Operator manual

Portable compressor

MOBILAIR M82 SIGMA CONTROL SMART

No.: 901783 07 E

Manufacturer:

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KAESER KOMPRESSOREN

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1 Regarding this document

1.1 Using this document

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

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

1.2 Further documents

Further documents included with this operating manual are:

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

Missing documents can be requested from KAESER.

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

1.3 Copyright

This operating manual is protected by copyright. Any queries regarding the use or duplication of this 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

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

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

Signal word	Meaning	Consequences of non-compliance
DANGER	Warns of an imminent danger	Will very likely result in death or severe injury
WARNING	Warns of a potentially imminent danger	May result in death or severe injury

Signal word	Meaning	Consequences of non-compliance
CAUTION	Warns of a potentially dangerous situation	May result in a moderate physical injury

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

Some warning notes may precede a chapter. They apply to the entire chapter including all sub-sections.

Example:



DANGER
The type and source of the imminent danger is shown here!
The possible consequences of ignoring a warning are shown here.
The word "DANGER" indicates that death or severe injury can very likely result from ignoring the warning.

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

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

Example:



1. **WARNING!**
   The type and source of the imminent danger is shown here!
   The possible consequences of ignoring a warning are shown here.
   The word "WARNING" indicates that death or severe injury may result from ignoring the warning.
   ➢ The measures required to protect yourself from danger are shown here.
2. Always read and comply with warning instructions.

1.4.2 Potential damage warnings

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

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

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

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

Example:



NOTICE
The type and source of the imminent danger is shown here!
Potential effects when ignoring the warning are indicated here.

➢ The protective measures against the damages are shown here.

➢ Carefully read and fully comply with warnings against damages.

1.4.3 Other alert notes and their symbols



This symbol indicates particular important information.

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

Precondition — Here you will find conditional requirements necessary to carry out the task.
The conditions relevant to safety shown here will help you to avoid dangerous situations.

- ➢ This symbol is placed by lists of actions comprising one step of a task.
1. In process instructions with several steps ...
2. ... the sequence of steps is numbered.

Result — Shows the expected conclusion of the previous action.

Option da — ➢ Information relating to one option only is marked with an option code (e.g., "option da" means that this section is only valid for machines with the air treatment components "aftercooler and centrifugal separator"). Option codes used in this operating manual are explained in chapter 2.2.



Information referring to potential problems is identified by a question mark.
The cause is named in the help text ...
➢ ... as is a solution.



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

Further information — Further subjects are introduced here.

2 Technical Specifications

2.1 Nameplate

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

➢ Enter here the nameplate data as a reference:

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

Tab. 3 Nameplate

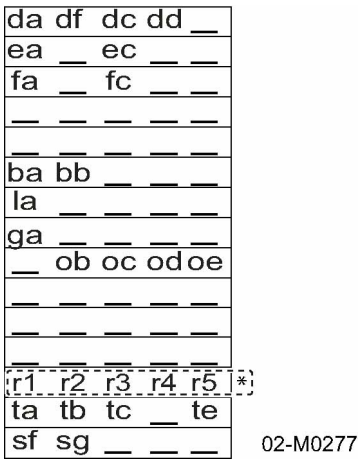
2.2 Options – options label

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

The nameplate is to be found:

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

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



* r1 - r5 = place holders for chassis options:

- r1 = rb; rc; rd
- r2 = rk; rl
- r3 = rm; ro
- r4 = rr; rs; rt
- r5 = rw; rx

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, df, dc, dd Air treatment

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

Tab. 5 Air treatment options

2.2.2 Option ea, ec Tool lubricator

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

Tab. 6 Tool lubricator option

2.2.3 Option fa, fc Compressed air distributor

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

Tab. 7 Compressed air distributor option

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
Equipment for fire hazard areas

Option	Option code	Available?
Spark arrestor	la	

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
GPS modem

Option	Option code	Available?
GPS modem	oc	

Tab. 11 GPS modem

2.2.8 Option ta, tb, tc, te
Lighting

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

Tab. 12 Lighting options

2.2.9 Option ga Generator

Option	Option code	Available?
Generator	ga	

Tab. 13 Generator option

2.2.10 Option oe Sealed floor pan

Option	Option code	Available?
Sealed floor pan	oe	

Tab. 14 Closed floor pan option

2.2.11 Option sf Anti-theft device

Option	Option code	Available?
Anti-theft device	sf	

Tab. 15 Optional anti-theft device

2.2.12 Option sg Pedestrian protection

Option	Option code	Available?
Pedestrian protection	sg	

Tab. 16 Pedestrian protection option

2.3 Machine (without options)

2.3.1 Noise emission

Guaranteed sound power level:

Type	M82
Guaranteed sound power level(1), (2) [dB(A)]	98

(1) in accordance with Machinery Directive 2000/14/EC,
(2) applies exclusively to machines lined with sound proofing material.

Tab. 17 Guaranteed sound power level

Emission sound pressure level

Type	M82
Emission sound pressure level(3) [dB(A)] (according to EN ISO 11203)	81.5
Measurement distance: d = 1 m Logarithmic surface ratio: Q2 = 18 dB(A) (3) Calculated from the guaranteed sound power level (2000/14/EC Directive, Sound Emission Standard ISO 3744)	

Tab. 18 Emission 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 [Nm]	3.0	5.9	10.0	24.5	48.0	84.0	133.0	206.0	295.0	415.0
Information provided according to VDI 2230.										

Tab. 19 Tightening torques for screws (property class 8.8, coefficient of friction μ = 0,12)

2.3.3 Torque cover fixing screws oil separator tank

Recommended values for screws corresponding to the strength category:

Screws	Strength category	Thread	Torque [Nm]
Hex-head screw	8.8	M16	200

Tab. 20 Torque cover fixing screws oil separator tank

2.3.4 Tightening torques for lifting eye

Recommended values for screws by strength class:

Screws	Strength class	Thread	Torque [Nm]
Hex-head bolt	8.8	M12	30
Hex-head bolt	8.8	M16	200

Tab. 21 Torques for lifting eye screws

2.3.5 Ambient conditions

Positioning	Limit value
Maximum altitude amsl* [m]	1000
Minimum ambient temperature [°C]	−10
Maximum ambient temperature [°C]	+50
* Higher altitudes are permissible only after consultation with the manufacturer.	

Tab. 22 Ambient conditions

2.3.6 Additional specifications according to the machine's operating licence

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

- dimensions,
- track width,
- footprint,

are to be found in the dimensioned drawing 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 Chassis options

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

2.5 Machines with stationary frame design

2.5.1 Option rw, rx Mass of machines with stationary frame design

Actual mass of individual machines are dependent on equipment fitted (see machine nameplate).

➢ Enter the actual overall weight* from the nameplate as reference.

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

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

Tab. 23 Mass of the machine

2.6 Compressor

2.6.1 Working gauge pressure and volumetric flow rate

Maximum working pressure [bar]	7	10	12	14
SIGMA airend	27–G			
Flow rate as per ISO 1217:2009. Annex D				

Maximum working pressure [bar]	7	10	12	14
Flow rate [m^3/min]	8.4	6.8	6.1	5.5
Flow rate as per ISO 1217:2009. Annex D				

Tab. 24 Working gauge pressure and volumetric flow rate

2.6.2 Compressed air outlet

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

Tab. 25 Compressed air distributor

2.6.3 Safety valves

Maximum working pressure: see machine nameplate

Maximum working pressure [bar]	Activating pressure [bar]
7	10
10	13
12	15
14	15.9

Tab. 26 Safety valve opening pressure

2.6.4 Temperature

Required temperatures readiness to switch to LOAD mode	Values
Airend discharge temperature (ADT) [°C]	20
The engine coolant temperature (ECT) [°C]	20

Tab. 27 Required temperatures readiness to switch to LOAD mode

Airend discharge temperature	Values
Typical airend discharge temperature during operation [°C]	75 100
Maximum airend discharge temperature (automatic safety shut-down) [°C]	117

Tab. 28 Airend discharge temperature

2.6.5 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	Synthetic oil	Synthetic oil
Application	Standard oil for all applications except in connection with processing of foodstuffs. Particularly suitable for machines with a low duty cycle.	Standard oil for all applications except in connection with processing of foodstuffs. Particularly suitable for machines with a high duty cycle. Not suitable for East and Southeast Asia.	Special oil for ambient conditions with high temperatures and humidity. Standard oil for all applications except in connection with foodstuffs. Particularly suitable for machines with a high duty cycle.
Viscosity at 40°°C	46 mm^2/s (ASTM D445)	46 mm^2/s (ASTM D445)	53 mm^2/s (ASTM D445)
Viscosity at 100 °C	6.9 mm^2/s (ASTM D445)	7.2 mm^2/s (ASTM D445)	8.0 mm^2/s (ASTM D445)
Flash point	230 °C (ASTM D92)	251 °C (ASTM D92)	258 °C (ASTM D92)
Density at 15 °C	0.868 g/cm^3 (ASTM D1298)	0.860 g/cm^3 (ASTM D1298)	0.869 g/cm^3 (ASTM D1298)
Pour point:	–30 °C (ASTM D97)	–27 °C (ASTM D97)	–54 °C (ASTM D97)

Tab. 29 Cooling oil recommendation

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 H1, NSF approved for applications where contact with foodstuffs may sporadically or incidentally be possible.	USDA H1, NSF approved for applications where contact with foodstuffs may sporadically or incidentally be possible.
Viscosity at 40° °C	46 mm^2/s (ASTM D445)	68 mm^2/s (ASTM D445)
Viscosity at 100 °C	8.0 mm^2/s (ASTM D445)	10.5 mm^2/s (ASTM D445)
Flash point	246 °C (ASTM D92)	238 °C (ASTM D92)

	SIGMA FLUID	
	FG-460	FG-680
Density at 15 °C	0.842 g/cm³ (ASTM D1298)	0.854 g/cm³ (ASTM D1298)
Pour point:	–39 °C (ASTM D97)	–39 °C (ASTM D97)

Tab. 30 Cooling oil recommendation (food processing)

2.6.6 Cooling oil charge

Cooling oil	Fluid volume [l]
Machine	22
Compressor unit + heat exchanger (option db)	25

Tab. 31 Cooling oil charge

2.7 Engine

2.7.1 Engine specification

Feature	Specification
Make/Model	Kubota / V 3307–CRT
Engine control	Electronic
Fuel injection	Common rail system
Rated engine power [kW]	54.6
Speed at LOAD operation [min^{-1}]	2400
Speed at IDLE operation [min^{-1}]	approx. 1900
Type of fuel	Diesel
Fuel consumption under LOAD operation [l/h]	14.0
Oil consumption relative to fuel consumption [%]	approx. 0.5

Tab. 32 Engine specification

2.7.2 Carbon dioxide emission value

These CO_2 measurements result from testing a (parent) engine over a fixed test cycle under laboratory conditions. The engine is representative of the engine family and shall not imply or express any guarantee of the performance of an individual engine.

CO_2 measurement	Value
CO_2 emission [g/kWh]	807.2

Tab. 33 CO_2 emission value

2.7.3 Oil recommendation

The engine oil must meet the following classification:

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

➢ Use only engine with low white ash build up.

- Engine oils that do not conform to the above can shorten the useful life of the engine!
- The use of unlisted engine oils requires prior authorisation by KAESER.

➢ Please contact the authorised 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 viscosity that is too low reduces the lubricating capacity and may cause very high oil consumption.

Viscosity is classified by SAE.

Always use multi-grade lubricating oils!

Always ensure the prescribed lubricating oil quality when selecting the viscosity class!

Ambient temperatures [°C]	Viscosity class
> 25	SAE 30 SAE 10 W–30 SAE 15 W–40
−10 25	SAE 10 W–30 SAE 15 W–40
−20 40	SAE 10W-40
< −10	SAE 10 W–30

Tab. 34 Engine oil recommendation

Initial engine oil quantity:

The engine is filled initially with the following engine oil:

Ambient temperatures [°C]	Viscosity class
−20 40	SAE 10W-40

Tab. 35 Initial engine oil quantity

2.7.4 Fuel recommendation

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

According to these standards 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.

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

Very low-sulphur diesel fuel is prescribed by law for engines certified pursuant the following standards and equipped with exhaust treatment systems.

