

Operator Manual

Screw Compressor

M250 SIGMA CONTROL MOBIL

No.: 9_9570 07 USE

Manufacturer:

KAESER KOMPRESSOREN SE

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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

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

- Certificate of acceptance / operating instructions for the pressure vessel
- Manufacturer's declaration / declaration of conformity in accordance with applicable directives
- Engine documentation (compressors driven by internal combustion engine)
- SIGMA CONTROL MOBIL service 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 dangers that may result in injury when disregarded.

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

Signal term	Meaning	Consequences of ignoring the warning
DANGER	Warns of an imminent danger	Will result in death or severe injury
WARNING	Warns of a potentially imminent danger	May result in death or severe injury
CAUTION	Warns of a potentially dangerous situation	May result in a moderate physical injury

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

1 Regarding this Document

1.4 Symbols and labels

Warning notices preceding a chapter apply to the entire chapter, including all sub-sections.
For example,

⚠ DANGER

These show the kind of danger and its source.

The possible consequences of ignoring a warning are shown here.

If you ignore the warning notice, the "DANGER" signal word indicates a lethal or severe injury will occur.

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

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

For example,

1. **⚠ WARNING** *These show the kind of danger and its source.*
The possible consequences of ignoring a warning are shown here.
If you ignore the warning notice, the "WARNING" signal word indicates that death or severe injury may occur.
 - *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

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

Warning notices for damages are identified by their signal term.

Signal term	Meaning	Consequences of ignoring the warning
NOTE	Warns of a potentially dangerous situation	Damage to property is possible

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

For example,

NOTICE

These show the kind of danger and its source.

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 alerts 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 stage of a task.

1. For instructions with several steps ...
2. ... the sequence of actions 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 cyclone moisture separator"). Option codes used in this service manual are explained in chapter 2.2.



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



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

Further information 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 Options – options label

A list of the options fitted to your machine helps to relate the information in this service manual. Options fitted to the machine are listed on the 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 db dc dd _	<p>* r1 - r5 = place holders for chassis options:</p> <ul style="list-style-type: none"> ■ r1 = rb; rc; rd ■ r3 = rm; ro ■ r4 = rr; rs; rt ■ r5 = rw; rx
fa _ _ _ _	
_ _ hc hd _	
ba bb _ _ _	
la lb _ ld le	
_ _ _ _ _	
_ ob oc od oe	
_ _ _ _ _	
_ _ _ _ _	
r1 _ r3 r4 r5 *)	
ta tb tc _ te	
_ _ _ _ _	

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Tab. 4 Extract from the options label

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

2.2.1 Option da, db, dc, dd Compressed air treatment devices

Option	Option code	Available?
Aftercooler and cyclone separator	da	
Heat exchanger	db	
Fresh air filter	dc	
Filter combination	dd	

Tab. 5 Compressed air treatment options

2.2.2 Option hc, hd Check valve function

Option	Option code	Available?
Pressure/check valve (without option dd)	hc	
Pressure/check valve (with option dd)	hd	

Tab. 6 Check valve option

2.2.3 Option ld, le Emission after-treatment

Option	Option code	Available?
Emission after-treatment with SCR catalytic converter	ld	
Emission without after-treatment	le	

Tab. 7 Options for emission treatment

2.2.4 Option ba
Low temperature equipment

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

Tab. 8 Low temperature equipment options

2.2.5 Option la, lb
Equipment for fire hazard areas

Option	Option code	Available?
Spark arrestor	la	
Spark arrestor and engine air intake shut-off valve (automatic/manual closing)	lb	

Tab. 9 Optional equipment for fire hazard areas

2.2.6 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

2.2.7 Option oc
GSM/GPS Modem

Option	Option code	Available?
GSM/GPS Modem	oc	

Tab. 11 GSM/GPS Modem

2.2.8 Option rb/rm/rt, rb/rm/rs, rc/ro/rt, rc/ro/rs, rd/ro/rs, rb/rm/rr, rc/ro/rr, rw, rx
Chassis


Chassis are defined by the combination of several option designations as follows:

Model/Height adjustment/Service brake

 Example: *rb/rm/rs* means

EU chassis with height-adjustable towbar and overrun brake

Chassis

Chassis	Option code	Available?
Model (rb, rc, rd):		
EU chassis	rb	

Chassis	Option code	Available?
GB chassis	rc	
US chassis	rd	
Height adjustment (rm, ro):		
With height adjustment	rm	
Without height adjustment (fixed height)	ro	
Service brake (rr, rs, rt):		
Without service brake	rr	
With overrun brake	rs	
With ABS compressed air brake	rt	

Tab. 12 Chassis options

Stationary frame

Chassis	Option code	Available?
Stationary (rw, rx):		
On skids	rw	
On frame	rx	

Tab. 13 Options: Stationary frame

**2.2.9 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. 14 Lighting options

**2.2.10 Option oe
Sealed floor pan**

Option	Option code	Available?
Sealed floor pan	oe	

Tab. 15 Sealed floor pan option

2.3 Machine (without options)

2.3.1 Sound pressure level

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

	M250
Guaranteed sound pressure level [dB(A)]	76

Tab. 16 Sound pressure level

2.3.2 Tightening torques for screws

Recommended values for screws of property class 8.8

Thread	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
Torque [lbf-in]	26.6	52.2	88.5	216.8	424.8	743.5	1177	1823	2611	3673

Tab. 17 Tightening torques for screws (property class 8.8, coefficient of friction $\mu = 0.12$)

2.3.3 Ambient conditions

Positioning	Limit value
Maximum altitude amsl* [ft]	3280
Minimum ambient temperature [°F]	14
Maximum ambient temperature [°F]	122

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

Tab. 18 Ambient conditions

2.3.4 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

2.4 Chassis

2.4.1 Mass



The values given are the maximum in each case. Actual mass of individual machines are dependent on equipment fitted (see machine nameplate).

Feature	Chassis						Stationary
	with	without	with	without	with	without	
Height adjustment	with	without	with	without	with	without	–
Service brake	without	without	with *	with *	with	with	
Actual total weight [lb]**							
Permissible axle load [lb]	8818			7716			–

* with anti-lock brake system (ABS)/compressed air brake

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

Tab. 19 Mass of the machine

2.4.2 Tires

The tire's dimensions are shown on the side wall, see also Fig. 1.

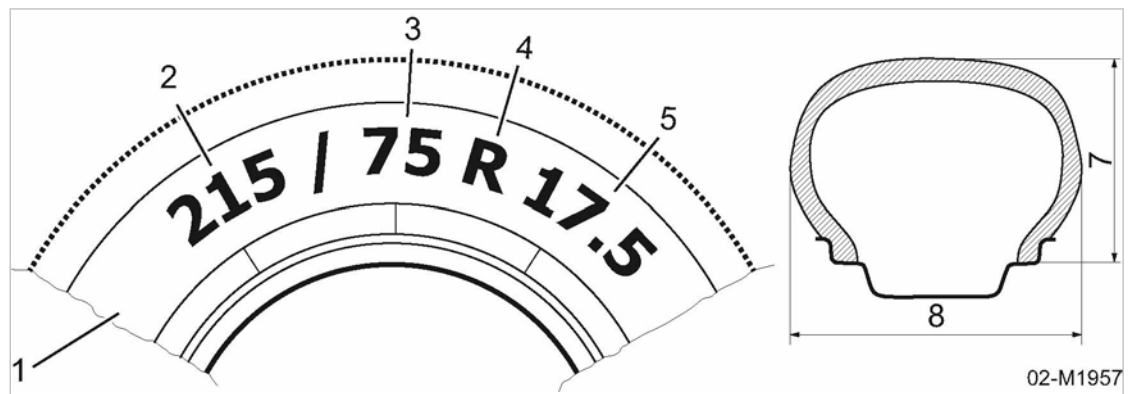


Fig. 1 Example of tire information on the side wall

- | | |
|---|------------------------|
| ① Section, tire side wall | ⑤ Rim diameter [in] |
| ② tire width [in] | ⑦ Cross-section height |
| ③ Ratio cross-section height to cross-section width [%] | ⑧ Cross-section width |
| ④ Radial design | |

Use the following table for detailed information regarding the tires of your machine:

Characteristic/markings	Value
Tire size	215/75R 17.5
Minimum and recommended tire pressure [psig]	116
Wheel bolt	M 18 x 1.5

Tab. 20 Tires



See tire side wall for maximum pressure.

2.4.3 Wheel nut/bolt tightening torque

Fixing medium	Thread	Wrench size	Torque [lbf in]
Wheel bolt	M 18 x 1.5	34	2876

Tab. 21 Wheel nut/bolt tightening torque

2.4.4 Towbar tightening torque

Components	Thread	Strength category	Torque [lbf in]
Ball coupling	M16	8.8	1859
Towing eye	M16	8.8	1859
Towbar	M20	10.9	4779–4956
	M24	8.8	5930–6107

Tab. 22 Towbar tightening torque

2.5 Compressor

2.5.1 Working gauge pressure and volumetric flow rate

Maximum working gauge pressure [psig]	125	145	174	203
SIGMA airend	297–G			
Flow rate [cfm]	930	885	795	705
Flow rate as per ISO 1217:2009. Annex D				

Tab. 23 Working gauge pressure and volumetric flow rate

2.5.2 Compressed air outlet

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

Tab. 24 Compressed air distributor

2.5.3 Safety valves

Maximum working pressure: see machine nameplate

Maximum working over-pressure [psi]	Activating pressure [psi]
125	174
145	189

Maximum working over-pressure [psi]	Activating pressure [psi]
174	218
203	232

Tab. 25 Relief valve activating pressure

2.5.4 Temperature

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

Tab. 26 Required temperatures readiness to switch to LOAD mode

Airend discharge temperature	Values
[°F] (At about 68 °F ambient temperatur)	167 - 212
Maximum airend discharge temperature (automatic safety shut-down) [°F]	243

Tab. 27 Airend discharge temperature

2.5.5 Cooling oil recommendation

A sticker showing the type of oil used is located near the oil separator tank filler. Information on ordering cooling oil is found in chapter 11.

Cooling oils for general applications

	SIGMA FLUID		
	MOL	S-460	S-570
Description	Mineral oil	Silicone-free, synthetic oil	Synthetic oil
Application	Standard oil for all applications except in connection with food products. Particularly suitable for machines with a low duty cycle.	Standard oil for all applications except in connection with food products. Particularly suitable for machines with a high duty cycle.	Special oil for ambient conditions with high temperatures and humidity. Standard oil for all applications except in connection with food products. Particularly suitable for machines with a high duty cycle.
Approval	—	—	—
Viscosity at 104°F	44 mm ² /s (DIN 51562-1)	45 mm ² /s (D 445; ASTM test)	52.8 mm ² /s (D 445; ASTM test)

	SIGMA FLUID		
	MOL	S-460	S-570
Viscosity at 212°F	6.8 mm ² /s (DIN 51562-1)	7.2 mm ² /s (D 445; ASTM test)	8.0 mm ² /s (D 445; ASTM test)
Flash point	428°F (ISO 2592)	460°F (D 92; ASTM test)	496°F (D 92; ASTM test)
Density at 59°F	—	864 kg/m ³ (ISO 12185)	0.869 kg/l (D 1298; ASTM test)
Pour point	-27°F (ISO 3016)	-51°F (D 97; ASTM test)	-65°F (D 97; ASTM test)
Demulsibility at 129°F	—	40/40/0/10 min (D 1401; ASTM test)	15 min (D 1401; ASTM test)

Tab. 28 Cooling oil recommendations

Cooling oils for applications in food processing

	SIGMA FLUID	
	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 H-1, NSF Approved for the manufacture of food packaging, meat and poultry processing and other food processing applications.	USDA H-1, NSF Approved for the manufacture of food packaging, meat and poultry processing and other food processing applications.
Viscosity at 104 °F	50.7 mm ² /s (D 445; ASTM test)	70.0 mm ² /s (D 445; ASTM test)
Viscosity at 212 °F	8.2 mm ² /s (D 445; ASTM test)	10.4 mm ² /s (D 445; ASTM test)
Flash point	473 °F (D 92; ASTM test)	473 °F (D 92; ASTM test)
Density at 59 °F	—	—
Pour point	—	—
Demulsibility at 130 °F	—	—

Tab. 29 Cooling oil recommendation (food processing)

2.5.6 Cooling oil charge

Cooling oil	Fluid volume [gal]
Machine	13.2

Cooling oil	Fluid volume [gal]
Compressor unit + heat exchanger (Option db)	14.5

Tab. 30 Cooling oil charge

2.6 Engine

2.6.1 Engine specification

Option Id Engine data (engine with emission treatment)

Feature	Specification
Make/Model	Mercedes / OM 926 LA
Engine control	Electronic
Fuel injection	Common rail system
Rated engine power [hp]	288
Speed at LOAD mode [rpm]	1800
Speed at IDLE mode [rpm]	1200
Type of fuel	Diesel
Fuel consumption under LOAD mode [gal/h]	11.36
Oil consumption related to fuel consumption [%]	approx. 0.5
Reducing agent consumption relative to fuel consumption [%]	approx. 5.0

Tab. 31 Engine data (engine with SCR catalytic converter)

Option Ie Engine data (engine without exhaust treatment):

Feature	Specification
Make/Model	Mercedes / OM 926 LA
Engine control	Electronic
Fuel injection	Common rail system
Rated engine power [hp]	282
Speed at LOAD mode rpm]	1800
Speed at IDLE mode rpm]	1200
Type of fuel	Diesel
Fuel consumption under LOAD mode [gal/h]	12.94
Oil consumption related to fuel consumption [%]	approx. 0.5

Tab. 32 Engine data (engine without exhaust treatment):

2.6.2 Oil recommendation



Engine oils that do not conform to the above can shorten the useful life of the engine.

Option 1e Recommended oil for engines without exhaust treatment:

The engine oil must meet the following classification:

- ACEA, class E4, E7
- API, class CF, CI-4

Option 1c Recommended oil for engines with exhaust treatment:

The engine oil must meet the following classification:

- ACEA, class E9
- API, class CI-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 authorisation by KAESER.
- Contact KAESER SERVICE.

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 too low viscosity 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
< -13 86	SAE 0 W-30 SAE 0 W-40
-13 > 86	SAE 5 W-30 SAE 5 W-40
-4 > 86	SAE 10 W-30 SAE 10 W-40 SAE 10 W-50
5 > 86	SAE 15 W-30 SAE 15 W-40 SAE 15 W-50
23 > 86	SAE 20 W-40 SAE 20 W-50

Tab. 33 Engine oil recommendation



For outdoors ambient temperatures below -4 °F, use engine oil of SAE class 5 W-30.

Initial engine oil quantity:

The engine is filled initially with the following engine oil:

Ambient temperatures [°F]	Viscosity class
-13 > 86	SAE 5 W-30

Tab. 34 Initial engine oil quantity

2.6.3 Fuel recommendation

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.

Bio diesel:

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

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

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

Option Id Engine without exhaust treatment:

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 following fuel specifications are approved:

- Diesel fuels according to EN 590
 - (≤0.0010% Sulphur – EU: Level IIIB and higher)
- Diesel fuels according to ASTM D975
 - (≤0.0015% Sulphur – EPA: Tier 4 interim and higher)



Never store fuel in galvanised containers!



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

2.6.4 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 complying with the following analysis values must be used:

Feature		Value
pH value		6.5-8.5
Chlorine (Cl)	[mg/l]	Max. 100
Sulphate (SO ₄)	[mg/l]	Max. 100
Total hardness (CaCO ₃)	[mmol/l]	3.56
	[mg/l]	
	[°dGH]	356
	[°e]	25.0
	[°fH]	35.6

Tab. 35 Water quality parameters for cooling water

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

Coolant quality:

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

The engine coolant must meet the requirements of specification ASTM D4985.



Do not use a common coolant and/or antifreeze that meets only the requirements of ASTM D3306. Such coolants are intended only for light use in vehicles and could shorten the useful life of the engine.

2.6.5 Reduction agent

Feature	Specification
Type	Urea solution AUS 32
Designation	AdBlue® DEF (Diesel Exhaust Fluid)
Quality	according to EN 70070/ISO 22241 or ATSTM D 7821
Application temperature [°F]	12.2 ... 113
Switching point for torque reduction motor (Fuel level of the fuel tank) [%]	approx. 14

Tab. 36 Reduction agent

2.6.6 Fluid volumes

Name	Fluid volume [gal]
Engine oil	6.87
Fuel	2 x 33 *
	2 x 46.2 **
Coolant	9.25

Name	Fluid volume [gal]
* Chassis with permissible axle load up to 7716 lb	
** Chassis with permissible axle load up to 8818 lb, when stationary	

Tab. 37 Fluid volumes

Option Id	Name	Fluid volume [gal]
	Reducing agent	10.56

Tab. 38 Fluid volume, reducing agent

2.6.7 Batteries

Feature	Value
Voltage [V]	24 (2 x 12)
Capacity [Ah]	2 x 135
PTC testing current [A] (according to EN 50342)	1000

Tab. 39 Batteries

2.7 Options

2.7.1 Air treatment options

2.7.1.1 Option dc Fresh air filter

Feature	Value
Maximum working pressure [psig]	232
Minimum ambient temperature [°F]	34.7
Maximum ambient temperature [°F]	86

Tab. 40 Fresh air filter conditions

2.7.1.2 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"> ■ After-cooler ■ Cyclone separator 	cool and condensate-free	A
da + db	<ul style="list-style-type: none"> ■ After-cooler ■ Cyclone separator ■ Heat exchanger 	dry and warmed	B

Air Treatment		Compressed air quality	
Option designation	Components	Characteristics	Abbreviation
da + dd	<ul style="list-style-type: none"> ■ After-cooler ■ Cyclone separator ■ Filter combination 	dry and technically oil-free	F
da + dd + db	<ul style="list-style-type: none"> ■ After-cooler ■ Cyclone separator ■ Filter combination ■ Heat exchanger 	technically oil-free and warmed	G

Tab. 41 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.

2.7.2 Option ba Low temperature equipment

2.7.2.1 Ambient conditions

Installation	Limit value
Maximum altitude amsl* [ft]	3280
Minimum ambient temperature [°F]	-13
Maximum ambient temperature [°F]	122

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

Tab. 42 Environmental conditions, low temperature equipment

2.7.2.2 Option bb Coolant pre-heating

Coolant pre-heater	Value
Voltage [V]	230
Power [W]	1000

Tab. 43 Coolant pre-heater

2.7.3 Option ob Trickle charging for starter batteries

Battery charger specification

Battery charger	Value
type	24V DC/10A
Charging voltage [V]	26.6
Charging current [A]	>0.5
Maximum charging current [A]	10

Battery charger	Value
Protection rating	IP 54
Motor overload protection switch	3 poles
Set-point [A]	4
Miniature circuit breaker [A]	16

Tab. 44 Battery charger specification

Power supply details

Mains supply	Value
Mains voltage [V/3~/N/PE]	400
Frequency [Hz]	50
Supply cable cross-section [AWG] (Cu multicore)	5 x 1.5
User's fusing [A]	16

Tab. 45 Power supply details

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.

- Comply with 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 Adherence to inspection schedules and accident prevention regulations

The machine may be subject to local inspection schedules.

- Ensure that local inspection schedules are adhered to.

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
1. Inspection interval after initial registration			
Interval [months]	36	24	12
Further inspection intervals			
Interval [months]	24	24	12

Tab. 46 General inspection intervals

3.4.5 Documenting the mileage of the machine as trailer

The kilometres 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 kilometres, we recommend that you maintain a logbook for the machine. This allows you document the actually travelled kilometres 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.

- Allow no 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 the 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. If the filler cap is unscrewed, hot coolant can spray out under pressure and cause severe scalding.

- 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 foodstuffs.
- 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, pressure 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 drive while the machine is switched on can result in serious injury.

- Do not open the service doors or panels while the machine is running.
- Prior to opening the service doors or the canopy, switch off the engine, disconnect from power source and secure against unintended reactivation.
- 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 aircend, 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 body is closed.

- Operate the machine only with closed body 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 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 aerosols 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 pressure components.

Conversion or modification of the machine

Modifications, additions or conversions to or 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.
- Prior to any technical modification and expansions of the machine, obtain the written approval of the manufacturer.

3.5.2 Save handling of the DEF reduction agent**⚠ WARNING**

Ammonia fumes!

When DEF (Diesel Exhaust Fluid) is heated beyond 122° F for some time, it may decompose resulting in Ammonia fumes.

Ammonia fumes can cause severe health damage.

- *Replenish DEF only when the machine has cooled down.*
- *Do not inhale DEF fumes.*

Handling DEF contaminated with foreign matter:

Individual components of the SCR system will react very sensitively to even the smallest traces of contaminants in DEF.

- Always use clean containers and bowls reserved for this purpose when handling DEF.
- Do not use DEF containing contaminant traces. Dispose of the contaminated liquid according to environmental protection regulations.

Handling fluids contaminated with DEF:

Fluids contaminated with DEF may cause damage to the machine's components.

For example, a small amount of DEF in the cooling water circuit will damage thermostats and sensors.

- Ensure that DEF is stored separately from other fluids such as fuel, coolants and lubricants as well as hydraulic and brake fluids, and that it is never used in the same containers and bowls.
- Do not use any fluids containing traces of DEF. Dispose of the contaminated fluids according to environmental protection regulations.

3.5.3 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

3.5.3.1 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.

3.5.3.2 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 a low roof or covering. 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.
- 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 jockey wheel (if available).
 - 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).

3.5.3.3 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.
 - Do not open or destroy disassembled parts.
Disassembled parts may represent a safety hazard.
 - 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).

3.5.3.4 De-commissioning, storage and disposal

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

- Drain out operating liquids and dispose of correctly.
These include, for example, fuel, engine and compressor oil and coolant.
- Dispose of the machine in accordance with local environmental regulations.

3.5.4 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.

3.5.5 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. 47 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 figure shows the position of the safety signs on the machine. The table lists the various safety signs used and their meanings.



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!

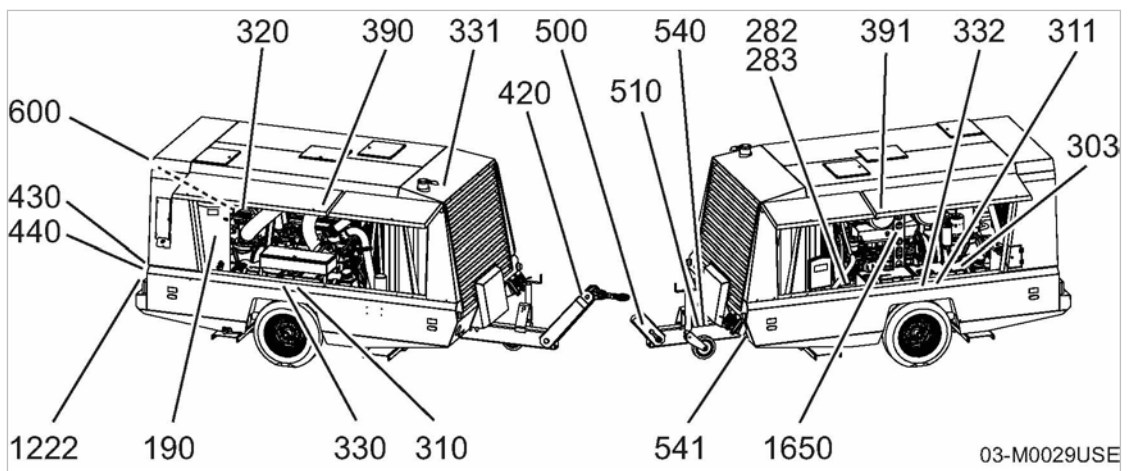


















Fig. 2 Location of safety signs

Item	Sign	Meaning
190*		Wrong cooling oil level. Risk of machine defects or rising oil consumption (oil content for pure air). <ul style="list-style-type: none"> ➤ Check cooling-oil level. ➤ Run the machine only with proper cooling-oil level.
282*		Explosive hydrogen gas. Severe injury or death could result from exploding gas. <ul style="list-style-type: none"> ➤ Keep flames, sparks and other sources of ignition away.
283*		Battery contains acid. Severe injury result from contact with battery acid. <ul style="list-style-type: none"> ➤ Do not allow battery acid to contact eyes, skin, clothing or painted surfaces. ➤ Do not attempt to jump-start if battery fluid is frozen. ➤ Bring temperature of battery up to at least 60°F before attempting to jump-start it may explode.
303*		Fire or explosion caused by refueling. Severe injury or death result from inflaming fuel. <ul style="list-style-type: none"> ➤ Use diesel fuel only. ➤ NEVER attempt to refuel the compressor while it is operating. ➤ Always replace fuel filter cap after refueling. ➤ Always wipe up fuel spills which may occur inside the compressor enclosure and allow the machine to ventilate.
310 311		Injury or damage from open machine. <ul style="list-style-type: none"> ➤ Operate the machine only when closed. ➤ Transport the machine only when closed.
320*		Loud noise and oil mist when the safety relief valve opens. Ear damage and burns can result. <ul style="list-style-type: none"> ➤ Wear ear protection and protective cloths. ➤ Close all maintenance doors and cover panels. ➤ Work carefully.
330 331 332		Hot surface can cause burns. <ul style="list-style-type: none"> ➤ Let the machine cool down. ➤ Work carefully. ➤ Wear protective cloths and gloves.
390* 391*		Rotating fan blades and V-belt drive Injury and machine damage possible. Severe injury could result from touching the fan blades and v-belt drive while it is rotating. <ul style="list-style-type: none"> ➤ Never switch the machine on without guard in place over the fan blade. ➤ Isolate completely from the power supply (all conductors) and ensure the supply cannot be switched on again (lock off).

* Location within the machine

** Only towable machines




*** Only machines with Option dc

Item	Sign	Meaning
420**		Injury or damage can result because tongue weight on this equipment may be heavy. <ul style="list-style-type: none"> ➤ Do not lift drawbar by hand if weight is more than you can safely handle. ➤ See safety section of service manual.
430		Connect air hoses only in full compliance with OSHA standard 29 CFR 1926,302 (bX7). The required safety devices should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use.
440		Compressed air quality. Injury and/or contamination can result from breathing compressed air. Contamination of food can result from using untreated compressed air for food processing. <ul style="list-style-type: none"> ➤ Never breathe untreated compressed air! ➤ 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. ➤ Food grade coolant must be used for food processing.
500**		Drawbar load and ground clearance. Danger of fishtailing, incorrect towing vehicle load, damage to the machine caused by rollover or contact with the ground. <ul style="list-style-type: none"> ➤ Always line up the drawbar so that the machine is level with the ground.
510**		Malfunction due to lack of maintenance. Accidents and machine damage possible. <ul style="list-style-type: none"> ➤ Maintain the chassis regularly. ➤ Follow instructions in the service manual.
540**		Machine without breaks. Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks. <ul style="list-style-type: none"> ➤ Always use chocks before uncoupling and generally when the unit is not in motion. ➤ Do not move unit manually.
541**		Missing chock. Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks. <ul style="list-style-type: none"> ➤ Always fix chock for proper storage. ➤ Always replace missing chock immediately.
600*		Pressure and spring force. Serious injury or death can result from loosening or opening component that is under pressure and heavily spring loaded. <ul style="list-style-type: none"> ➤ Never open (dismantle) valve. ➤ Contact authorized KAESER distributor.

* Location within the machine

** Only towable machines

*** Only machines with Option dc

Item	Sign	Meaning
1222***		Danger! Mortal danger from CO, CO ₂ or toxic gasses. ➤ Draw in only surrounding air of breathing quality.
		Danger! Danger to health from discharge of oily compressed air. ➤ Maintain surrounding air temperature between 35 °F and 86 °F. ➤ Check the oil indicator at least once a day.
1650**		Machine damage if switched while the engine is running! ➤ Use the «battery isolating switch» only with the engine stopped. ➤ Do not use the «battery isolating switch» as a main or emergency switch.

* Location within the machine

** Only towable machines

*** Only machines with Option dc

Tab. 48 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 Emergency situations

3.9.1 Correct fire fighting

Suitable measures

Calm and prudent action can save lives in the event of a fire.

- Keep calm.

- Give the alarm.
- Shut down the machine from the instrument panel if possible.
- Warn and move endangered personnel to safety.
- Help incapacitated persons.
- Close the doors.
- When trained accordingly: Attempt to extinguish the fire.

Extinguishing substances

- Suitable extinguishing media:
 - Foam
 - Carbon dioxide
 - Sand or soil
- Unsuitable extinguishing media:
 - Strong jet of water

3.9.2 Treating injuries from handling operating fluids/materials

The following operating fluids/materials are in the machine:

- Fuel
- Lubricating oil
- Compressor cooling oil
- Engine coolant
- Battery electrolyte
- Reduction agent (option Id)

Eye contact:

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

- Rinse open eyes thoroughly for a few minutes under running water.
- Seek medical help if irritation persists.

Skin contact:

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

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

Inhalation:

Fuel and oil vapors impair breathing.

- Clear the respiratory tract from fuel or oil vapor.
- Seek medical help if difficulty with respiration continues.

Ingestion:

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

3.10 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,
- incorrect maintenance,
- incorrect repair.

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

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

3.10.1 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.

3.11 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:

- Compressor motor/engine
- Fuel supply
- 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 MOBIL:
Program changes result in a reduced capability of software updating.

3.12 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.

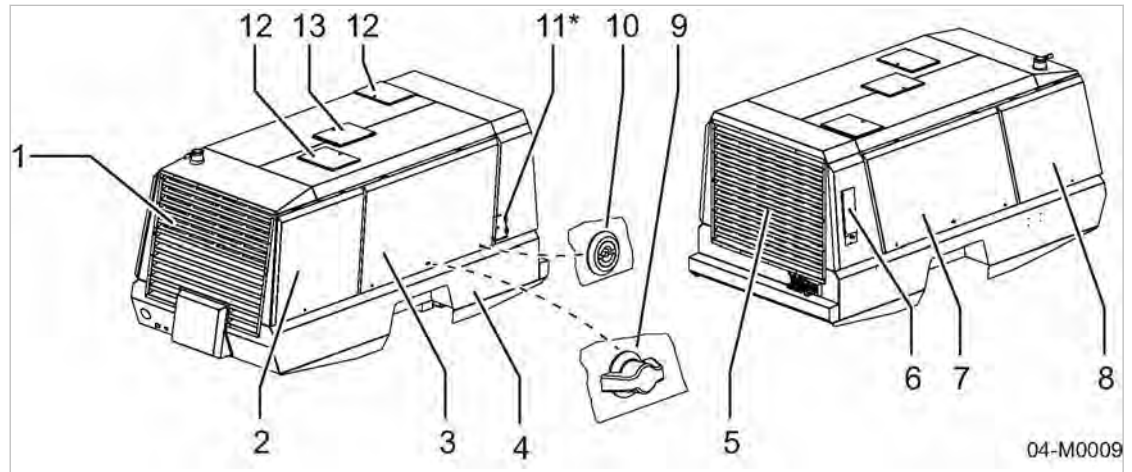


Fig. 3 Bodywork

- | | | | |
|---|--|----|---|
| ① | Cooling air outlet grill | ⑧ | Door right, front |
| ② | Door left, front | ⑨ | Catch mechanism (twist fastener with toggle) |
| ③ | Door left, rear | ⑩ | Lock (twist fastener) |
| ④ | Lower body | ⑪* | Fuelling panel filler plug, reducing agent tank |
| ⑤ | Air inlet grill | ⑫ | Service cover |
| ⑥ | Instrument panel, control cabinet key fixed within | ⑬ | Cover for lifting eye |
| ⑦ | Door right, rear | ⑰ | Only machines with option Id |

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:

- Walking on, standing, or sitting on.
- As resting place or storage for any kind of load.

⚠ CAUTION

Danger of pinching!

Severe injuries of the fingers if they are caught when closing doors and covers.

- *Work carefully.*
- *If necessary, wear protective gloves.*

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

The lift-up doors are held open by gas springs. To open, they must be unlocked with the key fixed inside the instrument panel cover. The rear doors are secured by a catch mechanism which needs to be unlocked with a toggle.

The two front lift-up doors can only be opened when the rear doors are fully lifted.

In order to open the service covers and the cover for the hoisting eye, you must unlock the covers from the inside by actuating the built-in hand lever.

The filler plug for the reduction agent tank (Option Id) is located at the left side of the machine. It is hidden behind a fuelling panel which is secured by a lock.

4.2 Machine structure

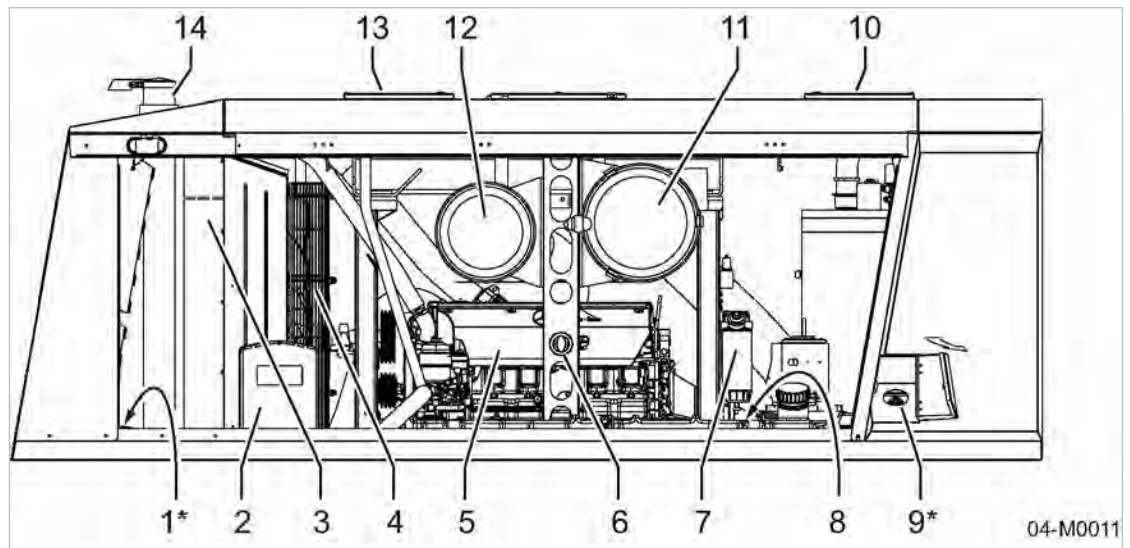


Fig. 4 Left-hand doors, opened

- | | |
|---|--|
| ① Silencer
(with reduction catalytic converter*) | ⑨ Reducing agent tank (exhaust treatment)* |
| ② Document pocket | ⑩ Service cover oil separator tank |
| ③ Cooling module | ⑪ Compressor air filter |
| ④ Fan | ⑫ Motor air filter |
| ⑤ Drive motor | ⑬ Service cover coolant expansion tank |
| ⑥ Battery isolating switch | ⑭ Outlet, exhaust silencer |
| ⑦ Fuel filter with water trap | * only machines with option Id |
| ⑧ Fuel tank 1 | |

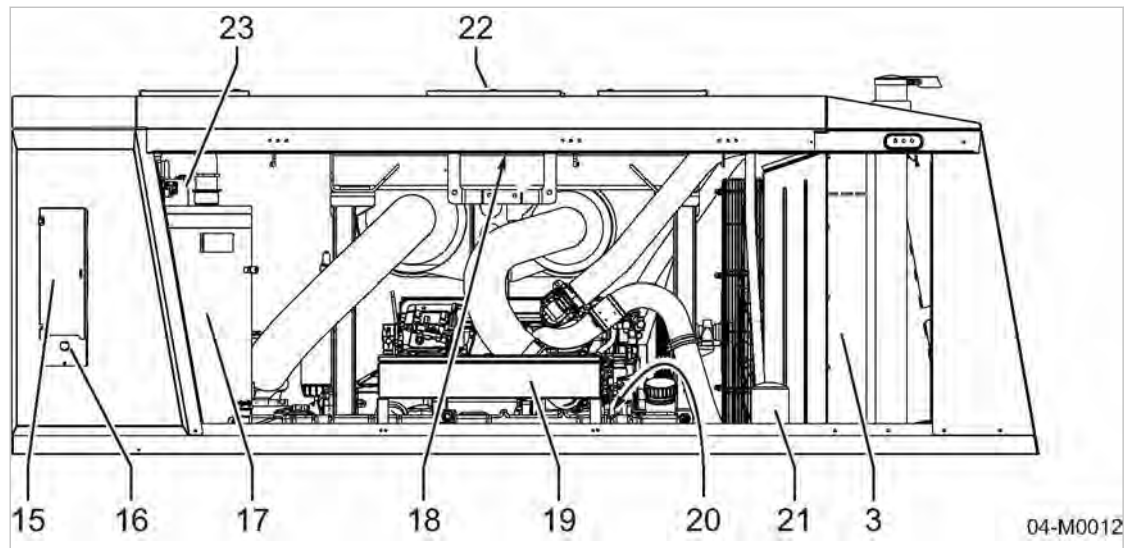


Fig. 5 Right-hand doors, opened

- | | |
|--------------------------------------|--|
| (15) Instrument panel (cover closed) | (20) Fuel tank 2 |
| (16) «QUICK STOP» button | (21) Thermostatic valve (oil temperature regulator) with compressor oil filter |
| (17) Oil separator tank | (22) Lifting eye cover |
| (18) Lifting eye | (23) Control valve with proportional controller |
| (19) Control cabinet | |

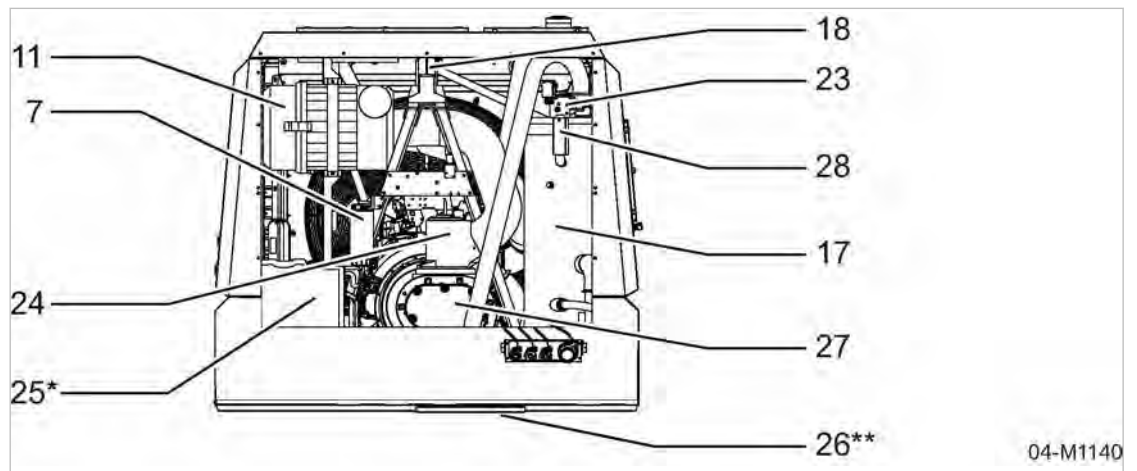


Fig. 6 Rear side, air inlet grille removed

- | | |
|---|---|
| (7) Fuel filter with water trap | (25) Reducing agent tank (exhaust treatment)* |
| (11) Compressor air filter | (26) Central drain for oil/coolant** |
| (17) Oil separator tank | (27) Airend |
| (18) Lifting eye | (28) Pressure relief valve |
| (23) Control valve with proportional controller | * only machines with option Id |
| (24) Inlet valve | ** only machines with option rw, rx, oe |

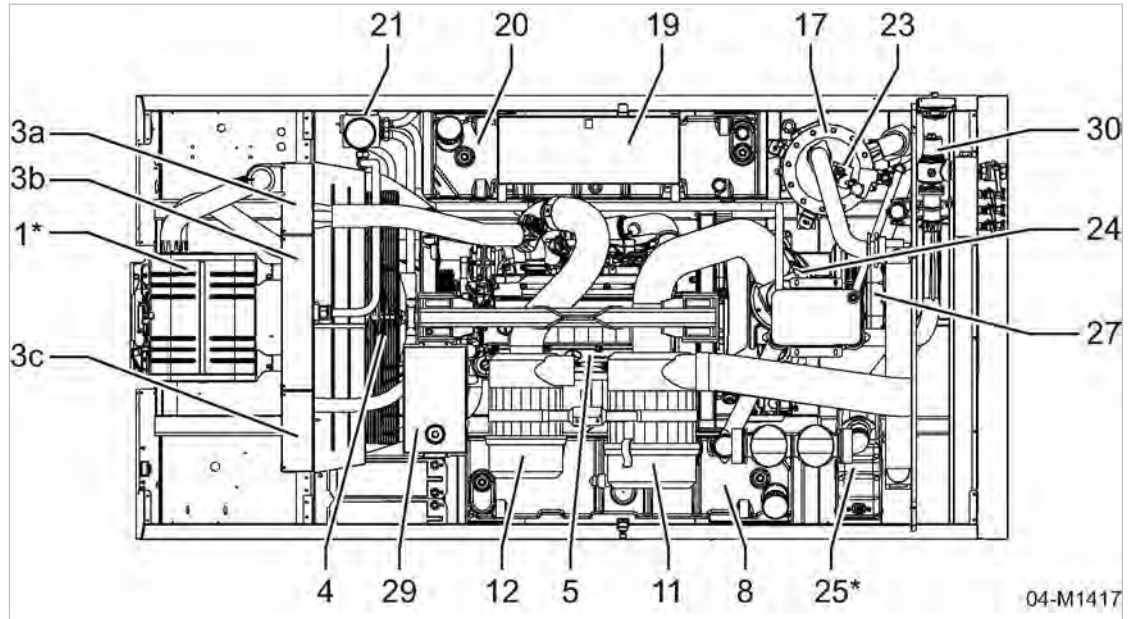


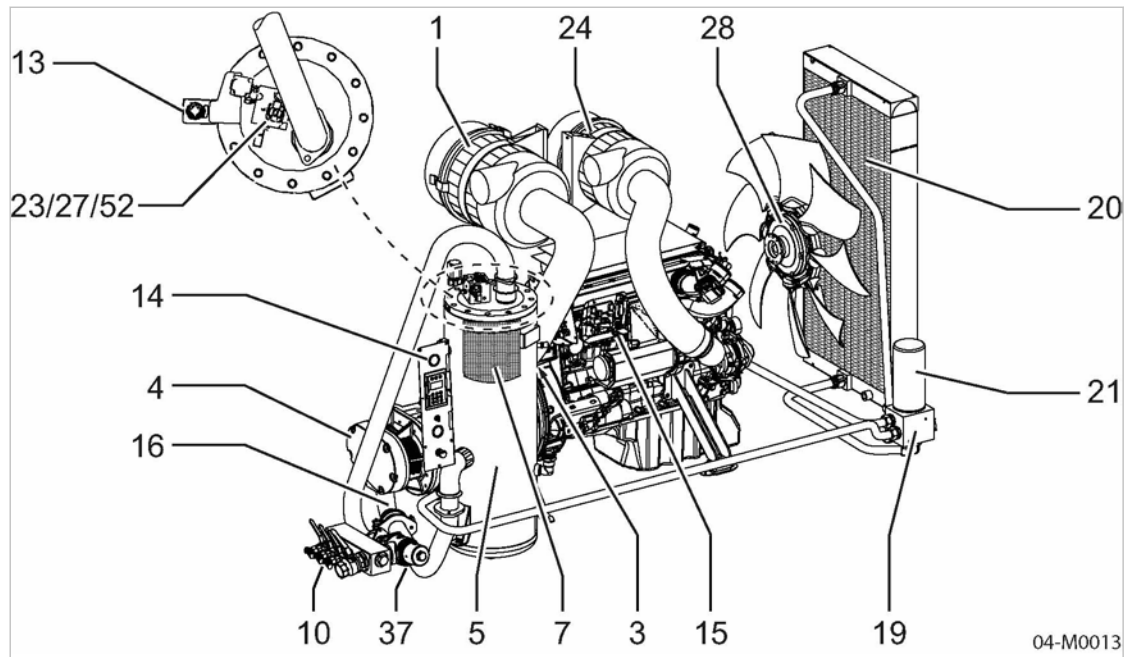
Fig. 7 View from above, machine roof removed

- | | |
|---|---|
| ① Silencer
(with reduction catalytic converter*) | ⑱ Control cabinet |
| ③a Turbo air cooler (engine) | ⑳ Fuel tank 2 |
| ③b Compressor oil cooler | ㉑ Thermostatic valve (oil temperature regulator) with compressor oil filter |
| ③c Radiator (engine) | ㉒ Control valve with proportional controller |
| ④ Fan | ㉓ Inlet valve |
| ⑤ Drive motor | ㉔ Reducing agent tank (exhaust treatment)* |
| ⑧ Fuel tank 1 | ㉕ Airend |
| ⑪ Compressor air filter | ㉖ Coolant equalising tank |
| ⑫ Motor air filter | ⑳ Minimum pressure check valve |
| ⑰ Oil separator tank | ① only machines with option Id |

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. 8 Machine overview

- | | | | |
|---|--|---|--|
| ① | Compressor air filter | ⑲ | Thermostatic valve (oil temperature control) |
| ③ | Inlet valve | ⑳ | Oil cooler |
| ④ | Airend | ㉑ | Oil filter |
| ⑤ | Oil separator tank | ㉒ | Proportional controller |
| ⑦ | Oil separator cartridge | ㉔ | Engine air filter |
| ⑩ | Air distributor | ㉕ | Venting valve |
| ⑬ | Pressure relief valve | ㉘ | Fan |
| ⑭ | Pressure gauge (on the instrument panel) | ㉟ | Minimum pressure check valve |
| ⑮ | Drive motor | ㊱ | Control valve |
| ⑯ | Oil return line | | |

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 ⑮.

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

Cooling oil recovered from the compressed air in the oil separator tank ⑤ gives up its heat in the oil cooler ⑳. The oil then flows through the oil filter ㉑ and back to the point of injection. Air pressure within the machine keeps the oil circulating. A separate pump is not necessary. A thermostatic valve ⑲ 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 ㉟ into the air distributor ⑩. The minimum pressure/check valve ensures sufficient internal pressure to maintain cooling oil circulation.

The cooling fan ㉘ 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 steplessly 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 de-pressurise 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 minimises the fuel consumption of the engine. The load and fuel consumption of the engine rises and falls with the air demand.

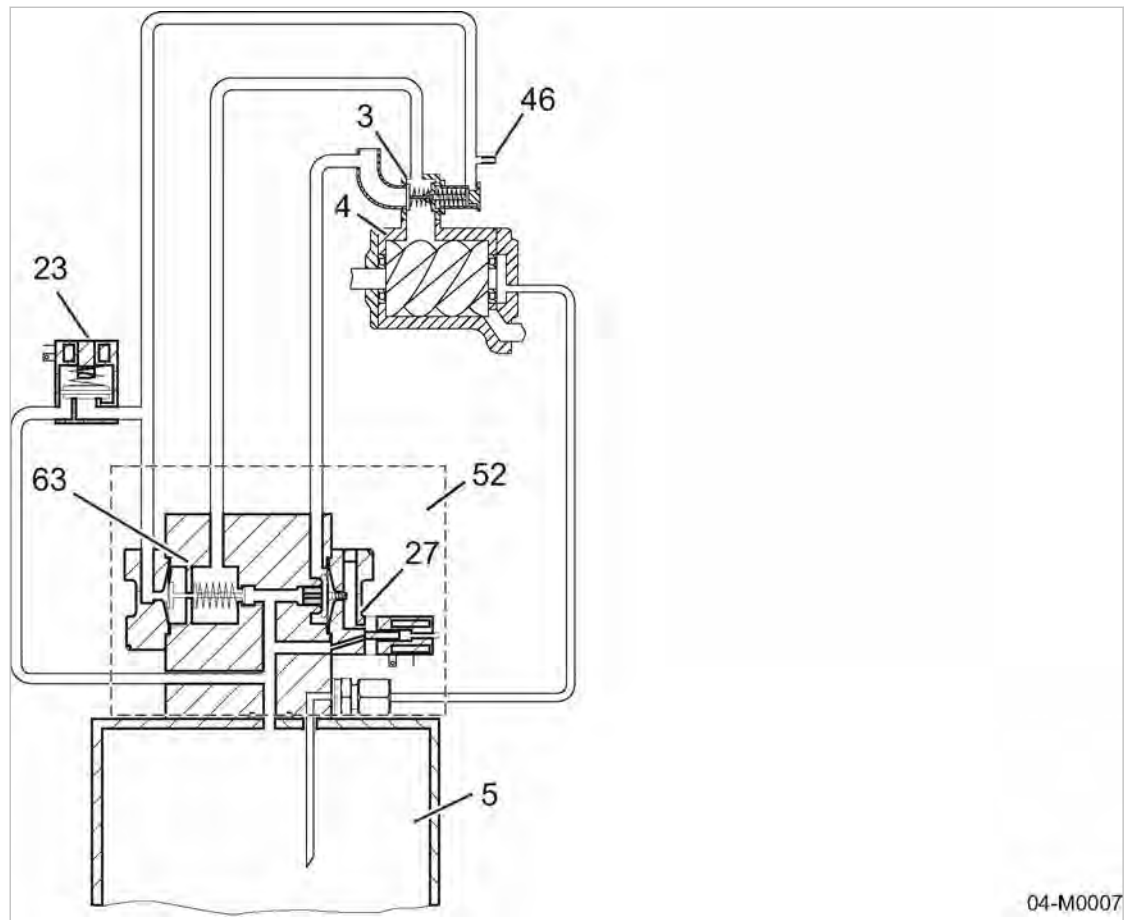


Fig. 9 Stepless regulation of volumetric flow (standstill)

- | | | | |
|----|------------------------------------|----|------------------------------------|
| ③ | Inlet valve | ②7 | Venting valve |
| ④ | Air end | 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 shutdown

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

The SIGMA CONTROL MOBIL saves the alarm message.

Further information Further information on alarm messages can be found 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 shuts down the compressor immediately. The engine comes to a stop. The pressure system is vented.

- Safety relief valves:
Safety relief valves protect the system against excessive pressure. They are factory set.
- Enclosures and guards for moving parts and electrical connections:
These protect against accidental contact.

4.5.3 Battery isolating switch

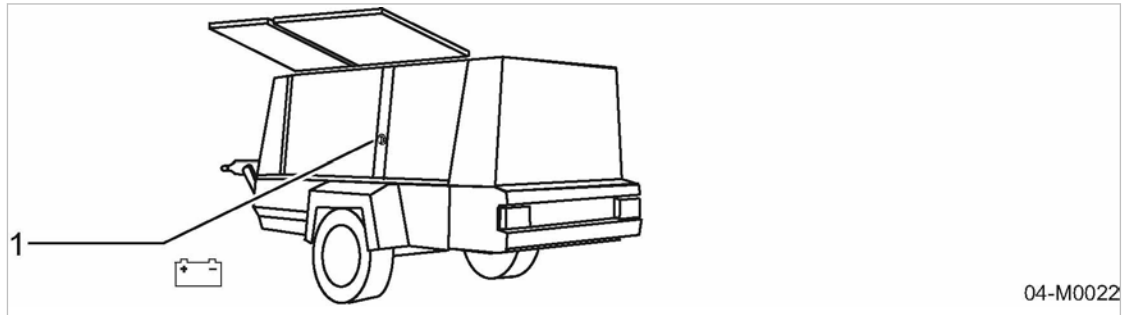
The «Battery isolating switch» disconnects the battery completely from the machine's electrical system (electronic controller protection, fire protection, battery discharge protection).

NOTICE

Danger of short circuit!

Damage to the machine electrical components is possible.

- Use the «Battery isolating switch» only when the machine is at a standstill (shut down).
- Do not use the «Battery isolating switch» as a main or emergency switch.

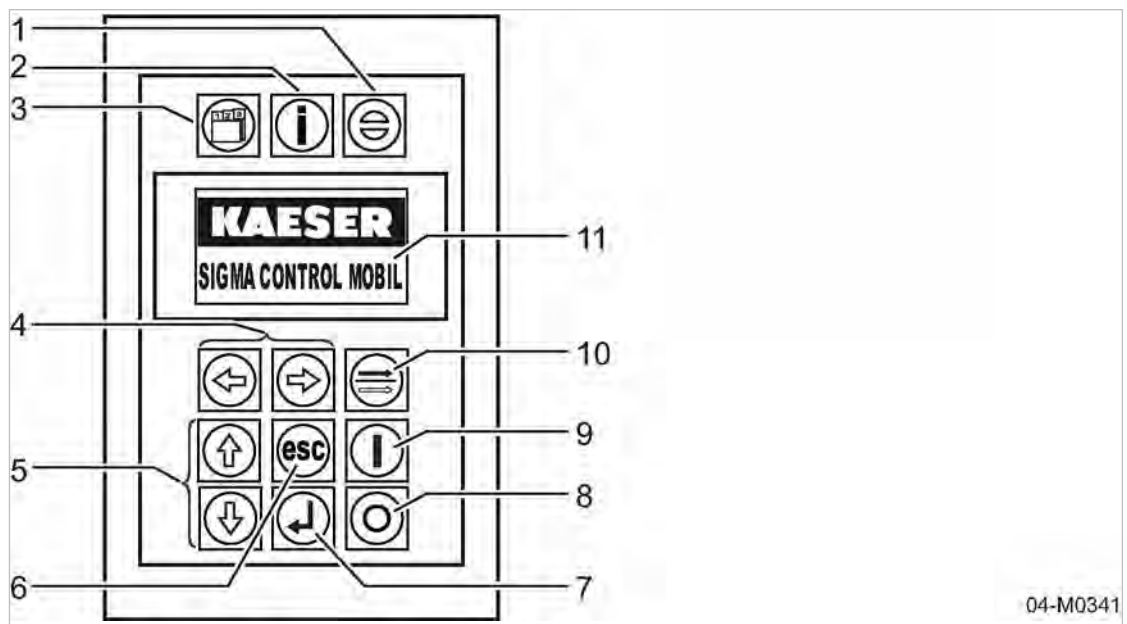


04-M0022

Fig. 10 Battery isolating switch




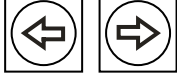
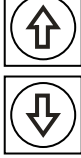





① «Battery isolating switch»

4.6 SIGMA CONTROL MOBIL control panel



04-M0341

Fig. 11 SIGMA CONTROL MOBIL main display – overview

Item	Sign	Designation	Function	Background LED
1		Key «Acknowledge»	Acknowledge key. Confirms active and displayed messages (acknowledging).	Flashes when a message is active and waiting for acknowledgement.
2		«Information» key	Operation display: Display event memory.	Flashes if a message is active.
3		«Menu» key	Displays the main menu.	–
4		«Change value» keys: «LEFT» and «RIGHT» keys	Changing a parameter value, jump to the left or right.	–
5		«Up» and «Down» keys	Scrolls upwards or downwards through the menu options.	–
6		«ESC» key	Jumps back to next higher menu level. Exits the edit mode without saving.	–
7		«Enter» key	Jump into the selected subordinate menu. Accepts an input.	–
8		«STOP» key	Stops the machine.	Continuous light when a fault has occurred.
9		«START» key	Start the machine.	Flashes when ready to start. Lights continuously, when the engine is running.
10		«LOAD/IDLE» toggle key	Toggles the compressor between LOAD and IDLE operating modes.	Flashes when ready to switch to LOAD mode. Continuous light when the machine is running under LOAD mode.

Item	Sign	Designation	Function	Background LED
11	–	Indicator field or display	Graphic display	–

Tab. 49 Instrument panel keys and displays

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

4.7 Options

The options available for your machine are described below.

4.7.1 Option da, db, dc, dd Compressed 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.

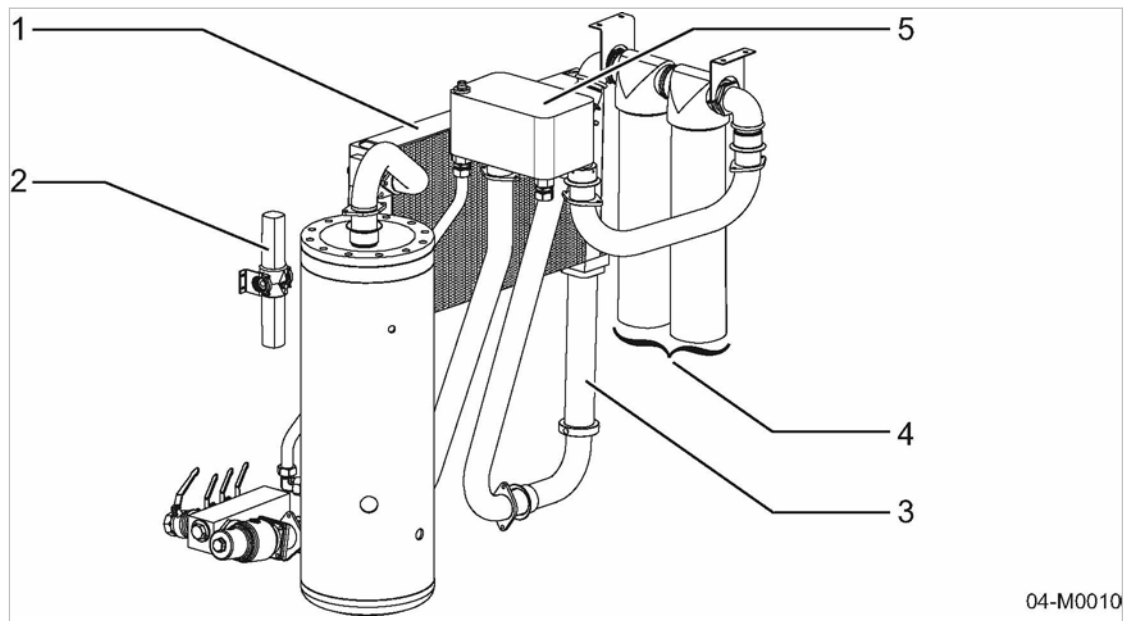


Fig. 12 Compressed air options

- | | |
|--|----------------------------------|
| ① Compressed air aftercooler (Option da) | ④ Filter combination (Option dd) |
| ② Fresh air filter (Option dc) | ⑤ Heat exchanger (Option db) |
| ③ Cyclone separator (Option da) | |

4.7.1.1 Option da Aftercooler

The aftercooler lowers the compressed air temperature to only 9°F to 18°F above ambient. Most of the moisture carried in the air is removed in the aftercooler.

4.7.1.2 Option da
Cyclone separator

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

4.7.1.3 Option db
Heat exchanger

The oil/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.

4.7.1.4 Option dd
Filter combination

The dried compressed air passes through a pre-filter and micro-filter combination and emerges oil-free.

4.7.1.5 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/CO₂, methane or other toxic gasses or vapors.

- *Never use the machine in enclosed spaces, only in the open.*
- *Clean inlet air without hazardous contaminants. Engine exhaust 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 2.7.1.1 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.

4.7.2 Option Id

Options for emission treatment

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

In order to reduce these exhaust emissions and to meet the tougher exhaust standards (EURO 5 and more), Mercedes Benz has developed the BlueTec® diesel technology for emission treatment. This treatment process applies the SCR (selective catalytic reduction) technology.

The BlueTec® system comprises technologically enhanced motors with an increased peak pressure improving the combustion and reducing the number of particles. Other system components are a catalytic converter and a reducing agent tank.

The reducing agent enters the engine exhaust via a dosing unit where the heat converts it to ammonia required for the chemical reaction in the catalytic converter. A chemical-catalytic reaction then converts the nitrogen oxides to environmentally harmless nitrogen and water.

4.7.2.1 Emission after-treatment with SCR technology

Principle:

The SCR (selective catalytic reaction) exhaust air after-treatment process is a technology enabling the necessary reduction of exhaust emissions and simultaneous optimisation of the engine in respect to performance and fuel consumption. This selective catalytic reaction enables an engine operation in operating parameters with lower fuel consumption. Contrary to the diesel particle filter, this process does not result in increased fuel consumption.

- The engine is optimised in such a manner that very few soot particles are created but a purposely large quantity of nitrogen oxides.
- The reduction agent is then injected into the exhaust flow.
- Due to the high exhaust temperature, the reduction agent is converted into ammonia and CO₂.
- Thanks to the ammonia, the nitrogen oxides on the catalytic converter's surface react to nitrogen and water which are natural components of our atmosphere.

General design

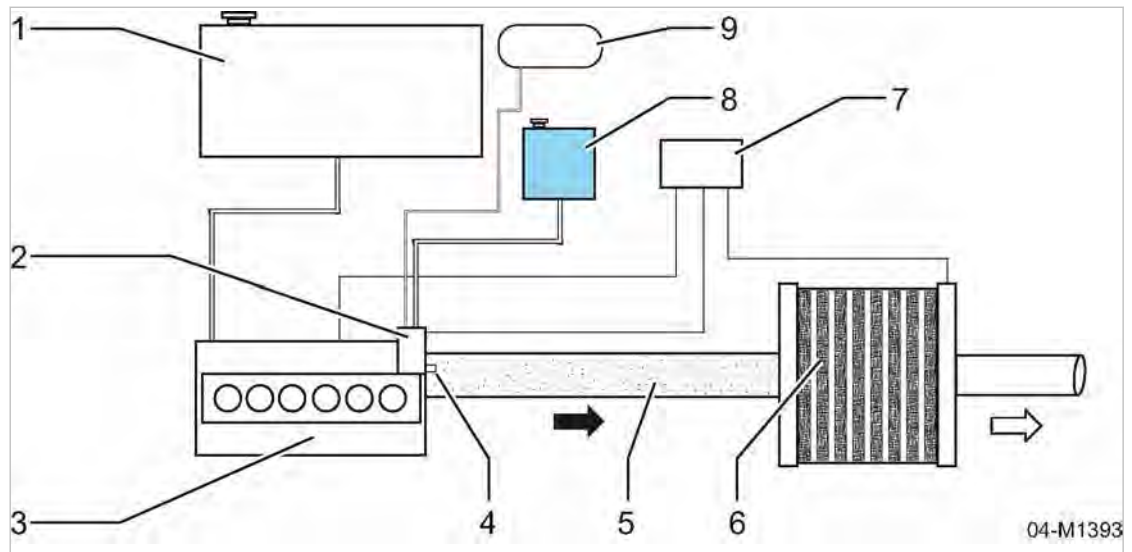


Fig. 13 General design of the SCR system

- | | |
|---------------------------------------|--|
| ① Diesel fuel tank | ⑥ SCR silencer with catalytic converter module |
| ② Dosing unit for the reduction agent | ⑦ Electronic control unit |
| ③ Diesel engine | ⑧ Tank, reduction agent |
| ④ Nozzle, reduction agent | ⑨ Air container, exhaust treatment |
| ⑤ Exhaust pipe | |

Reduction agent:

The reduction agent with the trade name "DEF" (Diesel Exhaust Fluid) is used which is also known as "Urea" or, in Europe, as "AdBlue®". This additive – a non-toxic and odour-free urea solution – is easily filled at the petrol pump and carried in a separate tank.

DEF meets the quality standard EN 70070/ISO 22241 and is neither a hazardous material as defined by the Chemicals Control Law nor a hazardous good as defined by the Dangerous Goods Regulation. It must not be mixed with any additives or diluted with water, or contaminated with other substances.

Further information Instructions regarding the safe handling of the DEF reduction agent are provided in chapter 3.5.2.

4.7.2.2 Monitoring the addition of the reduction agent

A well-functioning exhaust air treatment is necessary in order to meet the stricter emission limits. For this reason, the SRC system is monitored by various sensors, including the filling level of the reduction agent tank.

If this tank is found empty, the engine control switches the engine to "torque reduction". The SIGMA CONTROL MOBIL displays the warning message "Torque reduction active" (message code 3182).

In "torque reduction" mode, the engine reduces its output to force the operator to replenish the reduction agent and/or to have the exhaust system to be inspected.

This means that the engine runs in IDLE speed and no longer generates compressed air. The machine is no longer operational.

The engine will operate with normal speeds only after the reduction agent has been replenished.

4.7.3 Option ba Low temperature equipment options

Special equipment is provided for operation in extremely low temperatures.

This equipment guarantees machine operation at temperatures from -13°F to 122°F.

The electrical system enables trouble-free engine starting at ambient temperatures as low as -4°F.

Option bb Coolant pre-heating

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

The power supply to the coolant pre-heater takes place via a separate network connector. A flexible power cable (supplied) connects the machine's power plug to the user's power socket.

The coolant pre-heater works according to the principle of self-circulation.

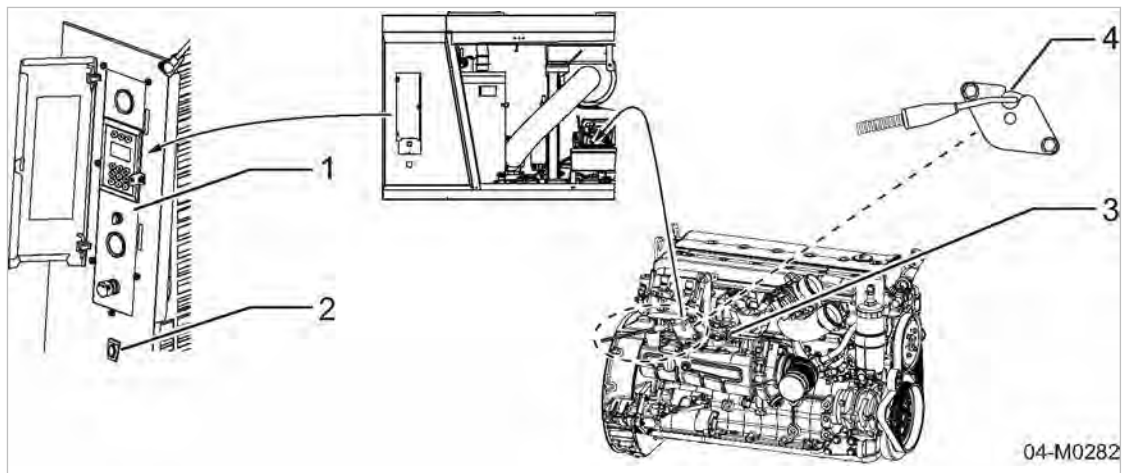


Fig. 14 Coolant pre-heating

- | | | | |
|---|---------------------------------------|---|---------------------|
| ① | Operating panel | ③ | Engine block |
| ② | Connection for the coolant pre-heater | ④ | Coolant pre-heating |

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 of approximately 3 hours.

4.7.4 Option la, lb Options for operating in fire hazard areas

Diesel motors represent a potential source of ignition in environments with concentrations of gas, vapour 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:

- Engine air shut-off valve
- Spark arrestor

4.7.4.1 Option Ib
Engine air shut-off valve

If flammable gases and vapours are drawn by the diesel engine from the environment into the air intake, they will act like additional fuel. This causes a sudden and uncontrolled increase in engine speed that can result in serious mechanical damage. Without appropriate preventive measures, the engine and the engine-driven devices can be destroyed. Explosion or fire are also possible.

When flammable gas is drawn into the engine, shutting off the fuel supply will no longer stop the engine. In order to shut down the engine quickly and reliably in these events, the intake of the combustion air must be interrupted.

If a certain engine speed is exceeded, the engine air throttle valve will close automatically. The feed of intake air is interrupted and causes the engine to immediately stand still.

Manual actuating the engine air shut-off valve:

The engine air intake shut-off valve may also be operated manually. Pulling a wire pull lever closes the intake valve.

NOTICE

Thermal overload of the engine.

Damage to the turbo charger by abrupt engine shut-down after high loading.

- *Use the wire pull handle only in an emergency when the surrounding air contains a flammable gas.*
- *Do not use the wire pull handle as the normal means of shutting down the machine.*

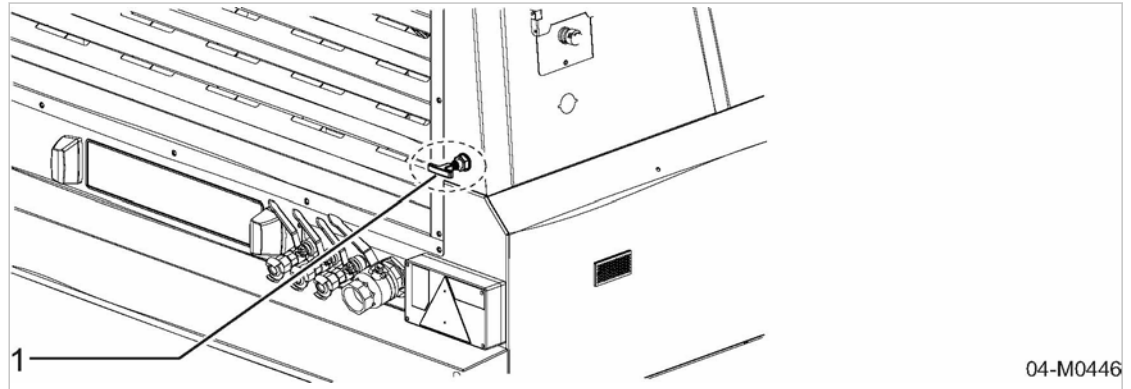


Fig. 15 Access engine air shut-off valve

① Handle

4.7.4.2 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.

4.7.5 Option ob, od
Start/stop/automatic options**Option ob Automatic engine start/stop**

The automatic start/stop option can be set in the SIGMA CONTROL MOBIL 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 drive engine to be started even after longer standstill times. Use a battery charger. This battery charger is connected to the user's electrical system.

4.7.6 Option oc
"GSM/GPS modem" option

The compressor is fitted with a GSM/GPS modem.

This modem can be equipped with a SIM card and serves in the MOBILAIR fleet management.

4.7.7 Option rb/rm/rs, rc/ro/rs, rd/ro/rs, rb/rm/rt, rb/rm/rr, rc/ro/rt, rc/ro/rr, rw, rx
Transport options**4.7.7.1 Option rb/rm/rs**
Chassis

Option rb - chassis EU version

Option rm - chassis with height-adjustable tow bar

Option rs - chassis with overrun brake

The chassis has the following features:

- permissible axle load: 7716 lb
- Single-axle chassis
- Towbar, height adjustable
- Rubber-spring axle
- with service brake
- May be operated on public roads

4.7.7.2 Option rc/ro/rs
Chassis

Option rc - chassis GB version

Option ro - chassis with fixed height tow bar

Option rs - chassis with overrun brake

The chassis has the following features:

- permissible axle load: 7716 lb
- Single-axle chassis
- Fixed height towbar
- Rubber-spring axle

- with service brake
- May be operated on public roads

4.7.7.3 Option rd/ro/rs**Chassis**

Option rd - chassis USA version

Option ro - chassis with fixed height tow bar

Option rs - chassis with overrun brake

The chassis has the following features:

- permissible axle load: 7716 lb
- Single-axle chassis
- Fixed height towbar
- Rubber-spring axle
- with service brake
- without parking brake
- May be operated on public roads

4.7.7.4 Option rb/rm/rt**Chassis**

Option rb - chassis EU version

Option rm - chassis with height-adjustable tow bar

Option rt - chassis with compressed air brake

The chassis has the following features:

- permissible axle load: 8818 lb
- Single-axle chassis
- Towbar, height adjustable
- Torsion bar spring axle
- with compressed air brake, with anti-lock brake system (ABS)
- May be operated on public roads

4.7.7.5 Option rb/rm/rr**Chassis**

Option rb - chassis EU version

Option rm - chassis with height-adjustable tow bar

Option rr - chassis without service brake

The chassis has the following features:

- permissible axle load: 8818 lb
- Single-axle chassis
- Towbar, height adjustable
- Torsion bar spring axle
- Without service brake
- Must not be operated on public roads

**4.7.7.6 Option rc/ro/rt
Chassis**

Option rc - chassis GB version

Option ro - chassis with fixed height tow bar

Option rt - chassis with compressed air brake

The chassis has the following features:

- permissible axle load: 8818 lb
- Single-axle chassis
- Fixed height towbar
- Torsion bar spring axle
- with compressed air brake, with anti-lock brake system (ABS)
- May be operated on public roads

**4.7.7.7 Option rc/ro/rr
Chassis**

Option rc - chassis GB version

Option ro - chassis with fixed height tow bar

Option rr - chassis without service brake

The chassis has the following features:

- permissible axle load: 8818 lb
- Single-axle chassis
- Fixed height towbar
- Torsion bar spring axle
- Without service brake
- Must not be operated on public roads

**4.7.7.8 Option rw
Stationary frame**

Option rw - Skid frame on runners

The frame has the following features:

- Body as skid
- Use as stationary machine
- Mounted on truck/trailer platform

**4.7.7.9 Option rx
Stationary frame**

Option rx - Frame

The frame has the following features:

- Frame
- Use as stationary machine
- Mounted on truck/trailer platform

4.7.8 Option oe Sealed floor pan option

The machine is fitted with a sealed floor pan. In the event of a leak, any leaking liquids required for the machine's operation are caught in the floor pan.



The sealed 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 plugs. These openings must be tightly re-closed after performing any cleaning work.

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

Locations of service openings in the sealed floor pan

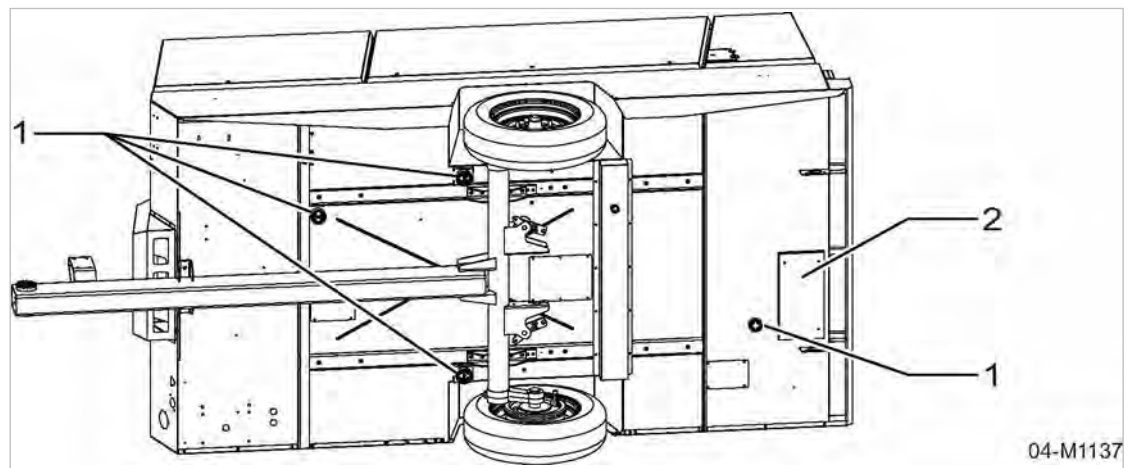


Fig. 16 Locations of service openings in the sealed floor pan

- ① Cleaning opening closed with plug
- ② Central drain point for oil/coolant (in the connection box, behind cover)

Fluid sensors in the sealed floor pan

If leaks occur, fluids will collect in recesses within the floor pan.

Sensors are installed in those areas that recognize the presence of fluids, and send a corresponding message to the SIGMA CONTROL MOBIL controller.

In the event of a fault, the controller will prevent the engine from starting or automatically shuts the engine off.

4.7.9 Option rw, rx, oe Location of draining points for the machine's fluids

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines and machines with a sealed floor pan. These are located at the rear of the machine, in a recessed connection box. The box can be accessed from below by removing a cover.

Option rw, rx, oe

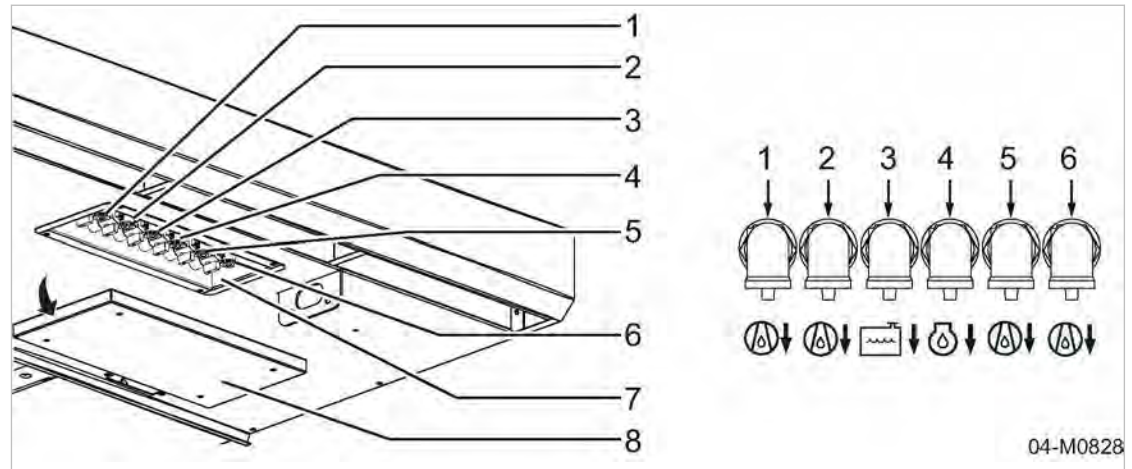


Fig. 17 Drain points for oil and coolant from engine and compressor

- | | | | |
|---|--|---|--|
| ① | Cooling oil drain, airend | ⑤ | Coolant drain, compressor oil cooler |
| ② | Cooling oil drain, air pipe between airend and oils separator tank | ⑥ | Coolant oil drain, compressor oil separator tank |
| ③ | Coolant drain, engine water cooler | ⑦ | Connection box |
| ④ | Engine oil drain | ⑧ | Connection box cover |

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 weight of the machine.

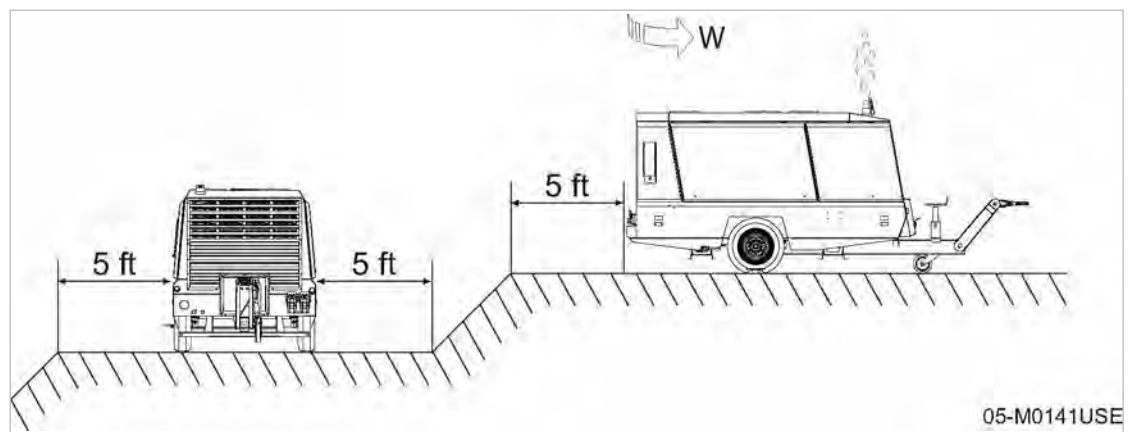


Fig. 18 Minimum distance from excavations/slopes and walls

Wind direction

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.



When the machine cannot be positioned evenly, check the tank levels (see Ill. 19). At inclined positions beyond 5°, the tank sensor of the controller may report *Fuel reserve* in the most adverse event, even if the other tank still contains sufficient fuel.

→ With the next message *fuel level low*, the controller shuts the machine down, recognising a fault.

In order to prevent the machine from shutting down due to lack of fuel:

- Do not operate the machine at slanted positions beyond 5 degrees.
- Fill both fuel tanks.

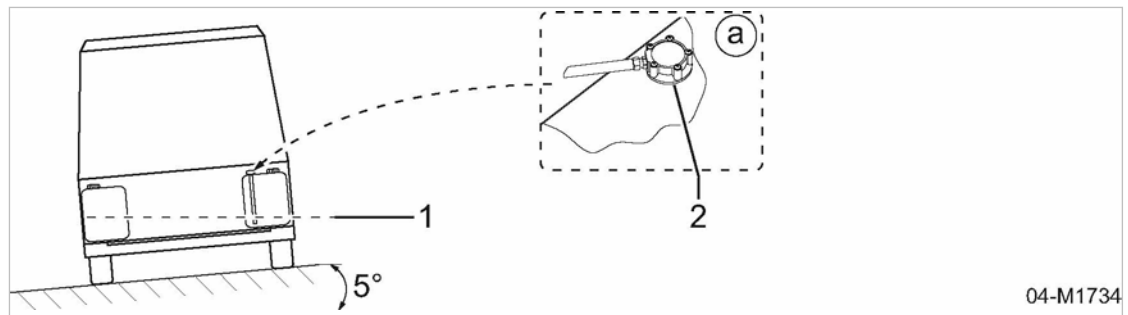


Fig. 19 Parking the machine in slanted position

- ① Fuel filling level in the fuel tanks
- ⓐ Detail: Fuel tank with tank sensor
- ② Tank sensor - view from above

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 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 18)
 - 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 Fitting the towbar

If the machine is shipped on a transport frame, it is necessary to dismantle the towbar to save space. The towbar must be re-assembled before removing the transport frame.

Material Protective gloves
Wrench
Hard rubber hammer

Precondition The machine is standing firm and level.
The machine is switched off.

CAUTION

Danger of pinching!

Severe pinching injury to fingers is possible.

- *Always wear protective gloves.*
- *Work carefully.*

**6.3.1 Option rb/rm/rs
Fitting the height-adjustable towbar (chassis 7716 lb)**

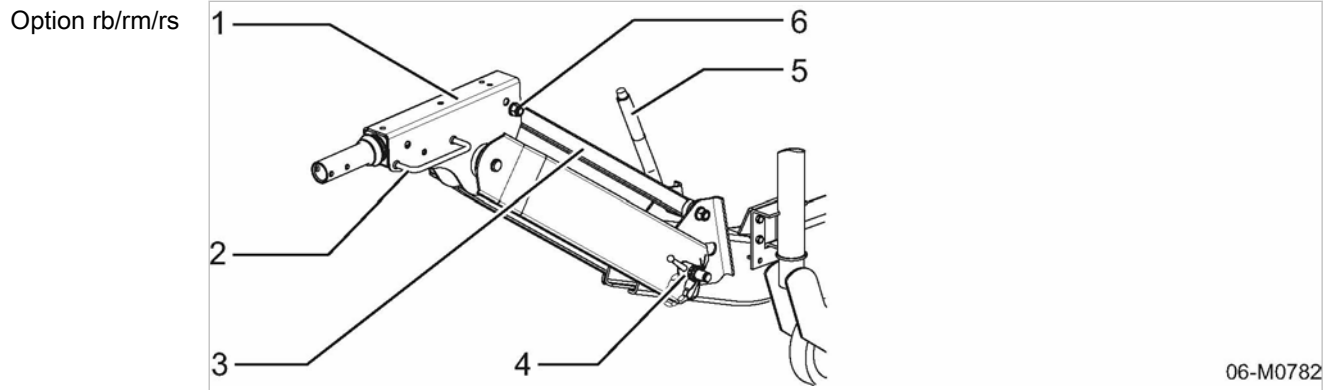


Fig. 20 Height adjustable towbar, fitted

- | | | | |
|---|---------------------------|---|---------------------------------|
| ① | Overrun braking mechanism | ④ | Locking lever with split pin |
| ② | Handle | ⑤ | Hand brake lever, parking brake |
| ③ | Tie bar | ⑥ | Fixing with bolt and nut |

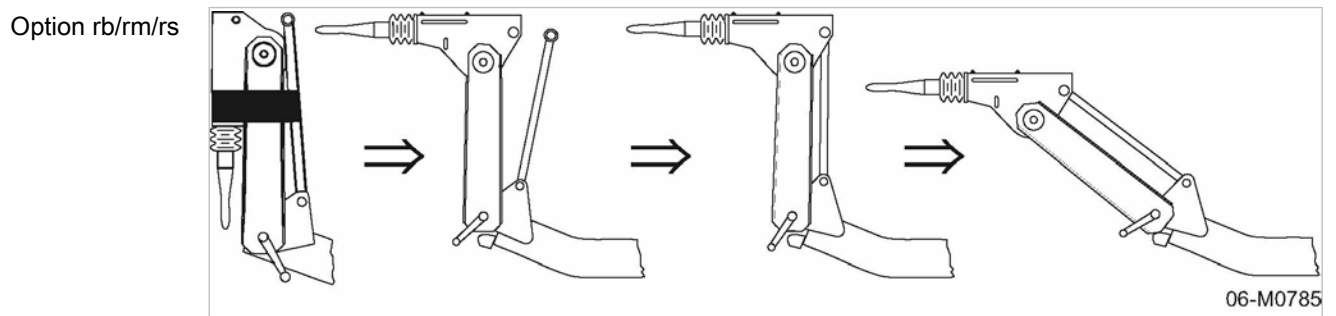


Fig. 21 Fitting the height adjustable towbar

1. Remove all transport securing items (duct tape, foam pads) from the towbar components.
2. Undo the self-locking nut and remove the tie bar fixing bolt.
3. Bring the overrun braking mechanism into the horizontal position.
4. Push the tie bar end between the cheeks of the overrun braking mechanism and align the fixing holes.
5. Push in the securing bolt, using light hammer blows if necessary.
6. Secure the bolt with the self-locking nut (see chapter 2.4.4 for tightening torque).
7. Release the parking brake by pushing the hand brake down.
8. Pull out the split pin and unscrew the locking lever to the stop.
9. Use the positioning handle to push the towbar to the required height.
10. Tighten the locking lever:
 - Make sure the teeth in the adjustment joint mesh together.
 - Manually tighten the locking lever.
 - Use a hammer to hit the locking lever to further tighten the lower serrated joint until the bore and the groove for the splint pin are aligned

11. Insert the splint pin.
12. Pull up the parking brake (pull the hand brake lever up).

**6.3.2 Option rc/ro/rs, rd/ro/rs
Fitting the fixed height towbar (chassis 7716 lb)**

Option rc/ro/rs, rd/ro/rs

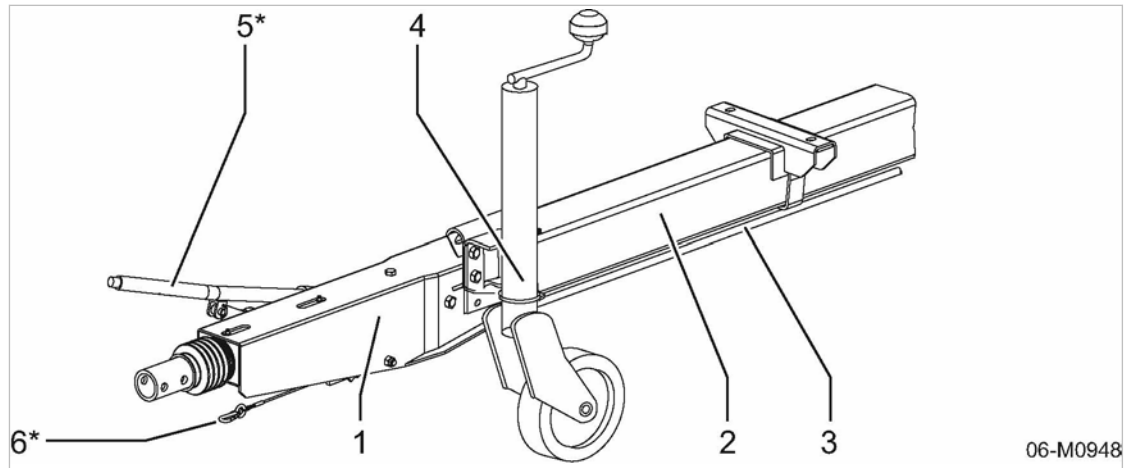


Fig. 22 Non-adjustable tow bar fitted

- | | | | |
|---|---------------------------|---|--------------------------|
| ① | Overrun braking mechanism | ⑤ | Parking brake |
| ② | Tow bar | ⑥ | Breakaway cable |
| ③ | Brake rod | ⑧ | not for USA type chassis |
| ④ | Jockey wheel | | |

1. Open the doors.
2. Remove the bag with fastenings (to be found at the lifting eye strut), and unpack and prepare the fastenings.
3. Close the doors.
4. Remove all transport securing items (screw fastenings, duct tape, foam pads) from the tow bar components.

Fitting the overrun braking mechanism of the non-adjustable tow bar:

Option rc/ro/rs, rd/ro/rs

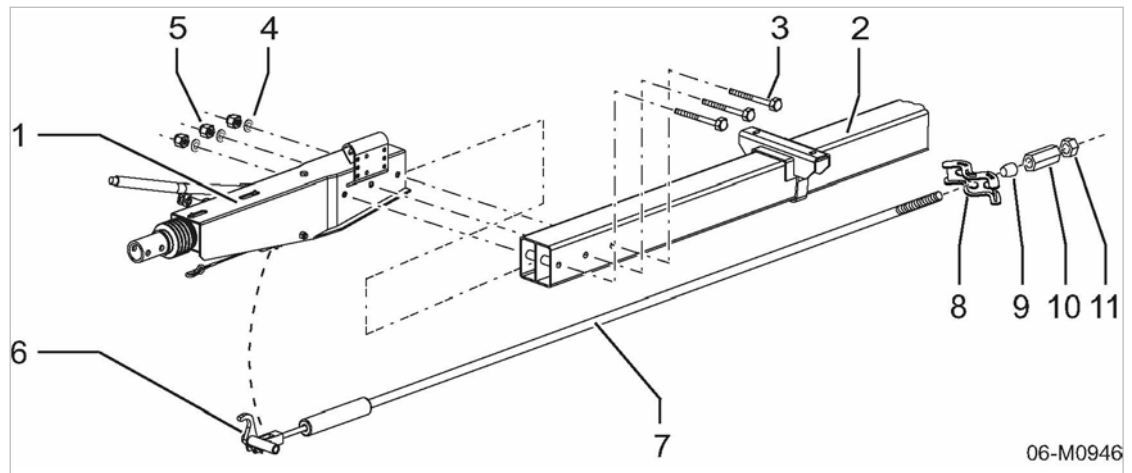


Fig. 23 Fitting the overrun braking mechanism of the non-adjustable tow bar

- | | | | |
|---|----------------------------|---|-----------------------------------|
| ① | Overrun braking mechanism | ⑦ | Brake rod |
| ② | Tow bar | ⑧ | Braking cable bracket (equaliser) |
| ③ | Fixing bolt | ⑨ | Spacer |
| ④ | Washer | ⑩ | Connecting sleeve |
| ⑤ | Hexagon nut (self locking) | ⑪ | Hexagonal locking nut |
| ⑥ | Brake transmission lever | | |

1. Push the overrun braking mechanism onto the tow bar and position so that the securing bolts can be pushed on.
2. Push in the securing bolts (using light hammer blows if necessary) and push on U-washers.
3. Secure the bolts with the self-locking nuts (see chapter 2.4.4 for tightening torque).
4. Push the brake rod into the brake cable bracket.
5. Insert the spacer and screw the connecting sleeve free of play and tension.
6. Lock the sleeve with the hexagonal nut.

Further information Further information on setting the brake actuating rod is to be found in chapter 10.10.3.3.

Fitting the jockey wheel of the non-adjustable tow bar:

Option rc/ro/rs, rd/ro/rs

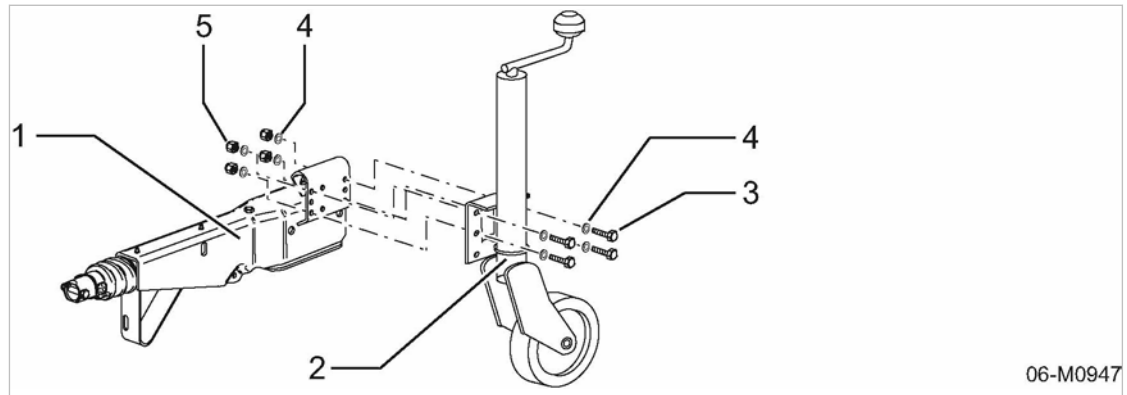


Fig. 24 Fitting the jockey wheel of the non-adjustable tow bar

- | | | | |
|---|---------------------------|---|----------------------------|
| ① | Overrun braking mechanism | ④ | Washer |
| ② | Jockey wheel | ⑤ | Hexagon nut (self locking) |
| ③ | Fastening screw | | |

1. Place a U-washer on each securing screw and insert each of these into the top four securing holes on the jockey wheel mounting plate.
2. Raise the overrun braking mechanism and position such that the securing holes of the jockey wheel mounting plate and the overrun braking mechanism coincide.
3. Push through the securing screws and push on the U-washers.
4. Secure the bolts with self-locking nuts.

Further information See chapter 2.4.4 for the tightening torque.

6.4 Adjusting the chassis

Material Pliers
Hard rubber hammer

Precondition The machine is shut down.
The machine is disconnected from the towing vehicle and safely parked.

⚠ CAUTION

Danger of pinching!

Severe injury to fingers is possible if they become trapped in the adjusting mechanism.

- *Always wear protective gloves.*
 - *Work carefully.*
- Ascertain which chassis is fitted to the machine.

**6.4.1 Option rb/rm/rs
Adjusting the tow bar (chassis 7716 lb)**

Option rb/rm/rs

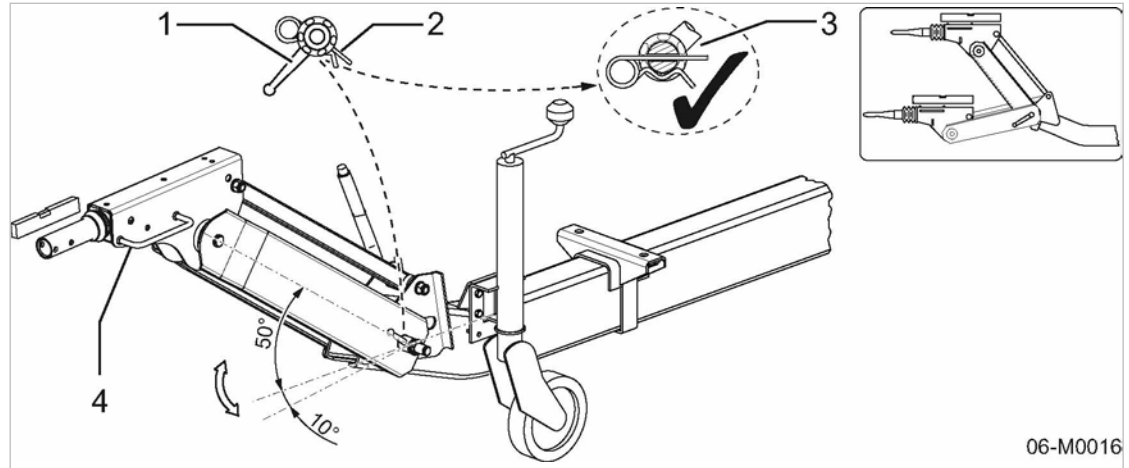


Fig. 25 Towbar height adjustment

- | | |
|-----------------|-------------------------------|
| ① Locking lever | ③ Split pin properly inserted |
| ② Split pin | ④ Handle |

1. Pull out the split pin and unscrew the locking lever to the stop.
2. Adjust the towbar with the handle until it is horizontal with the coupling on the towing vehicle and parallel to the ground.



The parallel tie bar ensures that the overrun braking mechanism stays horizontal (Fig. 25).

The centre-piece can be moved up to 50° upwards and 10° downwards for height adjustment.

3. Tighten the locking lever:
 - Make sure the teeth in the adjustment joint mesh together.
 - Manually tighten the locking lever.
 - Use a hammer to hit the locking lever to further tighten the lower serrated joint until the bore and the groove for the splint pin are aligned
4. Insert the splint pin.
5. Check if:
 - the teeth in the adjustment joint are fully engaged.
 - The locking lever is tight.
 - The split pin is correctly inserted to secure the locking lever (see 3 in Fig. 25).
6. Tighten the locking lever again after 30 miles.



The serrated joint will not disengage. The serrations are corroded together.

- Free the serrations by jerking the towbar horizontally and vertically.

6.4.2 Option rb/rm/rt, rb/rm/rr
Adjusting the tow bar (chassis 7716 lb)

Option rb/rm/rt, rb/rm/rr

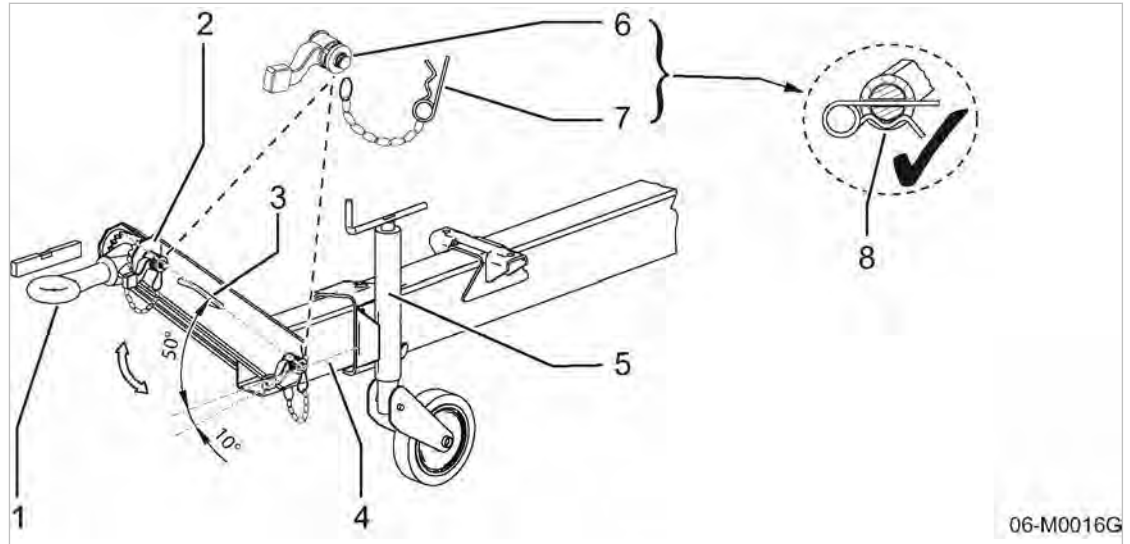


Fig. 26 Towbar height adjustment

- | | |
|------------------|-------------------------------|
| ① Towing eye | ⑤ Jockey wheel, complete |
| ② Towbar adapter | ⑥ Locking lever |
| ③ Handle | ⑦ Split pin |
| ④ Towbar | ⑧ Split pin properly inserted |

➤ Bring the overrun braking mechanism into the horizontal position.

Adjusting the towbar height:

1. Pull out the split pin from the towbar and unscrew the locking lever to the stop.
2. Adjust the centre piece with the handle until it is at the height of the coupling on the towing vehicle.
The centre-piece can be moved up to 50° upwards and 10° downwards for height adjustment.

3. Tighten the locking lever:
 - Make sure the teeth in the adjustment joint mesh together.
 - Manually tighten the locking lever.



The serrated joint will not disengage. The serrations are corroded together.
➤ Free the serrations by jerking the towbar horizontally and vertically.

Position the towing eye in the horizontal position:

1. Pull out the split pin from the towing eye and unscrew the locking lever to the stop.
2. Bring the towing eye into the horizontal position.
3. Tighten the locking lever:
 - Make sure the teeth in the adjustment joint mesh together.
 - Manually tighten the locking lever.

Securing the toothed couplings:

1. Use a hammer to hit the locking lever to further tighten the lower serrated joint until the bore and the groove for the splint pin are aligned
2. Insert both split pins.

Check the towbar adjustment

- Check if:
 - the teeth in the tow bar adjustment joints are fully engaged,
 - the locking levers are tightened,
 - the split pin is correctly inserted to secure the locking lever (see Pos. 8 in Fig. 26).



Tighten the locking lever again after 30 miles.

6.4.3 Changing the towing eye/ball hitch

The towbar can be fitted with various towing eyes or couplings.

Material Protective gloves
Wrench
Hammer

Precondition The machine is shut down.
The machine is disconnected from the towing vehicle and safely parked.

- Ascertain which towbar is fitted to the machine.

6.4.3.1 Option rb/rm/rs**Changing the towing eye/ball coupling on a height-adjustable towbar (chassis 7716 lb)**

The following alternative tasks must be carried out to change the towing eye or coupling.

Option rb/rm/rs

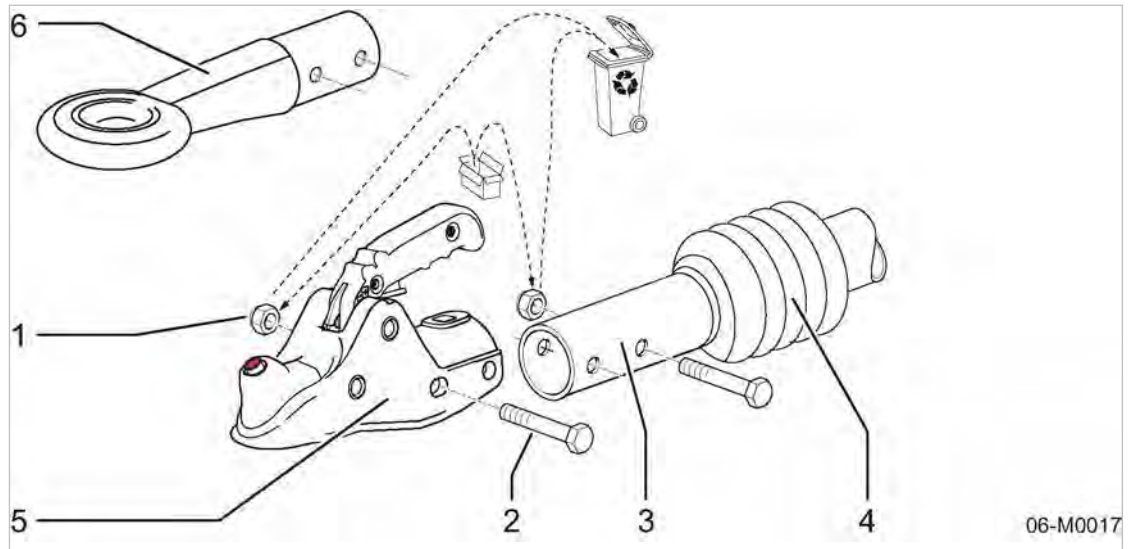


Fig. 27 Changing the towing eye/ball hitch (height-adjustable drawbar)

- | | |
|----------------------------|---------------------|
| ① Self-locking hexagon nut | ④ Protective sleeve |
| ② Hex-head screw | ⑤ Ball coupling |
| ③ Towbar | ⑥ Towing eye |

Remove the ball coupling	Removing the towing eye
<ol style="list-style-type: none"> 1. Unscrew the nuts ① of both screw connections and withdraw the bolts ②. 2. Remove the coupling ⑤ from the towbar ③. 	<ol style="list-style-type: none"> 1. Push back the protective sleeve ④. 2. Unscrew the nuts ① of both screw connections and withdraw the bolts ②. 3. Remove the towing eye ⑥ from the towbar ③.
Fitting the ball coupling	Fitting the towing eye
<ol style="list-style-type: none"> 1. Fit the new ball coupling ⑤ to the towbar. 2. Position the various parts so that the bolts can be freely inserted. 3. Insert the bolts ② through the corresponding fixing holes of both screw connections and secure with self-locking nuts ①. 	<ol style="list-style-type: none"> 1. Slide the towing eye ⑥ into or onto the towbar ③. 2. Position the various parts so that the bolts can be freely inserted. 3. Insert the bolts ② through the corresponding fixing holes of both screw connections and secure with self-locking nuts ①. 4. Draw the protective sleeve ④ over the fixings.

Further information See chapter 2.4.4 for the tightening torque.

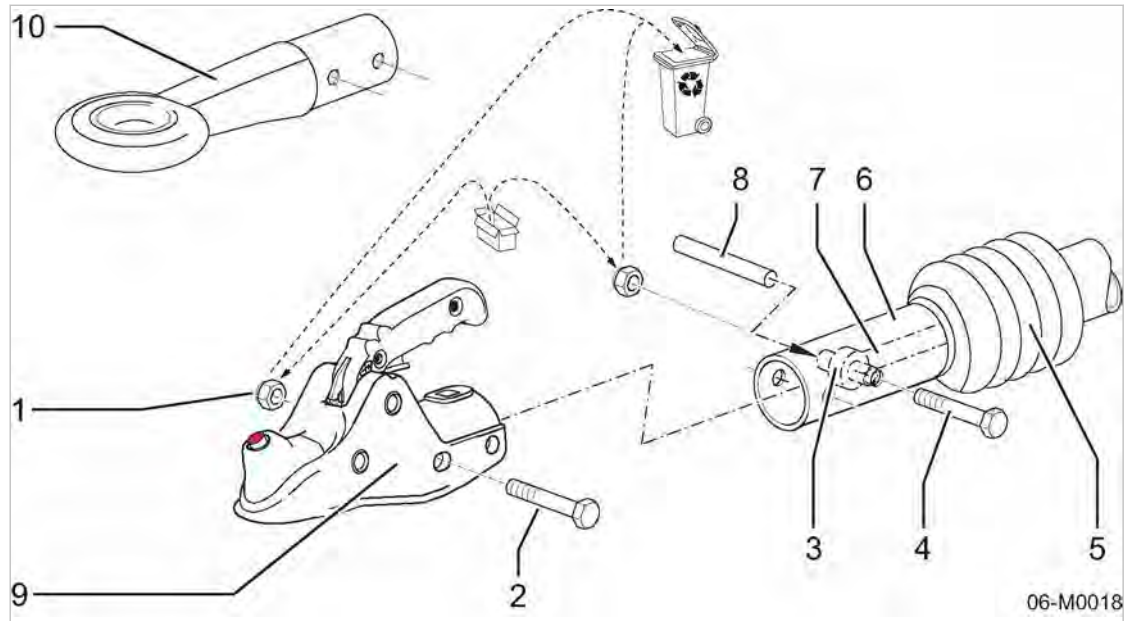
6.4.3.2 Option rc/ro/rs, rd/ro/rs

Changing the towing eye/ball coupling on a fixed height towbar (chassis 7716 lb)

The shock absorber is secured in the rear fixing screw. The shock absorber extends automatically. Use a mounting pin (thin metal rod \varnothing 0.3–0.4 in) to facilitate the installation.

Material Mounting pin (thin metal rod \varnothing 0.3–0.4 in)

Option rc/ro/rs, rd/ro/rs


Fig. 28 Changing the towing eye/ball hitch (fixed height towbar)

- | | |
|-----------------------------|------------------|
| ① Self-locking hexagon nut | ⑥ Towbar |
| ② Hex-head screw | ⑦ Shock absorber |
| ③ Shock absorber fixing eye | ⑧ Mounting pin |
| ④ Hex-head screw | ⑨ Ball coupling |
| ⑤ Protective sleeve | ⑩ Towing eye |

1. Push back the protective sleeve ⑤.
2. Unscrew and remove the nuts ① of both screw connections.
3. Use the mounting pin ⑧ to beat out the rear screw ④. Do not remove the pin in order to retain the centring of the shock absorber in the towbar tube.
4. Remove the front screw ②.
5. Remove the ball coupling ⑨ or towing eye ⑩ from the towbar tube ⑥.
6. Push the new ball coupling ⑨ or towing eye ⑩ onto the towbar ⑥ until the fixating holes match.
7. Use the screw ④ at the rear fixating hole of the towing eye/ball coupling to beat out the mounting and pin and to thread the shock absorber.
8. Insert the screw ② through the front fixating hole.
9. Thread self-locking nuts ① on both screws and tighten.
10. Draw the protective sleeve over the fixings.

Further information See chapter 2.4.4 for the tightening torque.

Checking the overrun braking mechanism

- Push the towbar tube in and out by hand.
If resistance is felt, the shock absorber is properly connected.

6.4.3.3 Option rb/rm/rt, rb/rm/rr

Changing the towing eye on a height-adjustable towbar (chassis 8818 lb)

Material Lithium multi-purpose grease (if required)

Option rb/rm/rt, rb/rm/rr

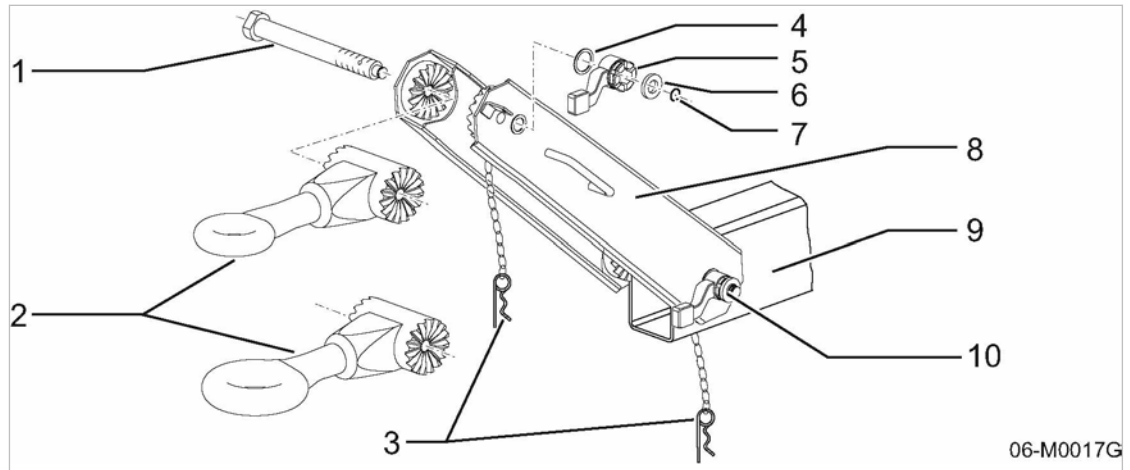


Fig. 29 Changing the towing eye

- | | |
|-----------------|---------------------------|
| ① Fixing bolt | ⑥ Bush |
| ② Towing eye | ⑦ Circlip |
| ③ Split pin | ⑧ Towbar adapter |
| ④ Washer | ⑨ Towbar |
| ⑤ Locking lever | ⑩ Locking lever, complete |

1. Grip the centre piece at the handle, pull out the split pin at the lower locking lever (at the towbar) and loosen the locking lever.
2. Set the centre piece to its lowest position (towards the ground).
3. Pull out the splint pin at the upper locking lever (at the towing eye) and loosen the locking lever.
4. Remove the lock ring at the fixing bolt and unscrew the locking lever, mind the attached washer and bush.
5. Remove the securing bolt, using light hammer blows if necessary.
6. Remove the towing eye to be removed from between the legs of the centre piece.



The locking teeth on the towbar are corroded and jammed and the towbar height cannot be set/loosened.

- If necessary, free the teeth by jerking the towbar horizontally and vertically. Drive in with light hammer blows if necessary.
- Clean the toothed coupling and smear with water-repellent grease.

1. Place and align the new towing eye between the legs of the centre piece.
2. Push in the securing bolt, using light hammer blows if necessary.
3. Place the washer and loosely screw on the locking lever.
4. Place the bush behind the locking lever and secure with lock ring.
5. Move the the centre piece upwards at the handle, align the towing device and move to the towing eye to a horizontal position.

6. Tighten both locking levers.
 - Ensure that the teeth in the adjustment joints are fully engaged,
 - Manually tighten the locking lever.
 - Use a hammer to hit the locking lever to further tighten the lower serrated joints until the bore and the groove for the splint pin are aligned.
7. Insert both split pins.

Further information See chapter 2.4.4 for the tightening torque.

Check the towbar adjustment

- Check if:
 - the teeth in the tow bar adjustment joints are fully engaged,
 - the locking lever is tightened,
 - the split pin is correctly inserted to secure the locking lever (see Pos. 8 in Fig. 26).

Further information See chapter 6.4.2 for towbar height adjustment.

6.4.3.4 Option rc/ro/rt, rc/ro/rr Changing the towing eye on a fixed height towbar (chassis 8818 lb)

Option rc/ro/rt, rc/ro/rr

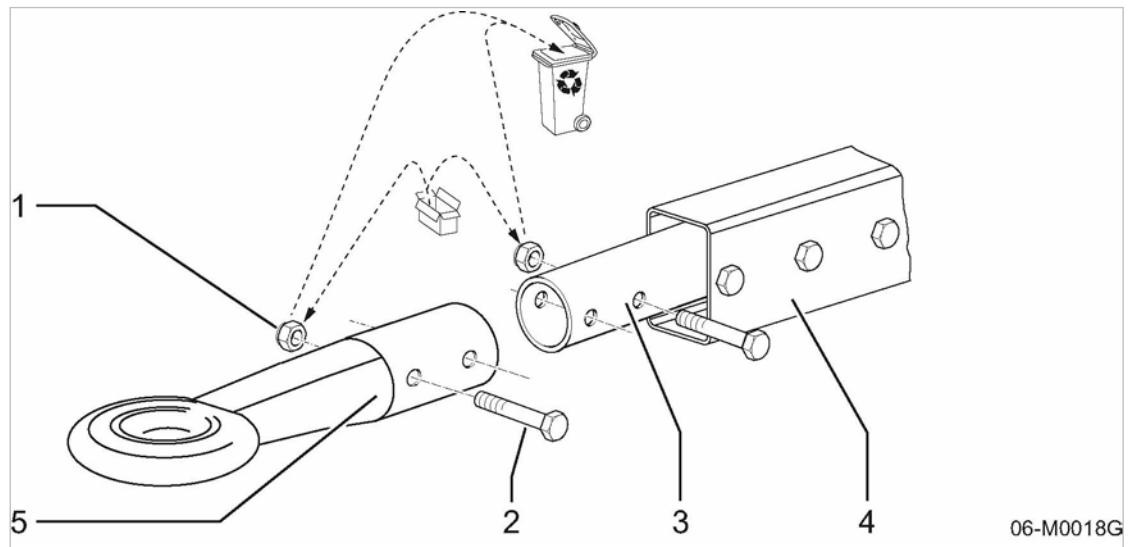


Fig. 30 Changing the towing eye (fixed height towbar)

- | | |
|----------------------------|--------------|
| ① Self-locking hexagon nut | ④ Towbar |
| ② Hex-head screw | ⑤ Towing eye |
| ③ Towbar | |

1. Unscrew the nuts ① of both screw connections and withdraw the bolts ②.
2. Remove the towing eye ⑤ from the towbar ③.
3. Slide the new towing eye ⑤ onto the towbar ③.
4. Position the various parts so that the bolts can be freely inserted.
5. Insert the bolts ② through the corresponding fixing holes of both screw connections and secure with self-locking nuts ①.

Further information See chapter 2.4.4 for the tightening torque.

6.5 Option od Connecting the battery trickle charger

The battery charger is wired ready for operation and only needs to be connected to the user's power supply.



The charger is factory set for use on a 400 V, 3-phase supply. For use with a 230 V, 1-phase supply, the charger connections must be changed as shown in the electrical diagram in chapter 13.4.4.

Precondition The power supply disconnecting device is switched off, the device is locked off, a check has been made that no voltage is present.

1. Have the power supply connected only by authorized installation personnel or an authorized electrician.
2. Take all safety precautions as required by Standards such as IEC 364 or EN 1012, part 1 and EN 60204, part 1, as well as national safety regulations (BGV A3 in Germany). In addition, observe the regulations of the local electricity supplier.
3. Select power supply cable conductor cross-sections and fusing in accordance with local regulations.
4. **⚠ DANGER** *Danger of fatal injury from electric shock!*
 - *Switch off and lock out the power supply disconnecting device and check that no voltage is present.*
5. Connect the machine to the power supply.

Further information See chapter 2.7.3 for power supply specifications.
The electrical diagram in chapter 13.4.4 contains further details of the power supply connection.

6.6 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.

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

Tab. 50 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.

To be checked	See chapter	Complied?
➤ 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?	10.5.1	
➤ 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, 10.5.7	
➤ Is there sufficient coolant in the coolant expansion tank?	10.4.1	
➤ Is there sufficient fuel in the fuel tank?	–	
➤ Are the access doors closed and all body panels in place?	–	
➤ Are the tire pressures OK?	–	
Option Id only:	–	
➤ Is there sufficient reducing agent (emission treatment) in the tank?		

Tab. 51 Installation conditions checklist

7.4 Low-temperature operation (winter)

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

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



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

7.4.1 Starting assistance

If the machine's starter batteries are discharged, it can be 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.
The «battery isolating switch» is off.

⚠ WARNING

Fire and explosion hazard.

High currents caused by short-circuited battery. Shorted batteries can catch fire or explode.

Battery casing may crack and allow acidic fluid to spray out.

- *Observe the instructions provided with the battery jumper cables.*
- *Do not connect the battery jumper cables to the negative pole of the discharged battery or to the bodywork of the machine.*
- *Work with caution.*

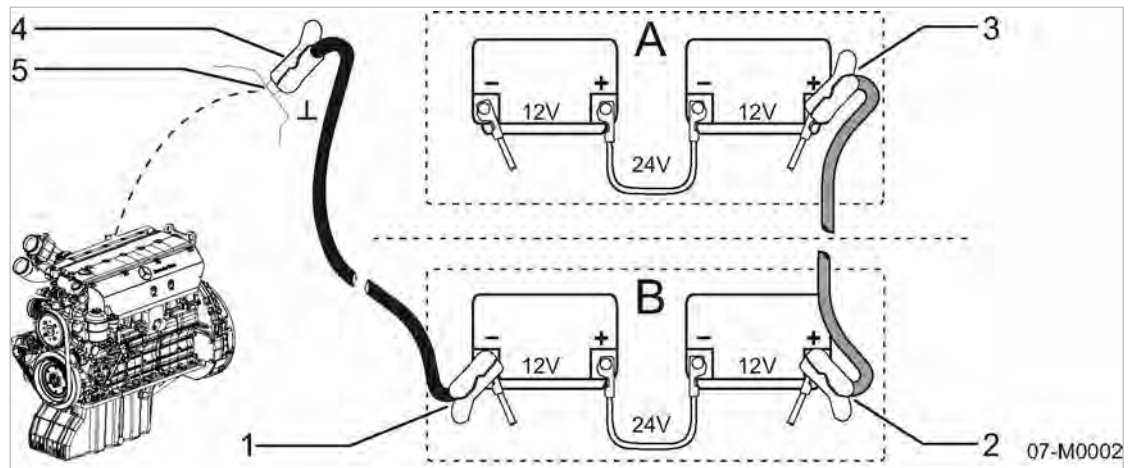


Fig. 31 Jumper cable connection diagram

- | | |
|--|--|
| (A) Engine batteries (receiving batteries) | (3) Positive pole clamp (red) on engine battery |
| (B) Assisting vehicle batteries (external donor batteries) | (4) Negative pole clamp (black/blue) on engine battery |
| (1) Negative pole clamp (black/blue) on battery of assisting vehicle | (5) Bare metal point on the engine block (earth) |
| (2) Positive pole clamp (red) on battery of assisting vehicle | |

Complying with safety notes

1. **⚠ WARNING** *Fault in starting aid process!*
 - *Connect batteries of the same 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 batteries are frozen. Allow the batteries to thaw first.*
 - *Do not try to start the machine with a boost charger.*
2. Comply with the safety instruction shown when using starting aids and starter batteries.

Preparations:

1. Park the assisting vehicle in close distance to the engine, without their bodywork touching 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 engine'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 minus terminals of the assisting vehicle to the negative terminals of the batteries in the machine to be started.*
This can cause sparks 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 engine ⑤ (as distant as possible to the batteries).
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. Switch on the «battery isolating switch».
2. Start the engine of the assisting vehicle and run at high speed.
3. Start the compressor engine.



Upon a successful start, run both engines for approximately 10 – 15 minutes. This is important, in particular for fully discharged batteries. They will pick up little current only in the beginning 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. The engine electronics in particular, of the machine is 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 (+).
3. Place the pole caps.
4. Close the maintenance panels and/or bonnet.



A stop of the compressor engine as soon as the cables are disconnected could indicate major damage to the alternator or batteries to be repaired by a specialised workshop.

**7.4.2 Option ba
Starting up low-temperature equipment****Option bb Operating the engine cooling water pre-heater**

The engine coolant can be pre-heated to improve starting under cold conditions. The connection for the mains supply is located on the machine's instrument panel.

