams</b>																																							
<b>MOBILAIR</b>																																							
<b>LED-Lighting equipment</b>																																							
<b>for EU-Right-hand traffic/Left-hand traffic</b>																																							
				<p>Manufacturer: KAESER KOMPRESSOREN SE Postfach 2143 96410 Coburg</p>																																			
<p>The drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions must be forwarded or otherwise made accessible to third parties.</p>																																							
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b		Drawn	Taubmann			+																																	
a		Released	Fischer C.																																				
A Change	Date	Name			DFAEURL.LED-03055.00	page 1	1 Sht.																																





## 13.4.5 Option ga

Generator electrical diagram, 400V, 3-ph

**Electrical diagrams****Synchronous generator****400V/3~/50Hz, 8,5/13 kVA****with Insulation monitoring**

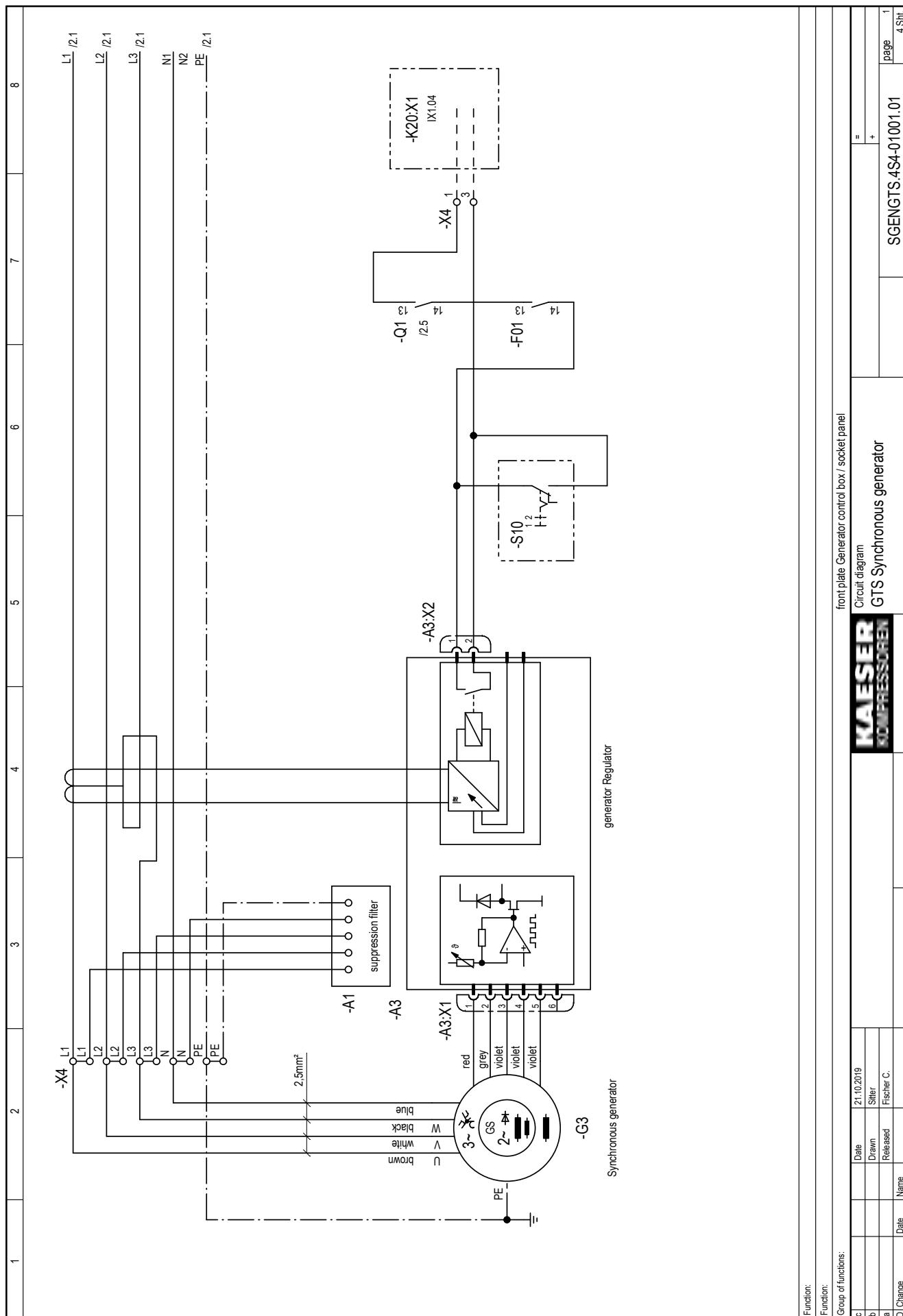
Manufacturer: KAESER KOMPRESSOREN SE  
Postfach 2143  
96410 Coburg

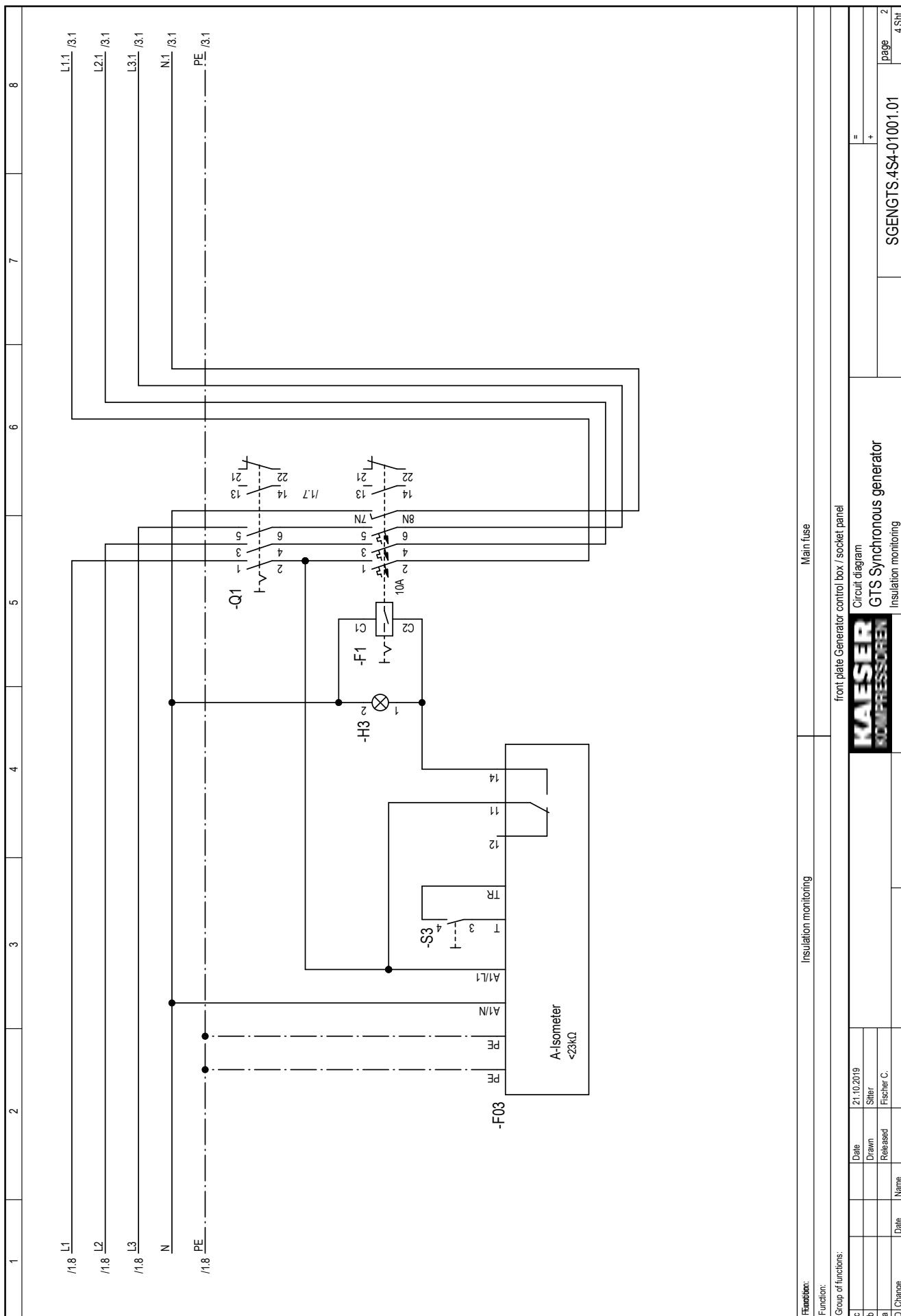
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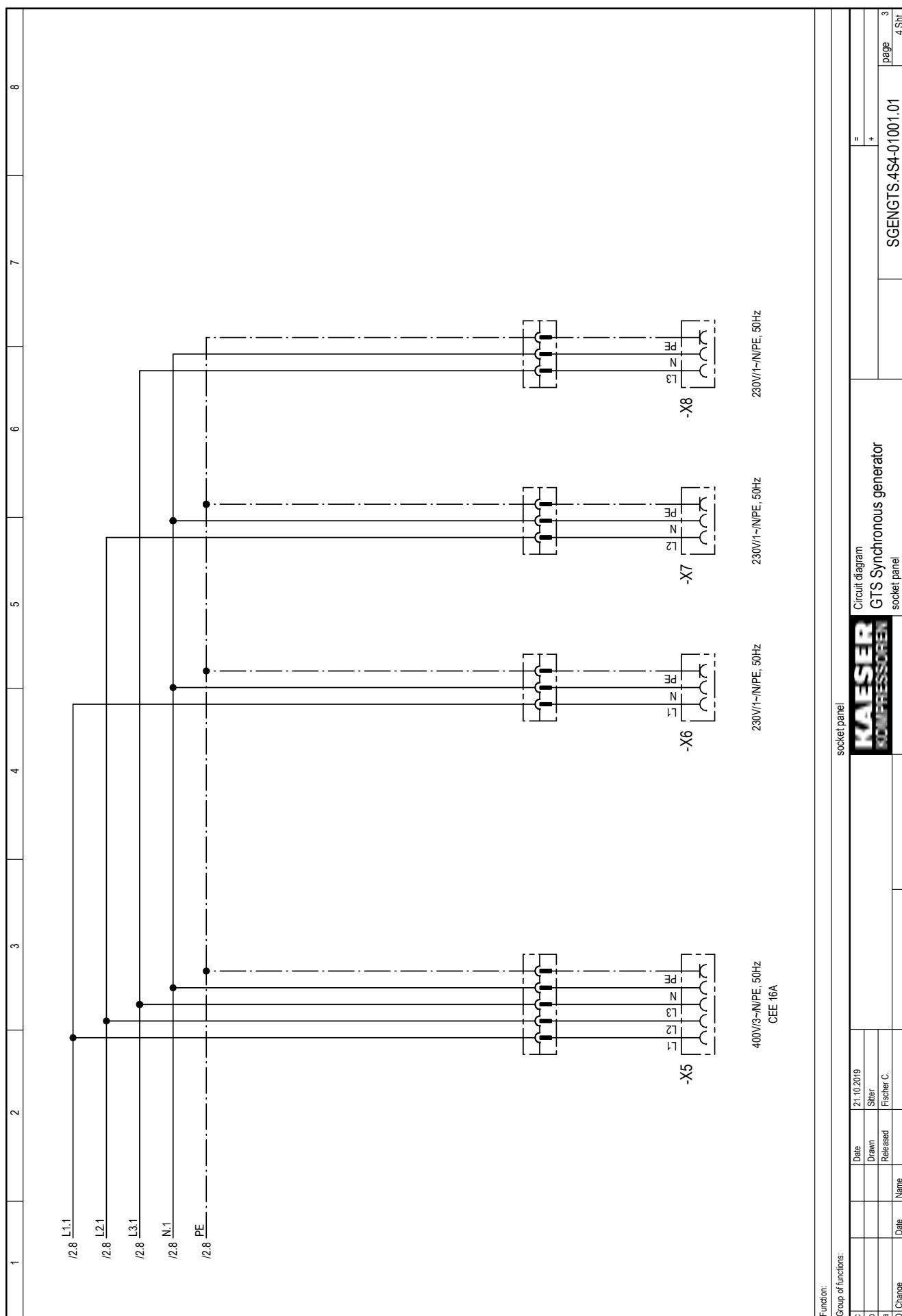
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Lfd. Nr. No.	Benennung Name	Zeichnungskennzeichen Drawing No. (customer)	Zeichnungskennzeichen (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DGENGTS.4S4-01001.01	1	
2	List of contents		ZGENGTS.4S4-01001.01	1	
3	Circuit diagram		SGENGTS.4S4-01001.01	1	
4	Circuit diagram	Insulation monitoring	SGENGTS.4S4-01001.01	2	
5	Circuit diagram	socket panel	SGENGTS.4S4-01001.01	3	
6	electrical equipment identification		SGENGTS.4S4-01001.01	01	
7	Equipment parts list		GGENGTS.4S4-01001.01	1	
8	Component layout	front plate	AGENGTS.4S4-01001.01	1	

<b>KAESER</b> KOMPRESSOREN	List of contents GTS Synchronous generator	=
	ZGENGTS.4S4-01001.01	+ page 1 1 Sht.



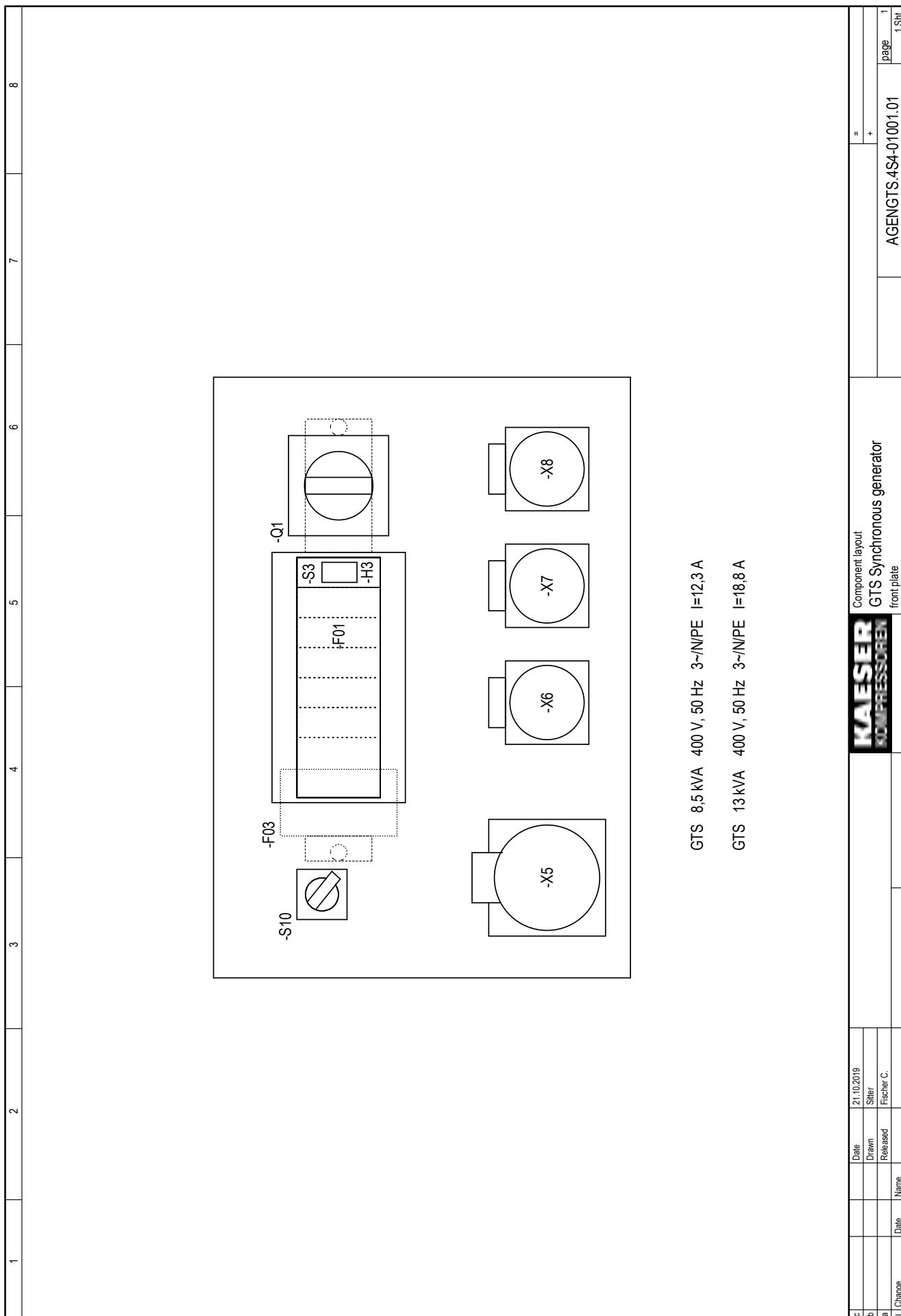




1	2	3	4	5	6	7	8
-A1	suppression filter						
-A3	generator-Regulator						
-F01	Cut-out with overcurrent release						
-F03	Insulation monitoring						
-G3	generator						
-H03	earth leakage lamp						
-Q1	Main switch						
-S3	Test button, Insulation monitoring						
-S10	Selector switch						
-X4	connection generator						
-X5	Socket outlet 400V/3~/N/PE, 50Hz						
-X6,-X7,-X8	Socket outlet 230V/1~/N/PE,50Hz						
-X42	Terminal strip, Valve interference suppression						

Operator Manual Portable Rotary Screw Compressor  
MOBILAIR M82 SIGMA CONTROL SMART

No.: 901783 09 USE



## 13.4.6 Option ga

Generator electrical diagram, 230V, 3-ph

1	2	3	4	5	6	7	8
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### Electrical diagrams

Synchronous generator

230V / 3~/50Hz, 8,5/13kVA

with Insulation monitoring

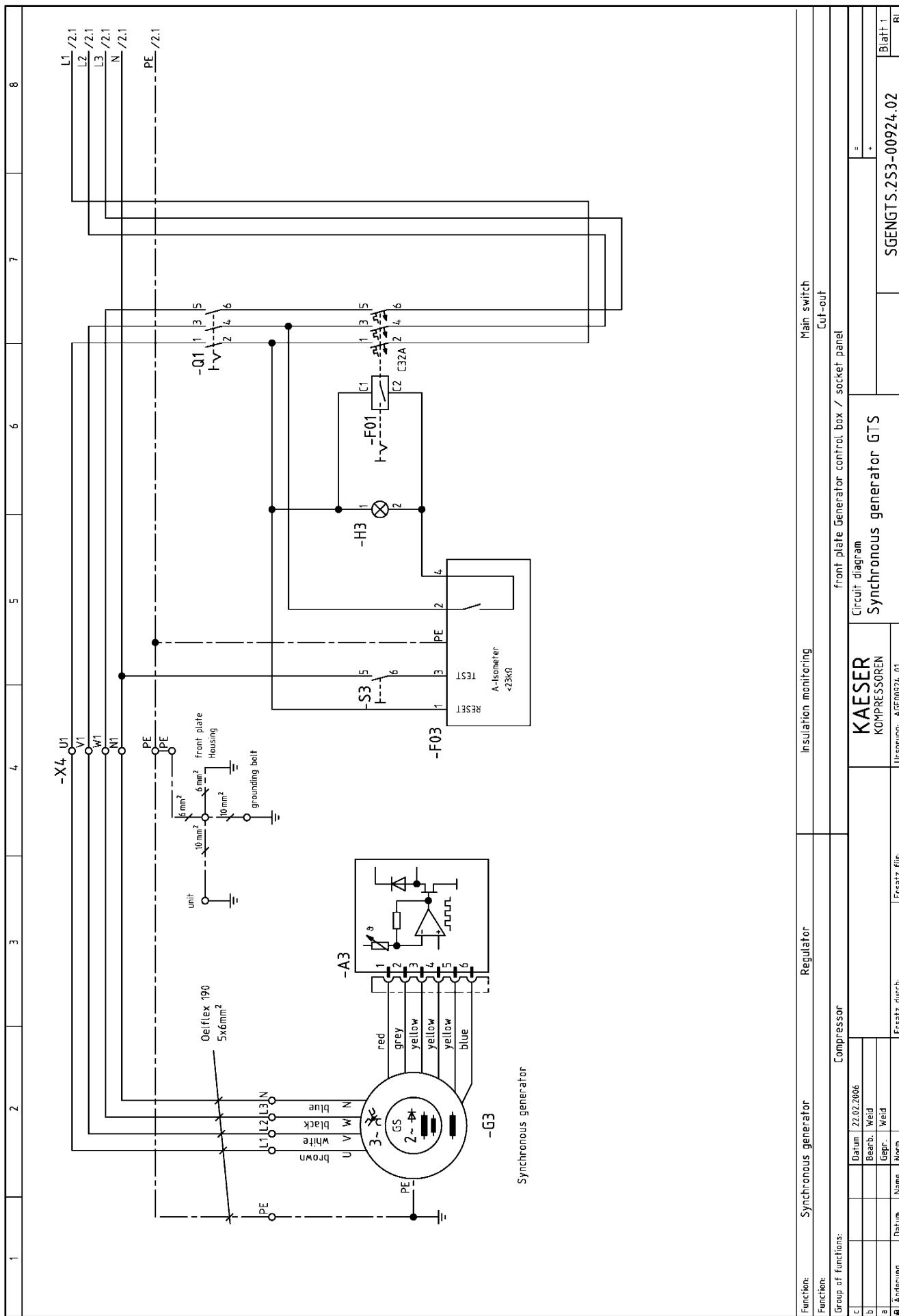
Manufacturer: KAESER KOMPRESSOREN SE  
 Postfach 2143  
 96410 Coburg

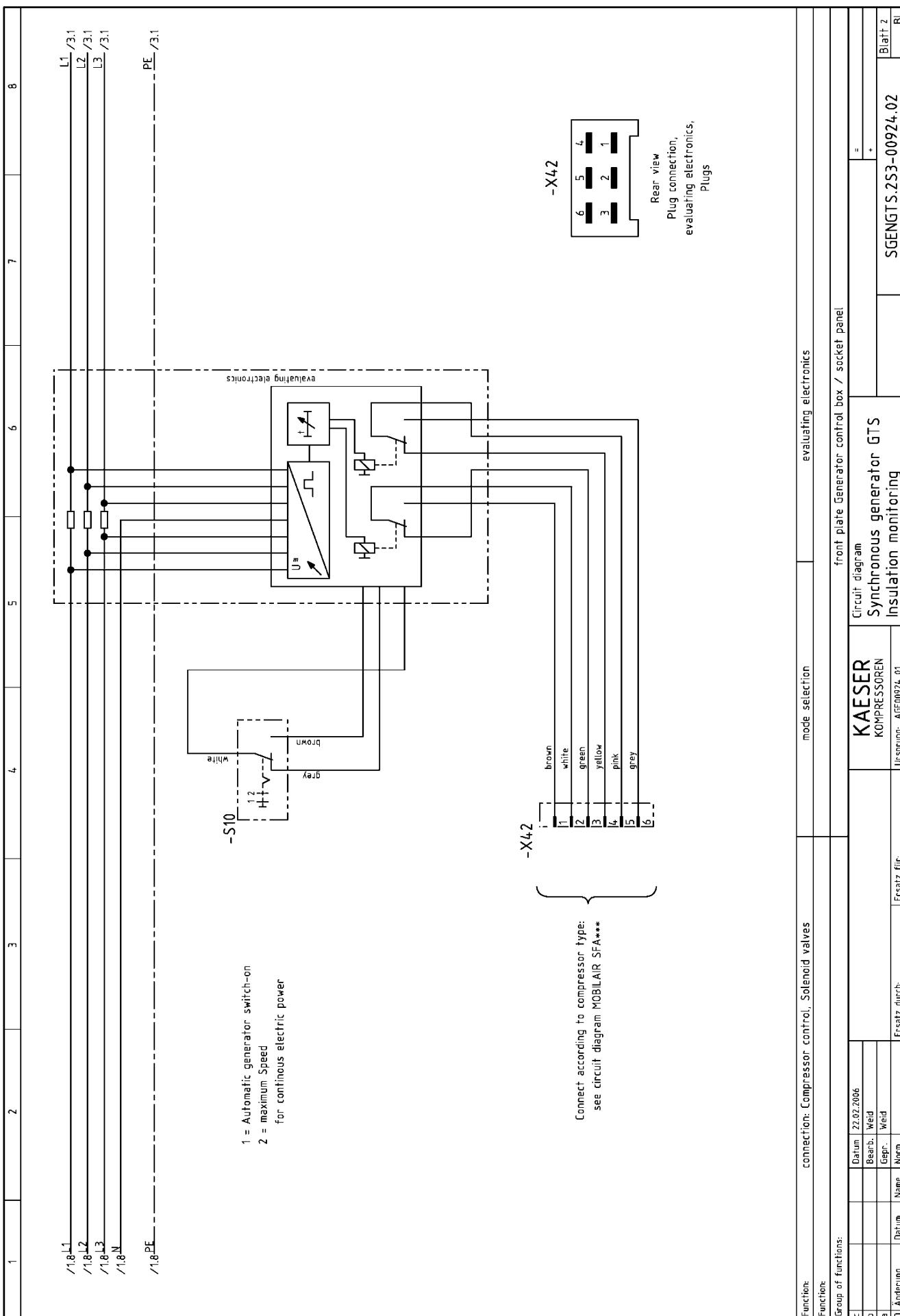
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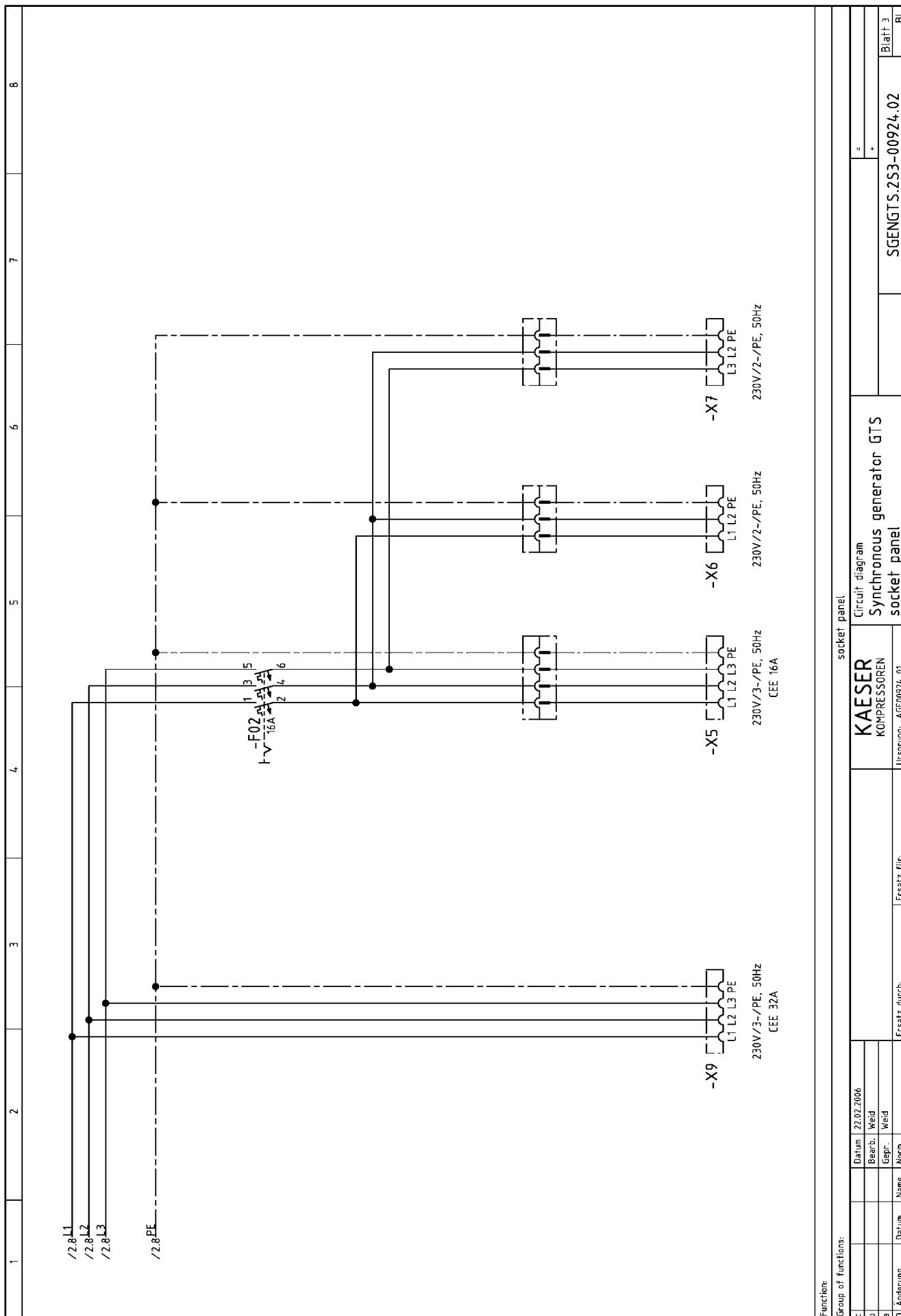
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b		Bearb. Weid		KOMPRESSOREN		+
a		Gepr. Weid		Ursprung: AAE0924_01		
A Änderung	Datum	Name	Ersatz für:		DGENGTS 2S3-00924.02	Blatt 1
		Norm				

Lfd. Nr. No.	Benennung Name	Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DGENGT S 253-00924_02	1	
2	List of contents		ZGENGT S 253-00924_02	1	
3	Circuit diagram		SGENGT S 253-00924_02	1	
4	Circuit diagram	Insulation monitoring	SGENGT S 253-00924_02	2	
5	Circuit diagram	socket panel	SGENGT S 253-00924_02	3	
6	Electrical equipment identification		SGENGT S 253-00924_02	01	
7	Equipment parts list		GGENGT S 253-00924_02	1	
8	Component layout	front plate	AGENGT S 253-00924_02	1	

c		Datum 27.02.2006			
b		Bearb. Weid			
a		Gegr. Weid			
b	Änderung	Datum Name Norm	Ersatz durch:	Ersatz für:	Ursprung: AEE00924_01 Bl. 1
					ZGENGT S 253-00924_02 Bl. 1