- (≤0.0010% Sulphur – EU: Tier IIIB)
- (≤0.0015% Sulphur – EPA: Tier 4 interim)

Never store fuel in galvanised containers!

2.7.5 Engine coolant recommendation

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

Water quality:

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

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

Characteristic		Value
pH value		6.5-8.0
Chloride	[mg/l]	max. 80
Chloride + sulphate	[mg/l]	max. 160
Alkaline earth ions	mmol/l	2.7
Hardness	°dH	15
1°dH = 0.1783 mmol/l; alkaline earth ions = 7.147 mg/l Ca^{2+} or 4.336 mg/l Mg^{2+}		

Tab. 36 Water quality specification

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

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

Coolant quality:

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

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

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

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

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

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

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

Initial filling of corrosion inhibitor/antifreeze:

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

Components	Description	Percentages [% vol.]
Corrosion inhibitor/antifreeze	Glysantin® G40®	50
Water		50

Tab. 37 Initial filling of coolant cooler

Miscibility with other corrosion inhibitors/antifreeze agents:

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

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

2.7.6 Fluid volumes

Description	Fluid volume [litre]
Engine oil	11.0
Fuel	140.0
Coolant	16.0

Tab. 38 Fluid volumes

2.7.7 Batteries

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

Tab. 39 Batteries

2.8 Options

2.8.1 Air treatment options

2.8.1.1 Option ea, ec
Tool lubricator

Name	Temperature range [°C]	Fluid volume [l]
Special road breaker lubricant	–25 50	2.5

Tab. 40 Road breaker lubricant recommendation

2.8.1.2 Option dc
Fresh air filter

Feature	Value
Maximum working pressure [bar]	16
Minimum ambient temperature [°C]	1.5
Maximum ambient temperature [°C]	30

Tab. 41 Fresh air filter conditions

2.8.1.3 Air quality at the compressed air outlets

Interrelation between compressed air treatment and compressed air quality:

Air treatment		Compressed air quality	
Option designation	Components	Characteristics	Abbreviation
da	■ Aftercooler ■ Centrifugal separator	cool and condensate-free	A
da + df	■ Aftercooler ■ Centrifugal separator ■ Heat exchanger	dry and warmed	W
da + dd	■ Aftercooler ■ Centrifugal separator ■ Filter combination	dry and technically oil-free	F
da + dd + df	■ Aftercooler ■ Centrifugal separator ■ Filter combination ■ Heat exchanger	technically oil-free and warmed	G
ea ec	Tool lubricator	Lubricated	E

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

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

2.8.2 Option ba
Low temperature equipment

2.8.2.1 Ambient conditions

Installation	Limit value
Maximum elevation ASL* [m]	1000
Minimum ambient temperature [°C]	–25
Maximum ambient temperature [°C]	+50
* Higher altitudes are permissible only after consultation with the manufacturer	

Tab. 43 Ambient conditions, low temperature equipment

2.8.2.2 Option bb
Engine coolant pre-heating

Further information Section 2.8.3 provides the data for the coolant pre-heating system of the diesel engine.

2.8.3 Option bb; od
Auxiliary electrical systems

Power supply connection details:

Mains supply	Value
Mains voltage [V / 1-phase / N / PE]	230
Frequency [Hz]	50
Supply cable cross-section [mm^2] (Cu multi-core)	3 x 1.5
User's fusing [A]	16

Tab. 44 Power supply connection details

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

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

Tab. 45 Technical data – Coolant pre-heating device

Option od **Battery charger:**

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

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

Tab. 46 Battery charger specification

2.8.4 Option ga Generator

Generator specification:

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

Tab. 47 Generator specification

Reduced compressed air flow rate:

Maximum working pressure [bar]	7	10	12	14
SIGMA airend	27–G			
Flow rate [m^3/min]	2.3 – 8.4	1.8 – 6.8	1.6 – 6.1	1.5 – 5.5
* value depending on current supply				

Tab. 48 Flow rate in generator mode

Connections

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

Tab. 49 Connection sockets

Circuit breaker

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

Tab. 50 Circuit breaker

Operating limits

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

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

Tab. 51 Generator operating limits

Maximum power loading by consumers:

Resistive consumers include lamps and heaters, for example.
Electric motors and transformers are inductive consumers.

Nominal rating conditions

- Ambient temperature: 25 °C
- Max. height above sea level of the place of installation: 1000 m

Three-phase power supply:

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

Tab. 52 Maximum three-phase mains loading

Single phase

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

Tab. 53 Maximum single-phase mains loading

Power reduction at elevated ambient temperatures

Ambient temperature [°C]	Generator power
≤30	Full power available
>30	Reduction of 10 % for each temperature rise of 10 °C.

Tab. 54 Power reduction at elevated ambient temperatures

2.8.5 Option oc GSM/GPS unit

Feature	Specification
Supplier/Manufacturer	Proemion
Type	CANlink mobile 5***

Tab. 55 GSM/GPS unit

3 Safety and Responsibility

3.1 Basic instructions

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

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



Disregard of warning or safety instructions can cause serious injuries!

- ➢ Use this machine only if it is in a technically perfect condition and only for the purpose for which it is intended; observe all safety measures and the instructions in the service manual!
- ➢ Immediately rectify (have rectified) any faults that could be detrimental to safety!

3.2 Specified use

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

- ➢ Keep to the specifications listed in this service manual.
- ➢ Operate the machine only within its performance limits and under the permitted ambient conditions.
- ➢ Do not use compressed air for breathing purposes unless it is specifically treated.

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 of explosive gases or vapours.
- ➢ Do not operate the machine in areas in which specific requirements with regard to explosion protection are in force.

3.4 User's responsibilities

3.4.1 Observe statutory and universally accepted regulations

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

- ➢ Observe relevant statutory and accepted regulations during transport, operation, 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.

Authorised operators possess the following qualifications:

- are of legal age,
- are conversant 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.

Authorised maintenance personnel possess the following qualifications:

- are of legal age,
- are conversant with and adhere to the safety instructions and sections of the service manual relevant to maintenance,
- are fully conversant with the safety concepts and regulations of motor vehicle, electrical and compressed air engineering,
- are able to recognise 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.

Authorised transport personnel possess the following qualifications:

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

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

3.4.3 Complying with inspection schedules and accident prevention regulations

The machine is subject to local inspection schedules.

Examples of operation in Germany

➢ Have the pre-commissioning inspection carried out according to the Ordinance on Industrial Safety and Health, §15.

➢ Carry out recurring inspections to *DGUV Regel 100–500*, chapter 2.11:
The user must ensure that the machine's safety devices are checked for function as required or at least annually.

➢ Carry out oil changes to *DGUV Regel 100–500*, chapter 2.11:
The user must ensure that the cooling oil is changed as required or at least annually and the oil change must be documented. Intervals may be varied if an analysis proves that the oil is still usable.

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

Inspection	Inspection interval	Inspection authority
Equipment inspection	Before commissioning	Approved supervisory body
Internal inspection	Every 5 years after commissioning or the last inspection	Competent person (e. g. KAESER SERVICE technician)
Strength test	Every 10 years after commissioning or the last inspection	Competent person (e. g. KAESER SERVICE technician)

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

Checking the lifting point

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

➢ Have lifting eye checked.

Lifting eye is not in order: The machine must not be transported by crane. Have the machine repaired immediately.

3.4.4 Taking the machine for general inspection

To ensure safety on public roads, every vehicle owner is obliged to have his vehicle inspected in regular intervals. A trailer will be inspected for roadworthiness and compliance 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 mass of the trailer

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

General inspection intervals:

Machine mass [kg]	≤ 750	< 3500	> 3500
1. Inspection interval after initial registration:			
Interval [months]	36	24	12
Further inspection intervals:			
Interval [months]	24	24	12

Tab. 57 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.

3.4.6 Attachment of a "Hazardous goods" label

The special regulation 363 "Transport of machines and equipment with liquid fluids" of the European regulations for the hazardous goods transport (ADR) has taken effect.

This regulation requires that machines filled with more than 1 litre petrol or 5 litres diesel (in the fuel tank) during transport must be identified with hazardous goods labels on the machine's exterior.

Number of labels per machine:

- *Fuel tank content 60l - 450l*
  - ➢ Attach one label to the exterior.
- *Fuel tank content 450l - 1500l*
  - ➢ Attach one label on every exterior side.

The operator of the machine but also the authorised users and transport personnel are responsible for compliance with this requirement. Please instruct your employees accordingly.

A violation of this regulation will be punished with a fine and the further machine transport will be forbidden.

➢ Have a "Hazardous goods" label attached.

Further information Chapter 3.7 “Safety signs” indicates the suggested position(s) for the hazardous goods label(s).

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 colour- and odour-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 authorised electricians or trained personnel under the supervision of a qualified and authorised 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 bar)
- ➢ 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 foodstuff-compatible cooling oil whenever compressed air is to come into contact with foodstuffs.

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 belt 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 re-starting.

Temperature

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

- ➢ Avoid contact with hot components.
  These include, for example, engine, compressor airend, oil and compressed air lines, coolers and oil separator tank. Any objects in or near the flow of exhaust gas or discharged cooling air will become very hot.
- ➢ Wear protective clothing.
- ➢ Wear protective gloves when connecting or disconnecting compressed air hoses.
- ➢ Allow the machine to cool down before commencing any maintenance work.
- ➢ If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting oil vapours 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 pressure 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 mass beyond the permissible limit and/or endanger its safe use or transportation. Any such changes invalidate the approval to use the machine or tow it on the road.
- ➢ Prior to any technical modification and expansions of the machine, obtain the written approval of the manufacturer.

3.5.2 Safe machine operation

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

Personal protective equipment

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

- ➢ Wear protective clothing as necessary.

Suitable protective clothing (examples):

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

3.5.2.1 Transport

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

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

Transport as trailer

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

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

Transport as trailer on public roads

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

Transporting with a crane

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

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

➢ Loads must be slowly lifted and carefully set down.
➢ Never allow the load to hang from the crane longer than necessary.

The following are forbidden:

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

3.5.2.2 Installation

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

General instructions

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

➢ Do not position the machine under roofs or coverings. A build up of heat from the exhaust can damage the machine.
➢ Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.
➢ Do not operate in areas in which specific requirements with regard to explosion protection are in force.
For instance, the requirements of ATEX directive 94/9/EC "Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres".
➢ Ensure adequate ventilation.
➢ Place the machine in such a manner that the working conditions in its environment are not impaired.
➢ Comply with limit values for ambient temperature and humidity.
➢ The intake air must not contain any damaging contaminants,

Damaging contaminants are for instance:

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

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

Parking the machine:

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

➢ To park the machine, select an even and solid surface which is capable of bearing the machine's weight.
➢ Move the machine only with a towing vehicle.
➢ Secure the parked machine:

- Lower the prop stand / wind down the jockey wheel.
- Chock the wheels to prevent unwanted movement.
  – Place chocks under the wheels.
  – Pull on the parking brake.

➢ Unauthorised persons must not be present in the parking area of the machine. The parking area must be properly secured.
➢ The machine – the chassis and the towing mechanism in particular – must not be stepped on or used for sitting.
➢ Do not place additional loads on the machine (e.g. excavator bucket as anti-theft measure).

3.5.2.3 Commissioning, operation and maintenance

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

➢ Allow maintenance work to be carried out only by authorised personnel.
➢ Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.
➢ Switch off the machine and lock out the supply disconnecting device.
➢ De-pressurise all pressurised components and enclosures.

- Wait until the machine has automatically vented.
- Carefully open the compressed air outlet valve.
- Check: The pressure gauge must read 0 bar!

➢ For maintenance and repair work, isolate machines with "automatic start/stop" (Option ob) from the compressed air network and secure against automatic start.
➢ Allow the machine to cool down.
➢ Do not open the body while the machine is switched on.
➢ Do not open or dismantle any valves.
➢ Use only spare parts approved by KAESER for use in this machine.
➢ Operate the machine only in technically sound condition.
➢ Carry out regular inspections:

- for visible damage and leakage,
- of safety devices,
- of the EMERGENCY STOP device,
- of parts needing monitoring.