Option bb

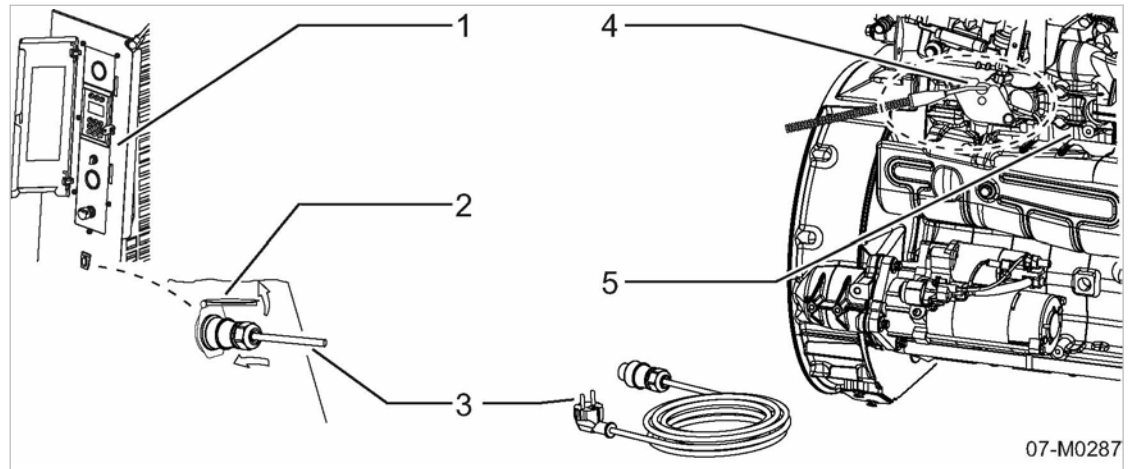


Fig. 32 Coolant pre-heating

- | | |
|---|-----------------------|
| ① Operating panel | ④ Coolant pre-heating |
| ② Connection for the coolant pre-heater | ⑤ Motor block |
| ③ Power cable | |

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

7.5 Option od Activating the battery trickle charging

The power supply voltage must be permanently connected as long as the compressor is to be operated in standby mode. Trickle charging the batteries ensures they are always in a condition to start the portable compressor.

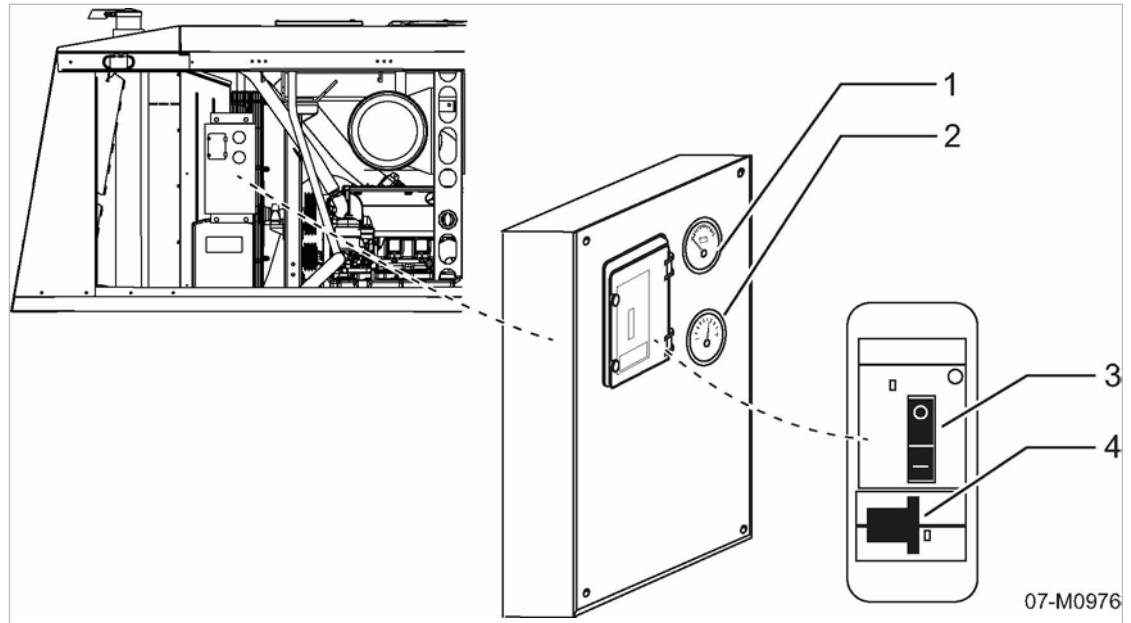


Fig. 33 Battery charger

- ① Voltmeter
- ③ Engine overload protection switch
- ② Ammeter
- ④ Safety cut-out

Activating the battery charger

1. Switch on the overload protection switch.
 2. Switch on the safety cut-out.
- The meters indicate the charging voltage and current.

Checking battery charger function

The charger function should be checked weekly.

Instruments	Voltmeter	Ammeter
Display	Charging voltage [V DC]	Charging current [A DC]
Value	≥26.6	>0.5

Tab. 52 Battery charger control

1. **NOTICE** *Cutting the power supply voltage of the battery charger. Starter batteries discharge through a connected battery charger. This can result in a total discharge and destruction of the batteries.*
 - *When switching off the power supply, you also must switch off the engine protection switch and the circuit breaker.*
2. Check the readings on the voltmeter and ammeter.
Call an electrician if there is a large discrepancy between the readings and standard values.

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.

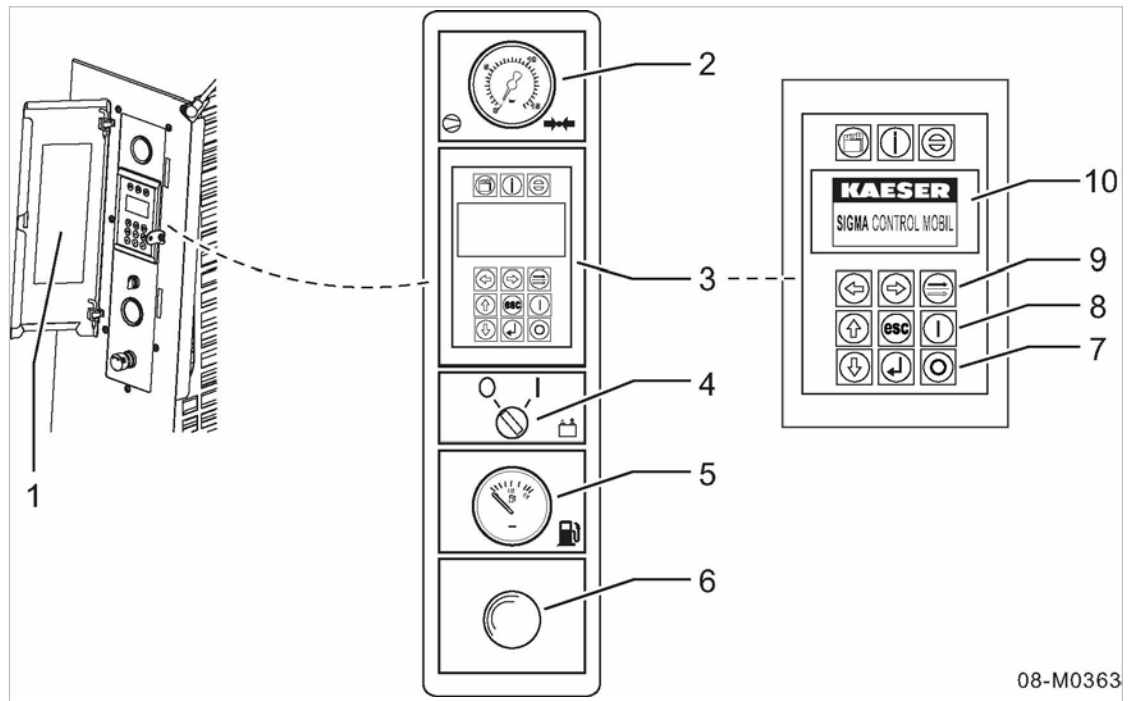


Fig. 34 Starting instruments

- | | |
|---|--------------------------|
| ① Operator panel cover with adhesive label providing brief instructions | ⑥ «QUICK STOP» button |
| ② Compressed air outlet pressure gauge | ⑦ «STOP» key |
| ③ SIGMA CONTROL MOBIL controller | ⑧ «START» key |
| ④ «Controller ON/OFF» switch | ⑨ «LOAD/IDLE» toggle key |
| ⑤ Fuel gauge | ⑩ Display |

8.2.1 Follow the brief instructions

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

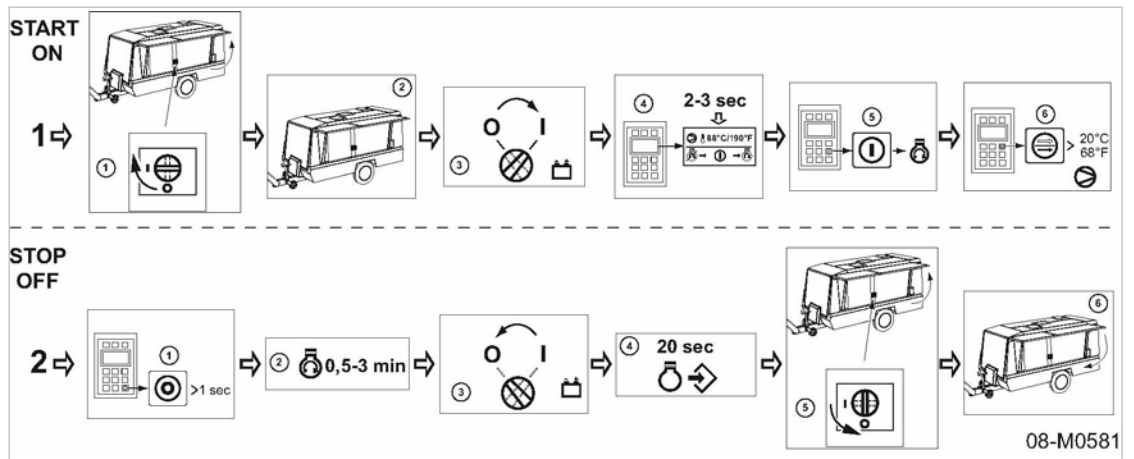


Fig. 35 Brief instructions on starting and stopping

- ① Starting sequence
- ② Shutdown sequence

➤ Open the instrument panel cover and follow the instructions attached at the inside.



The individual steps are fully explained below.

8.2.2 Starting 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 «QUICK STOP» pushbutton.

1. **⚠ WARNING** «QUICK STOP» button latched!
The machine cannot be stopped quickly in an emergency.
 - Check the function of the «QUICK STOP» button.
 - Do not operate the machine if the «QUICK STOP» button does not operate.
2. Press the «QUICK STOP» button.
The «QUICK STOP» button cannot be pushed in or does not latch. Defrost the «QUICK STOP» button.
3. Unlatch the «QUICK STOP» button



The «QUICK STOP» button still does not function after defrosting.

➤ Have the «QUICK STOP» button replaced.

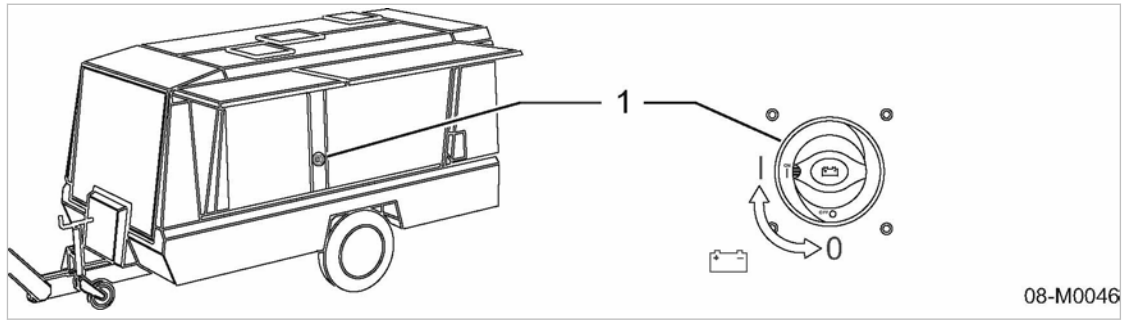


Fig. 36 «Battery isolating switch»

- ① «Battery isolating switch»
 I – on
 0 – off

1. Open the left-rear 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. Press the «Controller On» switch.
 - The controller boots up and the front page is displayed.
 - If the temperature is below zero, the engine control unit will switch on engine pre-heating.
 - If the controller does not display any unacknowledged messages (see separate SIGMA CONTROL MOBIL operating manual, chapter "Functional description"), the display switches to *Operating mode* and signals readiness.
 - The «Start» key flashes.

Starting the engine:

- Press the «Start» key.
- The engine starts and runs in IDLE until the following conditions are fulfilled:
 - The required airend discharge temperature (ADT) has been attained.
 - The required engine coolant temperature (ECT) has been attained.
 - The «Start key» illuminates and the «Load key» flashes.



If the starting sequence fails or is interrupted by pressing the «Quick stop» key, the re-start inhibit is activated for 20 seconds. The display shows the remaining time before another start can be attempted.

Switching the machine to LOAD:

- Press the «Load» key.
 - The machine switches to LOAD mode and is ready to deliver compressed air.
 - The «Load» key illuminates.



If the «Load» key is pressed before the required ADT or ECT are attained, the engine continues to run at IDLE speed. The controller switches automatically to LOAD when these temperature limits are reached.

Further information A representation of the operating sequence of the SIGMA CONTROL MOBIL is provided in the separate operating manual for the controller.

8.2.4 Regulating the shut-off valve

To prevent users' devices from venting when the compressor shuts down and automatically vents, a shut-off valve is installed in the control air line between oil separator tank and air distributor.

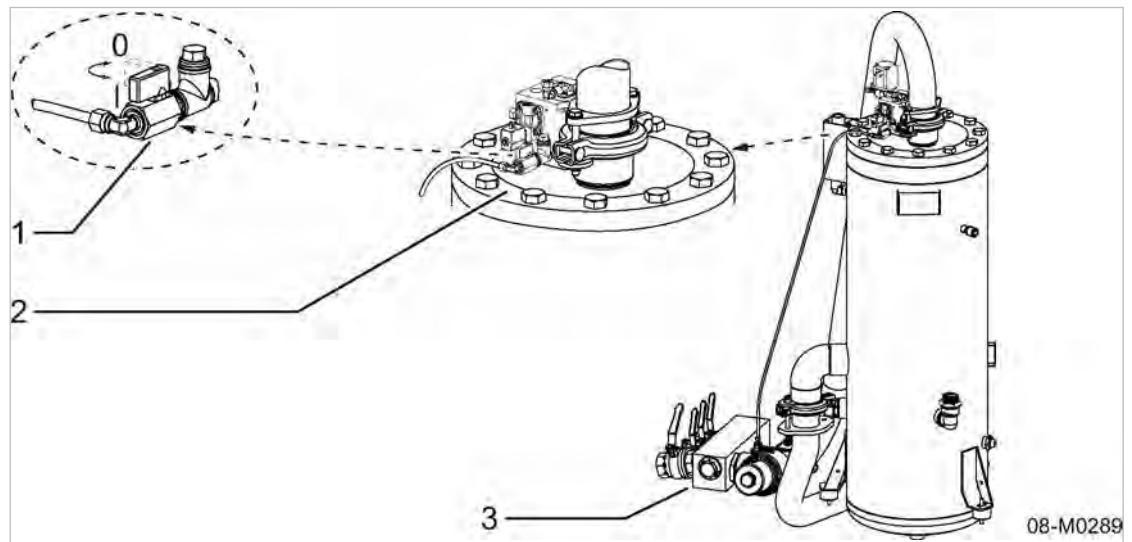


Fig. 37 Control line shut-off valve

- ① Shut-off ball valve
I – Open
0 – Closed
- ② Oil separator tank cover
- ③ Compressed air outlet distributor

1. Open the right-rear door.
2. Check that the shut-off valve in the control air line is open. If not, open it.
The machine is ready for operation.
3. Close the door.

8.2.5 Setting the compressed air discharge pressure

The compressed air discharge pressure is set from the instrument panel. Setting is in increments of 0.1 psig and shown as a scale 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.

- Comply with the separate operating manual for the SIGMA CONTROL MOBIL controller.

8.2.5.1 Selecting the discharge pressure in the Settings menu

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

- Quick access
- Entry via the menu structure

Quick access

Precondition LOAD run

<Main menu> (operating state) is selected.

- Press either «Left» or «Right».
- This immediately selects the output setting menu.

Access via menu structure

Precondition LOAD operation.

<Main menu => operating data – compressor >is selected.

Enter the output pressure in the sub-menu "set pressure in oil separator tank"

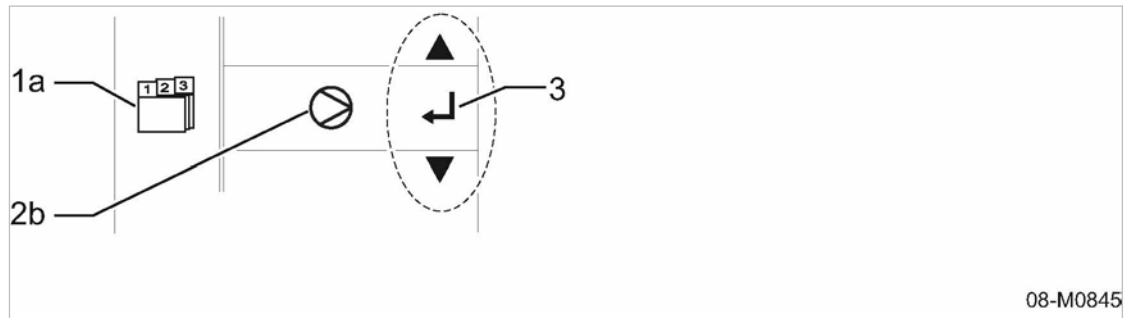


Fig. 38 Select menu option "set pressure in the oil separator tank"

- 1a Main menu
- 2b Compressor unit data
- 3 Menu navigation

1. Select the compressor data symbol and confirm with «Enter».
2. Press either «Up» or «Down».
- This immediately selects the output setting menu.

8.2.5.2 Setting pressure



- The pressure can only be set at lower than the nominal working pressure of the machine.
- A pressure setting 1.0 psig higher than nominal is possible with the appropriate password.
- This setting is only temporary and is reset to the maximum working pressure
 - if the keypad is not used for three minutes
 - when the controller is switched off.

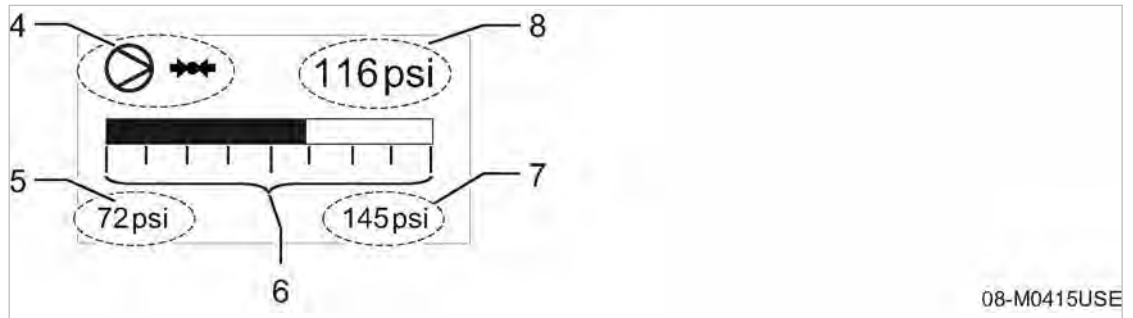


Fig. 39 Setting the output pressure

- | | | | |
|---|---|---|--|
| ④ | Select menu option "set pressure in the oil separator tank" | ⑦ | Maximum working pressure (upper setting limit) |
| ⑤ | Minimum working pressure (lower setting limit) | ⑧ | Current setting |
| ⑥ | Setting scale with indicator bar | | |

➤ Use «Right» and/or «Left» key to select the output pressure and check on the instrument panel pressure gauge.



The set pressure is saved when leaving the Setting menu option.

- Press «Escape».
- The discharge pressure is set and the display changes to *operating mode*.

8.2.6 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 engine a few minutes in idle before shutting down to allow the turbocharger to cool.

Operating the machine in the run-on phase

- Press and hold the «STOP» key for more than one second.
- The machine switches to *unloaded run-on*, i.e. the engine runs at IDLE speed and the oil separator tank (OST) is vented.
 - When the preset cool-down period* has elapsed, the machine has cooled enough so that the engine can stop automatically.
(* See also the separate SIGMA CONTROL MOBIL operating manual, chapter "Engine settings".)



- The controller display shows *back pressure* if the pressure in the oil separator tank is still > 1 psig
- When the machine is fully vented, the display changes to *ready to start*.
- When the OST is fully vented after shut down, the re-start inhibitor is activated and is indicated by the timer counting down from 20 seconds.

Shutting down the controller:

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 saved.
2. Shutting down the controller:
 - ⌚ 0.5 - 3 minutes
 - 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 switched off.
 - Do not use the «battery isolating switch» as a main or emergency switch.
2. Open the left-rear door.
3. Disconnect the machine's voltage supply:
 - ⌚ 20 seconds.
 - Turn off the «battery isolating switch».

Result The battery is disconnected from the machine's electrical system.

- Close all «compressed air outlet valves» on the air distributor.

Make sure equipment is protected from venting

Compressed air lines to consumers should not vent when the compressor shuts down. A typical example would be a user's auxiliary air receiver.



The shut-off valve must remain open for any other applications!

1. Open the right-rear door.
2. Close the shut-off valve.

Further information Close the shut-off valve in the control line, see Fig. 37

- Close the operating panel cover and all doors. Lock if necessary.

8.2.7 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 shutdown

- Press the «Emergency stop » push button.
 - The engine stops immediately.
 - The «Emergency stop » push button remains latched in after being pressed.
 - The restart inhibitor is activated for 20 seconds.
 - The «Information» key and «Stop» key on the SIGMA CONTROL MOBIL are illuminated.
 - The «Acknowledge» key flashes.

Restarting the machine

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

Precondition Fault rectified.

- Unlatch the «Emergency stop » push button.
- Confirm the message with the «Acknowledge» key.

The «Information» key, «Stop» key, and «Acknowledge» key are illuminated.
The machine can now be started again.

8.3 Acknowledging alarm, warning and maintenance messages

Information from the controller is interpreted as displayed messages.
The message is stored in the event memory at the same time.

8.3.1 Acknowledging alarm messages

An alarm message is displayed and:

- the machine is shut down and cannot be restarted.
- The «Information» key and «Stop» key are illuminated.
- the «Acknowledge» key flashes.

Precondition Fault rectified.

- Confirm the message with the «Acknowledge» key.

The «Information» key, «Stop» key, and «Acknowledge» key are illuminated.

8.3.2 Acknowledging warning and maintenance messages

A fault warning message or maintenance notification is displayed, and:

- the «Information» key illuminates,
- the «Acknowledge» key flashes.

Precondition The cause of the warning is rectified.
Maintenance task completed.

- Confirm the message with the «Acknowledge» key.
The «Acknowledge» key is extinguished but the «Information» key is still illuminated.



The «Information» key continues to be illuminated when the machine is restarted until the fault is rectified or maintenance has been carried out.
Upon maintenance, the maintenance interval counter must be reset.

Further information For more information about the event memory and resetting the maintenance timer, see the separate operating manual for the SIGMA CONTROL MOBIL.

8.4 Option bb Coolant pre-heating

- Start the coolant pre-heater as described in chapter 7.4.2.

8.5 Option lb Shutting down if any dangerous situation arises

If there is danger of the engine drawing in flammable gas mixture from the surroundings, the air intake shut-off valve can be manually closed to bring it to an immediate stop.

A handle is provided to close the air intake valve. A wire pulls the valve closed, preventing air from entering the engine and causing it to stop.

Precondition Flammable gas mixture is detected in the surrounding air.

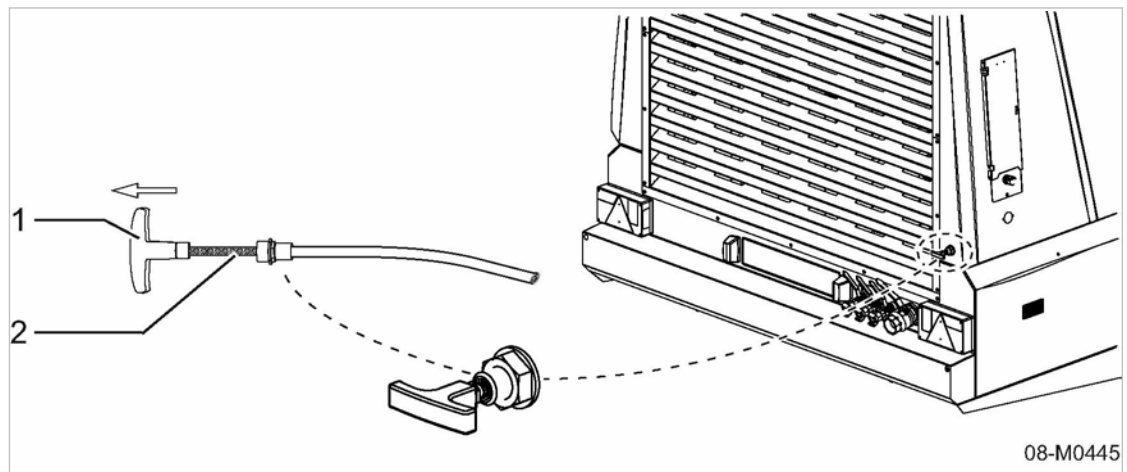


Fig. 40 Handle for manually closing the engine air intake valve

- ① Handle
- ② Pull wire

Closing the engine air intake valve manually:

- Pull the handle out as far as it will go and hold until the engine comes to a complete stop. The engine stops within a few seconds.

Restarting the machine:



The engine air intake valve is self-opening but this can take a few minutes. The pull wire cannot be pushed in.

Check whether the handle has returned to start position and the engine air intake valve is open again. Otherwise, the engine cannot be restarted.

Precondition No flammable gas is detected in the surrounding air.

- Check the position of the air intake valve handle.

The pull wire is completely drawn in by the engine air intake valve: The machine can now be started.

If the pull wire is not completely drawn in and has not returned the handle to its withdrawn position, wait until this is completed.

8.6 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 thus 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 sealed floor pan.

- Drain the water.



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

Further information See chapter 10.11.6 for information to the draining of liquids within the machine.

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 SIGMA CONTROL MOBIL 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)

Alarm with automatic machine shut-down function.

The «Acknowledge» key flashes. The «Information» key and the «STOP» key are illuminated.



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.

Message codes, range 1100 – 1199 "engine faults":

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1100	Fault – oil pressure low	Check the engine oil level.	10.4.4	–	–
		Have the engine oil pressure checked.	–	X	–
		Have the oil pressure switch checked.	–	X	X
1101	Fault – oil pressure sensor	Have the sensor changed.	–	X	X

SW = specialised workshop; KS = KAESER SERVICE

SCM - SIGMA CONTROL MOBIL; ECU - Motor electronic

SCR - Selective Catalytic Reduction

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1104	Fault oil temperature.	Have checked.	–	X	X
1110	Fault – coolant temperature high	Check the coolant level.	10.4.1	–	–
		Clean the cooler.	10.6	–	–
		Check the water cooling system.	–	X	X
1111	Fault – coolant level too low.	Check the coolant level.	10.4.1	–	–
1112	Fault – coolant level sensor.	Have the sensor changed.	–	X	X
1120	Fault – fault in turbo air pressure	Have the turbo air pressure sensor checked.	–	X	X
1121	Fault – turbo air temperature high	Check operating conditions.	5.2	–	–
		Allow the machine to cool down.			
		Clean the cooler.	10.6	–	–
1122	Fault – sensor turbo air pressure.	Have the sensor changed.	–	X	X
1123	Fault – sensor turbo air temperature.	Have the sensor changed.	–	X	X
1124	Fault - engine fault air flow meter	Have checked.	–	X	X
1130	Fault – engine fuel level too low.	Refuel.	–	–	–
1131	Fault – fuel temperature high	Allow the machine to cool down.	–	–	–
1132	Fault – fuel pressure low	Have checked.	–	X	X
		Clean / replace the fuel filter.	10.4.3	–	–
1133	Fault – sensor fuel temperature.	Have the sensor changed.	–	X	X
1134	Fault – sensor fuel pressure.	Have the sensor changed.	–	X	X
1135	Fault – fuel pump	Have checked.	–	X	X
1136	Fault – floor pan fluid level.	Drain the liquid.	10.11.6	–	–
1140	Fault – engine generator does not load.	Have checked.	–	X	X

SW = specialised workshop; KS = KAESER SERVICE

SCM - SIGMA CONTROL MOBIL; ECU - Motor electronic

SCR - Selective Catalytic Reduction

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1141	Fault – ECU power supply	Battery maintenance.	10.4.8	–	–
		Check battery charging system.	–	X	X
1150	Fault – ECU other faults	Have checked.	–	X	X
1151	Fault – ECU-SCM communication (ECU end)	Have checked.	–	X	X
1160	Fault – rail pressure sensor	Have checked.	–	X	X
1161	Fault – speed sensor	Have checked.	–	X	X
1170	Fault – automatic start fault	Have checked.	–	–	X
1171	Fault – manual stop automatic mode	Unblock.	8.2.7	–	–
		Have checked.	–	–	X
1180	Fault – Diesel particle filter fault	Check the diesel particulate filter.	–	–	X
1181	Fault – AdBlue level low.	Fill tank.	–	–	–
1185	Fault – fault in emission treatment	Have the emission treatment checked.	–	–	X
1186	Fault message emission treatment – temperature high	Have the emission treatment checked.	–	–	X
1187	Fault message emission treatment – regeneration	Have the emission treatment checked.	–	–	X
1189	Fault SCR System error.	Have checked.	–	X	X

SW = specialised workshop; KS = KAESER SERVICE

SCM - SIGMA CONTROL MOBIL; ECU - Motor electronic

SCR - Selective Catalytic Reduction

Tab. 53 Alarm messages and actions concerning the engine.

Message codes, range 1200 – 1299 “compressor faults”:

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1200	Fault – air discharge temperature high	Check operating conditions. Allow the machine to cool down.	5.2	–	–
		Check the cooling oil level.	10.5.1	–	–
		Clean the cooler.	10.6	–	–

SW = specialised workshop; KS = KAESER SERVICE

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1201	Fault – oil separator tank pressure high	Have checked.	–	–	X
1202	Fault - oil separator tank temperature high at the air discharge port	Check the cooling oil level.	10.5.1	–	–
		Clean the cooler.	10.6	–	–
		Change oil separator cartridge.	10.5.6	–	–

SW = specialised workshop; KS = KAESER SERVICE

Tab. 54 Alarm messages and actions concerning the compressor unit

Message codes, range 1300 – 1399 “controller faults”:

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1300	Fault – PLC memory error	Have checked.	–	–	X
1301	Fault PLC - GSM communication	Have checked.	–	–	X
1302	Fault PLC – HMI communication	Have checked.	–	–	X
1303	Fault PLC – temperature high	Check operating conditions. Allow the machine to cool down.	5.2	–	–
1304	Fault – PLC power supply	Have checked.	–	–	X
1310	Fault – fault in watchdog	Have checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

PLC = Programmable logic controller; GSM = Global system for mobile communications; HMI = Controller display

Tab. 55 Alarm messages and actions concerning the controller.

Message codes, range 1400 – 1499 “general faults”:

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1400	Fault message EMERGENCY STOP («QUICK STOP»).	Unlatch the «QUICK STOP» button	8.2.7	–	–
		Have checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

GSM = Global system for mobile communications

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
1410	Fault – oil separator tank pressure sensor open circuit	Have repaired.	–	–	X
1411	Fault – oil separator tank pressure sensor short-circuit	Have repaired.	–	–	X
1412	Fault – inlet valve pressure sensor open circuit	Have repaired.	–	–	X
1413	Fault – inlet valve pressure sensor short-circuit	Have repaired.	–	–	X
1414	Fault – airend discharge temperature sensor open circuit	Have repaired.	–	–	X
1415	Fault – airend discharge temperature sensor short-circuit	Have repaired.	–	–	X
1416	Fault – fuel level sensor open circuit	Have repaired.	–	–	X
1417	Fault – fuel level sensor short-circuit	Have repaired.	–	–	X
1420	Fault – venting valve open circuit	Have repaired.	–	–	X
1421	Fault – venting valve open circuit	Have repaired.	–	–	X
1422	Fault – auxiliary venting valve open circuit	Have repaired.	–	–	X
1423	Fault – auxiliary venting valve short-circuit	Have repaired.	–	–	X
1424	Fault – inlet valve control valve open circuit	Have repaired.	–	–	X
1425	Fault – inlet valve control valve short-circuit	Have repaired.	–	–	X
1426	Fault – frost protector valve open circuit	Have repaired.	–	–	X
1427	Fault – frost protector valve short-circuit	Have repaired.	–	–	X
1450	Fault – GSM module control locked	Unblock GSM/GPS module.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

GSM = Global system for mobile communications

Tab. 56 General alarm messages and measures

9.2.2 Warning message on the controller

The machine is not shut down.

The «Acknowledge» key flashes. The «Information» key illuminates.



- In the case of an overheating warning, the machine switches automatically to IDLE to cool down.
- You must acknowledge the warning message upon correction of 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
3100	Warning - engine oil pressure low.	Check the engine oil level.	10.4.4	–	–
		Have the engine oil pressure checked.	–	X	–
		Have the oil pressure sensor checked.	–	X	X
3102	Warning – oil level low	Replenish engine oil.	10.4.5	–	–
3103	Warning – oil level low	Checking the engine oil level, drain if necessary.	10.4.4	–	–
3104	Warning - oil temperature.	Have checked.	–	X	X
3105	Warning – oil quality bad.	Change oil.	10.4.6	X	X
3100	Warning - engine oil pressure low.	Check the engine oil level.	10.4.4	–	–
		Have the engine oil pressure checked.	–	X	–
		Have the oil pressure sensor checked.	–	X	X
3102	Warning – oil level low	Replenish engine oil.	10.4.5	–	–
3103	Warning – oil level low	Checking the engine oil level, drain if necessary.	10.4.4	–	–
3110	Warning – coolant temperature high	Check the coolant level.	10.4.1	–	–
		Clean the cooler.	10.6	–	–
		Check the water cooling system.	–	X	X

SW = specialised workshop; KS = KAESER SERVICE

SCR = Selective Catalytic Reduction; DPF - Diesel particulate filter

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

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
3121	Warning – turbo air temperature high	Check operating conditions. Allow the machine to cool down.	5.2	–	–
		Clean the cooler.	10.6	–	–
		Have the turbo air pressure sensor checked.	–	X	X
3130	Warning – engine fuel level low.	Refuel.	–	–	–
3131	Warning - fuel temperature high.	Check operating conditions. Allow the machine to cool down.	5.2	–	–
		Have checked.	–	X	X
3132	Warning - fuel temperature high.	Have checked.	–	X	X
3133	Warning - fuel temperature sensor faulty.	Have checked.	–	X	X
3134	Warning - fuel pressure sensor faulty.	Have checked.	–	X	X
3136	Warning – fuel filter water level.	Empty the fuel filter (water trap)	10.4.3	–	–
3154	Warning - drive motor sensor fault	Have checked.	–	X	X
3155	Warning - drive motor actuator fault	Have checked.	–	X	X
3181	Warning – AdBlue level low.	Fill AdBlue tank.	–	–	X
3182	Warning – Torque reduction active.	Fill AdBlue tank.	–	–	X
3183	Warning – Torque reduction next engine start.	Fill AdBlue tank.	–	–	X
3184	Warning – fault in ambient temperature sensor	Check/repair.	–	–	X
3185	Warning message - fault in emission treatment	Have the emission treatment checked.	–	–	X
3186	Warning message emission treatment - temperature high	Have the emission treatment checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

SCR = Selective Catalytic Reduction; DPF - Diesel particulate filter

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

Code	Meaning	Remedy	see chapter	Where can I get help?	
				SW	KS
3187	Warning message emission treatment – regeneration	Have the emission treatment checked.	–	–	X
3188	Warning – standstill regeneration required.	Start the standstill regeneration.	UM SCM	–	–
3189	Warning - SCR System error.	Have checked.	–	X	X
3190	Warning - DPF exchange required.	Have the DPF replaced.	–	X	–

SW = specialised workshop; KS = KAESER SERVICE

SCR = Selective Catalytic Reduction; DPF - Diesel particulate filter

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

Tab. 57 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 operating conditions. Allow the machine to cool down.	5.2	–	–
		Check the cooling oil level.	10.5.2	–	–
		Clean the cooler.	10.6	–	–
3201	Warning – OST pressure high	Have checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

Tab. 58 Warning messages and measures relating to the compressor

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
Press the «QUICK STOP» button.	Unlatch the «QUICK STOP» button, see chapter 8.2.7.	–	–
Defective starter.	Have changed.	X	–
Engine electrical fault	Have repaired/changed.	X	–
Fuel tank empty.	Fill up the fuel tank	–	–

SW = specialised workshop; KS = KAESER SERVICE

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 changed.	X	–
Defective control fuse or relay.	Have repaired or replaced if necessary.	X	X
Airend discharge temperature too high.	Have checked.	–	X
SIGMA CONTROL MOBIL defective.	Have repaired/changed.	–	X
Electrical connections and/or cables loose or broken	Tighten the connection or have the cable replaced.	X	–
Defective batteries or low charge.	Maintain batteries, see chapter 10.9.	–	–
Motor alternator defective.	Have changed.	X	–
Defective alternator regulator.	Have changed.	X	–
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 = specialised workshop; KS = KAESER SERVICE

Tab. 59 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 changed.	X	–
Engine electrical fault	Have repaired/changed.	X	–
SIGMA CONTROL MOBIL defective.	Have repaired/changed.	–	X
Torque reduction active.	Check/top up the reducing agent in the tank.	X	X
	Have the exhaust system checked.	X	X

SW = specialised workshop; KS = KAESER SERVICE

Tab. 60 Alarm: "engine does not reach full speed".

9.4 Analysing compressor faults and alarms

9.4.1 Working pressure too high

Possible cause	Remedy	Where can I get help?	
		SW	KS
SW = specialised workshop; KS = KAESER SERVICE			
Proportional controller defective.	Have repaired or replaced if necessary.	–	X
Inlet valve does not close.	Check the controller, the control air line and the inlet valve and replace if necessary.	–	X
Pressure gauge indicating false pressure.	Have repaired or replaced if necessary.	–	X
Venting valve does not blow off.	Check the connections and function and have repaired or replaced as necessary.	–	X

Tab. 61 Fault: working pressure too high

9.4.2 Working pressure too low.

Possible cause	Remedy	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 replaced if necessary.	–	X
Pressure gauge indicating false pressure.	Have repaired or replaced if necessary.	–	X
Pressure relief valve maladjusted and/or leaking.	Have repaired or replaced if necessary.	–	X
Venting valve does not close.	Check the connections and function and have 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 10.5.7.	–	–
Oil separator cartridge heavily clogged.	Change, see chapter 10.5.6.	–	–
SW = specialised workshop; KS = KAESER SERVICE			

Tab. 62 Fault: working pressure too low

9.4.3 Pressure relief valve blowing off

Possible cause	Remedy	Where can I get help?	
		SW	KS
Oil separator cartridge heavily clogged.	Change, see chapter 10.5.6.	–	–
Inlet valve does not close.	Check the controller, the control air line and the inlet valve and replace if necessary.	–	X
Pressure relief valve maladjusted and/or leaking.	Adjust or have replaced if necessary.	–	X

SW = specialised workshop; KS = KAESER SERVICE

Tab. 63 Fault: pressure relief valve blowing off

9.4.4 Machine overheating

Possible cause	Remedy	Where can I get help?	
		SW	KS
Defective cooling fan.	Have the fan wheel replaced.	–	X
Oil cooler surface clogged.	Clean surface, see chapter 10.6.	–	–
The working element of the combination valve not workingl.	Have repaired or replaced if necessary.	–	X
Working pressure too high (proportional controller maladjusted).	Reset to the permissible value or have replaced.	–	X
Oil separator cartridge heavily clogged.	Measure the pressure differential and change the cartridge if greater than 1 psig. Change, see chapter 10.5.6.	–	X
Compressor oil filter cartridge clogged.	Change, see chapter 10.5.4.	–	–
Compressor cooling oil level too low.	Replenish (see chapter 10.5.2).	–	–
Oil pipes leaking.	Seal leaks or have pipes changed.	X	X
Engine cooling system or cooling fan defective.	Have repaired.	X	X
Ambient temperature too high.	See installation conditions in chapter 5.2.	–	–

SW = specialised workshop; KS = KAESER SERVICE

Tab. 64 Fault: machine overheating

9.4.5 Too much oil residue in the compressed air

Possible cause	Remedy	Where can I get help?	
		SW	KS
Oil separator cartridge scavenge line clogged.	Clean the oil separator cartridge dirt trap or replace the strainer and nozzle if necessary. See chapter 10.5.5	–	X
Fractured oil separator cartridge.	Change, see chapter 10.5.6.	–	–
Oil level in the oil separator tank too high.	Reduce to maximum level, see chapters 10.5.1 and 10.5.3.	–	–

SW = specialised workshop; KS = KAESER SERVICE

Tab. 65 Alarm: "Too much oil residue in the compressed air"

9.4.6 Oil flows from the compressor air filter after shutdown

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

SW = specialised workshop; KS = KAESER SERVICE

Tab. 66 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	Remedy	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 10.11.1	–	X

SW = specialised workshop; KS = KAESER SERVICE

Tab. 67 Fault: high moisture content in the compressed air

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 warnings

Disregard of safety warnings 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
	Do not activate the machine.
	Warning: The machine is being serviced.

Tab. 68 Advise others that the machine is being serviced

- Before switching on, make sure that:
 - no personnel 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 pressure 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.
- Depressurize all pressurized 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 electrically-live components can result in serious injury.

- 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 authorized 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 MOBIL displays selected maintenance intervals. The display begins 25 operating hours before the maintenance interval will expire.

When the machine is switched on, the «Information» key illuminates. The «Acknowledge» key flashes.

- 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 10.3.3.1.

Code	Meaning	Remedy	see chapter
Message code, range 2100 – 2199 “engine maintenance”			
2100	Maintenance message drive motor - re-new oil filter	Change the engine oil filter. (every 500 hours)	10.4.7
2101	Maintenance message drive motor - clean/replace air filter.	Clean or change air filter. (every 500 hours)	10.4.2
2102	Maintenance message drive motor - change the oil	Change the engine oil. (every 500 hours)	10.4.6
Message codes, range 2200 – 2299 “compressor unit maintenance”			
2200	Maintenance message compressor - re-new oil filter	Replace the compressor oil filter. (every 1000 hours)	10.5.4
2201	Maintenance message compressor - clean/replace the air filter.	Clean or change the compressor air filter. (every 250 hours)	10.5.7
h - operating hours			

Code	Meaning	Remedy	see chapter
2201	Maintenance message compressor - change the cooling oil.	Replace the compressor cooling oil. (every 1000 hours)	10.5.3

h - operating hours

Tab. 69 Maintenance messages and required actions

10.2.2 Concluding the maintenance

Acknowledge the maintenance message:

Precondition Maintenance has been carried out.

- Acknowledge the maintenance message as described in chapter 8.3.

Resetting the maintenance interval counter

Precondition Maintenance is carried out and the maintenance message is acknowledged.

- Reset the maintenance timer as described in the separate operating manual for the SIGMA CONTROL MOBIL 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 or low temperatures
- a lot of dust
- frequent use

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

- Log 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 10.12.

10.3.2 Maintenance tasks after commissioning

The table below lists maintenance tasks required after commissioning (initial start-up).

- Carry out maintenance tasks according to the following schedule.

Maintenance tasks on the chassis after commissioning:

Component: Task	After first trip under load	K50	K100/A250 *	see chapter	Note
Chassis:					
Re tighten the wheel nuts/bolts.	X	X			
Re-tighten the screws of the towing mechanism.	X	X			
Have brake system inspected and adjusted, if necessary.			X	10.10.3	KS; SW

K50 = after approx. 50 driven kilometres; K100 = after approx. 00 – 200 driven kilometres
A250 = every 250 h, at least annually; * Whichever occurs first
KS = Contact KAESER SERVICE; SW = Contact specialised workshop

Tab. 70 Maintenance tasks on the chassis after commissioning

10.3.3 Regular maintenance tasks

The table below 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 1,000 h, at least annually.	A1000
Every 1,500 h, at least annually.	A1500
Every 2,000 h, at least every 2 years	A2000
Every 3,000 operating hours	A3000
Every 6,000 operating hours	A6000
Every 20,000 operating hours	A20000
Every 36,000 h, at least every 6 years	A36000

Tab. 71 Maintenance intervals

The table below lists regular maintenance tasks required.

1. Carry out maintenance tasks punctually, taking ambient and operating conditions into consideration.
2. Replace spare parts and operating fluids according to site conditions.

10.3.3.1 Machine maintenance schedule

- Carry out maintenance tasks according to the following schedule.

Component: Task	Daily	A250	A500	A1000	A2000	A36000	see chapter	Note
Engine:								
Check the oil level.	X						10.4.4	
Clean the 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 engine belt tension and re-tension if necessary.			X				10.4.9	KS; SW
Replace the engine air filter.				X			10.4.2	
Check the inlet line between air filter, turbo air cooler and engine.			X					KS; SW
Have intercooler maintained.					X			KS; SW
Have the turbocharger checked.					X			KS; SW
Have the engine mounts checked.				X				KS; SW
Have the valve clearance adjusted.				X				KS; SW
Check the engine coolant level.	X						10.4.1	
Clean the cooler.		X					10.6	
Check radiator hose and hose clips, have replaced if necessary.			X					
Check antifreeze concentration.			X				10.4.1	KS; SW
Change the coolant.				X			10.4.1	KS; SW
Fill up the fuel tank	X							
Emptying the fuel pre-filter (water trap)	X						10.4.3	
Clean the tank fuel strainer.			X					
Cleaning the fuel tank.			X					
Check fuel lines and hose clamping bands, have replaced if necessary.			X					KS; SW
Check the fuel return line for leakage and firm fixing.			X					
Change the fuel pre-filter.				X			10.4.3	KS; SW

KS = call KAESER SERVICE; SW = contact specialised workshop

Component: Task	Daily	A250	A500	A1000	A2000	A36000	see chapter	Note
Replace the fuel fine filter.				X			10.4.3	KS; SW
Check the battery electrolyte level and connections.			X				10.4.8	
Have the alternator checked.					X			KS; SW
Check lines, hoses and sensor cables.			X					KS; SW
Check fuel tanks for secure fixing.		X					10.4.10	
Compressor:								
Check the cooling oil level.	X						10.5.1	
Clean the compressor air filter.		X					10.5.7	
Clean the oil cooler.		X					10.6	
Have the pressure relief valve(s) checked.			X				10.5.8	KS; SW
Check/clean the oil separator tank dirt trap.			X				10.5.5	
Change the compressor air filter.				X			10.5.7	
Change the cooling oil.				X			10.5.3	
Change the compressor oil filter.				X			10.5.4	
Change the separator cartridge in the oil separator tank.					X		10.5.6	KS; SW
Check belt tension and re-tension if necessary.			X				10.7	KS; SW
Maintain the fan shaft bearing			X				10.8	
Chassis/bodywork								
Check all screw connections, hinges, locks, handles and snap fasteners of the doors for wear and secure fixing.		X						
Grease the door hinges.			X					
Lubricate the catch mechanism (fastener).		X					10.10.5	
Carry out rubber sealing strip maintenance.			X				10.9	
Have lifting eye and fixings checked.			X					KS; SW

Other maintenance tasks

KS = call KAESER SERVICE; SW = contact specialised workshop

Component: Task	Daily	A250	A500	A1000	A2000	A36000	see chapter	Note
Check all accessible screw fittings, pipes and clamps for wear and tightness.			X					
Check hoses for proper seating, leaks and wear.			X					
Have the plastic pipes and hose lines been replaced.						X		KS; SW
Check that all electrical connections are tight.			X					

KS = call KAESER SERVICE; SW = contact specialised workshop

Tab. 72 Regular machine maintenance tasks

10.3.3.2 Maintenance schedule for options

- Carry out maintenance tasks according to the following schedule.

Option: Task	Daily	A250	A500	A1000	see chapter	Note
Option Id – Emission after-treatment with SCR catalytic converter						
Filling reduction agent (tank).	X					
Have the SCR-System checked/serviced.			X			KS; SW
Have the reduction agent pressure accumulator (at supply unit) be filled.			X			KS; SW
Have the reduction agent filter replaced.				X		KS; SW
Check reduction agent container for secure fixing.		X			10.4.10	
Option da, db, dc, dd – cyclone separator:						
Clean and check the dirt trap.			X		10.11.1	
Options da, db, dc, dd – compressed air aftercooler:						
Clean the cooler.		X			10.6.2	
Option dd – filter combination:						
Drain condensate.	X				10.11.2	
Change the filter elements.			X		10.11.2	

KS - Contact KAESER SERVICE, SW = Contact specialised workshop, EL= Contact qualified electrician
 SCR - Selective Catalytic Reduction

Option: Task	Daily	A250	A500	A1000	see chapter	Note
Option dc – fresh air filter:setting dimension:						
Drain condensate.	X				10.11.3	
Check the oil indicator.	X				10.11.3	
Change the filter elements.			X		10.11.3	
Option bb – engine coolant pre-heater:						
Have the coolant pre-heating and associated wiring checked.			X			EL KS; SW
Option la – spark arrestor						
Clean the spark arrestor.		X			10.11.4	
Blow out the spark arrester with compressed air.			X			
Option lb - engine air intake shut-off valve						
Clean/check the engine air intake shut-off valve.		X			10.11.5	
KS - Contact KAESER SERVICE, SW = Contact specialised workshop, EL= Contact qualified electrician						
SCR - Selective Catalytic Reduction						

Tab. 73 Regular maintenance task options

10.3.3.3 Chassis maintenance schedule

The following table lists the maintenance intervals for the chassis.

Maintenance interval	Short description
Daily	–
Weekly	–
After approximately 50 km	K50
Every 2,000 km, at least semi-annually.	K2000
Every 5,000 km, at least semi-annually.	K5000
Every 10,000 km, at least annually.	K10000

Tab. 74 Chassis maintenance intervals and regular maintenance tasks

- Carry out maintenance tasks according to the following schedule.

Component: Task	Daily	Weekly	K50	K2000	K5000	K10000	see chapter	Note
Wheels:								
Check the tire pressures.					X		10.10.1	
Check wheel bolts and nut for tightness.					X		10.10.1	
<i>after wheel change:</i> Check wheel bolts and nut for tightness.			X					
Check the tires and rims.					X			
Tow bar:								
Grease the ball coupling, joints and tow bar.						X	10.10.2	
Checking the tow bar.					X		10.10.2	
Check the tow bar for deformation and cracks.					X			
Brake system:								
Brake maintenance.						X	10.10.3	KS; SW
Check wear on the brake linings.						X	10.10.3.2	
Have the wheel brakes adjusted.						X		KS; SW
Service the parking brake.					X		10.10.2 or 10.10.3	
Have the parking brake checked.						X		KS; SW
Pneumatic brake system:								
Drain the compressed air tank of the brake system.		X					10.10.4	
Lubricate the brake lever guide.						X	10.10.4	
Have pressure brake system maintained.				X				KS; SW
Jockey wheel:								
Check for secure fixing and function.						X		KS; SW
Grease the components.						X		
Chocks:								
Check the number and condition of the chocks.	X							
KS = call KAESER SERVICE; SW = contact specialised workshop								

Component: Task	Daily	Weekly	K50	K2000	K5000	K10000	see chapter	Note
General:								
Check the axle for deformation and cracks.					X			
Tighten screw connections.					X			
KS = call KAESER SERVICE; SW = contact specialised workshop								

Tab. 75 Regular chassis maintenance tasks

10.4 Engine maintenance

- Perform maintenance tasks according to the schedule in chapter 10.3.3.1.

10.4.1 Water cooler maintenance

Material

- Coolant
- Coolant tester
- Receptacle
- Drain hose with hose coupling is disconnectedly laying at the machine
- 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.

⚠ WARNING

Danger of scalding by hot coolant!

Serious injuries can be caused by hot coolant.

- *Let the machine cool down before opening the cooling system.*

⚠ CAUTION

Risk of chemical burns from coolant containing antifreeze!

- *Avoid eye and skin contact with coolant. If the eyes are affected, rinse immediately with running water.*
- *Wear protective glasses and gloves.*

NOTICE

*Insufficient coolant can damage the engine.
Insufficient coolant will cause the engine to overheat. Overheating can cause serious damage to the engine.*

- Check the coolant level daily.
- Top up the coolant as necessary.

- Open both left-hand doors.

10.4.1.1 Checking coolant level

The coolant level in the engine cooling circuit must be checked daily prior to startup.

Use the sight glass of the coolant expansion tank to check the coolant level. The coolant must be visible in the sight glass.

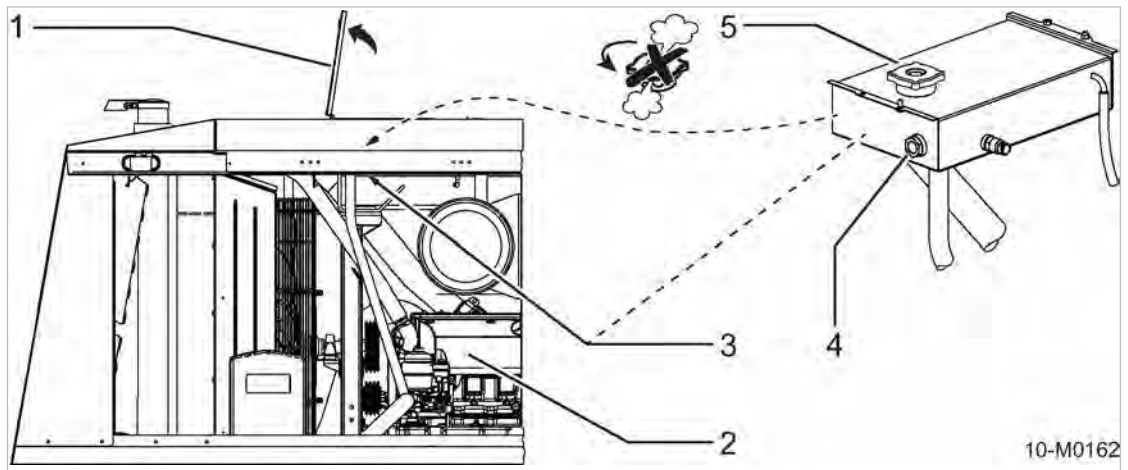


Fig. 41 Checking coolant level

- | | |
|--|-----------------------------|
| ① Service cover of coolant expansion tank opened | ④ Coolant level sight glass |
| ② Left-hand front door opened | ⑤ Filler port with cap |
| ③ Coolant equalising tank | |

1. Check coolant level.
If you cannot see coolant in the sight glass: Replenish the coolant.
2. Close the doors.



Have the cause for the coolant loss determined and rectified.

10.4.1.2 Checking the coolant

The coolant should be checked according to the maintenance schedule to ensure quality and operational life.

Coolant quality can be determined by the following parameters:

- Visual check
- Antifreeze concentration measurement

1. Unlock the service cover of the coolant expansion tank (on the roof) from inside and lift up.
2. Slowly open the cap on the coolant filler by a quarter to half of a turn to allow pressure to escape.
3. Then remove the filler cap completely.

Visual check

The coolant should be checked for its colour and any particles or sediments floating in it.

- Take a coolant sample and analyze.

The coolant is discoloured and/or has contains floating particles. Change the coolant.

Antifreeze concentration measurement

An instrument (e.g. refractometer) is used to check antifreeze concentration.

Maximum frost protection is ensured with an antifreeze concentration of 55% by volume, as frost protection and heat transfer properties deteriorate beyond this point. Higher concentration also leads to higher operating temperature.

1. **▲ CAUTION** *The engine can be damaged if the antifreeze concentration is insufficient.*
Corrosion
Damage to the cooling system
Engine casing fracture
 - *Check coolant.*
 - *Protect the coolant against frost.*
 - *Top up as necessary.*
2. Use the coolant tester as instructed by the manufacturer to test the coolant.
If the concentration of antifreeze is too low, Change the coolant.

Performing final work steps:

1. Screw in the cap and close the service cover.
2. Close the doors.

10.4.1.3 Mixing coolant

Never use water without coolant additive. Water alone is corrosive at engine operating temperature. Water alone does not offer sufficient protection from boiling or freezing.

The coolant is a mixture of clean, fresh water and antifreeze with corrosion inhibitor.

For reasons of corrosion protection and the need to raise the boiling point, the coolant must remain in the cooling system throughout the year.

The maximum permissible coolant life is 2 years.

- Follow coolant recommendations in chapter 2.6.4.

Preparing coolant

Precondition Coolant must meet the specification of ASTM D4985.

- The coolant should be mixed in the proportions given by the manufacturer.

KAESER coolant mixture table

Antifreeze	Water	Frost protection to [°F]
1 part	2 parts	-0.4
1 part	1.5 parts	-13
1 part	1 part	-34.6

Tab. 76 KAESER coolant mixture table



The concentration of antifreeze should not be less than 33% for ensured corrosion protection.

10.4.1.4 Filling and topping up the coolant

The proportion of antifreeze in the coolant should not fall below 33% to ensure frost and corrosion protection and prevent the build up of deposits in the cooling circuit. Topping up with water alone dilutes the antifreeze concentration and is forbidden.



Make sure that there is sufficient room for hot coolant to expand without overflowing.

Precondition The «battery isolating switch» is turned off.

1. Unlock the service cover of the coolant expansion tank (on the roof) from inside and lift up.
2. Slowly open the cap on the coolant filler by a quarter to half of a turn to allow pressure to escape.
3. Then remove the filler cap completely.
4. Mix coolant for topping up according to the table and top up the level to not higher than 3 cm below the filling neck.

The coolant must be visible in the sight glass.

5. Screw in the cap of the filler plug and close the service cover.
6. Open the left-rear door.
7. Turn on the «battery isolating switch».
8. Close all the doors.
9. Start the engine and allow to IDLE for about 1 minute.
10. Stop the engine.
11. Open both left-hand doors.
12. Check the coolant level.
If the coolant level in the expansion tank has decreased: Replenish the coolant.
13. Visually inspect for leaks.
14. Close the doors.

10.4.1.5 Draining the coolant

Precondition The machine has cooled down.
The «battery isolating switch» is turned off.

Draining the coolant:

The complete volume of coolant contained in the circuit can be drained from the radiator. This is done from a drain valve with the aid of a separate drain hose.

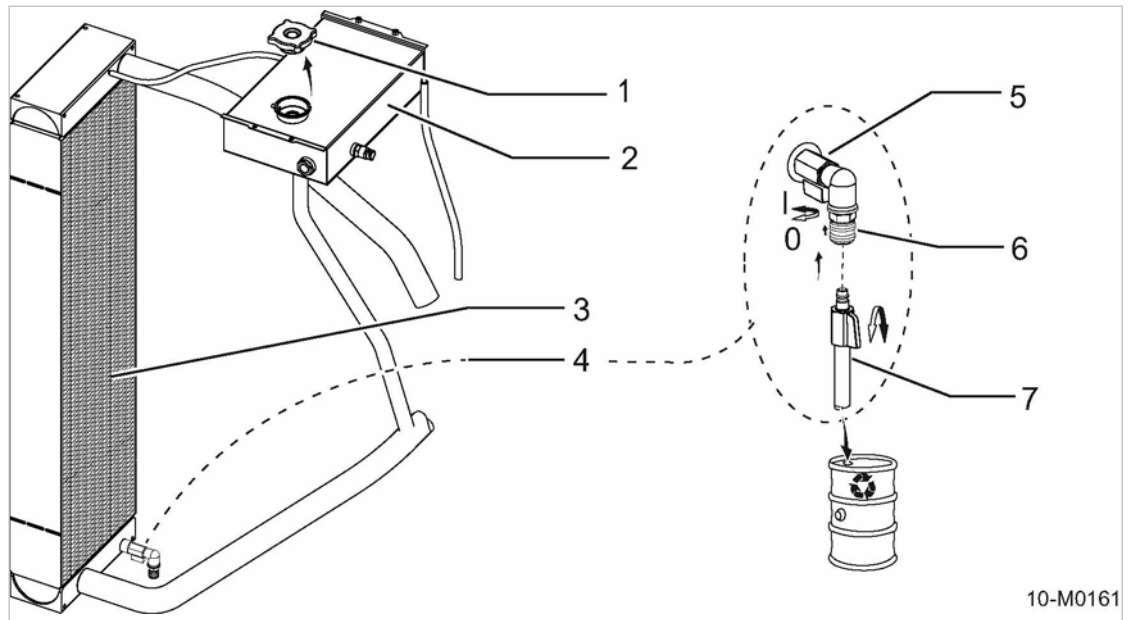


Fig. 42 Draining the coolant from the radiator

- | | |
|--------------------------------|--------------------------------|
| ① Filler cap | ⑤ Shut-off valve (ball valve) |
| ② Coolant equalising tank | I - open |
| ③ Water cooler | 0 - closed |
| ④ Coolant drain - water cooler | ⑥ Quick-release coupling |
| | ⑦ Drain hose with male fitting |

1. Unlock the service cover of the coolant expansion tank (on the roof) from inside and lift up.
2. Slowly open the cap on the coolant filler by a quarter to half of a turn to allow pressure to escape.
3. Then remove the filler cap completely.
4. Position a receptacle beneath the water cooler drain point (accessible through a hole in the floor panel).
5. Connect a drain hose (7) to the radiator quick-release coupling (6). If provided, open the shut-off valve at the nozzle of the draining hose.
6. Lead the hose through the hole in the floor panel and into the receptacle, securing it in place.
7. Open the shut-off valve (5) and catch the draining coolant.
8. Close the shut-off valve and remove the drain hose.
9. Screw in the cap of the filler plug and close the service cover.
10. Close the doors.

Option oe Draining the cooling oil (closed floor pan)

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine with closed floor pan. They are located at the rear of the machine, in a recessed connection box. The box can be accessed from below by removing a cover.

Coolant is drained via a pipeline screwed into the radiator drain point. The pipeline is closed with a shut-off valve and secured with an additional plug.

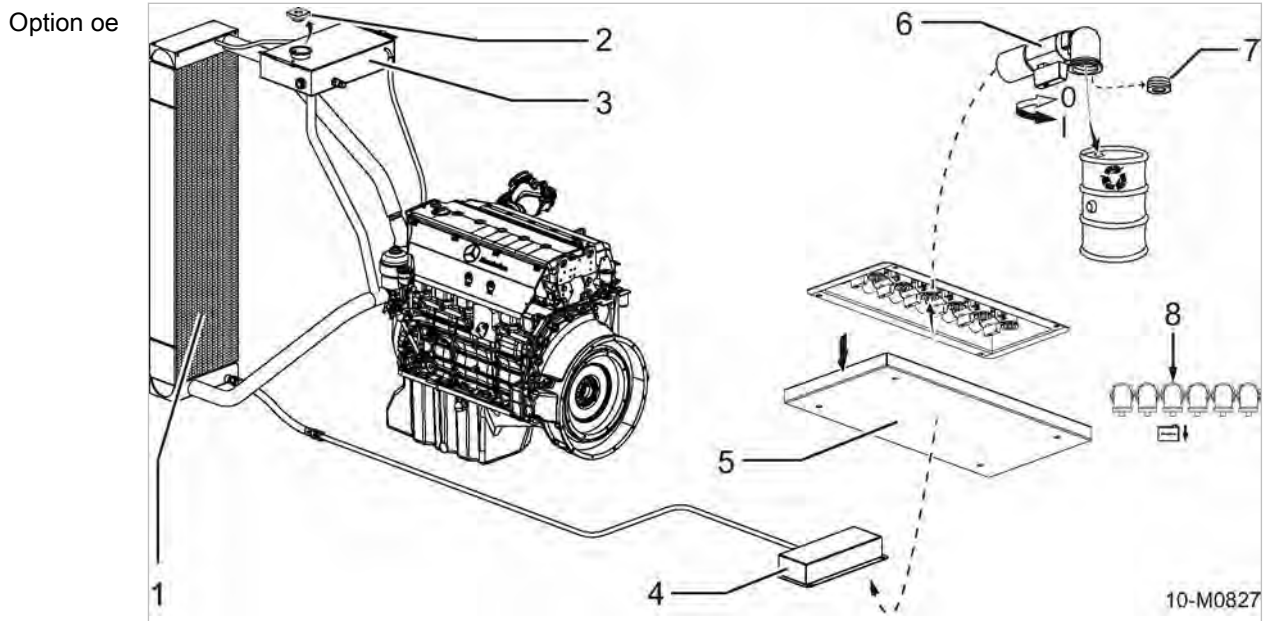


Fig. 43 Draining the coolant from the radiator (sealed floor pan)

- | | |
|--|---------------------------------------|
| ① Water cooler | ⑤ Connection box cover |
| ② Filler cap | ⑥ Shut-off valve (ball valve) |
| ③ Coolant equalising tank | I - open |
| ④ Connection box (central drain point for oil/coolant) | 0 - closed |
| | ⑦ Screwed sealing cap - coolant drain |
| | ⑧ Radiator drain |

1. Unlock the service cover of the coolant expansion tank (on the roof) from inside and lift up.
2. Slowly open the cap on the coolant filler by a quarter to half of a turn to allow pressure to escape.
3. Then remove the filler cap completely.
4. Remove the connection box cover (central draining point for oil/coolant).
5. Position a receptacle beneath the drainage location of the water cooler.
6. Unscrew the filler plug ⑦ at the coolant drain.
7. Open the shut-off valve ⑥ in the connection box and catch any draining coolant.
8. Close the shut-off valve and replace the screwed sealing cap.
9. Replace the cover of the terminal box again.
10. Screw in the cap of the filler plug and close the service cover.
11. Close the doors.

Removing scale within the water cooler

After extended periods of use, scale may form in the cooling circuit and within the water cooler in particular. Due to the resulting poorer heat transfer, the engine may overheat.

1. **NOTICE** *Scaling in the cooling circuit!*
Damage caused by engine overheating.
 - Use cooler cleaning agent to remove scaling in the water cooler.
2. Read and follow the manufacturer's instructions for using the cooler cleaning agent.
3. After draining the coolant, use a cooler cleaning agent to descale the water cooler.



- Dispose of used coolant in accordance with environmental protection regulations.

10.4.2 Engine air filter maintenance

Clean the filter no later than when the maintenance message displayed at the control unit indicates this is necessary.

Renew the air filter element after 2 years or after it has been cleaned 5 times.



- Using the drive motor 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 enter the engine and cause premature wear and damage.

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.
Wear in the engine from intake of contaminated air.

- Do not try to clean the filter element by striking or knocking it.
- Do not wash the filter element.

Analyzing the warning message on the controller

The air filter is connected by a sensor to the controller. The controller returns a warning message with rising degree of contamination in the air filter.

- The controller display will show "Service engine air filter".
- The «Information» key illuminates.
- The «Acknowledge» key flashes.



If this warning message triggers, maintenance of the engine air filter is required.

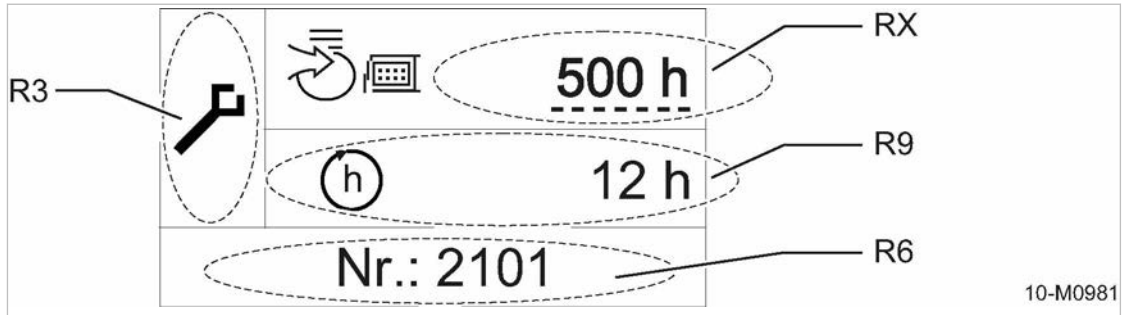


Fig. 44 Warning messages: Air filter engine intake maintenance

- R3 Event memory category: Maintenance
- R9 Time when maintenance is due.
- R6 Message codes
- RX Maintenance interval

- Maintain the filter.
- Open both left-hand doors.

Cleaning the air filter:

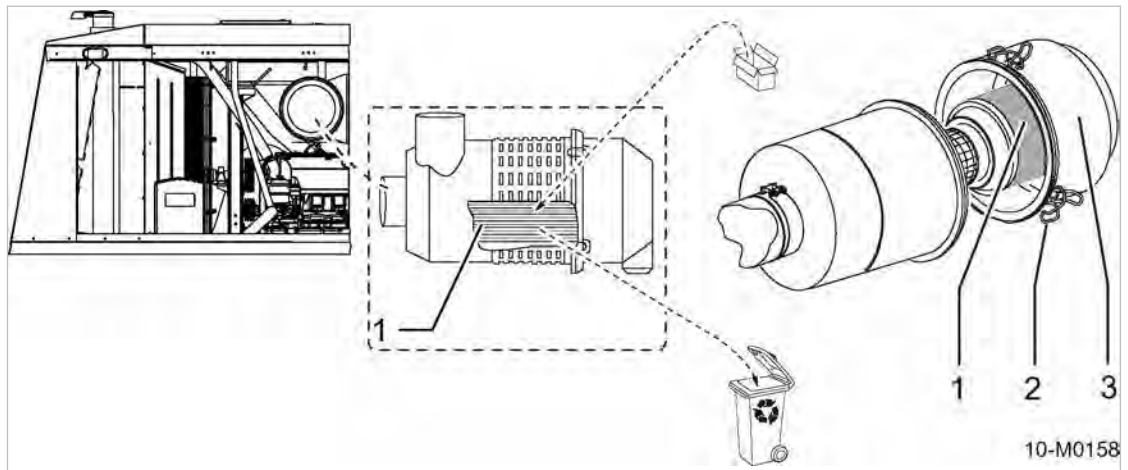


Fig. 45 Engine air filter maintenance

- 1 Filter element (air filter)
- 2 Retaining clip
- 3 Filter cap

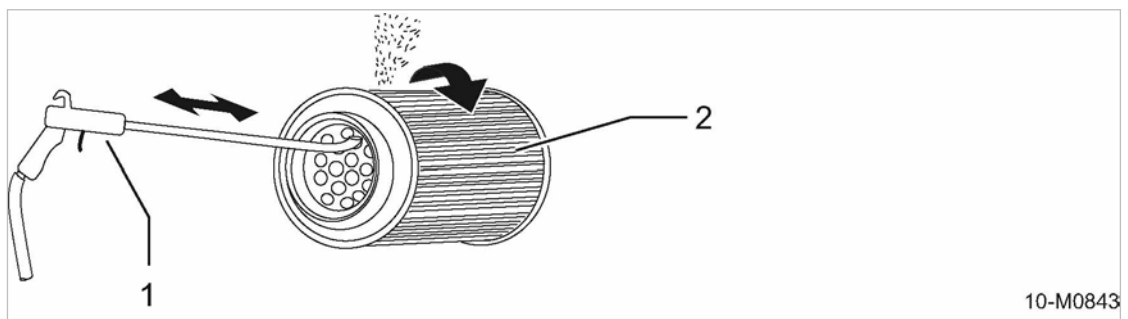


Fig. 46 Clean the filter element (air filter)

- 1 Compressed air gun with blast pipe bent to 90° at the end
- 2 Filter element (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 (≤ 72 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.

Concluding the maintenance:

Maintenance must be acknowledged after the air filter has been maintained.



For more information about acknowledging the maintenance message and resetting the maintenance timer, see the separate operating manual of the SIGMA CONTROL MOBIL

Precondition Air filter maintained

1. Acknowledge the maintenance message.
 - Confirm the message with the «Acknowledge» key.
 - The «Acknowledge» key is extinguished but the «Information» key is still illuminated.
2. Resetting the maintenance interval counter.
 - Simultaneously press and hold the «Acknowledge» and «Enter» keys for 2 seconds.
 - The system will automatically display the input menu for the password if no password is active.
 - Password (for example: Customer password: 4512) enter and confirm with the keypad.
 - Simultaneously press and hold the «Acknowledge» key and «Enter» for 2 seconds.

Result The maintenance interval counter is reset and the «Information» key extinguishes.

- Close the doors.



Dispose of old parts and contaminated materials according to 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
Wrench
Receptacle
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.
The «battery isolating switch» is turned off.

⚠ DANGER

*Danger of fire 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.
- Stop the engine.
- Wipe up escaped fuel.
- Keep fuel away from hot machine parts.

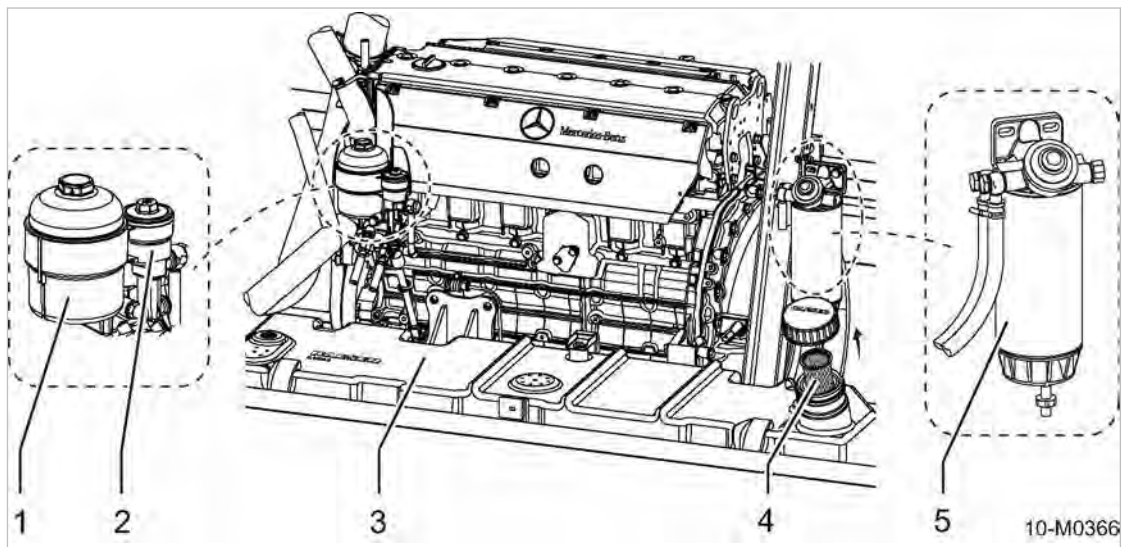


Fig. 47 Fuel system maintenance

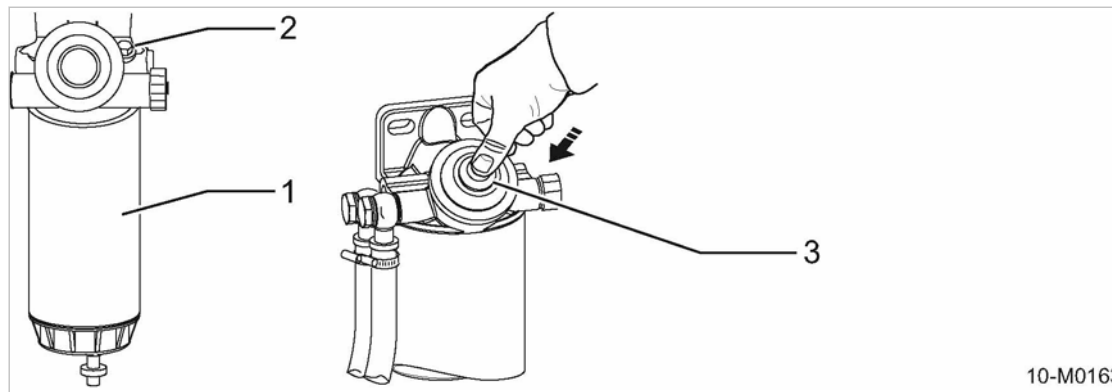
- | | |
|---------------------|--|
| ① Fuel micro-filter | ④ Fuel strainer |
| ② Fuel prefilter | ⑤ Fuel pre-filter with integrated water trap |
| ③ Fuel tank | |

- Open the left-rear 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.



10-M0163

Fig. 48 Bleeding the fuel system

- ① Fuel pre-filter with integrated water trap
- ② Bleed screw
- ③ Manual fuel pump

1. Place a receptacle beneath the water trap housing.
2. Open the bleed screw at the filter head.
3. Operate the fuel manual pump only until no more air bubbles appear in the fuel flowing from the bleed screw.
4. Close the bleed screw at the filter head.
5. Turn on the «battery isolating switch».
6. Close the door.



Start the engine as soon as the fuel system has been bled and allow to run for at least 5 minutes in IDLE.

7. Open the left-rear door.
8. Check the fuel water trap for leaks.
Fuel has escaped: Re-tighten filter cartridge and all screw connections.
9. Close the door.

10.4.3.2 Maintenance of the fuel pre-filter with water trap

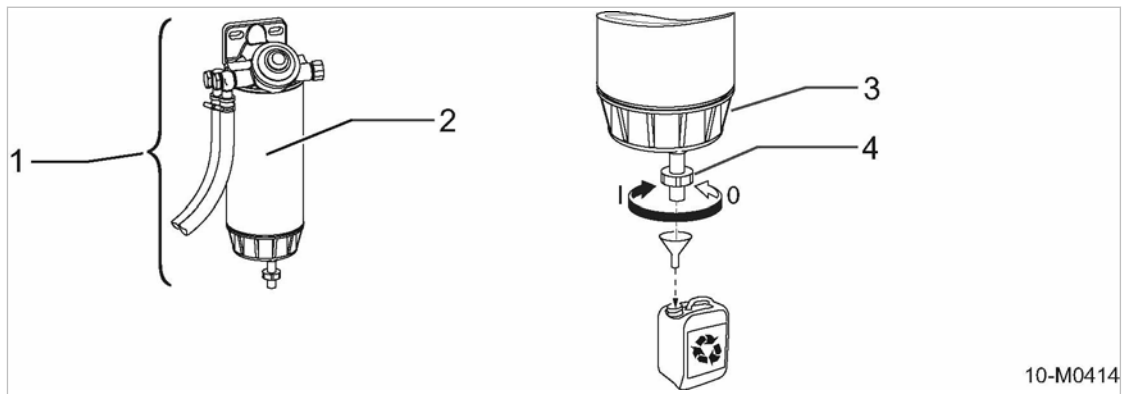


Fig. 49 Emptying the fuel pre-filter and water trap

- | | |
|--|--|
| ① Fuel pre-filter with integrated water trap | ③ Water receptacle |
| ② Filter cartridge | ④ Draining stopper (water drain valve) |
| | I - open |
| | O - close |

Check the fuel water separator:

Water, being denser than diesel fuel, sinks to the bottom of the separator tank. The water impurity also differs in colour from the fuel. A check should be made daily as to whether water and dirt has accumulated.

- Check the fuel in the transparent water trap.
- Fuel contaminated: Empty the fuel water separator immediately.

Empty the fuel water separator:

Precondition Water and/or contamination are visible in the water trap.

1. Place a receptacle beneath the fuel pre-filter housing.
2. Open the bleed screw.
3. Open the draining stopper in the bottom of the filter cartridge and drain water and contamination.
4. Close the dewatering tap and the bleed screw.
5. Turn on the «battery isolating switch».
6. Close the door.



The mixture of fuel and water and any materials contaminated with fuel must be disposed of in accordance with environment protection regulations.

Changing the filter cartridge:

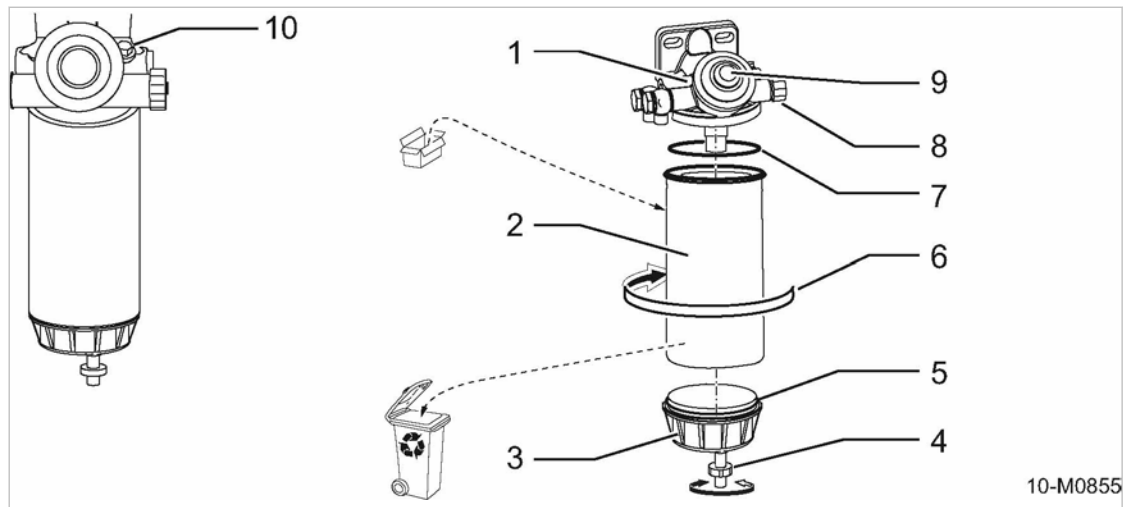


Fig. 50 Changing the fuel pre-filter cartridge

- | | |
|--|---|
| ① Filter head | ⑥ Turn in this direction to unscrew the filter cartridge. |
| ② Filter cartridge | ⑦ Sealing ring |
| ③ Water receptacle | ⑧ Shut-off valve |
| ④ Water draining stopper (water drain valve) | ⑨ Manual fuel pump |
| ⑤ Sealing ring | ⑩ Bleed screw |

1. Place a receptacle beneath the water trap housing.
2. Open the bleed screw at the filter head.
3. Open the draining stopper in the bottom of the filter and drain water and contamination.
4. Use a standard wrench to loosen and unscrew the filter cartridge.
5. Unscrew the water receptacle from the filter cartridge.
6. Empty any remaining fuel into a receptacle.
7. Clean the water receptacle and place a new O-ring. Smear some fuel on the sealing ring.
8. Clean the sealing faces of the filter cartridge with a damp cloth.
9. Screw the water trap onto the new filter cartridge hand-tight.
10. Mount the filter cartridge to the filter head:
 - Install a new sealing ring on the filter cartridge and lightly coat with fuel.
 - Manually screw the filter cartridge to the filter head, until seal is tight.
11. Close the dewatering tap.
12. Operate the fuel manual pump only until no more air bubbles appear in the fuel flowing from the bleed screw.
13. Close the bleed screw.
14. Turn on the «battery isolating switch».
15. Close the door.



Dispose of fuel and any materials and components contaminated with it in accordance with environmental protection regulations.

10.4.3.3 Maintenance of the engine fuel filter

Two fuel filters are provided directly at the engine and next to each other.

- Fuel prefilter
- Fuel micro-filter



Ensure that no foreign particles can enter the filter housings!
Do not wipe out the filter housings.
Water must be prevented from entering.

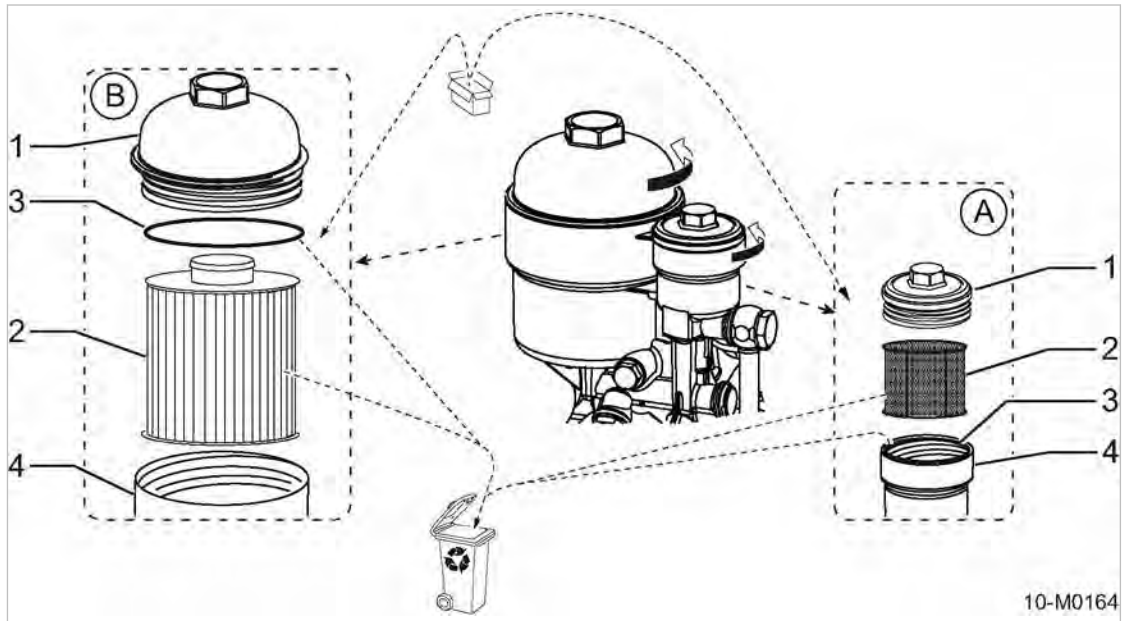


Fig. 51 Maintain the engine fuel filter

- | | | | |
|-----|-------------------|-----|----------------|
| (A) | Fuel prefilter | (2) | Filter element |
| (B) | Fuel micro-filter | (3) | Sealing ring |
| (1) | Screw cap | (4) | Filter housing |

➤ Open both left-hand doors.

Fuel pre-filter maintenance:

See Fig. 51; Detail: A.

1. Place a receptacle beneath the fuel pre-filter housing.
2. Use a wrench to loosen the screw cap of the fuel pre-filter.
3. Pull the screw cap with filter element somewhat out off the filter casing. Drain any fuel in the filter housing.
4. Remove the screw cap with filter element.
5. Remove the filter insert from the screw top
6. Clean the screw cap and filter element.
7. Check the sealing ring and filter element for wear.
When clearly worn: replace components.
8. Moisten the sealing ring with some fuel.
9. Insert the clean filter element into the screw cap.
10. Screw the screw cap with filter element and tighten to 25 Nm.

Fuel fine filter maintenance:

See Fig. 51; Detail: B.

1. Place a receptacle next to the fuel fine filter housing.
 2. Use a wrench to loosen the screw cap of the fuel filter.
 3. Pull the screw cap with filter element somewhat out off the filter casing. Drain any fuel in the filter housing.
 4. Remove the screw cap with filter element.
 5. Unclip the filter element by laterally pressing the lower rim of the element.
 6. Replace the sealing ring and lightly coat with fuel.
 7. Clip the new filter element into the screw cap.
 8. Screw the screw cap with filter element and tighten to 221 lbf in.
1. Turn on the «battery isolating switch».
 2. Close the doors.



The fuel system must be bled after the filter cartridges have 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 both left-hand doors.
4. Visually check the fuel system for leaks.
5. Tighten all fittings.
6. Close the doors.

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 cloth
Precondition	The machine is shut down. The machine is standing level. 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.

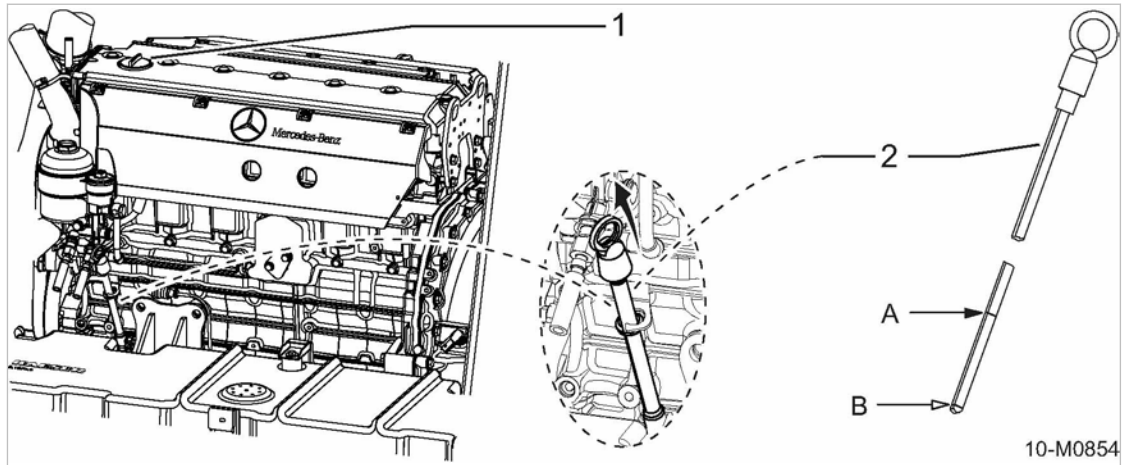


Fig. 52 Checking the engine oil level

- | | |
|-------------------------------------|-------------------------------------|
| ① Oil filler neck cover, engine oil | Ⓐ Mark for <i>maximum oil level</i> |
| ② Dipstick | Ⓑ Mark for <i>minimum oil level</i> |

1. Open both left-hand doors.
2. Withdraw the dipstick, wipe with a lint-free cloth and replace fully.
3. Withdraw the dipstick once more and read off the oil level.
The level should be between the maximum and minimum markings.
Top up if the level has reached or exceeded the *minimum level* mark.
4. Close the doors.



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 cloth
Funnel

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.
The «battery isolating switch» is off.

Filling with engine oil



See chapter 2.6.6 for engine oil filling volume.
The oil dipstick is marked with the «maximum oil level».

1. Open both left-hand doors.
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.

Top up if the level is too low.

4. Replace the plug in the filler port.
5. Switch the «battery isolating switch» on.
6. Close the doors.

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 both left-hand doors.
5. Check the oil level after about 5 minutes.
Top up if the level is too low.
6. Carry out a visual check for leaks.
7. Close the doors.

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
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 isolating switch» is turned off.

⚠ CAUTION

Danger of burns from hot components and escaping engine oil!

- *Wear long-sleeved clothing and gloves.*
- Open both left-hand doors.

Draining the engine oil

The oil is drained directly at the engine's oil pan. This is done from a drain valve with the aid of a separate drain hose.

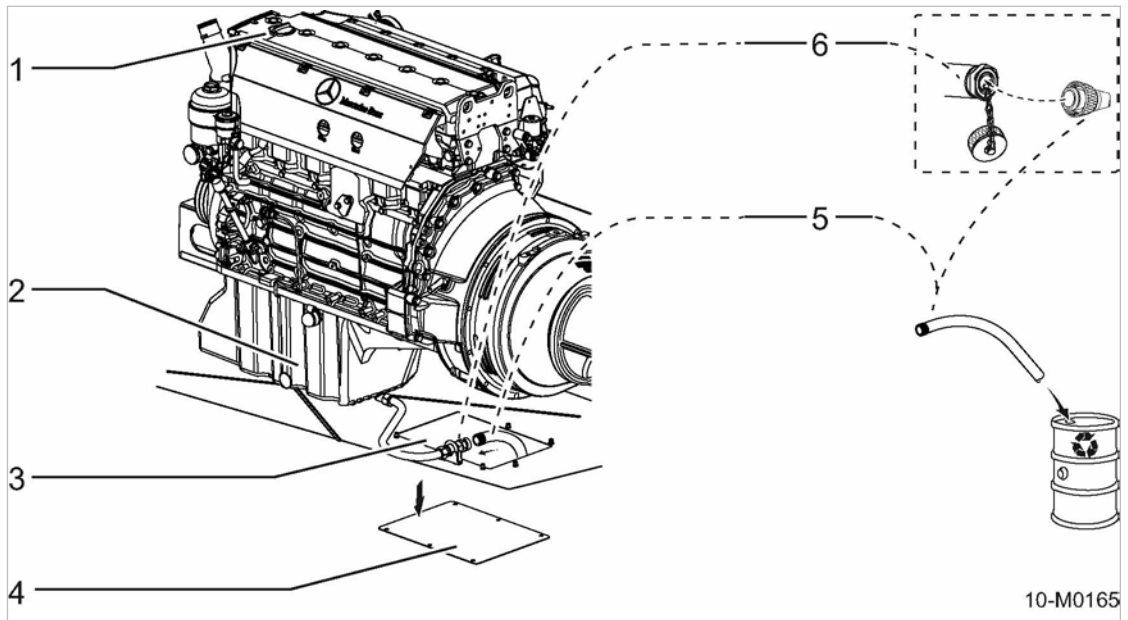


Fig. 53 Draining the engine oil

- | | |
|--|--|
| ① Oil filler neck cover, engine oil | ④ Cover, service opening |
| ② Engine oil sump | ⑤ Drain hose with quick-release coupling |
| ③ Service opening, engine oil drain (in floor pan) | ⑥ Oil drain valve |

1. Remove the oil oil filler cover.
2. Remove the cover of the service opening for the engine oil drain.
3. Provide a receptacle beneath the appropriate opening 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 (⑥).
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. Attach the cover of the service opening.
10. Replace the plug in the filler port.
11. Close the doors.

Option oe Draining the engine oil (closed floor pan)

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine with closed floor pan. They are located at the rear of the machine, in a recessed connection box. The box can be accessed from below by removing a cover.

Oil is drained via a pipeline screwed into the engine block's drain point. The pipeline is closed with a shut-off valve and secured with an additional plug.

Option oe

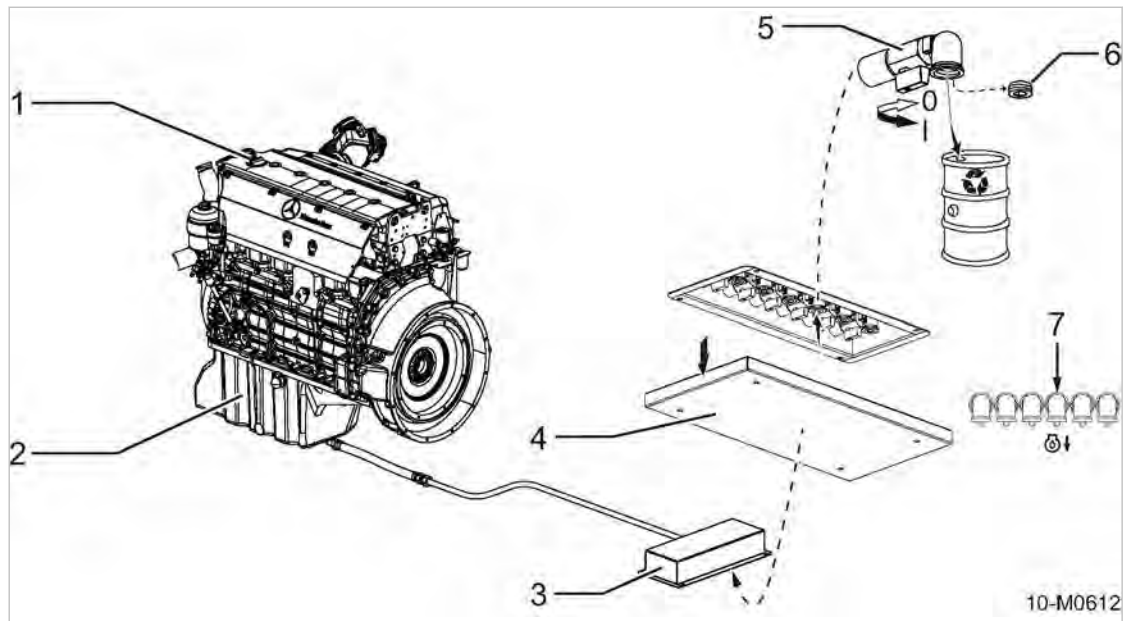


Fig. 54 Draining the engine oil (closed floor pan)

- | | |
|--|---|
| ① Oil filler neck cover, engine oil | ⑤ Shut-off valve (ball valve)
I - open
O - closed |
| ② Engine oil sump | ⑥ Screwed sealing cap - engine oil drain |
| ③ Connection box (central drain point for oil/
coolant) | ⑦ Engine oil drain |
| ④ Connection box cover | |

1. Remove the oil oil filler cover.
2. Remove the connection box cover (central draining point for oil/coolant).
3. Place the oil receptacle below the drain point.
4. Unscrew the filler plug ⑥ at the oil drain.
5. Open the shut-off valve ⑤ in the connection box and catch any draining oil.
6. Close the shut-off valve and replace the screwed sealing cap.
7. Attach the cover of the connection box.
8. Replace the plug in the filler port.
9. Close the doors.



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
Cleaning cloths
Receptacle
Wrench, socket spanner

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 isolating switch» is turned off.

⚠ CAUTION

Danger of burns from hot components and escaping engine oil!

➤ *Wear long-sleeved clothing and gloves.*

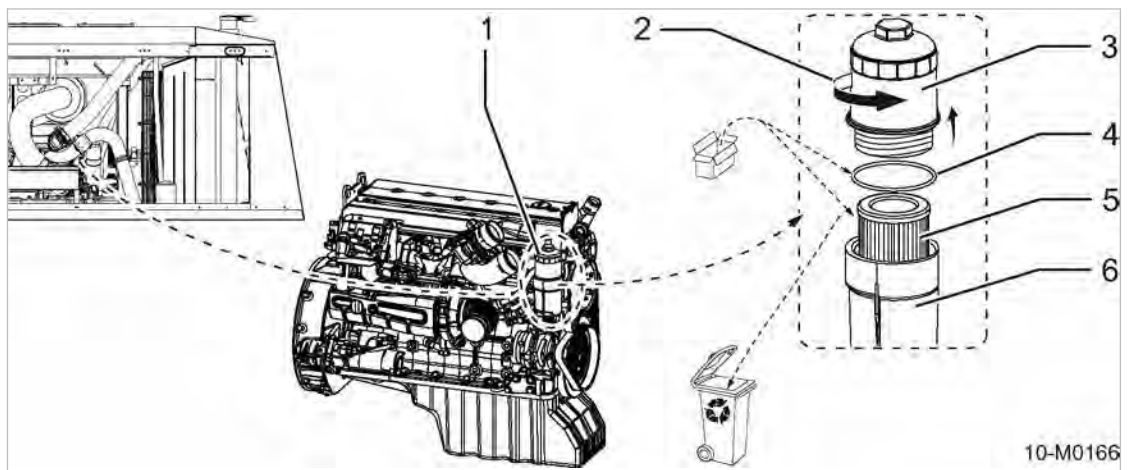


Fig. 55 Change the oil filter

- | | |
|--|------------------|
| ① Oil filter | ④ Sealing ring |
| ② Direction of rotation to unscrew the screw cap | ⑤ Filter element |
| ③ Screw cap | ⑥ Filter housing |



Ensure that no foreign particles can enter the filter housing!
Do not wipe out the filter housings, because fluff or dirt can ingress the oil circuit.

1. Open both right-side doors.
2. Prepare a receptacle.
3. Use the wrench and/or the socket spanner to remove the screw cap of the oil filter.
4. Pull the screw cap with filter element somewhat out off the filter casing. Drain any oil in the filter housing.
5. Remove the screw cap with filter element.
6. Unclip the filter element by laterally pressing the element.
7. Replace the sealing ring at the screw cap and lightly moisten with oil.

8. Clip the new filter element into the screw cap.
9. Screw the screw cap with filter element and tighten to 221 lbf in.
10. Check the engine oil level.
Low oil level: Replenish engine oil.
11. Turn on the «battery isolating switch».
12. Close the doors.



Dispose of old oil filter, old sealing ring, old oil and materials contaminated with oil according to environmental protection regulations.

10.4.8 Battery maintenance

- Check the charging system if the batteries discharge without reason.

10.4.8.1 Security

⚠ WARNING

Danger of acid burns from escaping electrolyte!

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

When working on batteries, comply with the following safety signs:

A warning label with safety signs is attached to the battery.



10-M0167

Fig. 56 Safety signs - warning stickers on the battery.

- Take heed of any safety signs on the battery warning labels.
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 electrolyte.
 - 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!

10.4.8.2 Battery checking and care

Even so-called 'maintenance-free' batteries need a degree of care to obtain their maximum operational life.



The outside of the battery and the terminals should be cleaned regularly with a soft cloth. This avoids current leaks and minimises the discharge rate.

- Material
- Terminal grease
 - Distilled water
 - 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.
 - The machine is cooled down.

- Open both left-hand doors.
 1. Clean the casing and terminals. Do not use a wire brush!
 2. Lightly grease the terminals to prevent corrosion.
 3. Check that the batteries and cable connections are properly seated and tighten if necessary.

Check the battery electrolyte level.

The fluid is generally sufficient for the life of the battery. Nevertheless, the fluid level should be checked annually. The level should be up to the mark, 0.4 inches above the plates.



Replace the battery immediately if the casing leaks.

1. **NOTICE** *Battery destruction!*
Topping up with pure acid will increase the electrolyte concentration and can destroy the battery.
 - *Top up only with distilled water.*
2. Check the electrolyte level.



If the level does not reach the mark -

- Top up with distilled water.

- Close the doors.

Winter operation

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

1. **NOTICE** *Danger of batteries freezing!*
Discharged batteries are subject to frost damage and can freeze at 14 °F.
 - *Check battery charge with a specific gravity tester.*
 - *Recharge the batteries.*
 - *Clean the battery terminals and wipe with grease.*
2. Check the battery charge weekly.
Recharge as necessary.
3. If the machine is to be unused for a number of weeks, remove the battery and store in a frost-proof room.



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

10.4.8.3 Battery removal and installation

Precondition The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine is cooled down.
The «battery isolating switch» is off.

1. **CAUTION** *There is danger of batteries bursting!*
If a battery is short circuited it will overheat 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 alternator.*
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.*
 - *Carry out work on batteries only with the machine shut down.*
3. Open both left-hand doors.
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. Switch the «battery isolating switch» on.
9. Close the doors.

Replacing batteries

Replacement batteries must have the same capacity, current strength and form as the original batteries.

- Always replace a battery with one of the same type.



Old batteries are hazardous waste and must be disposed of correctly in accordance with local environment protection regulations.

10.4.9 Engine belt maintenance

Defective engine belts may tear. A torn engine belt no longer drives the coolant pump and the alternator. The engine may overheat and be damaged.

Material Ratchet
Socket
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 isolating 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.*

➤ Open all doors.

10.4.9.1 Carry out visual check

1. Check the belt thoroughly for cracks, fraying or stretching.
When damaged or worn: Replace the drive belt immediately.
2. Turn on the «battery isolating switch».
3. Close the doors.

10.4.9.2 Replacing the engine belt

If the engine belt is torn or exhibits damage, it must be replaced.

⚠ WARNING

*Belt-tensioning device is under spring force!
Risk of lacerations or pinching when loosening or tightening the device.*

- *Take great care when working on the tensioning device.*
- *Ensure exact handling of the tool.*

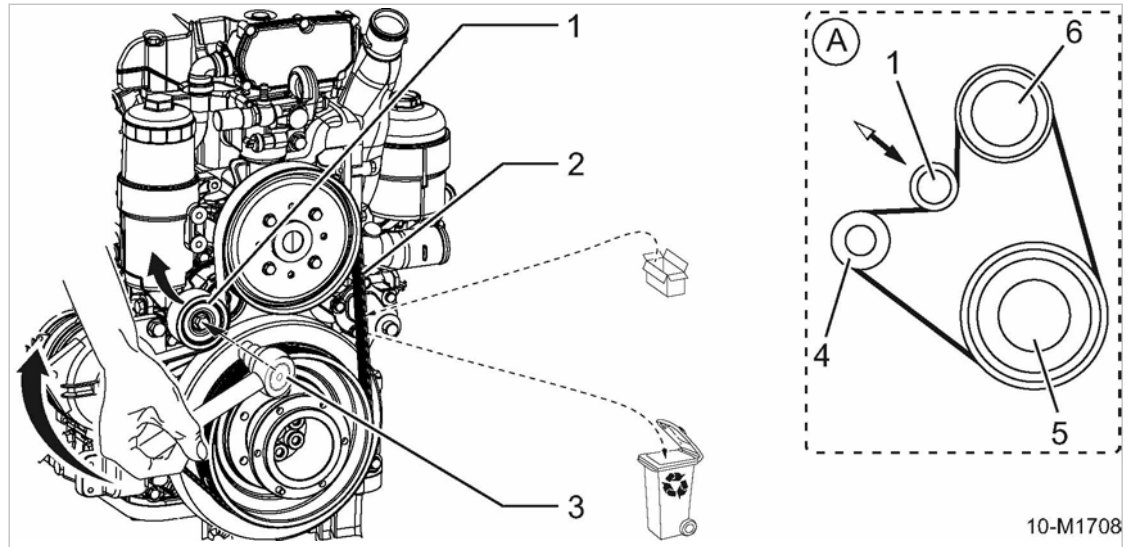


Fig. 57 Replacing the engine belt

- | | |
|---|-----------------------|
| ① Tensioning roller (tensioning device) | ⑤ Crankshaft |
| ② Engine belt | ⑥ Coolant pump |
| ③ Ratchet | Ⓐ Drive belt progress |
| ④ Engine generator | |

Removing the engine belt:

1. Insert the ratchet with the proper insert in the tensioning device (onto the tensioning roller).
2. Use the ratchet to swivel the tensioner roller upward (direction of the arrow).
The engine belt is free of tension.
3. Remove the engine belt.
4. Return the tensioning roller to its original position.
5. Visually inspect the tensioning device and the pulleys for:
 - dirt
 - wear and tear
 - broken bearings in tensioning roller and pulleys
 - profile wear of the pulleys

Result Contaminated components: Clean the components.
Worn components: Have worn components replaced.

Placing the engine belt:

A belt that has been removed may not be used again.
Please note the image 57 showing the progress of the engine belt.

1. Use the ratchet to swivel the tensioner roller upward.
2. Manually route the new engine belt over all pulleys without using force.
3. Return the tensioning roller to its "tensioning position" and thus tension the engine belt.
4. Remove the ratchet and check the proper seating of the engine belt on the pulleys.



Old engine belt should be disposed of in accordance with the latest environmental regulations.

Putting in operation:

1. Turn on the «battery isolating switch».
2. Close the doors.

10.4.10 Checking the fastening of the lashed fluid containers

The fuel tanks and the container for the reduction agent* are fixated with a lashing strip and a ratchet.

(* Option Id)

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 cooled down.

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

NOTICE

The lashing strip for the fluid container is over-tightened.

The plastic tank can be damaged by excessive tightening of the lashing strips.

The fuel tank may burst and spill.

- *Do not over-tighten the lashing strips.*
- *Slightly hand-tighten the lashing strips.*

10.4.10.1 Visual inspection

1. Check the lashing strips for tears and fraying in the fabric, and for damages to the ratchet. Change any damaged lashing strip immediately.
2. Check whether the lashing strips are tight with the tank and that the ratchet is closed. If the lashing strips sits loose, or the ratchet is not closed properly, tighten the fastening.

10.4.10.2 Tightening the fixing of the fluid containers

The lashing strips are tensioned via the integrated ratchet.

The lashing strips must fit closely around the plastic container. The tensioning force of the strip must not exceed 22.5 lbf (slightly hand-tighten only).

Tightening the fastening of the fuel tank:

- Hand-tighten the lashing strips with the integrated ratchet and push the ratchet to the strip.

Option Id Tightening the fixing of the reduction agent container:

- Hand-tighten the lashing strip with the integrated ratchet and push the ratchet to the strip.

10.5 Compressor Maintenance

- Perform maintenance tasks according to the schedule in chapter 10.3.3.1.

10.5.1 Check the cooling oil level

The cooling oil level can be seen by an indicator on the separator tank.

- Precondition The machine should run under LOAD for at least 5 minutes before being shut down.
 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.

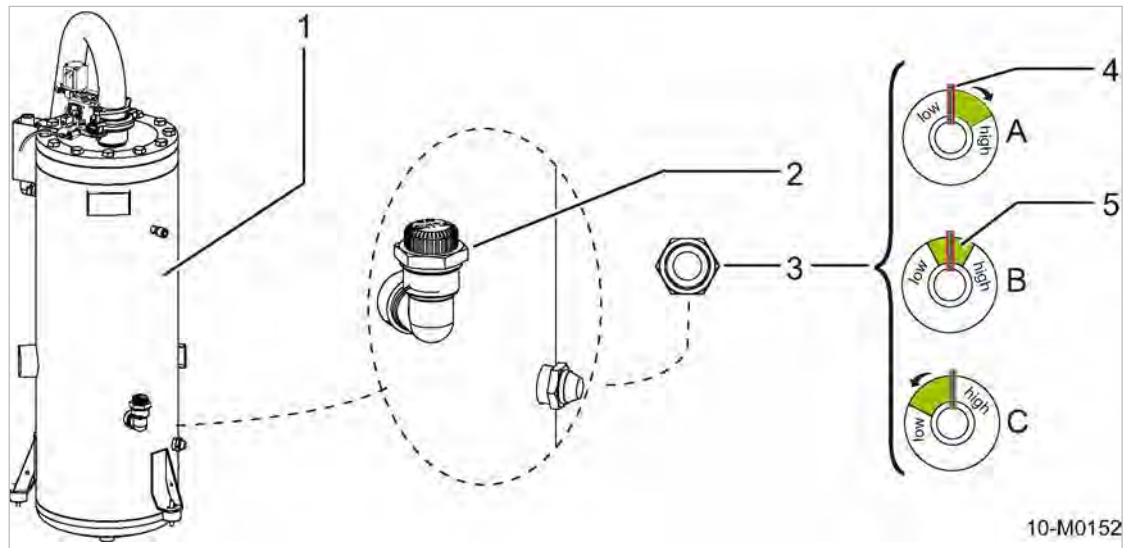


Fig. 58 Check the cooling oil level

- | | |
|-----------------------------|---------------------|
| ① Oil separator tank | ⑤ Green zone |
| ② Oil filler port with plug | Ⓐ Oil level minimum |
| ③ Oil level indicator | Ⓑ Oil level optimum |
| ④ Indicator markings | Ⓒ Oil level maximum |

1. Open the right-rear door.
2. Read off the oil level from the indicator.
 When the indicator shows *minimum cooling oil level*. Top up the cooling oil.
3. Close the door.


10.5.2 Cooling oil filling and topping up

Material Cooling oil
Funnel
Cleaning cloth
Wrench

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.
The «battery isolating switch» is 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 different type of oil than that already used in the machine.*
2. Open the left-hand door.
3. Slowly unscrew and withdraw the plug from the oil filler port.
4. Top up the cooling oil to the maximum level  with the help of a funnel.
5. Check the oil level.
6. Check the filler plug gasket for damage.
Change a damaged gasket.
7. Replace the plug in the filler port.
8. Switch the «battery isolating switch» on.
9. Close the access 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 left-hand door.
7. Check the oil level after about 5 minutes.
Top up if necessary.
8. Visually inspect for leaks.
9. Close the access door.

10.5.3 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

Risk of burns from hot components and escaping oil!

- *Wear long-sleeved clothing and gloves.*

- Open all the doors.

10.5.3.1 Draining the cooling oil

The cooling oil is drained through a drain hose at the oil separator tank and the oil cooler. The air-end and air pipe are drained through drain plugs.

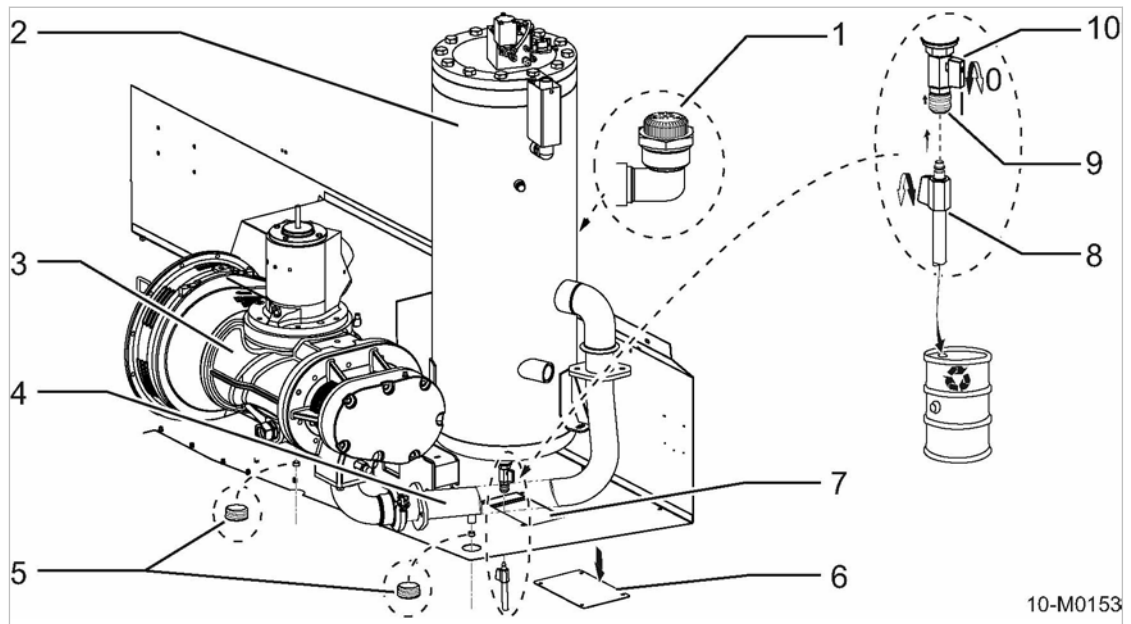


Fig. 59 Drain the oil from the oil separator tank and the airend.

- | | | | |
|---|--------------------------|---|--------------------------------|
| ① | Oil filler plug | ⑥ | Cover, service opening |
| ② | Oil separator tank | ⑦ | Service opening (in floor pan) |
| ③ | Airend | ⑧ | Drain hose with male coupling |
| ④ | Air pipe (pressure pipe) | ⑨ | Quick-release coupling |
| ⑤ | Drain plug | ⑩ | Shut-off valve (ball valve) |
| | | | I - open |
| | | | O - closed |

- Unscrew the drain plug in the oil separator tank.

Draining the cooling oil from the oil separator tank:

This is done from a drain valve in the bottom of the oil separator tank with the aid of a separate drain hose.

1. Remove the appropriate cover of the service opening for draining the cooling oil.
2. Provide a receptacle beneath the appropriate opening in the floor pan.
3. Connect a drain hose (8) to the oil separator tank's quick-release coupling (9). If provided, open the shut-off valve at the nozzle of the draining hose.
4. Lead the hose through the hole in the floor panel and into the receptacle, securing it in place.
5. Slowly open the shut-off valve (10) and catch the draining cooling oil.
6. Close the shut-off valve and remove the drain hose.

Draining the oil from the airend

The airend can be drained from a point accessible through a hole in the floor panel.

1. Provide a receptacle beneath the appropriate opening in the floor pan.
2. Unscrew the drain plug (5) in the bottom of the airend and catch any escaping cooling oil.
3. Fit a new gasket on the drain plug and screw it back in again.

Draining the oil from the air pipe

The airend is connected with the oil separator tank via an air pipe (pressure pipe) which must be separately drained of cooling oil.

The air pipe can be drained from a point accessible through a hole in the floor panel.

1. Provide a receptacle beneath the appropriate opening in the floor pan.
2. Unscrew the drain plug (5) at the air pipe 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 drain valve in the bottom of the oil cooler with the aid of a separate drain hose.

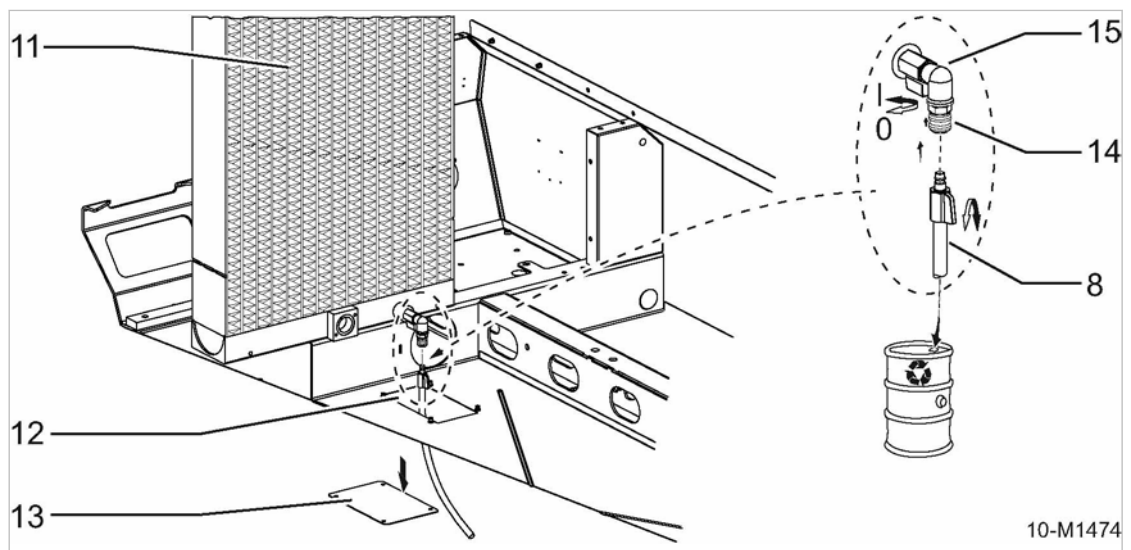


Fig. 60 Draining the oil from the cooler

- | | |
|-------------------------------------|-----------------------------|
| (8) Drain hose with male coupling | (13) Cover, service opening |
| (11) Oil cooler | (14) Quick-release coupling |
| (12) Service opening (in floor pan) | (15) Shut-off ball valve |

1. Connect a drain hose (8) to the oil cooler's quick-release coupling (14). If provided, open the shut-off valve at the nozzle of the draining hose.
2. Lead the hose through the hole in the floor panel and into the receptacle, securing it in place.
3. Slowly open the shut-off valve (15) and catch the draining cooling oil.
4. Close the shut-off valve and remove the drain hose.

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 10.5.2 for cooling oil filling.

**10.5.3.2 Option oe
Draining the cooling oil (closed floor pan)**

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine with closed floor pan. They are located at the rear of the machine, in a recessed connection box. The box can be accessed from below by removing a cover.

Oil drainage is via hose and pipe lines screwed into the drain ports of the oil separator tank, the oil cooler and the airend. The conduits are closed with shut-off valves and secured with additional plugs.

Option oe

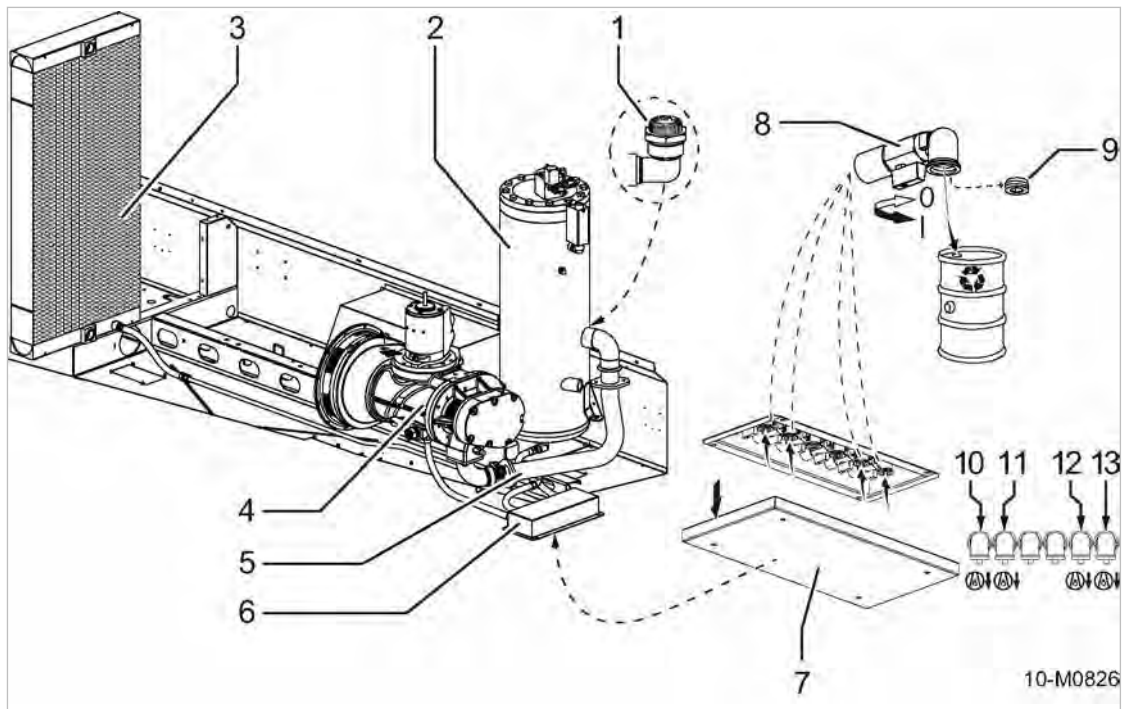


Fig. 61 Draining the compressor's cooling oil (closed floor pan)

- | | |
|--|---|
| ① Oil filler plug | ⑧ Shut-off valve (ball valve) |
| ② Oil separator tank | l - open |
| ③ Oil cooler | 0 - closed |
| ④ Compressor block | ⑨ Screwed sealing cap - cooling oil drain |
| ⑤ Air pipe (pressure pipe) | ⑩ Airend drain |
| ⑥ Connection box (central drain point for oil/coolant) | ⑪ Drain, air pipe |
| ⑦ Connection box cover | ⑫ Oil cooler drain |
| | ⑬ Oil separator tank drain |

1. Unscrew the drain plug in the oil separator tank.
2. Remove the connection box cover (central draining point for oil/coolant).

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.
2. Unscrew the appropriate filler plug at the oil drain point (⑬).
3. Open the corresponding shut-off valve in the connection box and catch any draining oil.