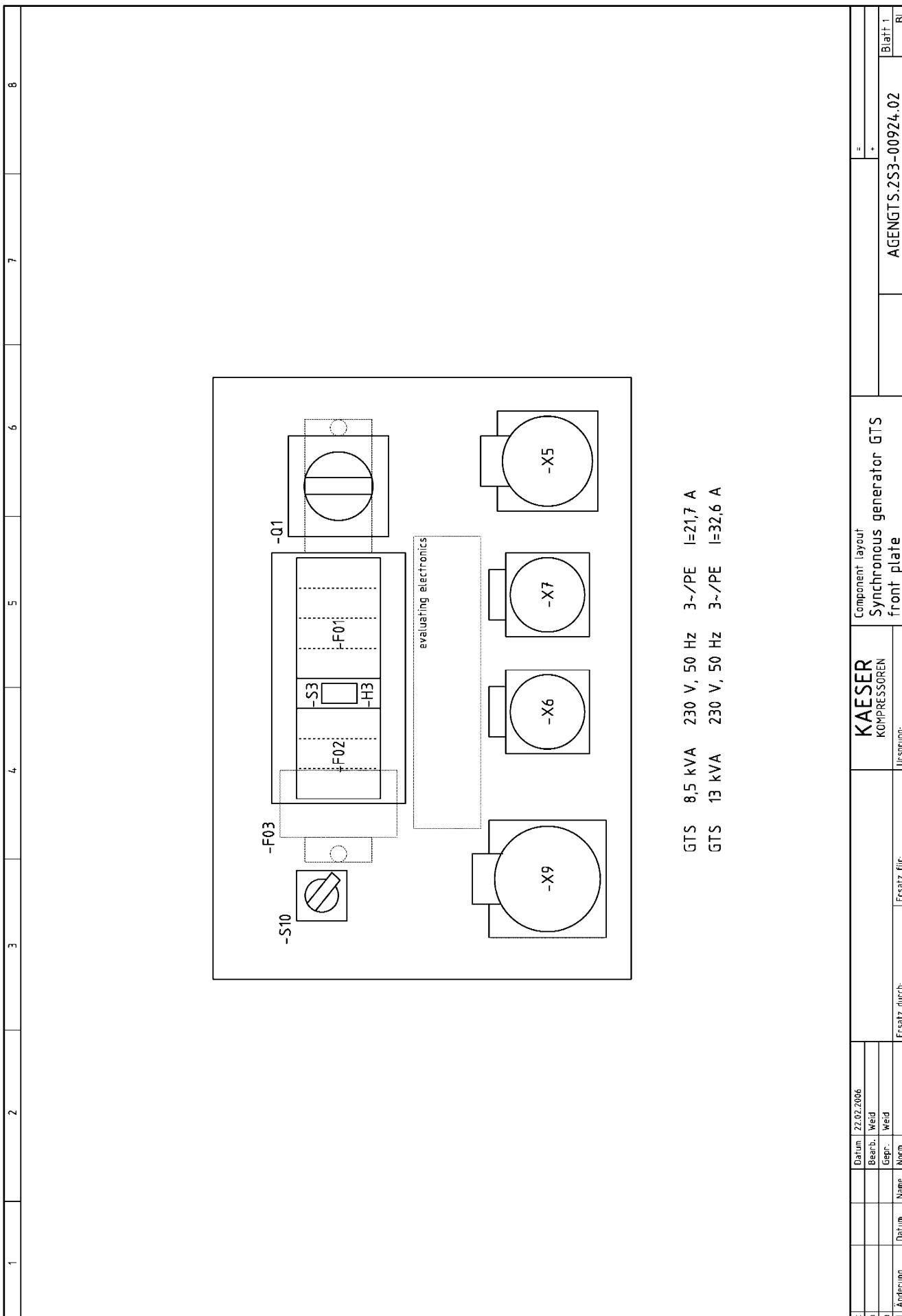




1	2	3	4	5	6	7	8
-A3	generator-Regulator						
-F01	Cut-out with overcurrent release						
-F02	Cut-out						
-F03	Insulation monitoring						
-G3	generator						
-H03	Earth leak lamp						
-Q1	Main switch						
-S3	Test button, Insulation monitoring						
-S10	Selector switch						
-X4	Generator terminals						
-X5	Socket outlet 230V/3~/PE, 50Hz 16A						
-X6,-X7	Socket outlet 230V/2~/PE, 50Hz 16A						
-X9	Socket outlet 230V/3~/PE, 50Hz 32A						
-X42	Plug connection, Valve interference suppression						

c		Datum 27.02.2006					
b		Bearb. Weid					
a		Gegr. Weid					
E Änderung	Datum	Name Norm	Ersatz durch:	Ersatz für:	Ursprung: AEE00924_01	SGENGTS.2S3-00924_02	Blatt 01





GTS 8,5 kVA 230 V, 50 Hz 3~/PE I=21,7 A  
 GTS 13 kVA 230 V, 50 Hz 3~/PE I=32,6 A

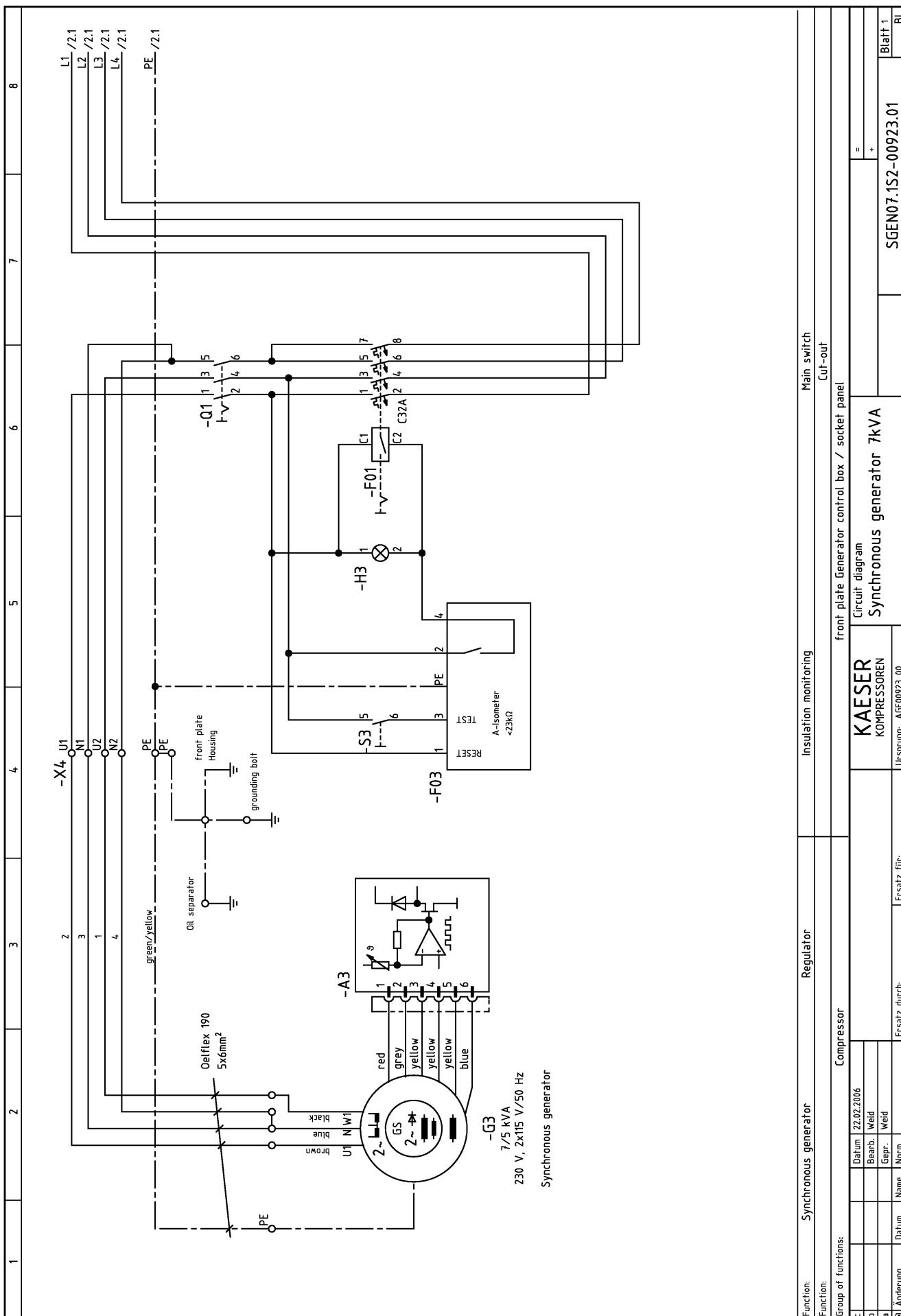
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a		Gegr.	Weid					
i Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	Ursprung:	AGENGTS.2S3-00924.02	Blatt 1

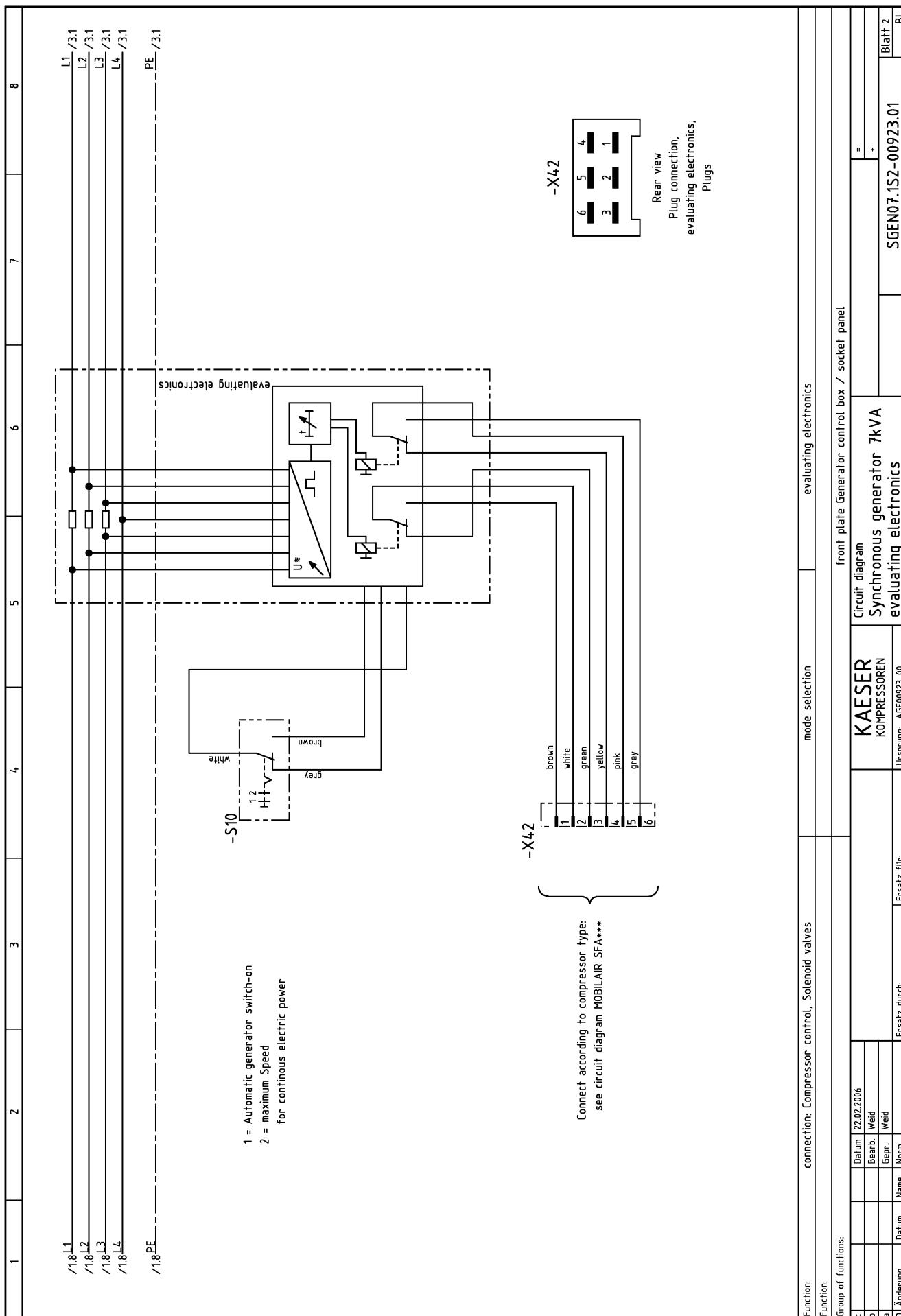
**13.4.7 Option ga**  
**Generator electrical diagram, 115 V, 2-ph**

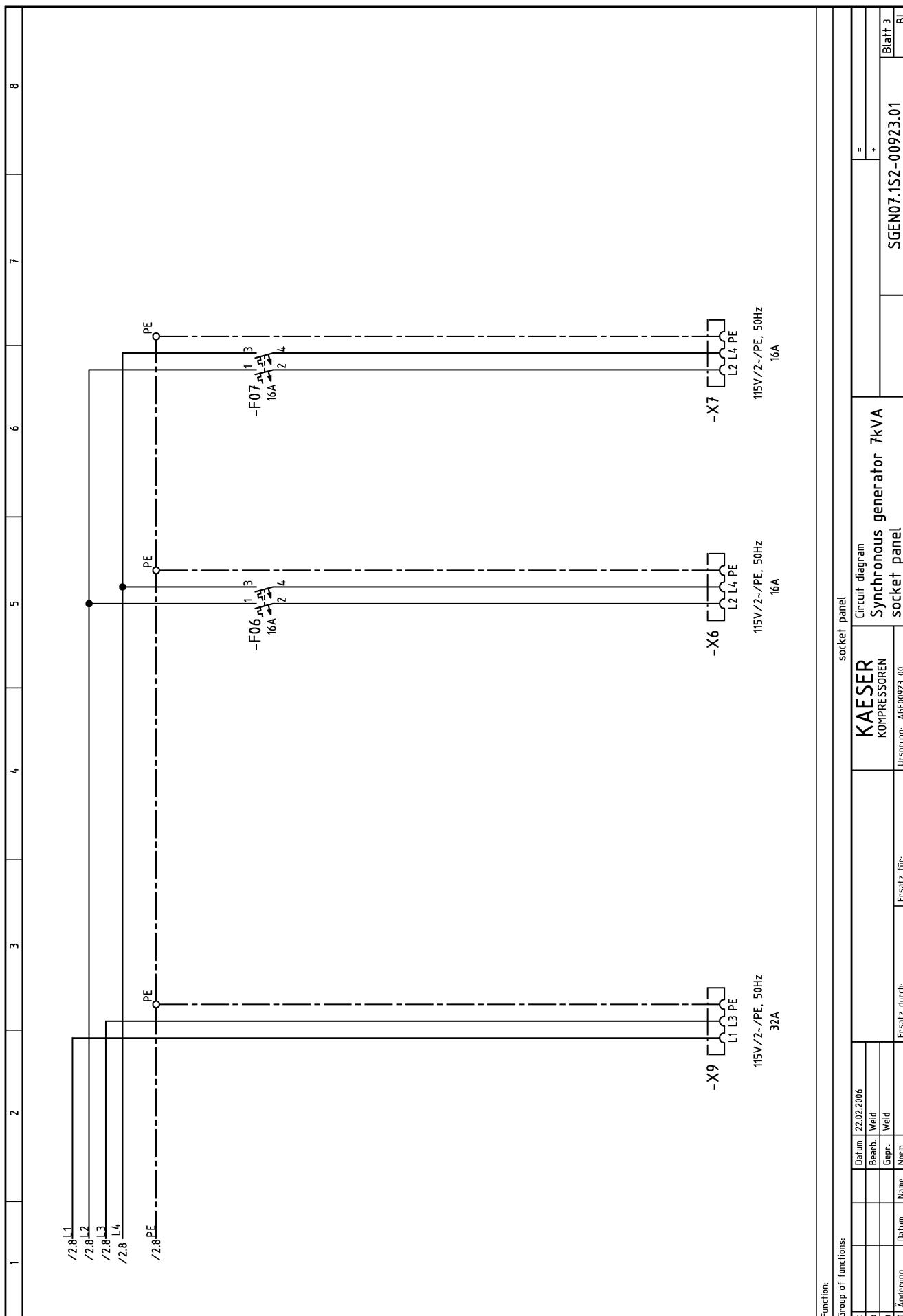
1	2	3	4	5	6	7	8																																								
<b>Electrical diagrams</b>																																															
<b>Synchronous generator GTS</b>																																															
<b>7/5 kVA, 115 V 50Hz</b>																																															
<b>with Insulation monitoring</b>																																															
<b>Manufacturer:</b> KAESER Kompressoren GmbH Postfach 2143 96410 Coburg																																															
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b		Bearb.	Weid				+																																								
a		Gegr.	Weid																																												
A Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	Ursprung: AEG0923_00	Blatt 1 Bl.																																								
						DGEN071S2-00923.01																																									

Lfd. Nr. No.	Benennung Name	Zeichnungsnr. Drawing No. (customer)	Zeichnungsnr. (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
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2	List of contents		ZGEN07.1S2-00923.01	1	
3	Circuit diagram		SGEN07.1S2-00923.01	1	
4	Circuit diagram		SGEN07.1S2-00923.01	2	
5	Circuit diagram		SGEN07.1S2-00923.01	3	
6	Electrical equipment identification		SGEN07.1S2-00923.01	01	
7	Circuit diagram		GGEN07.1S2-00923.01	1	
8	Component layout	front plate	AGEN07.1S2-00923.01	1	

c		Datum 22.02.2006	KAESER KOMPRESSOREN	List of contents GTS Synchronous generator	=
b		Bearb. Weid			+
a		Gepr.: Weid	Ersatz durch: Norm	Ursprung: AG0923.00	ZGEN07.1S2-00923.01
B Änderung	Datum	Name			Blatt 1 Bl.





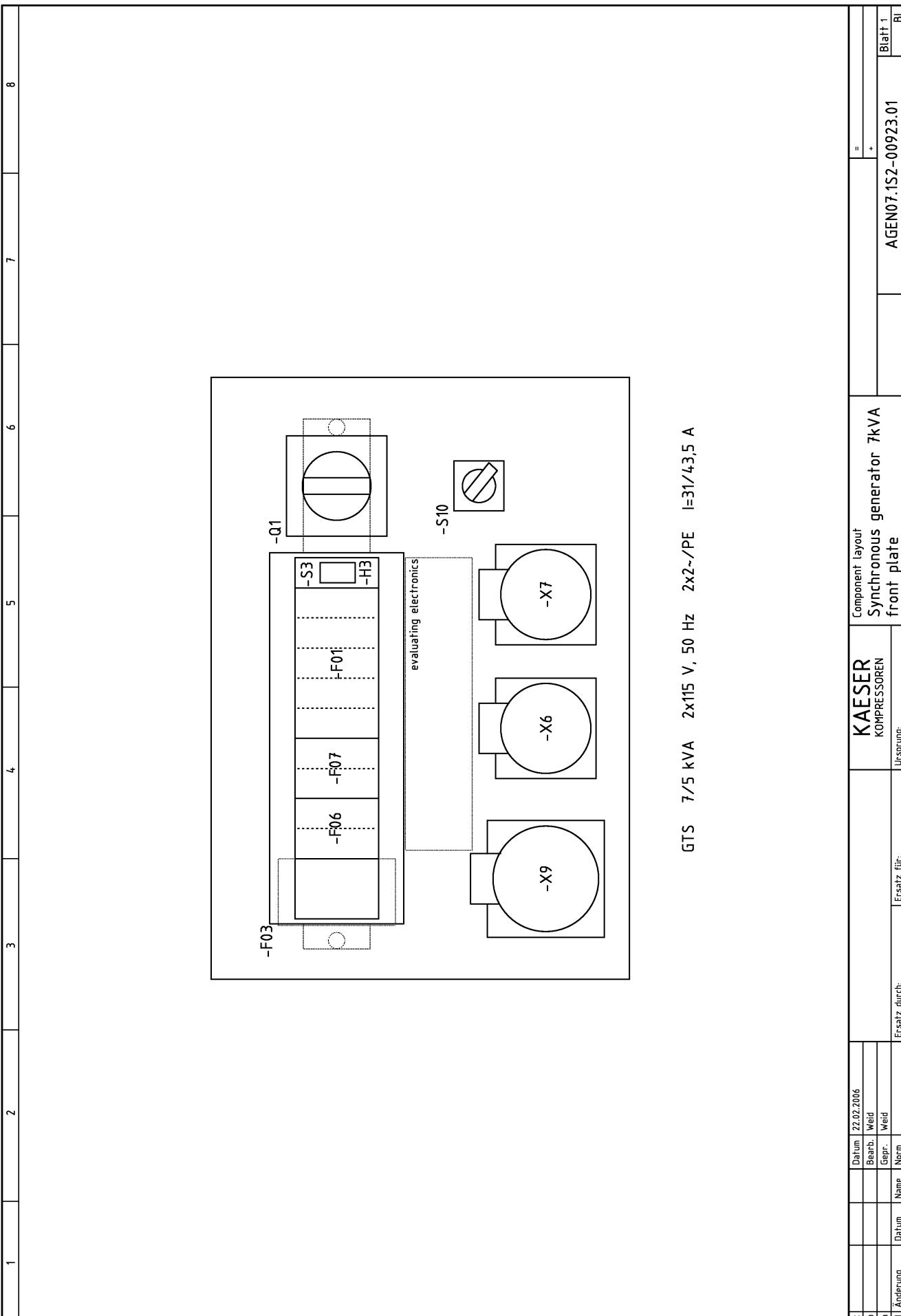


1	2	3	4	5	6	7	8
-A3	generator-Regulator						
-F01	Cut-out with overcurrent release						
-F06,-F07	Cut-out						
-F03	Insulation monitoring						
-G3	generator						
-H3	Earth leak lamp						
-Q1	Main switch						
-S3	Test button, Insulation monitoring						
-S10	Selector switch						
-X4	Generator terminals						
-X6,-X7	Socket outlet 115V/2~/PE, 50Hz 16A						
-X9	Socket outlet 115V/2~/PE, 50Hz 32A						
-X42	Plug connection, Valve interference suppression						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Spalten B und C angegebenen Daten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung dieser Gerätetypennummer anzugeben, sowie die Beantwortung technischer Rückfragen erleichtern. Für Eratzteilbestellung ist zusätzlich die Angabe der Seriennummer erforderlich, falls diese auf dem Gerätetypenblatt des Erzeugnisses genannt ist.

• Verzandsanschrift – Kennzeichen  
When ordering the parts, also quote the serial No. of the equipment, as well as the serial No. of the ceiling plate.

The German version applies in cases of doubt.



**13.4.8 Option od  
Battery charger electrical diagram**

**Electrical diagrams****Battery charger 12V DC / 5A****Power supply:****230V / 1~ / N / PE / 50Hz  
12V - System**

Manufacturer: KAESER KOMPRESSOREN SE  
Postfach 2143  
96410 Coburg

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including storage, treatment and dissemination by use of  
electronic systems must not be made for any other than the  
agreed purpose. Neither originals nor reproductions must be  
forwarded or otherwise made accessible to third parties.

c		Date	18.03.2020	E	=	
b		Drawn	Sitter		+	
a		Released	Fischer C.			
A Change	Date	Name				

KAESER  
KOMPRESSOREN  
MOBILAIR  
Battery charger

DFABLG-03039.01

1 Sht.

1

THE JOURNAL OF CLIMATE

## general instructions

Control voltage : 230V AC

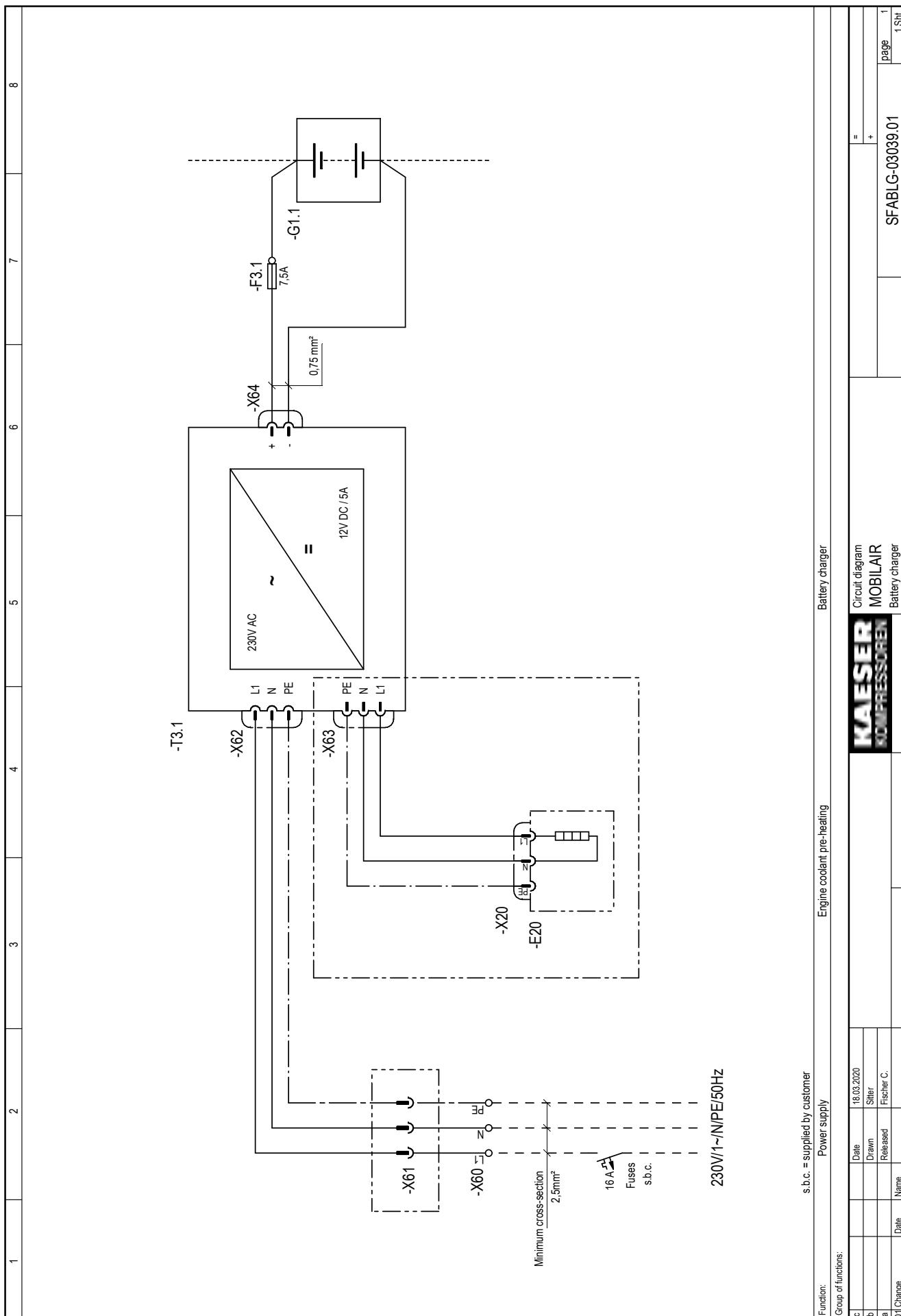
components option Battery charger

- |              |                 |
|--------------|-----------------|
| -T3.1        | Battery charger |
| -F3.1        | Fuse            |
| -G1.1        | Battery         |
| -X60 ... X64 | plug connection |

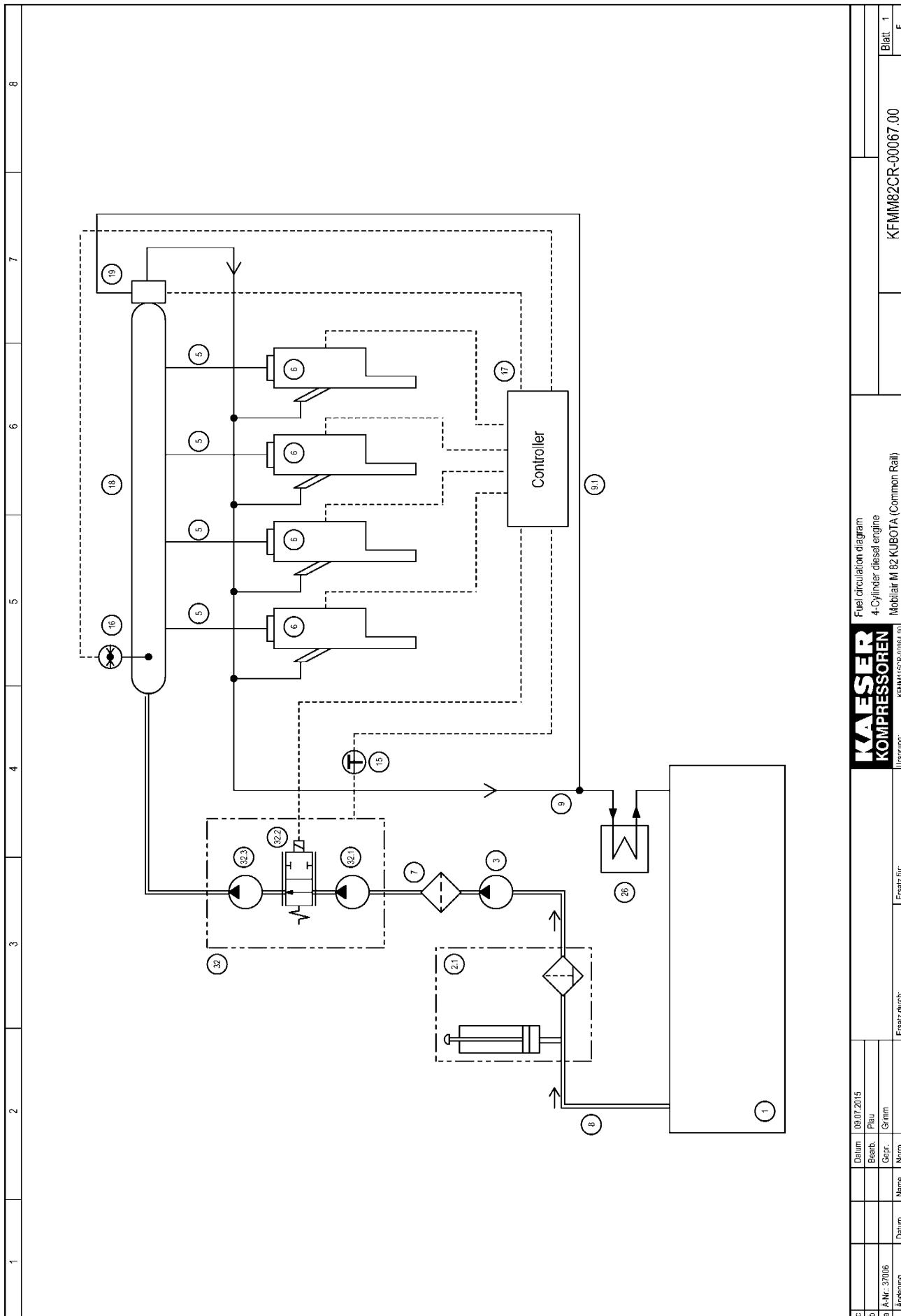
components option Engine coolant pre-heating

- HE20 Heating Engine coolant pre-heating  
XX20 plug connection

**KAESER**  
Kompressoren  
Block diagram  
general instructions  
UFABL-G-03039.01  
+  
page 1  
1 Sht



## 13.5 Fuel circulation diagram

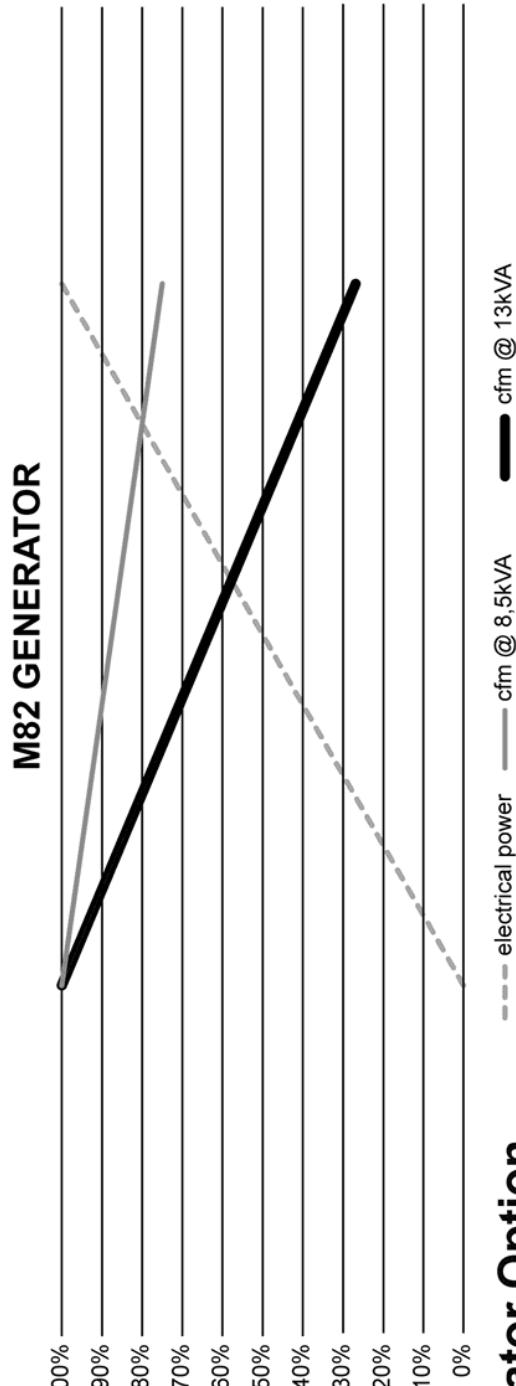




## 13.6 Compressed air flow rate in generator mode

M82 8,5kVA GENERATOR		0%	12,5%	25%	37,5%	50%	62,5%	75%	87,5%	100%
COMPRESSOR	kVA	0,0	1,1	2,1	3,2	4,3	5,3	6,4	7,4	8,5
@ 100 psi	cfm	297	286	279	268	261	251	240	233	222
@ 145 psi	cfm	240	233	226	219	212	201	194	187	180
@ 174 psi	cfm	215	208	201	194	187	180	177	170	162
@ 203 psi	cfm	194	187	184	177	170	162	159	152	145

M82 13kVA GENERATOR		0%	12,5%	25%	37,5%	50%	62,5%	75%	87,5%	100%
COMPRESSOR	kVA	0,0	1,6	3,3	4,9	6,5	8,1	9,8	11,4	13
@ 100 psi	cfm	297	268	244	215	187	162	134	106	81
@ 145 psi	cfm	240	219	198	173	152	131	109	85	64
@ 174 psi	cfm	215	194	177	155	138	117	99	78	57
@ 203 psi	cfm	194	177	159	141	123	106	88	71	53



## M82 Generator Option

## 13.7 Option dd

## Operating instructions for compressed air filter (combination filter)



## Filters for Compressed Air

005-055 (AO, AA, ACS, AR, AAR)

(EN) Original Language

(NL) (DE) (FR) (FI) (SV) (NO) (DA) (EL) (ES) (PT) (IT) (PL)  
(SK) (CS) (ET) (HU) (LV) (LT) (RU) (SL) (TR) (MT) (RO)

aerospace  
climate control  
electromechanical  
**filtration**  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



ENGINEERING YOUR SUCCESS.