➢ Pay particular attention to cleanliness during all maintenance and repair work. Cover components and openings with clean cloths, paper or tape to keep them clean.
➢ Do not leave any loose components, tools or cleaning rags on or in the machine.
➢ Components removed from the machine can still be dangerous.
Do not attempt to open or destroy any components taken from the machine.
➢ Self-locking nuts removed for the installation must not be reused but replaced by new nuts, because the non-positive safety is no longer ensured.
➢ Use only suitable compressed air hoses.

Compressed air hoses must meet the following requirements:

- they are of the right type and size for the highest permissible machine working pressure,
- they are not damaged, worn or of reduced quality,
- they have couplings and connections of the right type and size.

➢ Wear protective gloves when connecting or disconnecting compressed air hoses.

- ➢ Make sure compressed air hoses are de-pressurised before disconnecting from the machine.
- ➢ Secure the open end of an air hose before applying air pressure. An unsecured hose may whip and cause injury.
- ➢ At working pressures>7 bar, compressed air hoses should be secured by a cable to their respective outlet valves.
- ➢ Connect and operate only suitable air tools.

- ■ The air tools must meet the set output pressure of the machine.
- ■ Use a pressure reducer for air tools requiring a lower pressure.
- ■ Use compressed air tools only with the pressure appropriate for its purpose (tool working pressure).

3.5.2.4 De-commissioning, storage and disposal

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

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

3.5.3 Organisational Measures

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

3.5.4 Danger areas

The table gives information on areas dangerous to personnel.

Only authorized personnel may enter these areas.

Task	Danger area	Authorized personnel
Transport	Within a 3 m radius of the machine.	Operating personnel to prepare for transport. No personnel during transport.
	Beneath the lifted machine.	No personnel!
Commissioning	Within the machine. Within a 1 m radius of the machine.	Maintenance personnel
Operation	Within a 1 m radius of the machine.	Operating personnel
Maintenance	Within the machine. Within a 1 m radius of the machine.	Maintenance personnel

Tab. 58 Danger areas

3.6 Safety devices

Various safety devices ensure safe working with the machine.

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

➢ Do not remove or obliterate labels and notices.
➢ Ensure that labels and notices are clearly legible.

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

3.7 Safety signs

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

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

Safety signs outside:

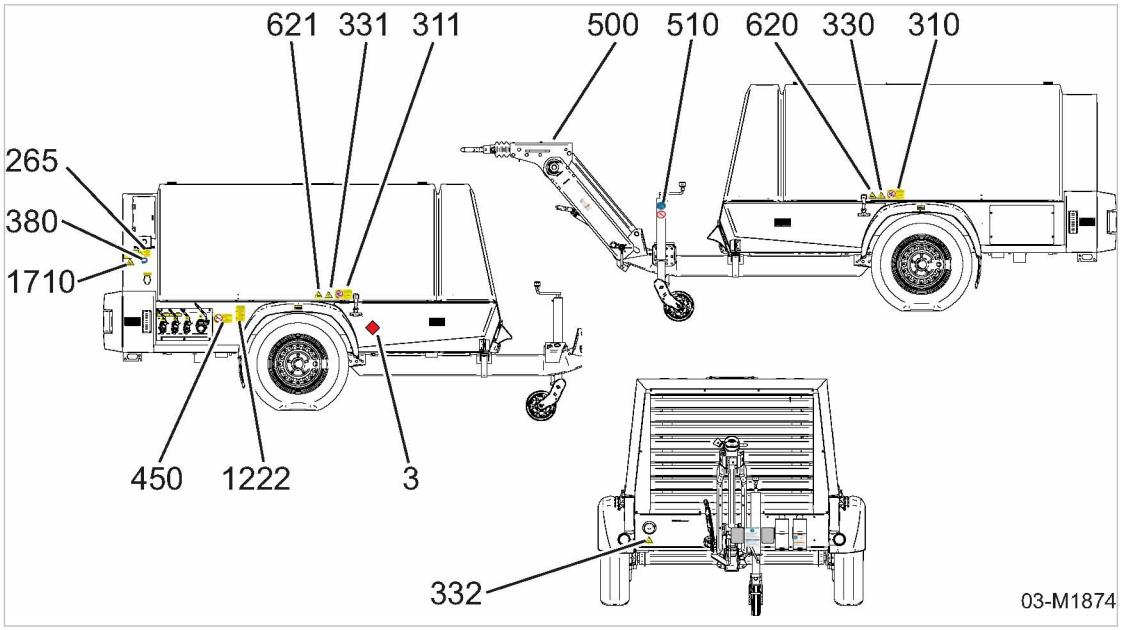


Fig. 1 Location of safety signs (outside)

Location	Symbol	Meaning
3		Hazardous good! Identifies machines filled with fuel during transport as a hazardous good.
265		Caution! Personal injury or damage to the machine due to incorrect operation! ➢ Read and understand the operating manual and all safety information before switching on this machine.

(1) only portable machines
(2) only machines with option ob

Location	Symbol	Meaning
310 311		Warning It is forbidden to operate the machine with open doors or enclosure! Personal injury or machine damage can result from an open machine enclosure. ➢ Operate only with the enclosure fully closed. ➢ Transport only with the enclosure fully closed.
330 331		Warning Hot surface! Risk of burns caused by contact with hot components! ➢ Do not touch the surface. ➢ Wear long-sleeved garments (no synthetics such as polyester) and protective gloves.
332		Warning Hot surfaces and dangerous gases! Burns from contact with hot components or gases. ➢ Do not touch the surface. ➢ Wear long-sleeved garments (no synthetics such as polyester) and protective gloves. ➢ Do not inhale dangerous gases.
380		Danger! Toxic exhaust gases in areas of work! ➢ Never use the machine in enclosed spaces, only in the open. ➢ Direct the exhaust fumes to the open air. ➢ Do not inhale dangerous gases.
450		Warning Loud noise and compressed air blast! Damage to hearing and injury if ball valve is opened without a compressed air hose being connected. ➢ 1. Connect a compressed air hose. ➢ 2. Open the ball valve.
500(1)		Caution! Danger of accident from unstable towing! Injury and machine damage possible. ➢ The compressor tow bar must be parallel with the ground when coupled to the towing vehicle. ➢ Note instructions in the operating manual regarding transporting.
510(1)		Warning Malfunction due to deficient maintenance. Injury and machine damage possible. ➢ Regularly maintain the chassis. ➢ Note the instructions in the operating manual regarding the chassis.

(1) only portable machines
(2) only machines with option ob

Location	Symbol	Meaning
620 621		Warning Risk of serious injuries (to the hands, in particular) or even severing of extremities from rotating components! ➢ Operate the machine only with closed safety guards, access doors and panels. ➢ Shut down the machine before opening a door or canopy and prevent from restarting.
1710(2)		Warning Risk of injury caused by an automatic machine start! ➢ Prior to performing any work on the machine: ■ Shut down the machine. ■ Turn off the «battery isolating switch». ➢ Operate the machine only with closed doors.

(1) only portable machines
(2) only machines with option ob

Tab. 59 Safety signs

Safety signs inside:

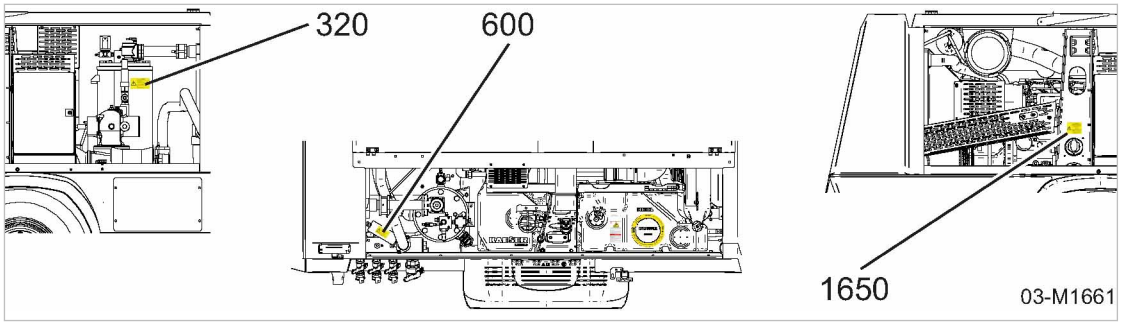


Fig. 2 Location of safety signs (inside)

Location	Symbol	Meaning
320		Warning Loud noise and oil mist! Hearing damage and burns from safety valve blow off. ➢ Wear hearing protectors and protective clothing. ➢ Close the enclosure or doors. ➢ Work with caution.
600		Danger! Risk of fatal injury when dismantling valves (spring-loaded or under pressure)! ➢ Do not open or dismantle valves. ➢ Call an authorised Service Technician in the event of a fault.

Location	Symbol	Meaning
1650		Warning 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.

Tab. 60 Safety signs

3.8 Option ga Generator operation

3.8.1 Comply with the protective measures against dangerous electric current

Protection against dangerous electric current is regulated by the "Low-voltage current generating installations" directive IEC 60364–5–551 (DIN VDE 0100–551).
The protective measure concerning "isolation, insulation monitoring and shut-down" is applied. The generator is equipped with an automatic mains cut-out with overcurrent release and insulation monitoring in accordance with this protective measure.

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

3.8.2 Safe generator operation

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

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

3.8.3 Connecting extension cables

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

Bear in mind:

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

3.8.4 Do not exceed the maximum supply system load

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

Bear in mind:

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

3.8.5 Perform regular generator inspections

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

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

➢ Insulation monitor function check.

Annual inspection by trained and authorised electrician:

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

3.9 Emergencies

3.9.1 Correct actions in the event of a fire

Suitable extinguishing media:

- Foam
- carbon dioxide
- Sand or earth

Unsuitable extinguishing agents:

- Strong jet of water

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

3.9.2 Treating injuries from handling operating fluids/materials

The following operating fluids/materials are in the machine:

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

Eye contact:

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

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

Skin contact:

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

➢ Wash thoroughly with skin cleaner, then with soap and water.

➢ Contaminated clothing should be intensively cleaned before reuse.

If inhaled:

Fuel and oil vapours impair breathing.

➢ Clear the respirator tract from fuel or oil vapour.

Any difficulty with respiration: seek immediate medical help.

If swallowed:

➢ Wash out the mouth immediately.

➢ Do not induce vomiting.

➢ Seek medical aid.

3.10 Warranty

This operating manual does not contain any independent warranty commitment. Our general terms and conditions apply with regard to warranty.

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

Furthermore, we do not assume any warranty obligation for damages caused by:

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

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

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

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:

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

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

The concerned directives and regulations can be:

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

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

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

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

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

3.12 Environment protection

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

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

4 Design and Function

4.1 Bodywork

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

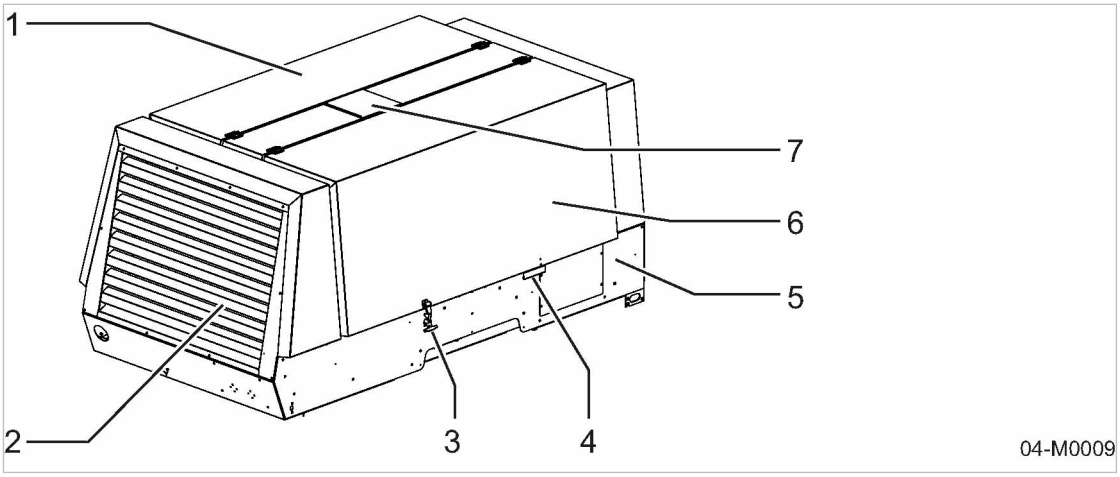


Fig. 3 Overview of bodywork

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

The bodywork has several functions when it is closed:

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

The bodywork is not suitable for the following uses:

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



CAUTION
Pinch hazard!
Risk of serious pinch injury to fingers when closing doors and covers.