4. Open the shut-off valve at the drainage connection of the oil separator tank and catch the draining cooling oil.
5. 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.
2. Unscrew the appropriate filler plug at the oil drain point **(12)**.
3. Open the corresponding shut-off valve in the connection box and catch any draining oil.
4. Open the shut-off valve at the drainage connection of the oil cooler and catch the draining cooling oil.
5. Close the shut-off valve and replace the screwed sealing cap.

Draining the oil from the airend

1. Position a receptacle beneath the oil drainage point for the airend's cooling oil.
2. Unscrew the appropriate filler plug at the oil drain point **(10)**.
3. Open the corresponding shut-off valve in the connection box and catch any draining oil.
4. Open the shut-off valve at the drainage connection of the airend and catch the draining cooling oil.
5. Close the shut-off valve and replace the screwed sealing cap.

Draining the oil from the air pipe

The airend is connected with the oil separator tank via an air pipe (pressure pipe) which must be separately drained of cooling oil.

1. Position a receptacle beneath the oil drainage point for the air pipe's cooling oil.
2. Unscrew the appropriate filler plug at the oil drain point **(11)**.
3. Open the corresponding shut-off valve in the connection box and catch any draining oil.
4. Open the shut-off valve at the drainage connection of the air pipe and catch the draining cooling oil.
5. Close the shut-off valve and replace the screwed sealing cap.

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 10.5.2 for cooling oil filling.

10.5.4 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 isolating switch» is turned off.

⚠ CAUTION

Danger of burning from hot components and oil.

➤ *Wear long-sleeved clothing and gloves.*

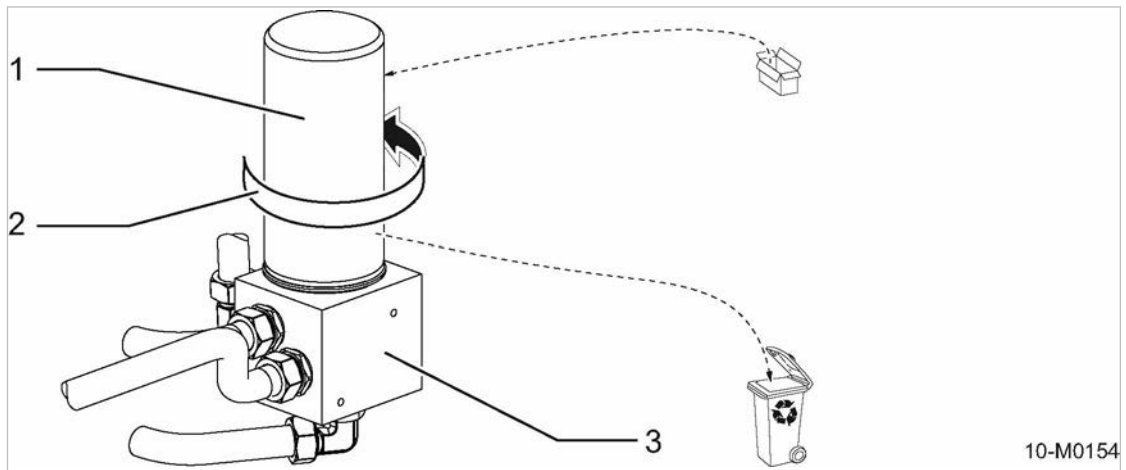


Fig. 62 Change the oil filter

- ① Oil filter
- ② Direction of rotation to unscrew the oil filter.
- ③ Combination valve

Changing the oil filter:

1. Open both right-side doors.
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 up the cooling oil.
8. Turn on the «battery isolating switch».
9. Close the doors.



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-rear 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.

10.5.5 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 cloth
Wrench
Small screwdriver
Maintenance kit, control valve
Petroleum ether or spirit

Precondition The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine is cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is off.

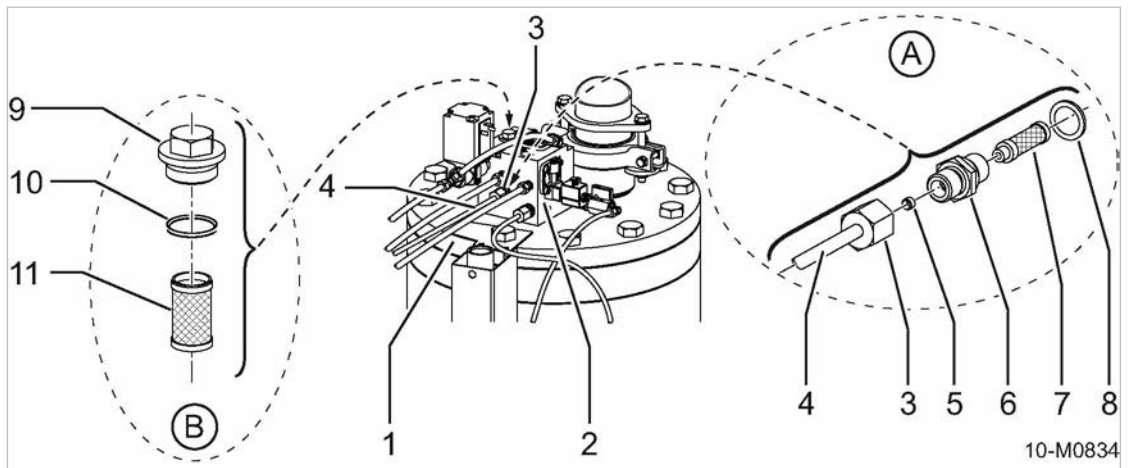


Fig. 63 Oil separator tank dirt trap maintenance

- | | |
|---|---|
| ① Oil separator tank cover | ⑦ Strainer |
| ② Control valve | ⑧ Sealing ring |
| ③ Union nut | ⓑ Detail of the proportional controller dirt trap |
| ④ Oil return line | ⑨ Screw plug |
| Ⓐ Detail of the oil return line dirt trap | ⑩ O-ring |
| ⑤ Nozzle | ⑪ Strainer |
| ⑥ Screw-in connector | |

1. Open the right-rear door.
2. Unlock the service cover of the oil separator tank (on the roof) from inside and lift up.

10.5.5.1 Oil return line dirt trap maintenance

See Fig. 63; 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 screwdriver 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.
Replace components if they are heavily worn.
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.

10.5.5.2 Maintenance of the proportional controller dirt trap

See Fig. 63; 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.
Replace components if they are heavily worn.
4. Place the screw plug on the strainer.
5. Screw in the plug making sure the O-ring seats properly.

Making operational

1. Close the service cover.
2. Switch the «battery isolating switch» on.
3. 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-rear door.
6. Carry out a visual check for leaks.
7. Shut down the machine.
8. Close the door.

10.5.6 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 Spares

Cleaning cloth

Wrench

Precondition The machine is shut down.

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

The machine is cooled down.

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

The «battery isolating switch» is off.

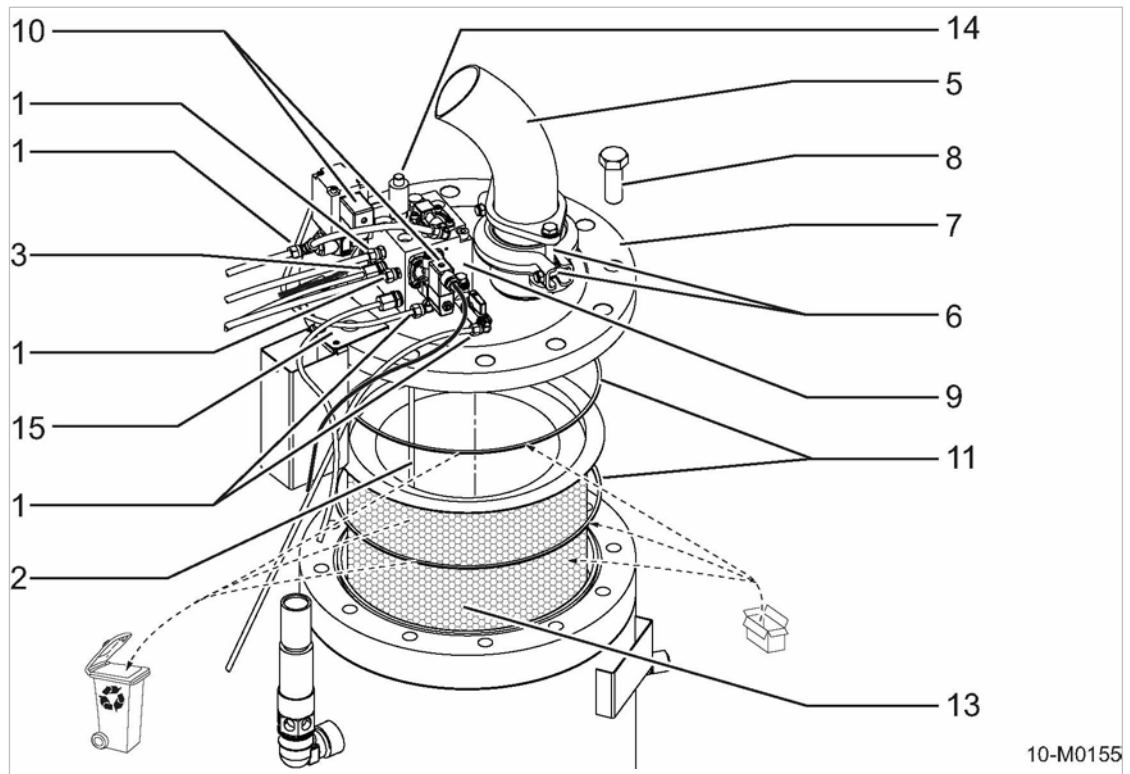


Fig. 64 Changing the oil separator cartridge

- | | |
|---|----------------------------|
| ① Control air line union nut | ⑨ Control valve |
| ② Oil scavenge pipe (screwed to the cover) | ⑩ Solenoid valve |
| ③ Oil scavenge pipe union nut (lower fitting, screwed to the dirt trap) | ⑪ Sealing ring |
| ⑤ Air pipe | ⑬ Oil separator cartridge |
| ⑥ Pipe fitting | ⑭ Pressure sensor |
| ⑦ Cover | ⑮ Relief valve guard plate |
| ⑧ Fixing screw | |

1. Open the right-rear door.
2. Unlock the service cover of the oil separator tank (on the roof) from inside and lift up.

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 to one side.
5. Remove the screws ⑧ securing the cover ⑦ to the tank.
6. Remove the protective guard ⑮ from the relief valve.
7. Carefully lift the cover and put to one side.



Take particular care with the following components:

- The oil scavenge line ② screwed to the underside of the cover.
- The pressure relief valve, covered by the guard plate ⑮.

8. Take out the old cartridge (13) and sealing rings (11).
9. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.
10. Insert the new oil separator cartridge with sealing rings and screw down the cover.
11. Secure the air pipe (5) with a new self-locking nut.



- Follow the instructions in chapter 10.5.9 concerning flexible pipe connections.

12. Position the guard plate (15).
13. Replace and tighten all loosened fittings.
14. Reconnect cables.
15. Check the oil level in the oil separator tank.
Top up if necessary.



- 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 10.5.5.

Making operational

1. Close the service cover of the oil separator tank on the roof.
2. Switch the «battery isolating switch» on.
3. 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 0 psig!
5. Open the outlet valves.
6. Open the right-rear door.
7. Check the oil level after about 5 minutes.
Top up if necessary.
8. Carry out a visual check for leaks.
9. Close the door.

10.5.7 Compressor air filter maintenance

Clean the air filter as per the maintenance table but at the latest when the controller displays the corresponding maintenance message.

Renew 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.

Analyzing the warning message on the controller

The air filters are connected to the controller via sensors. If the level of dirtiness of the air filter increases, a warning message is sent to the controller.

- The controller display will show "Service compressor air filter".
- The «Information» key illuminates.
- The «Acknowledge» key flashes.



Servicing the compressor air filter is required as soon as this message is displayed.

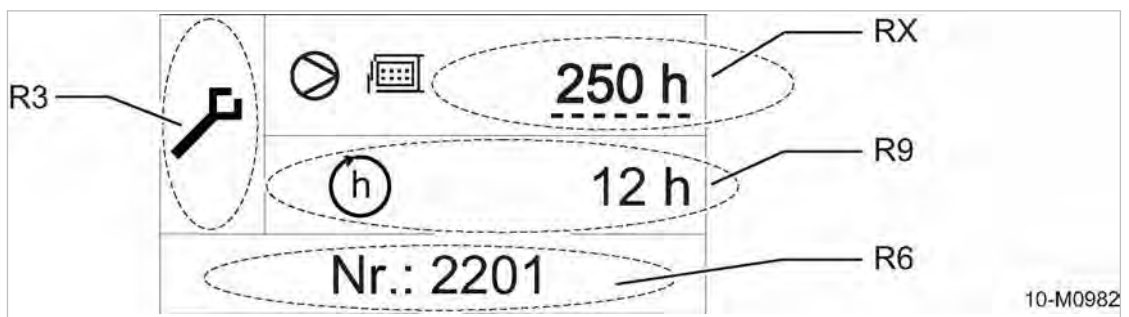


Fig. 65 Warning messages: Compressor air filter maintenance

R3 Event memory category: Maintenance **R9** Time when maintenance is due.
R6 Message codes **RX** Maintenance interval

- Maintain the filter.
- Open the left-rear door.

Cleaning the air filter:

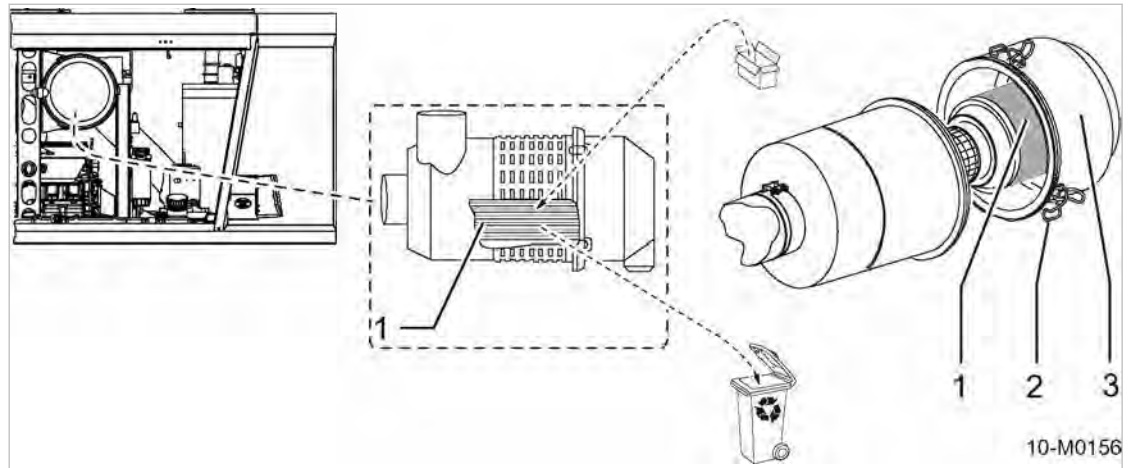


Fig. 66 Compressor air filter maintenance

- ① Filter element (air filter)
- ② Retaining clip
- ③ Filter cap

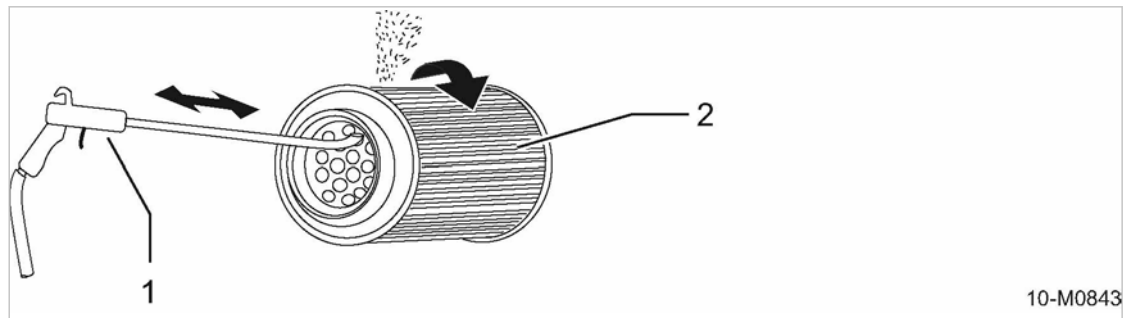


Fig. 67 Clean the filter element (air filter)

- ① Compressed air gun with blast pipe bent to 90° at the end
- ② Filter element (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 (≤ 72 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.

Concluding the maintenance:

Maintenance must be acknowledged after the air filter has been maintained.



For more information about acknowledging the maintenance message and resetting the maintenance timer, see the separate operating manual of the SIGMA CONTROL MOBIL

Precondition Air filter maintained

1. Acknowledge the maintenance message.
 - Confirm the message with the «Acknowledge» key.
 - The «Acknowledge» key is extinguished but the «Information» key is still illuminated.
2. Resetting the maintenance interval counter.
 - Simultaneously press and hold the «Acknowledge» and «Enter» keys for 2 seconds.
 - The system will automatically display the input menu for the password if no password is active.
 - Password (for example: Customer password: 4512) enter and confirm with the keypad.
 - Simultaneously press and hold the «Acknowledge» key and «Enter» for 2 seconds.

Result The maintenance interval counter is reset and the «Information» key extinguishes.

- Close the door.



Dispose of old parts and contaminated materials according to environmental regulations.

10.5.8 Checking safety relief valves

- Have safety relief valves checked by an authorized KAESER service representative in accordance with the maintenance schedule.

10.5.9 Fit the flexible pipe connection

With the machine stopped, the clamping bolts must be freely movable by hand and parallel with the pipe.

In LOAD operation, all clamping bolts must be equally loaded.

- Replace the self-locking nuts.

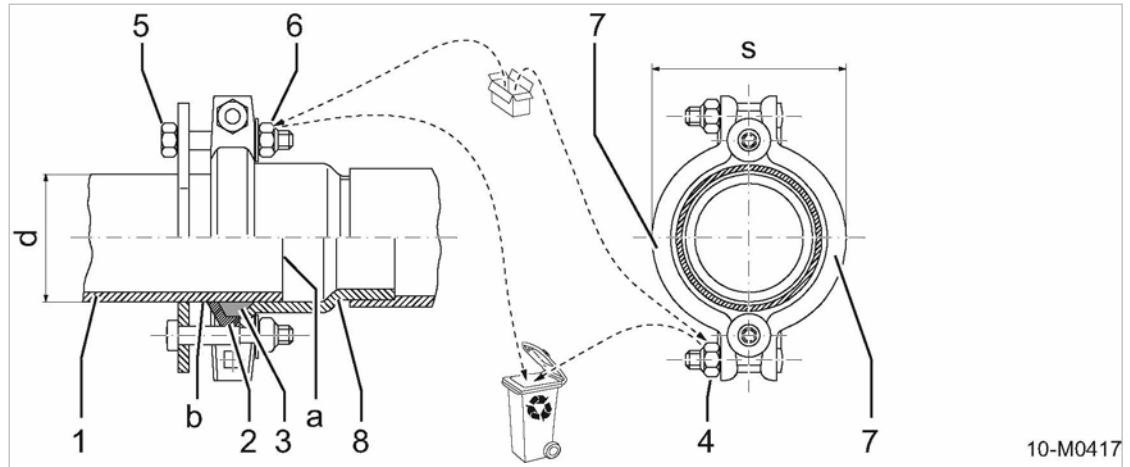


Fig. 68 Fit the flexible pipe connection

- | | |
|----------------------|---|
| ① Pipe | ⑦ Pipe clamp halves |
| ② Seal holder | ⑧ Sleeve |
| ③ Gasket (seal ring) | ① Pipe cut edge |
| ④ Self-locking nut | ② Pipe sealing surface |
| ⑤ Clamping screw | ③ Pipe diameter (outside) |
| ⑥ Self-locking nut | ④ Dimension of the flexible pipe joint under tension. |

Precondition The components to be connected must be flush-aligned.

The pipe must be deburred and the sealing face clean and undamaged. Point-shaped small concavities can be ignored, the axial direction must not exhibit any grooves.

1. Slide the seal holder ② and gasket ③ over the pipe ①.
2. Slide the pipe end ⑧ into the bush without pretension.
3. Ensure proper alignment of the pipe and push the sealing ring with sealing holder up to the beveled edge of the sleeve.
4. Lay the pipe clamp halves ⑦ over the seal holder ② and bush ⑧ and tighten the self-locking nuts ④ until the dimension ④ is reached.

Pipe diameter: d [in]	Clamp diameter: s [in]
2.99	5.16

Tab. 77 Dimensions of the flexible pipe connection

5. Tighten up the clamping bolts ⑤ with the self-locking nuts ⑥.
It must be just possible to manually move the screw connections.

10.6 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 eddies. 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 to the machine can be caused by water or steam jets.

Direct water or steam jets can damage or destroy electrical components and indicating instruments.

- *Cover up electrical components such as the control cabinet, alternator, starter and instruments.*
 - *Do **not** direct water or steam jets at sensitive components such as alternator, starter or indicating instruments.*
 - *Deploy the extension pole of the pressure washer at a distance of at least 1.6 ft and an approximately 90° angle to the cooler/radiator surface.*
- Open all doors.

10.6.1 Cleaning the compressor cooler and engine radiator

The compressor oil cooler and engine coolant radiator are combined in a single cooler block.

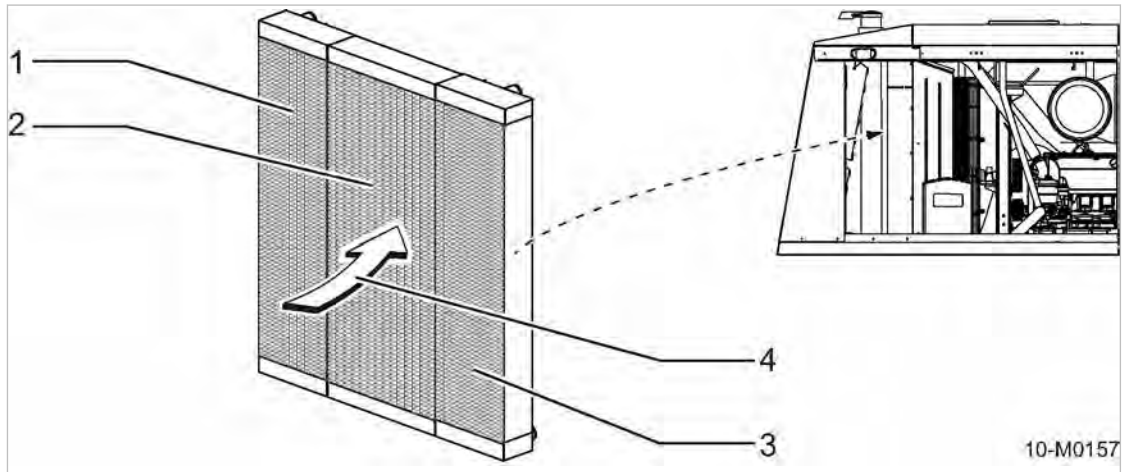


Fig. 69 Cleaning the compressor cooler and engine radiator

- | | |
|-----------------------------|---|
| ① Turbo air cooler (engine) | ③ Radiator (engine) |
| ② Compressor oil cooler | ④ Direction of impacting water or steam jet (from outside to inside). |

Cooler cleaning

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.

2. Remove the air outlet grille with sound damping louvres in front of the coolers.
3. Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from inside to outside).
4. Install the sound damping louvres and air outlet grille.
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 all doors.
2. Visually inspect for leaks. Does oil or cooling water escape?



Is a cooler leaking?

- Have the defective cooler repaired or replaced immediately by KAESER SERVICE.

- Close the doors.



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

**10.6.2 Option da, db, dc, dd
Cleaning the compressed air aftercooler**

The compressed air aftercooler is located near the air treatment devices.

Option da, db, dc, dd

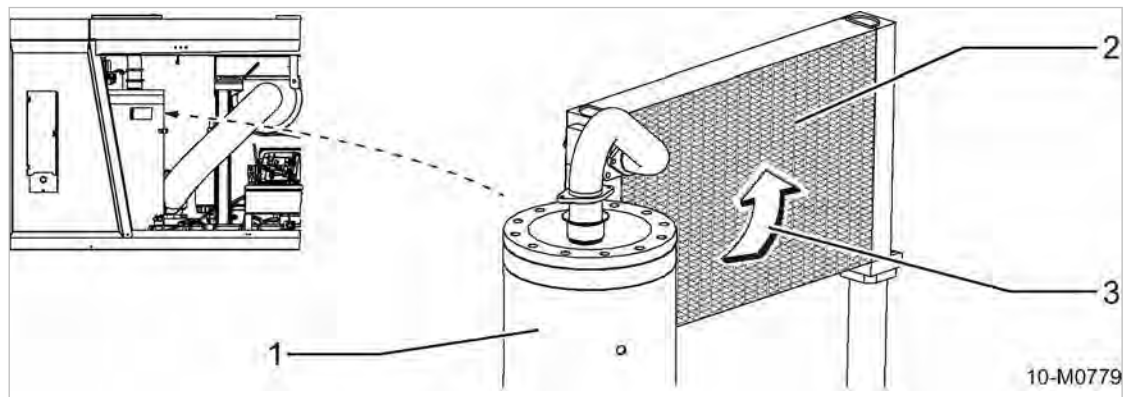


Fig. 70 Cleaning the compressed air aftercooler

- ① Oil separator tank
- ② Compressed air after-cooler
- ③ 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 aftercooler 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 blades only in a washing area equipped with an oil separator.

10.7 Drive belt maintenance

The life of the drive belts is influenced 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

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.

There is danger of serious injury from pinching.

- *Never check the drive belt unless the engine is at standstill.*

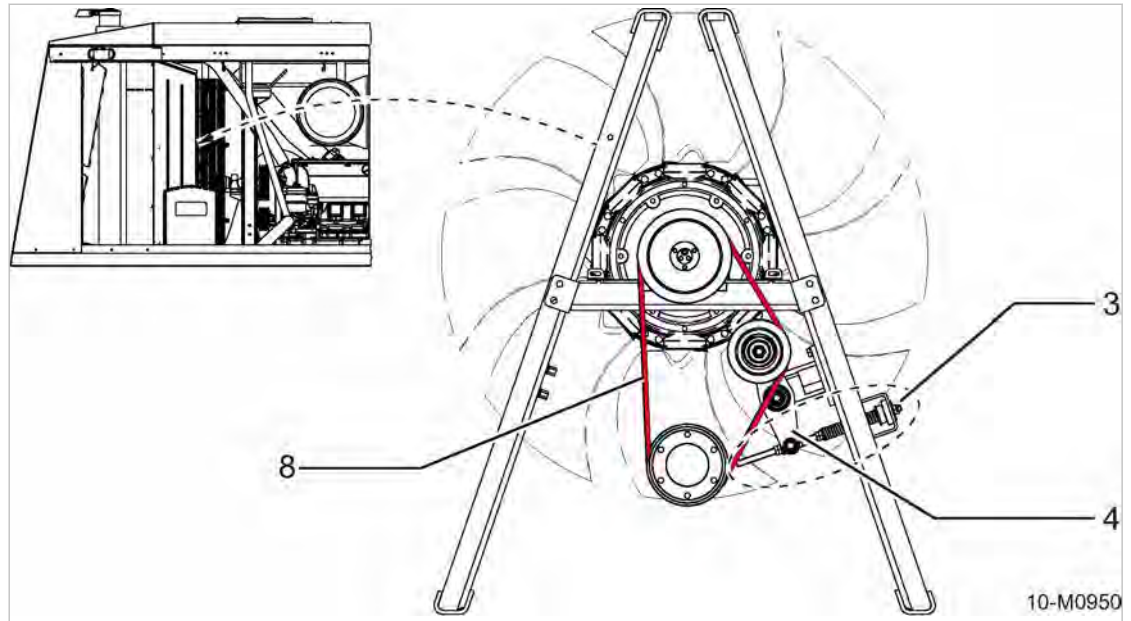


Fig. 71 Drive belt maintenance

- ③ Swing frame adjuster (belt tensioner)
- ④ Tensing frame (belt tension lever)
- ⑧ Drive belt

➤ Open all doors.

10.7.1 Carry out visual check

1. Check the belt thoroughly for cracks, fraying or stretching.
When damaged or worn: Replace the drive belt immediately.
2. Turn on the «battery isolating switch».
3. Close the doors.

10.7.2 Checking belt tension

The drive belts are automatically tensioned over a certain range by a compression spring in the tensing device.



If the drive belts have expanded to the point that the distance between the bottom edge of the swing frame tensioner (3a) and the washer (3b) is less than the reference dimension, it becomes necessary to re-tighten the belt.

(see illustration 72 for details)

- Reference and setting dimension $A = 197 \text{ mil}$

1. Determine the distance between the lower edge of the swing frame tensioner (3a) and the washer (3b).
Distance insufficient: Tension the drive belt.
2. Close the doors.

10.7.3 Changing/tensioning the drive belt

The drive belt is tensioned using a belt tensioning device.

Tensioning the drive belt:



The axis of the tensioning element (counterscrew) must be freely pivotable in the belt tension lever (tensioning frame).

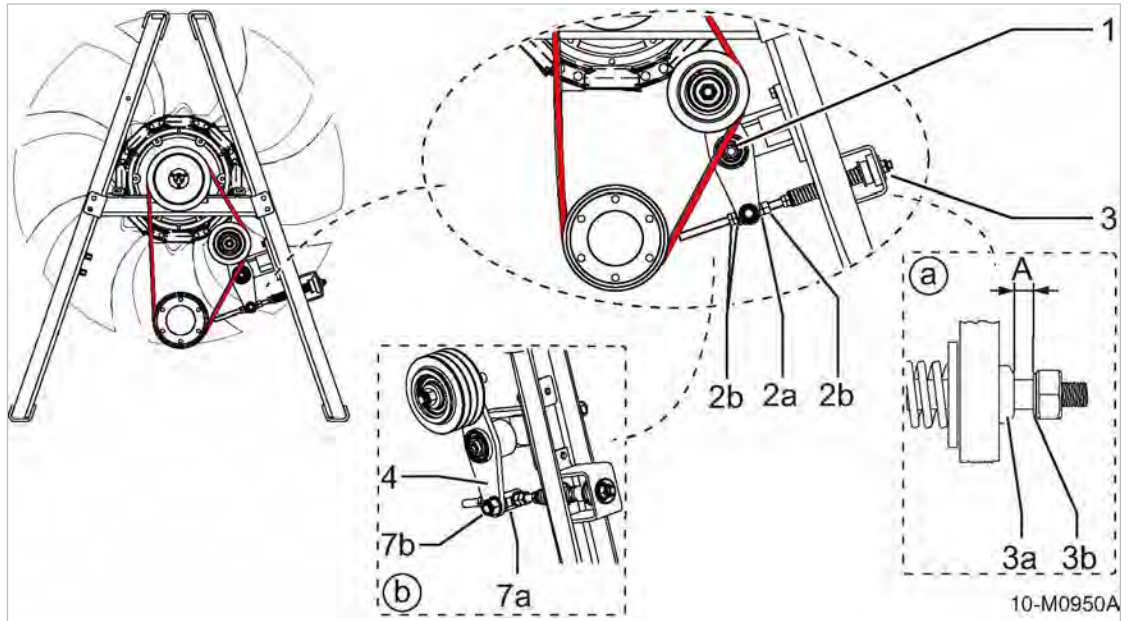


Fig. 72 Tension the belt

- | | | | |
|----|-------------------------------------|----|--|
| ① | Screwed joint belt tension lever | ③b | Washer |
| ②a | Tensioning nut | ⑥ | Detail: Tensioning frame |
| ②b | Locknut | ④ | Belt tensioning lever (tensioning frame) |
| ③ | Belt tensioner | ⑦a | Hinged bolt |
| ③a | Swing frame tensioner (lower edge) | ⑦b | Self-locking nut |
| ③b | Reference dimension, belt tension A | | |

1. Loosen the screw connection ① at the belt tensioner lever ④.
2. Remove the locknut ②b and tensioning nut ②a of the counterscrew ⑦a.
3. Check whether the counterscrew ⑦a can be freely turned in the belt tensioning lever ④.
Counterscrew is jammed: Adjust the self-locking nut ⑦b.
4. Adjust the belt tensioner ③ with the tensioning nut ②a to setting dimension A.
→197 mm
5. Lock the nuts ②b at the hinged bolt.
6. Tighten the screw connection ① at the belt tensioner lever with torque (130 – 135 Nm).
7. Turn on the «battery isolating switch».
8. Close the doors.

Replace the drive belt:

If the drive belt is torn or exhibits damage, it must be replaced.

Drive belts must be replaced as sets. A belt that has been replaced may not be used again.

Precondition The belt guard is completely removed.

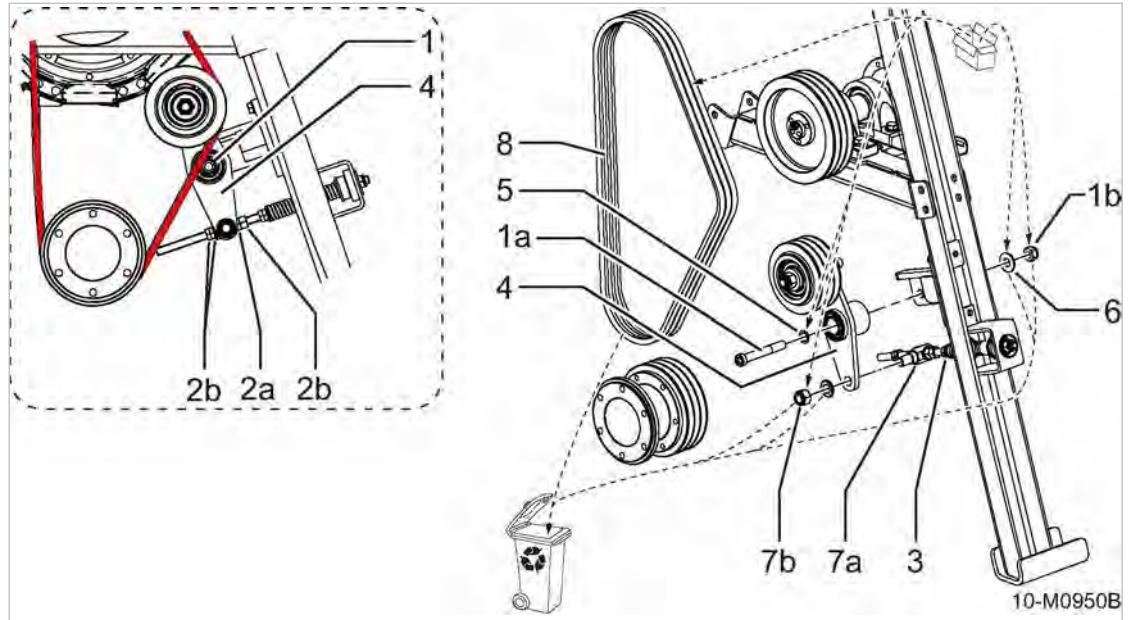


Fig. 73 Replace the drive belt.

①	Screwed joint belt tension lever	④	Belt tensioning lever (tensioning frame)
①a	Cheese head screw	⑤	Tension disk
①b	Self-locking nut	⑥	Wedge lock washer
②a	Tensioning nut	⑦a	Hinged bolt
②b	Locknut	⑦b	Self-locking nut
③	Belt tensioner	⑧	Drive belt

1. Loosen the screw connection ① at the belt tensioner lever ④.
2. Remove the locknut ②b and tensioning nut ②a of the counterscrew ⑦a.
3. Remove the entire drive belt set ⑧.
4. Check the pulleys for dirt and wear.
 Dirty pulley: Clean pulley.
 Worn pulley: Have the pulley changed.
5. Remove the belt tensioner lever ④.
6. Replace the wedge lock washer ⑥, tension disk ⑤ and self-locking nuts ①b and ⑦b.
7. Install the belt tensioner lever ④.
8. Secure the hinged bolt ⑦a with self-locking nut ⑦b in a manner that the hinged bolt can still be turned.
9. Manually route the new drive belt over the pulleys without using force.
10. Tension the drive belts:
 - Ensure that the drive belts are correctly positioned in their guides.
 - Adjust the belt tensioner ③ with the tensioning nut ②a to setting dimension A.
 →197 mil
 - Lock the nuts ②b at the hinged bolt.
 - Tighten the screw connection ① at the belt tensioner lever with torque (1150 – 1195 lbf in).
11. Replace the belt guard.

12. Turn on the «battery isolating switch».
13. Close the doors.



After running for two to three hours, check the belt tension again.



Old belts must be disposed of in accordance with the applicable environmental regulations.

10.8 Maintain the fan shaft bearing

Grease the fan shaft bearings according to the maintenance schedule, but at least once every year.

Material Lithium enriched multi-purpose grease
Cleaning cloth

Precondition The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine is cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is off.

⚠ WARNING

*Beware of rotating pulleys and moving belts.
There is danger of serious injury from pinching.*

- Grease the fan shaft only when the motor is standing still.

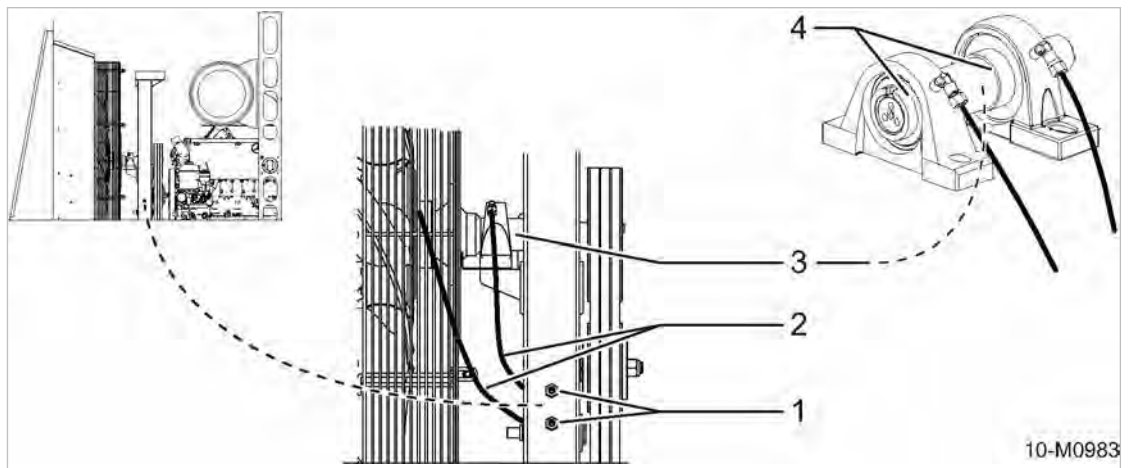


Fig. 74 Maintain the fan shaft bearing

- | | |
|-----------------|-----------------|
| ① Grease nipple | ③ Fan shaft |
| ② Tecalan lines | ④ Bearing point |

1. Open both left-hand doors.
2. Pump fresh grease into the nipple until old grease is squeezed out of the fan shaft bearing.
3. Close the doors.

10.9 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.

10.10 Chassis maintenance

- Perform maintenance tasks according to the schedule in chapter 10.3.3.1.

10.10.1 Wheel checks

Check the wheels for tightness, visible damage and tire pressures:

- after the first 30 miles
- after every wheel change
- at least every six months

Material Torque wrench
tire pressure gauge

Precondition Machine shut down and secured against restarting.

1. Check/adjust for wheel fixing torques.
2. Check the tires and wheels for any defect.
Replace any damaged or worn tires.
3. Check the tire treads for sufficient depth.



According to local road-worthy regulations, at least 63 mil in most countries.

Profile depth too low: change tires.

4. Check the tire pressures.

Result tire pressure too low: pump tires.

Further information See chapter 2.4.3 for wheel fixing torques.
See chapter 2.4.2 for tire pressures.
A sticker is found on each wheel arch giving the recommended tire pressure.

10.10.2 Towbar maintenance

Clean and lubricate all sliding and rotating bearings as necessary but at least every 6 months.

Material Lithium-enriched multi-purpose grease
Acid-free oil
Cleaning cloths

Precondition The machine is switched off.
The machine is disconnected from the towing vehicle and safely parked.

Option rb/rm/rs

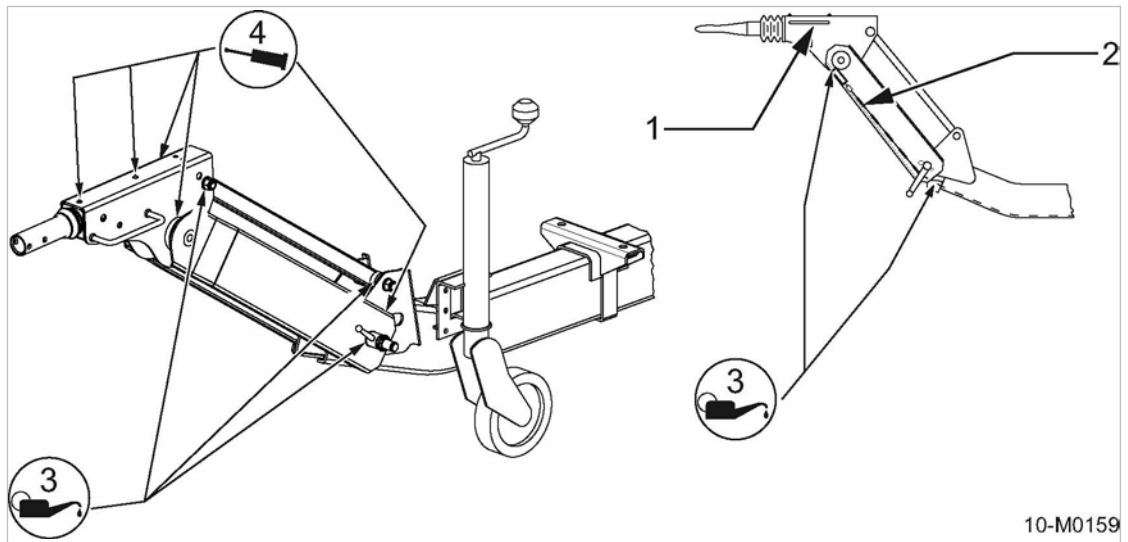
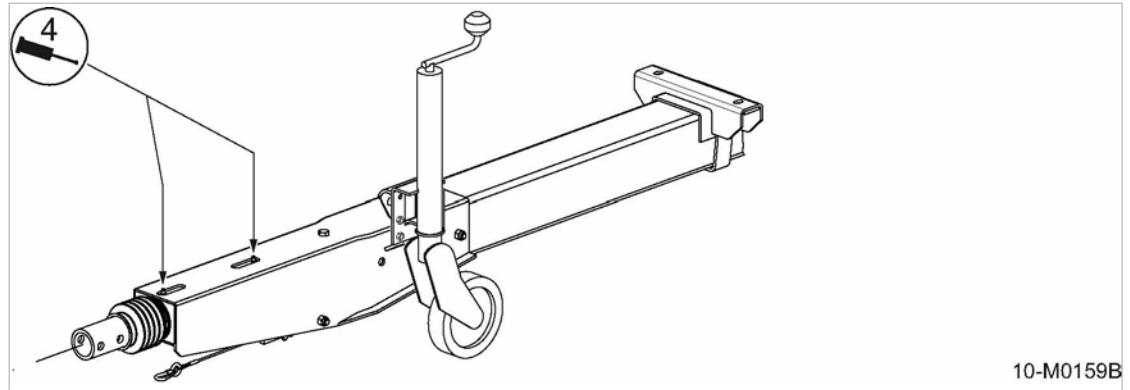


Fig. 75 Maintaining the height-adjustable towbar (chassis 7716 lb)

- | | |
|------------------|----------------------|
| ① Handle | ③ Lubricating points |
| ② Transfer cable | ④ Greasing points |

Option rc/ro/rs

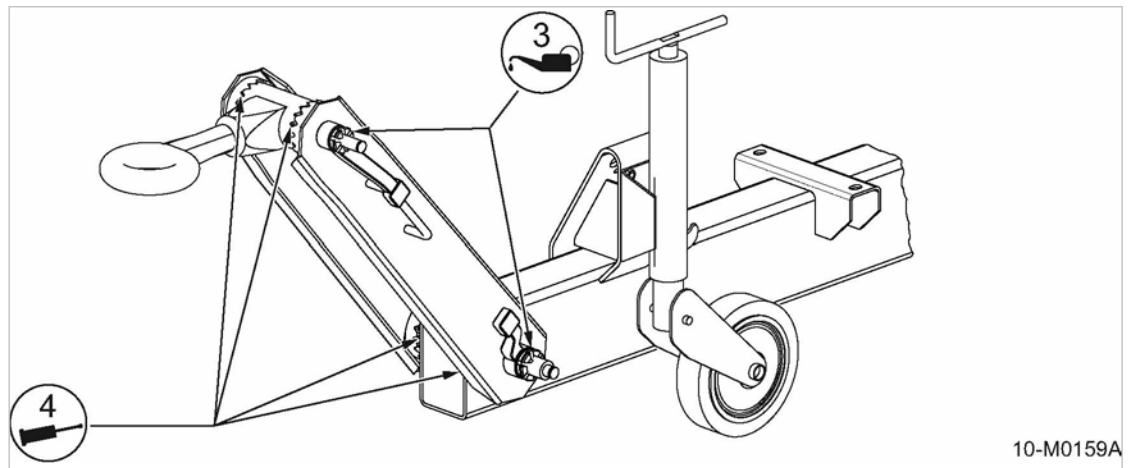


10-M0159B

Fig. 76 Maintaining the fixed height towbar (chassis 7716 lb)

- ④ Greasing points

Option rb/rm/rt, rb/rm/rr



10-M0159A

Fig. 77 Maintaining the height-adjustable towbar (chassis 8818 lb)

- ③ Lubricating points
- ④ Greasing points

10.10.2.1 Checking the tow bar

1. Check the tow bar for correct function and movement.
2. Clean and oil/grease all sliding and rotating bearings.

Option rb/rm/rt, rb/rm/rs, rb/rm/rr **Check the height setting of the towbar**

- Check the towbar height adjustment function.



The locking teeth on the towbar height adjustment joint are corroded and jammed and the towbar height cannot be adjusted.

- If necessary, free the teeth by jerking the towbar horizontally and vertically.
- Clean the toothed coupling and smear with water-repellent grease.

Further information See chapter 6.4.1 and 6.4.2 for towbar height adjustment.

Option rb/rm/rs, rc/ro/rs Maintaining the parking brake (hand brake lever)

1. Lightly lubricate the pins and adjustment joints.
2. Check free rotation of the parking brake lever.

Option rb/rm/rs, rc/ro/rs, rd/ro/rs; rb/rm/rr, rb/rm/rt, rc/ro/rt, rc/ro/rr Maintaining the jockey wheel:

1. Check the jockey wheel for condition, correct function, and movement.
Are individual parts twisted or damaged? Have the jockey wheel replaced.
2. Grease the interior tube of the paid-out jockey wheel.
3. Grease the spindle bearing area (grease nipple).

10.10.2.2 Option rb/rm/rs, rc/ro/rs Overrun device maintenance

Greasing the overrun device

- Pump fresh grease into the nipple until old grease is squeezed out.

Further information See pages 75 and 76 for grease points.

Checking the shock absorber:

1. Loosen the transfer cable one side.
2. Press in the shock absorber against its damping force.
Have the shock absorber replaced by a specialized workshop if:
 - There is little resistance to pushing in,
 - Air has entered the device,
 - There is little resistance to pulling out the shock absorber,
 - Oil leaks out.

10.10.2.3 Option rb/rm/rs, rc/ro/rs, rd/ro/rs Ball coupling maintenance

Option rb/rm/rs, rc/ro/rs, rd/ro/rs

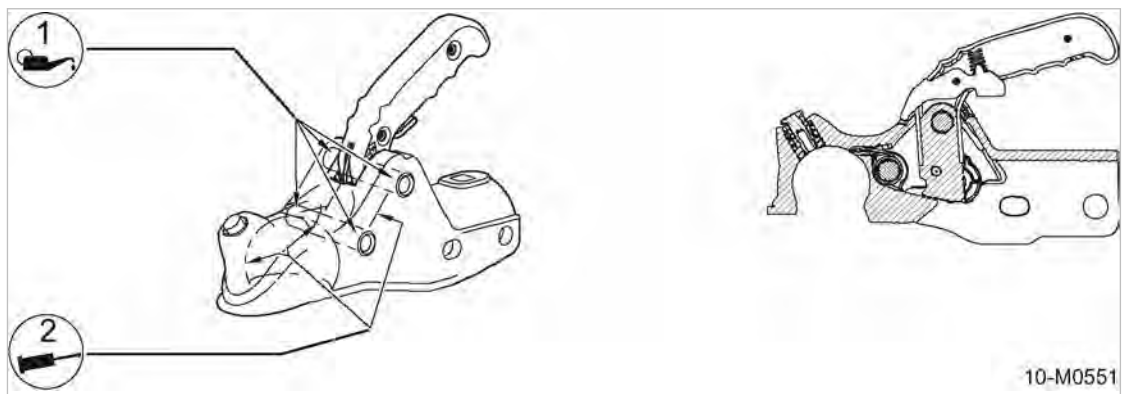


Fig. 78 Ball coupling

- ① Lubricating points
- ② Greasing points

1. Check the ball coupling for correct function and movement.
2. Clean the ball coupling. Grease or oil the ball cup, joints, and bearings.

10.10.3 Brake maintenance

The brake adjusting procedure ensures even wear on the brake linings by adjusting the brake shoes.

The following points must be observed:

- Carry out the adjustment procedure on all wheel brakes, one after the other.
- During adjustment, turn the wheel in the 'forward' direction only.

Material Screwdriver
Wrench
Inspection lamp or torch
Cleaning cloths
Lithium-enriched multi-purpose grease

Precondition The machine is switched off.

1. Jack up the machine and lower it onto supports.
2. Release the parking brake and completely pull out the overrun braking mechanism.
The brake cables are not tensioned.

10.10.3.1 Checking brake system settings

1. Pull up the parking brake to first notch.
2. Turn the wheels in the forward direction.
3. Check that there is the same braking resistance on both wheels.
Brake resistance not even: adjust brake system.
4. Release the parking brake.

10.10.3.2 Checking wheel brake lining wear

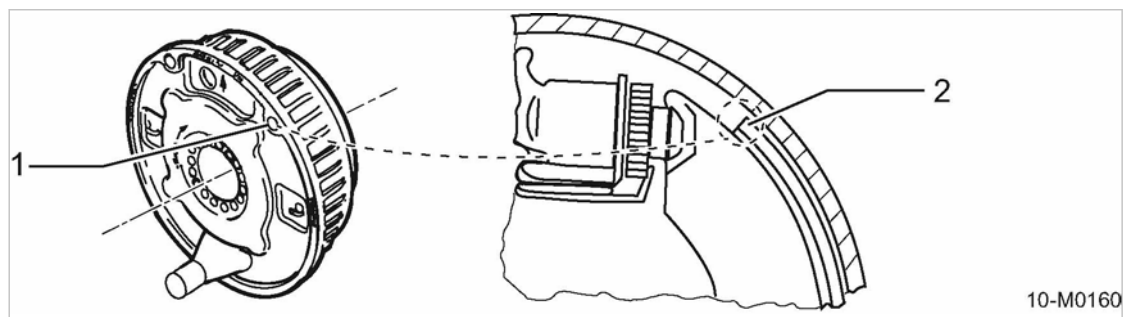


Fig. 79 Checking the brake lining thickness

- ① Inspection hole
- ② Brake linings

1. Remove the plug from the inspection hole.

2. With the aid of a torch, check the brake lining thickness.
 Brake linings of less than 0.1 inch thickness should be replaced by a specialised workshop.
3. Replace the plug in the inspection hole.

10.10.3.3 Brake system adjustment

There is an arrow pressed into the brake back plate near the adjustment hole.

- Turning in the direction of the arrow increases brake force.
- Turning in the opposite direction to the arrow releases brake force.

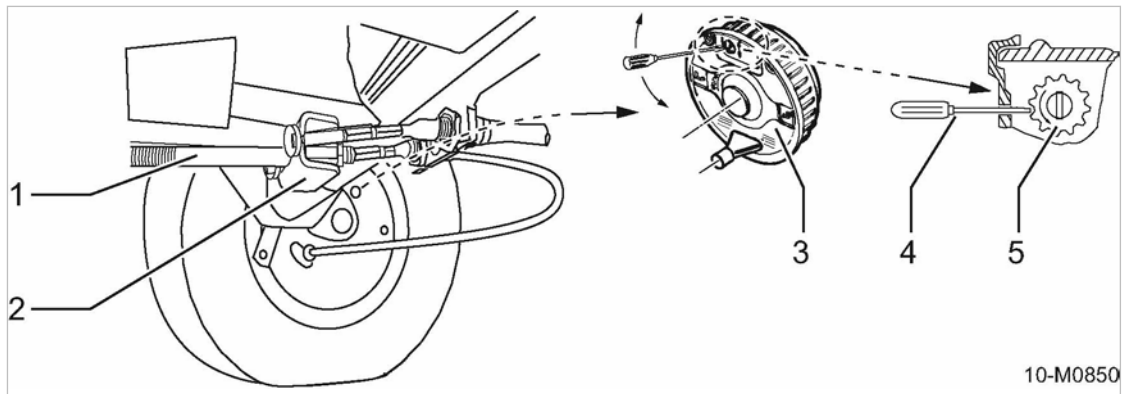


Fig. 80 Brake system adjustment

- | | |
|-----------------|---------------------------------|
| ① Brake rod | ④ Screwdriver as adjusting tool |
| ② Equaliser | ⑤ Adjusting wheel |
| ③ Brake support | |

1. Remove the plug from the inspection hole.
2. Use a screwdriver to turn the adjusting wheel ⑤ until the wheels no longer turn in the forward direction.
3. Apply the parking brake a number of times to centre the brake linings.
4. Use the screwdriver to turn the adjusting wheel back (3 to 5 notches) until there is no more braking resistance to the wheels turning forward.
5. Pull on the parking brake.
6. Check the position of the equaliser ② on the brake rod ①.
 If the equaliser is perpendicular to the brake rod, the brake clearance is the same on each wheel.
 If the equaliser is oblique to the brake rod, adjust the brake rod.
7. Pull the parking brake lightly on and compare the braking force on the wheels.
 If the braking force on the wheels is not equal, re-adjust brake system.
8. Replace the plug in the inspection hole.



A light rubbing sound when the wheels turn is permissible if it does not affect free turning.

Brake rod adjustment

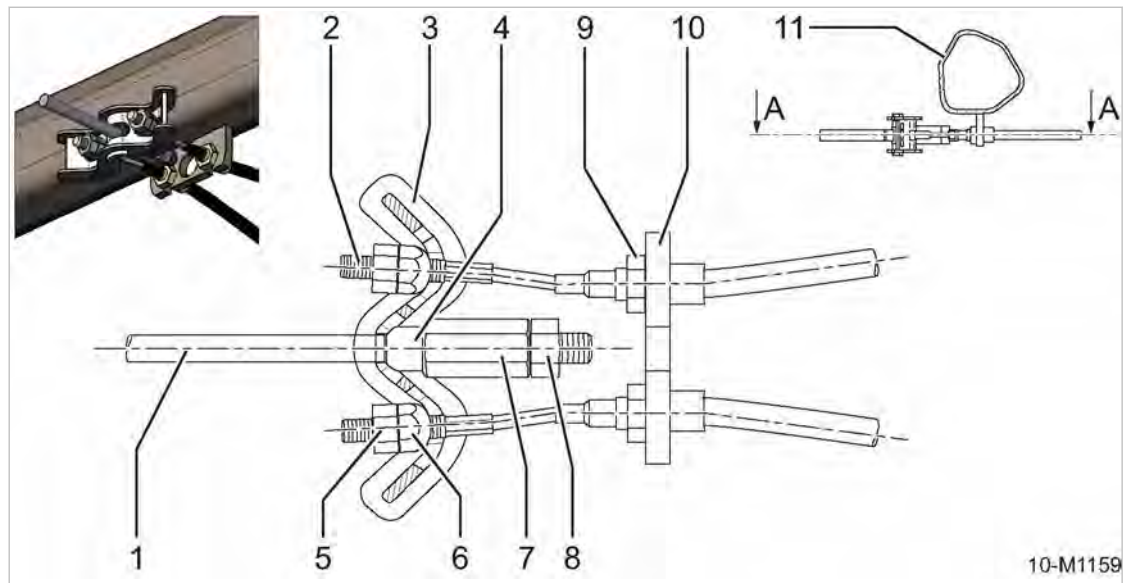


Fig. 81 Brake rod adjustment

- | | |
|------------------------|------------------------|
| ① Brake rod | ⑦ Connecting sleeve |
| ② Brake cable (Bowden) | ⑧ Hexagonal nut |
| ③ Equaliser | ⑨ Hexagonal nut |
| ④ Spacer | ⑩ Axle abutment |
| ⑤ Hexagonal nut | ⑪ Axle (cross-section) |
| ⑥ Ball nut | |

1. To free the brake rod, remove the hexagon nut ③ at the equaliser ⑧ and loosen the sleeve ⑦.
2. Clean and grease the brake rod threads.
3. Manually tighten the connecting sleeve.
4. Pull and release the parking brake three times.
5. Turn the wheel in forward direction and simultaneously tighten the connecting sleeve up to a clearly experienced braking resistance.



You must still be able to manually turn the wheel in forward driving direction.

6. Screw the hexagon nut ⑧ onto the brake rod and lock the connecting sleeve.

Further information For more information, see the assembly illustration in chapter 13.7.3.

- Test by applying the brake a number of times.

10.10.3.4 Greasing the brake rods

Grease the brake rods when necessary (stiff movement) but at least annually.

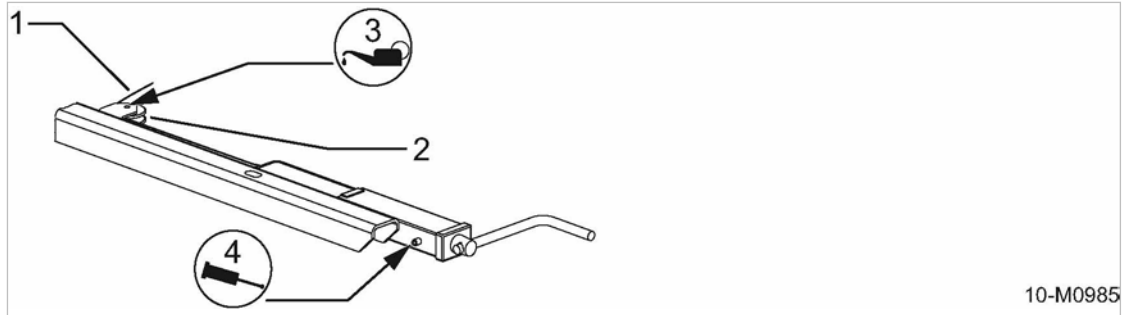
Material Lithium-enriched multi-purpose grease
Cleaning cloths

Precondition The machine is shut down.
The machine is disconnected from the towing vehicle and safely parked.

- Clean and grease the brake rod's sliding and adjustment joints.

10.10.3.5 Option rb/rm/rt, rc/ro/rt, rb/rm/rr, rc/ro/rr
Maintaining the parking brake (winding handle)

Option rb/rm/rt, rc/ro/rt,
rb/rm/rr, rc/ro/rr



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Fig. 82 Maintaining the parking brake

- | | |
|---------------------|---|
| ① Steel cable | ③ Lubricating point |
| ② Deflection pulley | ④ Lubricating point (grease fitting for trapezoid thread) |

1. Clean the steel cable and deflection pulley and check for wear.
Have any worn steel rope and/or return pulley replaced.
2. Lightly oil steel cable and deflection pulley.
3. Grease trapezoidal thread.

10.10.4 Option rb/rm/rr, rc/ro/rr
Pressure brake system maintenance

The air brake system must be checked and serviced by a specialised workshop approx. every 1000 miles or at least semi-annually.

The braking system is equipped with ABS.



Only specialists may work on the ABS electronics.

Material Lithium-enriched multi-purpose grease
Cleaning cloths

1. **⚠ DANGER** Risk of accident due to manipulation of the ABS!
Failure of the machine brake system could cause serious injury or death.
 - Manipulations of the ABS are strictly forbidden!
 - The brake system must be serviced by authorised specialists.
2. The brake system must be serviced by specialised workshop.

Drain the pressure brake system:

The air brake receiver tank must be drained weekly.

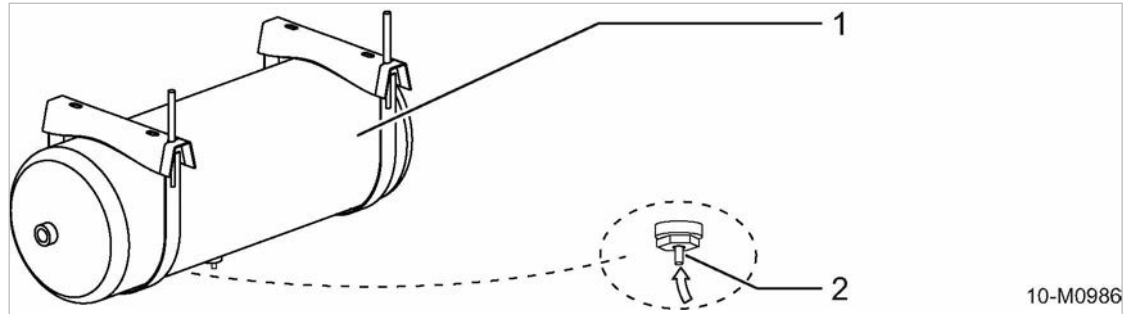


Fig. 83 Drain the brake air receiver.

- ① Brake air receiver
- ② Water drain valve

1. Couple the machine to the towing vehicle and connect the brake lines.
2. Start the towing vehicle.
The brake system is pressurised. The air brake receiver tank fills with air.
3. Turn off towing vehicle.
4. Carefully press in the draining pin in the air receiver drain valve until only dry air escapes.
Condensate is drained from the brake system.
5. Check the draining valve for leakages.
Draining valve continuously blows-off: Have the draining valve replaced.

Maintain the brake lever guide:

The brake lever diverter must be greased at least once every year.

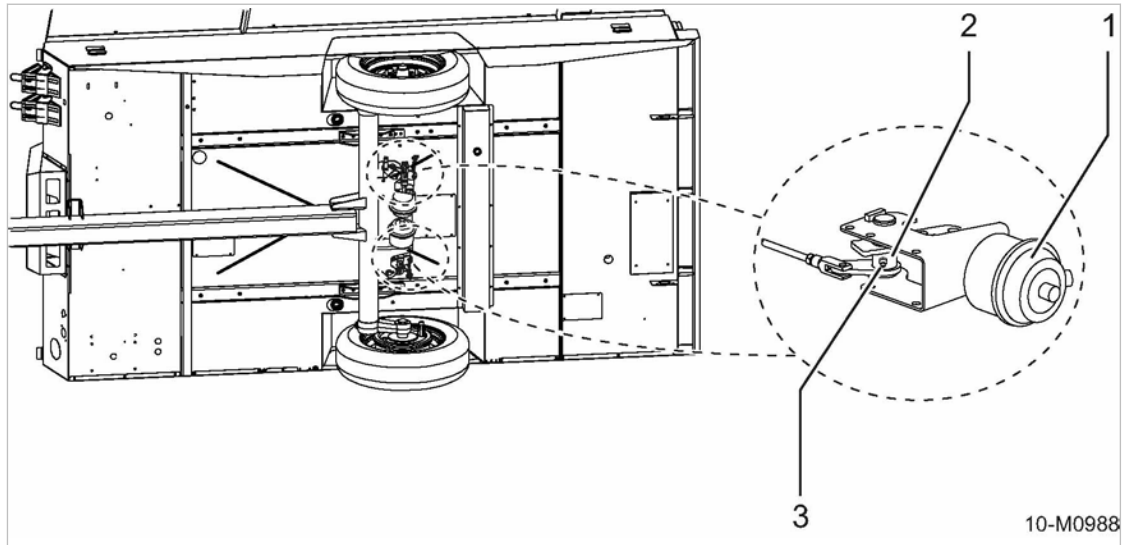


Fig. 84 Lubricate the brake lever guide

- ① Brake cylinder
- ② Brake lever guide
- ③ Grease nipple

➤ Press grease into all the grease nipples.

10.10.5 Lubrication of the catch mechanism

Lubricate the catch mechanism of the rear doors, when necessary, but at least every six months.

Material Lithium enriched multipurpose grease
Cleaning cloth

Precondition The machine is shut down.
The machine is disconnected from the towing vehicle and safely parked.

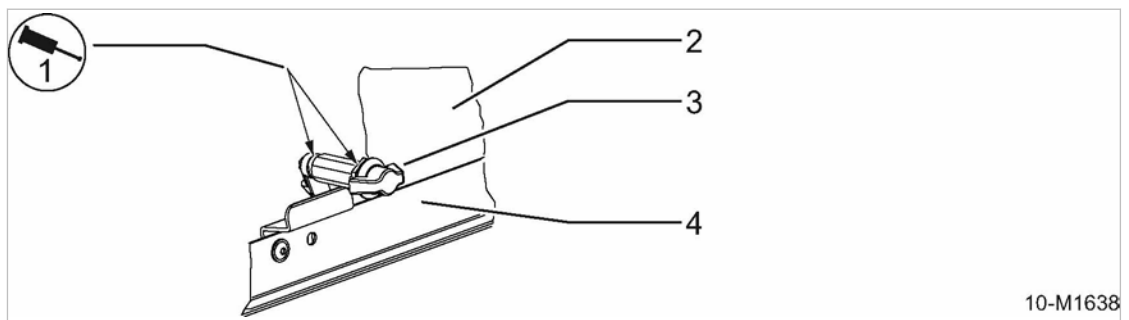


Fig. 85 Lubrication of the catch mechanism

- ① Greasing points
- ② Rear wing door (cross-section)
- ③ Catch mechanism
- ④ Lower body

1. Open the rear wing doors.
2. Clean the fastener and the catch mechanism with a lint-free cloth and lubricate with grease.



Fill any lubricating hole with grease.

3. Actuate the catch several times.
4. Close the doors.

10.11 Maintenance for Optional Items

- Perform maintenance tasks according to the schedule in chapter 10.3.3.2.

10.11.1 Option da, db, dc, dd Cyclone separator maintenance

Clean the cyclone 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 shut down.
The machine is 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 off.

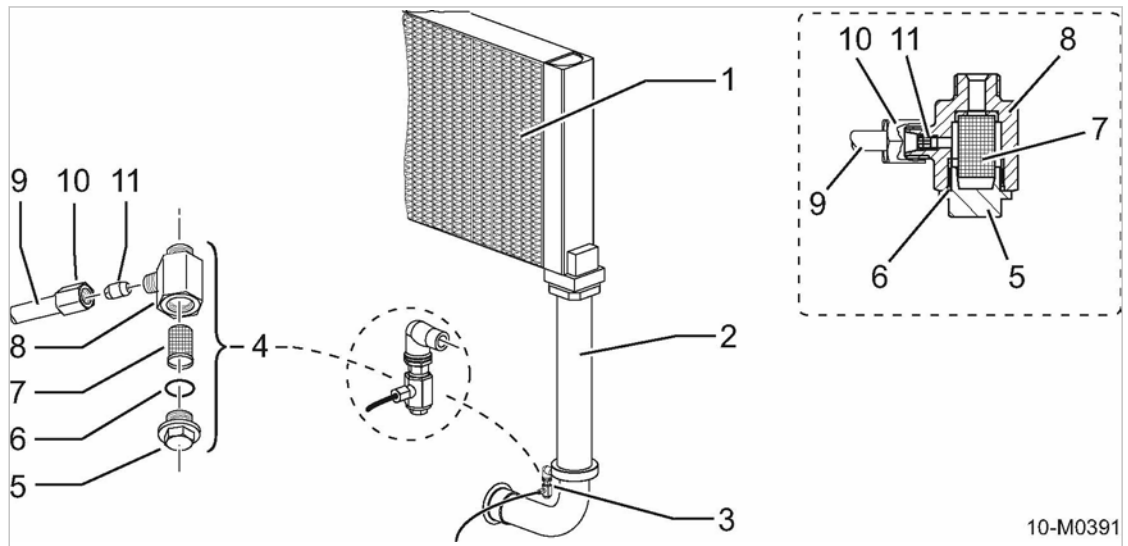


Fig. 86 Cleaning the condensate drain

- | | |
|-------------------------------|-----------------------------------|
| ① Compressed-air after-cooler | ⑦ Strainer |
| ② Cyclone separator | ⑧ Dirt trap housing |
| ③ Condensate drain | ⑨ Condensate drain hose |
| ④ Dirt trap | ⑩ Condensate drain hose union nut |
| ⑤ Screw plug | ⑪ Nozzle |
| ⑥ O-ring | |

- Open the left-rear door.

Cleaning the condensate drain

1. Unscrew the plug (5) and remove the strainer (7).
2. Loosen the union nut (10) and detach the condensate drain hose (9) from the dirt trap
3. Use the small screwdriver to unscrew the nozzle (11) from the dirt trap housing.
4. Clean the nozzle, strainer, screw plug, O-ring (6) and dirt trap housing (9) with cleaning solvent or spirit.
5. Check the nozzle, strainer and O-ring for wear.
Replace components if they are heavily worn.
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. Activate the «battery isolating 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-rear door.
6. Check the cyclone separator housing and hose line for leaks.
7. Close the door.

**10.11.2 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.*

Option dd

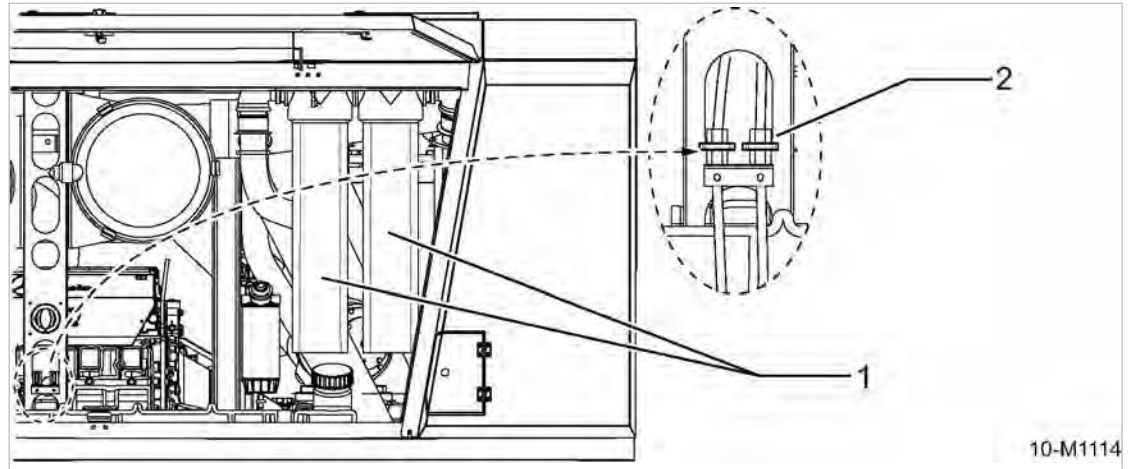


Fig. 87 Filter combination

- ① Filter combination
- ② Shut-off valve condensate drain

Option dd

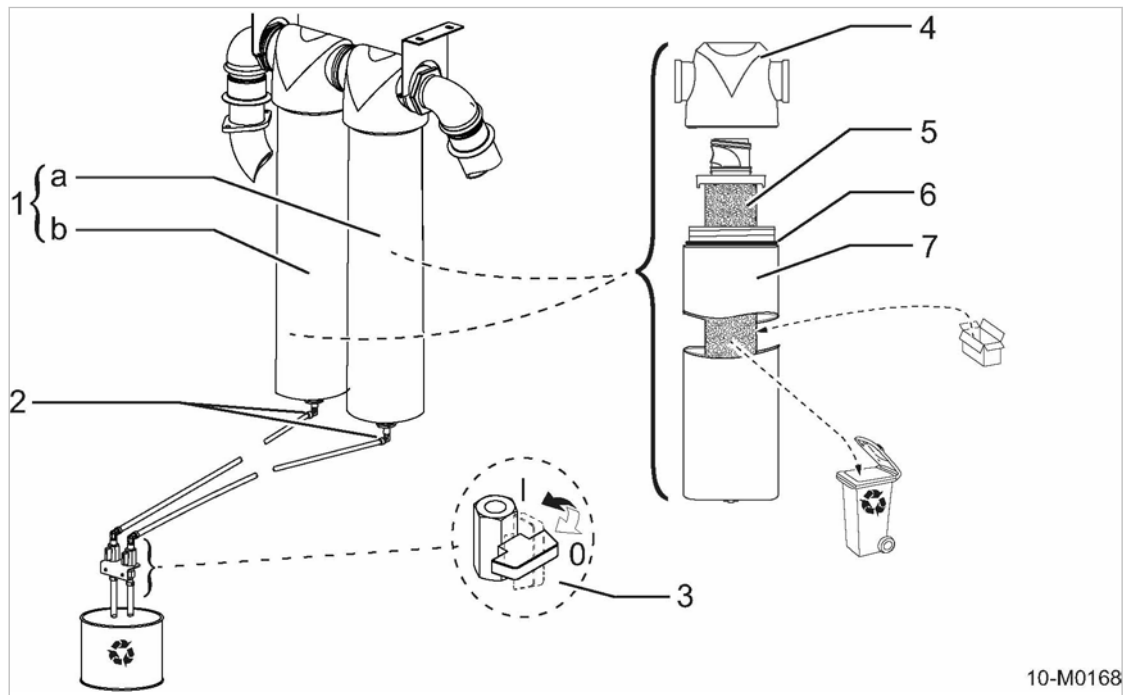


Fig. 88 Combination filter maintenance

- ① Filter combination
- ④ Filter head
- ② Condensate drain hose fitting
- ⑤ Filter element
- ③ Shut-off valves (ball valve) for condensate drain
- ⑥ Casing gasket
- 0 - closed
- 1 - open
- ⑦ Filter housing

➤ Open both left-hand doors.

10.11.2.1 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 doors.
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 both left-hand doors.
7. Close the shut-off valve.
8. Close the doors.



Condensate must be stored in suitable containers and disposed of in accordance with local environmental regulations.

10.11.2.2 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 doors.



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 13.8.

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 both left-hand doors.
6. Check the combination filter housing and hose lines for leaks.
7. Close the doors.

**10.11.3 Option dc
Fresh air filter maintenance**

Before commencing work on the fresh air filter, read and understand the operating instructions given in chapter 13.9.

- 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

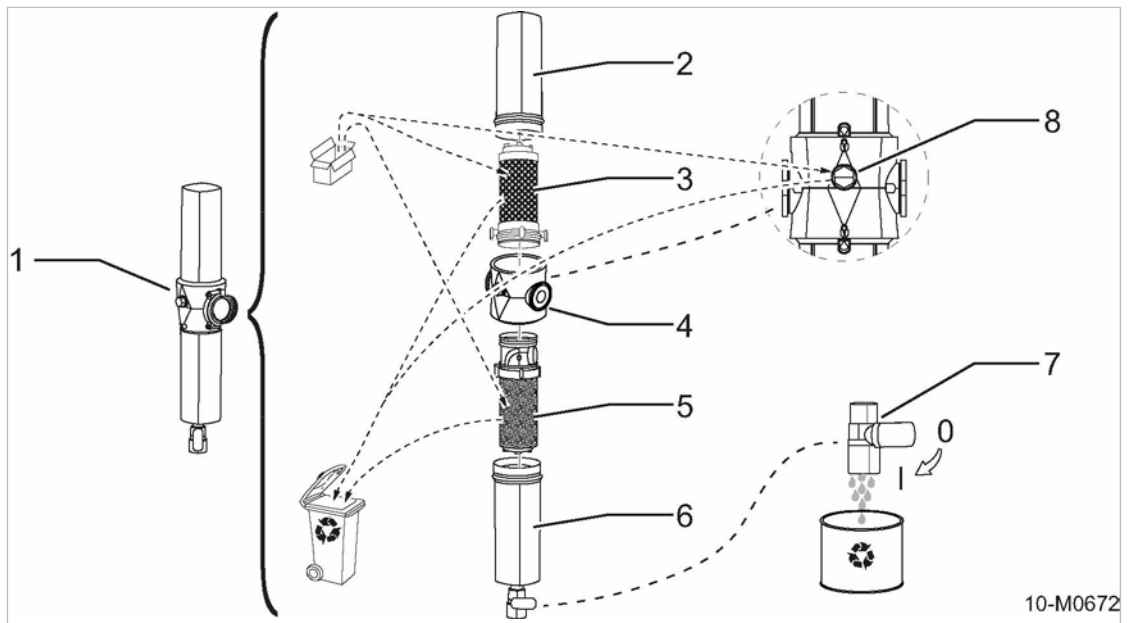


Fig. 89 Fresh air filter maintenance

- | | |
|--------------------------------------|--|
| 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 |
| | I - Open |
| | ⑧ Oil indicator |

➤ Open both left-hand doors.

10.11.3.1 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 doors.

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 both left-hand doors.
7. Close the drain valve.
8. Carefully remove the receptacle.
9. Close the doors.



Condensate must be stored in suitable containers and disposed of in accordance with local environmental regulations.

10.11.3.2 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.

10.11.3.3 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 doors.



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 13.9.

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 both left-hand doors.
6. Check the fresh air filter housing and hose line for leaks.
7. Close the doors.

10.11.4 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. The spark arrestor is installed on the machine's roof.

Material Suitable rubber hose
Soot receptacle
Cleaning cloth
Protective gloves
Eye protection

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.

⚠ DANGER

Danger of suffocation from toxic exhaust fumes.

Exhaust fumes from internal combustion engines contain carbon monoxide, which is odorless, and deadly.

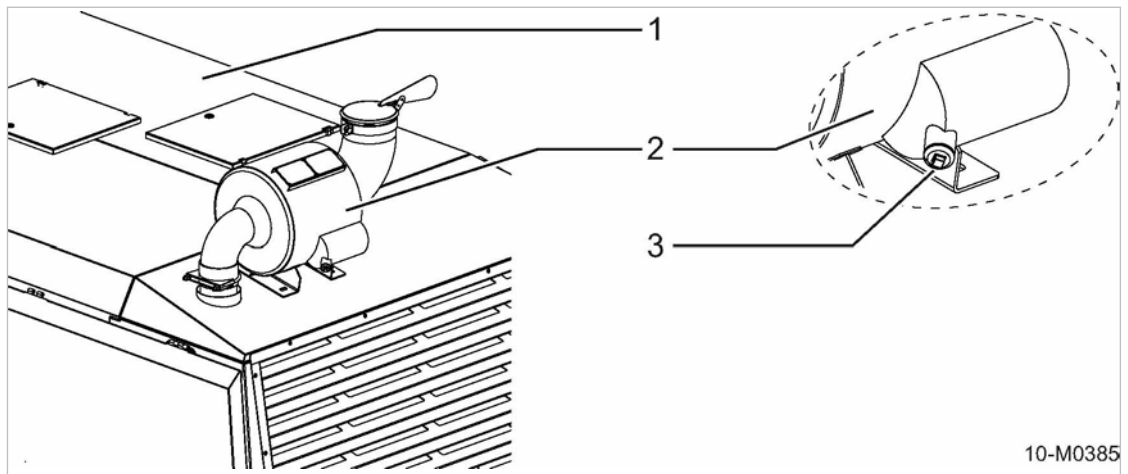
- *Use the machine only outdoors!*
- *Do not inhale exhaust fumes.*

⚠ CAUTION

Danger of burns from hot components and sparks.

- *Wear long-sleeved clothing and protective gloves.*
- *Wear eye protection.*

Spark arrestor cleaning



10-M0385

Fig. 90 Cleaning the spark arrestor (sealed floor pan with service openings)

- ① Machine roof
- ② Spark arrestor
- ③ Soot drain plug

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.

10.11.5 Option 1b
Engine air shut-off valve maintenance

Material Compressed air for blowing out
Petroleum ether or spirit
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

Adjusted engine air intake shut-off valve

The engine air intake shut-off valve does not close when flammable gas is drawn into the engine:

The machine does not shut down? Destruction of the engine and explosion and/or fire are possible.

- Do not move the valve adjusting screw.
- Have the valve set by a specialist workshop or KAESER SERVICE.

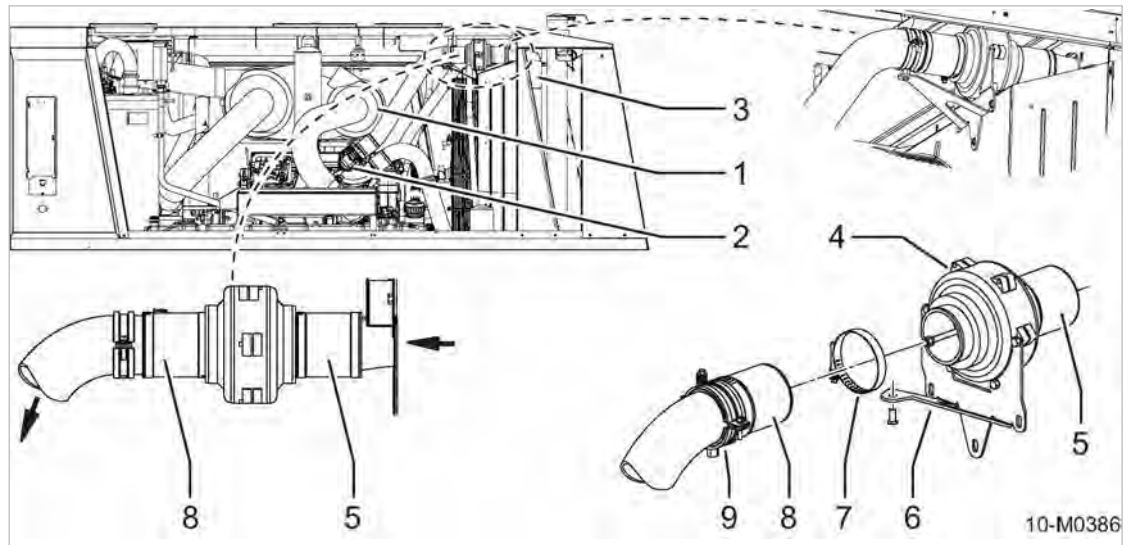


Fig. 91 Maintain the engine air shut-off valve

- | | |
|------------------------------------|--------------------------------|
| ① Motor air filter | ⑥ Fixing angle |
| ② Turbocharger | ⑦ Hose clamp |
| ③ Turbo air cooler | ⑧ Air inlet hose (engine side) |
| ④ Engine air shut-off valve | ⑨ Pipe clamp |
| ⑤ Air inlet hose (air filter side) | |

- Open both right-side doors.

Clean the engine air shut-off valve:

1. **NOTICE** *The engine air intake shut-off valve does not close fully. The machine does not shut down? Destruction of the engine and explosion and/or fire are possible.*
 - Do not grease the valve, as this may cause a build up of dust and valve sticking.
2. Loosen the pipe clamp from the fixing angle.
3. Loosen the pipe clamp, pull the air intake hose from the engine air shut-off valve and swing the air pipe away.
4. Check if the interior of the shut-off valve is clean.
Engine shut-off valve is clogged: Blow out with compressed air.



If necessary, clean the valve with cleaning fluid or spirit and allow to dry.
If dirt cannot be removed: Contact specialist workshop or KAESER SERVICE.

Checking the engine air intake shut-off valve for correct function and movement:

1. Check the valve for signs of excessive wear.
2. Check that the valve plate closes fully and easily.

Result When severe wear or function problems are apparent: Have the engine air intake valve replaced.

1. Reposition the air intake hose and tighten the clamp.
2. Attach the pipe clamp from the fixing angle.
3. Close the doors.
4. Start the machine and switch to LOAD operation.

The engine stops in LOAD operation: Have the engine air intake valve checked by a specialist workshop or KAESER SERVICE.

Checking manual operation of the engine air intake valve

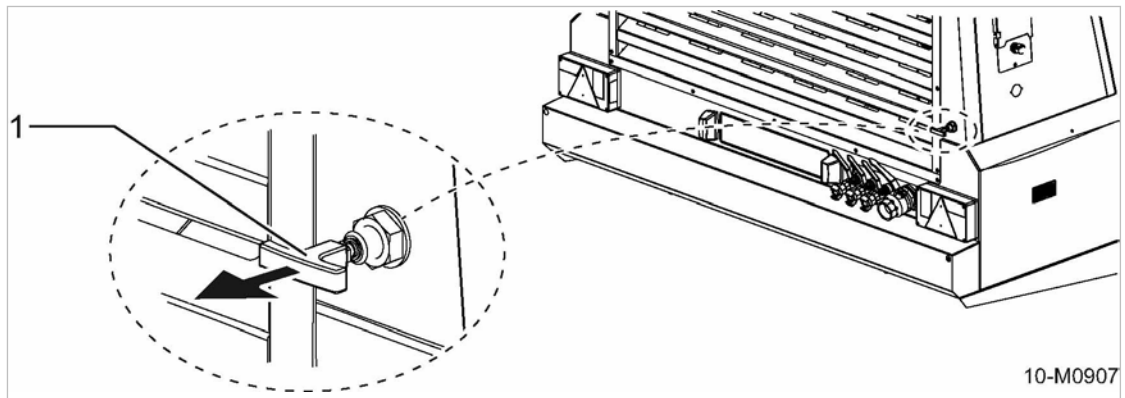


Fig. 92 Checking manual operation of the engine air intake valve

- ① Handle

1. Start the machine and switch to LOAD operation.
2. Pull the handle to the stop and hold.
The engine should stop in a few seconds.



Engine does not stop:

- Have the engine air intake valve checked by a specialist workshop or KAESER SERVICE.

Further information Further information on manual valve operation is given in chapter 8.5.

**10.11.6 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 in order to avoid potential machine faults.

For draining the liquid, maintenance openings have been added to the floor panel of the machine which are closed with bungs.

Some of these maintenance openings are fitted with liquid sensors sending a message to the SIGMA CONTROL MOBIL controller when they register liquids. In the event of a fault, the engine can no longer be started or the system automatically shuts the engine off.



In order to clean the machine, see chapter 4.7.8 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.
The «battery isolating switch» is turned off.

Analysing the fault message on the controller

The machine's floor pan is connected to the SIGMA CONTROL MOBIL controller via liquid sensors. When these sensors detect accumulations of liquid in the floor pan, they send a fault message to the controller, and the machine is shut down and/or cannot be started.

- The controller displays indicates "Liquid level in floor pan high".
- The «Information» and «STOP» keys are illuminated.
- The «Acknowledge» key flashes.

The message is stored in the event memory at the same time.



When this fault message appears, the accumulations of liquid within the machine must be drained immediately.

Precondition Liquid leaking into the floor pan.

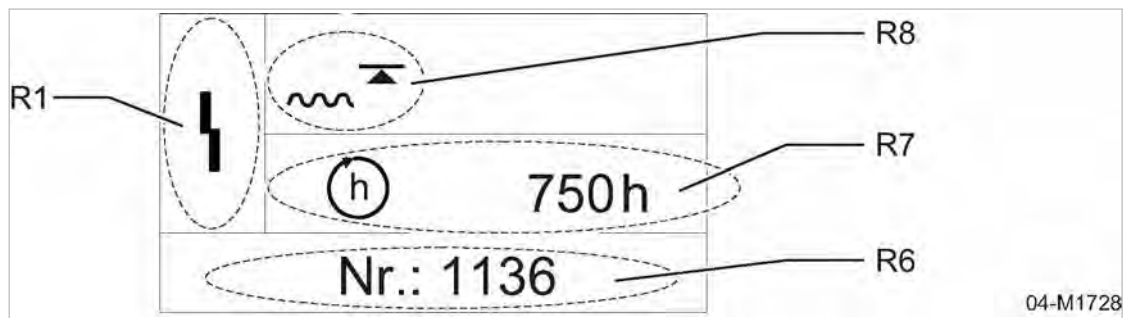


Fig. 93 Alarm message: "Liquid in the floor pan too high"

(R1) Event memory category: Fault
(R6) Message codes

(R7) Operating hours since this occurred last time
(R8) Symbols for trouble-shooting "Liquid level in floor pan high"

- Drain accumulated liquid.
- Open all 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. Using the cleaning cloth, remove any dirt within the machine.
4. Clean the bungs and service openings.
5. Close all service openings with bungs.
The machine body is sealed.



Dispose of collected liquid and contaminated working materials according to applicable environmental protection regulations.

- Find the cause for the accumulation and eliminate or have eliminated the problem.



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

- Close the doors.

Acknowledging alarm messages:

Precondition Fault rectified.

- Confirm the message with the «Acknowledge» key.
The «Information», «STOP» and «Acknowledge» keys extinguish.

Result The machine can again be operated.

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 KAESER products. They are specifically selected for use in KAESER machines and ensure trouble-free operation.

Unsuitable or poor quality spare parts and operating fluids/materials may damage the machine or impair its proper function.

Damage to the machine can also result in personal injury.

⚠ WARNING

There is risk of personal injury or damage to the machine resulting from the use of unsuitable spare parts or operating fluids/materials.

- *Use only original KAESER parts and operating fluids/materials.*
- *Do not use alternative consumable parts and operating fluids and materials.*
- *Have an authorized KAESER service representative carry out regular maintenance.*

Compressor

Name	Quantity	Number
Air filter element	1	1260
Compressor oil filter	1	1210
Oil separator cartridge set	1	1450
Cooling oil	1	1600
Drive belt (set of belts)	1	1801

Tab. 79 Compressor consumable parts/spares

MERCEDES BENZ engine components

Name	Quantity	Number
Air filter element	1	1280
Fuel prefilter (filter cartridge at the water separator)	1	1915
Fuel prefilter (element)	1	1919
Fuel microfilter (element)	1	1920
Engine oil filter (element)	1	1905
Engine oil	1	1925

Name	Quantity	Number
Engine belt	1	4470

Tab. 80 Engine consumable parts/spares

Option dd Filter combination

Name	Quantity	Number
Filter element for prefilter	1	1550
Filter element for microfilter	1	1551
Sealing kit	2	6260

Tab. 81 Replacement parts: Combination filter

Option dc Fresh air filter

Name	Quantity	Number
Filter elements, fresh-air filter (filter kit)	1	1549
Indicator insert	1	3930

Tab. 82 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 Service Addresses

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

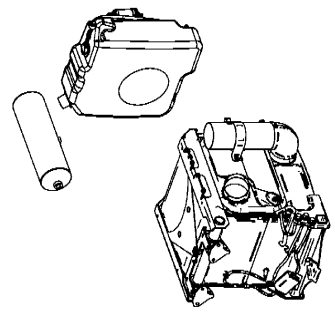
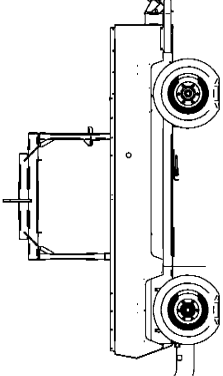
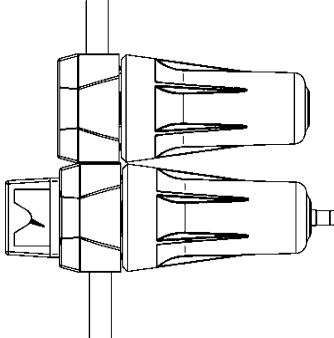
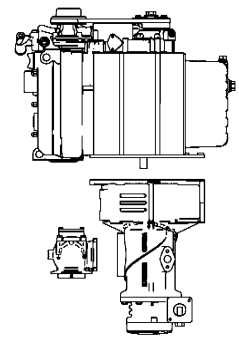
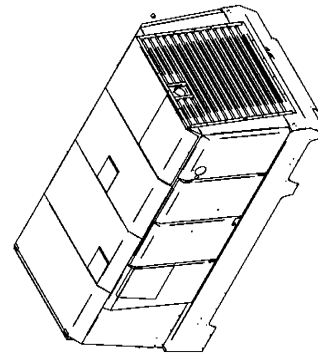
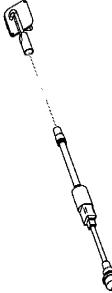
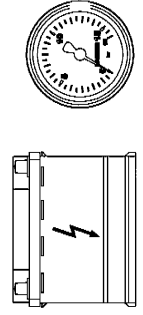
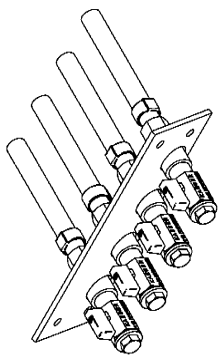
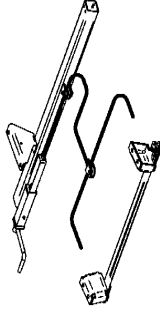
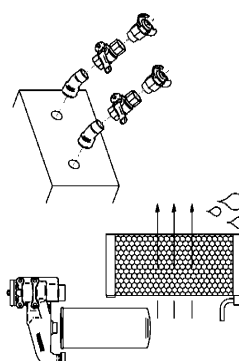
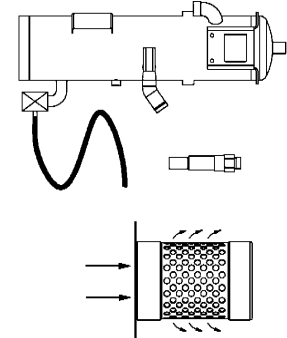
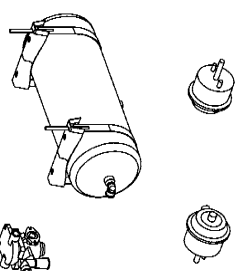
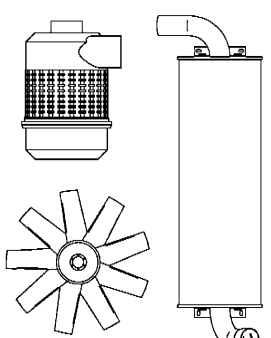
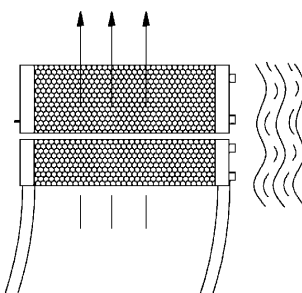
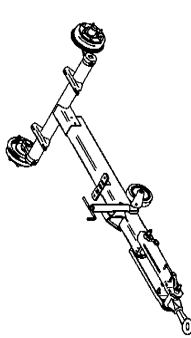
11.5 Replacement parts for service and repair

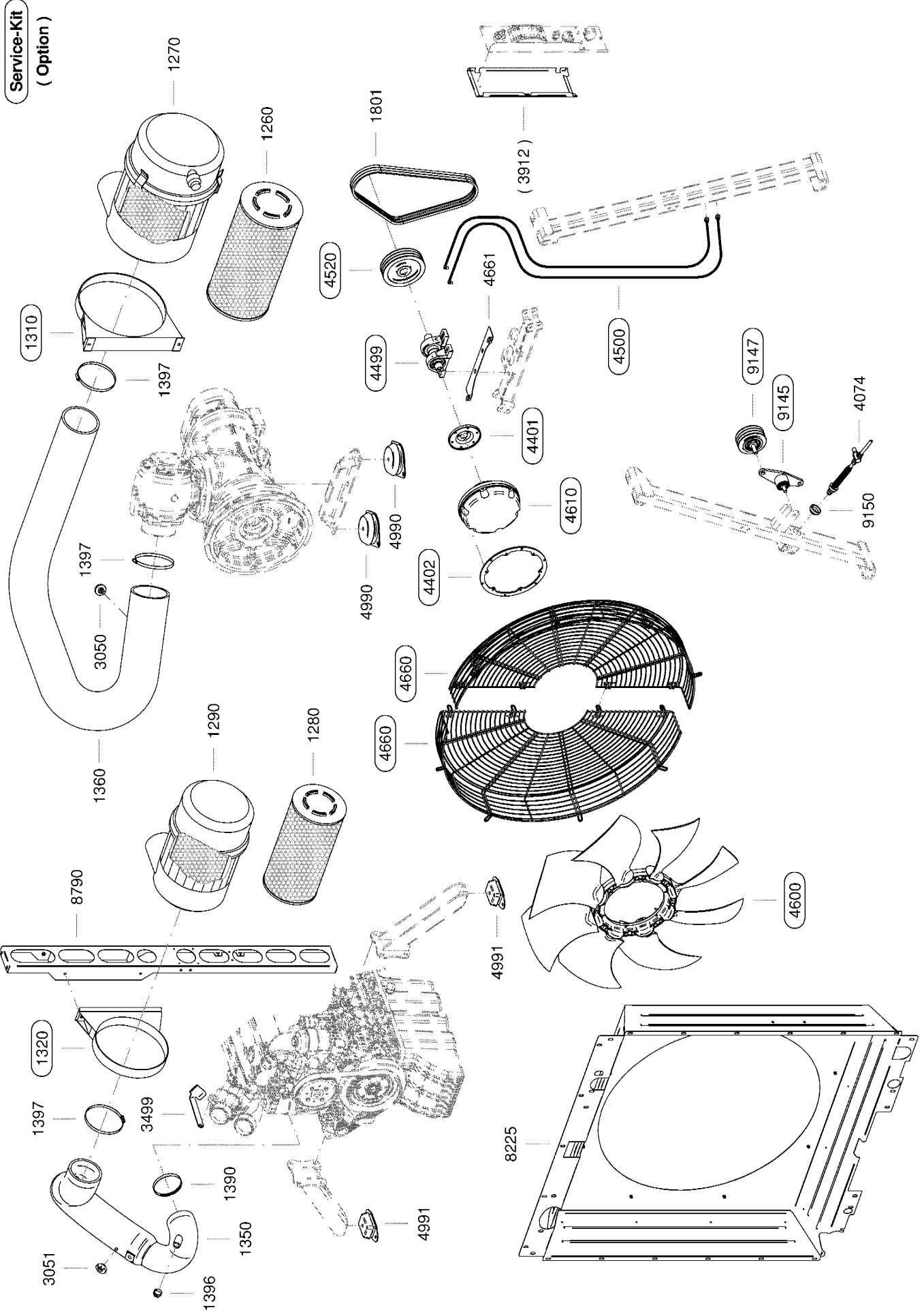
With the help of the parts list you can plan your material requirement according to operating conditions, and order the spare parts you need.

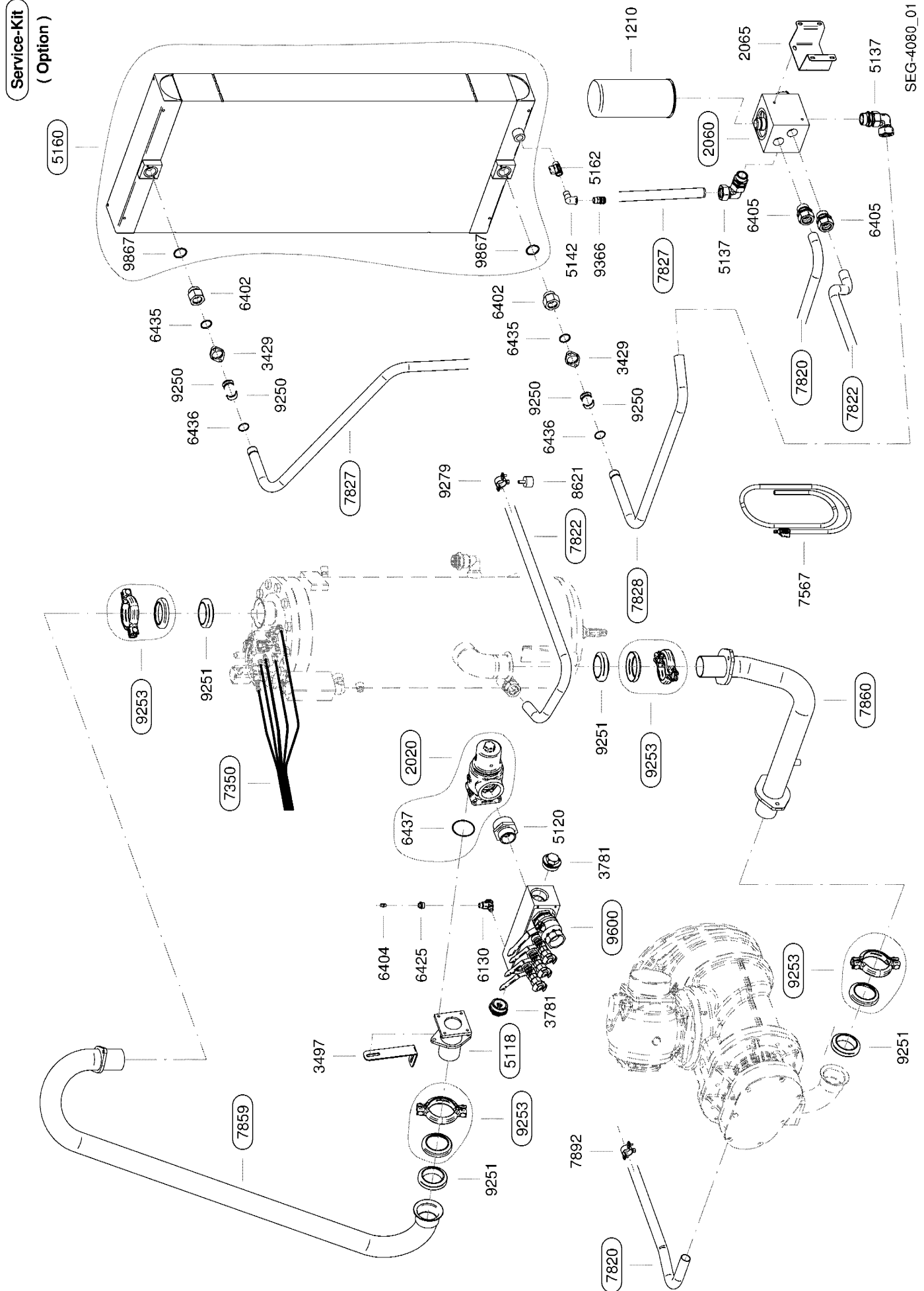
⚠ WARNING

*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.*

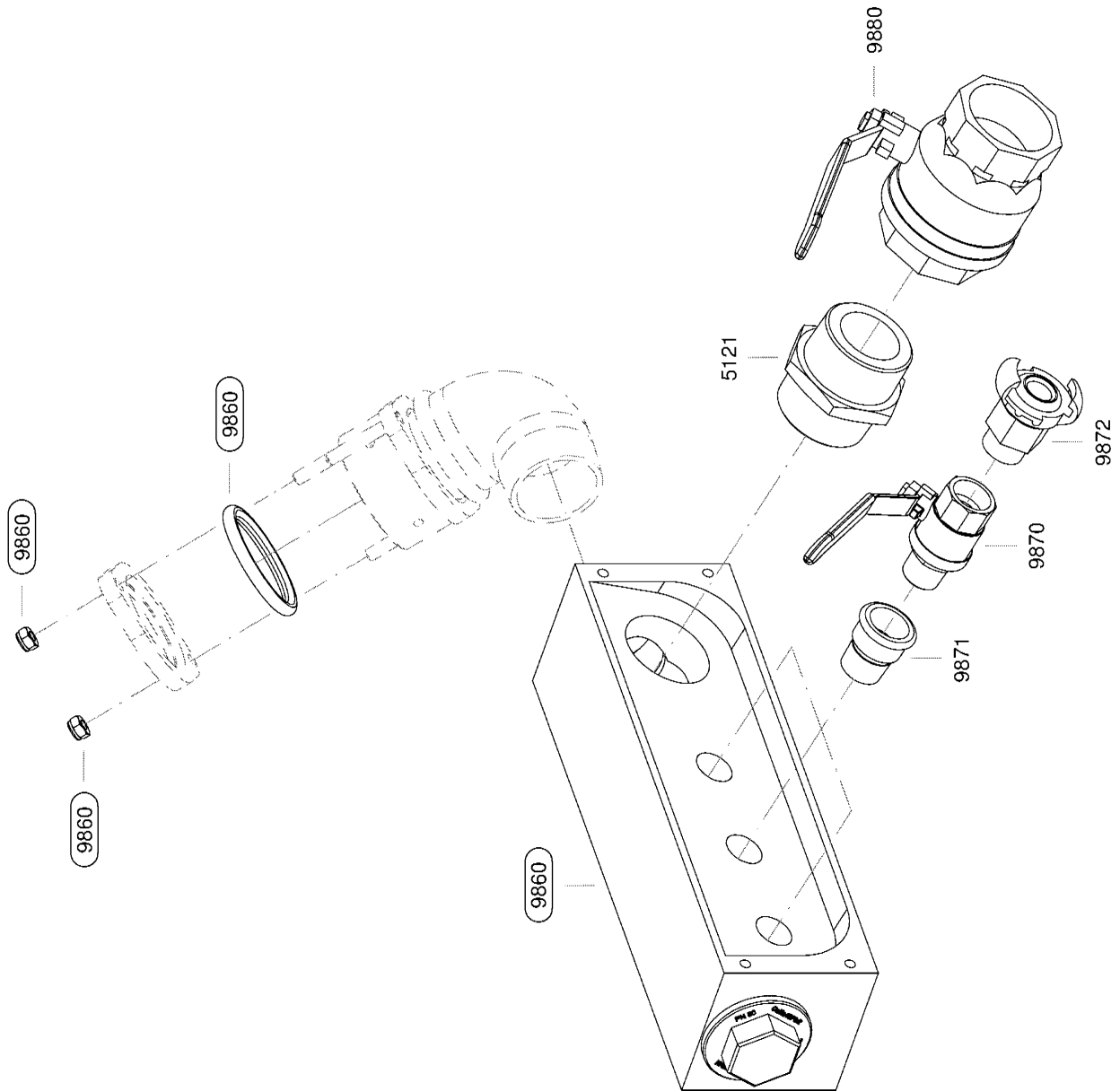
- *Inspections, preventive maintenance or repair tasks not described in this manual must not be carried out by unqualified personnel.*
- *Have further tasks, not described in this service manual, carried out by motor vehicle workshops or KAESER SERVICE.*

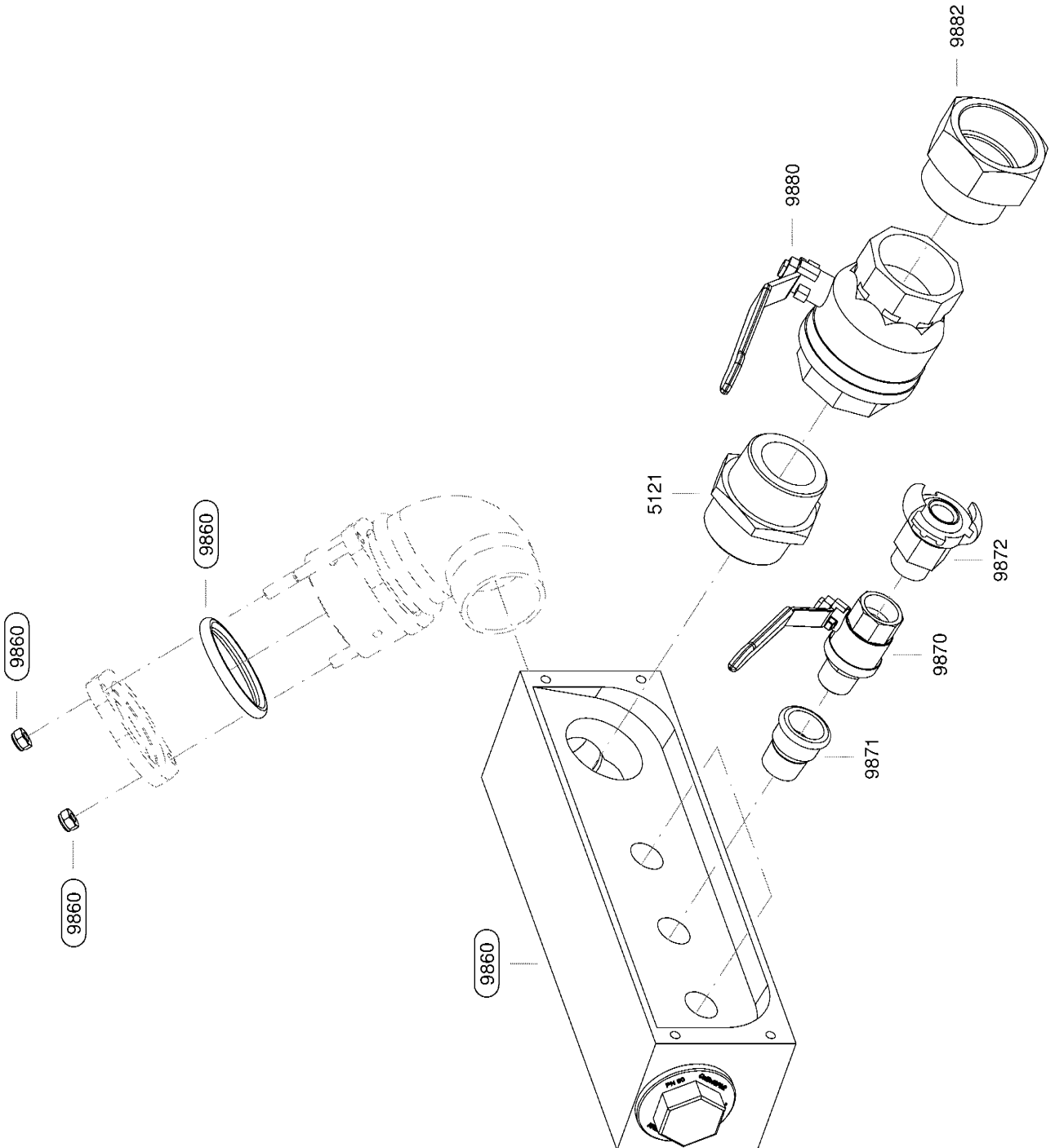
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	 <p>3001</p>	 <p>(7004)</p>	 <p>(8902)</p>
	 <p>2001</p>	 <p>6001</p>	 <p>(8901)</p>
	 <p>1001</p>	 <p>5001</p>	 <p>8900</p>

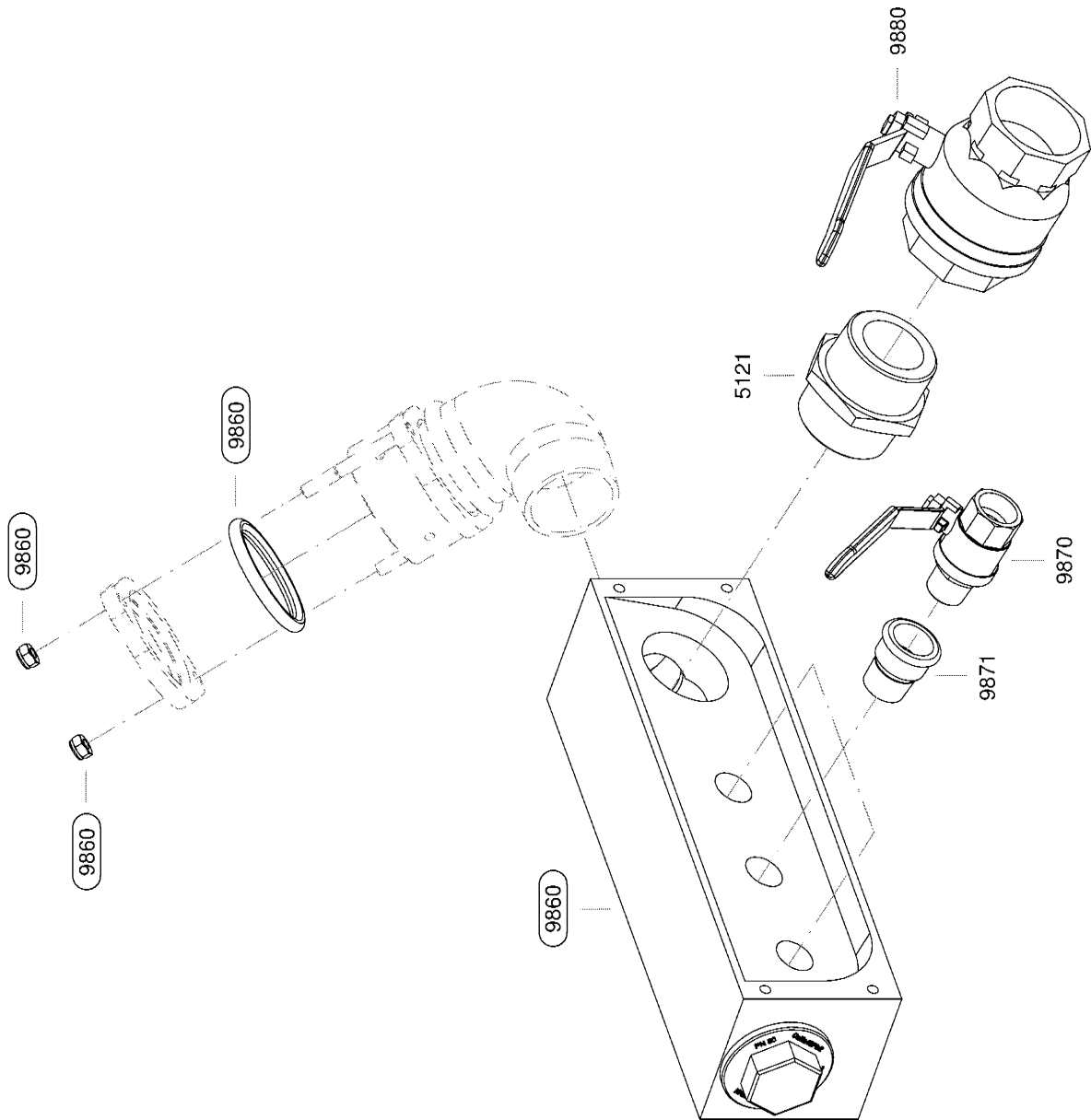


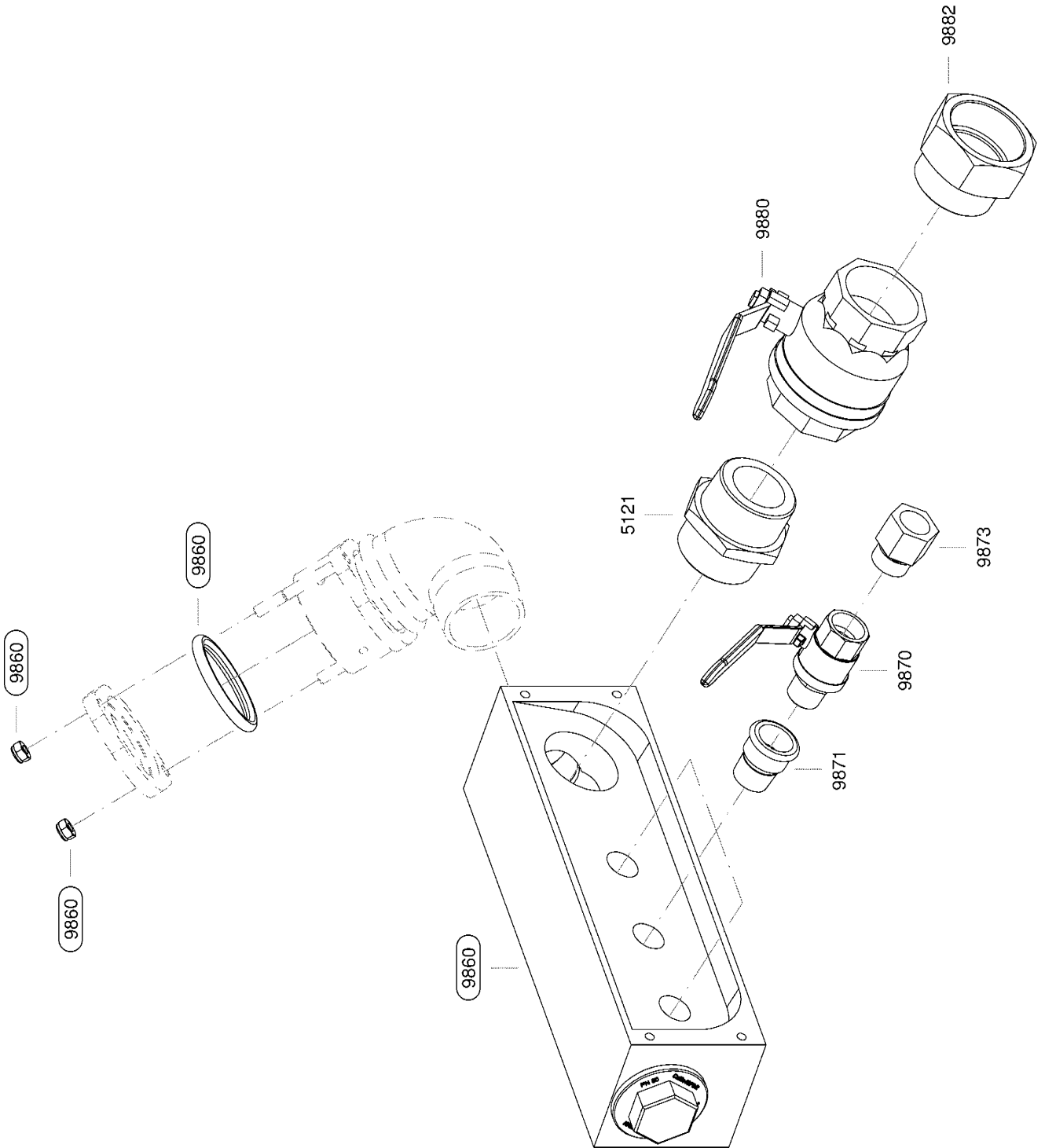


SEG-4080_01



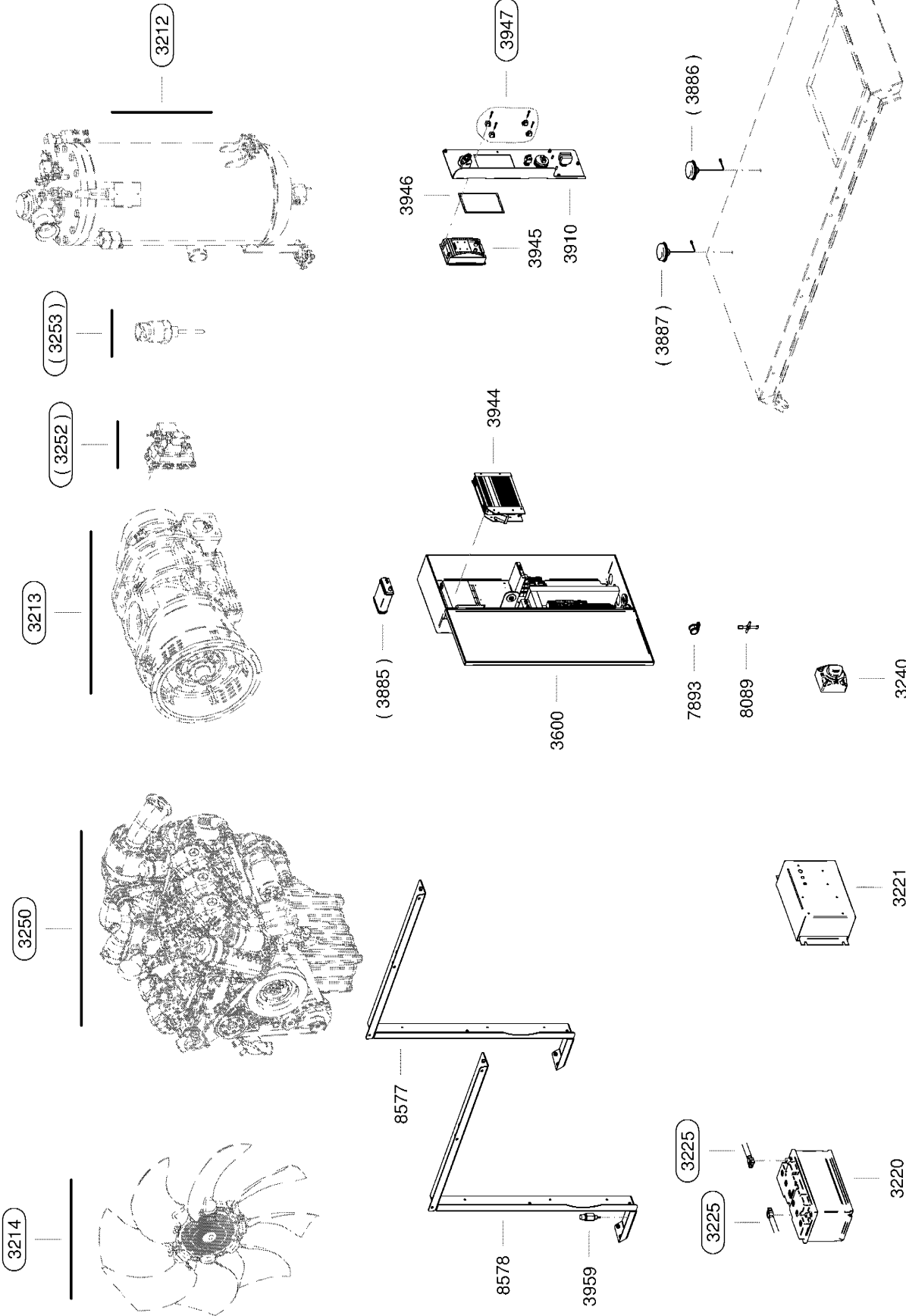


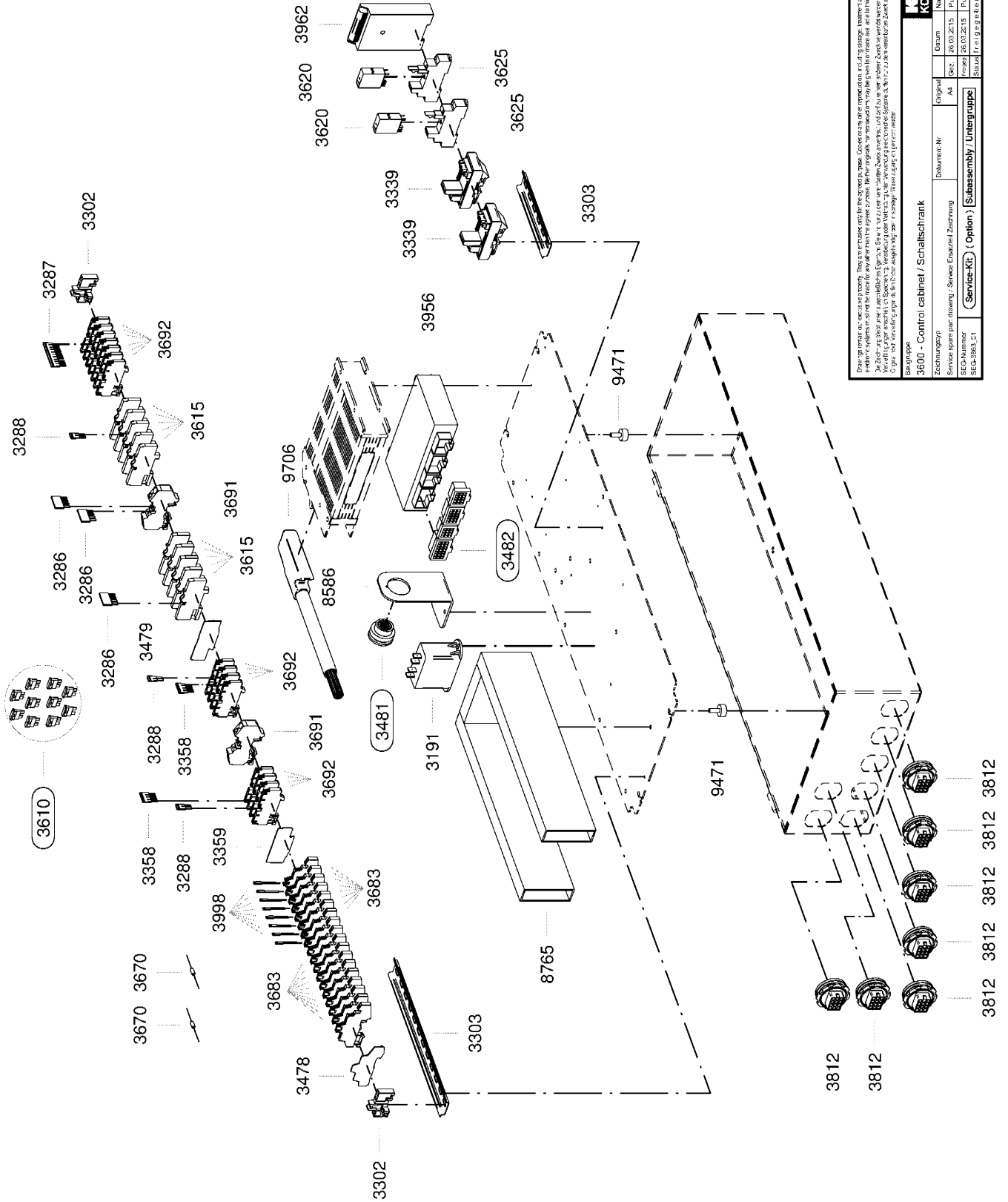




Service-Kit
(Option)

SEG-4081_01



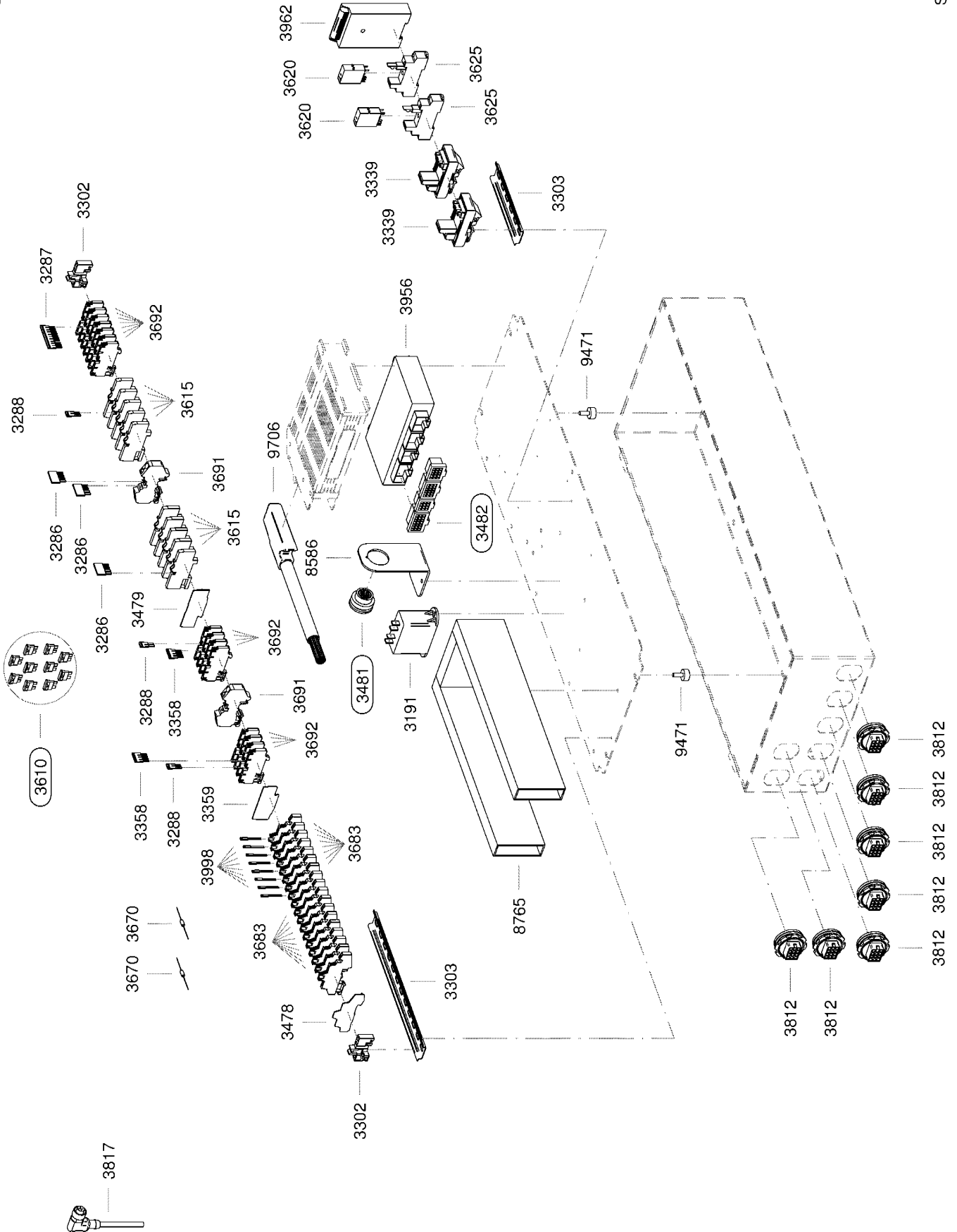


Bitte beachten Sie die folgenden Hinweise: Gebrauchsinformationen, Bedienungsanleitung, Ersatzteil- und Service-Liste sind Bestandteil des Produkts. Die Zeichnungen sind nur zur Identifizierung der Teile zu verwenden. Die Zeichnungen sind nicht für die Montage der Ersatzteile zu verwenden. Die Zeichnungen sind nur zur Identifizierung der Teile zu verwenden. Die Zeichnungen sind nicht für die Montage der Ersatzteile zu verwenden.