FILTER DH-OIL-X EVO AO AA\_01-

FILTER DH-OIL-X EVO AO AA\_01-


**Warning**

- Highlights actions or procedures, which if not performed correctly, may lead to personal injury or death.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, lichamelijk letsel of de dood kunnen veroorzaken.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Verletzungen und tödlichen Unfällen führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent entraîner des dommages corporels ou la mort.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin suoritettuna saattavat aiheuttaa henkilövahingon tai kuoleman.
- Anger åtgärder och metoder som kan orsaka personskador eller dödsfall om de inte utförs korrekt.
- Fremhever handlinger eller prosedyrer som kan føre til personskafe eller dødsfall hvis de ikke utføres på korrekt måte.
- Fremhever handlinger eller fremgangsmåder, som kan medføre personskafe eller dødsfall, hvis de ikke utføres korrekt.
- Επισημαίνει τις ενέργειες ή τις διαδικασίες, οι οποίες αν δεν πραγματοποιηθούν σωστά, μπορεί να οδηγήσουν σε τραυματισμό προσωπικού ή σε θάνατο
- Destaca acciones o procedimientos que, de no realizarse correctamente, pueden ocasionar daños personales o la muerte.
- Realça as ações ou procedimentos que, se não forem executados correctamente, poderão provocar danos pessoais ou morte.
- Segnala azioni o procedure che, se non eseguite correttamente, comportano il rischio di infortuni o morte.
- Wskazuje działania i procedury, które w razie niewłaściwego wykonania mogą prowadzić do obrażeń ciała lub śmierci.
- Zvýrazňuje činnosti alebo postupy, ktoré môžu v prípade nesprávneho vykonania viesť k zraneniu alebo usmrteniu.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést ke zranění nebo usmrcení osob.
- Töstab esile toiminguud või protseduurid, mis väärä teostamise korral võivad põhjustada kehavigastusi või surma.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása súlyos vagy végzetes személyi sérelést okozhat.
- Uzsver darbības vai procedūras, kuru rezultātā, ja tās neveic pareizi, var izraisīt ievainojumus vai nāvi.
- Žymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima susižeisti ar mrti.
- Указывает на действия, ненадлежащее выполнение которых может привести к нанесению вреда здоровью или смерти
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajjanju poškodujejo človeka ali povzročijo smrt.
- Doğru bir şekilde yerine getirilmediği takdirde bu ürünü hasar verebilecek işlem ve süreçleri vurgular.
- Tissottolinea l-azzjonijiet jew il-proceduri, li jekk ma jsirux kif suppost, jiġi hemm koriment jew mewt
- Evidențiază acțiuni sau proceduri care, dacă nu sunt corect efectuate, pot duce la leziuni personale sau la deces.


**Caution**

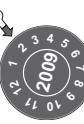
- Highlights actions or procedures, which if not performed correctly, may lead to damage to this product.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, schade kunnen berokkenen aan dit product.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Schäden am Gerät führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent endommager ce produit.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin suoritettuna saattavat vaarioittaa täti laitetta.
- Anger åtgärder och metoder som kan orsaka skador på den här produkten om de inte utförs på korrekt måte.
- Fremhever handlinger eller prosedyrer som kan føre til skade på produktet hvis de ikke utføres på korrekt måte.
- Fremhever handlinger eller fremgangsmåder, som kan medføre beskadigelse af dette produkt, hvis de ikke udføres korrekt.
- Επισημαίνει τις ενέργειες ή τις διαδικασίες, οι οποίες αν δεν πραγματοποιηθούν σωστά, μπορεί να προκαλέσουν ζημιά στο προϊόν αυτό
- Destaca acciones o procedimientos que, de no realizarse correctamente, pueden ocasionar el deterioro del producto.
- Realça as ações ou procedimentos que, se não forem executados correctamente, poderão danificar este produto.
- Segnala azioni o procedure che, se non eseguite correttamente, comportano il rischio di danneggiare il prodotto.
- Wskazuje działania i procedury, które w razie niewłaściwego wykonania mogą powodować uszkodzenie produktu.
- Zvýrazňuje činnosti alebo postupy, ktoré v prípade nesprávneho vykonania môžu viesť k poškodeniu tohto výrobku.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést k poškození tohoto výrobku.
- Töstab esile toiminguud või protseduurid, mis väärä teostamise korral võivad kääsolevat tooted kahjustada.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása a termék károsodásához vezethet.
- Uzsver darbības vai procedūras, kuru rezultātā, ja tās neveic pareizi, var sabojāt šo izstrādājumu.
- Žymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima sugadinti šī gaminij.
- Указывает на действия, ненадлежащее выполнение которых может привести к повреждениям данного изделия
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajjanju poškodujejo izdelek.
- Doğru bir şekilde yerine getirilmediği takdirde yaralanma ya da ölüm yol açabilecek işlem ve süreçleri vurgular
- Tissottolinea l-azzjonijiet jew il-proceduri, li jekk ma jsirux kif suppost, tista' ssir hsara lil dan il prodott
- Evidențiază acțiuni sau proceduri care, dacă nu sunt corect efectuate, pot duce la deteriorarea acestui produs.



- Suitable gloves must be worn.
- Geeignete Schutzhandschuhe tragen.
- Käytettävä asianmukaisia käsineitä.
- Bruk egnede hansker.
- Απαιτείται να φοράτε κατάλληλα γάντια
- Devem ser utilizadas luvas adequadas.
- Należy zakładać odpowiednie rękawice
- Kohustuslik kanda sobivaid kaitsekindaid
- Järvalka piemēroti cimdi.
- Работы должны проводиться в соответствующих перчатках
- Uygun eldiven giyilmelidir
- Este necesară purtarea unor mănuși adecvate.
- Altijd geschikte handschoenen dragen.
- Le port de gants adaptés est obligatoire.
- Använd lämpliga handskar.
- Der skal anvendes egnede handsker.
- Se deben llevar guantes apropiados.
- Indossare guanti di protezione.
- Je nutne použít vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia mūvēti tinkamas pirštines.
- Uporabiti je treba ustrezne rokavice.
- Għandhom jintlibbu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggoeden van gebruikte onderdelen en afval.
- Weist auf die Anforderungen zur Entsorgung gebrauchter Teile und Abfall hin.
- Met en relief les consignes de mise au rebut des pièces usagées et des déchets.
- Osoittaa käytettyjen osien ja jätteen hävittämistä koskevia vaatimuksia.
- Anger de krav som ställs på bortskaffande av gamla delar och avfall.
- Fremhever kravene for avhending av brukte deler og avfall.
- Fremhever kravene til bortskaffelse av utdiente dele og affald.
- Επισημαίνει τις απαιτήσεις των χρησιμοποιημένων εξαρτημάτων και των απορριμάτων
- Destaca los requisitos para desechar las piezas usadas y los residuos.
- Realça os requisitos para eliminar as peças utilizadas e os desperdícios.
- Segnala i criteri per lo smaltimento di componenti usati e rifiuti.
- Wskazuje wymagania dotyczące usuwania zużytych części i odpadów.
- Zvýrazňuje požiadavky pre zneškodňovanie použitých dielov a odpadu.
- Upozornění na požadavky týkající se likvidace použitých dílů a odpadu.
- Töstab esile kasutatud osade ja jätkide utiliserimisele esitatavad nõuded
- A használt alkatrészek és a hulladék megfelelő módon történő elhelyezésére hívja fel a figyelmet.
- Uzsver prasības tam, kā atrīvoties no lietotajām detaļām un atkritumiem.
- Žymi panaudotu daliu ir atlieku išmetimo reikalavimus.
- Указывает на требование по уничтожению использованных деталей и отходов
- Označuje zahteve za odlaganje rabljenih delov in odpadkov.
- Kullanılmış parçaların ve atıkların atılmasıyla ilişkili gereklilikleri vurgular
- Tissottolinea l-kundizzonijiet biex wieħed jarmi l-partijiet użati u l-iskart
- Evidențiază cerințele pentru depunerea la deșeuri a pieselor uzate și a reziduurilor.

 <ul style="list-style-type: none"> <li>Pressure.</li> <li>Paine.</li> <li>Πίεση</li> <li>Ciśnienie</li> <li>Nyomás alatt.</li> <li>Tlak</li> </ul>  <ul style="list-style-type: none"> <li>Release Pressure.</li> <li>Évacuation de pression.</li> <li>Avlast trykk</li> <li>Despresurizar.</li> <li>Ciśnienie spustowe</li> <li>Surve välvjälase</li> <li>Išleiskite slėgi.</li> <li>Basinci Kaldırın</li> </ul>  <ul style="list-style-type: none"> <li>Replace every year</li> <li>REMPLACER tous les ans.</li> <li>Skift ut hvert år</li> <li>Sustituir anualmente</li> <li>Naleží vymieňať raz w roku</li> <li>Asendage igal aastal</li> <li>Keiskite kartą per metus</li> <li>Her yıl değiştirin</li> </ul>  <ul style="list-style-type: none"> <li>Filter housing / Model</li> <li>Logement du filtre/modèle.</li> <li>Filterhus-/modell</li> <li>Caja de filtro/modelo.</li> <li>Obudowa filtra / model.</li> <li>Filti korpus/mudel</li> <li>Filtro korpusas / modelis</li> <li>Filtre muhafazası / Model</li> </ul>  <ul style="list-style-type: none"> <li>High efficiency filter element</li> <li>Höchleistungsfilterelement</li> <li>Tehokas suodatinolelementti</li> <li>Høyeffektivt filterelement</li> <li>Φίλτρο υψηλής απόδοσης</li> <li>Elemento do filtro de elevado rendimento</li> <li>Wysokowydajny wkład filtra</li> <li>Vysoko účinný filtrační prvek</li> <li>Nagy hatékonyságú szűrőelem</li> <li>Labai efektyvus filtravimo elementas</li> <li>Visoko učinkovit filtrični element</li> <li>Element tal-filtru b'effičjenza kbira</li> </ul>  <ul style="list-style-type: none"> <li>Ensure correct tool is used</li> <li>Zorg dat het juiste gereedschap wordt gebruikt</li> <li>Vérifier que les outils adéquats sont utilisés.</li> <li>Se till att rätt verktyg används.</li> <li>Sørg for at benytte korrekt værktoj</li> <li>Asegúrese de que se utiliza la herramienta adecuada</li> <li>Assicurarsi di utilizzare l'utensile corretto</li> <li>Uistite sa, že používate správny nástroj</li> <li>Tagage oīge tööriista kasutamine</li> <li>Izmantojiet tikai atbilstošus darbarīkus</li> <li>Убедитесь, что используется правильный инструмент</li> <li>Doğru alet kullanılmasını sağlayın</li> </ul>  <ul style="list-style-type: none"> <li>Next service date (month/year)</li> <li>Nächster Wartungstermin (Monat/Jahr)</li> <li>Seuraava huollon päivämäärä (kuukausi/vuosi)</li> <li>Neste servicedato (måned/år)</li> <li>Επόμενη ημερομηνία σέρβις (μήνας / έτος)</li> <li>Data da próxima intervenção técnica (mês / ano)</li> <li>Data następnego serwisu (miesiąc/rok)</li> <li>Datum příští prohlídky (měsíc / rok)</li> <li>Következő szerviz dátuma (hó / év)</li> <li>Kitos techninės priežiūros data (mėnuo / metai)</li> <li>Datum naslednjega servisa (mesec / leto)</li> <li>Id-data tas-servis li jiniss (xahar / sena)</li> </ul>	<ul style="list-style-type: none"> <li>Druck.</li> <li>Trykk.</li> <li>Pressão.</li> <li>Tlak.</li> <li>Stégis.</li> <li>Pressjoni</li> </ul> <ul style="list-style-type: none"> <li>Druck ablassen.</li> <li>Tryckutsläpp.</li> <li>Εκτόνωση πίεσης.</li> <li>Scaricare la pressione.</li> <li>Uvolnění tlaku.</li> <li>Pazeminiel spiedienu.</li> <li>Sprostitev tlaka.</li> <li>Depresurizare.</li> </ul> <ul style="list-style-type: none"> <li>Jährlich austauschen</li> <li>Byt varje år</li> <li>Αντικατάσταση κάθε χρόνου</li> <li>Sostituire ogni anno</li> <li>Nutná vyměna každý rok.</li> <li>Nomainiet reizi gadā</li> <li>Zamenjajte vsako leto.</li> <li>Înlocuire anuală</li> </ul> <ul style="list-style-type: none"> <li>Filtergehäuse / Modell</li> <li>Filterhus/modell</li> <li>Υποδοχή/μοντέλο φίλτρου</li> <li>Corpo del filtro / Modello</li> <li>Kryt filtra / Model</li> <li>Filtra korpuus / modelis</li> <li>Ohijsje filtra / Model</li> <li>Carcasă filtru / Model</li> </ul> <ul style="list-style-type: none"> <li>• Zeer efficiënt filterelement</li> <li>• Cartouche filtrante haute efficacité.</li> <li>• Högeffektivt filterelement</li> <li>• Högeffektivt filterelement</li> <li>• Elemento filtrante de gran eficiencia.</li> <li>• Elemento filtrante ad alta efficienza</li> <li>• Vysoko účinný filtračný článok</li> <li>• Kõrgtootlik filterelement</li> <li>• Augstas produktivitātes filtra elements</li> <li>• Высокоэффективный фильтрующий элемент</li> <li>• Yüksek etkinlikli filtre öğesi</li> <li>• Element filtrant cu eficiență ridicată</li> </ul> <ul style="list-style-type: none"> <li>• Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden.</li> <li>• Käytettävä oikeaa työkalua</li> <li>• Pass på att korrekt verktyg brukes</li> <li>• Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο</li> <li>• Certifique-se de que é utilizada a ferramenta correcta</li> <li>• Należy używać odpowiedniego narzędzia.</li> <li>• Zkontrolujte použití správného nástroje</li> <li>• Mindig a célnak megfelelő szerszámost használja</li> <li>• Ісітікінде, кад наудожамас reikiamas іrankis</li> <li>• Poskrbite, da boste uporabili ustrezno orodje</li> <li>• Kun žgur li tintuża l-ghoddha t-tajba</li> <li>• Asigurați-vă că este utilizată scula corectă</li> </ul> <ul style="list-style-type: none"> <li>• Volgende onderhoudsdatum (maand / jaar)</li> <li>• Date de la prochaine révision (mois/année)</li> <li>• Nästa servicedatum (måned/år)</li> <li>• Næste servicedato (måned/år)</li> <li>• Fecha de siguiente revisión (mes/año)</li> <li>• Prossimo intervento di assistenza (mese / anno)</li> <li>• Dátum nasledujúcej opravy (mesiac/rok)</li> <li>• Järgmise hoolduse kuupäev (kuu / aasta)</li> <li>• Nākamais arkipes datums (mēnesis / gads)</li> <li>• Дата следующего обслуживания (месяц/год)</li> <li>• Bir sonraki servis tarihi (ay / yıl)</li> <li>• Data următoarei vizite de service (lună/an)</li> </ul>
--	--

**Warning!**

This product must be installed and maintained by competent and authorised personnel only, under strict observance of these operating instructions, any relevant standards and legal requirements where appropriate.

**Retain this user guide for future reference**

**Waarschuwing!**

Dit product mag alleen geïnstalleerd en onderhouden worden door deskundig en bevoegd personeel met strikte inachtneming van deze bedieningsinstructies en de betreffende normen en wettelijke vereisten indien van toepassing.

**Bewaar deze handleiding als naslag.**

**Warnung!**

Das Produkt darf ausschließlich von autorisiertem Fachpersonal unter strikter Befolgung dieser Betriebsanleitung, ggf. relevanter Normen sowie gesetzlicher Vorschriften installiert und gewartet werden.

**Bewahren Sie die Bedienungsanleitung zu Referenzzwecken auf.**

**Attention !**

Ce produit doit être installé et entretenue exclusivement par un personnel compétent et autorisé, dans le respect le plus strict de ce mode d'emploi et des normes applicables et exigences légales éventuelles.

**Conserver ce guide de l'utilisateur à titre de référence future**

**Varoitus!**

Tämän tuotteen saa asentaa ja huoltaa vain pätevä ja valtuutettu henkilöstö, noudattaen tarkasti näitä käyttöohjeita, kaikkia asiaankuuluvia normeja ja tarpeen vaatissa lain asettamia vaatimuksia.

**Säilytä tämä käyttöohje tulevaa tarvetta varten.**

**Varning!**

Produkten får endast installeras och underhållas av utbildad och behörig personal, som följer denna bruksanvisning och eventuella tillämpliga normer och lagföreskrifter noga i förekommande fall.

**Behåll denna användarhandbok som referens**

**Advarsel!**

Dette produktet må bare installeres og vedlikeholdes av kompetent og autorisert personale, i streng overholdelse av disse betjeningsanvisningene, alle relevante standarder og rettslige krav der det passer.

**Ta vare på denne brukerveiledningen for senere bruk**

**Advarsel!**

Dette produktet må kun installeres og vedligeholdes af autoriseret personale, under nøje overholdelse af disse driftsinstruktioner, relevante standarder og lovgivningsmæssige krav, hvor dette er aktuelt.

**Gem denne vejledning til senere reference.**

**Προειδοποίηση!**

Η εγκατάσταση και συντήρηση αυτού του προϊόντος πρέπει να γίνεται μόνο από κατάλληλα εκπαιδευμένο και εξουσιοδοτημένο προσωπικό, με αυστηρή τήρηση των οδηγιών χειρισμού, των εφαρμοζόμενων προτύπων και των νομικών απαιτήσεων όπου απαιτείται.

**Φυλάξτε αυτό το εγχειρίδιο χρήσης για μελλοντική αναφορά**

**Advertencia**

La instalación y mantenimiento de este producto debe ser efectuada únicamente por personal competente y autorizado, respetándose de forma estricta estas instrucciones de funcionamiento, así como cualquier norma y requerimiento legal que sean aplicables.

**Conserve esta guía del usuario para poder consultarla en el futuro.**

**Advertência!**

A instalação e a manutenção deste produto só deve ser realizada por pessoal autorizado e competente, sob estrita observância destas instruções de utilização e de quaisquer normas e requisitos legais relevantes, quando adequado.

**Conserve este guia do utilizador para referência futura**

**Attenzione**

L'installazione e la manutenzione del prodotto devono essere affidate a personale competente e autorizzato, nel rigoroso rispetto delle presenti istruzioni di funzionamento, degli standard applicabili e delle normative in vigore, qualora appropriato.

**Conservare questa guida utente per consultarla in seguito****Ostrzeżenie!**

Instalacja i konserwacja urządzenia muszą być prowadzone przez wykwalifikowany personel, w zgodzie z poniższymi instrukcjami, obowiązującymi standardami i wymogami prawa.

Niniejszą instrukcję należy zachować do późniejszego wykorzystania.

**Pozor!**

Tento výrobok musí byť nainštalovaný a udržiavaný iba kompetentnou a autorizovanou osobou, pri prísnom dodržiavaní tohto návodu na použitie, príslušných štandardov a zákonných požiadaviek v prípade potreby.

Uschovajte túto užívateľskú príručku pre budúce použitie

**Upozornění!**

Tento produkt smí instalovat a údržbu smí provádět pouze kompetentní a autorizovaný personál, a to za přísného dodržování tohoto návodu k obsluze, veškerých relevantních norem a zákonných požadavků tam, kde je to nutné.

Tuto užívateľskou príručku uschovajte pro pozdější potřebu.

**Hoiatus!**

Toote paigaldamine ja hooldamine on lubatud ainult pädeval, vastavate volitustega töötajal, kes tegutseb kasutusjuhendi nõudeid, asjakohased standardeid ja kehtivaid eeskirju järgides

Hoidke käesolev kasutusjuhend alal edaspidiseks kasutamiseks

**Figyelem!**

A terméket csak szakképzett és felhatalmazott személy helyezheti üzembe és tarthatja karban, a kezelési utasítások, a vonatkozó szabványok és jogi előírások szigorú betartása mellett, ahol azok alkalmazhatóak.

A leírást tartsa minden elérhető helyen

**Būdinājums!**

Iekārtas uztādišanu un apkopi drīkst veikt tikai kompetents un pilnvarots personāls, stingri ievērojot lietošanas instrukciju un citus saistītus standartus un likumdošanā noteiktās prasības, kad nepieciešams.

Saglabājiet šo lietotāja rokasgrāmatu turpmākām uzziņām

**Ispējimas!**

Montuoti ir prižirēti šī gaminj gali tik kompetentingi ir īgaloti darbuotojai, griežtais laikydamies šių naudojimo instrukcijų, visų atitinkamų standartų bei teisiniui reikalavimui, jei tai yra taikytina.

Пасилките щи вартотоjo vadova, яме esančios informacijos гали prieikti vėliau

**Предупреждение!**

Установку и техническое обслуживание данного оборудования разрешается выполнять только специалисту, имеющему допуск к выполнению таких работ, при строгом соблюдении данной инструкции по эксплуатации, соответствующих стандартов и применимых нормативных актов.

Сохраните это руководство пользователя, чтобы обращаться к нему в дальнейшем

**Opozorilo!**

Izdelek lahko namestijo in vzdržujejo le usposobljeni in pooblaščeni delavci, ki morajo pri tem strogo upoštevati navodila za uporabo, vse standarde in zakonske zahteve, ki veljajo za posamezno situacijo.

Shranite ta navodila za uporabo za v prihodnje

**Dikkat!**

Bu ürün yalnızca yetkili ve kalifiye personel tarafından monte edilmeli ve bakımı yapılmalıdır. Kullanım talimatına, ilgili standartlara ve yasal şartlara harfiyen uyulmalıdır.

**Bu kullanım kılavuzunu ileride başvurmak için saklayın.**

**Twissija!**

Dan il-prodott għandu jiġi installat u jingħata l-manutenzjoni minn personal kompetenti u awtorizzat biss, taħt sorveljanza stretta ta' dawn l-istruzzjonijiet tat-thaddim, u kwalunkwe standards u htigjiet legali rilevanti fejn hu xieraq.

**Erfa' din il-għida biex tikkonsulta fil-fil-futur.**

**Vertizare!**

Acest produs trebuie instalat și întreținut numai de către personal competent și autorizat, cu respectarea strictă a acestor instrucțiuni de utilizare, a tuturor standardelor relevante și a cerințelor legale, unde este cazul.