➢ Work with caution.
➢ Wear protective gloves as necessary.

Safe and reliable operation is only ensured when the bodywork is closed.
The wing doors are provided with handles for opening. Release the doors by the snap fasteners.
The doors are held open by gas springs.

4.2 Machine layout

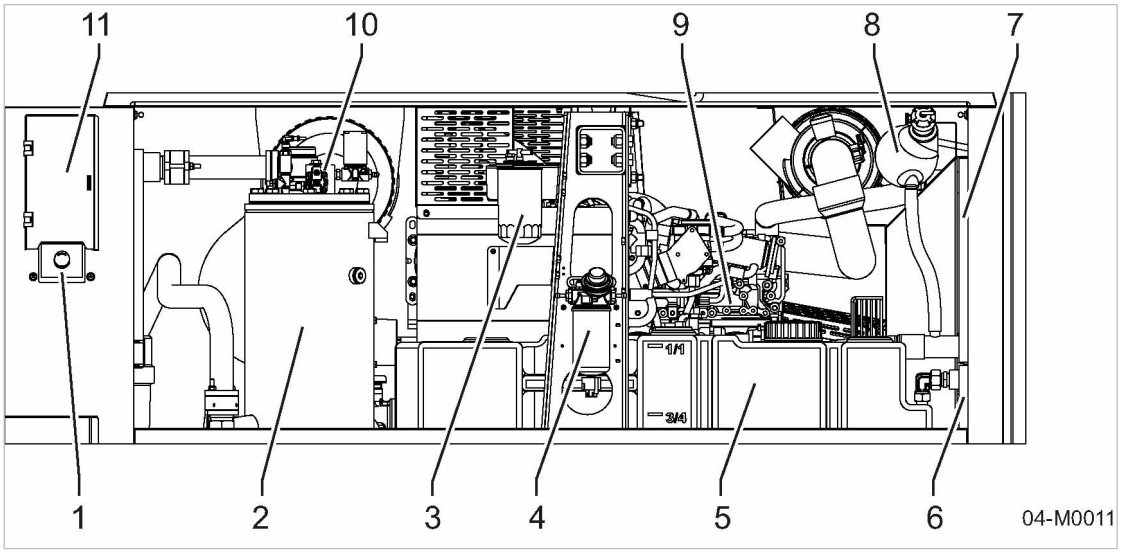


Fig. 4 Right-hand door opened

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

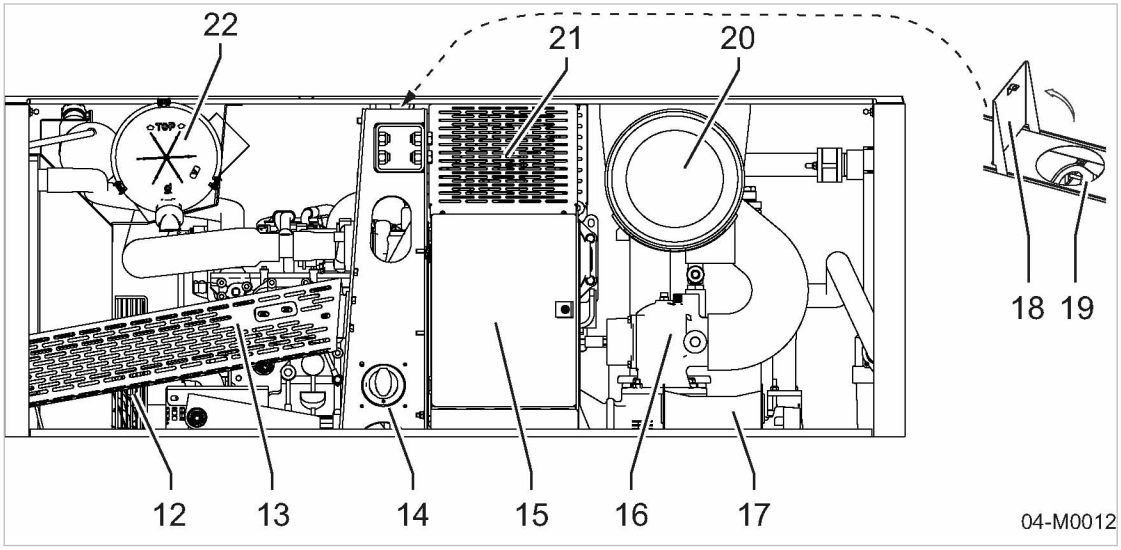


Fig. 5 Left-hand door opened

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

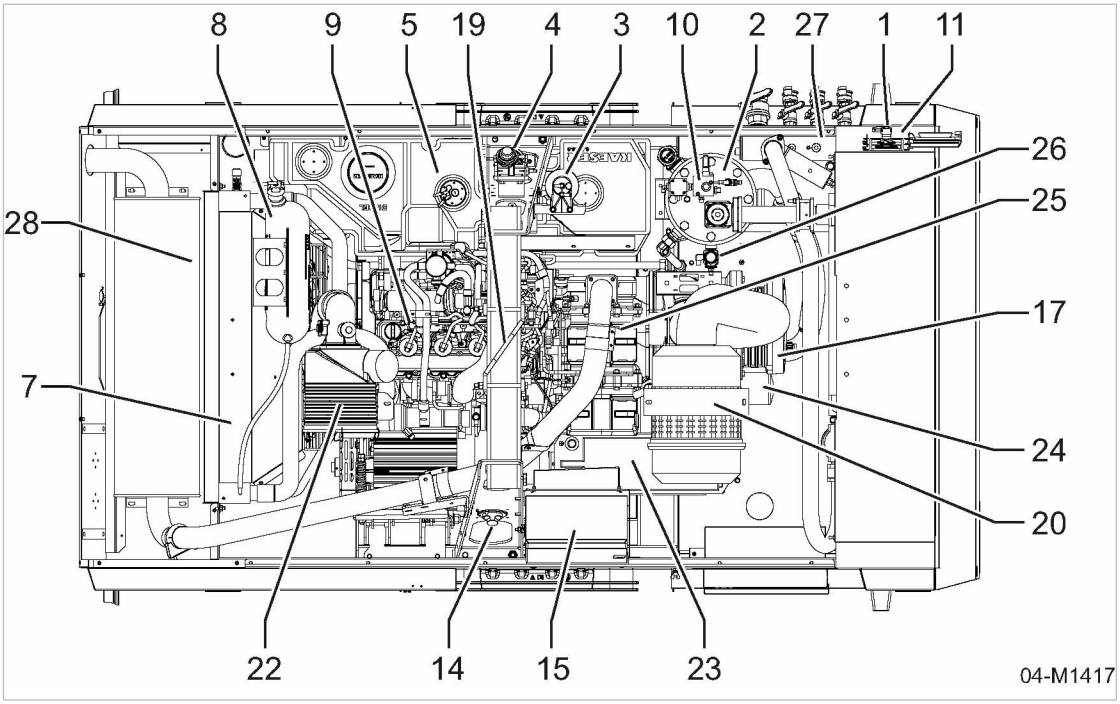


Fig. 6 View from above, machine roof removed

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

4.3 Machine function

Machine function (without options)

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

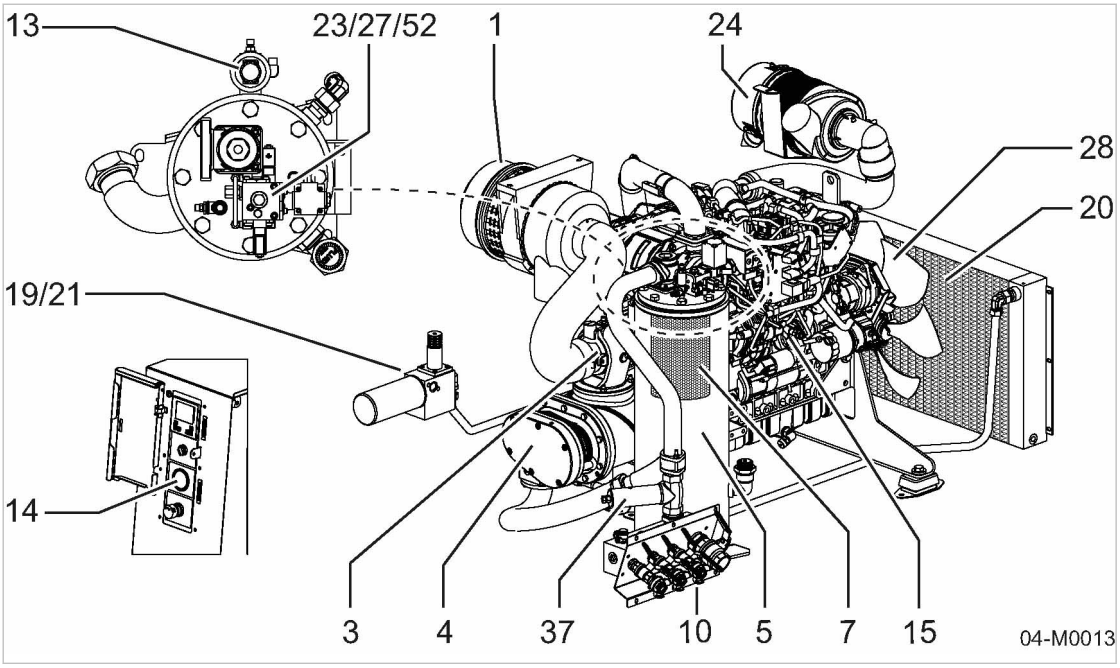


Fig. 7 Machine overview

[1] Compressor air filter
[3] Inlet valve
[4] Airend
[5] Oil separator tank
[7] Oil separator cartridge
[10] Air distributor
[13] Pressure relief valve
[14] Pressure gauge (on the instrument panel)
[15] Drive motor
[19] Thermostatic valve (oil temperature control)
[20] Oil cooler
[21] Oil filter
[23] Proportional controller
[24] Engine air filter
[27] Venting valve
[28] Fan
[37] Minimum pressure check valve
[52] Control valve

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

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

The airend is driven by an internal combustion engine [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 [37] 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.

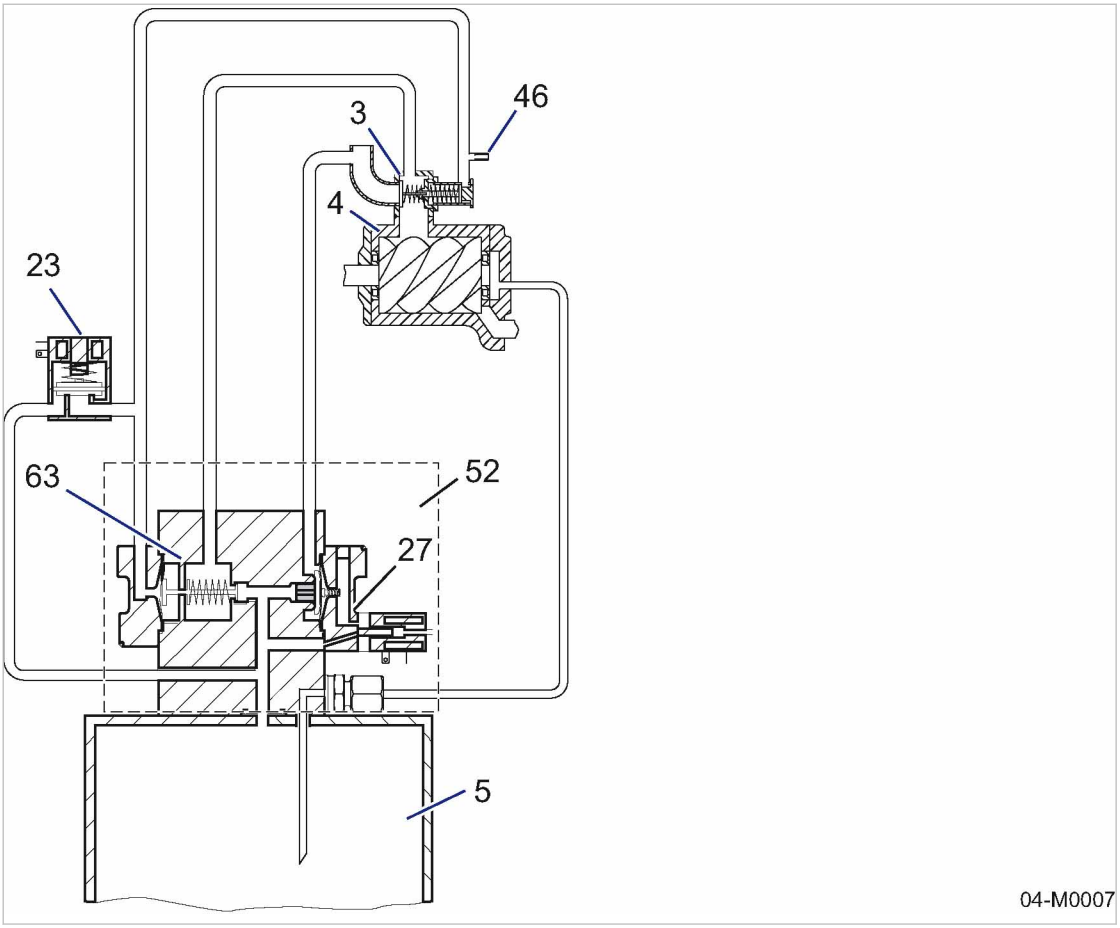


Fig. 8 Stepless regulation of volumetric flow (standstill)

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

4.5 Safety devices

4.5.1 Monitoring functions with shut-down

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

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

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

4.5.2 Further safety devices

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

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

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

4.5.3 Battery isolating switch

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

NOTICE
Danger of short circuit!
Damage to the machine 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.