KAESER KOMPRESSOREN

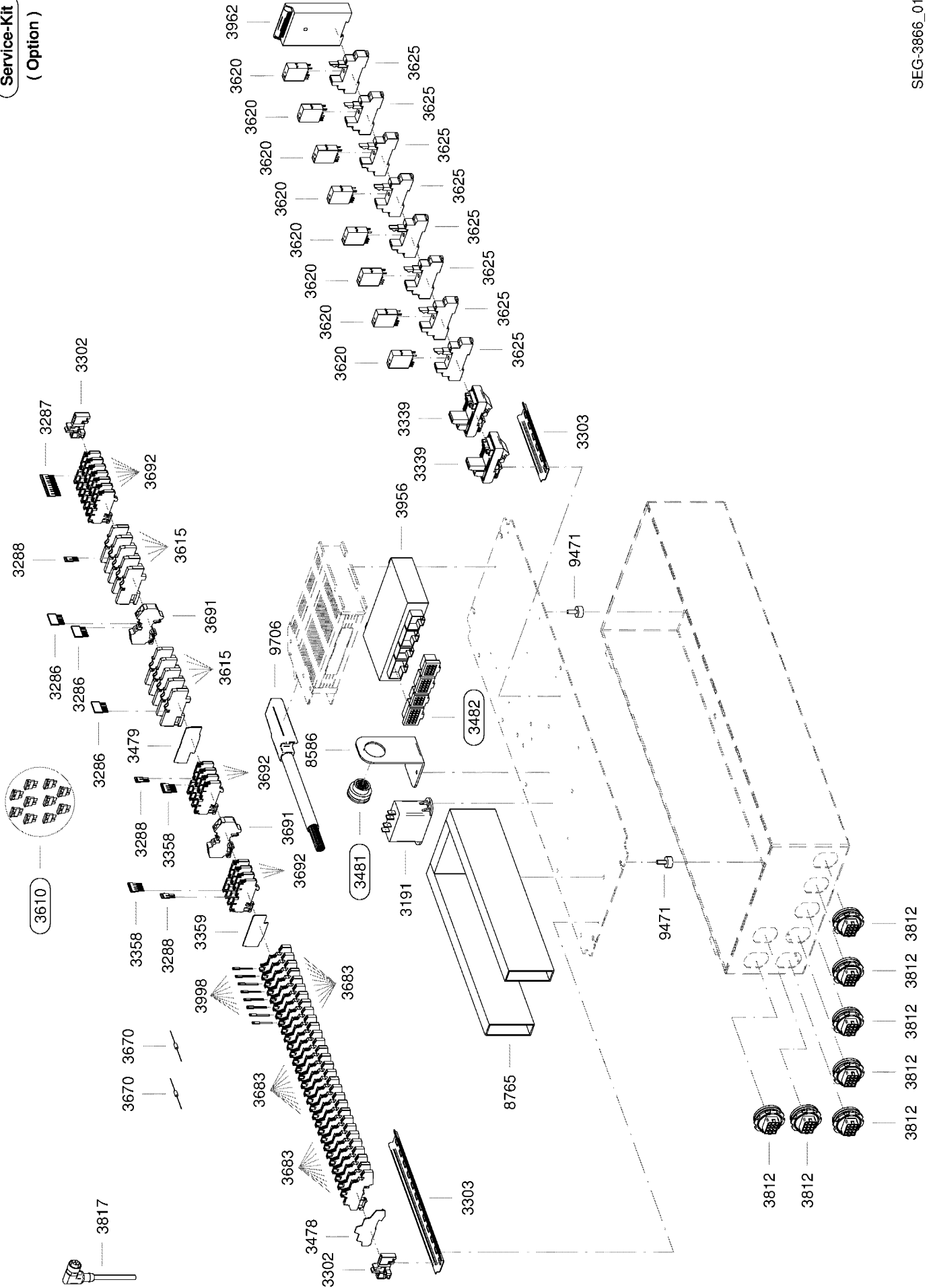
Benennung	3600 - Control cabinet / Schaltschrank	Original Name	Enchilite
Zeichnungsart	3600	Datum	2015
Skizze	2015	Original Nr.	3600
SECC-Nr.	3600	Alt	3600
SECC-Gruppe	3600	Version	2015
SECC-Gruppe	3600	Subassembly / Untergruppe	3600
SECC-Gruppe	3600	Option	3600
SECC-Gruppe	3600	Blatt	1 von 1

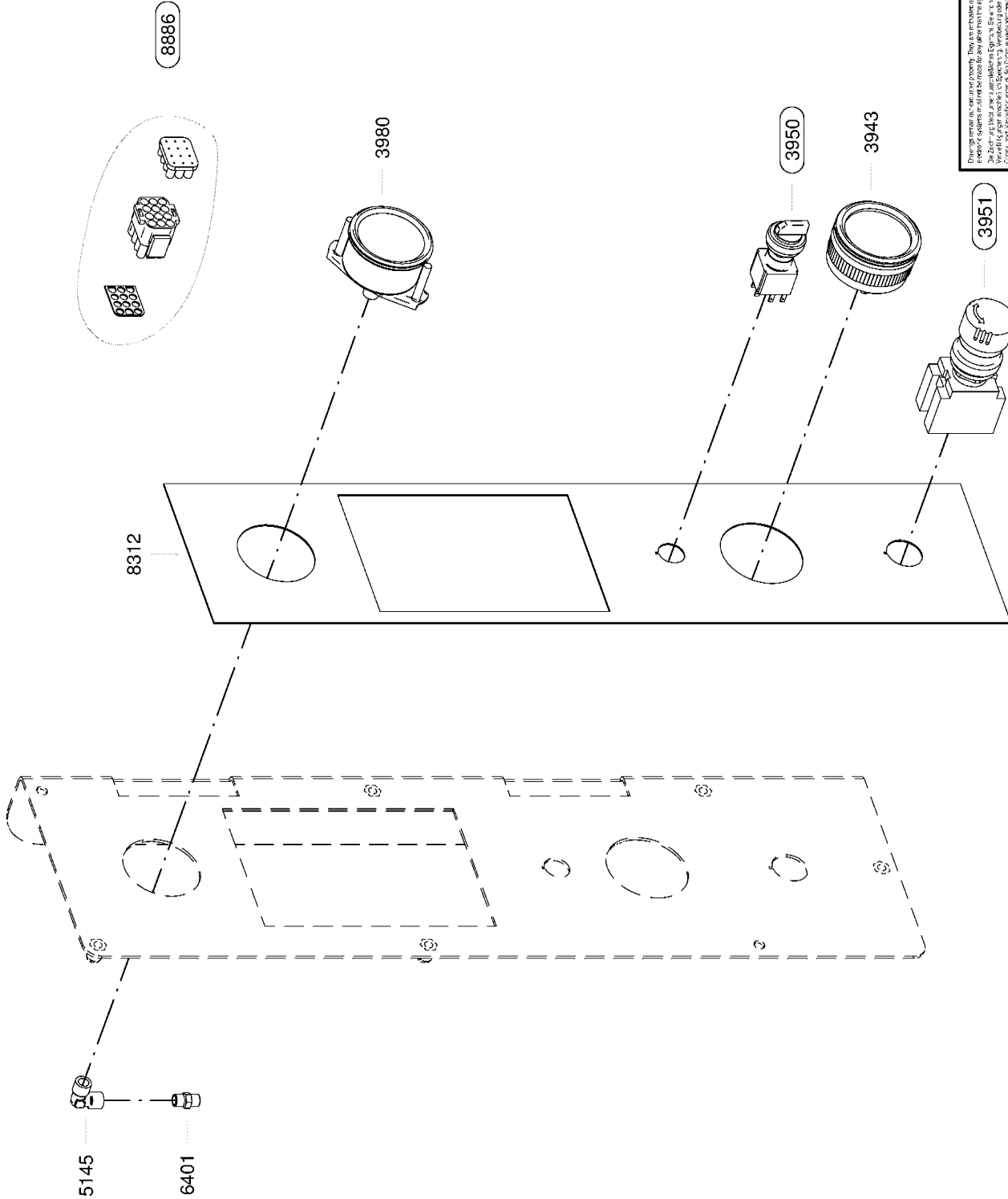
Service-Kit
(Option)



SEG-3865_01

Service-Kit
(Option)





KAESER KOMPRESSOREN

Original Name: Erstellte Nr.:
 Zeichnungs-Nr.: Datum:
 Skizze: Zeichnungs-Nr.:
 Original: Alt:
 Zeichnungs-Nr.: Datum:
 Skizze: Zeichnungs-Nr.:
 Original: Alt:

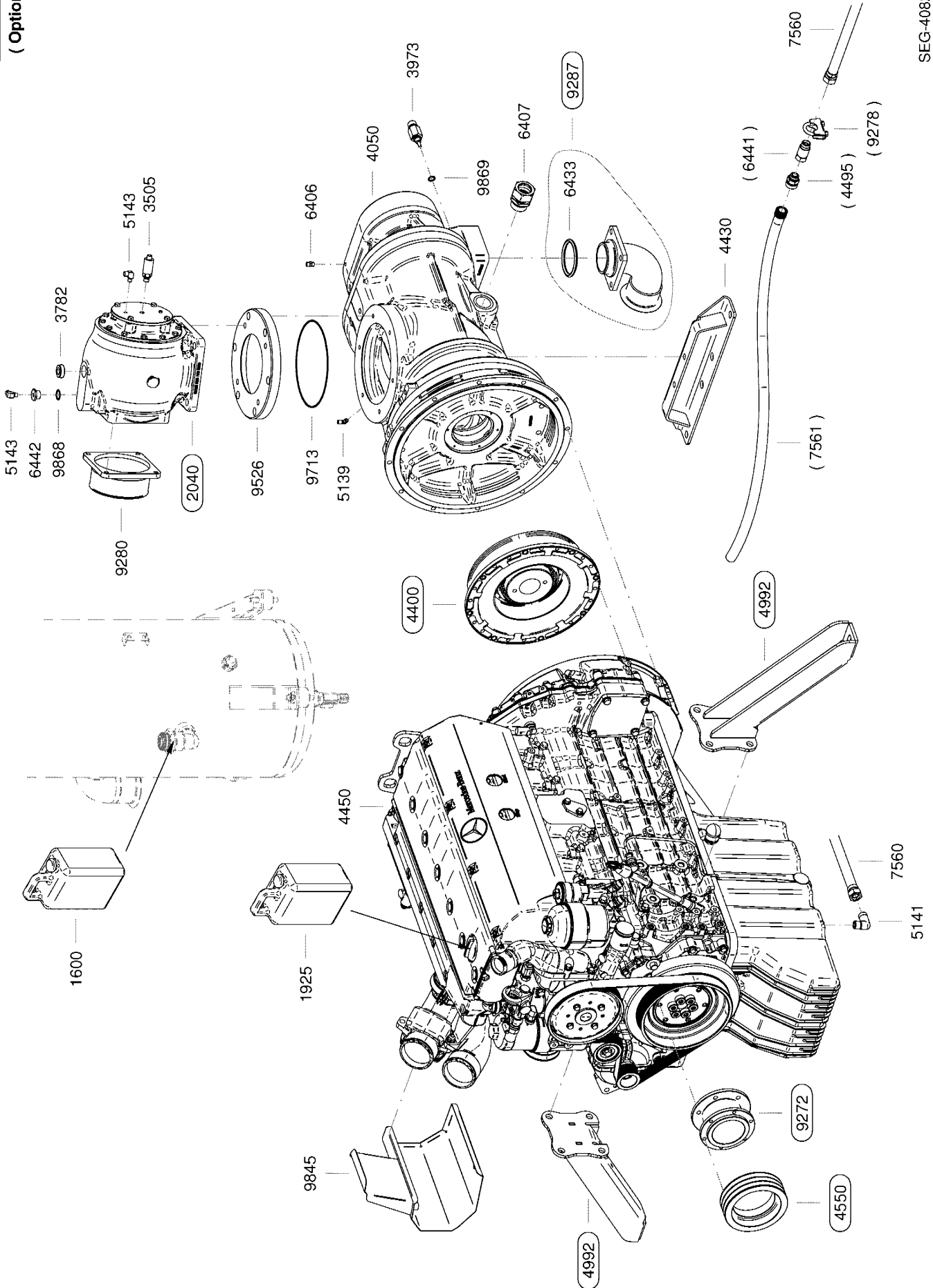
3910 - Instrument panel / Bedientafel

Service-Kit (Option) / Untergruppe

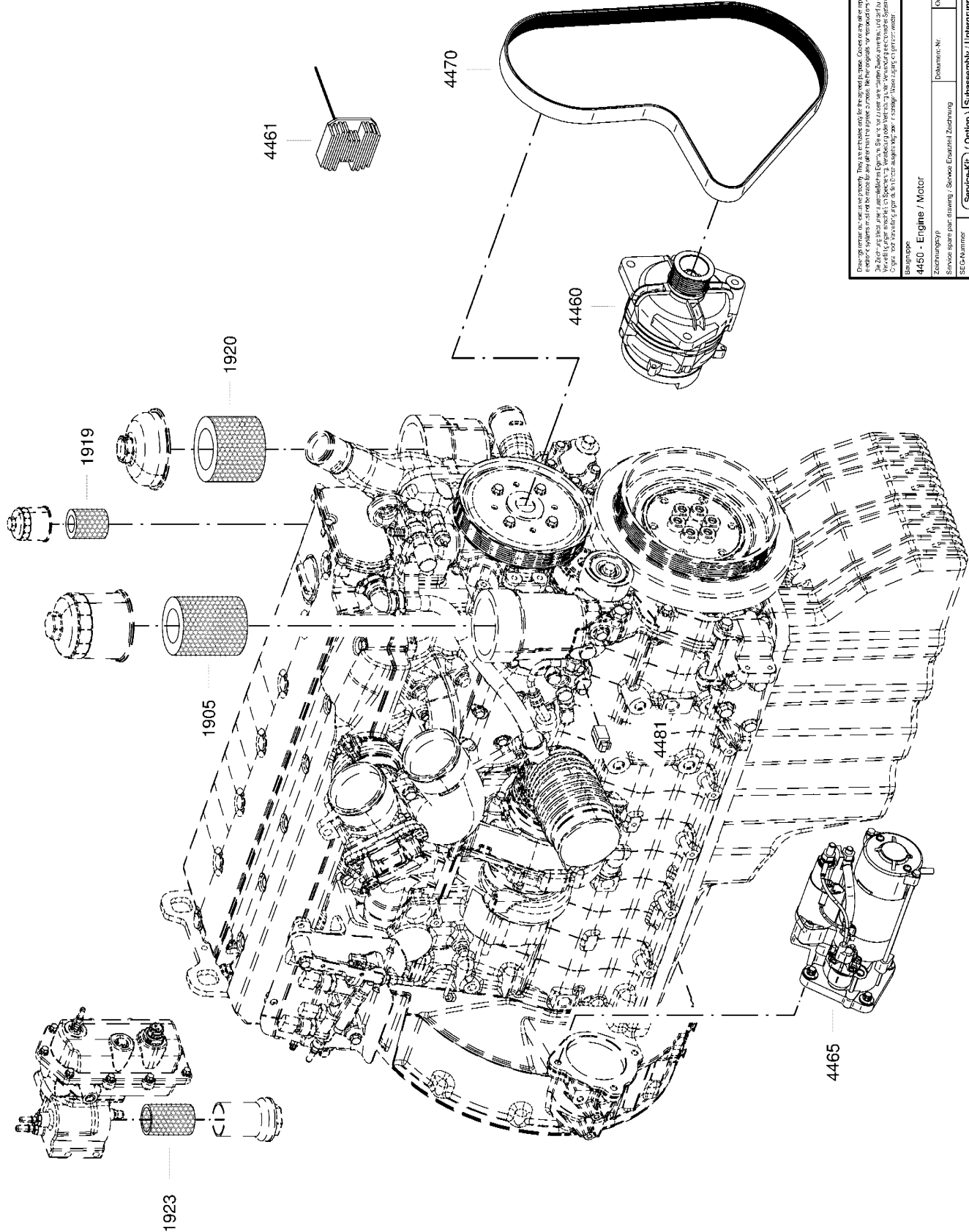
SECC-9867/21

1 von 1

Service-Kit
(Option)



SEG-4082_01

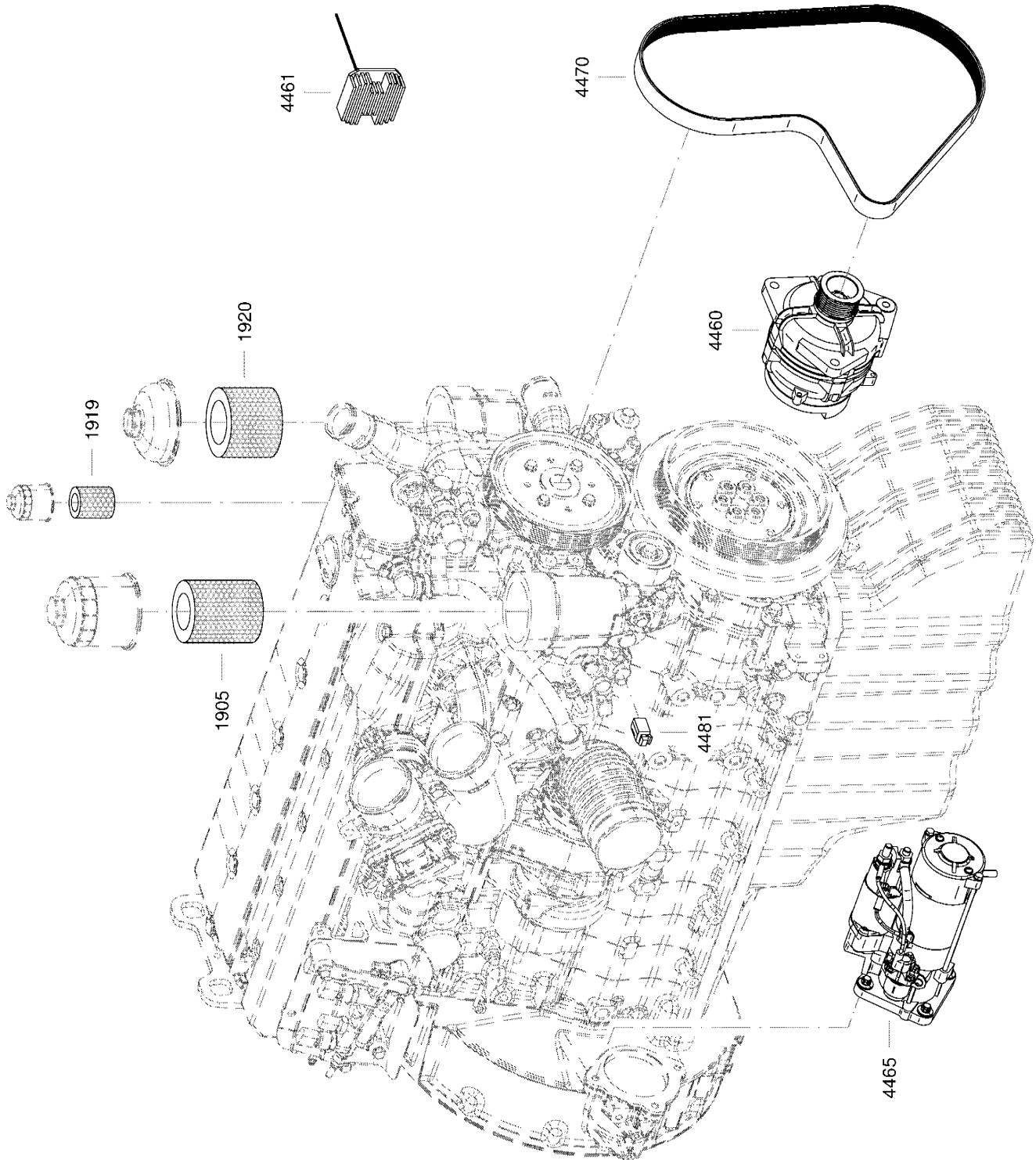


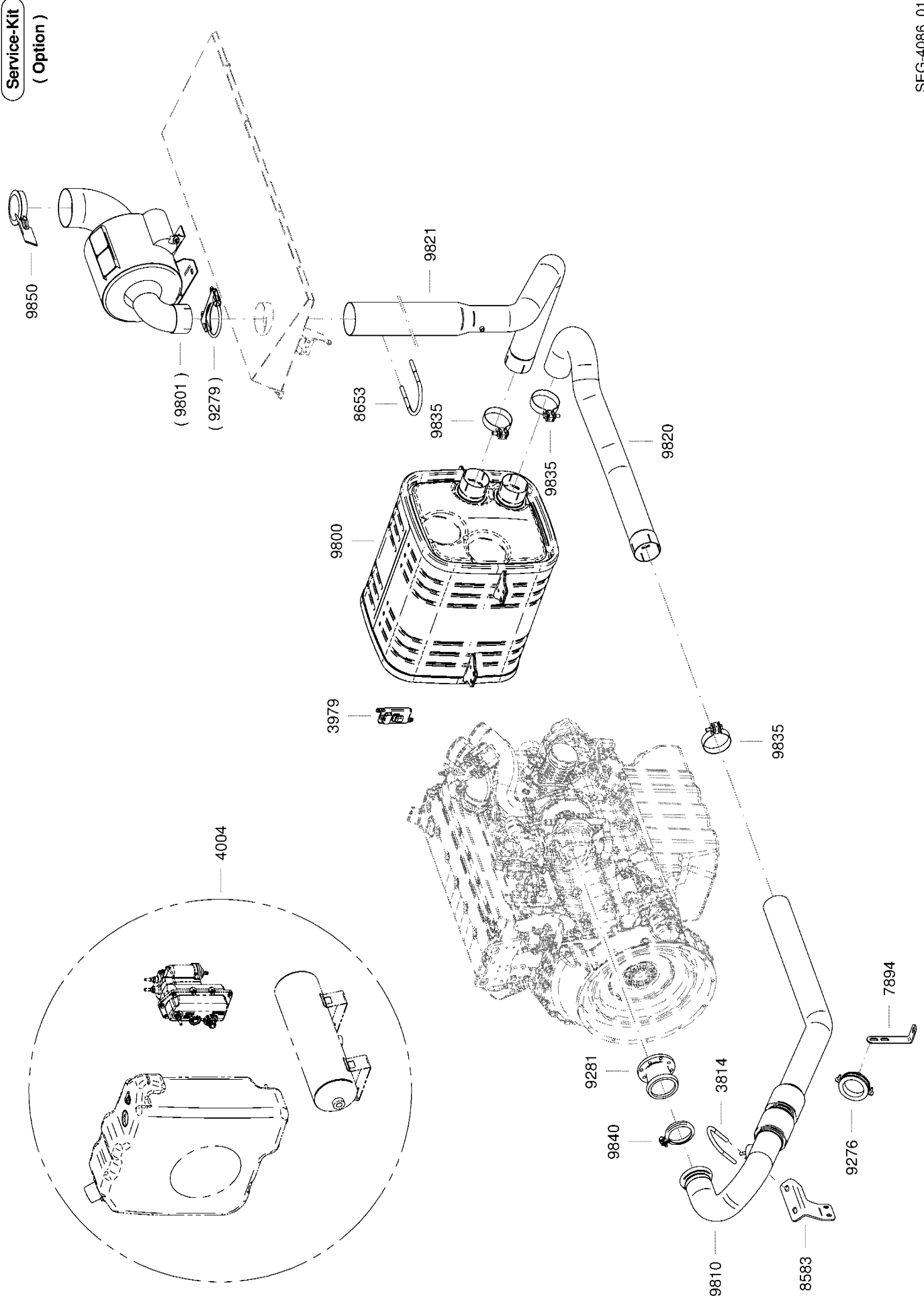
Bitte beachten Sie, dass die Ersatzteile, die in diesem Katalog angegeben sind, nur für die Reparatur von Originalgeräten geeignet sind. Die Ersatzteile sind nur für die Reparatur von Originalgeräten geeignet. Die Ersatzteile sind nur für die Reparatur von Originalgeräten geeignet. Die Ersatzteile sind nur für die Reparatur von Originalgeräten geeignet.

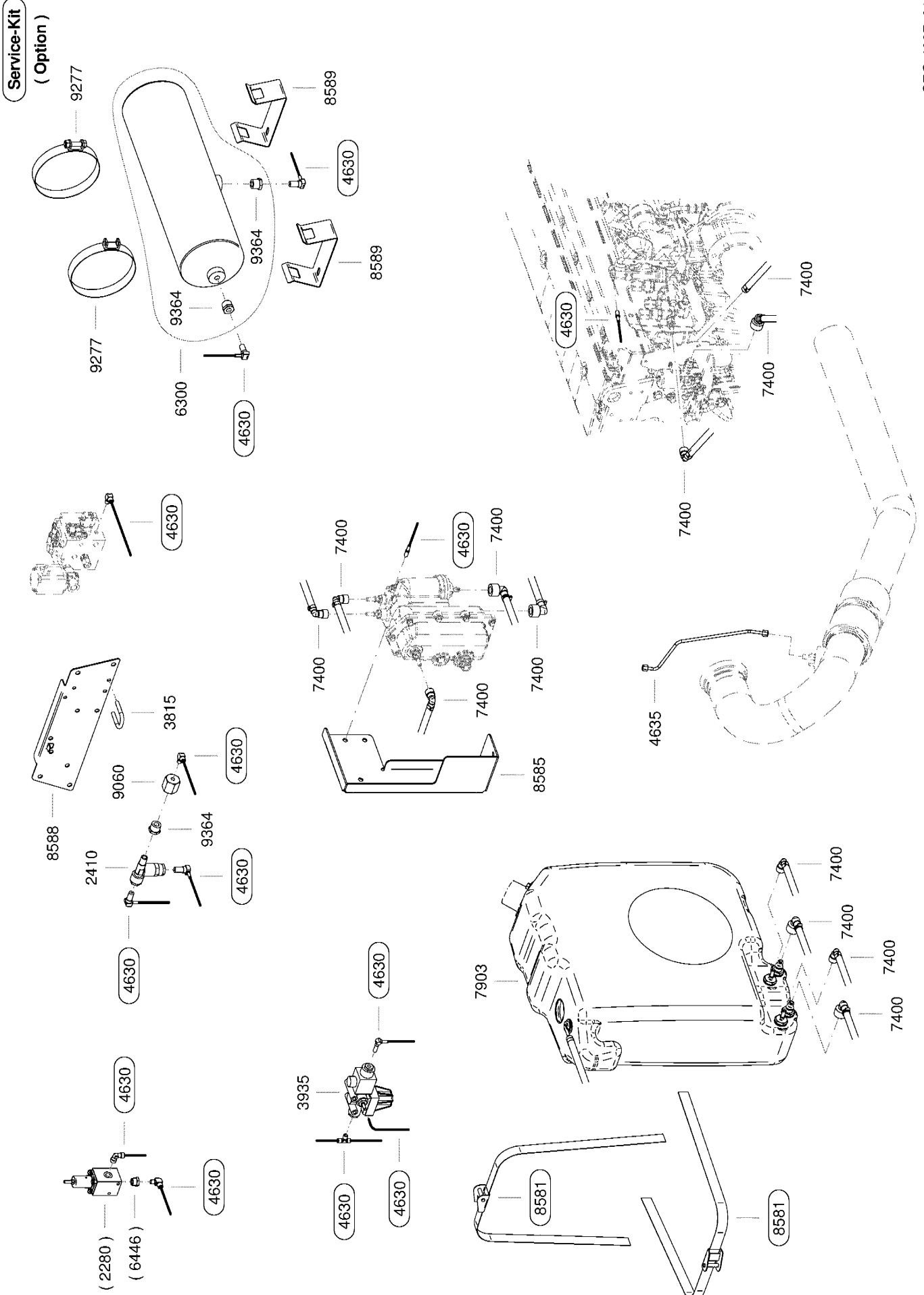
KAESER KOMPRESSOREN		Original Name	Erstellt mit
4450 - Engine / Motor		Dokument-Nr.	01/01
Zuschlagsschein	Ad	02/03 2015	1/01/11
Service-Kit	Option	Subassembly / Untergruppe	1 von 1

Service-Kit
(Option)

SEG-4085_01

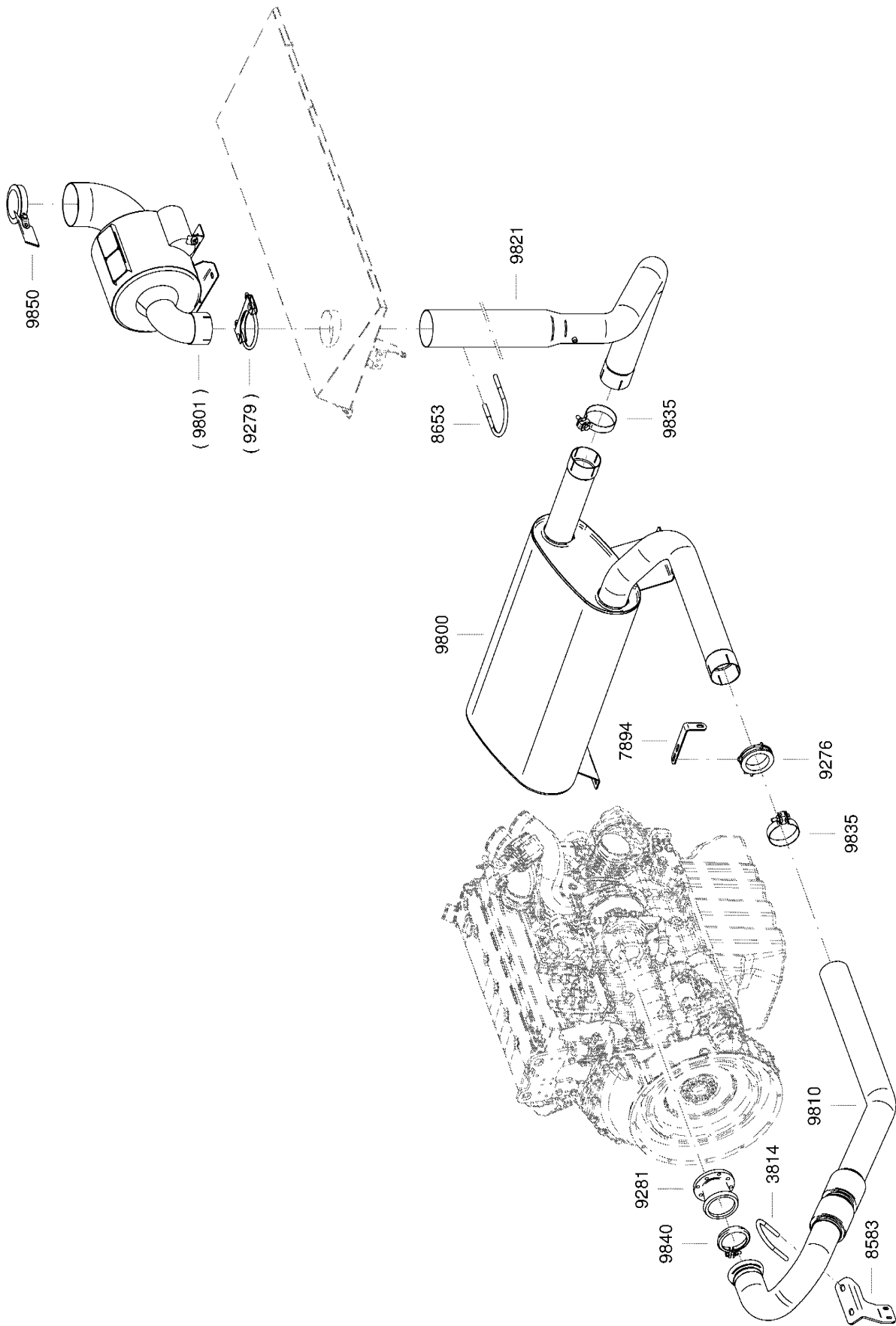


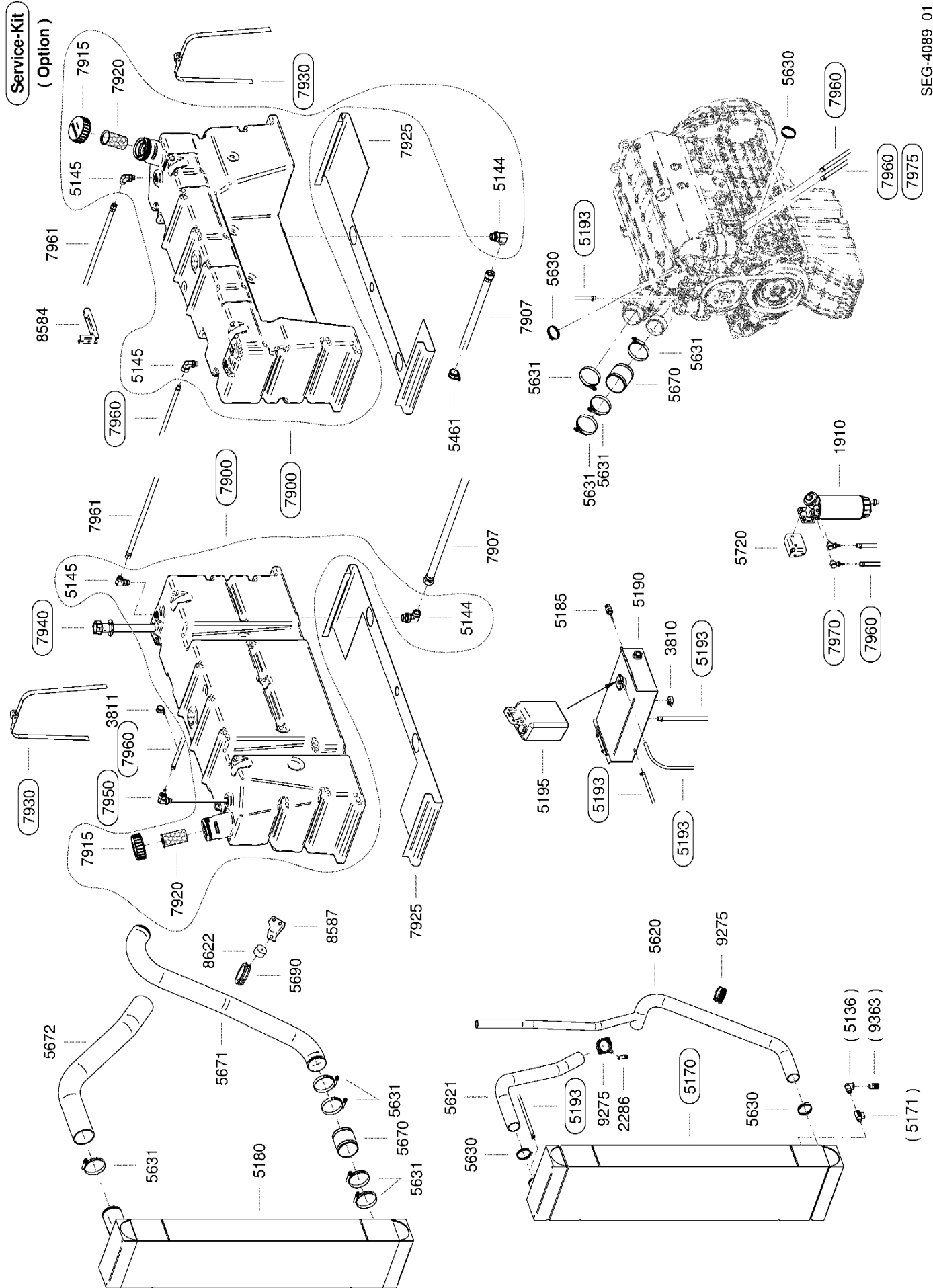




Service-Kit
(Option)

SEG-4088_01

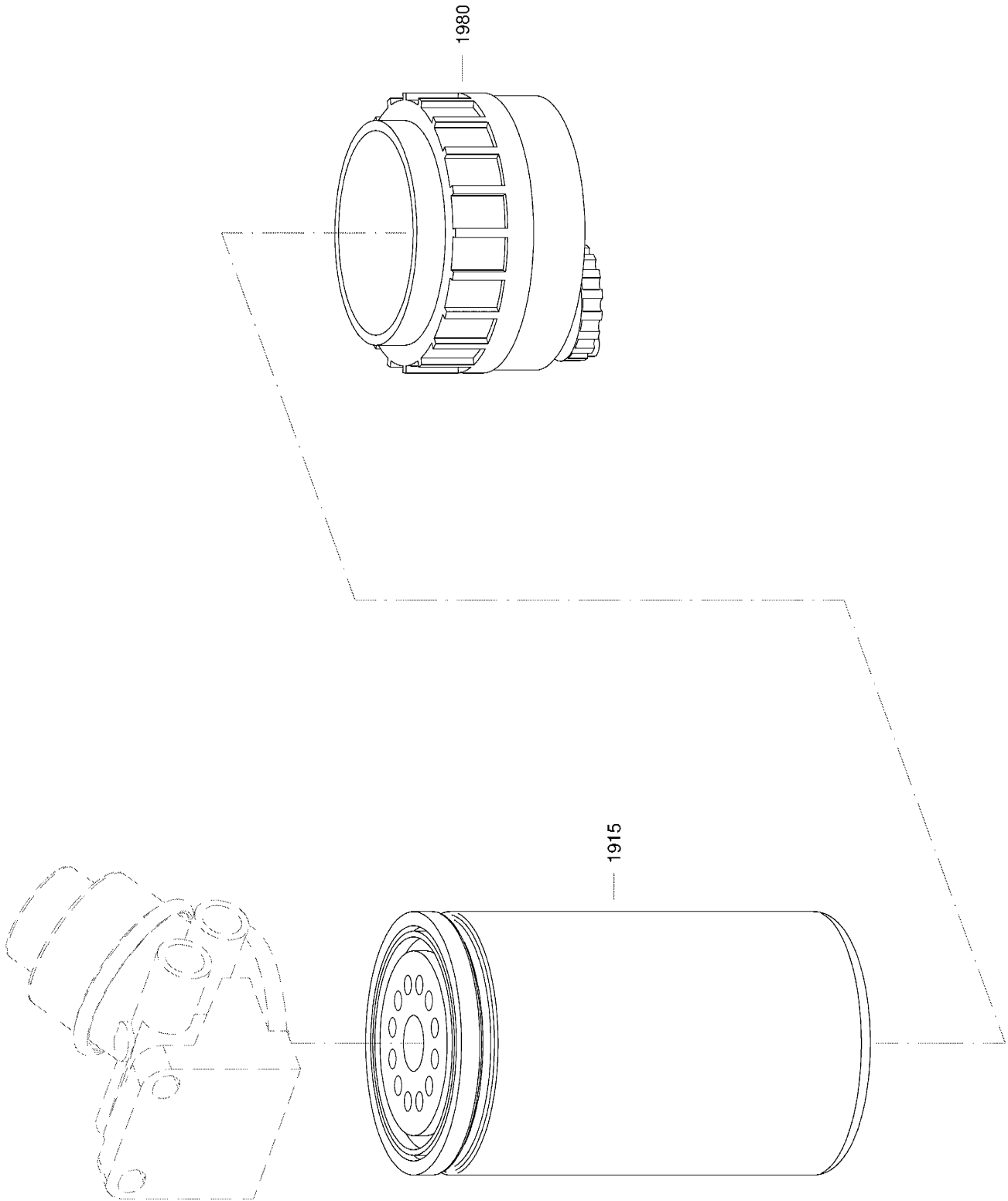




SEG-4089_01

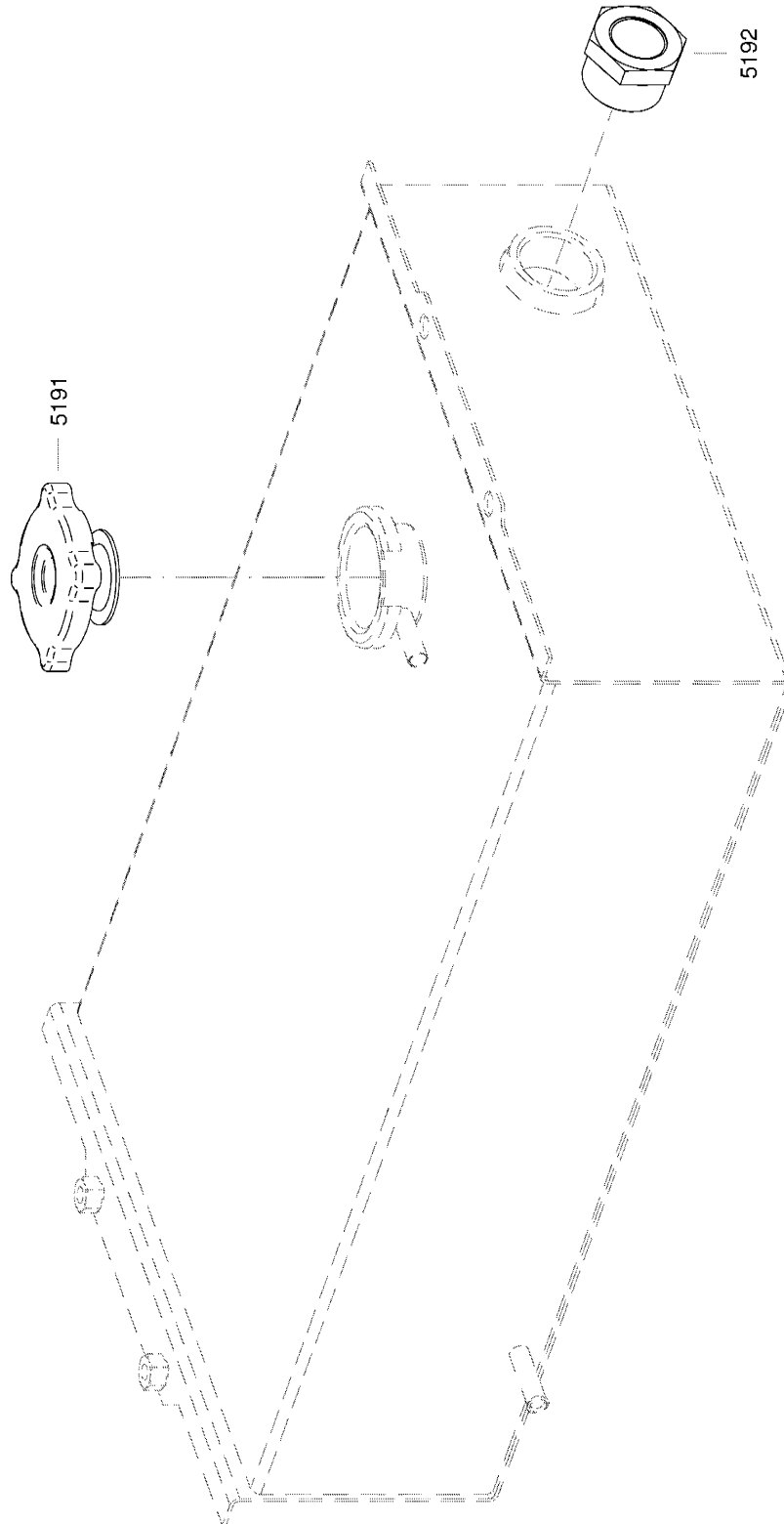
Service-Kit
(Option)

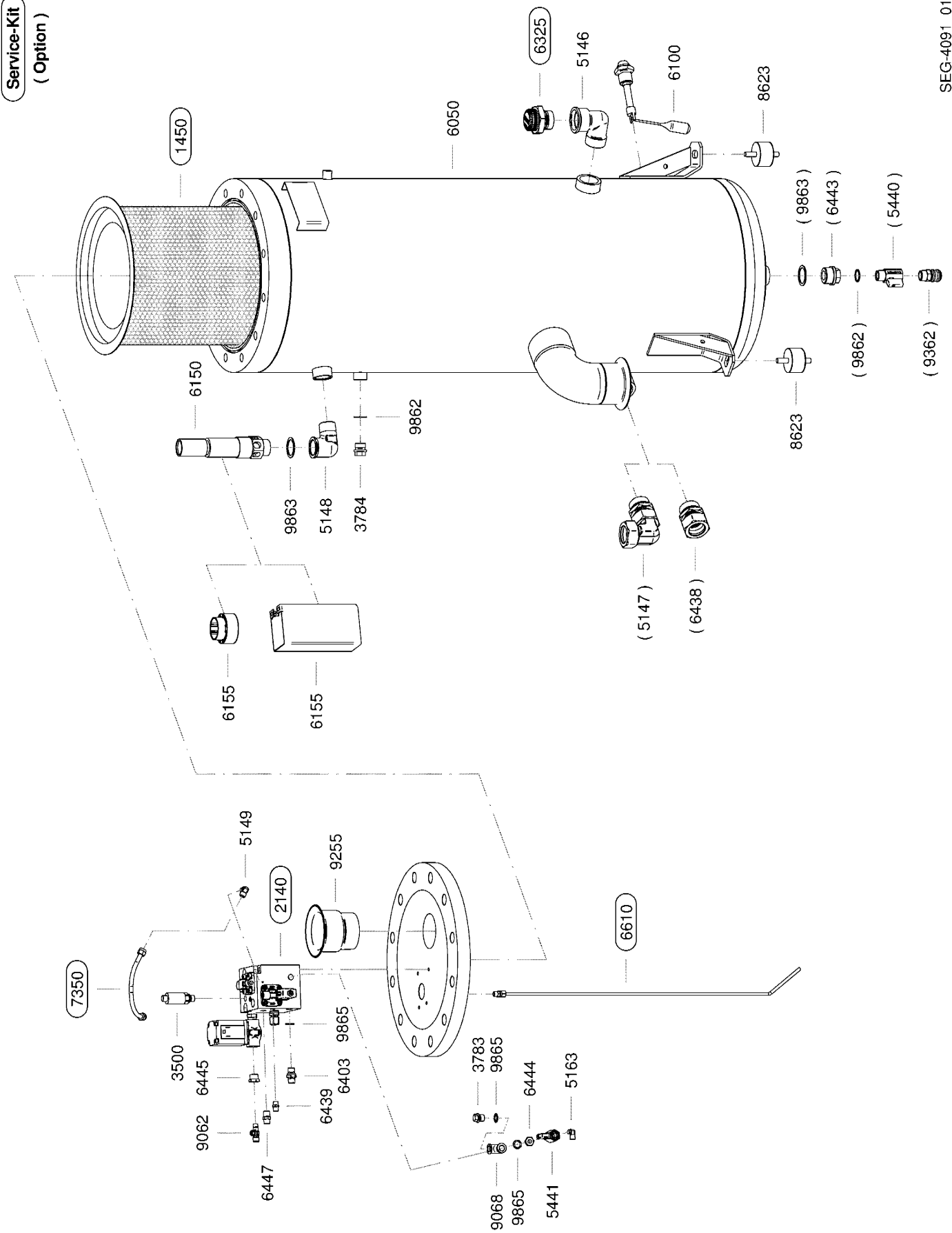
SEG-3875_01



Service-Kit
(Option)

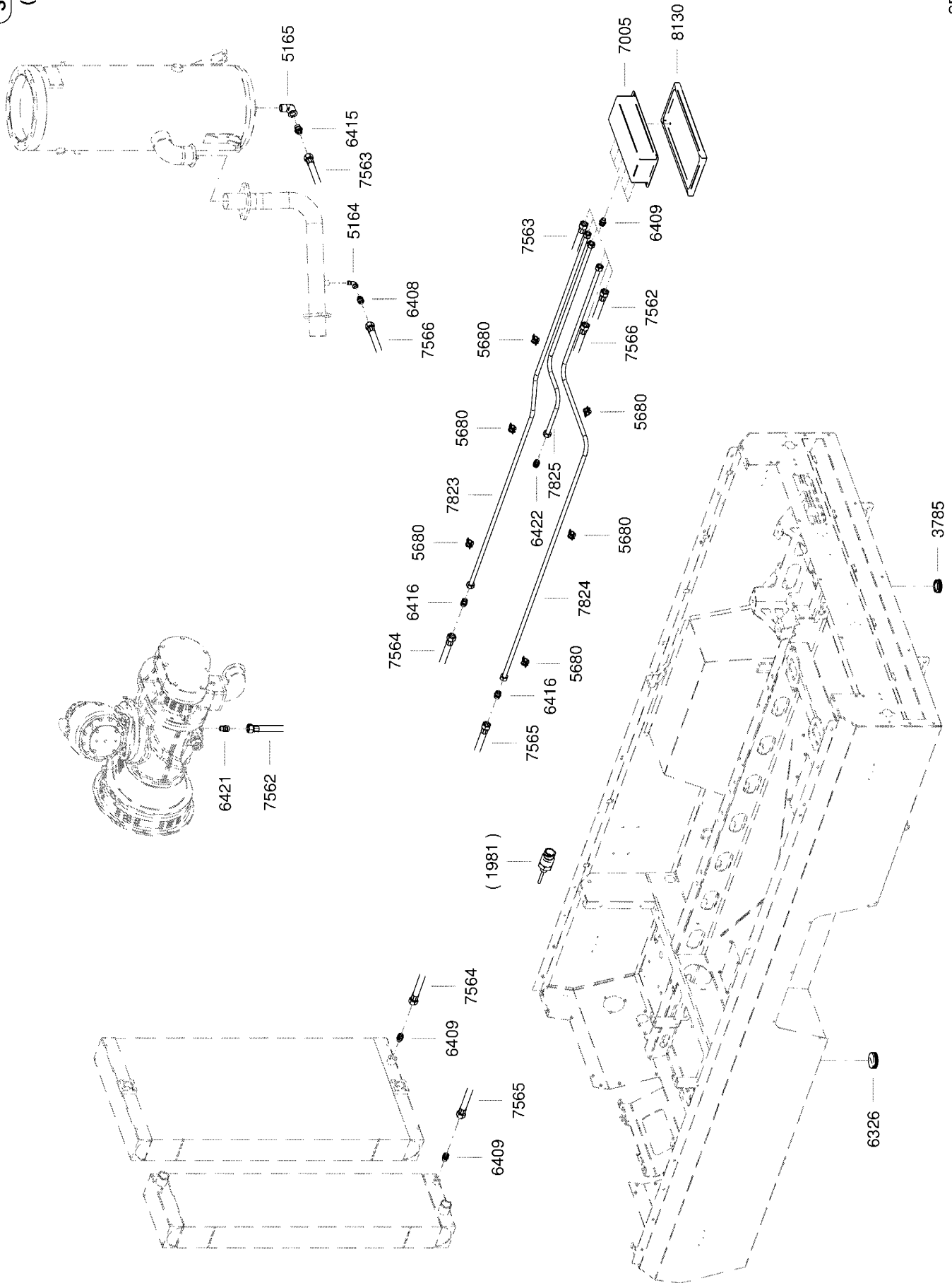
SEG-4090_01





SEG-4091_01

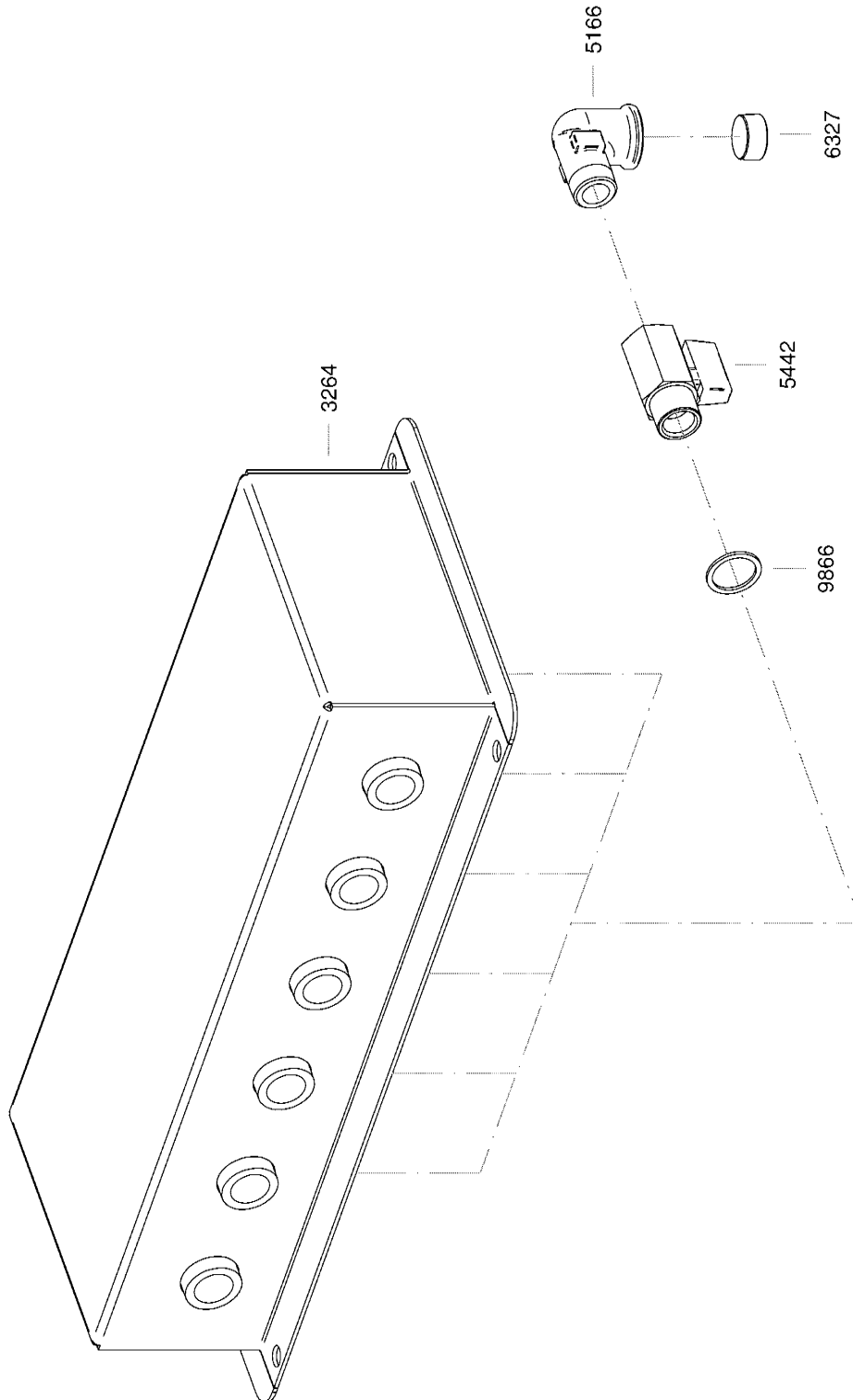
Service-Kit
(Option)



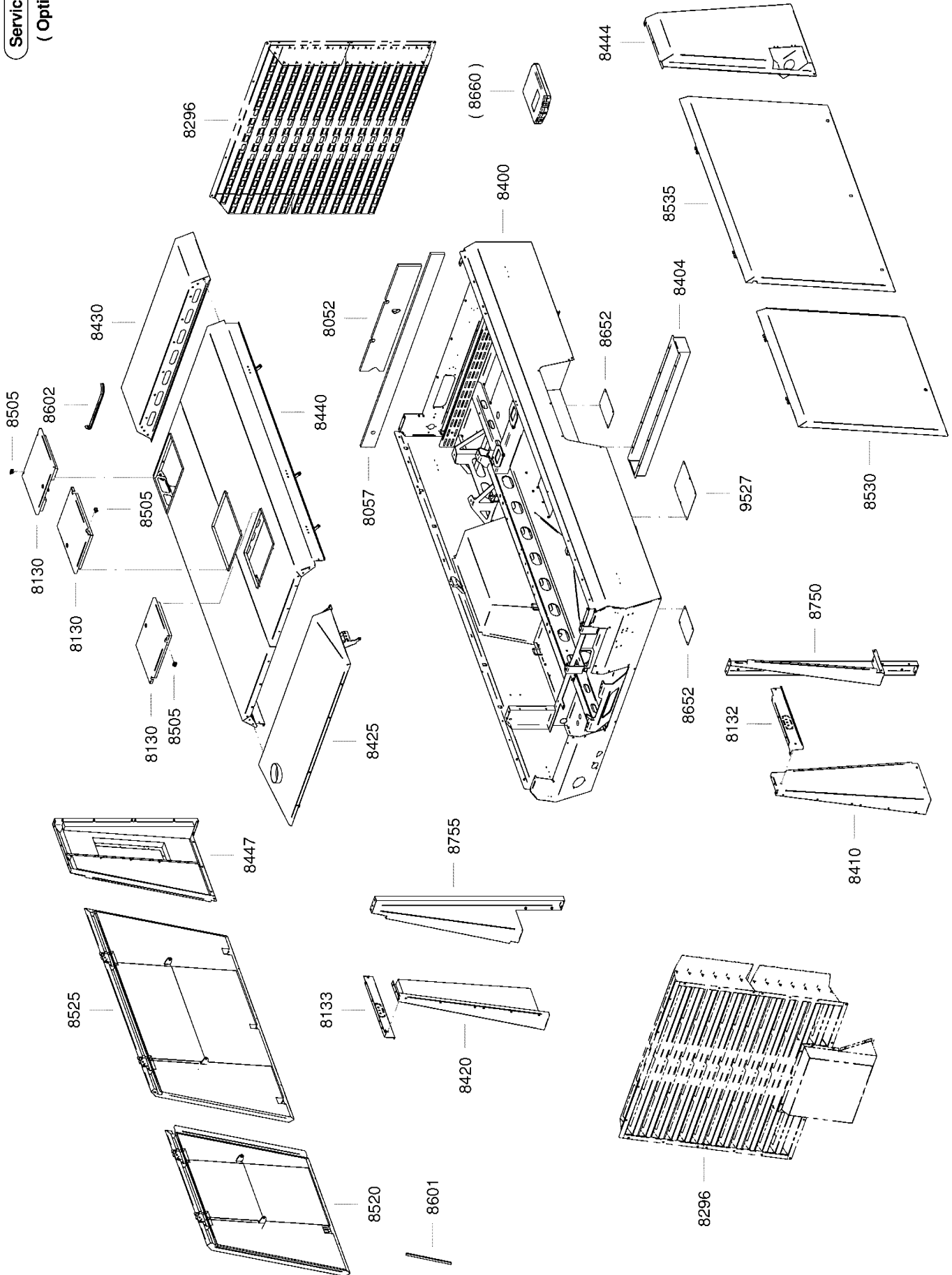
SEG-4092_01

Service-Kit
(Option)

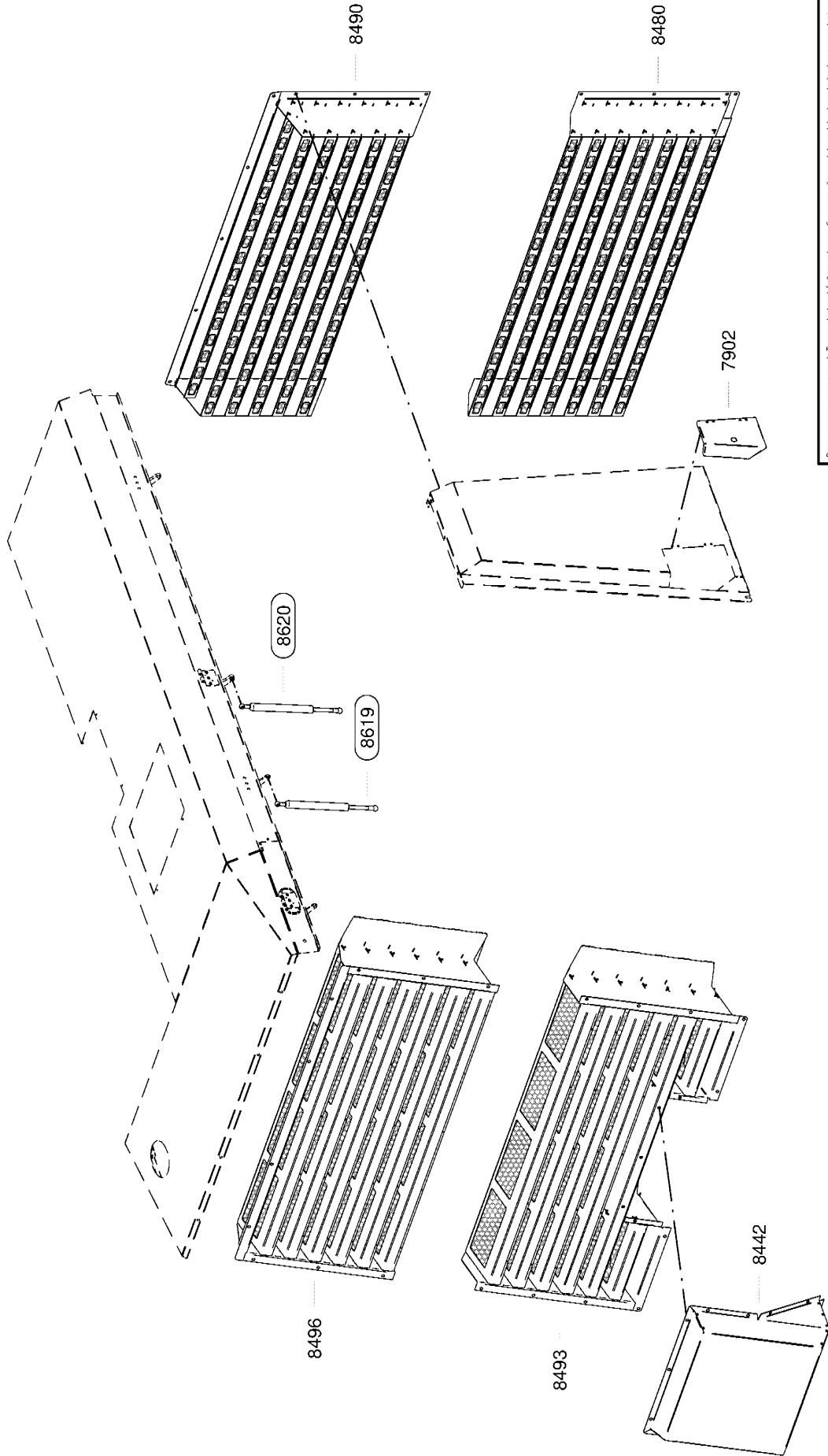
SEG-4094_01



Service-Kit
(Option)



SEG-4095_01



KAESER KOMPRESSOREN

Die Zeichnung ist ein technisches Dokument. Sie ist ausschließlich für den technischen Gebrauch bestimmt und darf nicht ohne schriftliche Genehmigung von KAESER KOMPRESSOREN kopiert, verändert oder weitergegeben werden. Die Zeichnung ist Eigentum von KAESER KOMPRESSOREN und darf nicht ohne schriftliche Genehmigung von KAESER KOMPRESSOREN weitergegeben werden. Die Zeichnung ist ein technisches Dokument und darf nicht ohne schriftliche Genehmigung von KAESER KOMPRESSOREN kopiert, verändert oder weitergegeben werden.

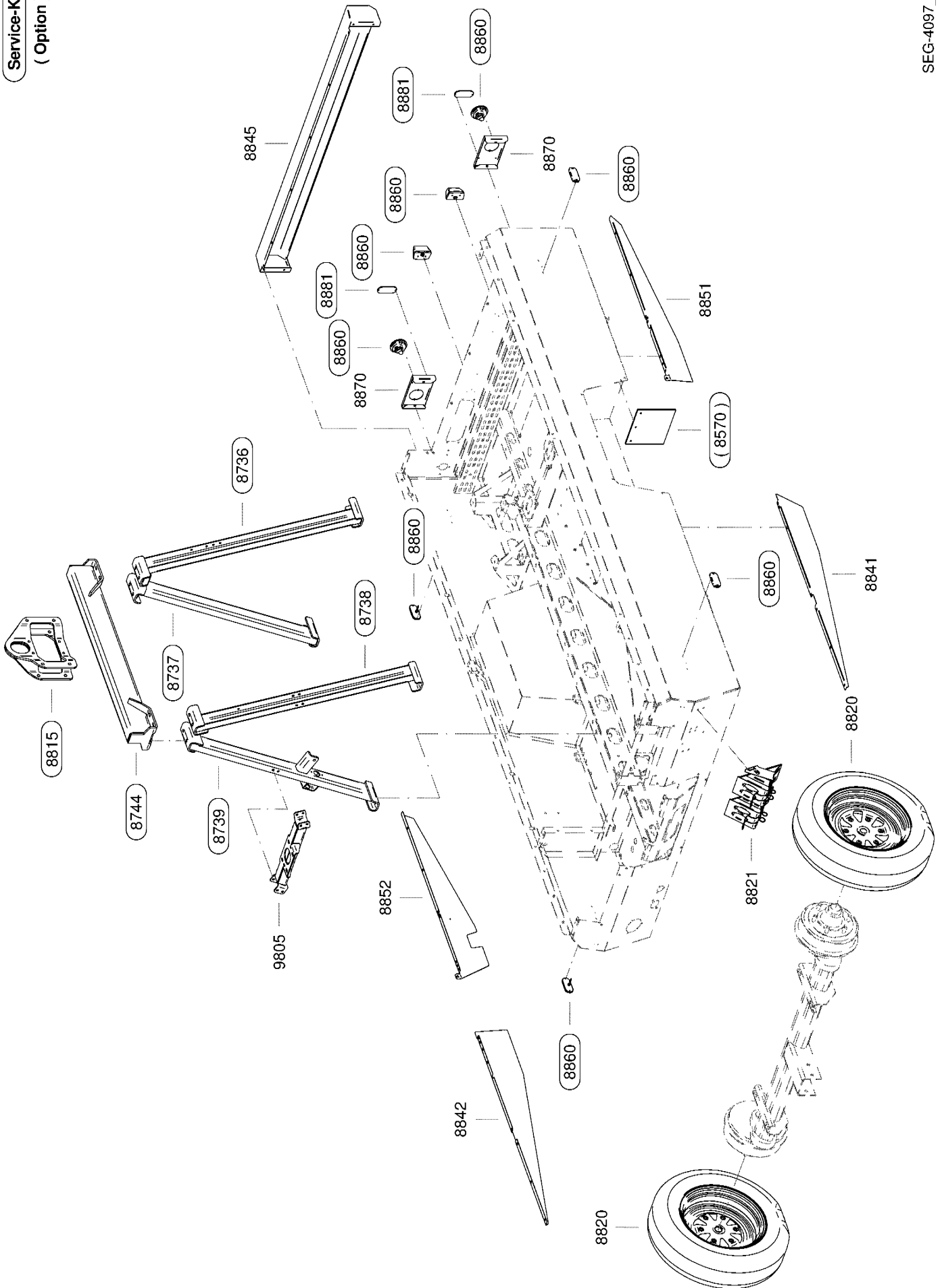
8296 - Cooling air outlet grill / Luftaustrittsgitter

Zeichnungsart	Original	Erstellt mit
Skizze	18.03.2015	Part1
SEGA-Nummer	18.03.2015	Part1
SEGA-4906_21	18.03.2015	Part1

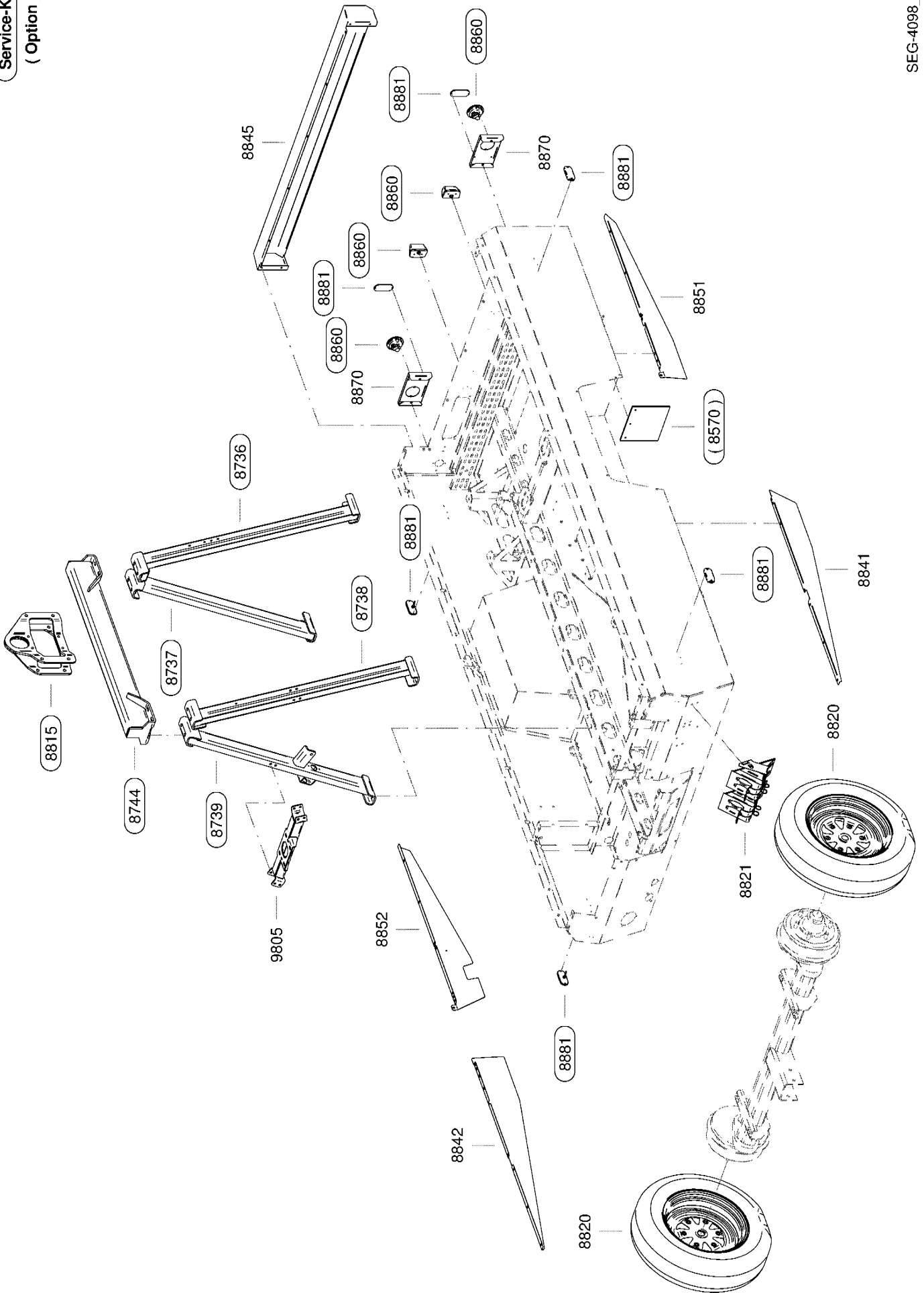
Blattgruppe: (Option) / Subassembli / Untergruppe

Blatt: 1 von 1

Service-Kit
(Option)

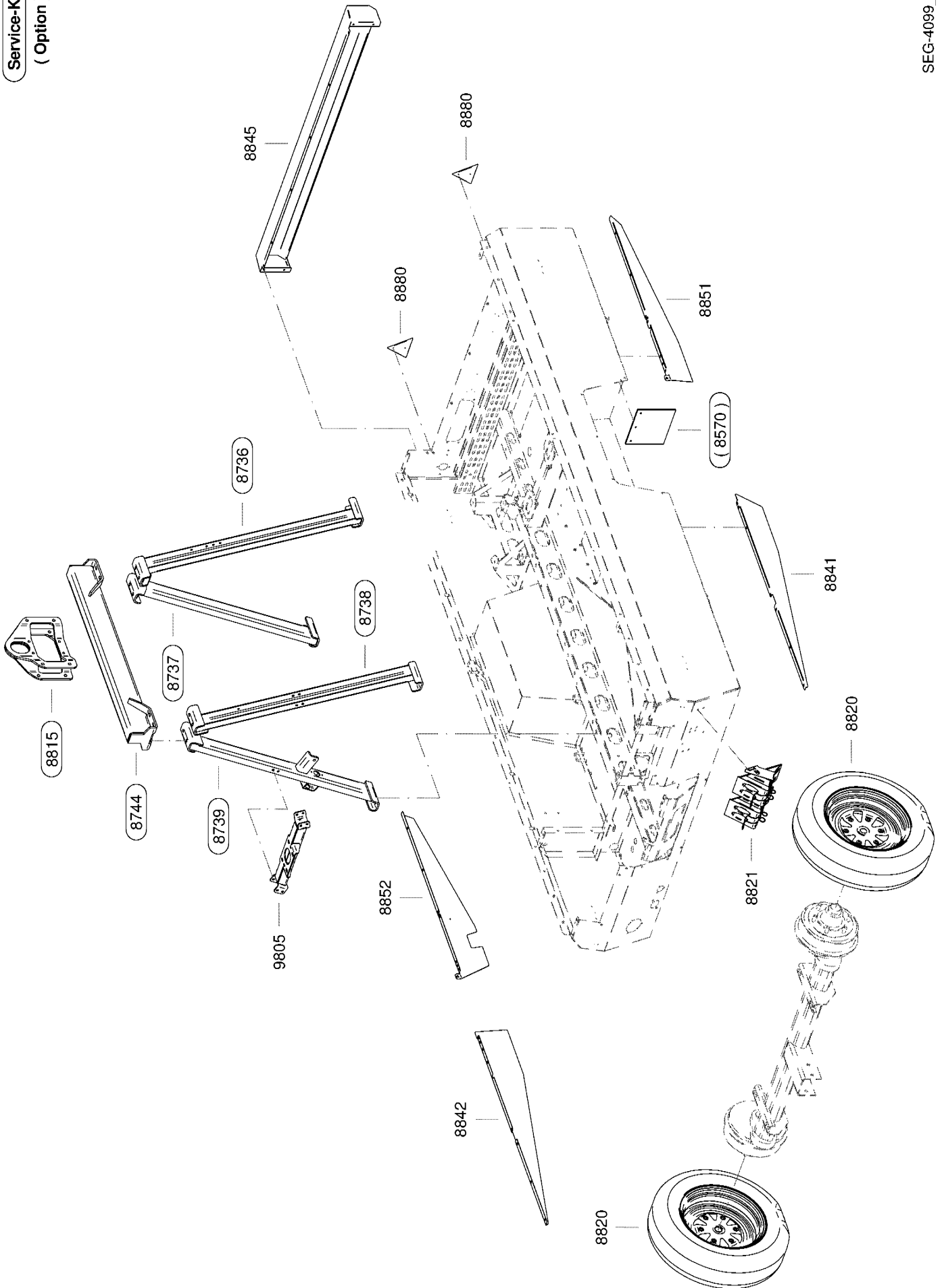


Service-Kit
(Option)



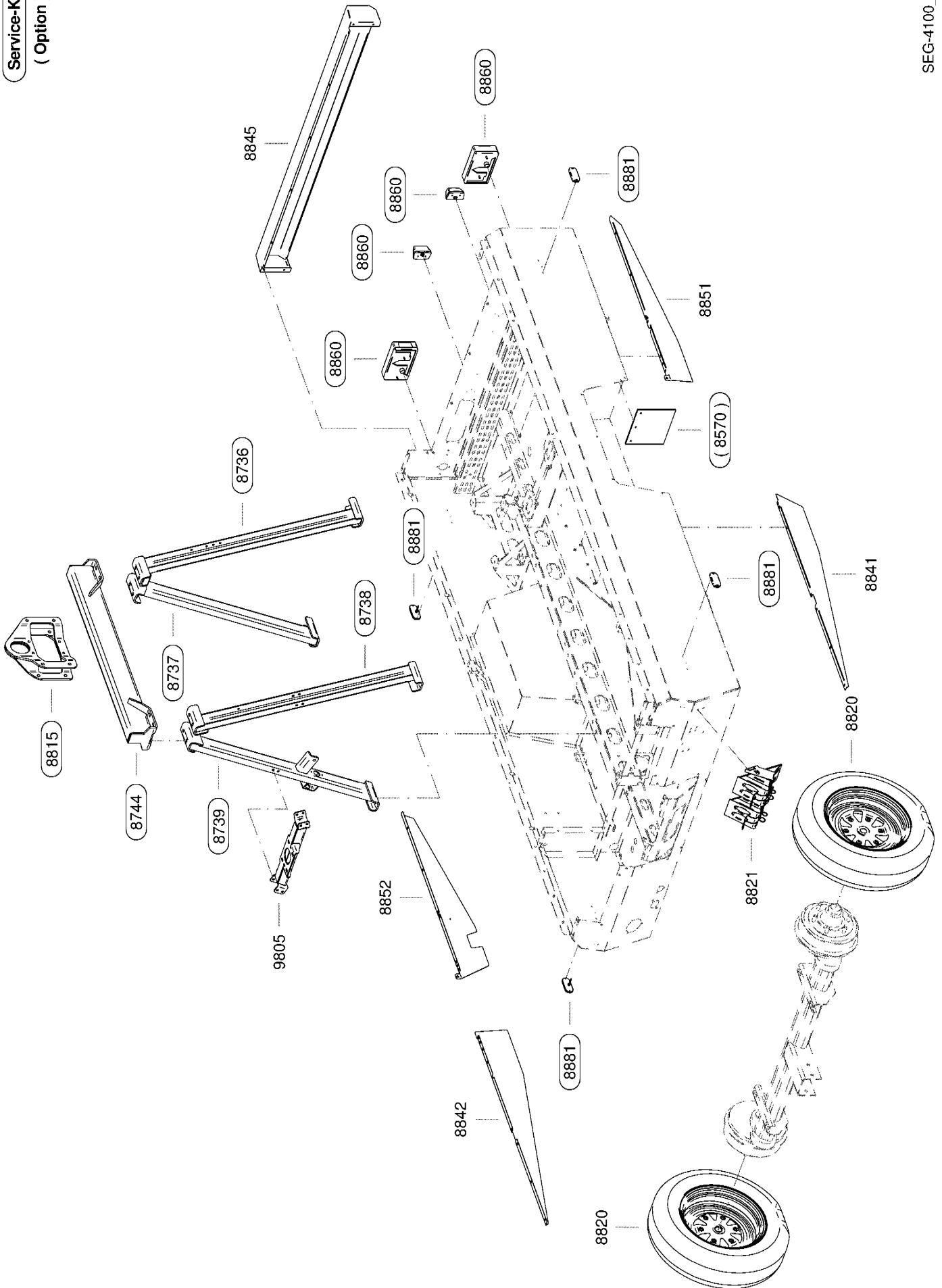
SEG-4098_01

Service-Kit
(Option)

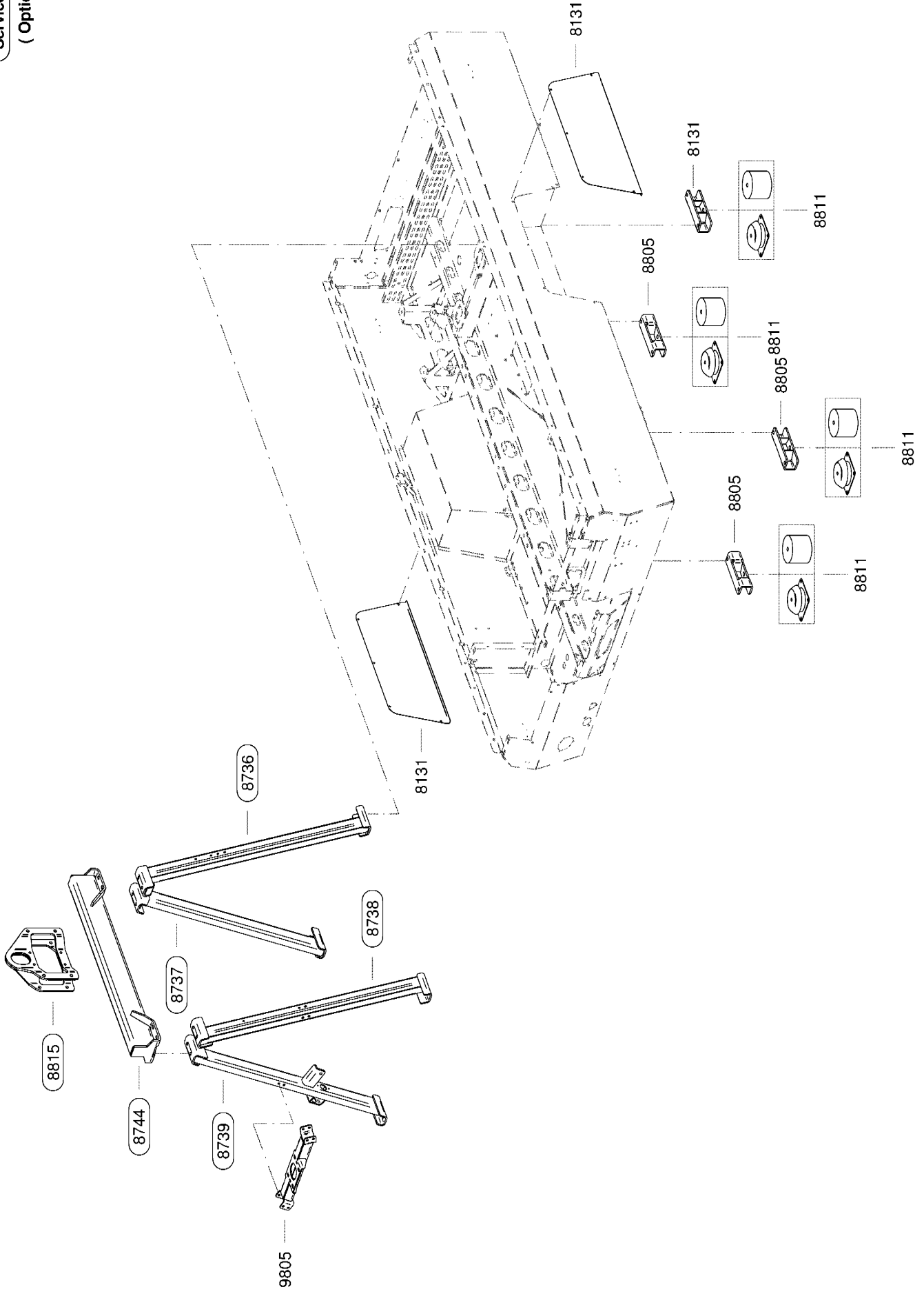


Service-Kit
(Option)

SEG-4100_01

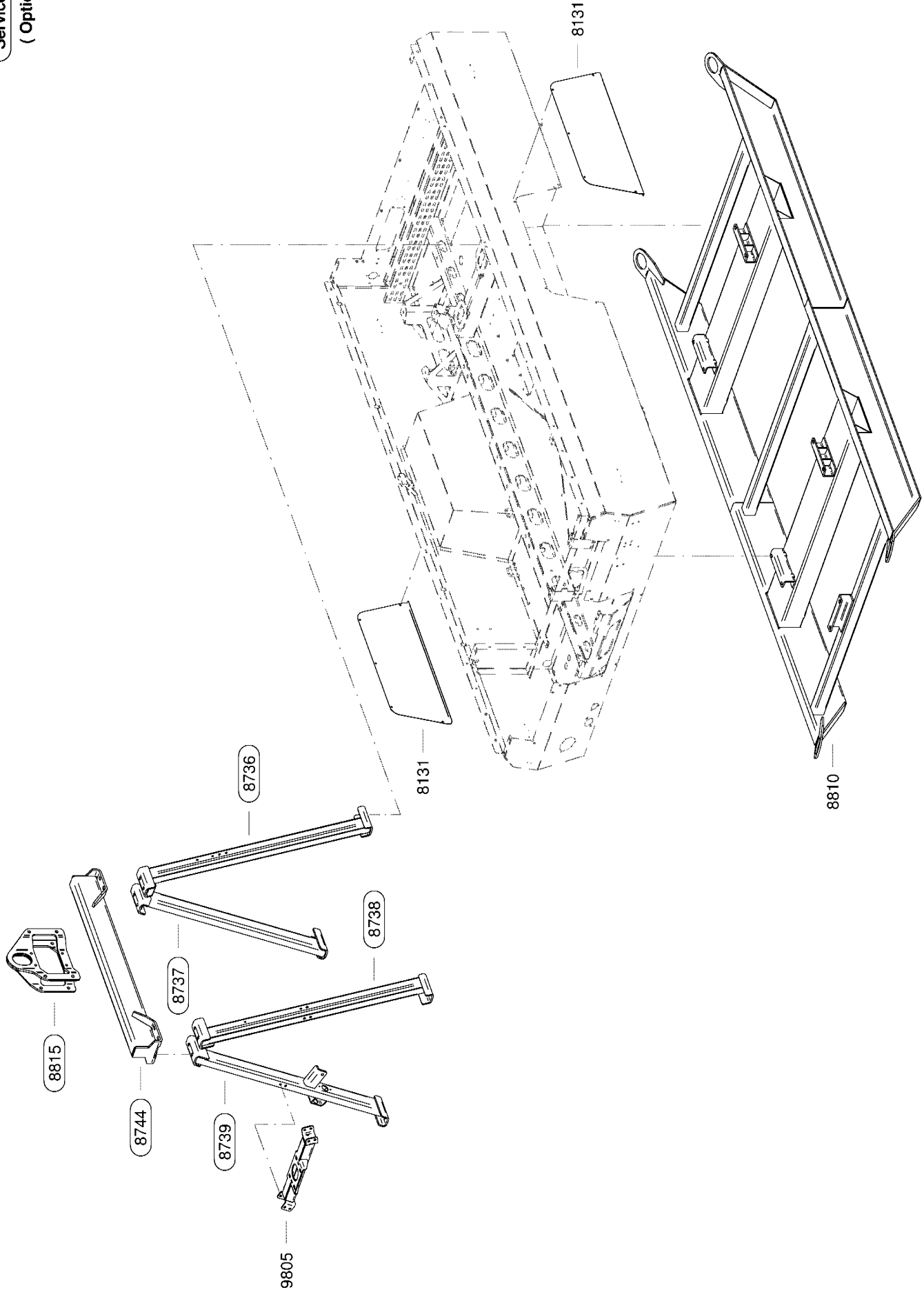


Service-Kit
(Option)

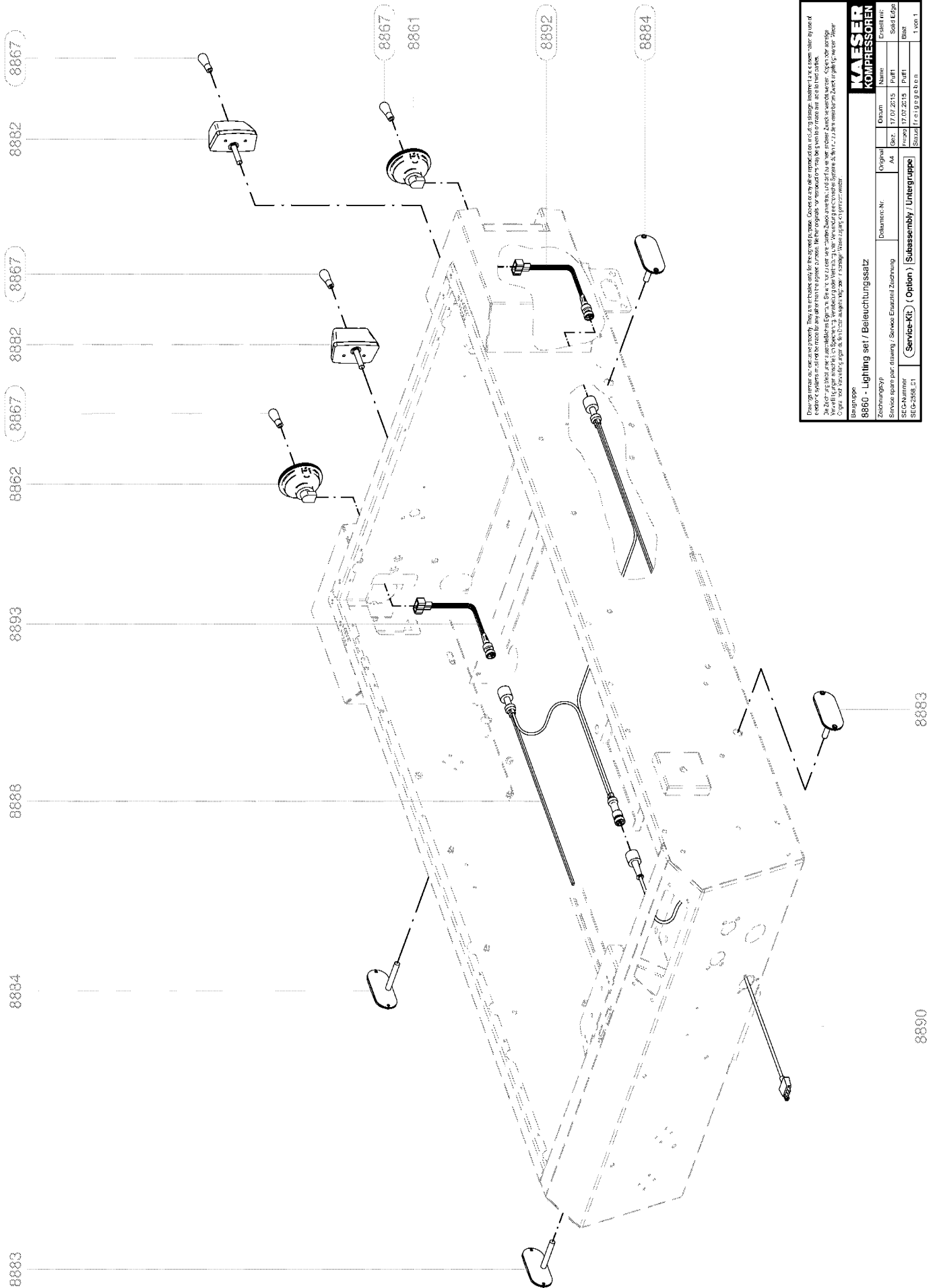


SEG-4101_01

Service-Kit
(Option)



SEG-4102_01



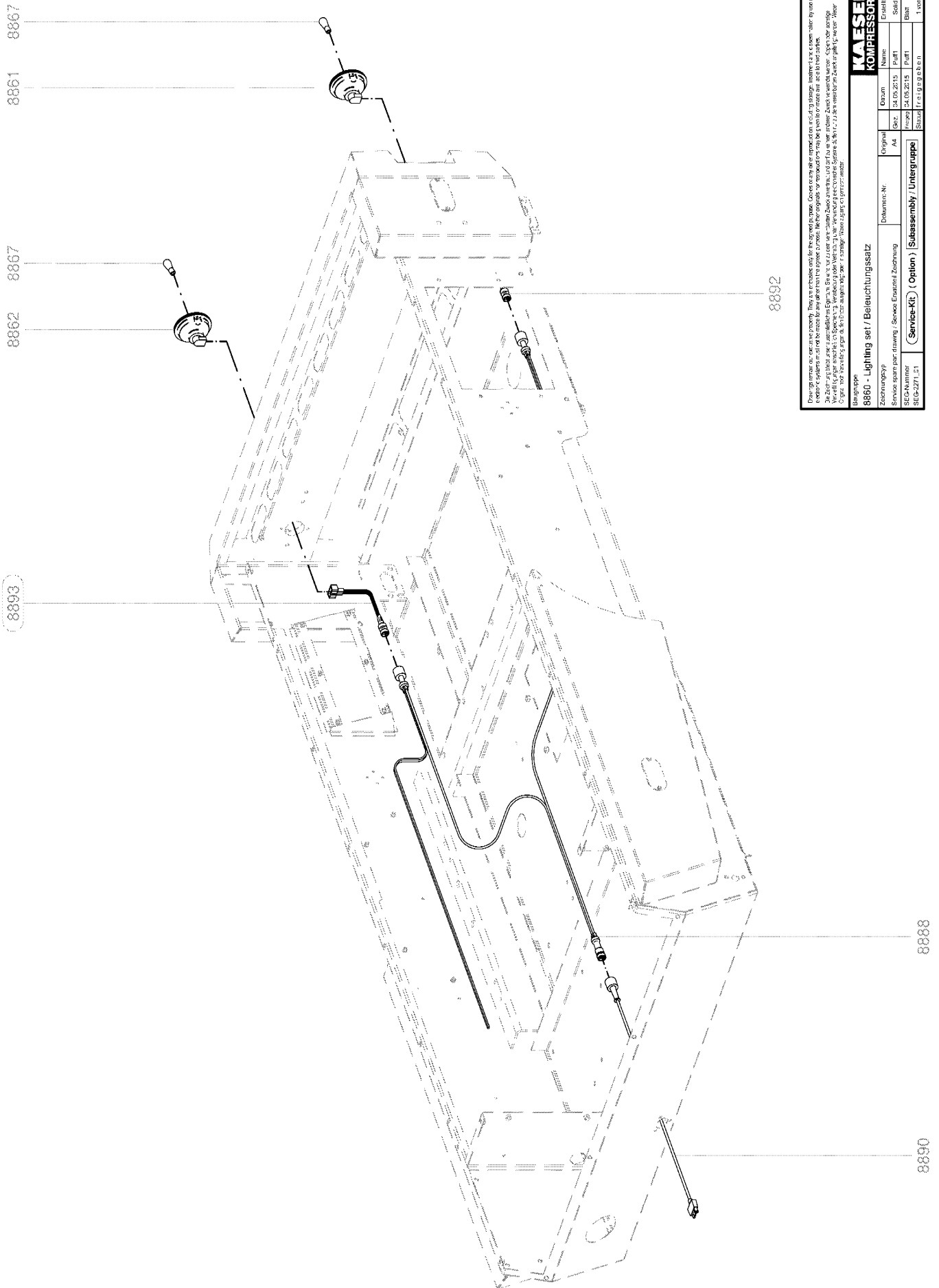
KAESER KOMPRESSOREN

Original Name Datum Erteilt von
 Zeichnungs-Nr. 17.07.2015 P.0411 Solid Edge
 Skizze 17.07.2015 P.0411 BMB
 Status (1 von 3) (1 von 1)

Bezeichnung: 8860 - Lighting set / Beleuchtungssatz
 Zeichnungs-Nr. 17.07.2015 P.0411
 Skizze 17.07.2015 P.0411
 Status (1 von 3) (1 von 1)

Original Name Datum Erteilt von
 Zeichnungs-Nr. 17.07.2015 P.0411 Solid Edge
 Skizze 17.07.2015 P.0411 BMB
 Status (1 von 3) (1 von 1)

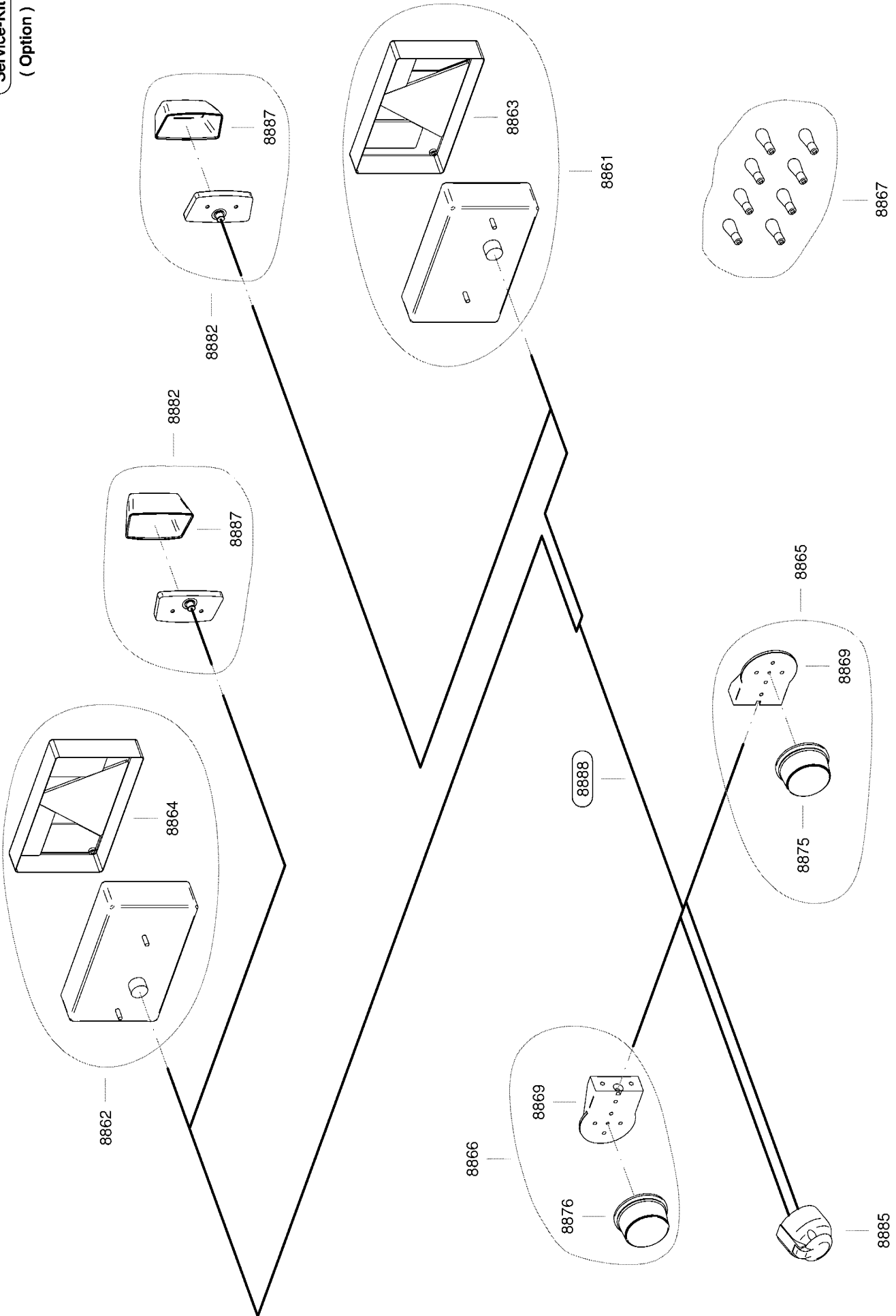
Bezeichnung: 8860 - Lighting set / Beleuchtungssatz
 Zeichnungs-Nr. 17.07.2015 P.0411
 Skizze 17.07.2015 P.0411
 Status (1 von 3) (1 von 1)



Originalteilzeichnungen sind in der Regel in der Zeichnung des Kompressors angegeben. Bitte beachten, dass Ersatzteile nur bei Originalherstellern bestellt werden dürfen. Die Zeichnungen sind ausschließlich als Ersatzteilzeichnungen zu verwenden. Die Originalzeichnungen sind Eigentum der KAESER KOMPRESSOREN GmbH und dürfen nicht ohne schriftliche Genehmigung der KAESER KOMPRESSOREN GmbH ververvielfältigt, kopiert, weitergegeben oder sonstwie in irgendeiner Weise veröffentlicht werden. Das Anbringen von Änderungen ist nicht zulässig. Die Zeichnungen sind Eigentum der KAESER KOMPRESSOREN GmbH und dürfen nicht ohne schriftliche Genehmigung der KAESER KOMPRESSOREN GmbH weitergegeben oder sonstwie in irgendeiner Weise veröffentlicht werden.

KAESER KOMPRESSOREN		KAESER KOMPRESSOREN	
Benennung	8860 - Lighting set / Beleuchtungssatz	Original	Erstellt in:
Zeichnungsgr.		Datum	Name
Skizze		18.05.2015	Perth
SEI-Nr.		Arb.	Schalt-Ergebnis
SEI-Nr. (Option) / Untergruppe	(Service-Kit)	18.05.2015	Perth
			BSP
			1 von 1

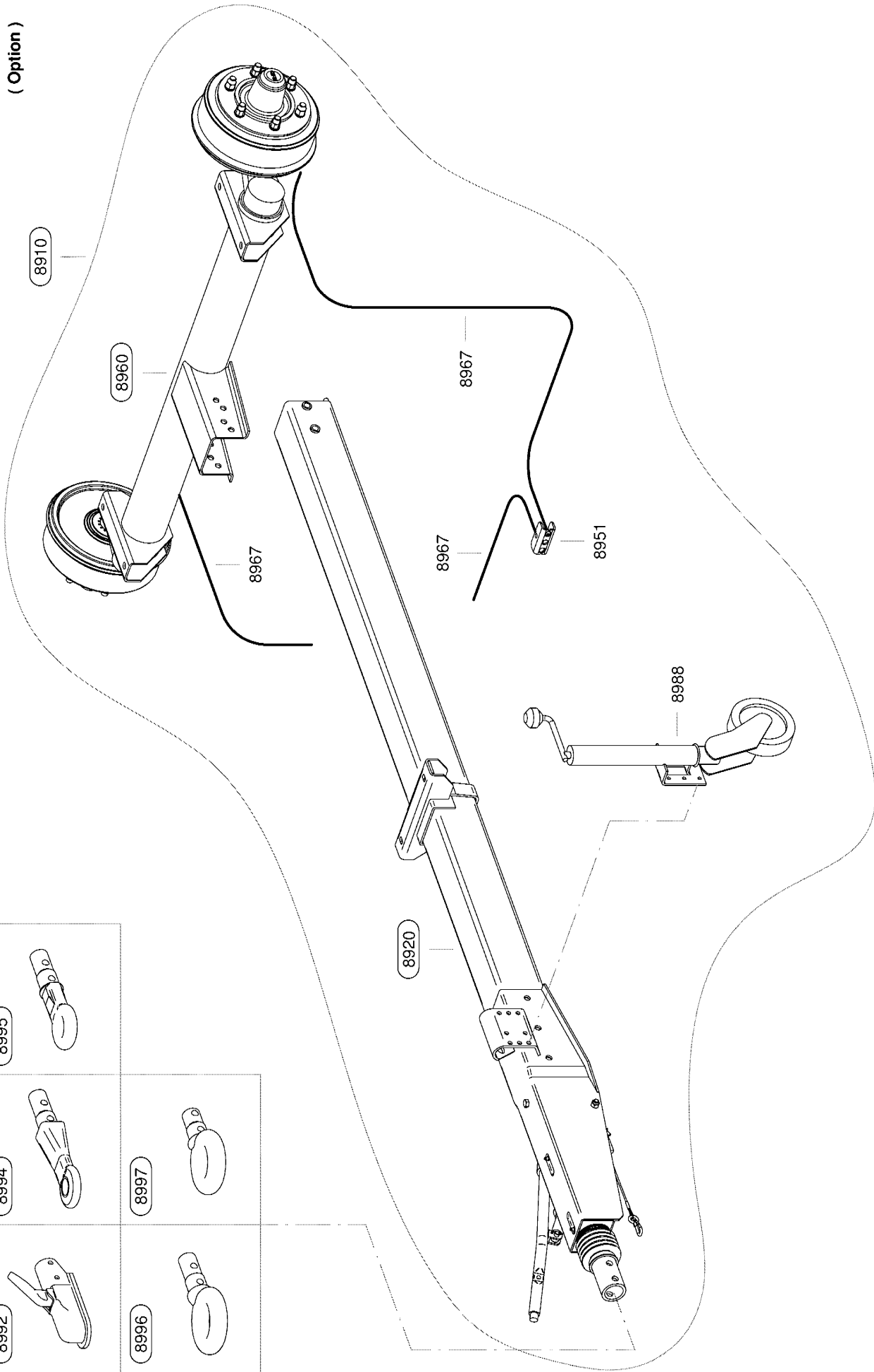
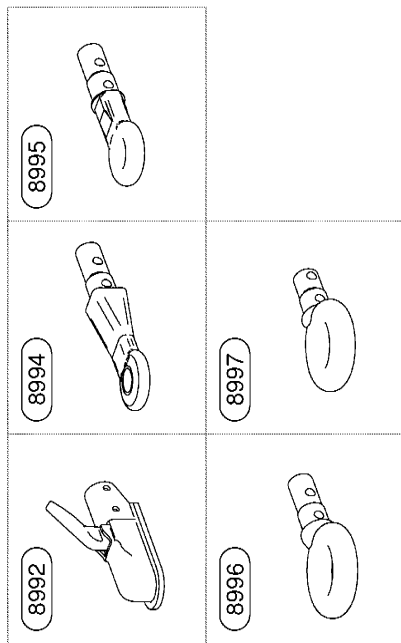
Service-Kit
(Option)

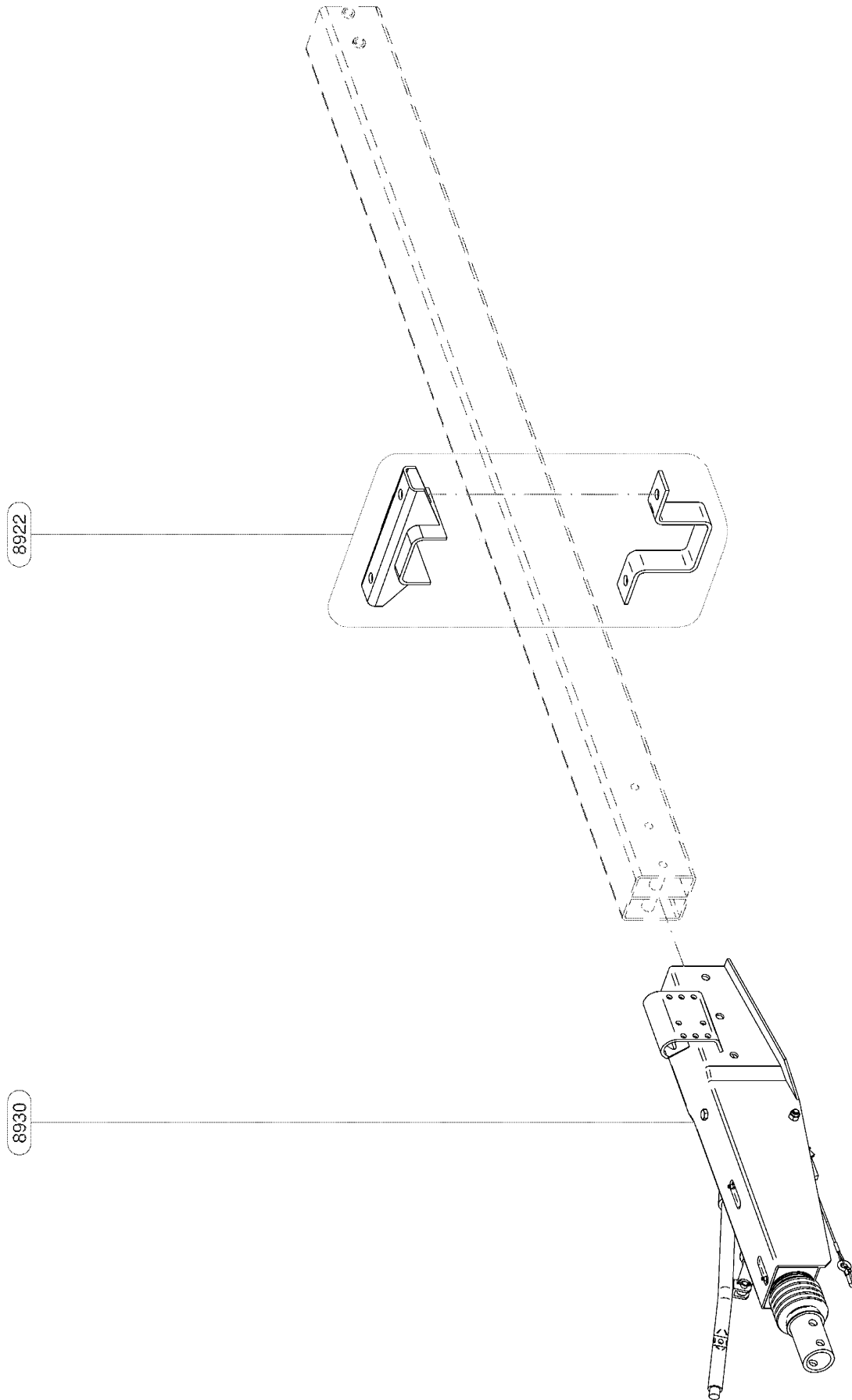


SEG-4124_01

Service-Kit
(Option)

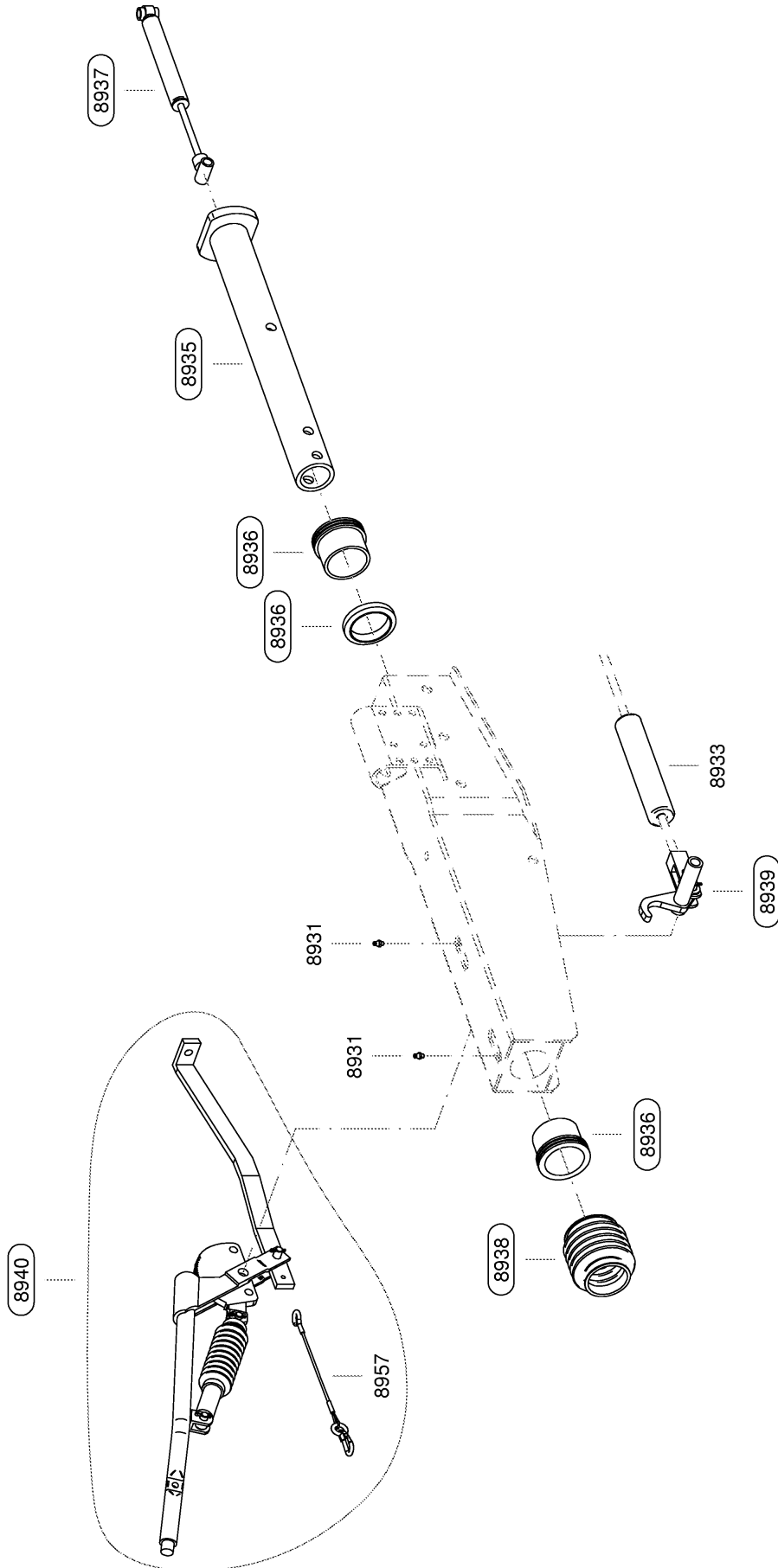
SEG-4103_01



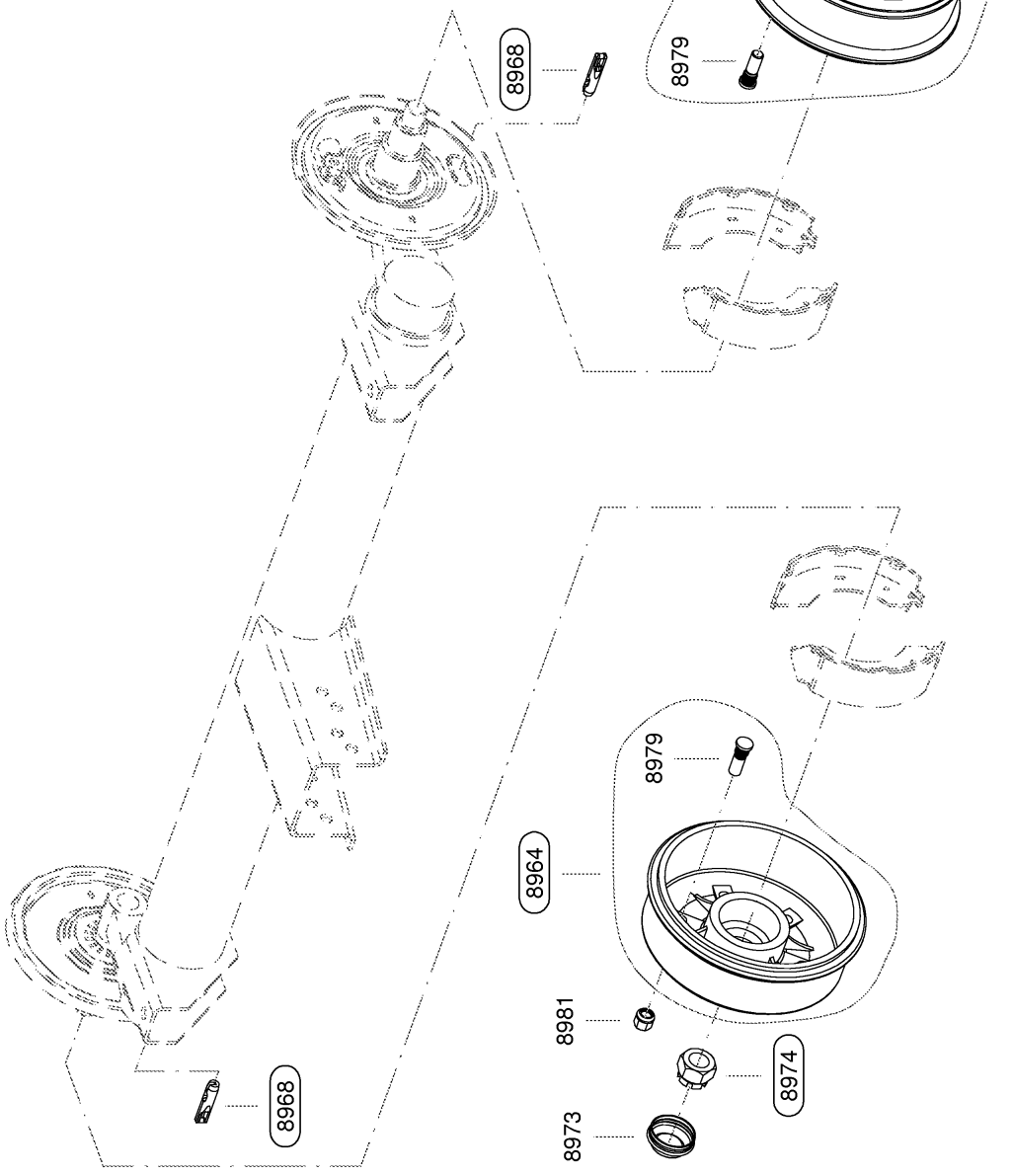
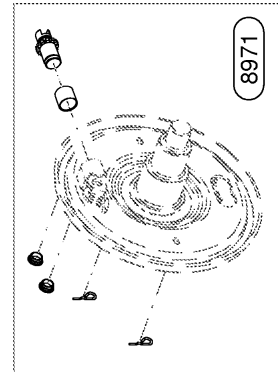
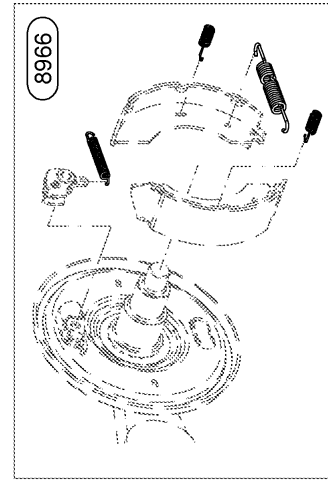
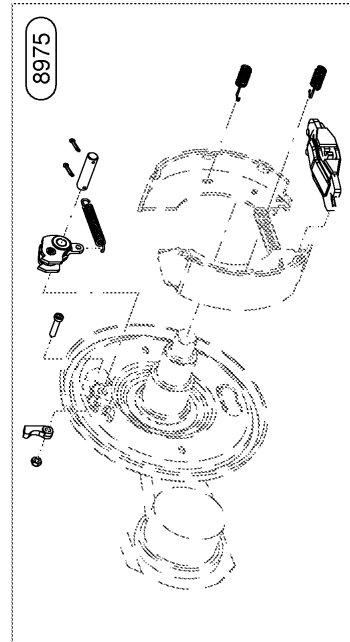
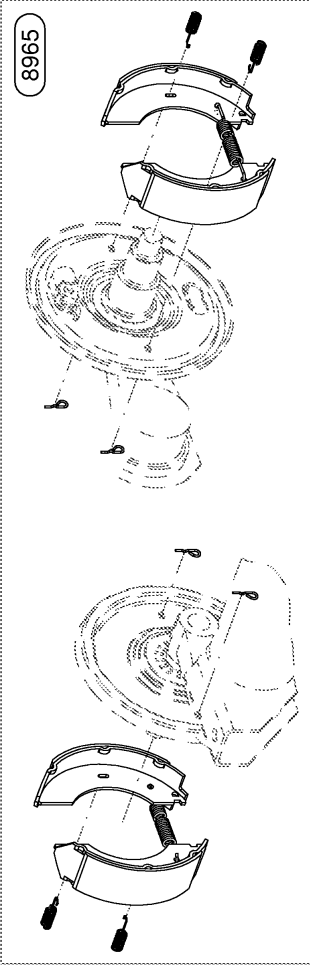
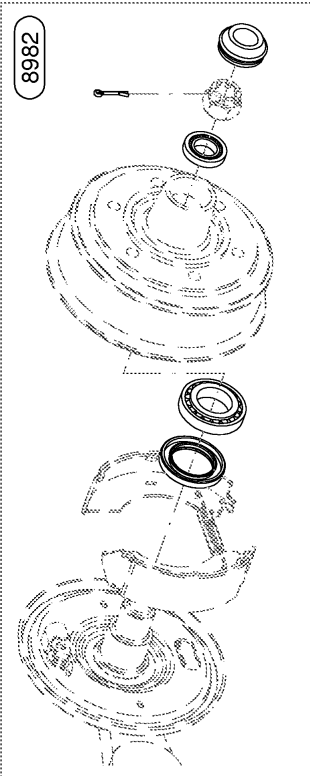


Das Dokument ist ein Ersatzteilblatt. Bitte beachten Sie die folgenden Hinweise: Originalteile werden verwendet, falls diese lieferbar sind. Falls nicht, werden Ersatzteile verwendet.
 Die Zeichnung ist eine ungeschliffene Darstellung. Es ist zu erwarten, dass die Zeichnung nur ein grobes Bild der Formgebung zeigt. Die Zeichnung ist nicht zur Fertigung geeignet.
 Vor der Fertigung sind die Zeichnungen zu prüfen. Die Zeichnung ist nur ein grobes Bild der Formgebung. Die Zeichnung ist nicht zur Fertigung geeignet. Weiter:
 Original-Teil-Nr. 8922, 8930, 8931, 8932, 8933, 8934, 8935, 8936, 8937, 8938, 8939, 8940, 8941, 8942, 8943, 8944, 8945, 8946, 8947, 8948, 8949, 8950, 8951, 8952, 8953, 8954, 8955, 8956, 8957, 8958, 8959, 8960, 8961, 8962, 8963, 8964, 8965, 8966, 8967, 8968, 8969, 8970, 8971, 8972, 8973, 8974, 8975, 8976, 8977, 8978, 8979, 8980, 8981, 8982, 8983, 8984, 8985, 8986, 8987, 8988, 8989, 8990, 8991, 8992, 8993, 8994, 8995, 8996, 8997, 8998, 8999, 9000.