**Păstrați acest ghid al utilizatorului pentru consultări ulterioare**

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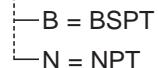
- Onderhoud • Wartung • Entretien • Kunnossapito • Underhåll • Vedlikehold • Vedligeholdelse • Συντήρηση • Mantenimiento • Manutenção
- Manutenzione • Konserwacja • Údržba • Údržb • Hooldus • Karbantartás • Tehnická apkope • Techniné priežiūra • Обслуживание
- Vzdrževanja • Bakım • Manutenzjoni • Întreținere

		Flow Rate	Dimensions	Weight	Operating Parameters	Filter Grade	Filter Models	Max Operating Pressure	Max Operating Temperature	Min Operating Temperature
(EN)	Model	BSPT/NPT Port Size	Stroom snelheid	Afmetingen	Bedrijfs parameters	Filter kwaliteitsgraad	Filter modellen	Maximale bedrijfs druk	Maximale bedrijfs temperatuur	Minimale bedrijfs temperatuur
(NL)	Model	BSPT/NPT poortafmeting	Durchflusssrate	Abmessungen	Gewicht	Bedrijfsparameter	Filterklasse	Max. Betriebsdruck	Max. Betriebstemperatur	Min. Betriebstemperatur
(DE)	Modell	BSPT/NPT Anschlussgröße	Débit	Dimensions	Poids	Paramètres de fonctionnement	Grade de filtres	Modèles de filtres	Pression de fonctionnement max.	Température de fonctionnement min.
(FR)	Modèle	Taille du port BSPT/NPT	Virtaus-nopeus	Mitat	Paino	Käytö-parametrit	Suodatin-luokka	Suodatin-mallit	Suurin käytö-paine	Pienin käytö-lämpöpötila
(F)	Malli	BSPT NPT-portin koko	Flödes-hastighet	Mått	Vikt	Drifts-parametrar	Filter-klass	Högsta driftstryck	Högsta drifts-temperatur	Lägsta drifts-temperatur
(SV)	Modell	BSPT NPT-öppningsstorlek	Strömnings-hastighet	Mål	Vekt	Drifts-parametere	Filter-type	Maks. driftstrykk	Maks. drifts-temperatur	Mín. drifts-temperatur
(NO)	Modell	BSPT NPT-Portstørrelse	Flow-hastighet	Mål	Vægt	Drifts-parametre	Filter-kvalitet	Maks. driftstryk	Maks. drifts-temperatur	Min. drifts-temperatur
(DA)	Model	BSPT NPT-Portstørrelse	Πυθμός προροής	Διαστάσεις	Βάρος	Πορόμετροι λειτουργίας	Κατηγορία φίλτρου	Μοντέλα φίλτρων	Μέγ. πίεση λειτουργίας	Ελάχ. θερμοκρασία λειτουργίας
(EL)	Μοντέλο	Μέγεθος θύρας BSPT/NPT	Caudal	Dimensiones	Peso	Parámetros de funcionamiento	Grado del filtro	Modelos de filtros	Presión de funcionamiento máxima	Temperatura de funcionamiento mínima
(ES)	Modelo	Tamaño de puerto BSPT/NPT	Taxa de Fluxo	Dimensões	Peso	Parâmetros de Funcionamento	Grado do Filtro	Modelos do Filtro	Temperatura Máxima de Funcionamento	Temperatura de Funcionamiento mínimo
(PT)	Modelo	Porta BSPT NPT	Porta BSPT/NPT	Dimensioni	Peso	Parametri di esercizio	Grado di filtrazione	Filtri	Temperatura di esercizio massima	Temperatura di esercizio massima
(T)	Modelo	Wielkość otworu BSPT/NPT	Przedkość przepływu	Wymiary	Cieżar	Parametry pracy	Klasa filtra	Typy filtrów	Maks. ciśnienie robocze	Temperatura di esercizio massima
(PL)	Model	BSPT/NPT Výškosť potu	Priekoková rýchlosť Rate	Rozmery	Hmotno st	Prevádzkové parametre	Trieda filtra	Typy filtri	Max. prevádzkový tlak	Min. prevažková teplota
(SK)	Model	Velikost závitu BSPT/NPT	Rychlosť prúdu	Rozměry	Hmotno st	Provozní parametry	Klasifikace filtru	Modely filtri	Maximálni provozní tlak	Minimální provozní teplota
(CS)	Model	BSPT/NPT pordi suurus	Voolikulu	Mõõtmed	Kaal	Talitusparametrid	Filtratsioonistaste	Filtri mudelid	Maksimaalne töösurve	Minimaalne töötemperatuur
(ET)	Model	BSPT/NPT Áramlási sebesség	Méretek	Tömeg	Üzemi paraméterek	Szűrő fokozat	Szűrő típusa	Max. üzemi nyomás	Max. Üzem. hőmérséklet	Min. Üzem. hőmérséklet
(HU)	Tipus	Csőcsontk mérete	Plūsmas átrums	Izméri	Svars	Darbības parametri	Filtru kategorija	Maks. darbības spiediens	Maks. darbības temperatūra	Min. darbības temperatūra
(LV)	Modelis	BSPT/NPT porta lielums	Stato tēkmeneitēs	Matmenys	Svoris	Darbībai parametri	Filtro klasē	Maks. darbības slēgis	Maks. darbībe temperatūra	Min. darbībe temperatūra
(LT)	Modelis	BSPT/NPT Prievado dydis	Диаметр отверстия	Скоростока	Тарбариты	Рабочие параметры	Качество фильтра	Макс. рабочее давление	Макс.	Мин.
(RU)	Модель	BSPT/NPT Velikost vrat	Meretek	Teža	Delovni parametri	Razred filtra	Modeli filtrov	Maks. delovni tlak	Макс. деловая температура	Мин. деловая температура
(SL)	Model	BSPT/NPT Port Boyu	Akımlı Hizi	Boyu	İşletim Parametreleri	Filtre Detercesi	Filtre Modelleri	Azami İşletme Basıncı	Azami işletme ıslısı	Asgari işletme ıslısı
(TR)	Model	Dags tal-Port BSPT/NPT	Rata tal-Fluss	Dimensijsijiet	Piz	Parametri ta l-Operar	Grad tal-Filtru	Presijsi Massima ta l-Operar	Temperatura Massima ta l-Operar	Temperatura Minima ta l-Operar
(MT)	Modell	Dimensiune port BSPT/NP	Debi	Dimensiun Greutat	Parametri de func, ionar	Gradul filtrului	Modele de filtr	Temperatur „maxim„ de func, ionar	Temperatur „minim„ de func, ionar	Temperatur „minim„ de func, ionar

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Model	Pipe Size	L/s	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm
005A	1/4"	6	0.4	22	13
005B	3/8"	6	0.4	22	13
005C	1/2"	6	0.4	22	13
010A	1/4"	10	0.6	36	21
010B	3/8"	10	0.6	36	21
010C	1/2"	10	0.6	36	21
015B	3/8"	20	1.2	72	42
015C	1/2"	20	1.2	72	42
020C	1/2"	30	1.8	108	64
020D	3/4"	30	1.8	108	64
020E	1"	30	1.8	108	64
025D	3/4"	60	3.6	216	127
025E	1"	60	3.6	216	127
030E	1"	110	6.6	396	233
030F	1 1/4"	110	6.6	396	233
030G	1 1/2"	110	6.6	396	233
035F	1 1/4"	160	9.6	576	339
035G	1 1/2"	160	9.6	576	339
040G	1 1/2"	220	13.2	792	466
040H	2"	220	13.2	792	466
045H	2"	330	19.8	1188	699
050I	2 1/2"	430	25.9	1548	911
050J	3"	430	25.9	1548	911
055I	2 1/2"	620	37.3	2232	1314
055J	3"	620	37.3	2232	1314

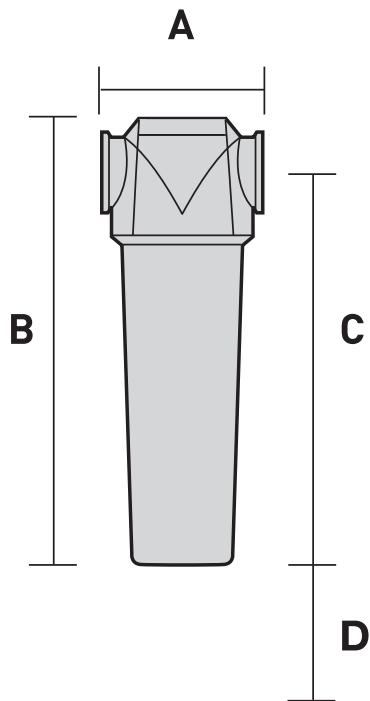
**BSPT / NPT**
**AA005A □ FX**


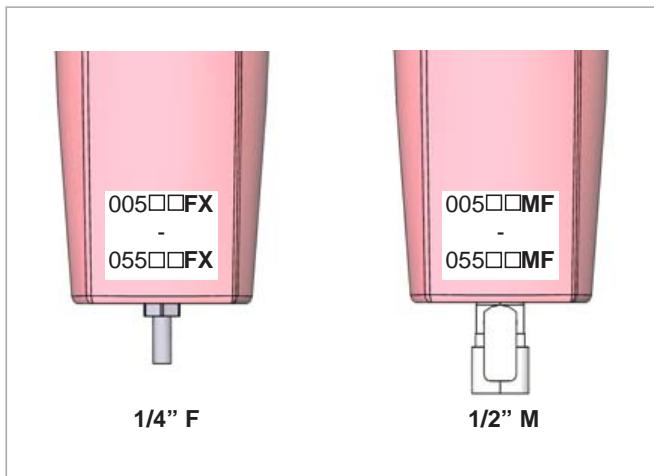
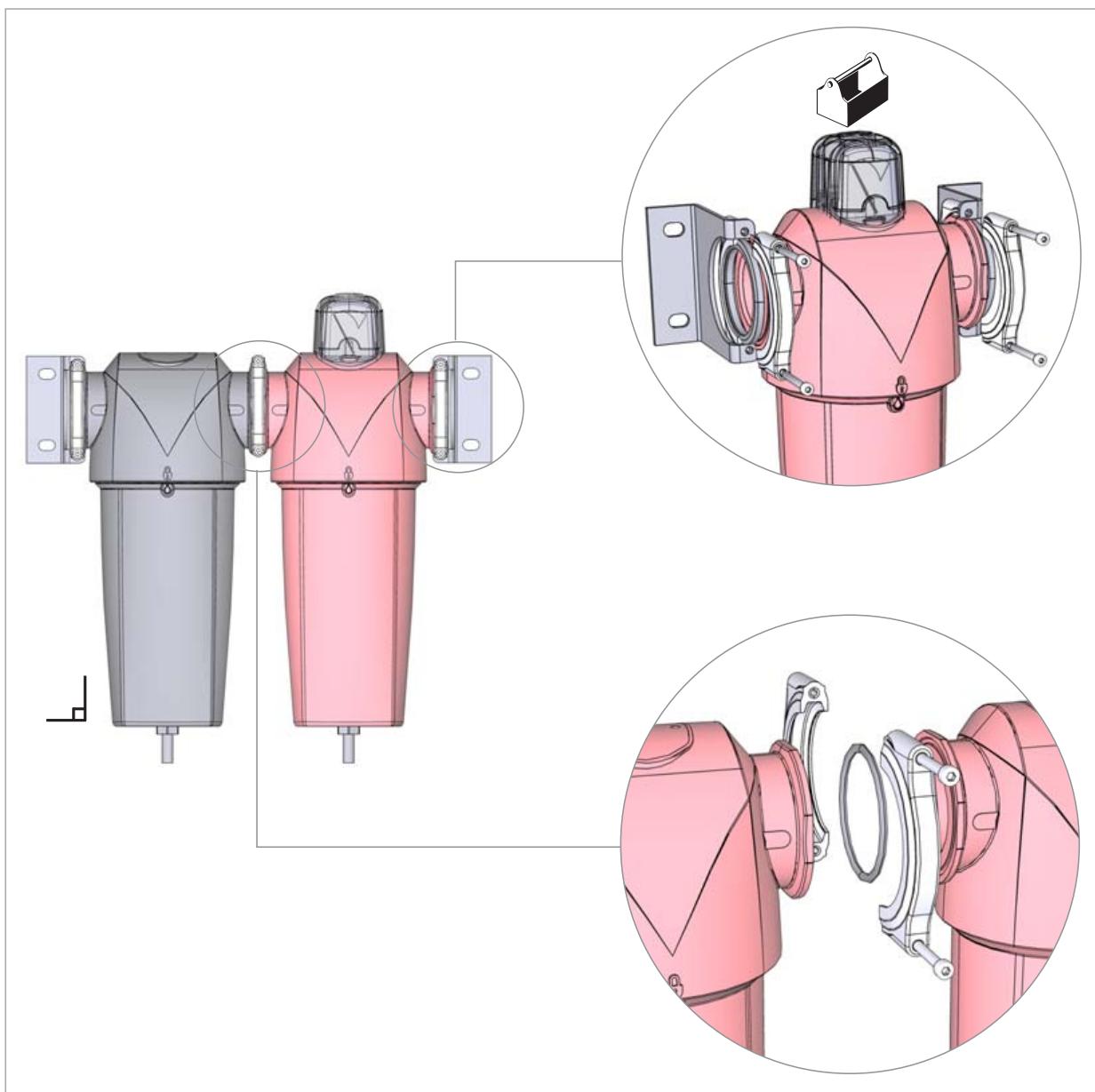
Filter Grade	Models	Max Operating Pressure		Max Recommended Operating Temperature		Min Recommended Operating Temperature	
		bar g	psi g	°C	°F	°C	°F
AO	005□□F□□-055□□F□	16	232	80°C	176°F	1.5°C	35°F
AO	005□□M□□-055□□M□	20	290	100°C	212°F	1.5°C	35°F
AA	005□□F□□-055□□F□	16	232	80°C	176°F	1.5°C	35°F
AA	005□□M□□-055□□M□	20	290	100°C	212°F	1.5°C	35°F
AR	005□□M□□-055□□M□	20	290	100°C	212°F	1.5°C	35°F
AAR	005□□M□□-055□□M□	20	290	100°C	212°F	1.5°C	35°F
ACS	005□□M□□-055□□M□	20	290	50°C	122°F	1.5°C	35°F

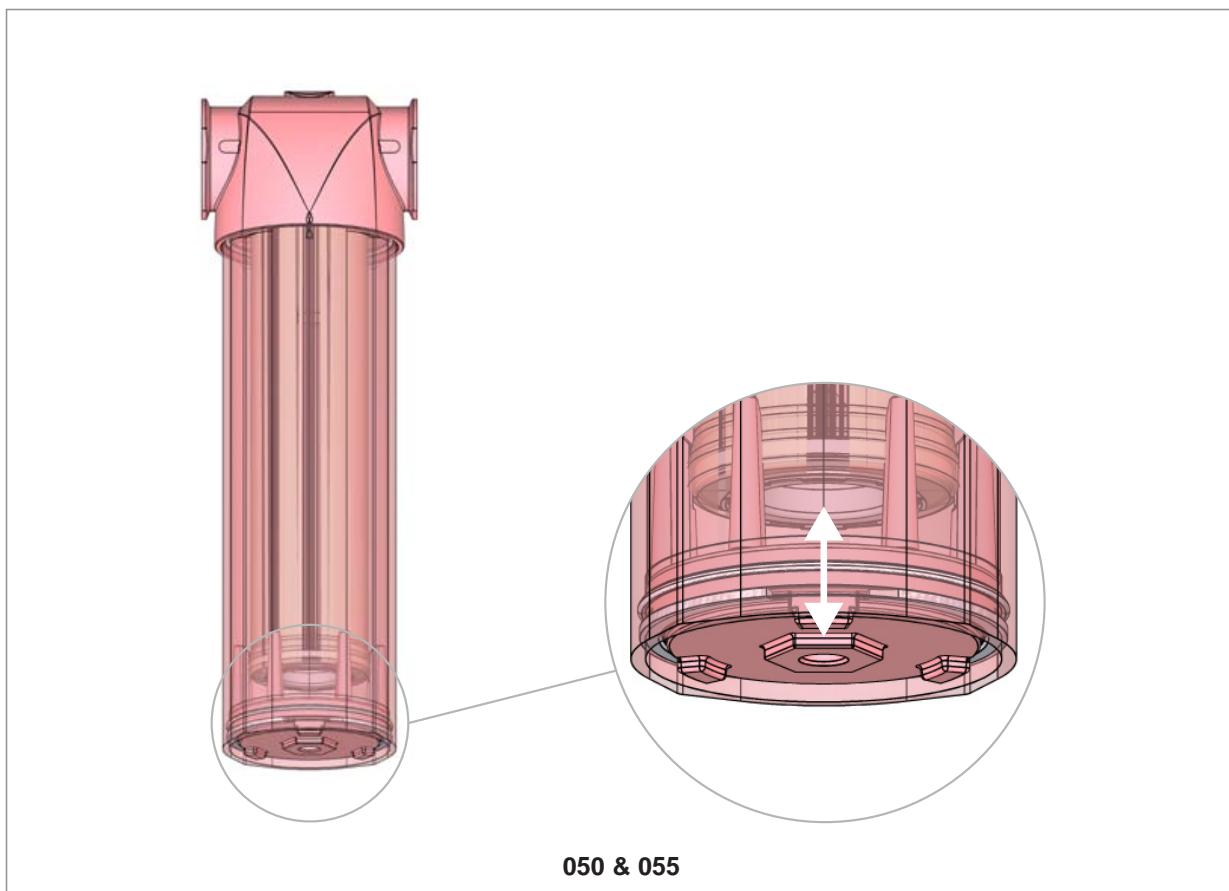
**Weights and Dimensions**

- Gewichten en afmetingen • Gewicht und Abmessungen • Poids et dimensions • Painot ja mitat • Vikter och mått • Vekt og dimensjone
- Vægt og mål • Výška a rozloha • Pesos y dimensiones • Pesos e Dimensões • Pesi e dimensioni • Ciężary i wymiary • Hmotnosti a rozmery
- Hmotnost arozměry • Kaalud ja mõõtmed • Tömeg és méretek • Svars un izmēri • Svoris ir matmenys • Вес и габариты • Teže in mere
- Ağırlıklar ve Boyutlar • Pízijiet u Dimensjonijet • **Greutăți și dimensiuni**

Model	Pipe Size	A		B		C		D		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
005A	1/4"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
005B	3/8"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
005C	1/2"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
010A	1/4"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
010B	3/8"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
010C	1/2"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
015B	3/8"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
015C	1/2"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
020C	1/2"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
020D	5/8"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
020E	1"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
025D	5/8"	129	5.1	275	10.8	232.5	9.2	70	2.76	2.2	2.5
025E	1"	129	5.1	275	10.8	232.5	9.2	70	2.76	2.2	2.5
030E	1"	129	5.1	364.5	14.3	322	12.7	70	2.76	2.7	2.9
030F	1 1/4"	129	5.1	364.5	14.3	322	12.7	70	2.76	2.7	2.9
030G	1 1/2"	129	5.1	364.5	14.3	322	12.7	70	2.76	2.7	2.9
035F	1 1/4"	170	6.7	432.5	17	382.5	15.1	100	3.94	5.1	11.2
035G	1 1/2"	170	6.7	432.5	17	382.5	15.1	100	3.94	5.1	11.2
040G	1 1/2"	170	6.7	524.5	20.6	474.5	18.7	100	3.94	7	12.5
040H	2"	170	6.7	524.5	20.6	474.5	18.7	100	3.94	7	12.5
045H	2"	170	6.7	524.5	20.6	474.5	18.7	100	3.94	7	12.5
050I	2 1/2"	205	8.1	641.5	25.3	581.5	22.9	120	4.72	11.1	24.4
050J	3"	205	8.1	641.5	25.3	581.5	22.9	120	4.72	11.1	24.4
055I	2 1/2"	205	8.1	832	32.8	772	30.4	120	4.72	13.9	30.6
055J	3"	205	8.1	832	32.8	772	30.4	120	4.72	13.9	30.6







- (EN) The lower closure plate may move when the filter is not pressurised.
- (NL) Het onderste sluitplaatje zou kunnen bewegen wanneer het filter niet onder druk staat.
- (DE) Die untere Verschlussplatte kann sich bewegen, wenn der Filter nicht mit Druck beaufschlagt ist.
- (FR) La plaque d'obturation la plus basse peut bouger si le filtre n'est pas pressurisé.
- (FI) Alempi sulkulevy saattaa liikkua, kun suodatin ei ole paineistettu.
- (SV) Den lägre slutningsplattan kan rivas näär filtret inte är trycksatt.
- (NO) Den nedre trykkplaten kan bevege seg når filteret ikke er trykksatt.
- (DA) Den nedre lukkeplade kan bevæge sig, når filtret ikke sættes under tryk.
- (EL) Η κάτω πλάκα κλεισίματος μπορεί να μετακινηθεί εάν το φίλτρο δεν βρίσκεται υπό πίεση.
- (ES) La placa inferior de cierre puede moverse si el filtro no está presurizado.
- (PT) A placa de isolamento inferior pode deslocar-se se o filtro não estiver pressurizado.
- (IT) Quando il filtro non è sotto pressione, la piastra di chiusura inferiore potrebbe spostarsi.

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(PL) Pokrywa dolna może się przesuwać, gdy filtr nie będzie pod ciśnieniem.

(SK) Ak filter nie je natlakovaný, spodná uzatváracia platňa sa môže posunúť.

(CS) Spodní uzavírací deska se může pohybovat, pokud je filtr pod tlakem.

(ET) Alumine sulgurplaat võib liikuda, kui filter ei ole rõhu all.

(HU) Az alsó zárólemez elmozdulhat, ha a szűrő nincs nyomás alatt.

(LV) Apakšējā noslēgplāksne var kustēties, ja filtrs nav zem spiediena.

(LT) Jeigu filtre nėra slégio, apatinė uždaromoji plokštė gali judėti.

(RU) Если фильтр не герметизирован, возможно смещение нижней замыкающей пластины.

(SL) Spodnja plošča za zapiranje se lahko premika, ko filter ni pod pritiskom.

(TR) Filtreye basınç uygulanmadığında alt kapama levhası hareket edebilir.

(MT) L-aċċessorji għandhom ikunu mqabbdin ma' l-ert - art

(RO) Placa inferioară de acoperire se poate deplasa atunci când filtrul nu este presurizat

### 3. Startup and Operation

- Starten en bediening • Start und Betrieb • Démarrage et exploitation • Käynnistys ja toiminta • Start och drift • Oppstart og betjenning
- Start og drift • Έναρξη λειτουργίας και χειρισμός • Puesta en marcha y funcionamiento • Arranque e Operação • Avvio e funzionamento
- Uruchomienie i eksploatacja • Spustenie a prevádzka • Spuštění a provoz • Käikulaskmine ja töötamine • Beindítás és üzemeltetés
- Darbības uzsākšana un darbība • Paleidimas ir naudojimas • Запуск и эксплуатация • Zagon in uporaba • Çalıştırma ve İşletme
- Kif Tixxhel u Kif Thaddem

(EN)

1. Open inlet valve slowly to gradually pressurise the unit.
2. Open outlet valve slowly to re-pressurise the downstream piping

Do not open inlet or outlet valves rapidly or subject unit to excessive pressure differential or damage may occur.

(NL)

1. Doe de inlaatklep langzaam open om het toestel geleidelijk onder druk te zetten.
2. Doe de uitlaatklep langzaam open om de leidingen verderop in het systeem opnieuw onder druk te zetten.

De inlaat- en uitlaatkleppen niet snel openen en het toestel niet aan een te groot drukdifferentieel blootstellen om schade te voorkomen.

(DE)

1. Einlassventil langsam öffnen, damit Einheit allmählich mit Druck beaufschlagt wird.
2. Auslassventil langsam öffnen, damit nachgeschaltete Rohrleitungen erneut mit Druck beaufschlagt werden.

Einlass- und Auslassventil nicht schnell öffnen. Einheit nicht extremen Druckunterschieden aussetzen. Gefahr von Schäden.

(FR)

1. Ouvrez lentement la soupape d'admission pour mettre progressivement l'unité sous pression.
2. Ouvrez lentement la soupape de refoulement pour faire remonter la pression des conduits en aval.

Évitez d'ouvrir la soupape d'admission ou la soupape de refoulement trop rapidement ou de soumettre l'unité à une pression différentielle trop importante au risque d'entraîner des dommages.

(FI)

1. Paineista yksikkö asteittain avaamalla tuloventtiili.
2. Paineista laskuputkisto uudelleen avaamalla lähtöventtiili hitaasti

Älä avaa tulo- tai lähtöventtiiliä nopeasti tai altista yksikköä liialliselle paine-erolle, sillä yksikkö voi vaurioitua.

(SV)

1. Öppna inloppsventilen långsamt så att enheten trycksätts gradvis.
2. Öppna utloppsventilen långsamt för att trycksätta rören nedströms på nytt.

Öppna inte inlopps- eller utloppsventilerna snabbt och utsätt inte enheten för överdrivet differentialtryck, eftersom det kan orsaka skador.

(NO)

1. Åpne inntaksventilen langsomt for å sette enheten gradvis under trykk.
2. Åpne uttaksventilen langsomt for å sette nedstrømsrørene under trykk igjen.

Ikke åpne inntaks- eller uttaksventilene rast eller utsett enheten for høyt differensialtrykk, da dette kan føre til skade.

(DA)

1. Åbn langsomt indgangsventilen for gradvist at sætte enheden under tryk.
2. Åbn langsomt udløbsventilen for at sætte rørene længere fremme under tryk igen.

Åbn ikke indgangs- eller udgangsventiler hurtigt, og udsæt ikke enheden for store trykforskelle, da det kan medføre skader.

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**EL**

1. Ανοίξτε αργά τη βαλβίδα εισαγωγής για να ανέβει σταδιακά η πίεση της μονάδας.
2. Ανοίξτε αργά τη βαλβίδα εξαγωγής για να ανέβει η πίεση της σωλήνωσης κατάντι

Μην ανοίγετε γρήγορα τις βαλβίδες εισαγωγής ή εξαγωγής και μην υποβάλλετε τη μονάδα σε υπερβολική διαφορική πίεση, διότι μπορεί να προκύψει βλάβη.

**ES**

1. Abra lentamente la válvula de admisión para presurizar progresivamente la unidad.
2. Abra lentamente la válvula de descarga para volver a presurizar las tuberías aguas abajo.

Para evitar daños, no abra bruscamente las válvulas de admisión o de descarga ni someta la unidad a una diferencia de presiones excesiva.

**PT**

1. Abra lentamente a válvula de entrada para pressurizar gradualmente a unidade.
2. Abra lentamente a válvula de saída para pressurizar novamente a tubagem a jusante

Não abra rapidamente as válvulas de entrada ou saída nem sujeite a unidade a uma pressão diferencial excessiva, caso contrário poderão ocorrer danos.

**IT**

1. Aprire lentamente la valvola di mandata per aumentare gradualmente la pressione nell'unità.
2. Aprire lentamente la valvola di scarico per pressurizzare i tubi a valle

Non aprire rapidamente le valvole di mandata o scarico o sottoporre l'unità a una differenza di pressione eccessiva; rischio di danni.

**PL**

1. Powoli otwórz zawór wlotowy, aby stopniowo zwiększyć ciśnienie w urządzeniu.
2. Powoli otwórz zawór wylotowy, aby zwiększyć ciśnienie w rurach w dół przepływu.

Nie wolno szybko otwierać zaworów wlotowych ani wylotowych, ponieważ może to doprowadzić do zbyt dużej różnicy ciśnień w urządzeniu i do jego uszkodzenia.

**SK**

1. Pre postupné natlakovanie jednotky pomaly otvorte prívodný ventil.
2. Pre opäťovné natlakovanie potrubia v smere toku pomaly otvorte vývodný ventil.

Neotvárajte prívodný alebo vývodný ventil rýchlo ani nevystavujte jednotku nadmernému rozdielu tlaku, lebo môže dôjsť k poškodeniu.

**CS**

1. Pomalým otevřením přívodního ventilu jednotku pozvolna natlakujte.
2. Pomalým otevřením výstupního ventilu znova natlakujte potrubí ve směru rozvodu.

Přívodní ani výstupní ventily neotvírejte rychle, ani jednotku nevystavujte nadmerným rozdílu tlaku, v opačném případě může dojít k poškození.

**ET**

1. Üksuse järgjärguliseks survestamiseks avage sisselaskeventiil aeglaselt.
2. Surve taastamiseks väljavoolutorustikus avage väljalaskeventiil aeglaselt.

Sisselask- ja väljalaskeventiile ei tohi avada kiiresti ega põhjustada üksuses liiga suurt surve langu, mis võib tekitada sellele kahjustusi.

**HU**

1. Az egység fokozatosan történő nyomás alá helyezéséhez a bemenő szelepet lassan nyissa meg.
2. Az elmenő csővezeték nyomásának visszaállításához lassan nyissa meg az elmenő szelepet

A berendezés károsodásának elkerülése érdekében ne nyissa meg túl gyorsan a bemenő vagy az elmenő szelepet, és ne tegye ki az egységet nagy nyomáskülönbségeknek.

**(LV)**

1. Lēnām atveriet ieplūdes vārstu, lai iekārtā pamazām paaugstinātu spiedienu.
2. Lēnām atveriet izplūdes vārstu, lai caurulēs plūsmas virzienā samazinātu spiedienu

Neatveriet ieplūdes un izplūdes vārstus strauji, pretējā gadījumā attiecīgajā iekārtā var rasties pārmērīgi liels spiediens vai tā var sabojāties.

**(LT)**

1. Lėtai atidarydami įleidimo vožtuvą, palaipsniui sudarykite slēgį įrenginyje.
2. Lėtai atidarydami išleidimo vožtuvą, iš naujo sudarykite slēgį pasroviui esančiam vamzdyne

Negalima staigiai atidaryti įleidimo ar išleidimo vožtuvų, nei paveikti įrenginio pernelyg dideliu diferencialiniu slēgiu, nes galima sugadinti įrangą.

**(RU)**

1. Впускной клапан следует открывать плавно, чтобы постепенно создать давление в устройстве.
2. Плавно откройте выпускной клапан, чтобы создать давление в системе трубопровода

Запрещено резко открывать впускной или выпускной клапаны, а также используемое устройство, так как это может привести к перепаду давления и повреждениям.

**(SL)**

1. Za počasno dajanje pod pritisk počasi odprite dovodni ventil.
2. Počasi odprite dovodni ventil za ponovno dajanje spodnjih cevi pod pritisk.

Dovodne ali odvodne ventile odpirajte počasi in enote ne izpostavljajte prevelikim nihanjem tlaka, saj lahko to povzroči škodo.

**(TR)**

1. Giriş valfini yavaşça açıp üniteye yavaş basınç uygulayın.
2. Mensap tarafındaki borulara yeniden basınç uygulamak için çıkış valfini yavaşça açın

Giriş ve çıkış valflerini hızla açmayın ve üniteyi aşırı basınç farklarına maruz bırakmayın; aksi halde hasar görebilir.

**(MT)**

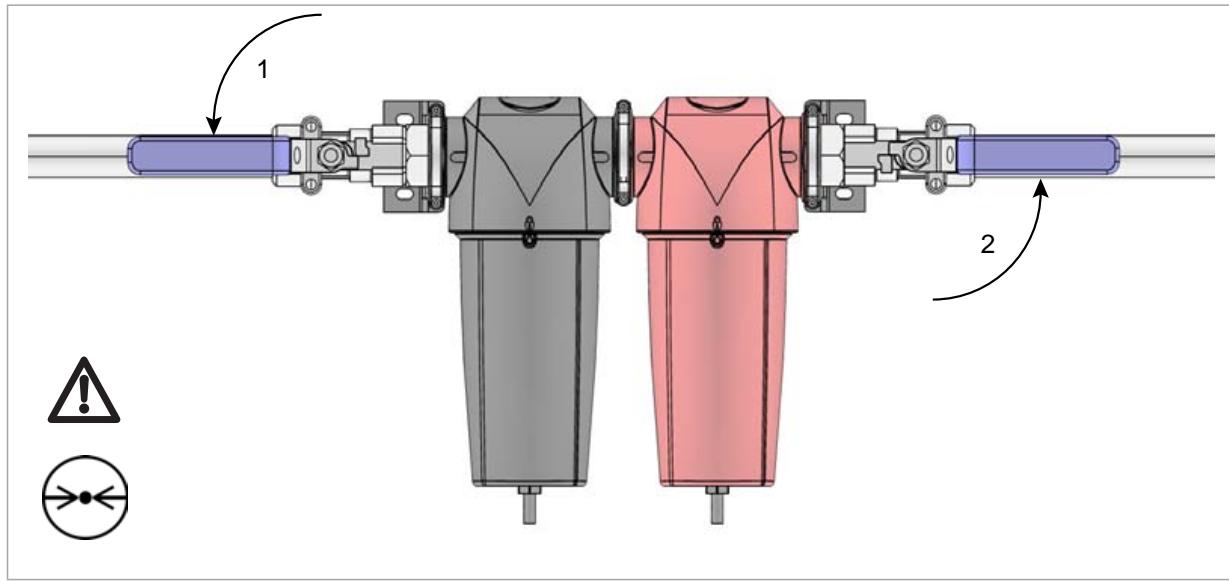
1. Iftah il-valv tad-dhul bil-mod, biex bil-mod tiżidie il-pressjoni fit-tagħmir.
2. Iftah il-valv tal-hruġ bil-mod biex terġa' tibni l-pressjoni fil-pajps li jwasslu 'I isfel

Ara li ma tiftahx il-valvs tad-dhul jew tal-hruġ f'daqqa jew b'xi mod tikkawża differenza eċċessiva fil-pressjoni tat-tagħmir ghax tista' tagħmel il-hsara.