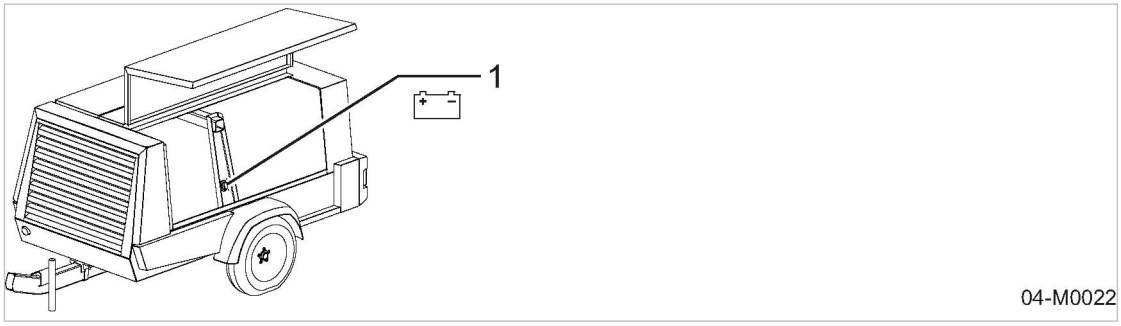


Fig. 9 Battery isolating switch
[1] «Battery isolating switch»

4.6 SIGMA CONTROL SMART control panel

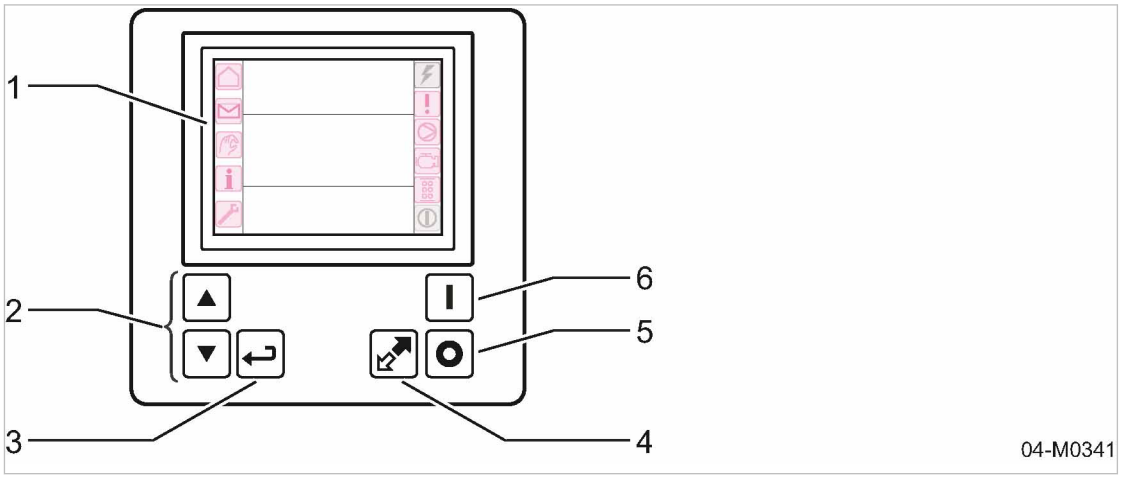
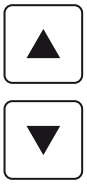


Fig. 10 SIGMA CONTROL SMART operator panel – overview

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

Item	Sign	Designation	Function	Background LED
2		«up» and «down» keys	■ Scrolls upwards or downwards through the menu options. ■ Enter settings. ■ Change values. ■ Switch between menu pages.	–
3		«Enter» key	■ Jumps to the selected menu option. ■ Finish an entry. ■ Activate the input. ■ Acknowledges/resets maintenance tasks. ■ Returns to the superordinate menu item (quick touch) ■ Closes the menu (press for at least two seconds)	–
4		Key «LOAD/IDLE»	Toggles the compressor between LOAD and IDLE operating modes.	Flashes when ready for switching to LOAD mode. Continuous light when the machine is running under LOAD.
5		«STOP» key	■ Stops the machine. ■ Acknowledges/resets maintenance tasks.	Continuous light when a fault has occurred.
6		«START» key	Start the machine.	Flashes when ready to start. Lights continuously, when the engine is running.

Tab. 61 Instrument panel keys and displays

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

4.7 Exhaust gas after-treatment

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

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

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

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

4.7.1 Engine optimisation

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

Electronic engine management:

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

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

Common rail injection system:

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

Exhaust gas return:

Exhaust gas recirculation is a measure to reduce the emissions of nitrogen oxides. At high combustion temperatures, damaging nitrogen oxides (NO_x) increasingly develop in the engine. To reduce these levels, the combustion temperature must be lowered. The cooled and controlled exhaust gas recirculation circulates a portion of the exhaust gas back to the inlet side of the engine where it is added to the inlet air. This reduces the available oxygen volume and thus the combustion temperature. Both measures reduce the development of nitrogen oxides.

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

Exhaust gas turbo-charging:

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

4.7.2 Exhaust gas treatment system

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

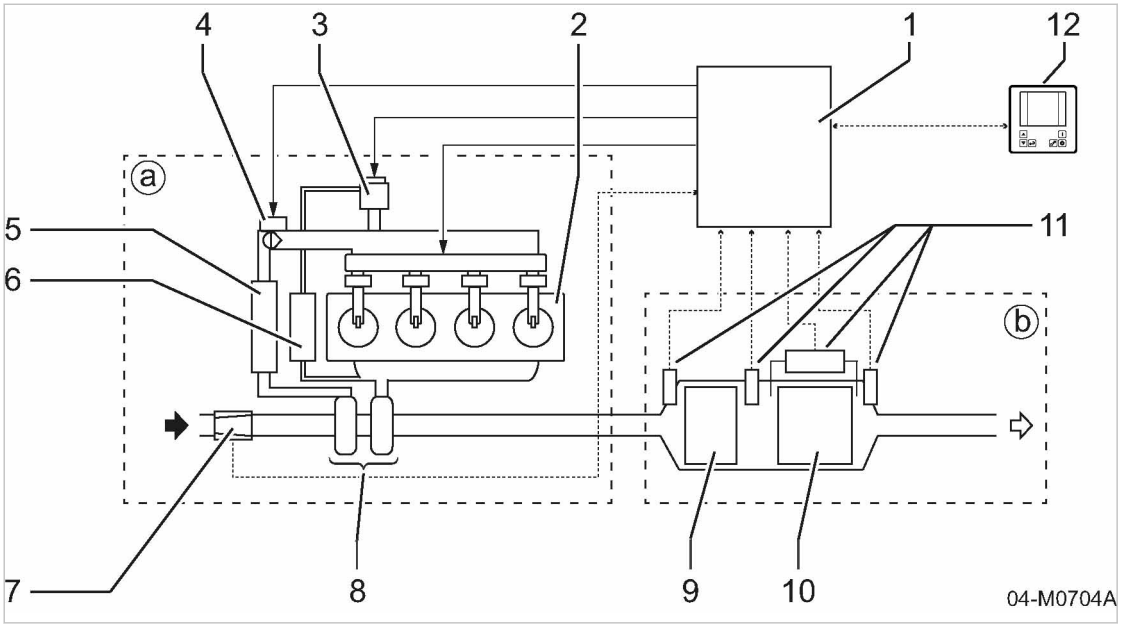


Fig. 11 Principle of treatment devices

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

Diesel oxidation catalytic converter (DOC):

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

Diesel particulate filter (DPF):

The diesel particulate filter is used for reducing the particulate present in the diesel engine exhaust (fine solids and mostly soot). Nearly all of these particles are trapped in the filter and burnt to CO_2 at high exhaust gas temperature.

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

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

4.8 Options

The options available for your machine are described below.

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

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

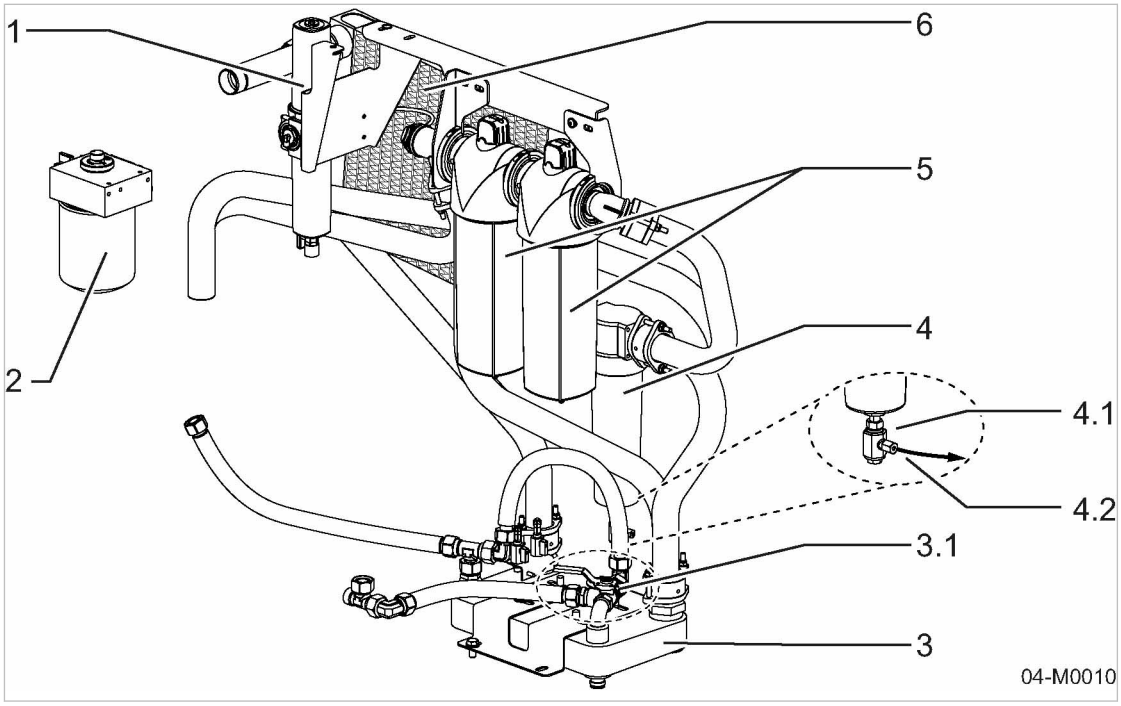


Fig. 12 Compressed air options

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

4.8.1.1 Option da Compressed air aftercooler

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

4.8.1.2 Option da Centrifugal separator

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

4.8.1.3 Option da
Dirt trap with condensate drain pipe

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

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

4.8.1.4 Option df
Heat exchanger

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

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

Option df Compressed air quality with/without heat exchanger:

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

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

Tab. 62 Compressed air quality with/without heat exchanger

4.8.1.5 Option dd
Filter combination

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

4.8.1.6 Option dc
Fresh air filter

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

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

Air must be filtered to remove all contaminants, such as fine dust and oil as well as odours, before it can be used for breathing purposes.
To achieve this, part of the compressed air output from the compressor is passed through a combination of micro-filter and activated carbon filter.