Bezeichnung		8920 - Tow device / Zuganrichtung	
Zeichnungsgr.:	Original	Dokument-Nr.:	
Skizze	27.01.2015	Part1	
Alt		Part1	
SECC-Nr.	8920	27.01.2015	Part1
SECC-Änderung			
Service-Kit		Option / Untergruppe	
8920		8920	
1 von 1			



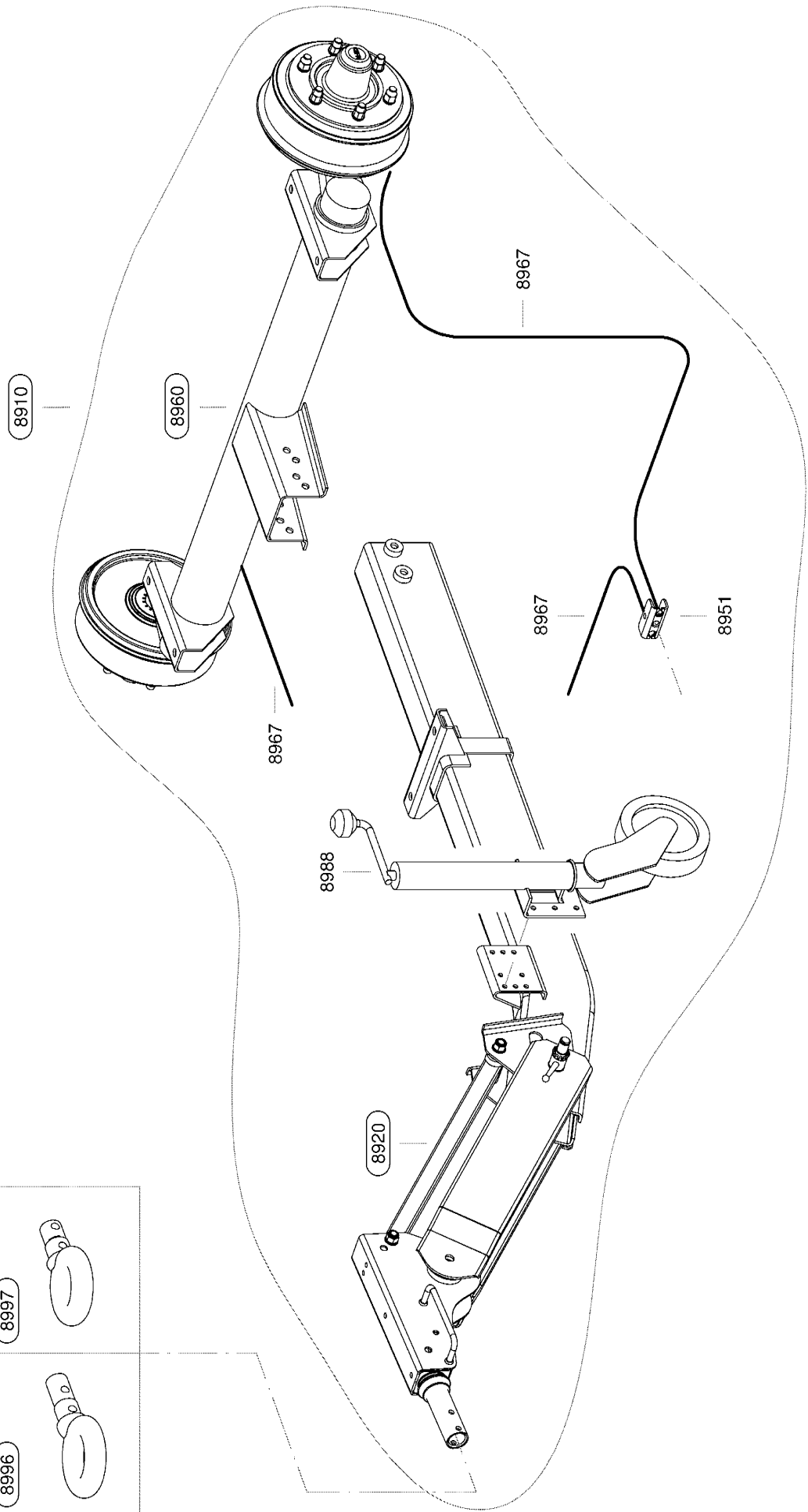
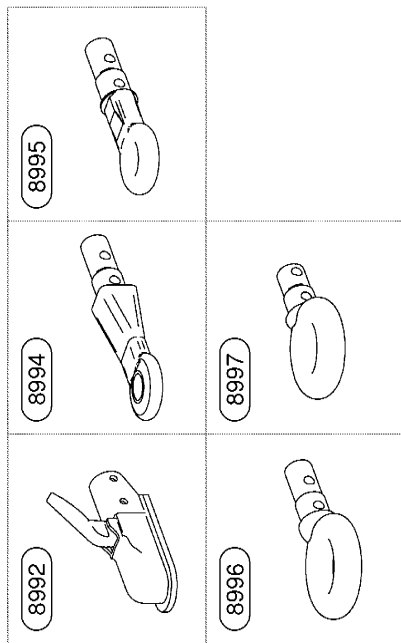
Service-Kit

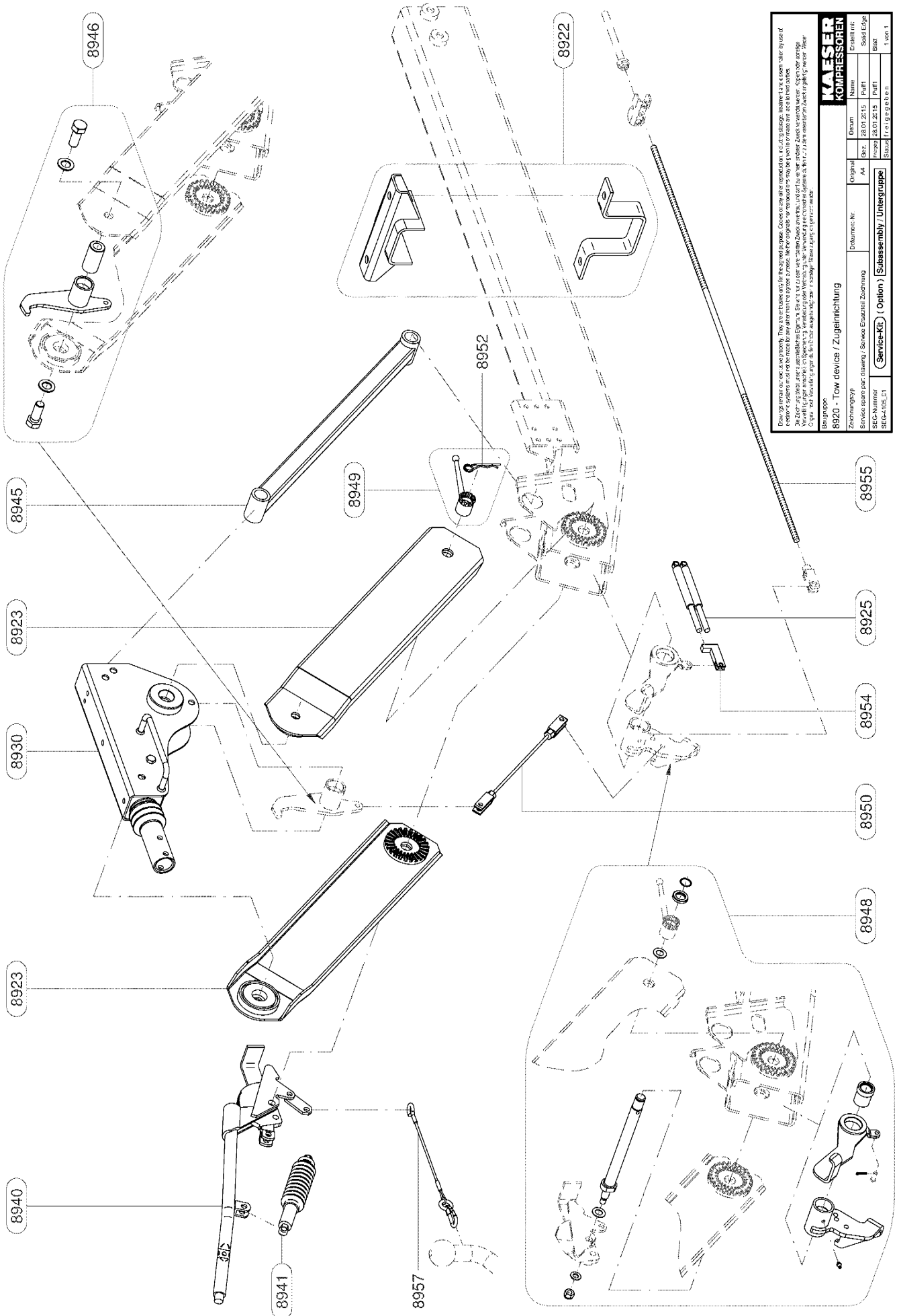


SEG-2056_01

Service-Kit
(Option)

SEG-4104_01





Pictogramme des pièces détachées. Elles sont schématisées dans leur position d'origine. Elles ne sont pas représentées dans leur position réelle. Elles sont schématisées dans leur position d'origine. Elles ne sont pas représentées dans leur position réelle. Elles sont schématisées dans leur position d'origine. Elles ne sont pas représentées dans leur position réelle.

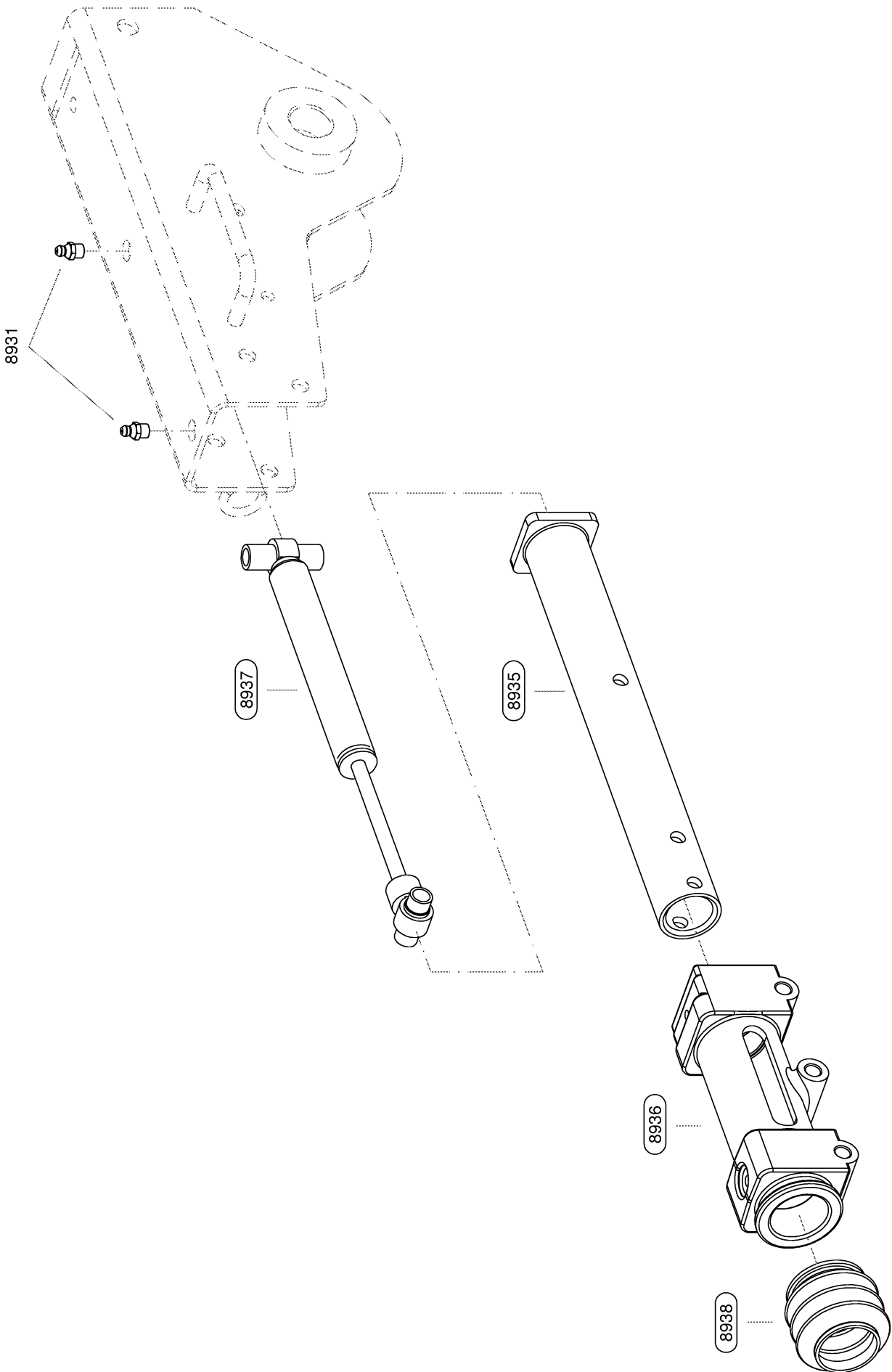
Die Zeichnung zeigt die Ersatzteile in ihrer ursprünglichen Position. Die Zeichnung zeigt die Ersatzteile in ihrer ursprünglichen Position. Die Zeichnung zeigt die Ersatzteile in ihrer ursprünglichen Position. Die Zeichnung zeigt die Ersatzteile in ihrer ursprünglichen Position. Die Zeichnung zeigt die Ersatzteile in ihrer ursprünglichen Position.

Verfügbare Ersatzteile sind in der Liste aufgeführt. Verfügbare Ersatzteile sind in der Liste aufgeführt. Verfügbare Ersatzteile sind in der Liste aufgeführt. Verfügbare Ersatzteile sind in der Liste aufgeführt. Verfügbare Ersatzteile sind in der Liste aufgeführt.

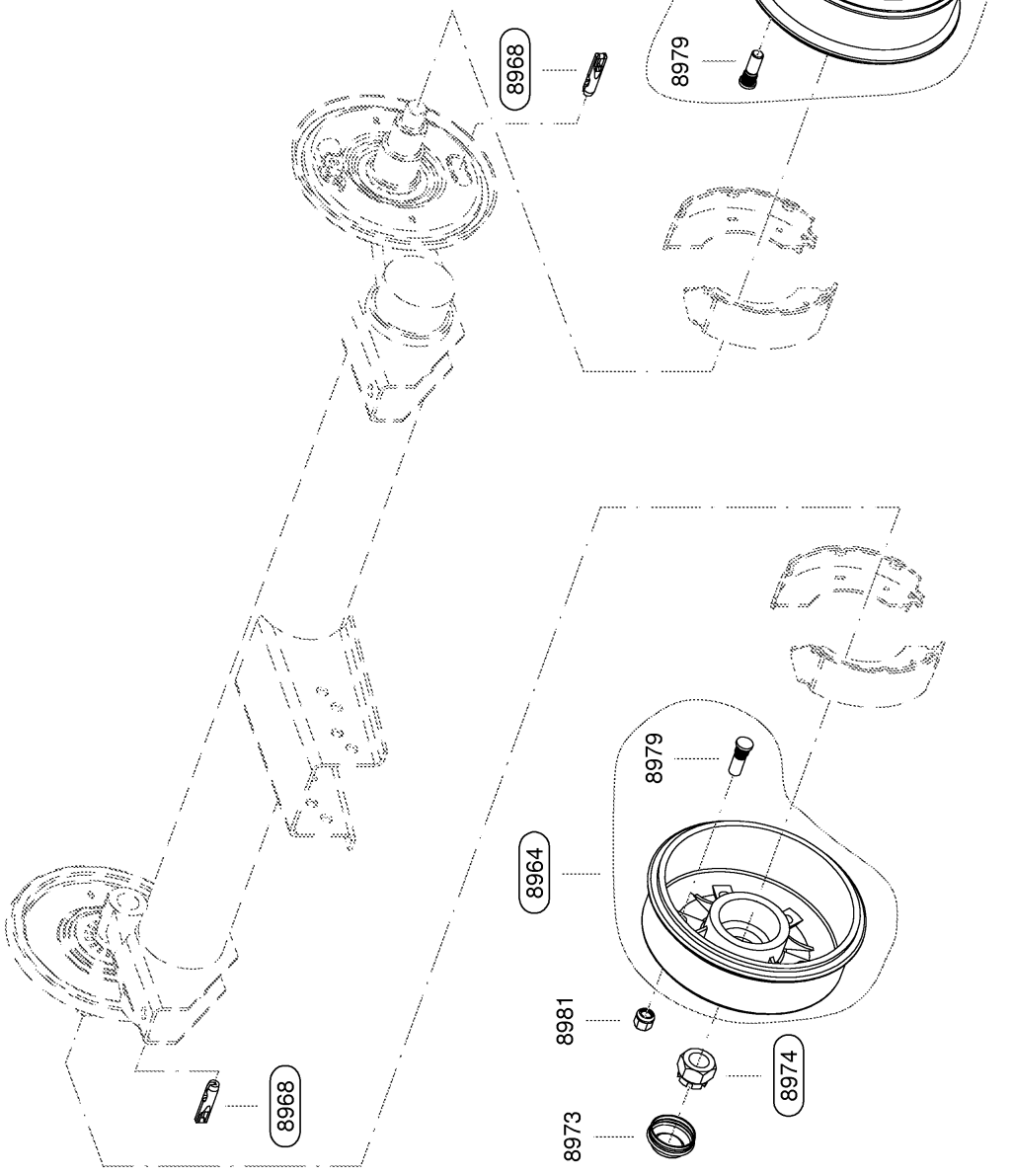
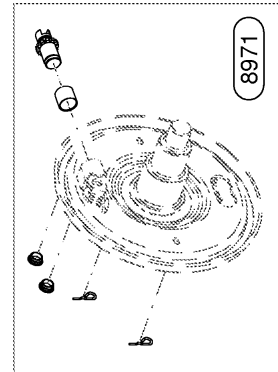
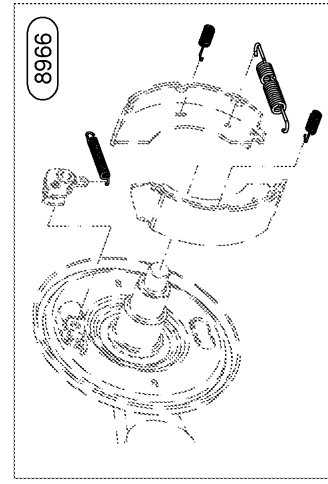
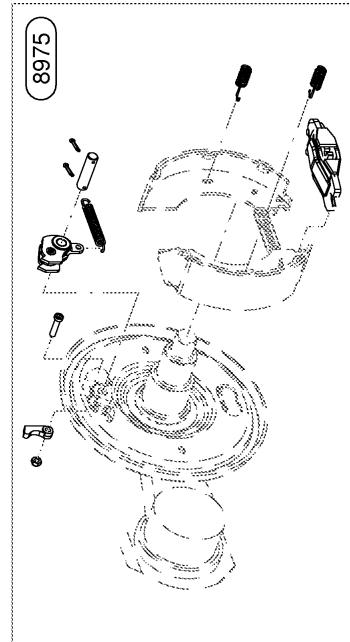
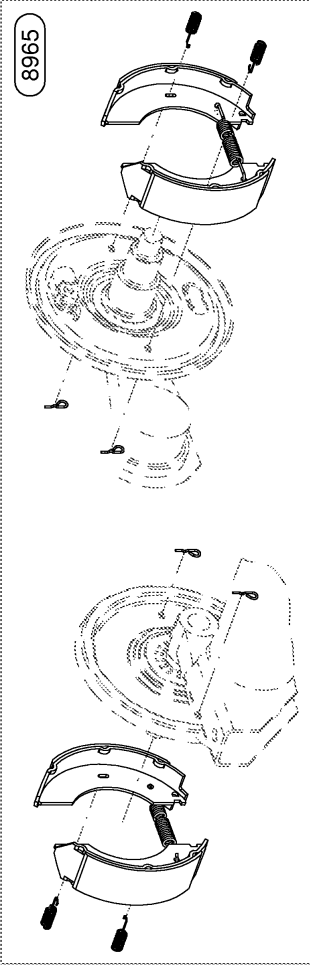
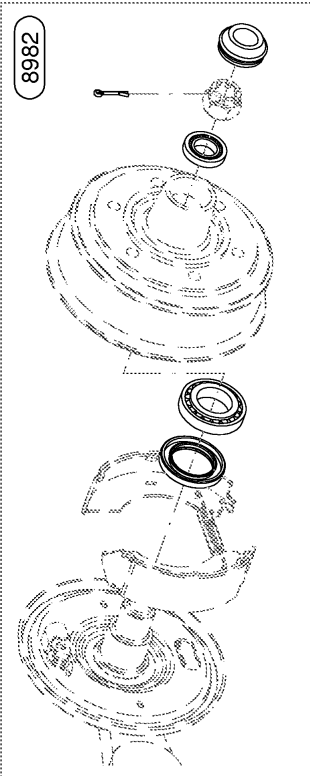
Original-Teilenummern sind in der Liste angegeben. Original-Teilenummern sind in der Liste angegeben. Original-Teilenummern sind in der Liste angegeben. Original-Teilenummern sind in der Liste angegeben. Original-Teilenummern sind in der Liste angegeben.

KAESER KOMPRESSOREN		Erstellt mit:	1 von 1
Bezeichnung:	8920 - Tow device / Zuganrichtung	Name:	
Zeichnungs-Nr.:		Datum:	
SEGA-Nummer:	8920-1000	Original:	
SEGA-4105.21		Alt:	
		Neu:	
		Repar:	
		Service-Kit / Subassembli / Untergruppe:	

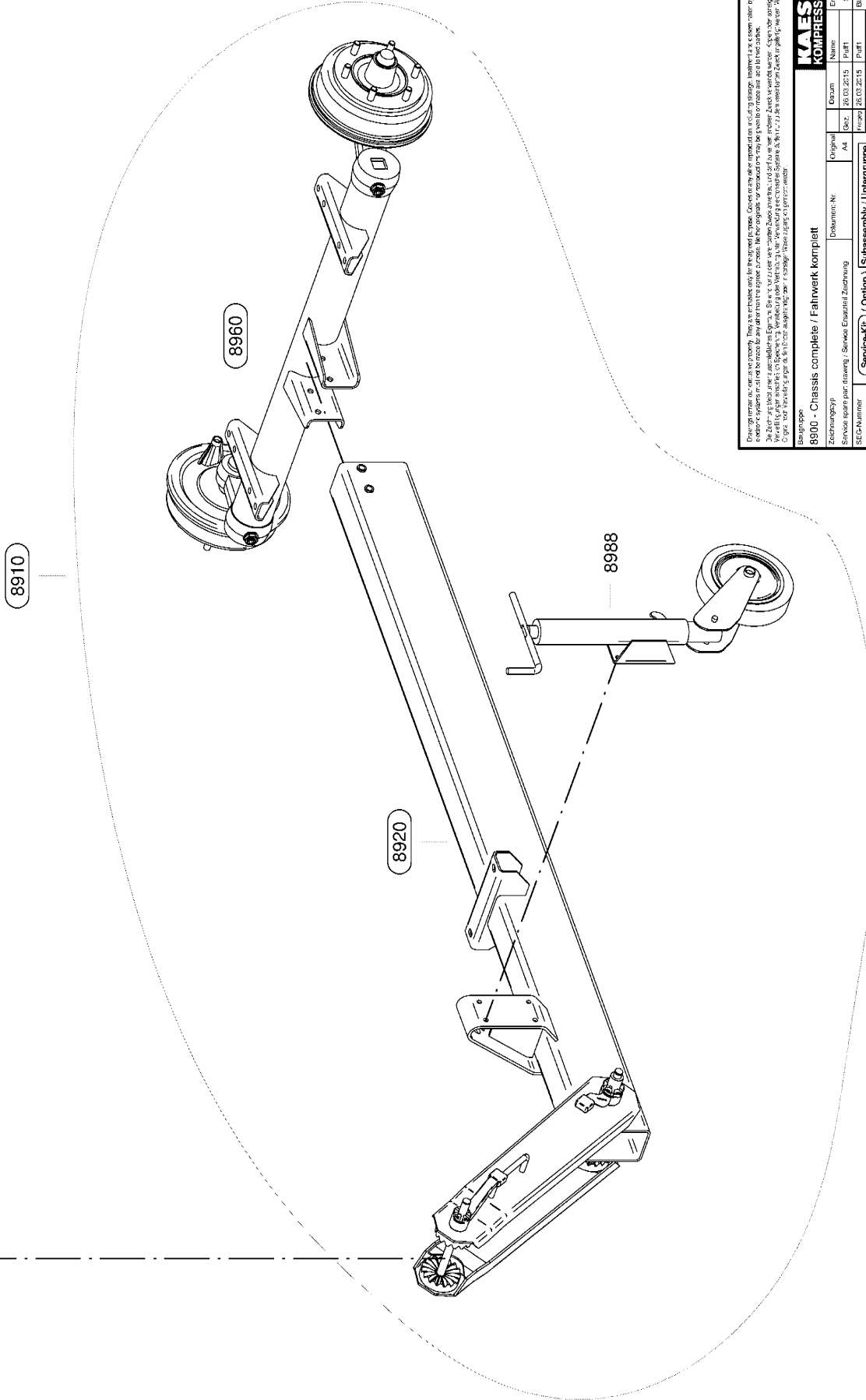
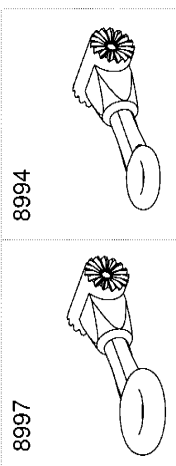
Service-Kit



Service-Kit



SEG-2056_01



KAESER KOMPRESSOREN

8900 - Chassis complete / Fahwerk komplett

Benennung: 8900 - Chassis complete / Fahwerk komplett

Zuordnung: 8900 - Chassis complete / Fahwerk komplett

Skizze: 8900-01-01

SEGA-Nummer: 8900-01-01

SEGA-Code: 8900-01-01

Original: 8900-01-01

Alt: 8900-01-01

Erstellt: 8900-01-01

Gezeichnet: 8900-01-01

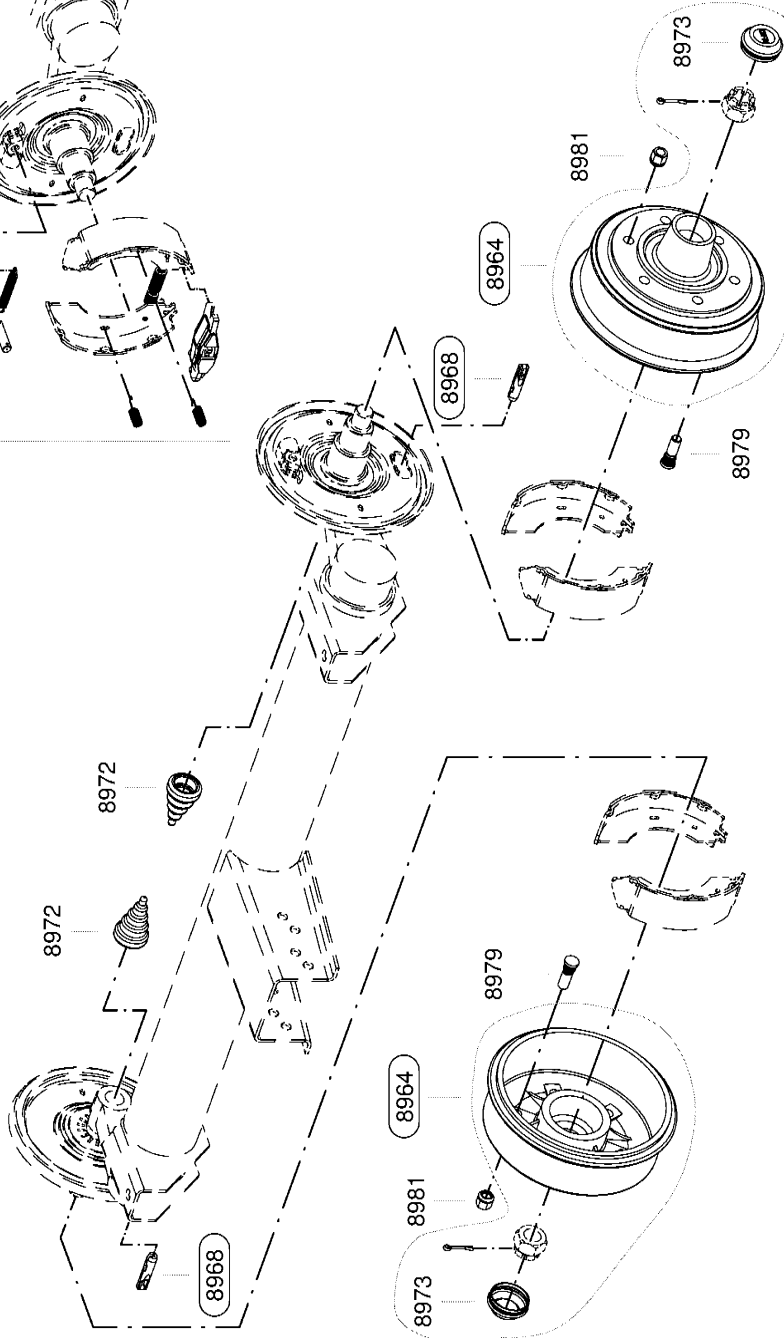
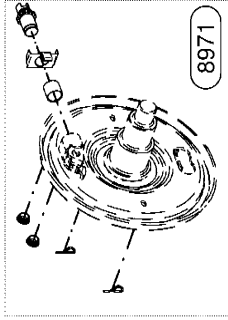
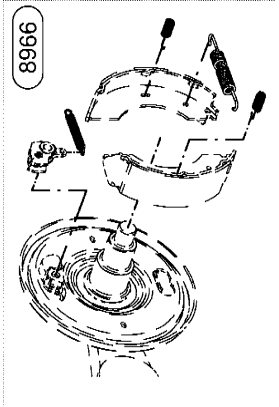
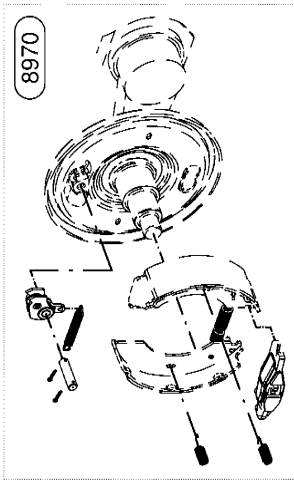
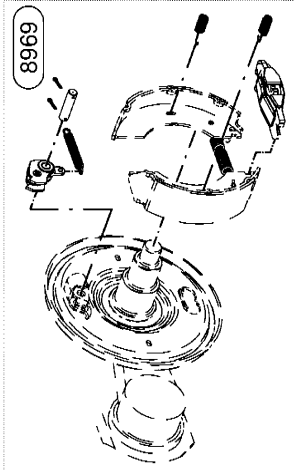
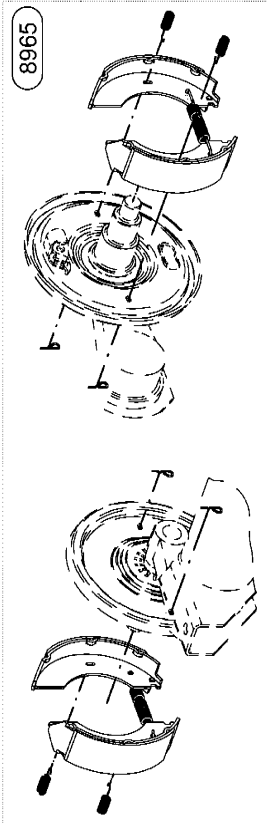
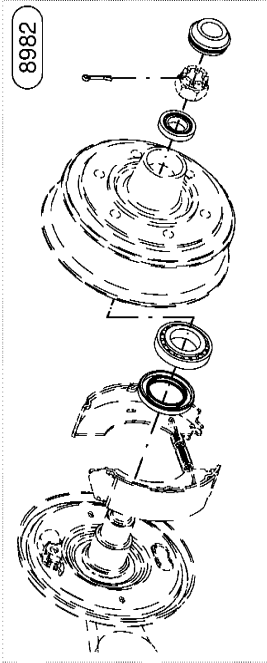
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Skizze: 8900-01-01

Blatt: 8900-01-01

Blattzahl: 8900-01-01

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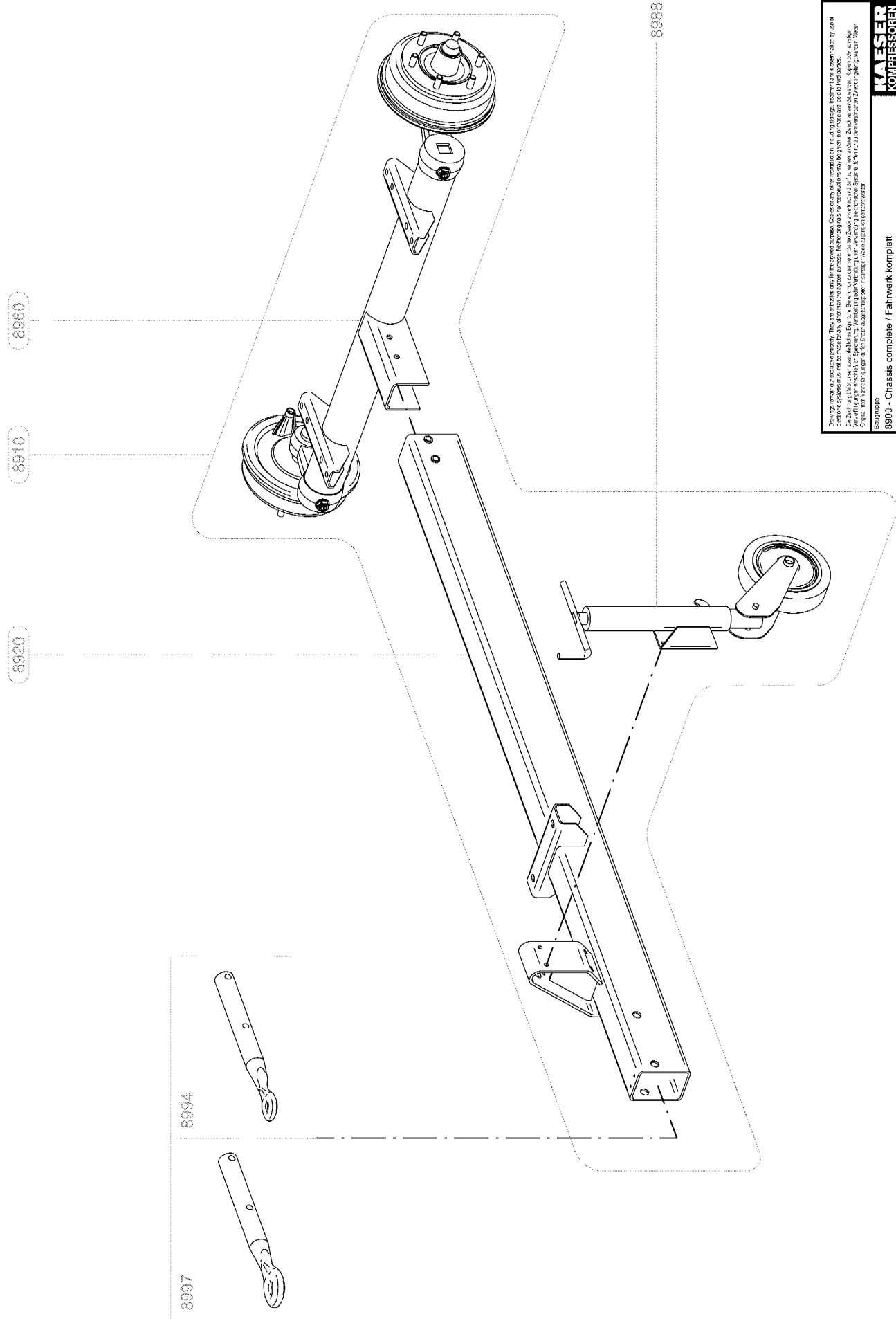


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8960 - Achse / Achse

Zeichnungsgruppe	Original	Name	Erstellt am:
Skizze	Ad	Datum	
SECA-Nummer	Version	Druck	Seitenanzahl
SEC-8963_21	06.03.2015	10/11	1 von 1
Service-Kit		Subassembli / Untergruppe	

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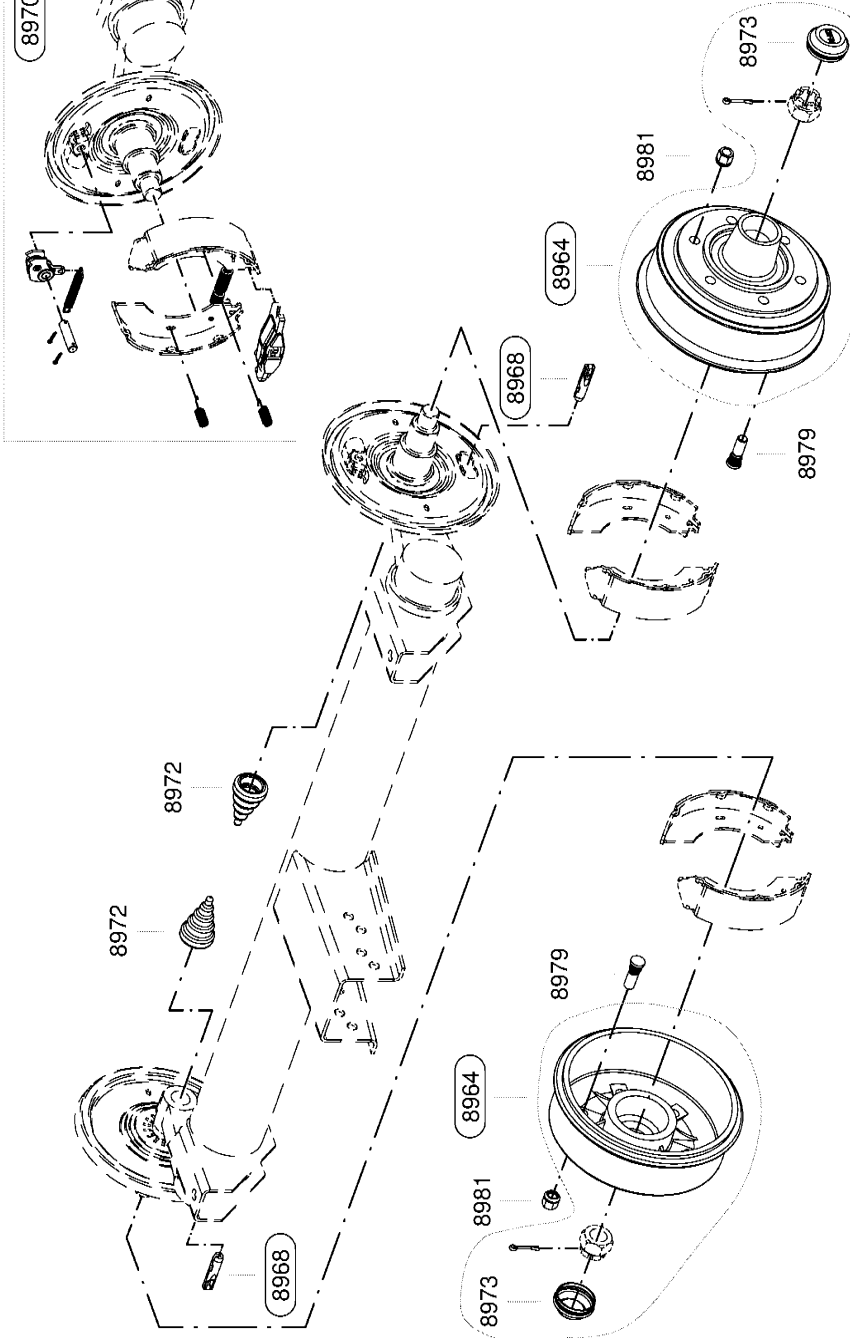
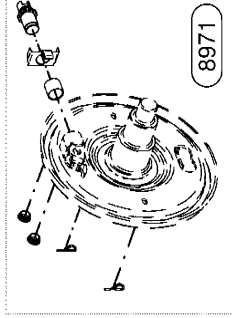
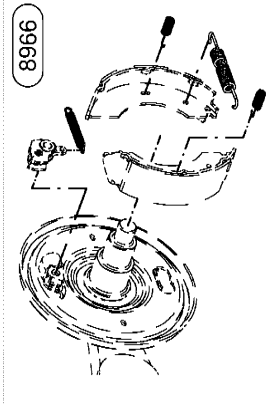
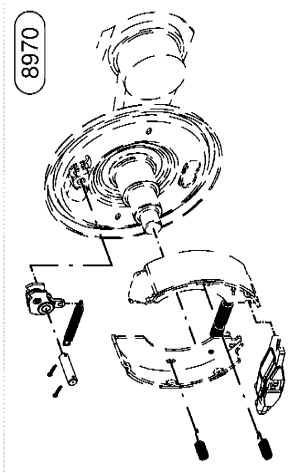
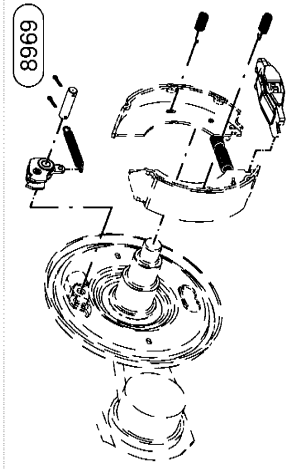
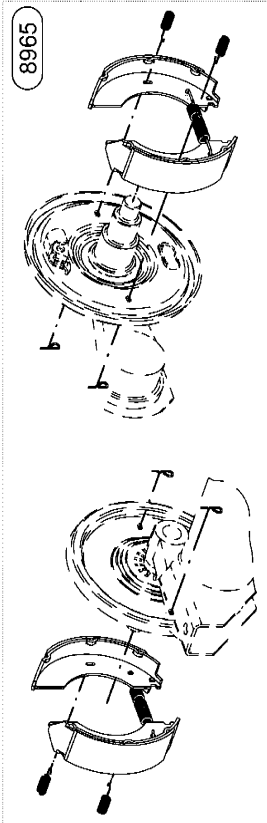
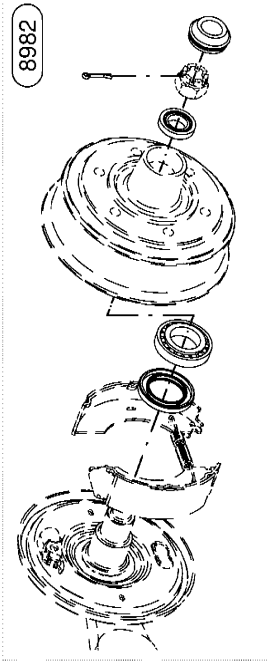
KAESER KOMPRESSOREN

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Original: 25.03.2015
 Ersatzteil: 25.03.2015
 Stückzahl: 1

89900 - Chassis complete / Fahrgestell komplett

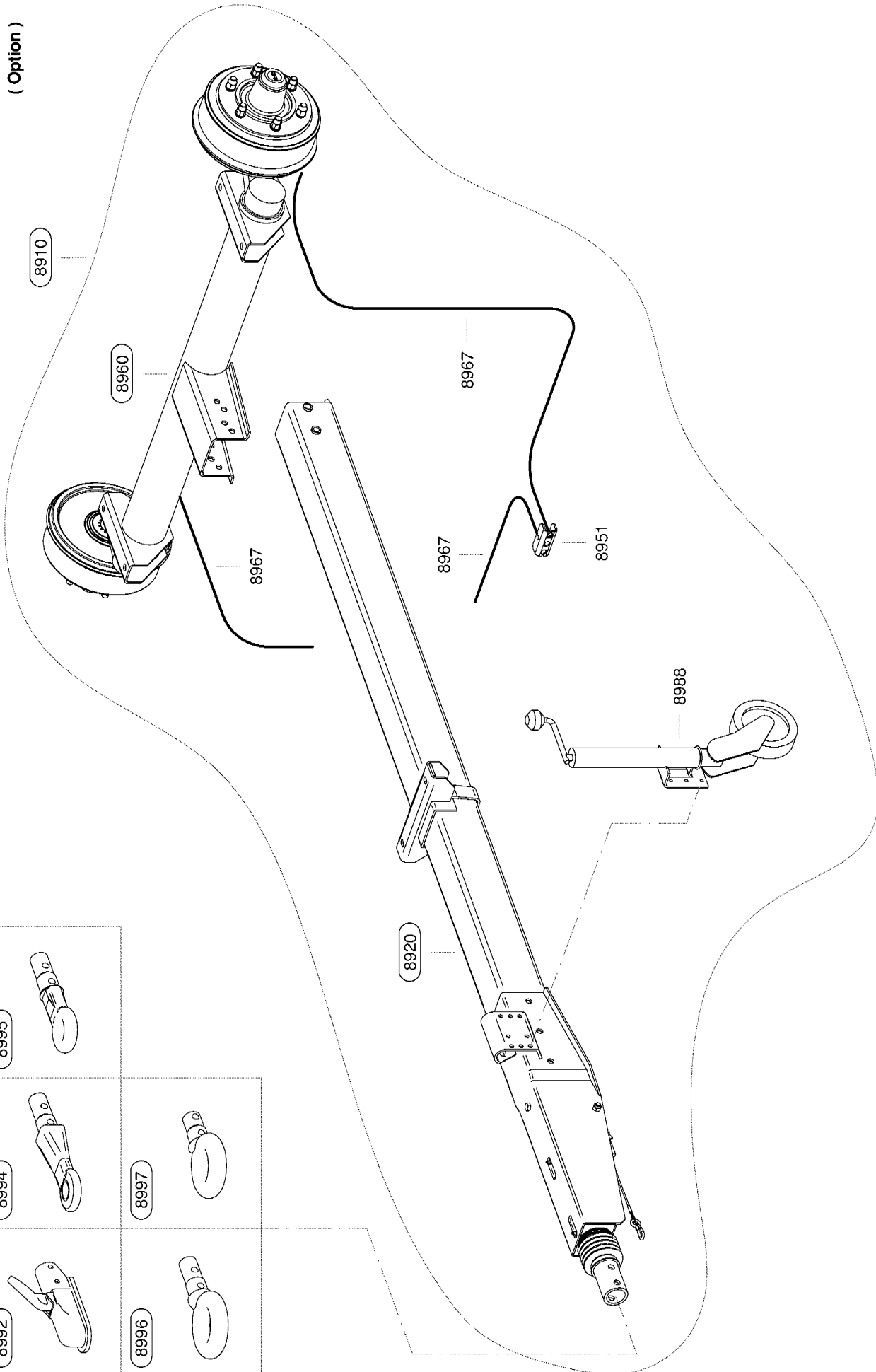
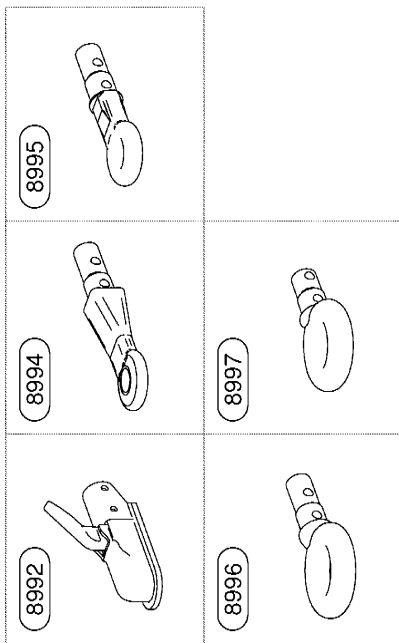
Zeichnungsgruppe	Dokument-Nr.	Original	Name	Erstellt mit:
Service spare part drawing / Service Ersatzteil Zeichnung		Alt	8988	Solid Edge
SEGA Nummer		Neu	8988	BRZ
SEGA-108.21		Service-Kit (Option) / Subassembly / Untergruppe		1 von 1



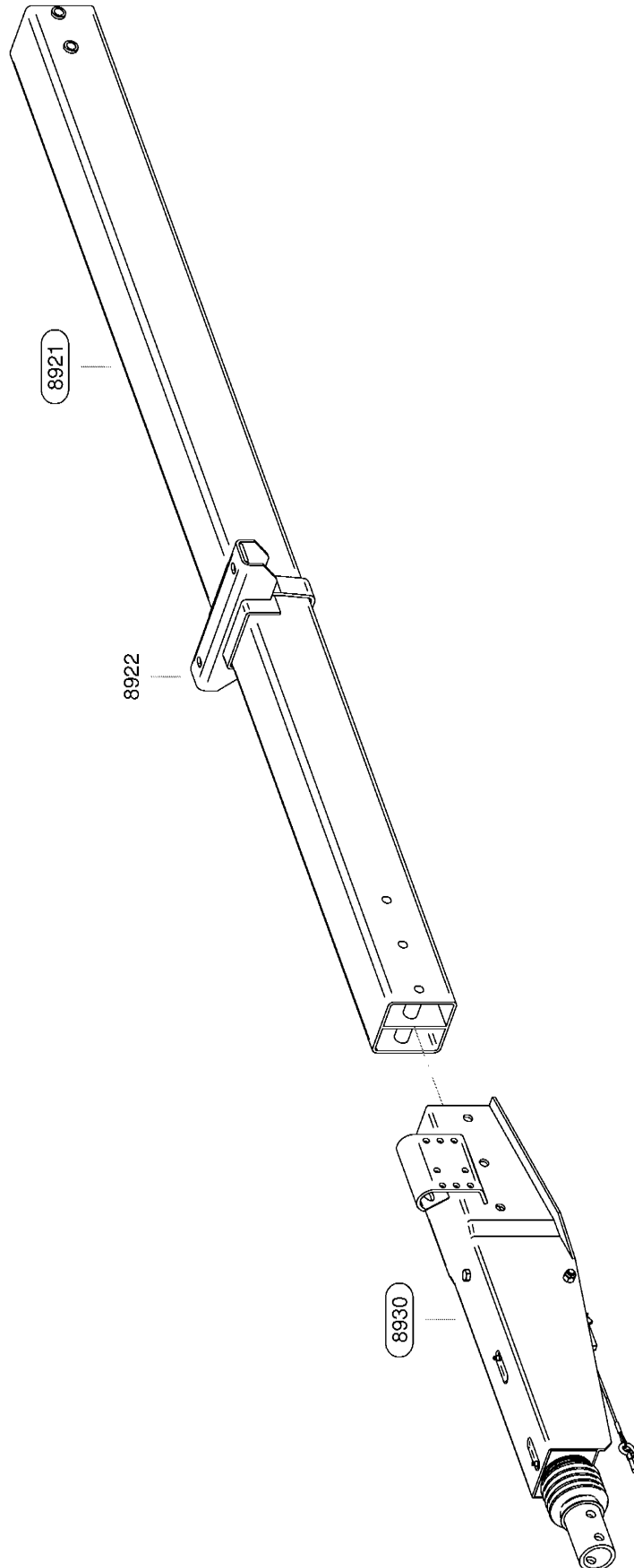
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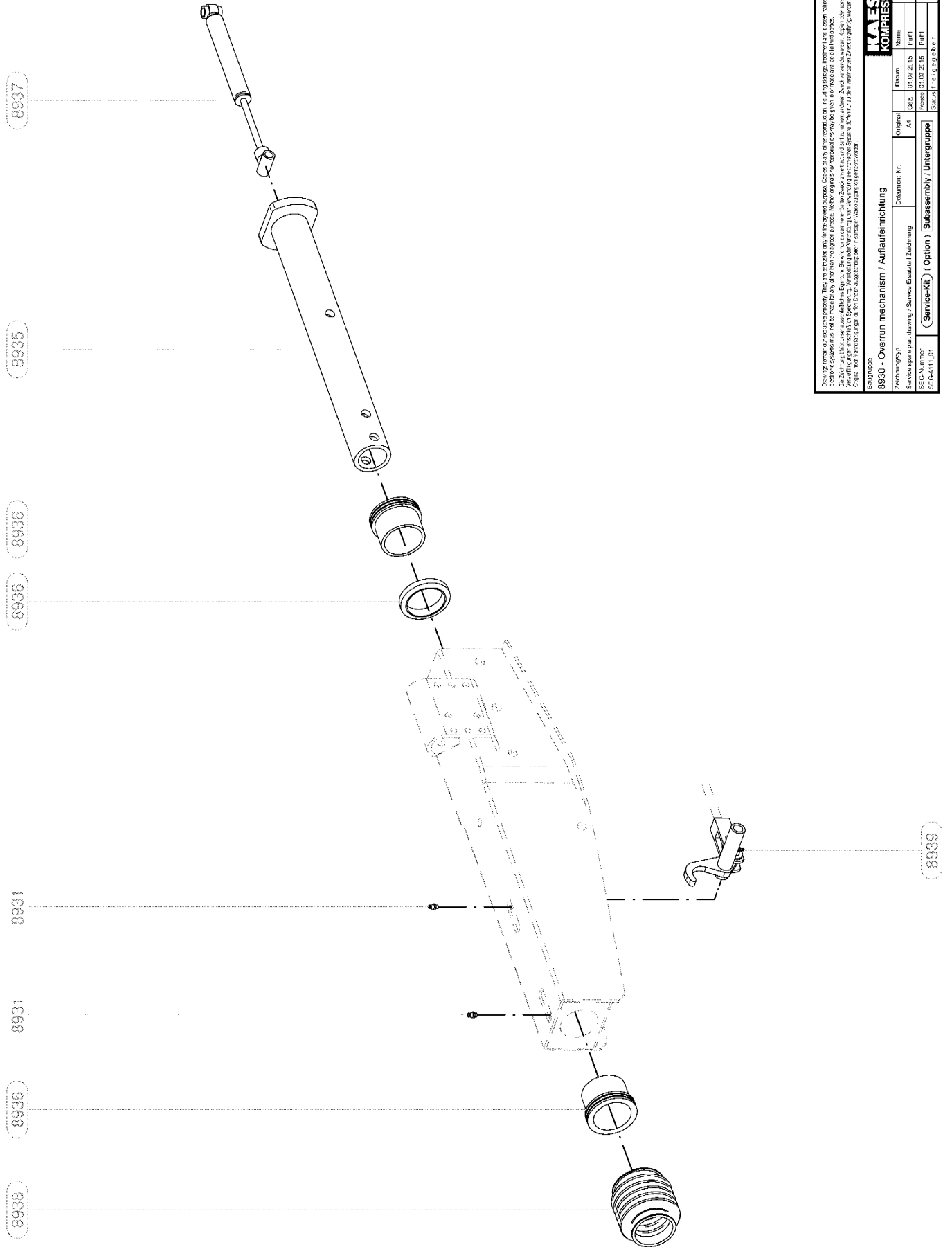
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Zeichnungs-Nr.	Dokument-Nr.	Name
Skizzen-Nr.	Original	Datum
SEC-Nr.	Ad.	Ad.
SEC-8983_21	(Service-Kit)	(Option)
(Subassembly)	(Untergruppe)	(Teil)
1 von 1	1 von 1	1 von 1

Service-Kit
(Option)



SEG-4109_01



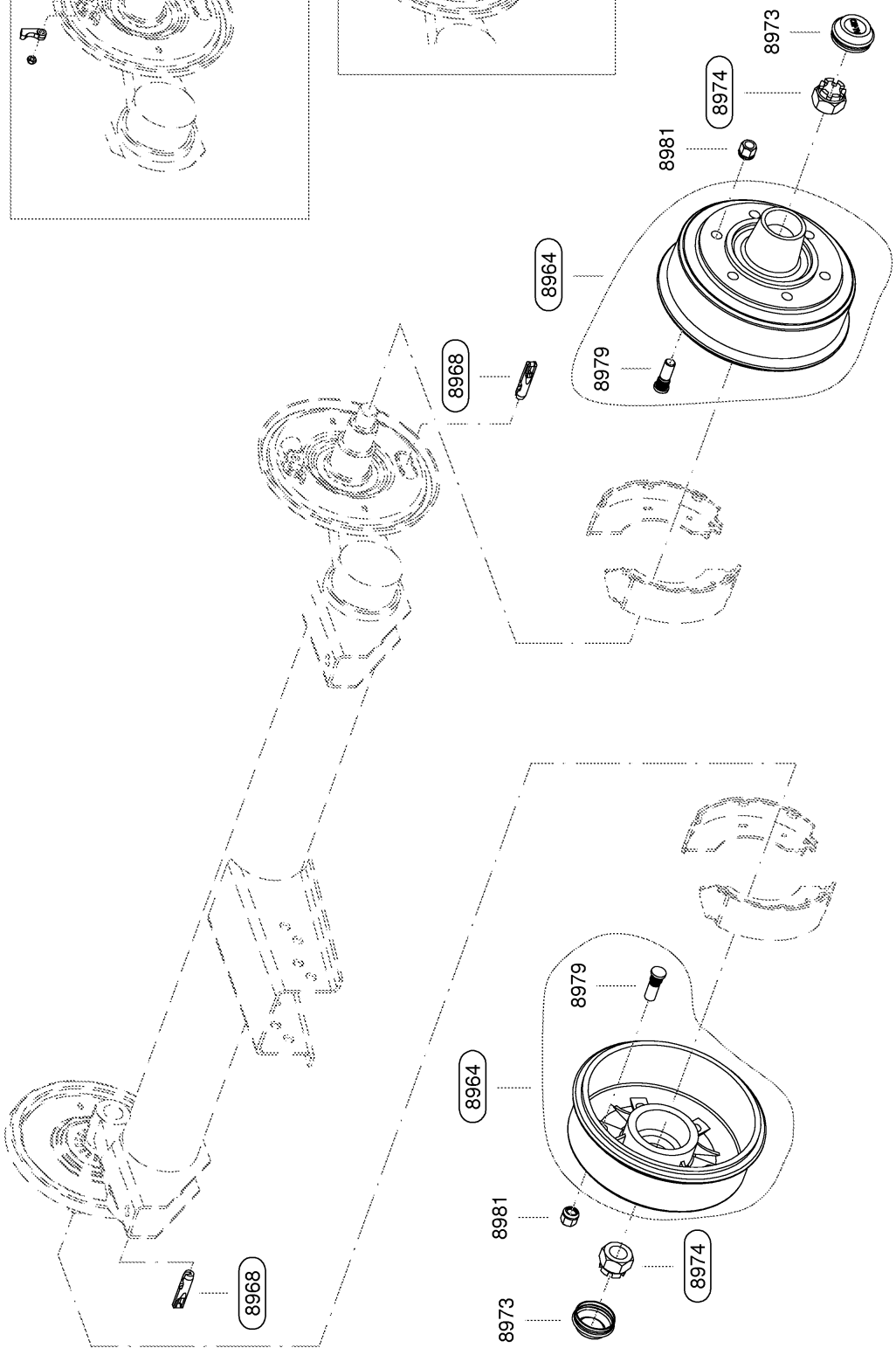
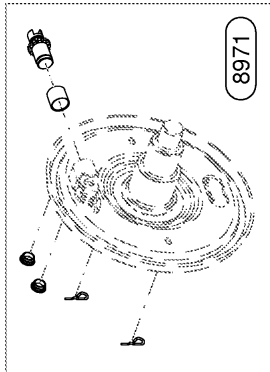
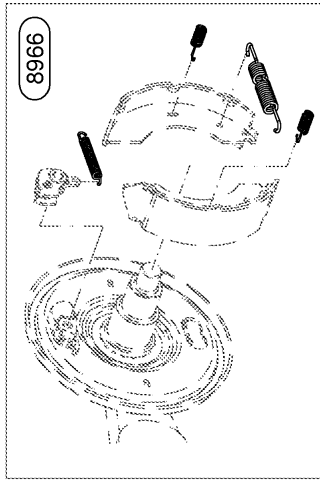
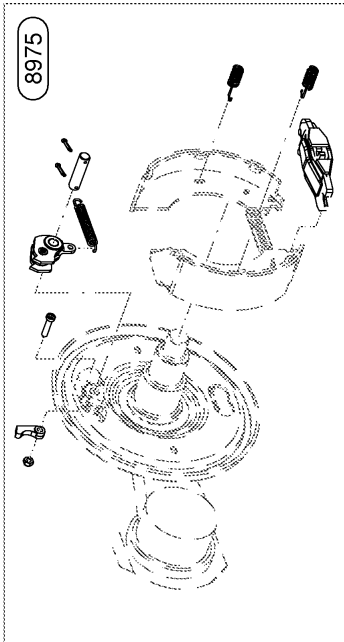
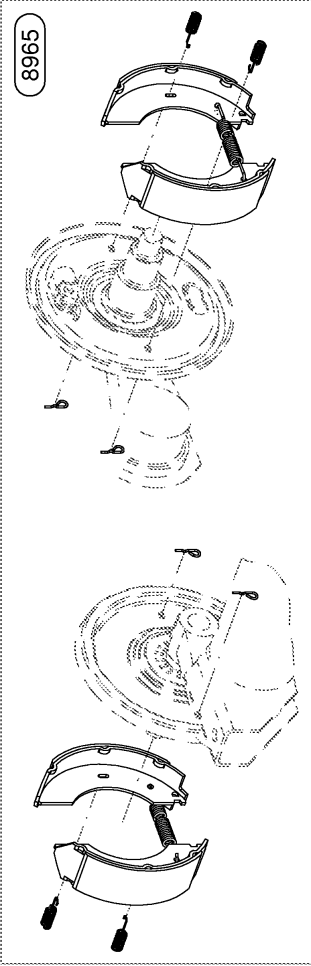
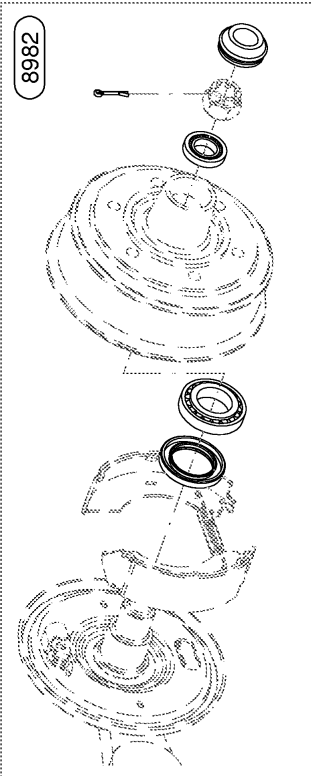


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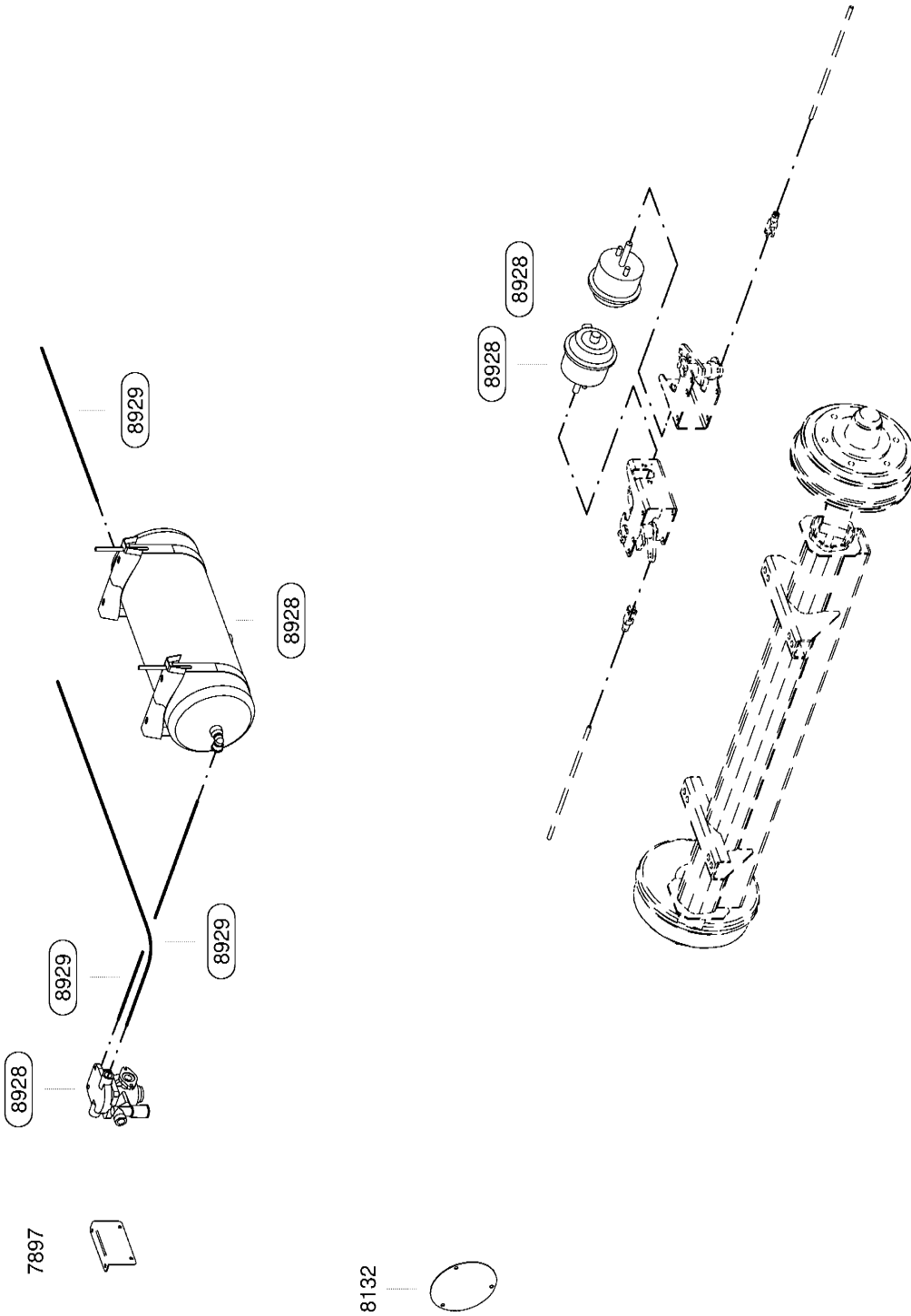
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Benennung		Original		Ersatzteil	
8930 - Overrun mechanism / Aufsteuerung		Dokument-Nr.		Name	
Zeichnungsgrupp.		Datum		Ersatzteil-Nr.	
Sonderzeichnung		13.07.2015		Part1	
SEGA-Nummer		A4		Solid Edge	
SEGA-111_21		Version		Date	
		1.00		19.07.2015	
				Part1	
				Date	
				1.00	

Service-Kit

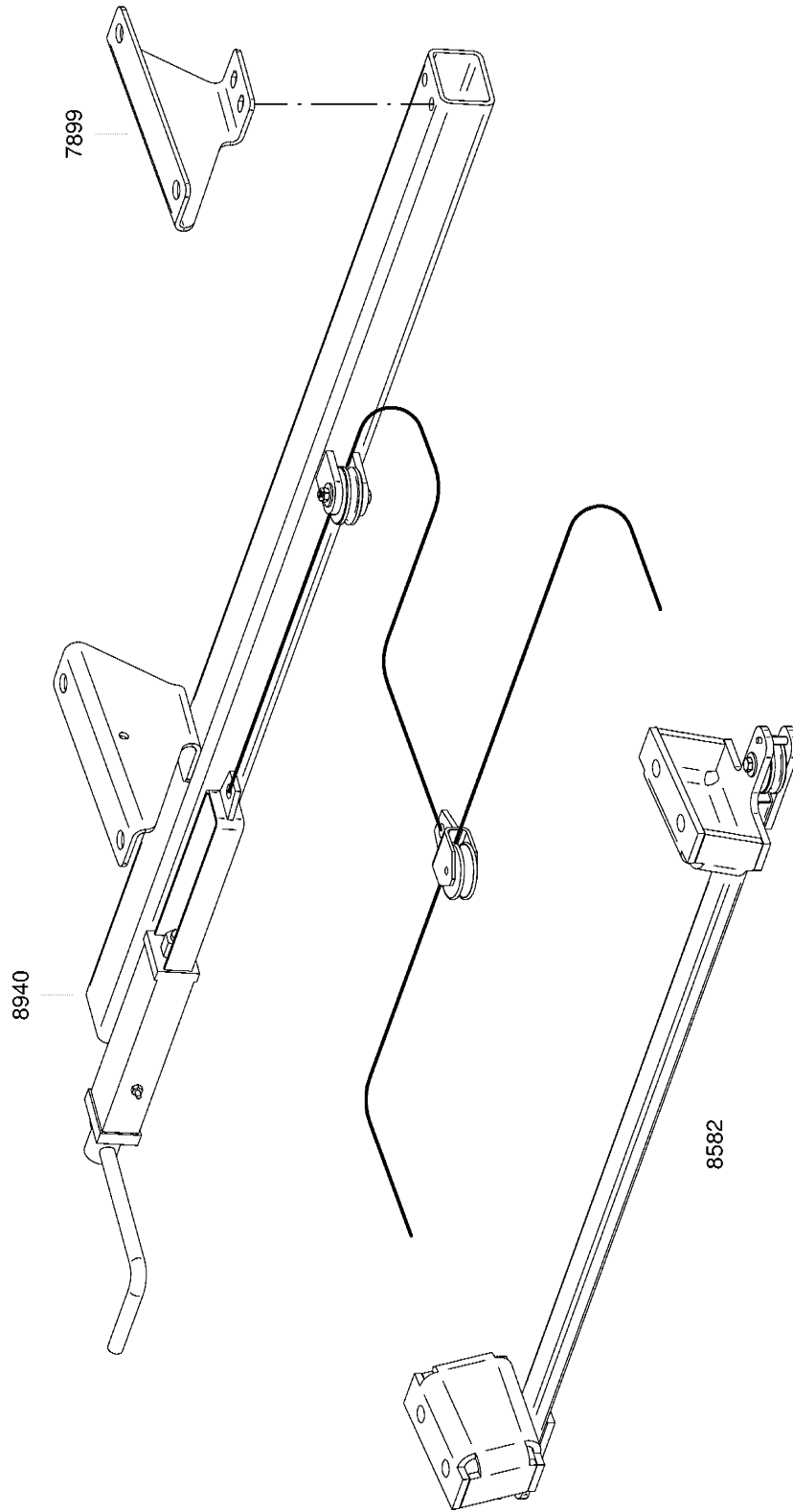


SEG-2056_01



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KAESER KOMPRESSOREN		Erstellt mit:	
Name:		Datei:	
Datum:		Skizze:	
Original:		Menge:	
Dokument-Nr.:		Status:	
Zuordnung:		Option / Untergruppe:	
Service-Kit:		1 von 1	

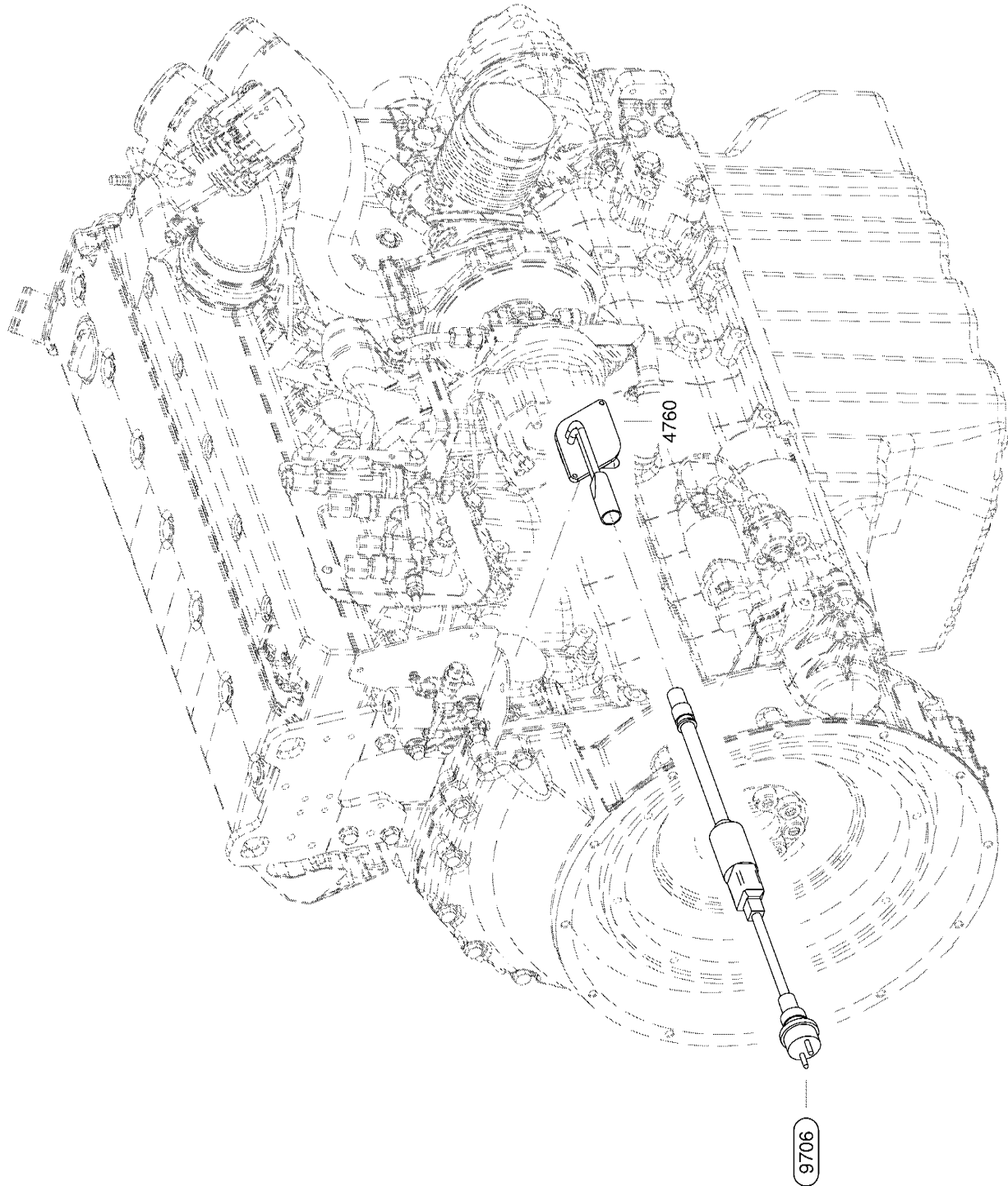


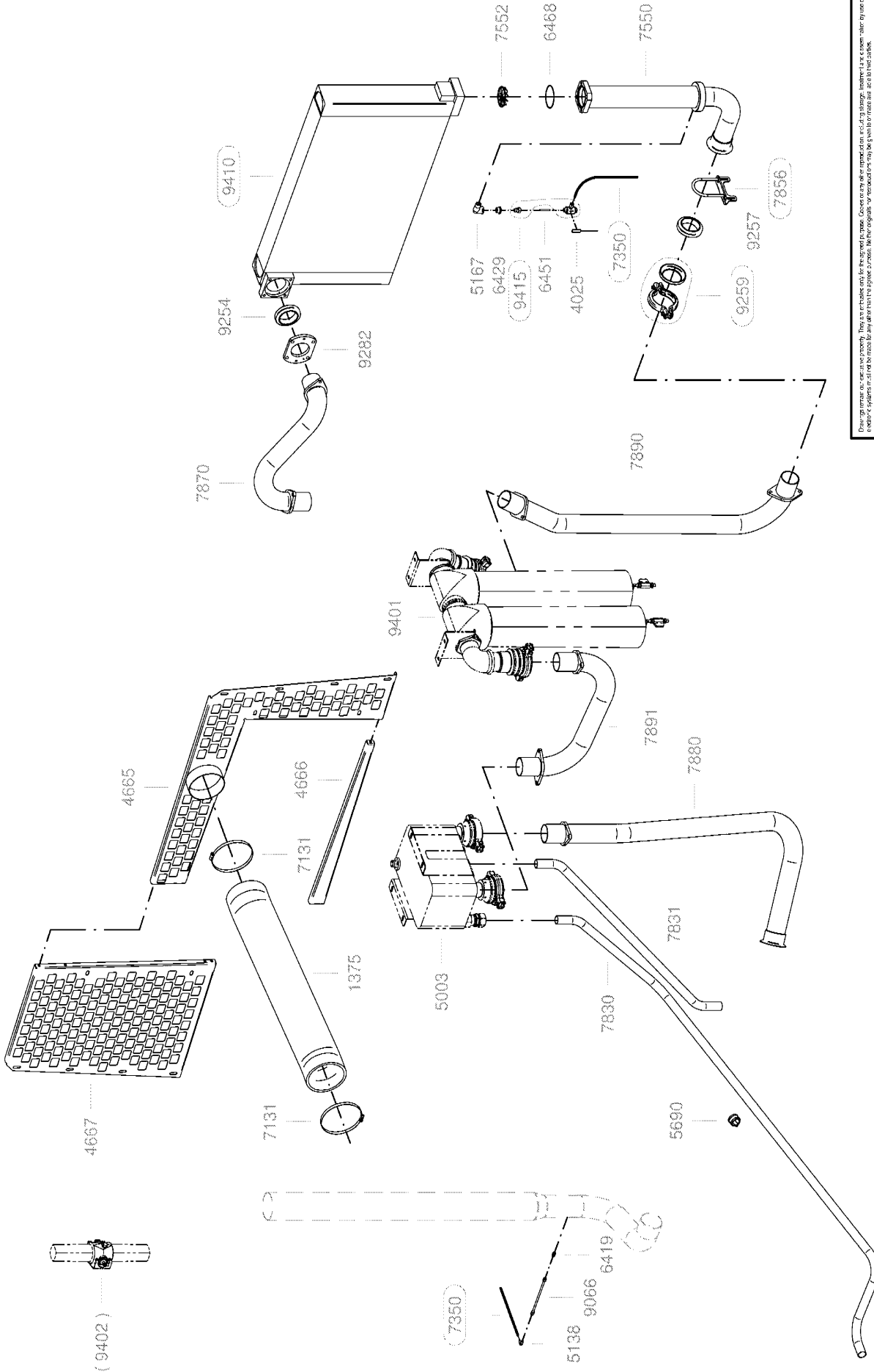
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Benennung		8902 - Parking brake / Standbremse	
Zeichnungsart	Dokument-Nr.	Original	Erstellt in:
Service spare part drawing / Service Ersatzteil-Zeichnung		Alt	Standort
SEGA-Nummer		Neu	SEGA-4113.21
SEGA-4113.21		Option	Subassembli / Untergruppe
			Blatt 1 von 1

Service-Kit
(Option)

SEG-4114_01





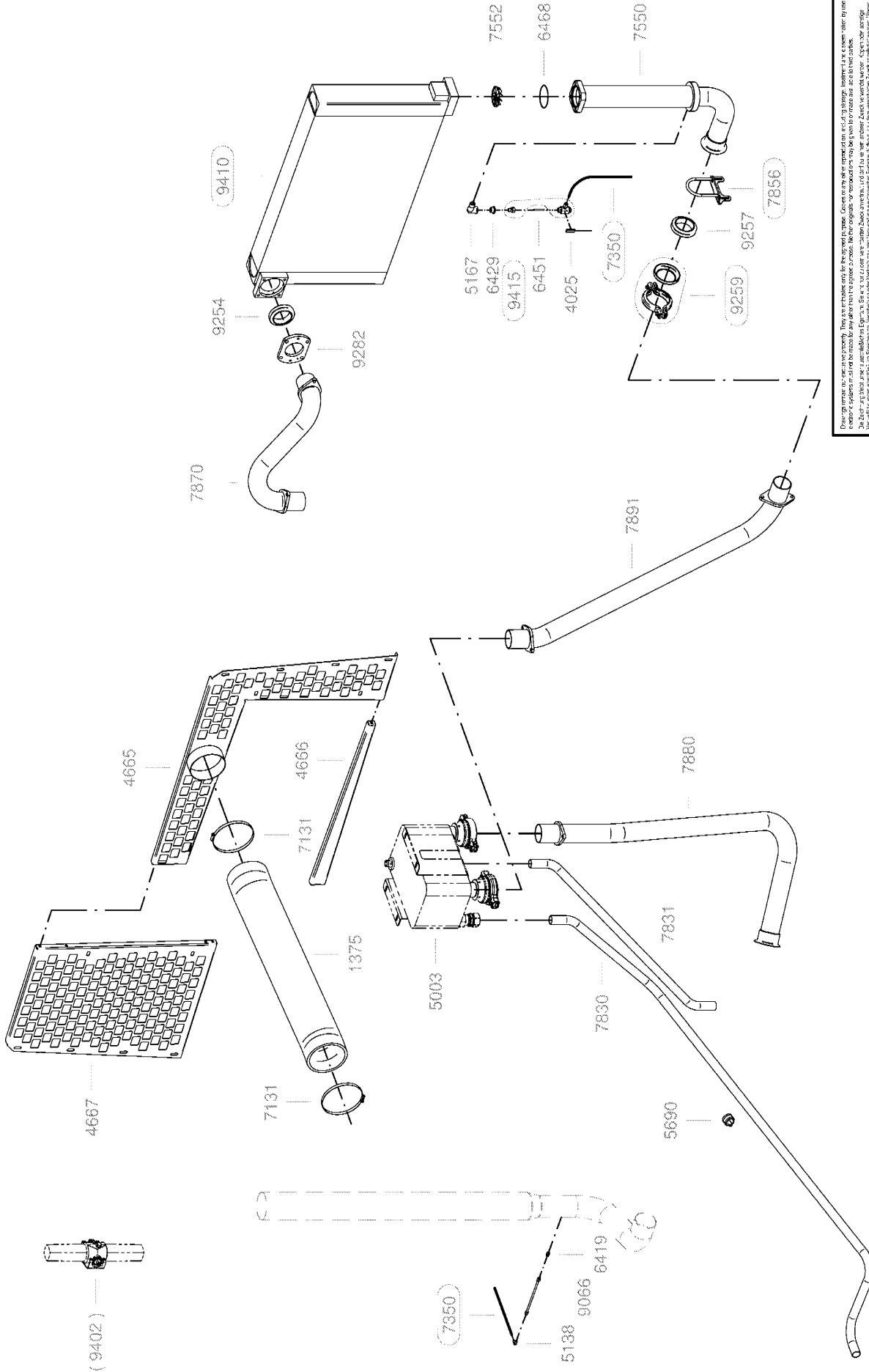
KAESER KOMPRESSOREN

9400 - Compressed air treatment / Druckluftaufbereitung

Original Name: 138.02.2116 Part1
 Zeichnungsart: A4
 Original Name: 138.02.2116 Part1
 Zeichnungsart: A4
 Original Name: 138.02.2116 Part1
 Zeichnungsart: A4

SEGA Number: 9400-115.21
 (Service-Kit) (Option) (Subassembly) (Untergruppe)

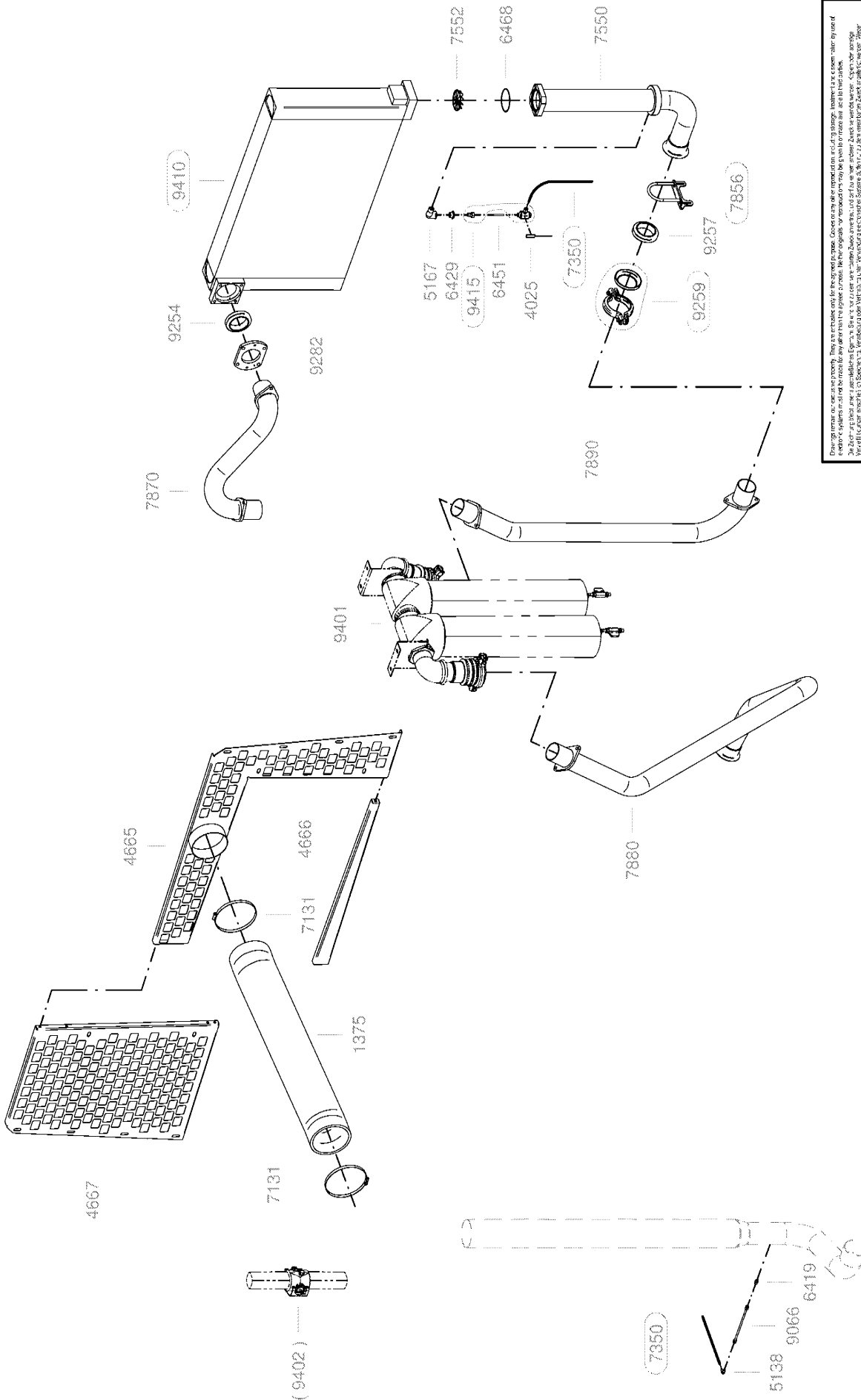
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 Blattzahl: 1 von 1



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KAESER KOMPRESSOREN		Erteilt von:	
Zeichnungs-Nr.	Datum	Original	Name
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SFGA-Nummer	Zeichnung	Stückzahl	Stückzahl
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(Service-Kit) Subassembly Untergruppe			

Blatt 1 von 1



KAESER KOMPRESSOREN

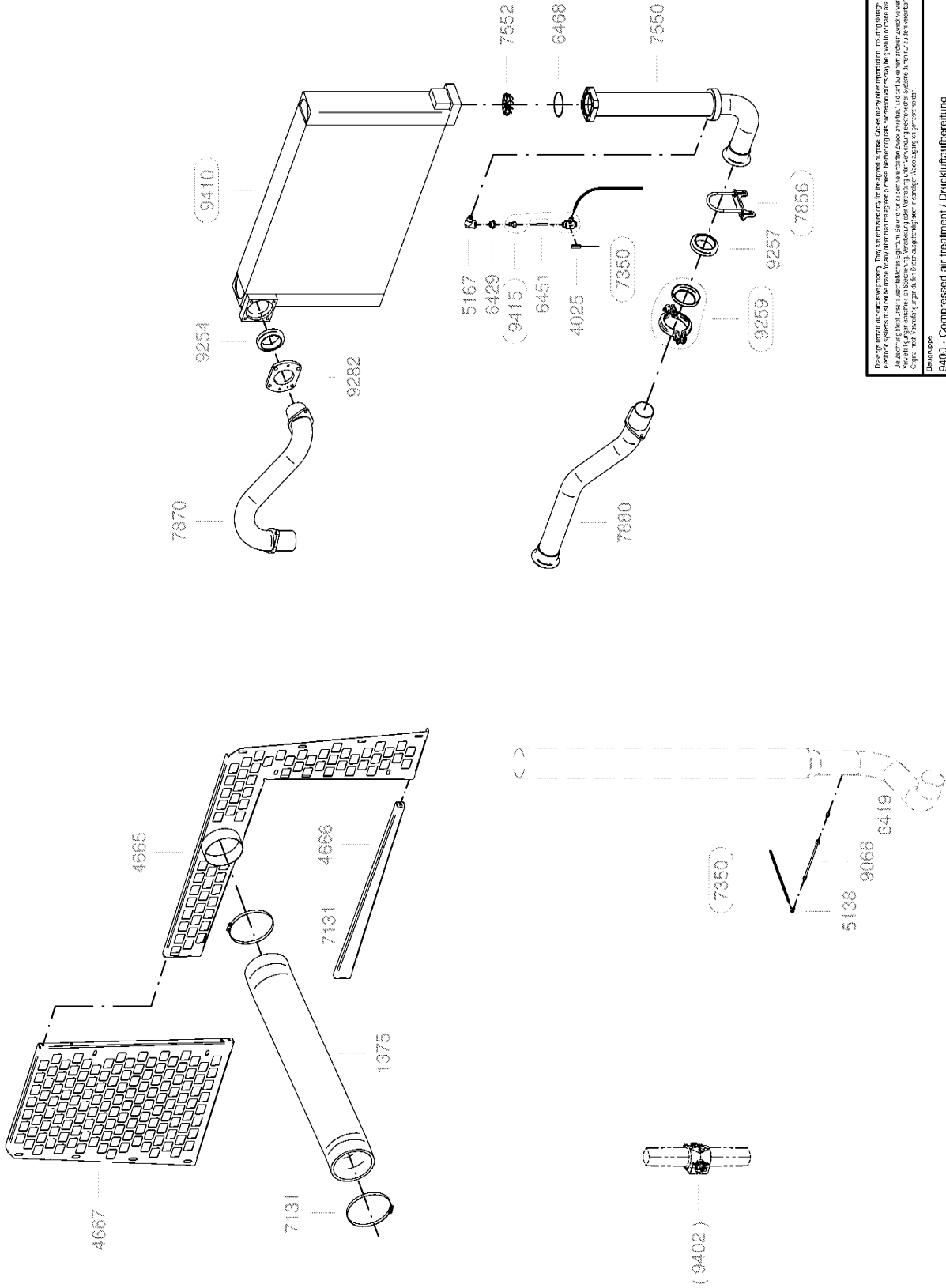
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 Datum: 13.02.2016
 Zeichnungs-Nr.: 13.02.2016
 Original: Part1
 Zeichnungstyp: Part1
 Skizze: 13.02.2016
 Zeichner: Part1
 Bearb.: Part1
 Status: 1 von 1

9400 - Compressed air treatment / Druckluftaufbereitung

SEGA-Kit (Option) / Subassembly / Untergruppe

SEGA-417.21

Original: 13.02.2016
 Zeichnungstyp: Part1
 Skizze: 13.02.2016
 Zeichner: Part1
 Bearb.: Part1
 Status: 1 von 1



KAESER KOMPRESSOREN

Original Name: Erweitert Name:
 Datum: 13.02.2016 Part1
 Zeichnungs-Nr.: 13.02.2016 Part1
 Original: 13.02.2016 Part1
 Zeichnung: 13.02.2016 Part1
 SPS-Nr.: 13.02.2016 Part1
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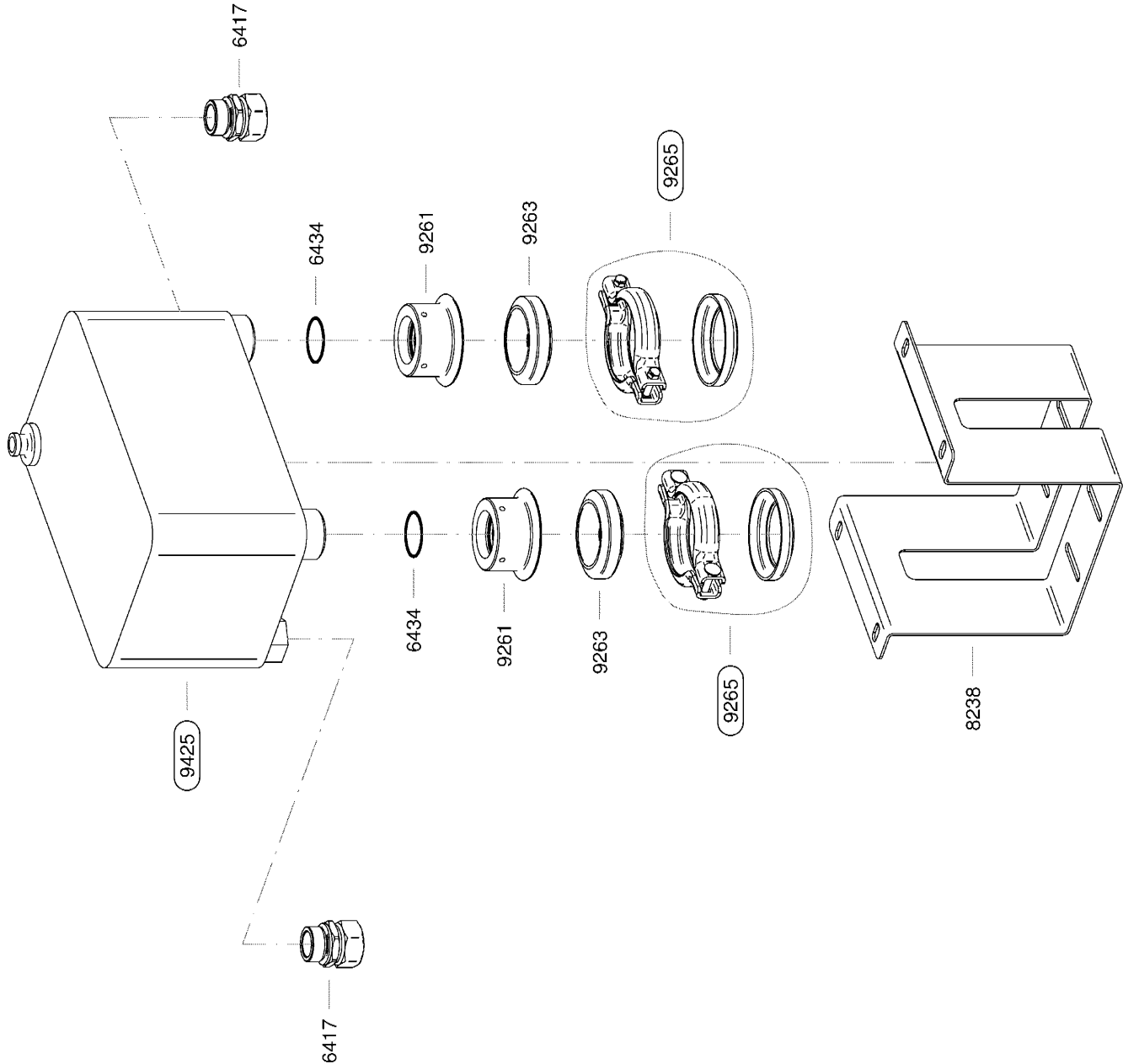
9400 - Compressed air treatment / Druckluftaufbereitung

Blattgruppe: 1 von 1

SEGA-118.21 (Service-Kit) (Option) / Subassembly / Untergruppe

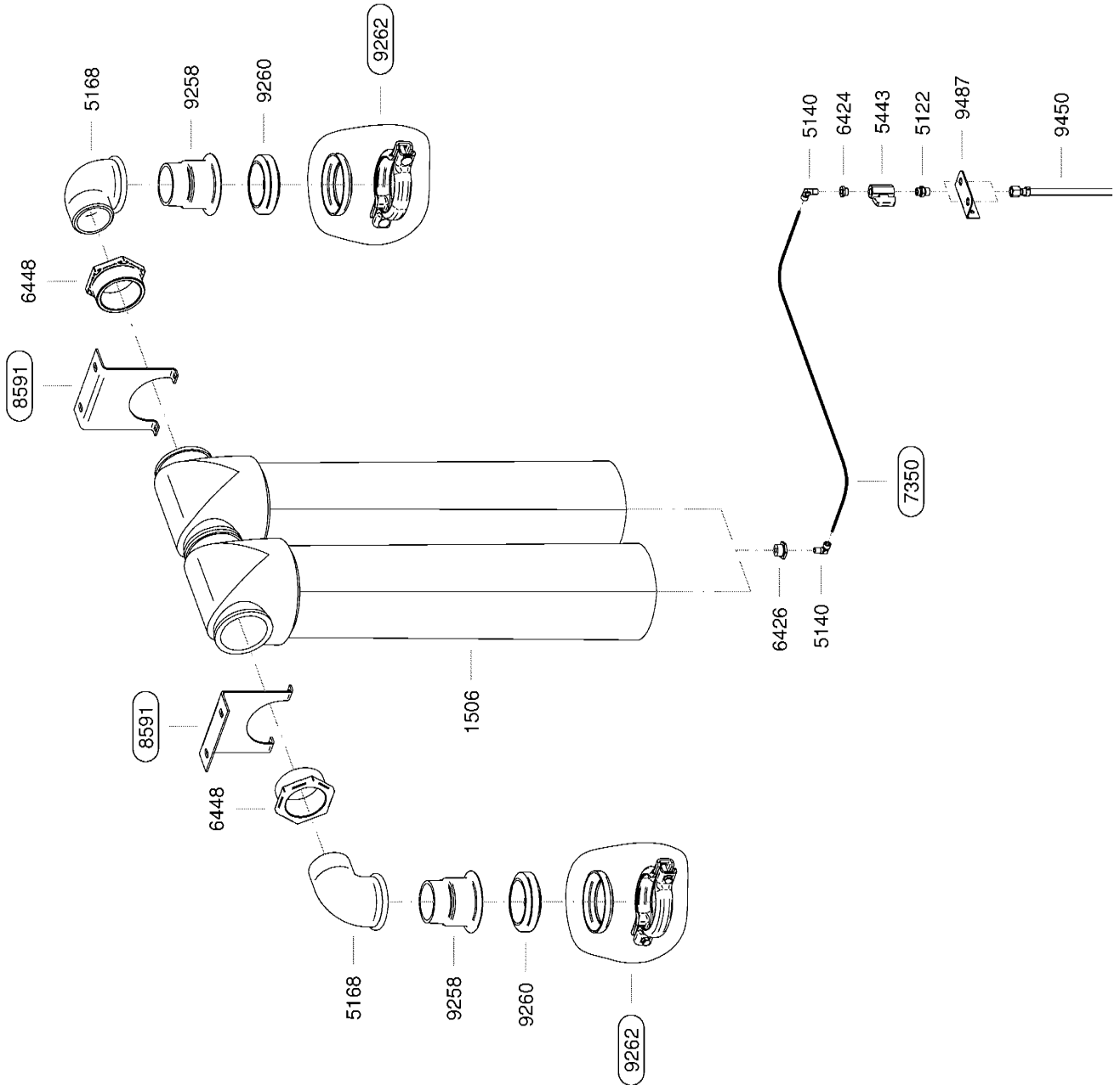
Service-Kit
(Option)

SEG-4119_01



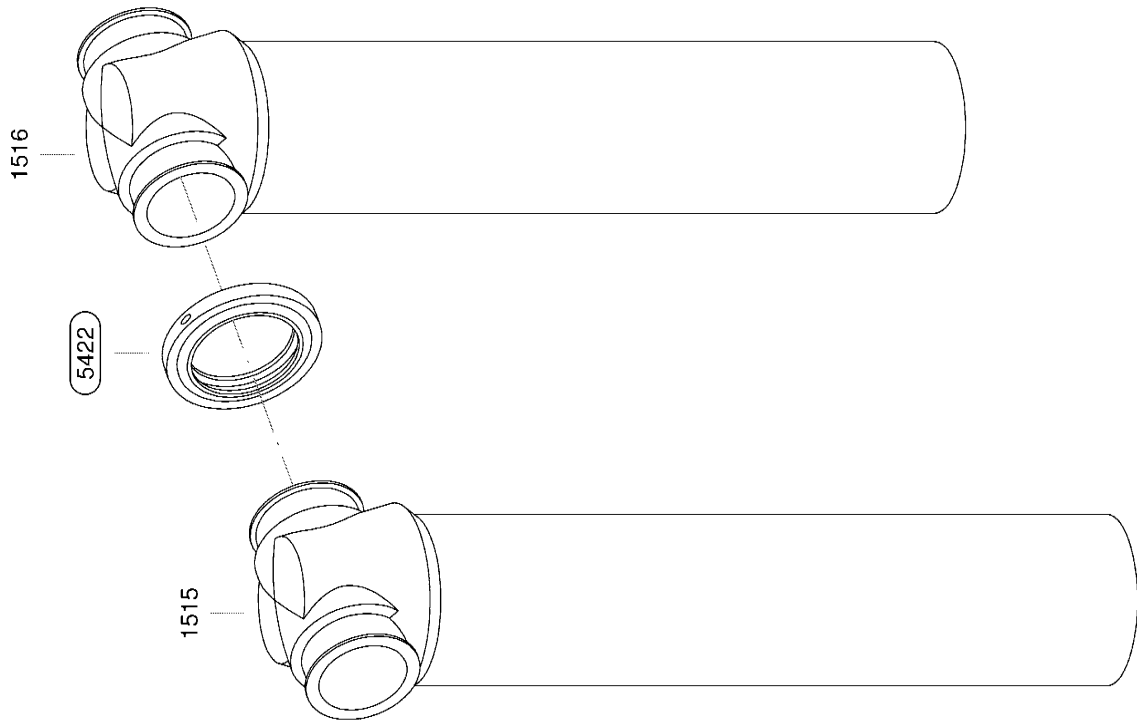
Service-Kit
(Option)

SEG-4120_01



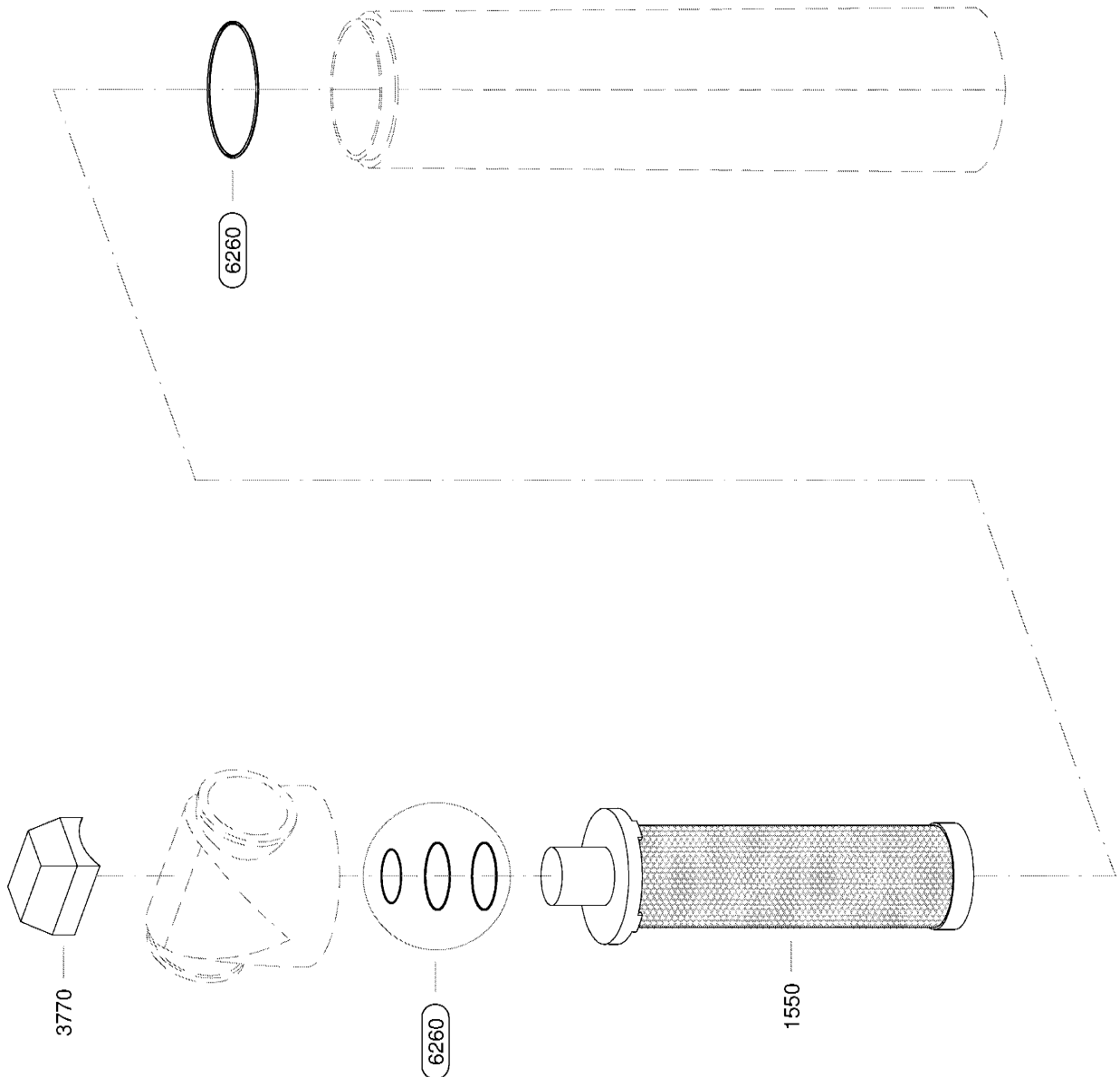
Service-Kit
(Option)

SEG-4227_01



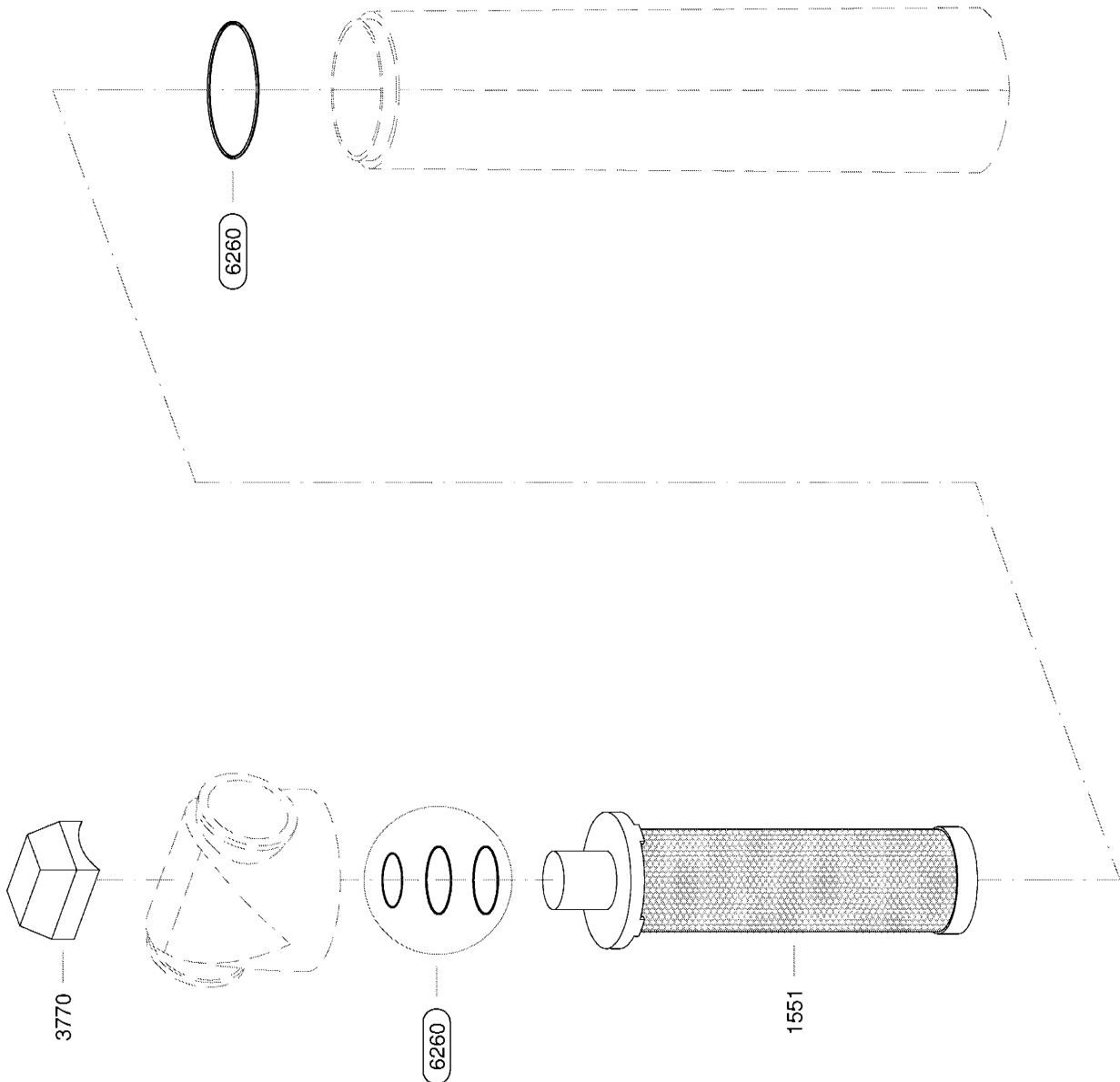
Service-Kit
(Option)

SEG-4228_01



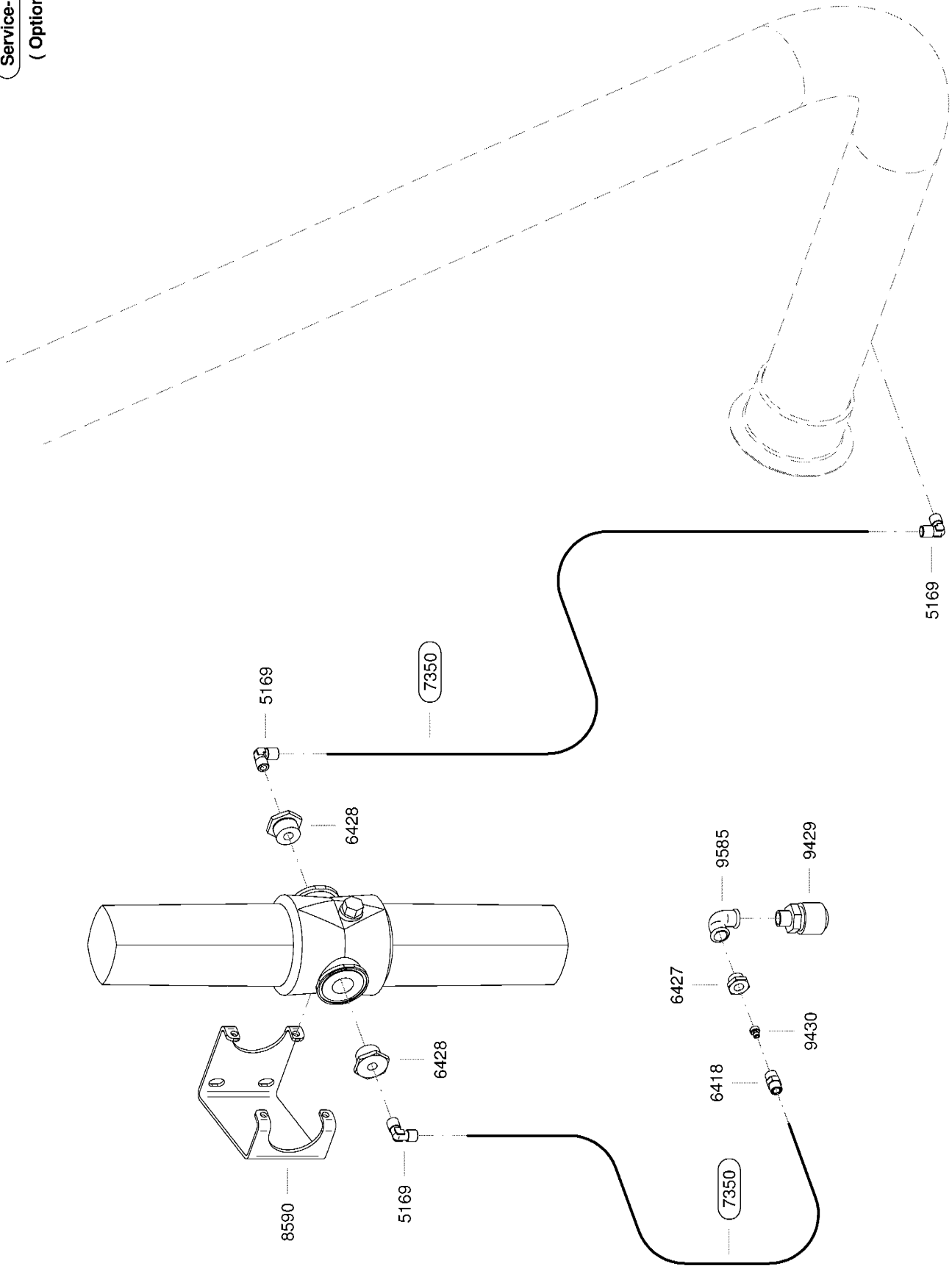
Service-Kit
(Option)

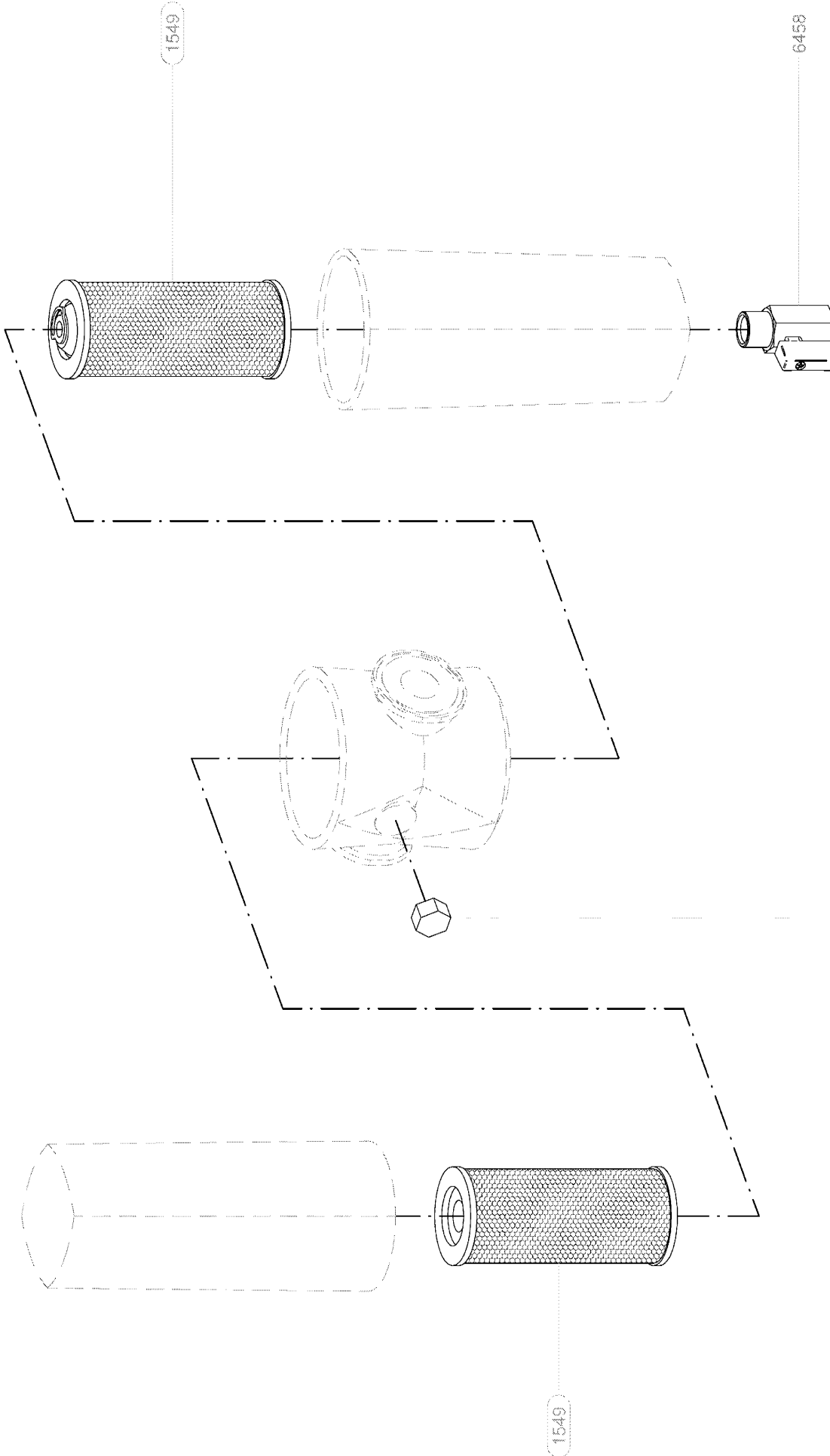
SEG-4229_01



Service-Kit
(Option)

SEG-4121_01





KAESER KOMPRESSOREN

1510 - Fresh air filter / Frischluftfilter

Original Name Datum Erteilt am
 Zeichnungsart: A4
 Original: 18.07.2015 Part1
 Spross: 18.07.2015 Part1
 SECA Nummer: (Service-Kit) / Subassembly / Untergruppe
 SEC-2482.23
 Blatt: 1 von 1

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7959

12 Decommissioning, Storage and Transport

12.1 De-commissioning

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

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

Precondition The machine is shut down.