**(RO)**

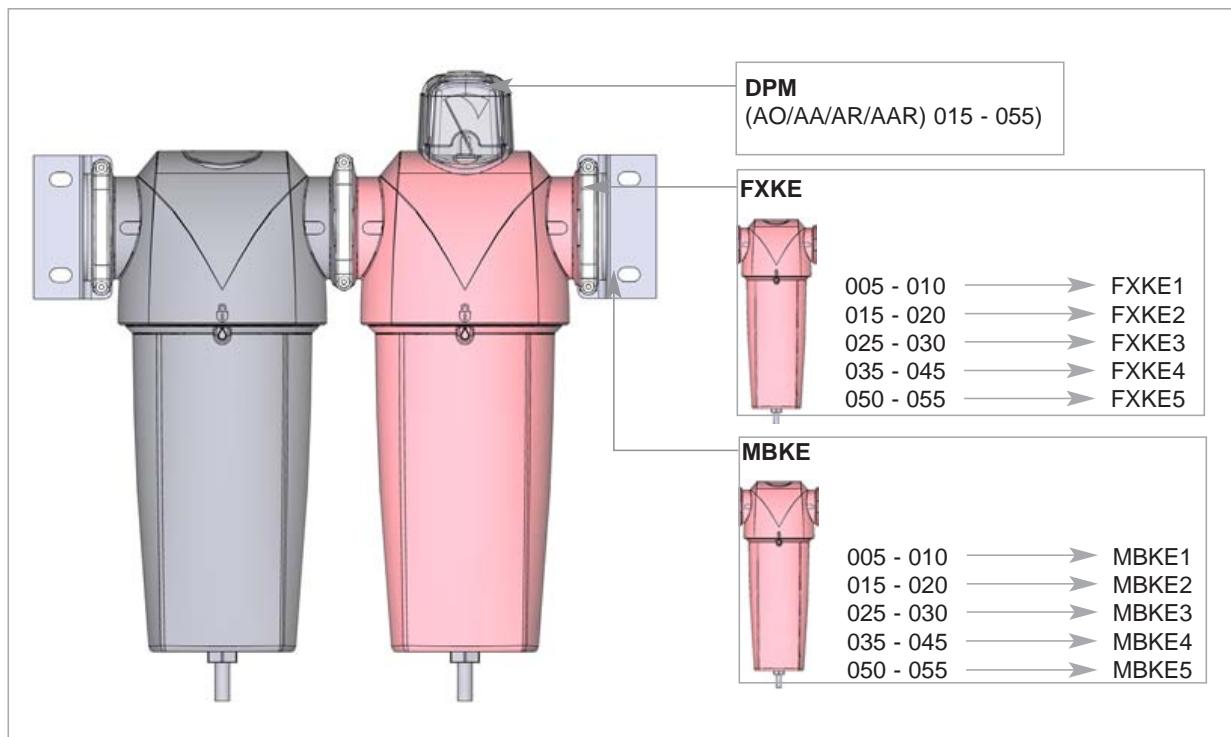
1. Deschideți lent supapa de admisie, pentru a presuriza gradat aparatul.
2. Deschideți lent supapa de evacuare pentru a represuriza sistemul de conducte din aval

Nu deschideți rapid supapele de admisie sau de evacuare și nu supuneți aparatul la o diferență „excesivă“ de presiune; În caz contrar, aparatul poate suferi deteriorări.



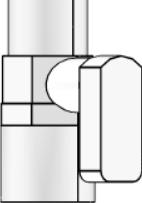
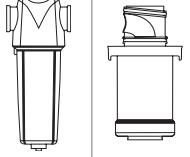
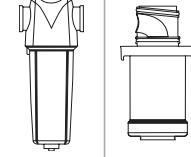
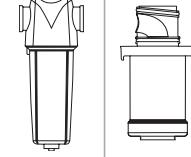
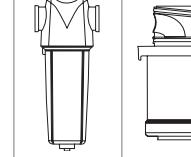
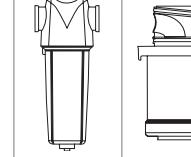
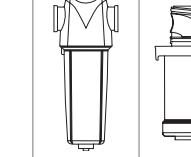
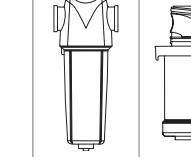
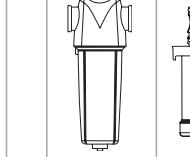
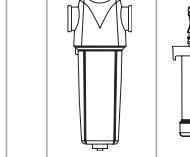
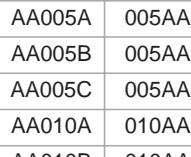
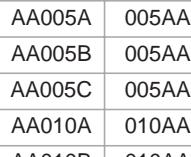
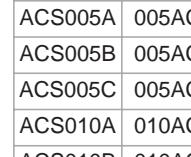
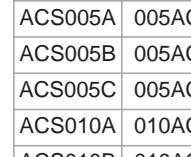
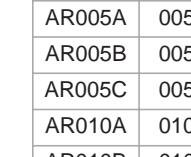
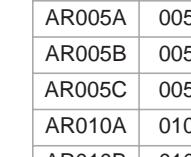
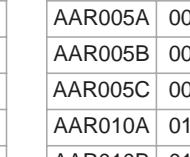
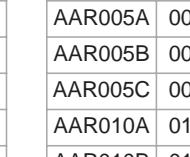
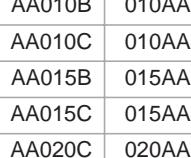
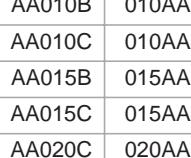
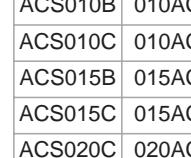
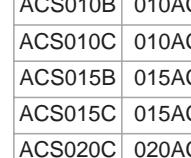
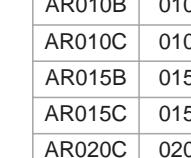
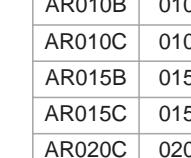
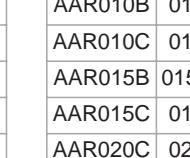
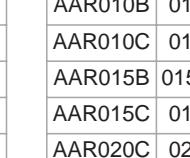
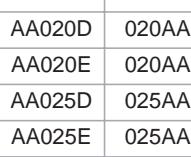
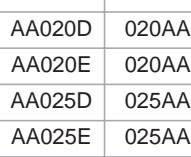
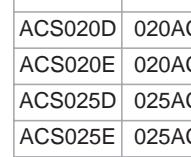
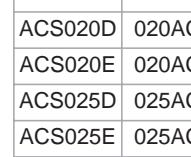
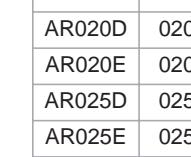
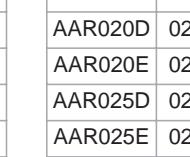
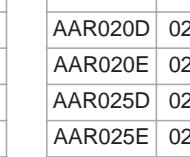
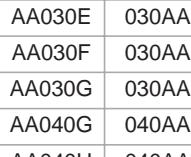
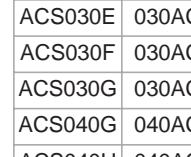
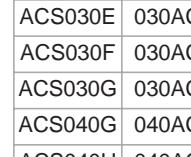
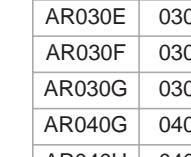
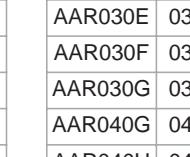
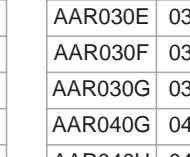
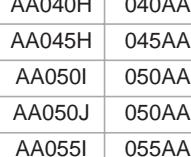
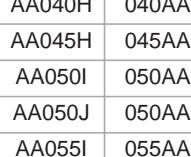
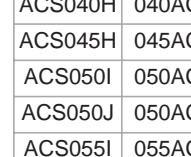
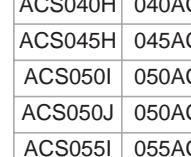
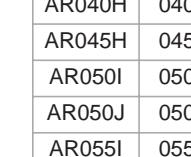
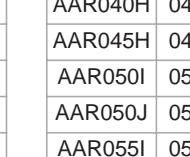
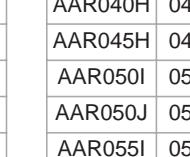
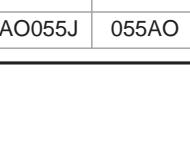
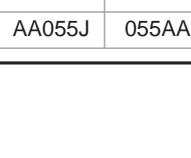
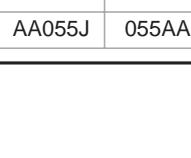
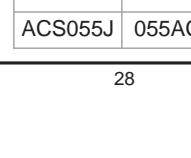
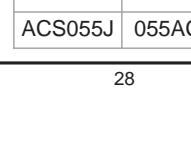
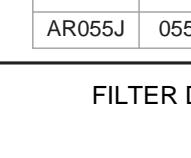
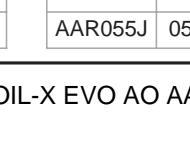
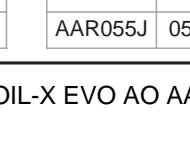
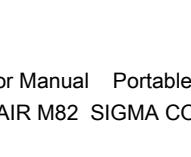
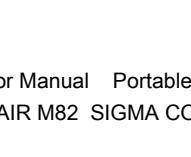
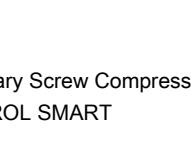
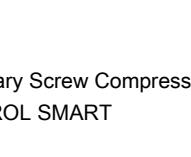
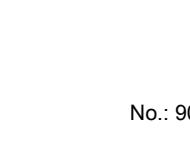
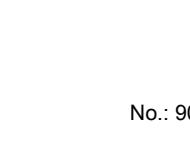
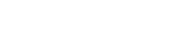
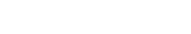
**4. Accessories**

- Toebehoren • Zubehör • Accessoires • Lisävarusteet • Tillbehör • Tilbehør • Tilbehør • Εξαρτήματα • Accesorios • Acessórios • Accessori
- Wyposażenie • Príslušenstvo • Příslušenství • Tarvikud • Tartozékok • Piederumi • Priedai • Принадлежности • Dodatna oprema
- Aksesuarlar • Accessori • Accesorii



**5. Spare Parts (Service Kits)**

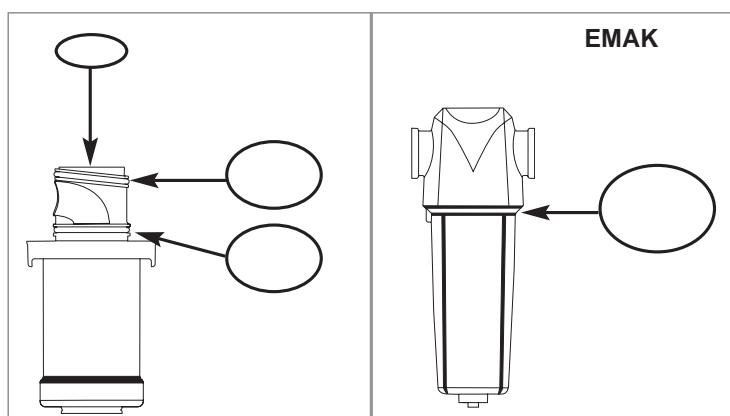
- Reserve-onderdelen (servicekits) • Ersatzteile (Service-Kits) • Pièces de rechange (nécessaires d'entretien) • Varaosat (Huoltopakkaukset)
- Reservdelar (servicesetar) • Reservedeler (service-sett) • Reservedele (Servicekit) • Ανταλλακτικά (Πακέτα τεχνικής υποστήριξης)
- Piezas de repuesto (kits de mantenimiento) • Peças Sobressalentes (Kit de Reparação) • Ricambi (kit per l'assistenza)
- Części zamienne (zestawy serwisowe) • Náhradné diely (Servisná súprava) • Náhradní díly (Sady pro údržbu) • Varuosad (hooldekoplektid)
- Pótalkatrészek (szervizkészletek) • Rezerves daļas (apkopēs komplekti) • Atsarginēs dalys (priežiņos detalių komplektai)
- Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • Yedek parça (Servis kitleri) • Partijiet Għat-Tibdil (Kitts tas-Servizz) • Pieze de schimb (Truse de service)

 EF1	 EM1	<b>AUTOMATIC DRAIN</b> • AUTOMATISCHER ABLAUF • VIDANGE AUTOMATIQUE • AUTOMISCHAFTAPPEN • DRENAJE AUTOMATICO • SCARIO AUTOMATICO • AUTOMATISK AFLØB • DRENO AUTOMÁTICO • ΑΥΤΟΜΑΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ • AUTOMATDRÄNERING • AUTOMAAATTINEN • TYHJENNYSKAPPALE • DREN AUTOMATYCZNY • AUTOMATICKÉ VYSUŠENIE • AUTOMATICKE VYPOUŠTĚNÍ • AUTOMAATNE VÄLJALASE • AUTOMATIKUS LEERESZTÉS • AUTOMÁTISKA IZTECINĀŠANA • AUTOMATINIS ĪSLEIDIMAS • АВТОМАТИЧЕСКИЙ ДРЕНАЖ • SAMODEJNJI ODTOK • OTOMATİK SÜZDÜRÜCÜ • DREJN AWTONMATIKU • EVACUARE AUTOMAT/	<b>MANUAL DRAIN</b> • MANUELLER ABLAUF • VIDANGE MANUELLE • MANUEEL AFTAPPEN • DRENAJE MANUAL • SCARIO MANUALE • MANUELT AFLØB • DRENO MANUAL • ΧΕΙΡΟΚΙΝΗΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ • MANUELL DRÄNERING • KÄSIKÄYTÖINEN • TYHJENNYSKAPPALE • DREN RĘCZNY • RUČNÉ VYSUŠENIE • RUČNÍ VYPOUŠTĚNÍ • KÄSITSI VÄLJALASE • KÉZI LEERESZTÉS • MANUĀLA IZTECINĀŠANA • RANKINIS ĪSLEIDIMAS • ДРЕНАЖ ВРУЧНЮО • ROČNÍ ODTOK • ELLE KULLANILACAK SÜZDÜRÜCÜ • DREJN MANWALI • EVACUARE MANUAL/						
 AO005A	 005AO	 AA005A	 005AA	 ACS005A	 005ACS	 AR005A	 005AR	 AAR005A	 005AAR
 AO005B	 005AO	 AA005B	 005AA	 ACS005B	 005ACS	 AR005B	 005AR	 AAR005B	 005AAR
 AO005C	 005AO	 AA005C	 005AA	 ACS005C	 005ACS	 AR005C	 005AR	 AAR005C	 005AAR
 AO010A	 010AO	 AA010A	 010AA	 ACS010A	 010ACS	 AR010A	 010AR	 010AAR	 010AAR
 AO010B	 010AO	 AA010B	 010AA	 ACS010B	 010ACS	 AR010B	 010AR	 010AAR	 010AAR
 AO010C	 010AO	 AA010C	 010AA	 ACS010C	 010ACS	 AR010C	 010AR	 010AAR	 010AAR
 AO015B	 015AO	 AA015B	 015AA	 ACS015B	 015ACS	 AR015B	 015AR	 015AAR	 015AAR
 AO015C	 015AO	 AA015C	 015AA	 ACS015C	 015ACS	 AR015C	 015AR	 015AAR	 015AAR
 AO020C	 020AO	 AA020C	 020AA	 ACS020C	 020ACS	 AR020C	 020AR	 020AAR	 020AAR
 AO020D	 020AO	 AA020D	 020AA	 ACS020D	 020ACS	 AR020D	 020AR	 020AAR	 020AAR
 AO020E	 020AO	 AA020E	 020AA	 ACS020E	 020ACS	 AR020E	 020AR	 020AAR	 020AAR
 AO025D	 025AO	 AA025D	 025AA	 ACS025D	 025ACS	 AR025D	 025AR	 025AAR	 025AAR
 AO025E	 025AO	 AA025E	 025AA	 ACS025E	 025ACS	 AR025E	 025AR	 025AAR	 025AAR
 AO030E	 030AO	 AA030E	 030AA	 ACS030E	 030ACS	 AR030E	 030AR	 030AAR	 030AAR
 AO030F	 030AO	 AA030F	 030AA	 ACS030F	 030ACS	 AR030F	 030AR	<img alt="Diagram of filter element AAR030	

AO, AA, ACS, AR, AAR

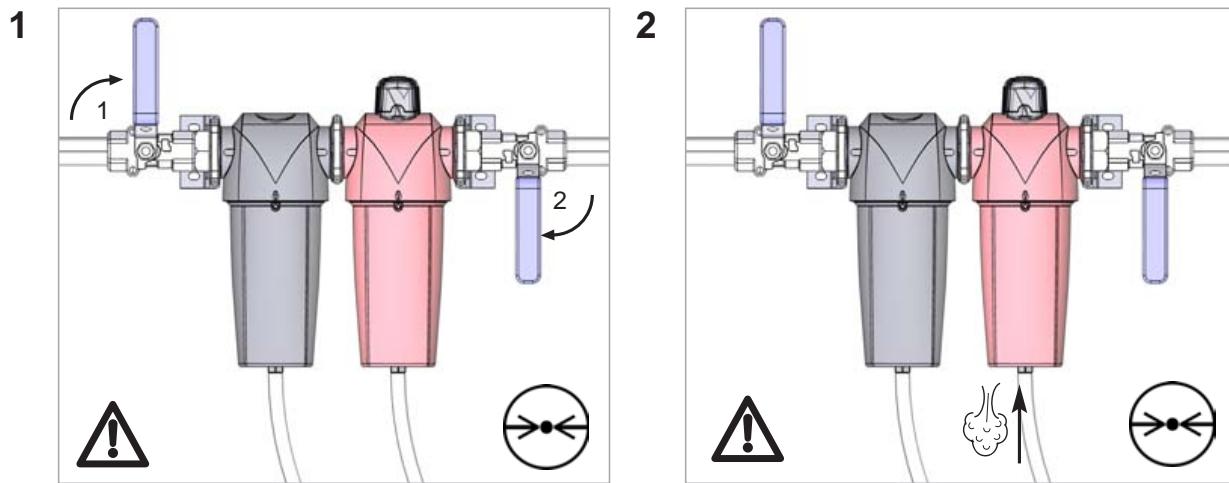
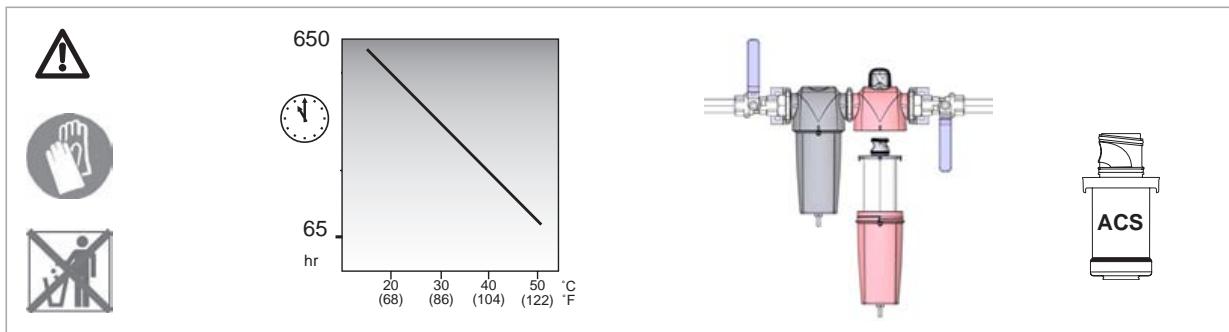
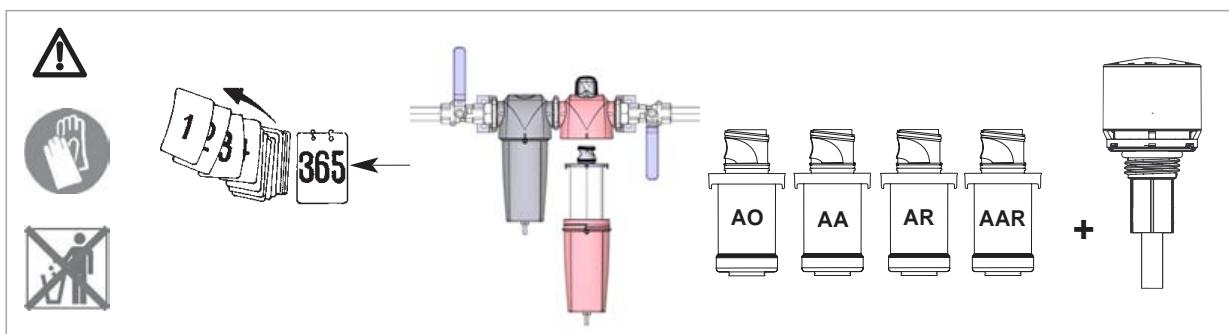
005 - 055

EMAK1	005 - 010
EMAK2	015 - 020
EMAK3	025 - 030
EMAK4	035 - 045
EMAK5	050 - 055

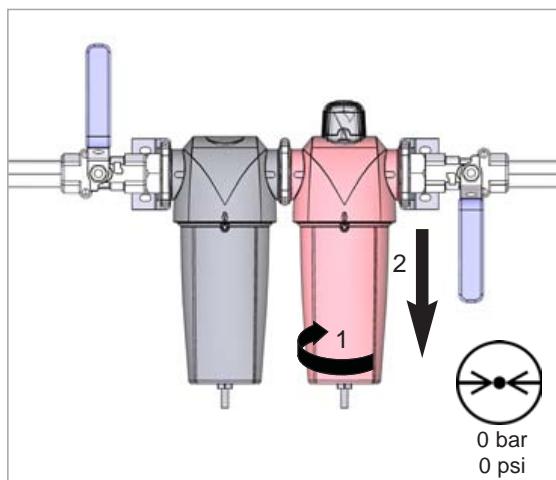


### 6. Maintenance

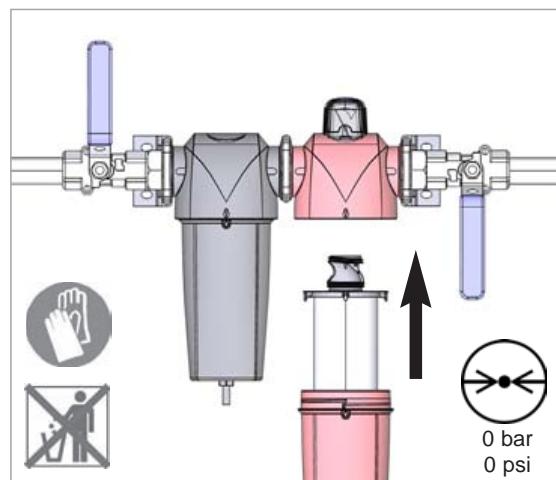
- Onderhoud • Wartung • Entretien • Kunnossapito • Underhåll • Vedlikehold • Vedligeholdelse • Συντήρηση • Mantenimiento • Manutenção • Manutenzione • Konserwacja • Údržba • Údržba • Hooldus • Karbantartás • Tehnická akope • Techniné priežúra • Обслуживание • Vzdrževanja • Bakım • Manutenzjoni • Întreținere



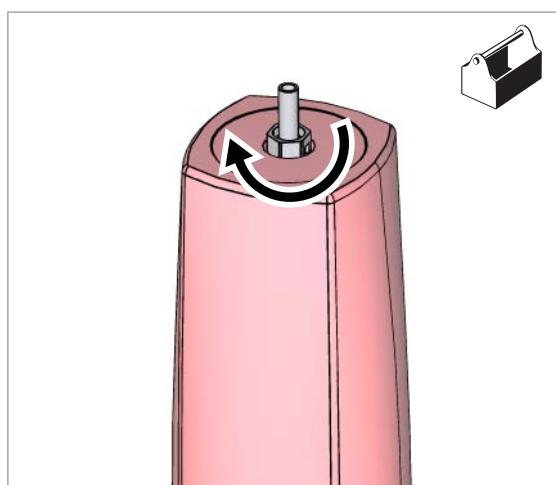
3



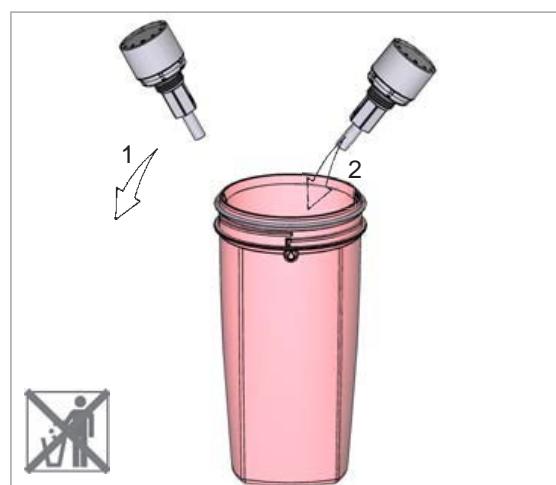
4



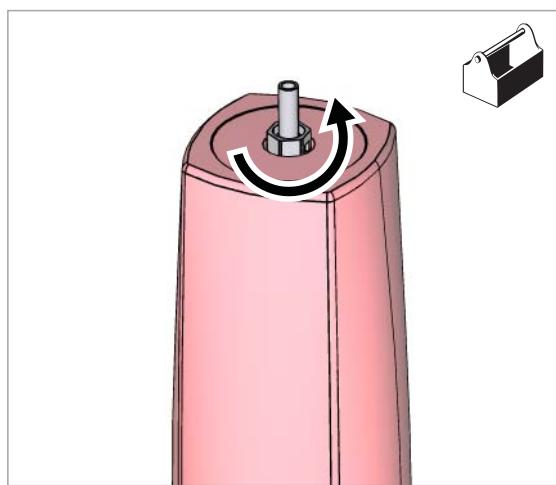
5



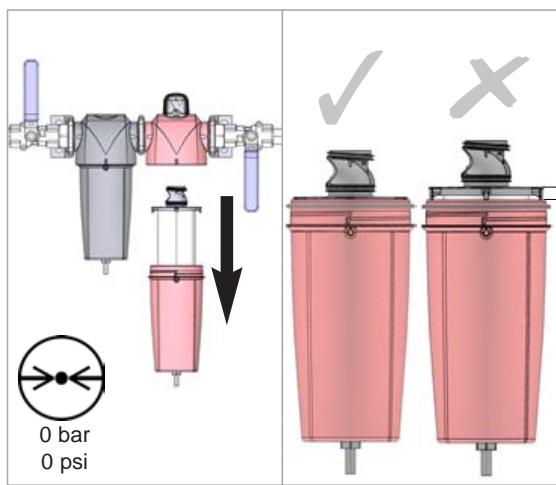
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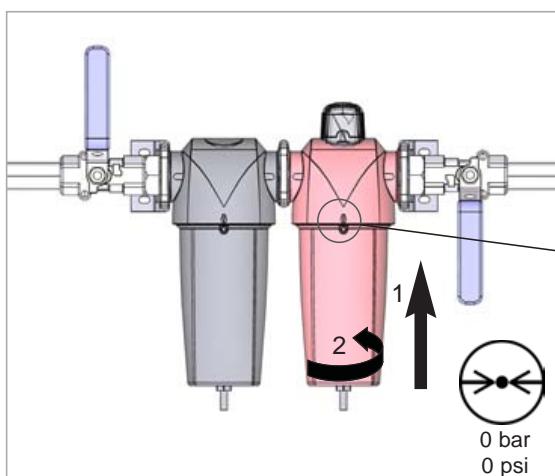
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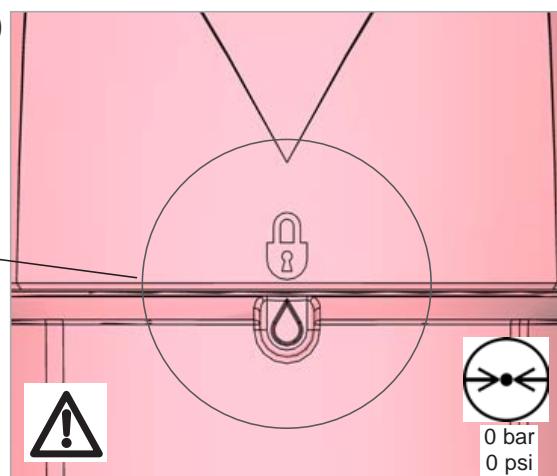
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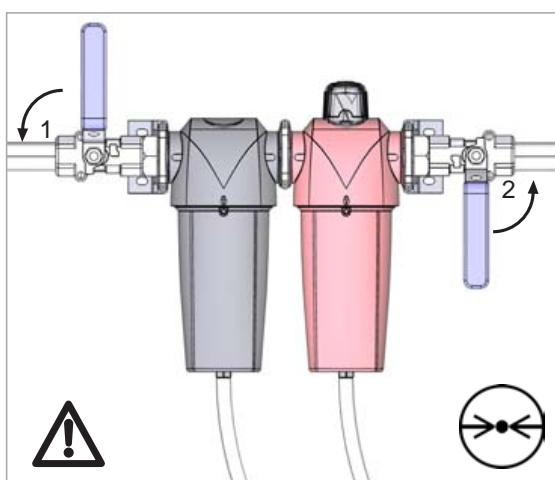
**9**



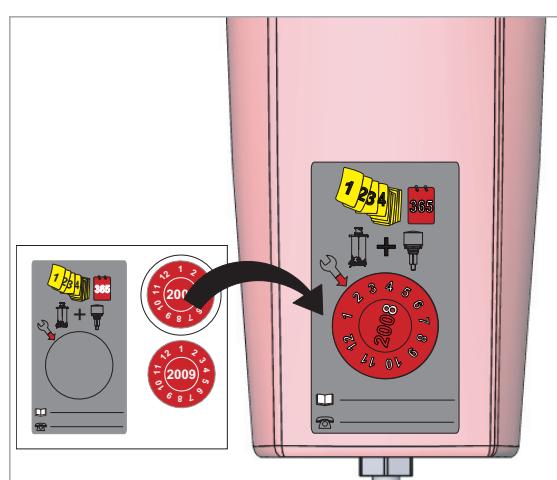
**10**



**11**



**12**



(EN) Align the arrow to the month and year of the next service

(NL) Breng de pijl op een lijn met de maand en het jaar van de volgende onderhoud beurt

(DE) Stellen Sie den Pfeil auf Monat und Jahr der nächsten Wartung termin. Alignez la flèche sur

(FR) le mois et l'année de la prochaine révision

(FI) Kohdi ta nuoli euraavan huollon kuukauteen ja vuoteen

(SV) Rikta pilen mot månaden och året för nästa service

(NO) Ju ter pilen til måneden og året før næste service

(DA) Stil pilen på måned og år for næste service

(EL) Ευθυγραμμίστε το βέλος με το μήνα και έτος του επόμενου σέρβις

(ES) Alinee la flecha con el mes y año de la siguiente revisión

(PT) Alinhe a seta com o mês e o ano da próxima intervenção técnica

(IT) Allineare la freccia in corrispondenza del mese e anno del prossimo intervento di assistenza

(PL) Należy ustawić strzałkę na miesiąc i rok daty następnego serwisu

(SK) Šípku nasmerujte na mesiac a rok nasledujúcej opravy

(CS) Umístěte šípku na měsíc a rok příští prohlídky

(ET) Joondage nool järgmisse hoolduks kuu ja aasta taga

(HU) Irányítása a nyilat a következő szerviz hónapjára és évre

(LV) Irányítása a nyilat a következő szerviz hónapjára és évre

(LT) Nustatykite rodyklę ties kitos techninių priežiūros mėnesiu ir metais

(RU) Совместите стрелку с месяцем и годом следующего обслуживания

(SL) Puščico nastavite na mesec in leto naslednjega servisa

(TR) Oku bir sonraki servis işleminin ay ve yılina hizalayın

(MT) Allinja l-vleġġa ghax-xahar u s-sena tas-servis li jmiss

(RO) Aliniați săgeata în dreptul lunii și al anului următoarei vizite de service



FILTER DH-OIL-X EVO AO AA\_01-

**ПРИЛОЖЕНИЕ**

к разрешению № PPC 00-32481 от 17.12.2008  
(без разрешения недействительно)

**ПЕРЕЧЕНЬ**

оборудования фирмы "Parker Hannifin Ltd. domnick hunter division",  
разрешенного к применению на территории Российской Федерации :

**1. Фильтры для взрывобезопасных газов типов:**

- OIL-X-EVOLUTION (модели от 010 до 055);
- OIL-X-EVOLUTION 4" (модели 060);
- OIL-X-EVOLUTION Fabricated (модели от 100 до 500);
- OIL-X-EVOLUTION OVR (модели от OVR 100 до OVR 250);
- OIL-X-EVOLUTION AC (модели от AC 010 до AC 030);
- OIL-X-EVOLUTION WS (модели от WS 010 до WS 055);
- OIL-X Plus TF-G/H (модели от TF 55 до TF 870);
- OIL-X-EVOLUTION (модели от TFE 060 до TFE 660).