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

DANGER
Danger from toxic air!
Danger of respiratory arrest because the filter does not remove CO/CO_2, methane or other toxic gases or vapours.

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

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

Further information See Chapter 2.8.1.2 for ambient conditions under which the fresh air filter can be used.

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

4.8.1.7 Option ea, ec
Tool lubricator

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

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

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

The oil flow can be stopped by a shut-off valve.
The oil flow adjusts automatically to changes in air demand (one or more tools/consumers on line).

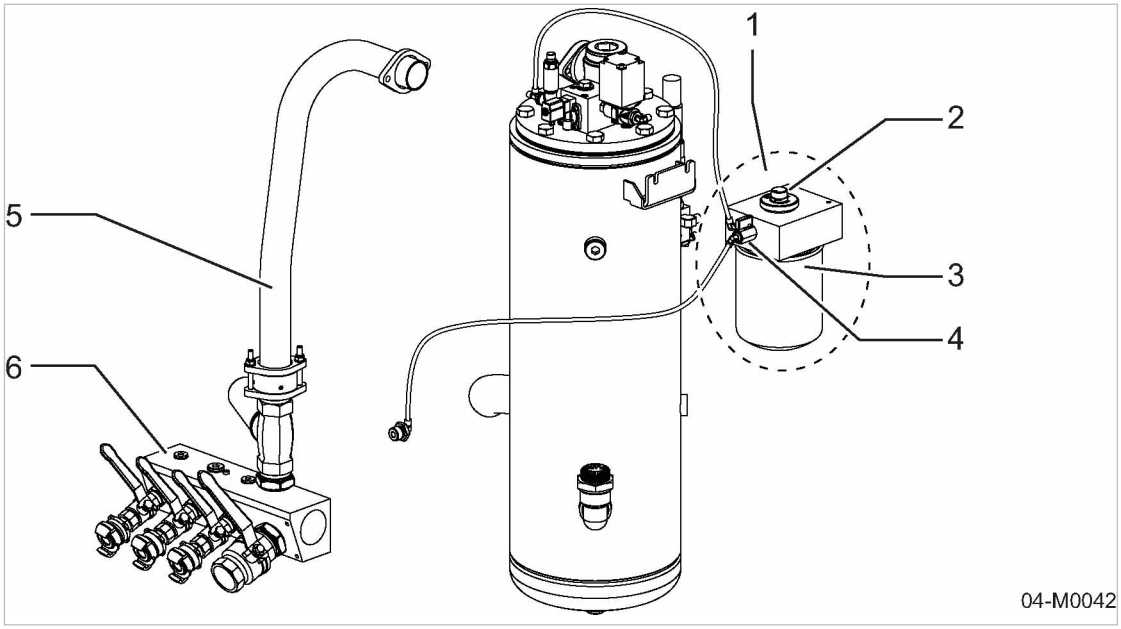


Fig. 13 Tool lubricator

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

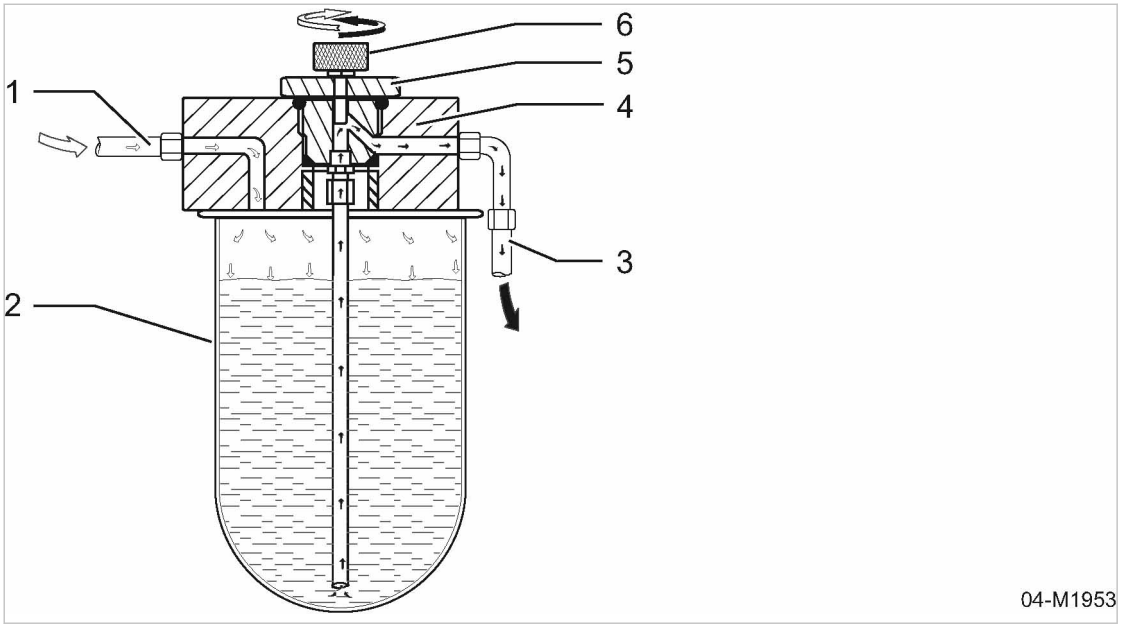


Fig. 14 Principle tool lubricator

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

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

NOTICE
Lubrication with tool oil.
Air tools that must not be lubricated can be damaged.
➢ Blow any residual oil out of the line before connecting such an air tool.

4.8.2 Option bb; od Auxiliary electrical systems

The following auxiliary electrical equipment is provided in the machine:

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

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

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

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

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

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

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

4.8.3 Option ba
Low temperature equipment options

Special equipment is provided for operation in extremely low temperatures.

This equipment assures trouble-free operation in ambient temperatures from -25 °C to +50 °C. The electrical system starts the engine without problem at ambient temperatures as low as -20 °C.

Option bb **Coolant pre-heating:**

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

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

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

4.8.4 Option la
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:

- Spark arrestor

4.8.4.1 Option la
Spark arrestor

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

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

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

4.8.5 Option ga
Generator option

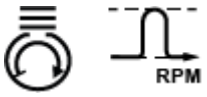
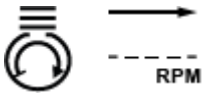
A generator is installed to provide a power supply to electrical consumers. The generator is driven from the engine by a drive belt. A tensioning device automatically ensures optimum belt tension.

4.8.5.1 Operating modes

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

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

- Automatic cut-in
- Continuous load

Generator power supply isolating device	Mode selector switch	What is provided?
OFF	-	Compressed air
ON	 Position 1 (automatic start mode)	Compressed air and electrical power
	 Position 2 (continuous load)	Electrical power and compressed air

Tab. 63 Generator / compressor operation

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

Tab. 64 Generator operating modes

4.8.5.2 Operating controls

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

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

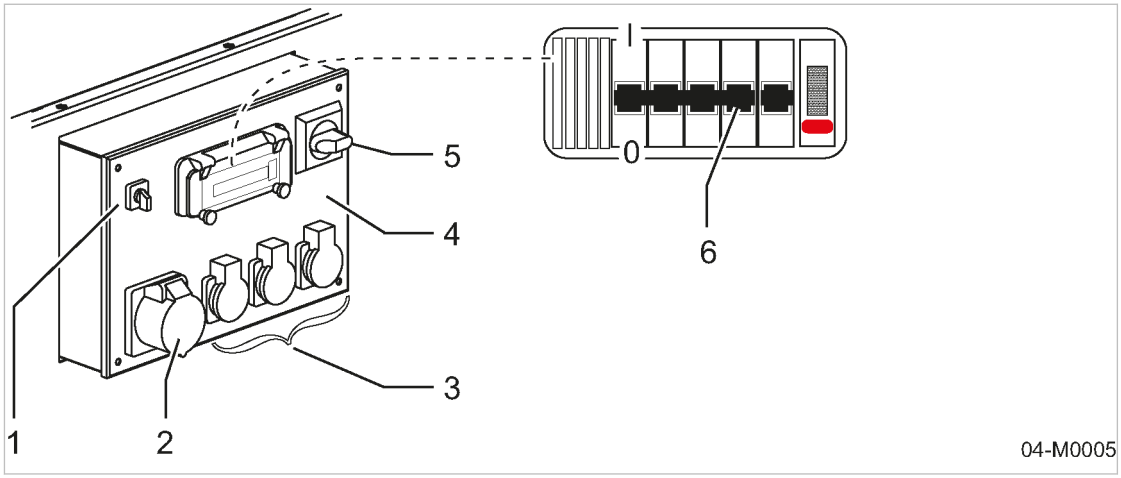


Fig. 15 Instrument panel – generator control box, 400 V three phase

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

Generator 230 V/3~; 13 kVA:

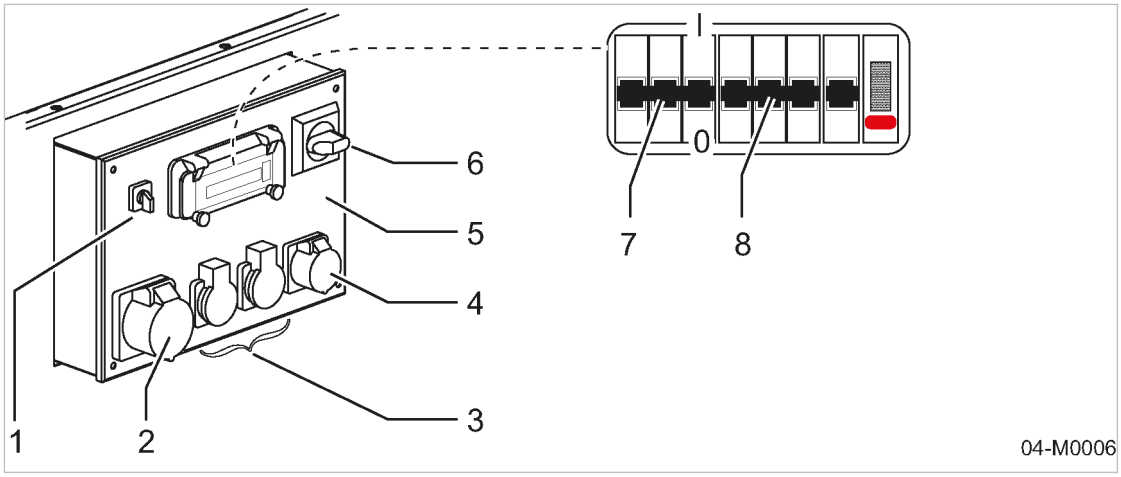


Fig. 16 Instrument panel – generator control box, 230 V three phase

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

Generator 115 V/2~; 7 kVA:

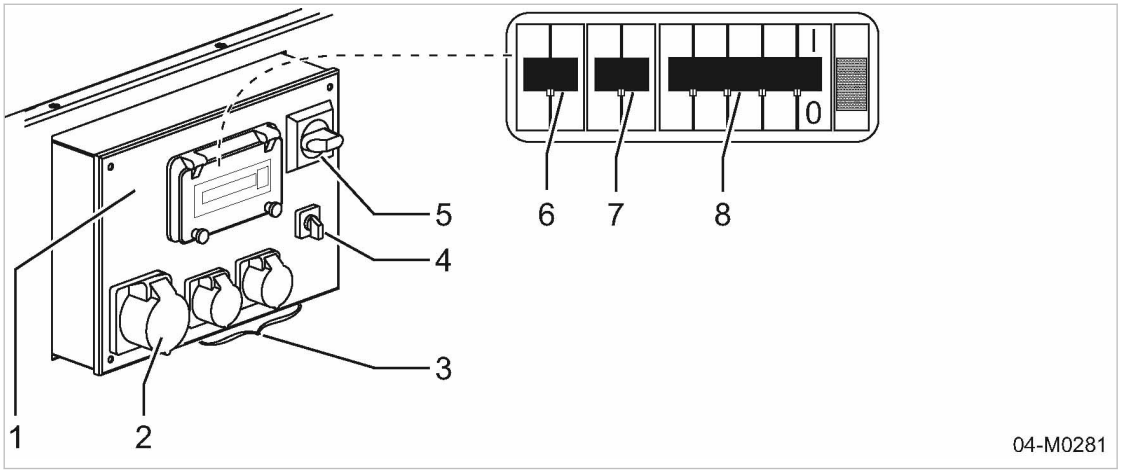


Fig. 17 Control panel, generator control box, 115 V AC

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

4.8.5.3 Note when operating the generator

Do not exceed the maximum supply system load

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

Bear in mind:

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

Connect electrical consumers



DANGER
Devices start automatically without warning.
Serious injury and damage to property is possible.
➢ Make sure that electric consumers are switched off.