Machine dry and cool.

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

12.1.1 Temporary de-commissioning

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. 83 "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.*

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.	10.5.3	
➤ Fill the separator tank and engine with preserving oil.	10.5.2 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.	10.9	
➤ 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"> ■ Engine air inlet ■ Compressor air inlet ■ Exhaust silencer 	–	
➤ Clean the bodywork and treat with preservative.	–	
➤ Hang a notice on the instrument panel to inform of the decommissioning measures taken.	–	

Tab. 84 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. 85 Text for the long-term decommissioned and storage information notice

- Store in a dry place with constant temperatures.

12.2 Transport

Precondition Machine switched off and locked off
(«battery isolating switch» off)

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

Machine is cooled down.

All compressed air consumers are disconnected.

All connecting lines and hoses disconnected and removed.

Any loose or movable parts that may fall when transporting are removed or secured.

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 Towing the compressor on the road

The portable machine can be transported as trailer by a towing vehicle.

Machines without lighting system and service brake must not be towed on public roads.

Prerequisites for the towing on public roads:

Axle load up to 7716 lb:

- Chassis with overrun brake
- Lighting and signaling system.

Axle load up to 8818 lb:

- Chassis with compressed air brake and ABS
- Lighting and signaling system.

All other machines may be transported only on non-public roads!



National and local regulations must be observed when towing the machine on public highways.

1. **⚠ WARNING** *Risk of accident when towing non-roadworthy machines on public roads. Death or severe injury possible due to accidents with unbraked and/or unilluminated trailer.*
 - *Do not tow machines without service brake and/or illumination equipment on public roads.*
 - *Transport only an illuminated machine equipped with a service brake on public roads.*
2. Observe the safety instructions in chapter 3.5.3 "Safe machine operation".

12.2.2.1 Preparing for transport

Stowing payload:

Do not exceed the permissible loading (overall mass, coupling load, axle load). Observe national traffic laws. If additional loading is not permitted, the load must be transported in the towing vehicle.

1. Check that loading the machine with tools or accessories during transport is permissible.
2. Place additional loads only in the spaces provided (if available) and secure carefully.

Additional precautions for a very dirty machine:

The machine can become very dirty after prolonged use on a construction site. A machine in such condition is not suitable for towing on public roads.

1. Clean the machine, in particular around the chassis and the lighting and signalling equipment.
2. Check the function of wheels, brakes, lights and signalling equipment.
If defects are found: Correct any defects before towing.

Additional precautions for conditions of snow and ice:

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

1. **⚠ CAUTION** *Accident hazard due to snow or ice falling off the machine. Snow or ice falling from the towed machine can endanger following vehicles. Problems with driving dynamics and damage to the machine could occur. The maximum permissible axle load could be exceeded.*
 - *Do not transport the machine if it is covered by snow or ice.*
2. Remove any snow or ice before towing.

Perform the following tasks prior to transporting the machine:

1. Make sure the towing hitch is compatible with the ball or eye coupling on the towed machine.
2. Check that the machine is shut down and secured against accidental restarting.
3. Detach all connecting lines and hoses.
4. Make sure there are no unsecured tools lying on or in the machine.

5. Close and lock the access doors.
6. Position the towing vehicle with hitch in front of the machine's towing eye.

Option rb/rm/rt, rb/rm/rs,
rb/rm/rr

Adjust the towing bar to suit the height of the towing vehicle hitch.

When the machine is coupled up, the towing bar must be parallel with the ground.

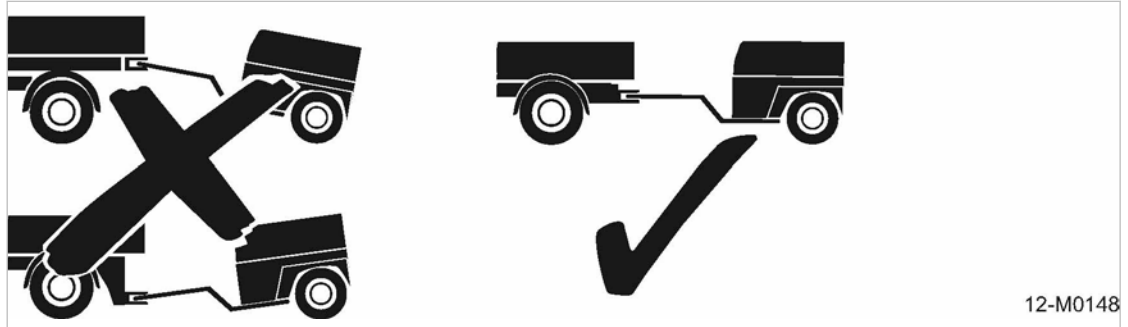


Fig. 94 Transport position

1. **⚠ WARNING** *Danger from problematic driving dynamics!
The permissible loading range may be exceeded or undercut.
Personal injury may result from towing.
Damage to the machine and/or towing vehicle is possible.*
 - *Do not couple up the machine at an angle to the towing vehicle.*
 - *Ensure that the towing bar is horizontal when coupled to the towing vehicle.*
2. Adjust the towing bar height to suit the height of the hitch on the towing vehicle.

Further information See chapters 6.4.1 and 6.4.2 for tow bar height adjustment.

12.2.2.2 Coupling-up

1. Slowly and carefully approach the machine with the towing vehicle.
2. Position and park the towing vehicle with coupling in front of the machine's towing eye.

Coupling a machine with towing eye:

1. Open the towing coupling of the towing vehicle.
2. Slowly and carefully approach the machine with the towing vehicle until the trailer coupling audibly latches.
3. **⚠ WARNING** *Danger of accident from an incorrectly attached coupling.
If the coupling is not fully closed, the trailer can become uncoupled from the towing vehicle and cause an accident.*
 - *Check correct coupling.*
4. Check the locking mechanism of the trailer coupling and re-couple if required.

Option rb/rm/rs, rc/ro/rs,
rd/ro/rs

Coupling a machine with ball coupling:

To hitch up the machine, lower the open coupling onto the ball of the towing vehicle so that it clicks into place.

The ball coupling is coupled correctly, when:

- the locking latch at the coupling handle is released
- the cylinder of the locking indicator is protruding and visible

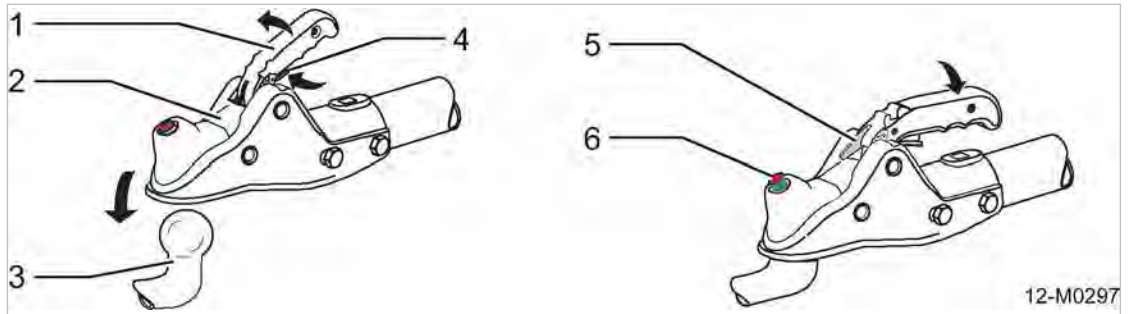


Fig. 95 Ball coupling (ALKO)

- | | | | |
|---|---------------------------|---|--------------------------------------|
| ① | Coupling handle | ④ | Safety lever (locking latch release) |
| ② | Ball coupling | ⑤ | Locking latch (released) |
| ③ | Towing vehicle ball hitch | ⑥ | Locking indicator (protruding) |

1. **NOTICE** *There is considerable danger of injury caused by trapped fingers. They can be trapped in the spring-loaded closing mechanism.*
 - Never place your fingers inside an open ball coupling.
 - Always wear protective gloves.
2. Fully push the safety lever ④ and pull up the coupling handle of the ball coupling. The coupling opens.
3. **⚠ WARNING** *Risk of accident due to unhitching of the ball coupling during transport. If the coupling is not fully closed the compressor can become uncoupled from the towing vehicle and cause an accident.*
 - Check correct coupling.
4. Place the open coupling over the towing vehicle ball hitch. The weight on the coupling will cause it to audibly close. The coupling locks automatically. Closing and locking is automatic.
5. Manually push down the coupling handle until the locking latch releases and the cylinder of the locking indicator is pushed through the towing device and becomes visible.
6. Check correct coupling.
 - Check that the coupling handle cannot be pushed further down.
 - Check that the locking latch has released.
 - Check that the locking indicator is protruding and visible.



- Locking latch is not released and/or cylinder of the locking indicator is not visible.
- Lift the safety lever and pull the coupling handle forward then lift the coupling slightly.
 - Set the coupling back on the towing vehicle ball hitch and forcibly push down at the coupling handle.

Checking the ball coupling wear indicator

The ball coupling is equipped with a wear indicator.

The wear indicator shows:

- Wear on the ball hitch.
- Wear on the coupling.

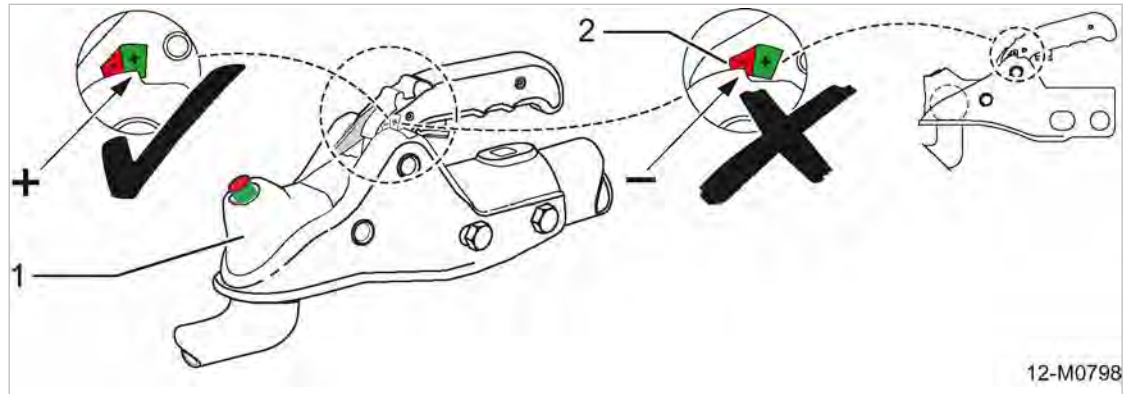


Fig. 96 Wear indication, ALKO ball coupling

- | | | | |
|---|----------------|---|------------------------------------|
| ① | Ball coupling | + | Green zone (OK) |
| ② | Wear indicator | - | Red zone (wear tolerance exceeded) |

1. **⚠ WARNING** *Danger of accident from worn coupling!*
The machine may detach from the towing vehicle.
 - *Do not tow the machine.*
 - *Have the ball coupling and ball hitch checked.*
 - *Replace worn parts.*
2. Couple-up the machine and tow slowly and carefully for about 0.5 miles.
The action of towing sets the coupling mechanism to maximum closure and gives a true reading on the wear indicator.
3. Interpret the wear indicator as follows:

Wear indicator	Meaning
Green zone showing	<ul style="list-style-type: none"> ■ Coupling in new condition. ■ Towing vehicle ball hitch wear within acceptable limits. ➤ No action necessary.
Red zone showing	<ul style="list-style-type: none"> ■ Ball hitch wear at acceptable limit, ball coupling unworn. ■ Ball hitch in new condition; ball coupling showing increased wear. ■ Both ball and coupling showing increased wear. ■ Ball coupling damaged. ➤ Ball hitch and coupling ball must be inspected by a specialised workshop. ➤ Replace worn parts.
Marking is outside the coloured zones.	<ul style="list-style-type: none"> ■ Coupling not properly engaged.

Tab. 86 Ball coupling wear indicator

**12.2.2.3 Option rb/rm/rt, rc/ro/rt, rb/rm/rr, rc/ro/rr
 Preparing the coupled machine for transport (chassis axle load 8818 lb)**
Option rb/rm/rt Preparing the machine for transport (height-adjustable chassis, without service brake):

1. Check that the tow bar is adjusted to the correct height. (see also chapter 6.4.2)
 Check if:
 - The teeth in the tow bar height adjusting joints are fully engaged
 - The locking levers are tightened
 - The security pin is fully inserted.
2. Prepare the jockey wheel for transport (see Ill. 97, Figure b).
 - Lift the jockey wheel just below the stop.
 - Pull the fixing lever forward (disengage).
 - Lift the jockey wheel and hang the fixing lever in the transport hook.

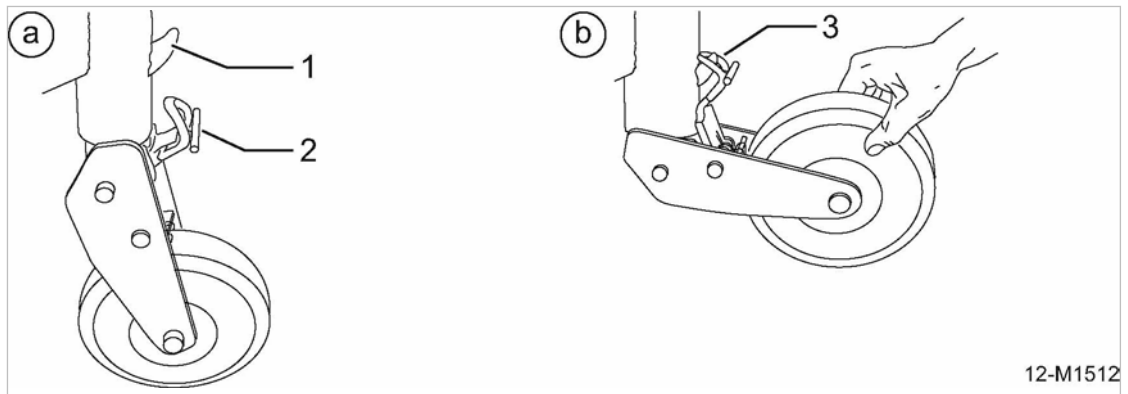


Fig. 97 Function of the semi-automatic jockey wheel

- | | |
|---|--|
| <p>Ⓐ Support position</p> <p>① Transport hook</p> <p>② Fixing lever</p> | <p>Ⓑ Transport position</p> <p>③ Hung fixing lever</p> |
|---|--|

3. Check that the wheels are securely fitted and the tires are in good condition.
4. Check the tire pressures.
5. Connect the cable for the lighting and indicator systems and carry out a function check.
6. Loosen the parking brake (turn the crank).
7. Remove the chocks.



Secure the chocks in the corresponding transport securing devices before towing. Replace any missing chocks immediately.

Option rc/ro/rt Preparing the machine for transport (fixed-height chassis, without service brake):

1. Prepare the jockey wheel for transport (see Ill. 97, Figure b).
 - Lift the jockey wheel just below the stop.
 - Pull the fixing lever forward (disengage).
 - Lift the jockey wheel and hang the fixing lever in the transport hook.
2. Check that the wheels are securely fitted and the tires are in good condition.
3. Check the tire pressures.
4. Connect the cable for the lighting and indicator systems and carry out a function check.

5. Loosen the parking brake (turn the crank).
6. Remove the chocks.



Secure the chocks in the corresponding transport securing devices before towing. Replace any missing chocks immediately.

Option rb/rm/rr Preparing the machine for transport (height-adjustable chassis with compressed air brake and ABS):

Option rb/rm/rr

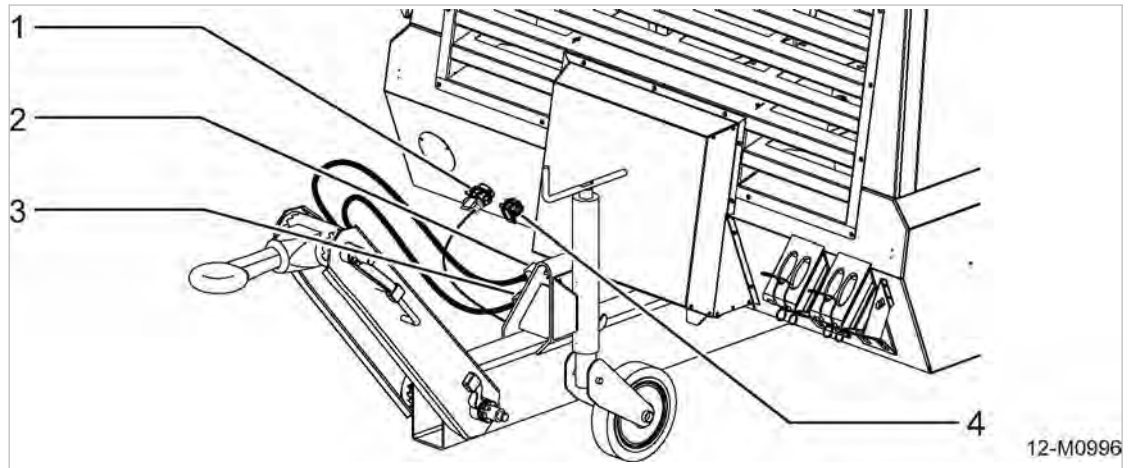


Fig. 98 Supply lines compressed air brake and ABS

- | | |
|--|--|
| ① Parking socket for ABS connection cable, cable attached | ③ Parking socket for brake line (yellow compressed air brake, line attached) |
| ② Parking socket for supply line (red) compressed air brake, line attached | ④ Socket, lighting system |

1. Check that the tow bar is adjusted to the correct height. (see also chapter 6.4.2)
Check if:
 - The teeth in the tow bar height adjusting joints are fully engaged
 - The locking levers are tightened
 - The security pin is fully inserted.
2. Prepare the jockey wheel for transport (see Ill. 97, Figure b).
 - Lift the jockey wheel just below the stop.
 - Pull the fixing lever forward (disengage).
 - Lift the jockey wheel and hang the fixing lever in the transport hook.
3. Check that the wheels are securely fitted and the tires are in good condition.
4. Check the tire pressures.
5. Connect the brake line hoses:
 - first brake line (yellow)
 - then supply line (red)
6. Connect the ABS cable.
7. Connect the cable for the lighting and indicator systems and carry out a function check.
8. Loosen the parking brake (turn the crank).
9. Remove the chocks.



Secure the chocks in the corresponding transport securing devices before towing. Replace any missing chocks immediately.

Option rc/ro/rr Preparing the machine for transport (fixed-height chassis with compressed air brake and ABS):

1. Prepare the jockey wheel for transport (see Ill. 97, Figure b).
 - Lift the jockey wheel just below the stop.
 - Pull the fixing lever forward (disengage).
 - Lift the jockey wheel and hang the fixing lever in the transport hook.
2. Check that the wheels are securely fitted and the tires are in good condition.
3. Check the tire pressures.
4. Connect the brake line hoses:
 - first brake line (yellow)
 - then supply line (red)
5. Connect the ABS cable.
6. Connect the cable for the lighting and indicator systems and carry out a function check.
7. Loosen the parking brake (turn the crank).
8. Remove the chocks.



Secure the chocks in the corresponding transport securing devices before towing. Replace any missing chocks immediately.

**12.2.2.4 Option rb/rm/rs, rc/ro/rs, rd/ro/rs
Preparing the coupled machine for transport (chassis axle load 7716 lb)**

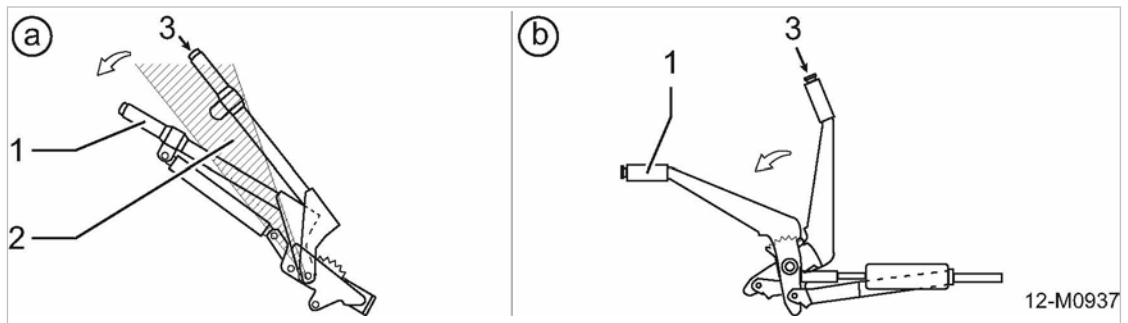


Fig. 99 Release the parking brake.

- | | |
|--|---|
| Ⓐ Parking brake with gas spring assistance | Ⓑ Parking brake with ratchet and spring loading |
| ① Parking brake lever | ③ Brake lever release button |
| ② Marking: "Death point zone" | |

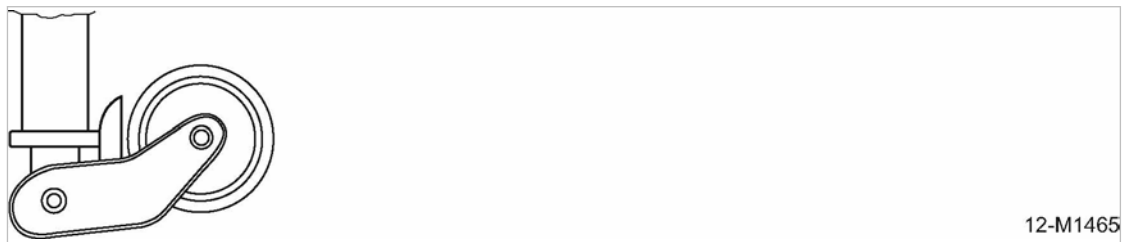


Fig. 100 Automatic jockey wheel in transport position

Option rb/rm/rs Preparing the machine for transport (height-adjustable chassis):

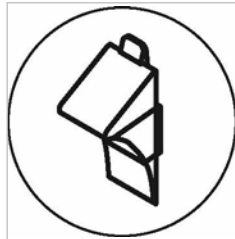
1. Check that the tow bar is adjusted to the correct height. (see also chapter 6.4.1)
Check if:
 - The teeth in the tow bar height adjusting joints are fully engaged.
 - The locking levers are tightened
 - The security pin is fully inserted.
2. Wind the jockey wheel to its uppermost position.
The free jockey wheel automatically moves in transport position (see Ill. 100).
3. Check that the wheels are securely fitted and the tires are in good condition.
4. Check the tire pressures.
5. Connect the cable for the lighting and indicator systems and carry out a function check.
6. Release the parking brake:
(see Ill. 99, figure a).
 - Pull the brake lever a little further on and press the release button.
 - Hold the release button in and push the lever down past the dead point zone.
7. Remove the chocks.

Option rc/ro/rs Preparing the machine for transport (fixed-height chassis):

1. Wind the jockey wheel to its uppermost position.
The free jockey wheel automatically moves in transport position (see Ill. 100).
2. Check that the wheels are securely fitted and the tires are in good condition.
3. Check the tire pressures.
4. Connect the cable for the lighting and indicator systems and carry out a function check.
5. Release the parking brake:
(see Ill. 99, figure b).
 - Pull the brake lever a little further on and press the release button.
 - Hold in the release button and push the lever fully down.
6. Remove the chocks.

Option rd/ro/rs Preparing the machine for transport (fixed-height chassis, without parking brake):

Option rd/ro/rs



12-M0393

Fig. 101 Safety signs: Secure the chocks

1. **▲ WARNING** *Missing chocks*
Serious injury or death can result from an unsecured machine rolling away.
 - *Secure the chocks in the transport securing device before transporting the machine.*
 - *Replace missing chocks immediately.*

2. Wind the jockey wheel to its uppermost position.
The free jockey wheel automatically moves in transport position (see Ill. 100).
3. Check that the wheels are securely fitted and the tires are in good condition.
4. Check the tire pressures.
5. Attach the lighting and indicator systems and carry out a function check.
6. Remove the chocks and secure them in the transport securing device.



Replacement chocks can be purchased from KAESER representatives. A list is given at the end of this manual. The part number of the chock is 5.1325.0.

Option rb/rm/rs, rc/ro/rs Ensuring emergency braking in the case of breakaway from the towing vehicle:

If the compressor breaks away from the towing vehicle, the cable tightens and pulls on the emergency brake (parking brake).

It is essential that the breakaway cable is threaded through its guides for correct emergency braking.

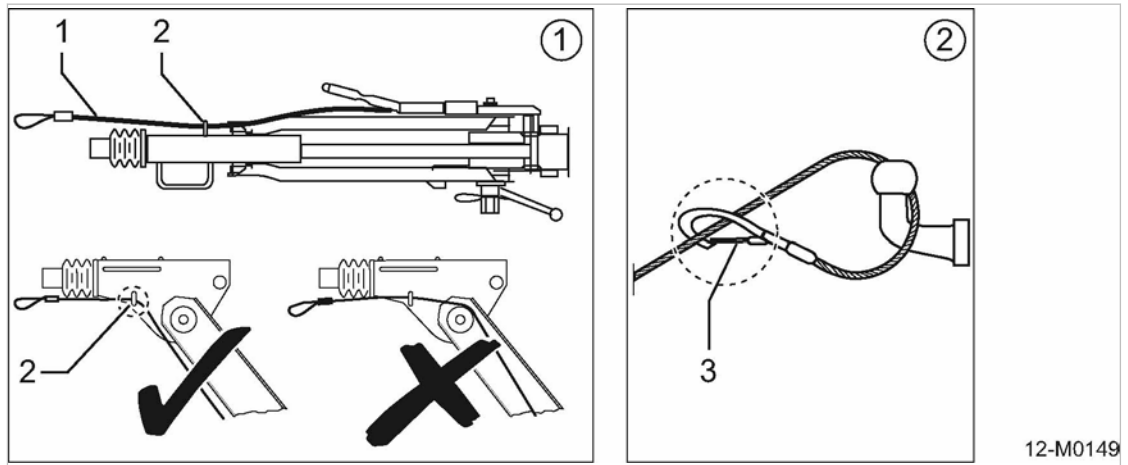


Fig. 102 Breakaway cable attachment

- ① Breakaway cable
- ② Breakaway cable guide (eye)
- ③ Connection (spring clip)

1. **NOTICE** *Unintentional brake application.*
If the breakaway cable is too short it can apply the brakes when rounding a curve. This imposes high wear on the braking system.
➤ *Make sure the breakaway cable is long enough.*
2. Thread the breakaway cable through the guide welded on the side of the towing bar.
3. Loop the end of the cable round the towing vehicle hitch and secure with the spring clip.

Option rd/ro/rs Attach safety chains



Always use safety chains.
Chains hold the towed machine if connections fails.

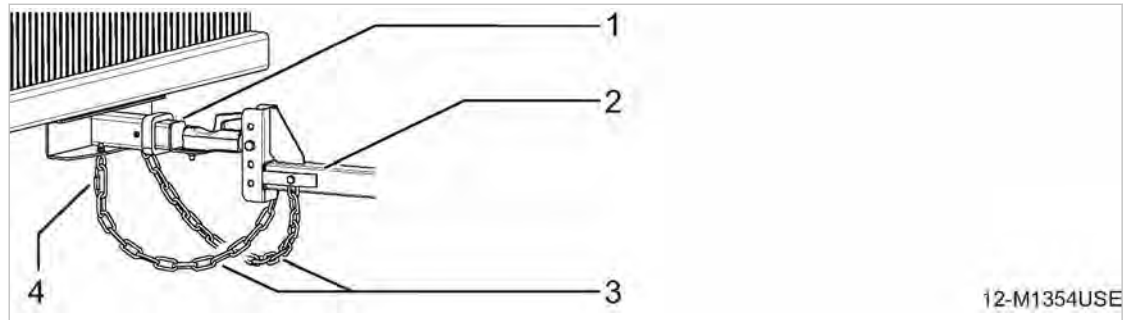


Fig. 103 Attach safety chains

- | | | | |
|---|------------------|---|------------------------|
| ① | Coupling vehicle | ③ | Safety chains, crossed |
| ② | Towbar | ④ | Fixing hook |

- Attach safety chains to the towing vehicle.
 - Both chains must be crossed under the ball coupling/towing eye.
 - Allow slack for towed machine to turn.
 - Attach chain hooks securely to tow vehicle frame.

12.2.3 Parking the machine

The machine is generally only moved by being coupled to a towing vehicle.

The parking brake is not a running brake and is used only to lock the wheels when the machine is positioned.



When parking on a slope, securely chock the machine before uncoupling.

- Ascertain which chassis is fitted to the machine.

12.2.3.1 Parking the machine (chassis axle load 8818 lb)

Option rb/rm/rt, rc/ro/rr Parking the machine (chassis without service brake):

1. Use a coupled towing vehicle to move the machine into position.
2. Make sure the parking brake is fully engaged.
3. Disconnect the lighting and signaling cable.
4. Prepare the jockey wheel for parking (see Ill. 97, Figure a).
 - Lift the jockey wheel and unhinge the fixing lever.
 - Pivot the jockey wheel downward.
 - Check whether the fixing lever touches the support pipe.
 - Lower the jockey wheel until the towing mechanism is stress-free.
5. Place chocks under the wheels.
6. Open the towing coupling of the towing vehicle.
7. Slowly forward the towing vehicle to separate from the parked machine.

Option rb/rm/rr, rc/ro/rr Parking the machine (chassis with compressed air brake and ABS):

See Ill. 98 for the position of the supply lines.

1. Use a coupled towing vehicle to move the machine into position.

2. Make sure the parking brake is fully engaged.
3. Disconnect the supply lines:
 - Disconnect the lighting and signaling cable.
 - Disconnect the ABS cable and plug into the appropriate "parking socket".
 - Disconnect the hoses of the brake line and attach their coupling heads to the dummy coupling of the towing bar.
 - first supply line (red)
 - then brake line (yellow)
4. Prepare the jockey wheel for parking (see Ill. 97, Figure a).
 - Lift the jockey wheel and unhinge the fixing lever.
 - Pivot the jockey wheel downward.
 - Check whether the fixing lever touches the support pipe.
 - Lower the jockey wheel until the towing mechanism is stress-free.
5. Place chocks under the wheels.
6. Open the towing coupling of the towing vehicle.
7. Slowly forward the towing vehicle to separate from the parked machine.

12.2.3.2 Parking the machine (chassis axle load 7716 lb)



The towing mechanism of the machine is fitted with an "automatic jockey wheel".

In a parked machine which is separated from the towing vehicle, the machine's bearing load affects the jockey wheel.

For this reason, the jockey wheel of a separated machine must be wound down until the cam ② no longer touches the bead ①. The automatic folding of the wheel suspension is thus blocked (see Ill. 105, figure a).

When the jockey wheel of a separated machine is wound up further, the bead pushes against the cam of the retaining pin (see Ill. 105, figure b). The retaining pin ③ unlocks the wheel suspension ④ which will abruptly fold (see Ill. 105, figure c), and drop the towing mechanism to the ground.

CAUTION

A folding wheel suspension during winding up causes the towing device to suddenly crash onto the ground, potentially causing severe injuries to legs and/or feet.

- *The operator must ensure that only authorised personnel has access to the machine.*
- *Wind the automatic jockey wheel only up when the machine is coupled to a towing vehicle.*
- *Wind the automatic jockey wheel up only as far as the bead does not touch the cam.*
- *Do not place your feet beneath the towing device.*

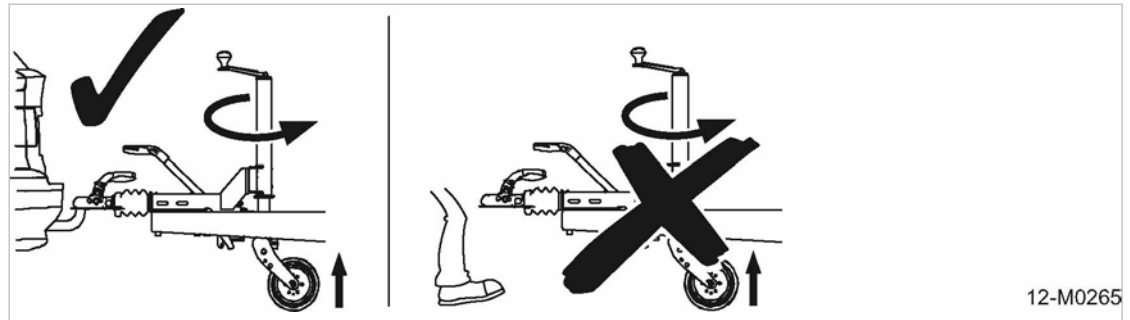


Fig. 104 Warning "Injury can occur if the towbar is allowed to fall."

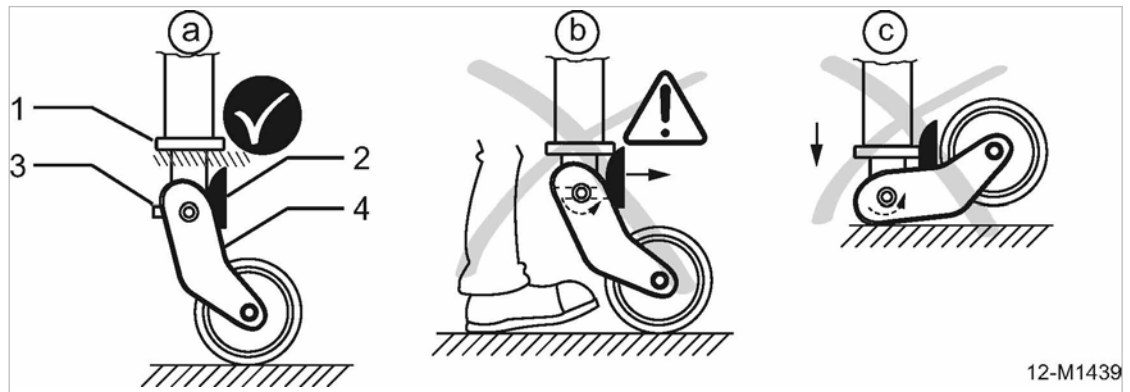


Fig. 105 Risk of injury due to incorrect operation of the automatic jockey wheel

- | | |
|--------|--------------------|
| ① Bead | ③ Retaining pin |
| ② Cam | ④ Wheel suspension |

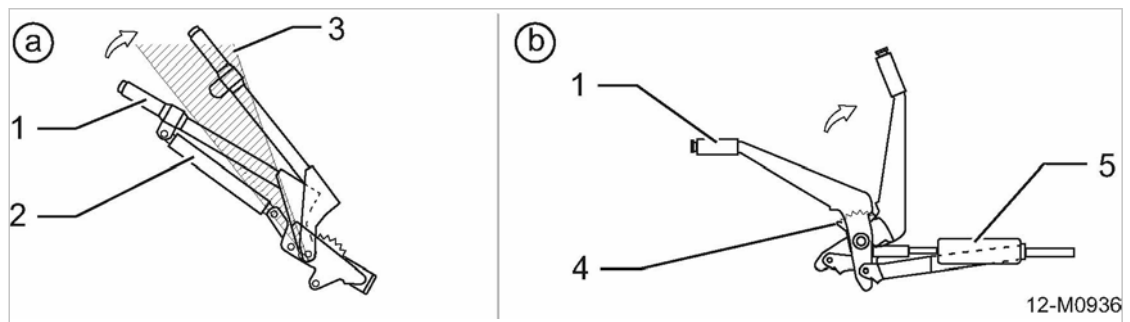


Fig. 106 Actuating the parking brake

- | | |
|--|---|
| Ⓐ Parking brake with gas spring assistance | Ⓑ Parking brake with ratchet and spring loading |
| ① Parking brake lever | ④ Ratchet |
| ② Gas spring | ⑤ Spring loading device |
| ③ Dead point zone | |

Parking the machine (towing eye coupling):

1. Use a coupled towing vehicle to move the machine into position.
2. Disconnect the lighting and signaling cable (if provided).
3. Strongly pull the parking brake (if provided) upward past the dead point zone (see III.106, figure a).
The gas spring holds the brake under tension.
4. Remove the cap nut (if fitted).

5. Lower the jockey wheel until the towing mechanism is stress-free.
6. Place chocks under the wheels.
7. Uncouple the compressor from the towing vehicle:
 - Open the towing coupling of the towing vehicle.
 - Slowly forward the towing vehicle to separate from the parked machine.

Option rb/rm/rs Parking the machine (height-adjustable chassis):

1. Use a coupled towing vehicle to move the machine into position.
2. Disconnect the lighting and signaling cable.
3. Strongly pull the parking brake upward past the dead point zone (see Ill.106, figure a).
The gas spring holds the brake under tension.
4. Detach the breakaway cable.
5. Lower the jockey wheel until the towing mechanism is stress-free.
6. Place chocks under the wheels.
7. Uncouple the compressor from the towing vehicle:
 - Push the safety lever at the ball coupling and pull the coupling handle upward (see Ill. 95).
 - Lift the coupling off the towing hitch ball.
8. Slowly remove the towing vehicle from the parked machine.



The gas spring automatically increases parking brake force if the machine rolls backwards or when parked on a slope.

Option rc/ro/rs Parking the machine (fixed-height chassis):

1. Use a coupled towing vehicle to move the machine into position.
2. Disconnect the lighting and signaling cable.
3. Strongly pull the lever of the parking brake upward to the last ratchet tooth (see Ill. 106, figure b).
When the hand brake lever is horizontal, the brake is under spring loading.
If the lever is not horizontal, the brake is not fully applied and the machine may roll away.
4. Detach the breakaway cable.
5. Lower the jockey wheel until the towing mechanism is stress-free.
6. Place chocks under the wheels.
7. Uncouple the compressor from the towing vehicle:
 - Push the safety lever at the ball coupling and pull the coupling handle upward (see Ill. 95).
 - Lift the coupling off the towing hitch ball.
8. Slowly remove the towing vehicle from the parked machine.

Option rd/ro/rs **Parking the machine (fixed-height chassis, without parking brake):**



12-M0392

Fig. 107 Safety sign - secure the chocks

1. **⚠ WARNING** *Machine without parking brake.*
Serious injury or death can result from an unsecured machine rolling away.
 - *Securely chock the machine before uncoupling.*
 - *As a general rule, the machine should always be blocked with chocks when it is not being moved.*
 - *The machine should not be manoeuvred by hand.*
2. Use a coupled towing vehicle to move the machine into position.
3. Lower the jockey wheel until the towing mechanism is stress-free.
4. Place chocks under the wheels.
5. Remove the lighting and signaling system.
6. Uncouple the compressor from the towing vehicle:
 - Push the safety lever at the ball coupling and pull the coupling handle upward (see Ill. 95).
 - Lift the coupling off the towing hitch ball.
7. Slowly remove the towing vehicle from the parked machine.

12.2.4 Transport with a crane

Additional precautions for conditions of snow and ice

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

- Perform the following tasks in snow and ice conditions:
 - Remove any snow and ice from the machine before lifting by a crane.
 - Make sure the lifting eye cover plate is freely accessible and can be opened.

Perform the following tasks prior to transport by crane

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

1. **⚠ CAUTION** *The machine can be damaged by jerky lifting!*
Components may break.
 - *Lift the machine carefully.*
2. Unlock the cover from the inside by actuating the built-in hand lever and lift up.
3. Position the crane hook vertically over the lifting eye.
4. Engage the hook in the eye.

5. Close and lock the access doors.
6. Lift and transport carefully.

Take care 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 the machine down.*
 - Set the machine down carefully.
 - Do not set down unevenly.
2. Set the machine down slowly and carefully.

**12.2.5 Option rb/rm/rt, rc/ro/rt, rw
Transport with a forklift truck**

Precondition The machine is shut down.
All connecting lines and hoses disconnected and removed.

CAUTION

Damage to the machine by incorrect lifting with a fork truck. The machine may fall or be damaged by the forks.

- Only machines equipped with a guide for forklift trucks or lifting lugs may be lifted with the forklift.
- Do not use forklifts to lift towable machines.
- Do not use a fork lift on stationary machines with base frame (option rx).
- Pick up the machine only from the side with the forks through the lifting lugs.

Option rb/rm/rt, rc/ro/rt,
rw

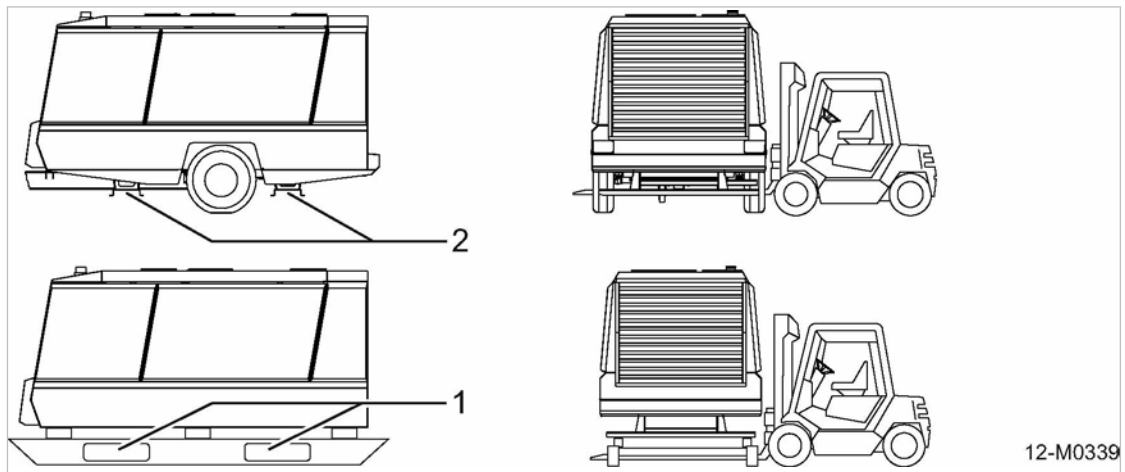


Fig. 108 Transport with a forklift truck

- ① Lifting lug (machine with skid chassis)
- ② Guides for forklift truck (non-towable machine)

1. Close and lock the access doors or canopy.
2. Position the forklift truck to the side of the machine with the forks lined up with the lifting lugs/guides.

3. Drive the forks fully through the lifting lugs/guides as far as possible.
The forks are fully under the machine.
4. Lift the machine carefully.

12.2.6 Transporting the machine as load

The type of transporting will determine the type of packing and load 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
Restraints or timber bunks
Straps

Carry out a freight securing:



- National directives and regulations for securing loads should be followed.
- Load securing is taken to mean that by full braking or sudden turning the load will not slide, fall, roll or cause unnecessary noise. Generally accepted technical regulations should be observed (e.g., in Germany: the VDI Directive 2700 ff).
- Responsibility for properly secured loads falls on the driver, the vehicle keeper and the carrier.

Use chocks, restrainers or timber bunks for securing the load.
If necessary, use straps across the chassis and the towbar.

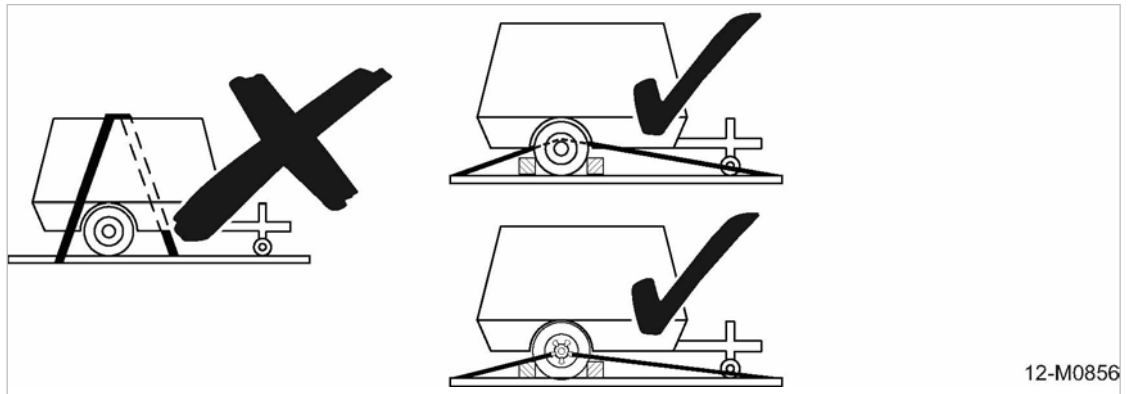


Fig. 109 Guys to secure the freight

1. **NOTICE** Straps can damage the bodywork.
Movement during transportation can damage the bodywork.
 - Do not use straps over the bodywork.
 - Use straps only over the chassis.
2. Always observe valid accident and safety regulations when transporting.
3. The loads must be secured against rolling, tipping, slipping and falling.



Contact KAESER SERVICE with any questions regarding transporting or load securing. KAESER accepts no liability and provides no guarantee for damage arising from incorrect transport or insufficient or incorrect load securing provisions.

For hire, rental and trade fair plant, any transport safety devices used for the delivery must also be used for the return transport.

Before shipment as air freight

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

1. **▲ WARNING** *Danger of fire or explosion from operating fluids/materials.*
The machine incorporates an internal combustion engine.
 - *Any dangerous fluids/materials contained within the machine must be removed before transport.*
2. Remove all dangerous fluids/materials.
These include:
 - Residues of fuel or fuel vapours
 - Lubricants in engine and compressor.
 - Battery electrolyte

12.3 Storage

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

Frozen moisture can damage components, valve diaphragms and gaskets.

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

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

Precondition The machine is decommissioned.

1. Completely drain the fuel from the machine.
2. Completely drain the cooling oil and engine oil from the machine.
3. Remove used filters and the oil separator cartridge.
4. Drain the coolant from water-cooled engines and systems.

5. The battery has been removed.
6. Hand the machine over to an authorized disposal expert.



- Operating materials and components contaminated with fuel, cooling oil or engine oil must be disposed of in accordance with local environmental protection regulations.
- Old batteries are hazardous waste and must be disposed of correctly in accordance with local environmental protection regulations

13 Annex

13.1 Marking

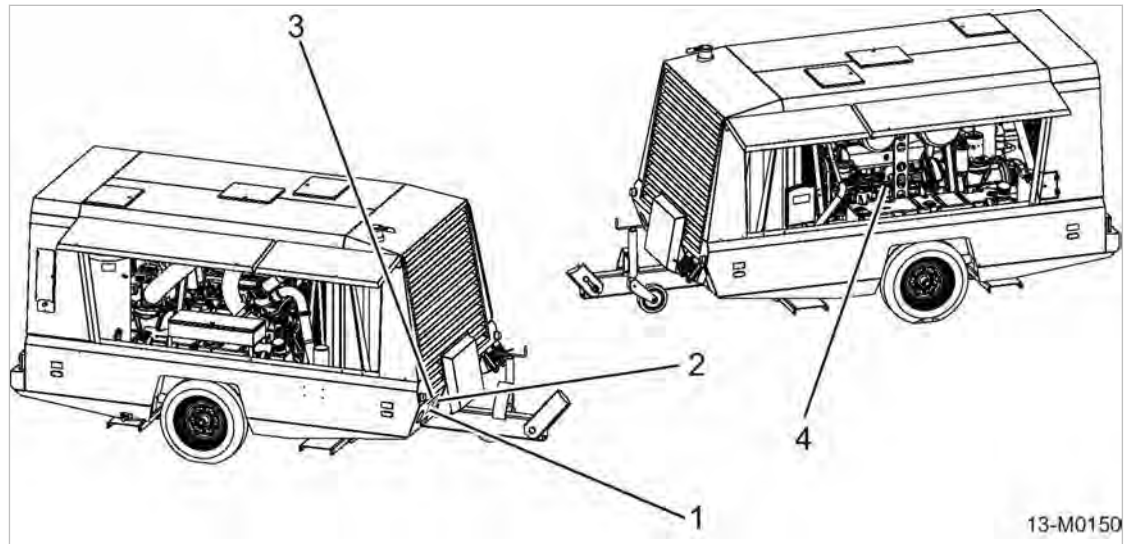
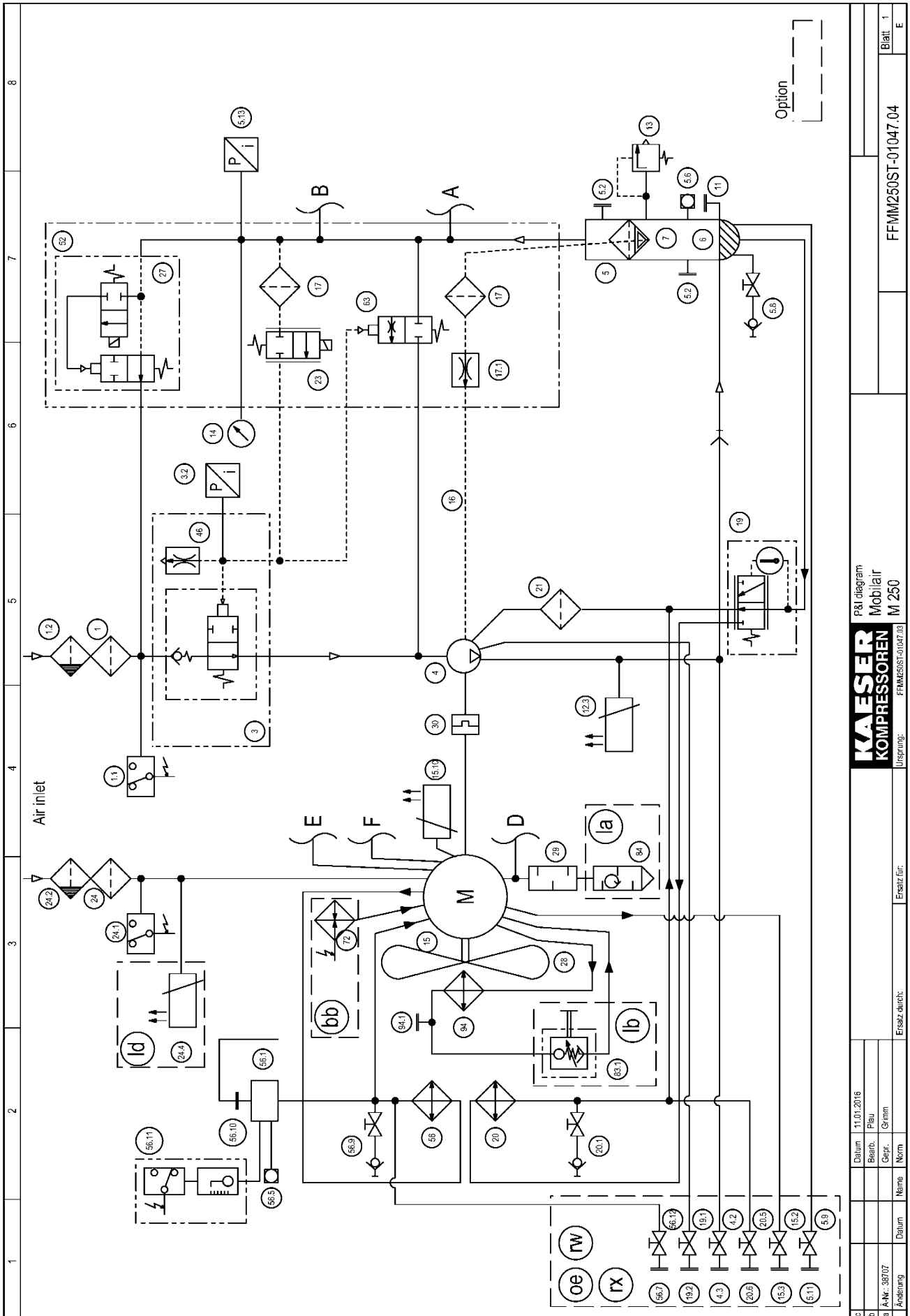


Fig. 110 Marking

- | | |
|---|---|
| ① Machine nameplate with system serial number | ③ VIN *) (stamped in the bodywork)
* Vehicle identity number |
| ② Options label | ④ Motor nameplate with motor serial number
(etched into the crankcase) |

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



P&I Diagram
Mobilair
M 250
FFMM250ST-01047.04

Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:
c	Datum	11.01.2016			
b	Bearb.	Pfau			
a	Ank.	39707	Grimm		

Blatt 1
E

1	2	3	4	5	6	7	8
1	Compressor - Air filter						
1.1	Vacuum switch						
1.2	Dust collector						
3	Inlet valve						
3.2	Pressure transducer - Control pressure						
4	Rotary screw airtend						
4.2	Shut-off valve - Oil drain device						
4.3	Screw plug - Oil drain device						
5	Oil separator tank						
5.2	Screw plug						
5.6	Oil level sight glass: minimum/maximum oil level						
5.8	Shut-off valve with hose coupling - Oil drain device						
5.9	Shut-off valve - Oil drain device						
5.11	Screw plug- Oil drain device						
5.13	Pressure transducer - Internal pressure						
6	Oil reserve						
7	Oil separator cartridge						
11	Oil filler port with plug						
12.3	Sensor - Airtend discharge temperature						
13	Pressure relief valve						
14	Pressure gauge Compressed air - Control panel						
15	Diesel engine						
15.2	Shut-off valve - Oil drain device						
15.3	Screw plug- Oil drain device						
15.10	Sensor - Outside temperature						
16	Oil return line						
17	Dirt trap						
17.1	Nozzle						
19	Thermostatic valve						
19.1	Shut-off valve						
19.2	Screw plug - Oil drain device						
20	Oil cooler						
20.1	Shut-off valve with hose coupling - Oil drain device						
20.5	Shut-off valve- Oil drain device						
20.6	Screw plug- Oil drain device						
21	Oil filter						
23	Electric proportional controller						
24	Motor - Air filter						
24.1	Vacuum switch						
24.2	Dust collector						
24.4	Sensor - Temperature + Humidity						
25	Maintenance indicator, Motor - Air filter						
27	Venting valve						
28	Fan						
29	Exhaust silencer [for option id: SCR catalytic converter]						
30	Coupling						
46	Nozzle (Secondary end Proportional controller)						
52	Control valve						

P&I diagram legend
Mobilair
M 250



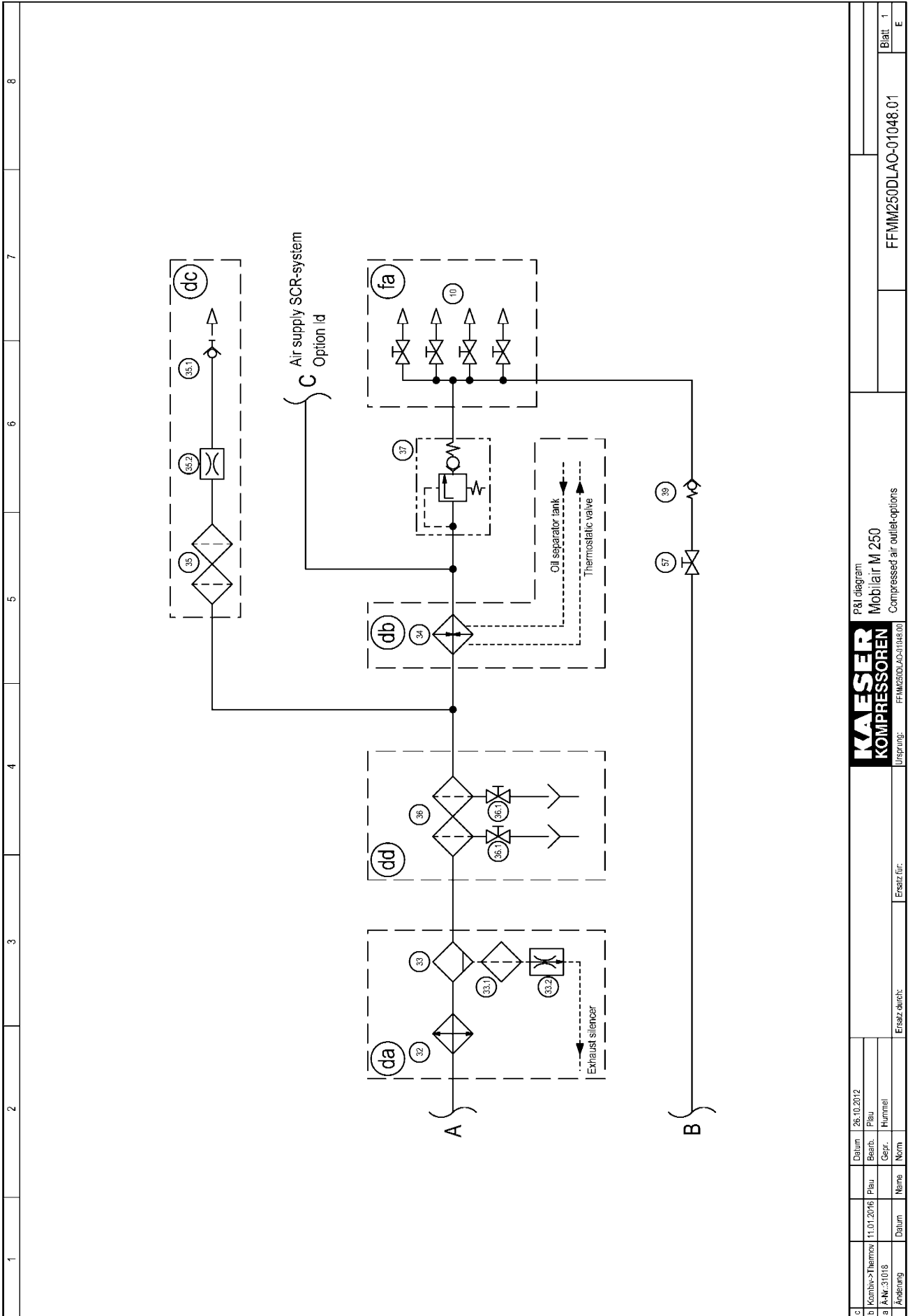
Ursprung: FFM250ST-01047.04

c	Datum	11.01.2016			
b	Bearb.	Pfau			
a	Gepr.	Grimm			
Änderung	Name	Norm	Ersatz durch:	Ersatz für:	

FFMM250ST-01047.04

Blatt: 2
E

1	2	3	4	5	6	7	8
	56 56.1 56.5 56.7 56.9 56.10 56.11 56.12 63 72 83.1 84 94 94.1	Water cooler Cooling water expansion tank Cooling water sight glass Screw plug - Water drain device Shut-off valve with hose coupling - Water drain device Water filling port with plug and pressure relief valve Cooling water status indicator (switching) Shut-off valve - Water drain device Regulating valve (Directional control valve) Fail-safe heat exchangers Engine air intake shut-off valve (automatic and manual shut-off) Spark arrester Intercooler Screw plug			A B D E F Option bb la lb oe rw rx	Compressed air outlet; as Standard + Options Venting line; as Standard + Options Reducing agent injection Option Id Cooling water inlet Option Id Cooling water outlet Option Id Coolant pre-heating Spark arrester Spark arrester + Engine air intake shut-off valve (automatic and manual shut-off) Closed floor pan Stationary, on skids Stationary, on frame	
c		Datum	11.01.2016	P&I diagram legend			
b		Bearb.	Flau	Mobilair			
a		Gepr.	Grimm	M 250			
Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	FFMM250ST-01047.04	
						Blatt 3 E	



c	Datum	26.10.2012
b	Bearb.	Plau
a	Gepr.	Hummel
Änderung	Datum	Name
		Norm
	Ersatz durch:	
	Ersatz für:	

KAESER
KOMPRESSOREN
Ursprung: FFM250DLAC-01048.01

P&I Diagram
Mobilair M 250
Compressed air outlet-options

FFMM250DLAC-01048.01

Blatt: 1
E

1	2	3	4	5	6	7	8
	10 Air distributor	30 Minimum pressure check valve					
	32 Compressed air cooler	39 Check valve					
	33 Centrifugal separator	57 Shut-off valve - Venting line					
	33.1 Dirt trap						
	33.2 Nozzle						
	34 Heat exchanger	Option					
	35 Fresh air filter	da After-cooler + Centrifugal separator					
	35.1 Hose coupling	db Heat exchanger					
	35.2 Nozzle	dc Fresh air filter					
	36 Filter combination	dd Filter combination					
	36.1 Condensate drain shut-off valve	fa Direct air flow					
		ld Emission after-treatment with SCR catalytic converter					



P&I diagram legend
Mobilair M250
Compressed air outlet-options

Blatt 2
E

FFMM250DLAC-01048.01

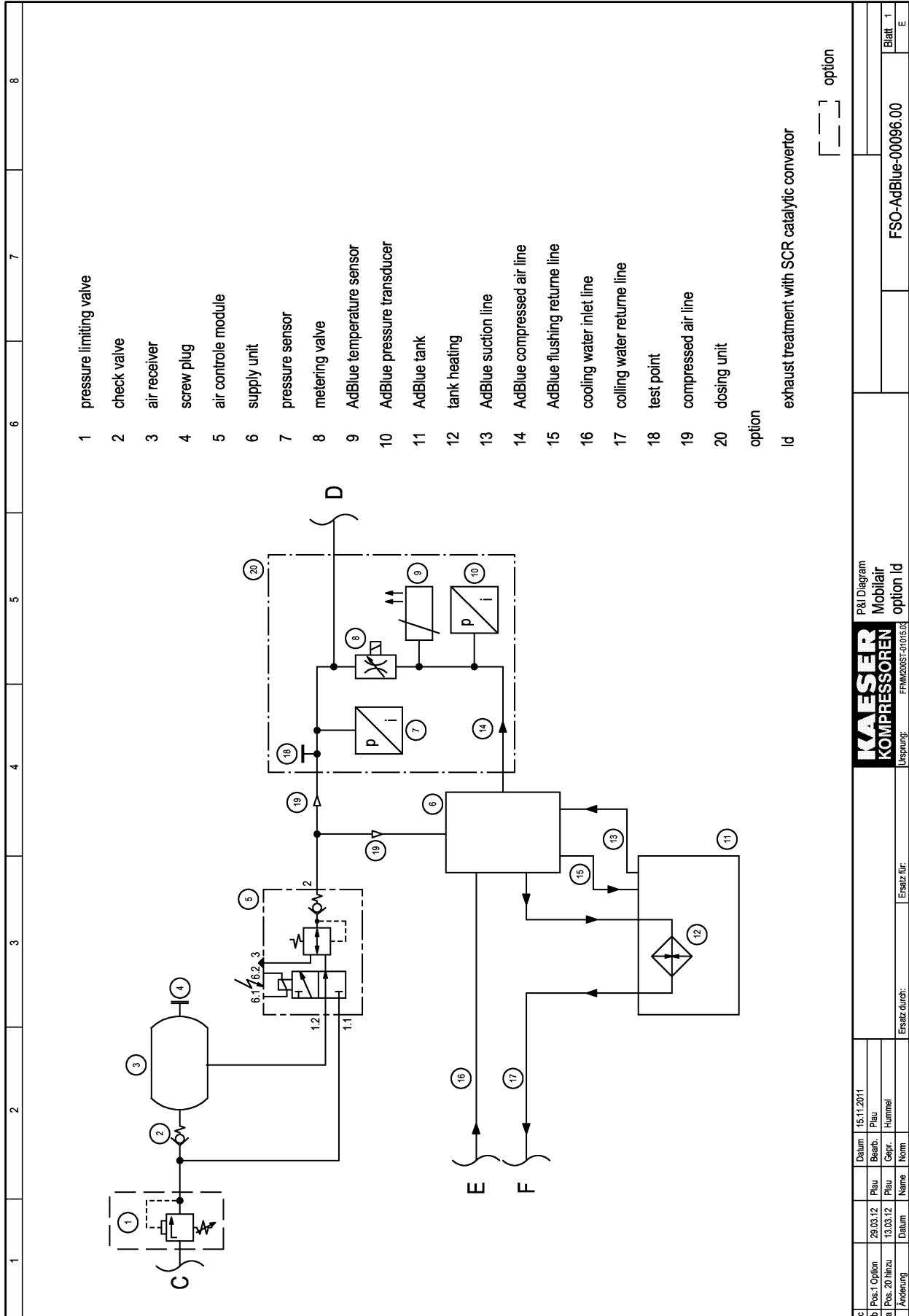
Ersatz für:

Ersatz durch:

	Datum	Bearb.	Plau
		Gear.	Hummel
		Norm	

Änderung	Datum	Name	Norm

**13.2.1 Option Id
Pipeline and instrument flow diagram (exhaust treatment)**



P&I Diagram
Mobilair
option Id

KAESER
KOMPRESSOREN
Ursprung: FFM2005T-01/015/04

Ersatz für:

Ersatz durch:

Datum	15.11.2011
Bearb.	Pflau
Prüf.	Hummel

Pos. 1 Option	29.03.12	Prüf.	Name	Norm.
Pos. 20 Umzu	13.03.12	Gepr.	Hummel	

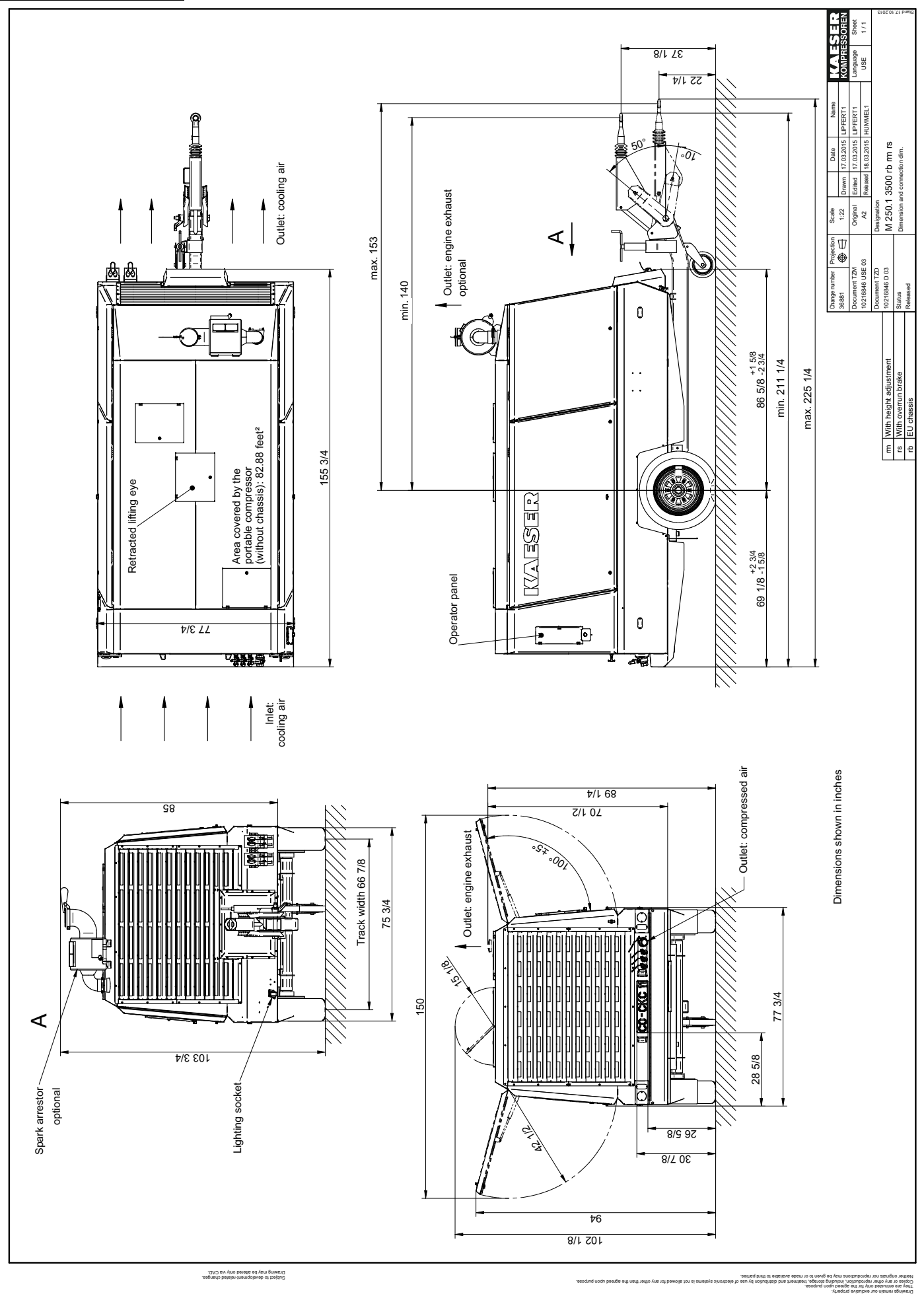
FSO-AdBlue-00096.00

Blatt 1
E

13.3 Dimensional drawings

13.3.1 Option rb/rm/rs Chassis drawing

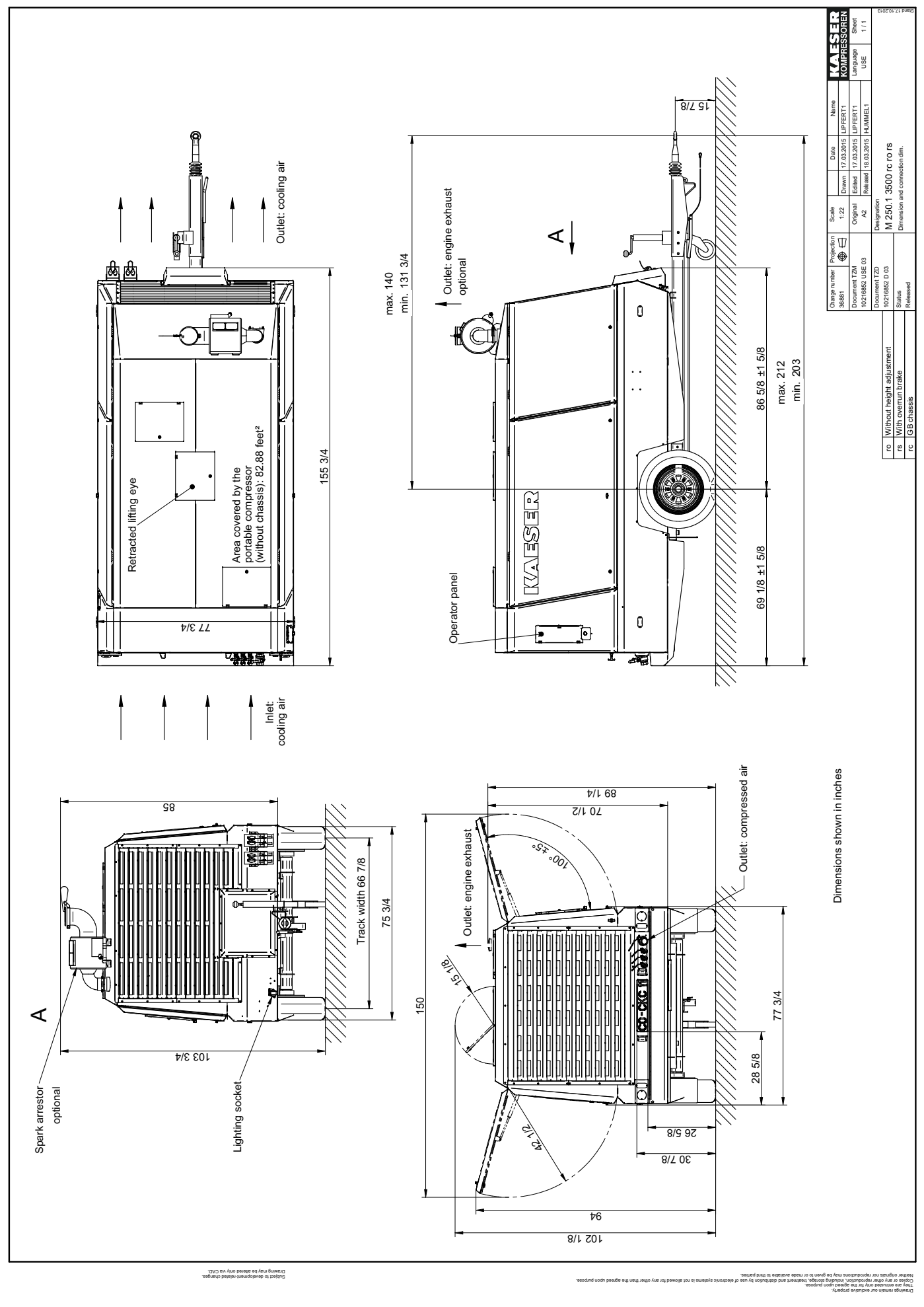
- Option rb - chassis EU version
- Option rm - chassis with height-adjustable towbar
- Option rs - chassis with overrun brake



13.3.2 Option rc/ro/rs

Dimensional drawing, chassis options

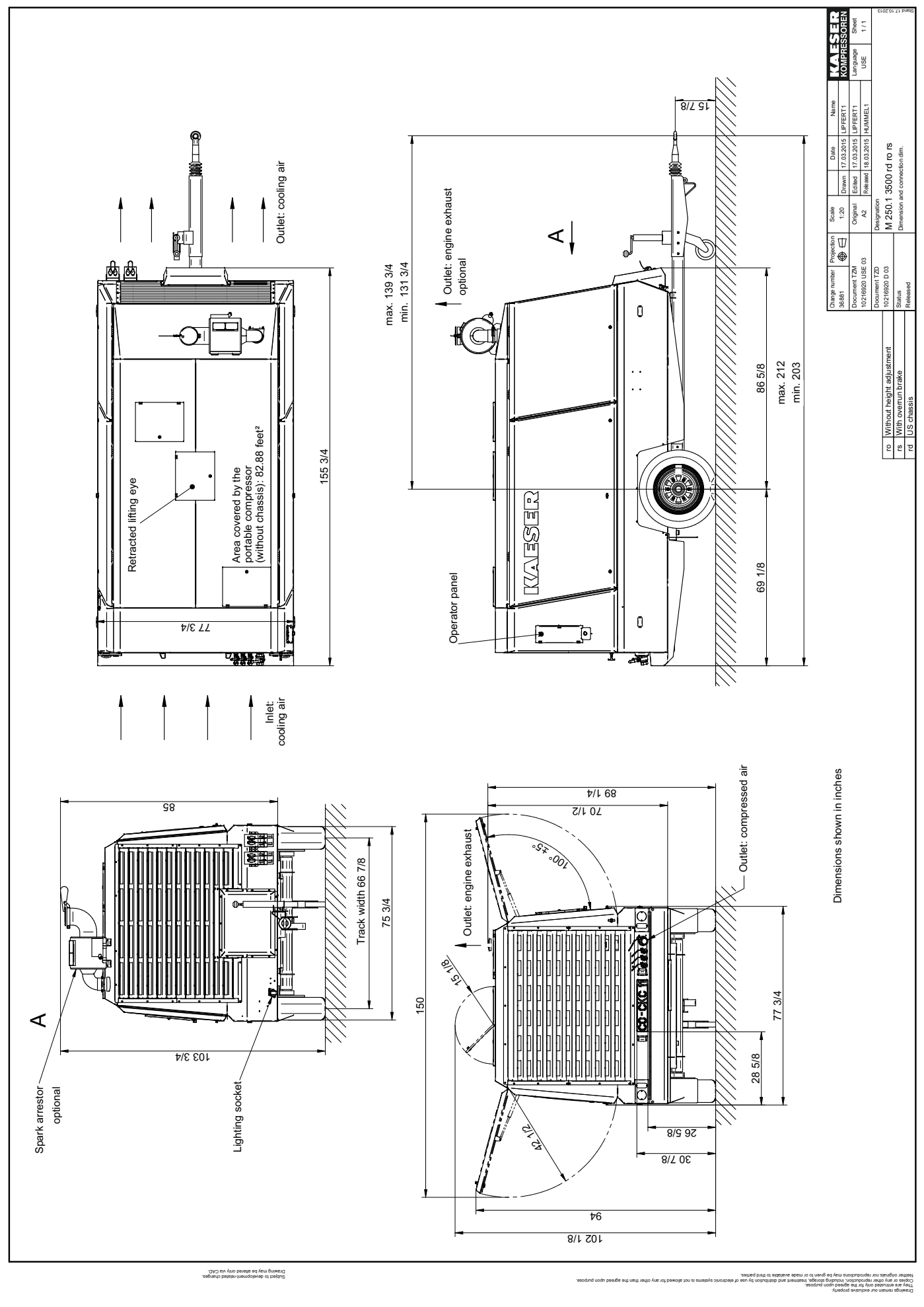
- Option rc - Chassis GB version
- Option ro - Chassis with fixed height towbar
- Option rs - Chassis with overrun brake



13.3.3 Option rd/ro/rs

Dimensional drawing, chassis options

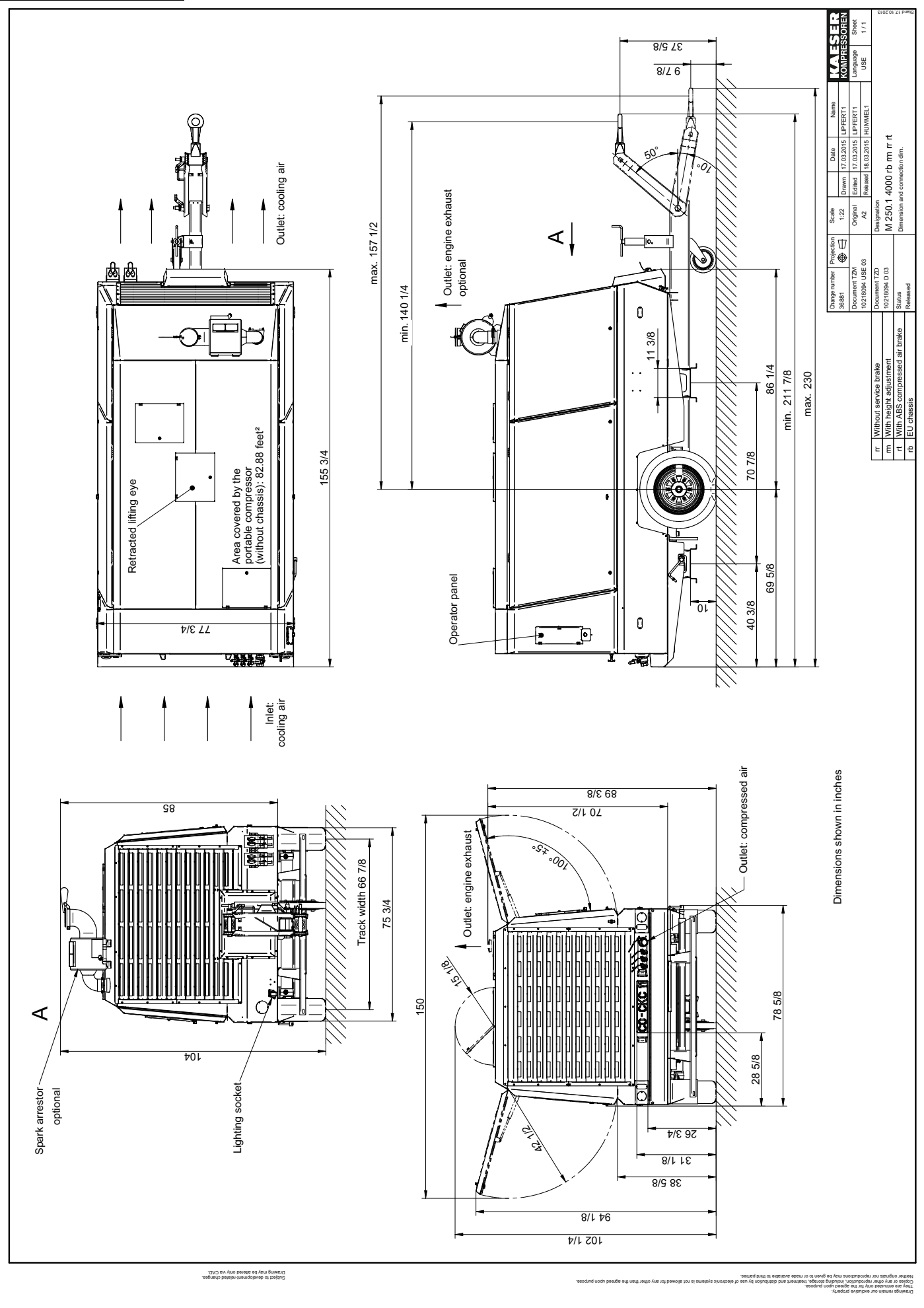
- Option rd - Chassis USA version
- Option ro - Chassis with fixed height towbar
- Option rs - Chassis with overrun brake



Charge number		Projection		Scale		Date		Name	
36881	Document T2M	1:20	1:20	17.03.2015	17.03.2015	LIPPERT1	LIPPERT1	LIPPERT1	LIPPERT1
10216920 USE 03	A2	10216920 USE 03	A2	17.03.2015	17.03.2015	LIPPERT1	LIPPERT1	LIPPERT1	LIPPERT1
Document T2D	10216920 D 03	Document T2D	10216920 D 03	18.03.2015	18.03.2015	HUMMEL1	HUMMEL1	HUMMEL1	HUMMEL1
rd	Without height adjustment	rd	Without height adjustment	rd	Without height adjustment	rd	Without height adjustment	rd	Without height adjustment
rs	With overrun brake	rs	With overrun brake	rs	With overrun brake	rs	With overrun brake	rs	With overrun brake
rd	US chassis	rd	US chassis	rd	US chassis	rd	US chassis	rd	US chassis

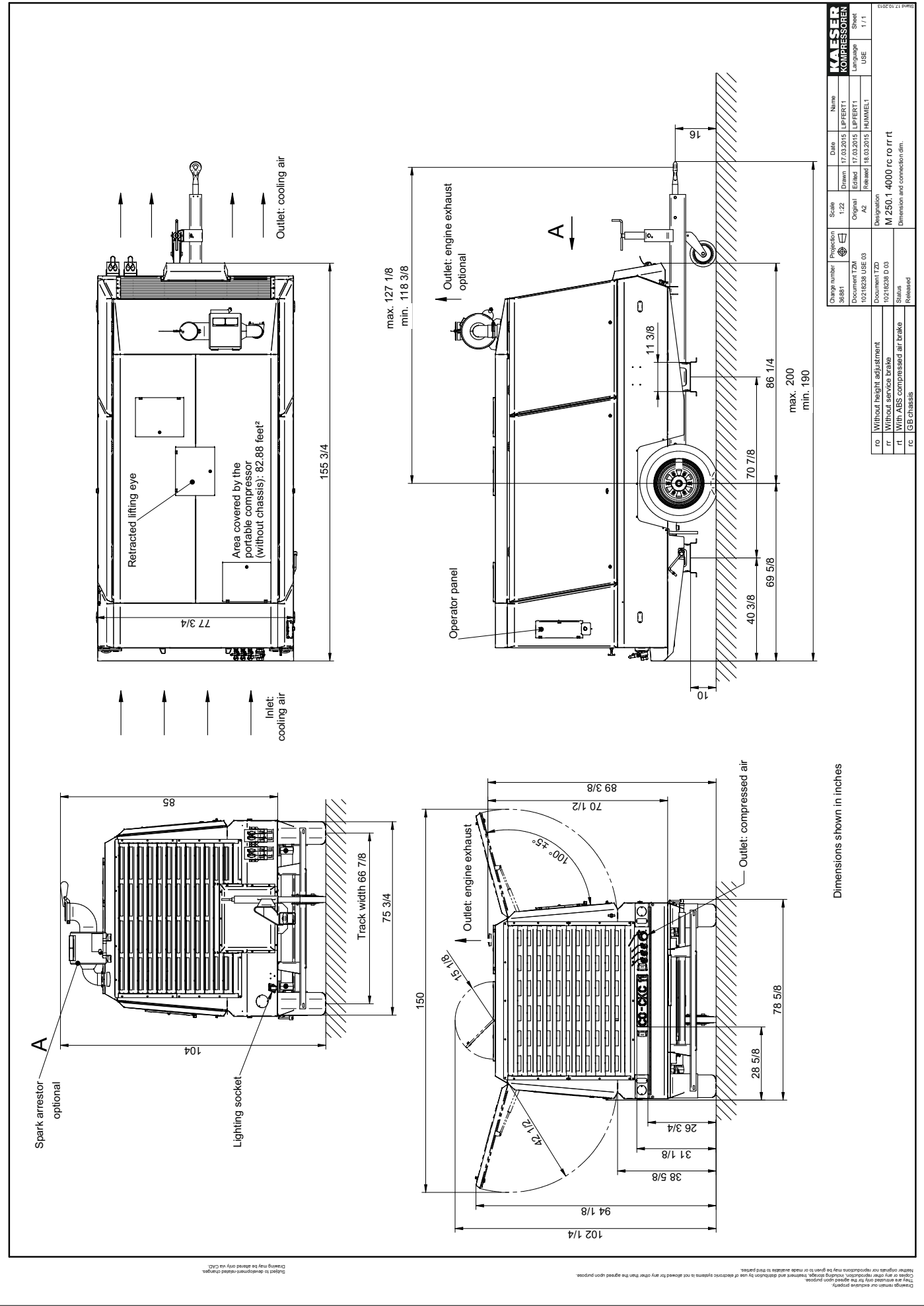
13.3.4 Option rb/rm/rr, rb/rm/rt
Dimensional drawing, chassis options

- Option rb - Chassis EU version
- Option rm - Chassis with height-adjustable towbar
- Option rr - Chassis without service brake
- Option rt - Chassis with compressed air brake and ABS



13.3.5 Option rc/ro/rr, rc/ro/rt Dimensional drawing, chassis options

- Option rc - Chassis GB version
- Option ro - Chassis with fixed height towbar
- Option rr - Chassis without service brake
- Option rt - Chassis with compressed air brake and ABS



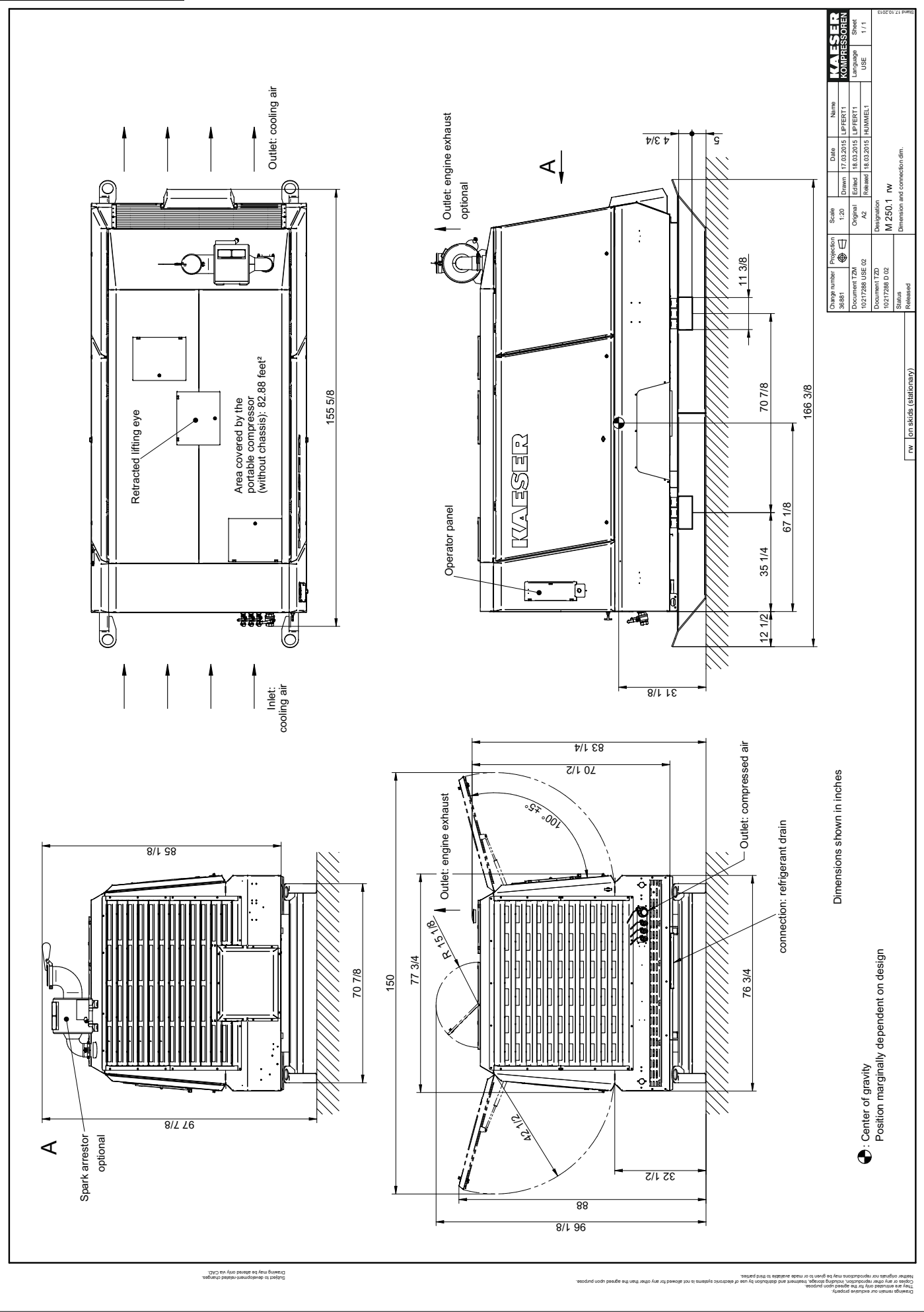
Charge number		Scale		Projection		Name	
36881	1:22	1:22					
Document T2M		Document T2M		Document T2M		Document T2M	
10218238 USE 03	A2	10218238 USE 03	A2	10218238 USE 03	A2	10218238 USE 03	A2
Released		Released		Released		Released	
1/1		1/1		1/1		1/1	
M 250.1 4000 rc ro rr tr		M 250.1 4000 rc ro rr tr		M 250.1 4000 rc ro rr tr		M 250.1 4000 rc ro rr tr	
Dimension and connection dim.		Dimension and connection dim.		Dimension and connection dim.		Dimension and connection dim.	
Released		Released		Released		Released	
rc		rc		rc		rc	
tr		tr		tr		tr	
rr		rr		rr		rr	
ro		ro		ro		ro	
Without height adjustment		Without height adjustment		Without height adjustment		Without height adjustment	
With ABS compressed air brake		With ABS compressed air brake		With ABS compressed air brake		With ABS compressed air brake	
Without service brake		Without service brake		Without service brake		Without service brake	
Status		Status		Status		Status	
10218238 D 03		10218238 D 03		10218238 D 03		10218238 D 03	

Dimensions shown in inches

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13.3.6 Option rw Dimensional drawing, stationary version

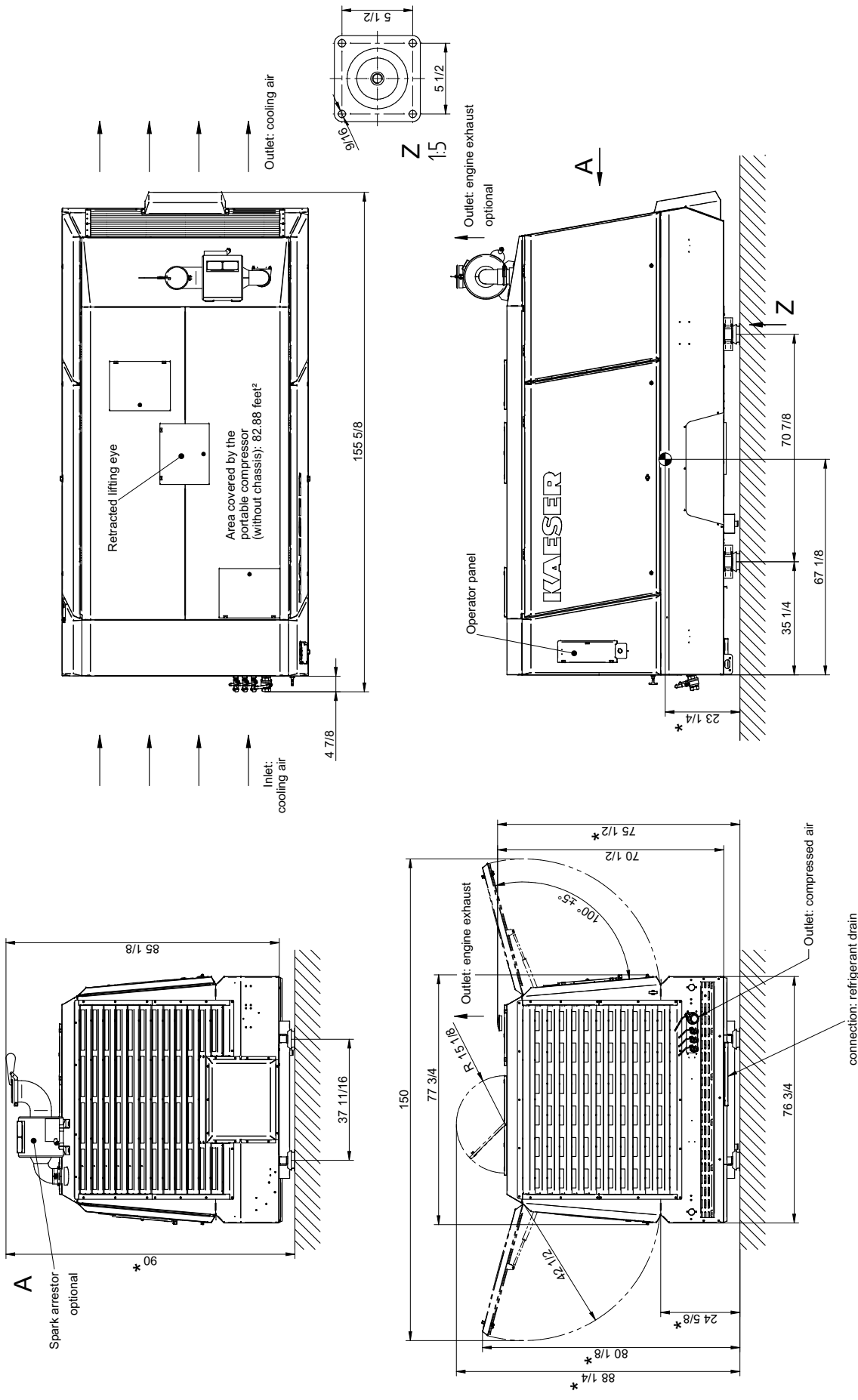
- Option rw - Skid frame on runners



Charge number	Projection	Scale	Date	Name
36881	1:20	17.03.2015	LIPPERT1	
Document T2M	Original	18.03.2015	LIPPERT1	
Document T2D	A2	18.03.2015	HUMMEL1	
Document D 02	Released	18.03.2015	HUMMEL1	
Designation	M 250.1 rw			
Status	Released			

13.3.7 Option rx Dimensional drawing, stationary version

- Option rx - On frame



Charge number	Projection	Scale	Date	Name
36881	1:20	17.03.2015	LIPPERT1	
Document T2M	Original	18.03.2015	LIPPERT1	
10217983 USE 02	A2	18.03.2015	HAUMEL1	
Document T2D	Designation	M 250.1 TX		
10217983 D 02	Status	Released		
	Dimension and connection dim.			

Dimensions shown in inches

* with rubber pads +1.97 in

Center of gravity

Position marginally dependent on design

Anchoring of the machine only with machine mounts.

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13.4 Wiring diagrams

13.4.1 Electrical Diagram

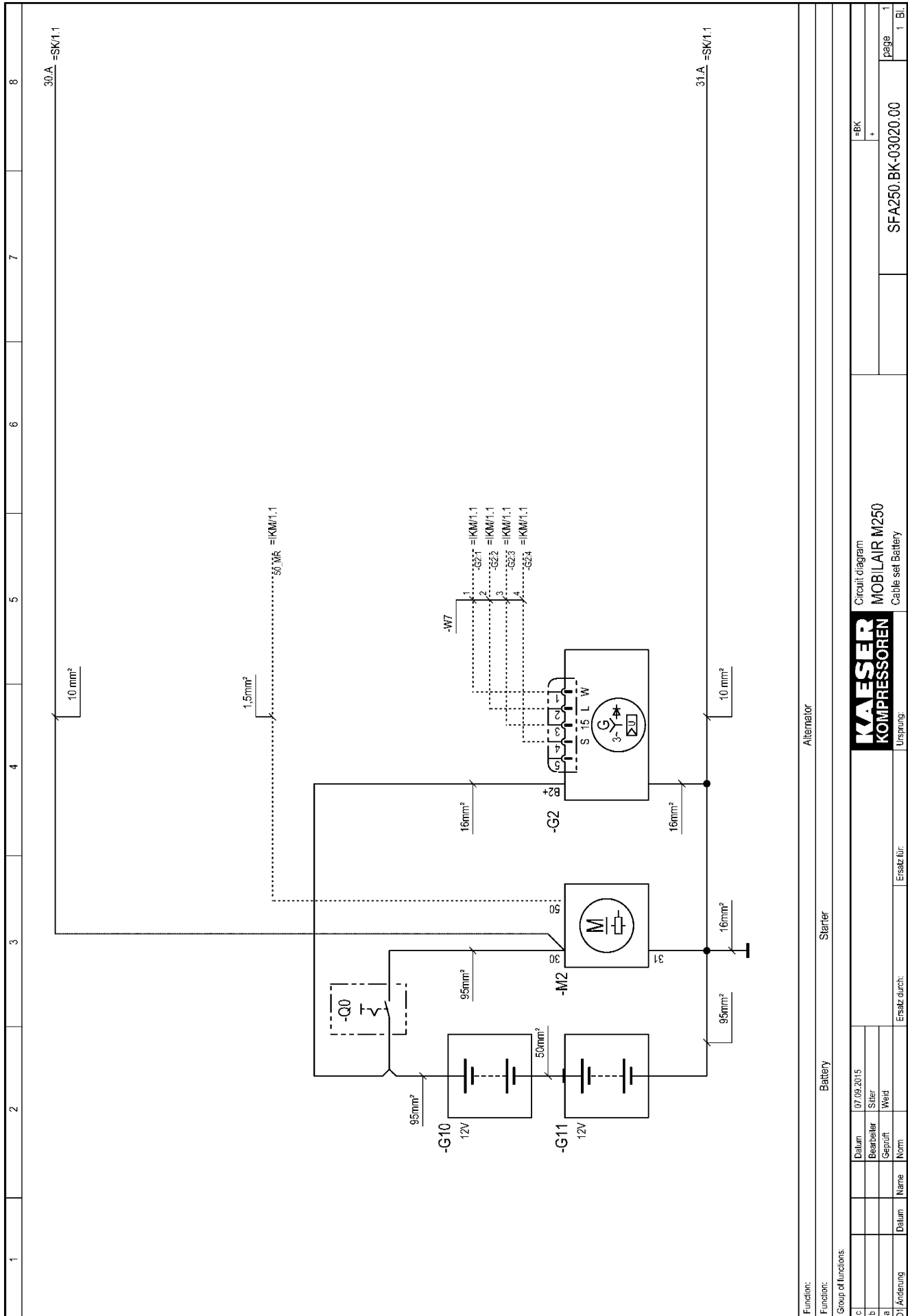
1	2	3	4	5	6	7	8	
<p>Electrical diagrams</p> <p>MOBILAIR M250</p> <p>MTU Motor with ADM3</p> <p>SIGMA CONTROL MOBIL</p>								
<p>Manufacturer: KAESER KOMPRESSOREN SE Postfach 2143 96410 Coburg</p>								
<p>The drawings remain our exclusive property. They are entrusted only for the agreed purpose. 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>								
c	Datum	07.09.2015	E	Cover page				=
b	Bearbeiter	Stier		MOBILAIR M250				+
a	Geprüft	Weid						
A	Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	DFA250-03020.00	
							page 1	
							1 Bl.	

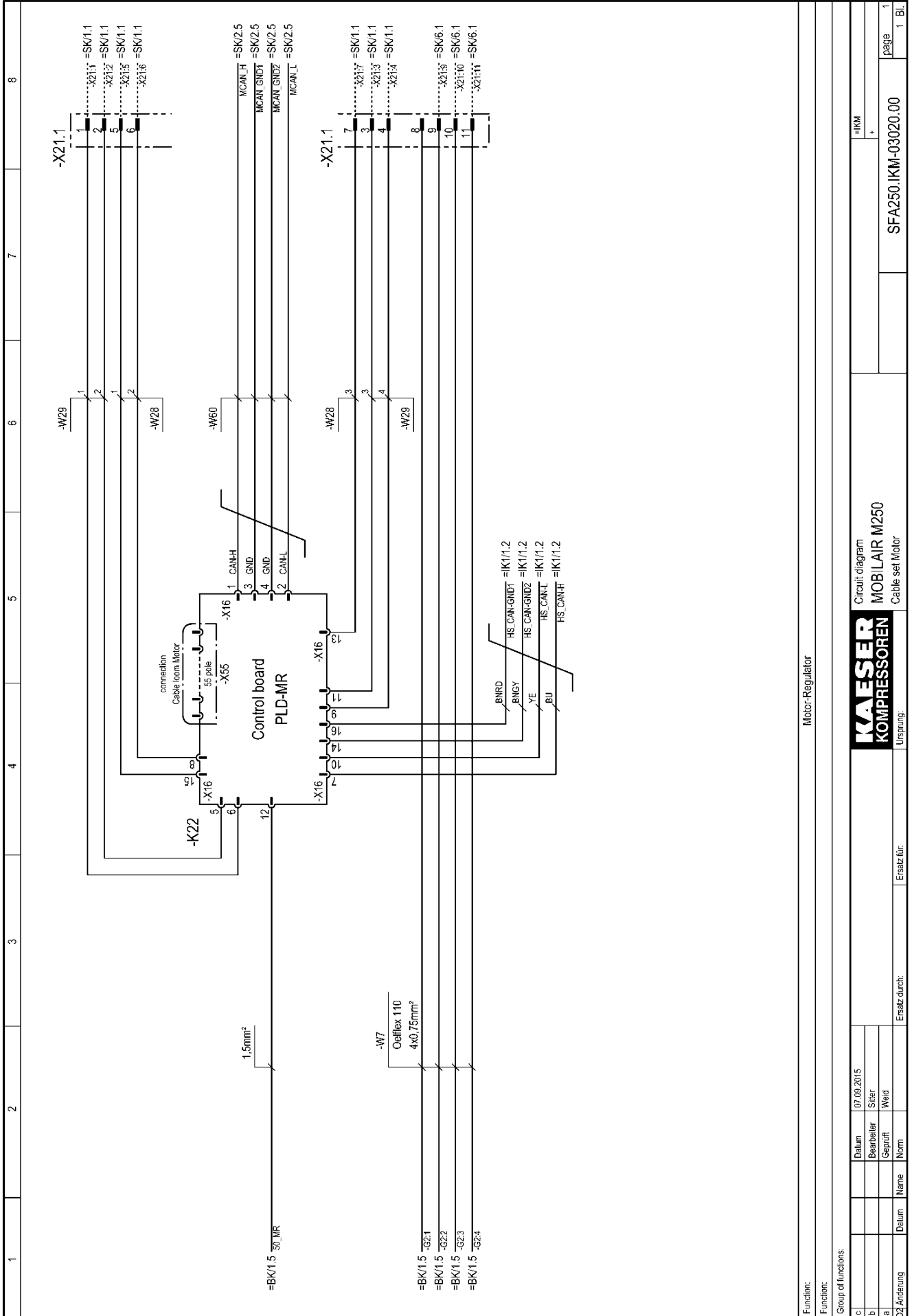
Lfd. Nr. No.	Benennung Name	Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DFA250-03020.00	1	
2	List of contents		ZFA250-03020.00	1	
3	Block diagram	general instructions	UFA250-03020.00	1	
4	Block diagram	Cross-reference	UFA250-03020.00	2	
5	Block diagram	cabling	UFA250-03020.00	3	
6	Circuit diagram	Cable set Battery	SFA250-BK-03020.00	1	=BK
7	Circuit diagram	Cable set Motor	SFA250-KM-03020.00	1	=KM
8	Circuit diagram	Control SCR-RM	SFA250-KI-03020.00	1	=KI
9	Circuit diagram	Control panel	SFA250-BT-03020.00	1	=BT
10	Circuit diagram	SCM outputs	SFA250-SK-03020.00	11	=SK
11	Circuit diagram	switching on	SFA250-SK-03020.00	1	=SK
12	Circuit diagram	Control board ADM3	SFA250-SK-03020.00	2	=SK
13	Circuit diagram	interface	SFA250-SK-03020.00	3	=SK
14	Circuit diagram	SCM sensors	SFA250-SK-03020.00	4	=SK
15	Circuit diagram	SCM inputs	SFA250-SK-03020.00	5	=SK
16	Circuit diagram	SCM inputs	SFA250-SK-03020.00	6	=SK
17	Circuit diagram	SCM inputs	SFA250-SK-03020.00	7	=SK
18	Circuit diagram	SCM outputs	SFA250-SK-03020.00	8	=SK
19	Circuit diagram	SCM outputs	SFA250-SK-03020.00	9	=SK
20	Circuit diagram	SCM outputs	SFA250-SK-03020.00	10	=SK
21	Circuit diagram	connection sensors	SFA250-SK-03020.00	12	=SK
22	Circuit diagram	Volt-free contacts	SFA250-SK-03020.00	13	=SK
23	Equipment parts list	Control cabinet	GFA250-03020.00	1	
24	Equipment parts list	Control cabinet	GFA250-03020.00	2	
25	Terminal schedule	Terminal strip -X1	KFA250-03020.00	1	=SK
26	Terminal schedule	Terminal strip -X1	KFA250-03020.00	2	=SK
27	Terminal schedule	Terminal strip -X10	KFA250-03020.00	3	=SK
28	Terminal schedule	Plug connection -X1	KFA250-03020.00	10	
29	Terminal schedule	Plug connection -X24	KFA250-03020.00	11	
30	Terminal schedule	Plug connection -X25	KFA250-03020.00	12	
31	Terminal schedule	Plug connection -X31	KFA250-03020.00	20	=SK
32	Terminal schedule	Plug connection -X32	KFA250-03020.00	21	=SK
33	Terminal schedule	Plug connection -X33	KFA250-03020.00	22	=SK
34	Terminal schedule	Plug connection -X34	KFA250-03020.00	23	
35	Component layout	Mounting plate	AFA250-03020.00	1	

c	Datum	07.09.2015	List of contents		=
b	Bearbeiter	Stier	MOBILAIR M250		+
a	Geprüft	Weid	MOBILAIR M250		
B	Änderung	Datum	Name	Ersatz für	ZFA250-03020.00
		Norm		Ursprung	1
					1 Bl.

1	2	3	4	5	6	7	8
<p>general instructions</p> <p>Control voltage: 24VDC</p> <p>control cabinet wiring for non-designated conductors: primary circuits: black 1,0 mm² H05V2-K/UL/CSA blue Control voltage DC: 1,5 mm² H07V2-K/UL/CSA orange external voltage: 1,0 mm² H05V2-K/UL/CSA violet measuring circuits: 1,0 mm² H05V2-K/UL/CSA violet</p> <p>All control lines marked a) are 1,5 mm² H05V-K/UL blue All control lines marked b) are 2,5 mm² H07V-K black</p>							
<p>potentials:</p> <p>15 switched plus + (unit ON) 30 + terminal (Battery) 31 - terminal (Battery), earth 50 Starter-Control</p>							
<p>wiring colors:</p> <p>BU = blue BN = brown YE = yellow GN = green GNYE = green-yellow GY = grey</p> <p>OG = orange PK = pink RD = red BK = black VT = violet WH = white</p>							
<p>components Control cabinet</p> <p>-K20 Control board SIGMA CONTROL MOBIL -K23 Control board ADM 3 -F5,-F6,-F7,-F8 Fuse -F9,-F10,-F11,-F12 PTC thermistor trigger Oil separator tank air discharge -F41 Relay Starter -K30,-K39 Resistor -R10,-R11 LOAD-DUMP-Modul 24 VDC -V10 Terminal strip -X1 -X21,-X24,-X25 plug connection -X31,-X32,-X33,-X34 diagnostics plug ADM / MR-PLD -X22 diagnosis-Plug PLC / HMI -X100,-X101</p> <p>model-dependent components:</p> <p>-K61...-K66 Relay Volt-free contacts -K46 Relay Level Floor pan -X10 Terminal strip Volt-free contacts -E12 Heating Condensate drain -B36 Level sensor Floor pan</p> <p>components Control panel</p> <p>-K21 Operating unit SIGMA CONTROL MOBIL -S10 Control voltage ON/OFF switch -P9 Display fuel level -S1 quick stop pushbutton</p>							
<p>components unit</p> <p>-B5,-B6 Pressure switch filter clogging -B40 sensor airtend temperature -B30 sensor coolant level -B37 sensor fuel level -B10 Pressure transducer system pressure -B11 Pressure transducer Control pressure -B41 sensor Oil separator tank air discharge -B80 sensor Ambient temperature -B116,-K16 Fan -K7 Valve Venting -K1 Control valve inlet valve</p> <p>components Drive motor</p> <p>-K22 Control board PLD-MR -G2 Alternator -G10,-G11 Battery -M2 Starter -Q0 Battery isolating switch</p> <p>components Exhaust treatment</p> <p>-K24 Control SCR-RM -B64,-B65 sensors Temperature SCR Kat -B67 NOx sensor SCR Kat -B51 Humidity and temperature sensor -B55 Level and Temperature AdBlue Tank -R12 Resistor -M3 Dosing unit -K80 Valve Dosing unit</p>							
<p>Block diagram MOBILAIR M250 general instructions</p>							
<p>KAESER KOMPRESSOREN Ursprung:</p>							
<p>Datum: 07.09.2015 Bearbeiter: Siller Geprüft: Weid Norm: Ersatz durch: Ersatz für:</p>							
<p>UFA250-03020.00</p>							
<p>page 1 3 Bl.</p>							

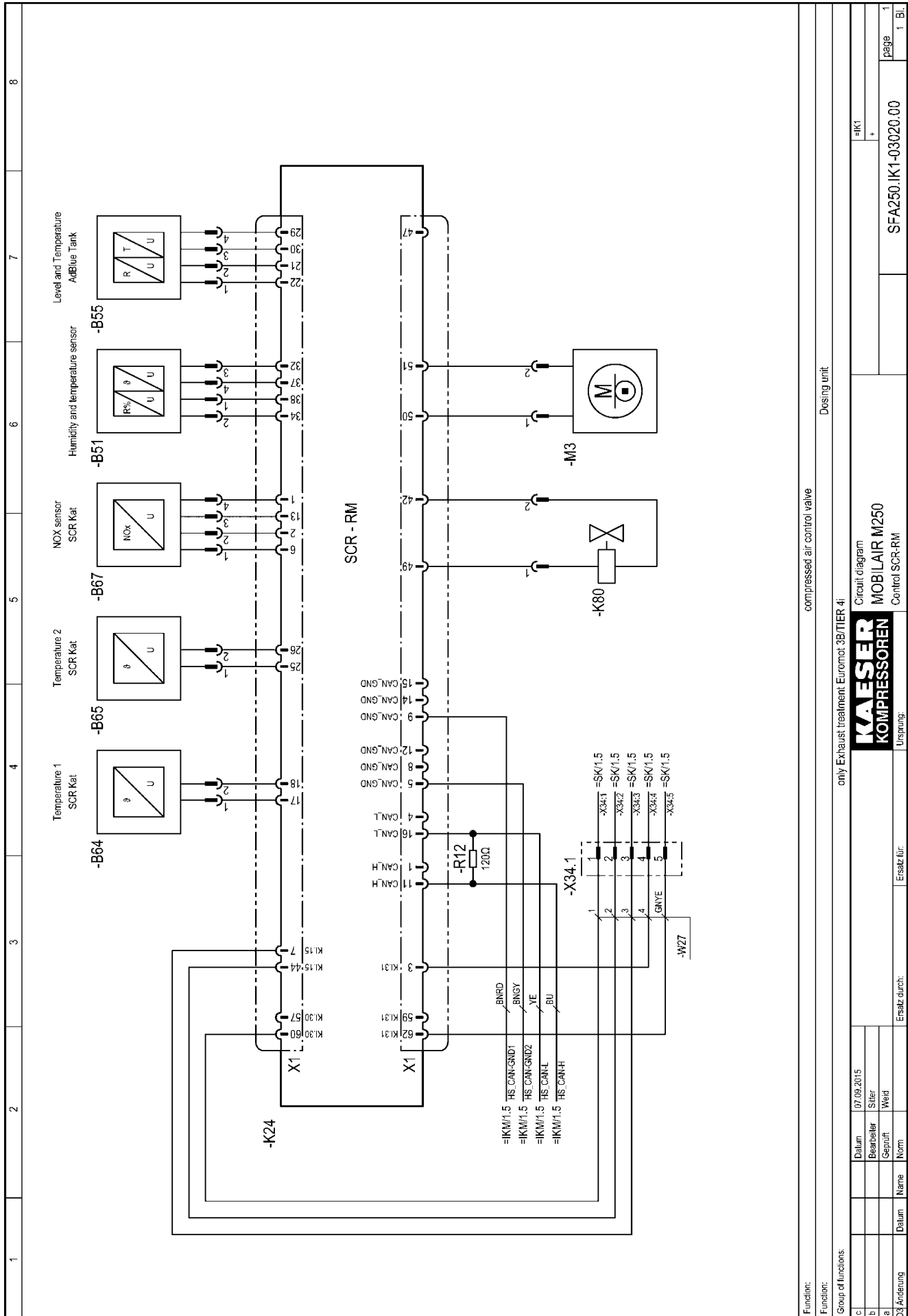
1	2	3	4	5	6	7	8
<p>general instructions This document includes a common electrical diagram, consisting of documents:</p>							
module	Electrical diagrams	Cross-reference					
Cable set: connection Battery	SFA250.BK-03020.00	BK					
Cable set: connection Motor	SFA250.IKM-03020.00	IKM					
cabling Exhaust treatment	SFA250.IK1-03020.00	IK1					
cabling Control panel	SFA250.BT-03020.00	BT					
cabling Control cabinet	SFA250.SK-03020.00	SK					
c	Datum	07.09.2015					
b	Bearbeiter	Stier					
a	Geprüft	Weid					
C	Norm						
Ersatz durch:		Ersatz für:					
KAESER KOMPRESSOREN			Ursprung:		Block diagram general instructions Cross-reference		
			UFA250-03020.00		=		page 2
							3 Bl.