**2. Осушители и аппараты для взрывобезопасных газов типов:**

- MINI (модели от DM 002 до DM 006);
- Midas (модели от Das 1 до Das 7);
- MIDI DME / DM (модели от DME 012 до DME 080; от DM 012 до DM 080);
- MIDI Transportation (модели TDV – TDH – TDS - TDVC);
- MX/MPX (модели от MX 102c до MX 110; от MPX 110 до MPX 112);
- DH (модели от DH 102 до DH 110);
- PCO2 Maxi (модели от PCO2/0 до PCO2/3);
- PCO2 Maxi Plus (модели от MPlus 4000 до MPlus 10000);
- CDP (модели от CDP1 до CDP6);
- CDPlus (модели от CDPlus 8 до CDPlus 12);
- G (модели от G1 до G9);
- LC/MS (LCMS) (модели LCMS 12/2; 20; 30 – 40);
- Zero Air (модели от UHP-10ZA до UHP-200 ZA);
- CO2RP (модели от CO2RP015 до CO2RP850);
- N2Midi (модели от N2Mid350 до N2Mid601);
- Maxigas (модели от 104 до 120).

Заместитель руководителя  
Б.А. Красных



Л В 087863

Declaration of Conformity		EN
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Directives</b> 97/23/EC  <b>Standards used</b> Generally in accordance with ASMEVIII Div 1 2004  <b>PED Assessment Route</b> Article 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Module A (AO AA ACS AAR 035 040 045) Module B (AO AA ACS AAR AAR 050 055)  <b>Notified body for PED</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>EC Type exam nat on Certificate</b> COVO413459/TEC  <b>Authorised Representative</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Declaration</b> I declare that as the authorised representative, I have the above information in relation to the supply / manufacture of this product is in conformity with the standards and other related documents following the provisions of the above Directive.  <b>Signature</b>  <b>Date</b> 8/8/2007  <b>Declaration Number</b> 0002/8807		

Déclaration de conformité		FR
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Directives</b> 97/23/EC  <b>Normes utilisées</b> Généralement conforme à ASMEVIII Div 1 2004  <b>Méthode d'évaluation de la directive d'équipement de pression</b> Article 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modèle A (AO AA ACS AAR 035 040 045) Modèle B (AO AA ACS AAR AAR 050 055)  <b>Organisme de notification pour la directive d'équipement sous pression</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>Certificat d'examen de type CE</b> COVO413459/TEC  <b>Représentant agréé</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Déclaration</b> Je déclare à titre de représentant agréé que les informations ci-dessus liées à la fourniture/fabrication du produit sont en conformité avec les normes et autres documents ci-dessus établis selon les dispositions des Directives susmentionnées.  <b>Signature</b>  <b>Date</b> 8/8/2007  <b>N° de déclaration</b> 0002/8807		

Verklaring van Conformiteit		NL
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Richtlijnen</b> 97/23/EC  <b>Gehanteerde normen</b> Gewoonlijk volgens ASMEVIII Div 1 2004  <b>PED beoordelingsroute</b> Artikel 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR AAR 050 055)  <b>Aangemelde instantie voor PED</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>EC Type onderzoeks certificaat</b> COVO413459/TEC  <b>Bevoegde vertegenwoordiger</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Verklaring</b> Als bevoegde vertegenwoordiger verklaar ik dat bovenstaande informatie met betrekking tot de levering / verkoop gington van dit product overeenstemt met de normen en andere behorende documentatie volgens de bepalingen van bovengenoemde richtlijnen.  <b>Handtekening</b>  <b>Datum</b> 8/8/2007  <b>Verklaringnummer</b> 0002/8807		

Vaatimustenmukaisuusvakuutus		FI
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Direktiivit</b> 97/23/EC  <b>Käytetyt standardit</b> Yleensä seuraavien standardien mukaan: ASMEVIII Div 1 2004  <b>PED arviointi menetely</b> Artikeli 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR AAR 050 055)  <b>PED säännösten Imointutuote</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>EY tyyppihyväksymän sertifikaatti</b> COVO413459/TEC  <b>Valtuutettu edustaja</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Vakuutus</b> Vakuutustuna edustajana vakuutan, että tämä lehdistö julkaisee tämän tuotteen toimitamiseen tai valmistamiseen olevat standardit ja muiden asian I lityyvien asikirjojen mukaisia ja noudattavat yllä mainituja direktiivejä.  <b>Allekirjoitus</b>  <b>Päiväys</b> 8/8/2007  <b>Vakuutuksen numero</b> 0002/8807		

Konformitätserklärung		DE
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Richtlinien</b> 97/23/EC  <b>Anwendete Normen</b> Allgemein in Übereinstimmung mit ASMEVIII Div 1 2004  <b>Beurteilungsroute der Druckgeräterichtlinie</b> Artikel 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR AAR 050 055)  <b>Benannte Stelle für die Druckgeräterichtlinie</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>EG Baumusterprüfbescheinigung</b> COVO413459/TEC  <b>Bevollmächtigter Vertreter</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Erklärung</b> Hiermit erklären wir als bevollmächtigter Vertreter die Konformität der oben aufgeführten Informationen in Bezug auf die Lieferung/Herstellung dieses Produkts mit den Normen und anderen zugehörigen Dokumenten gemäß den Bestimmungen der oben genannten Richtlinie.  <b>Unterschrift</b>  <b>Datum</b> 8/8/2007  <b>Nummer der Erklärung</b> 0002/8807		

Försäkring om överensstämmelse		SV
Parker Hannifin Ltd domnick hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK  <b>OIL X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055  <b>Direktiv</b> 97/23/EC  <b>Använda standarder</b> Genom att i enlighet med ASMEVIII Div 1 2004  <b>Fastställningsväg för PED</b> Artikel 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR AAR 050 055)  <b>Anmält organ för PED</b> Lloyds Register Verification 71 Fenchurch St London EC3M 4BS  <b>EG intyg om typprovning</b> COVO413459/TEC  <b>Auktoriseringad representant</b> Derek Banker Divisional Quality Manager Parker Hannifin Ltd domnick hunter division  <b>Försäkring</b> Jag försäkrar i egenperson om att den här försäkringen levereras till leverantör av denna produkt där den överensstämmer med standarderna och andra relevanta dokumenten enligt vad som är angivet i detta dokument.  <b>Underskrift</b>  <b>Datum</b> 8/8/2007  <b>Försäkringsnummer</b> 0002/8807		

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Konformitetserkjuring		NO
Parker Hannifin Ltd domnick hunter divisjon Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktiver	97/23/EC	
Benyttede standarder	Hovedsakelig i samsvar med ASMEVIII d v 2004	
Rute for vurdering av PED (d rett vet for trykkplagd utstyr)	Paragraf 3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR 050 055)	
Underrettelser organ for PED	Lloyds Register Verifikasjon 71 Fenchurch St London EC3M 4BS	
EC typegodkjenningsattestat	COV0413459/TEC	
Autorisert representant	Derek Bankier D's oral Quality Manager Parker Hannifin Ltd domnick hunter d's on	
<b>Erklæring</b>		
Jeg erklærer som autor sett representant at informasjonen ovenfor med hensyn til levering/produksjon av dette produktet er i overensstemmelse med standardene og de relevante dokumentene følger bestemmelserne i direktivene ovenfor		
Signatur	Dato 8/8/2007	
Erklæringsnummer 0002/8807		

Declaración de conformidad		ES
Parker Hannifin Ltd domnick hunter division Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Directivas	97/23/EC	
Normas utilizadas	Generalmente conforme con ASMEVIII Div 1 2004	
Ruta de evaluación de la normativa PED	Artículo 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modulo A (AO AA ACS AAR 035 040 045) Modulo B (AO AA ACS AAR 050 055)	
Organismo notificado para la normativa PED	Lloyds Register Verificación 71 Fenchurch St London EC3M 4BS	
Certificado de examen CE de tipo	Derek Bankier D's oral Quality Manager Parker Hannifin Ltd domnick hunter division	
Representante autorizado		
<b>Declaración</b>		
Como representante autorizado declaro que la información anteriormente expuesta en relación con el suministro y/o fabricación del producto cumple las normativas indicadas y otros documentos afines según las disposiciones de las Directivas citadas anteriormente		
Firma	Fecha 8/8/2007	
Número de declaración 0002/8807		

Overensstemmelseserklæring		DA
Parker Hannifin Ltd domnick hunter division Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktiver	97/23/EC	
Anvendte standarder	Generelt i overensstemmelse med ASMEVIII div 1 2004	
Forløb for PED bedømmelse	Artikel 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AAR 050 055)	
Notifiteret organ for PED	Lloyds Reg ster Verifikation 71 Fenchurch St London EC3M 4BS	
EF typeprøvningsattestat	COV0413459/TEC	
Autorisert representant	Derek Bankier D's oral Quality Manager Parker Hannifin Ltd domnick hunter division	
<b>Erklæring</b>		
Jeg erklærer hermed som autor sett representant at ovennevnte oplysninger ved henvendt levering/produktet om dette produktet er i overensstemmelse med de anførte standarder og øvrige tilknyttede dokumenter i henhold til bestemmelserne i ovenstående direktiv		
Underskrift	Dato 8/8/2007	
Erklæringsnummer 0002/8807		

Declaração de Conformidade		PT
Parker Hannifin Ltd domnick hunter division Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktivas	97/23/EC	
Padrões utilizados	De forma geral em concordância com ASMEVIII Div 1 2004	
Percorso de Avaliação do PED	Artigo 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modulo A (AO AA ACS AAR 035 040 045) Modulo B (AO AA ACS AAR 050 055)	
Notificado para o PED	Lloyds Reg ster Verifikation 71 Fenchurch St London EC3M 4BS	
Certificado de Inspeção Tipo CE	COV0413459 TEC	
Revendedor Autorizado	Derek Bankier D's oral Quality Manager Parker Hannifin Ltd domnick hunter division	
<b>Declaração</b>		
Declaro na qualidade de representante autorizado que as informações acima constam referentes ao fornecimento / fabrico deste produto estão em conformidade com as normas e outros documentos relativos mencionados de acordo com as disposições das Diretivas anteriores		
Assinatura	Data 8/8/2007	
Número da Declaração 0002/8807		

Δήλωση συμμόρφωσης		EL
Parker Hannifin Ltd domnick hunter division Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Οδηγίες	97/23/EC	
Πρότυπα που χρησιμοποιήθηκαν	Γενικά σε συμφωνία με το ASMEVIII Div 1 2004	
Διεύρυνση επιλογής για κενούς αριθμών PED	Άρθρο 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Ενότητα A (AO AA ACS AAR 035 040 045) Ενότητα B (AO AA ACS AAR 050 055)	
Ενίσχυσης οργανώσεως για κενούς αριθμών PED	Lloyds Register Verification 71 Fenchurch St London EC3M 4BS	
Πιστοποιητικό εξέτασης τύπου EK	COV0413459/TEC	
Εργασιοδομήσεις αντι πρόσωπος	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domnick hunter division	
<b>Δήλωση</b>		
Δηλώνω ότι ο παραπάνω αυτός πρόσωπος, όπως παραπάνω παραρρέεται, έχει σχηματιστεί με τη διάθεση ιατροκαθηγητών αυτού της σχολής συμμόρφωσην της προς τα πρότυπα και ως τροφή τα άλλα σχετικά έγγραφα που συνοδεύουν της διάταξης των πιο πάνω αριθμών		
Υπογραφή	Ημερομηνία 8/8/2007	
Αριθμός δήλωσης 0002/8807		

Dichiarazione di conformità		IT
Parker Hannifin Ltd domnick hunter division Dukessway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direttive	97/23/EC	
Norme utilizzate	Generalmente conforme con ASMEVIII Div 1 2004	
Procedura di valutazione PED	Articolo 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modulo A (AO AA ACS AAR 035 040 045) Modulo B (AO AA ACS AAR 050 055)	
Organismo accreditato per PED	Lloyds Register Verifikation 71 Fenchurch St London EC3M 4BS	
Attestato di certificazione tipo CE	COV0413459/TEC	
Rappresentante autorizzato	Derek Bankier D's oral Quality Manager Parker Hannifin Ltd domnick hunter division	
<b>Dichiarazione</b>		
In qualità di rappresentante autorizzato dichiaro che le informazioni di cui sopra in merito alla fornitura fabbricata da questo prodotto sono conformi alle norme indicate e a qualsiasi altro documento correlato a la fornitura basato su quanto prescritto dalle direttive menzionate		
Firma	Data 8/8/2007	
Dichiarazione numero 0002/8807		

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Deklaracja zgodności		PL
<p>Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Dyrektwy 97/23/EC</p> <p>Stosowane standardy Ogólne zgodny z ASMEVIII dział 1 2004</p> <p>Ścieżka potwierdzania zgodności z Artykuł 3 (AO AA ACS AAR 005 010 015 020 025 030) Moduł A (AO AA ACS AAR 035 040 045) Moduł B (AO AA ACS AR AAR 050 055)</p> <p>Organizacyjna powiadomiana mocy PED Lloyds Register Verification 71 Fenchurch St London EC3M 4BS COV0413459 TEC</p> <p>Certyfikat badań a typu WE Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd domn ck hunter division</p> <p>Autoryzowany przedstawiciel</p> <p>Deklaracja Oświadczam jako auto zowany przedstawiciel, że powyższe informacje dotyczące dostawy / wytworzenia a niniejszego produktu są zgodne ze standardami i innymi dokumentami powiązany zgodnie z postanowieniami powyższych dyrektyw</p> <p>Podpis  Data 8/8/2007</p> <p>Numer deklaracji 0002/8807</p>		

Vyhľásenie o zhode		SK
<p>Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Smeren ce 97/23/EC</p> <p>Použité normy Vo všeobecnosti v zhode s ASMEV II oddiel 1 2004</p> <p>Spôsob posudzovania podľa Smernice PED Článok 3 (AO AA ACS AAR 005 010 015 020 025 030) Moduł A (AO AA ACS AAR 035 040 045) Moduł B (AO AA ACS AR AAR 050 055)</p> <p>Oboznamení orgán podľa smernice PED Lloyds Register Verifikácia 71 Fenchurch St London EC3M 4BS COV0413459 TEC</p> <p>Spinoznomený zástupca Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd domn ck hunter d v s on</p> <p>Vyhľásenie Aké spomienkové zhlášťanie vyhľásujem, že uvedené výše sú v súlade s dodávkou / výrobou tohto výročku v zhode s normami a jinými uvedenými v dokumentu podľa ustanovení uvedených smernic</p> <p>Podpis  Dátum 8/8/2007</p> <p>Číslo vyhlásenia a 0002 8807</p>		

Prohlášení o shodě		CS
<p>Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Směrn ce 97/23/EC</p> <p>Použité normy Obecné v souladu ASMEVIII Div 1 2004</p> <p>Metoda stanovení shody pro tisková zařízení (PED) Článek 3 (AO AA ACS AAR 005 010 015 020 025 030) Dložkář A (AO AA ACS AAR 035 040 045) Dložkář B (AO AA ACS AR AAR 050 055)</p> <p>Notifikovaný orgán pro PED Lloyds Register Verifikácia 71 Fenchurch St London EC3M 4BS COV0413459 TEC</p> <p>Osvědčení o zkoušce typu ES Oprávněný zástupce Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domnick hunter d v s on</p> <p>Prohlášení Jako oprávněný zástupce prohlášuji, že výše uvedené informace týkající se dodávky / výroby tohoto produktu jsou v souladu s normami a jinými souvisejícími dokumenty uvedenými výše.</p> <p>Podpis  Datum 8/8/2007</p> <p>Číslo prohlášení 0002/8807</p>		

Vastavusdeklaratsioon		ET
<p>Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Direktviid 97/23 EC</p> <p>Kasutatud standardid Õld sell vastavuses standardiga ASMEVI I D v 1 2004</p> <p>PED vastavushinangu jaotus A tikkel 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Moduul A (AO AA ACS AAR 035 040 045) Moduul B (AO AA ACS AR AAR 050 055)</p> <p>PEDist (survesedamete direktiivist) teavatustatud 71 Fenchurch St London EC3M 4BS</p> <p>EU tüübli nadamistöönd COV0413459 TEC</p> <p>Vollitud esindaja Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd domn ck hunter division</p> <p>Deklaratsioon</p> <p>Vollitud esindajana kinnitan, et ülatoodud teave seisest antud töötamisest on täpselt vastavas standardis ja muude seotud dokumentidega vastavas ülatoodud direktiviidest.</p> <p>Allkiri  Kuupäev 8/8/2007</p> <p>Deklaratsiooni number 0002/8807</p>		

Megfelelőségi nyilatkozat		HU
<p>Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Direktívák 97/23/EC</p> <p>Alkalmazott szabványok Általánosan a következő alapján ASMEVII D v 1 2004</p> <p>PED értékelési irányvonali 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Moduul A (AO AA ACS AAR 035 040 045) Moduul B (AO AA ACS AR AAR 050 055)</p> <p>PED teljesítési igazolásának értesített tesztelés 71 Fenchurch St London EC3M 4BS EC törlesztési bizonyítvány COV0413459 TEC</p> <p>Hivatalos képviselő Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domnick hunter division</p> <p>Nyilatkozat Hivatalos képviselőköl hirdetjük, hogy a termék szabályosan / gyártásával kapcsolatos fent olvasható információk megfelelnek a fenti Direktívök előírásai szerinti szabványoknak és egyéb kapcsolódó dokumentumoknak</p> <p>Aláírás  Dátum 8/8/2007</p> <p>Nyilatkozat száma 0002/8807</p>		

Atbilstības deklarācija		LV
<p>Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne &amp; Wear NE11 0PZ UK</p> <p>OIL_X Evolution AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055</p> <p>Direktīvas 97/23/EC</p> <p>Izmantotie standarti Parasti saskaņa ar ASMEVII I D v 1 2004</p> <p>PED novērtējums Člens 3 (AO AA ACS AAR 005 010 015 020 025 030) Moduļs A (AO AA ACS AAR 035 040 045) Moduļs B (AO AA ACS AR AAR 050 055)</p> <p>Par PED informātās organizācijas 71 Fenchurch St London EC3M 4BS COV0413459 TEC</p> <p>EK sertifikāts Eksaminācijas sertifikāts</p> <p>Pilnvarotais pārstāvis Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd domn ck hunter d v s on</p> <p>Deklarācija Es kā pilnvarotais pārstāvis ar šo pazīsti, ka iepriekšminētā informācija kas a tiecas uz šī produkta piegādi / ažošanu atbilst standartiem un citem a bilstošiem dokumentiem saskaņā ar jep leiksmi nstājam D rektīvām</p> <p>Paraksts  Datums 8/8/2007</p> <p>Deklarācijas numurs 0002/8807</p>		

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Atitikties deklaracija		LT
Parker Hannifin Ltd. domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktivos	97/23/EC	
Naudoti standartai	Atiltina bendrasias ASMEVIII Div 1 : 2004 nustatatas	
PED (vertintimo pakora):	3.3 straipsnis (AO AA ACS AAR 005 010 015 020 025 030) Modulis A (AO AA ACS AAR 035 040 045) Modulis B (AO AA ACS AR AAR 050 055)	
PED notifikuojoji institucija	Lloyd's Register Verification 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
EB t po testavimo sertifikatas	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. domn ck hunter d v s on	
<b>Deklaracija</b>		
Aš, galutinės atstovas, paririu, kad šiakiai patenkinti gamintojų teikiamą pagrindinį informaciją atitinkančiai nuostatomis standartus ir kiti nuostytūgi direktyvų nuostatomis susijusią dokumentaciją.		
Parasas	Data: 8/8/2007	
Deklaracijos numeris 0002 8807		

Uyum Beyani		TR
Parker Hannifin Ltd. domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktifler	97/23/EC	
Kullanılan standartlar	Genelde ASMEV II D v 1 2004'e uygun	
PED (Basılıcılık Ekranı)	Madde 3.3 (AO AA ACS AAR 005 010 015 020 025 030)	
Yolu	Modül A (AO AA ACS AAR 035 040 045) Modül B (AO AA ACS AR AAR 050 055)	
PED için bildirme bulunulan kuruluş:	Lloyd's Register Verification 71 Fenchurch St London EC3M 4BS	
AT Tip İncelemesi Sertifikası:	COV0413459/TEC	
Yetkili Temsilci	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. domn ck hunter division	
<b>Beyan</b>		
Yetkili temsilci olarak bayim ederim ki bu ortamın temininde / üretmekte ilişkin olarak yukarıda verilen bilgiler yukarıda anlatılan direktiflerin hükümlerine uygun standartlara ve ilgili başka belgelere uygunlardır.		
İmza:	Tarih: 8/8/2007	
Beyan No 0002/8807		

Декларация соответствия		RU
Parker Hannifin Ltd. domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktiv	97/23/EC	
Применимые стандарты	В соответствии с правилами оценки соответствия стандарту ASMEVIII, Раздел 1: 2004.	
Система обеспечения качества	Система (AO AA ACS AAR -005, 010, 015, 020, 025, 030) Модуль А (AO AA ACS AAR -035, 040, 045) Модуль Б (AO AA ACS AR AAR -050, 055)	
PED	Lloyd's Register Verification 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Уполномоченный орган для PED:	Lloyd's Register Verification 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Сертификат ЕС на проведение типовых испытаний:	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. domn ck hunter division	
<b>Декларация</b>		
Как уполномоченный представитель, я заявляю, что приведенные выше информации относятся к поставкам/производству данного продукта и соответствует стандартам, другим связанным документам и положениям указанных выше требований.		
Подпись:	Дата: 8/8/2007	
Номер декларации: 0002/8807		

Dikjarazzjoni tal Konformità		MT
Parker Hannifin Ltd. domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direttivi	97/23/EC	
Standards użati	Generalment 'konformità ma' ASMEVIII Div 1 : 2004	
Rotta ta' I Assessjar tal PED	Artiklu 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AR AAR 050 055)	
Korp notifikat għall-PED:	Lloyd's Reg ster Verification 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Certifikat tal-KE ta' I-ezaminazzjoni tat-Tip:		
Rappreżentant Awtorizat	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. domn ck hunter division	
<b>D jarrazzjoni</b>		
Niddikja li bħala r-repräsentant awtorizat, l-informazzjoni ta' hawn fuq, f'dak li għandu x-jagħsim mal-formant/manifestu ta' dan il-prodott, hija konformi ma' l-istandars u d-dokumenti oħra relatati li jseigu d-dispozizzjoni ja' t-tad-Direttivi msemma fuq hawn fuq		
Firma	Data: 8/8/2007	
Numru tad-Dikjarazzjoni 0002/8807		

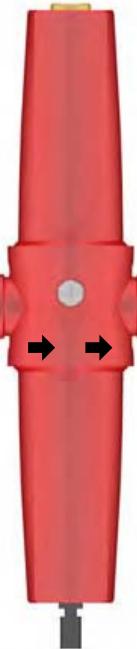
Izjava o skladnosti		SL
Parker Hannifin Ltd. domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Direktive	97/23/EC	
Uporabljeni standardi	Splošno skladno z ASMEVIII Div 1 2004	
Ocenjevanja pot PED	Članek 3.3 (AO, AA, ACS, AAR -005, 010, 015, 020, 025, 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AR AAR 050 055)	
Priglašeni organ za PED	Lloyd's Register Verification 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Certifikat o tipskem pregledu ES	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. domn ck hunter division	
Pooblaščeni zastopnik		
<b>Izjava</b>		
Kot pooblaščeni zastopnik izjavjam, da s so zgodni podatki glede dobave/vozidje legi zdeka skladna s standardi oziroma sorodnimi dokumenti, ki sledijo določbam zgornjih direktiv.		
Podpis	Datum: 8/8/2007	
Štev ika izjave 0002/8807		

Declaratie de conformitate		RO
Parker Hannifin Ltd. dominick hunter div sion Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
<b>OIL-X Evolution</b> AO AA ACS AR AAR 005 010 015 020 025 030 AO AA ACS AR AAR 035 040 045 AO AA ACS AR AAR 050 055		
Directive	97/23/EC	
Standarde u ilizate	Splošno skladno z ASMEV II D v 1 2004	
Traseu de evaluare PED	Članek 3.3 (AO, AA, ACS, AAR -005, 010, 015, 020, 025, 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AR AAR 050 055)	
Organism no ificat pentru PED	Lloyd's Reg ster Verification 71 Fenchurch St London EC3M 4BS COV0413459 TEC	
Certificat de examinare de tip CE	Derek Bankier D v s onal Quality Manager Parker Hannifin Ltd. dominick hunter division	
Reprezentant autorizat		
<b>Declarație</b>		
În calitate de reprezentant autorizat, declar că informațiile de mai sus, referitoare la furnizarea / fabricația acestui produs, sunt în conformitate cu standardele și alte documente constante care respectă prevederile Directiveelor de mai sus.		
Semnătură:	Data: 8/8/2007	
Număr declaratie: 0002/8807		

**FILTER DH-OIL-X EVO AO AA\_01-**

## 13.8 Option dc

## Operating instructions for compressed air filter (fresh air filter)



**AC010 - AC030**

**OIL-X  
EVOLUTION**

Original Language EN **OIL VAPOUR & ODOUR REMOVAL FILTERS**

(NL) OLIEDAMP & GEUR VERWIJDERINGSFILTERS	(DE) FILTER ZUM ENTFERNNEN VON ÖLNEBEL UND GERÜCHEN
(FR) FILTRES D'ÉLIMINATION DES ODEURS ET DES VAPEURS D'HUILE	(FI) ÖLJYHÖYRYN JA HAJUN POISTOSUODATTIMET
(SV) FILTER FÖR AVLÄGSNING AV OLJEÅNGOR OCH LUKT	(NO) OLJEDAMP- OG OLJELUKTFJERNINGSFILTRE
(DA) FILTER FÖR AVLÄGSNING AV OLJEÅNGOR OCH LUKT	(EL) ΦΙΛΤΡΑ ΑΦΑΙΡΕΣΗΣ ΑΤΜΩΝ & ΟΣΜΩΝ ΛΑΔΙΟΥ
(ES) FILTROS DE ELIMINACIÓN DE OLORES Y VAPORES DE ACEITE	(PT) VAPOR DO ÓLEO E FILTROS DE REMOÇÃO DOS CHEIROS
(IT) FILTRI PER L'ELIMINAZIONE DEGLI ODORI E DEI VAPORI D'OLIO	(PL) FILTRY DO USUWANIA OPARÓW I ZAPACHU OLEJU
(SK) FILTRE NA ODSTRAŇOVANIE OLEJOVÝCH VÝPAROV A ZÁPACHU	(CS) OLEJOVÉ A PROTIPACHOVÉ FILTRY
(ET) ŌLISUDU JA -HAISU EEMALDUSFILTRID	(HU) OLAJGÖZ- ÉS SZAGELTÁVOLÍTÓ SZÜRŐK
(LV) EĻĻAS TVAIKU UN AROMĀTA NOVĒRŠANAS FILTRI	(LT) ALYVOS GARŪ IR KVAPO ŠALINIMO FILTRAI
(RU) ФИЛЬТРЫ ДЛЯ УСТРАНЕНИЯ ЗАПАХА И ПАРОВ МАСЛА	(SL) FILTRI ZA ODSTRANJEVANJE OLJNIH HLAPOV IN VONJAV
(TR) YAĞ BUHARI VE KOKUSU GİDERİCİ FİLTRELER	(MT) FILTRI LI JNEHHU L-FWAR TAŽ-ŽJUT U L-IRWEJJAH




**Warning**

- Highlights actions or procedures, which if not performed correctly, may lead to personal injury or death.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, lichamelijk letsel of de dood kunnen veroorzaken.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Verletzungen und tödlichen Unfällen führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent entraîner des dommages corporels ou la mort.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin suoritettuna saattavat aiheuttaa henkilövahingon tai kuoleman.
- Anger åtgärder och metoder som kan orsaka personskador eller dödsfall om de inte utförs korrekt.
- Fremhever handlinger eller prosedyrer som kan føre til personskafe eller dødsfall hvis de ikke utføres på korrekt måte.
- Επισημαίνεται τις ενέργειες ή τις διαδικασίες, οι οποίες αν δεν πραγματοποιηθούν σωστά, μπορεί να οδηγήσουν σε τραυματισμό προσωπικού ή σε θάνατο.
- Destaca acciones o procedimientos que, de no realizarse correctamente, pueden ocasionar daños personales o la muerte.
- Realça as acções ou procedimentos que, se não forem executados correctamente, poderão provocar danos pessoais ou morte.
- Segnala azioni o procedure che, se non eseguite correttamente, comportano il rischio di infortuni o morte.
- Wskazuje działania i procedury, które w razie niewłaściwego wykonania mogą prowadzić do obrażenia ciała lub śmierci.
- Zvýrazňuje činnosti alebo postupy, ktoré môžu v prípade nesprávneho vykonania viesť k zraneniu alebo usmrteniu.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést ke zranění nebo usmrcení osob.
- Töstab esile toimingud või protseduurid, mis väärää teostamise korral võib hoiata surma.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása súlyos vagy végzetes személyi sértést okozhat.
- Uzsver darbības vai procedūras, kuru rezultātā, ja tās neveic pareizi, var izraisīt ievainojumus vai nāvi.
- Žymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima susiziešti ar mirti.
- Указывает на действия, ненадлежащее выполнение которых может привести к нанесению вреда здоровью или смерти.
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajjanju poškodujejo človeka ali povzročijo smrt.
- Doğru bir şekilde yerine getirilmemiği takdirde bu ürüne hasar verebilecek işlem ve süreçleri vurgular.
- Tissottolinea l-azzjonijiet jew il-proceduri, li jekk ma jsirux kif suppost, jista' jkun hemm korrientej jew mewt