Before connecting electrical consumers, carry out the following:

- Read the technical specification for the generator before connecting voltage-sensitive equipment.
- Check that electric consumers and their connecting cables are in perfect condition.
- Plug in and switch on consumers one-by-one.
- Consumers with unfavourable on/off characteristics (e.g. high starting current) should be started first.
  Do not allow the rated current for each electrical socket and for the generator to be exceeded.

Switch off the generator

Before deactivating the generator, carry out the following:

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

4.8.6 Option ob, od Start/stop/automatic options

Option ob **Automatic engine start/stop**

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

Option od **Trickle charging of starter batteries**

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

4.8.7 Option oc GSM/GPS unit

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

The GSM/GPS unit comprises:

- GSM modem
- GPS receiver

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

Further information Dealer/manufacturer and GSM/GPS unit model information can be found in chapter 2.8.5.

4.8.8 Transport options

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

4.8.9 Frame design options for stationary machines

4.8.9.1 Option rw; rx
Frame types of stationary machines

Option	Designation	Characteristics
rw	Skid	■ Frame designed as skid ■ Use as stationary machine ■ Mounted on truck/trailer platform
rx	Frame	■ The mounting assembly is designed as a frame. ■ Use as stationary machine ■ Mounted on truck/trailer platform

Tab. 65 Stationary machines

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

4.8.10 Option oe
Closed floor pan option

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

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

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

Position of service openings in the closed floor pan:

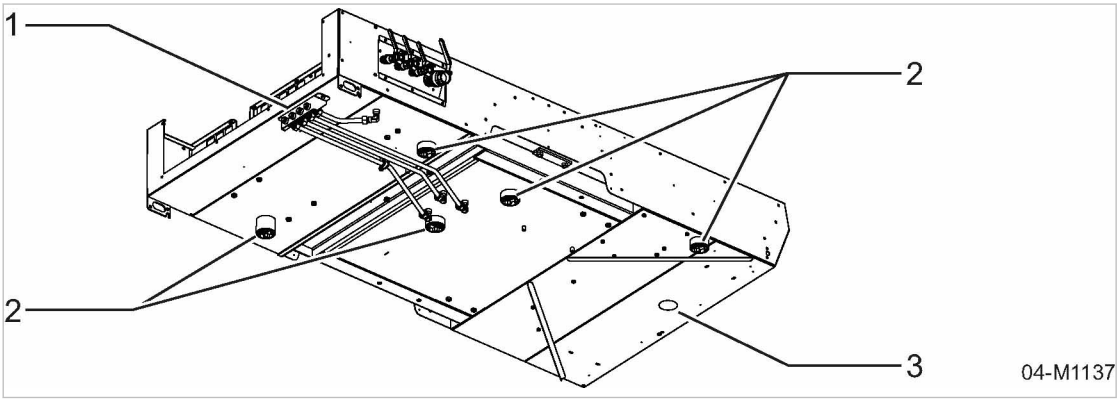


Fig. 18 Position of service openings in the closed floor pan

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

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

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

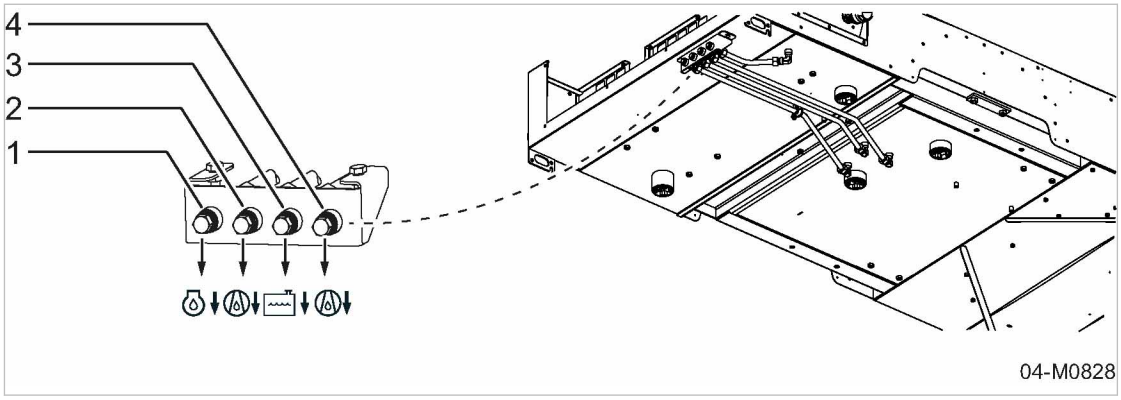


Fig. 19 Drain points for oil and coolant from engine and compressor

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

4.8.11 Option sg
Pedestrian protection option

The machine is provided with pedestrian protection that functions both as a deflector and against pedestrians being run-over.

5 Installation and Operating Conditions

5.1 Ensuring safety

The conditions in which the machine is installed and operated have a decisive effect on safety.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Complying with safety notes

Disregard of safety notes can cause unforeseeable dangers!

- ➢ 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 vapours or parts of the machine.
- ➢ Do not store inflammable material 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.
  For instance, the requirements of ATEX directive 94/9/EC "Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres".
- ➢ Suitable fire extinguishing material must be to hand.
- ➢ Ensure that required ambient conditions are maintained.

Required ambient conditions may be:

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

5.2 Installation conditions

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

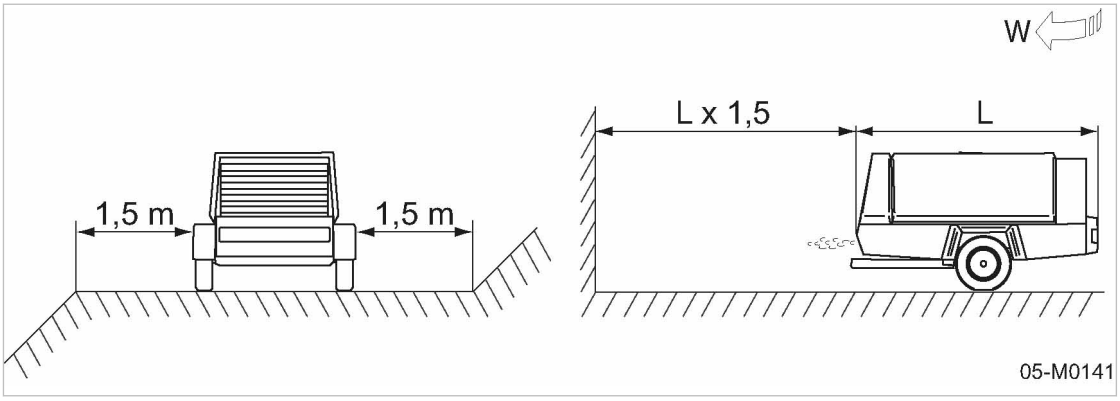


Fig. 20 Minimum distance from excavations/slopes and walls
Ⓦ Wind direction

1. Keep sufficient distance (at least 1.5 m) from the edges of excavations and slopes.
2. Ensure that the machine is as level as possible.

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

3. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance. The operator panel with the «EMERGENCY STOP» button must be accessible and within reach at any time.
4. *NOTICE!*
   Fire hazard from build-up of heat and hot exhaust system!
   Insufficient clearance above the machine may well cause heat build-up that could damage the machine.
   - ➢ Do not position the machine directly under a low roof or covering.
   - ➢ Ensure always sufficient ventilation space around the machine.
5. Ensure there is enough free space all round and above the machine.
6. Keep air inlet and outlet openings free of obstructions so that the cooling air can flow freely through the machine.
7. Install the machine ensuring that
   - exhaust gases and heated exhaust air can escape freely.
   - Do not allow exhaust gases and heated cooling air to be drawn into the compressor. Note the wind direction! (see figure 20)
   - Ensure the unimpeded intake of fresh air (air intake, cooling air).
8. *NOTICE!*
   Ambient temperature too low.
   Frozen condensate and highly viscous engine or compressor cooling oil can cause damage when starting the machine.
   - ➢ Use winter grade engine oil.
   - ➢ Use winter diesel fuel.
   - ➢ Use low viscosity compressor cooling oil.
9. At ambient temperatures below 0 °C, 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 «EMERGENCY STOP» pushbutton 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.

Prior to transporting the machine, check whether the hazardous goods label is attached to the machine. (See chapter 3.4.6) Renew if necessary.

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 notes

Disregard of safety notes can cause unforeseeable dangers!

- ➢ Follow the instructions in chapter 3 'Safety and Responsibility'.
- ➢ Installation work may only be carried out by authorised 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.

Further information

Details of authorised personnel are found in chapter 3.4.2.

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

6.2 Reporting Transport Damage

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

6.3 Perform regular maintenance on the chassis:

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

6.4 Option rx
Installing a machine with stationary frame superstructure on a truck platform

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

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

Material

Bolt-down machine feet (anti-vibration elements)

Fixing screws

Wrench

Precondition

The machine is switched off.

Installing the machine mounts on the frame:

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

Fasten the machine on the load platform:

Precondition The bolt-down machine mounts are attached to the machine.

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

7 Initial Start-up

7.1 Ensuring safety

Here you will find instructions for a 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 notes

Disregard of safety notes can cause unforeseeable dangers!

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

Further information

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

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 Note when commissioning



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 authorised 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 re-commissioning after storage or de-commissioning

➢ Carry out the following before every start-up after long period of storage or de-commissioning:

Storage/de-commissioning period longer than:	Remedy
5 months	➢ Remove the desiccant from the openings in the air intake filters of the engine and compressor. ➢ Check the air and oil filters. ➢ Drain the preserving oil from the separator tank. ➢ Fill with cooling oil. ➢ Drain the preserving oil from the engine. ➢ Fill up with engine oil. ➢ Check the engine coolant level. ➢ 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 tyre pressures.
36 months	➢ Have the overall technical condition checked by an authorised KAESER SERVICE Technician.

Tab. 66 Measures for re-commissioning the compressor after a long period of storage or de-commissioning

7.3 Checking installation and operating conditions

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

Check	See chapter	Confirmed?
➢ Are the operators fully conversant with safety regulations?	–	
➢ Have all the positioning conditions been fulfilled?	5	
➢ Is there sufficient cooling oil in the separator tank?	10.6.1	
➢ Is there sufficient oil in the engine?	10.4.4	
➢ Is the maintenance indicator on the air intake filters (engine and compressor) OK?	10.4.2, 10.6.7	
➢ Is there sufficient coolant in the coolant expansion tank?	10.4.1	
➢ Is there sufficient fuel in the fuel tank?	–	
➢ Is there sufficient tool oil in the tool lubricator? (option ea, ec)	10.11.1	
➢ Are the access doors closed and all body panels in place?	–	
➢ Are the tyre pressures OK?	–	

Tab. 67 Positioning and operating conditions checklist

7.4 Low-temperature operation (winter)

The machine's electric system is designed for starting at ambient temperatures as low as −10 °C.

➢ In temperatures below 0 °C, use the following operating materials/components:
- Winter grade engine oil
- Low viscosity cooling oil for the compressor
- Winter grade diesel fuel
- Stronger battery



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

7.4.1 Jump starting the machine

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

Material Jumper cables

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



WARNING
Fire and explosion hazard.
Short-circuit currents caused by short-circuited battery. Shorted batteries can catch fire or explode.
Battery casing may crack and allow acidic fluid to spray out.