Motor-Regulator

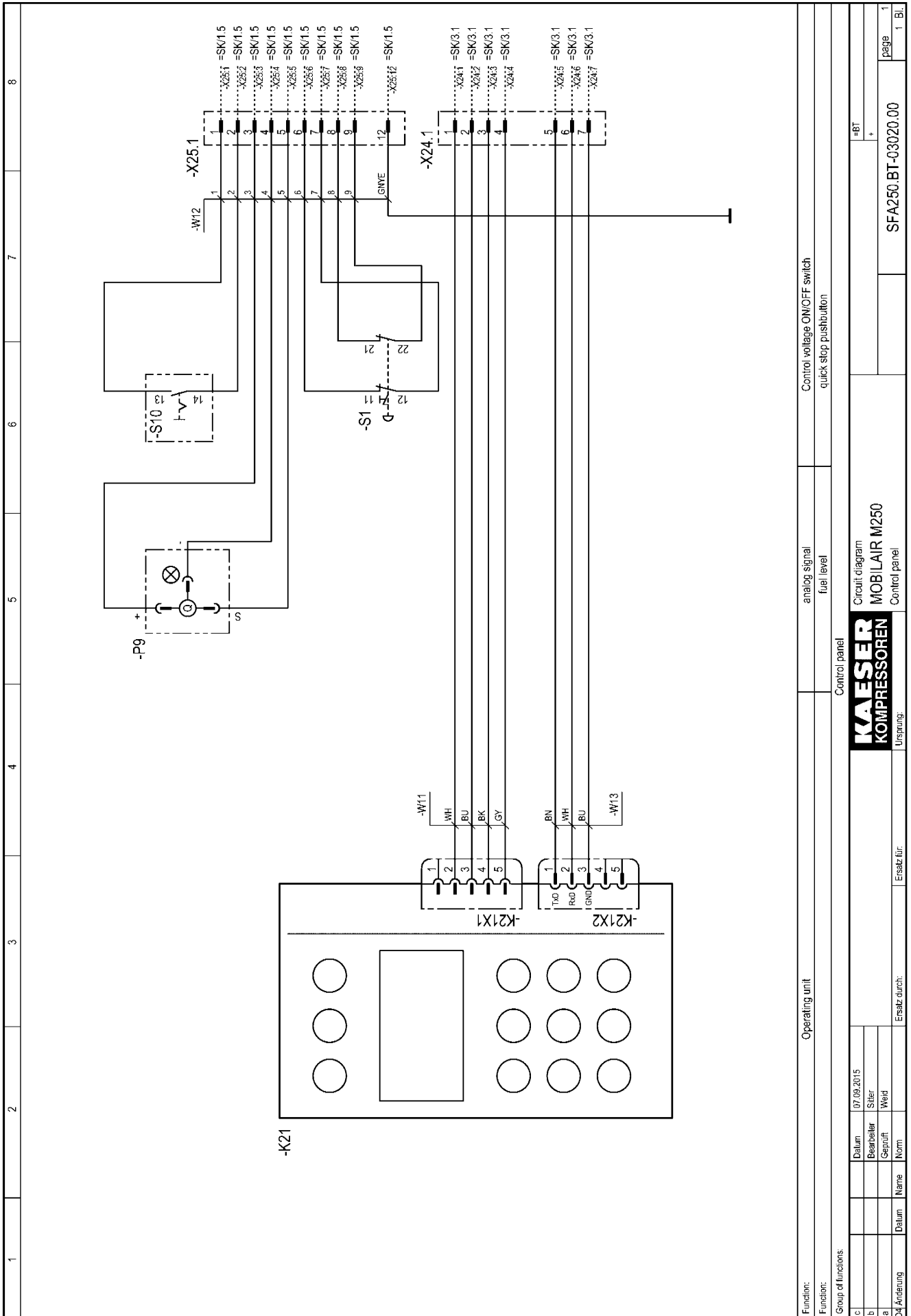
Function:		Motor-Regulator	
Group of functions:			
c	Datum	07.09.2015	
b	Bearbeiter	Stiller	
a	Geprüft	Weid	
D2	Änderung	Datum	Name
		Ersatz durch:	Ersatz für:
Circuit diagram		MOBILAIR M250	
Cable set Motor		SFA250.IKM-03020.00	
IKM		+ 1 Bl.	
page		1	



compressed air control valve

Dosing unit

Function:		compressed air control valve	
Group of functions:		Dosing unit	
only Exhaust treatment Euromot 3B/TIER 4i		Circuit diagram	
KAESER KOMPRESSOREN		MOBILAIR M250	
Ursprung:		Control SCR-RM	
Ersatz für:		SFAZ50 IK1-03020.00	
Ersatz durch:		=IK1 +	
Datum: 07.09.2015		page 1	
Bearbeiter: Siller		1 Bl.	
Geprüft: Weid			
Norm:			

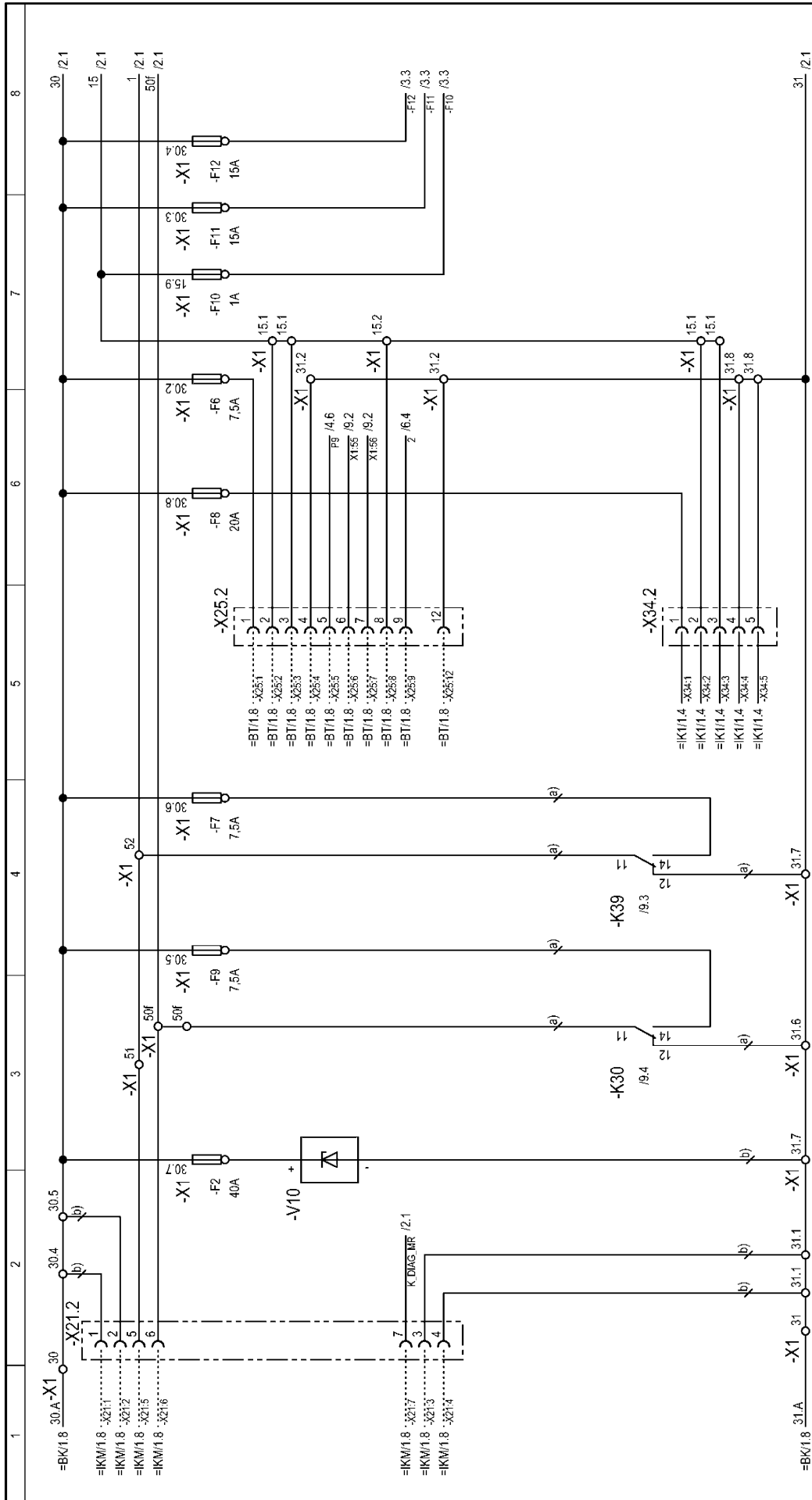


Function: analog signal
fuel level
Control voltage ON/OFF switch
quick stop pushbutton

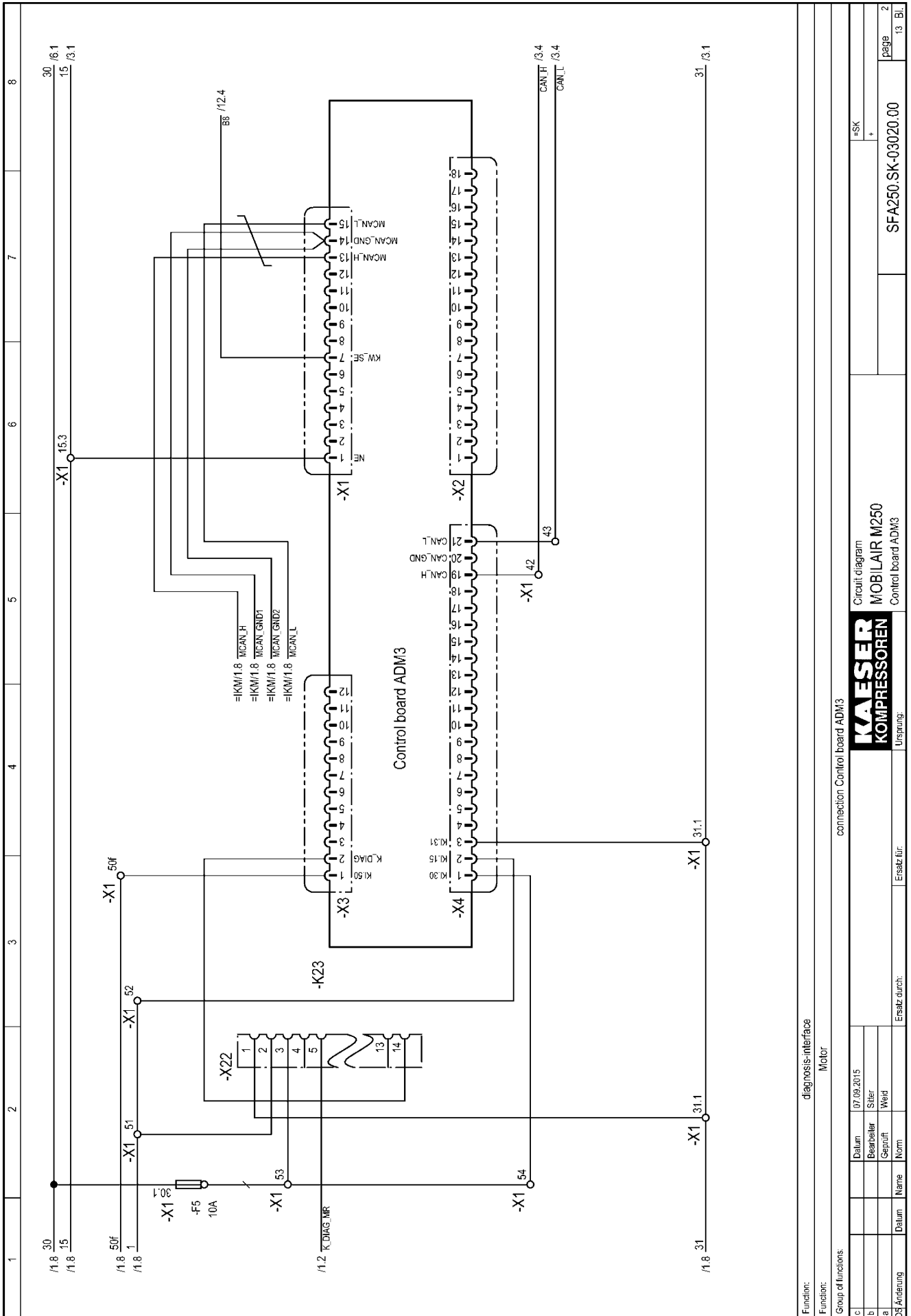
Operating unit

Control panel

Group of functions:		Control panel		SFA250.BT-03020.00	
c	Datum	07.09.2015	-BT		page 1
b	Bearbeiter	Stiller	+		1 Bl.
a	Geprüft	Weid			
D4-Änderung	Datum	Name	Ersatz durch:		
		Ursprung:		MOBILAIR M250	
		Kaeser KOMPRESSOREN		Control panel	



F1		F2		F3		F4		F5		F6		F7		F8		F9		F10		F11		F12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
1		2		3		4		5		6		7		8		9		10		11		12	
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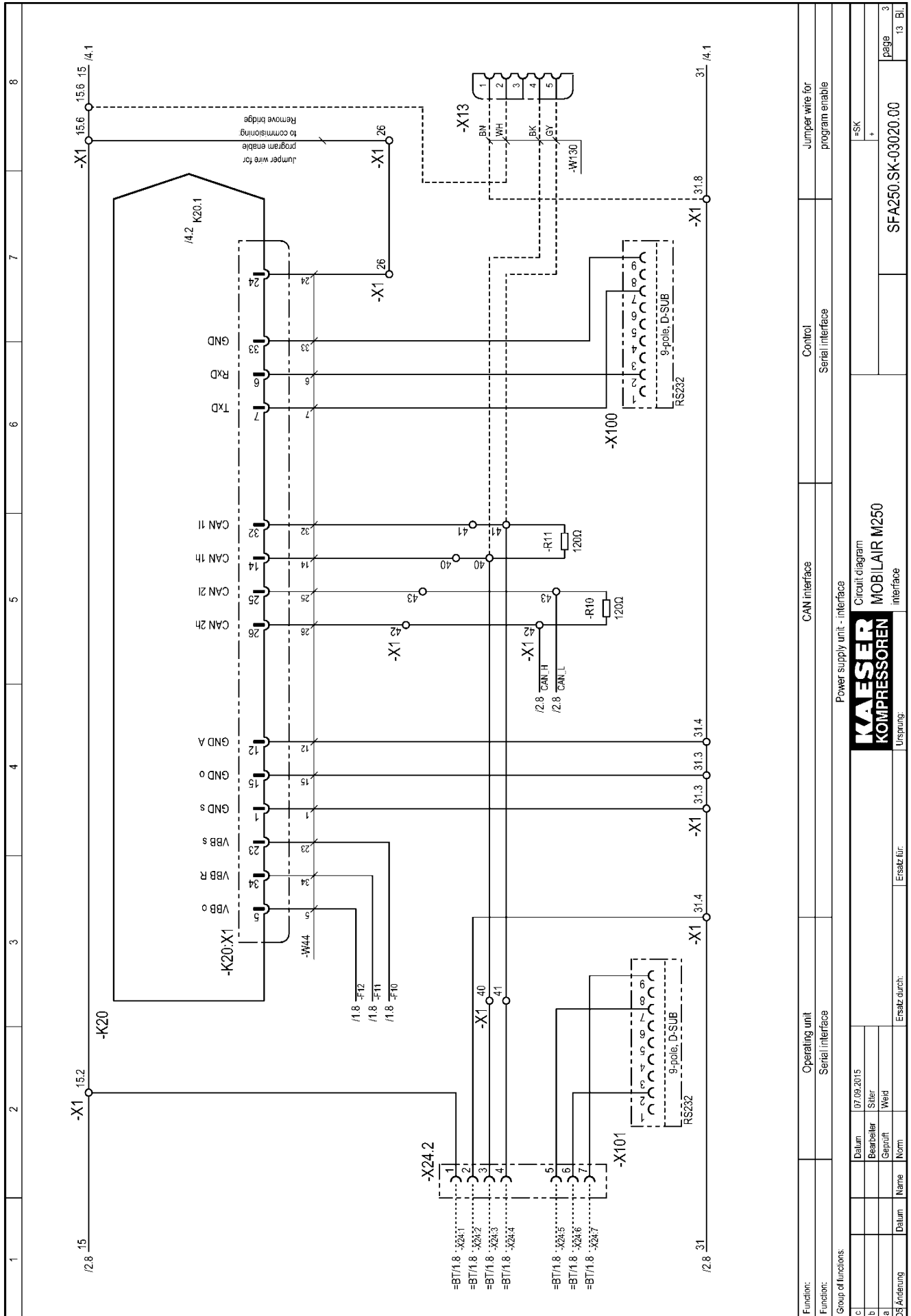
Function: diagnosis-interface
Motor

Group of functions: connection Control board ADM3

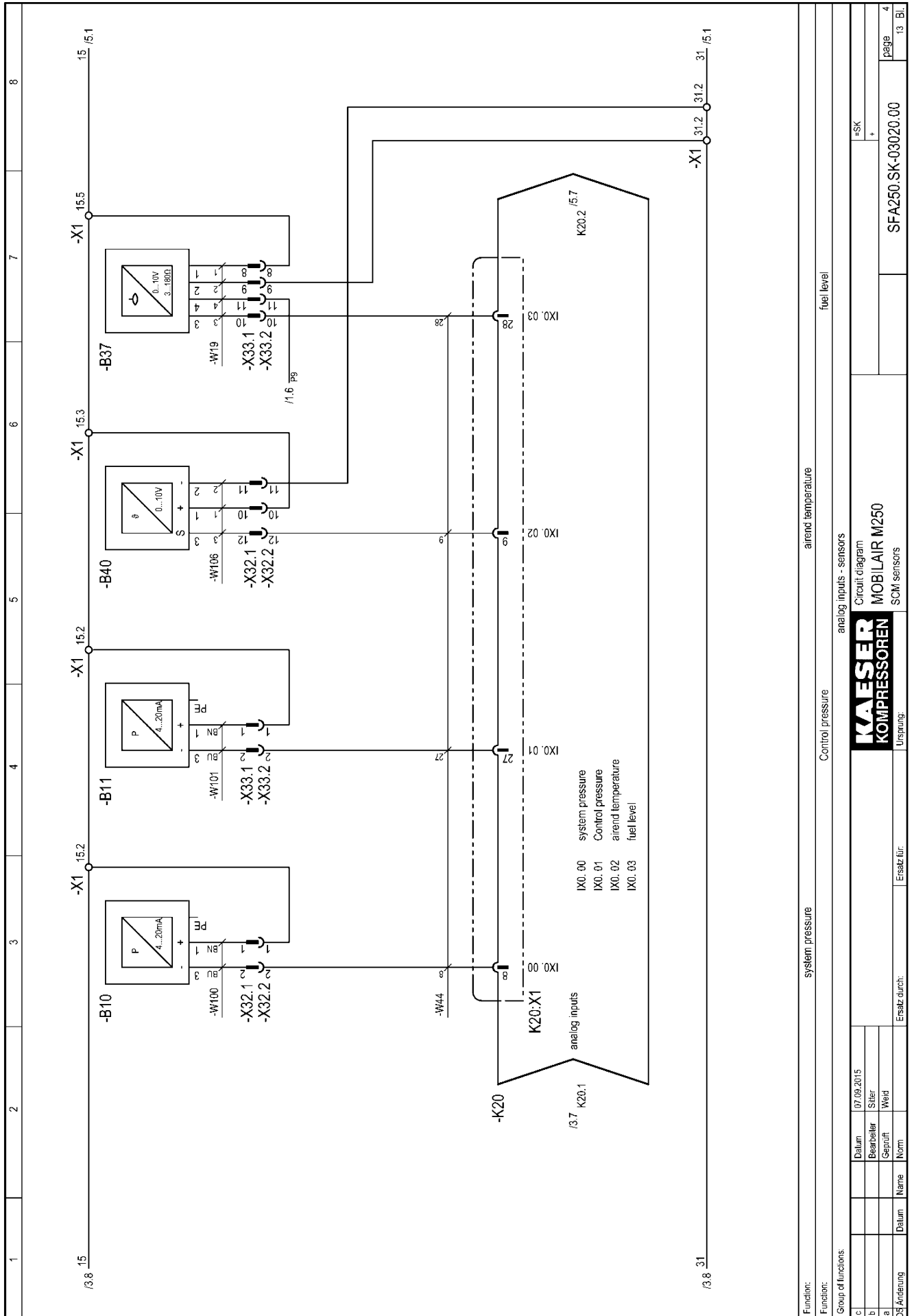
DA	Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:
c		Datum	07.09.2015			
b		Bearbeiter	Stiller			
a		Geprüft	Weid			

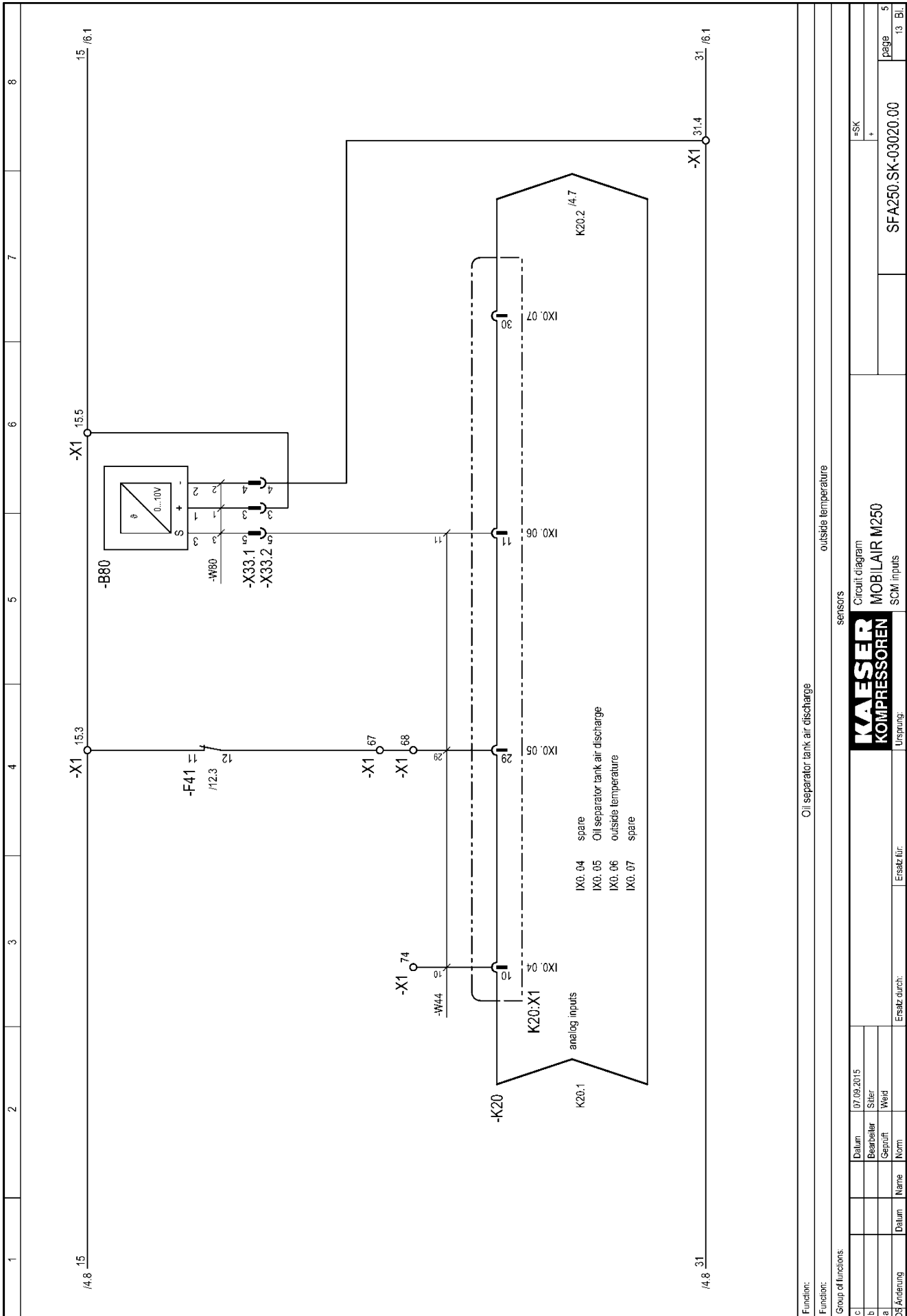
Ursprung: SFA250.SK-03020.00

13 Bl.



Function:		Operating unit		CAN interface		Control	
Function:		Serial interface		Serial interface		Jumper wire for program enable	
Group of functions:							
Power supply unit - interface				Jumper wire for program enable			
K20				SFA250.SK-03020.00			
K20.1				SFA250.SK-03020.00			
K20.2				SFA250.SK-03020.00			
K20.3				SFA250.SK-03020.00			
K20.4				SFA250.SK-03020.00			
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K20.13				SFA250.SK-03020.00			
K20.14				SFA250.SK-03020.00			
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K20.100				SFA250.SK-03020.00			

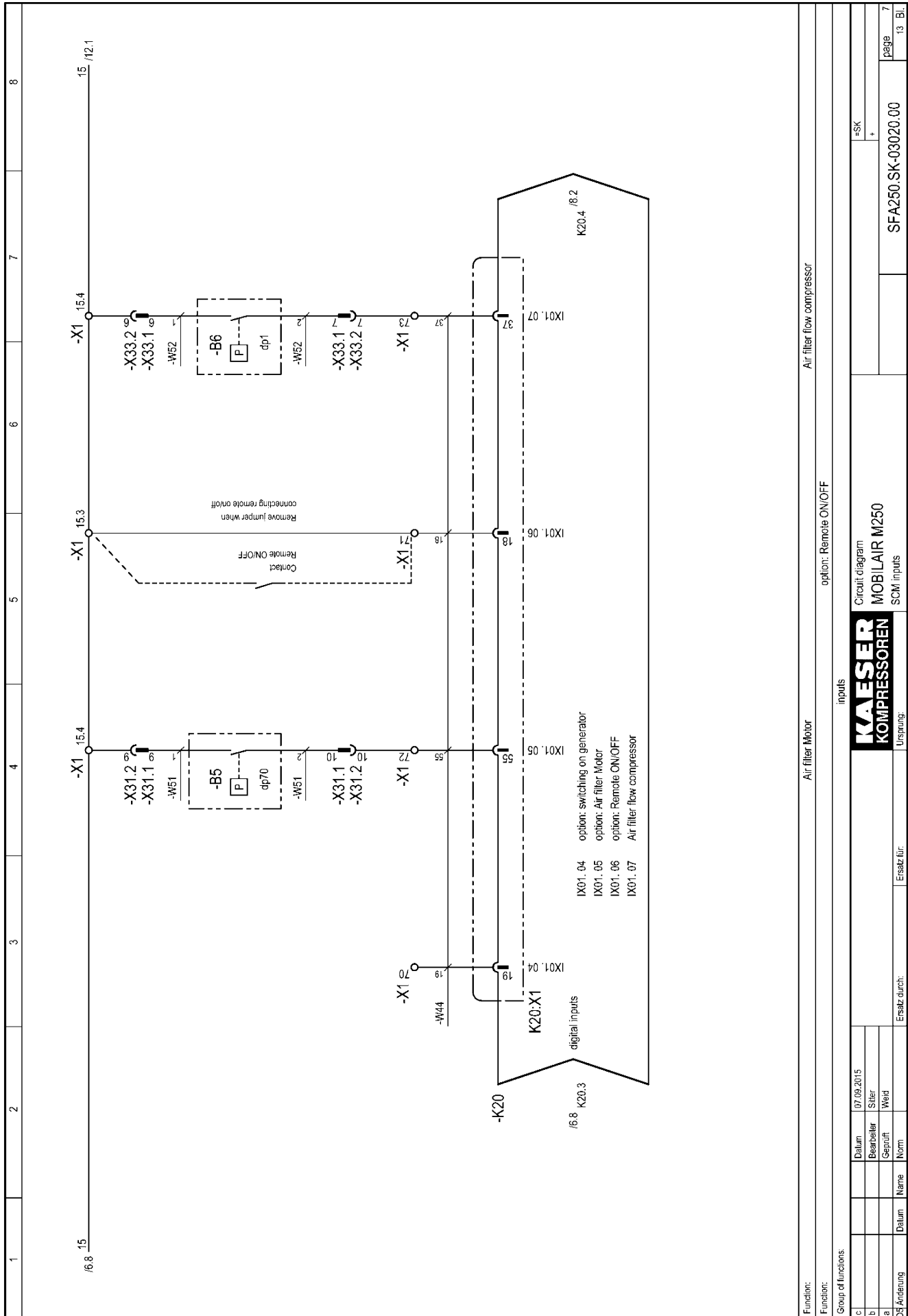




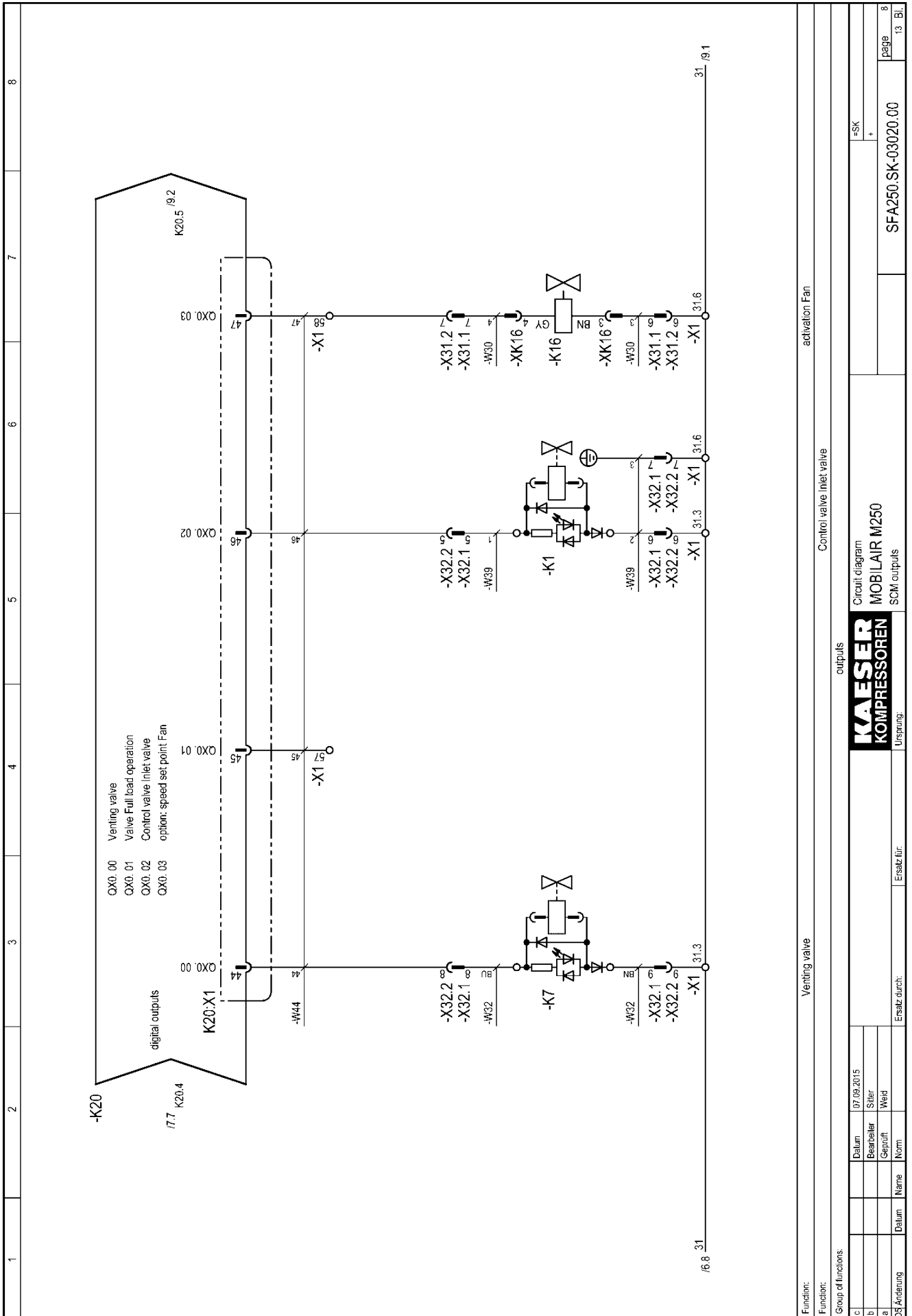
Oil separator tank air discharge

sensors
outside temperature

Function:		Oil separator tank air discharge	
Group of functions:		sensors outside temperature	
c)	Datum	07.09.2015	+ =SK
b)	Bearbeiter	Stiller	
a)	Geprüft	Weid	
DS-Änderung	Datum	Name	Ersatz durch:
Kaeser logo		Circuit diagram MOBILAIR M250 SCM inputs	
SFA250.SK-03020.00		SFA250.SK-03020.00	
page		5	
13 Bl.		13 Bl.	



Function:		Air filter Motor		Air filter flow compressor	
Function:		option: Remote ON/OFF		option: Remote ON/OFF	
Group of functions:		inputs		inputs	
c	Datum	07.09.2015			
b	Bearbeiter	Stiller			
a	Geprüft	Weid			
DA	Änderung	Datum	Name	Ersatz durch:	Ersatz für:
				K20.3	
				K20.4	
				SFA250.SK-03020.00	
				+ -SK	
				page 7	
				13 Bl.	



Function: Venting valve

Function: Control valve inlet valve

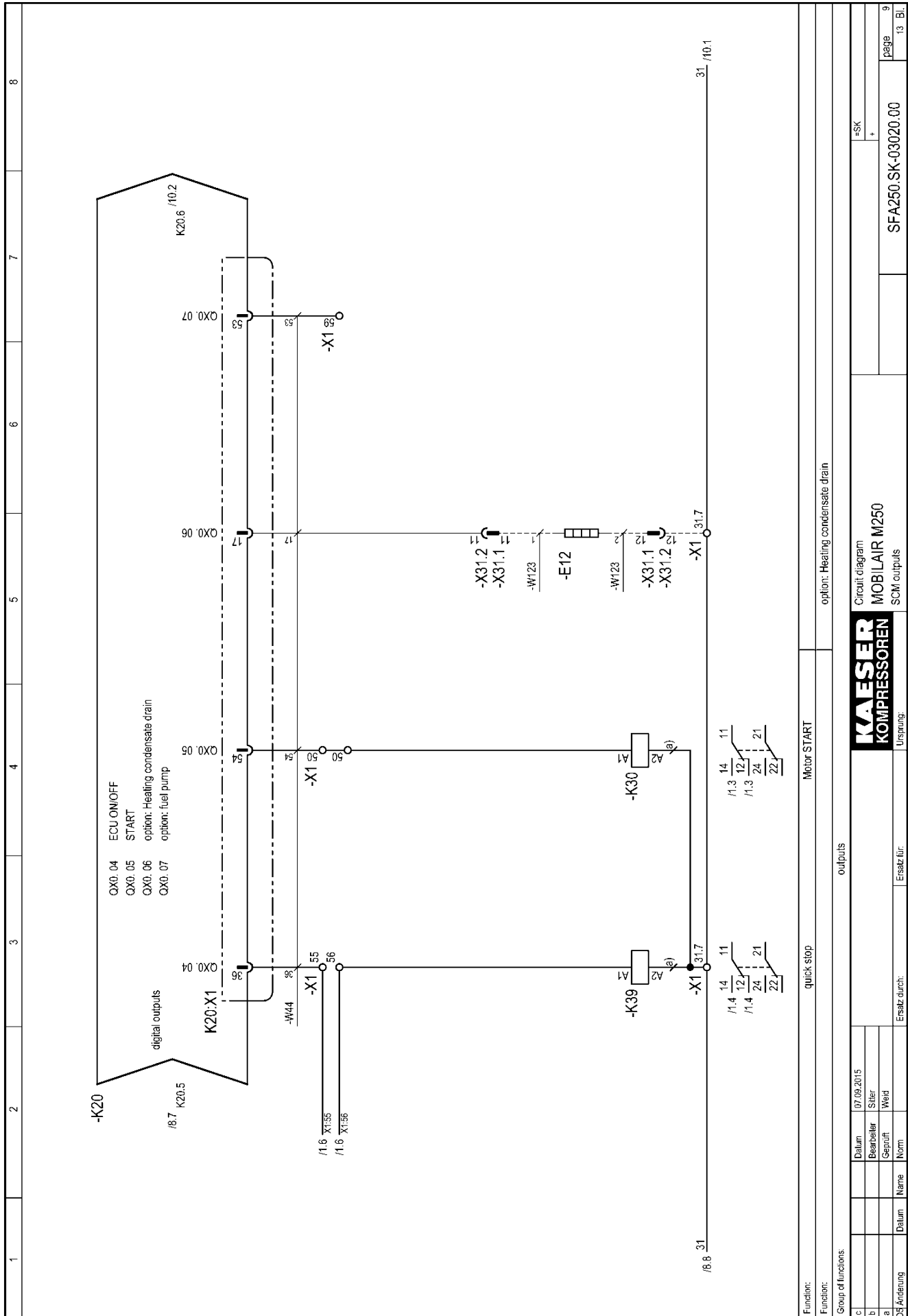
Function: activation Fan

Group of functions: outputs

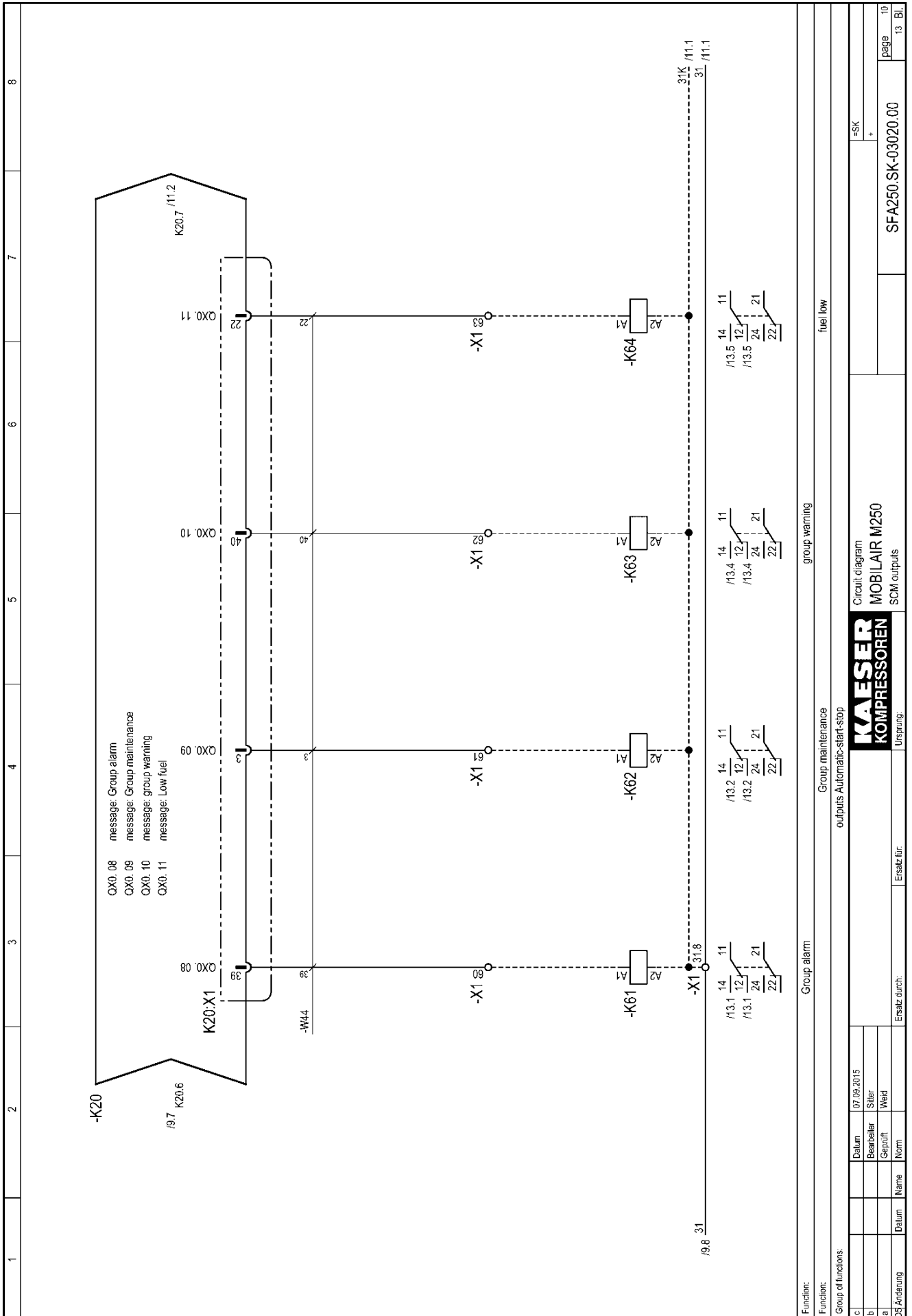
Datum	07.09.2015
Bearbeiter	Stier
Geprüft	Weid
Norm	
Ersatz für:	Ersatz für:
Ersatz durch:	

KAESER KOMPRESSOREN
 Ursprung: MOBILAIR M250
 SCM outputs

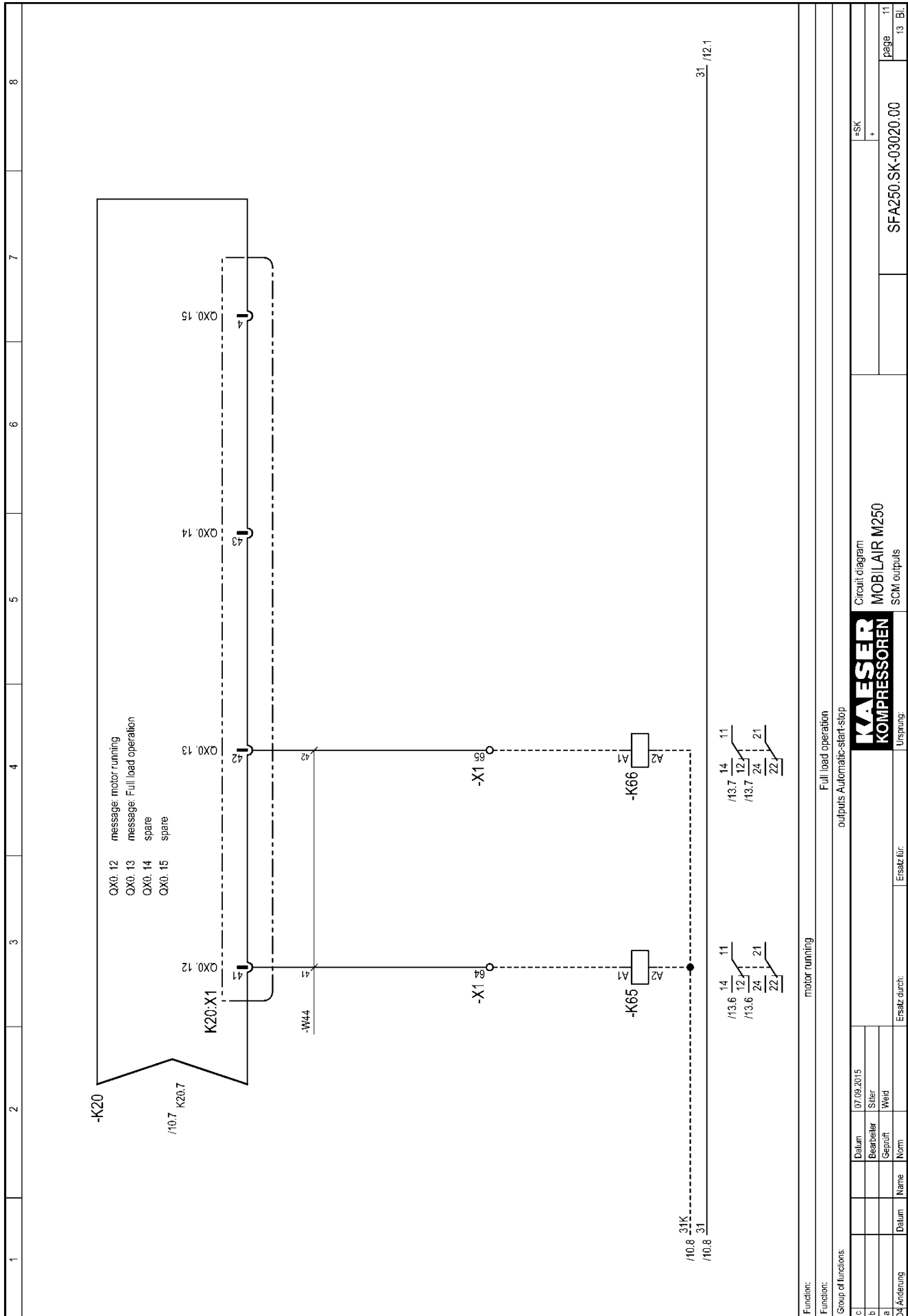
+SK	
SFA250.SK-03020.00	
page	8
13 Bl.	

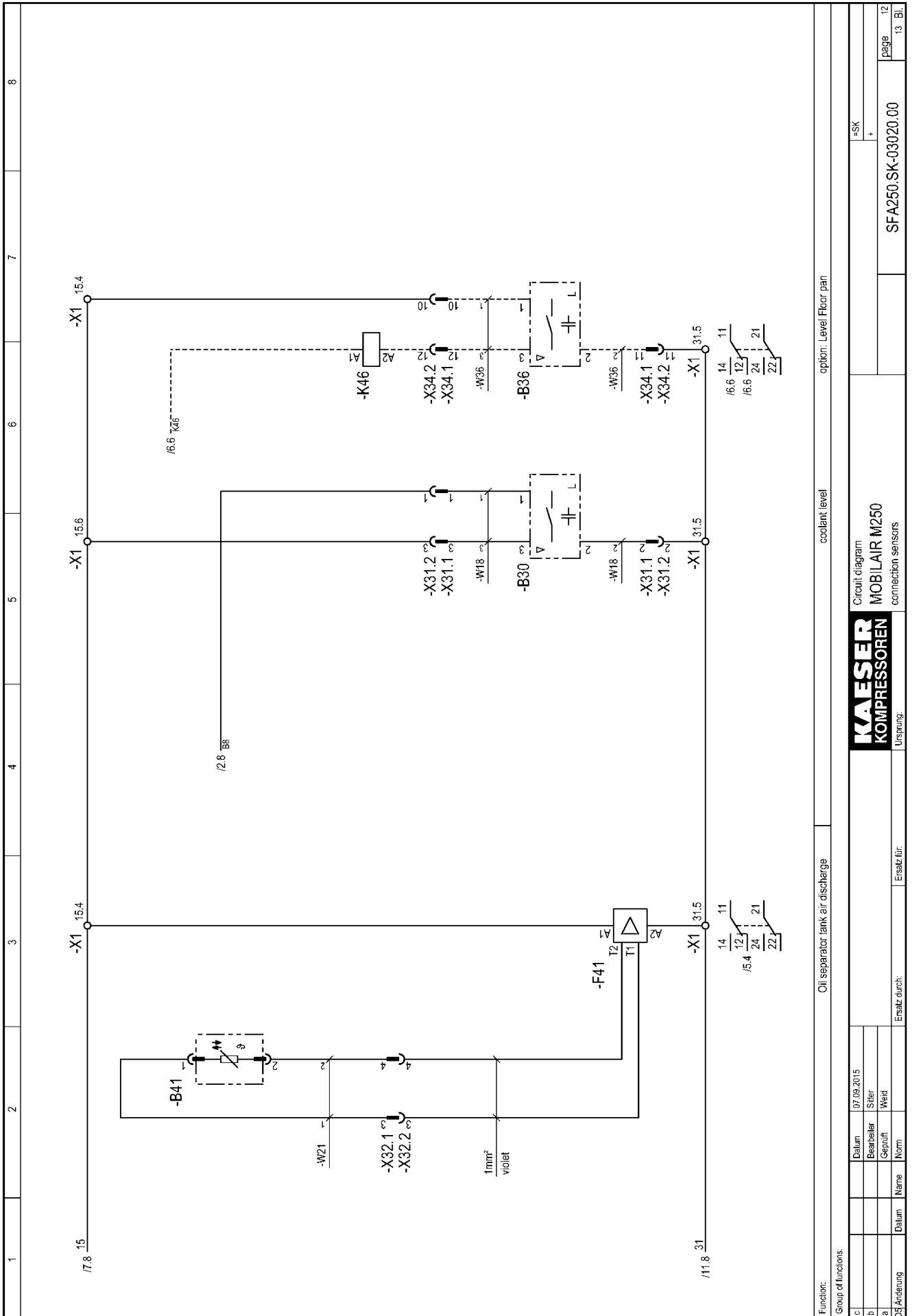


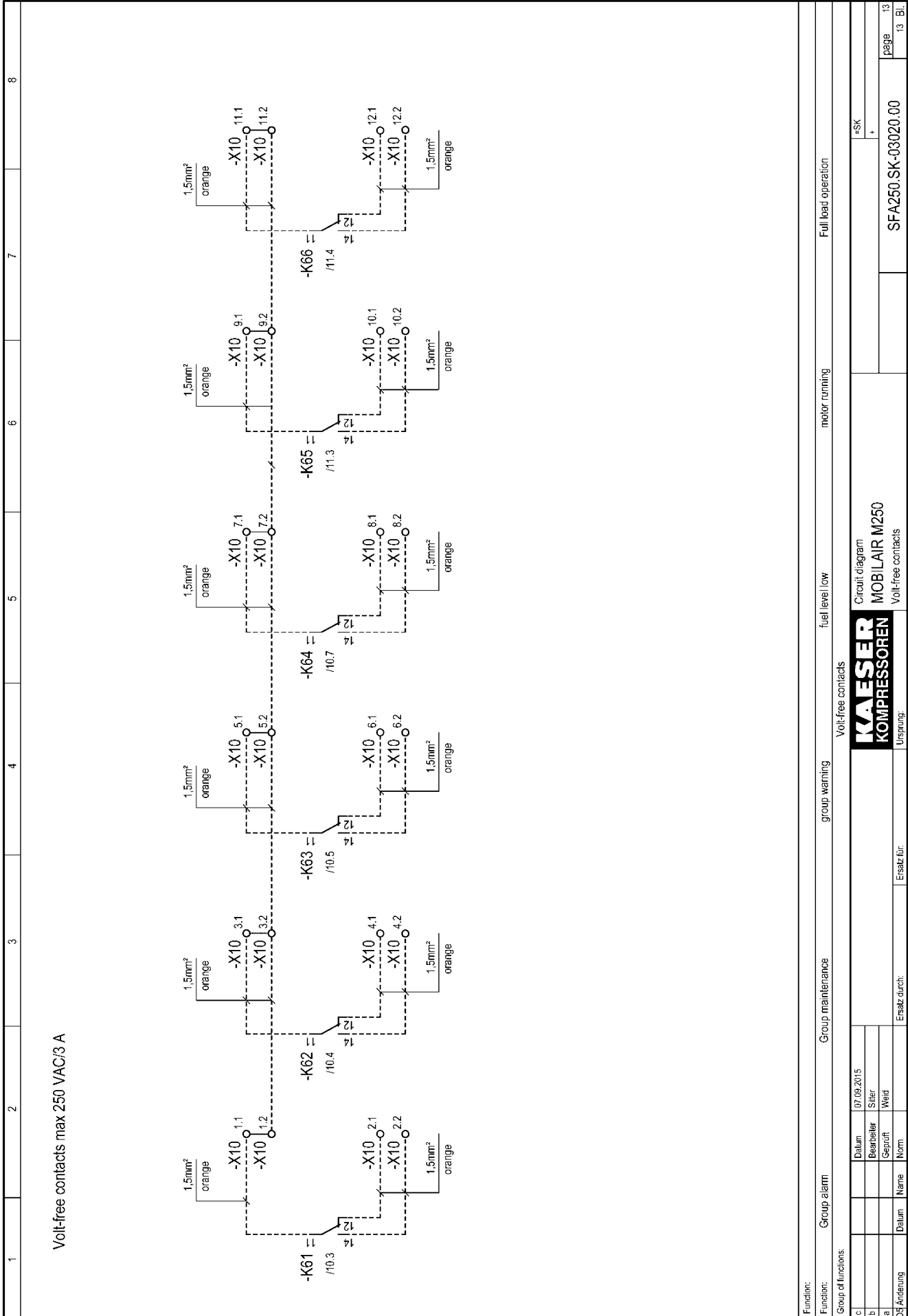
Function:		quick stop		Motor START		option: Heating condensate drain	
Group of functions:		outputs					
c	Datum	07.09.2015					
b	Bearbeiter	Sittler					
a	Geprüft	Weid					
Dr. Änderung	Datum	Norm	Ersatz für:				
				Circuit diagram		SFA250.SK-03020.00	
				MOBILAIR M250		page 9	
				SCM outputs		13 Bl.	



Function:		Group alarm	
Function:		Group maintenance	
Group of functions:		outputs Automatic-start-stop	
Group of functions:		fuel low	
Date:		07.09.2015	
Prepared by:		Stiller	
Checked by:		Weid	
Name:		Norm	
Ersatz durch:		Ersatz für:	
Circuit diagram:		MOBILAIR M250	
SCM outputs:		SFA250.SK-03020.00	
page:		10	
13 Bl.			







Function:		Group alarm		Group maintenance		group warning		Volt-free contacts		fuel level/low		motor running		Full load operation	
Group of functions:		Group alarm		Group maintenance		group warning		Volt-free contacts		fuel level/low		motor running		Full load operation	
c	Datum	07.09.2015													
b	Bearbeiter	Stiller													
a	Geprüft	Weid													
Dr. Änderung	Datum	Name		Ersatz für:		Ersatz durch:		Ursprung:		Circuit diagram		MOBILAIR M250		SFA250.SK-03020.00	
														page 13	
														13 Bl.	

1	2	3	4	5	6	7	8			
A	B	C	D	E	F	G	H	I	J	K
Stückzahl	Benennung und Verwendung	Fabrikatsbezeichnung	Lfd. Nr.	Betriebsmittel-Kennz.	Stromlaufplan	Einbauort	Schabl. Nr.	BZ-Pos.	VA (Kz. *)	Eingangsvermerk
Qty.	Description and function	Identification data	Item	Identifying symbol of device	Circuit diagram sheet No. / section No.	Location				
	Control cabinet:	Typ: notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr. - Hersteller Typ: basic technical data (e.g. control voltage, frequency, adjustable range); order No. - manufacturer		nach DIN 40719, Teil 2						
1	Control cabinet:	800x300x155	Rittal							
1	Control	CR0020	ifm	-K20						
1	LOAD-DUMP-Modul	24 VDC	ifm	-V10						
2	Relay	G2R-2-SN-24V	Omnron	-K30 -K39						
2	Relay socket	P2RF-08-E	Omnron	-K30 -K39						
1	PTC thermistor trigger	24V UC MS220K	Ziell	-F41						
18	tiered terminals	WKFI.5E/35	Wieland	-X1						
15	Terminal	WKFN 2.5D2/2/35	Wieland	-X1						
2	Terminal	WKF 16/35 PV/WKFN	Wieland	-X1						
8	Fuse terminal	WKF N 4/FSI	Wieland	-X1						
1	Fuse UNIVAL	1 A	L&K	-F10						
3	Fuse UNIVAL	7,5 A	L&K	-F6, -F7, -F9						
1	Fuse UNIVAL	10 A	L&K	-F5						
2	Fuse UNIVAL	15 A	L&K	-F11, -F12						
1	Fuse UNIVAL	20 A	L&K	-F8						
2	Resistor	120 Ω	Bürklin	-R10 -R11						
7	plug connection 12-pole	1604941-1	TYCO	-X21...-X25; -X31...-X34						
1	Control board ADM3		MTU	-K23						
1	diagnostics plug		MTU	-X22						
	Control panel									
1	Operating unit	CR9022	ifm	-K21						
1	Display fuel level		VDO	-P9						
1	switch Control voltage ON/OFF	26 00 00	Merit	-S10						
1	quick stop pushbutton	GRUV-MHT00	Schlegel	-S1						
2	plug connection 12-pole	360735-1	TYCO	-X24, -X25						

*) Versandanschrift - Kennzeichen

B and C should be stated in this list of equipment, insofar as they are included in answering technical enquiries. When ordering spare parts, also quote the serial No. of the product if stated on the rating plate.

When ordering the equipment, all data enclosed by the heavy lines of columns addition, the data in columns D to G should be given together with the No. of they are included in answering technical enquiries. When ordering spare parts, product if stated on the rating plate.

The German version applies in cases of doubt.

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Tabellen B und C angegebenen Daten anzugeben. Die Daten in den Spalten D bis G sind zusätzlich unter Neinnung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Seriennummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

In Zweifelsfällen gilt die deutsche Fassung.

Stellen B und C angegebenen Daten dieser Gerätebestelllisten-Nummern anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Seriennummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

Equipment parts list		MOBILAIR M250		Control cabinet	
c	Datum	07.09.2015			
b	Bearbeiter	Sitler			
a	Geprüft	Weid			
F	Name	Norm			
	Datum	Norm			
Ersatz durch:		Ersatz für:			
		Ursprung:			
		<div style="border: 1px solid black; padding: 2px;"> KAESER KOMPRESSOREN </div>			
		The German version applies in cases of doubt.			
		B and C should be stated in this list of equipment, insofar as they are included in answering technical enquiries. When ordering spare parts, also quote the serial No. of the product if stated on the rating plate.			
		*) Versandanschrift - Kennzeichen			
		In Zweifelsfällen gilt die deutsche Fassung.			
		Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Tabellen B und C angegebenen Daten anzugeben. Die Daten in den Spalten D bis G sind zusätzlich unter Neinnung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Seriennummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.			
		The German version applies in cases of doubt.			
		When ordering the equipment, all data enclosed by the heavy lines of columns addition, the data in columns D to G should be given together with the No. of they are included in answering technical enquiries. When ordering spare parts, product if stated on the rating plate.			
		When ordering spare parts, also quote the serial No. of the product if stated on the rating plate.			
		The German version applies in cases of doubt.			
		Stellen B und C angegebenen Daten dieser Gerätebestelllisten-Nummern anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Seriennummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.			
		In Zweifelsfällen gilt die deutsche Fassung.			

Cable identification		Terminal strip		Terminal strip: -X10		Cable identification	
Destination internal	Connection number	Destination external	Connection number	Terminal number	Terminal legend Link	Terminal number	Connection number
				1.1	a	1.1	-K61
				1.2	b	1.2	-K61
				2.1	a	2.1	-K61
				2.2	b	2.2	-K61
				3.1	a	3.1	-K62
				3.2	b	3.2	-K62
				4.1	a	4.1	-K62
				4.2	b	4.2	-K62
				5.1	a	5.1	-K63
				5.2	b	5.2	-K63
				6.1	a	6.1	-K63
				6.2	b	6.2	-K63
				7.1	a	7.1	-K64
				7.2	b	7.2	-K64
				8.1	a	8.1	-K64
				8.2	b	8.2	-K64
				9.1	a	9.1	-K65
				9.2	b	9.2	-K65
				10.1	a	10.1	-K65
				10.2	b	10.2	-K65
				11.1	a	11.1	-K66
				11.2	b	11.2	-K66
				12.1	a	12.1	-K66
				12.2	b	12.2	-K66
				13.1	a	13.1	-K66
				13.2	b	13.2	-K66
				13.3	a	13.3	-K66
				13.4	b	13.4	-K66
				13.5	a	13.5	-K66
				13.6	b	13.6	-K66
				13.7	a	13.7	-K66
				13.8	b	13.8	-K66
				13.9	a	13.9	-K66
				13.10	b	13.10	-K66
				14.1	a	14.1	-K66
				14.2	b	14.2	-K66
				14.3	a	14.3	-K66
				14.4	b	14.4	-K66
				14.5	a	14.5	-K66
				14.6	b	14.6	-K66
				14.7	a	14.7	-K66
				14.8	b	14.8	-K66
				14.9	a	14.9	-K66
				14.10	b	14.10	-K66

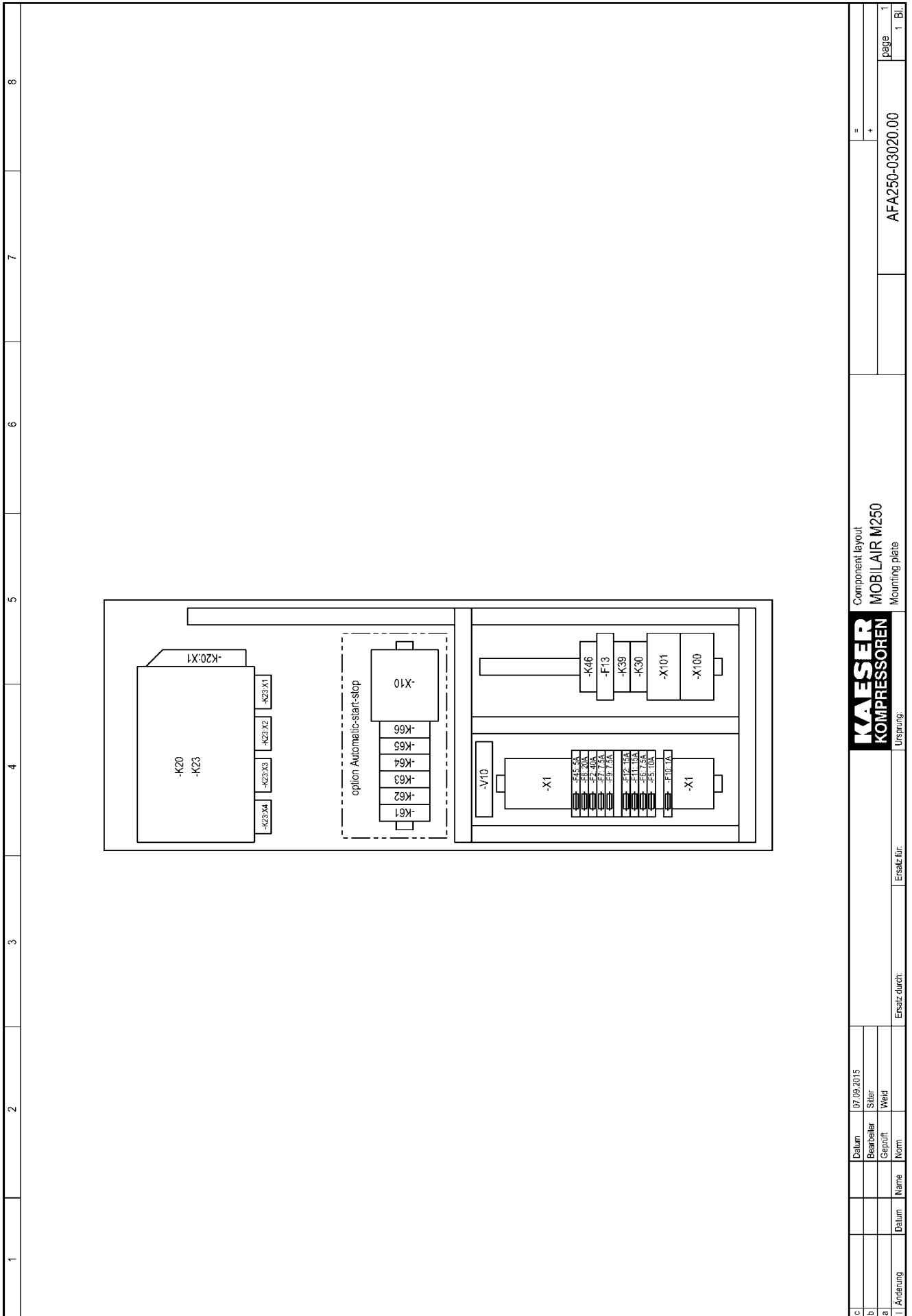
c	Datum	07.09.2015	Ersatz durch:	Ersatz für:	-SK +	KFA250-03020.00	page 3
	Bearbeiter	Siller					
b	Geprüft		Terminal schedule MOBILAIR M250 Terminal strip -X10				
a	Norm						
H Änderung	Datum	Name	Ursprung:				

Cable identification	Connection number	Component identification	Location	Wire link	Terminal legend Link	Terminal number	Connection number	Component identification	Plug connection: =SK-X25,2 total 12 Terminals																																						
									1	2	3	4	5	6	7	8	9	10	11	12																											
-W44 FLY-B 55x1mm ²									SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5	SK1.5																										
									30.2	15.1	15.1	31.2	11	55	56	15.2	2																														
									total 12 Terminals																																						
									-W12 Oelflex 110 12G1.5mm ²									S10	S10	P9	P9	S5	S1	S1	S1	S1	S1	S1	S1	S1																	
																		13.1	14.2	3	4	5	6	7	8	9	22	9	21	8	12	7	11	6	11	6	11	6									
																		total 12 Terminals																													
																		-W44 FLY-B 55x1mm ²									BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8	BT1.8								
																											13.1	14.2	3	4	5	6	7	8	9	22	9	21	8	12	7	11	6	11	6	11	6
																											total 12 Terminals																				
																											EARTH																				
																											total 12 Terminals																				

a	H Änderung	Datum	Name	Geprüft	Weld	07.09.2015	Stiller
b	Bearbeiter						
c	Datum						
Ersatz durch:							
Ersatz für:							
<p align="center">KAESER KOMPRESSOREN</p> <p align="center">Ursprung:</p>				<p align="center">Terminal schedule MOBILAIR M250 Plug connection-X25</p>			
						KFA250-03020.00	
						=	+
						12	page
						10	Bl.

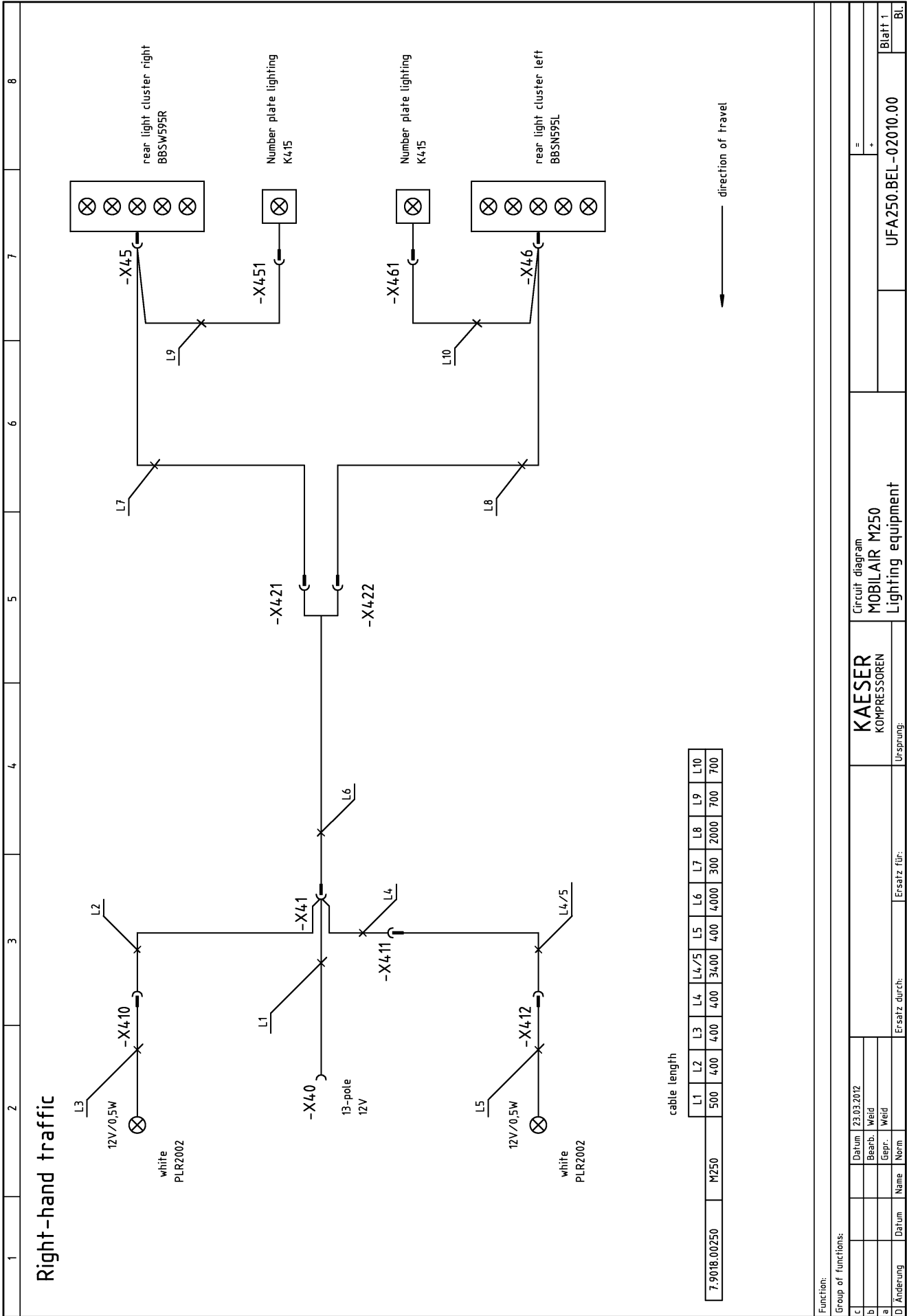
Cable identification		Terminal strip		Destination external		Destination internal		Cable identification	
Connection number	Component identification	Location	Wire link	Terminal legend	Link	Terminal number	Connection number	Component identification	Connection number
-W44 FLY-B 55x1mm ²									
Plug connection: -X33.1 total 12 Terminals		Plug connection: -X33.2 total 12 Terminals							
-B11		/4,4				1	-B11		
-B80		/5,6				3	-B80		
-B80		/5,6				2	-B80		
-B80		/5,5				4	-B80		
-B6		/7,7				6	-B6		
-B6		/7,7				7	-B6		
-B37		/4,7				1	-B37		
-B37		/4,7				8	-B37		
-B37		/4,7				2	-B37		
-B37		/4,7				9	-B37		
-B37		/4,7				3	-B37		
-B37		/4,7				10	-B37		
-B37		/4,7				4	-B37		
-B1		/4,4				1	-B1		
-X1		/15,2				2	-X1		
-K20-X1		/4,4				27	-K20-X1		
-X1		/15,5				3	-X1		
-X1		/15,5				4	-X1		
-X1		/31,4				5	-X1		
-K20-X1		/5,5				9	-K20-X1		
-X1		/15,4				6	-X1		
-X1		/7,7				7	-X1		
-X1		/7,7				73	-X1		
-X1		/15,5				8	-X1		
-X1		/4,7				15,5	-X1		
-X1		/4,7				31,2	-X1		
-K20-X1		/4,7				9	-K20-X1		
-X25.2		/4,7				11	-X25.2		
						12			

Terminal schedule		-SK +		KFA250-03020.00		page 22	
MOBILAIR M250		Plug connection-X33		10 Bl.			
Kaeser KOMPRESSOREN		Ursprung:		Ersatz für:			
07.09.2015		Datum		Name		Norm	
Sitter		Bearbeiter		Geprüft		Weld	
Ersatz durch:		Datum		Name		Norm	



13.4.2 Option tc
Lighting and signaling system connection

1	2	3	4	5	6	7	8
<div style="border: 1px solid black; padding: 20px; margin: 0 auto; width: 80%;"> <p>Electrical diagrams Lighting equipment MOBILAIR M250</p> </div> <p style="text-align: center; margin-top: 20px;"> Manufacturer: Kaeser Kompressoren GmbH 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>							
c	Datum	123.03.2012	E	KAESER KOMPRESSOREN		Circuit diagram MOBILAIR M250 Lighting equipment	
b	Bearb.	Weld				=	
a	Gepr.	Weld				+	
D	Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	Blatt 1 Bl.
						DFA250.BEL-02010.00	

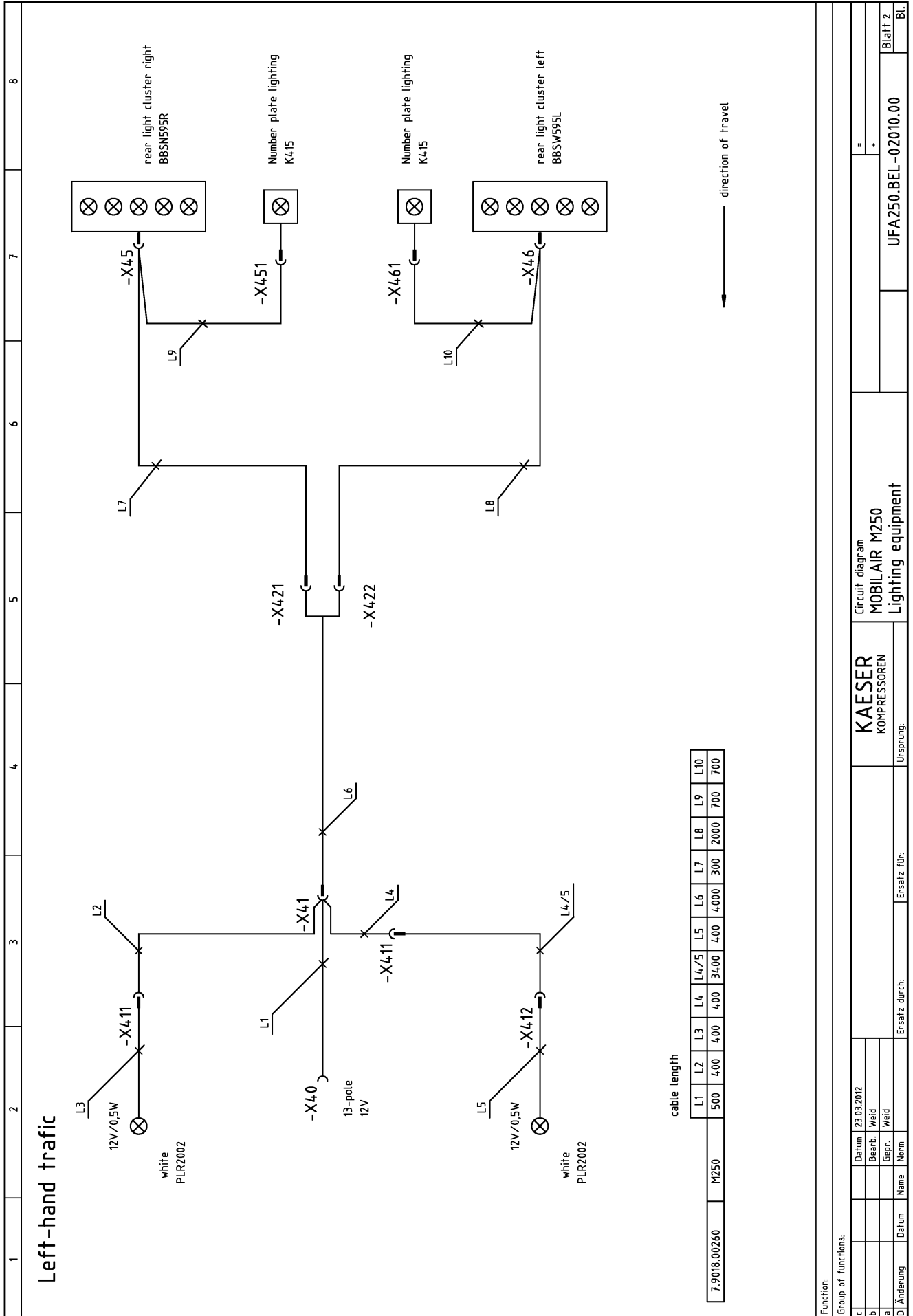


Function:

Group of functions:

a	Datum	23.03.2012
b	Bearb. / Weid	
c	Gepr. / Weid	
d	Norm	
D	Anderung	Datum
	Name	
	Ersatz durch:	
	Ursprung:	

Circuit diagram		MOBILAIR M250		UFA250.BEL-02010.00	
Lighting equipment				Blatt 1	
				Bl.	



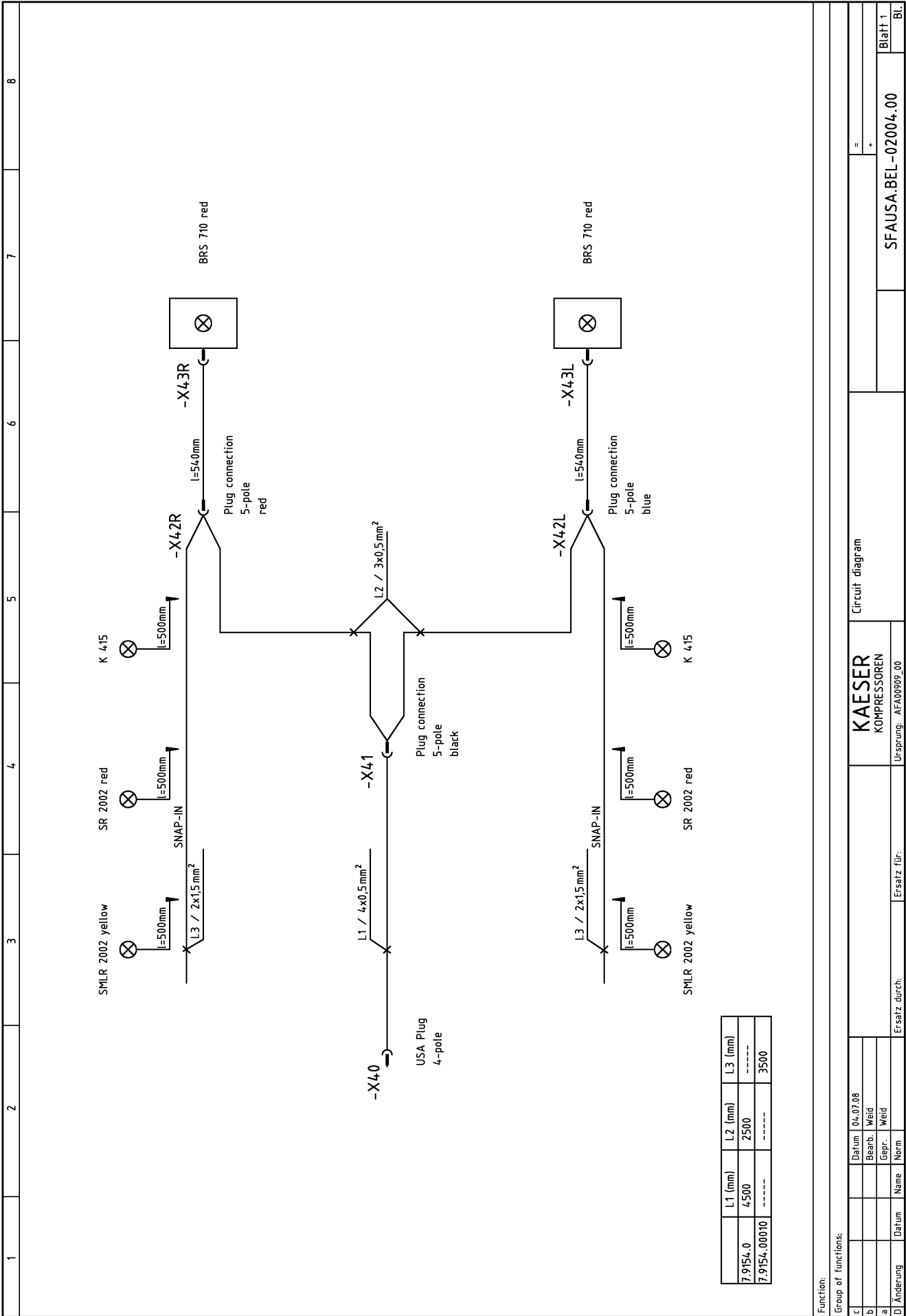
Function:

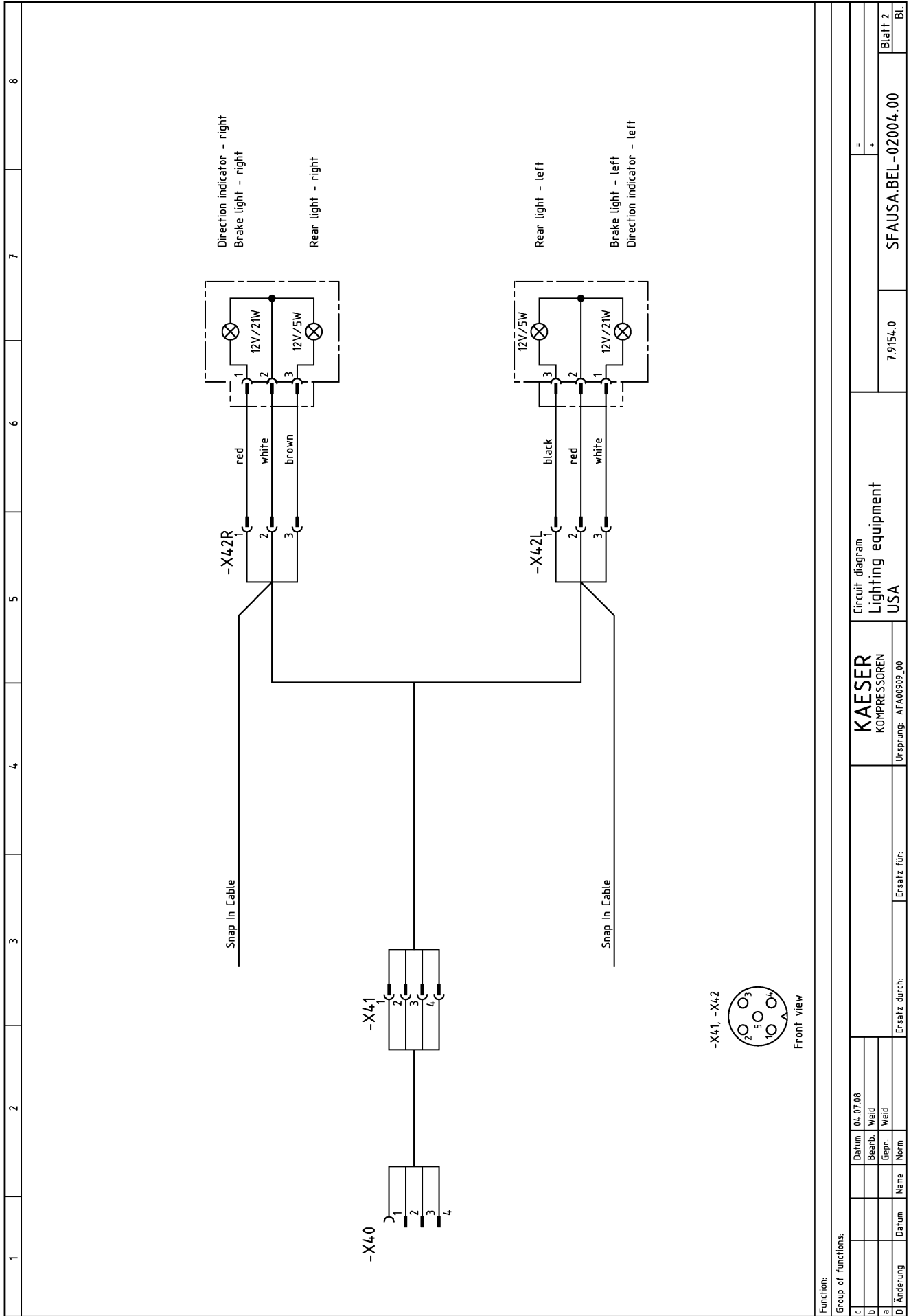
Group of functions:

Date		23.03.2012	
Bearb. / Weid			
Gepr. / Weid			
Name			
Datum			
Ersatz durch:			
Ersatz für:		Ursprung:	
KOMPRESSOREN		MOBILAIR M250	
Lighting equipment		UFA250.BEL-02010.00	
Blatt 2		Bl.	

13.4.3 Option te
Lighting and signaling system connection

1	2	3	4	5	6	7	8	
<p>Electrical diagrams MOBILAIR Lighting equipment for USA / CAN</p>								
<p>Manufacturer: Kaeser Kompressoren GmbH 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>								
c	Datum	04.07.08	E		KAESER KOMPRESSOREN			Cover page
b	Bearb. / Weid				MOBILAIR			=
a	Gepr. / Weid				Lighting equipment			+
D	Änderung	Datum	Name	Norm	Ersatz für:		DFAUSA.BEL-02004.00	
				Ersatz durch:		Blatt 1		
						Bl.		





Function:
Group of functions:

c	Datum	04.07.08
b	Bearb. / Weid	
a	Gepr. / Weid	
D	Änderung	Datum Name Norm
Ersatz durch:		Ersatz für:

Circuit diagram
Lighting equipment
USA

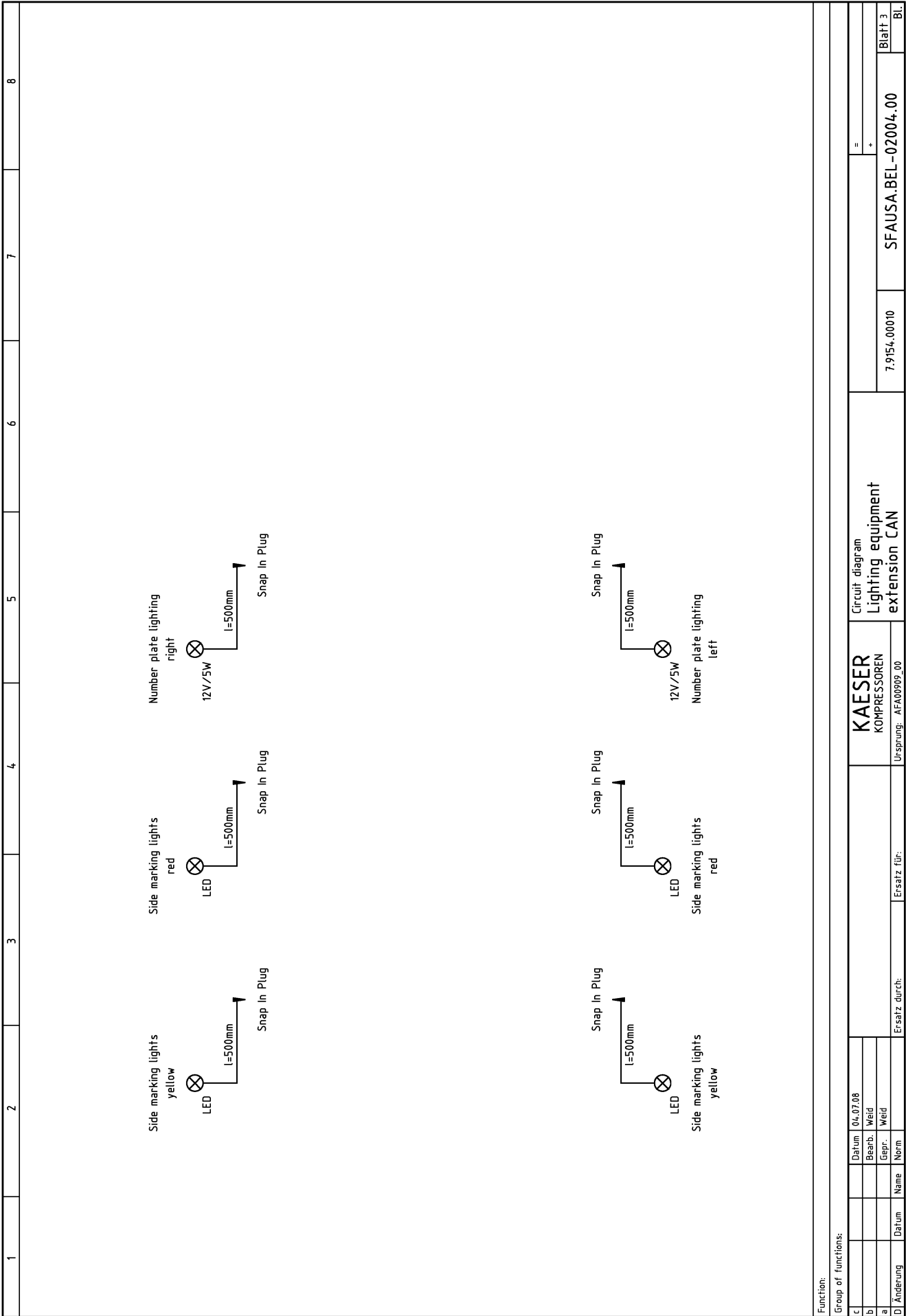
KAESER
KOMPRESSOREN
Ursprung: AFA00902_00

7,9154,0

SFAUSA.BEL-02004.00

Blatt 2

Bl.



13.4.4 Option od
Battery charger electrical diagram

1	2	3	4	5	6	7	8	
<div style="border: 1px solid black; padding: 20px; margin: 20px auto; width: 80%;"> <p>Electrical diagrams</p> <p>Battery charger 12/24 VDC</p> <p>Power supply:</p> <p>400 V/3~/N/PE/50 Hz</p> <p>230 V/1~/N/PE/50 Hz</p> </div> <p style="text-align: center; margin-top: 20px;"> Manufacturer: Kaeser Kompressoren GmbH 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>								
c	Datum	18.05.2009	E	KAESER KOMPRESSOREN <small>Ursprung: AFA0722_00</small>				Cover page MOBILAIR Battery charger = + DFABLG-01225.00
b	Bearb.	Weidr						Blatt 1
a	Gepr.	Weidr						Bl.
A	Änderung	Datum	Name	Norm	Ersatz durch:			

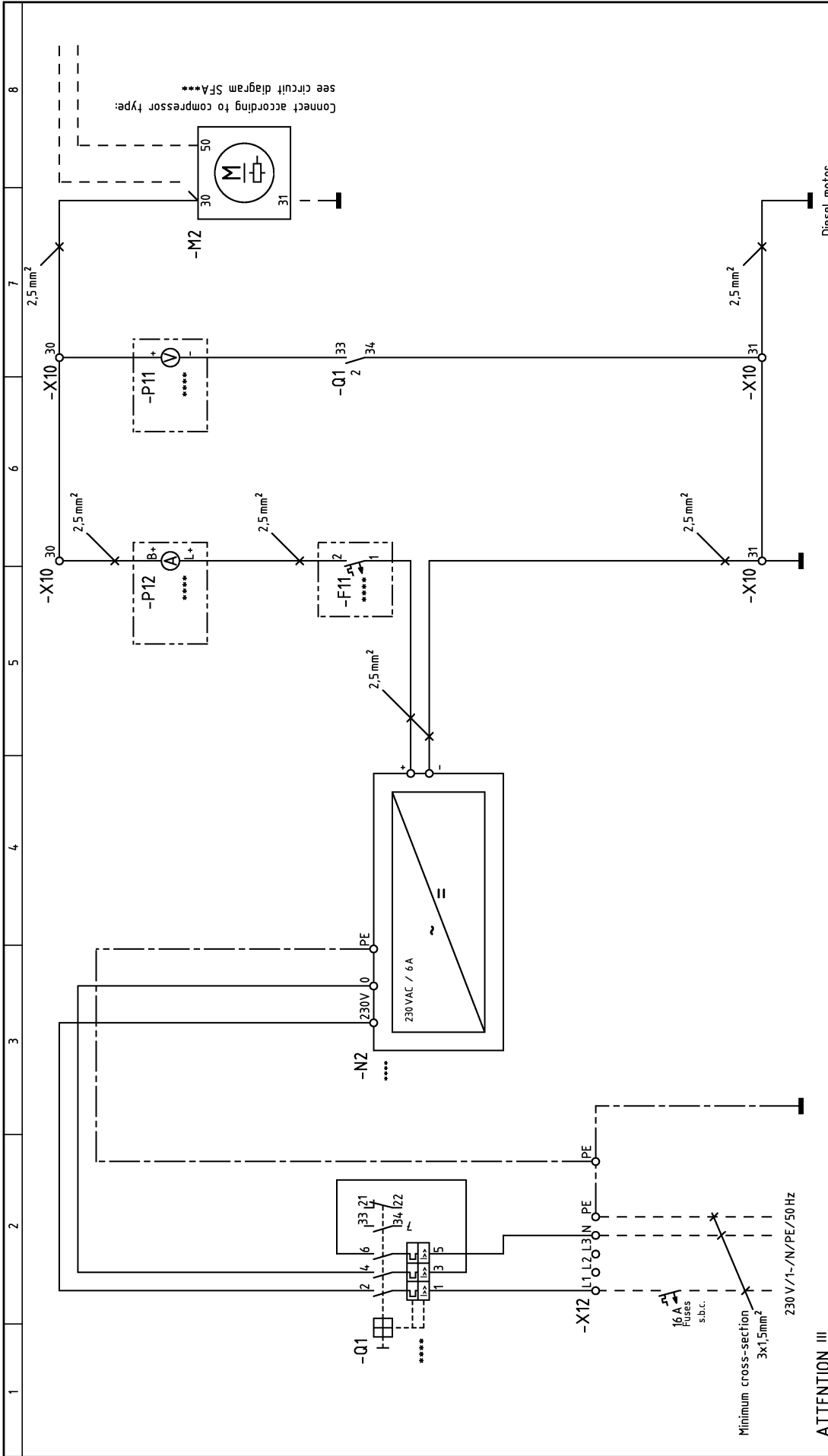
Lfd. Nr. No.	Benennung Name	Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page	Battery charger	DFABLG-01225.00	1	
2	List of contents	Battery charger	ZFABLG-01225.00	1	
3	Block diagram		UFABLG-01225.00	1	
4	Block diagram	Equipment parts list	UFABLG-01225.00	2	
5	Circuit diagram	Power supply 230V/1-/N/PE	SFABLG-01225.00	1	
6	Circuit diagram	Power supply 400V/3-/N/PE	SFABLG-01225.00	2	
7	Terminal schedule	Terminal strip -X10.-X12	KFABLG-01225.00	1	
8	Component layout	Battery charger 24VDC	AFABLG-01225.00	1	
9	Component layout	Battery charger 12VDC	AFABLG-01225.00	2	

c	Datum	18.05.2009	Kaeser KOMPRESSOREN List of contents MOBILAIR Battery charger	=	ZFABLG-01225.00	Blatt 1
b	Bearb. Weid					
a	Gepr. Weid		Ursprung: AFA01222_00	+	ZFABLG-01225.00	Bl.
B. Änderung	Datum	Name				

1	2	3	4	5	6	7	8
<p>general instructions</p> <p>ATTENTION !!!</p> <p>Install supplies, grounding and shock protection to local safety regulations.</p> <p>Control circuits are single-end-earthed, if they are floating they may only be used together with insulation monitoring.</p> <p>Do not make or break live plug-in connectors.</p>							
<p>control cabinet wiring for non-designated conductors with multi-standard stranded conductors</p> <p>primary circuits: black</p> <p>Control voltage AC: red 1mm² H07V-K, 18AWG UL-Style 1015, CSA-TEW</p> <p>Control voltage DC: blue 1mm² H07V-K, 18AWG UL-Style 1015, CSA-TEW</p> <p>external voltage: orange 1,5mm² H07V-K, 16AWG UL-Style 1015, CSA-TEW</p> <p>measuring circuits: violet 1mm² H07V-K, 18AWG UL-Style 1015, CSA-TEW</p> <p>earth conductor: green/yellow</p>							
<hr style="border-top: 1px dashed black;"/>							
<p>c</p>		<p>Datum 18.05.2009</p>		<p>KAESER KOMPRESSOREN</p>		<p>Block diagram general instructions</p>	
<p>b</p>		<p>Bearb. Weid</p>		<p>Ursprung: AFA01222_00</p>		<p>=</p>	
<p>a</p>		<p>Gepr. Weid</p>		<p>Ersatz durch:</p>		<p>+</p>	
<p>C Änderung</p>		<p>Datum Name Norm</p>		<p>Ersatz für:</p>		<p>UFABLG-01225.00</p>	
						<p>Blatt 1</p>	
						<p>Bl.</p>	

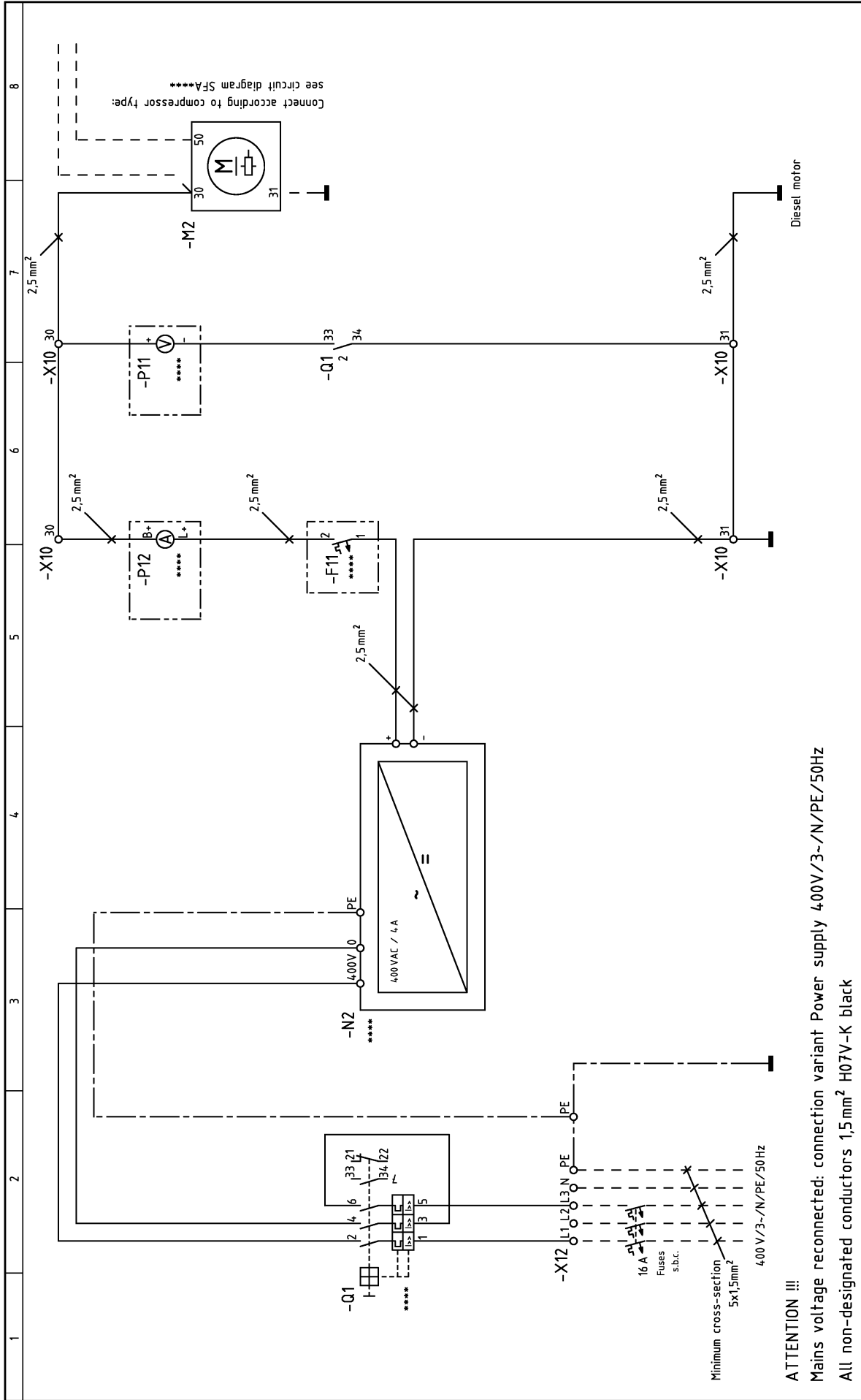
model		Equipment parts list Battery charger			
Power supply		230 V ±10 %, 50 Hz	400 V ±10 %, 50 Hz	230 V ±10 %, 50 Hz	400 V ±10 %, 50 Hz
Voltage Battery		12 VDC	12 VDC	24 VDC	24 VDC
Control cabinet					
Battery charger	-N2 Eltroma	7.9117.00010 BGL 1024 / 12V	7.9117.00010 BGL 1024 / 12V	7.9117.0 BGL 1024 / 24V	7.9117.0 BGL 1024 / 24V
Overload protection switch	-Q1	7.6860.00170 3RV1011-1GA10 (4,5-6,3A)	7.6860.00170 3RV1011-1GA10 (4,5-6,3A)	7.6860.00170 3RV1011-1GA10 (4,5-6,3A)	7.6860.00170 3RV1011-1GA10 (4,5-6,3A)
Auxiliary switch	Siemens	setting: 6A 7.314.0.02210 3RV1901-1A	setting: 4,5A 7.314.0.02210 3RV1901-1A	setting: 6A 7.314.0.02210 3RV1901-1A	setting: 4,5A 7.314.0.02210 3RV1901-1A
Cut-out	-F12	7.314.0.02750 5SY6106-7 C16 A 16 A	7.314.0.02750 5SY6106-7 C16 A 16 A	7.314.0.02750 5SY6106-7 C16 A 16 A	7.314.0.02750 5SY6106-7 C16 A 16 A
voltmeter	-P11 VDO	7.9033.00010 332-030-001G 8-16 VDC	7.9033.00010 332-030-001G 8-16 VDC	7.9033.0 332-040-001G 16-32 VDC	7.9033.0 332-040-001G 16-32 VDC
Ammeter	-P12 VDO	7.9118.0 190-037-001G -30...0...+30 A	7.9118.0 190-037-001G -30...0...+30 A	7.9118.0 190-037-001G -30...0...+30 A	7.9118.0 190-037-001G -30...0...+30 A
front plate 6TE	Menekes	7.5390.00020 40986	7.5390.00020 40986	7.5390.00020 40986	7.5390.00020 40986
Attachment piece 6TE	Menekes	7.5395.00020 41431	7.5395.00020 41431	7.5395.00020 41431	7.5395.00020 41431
Terminal	-X10,-X12 Wieland	7.3149.01810 WKFN4/35 4mm ²	7.3149.01810 WKFN4/35 4mm ²	7.3149.01810 WKFN4/35 4mm ²	7.3149.01810 WKFN4/35 4mm ²
PE earth terminal	-X10 Wieland	7.3149.01830 WKFN4/SL/35 4mm ²	7.3149.01830 WKFN4/SL/35 4mm ²	7.3149.01830 WKFN4/SL/35 4mm ²	7.3149.01830 WKFN4/SL/35 4mm ²

Blatt 2	Bl.
UFABLG-01225.00	
Block diagram Battery charger Equipment parts list	
KAESER KOMPRESSOREN Ursprung: AFA01222_00	
Ersatz für:	
Ersatz durch:	
Datum	18.05.2009
Bearb.	Weid
Gepr.	Weid
Name	
Datum	
Änderung	



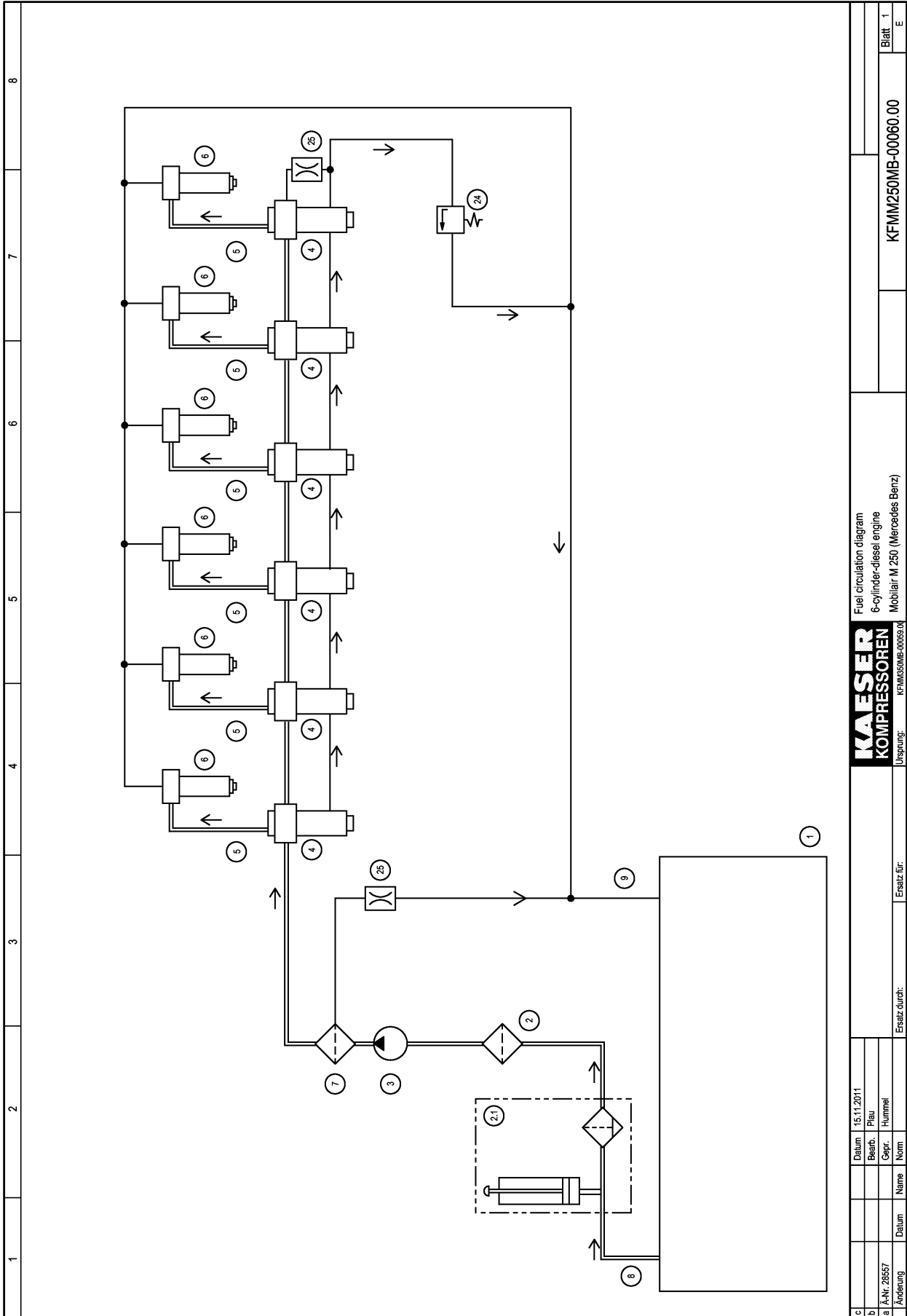
ATTENTION !!
Mains voltage reconnected: connection variant Power supply 230V/1~/N/PE/50Hz
All non-designated conductors 1,5 mm² H07V-K black

Function: Power supply		Battery charger		Display instruments		MOBILAIR	
c	Datum	18.05.2009	Circuit diagram		=		
b	Bearb. / Weid		Battery charger		+		
a	Gepr. / Weid		Power supply 230V/1~/N/PE		SFABLG-01225.00		Blatt 1
D	Änderung	Datum	Name	Norm	Ersatz durch:		Bl.
					Ursprung: AFA01222_00		



Function: Power supply		Battery charger		Display instruments		MOBLAIR M121	
Group of functions:							
c		Datum	18.05.2009	Circuit diagram			
b		Bearb.	Weld	Battery charger			
a		Gepr.	Weld	Power supply 400V/3~/N/PE		SFABLG-01225.00	
D	Anderung	Datum	Name	Ersatz für:	Blatt 2		Bl.

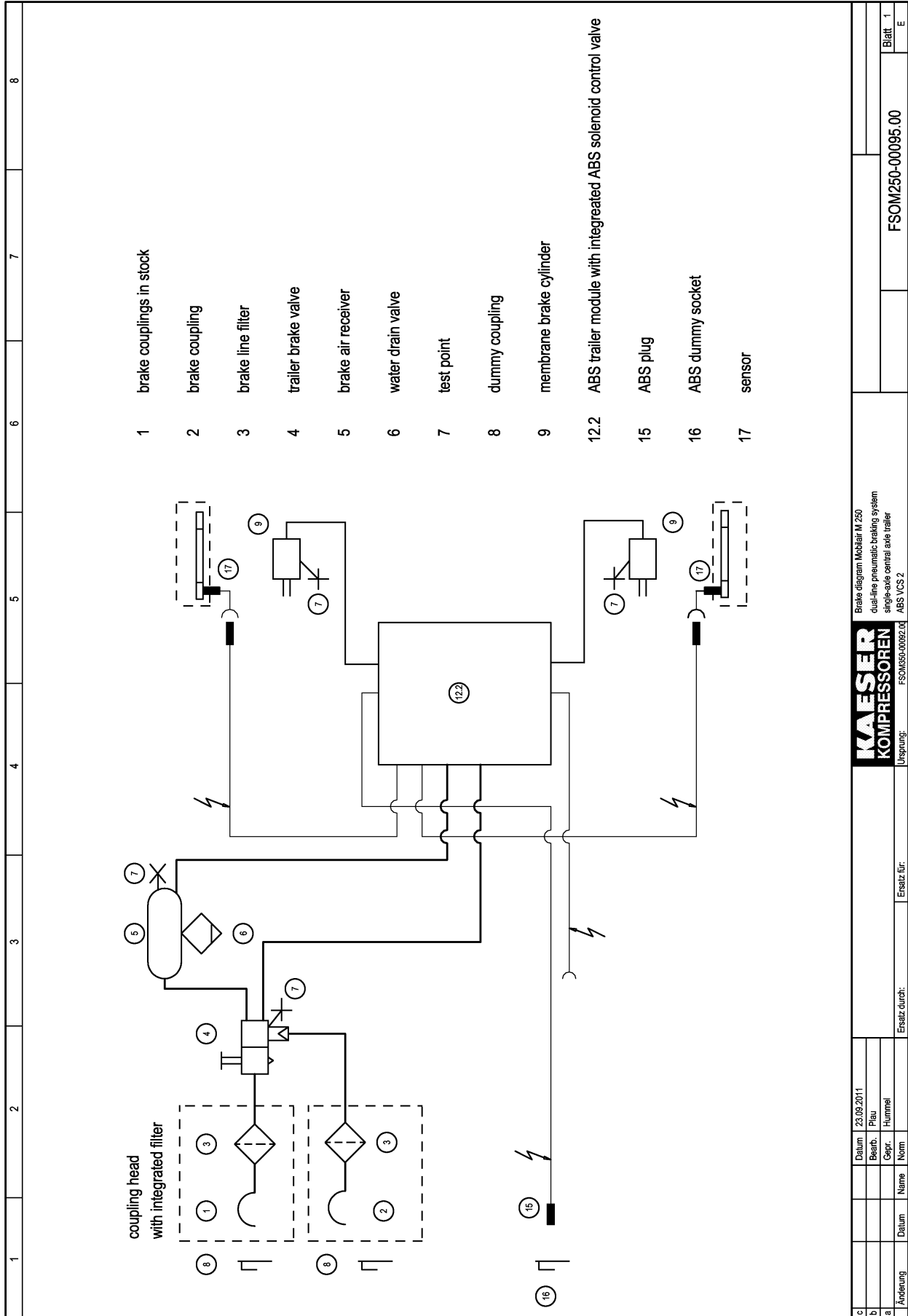
13.5 Fuel circulation diagram



Date		15.11.2011	Ersatz durch:		Ersatz für:		KFMM250MB-00060.00		Blatt 1	
Bearb.		Pflau	Ersatz durch:		Ersatz für:		KFMM250MB-00060.00		E	
a) A-Nr.		29557	Ersatz durch:		Ersatz für:		KFMM250MB-00060.00		E	
b) Name		Hummel	Ersatz durch:		Ersatz für:		KFMM250MB-00060.00		E	
c) Datum			Ersatz durch:		Ersatz für:		KFMM250MB-00060.00		E	

1	2	3	4	5	6	7	8	
		1 fuel tank						
		2 fuel prefilter						
		2.1 fuel prefilter with water separator and manual pump						
		3 fuel feed pump						
		4 injection pump						
		5 high pressure line						
		6 injection nozzle						
		7 fuel filter						
		8 fuel supply line						
		9 fuel return line						
		24 pressure retaining valve						
		25 nozzle						
c	Datum	15.11.2011	<p align="center">KAESER KOMPRESSOREN</p> <p align="right">Ursprung: KFM250MB-00060.00</p>					Fuel circulation diagram 6-cylinder-diesel engine Mobilair M 250 (Mercedes Benz)
b	Bearb.	Plau						
a	Gepr.	Hummel						
Änderung	Datum	Name	Ersatz durch:		Ersatz für:			Blatt 2 E

13.6 Option sl
Air brake diagram



13.7 Assembly diagrams - chassis**13.7.1 Assembly diagrams - EU chassis**

VEHICLE TECHNOLOGY
QUALITY FOR LIFE

	A	M16 x * x 8.8	6x
	B	M16 x 170 x 8.8 (DIN 981)	2x
	C	A17	8x
	D	18-10.9 (DIN 985)	8x
		M16: 210 Nm	

TYP VB

AL-KO FAHRGESTELLE

AL-KO

MADE IN [] IN []

Typ [] Nr. [] kg V []

A [] kg []

	A	M16x~x10.9 (DIN 931)	6x
	B	M16x170-8.8 (DIN 931)	2x
	C	A17 (DIN 125)	8x
	D	M16-10 (DIN 985)	8x
		M16: 21,0 Nm	

TYP 501 VB

AL-KO Fahrgestelle

3 Einprägung Zugdeichsel

Wiederholbarkeit
QUALITY FOR LIFE

13.7.2 Assembly diagrams - GB/US chassis

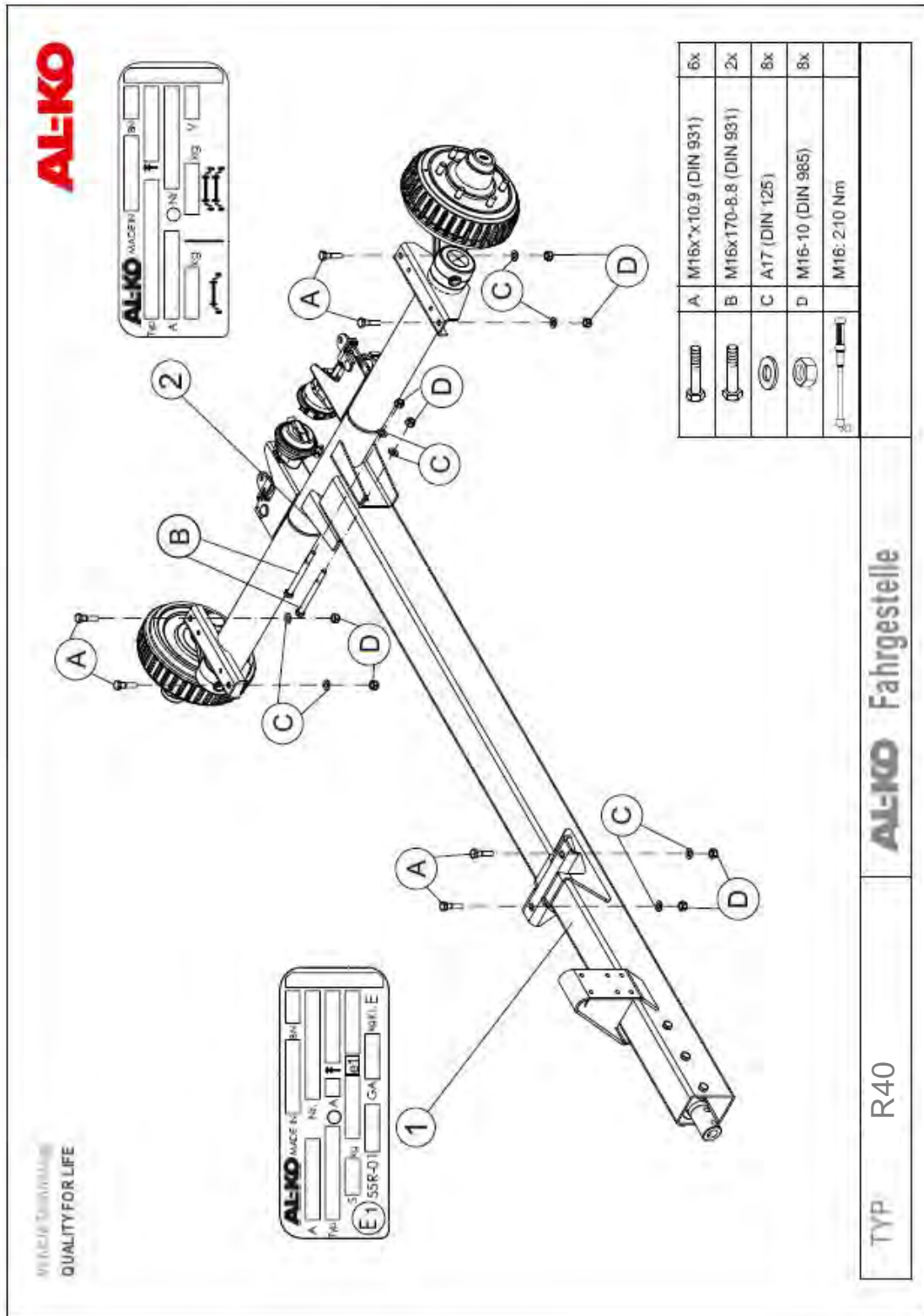
AL-KO

VEHICLE TECHNOLOGY
QUALITY FOR LIFE

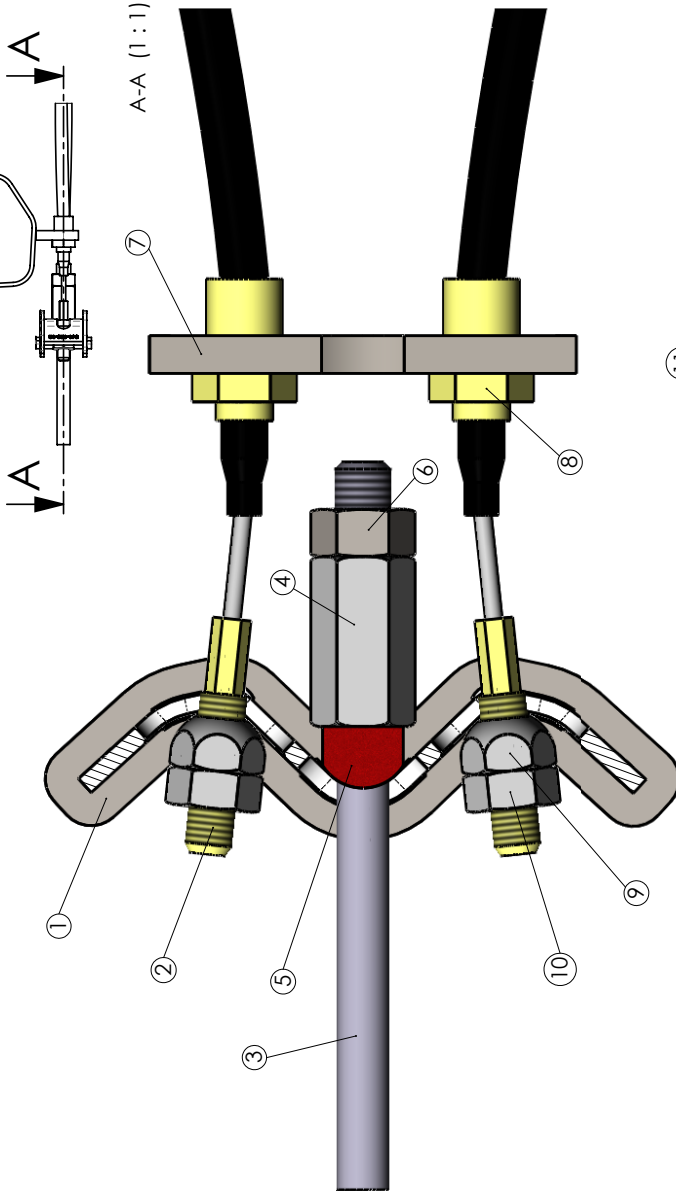
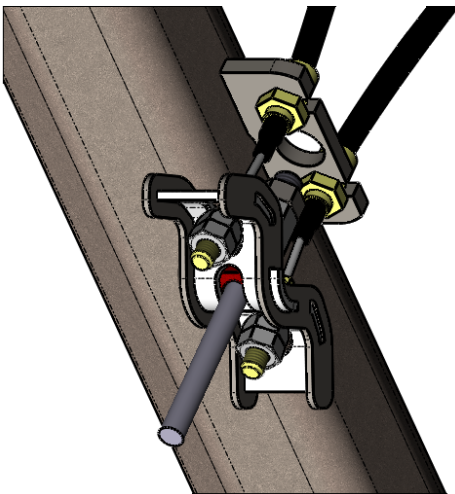
	A	M16 x * 8.8	2x
	B	M16 x 170 8.8	2x
	C	M16 x 150 10.9	3x
	D	A17	4x
	E	M16 10.9	7x
		M16 10.9: 250 Nm	
		M16 8.8: 200 Nm	

TYP R35

AL-KO FAHRGESTELLE



13.7.3 Assembly diagram brake rod



1. Bowdenzüge (2) am Achswiderlager (7) einstecken und mit Ski.-Mutter M16x1,5 (8) kontern.
Anziehdrehmoment 90-100 Nm.
1. Insert bowden cables (2) into abutment (7) and counter with hex. nut M16x1,5.
torque to 90-100 Nm.
2. Ausgleichsprofil (1) auf Bremsgestänge (3) aufschieben. Bowdenzüge (2) in Ausgleichsprofil (1) einrücken.
2. Put the balance bar (1) on the push brake rod (3). Arrange the bowden cables (2) into the balance bar (1).
3. Kugelmutter M10 (9) aufschrauben und anziehen. Mit Ski.-Mutter M10 (10) kontern.
Anziehdrehmoment 20-25Nm
3. Screw the ball nut M10 (9) and fix it. Counter with hex. nut M10 (10) torque to 20-25 Nm.
4. Distanzstück (5) auf Bremsgestänge (3) schieben. (Rundung zum Ausgleichsprofil)
4. Fit the distance plate on to the push brake rod. (with the curve to the balance bar)
5. Langmutter M10 oder M12 (4) aufschrauben und anziehen bis kein Spiel mehr vorhanden ist. Mit Ski.-Mutter M10 oder M12 (6) kontern.
Anziehdrehmoment für M10 20-25Nm
5. Srew the long nut M10 or M12 (4) and fix it until no tolerance is available. Counter with hex. nut M10 or M12 (6). torque to 20-25 Nm for M10 torque to 35-40 Nm for M12
6. Gestängehalter (11) wahlweise
6. Brake rod rear (11) optional

PDM-
Status:

Vers./Revis./Änderungstext	Werkstoff	Norm	Halbzeug	Norm	Materialnr.
Zul. Abweichung nach EN ISO 1302	-	-	-	-	-
Datum	Name	Gewicht	Bearb. Name: MUSKIEFORZ	Datum: 10.10.2014	Projekt: -
Benennung: MONTPLAN AUSGLEICHSPR R13 EA3062-3081					
Materialnr. 694918					
Klass.-Nr. 904050					
Maßstab 1:4					
Bl.-Anz. 1					
Format A3					
Urspr. Es. f.					

13.8 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 uitgeoerd, 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 suoritettuina 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 personskade eller dødsfall hvis de ikke utføres på korrekt måte.
- Fremhæver handlinger eller fremgangsmåder, som kan medføre personskade eller dødsfald, hvis de ikke udføres 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 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 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.
- Tőstáb esile toimingud või protseduurid, mis võivad teostamisel korral võivad põhjustada kehavigastusi või surma.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása súlyos vagy végzetes személyi sérülést 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 mirtį.
- Указывает на действия, ненадлежащее выполнение которых может привести к нанесению вреда здоровью или смерти
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajanju poškodujejo človeka ali povzročijo smrt.
- Doğru bir şekilde yerine getirilmediği takdirde bu ürüne hasar verebilecek işlem ve süreçleri vurgular.
- Tissottolinea l-azzjonijiet jew il-proċeduri, li jekk ma jsirux kif suppost, jista' jkun hemm korrimnt 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 uitgeoerd, 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 suoritettuina saattavat vaurioittaa tätä 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.
- Fremhæver 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 ζημιό 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 môžu viesť k poškodeniu tohto výrobku.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést k poškození tohoto výrobku.
- Tőstáb esile toimingud või protseduurid, mis võivad teostamisel korral võivad kääsolestat 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 šį gaminį.
- Указывает на действия, ненадлежащее выполнение которых может привести к повреждениям данного изделия
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajanju poškodujejo izdelek.
- Doğru bir şekilde yerine getirilmediği takdirde yaralanma ya da ölüme yol açabilecek işlem ve süreçleri vurgular
- Tissottolinea l-azzjonijiet jew il-proċeduri, 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
- Jāvalkā piemēroti cimdi.
- Работы должны проводиться в соответствующих перчатках
- Uygun eldiven giyimelidir
- 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 puestos guantes apropiados.
- Indossare guanti di protezione.
- Je nutné použiť vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia mūvēti tinkamas pirštines.
- Uporabiti je treba ustrezne rokavice.
- Ghandhom jintlibsu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggoeien 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.
- Fremhæver kravene til bortskaftelse af udtjente dele og affald.
- Επισημαίνει τις απαιτήσεις απόρριψης των χρησιμοποιημένων εξαρτημάτων και των απορριμμάτων
- 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.
- Tőstáb esile kasutatud osade ja jääkide utiliseerimisele esitatavad nõuded
- A használt alkatrészek és a hulladék megfelelő módon történő elhelyezésére hívja fel a figyelmet.
- Uzsver prasības tam, kā atbrīvoties no lietotajām detaļām un atkritumiem.
- Žymi panaudotų dalių ir atliekų išmetimo reikalavimus.
- Указывает на требования по уничтожению использованных деталей и отходов
- Označuje zahteve za odlaganje rabljenih delov in odpadkov.
- Kullanılmış parçaların ve atıkların atılmasına ilişkin gereklilikleri vurgular
- Tissottolinea l-kundizzjonijiet biex wiehed jarmi l-partijiet uzati u l-iskart
- Evidențiază cerințele pentru depunerea la deșeurii a pieselor uzate și a reziduurilor.