**Caution**

- Highlights actions or procedures, which if not performed correctly, may lead to damage to this product.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, schade kunnen berokkenen aan dit product.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Schäden am Gerät führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent endommager ce produit.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin suoritettuna saattavat vaurioittaa täitä laitetta.
- Anger åtgärder och metoder som kan orsaka skador på den här produkten om de inte utförs korrekt.
- Fremhever handlinger eller prosedyrer som kan føre til skade på produktet hvis de ikke utføres på korrekt måte.
- Επισημαίνεται τις ενέργειες ή τις διαδικασίες, οι οποίες αν δεν πραγματοποιηθούν σωστά, μπορεί να προκαλέσουν ζημιά στο προϊόν αυτό.
- Destaca acciones o procedimientos que, de no realizarse correctamente, pueden ocasionar el deterioro del producto.
- Realça as acções ou procedimentos que, se não forem executados correctamente, poderão danificar este produto.
- Segnala azioni o procedure che, se non eseguite correttamente, comportano il rischio di danneggiare il prodotto.
- Wskazuje działania i procedury, które w razie niewłaściwego wykonania mogą powodować uszkodzenie produktu.
- Zvýrazňuje činnosti alebo postupy, ktoré v prípade nesprávneho vykonania možu viesť k poškodeniu tohto výrobku.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést k poškození tohoto výrobku.
- Töstab esile toimingud või protseduurid, mis väärää teostamise korral võivad toodet kahjustada.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása a termék károsodásához vezethet.
- Uzsver darbības vai procedūras, kuru rezultātā, ja tās neveic pareizi, var sabojāt šo izstrādājumu.
- Žymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima sugadinti šī gaminī.
- Указывает на действия, ненадлежащее выполнение которых может привести к повреждениям данного изделия.
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajjanju poškodujejo izdelek.
- Doğru bir şekilde yerine getirilmemiği takdirde yaralanma ya da ólume yol açabilecek işlem ve süreçleri vurgular.
- Tissottolinea l-azzjonijiet jew il-proceduri, li jekk ma jsirux kif suppost, tista' ssir hsara lil dan il prodott



- Suitable gloves must be worn.
- Geeignete Schutzhandschuhe tragen.
- Käytettävä asianmukaisia käsineitä.
- Bruk egnede hansker.
- Апарателтai va forapeat katállela yántia
- Devem ser utilizadas luvas adequadas.
- Należy zakładać odpowiednie rękawice
- Kohustuslik kanda sobivaid kaitsekindaid
- Järvalka piemēroti cimdi.
- Работы должны проводиться в соответствующих перчатках
- Uygun eldiven giyilmelidir
- Altijd geschikte handschoenen dragen.
- Le port de gants adaptés est obligatoire.
- Använd lämpliga handskar.
- Der skal anvendes egnede handsker.
- Se deben llevar puestos guantes apropiados.
- Indossare guanti di protezione.
- Je nutné použiť vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia művéti tinkamas piirštines.
- Uporabit je treba ustrene rokavice.
- Għandhom jintibbu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggoeden van gebruikte onderdelen en afval.
- Weist auf die Anforderungen zur Entsorgung gebrauchter Teile und Abfall hin.
- Met en relief les consignes de mise au rebut des pièces usagées et des déchets.
- Osoittaa käytettyjen osien ja jätteen hävitättäistä koskevia vaatimuksia.
- Anger de krav som ställs på bortskaffande av gamla delar och avfall.
- Fremhever kravene for avhending av brukte deleier og avfall.
- Επισημαίνεται τις απαιτήσεις απόρριψης των χρησιμοποιημένων εξαρτημάτων και των απορριμάτων
- Destaca los requisitos para desechar las piezas usadas y los residuos.
- Realça os requisitos para eliminar as peças utilizadas e os desperdícios.
- Segnala i criteri per lo smaltimento di componenti usati e rifiuti.
- Wskazuje wymagania dotyczące usuwania zużytych części i odpadów.
- Zvýrazňuje požiadavky pre zneškodnenie použitých dielov a odpadu.
- Upozornění na požadavky týkající se likvidace použitých dílů a odpadu.
- Töstab esile kasutatud osade ja jáakide utiliseerimisele esitatavad nöörid.
- A használt alkatrészek és a hulladék megfelelő módon történő elhelyezésére hívja fel a figyelmet.
- Uzsver prasbas tam, ka atrbivoties no lietotajam detaljam atkritumiem.
- Žymi panaudotuļu ir atlieku išmetimo reikalavimus.
- Указывает на требования по уничтожению использованных деталей и отходов.
- Označuje zahteve za odlaganje rabljenih delov in odpadkov.
- Kullanılmış parçaların ve atıkların atılmasıyla ilişkili gereklilikler vurgular
- Tissottolinea l-kundizzonijiet biex wieħed jarmi l-partijiet użati u l-iskart

	<ul style="list-style-type: none"> <li>Pressure.</li> <li>Paine.</li> <li>Πίεση</li> <li>Ciśnienie</li> <li>Nyomás alatt.</li> <li>Tlak</li> </ul>	<ul style="list-style-type: none"> <li>Druk</li> <li>Tryck</li> <li>Presión.</li> <li>Tlak..</li> <li>Spiediens.</li> <li>Basinç</li> </ul>	<ul style="list-style-type: none"> <li>Druck.</li> <li>Trykk</li> <li>Pressão.</li> <li>Tlak.</li> <li>Slēgis.</li> <li>Pressjoni</li> </ul>	<ul style="list-style-type: none"> <li>Pressure.</li> <li>Tryk</li> <li>Pressione.</li> <li>Surve.</li> <li>Давление</li> </ul>
	<ul style="list-style-type: none"> <li>Release Pressure.</li> <li>Evacuation de pression.</li> <li>Avlast trykk</li> <li>Despresurizar.</li> <li>Ciśnienie spustowe</li> <li>Surve väljälase</li> <li>Išleiskite slėgi.</li> <li>Basinci Kaldırın</li> </ul>	<ul style="list-style-type: none"> <li>Druk aftalen.</li> <li>Vapauta paine.</li> <li>Aflast tryk</li> <li>Liberta Pressão.</li> <li>Uvoňnite tlak.</li> <li>Engedje ki a nyomást.</li> <li>Справить давление</li> <li>Nehhi l-pressjoni</li> </ul>	<ul style="list-style-type: none"> <li>Druck ablassen.</li> <li>Tryckutsläpp.</li> <li>Εκτόνωση πίεσης</li> <li>Scaricare la pressione.</li> <li>Uvolnění tlaku.</li> <li>Pazeminiel spiedienu.</li> <li>Sprostitev tlaka.</li> </ul>	<ul style="list-style-type: none"> <li>Druck ablassen.</li> <li>Tryckutsläpp.</li> <li>Εκτόνωση πίεσης</li> <li>Scaricare la pressione.</li> <li>Uvolnění tlaku.</li> <li>Pazeminiel spiedienu.</li> <li>Sprostitev tlaka.</li> </ul>
	<ul style="list-style-type: none"> <li>Replace every year</li> <li>Remplacer tous les ans.</li> <li>Skift ut hvert år</li> <li>Sustituir anualmente</li> <li>Należy wymieniać raz w roku</li> <li>Asendage igal aasta!</li> <li>Keiskeite kartaž per metus</li> <li>Her yıl değiştürün</li> </ul>	<ul style="list-style-type: none"> <li>Elk jaar vervangen</li> <li>Vaihda vuosittain.</li> <li>Udskift en gang om året</li> <li>Substituir todos os anos</li> <li>Každý rok vymieňajte</li> <li>Evente cserélje</li> <li>Заменять каждый год.</li> <li>Ibdel kull sena</li> </ul>	<ul style="list-style-type: none"> <li>Jährlich austauschen</li> <li>Byt varje år</li> <li>Αντικατοτάσθη κάθε χρόνο</li> <li>Sostituire ogni anno</li> <li>Nutná vyměna každý rok.</li> <li>Nomainiet reizi gadā</li> <li>Zamenjajte vsako leto.</li> </ul>	<ul style="list-style-type: none"> <li>Jährlich austauschen</li> <li>Byt varje år</li> <li>Αντικατοτάσθη κάθε χρόνο</li> <li>Sostituire ogni anno</li> <li>Nutná vyměna každý rok.</li> <li>Nomainiet reizi gadā</li> <li>Zamenjajte vsako leto.</li> </ul>
	<ul style="list-style-type: none"> <li>Filter housing / Model</li> <li>Logement du filtre/modèle.</li> <li>Filterhus-/modell</li> <li>Caja de filtro/modelo.</li> <li>Obudowa filtra / model.</li> <li>Filtři korpus/mudel</li> <li>Filtro korpusas / modelis</li> <li>Filtre muhafazası / Model</li> </ul>	<ul style="list-style-type: none"> <li>Filterhuis / Model</li> <li>Suodatinikoteló-/malli</li> <li>Filterhus/modell</li> <li>Caixa / Modelo do filtro</li> <li>Kryt filtra / Model</li> <li>Szűrőház / típus</li> <li>Корпус фильтра / модель</li> <li>Kontenitur tal-filtri - Mudell</li> </ul>	<ul style="list-style-type: none"> <li>Filtergehäuse / Modell</li> <li>Filterhus/modell</li> <li>Υποδοχή/μοντέλο φίλτρου</li> <li>Corpo del filtro / Modello</li> <li>Kryt filtru / Model</li> <li>Filtra korpuß / modelis</li> <li>Ohišje filtra / Model</li> </ul>	<ul style="list-style-type: none"> <li>Filtergehäuse / Modell</li> <li>Filterhus/modell</li> <li>Υποδοχή/μοντέλο φίλτρου</li> <li>Corpo del filtro / Modello</li> <li>Kryt filtru / Model</li> <li>Filtra korpuß / modelis</li> <li>Ohišje filtra / Model</li> </ul>
	<ul style="list-style-type: none"> <li>High efficiency filter element</li> <li>Höchleistungsfiltterelement</li> <li>Tehokas suodatinelementti</li> <li>Ноуеффектив филтерелемент</li> <li>Фільтро усилінг апоДоцтс</li> <li>Elemento do filtro de elevado rendimento</li> <li>Wysokowydajny wkład filtra</li> <li>Vysoko účinný filtrační prvek</li> <li>Nagy hatékonyságú szűrélem</li> <li>Labai efektívus filtrávimo elementas</li> <li>Visoko učinkovit filtrirni element</li> <li>Element tal-filtri b'efficjenza kbira</li> </ul>	<ul style="list-style-type: none"> <li>Filterelement / Model</li> <li>Suodatinikoteló-/malli</li> <li>Filterhus/modell</li> <li>Caixa / Modelo do filtro</li> <li>Kryt filtra / Model</li> <li>Szűrőház / típus</li> <li>Корпус фильтра / модель</li> <li>Kontenitur tal-filtri - Mudell</li> </ul>	<ul style="list-style-type: none"> <li>Zeer efficiënt filterelement</li> <li>Cartouche filtrante haute efficacité.</li> <li>Högeffektivt filterelement</li> <li>Hogeefektivt filterelement</li> <li>Elemento filtrante ad alta efficienza.</li> <li>Elemento filtrante de gran eficiencia.</li> <li>Vysoko účinný filtračný článok</li> <li>Körkotollik filterelement</li> <li>Augstas produktivitātes filtra elements</li> <li>Высокоэффективный фильтрующий элемент</li> <li>Yüksek etkinlikli filtre öğesi</li> </ul>	<ul style="list-style-type: none"> <li>Zeer efficiënt filterelement</li> <li>Cartouche filtrante haute efficacité.</li> <li>Högeffektivt filterelement</li> <li>Hogeefektivt filterelement</li> <li>Elemento filtrante ad alta efficienza.</li> <li>Elemento filtrante de gran eficiencia.</li> <li>Vysoko účinný filtračný článok</li> <li>Körkotollik filterelement</li> <li>Augstas produktivitātes filtra elements</li> <li>Высокоэффективный фильтрующий элемент</li> <li>Yüksek etkinlikli filtre öğesi</li> </ul>
	<ul style="list-style-type: none"> <li>Adsorption filter cartridge - Granular carbon</li> <li>Adsorptionsfiltereinsatz - Granulat Kohle</li> <li>Adsorptionsuodatinelementti - rakeinen hiili</li> <li>Adsorpsjonsfilterpatron - Karbon i kornform</li> <li>Φιλτρού ψυλής απόδοσης</li> <li>Elemento do filtro de elevado rendimento</li> <li>Wysokowydajny wkład filtra</li> <li>Vysoce účinný filtrační prvek</li> <li>Nagy hatékonyságú szűrélem</li> <li>Labai efektívus filtrávimo elementas</li> <li>Visoko učinkovit filtrirni element</li> <li>Element tal-filtri b'efficjenza kbira</li> </ul>	<ul style="list-style-type: none"> <li>Adsorption filter cartridge - Granular carbon</li> <li>Adsorptionsfiltereinsatz - Granulat Kohle</li> <li>Adsorptionsuodatinelementti - rakeinen hiili</li> <li>Adsorpsjonsfilterpatron - Karbon i kornform</li> <li>Φιλτρού ψυλής απόδοσης</li> <li>Elemento do filtro de elevado rendimento</li> <li>Wysokowydajny wkład filtra</li> <li>Vysoce účinný filtrační prvek</li> <li>Nagy hatékonyságú szűrélem</li> <li>Labai efektívus filtrávimo elementas</li> <li>Visoko učinkovit filtrirni element</li> <li>Element tal-filtri b'efficjenza kbira</li> </ul>	<ul style="list-style-type: none"> <li>Adsorptiefilter cartridge - korrelvormige actieve kool</li> <li>Cartouche filtrante d'adsorption - Charbon en granulés.</li> <li>Adsorptionsfilterkassett – Kornigt kol</li> <li>Adsorptionsfilterkassett – Kornigt kol</li> <li>Cartucho de filtro de adsorción, capas de tejido de carbón.</li> <li>Filtro a cartuccia ad adsorbimento - granuli di carbone</li> <li>Adsorpcná filtračná kazeta – Granulovaný uhlík</li> <li>Adsorpsioonfiltr kassett – teraline süsi</li> <li>Absorbējoša filtra kasetne – graudains ogleklis</li> <li>Адсорбционный фильтрующий элемент – гранулированный уголь</li> <li>Adırsorpsiyon filtresi kartusu – Taneli karbon</li> </ul>	<ul style="list-style-type: none"> <li>Adsorptiefilter cartridge - korrelvormige actieve kool</li> <li>Cartouche filtrante d'adsorption - Charbon en granulés.</li> <li>Adsorptionsfilterkassett – Kornigt kol</li> <li>Adsorptionsfilterkassett – Kornigt kol</li> <li>Cartucho de filtro de adsorción, capas de tejido de carbón.</li> <li>Filtro a cartuccia ad adsorbimento - granuli di carbone</li> <li>Adsorpcná filtračná kazeta – Granulovaný uhlík</li> <li>Adsorpsioonfiltr kassett – teraline süsi</li> <li>Absorbējoša filtra kasetne – graudains ogleklis</li> <li>Адсорбционный фильтрующий элемент – гранулированный уголь</li> <li>Adırsorpsiyon filtresi kartusu – Taneli karbon</li> </ul>
	<ul style="list-style-type: none"> <li>Adsorption filter element - Wrapped carbon cloth</li> <li>Adsorptie filterelement - gewickelde koolstofdoek</li> <li>Adsorptionsfilterelement - eingewickeltes Filtertuch aus Kohlenstoff</li> <li>Cartouche filtrante d'adsorption - Charbon entouré de tissu.</li> <li>Adsorptionsuodatinelementti - kääritty hiljikangas</li> <li>Adsorptionsfilterelement – Veckad kolfiberduk</li> <li>Adsorpsjonsfilterelement – Innpakket karbonstoff</li> <li>Adsorptionsfilterelement – Veckad kolfiberduk</li> <li>Фільтро пророфопрот</li> <li>Elemento filtrante de adsorción, capas de tejido de carbón.</li> <li>Elemento do filtro de absorção - Pano revestido de carvão</li> <li>Elemento filtrante ad adsorbimento - tessuto al carbone con struttura ad avvolgimento</li> <li>Wkład adsorpcyjny filtra ze zwijanej tkaniny z włókną węglowego</li> <li>Adsorpcný filtračný článok – Zábalená uhlíková tkanina</li> <li>Adsorpcni filtraci prvek – zabalena uhlíková tkanina</li> <li>Adsorpsioonfiltr element – isoleeritud süsikirke</li> <li>Adsorpcios szűrébet – göngyölt szénszövet</li> <li>Absorbējoša filtra elementi – saīta ogleklā drāniņa</li> <li>Adsorbcinis filtravimo elementas – susuktas anglies audinys</li> <li>Адсорбционный фильтрующий элемент – ткань из углеродистого волокна</li> <li>Adsorpcjski filtrimi element – navita ogljikova krpă</li> <li>Adsorpsiyon filtersi öğesi - Sarılı karbon kumaş</li> <li>Element tal-filtri li jassorbxixi - Xoqqa tal-karbonju mgeżwra</li> </ul>	<ul style="list-style-type: none"> <li>Adsorption filter element - Wrapped carbon cloth</li> <li>Adsorptie filterelement - gewickelde koolstofdoek</li> <li>Adsorptionsfilterelement - eingewickeltes Filtertuch aus Kohlenstoff</li> <li>Cartouche filtrante d'adsorption - Charbon entouré de tissu.</li> <li>Adsorptionsuodatinelementti - kääritty hiljikangas</li> <li>Adsorptionsfilterelement – Veckad kolfiberduk</li> <li>Adsorpsjonsfilterelement – Innpakket karbonstoff</li> <li>Adsorptionsfilterelement – Veckad kolfiberduk</li> <li>Фільтро пророфопрот</li> <li>Elemento filtrante de adsorción, capas de tejido de carbón.</li> <li>Elemento do filtro de absorção - Pano revestido de carvão</li> <li>Elemento filtrante ad adsorbimento - tessuto al carbone con struttura ad avvolgimento</li> <li>Wkład adsorpcyjny filtra ze zwijanej tkaniny z włókną węglowego</li> <li>Adsorpcný filtračný článok – Zábalená uhlíková tkanina</li> <li>Adsorpcni filtraci prvek – zabalena uhlíková tkanina</li> <li>Adsorpsioonfiltr element – isoleeritud süsikirke</li> <li>Adsorpcios szűrébet – göngyölt szénszövet</li> <li>Absorbējoša filtra elementi – saīta ogleklā drāniņa</li> <li>Adsorbcinis filtravimo elementas – susuktas anglies audinys</li> <li>Адсорбционный фильтрующий элемент – ткань из углеродистого волокна</li> <li>Adsorpcjski filtrimi element – navita ogljikova krpă</li> <li>Adsorpsiyon filtersi öğesi - Sarılı karbon kumaş</li> <li>Element tal-filtri li jassorbxixi - Xoqqa tal-karbonju mgeżwra</li> </ul>	<ul style="list-style-type: none"> <li>Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden.</li> <li>Käytettävä oikeaa työkalua</li> <li>Pass på att korrekt verktyg brukas</li> <li>Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο</li> <li>Certifique-se de que é utilizada a ferramenta correcta</li> <li>Należy używać odpowiedniego narzędzia.</li> <li>Zkontrolujte použití správného nástroje</li> <li>Mindig a célnak megfelelő szerszámot használja</li> <li>Istinkinkite, kad naudojamas reikiamas īrankis</li> <li>Poskrbite, da boste uporabili ustrezno orodje</li> <li>Kun žgur li tintuża l-ghoddha t-tajba</li> </ul>	<ul style="list-style-type: none"> <li>Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden.</li> <li>Käytettävä oikeaa työkalua</li> <li>Pass på att korrekt verktyg brukas</li> <li>Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο</li> <li>Certifique-se de que é utilizada a ferramenta correcta</li> <li>Należy używać odpowiedniego narzędzia.</li> <li>Zkontrolujte použití správného nástroje</li> <li>Mindig a célnak megfelelő szerszámot használja</li> <li>Istinkinkite, kad naudojamas reikiamas īrankis</li> <li>Poskrbite, da boste uporabili ustrezno orodje</li> <li>Kun žgur li tintuża l-ghoddha t-tajba</li> </ul>
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**Warning!**

This product must be installed and maintained by competent and authorised personnel only, under strict observance of these operating instructions, any relevant standards and legal requirements where appropriate.

**Retain this user guide for future reference**

**Waarschuwing!**

Dit product mag alleen geïnstalleerd en onderhouden worden door deskundig en bevoegd personeel met strikte inachtneming van deze bedieningsinstructies en de betreffende normen en wettelijke vereisten indien van toepassing.

**Bewaar deze handleiding als naslag.**

**Warnung!**

Das Produkt darf ausschließlich von autorisiertem Fachpersonal unter strikter Befolgung dieser Betriebsanleitung, ggf. relevanter Normen sowie gesetzlicher Vorschriften installiert und gewartet werden.

**Bewahren Sie die Bedienungsanleitung zu Referenzzwecken auf.**

**Attention !**

Ce produit doit être installé et entretenu exclusivement par un personnel compétent et autorisé, dans le respect le plus strict de ce mode d'emploi et des normes applicables et exigences légales éventuelles.

**Conserver ce guide de l'utilisateur à titre de référence future**

**Varoitus!**

Tämän tuotteen saa asentaa ja huoltaa vain pätevä ja valtuutettu henkilöstö, noudattaen tarkasti näitä käyttöohjeita, kaikkia asiaankuuluvia normeja ja tarpeen vaatessa lain asettamia vaatimuksia.

**Säilytä tämä käyttöohje tulevaa tarvetta varten.**

**Varning!**

Produkten får endast installeras och underhållas av utbildad och behörig personal, som följer denna bruksanvisning och eventuella tillämpliga normer och lagföreskrifter noga i förekommande fall.

**Behåll denna användarhandbok som referens**

**Advarsel!**

Dette produktet må bare installeres og vedlikeholdes av kompetent og autorisert personale, i streng overholdelse av disse betjeningsanvisningene, alle relevante standarder og rettslige krav der det passer.

**Ta vare på denne brukerveiledningen for senere bruk**

**Advarsel!**

Dette produktet må kun installeres og vedligeholdes af autoriseret personale, under nøje overholdelse af disse driftsinstruktioner, relevante standarder og lovgivningsmæssige krav, hvor dette er aktuelt.

**Gem denne vejledning til senere reference.**

**Προειδοποίηση!**

Η εγκατάσταση και συντήρηση αυτού του προϊόντος πρέπει να γίνεται μόνο από κατάλληλα εκπαιδευμένο και εξουσιοδοτημένο προσωπικό, με αυστηρή τήρηση των οδηγιών χειρισμού, των εφαρμοζόμενων προτύπων και των νομικών απαιτήσεων όπου απαιτείται.

**Φυλάξτε αυτό το εγχειρίδιο χρήσης για μελλοντική αναφορά**

**Advertencia**

La instalación y mantenimiento de este producto debe ser efectuada únicamente por personal competente y autorizado, respetándose de forma estricta estas instrucciones de funcionamiento, así como cualquier norma y requerimiento legal que sean aplicables.

**Conserve esta guía del usuario para poder consultarla en el futuro.**

**Advertência!**

A instalação e a manutenção deste produto só deve ser realizada por pessoal autorizado e competente, sob estrita observância destas instruções de utilização e de quaisquer normas e requisitos legais relevantes, quando adequado.

**Conserve este guia do utilizador para referência futura**


**Rakkomandazzjonijiet ghall-Installazzjoni**

Nirrakkomandaw li l-arja kompressata tiġi trattata qabel ma tidhol fis-sistema ta' distribuzzjoni kif ukoll fil-punti ċi l-applikazzjonijiet kritici ta' l-užu.

L-installazzjoni ta' tagħmir li jnixxef l-arja kumpressata fuq sistema li kienet imxarba jista' jirriżulta f'aktar tagħbiha ta' hmieġ għall-filtri li jintużaw f-punt wieħed, għall-perjodu sakemm is-sistema ta' distribuzzjoni tinxef. L-elementi tal-filtri jista' jkollhom bżonn li jinbidlu aktar spiss matul dan il-perjodu.

Għal installazzjonijiet fejn jintużaw kumpressuri mingħajr żejt, xorta jkun hemm preżenti ajrusols u partijiet ta' l-ilma, għalhekk xorta għandhom jintużaw grad bi skop generali u b'efficċjenza kbira.

Filtu għal skopijiet generali għandu dejjem jiġi installat biex jipprotegi l-filtri ta' efficċjenza kbira mill-volum kbir ta' ajrusols likwid u partijiet solidi.

Installa tagħmir ta' purifikazzjoni fl-aktar temperatura baxxa possibbi imma b'mod li ma jkunx hemm iffrizziar, preferibbile aktar 'l-isfel mill-aftercoolers u mir-riċevituri ta' l-arja.

Tagħmir tal-purifikazzjoni fil-punt ta' l-užu għandu jiġi installat kemm jista' jkun qrib tal-post fejn għandu jaapplika.

It-tagħmir ta' purifikazzjoni m'għandux jiġi installat aktar 'l-isfel mill-valvs li jifthu malajr u għandu jkun protett minn possibilità ta' fluss b'lura jew kundizzjonijiet oħra stressanti.

Naddaf il-pajps kollha li jwasslu għażiex tagħmir ta' purifikazzjoni qabel tinstalla u l-pajps kollha wara li tinstalla t-taghħmir ta' purifikazzjoni u qabel ma tqabbar ma' l-applikazzjoni finali.

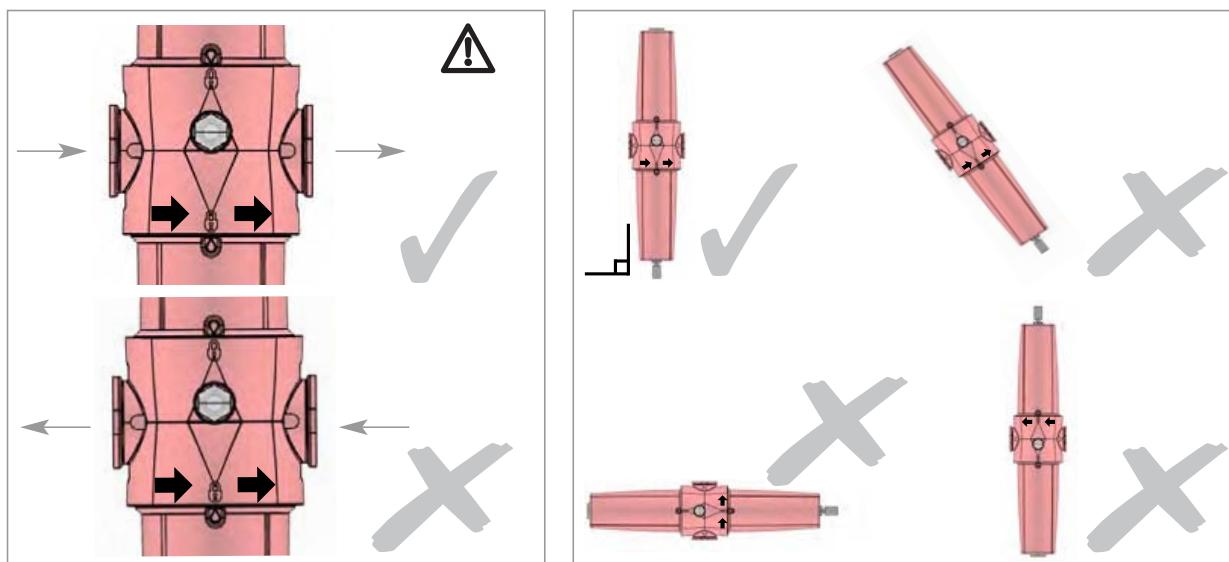
Jekk tififtija linji ta' by-pass madwar it-taghħmir ta' purifikazzjoni, kun żgur li hemm biżżejjed filtrazzjoni ffifttata mal-linjal ta-by-pass biex ma thallix li jkun hemm kontaminazzjoni tas-sistema aktar 'l-isfel.

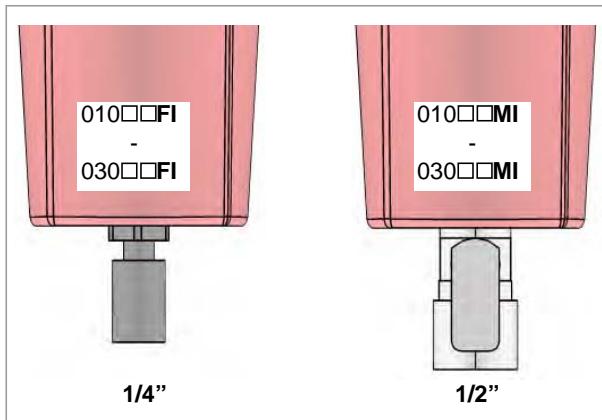
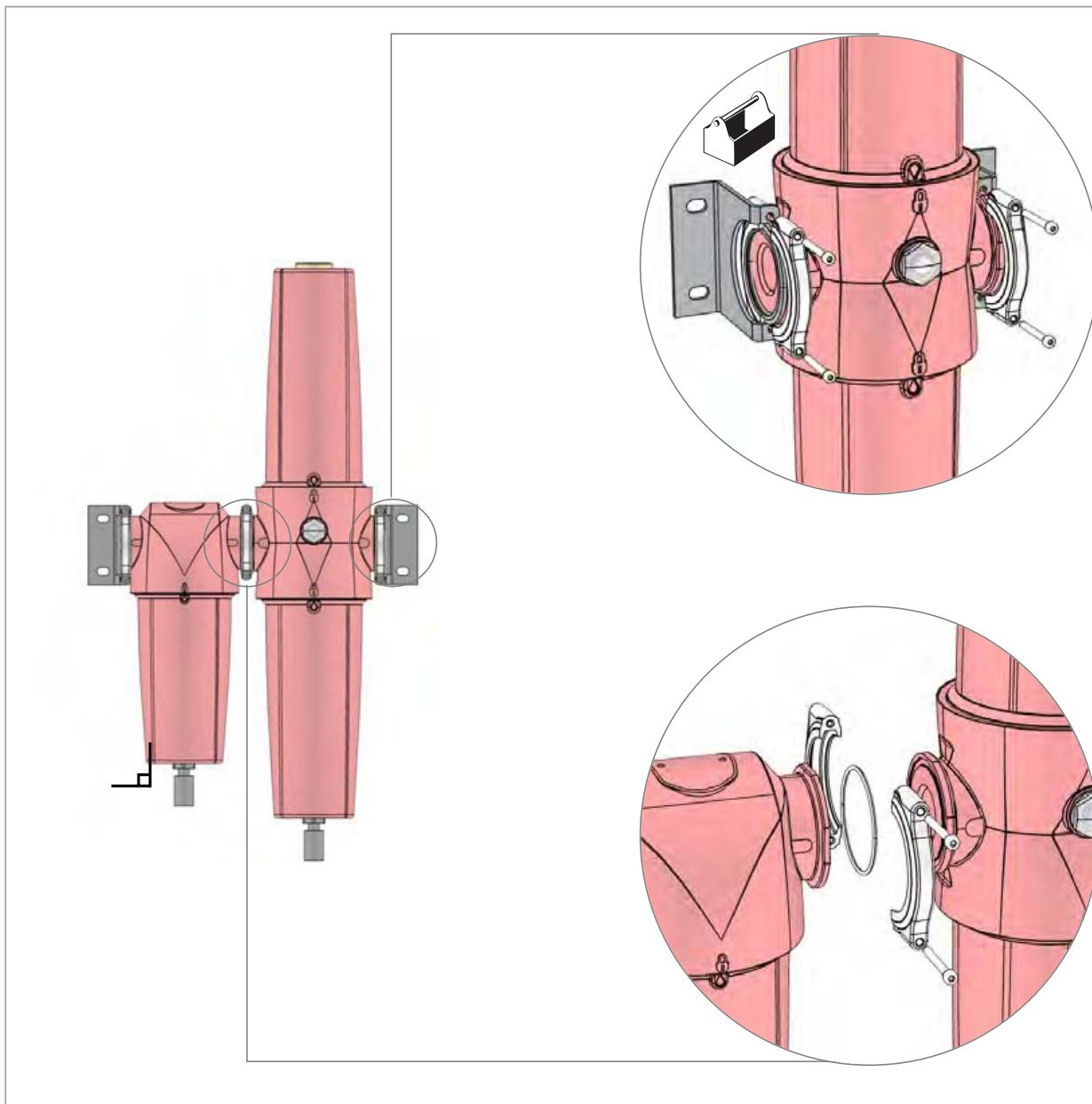
Ipprovi facilità biex tiddrejna l-likwidli li jingħabru mit-taghħmir tal-purifikazzjoni. Il-likwidli li jingħabru għandhom jiġu trattati u mormija b'mod risponsabli.

Iż-żmien kemm idumu jservu l-elementi tal-filtri li jneħhi l-fwar taż-żjut huwa affettwat mill-konċentrazzjoni taż-żejt tad-dħul, l-umdiċċa relativa u t-temperatura tas-sistema ta' l-arja kumpressata. L-elementi li jneħħu l-fwar taż-żjut ikollhom bżonn jinbidlu aktar ta' sikkut mill-element shiħi ekwivalenti.

Mudelli AC010□□□ - AC030□□□ huma ffifttati b'indikatur tal-volum taż-żejt. Kemm l-elementi tal-filtri kif ukoll l-indikatur għandhom jinbidlu jekk l-indikatur isir ta' kultur blu.

**Jekk Joghġbok Innota - Dan hu indikatur tal-volum taż-żejt u ma jindikax iż-żmien li jdum iservi l-element tal-filtri.**

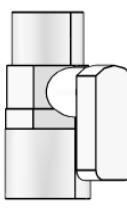




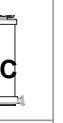
**5. Spare Parts (Service Kits)**

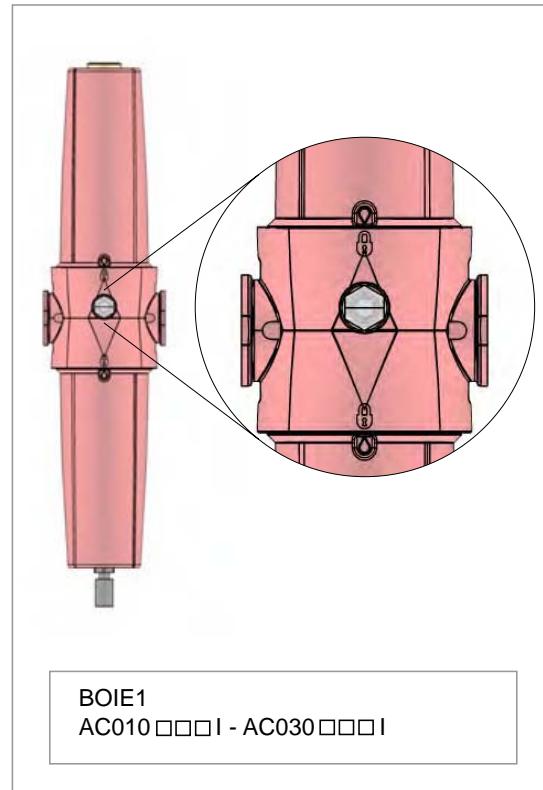
Reserve-onderdelen (servicekits) • Ersatzteile (Service-Kits) • Pièces de rechange (nécessaires d'entretien) • Varaosat (Huoltopakkaukset)

- Reservdelar (servicesatser) • Reservedeler (service-sett) • Reservedele (Servicekit) • Ανταλλακτικά (Πακέτα τεχνικής υποστήριξης)
- Piezas de repuesto (kits de mantenimiento) • Peças Sobressalentes (Kit de Reparação) • Ricambi (kit per l'assistenza)
- Części zamienne (zestawy serwisowe) • Náhradné diely (Servisná súprava) • Náhradní díly (Sady pro údržbu) • Varuosad (hoolekomplektid)
- Pótalkatrészek (szervizkészletek) • Rezerves daļas (apkopes komplekti) • Atsarginės dalys (priežiuros detalijų komplektai)
- Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • Yedek parça (Servis kitleri) • Partijet Għat-Tibdil (Kitts tas-Servizz)

 EF1	<ul style="list-style-type: none"> <li>• AUTOMATIC DRAIN</li> <li>• AUTOMATISCHER ABLAUF</li> <li>• VIDANGE AUTOMATIQUE</li> <li>• AUTOMISCHAFTAPPEN</li> <li>• DRENAJE AUTOMATICO</li> <li>• SCARIO AUTOMATICO</li> <li>• AUTOMATISK AFLØB</li> <li>• DRENO AUTOMÁTICO</li> <li>• AYTOMATH ΑΠΟΣΤΡΑΓΓΙΣΗ</li> <li>• AUTOMATDRÄNERING</li> <li>• AUTOMAATTINEN</li> <li>• TYHJENNYSKAPPALE</li> <li>• DREN AUTOMATYCZNY</li> <li>• AUTOMATICKE VYSUŠENIE</li> <li>• AUTOMATICKE VYPOUŠTĚNÍ</li> <li>• AUTOMAATNE VÄLJALASE</li> <li>• AUTOMATIKUS LEERESZTÉS</li> <li>• AUTOMÁTISKA IZTECINĀŠANA</li> <li>• AUTOMATINIS IŠLEIDIMAS</li> <li>• АВТОМАТИЧЕСКИЙ ДРЕНАЖ</li> <li>• SAMODEJNI ODTOK</li> <li>• OTOMATİK SÜZDÜRÜCÜ</li> <li>• DREJN AWATOMATIKU</li> </ul>	 EM1	<ul style="list-style-type: none"> <li>• MANUAL DRAIN</li> <li>• MANUELLE ABLAUF</li> <li>• VIDANGE MANUELLE</li> <li>• MANUEEL AFTAPPEN</li> <li>• DRENAJE MANUAL</li> <li>• SCARIO MANUALE</li> <li>• MANUELT AFLØB</li> <li>• DRENO MANUAL</li> <li>• ΧΕΙΡΟΚΙΝΗΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ</li> <li>• MANUELL DRÄNERING</li> <li>• KÄSIKÄYTTÖINEN</li> <li>• TYHJENNYSKAPPALE</li> <li>• DREN RĘCZNY</li> <li>• RUČNÉ VYSUŠENIE</li> <li>• RUČNÍ VYPOUŠTĚNÍ</li> <li>• KÄSITSI VÄLJALASE</li> <li>• KÉZI LEERESZTÉS</li> <li>• MANUĀLA IZTECINĀŠANA</li> <li>• RANKINIS IŠLEIDIMAS</li> <li>• ДРЕНАЖ ВРУЧНЮЮ</li> <li>• ROČNÍ ODTOK</li> <li>• ELLE KULLANILACAK SÜZDÜRÜCÜ</li> <li>• DREJN MANWALI</li> </ul>
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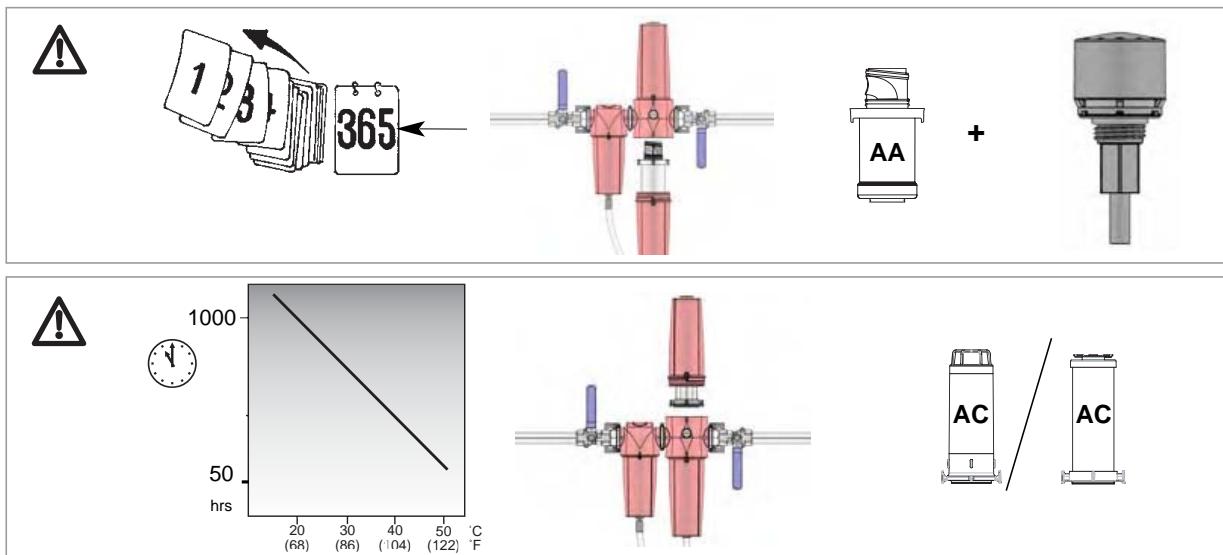
 010 A
 010 B
 010 C
 015 B
 015 C
 020 C
 020 D
 020 E
 025 D
 025 E
 030 E
 030 F
 030 G

 AA	 AC	 AC
 010AA	 010AC	 015AC
 015AA		
 020AA	 020AC	 025DAC
 025AA	 025EAC	 030AC
 030AA		



**AC010 - AC030**
**6. Maintenance**

Onderhoud • Wartung • Entretien • Kunnossapito • Underhåll • Vedlikehold • Vedligeholdelse • Συντήρηση • Mantenimiento • Manutenção • Manutenzione • Konserwacja • Údržba • Údržba • Hooldus • Karbantartás • Tehnická apkope • Technické priežúra • Обслуживание • Vzdrževanja • Bakım • Manutenzioni



Models AC010□□□I - AC030□□□I are fitted with a bulk oil indicator. Both filter elements and indicator should be changed if indicator is blue in colour.

**Please Note - This is a bulk oil indicator, it does not indicate filter element life.**

Modellen AC010□□□I - AC030□□□I zijn uitgerust met een bulk olie indicator. Zowel de filterelementen als de indicator moeten vervangen worden als de indicator blauw van kleur is.

**N.B. - Dit is een bulk olie indicator, het is geen indicator voor de levensduur van het filterelement.**

Die Modelle AC010□□□I - AC030□□□I sind mit einer Ölanzeige ausgestattet. Sowohl die Filterelemente also auch die Anzeige sollte ausgetauscht werden, wenn sich die Anzeige blau färbt.

**Bitte beachten - Es handelt sich hier um eine Ölzanzeige. Diese gibt keinen Hinweis auf die Lebensdauer des Filterelements.**

Les modèles AC010□□□I - AC030□□□I sont fournis avec un indicateur de présence massive d'huile. Lorsque l'indicateur est bleu, il est nécessaire de remplacer les cartouches et l'indicateur.

**Remarque : Il s'agit d'un indicateur de présence massive d'huile, et non pas de la durée de vie des cartouches.**

Malleissa AC010□□□I - AC030□□□I on öljynilmäisin. Sekä suodatinelementit että ilmäisin on vaihdettava, jos ilmäisin on sininen.

**Huomautus – Tämä on öljynilmäisin. Se ei ilmaise suodatinelementin ikää.**

Modell AC010□□□I - AC030□□□I har en indikator för större mängder olja. Både filterelement och indikator ska bytas om indikatorn har blå färg.

**Observera — indikatorn visar oljeförekomst, den indikerar inte filterelementets livslängd.**

Modell AC010□□□I - AC030□□□I er montert med bulkvolum oljeindikator. Både filterelementer og indikator skal skiftes når indikatoren er blå.

**Merk – Dette er en bulkvolum oljeindikator, den indikerer ikke filterelementets levetid.**

Modell AC010□□□I - AC030□□□I har en indikator för större mängder olja. Både filterelement och indikator ska bytas om indikatorn har blå färg.

**Observera — indikatorn visar oljeförekomst, den indikerar inte filterelementets livslängd.**

Ta μοντέλα AC010□□□I - AC030□□□I διαθέτουν ένα δείκτη παρουσίας λαδιού. Όταν ο δείκτης είναι μπλε πρέπει να αλλάζονται τόσο τα φίλτρα όσο και οι δείκτες.

**Παρακαλούμε σημειώστε ότι - Αυτός είναι ένας δείκτης παρουσίας λαδιού, δεν υποδεικνύει τη διάρκεια ζωής του φίλτρου.**

Los modelos AC010□□□I - AC030□□□I disponen de un indicador de presencia de aceite. Si el indicador se vuelve azul deben cambiarse tanto los elementos filtrantes como el indicador.

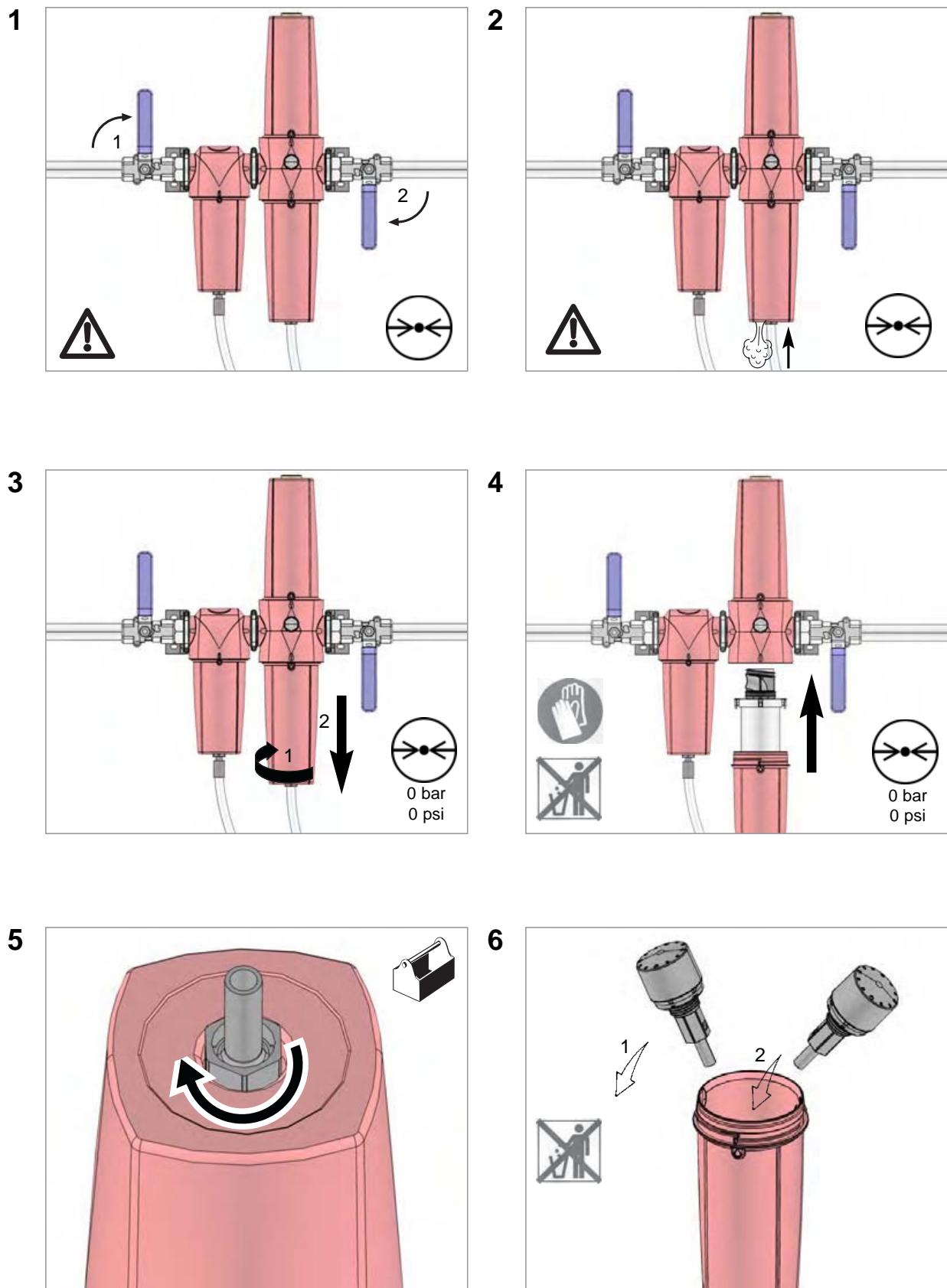
**Nota importante: se trata de un indicador de presencia de aceite. No indica la vida del elemento filtrante.**

Modelos AC010□□□I - AC030□□□I são instalados com um indicador do óleo em bruto. Ambos os elementos do filtro e o indicador deverão ser mudados se o indicador estiver azul.

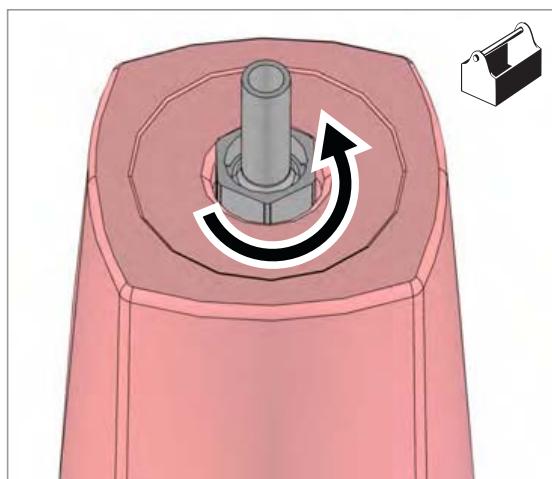
**Nota - Este é um indicador do óleo em bruto, não indica a vida útil do elemento do filtro.**

I modelli AC010□□□I - AC030□□□I sono provvisti di un indicatore degli oli misti. Sostituire gli elementi filtranti e l'indicatore quando il secondo assume una colorazione blu.

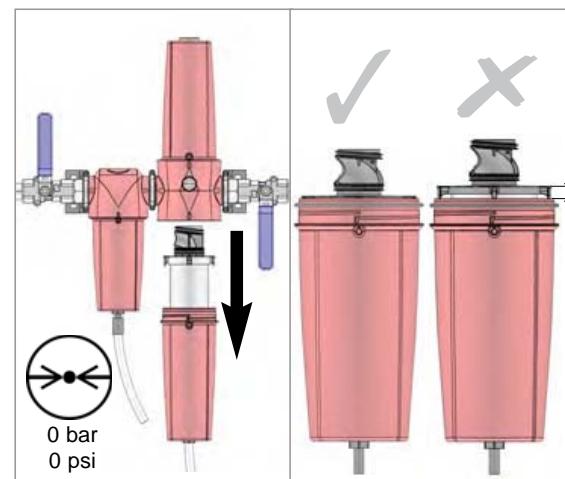
**Nota - L'indicatore segnala la presenza di oli misti, ma non la durata dell'elemento filtrante.**



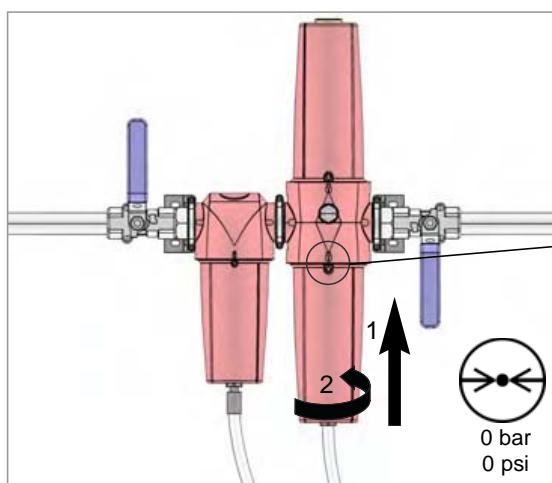
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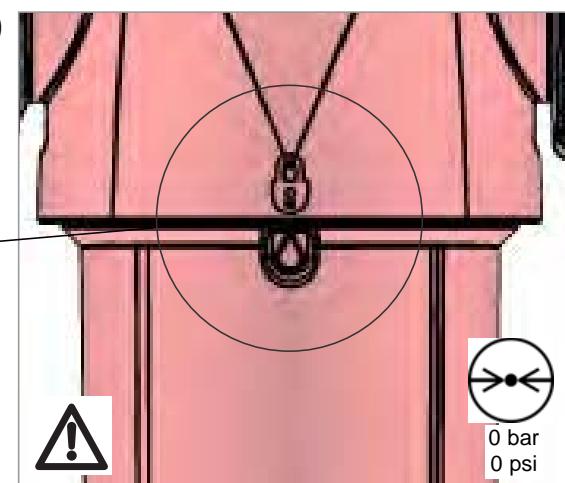
8



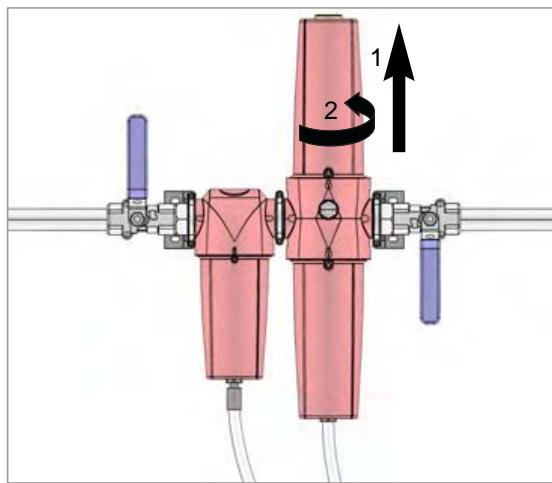
9



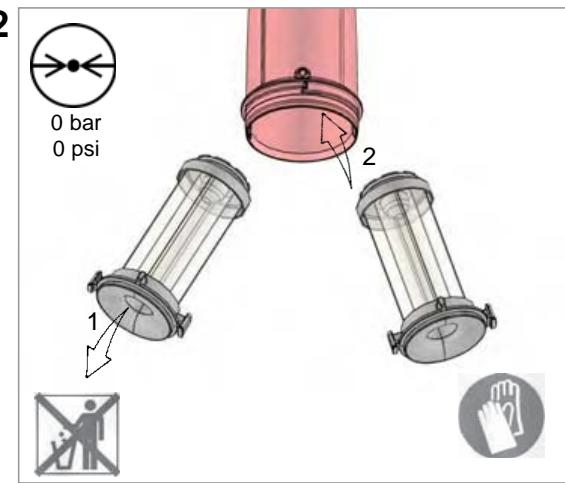
10



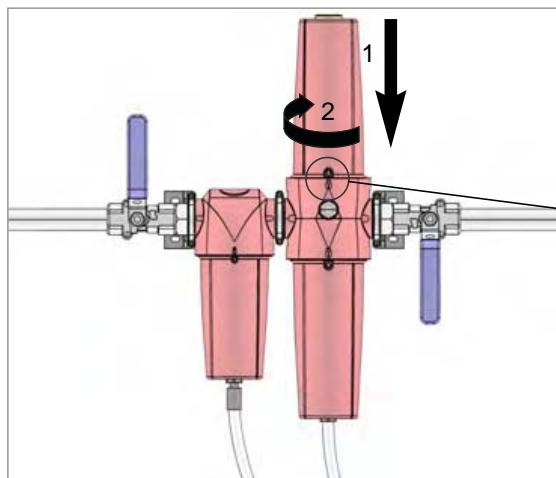
11



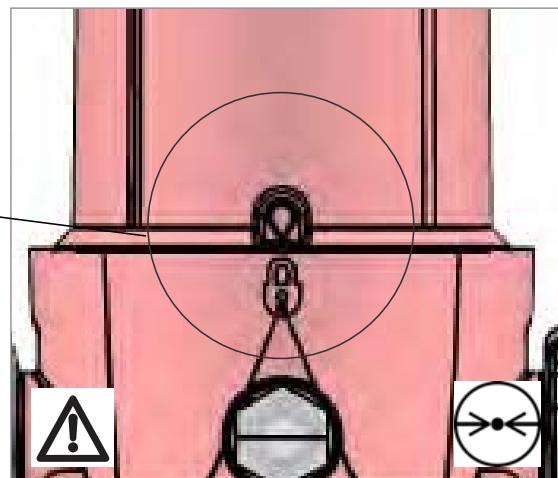
12



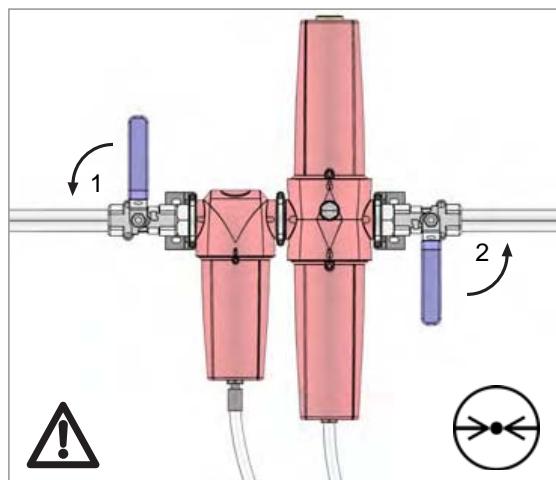
**13**



**14**



**15**





### 13.9 Option ga Maintenance tasks for the generator

In order to ensure a safe operation of the machine, the generator must be inspected once every year by a trained and authorized electrician.

Have the following tasks performed by a specialist electrician or an authorized KAESER service representative:

- Inspection of the generator and generator control cubicle for mechanical damages.
- Inspection of the protective conductor.
- Measurement of the dielectric resistance.
- Measurement of the substitute leakage current.
- Inspection of generator functionality.
- Inspection of the proper functioning of the generator fan and cleaning, if required.
- Cleaning the cooling air apertures.
- Check all screwed connections on the generator and control box and tighten if necessary.
- Check covers and power socket caps for damage and good sealing.
- Check that all warning and other labels are complete and undamaged.

### 13.10 Oil-injected MOBILAIR service intervals

Maintenance strategy 000510 (1x service per year):

Package sequence	A	B	A	B	A	C	from the beginning
Years	1	2	3	4	5	6	

Tab. 113 Service maintenance package - (1x service per year)



Change intervals apply to favourable ambient conditions, such as good fuel quality, cool to medium ambient temperatures, low humidity and low to medium dust exposure.

Group	Part (with mounting location)	Item Parts list	Change intervals and maintenance packages					Note
			A 1 year	B 2 years	C 6 years max.	Years	Operating hours max.	
<b>Filter SET (compressor and engine):</b>								
Compressor oil filter	550	X	X	X	X	1		The composition of the sets may vary depending on the machine type.
Engine oil filter	1210							
Intake air filter, compressor	1905							
Intake air filter, engine	1260							
Fuel prefilter	1280							
Fuel filter	1910, 1915							
Water separator filter element	1920							
	1985							

**Tab. 114 Service intervals for MOBILAIR parts, Filter SET group (compressor and engine)**

Compressor group Part (with mounting location)	Item Parts list	Change intervals and maintenance packages						Note
		A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.		
Cooling oil	1600, 1601	X	X	X	1	1000		
Compressor oil filter	1210	X	X	X	1	1000		
Intake air filter, compressor	1260	X	X	X	1	1000		
Oil separator cartridge	1450		X	X	2	2000		
Drive belt, fan wheel, cooler	1801		X	X	2	2000		
Generator belt	9125		X	X	2	2000		
Service kit for dirt trap	9416	X			1			
Service kit, dirt trap, control valve	2148	X	X	X	1			
Service kit for dirt trap	9420	X	X	X	1			
Compressed air pre-filter filter element	1550	X	X	X	1	500		
Compressed air micro-filter element	1551	X	X	X	1	500		
Pre-/micro-filter element seal	1548	X	X	X	1	500		
Fresh-air filter element set	1549	X	X	X	1	500		
Fresh air extraction line	9439, 9440			X	6			
Insert for condensate drain	9475	X	X	X	1	1000		
Service kit for condensate drain compressed air fil- ter	9601	X	X	X	1	500		

Compressor group  Part (with mounting location)	Item  Parts list	Change intervals and maintenance packages					Note
		A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Pressure hoses - oil, compressed air, condensate and control air	7110, 7120, 7130, 7140, 7160, 7170, 7172, 7180, 7190, 7195, 7200, 7205, 7230, 7250, 7360, 7560 – 7566, 7580, 7590, 9450, 9485, 9886			X	6		The type and quantity depends on the machine model.

**Tab. 115 Service intervals for MOBILAIR parts, compressor group**

Group	Part (with mounting location)	Item Parts list	Change intervals and maintenance packages				Note
			A	B	C	Years max.	
			1 year	2 years	6 years	max.	
<b>Engine filter SET:</b>							
Engine oil filter	551	X					
Fuel prefilter	1905						
Fuel filter	1910, 1915						
Water separator filter ele- ment	1920						

The composition of the sets may vary depending on the machine type.

**Tab. 116 Service intervals for MOBILAIR parts, Filter SET group Engine**

Engine group  Part (with mounting location)	Item  Parts list	Change intervals and maintenance packages					Note
		A 1 year	B 2 years	C 6 years	Operating hours max.		
Engine oil	1925	X					
Engine oil filter	1905	X	X	X	1	500	
Intake air filter, engine	1280	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Fuel prefILTER	1910; 1915 – 1919	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Fuel filter	1920	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Water separator filter element	1985	X	X	X	1	500	in fuel supply line
Engine coolant	5195	X	X	X	3; 6	2000; 12000	Gly santin; CAT ELC
Engine coolant addition	5197	X	X	X	2; 3		SCA additive; CAT ELC refresher
Engine drive belt (for engine fan and engine units)	1800, 4470	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Crankcase ventilation filter element	1216	X	X	X	2	2000	
Air filter element	1250	X	X	X		3000	Oil separator element
Fuel return line	7975		X	X	1	1000	M235
Fuel hoses	5193, 7960 - 7962, 9350		X	X	2		Add-on filter, tank venting
							The type and quantity depends on the machine model.

Engine group Part (with mounting location)	Item Parts list	Change intervals and maintenance packages					Note
		A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Pressure hoses - coolant , charge air and oil	4511 - 4513, 5620 5621, 5664 - 5667, 5670 - 5672, 7100, 7120, 7400, 7402, 7404, 7500, 7502, 7504, 7510, 7600, 7907	X			6		The type and quantity depends on the machine model.

**Tab. 117 Service intervals for MOBILAIR parts, Engine group**