	<ul style="list-style-type: none"> • Pressure. • Paine. • Πίεση • Ciśnienie • Nyomás alatt. • Tlak 	<ul style="list-style-type: none"> • Druk • Tryck • Presión. • Tlak.. • Spiediëns. • Basınç 	<ul style="list-style-type: none"> • Druck. • Trykk • Pressão. • Tlak. • Slëgis. • Pressjoni 	<ul style="list-style-type: none"> • Pression. • Tryk • Pressione. • Surve. • Давление • Presiune.
	<ul style="list-style-type: none"> • Release Pressure. • Évacuacion de pression. • Avlast trykk • Despresurizar. • Ciśnienie spustowe • Surve väljalase • Išleiskite slëgį. • Basıncı Kaldırın 	<ul style="list-style-type: none"> • Druk aflaten. • Vapauta paine. • Aflast tryk • Liberta Pressão. • Uvolnëní tlaku. • Engedje ki a nyomást. • Evente cserélje • Справитъ давление • Nehhi l-pressjoni 	<ul style="list-style-type: none"> • Druck ablassen. • Tryckutsläpp. • Εκτόνωση πίεσης • Scaricare la pressione. • Uvolnëní tlaku. • Pazeminiet spiedienu. • Sprostitev tlaka. • Depresurizare. 	
	<ul style="list-style-type: none"> • Replace every year • Remplacer tous les ans. • Skift ut hvert år • Sustituir anualmente • Należy wymieniać raz w roku • Asendage igal aastal • Keiskite kartä per metus • Her yıl deđiştirin 	<ul style="list-style-type: none"> • Elk jaar vervangen • Vaihda vuosittain. • Udskift en gang om året • Substituir todos os anos • Každý rok vymieňajte • Evente cserélje • Заменять каждый год. • Ibdel kull sena 	<ul style="list-style-type: none"> • Jährlich austauschen • Byt varje år • Αντικατάσταση κάθε χρόνου • Sostituire ogni anno • Nutná výměna každý rok. • Nomainiet reizi gadā • Zamenjajte vsako leto. • Inlocuire anuală 	
	<ul style="list-style-type: none"> • Filter housing / Model • Logement du filtre/modèle. • Filterhus/-modell • Caja de filtro/modelo. • Obudowa filtra / model. • Filtri korpus/mudel • Filtro korpusas / modelis • Filtre muhafazası / Model 	<ul style="list-style-type: none"> • Filterhuis / Model • Suodatinkotelo/-malli • Filterhus/modell • Caixa / Modelo do filtro • Kryt filtra / Model • Szűrőház / típus • Корпус фильтра / модель • Kontenitur tal-filtru - Mudell 	<ul style="list-style-type: none"> • Filtergehäuse / Modell • Filterhus/modell • Υποδοχή/μοντέλο φίλτρου • Corpo del filtro / Modello • Kryt filtru / Model • Filtra korpus / modelis • Ohšje filtra / Model • Carcasă filtru / Model 	
	<ul style="list-style-type: none"> • High efficiency filter element • Hochleistungsfilterelement • Tehokas suodatinelementti • Høyeffektivt filterelement • Φίλτρο υψηλής απόδοσης • Elemento do filtro de elevado rendimento • Wysokowydajny wkład filtra • Vysoce účinný filtrační prvek • Nagy hatékonyságú szűrőelem • Labai efektyvus filtravimo elementas • Visoko učinkovit filtrirni element • Element tal-filtru b'effiċjenza kbira 	<ul style="list-style-type: none"> • Zeer efficiënt filterelement • Cartouche filtrante haute efficacité. • Høgeffektivt filterelement • Høgeffektivt filterelement • Elemento filtrante de gran eficiencia. • Elemento filtrante ad alta efficienza • Vysoko účinný filtrační článok • Kõrgtootlik filterelement • Augstas produktivitātes filtra elements • Высокоэффективный фильтрующий элемент • Yüksek etkinlikli filtre öğesi • Element filtrant cu eficiență ridicată 		
	<ul style="list-style-type: none"> • Ensure correct tool is used • Zorg dat het juiste gereedschap wordt gebruik • Vérifier que les outils adéquats sont utilisés. • Se till att rätt verktyg används. • Sørg for at benytte korrekt værktøj • Asegúrese de que se utiliza la herramienta adecuada • Assicurarsi di utilizzare l'utensile corretto • Uistíte sa, že používate správny nástroj • Tagage õige tööriista kasutamise • Izmantojiet tikai atbilstošus darbarīkus • Убедитесь, что используется правильный инструмент • Doğru alet kullanılması sağlayın 	<ul style="list-style-type: none"> • Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden. • Käyttävä oikeaa työkalua • Pass på at korrekt verktoy brukes • Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο • Certifique-se de que é utilizada a ferramenta correcta • Należy używać odpowiedniego narzędzia. • Zkontrolujte použití správného nástroje • Mindig a célnak megfelelő szerszámot használja • Istitikikite, kad naudojamais reikiamas įrankis • Poskrbite, da boste uporabili ustrezno orodje • Kun žgur li tintuža l-ghodda t-tajba • Asigurați-vă că este utilizată scula corectă 		
	<ul style="list-style-type: none"> • Next service date (month/year) • Nächster Wartungstermin (Monat/Jahr) • Seuraava huollon päivämäärä (kuukausi/vuosi) • Neste servicedato (månad/år) • Επόμενη ημερομηνία σέρβις (μήνας / έτος) • Data da próxima intervenção técnica (mês / ano) • Data następnego serwisu (miesiąc/rok) • Datum příští prohlídky (měsíc / rok) • Következő szerviz dátuma (hó / év) • Kitos techninės priežiūros data (mėnuo / metai) • Datum naslednjega servisa (mesec / leto) • Id-data tas-servis li jmiss (xahar / sena) 	<ul style="list-style-type: none"> • Volgende onderhoudsdatum (maand / jaar) • Date de la prochaine révision (mois/année) • Nästa servicedatum (månad/år) • Næste servicedato (måned/år) • Fecha de siguiente revisión (mes/año) • Prossimo intervento di assistenza (mese / anno) • Dátum nasledujúcej opravy (mesiac/rok) • Järgmise hoolduse kuupäev (kuu / aasta) • Nākamais apkopes datums (mēnesis / gads) • Дата следующего обслуживания (месяц/год) • Bir sonraki servis tarihi (ay / yıl) • Data următoarei vizite de service (lună/an) 		

**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 vaatiessa 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 produkt 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

AO, AA, ACS, AR, AAR 005 - 055

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 uživatelskou příručku uschovejte pro pozdější potřebu.

Hoiatus!

Toote paigaldamine ja hooldamine on lubatud ainult pädeval, vastavate volitustega töötajal, kes tegutseb kasutusjuhendi nõudeid, asjakohaseid 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 mindig elérhető helyen

Brīdinājums!

Iekārtas uzstādīšanu 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

Įspėjimas!

Montuoti ir prižiūrėti šį gaminį gali tik kompetentingi ir įgalioti darbuotojai, griežtai laikydamiesi šių naudojimo instrukcijų, visų atitinkamų standartų bei teisinių reikalavimų, jei tai yra taikytina.

Pasilikite šį vartotojo vadovą, jame esančios informacijos gali prireikti 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.

Сохраниите это руководство пользователя, чтобы обращаться к нему в дальнейшем

Opozorilo!

Izdelek lahko namestijo in vzdržujejo le usposobljeni in pooblašteni 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 ghandu jiġi installat u jinghata l-manutenzjoni minn personal kompetenti u awtorizzat biss, taht sorveljanza stretta ta' dawn l-istruzzjonijiet tat-thaddim, u kwalunkwe standards u htigijiet legali rilevanti fejn hu xieraq.

Erfä' din il-gwida biex tikkonsultaha 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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Model	BSPT/NPT Port Size	Flow Rate	Dimensions	Weight	Operating Parameters	Filter Grade	Filter Models	Max Operating Pressure	Max Operating Temperature	Min Operating Temperature
Model	BSPT/NPT poortafmeting	Stroom snelheid	Afmetingen	Gewicht	Bedrijfs parameters	Filter kwaliteitsgraad	Filter modellen	Maximale bedrijfs temperatuur	Maximale bedrijfs temperatuur	Minimale bedrijfs temperatuur
Modell	BSPT/NPT Anschlussgröße	Durchflussrate	Abmessungen	Gewicht	Betriebsparameter	Filterklasse	Filtermodell	Max. Betriebsdruck	Max. Betriebstemperatur	Min. Betriebstemperatur
Modèle	Taille du port BSPT/NPT	Débit	Dimensions	Poids	Paramètres de fonctionnement	Grade de filtres	Modèles de filtres	Pression de fonctionnement max.	Température de fonctionnement max.	Température de fonctionnement min.
Maili	BSPT NPT- portin koko	Virtausnopeus	Mitat	Paino	Käyttöparametrit	Suodatinluokka	Suodatinmallit	Suurin käyttöpaino	Suurin käyttölämpötila	Pienin käyttölämpötila
Modell	BSPT NPT- öppningsstorlek	Flödes-hastighet	Mått	Vikt	Driftsparametrar	Filter-klass	Filter-modeller	Högsta driftstryck	Högsta drifts-temperatur	Lågsta drifts-temperatur
Modell	BSPT NPT- Portstørrelse	Strømnings-hastighet	Mål	Vekt	Driftsparametere	Filter-type	Filter-modeller:	Maks. drifts-trykk	Maks. drifts-temperatur	Min. drifts-temperatur
Modell	BSPT NPT- portstørrelse	Flow-hastighed	Mål	Vægt	Driftsparametre	Filter-kvalitet	Filter-modeller	Maks. drifts-tryk	Maks. drifts-temperatur	Min. drifts-temperatur
Μοντέλο	Μέγεθος θύρας BSPT/NPT	Ρυθμός παροχής	Διαστάσεις	Βάρος	Παράμετροι λειτουργίας	Κατηγορία φίλτρου	Μοντέλα φίλτρων	Μέγ. πίεση λειτουργίας	Μέγ. θερμοκρασία λειτουργίας	Ελάχισ. θερμοκρασία λειτουργίας
Modelo	Tamaño de puerto BSPT/NPT	Caudal	Dimensiones	Peso	Parámetros de funcionamiento	Grado del filtro	Modelos de filtros	Presión de funcionamiento máxima	Temperatura de funcionamiento máxima	Temperatura de funcionamiento mínima
Modelo	Tamanho da Porta BSPT NPT	Taxa de Fluxo	Dimensões	Peso	Parâmetros de Funcionamento	Grau do Filtro	Modelos do Filtro	Pressão Máx. de Funcionamento	Temperatura Máxima de Funcionamento	Temperatura Mínima de Funcionamento
Modello	Dimensioni collegamento BSPT/NPT	Portata	Dimensioni	Peso	Parametri di esercizio	Grado di filtrazione	Filtri	Pressione di esercizio massima	Temperatura di esercizio massima	Temperatura di esercizio minima
Model	Wielkość otworu BSPT/NPT	Prędkość przepływu	Wymiary	Ciężar	Parametry pracy	Klasa filtra	Typy filtrów	Maks. ciśnienie robocze	Maks. temperatura pracy	Min. temperatura pracy
Model	BSPT/NPT Velikost portu	Prietoková rychlost Rate	Rozměry	Hmotnost	Prevádzkové parametre	Trieda filtra	Typy filtrov	Max. prevádzkový tlak	Max. prevádzková teplota	Min. prevádzková teplota
Model	BSPT/NPT Velikost závitů BSPT/NPT	Rychlost průtoku	Rozměry	Hmotnost	Provozní parametry	Klasifikace filtru	Modely filtru	Maximální provozní tlak	Maximální provozní teplota	Minimální provozní teplota
Model	BSPT/NPT porti suurus	Voolukulu	Mõõtmed	Kaal	Talitusparameetrid	Filtratsiooniaste	Filtri mudelid	Maksimaalne töösurve	Maksimaalne töötemperatuur	Minimaalne töötemperatuur
Tipus	BSPT/NPT Csőcsomok mérete	Áramlási sebesség	Méretek	Tömeg	Üzemi paraméterek	Szűrő fokozat	Szűrő típusa	Max. üzemi nyomás	Max. üzemi hőmérséklet	Min. üzemi hőmérséklet
Modelis	BSPT/NPT porta lielums	Plūsmas ātrums	Izmēri	Svars	Darbības parametri	Filteru kategorija	Filteru modeļi	Maks. darbības spiediens	Maks. darbības temperatūra	Min. darbības temperatūra
Modelis	BSPT/NPT Prievado dydis	Srauto tekmgreitiss	Matmenys	Svoris	Darbiniai parametrai	Filtro klasė	Filtro modeliai	Maks. darbinis slėgis	Maks. darbinė temperatūra	Min. darbinė temperatūra
Модель	Диаметр отверстия BSPT/NPT	Скоростота	Габариты	Вес	Рабочие параметры	Качество фильтра	Модели фильтров	Макс. рабочее давление	Макс. рабочая температура	Мин. рабочая температура
Model	Velikost vrat BSPT/NPT	Hitrost pretoka	Mere	Teža	Delovni parametri	Razred filtra	Modeli filtrov	Maks. delovni tlak	Maks. delovna temperatura	Min. delovna temperatura
Model	BSPT/NPT Port Boyu	Akım Hızı	Boyutlar	Ağırlık	İşletim Parametreleri	Filtre Derecesi	Filtre Modelleri	Azami İşletme Basıncı	Azami İşletme Isısı	Asgari İşletme Isısı
Mudell	Daçs tal-Port BSPT/NPT	Rata tal-Fluss	Dimensjonijiet	Piż	Parametri ta l-Operat	Grad tal-Filtro	Mudelli tal-Filtro	Pressjoni Massima ta' l-Operat	Temperatura Massima ta' l-Operat	Temperatura Minima ta' l-Operat
Mode	Dimensione port BSPT/NPT	Debi	Dimensioni	Greutate	Parametri de funcționare	Gradul filtrului	Modele de filtr	Presiune maximă, de funcționare	Temperatură maximă, de funcționare	Temperatură minimă, de funcționare

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- Tehniskā specifikācija • Tehninė specifikacija • Технические характеристики • Tehnične specifikacije • Teknik Spesifikasyon
- Specifikazzjoni Teknika • **Specificație tehnică**

Model	Pipe Size	L/s	m ³ /min	m ³ /hr	cfm
005A	¼"	6	0.4	22	13
005B	⅜"	6	0.4	22	13
005C	½"	6	0.4	22	13
010A	¼"	10	0.6	36	21
010B	⅜"	10	0.6	36	21
010C	½"	10	0.6	36	21
015B	⅜"	20	1.2	72	42
015C	½"	20	1.2	72	42
020C	½"	30	1.8	108	64
020D	¾"	30	1.8	108	64
020E	1"	30	1.8	108	64
025D	¾"	60	3.6	216	127
025E	1"	60	3.6	216	127
030E	1"	110	6.6	396	233
030F	1¼"	110	6.6	396	233
030G	1½"	110	6.6	396	233
035F	1¼"	160	9.6	576	339
035G	1½"	160	9.6	576	339
040G	1½"	220	13.2	792	466
040H	2"	220	13.2	792	466
045H	2"	330	19.8	1188	699
050I	2½"	430	25.9	1548	911
050J	3"	430	25.9	1548	911
055I	2½"	620	37.3	2232	1314
055J	3"	620	37.3	2232	1314

BSPT / NPT

AA005A □ FX

— B = BSPT

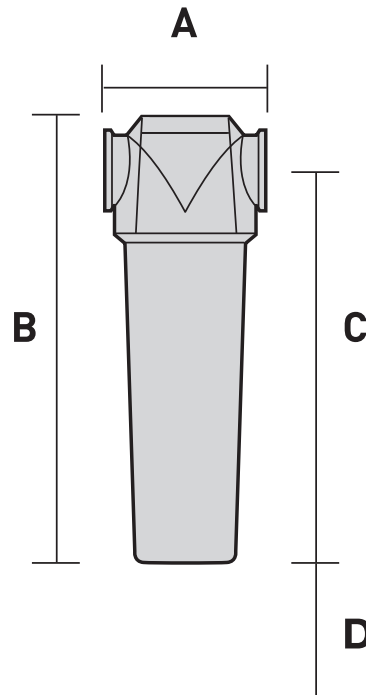
— N = NPT

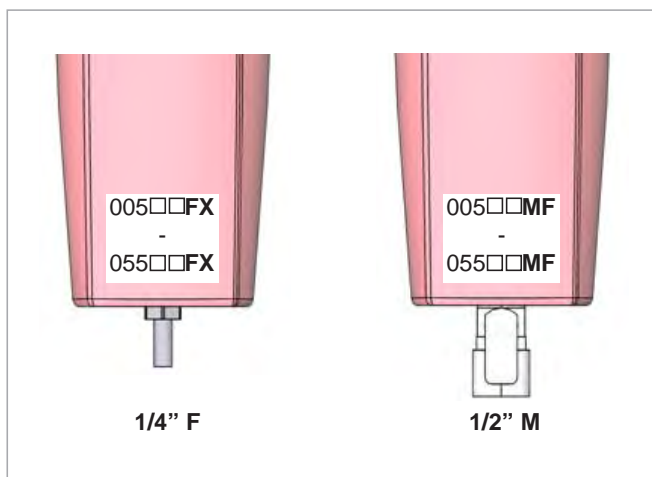
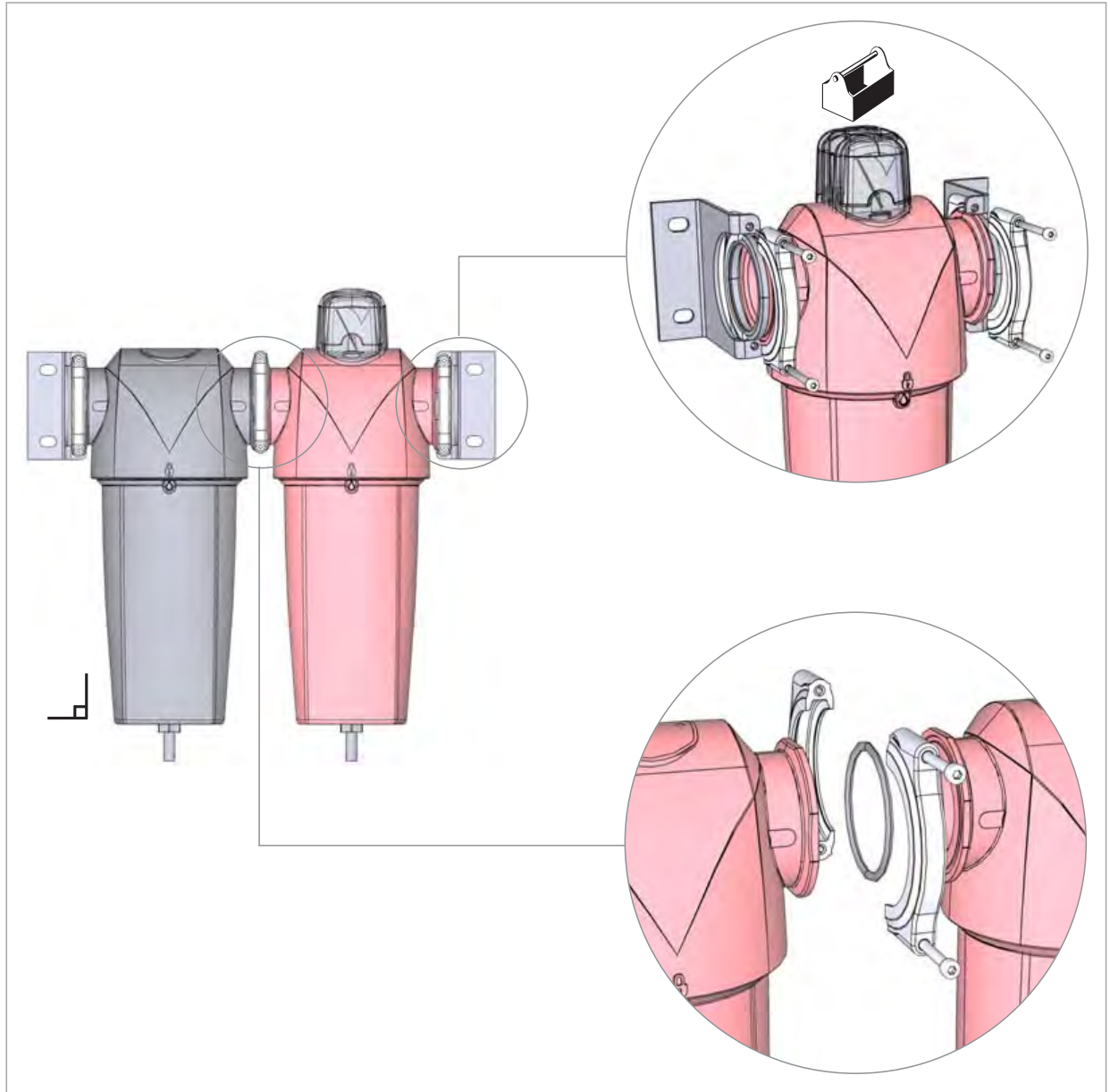
Filter Grade	Models	Max Operating Pressure		Max Recommended Operating Temperature		Min Recommended Operating Temperature	
		bar g	psi g	Temperature		Temperature	
AO	005 □ □ F □ -055 □ □ F □	16	232	80°C	176°F	1.5°C	35°F
AO	005 □ □ M □ -055 □ □ M □	20	290	100°C	212°F	1.5°C	35°F
AA	005 □ □ F □ -055 □ □ 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

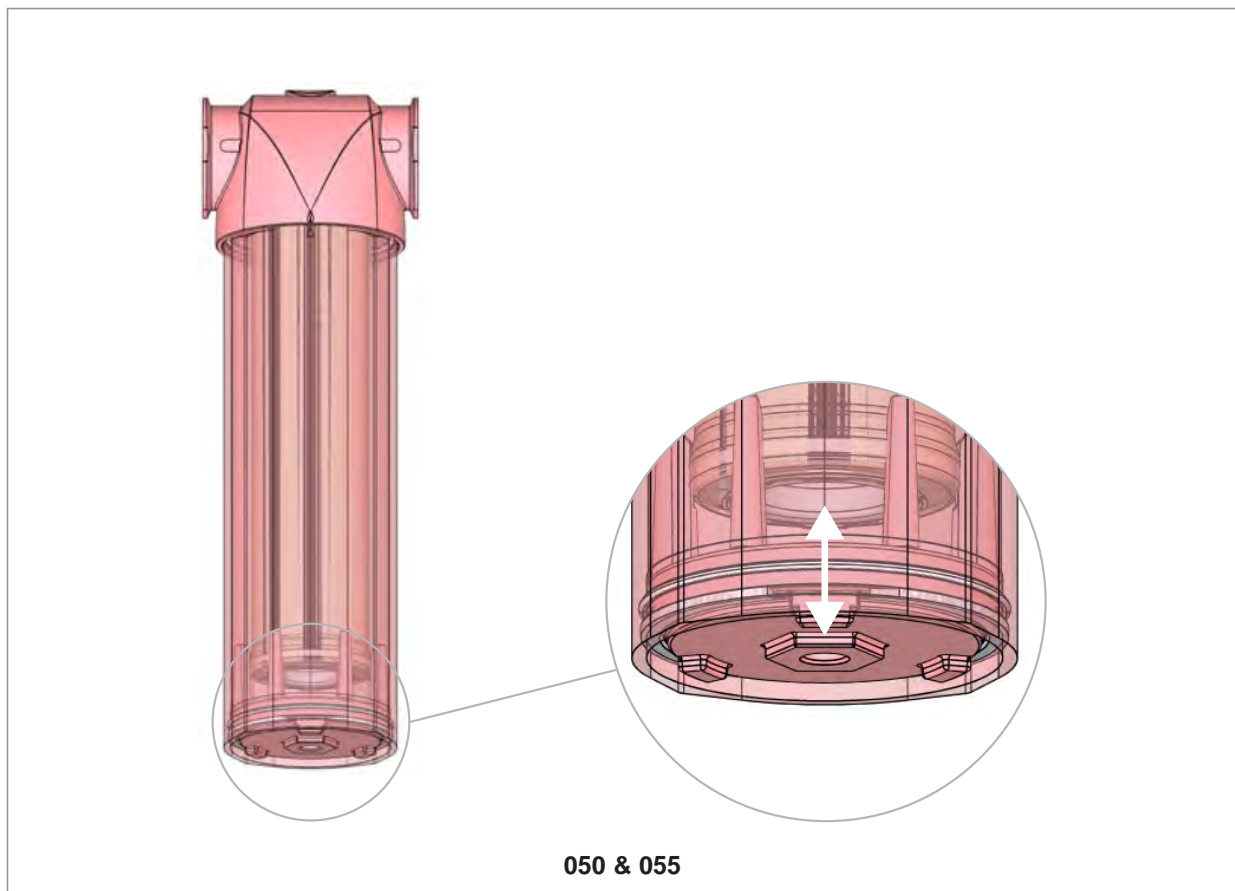
Weights and Dimensions

- Gewichten en afmetingen • Gewicht und Abmessungen • Poids et dimensions • Painot ja mitat • Vikter och mått • Vekt og dimensjone
- Vægt og mål • VΨgt og m'l • Pesos y dimensiones • Pesos e Dimensões • Pesi e dimensioni • Ciężary i wymiary • Hmotnosti a rozmery
- Hmotnost a rozměry • Kaalud ja mõõtmed • Tömeg és méretek • Svarts un izmēri • Svoris ir matmenys • Вес и габариты • Teže in mere
- Ağırlıklar ve Boyutlar • Pizijiet u Dimensjonijiet • **Greutāji ņi dimensiuni**

Model	Pipe Size	A		B		C		D		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
005A	¼"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
005B	¾"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
005C	½"	76	3	154.5	6.1	126.5	5	40	1.58	0.5	1.1
010A	¼"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
010B	¾"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
010C	½"	76	3	181.5	7.2	153	6	40	1.58	0.6	1.3
015B	¾"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
015C	½"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
020C	½"	97.5	3.8	235	9.3	201	7.9	50	1.97	1.1	2.4
020D	¾"	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	¾"	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	1¼"	129	5.1	364.5	14.3	322	12.7	70	2.76	2.7	2.9
030G	1½"	129	5.1	364.5	14.3	322	12.7	70	2.76	2.7	2.9
035F	1¼"	170	6.7	432.5	17	382.5	15.1	100	3.94	5.1	11.2
035G	1½"	170	6.7	432.5	17	382.5	15.1	100	3.94	5.1	11.2
040G	1½"	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	2½"	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	2½"	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 rubbas när 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.

AO, AA, ACS, AR, AAR 005 - 055

- (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 filtrė nėra slėgio, apatinė uždaromoji plokštė gali judėti.
- (RU)** Если фильтр не загерметизирован, 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 gżandhom 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 betjening
- **Start og drift** • Έναρξη λειτουργίας και χειρισμός • **Puesta en marcha y funcionamiento** • Arranque e Operação • **Avvio e funzionamento**
- Uruchromienie 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 Tixghel u Kif Thadden**

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.

AO, AA, ACS, AR, AAR 005 - 055

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. Aprete lentamente la valvola di mandata per aumentare gradualmente la pressione nell'unità.
2. Aprete 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 opätovné 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 znovu natlakujte potrubí ve směru rozvodu.

Přívodní ani výstupní ventily neotvírejte rychle, ani jednotku nevystavujte nadměrným rozdílům tlaku, v opačném případě může dojít k poškození.

ET

1. Üksuse järkjärguliseks survestamiseks avage sisselaskeventiil aeglaselt.
2. Surve taastamiseks väljavoolutorustikus avage väljalaskeventiil aeglaselt.

Sisselaske- ja väljalaskeventiile ei tohi avada kiiresti ega põhjustada üksuses liiga suurt surveelangu, 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 nyomáskülönbségnek.

AO, AA, ACS, AR, AAR 005 - 055

(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. Lētai atidarydami įleidimo vožtuvą, palaipsniui sudarykite slėgį įrenginyje.
2. Lėtai atidarydami išleidimo vožtuvą, iš naujo sudarykite slėgį pasroviui esančiame vamzdyne

Negalima staigiai atidaryti įleidimo ar išleidimo vožtuvų, nei paveikti įrenginio pernelyg dideliu diferencialiniu slėgiu, 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. Počasni 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 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)

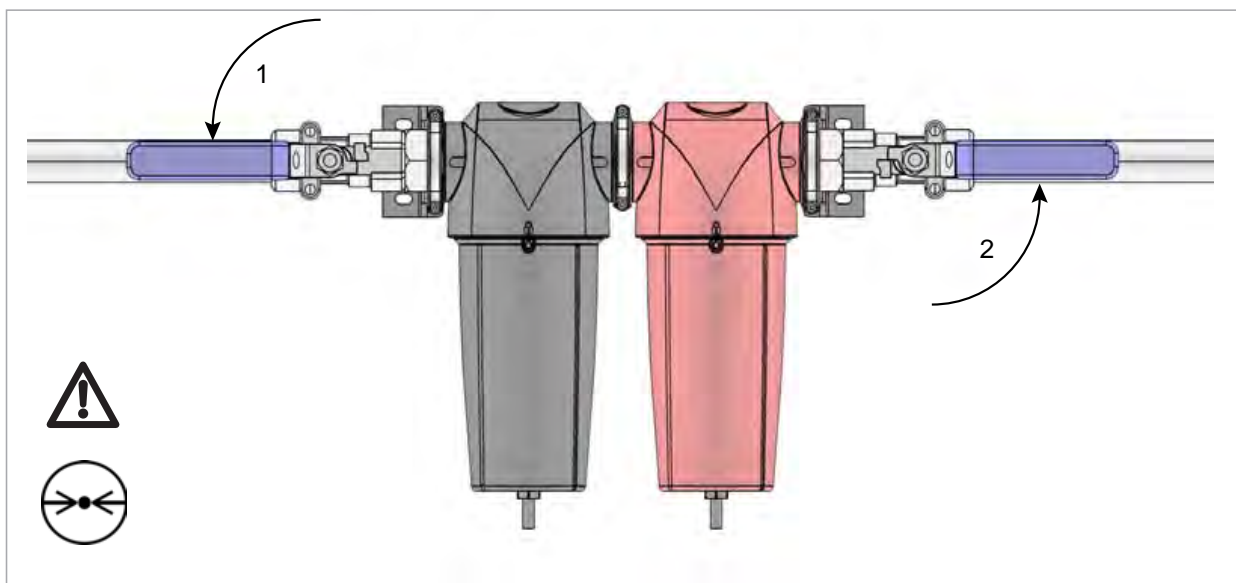
1. Ifтах il-valv tad-dhul bil-mod, biex bil-mod tizzied il-pressjoni fit-tagħmir.
2. Ifтах il-valv tal-hruġ bil-mod biex terġa' tibni l-pressjoni fil-pajps li jwasslu 'l isfel

Ara li ma tiftaħx il-valvs tad-dhul jew tal-hruġ f'daqqa jew b'xi mod tikkawza differenza eċċessiva fil-pressjoni tat-tagħmir għax 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

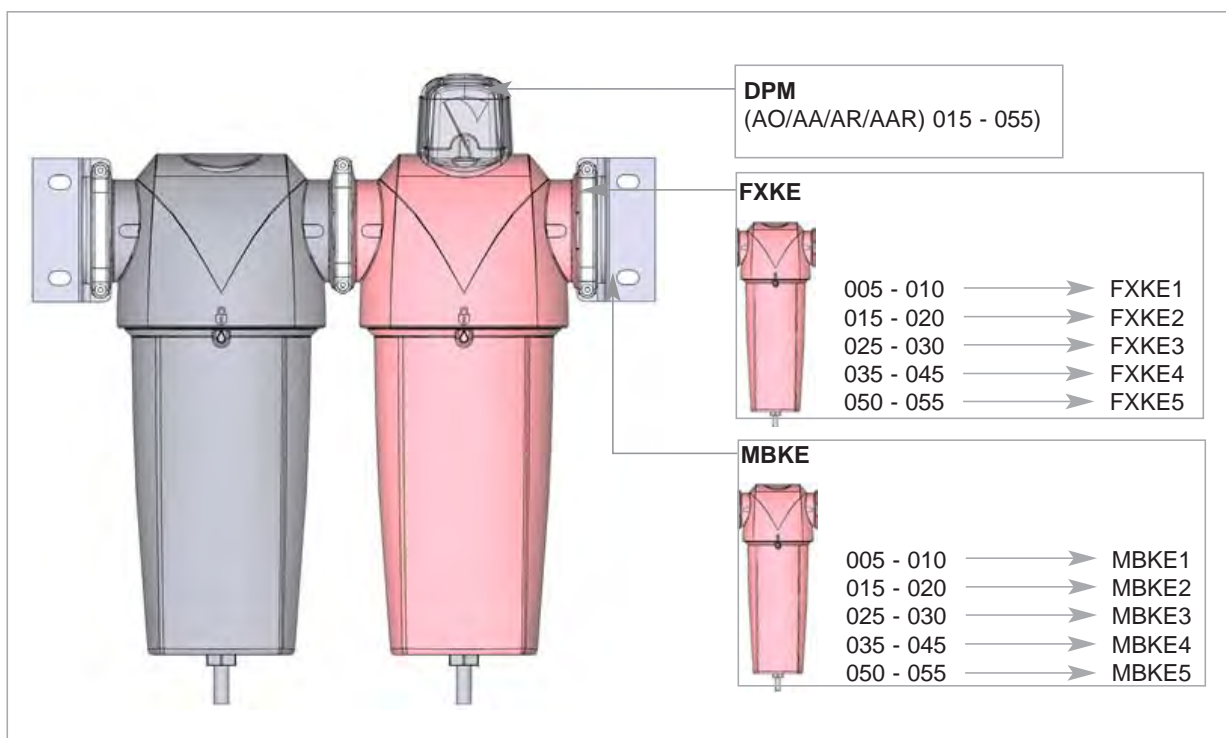
Nu deschideți rapid supapele de admisie sau de evacuare și nu supuneți aparatul la o diferență excesivă de presiune; În caz contrar, aparatul poate suferi deteriorări



AO, AA, ACS, AR, AAR 005 - 055

4. Accessories


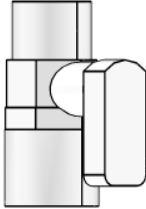
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- Wyposażenie • Príslušenstvo • Příslušenství • Tarvikud • Tartozékok • Piederumi • Priedai • Принадлежности • Dodatna oprema
- Aksesuarlar • Accessorji • Accesorii

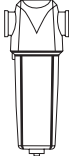

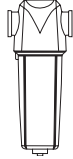




AO, AA, ACS, AR, AAR 005 - 055

5. Spare Parts (Service Kits)

- Reserve-onderdelen (servicekits) • Ersatzteile (Service-Kits) • Pièces de rechange (nécessaires d'entretien) • Varaosat (Huoltopakkaukset)
- Reservdelar (servicesatser) • Reservdeler (service-sett) • Reservedele (Servicekit) • Ανταλλακτικά (Πακέτο 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 (hooldekomplektid)
- Pótalkatrészek (szervizkészletek) • Rezerwes części (apkopes komplekti) • Atsarginės dalys (priežiros detalių komplektai)
- Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • Yedek parça (Servis kitleri) • Partijiet Għat-Tibdil (Kitts tas-Servizz) • Piese de schimb (Truse de service)

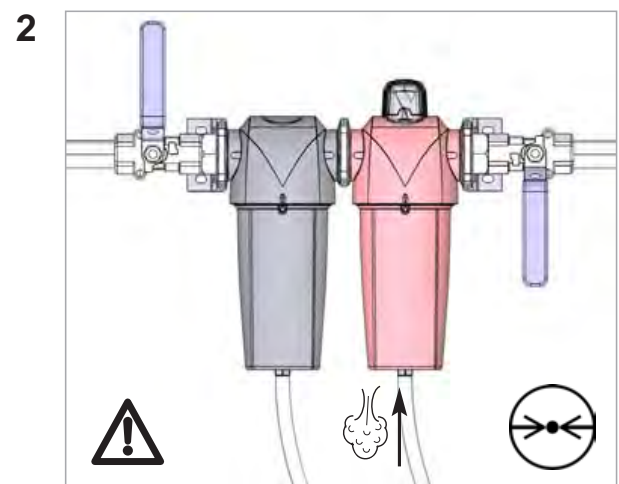
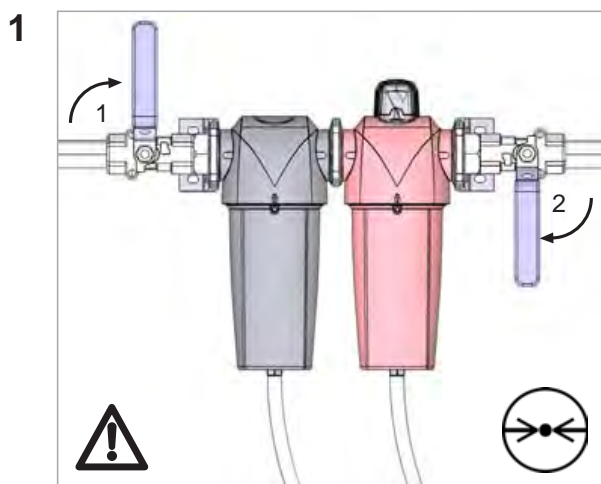
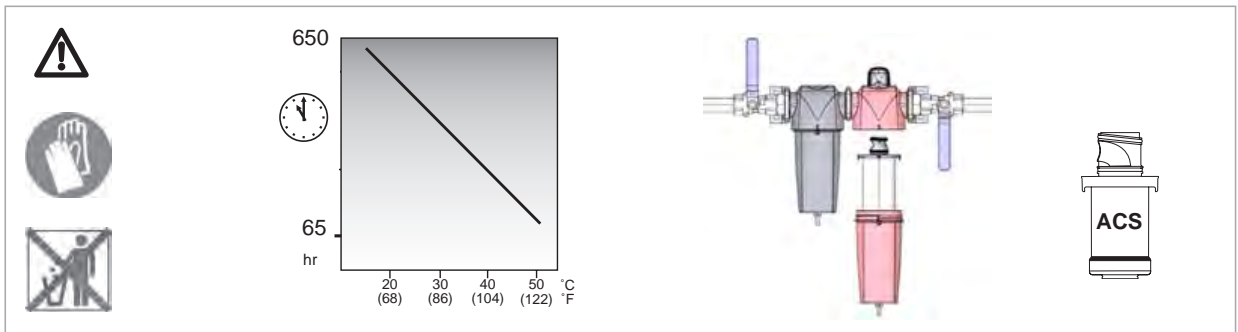
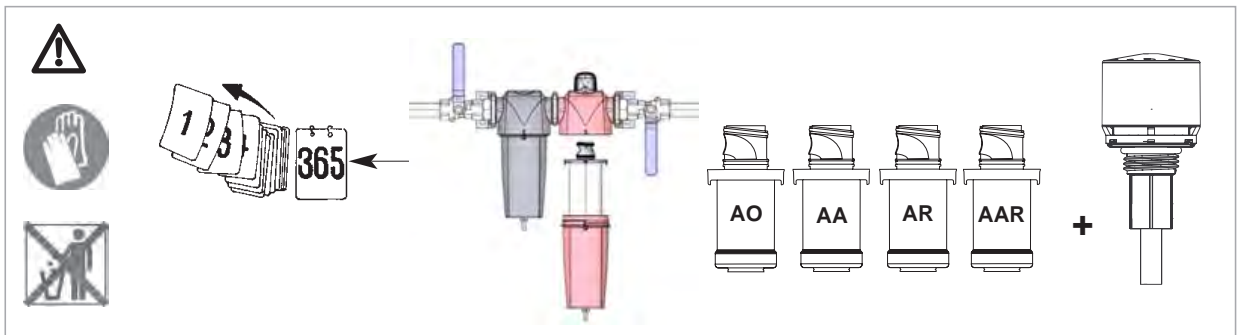
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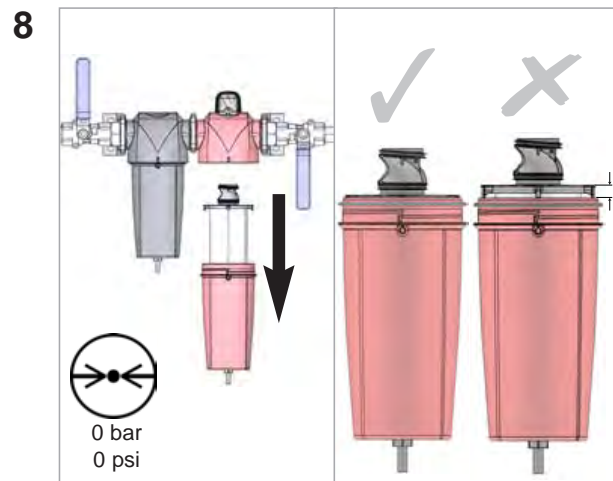
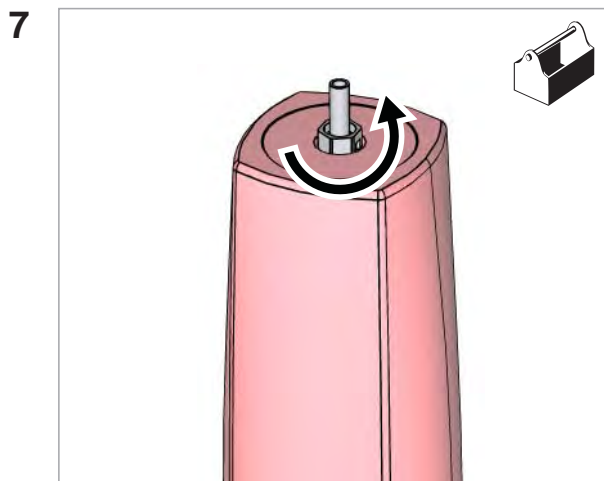
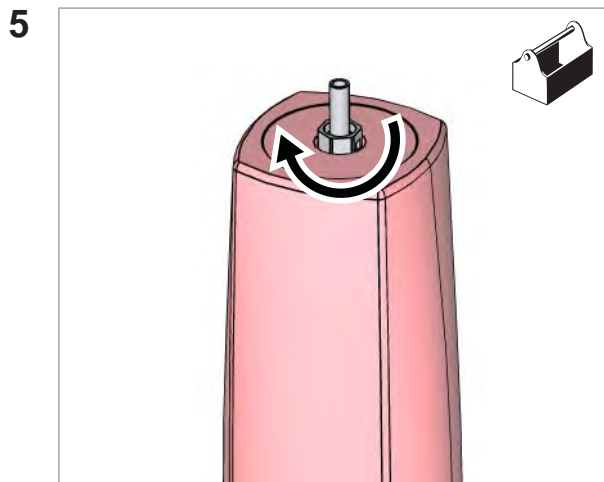
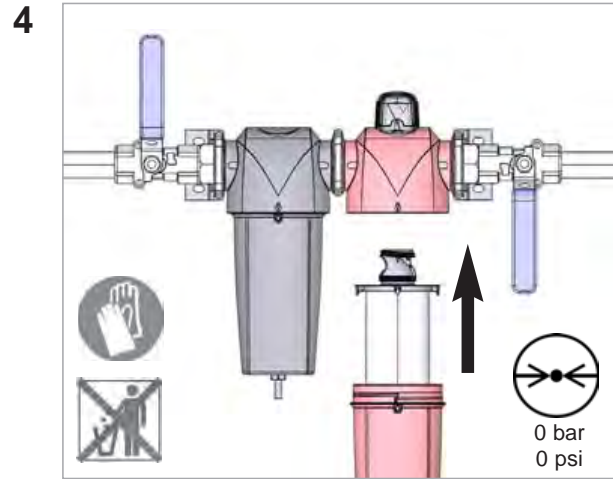
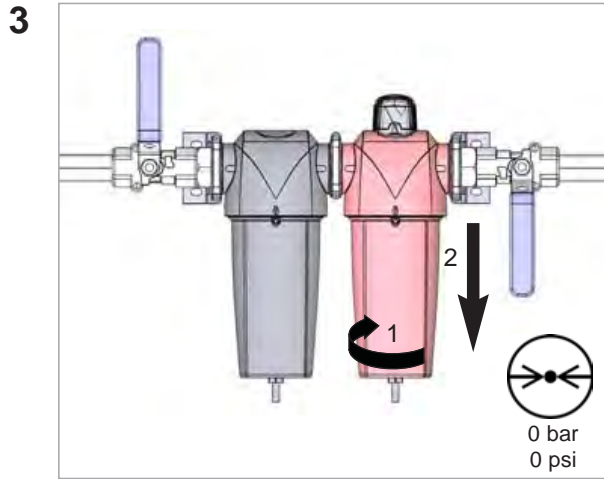
									
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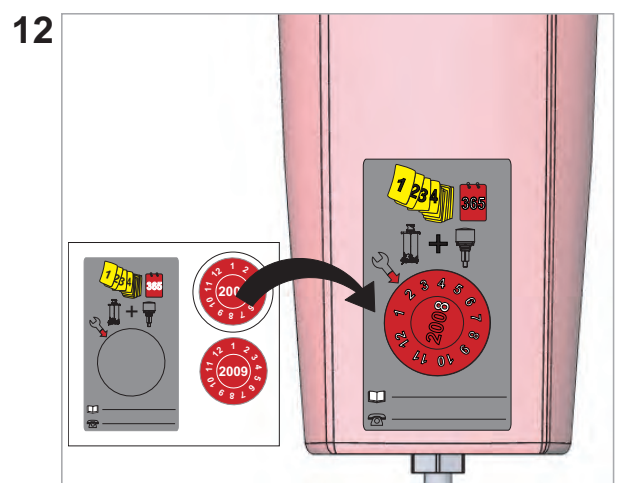
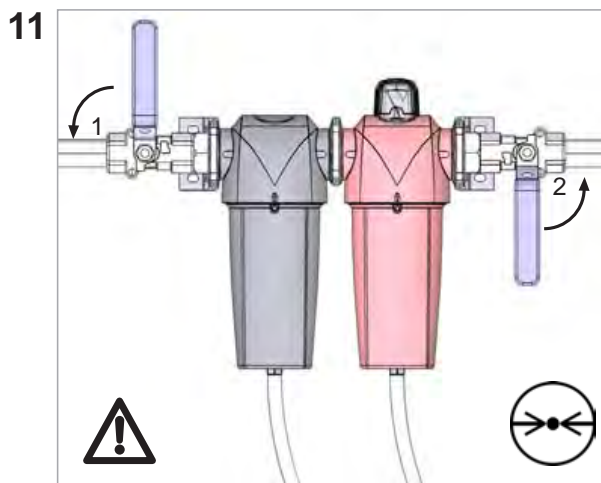
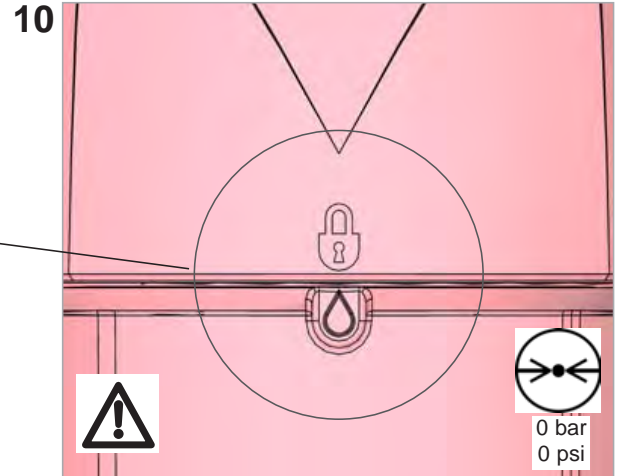
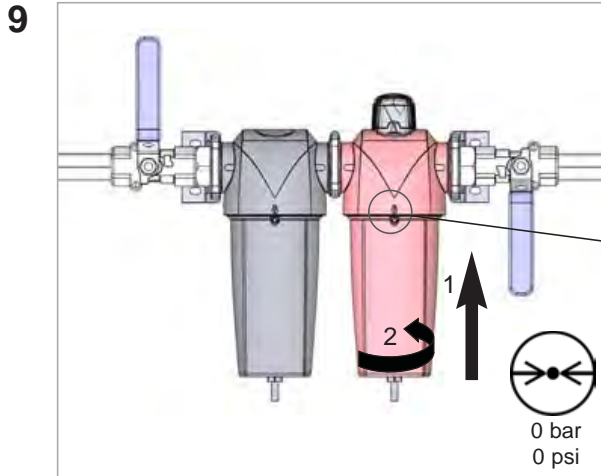
EMA1	005 - 010		
EMA2	015 - 020		
EMA3	025 - 030		
EMA4	035 - 045		
EMA5	050 - 055		

6. Maintenance

- Onderhoud • Wartung • Entretien • Kunnossapito • Underhåll • Vedlikehold • Vedligeholdelse • Συντήρηση • Mantenimiento • Manutenção
- Manutenzione • Konserwacja • Údržba • Údržba • Hooldus • Karbantartás • Tehniskā apkope • Techninė priežiūra • Обслуживание
- Vzdrževanja • Bakım • Manutenzjoni • İntreținere



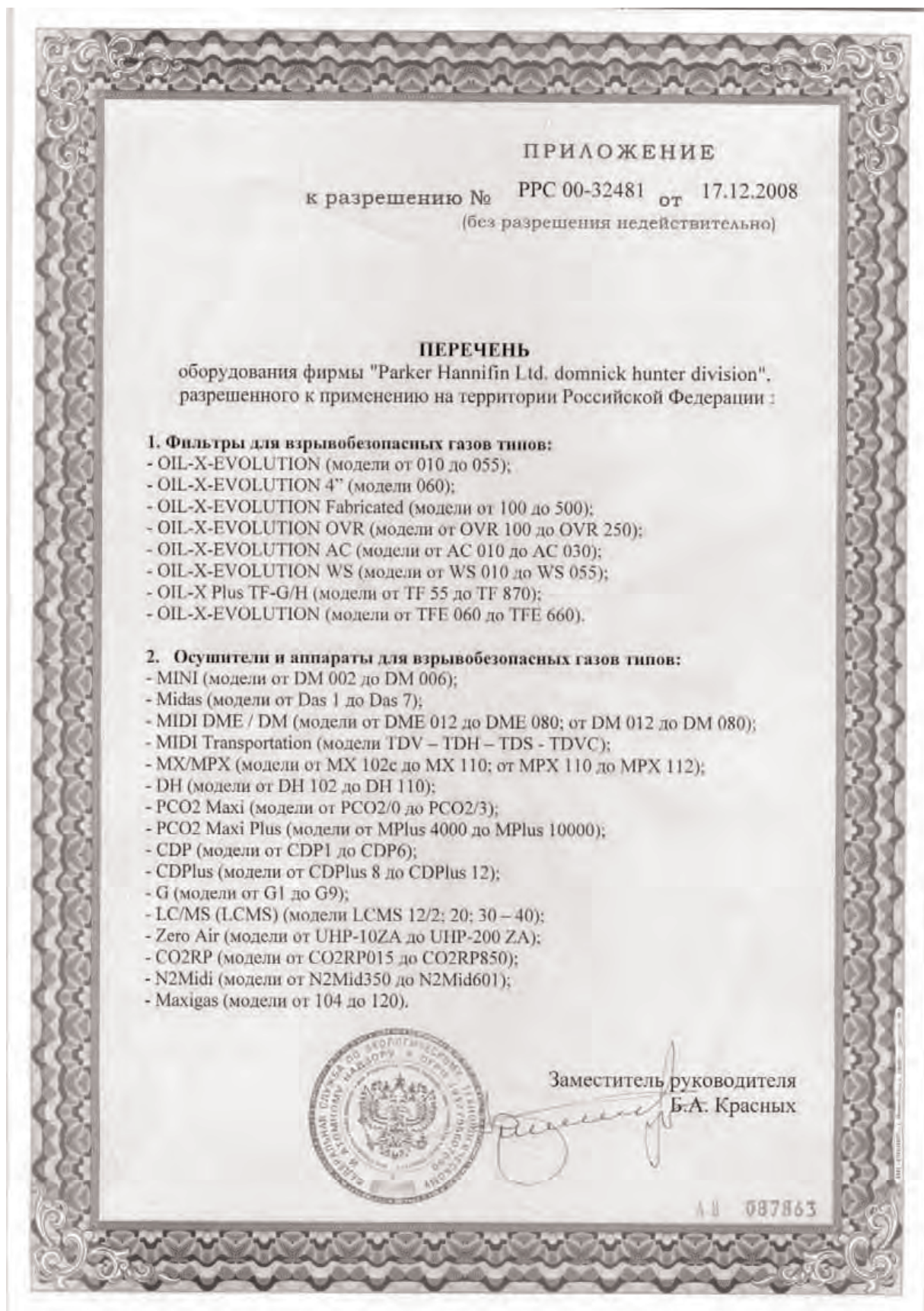





(EN) Align the arrow to the month and year of the next service
 (NL) Breng de pijl op een lijn met de maand en het jaar van de volgende onderhoud beurt
 (DE) Stellen Sie den Pfeil auf Monat und Jahr der nächstten Wartungstermin. Alignedz la flèche sur le mois et l'année de la prochaine révision
 (FR) le mois et l'année de la prochaine révision
 (FI) Kohdi ta nuoli seuraavan huollon kuukauteen ja vuoteen
 (SV) Rikta pilen mot månaden och året för nästa service
 (NO) Ju ter pilen til måneden og året for neste service
 (DA) Stil pilen på måneden 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 järgmise hoolduse kuuga ja aastaga
 (HU) Irányítsa a nyílát a következő szerviz hónapjára és évére
 (LV) Irányítsa a nyílát a következő szerviz hónapjára és évére
 (LT) Nustatykite rodyklę ties kitos techninės 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 yılını hizalayın
 (MT) Allinja l-vleġġa għax-xahar u s-sena tas-servis li jmiss
 (RO) Aliniați săgeata în dreptul lunii și al anului următoarei vizite de service




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Declaration of Conformity		EN
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Directives	97/23/EC	
Standards used	Generally in accordance with ASMEVIII Div 1 2004	
PED Assessment Route	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 050 055) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Notified body for PED	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
EC Type exam nat on Certificate	COVD413459/TEC	
Authorised Representative	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Declaration		
I declare that as the authorised representative I have above information in relation to the supply / manufacture of this product in conformity with the standards and other related documents following the provisions of the above directives.		
Signature		Date 8/8/2007
Declaration Number 0002/8807		

Déclaration de conformité		FR
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Directives	97/23/EC	
Normes utilisées	Généralment conforme à ASMEVIII d 1 2004	
Méthode d'évaluation de la directive d'équipements de pression	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 050 055) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Organisme de notification pour la directive d'équipement sous pression	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Certificat d'examen de type CE	COVD413459/TEC	
Représentant agréé	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Déclaration		
Je déclare à titre de représentant agréé que les informations ci-dessus liées à la fourniture/fabrication de ce produit sont en conformité avec les normes et autres documents liés décrits selon les dispositions des directives susmentionnées.		
Signature		Date 8/8/2007
N° de déclaration 0002/8807		

Verklaring van Conformiteit		NL
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Richtlijnen	97/23/EC	
Gehanteerde normen	Gewoonlijk volgens ASMEVIII Div 1 2004	
PED beoordelingstraject	Artikel 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 050 055) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Aangemelde instantie voor PED	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
EC Type onderzoekscertificaat	COVD413459/TEC	
Bevoegde vertegenwoordiger	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Verklaring		
Als bevoegde vertegenwoordiger verklaar ik dat bovenstaande informatie met betrekking tot de levering / vervaardiging van dit product overeenstemt met de normen en andere behorende documentatie volgens de bepalingen van bovengenoemde richtlijnen.		
Handtekening		Datum 8/8/2007
Verklaringnummer 0002/8807		

Vaatimustenmukaisuusvakuutus		FI
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Direktiivit	97/23/EC	
Käytetyt standardit	Yleensä seuraavan standardin mukaisesti ASMEVIII Div 1 2004	
PED arviointimenettely	Artikla 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Moduuli A (AO AA ACS AAR 035 040 045) Moduuli B (AO AA ACS AAR 050 055) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
PED säännösten ilmoittelu	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
EY tyyppihyväksynnän sertifikaatti	COVD413459/TEC	
Valtuutettu edustaja	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Vakuutus		
Vakuutuslupien edustajana vakuutan, että yllä olevat tiedot, jotka liittyvät tämän tuotteen toimittamiseen tai valmistamiseen, ovat standardien ja muiden osien liittyvien asukirjojen mukaisia ja noudattavat yllä mainittuja direktiivejä.		
Allekirjoitus		Päiväys 8/8/2007
Vakuutuksen numero 0002/8807		

Konformitätserklärung		DE
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Richtlinien	97/23/EC	
Angewandte Normen	Allgemein in Übereinstimmung mit ASMEVIII Div 1 2004	
Beurteilungsrouten der Druckgerätekategorie	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) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Benannte Stelle für die Druckgerätekategorie	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
EG Baumusterprüfbescheinigung	COVD413459/TEC	
Bevollmächtigter Vertreter	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Erklärung		
Hiermit erkläre ich 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 Richtlinien.		
Unterschrift		Datum 8/8/2007
Nummer der Erklärung 0002/8807		

Försäkran om överensstämmelse		SV
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Direktiv	97/23/EC	
Använda standarder	Generellt i enlighet med ASMEVIII Div 1 2004	
Fastställningsväg för PED	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) Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
Anmält organ för PED	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS COVD413459/TEC	
EG intyg om typgodkänning	COVD413459/TEC	
Auktoriserad representant	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Försäkran		
Jag försäkras i egenskap av auktoriserad representant att ovanstående information avseende leverans eller tillverkning av denna produkt överensstämmer med standarder och övriga relevanta dokument enligt vilka denna är överensstämmande med direktivet.		
Underskrift		Datum 8/8/2007
Försäkran nummer 0002/8807		

Konformitetserklæring		NO
Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Direktiver	97/23/EC	
Benyttede standarder	Hovedsakelig i samsvar med ASMEVIII d v 1 2004	
Route for vurdering av PED (direktivet for trykkpløst utstyr)	Paragraf 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) Lloyds Register Verificalion 71 Fenchurch St London	
Underrettet organ for PED	EC3M 4BS COV0413459/TEC	
EC typegodkjenningsattest	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Autorisert representant	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter d v s on	
Erklæring		
Jeg erklærer som autorisert representant at informasjonen ovenfor med hensyn til leveringsproduksjon av dette produktet er i overensstemmelse med standardene og andre relaterte dokumenter, følge bestemmelsene i direktivene ovenfor		
Signatur	Dato	8/8/2007
Erklæringsnr 0002/8807		

Declaración de conformidad		ES
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Directivas	97/23/EC	
Normas utilizadas	Generalmente de conformidad 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) Módulo A (AO AA ACS AAR 035 040 045) Módulo B (AO AA ACS AAR 050 055) Lloyds Register Verificalion 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Organismo notificado para la normativa PED	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Certificado de examen CE de tipo	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Representante autorizado	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Declaración		
Como representante autorizado declaro que la información anterior expuesta en relación con el suministro y/o fabricación de este producto cumple las normativas, indicadas y otros documentos afines según las disposiciones de las Directivas citadas anteriormente.		
Firma	Dato	8/8/2007
Número de declaración 0002/8807		

Overensstemmelseerklæring		DA
Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
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) Lloyds Register Verificalion 71 Fenchurch St London	
Notificeret organ for PED	EC3M 4BS COV0413459/TEC	
EF typeprøvningsattest	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Autoriseret representant	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Erklæring		
Jeg erklærer hermed som autoriseret representant at ovenstående oplysninger vedrørende leveringsproduktet er i overensstemmelse med de anførte standarder og øvrige tilknyttede dokumenter i henhold til bestemmelse i ovenstående direktiv		
Underskrift	Dato	8/8/2007
Erklæringsnummer 0002/8807		

Declaração de Conformidade		PT
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Directivas	97/23/EC	
Padrões utilizados	De forma geral em conformidade com ASMEVIII Div 1 2004	
Percurso de Avaliação do PED	Artigo 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Módulo A (AO AA ACS AAR 035 040 045) Módulo B (AO AA ACS AAR 050 055) Lloyds Register Verificalion 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Notificado para o PED	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Certificado de Inspeção Tipo CE	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Revendedor Autorizado	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Declaração		
Declaro na qualidade de representante autorizado que as informações acima contidas referentes ao fornecimento / fabrico deste produto estão em conformidade com as normas e outros documentos relacionados de acordo com as disposições das Diretivas anteriores		
Assinatura	Dato	8/8/2007
Número da Declaração 0002/8807		

Δήλωση συμμόρφωσης		EL
Parker Hannifin Ltd domn ck hunter divis on Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Οδηγίες	97/23/EC	
Πρότυπα που χρησιμοποιήθηκαν	Γενικά σε συμφωνία με το ASMEVIII Div 1 2004	
Διαδρομή αξιολόγησης για κανονικούς PED	Άρθρο 3.3 (AO AA ACS AAR 005 010 015 020 025 030) Ενότητα Α (AO AA ACS AAR 035 040 045) Ενότητα Β (AO AA ACS AAR 050 055) Lloyds Register Verificalion 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Ενθισμένος οργανισμός για κανονικούς PED	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Πιστοποιητικό εξέλιξης τύπου EK	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Εξουσιοδοτημένος αντιπρόσωπος	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Δήλωση		
Δηλώνω ως εξουσιοδοτημένος αντιπρόσωπος ότι οι παραπάνω πληροφορίες σε σχέση με τη δοκιμή / κατασκευή αυτού του προϊόντος συμμορφώνονται ως προς τα πρότυπα και ως προς τα άλλα σχετικά έγγραφα που συνοδεύουν τις οδηγίες των προϊόντων.		
Υπογραφή	Ημερομηνία	8/8/2007
Αριθμός δήλωσης 0002/8807		

Dichiarazione di conformità		IT
Parker Hannifin Ltd domn ck hunter division Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK		
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		
Directive	97/23/EC	
Norme utilizzate	Generalmente conforme a 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) Lloyds Register Verificalion 71 Fenchurch St London EC3M 4BS COV0413459/TEC	
Organismo accreditato per PED	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Attestato di certificazione tipo CE	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Rappresentante autorizzato	Derek Bankier Divisional Quality Manager Parker Hannifin Ltd domn ck hunter division	
Dichiarazione		
In qualità di rappresentante autorizzato dichiaro che le informazioni di cui sopra in merito alla fornitura/fabbricazione del prodotto in oggetto, sono conformi alle norme indicate e a qualsiasi altro documento correlato alla fornitura basato su quanto prescritto dalle direttive menzionate.		
Firma	Dato	8/8/2007
Dichiarazione numero 0002/8807		

Deklaracja zgodności **PL**

Parker Hannifin Ltd domn ck hunter divis on
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Dyrektwy 97/23/EC

Stosowane standardy Ogólnie zgodny z ASMEVIII dział 1 2004

Ścieżka potwierdzenia zgodności z PED Artykuł 3.3 (AO AA ACS AR 005 010 015 020 025 030)
Moduł A (AO AA ACS AR 035 040 045)
Moduł B (AO AA ACS AR AAR 050 055)


Organ/instytucja powiadamiana na mocy PED Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Certyfikat badań a typu WE COV0413459/TEC

Autoryzowany przedstawiciel Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domn ck hunter division

Deklaracja

Oświadczam jako auto zywony przedstawiciel że powyższe informacje dotyczące dostawcy / wytwórcy niniejszego produktu są zgodne ze standardami i innymi dokumentami powiązanymi zgodnie z postanowieniami powyższych dyrektyw

Podpis  **Data** 8/8/2007

Numer deklaracji: 0002/8807

Vastavusdeklaratsioon **ET**

Parker Hannifin Ltd domn ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktiivid 97/23/EC

Kasutatud standardid Üld seel vastavuses standardiga ASMEVI I D v 1 2004

PED vastavushinnangu jaotus A tükkel 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)


PEDIst (surveedmete direktiivist) teav taatud asutus Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

EÜ tüübih ndamistend COV0413459/TEC

Volitatud es ndaja Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domn ck hunter division

Deklaratsioon

Volitatud es ndajana kinnitan et ülaltoodud teave seoses antud toote lam m seeltootmisega on vastavuses standardite ja muude seotud dokumentidega vastava l ülaltoodud direktiivide sätetega

Alkiri  **Kuupäev** 8/8/2007

Deklaratsioon number 0002/8807

Vyhlasenie o zhode **SK**

Parker Hannifin Ltd domn ck hunter divis on
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Smern ce 97/23/EC

Použí té normy Vo všeobecnosti v zhode s ASMEV II oddiel 1 2004

Spôsob posudzovania podľa smernice PED Článok 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)


Obznanený orgán podľa smernice PED Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Osvedčenie typovej skôšky ES COV0413459/TEC

Spinomocnený zástupca Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domn ck hunter d v s on

Vyhlasenie

Ako spinomocnený zástupca vyhlasujem že informácie uvedené vyššie sú v súlade s dodatky / výrobou tohto produktu v zhode s normami a inými súvisiacimi dokumentmi podľa ustanovení uvedených smerníc

Podpis  **Dátum** 8/8/2007

Číslo vyhlásenia 0002/8807

Megfelelôsségi nyilatkozat **HU**

Parker Hannifin Ltd domn ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktívák 97/23/EC

Alkalmazott szabványok Általában a következô alapján ASMEVI II D v 1 2004

PED értékelési irányvonal 3.3 as cikkely (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)


PED del kapcsolatban értes tett testület Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

EC I pusztvásgálati bizonyítvány COV0413459/TEC

Hivatalos képviselô Derek Bankier
Divisional Quality Manager
Parker Hannifin Ltd domn ck hunter division

Nyilatkozat

Hivatalos képviselôként kijelentem hogy a termék szállítással / gyártással kapcsolatos fenti olvasható információk megfelelnek a fenti Direktívák eô rásai szerinti szabványoknak és egyéb kapcsolódó dokumentumoknak

Aláírás  **Dátum** 8/8/2007

Nyilatkozat száma 0002/8807

Prohlášení o shodě **CS**

Parker Hannifin Ltd domn ck hunter divis on
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Smern ce 97/23/EC

Použí té normy Obecné v souladu ASMEVIII Dv 1 2004

Metoda stanovení shody pro tlaková za zeni (PED) Článek 3.3 (AO AA ACS AAR 005 010 015 020 025 030)
Dí l část A (AO AA ACS AAR 035 040 045)
Dí l část B (AO AA ACS AR AAR 050 055)


Notif kovaný orgán pro PED Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Osvědčení o zkoušce typu ES COV0413459/TEC

Oprávněný zástupce Derek Bankier
Divisional Quality Manager
Parker Hannifin Ltd domn ck hunter d v s on

Prohlášení

Jako oprávněný zástupce prohlašuji že výše uvedené informace týkající se dodatky / výrobou tohoto produktu jsou v souladu s normami a jinými souv seji cími dokumenty vyplývajícími z ustanovení výše uvedených směrnic

Podpis  **Datum** 8/8/2007

Číslo prohlášení 0002/8807

Atbilstības deklarācija **LV**

Parker Hannifin Ltd domn ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktīvas 97/23/EC

Izmantotie standarti Parasti saskaņā ar ASMEVI I D v 1 2004

PED novērtējums Pielikums 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)

Par PED informētā organizācija Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

EK saskaņotā Eksaminācijas sertifikāts COV0413459/TEC

Pilnvarotais pārstāvis Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domn ck hunter d v s on

Deklarācija

Es kā pilnvarotais pārstāvis ar šo paziņoju ka iepriekšminētā informācija kas a tiecas uz šī produkta piegādi / saskaņošanu atbilst standartiem un citiem a būtiskiem dokumentiem saskaņā ar iepriekš minētajiem D direktīvu

Paraksts  **Datums** 8/8/2007

Deklarācijas numurs 0002/8807

Atitikties deklaracija LT

Parker Hannifin Ltd domis ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktyvos 97/23/EC

Naudoti standartai Atitinka bendrijas ASMEVIII Div 1: 2004 nuostatas

PED įvertinimo pakopa: 3.3 s fra psm s (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 notifikuoti institucija Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

EB t po testavimo sertifikatas COV0413459/TEC

Igaliotasis atstovas Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter d v s on

Deklaracija

Aš, įgaliotasis atstovas, patvirtinu, kad aukščiau pateikta gaminio techninio apibūdinimo informacija atitinka aukščiau nurodytus standartus ir kitą su nurodytų direktyvų nuostatomis susijusią dokumentaciją.

Parašas  Data 8/8/2007

Deklaracijos numeris 0002/8807

Uyum Beyanı TR

Parker Hannifin Ltd domis ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktifler 97/23/EC

Kullanilan standartlar Genelde ASMEVİI D v 1 2004'e uygun

PED (Basınçlı Ekipman Direktifli) Değerlendirilmesi 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 bildirimde bulunulan kuruluş: Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

AT Tip İncelemesi Sertifikası: COV0413459/TEC

Yetkilili Temsilci Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter division

Beyan

Yetkilili temsilci olarak beyan ederim ki bu ürünün teminine / üretimine ilişkin olarak yukarıda verilen bilgiler yukarıda anılan Direktiflerin hükümlerine uyan standartlara ve ilgili başka belgelere uygundur.

İmza:  Tarih: 8/8/2007

Beyan No 0002/8807

Декларация соответствия RU

Parker Hannifin Ltd domis ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Требования 97/23/EC

Применяемые стандарты В большинстве случаев обеспечивается соответствие стандарту ASMEVIII, Раздел 1: 2004.

Система обеспечения качества Статья 3.3 (AO, AA, ACS, AAR - 005, 010 015 020 025 030)
Модуль А (AO, AA, ACS, AAR - 035, 040 045)
Модуль В (AO, AA, ACS, AR, AAR - 050 055)


Уполномоченный орган для PED: Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

Сертификат ЕС на проведение типовых испытаний: COV0413459/TEC

Уполномоченный представитель Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter division

Декларация

Как уполномоченный представитель, я заявляю, что приведенная выше информация относительно поставщик/производства данного продукта соответствует стандартам, другим связанным документам и положениям указанных выше требований.

Подпись:  Дата: 8/8/2007

Номер декларации: 0002/8807

Dikjarazzjoni ta' Konformità MT

Parker Hannifin Ltd domis ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direttivi 97/23/EC

Standards użati Generalment f'konformità ma' ASMEVİI Div 1: 2004

Rotta ta' l'Assessorjat tal PED Artikolu 3.3 (AO, AA, ACS, AAR 005 010 015 020 025 030)
Modulu A (AO, AA, ACS, AAR 035 040 045)
Modulu B (AO, AA, ACS, AR, AAR 050 055)


Korp notifikat għall-PED: Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

Certifikat tal-KE ta' l-eżaminazzjoni tal-Tip: COV0413459/TEC

Rappreżentant Awtorizzat Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter division

Dikjarazzjoni

Niddikjara li bħala r-repreżentant awtorizzat, l-informazzjoni ta' hawn fuq, f'dak li għandu j'inqas mal-forminimant/manifattura ta' dan il-prodott, hija f'konformità ma' l-istandards u d-dokumenti l-oħra relatati li jsewju d-dispożizzjonijiet tad-Direttivi rrespettja hawn fuq

Firma  Data 8/8/2007

Numru tad-Dikjarazzjoni 0002/8807

Izjava o skladnosti SL

Parker Hannifin Ltd domis ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Direktive 97/23/EC

Uporabljeni standardi Splošno skladno z ASMEVİI Div 1 2004

Ocenjevalna pol 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 Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

Certifikat o tipskem pregledu ES COV0413459/TEC

Pooblašeni zastopnik Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter division

Izjava

Kot pooblašeni zastopnik izjavljam, da so zgorajni podatki glede dobave/prozvodnje tega zefelka skladni s standardi in ostalimi sorodnimi dokumenti, ki sledijo zahtevam zgorajnih direktiv.

Podpis  Datum 8/8/2007

Štev ilka izjave 0002/8807

Declarație de conformitate RO

Parker Hannifin Ltd domis ck hunter div sion
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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

Directive 97/23/EC

Standarde u lizate Splošno skladno z ASMEVİI 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 Lloyds Register Ver fication
71 Fenchurch St. London
EC3M 4BS

Certificat de examinare de tip CE COV0413459/TEC

Reprezentant autorizat Derek Bankier
D v s onal Quality Manager
Parker Hannifin Ltd domis ck hunter division

Declarație

În calitate de reprezentant autorizat, declar că informațiile de mai sus, referitoare la furnizarea / fabricarea acestui produs, sunt în conformitate cu standardele și alte documente conexe care respectă prevederile Directivei de mai sus.

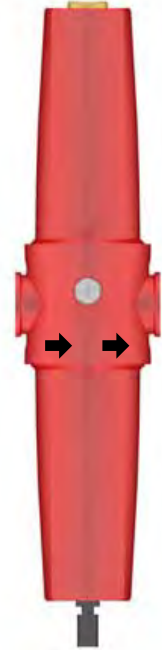
Semnătura:  Data: 8/8/2007

Numrul declaratiei: 0002/8807

13.9 Option dc Operating instructions for compressed air filter (fresh air filter)



domnick hunter



AC010 - AC030

OIL-X
EVOLUTION

Original Language **EN** **OIL VAPOUR & ODOUR REMOVAL FILTERS**

NL OLIEDAMP & GEUR VERWIJDERINGSFILTERS	DE FILTER ZUM ENTFERNEN 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 ÕLISUDU JA -HAISU EEMALDUSFILTRID	HU OLAJGŐZ- ÉS SZAGELTÁVOLÍTÓ SZŰRŐK
LV EĻĻAS TVAIKU UN AROMĀTA NOVĒRŠANAS FILTRI	LT ALYVOS GARŲ 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 TAŻ-ŻJUT U L-IRWEJJAĦ

AC010 - AC030



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 suoritettuina 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 personskade eller dødsfall hvis de ikke utføres på korrekt måte.
- Fremhæver handlinger eller fremgangsmåder, som kan medføre personskade eller dødsfald, hvis de ikke udføres 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 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 obrażeń ciała lub śmierci.
- Zvýrazňuje činnosti alebo postupy, ktoré môžu v prípade nesprávneho vykonania viesť zraneniu alebo usmrteniu.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést ke zranění nebo usmrcení osob.
- Tóstab esile toimingud või protseduurid, mis väärteostamise korral võivad põhjustada kehavigastusi või surma.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása súlyos vagy végzetes személyi sérülést okozhat.
- Uzsver darbības vai procedūras, kuru rezultātā, ja tās neveic pareizi, var izraisīt ievainojumus vai nāvi.
- Żymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima susižeisti ar mirtį.
- Указывает на действия, ненадлежащее выполнение которых может привести к нанесению вреда здоровью или смерти
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajanju poškodujejo človeka ali povzročijo smrt.
- Doğru bir şekilde yerine getirilmediği takdirde bu ürüne hasar verebilecek işlem ve süreçleri vurgular.
- Tissottolinea l-azzjonijiet jew il-proċeduri, li jekk ma jsirux kif suppost, jista' jkun hemm korrimnt 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 suoritettuina saattavat vaurioittaa tätä 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.
- Fremhæver 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 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 môžu viesť k poškodeniu tohto výrobku.
- Upozornění na činnosti nebo postupy, jejichž nesprávné provádění může vést k poškození tohoto výrobku.
- Tóstab esile toimingud või protseduurid, mis väärteostamise korral võivad kaesolevat 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.
- Żymi veiksmus ar procedūras, kuriuos atlikus neteisingai, galima sugadinti šį gaminį.
- Указывает на действия, ненадлежащее выполнение которых может привести к повреждениям данного изделия
- Označuje dejanja ali postopke, ki lahko ob nepravilnem izvajanju poškodujejo izdelek.
- Doğru bir şekilde yerine getirilmediği takdirde yaralanma ya da ölçüme yol açabilecek işlem ve süreçleri vurgular
- Tissottolinea l-azzjonijiet jew il-proċeduri, 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 egnete hansker.
- Απαιτείται να φοράτε κατάλληλα γάντια
- Devem ser utilizadas luvas adequadas.
- Należy zakładać odpowiednie rękawice
- Kohustuslik kanda sobivaid kaitsekindaid
- Jävalkä piemēroti cimdi.
- Работы должны проводиться в соответствующих перчатках
- Uyğun eldiven giyimelidir

- Altijd geschikte handschoenen dragen.
- Le port de gants adaptés est obligatoire.
- Använd lämpliga handskar.
- Der skal anvendes egnete handsker.
- Se deben llevar puestos guantes apropiados.
- Indossare guanti di protezione.
- Je nutné použít vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia mūvēti tinkamas pirštines.
- Uporabiti je treba ustrezne rokavice.
- Ghandhom jintlibsu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggooiën 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 bortskaflande av gamla delar och avfall.
- Fremhever kravene for avhending av brukte deler og avfall.
- Fremhæver kravene til bortskaflelse af udtjente dele og affald.
- Επισημαίνει τις απαιτήσεις απόρριψης των χρησιμοποιημένων εξαρτημάτων και των απορριμμάτων
- 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.
- Tóstab esile kasutatud osade ja jääkide utiliseerimisele esitatavad nõuded
- A használt alkatrészek és a hulladék megfelelő módon történő elhelyezésére hívja fel a figyelmet.
- Uzsver prasības tam, kā atbrīvoties no lietotajām detaļām un atkritumiem.
- Żymi panaudotų dalių ir atliekų išmetimo reikalavimus.
- Указывает на требования по уничтожению использованных деталей и отходов
- Označuje zahteve za odlaganje rabljenih delov in odpadkov.
- Kullanihmis parçaların ve atıkların atılmasına ilişkin gereklilikleri vurgular
- Tissottolinea l-kundizzjonijiet biex wiehed jarmi l-partijiet uzati u l-iskart

AC010 - AC030

	<ul style="list-style-type: none"> • Pressure. • Paine. • Πίεση • Ciśnienie • Nyomás alatt. • Tlak 	<ul style="list-style-type: none"> • Druk • Trykk • Presión. • Tlak. • Spiediensi. • Basınc 	<ul style="list-style-type: none"> • Druck. • Trykk • Pressão. • Tlak. • Sléigis. • Pressjoni 	<ul style="list-style-type: none"> • Pression. • Tryk • Pressione. • Surve. • Давление
	<ul style="list-style-type: none"> • Release Pressure. • Evacuation de pression. • Avlast trykk • Despresurizar. • Ciśnienie spustowe • Surve väljalase • Ísleiskite sléji. • Basıncı Kaldırın 	<ul style="list-style-type: none"> • Druk aflaten. • Vapauta paine. • Aflast tryk • Liberta Pressão. • Uvolnite tlak. • Engedje ki a nyomást. • Стравить давление • Nehhi l-pressjoni 	<ul style="list-style-type: none"> • Druck ablassen. • Tryckutsläpp. • Εκτόνωση πίεσης • Scaricare la pressione. • Uvolnění tlaku. • Pazeminiet spiedienu. • Sprostitev tlaka. 	
	<ul style="list-style-type: none"> • Replace every year • Remplacer tous les ans. • Skift ut hvert år • Sustituir anualmente • Należy wymieniać raz w roku • Asendage igal aastal • Keiskite kartā per metus • Her yıl değiştirin 	<ul style="list-style-type: none"> • Elk jaar vervangen • Vaihda vuosittain. • Udskift en gang om året • Substituir todos os anos • Každý rok vymieňajte • Evente cserélje • Заменять каждый год. • İbdel kull sena 	<ul style="list-style-type: none"> • Jährlich austauschen • Byt varje år • Αντικατάσταση κάθε χρόνο • Sostituire ogni anno • Nutná výměna každý rok. • Nomainiet reizi gadā • Zamenjajte vsako leto. 	
	<ul style="list-style-type: none"> • Filter housing / Model • Logement du filtre/modèle. • Filterhus/-modell • Caja de filtro/modelo. • Obudowa filtra / model. • Filtri korpus/mudel • Filtró korpusas / modelis • Filtrre muhafazası / Model 	<ul style="list-style-type: none"> • Filterhuis / Model • Suodatinkotelo/-malli • Filterhus/modell • Caixa / Modelo do filtro • Kryt filtra / Model • Szűrőház / típus • Корпус фильтра / модель • Kontenitur tal-filtru - Mudell 	<ul style="list-style-type: none"> • Filtergehäuse / Modell • Filterhus/modell • Υπόδοξη/μοντέλο φίλτρου • Corpo del filtro / Modello • Kryt filtru / Model • Filtra korpus / modelis • Ohišje filtra / Model 	
	<ul style="list-style-type: none"> • High efficiency filter element • Hochleistungsfilterelement • Tehokas suodatinelementti • Høyeffektivt filterelement • Φίλτρο υψηλής απόδοσης • Elemento do filtro de elevado rendimento • Wysokowydajny wkład filtra • Vysoce účinný filtrační prvek • Nagy hatékonyságú szűrőelem • Labai efektyvus filtravimo elementas • Visoko učinkovit filtrirni element • Element tal-filtru b'effiċjenza kbira 	<ul style="list-style-type: none"> • Zeer efficiënt filterelement • Cartouche filtrante haute efficacité. • Høgeffektivt filterelement • Høgeffektivt filterelement • Elemento filtrante de gran eficiencia. • Elemento filtrante ad alta efficienza • Vysoko účinný filtračný článok • Kõrgtootlik filterelement • Augstas produktivitātes filtra elements • Высокоэффективный фильтрующий элемент • Yüksek etkinlikli filtre ögesi 		
	<ul style="list-style-type: none"> • Adsorption filter cartridge - Granular carbon • Adsorptionsfiltereinsatz - Granulatkohle • Adsorptiosuodatinelementti - rakeinen hiili • Adsorpsjonsfilterpatron - Karbon i kornform • Φυσιγγίο φίλτρου προσρόφησης - Κοκκώδης άνθρακας • Cartucho do filtro de absorção - Carvão granular • Adsorpcyjny wkład filtrujący z węgla ziamistego • Adsorpcni filtrační prvek - granulovaný uhlík • Adsorpciószűrőbetét - granulált szén • Adsorbicinio filtro kasetē - angļies granulēs 	<ul style="list-style-type: none"> • Adsorptiefilter cartridge - korrelvormige actieve kool • Cartouche filtrante d'adsorption - Charbon en granulé. • Adsorptionsfilterkassett - Kornigt kol • Adsorptionsfilterkassett - Kornigt kol • Cartucho filtrante de adsorción, granulos de carbón. • Filtro a cartuccia ad adsorbimento - granuli di carbone • Adsorpcná filtračná kazeta - Granulovaný uhlík • Adsorpciofiltri kassett - teraline süsi • Absorbējoša filtra kasetne - graudains ogleklis • Адсорбционный фильтрующий элемент - гранулированный уголь • Adsorpsiyon filtresi kartuşu - Taneli karbon 		
	<ul style="list-style-type: none"> • Kaseta adsorpcyjna filtra - zrnasti ogļķis • Kaxxa assorbenti tal-filtru - Karbonju mrammel 			
	<ul style="list-style-type: none"> • Adsorption filter element - Wrapped carbon cloth • Adsorptie filterelement - gewikkelde koolstofdoek • Adsorptionsfilterelement - eingewickeltes Filtertuch aus Kohlenstoff • Cartouche filtrante d'adsorption - Charbon entouré de tissu. • Adsorptiosuodatinelementti - kääritty hiilikangas • Adsorptionsfilterelement - Veckad kolfiberduk • Adsorpsjonsfilterelement - Innpakket karbonstoff • Adsorptionsfilterelement - Veckad kolfiberduk • Φίλτρο προσρόφησης - Τυλιγμένο ύφασμα άνθρακα • Elemento filtrante de adsorción, capas de tejido de carbón. • Elemento do filtro de absorção - Pano revestido de carvão • Elemento filtrante ad adsorbimento - tessuto al carbone con struttura ad avvolgimento • Wkład adsorpcyjny filtra ze zwijanej tkaniny z włókna węglowego • Adsorpcni filtrační článok - Zabalená uhlíková tkanina • Adsorpcni filtrační prvek - zabalená uhlíková tkanina • Adsorpciofiltri element - isoleeritud süsinikriie • Adsorpciószűrőelem - göngyölt szénszövet • Absorbējošs filtra elements - saīta oglekļa drāniņa • Adsorbicinis filtravimo elementas - susuktas angļies audinys • Адсорбционный фильтрующий элемент - ткань из углеродистого волокна • Adsorpcijski filtrirni element - navita ogļķikova krpa • Adsorpsiyon filtresi ögesi - Sarılı karbon kumaş • Element tal-filtru li jassorbixxi - Xoqqa tal-karbonju mgeżwra 			
	<ul style="list-style-type: none"> • Ensure correct tool is used • Zorg dat het juiste gereedschap wordt gebruik • Vérifier que les outils adéquats sont utilisés. • Se till att rätt verktyg används. • Sørg for at benytte korrekt værktøj • Asegúrese de que se utiliza la herramienta adecuada • Assicurarsi di utilizzare l'utensile corretto • Uistite sa, že používate správny nástroj • Tagage öge tööriista kasutamise • Izmantojiet tikai atbilstošus darbarīkus • Убедитесь, что используется правильный инструмент • Doğru alet kullanımlarını sağlayın 	<ul style="list-style-type: none"> • Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden. • Käyttävää oikeaa työkalua • Pass på at korrekt verktoy brukes • Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο • Certifique-se de que é utilizada a ferramenta correcta • Należy używać odpowiedniego narzędzia. • Zkontrolujte použití správného nástroje • Mindig a célnak megfelelő szerszámot használja • Isitinkite, kad naudojamais reikiamas įrankis • Poskrbite, da boste uporabili ustrezno orodje • Kun žgur li tintuza l-ghodda t-tajba 		

AC010 - AC030

**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 vaatiessa 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 produkt må kun installeres og vedlikeholdes 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

AC010 - AC030

MT

Rakkomandazzjonijiet għall-Installazzjoni

Nirrakkomandaw li l-arja kumpressata tiġi trattata qabel ma tidhol fis-sistema ta' distribuzzjoni kif ukoll fil-punti ċ l-applikazzjonijiet kritiċi ta' l-użu.

L-installazzjoni ta' taghmir li jnixxef l-arja kumpressata fuq sistema li kienet imxarba jista' jirriżulta f'aktar taghbija ta' hmieg għall-filtri li jintużaw f'punt wiehed, 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 minghajr żejt, xorta jkun hemm prezenti ajrusols u partijiet ta' l-ilma, għalhekk xorta għandhom jintużaw gradi bi skop ġenerali u b'effiċjenza kbira.

Filtru għal skopijiet ġenerali għandu dejjem jiġi installat biex jiproteġi l-filtru ta' effiċjenza kbira mill-volum kbir ta' ajrusols likwidi u partijiet solidi.

Installa taghmir ta' purifikazzjoni fl-aktar temperatura baxxa possibbli imma b'mod li ma jkunx hemm iffriżar, preferibbilment aktar 'l isfel mill-aftercoolers u mir-riċevituri ta' l-arja.

Taghmir tal-purifikazzjoni fil-punt ta' l-użu għandu jiġi installat kemm jista' jkun qrib tal-post fejn għandu japplika.

It-taghmir ta' purifikazzjoni m'għandux jiġi installat aktar 'l isfel mill-valvs li jifflu malajr u għandu jkun protett minn possibbiltà ta' fluss b'lura jew kundizzjonijiet oħra stressanti.

Naddaf il-pajps kollha li jwasslu għat-taghmir ta' purifikazzjoni qabel tinstalla u l-pajps kollha wara li tinstalla t-taghmir ta' purifikazzjoni u qabel ma tqabbad ma' l-applikazzjoni finali.

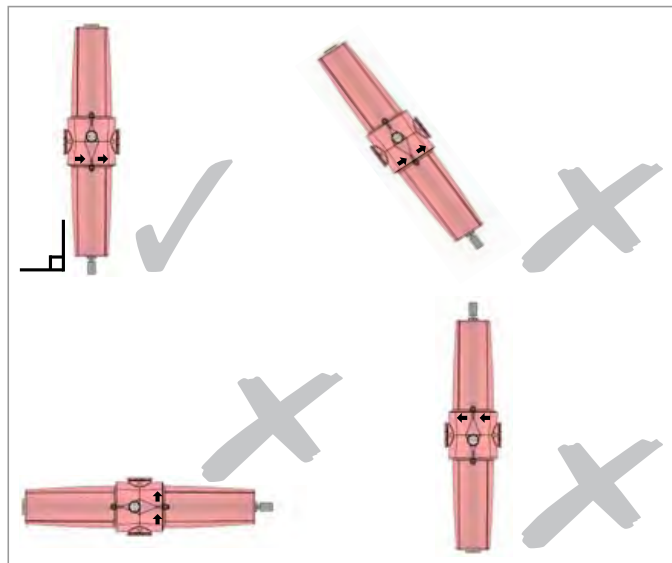
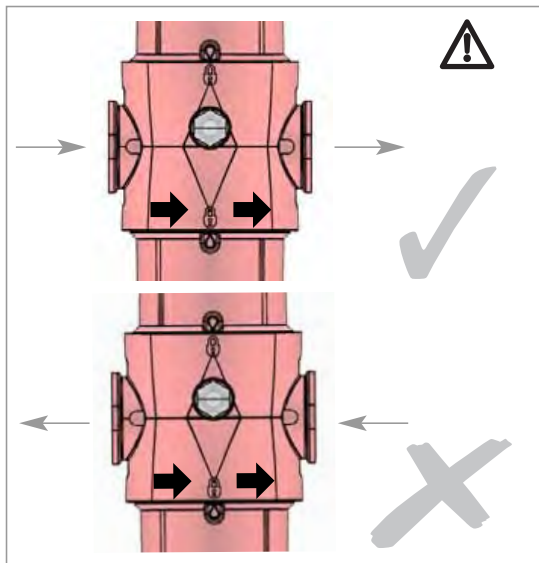
Jekk tiffittja linji ta' by-pass madwar it-taghmir ta' purifikazzjoni, kun żgur li hemm biżżejjed filtrazzjoni f'fittjata mal-linja tal-by-pass biex ma thallix li jkun hemm kontaminazzjoni tas-sistema aktar 'l isfel.

Ipprova facilità biex tiddrejnja l-likwidi li jingabru mit-taghmir tal-purifikazzjoni. Il-likwidi li jingabru għandhom jiġu trattati u mormija b'mod responsabbli.

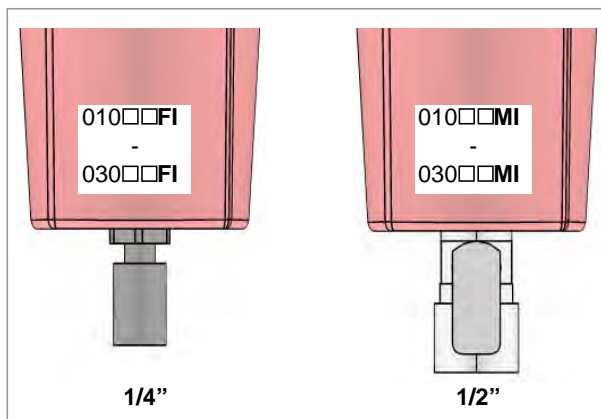
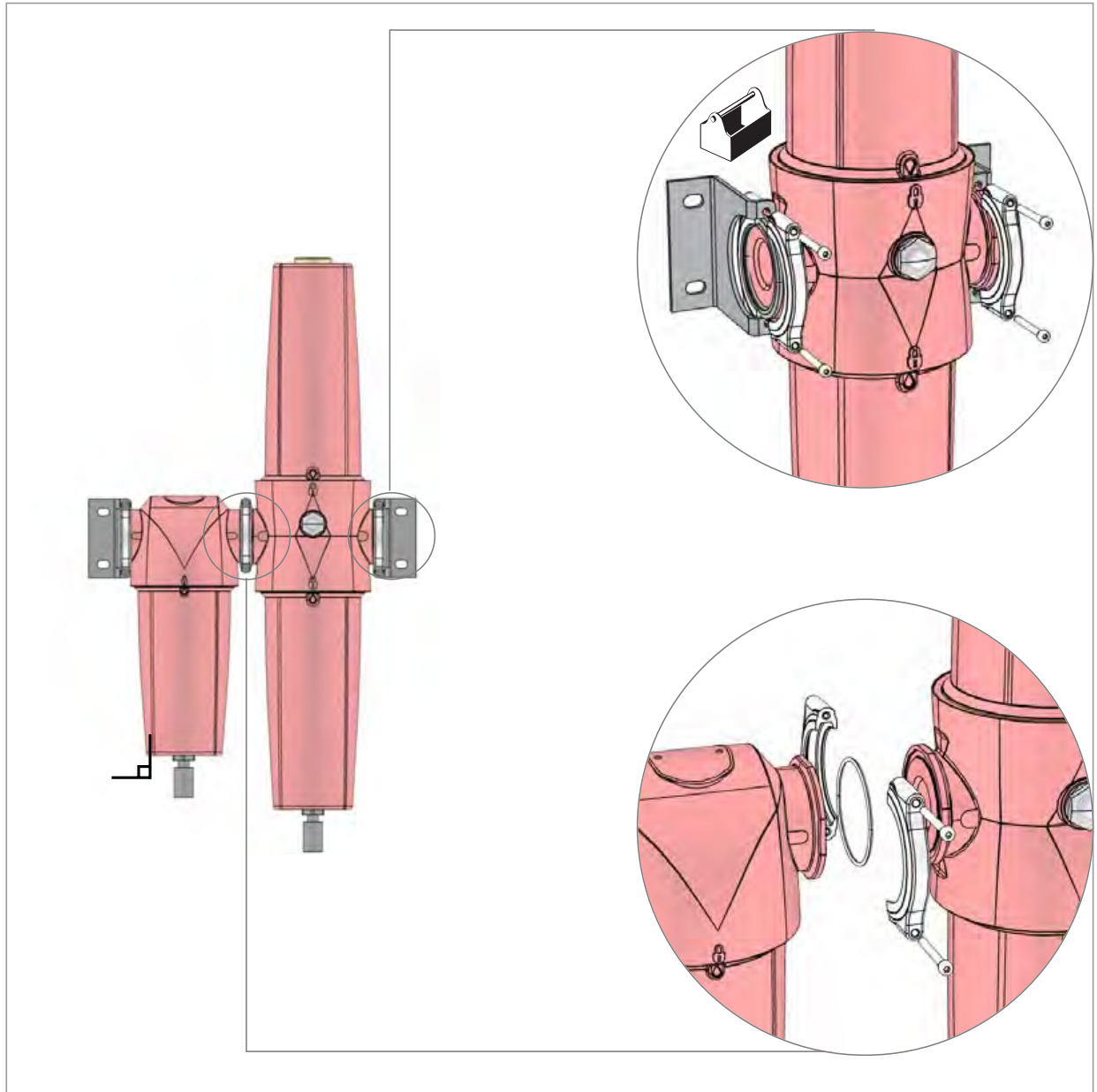
Iż-żmien kemm idumu jersvu l-elementi tal-filtru li jneħhi l-fwar taż-żjut huwa affettwat mill-koncentrazzjoni taż-żejt tad-dhul, l-umdità relattiva u t-temperatura tas-sistema ta' l-arja kumpressata. L-elementi li jneħhu l-fwar taż-żjut ikollhom bżonn jinbidlu aktar ta' sikwit mill-element shih ekwivalenti.

Mudelli AC010□□□□ - AC030□□□□ huma f'fittjata b'indikatur tal-volum taż-żejt. Kemm l-elementi tal-filtru kif ukoll l-indikatur għandhom jinbidlu jekk l-indikatur isir ta' kulur blu.

Jekk Joghġbok Innota - Dan hu indikatur tal-volum taż-żejt u ma jindikax iż-żmien li jdum iservi l-element tal-filtru.



AC010 - AC030



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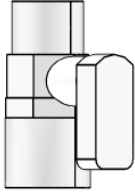
FILTER-DH-OIL-XEVOLUTION 01



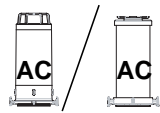
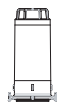
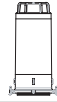

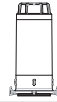


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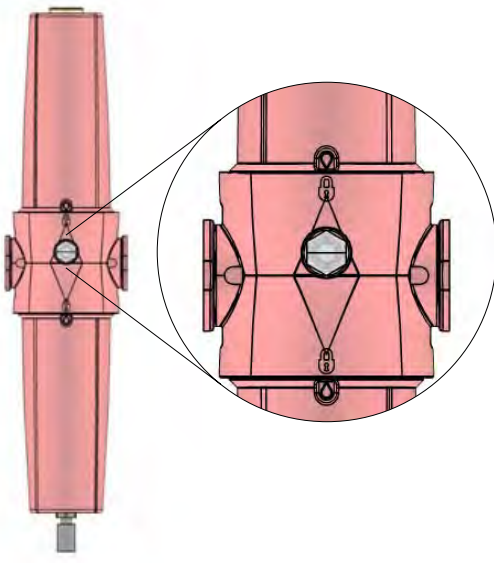
AC010 - AC030

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 (hooldekomplektid) • Pótalkatrészek (szervizkészletek) • Rezerwes części (apkopes komplekti) • Atsarginės dalys (priežiros detalių komplektai) • Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • Yedek parça (Servis kiti) • Partijiet Ghat-Tibdil (Kitts tas-Servizz)

 EF1	<ul style="list-style-type: none"> • AUTOMATIC DRAIN • AUTOMATISCHER ABLAUF • VIDANGE AUTOMATIQUE • AUTOMISCHAFTAPPEN • DRENAJE AUTOMATICO • SCARIO AUTOMATICO • AUTOMATISK AFLØB • DRENO AUTOMÁTICO • ΑΥΤΟΜΑΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ • AUTOMATDRÄNERING • AUTOMAATTINEN • TYHJENNYSKAPPALE • DREN AUTOMATYCZNY • AUTOMATICKÉ VYSUŠENIE • AUTOMATICKÉ VYPOUŠTĚNÍ • AUTOMAATNE VÄLJALASE • AUTOMATIKUS LEERESZTÉS • AUTOMÁTISKA IZTECINĀŠANA • AUTOMATINIS IŠLEIDIMAS • АВТОМАТИЧЕСКИЙ ДРЕНАЖ • SAMODEJNI ODTOK • OTOMATİK SÜZDÜRÜCÜ • DREJN AWTOMATIKU 	 EM1	<ul style="list-style-type: none"> • MANUAL DRAIN • MANUELLER ABLAUF • VIDANGE MANUELLE • MANUEEL AFTAPPEN • DRENAJE MANUAL • SCARIO MANUALE • MANUELT AFLØB • DRENO MANUAL • ΧΕΙΡΟΚΙΝΗΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ • MANUELL DRÄNERING • ΚΑΣΙΚΑΥΤΤΟΙΝΕΝ • TYHJENNYSKAPPALE • DREN RĘCZNY • RUČNÉ VYSUŠENIE • RUČNÍ VYPOUŠTĚNÍ • KÄSITSI VÄLJALASE • KÉZI LEERESZTÉS • MANUĀLA IZTECINĀŠANA • RANKINIS IŠLEIDIMAS • ДРЕНАЖ ВРУЧНУЮ • ROČNI ODTOK • ELLE KULLANILACAK SÜZDÜRÜCÜ • DREJN MANWALI
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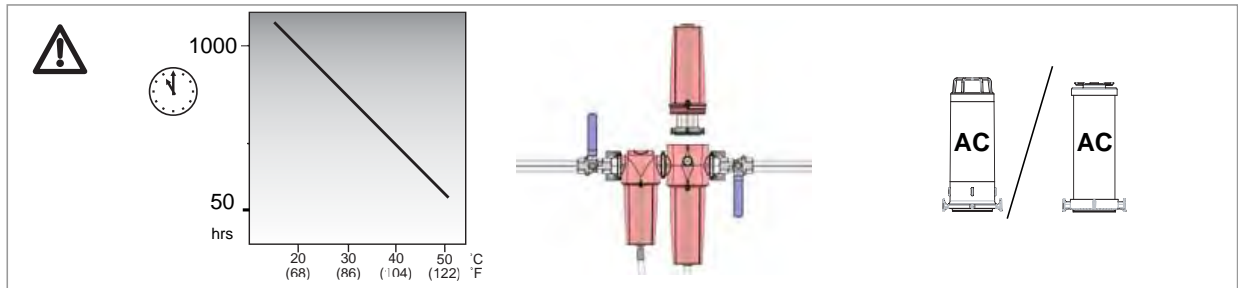
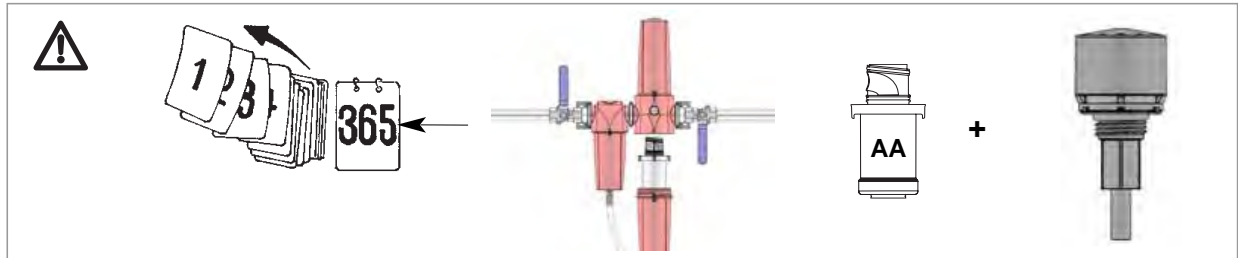
 010 A 010 B 010 C 015 B 015 C 020 C 020 D 020 E 025 D 025 E 030 E 030 F 030 G	 010AA 015AA 020AA 025AA 025AA 030AA	 010AC 015AC 020AC 025DAC 025EAC 030AC	     
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BOIE1
AC010 □□□ I - AC030 □□□ I

AC010 - AC030
6. Maintenance

Onderhoud • **Wartung** • **Entretien** • **Kunnossapito** • **Underhåll** • **Vedlikehold** • **Vedlikeholdelse** • **Συντήρηση** • **Mantenimiento** • **Manutenção** • **Manutenzione** • **Konserwacja** • **Údržba** • **Údržba** • **Hoolidus** • **Karbantartás** • **Tehnikā apkope** • **Techniné priežiūra** • **Обслуживание** • **Vzdrževanja** • **Bakım** • **Manutenzjoni**



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 Ölanzeige. 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 öljynilmais. Sekä suodatinelementit että ilmaisin on vaihdettava, jos ilmaisin on sininen.

Huomautus – Tämä on öljynilmais. 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 monteret 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.

Τα 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.

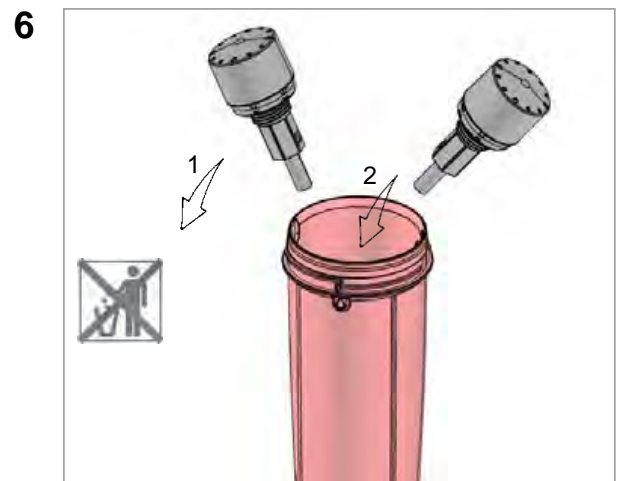
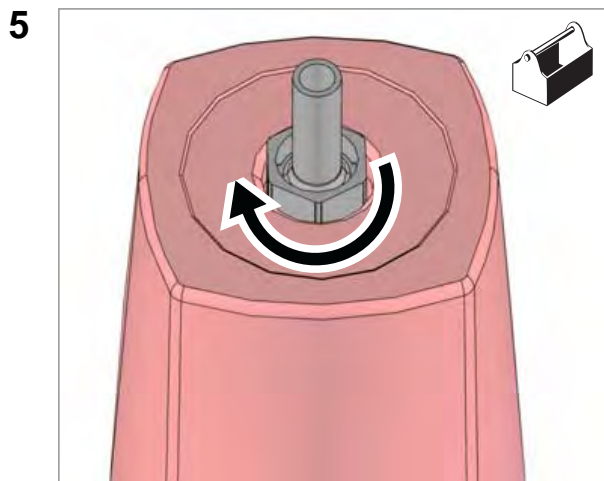
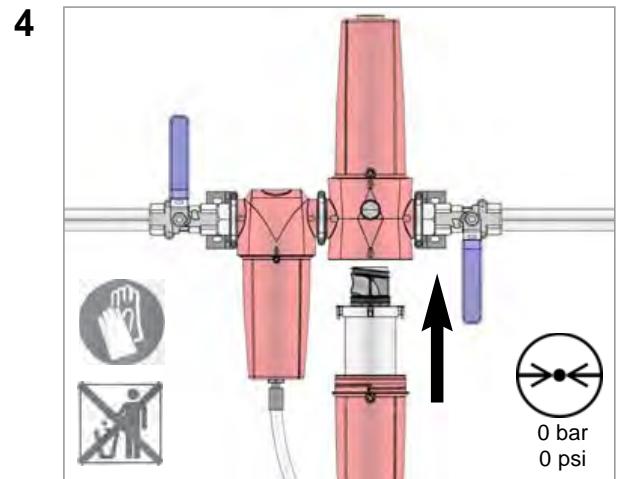
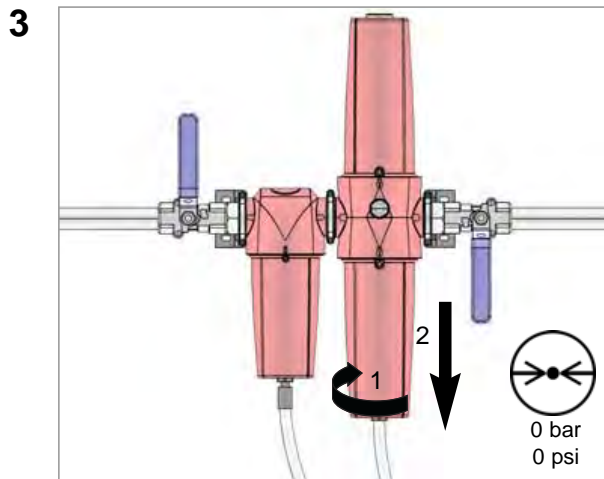
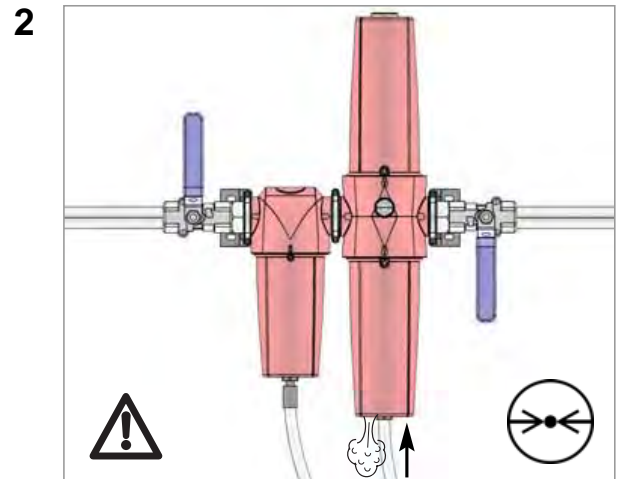
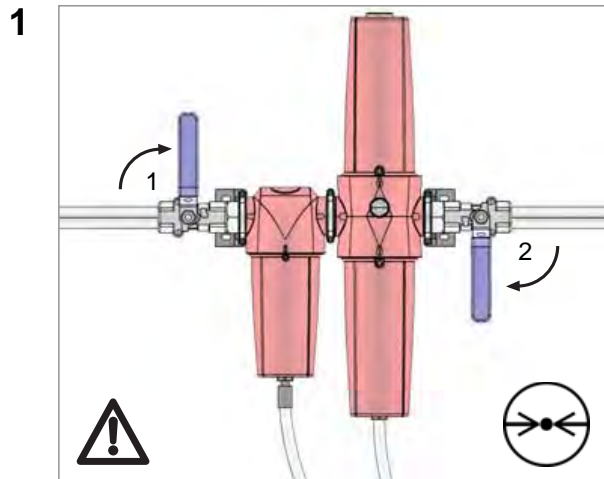
Modelos AC010□□□I - AC030□□□I são instalados com um indicador do óleo em bruto. Ambos os elementos do filtro e o indicador deverão ser mudados se o indicador estiver azul.

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.

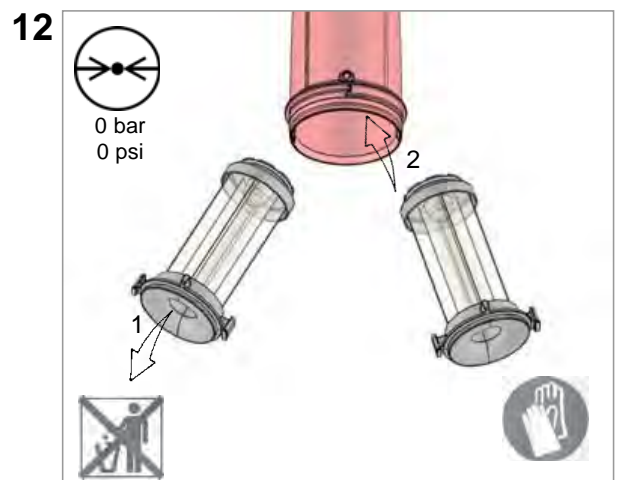
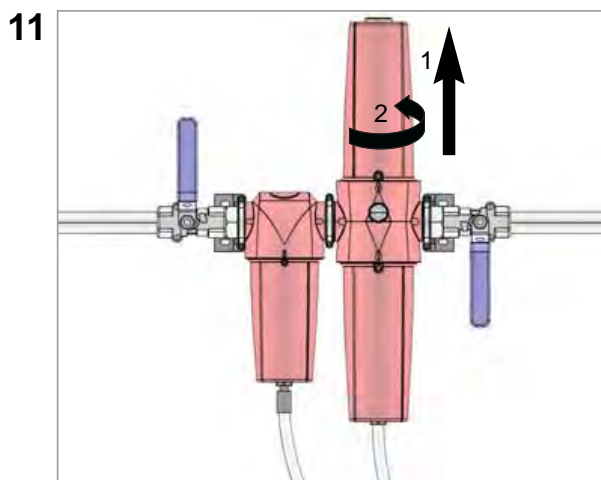
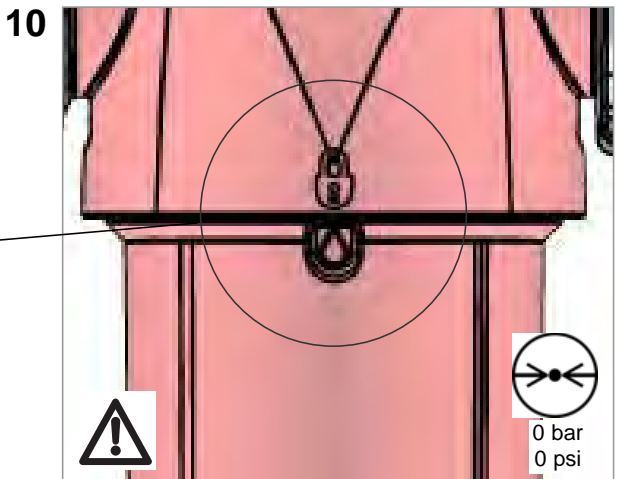
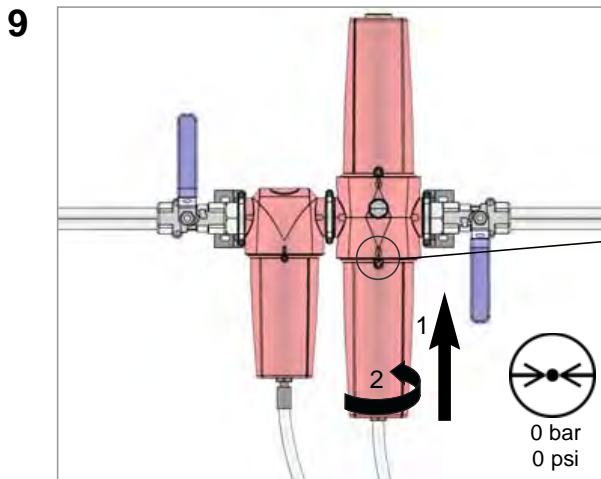
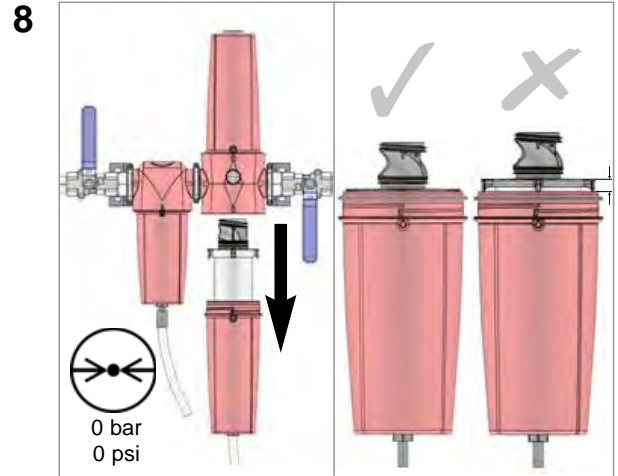
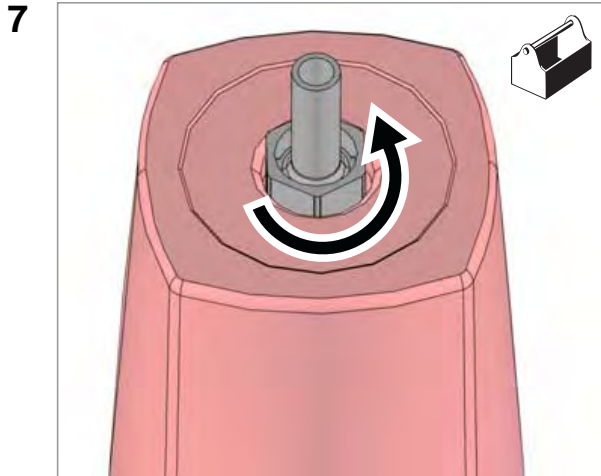
AC010 - AC030



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FILTER-DH-OIL-XEVOLUTION 01

AC010 - AC030

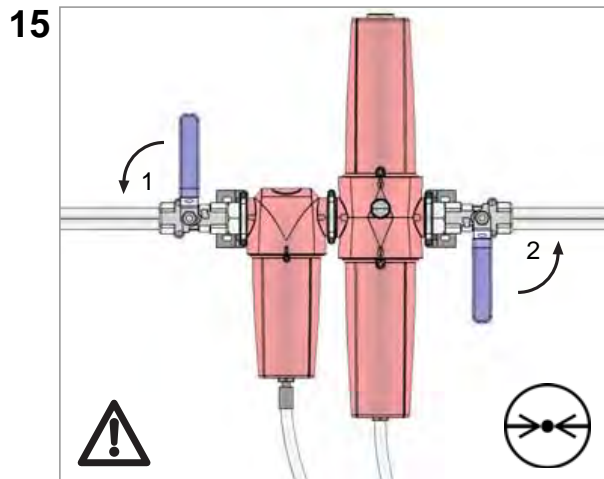
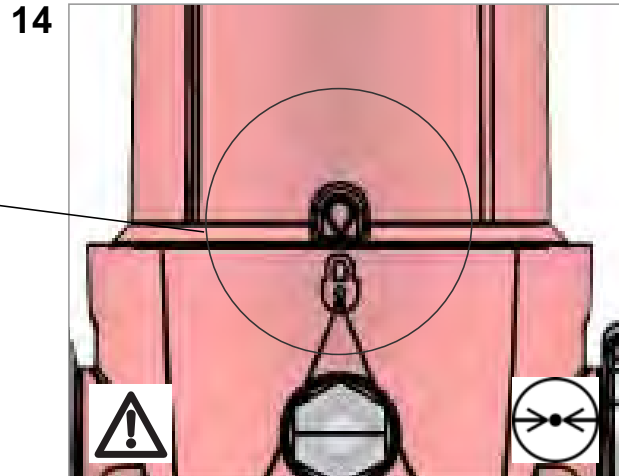
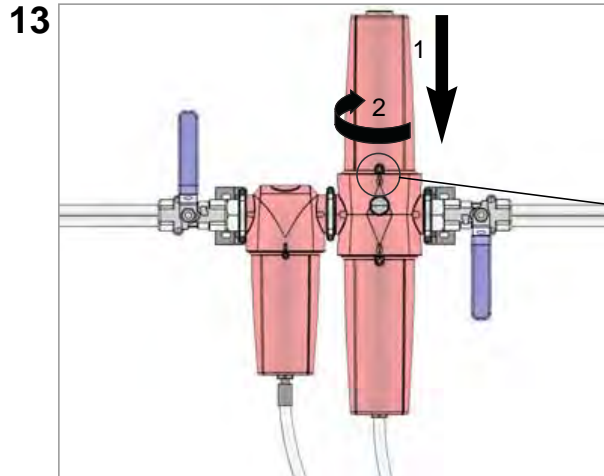


10

FILTER-DH-OIL-XEVOLUTION 01

30

AC010 - AC030



AC010 - AC030

DE	NL	EN	FI	FR	SV
<p>Konformitätserklärung</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, UK AC010, 015, 020 025, 030 97/23/EC.</p> <p>Richtlijnen</p> <p>Angewandte Normen</p> <p>Beurteilungsrouten der Druckgeräterichtlinie: Artikel 3.3 (AC 010, 015, 020, 025) Modul A (AC030)</p> <p>Benannte Stelle für die Druckgeräterichtlinie: N/A</p> <p>EG-Baumusterprüfbescheinigung: N/A</p> <p>Bevollmächtigter Vertreter Barry Wade Business Systems Improvement Manager domnick hunter ltd</p> <p>Erklärung</p> <p>Hiermit erkläre ich 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 Richtlinien.</p> <p>Unterschrift:  Datum: 28 / 09 / 05 Nummer der Erklärung: 0001/280905</p>	<p>Verklaring van Conformiteit</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, GB AC010, 015, 020 025, 030 97/23/EC.</p> <p>Richtlijnen</p> <p>Gehanteerde normen</p> <p>PED-beoordelingsstraject: Gewoonlijk volgens ASMEVIII Div 1; 2004. Artikel 3.3 (AC 010, 015, 020, 025) Module A (AC 030)</p> <p>Aangemelde instantie voor PED: N/A</p> <p>EC Type onderzoekscertificaat: N/A</p> <p>Bevoegde vertegenwoordiger Barry Wade Manager Bedrijfsysteemverbetering domnick hunter ltd</p> <p>Verklaring</p> <p>Als bevoegde vertegenwoordiger verklaar ik dat bovenstaande informatie met betrekking tot de levering / vervaardiging van dit product overeenstemt met de normen en andere bijbehorende documentatie volgens de bepalingen van bovengenoemde richtlijnen.</p> <p>Handtekening:  Datum: 28 / 09 / 05 Verklaringnummer: 0001/280905</p>	<p>Declaration of Conformity</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, UK AC010, 015, 020 025, 030 97/23/EC.</p> <p>Standards used</p> <p>PED Assessment Route : Generally in accordance with ASMEVII Div 1; 2004. Article 3.3 (AC 010, 015, 020, 025) Module A (AC 030)</p> <p>Notified body for PED: N/A</p> <p>EC Type-examination Certificate: N/A</p> <p>Authorised Representative Barry Wade Business Systems Improvement Manager domnick hunter ltd</p> <p>Declaration</p> <p>I declare that as the authorised representative, 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 Directives.</p> <p>Signature:  Date: 28 / 09 / 05 Declaration Number: 0001/280905</p>	<p>Vaatimustenmukaisuusvakuutus</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, FINLANDIA AC010, 015, 020 025, 030 97/23/EC.</p> <p>Direktiivit</p> <p>Käytetyt standardit</p> <p>PED-arviointimenetely: Yleensä seuraavaan standardin mukaisesti: ASMEVIII Div 1; 2004.</p> <p>PED-sääntösten ilmoitettu laitos: Artikla 3.3 (AC010, 015, 020, 025, 030) Moduuli A (AC030)</p> <p>EY-tyyppihyväksynnän sertifikaatti: N/A</p> <p>Vakuutettu edustaja Barry Wade Yritysjärjestelmien kehityspäällikkö domnick hunter ltd</p> <p>Vakuutus</p> <p>Vakuutuksena edustajana vakuutan, että yllä olevat tiedot, jotka liittyvät tämän tuotteen toimittamiseen tai valmistamiseen, ovat standardien ja muiden asiaan liittyvien asiakirjien mukaisia ja noudattavat yllä mainittuja direktiivejä.</p> <p>Allakirjoitus:  Päiväys: 28 / 09 / 05 Vakuutuksen numero: 0001 / 280905</p>	<p>Déclaration de conformité</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ GB AC010, 015, 020 025, 030 97/23/EC.</p> <p>Normes utilisées</p> <p>Méthode d'évaluation de la directive d'équipements de pression : Généralement conforme à ASMEVII div. 1; 2004. Article 3.3 (AC010, 015, 020, 025, 030) Module A (AC030)</p> <p>Organisme de notification pour la directive d'équipement sous pression : N/A</p> <p>Certificat d'examen de type CE : N/A</p> <p>Représentant agréé Barry Wade Business Systems Improvement Manager domnick hunter ltd</p> <p>Déclaration</p> <p>Je déclare à titre de représentant agréé que les informations ci-dessus liées à la fourniture/fabrication de ce produit sont en conformité avec les normes et autres documents liés déclarés selon les dispositions des directives susmentionnées.</p> <p>Signature :  Date : 28 / 09 / 05 N° de déclaration : 0001/280905</p>	<p>Försäkran om överensstämmelse</p> <p>Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, Storbritannien AC010, 015, 020 025: 030 97/23/EC.</p> <p>Direktiv</p> <p>Använda standarder</p> <p>Fastställningsväg för PED: Generellt i enlighet med ASMEVII Div 1; 2004.</p> <p>Ansatt organ för PED: Artikel 3.3 (AC010, 015, 020, 025, 030) Modul A (AC030)</p> <p>EG-intyg om typprovning: N/A</p> <p>Auktoriserad representant Barry Wade Business Systems Improvement Manager domnick hunter ltd</p> <p>Försäkran</p> <p>Jag försäkrar, i egenskap av auktoriserad representant, att ovanstående information avseende leverans/fabrikering av denna produkt överensstämmer med standarder och övriga relevanta dokument enligt Villkoren i ovanstående direktiv.</p> <p>Underskrift:  Datum: 28 / 09 / 05 Försäkran nummer: 0001/280905</p>