➢ Observe the instructions provided with the battery jumper cables.

➢ Do not connect the battery jumper cables to the negative pole of the discharged battery or to the bodywork of the machine.

➢ Work with caution.

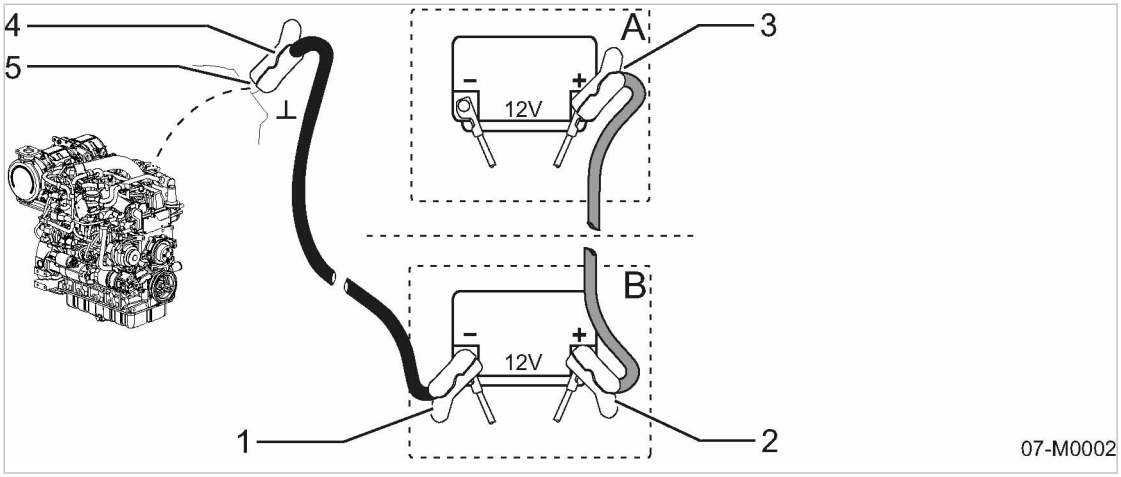


Fig. 21 Jumper cable connection diagram

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

Complying with safety notes:

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

Preparations:

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

Connecting the battery jumper cables:

1. Clamp the first terminal clamp [3] of the red jumper cable to the positive pole of the machine's battery.
2. Clamp the second terminal clamp [2] of the red jumper cable to the positive pole of the assisting vehicle's battery.



3. **DANGER!**
   Explosion hazard!
   A spark may ignite an explosive gas mixture.
   - ➢ Do not, under any circumstances, connect the negative pole of the assisting machine to the negative pole of the battery in the machine to be jump-started.
     Sparks may be caused when connecting and disconnecting.
   - ➢ Work with caution.
4. Connect the first pole clamp [4] of the black jumper cable to the engine block or a connected, solid and unpainted metal component of the machine [5] (as distant as possible to the battery).
5. Clamp the second terminal clamp [1] of the black jumper cable to the negative pole of the assisting vehicle's battery.

Starting the engine:

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



Upon a successful start, run both engines run for approximately 10 – 15 minutes.
This is important, in particular for fully discharged batteries. In the beginning, they will only pick up little current and have a high internal resistance. Any voltage peaks occurring in the engine generator in this state can be attenuated only by the batteries of the assisting vehicle. In particular the engine electronics of the machine are sensitive to overvoltages and could be damaged easily.

Disconnecting the battery jumper cables:

1. Stop the engine of the assisting vehicle.
2. Disconnect the jumper cables in the reverse order, first negative (-) then positive (+) poles.
3. Replace the pole caps.
4. Close the maintenance panels and/or bonnet.



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

7.4.2 Option ba
Starting up low-temperature equipment

Option bb **Starting the engine coolant pre-heating:**

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

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

7.5 Option bb; od Commissioning electrical equipment

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

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

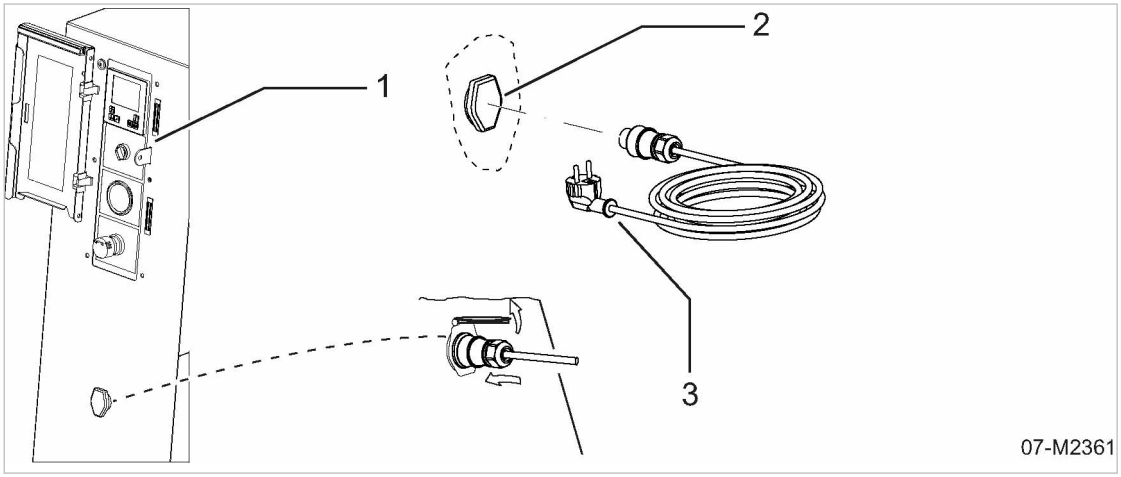


Fig. 22 Connect auxiliary electrical systems

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



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

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

7.6 Option ga Activating the generator

7.6.1 Checking the generator

The generator can be operated without earthing.
Test the insulation monitoring daily with the engine running before putting the generator into operation.

Generator 400 V/3~; 13 kVA:

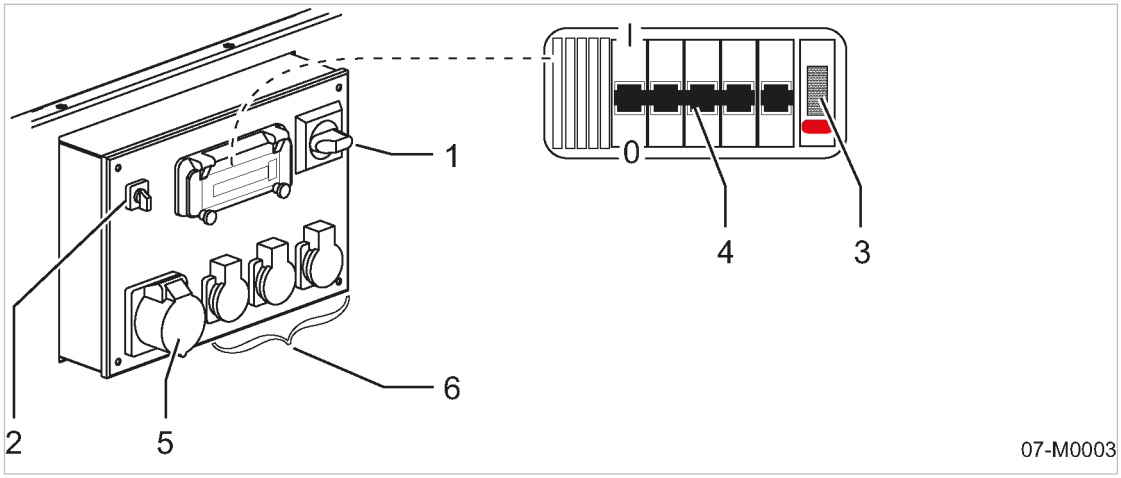


Fig. 23 Insulation monitoring – 400 V three-phase Generator

Generator 230 V/3~; 13 kVA:

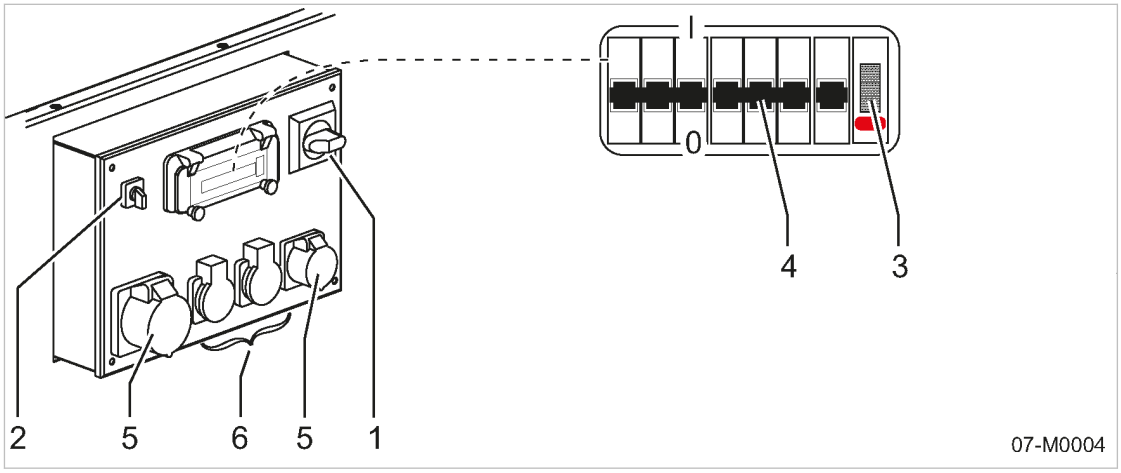


Fig. 24 Insulation monitoring – 230 V three-phase Generator

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

Generator 115 V/2~; 7 kVA:

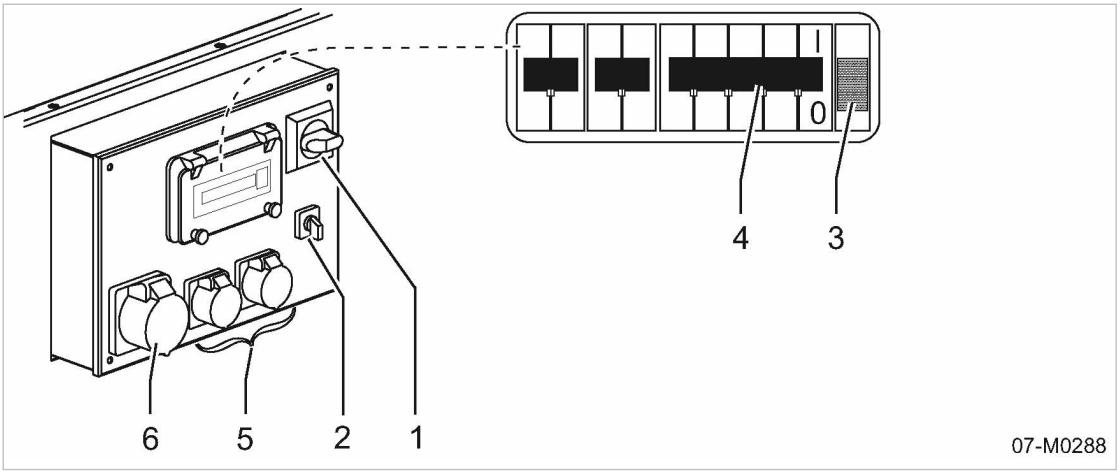


Fig. 25 Insulation monitoring - 115 V single phase generator

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

1. Start the machine.

2. **DANGER!**
   Risk of fatal injury caused by contact with live components!
   ➢ The generator may only be used if the «circuit breaker» («mains circuit breaker») has tripped during the test!

3. Check the insulation monitor according to instructions:

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

DANGER!

Electrical power

Risk of fatal injury caused by contact with live components!

▸ Test the «mains circuit breaker» each day while the machine is running.

▸ The generator may only be operated if the «mains circuit breaker» is functioning correctly.

Checking the «safety cut-out»:

➢ Switch on the «mains circuit breaker» for the generator.

➢ Press and hold the «test button» for 3 seconds.

The «mains circuit breaker» trips out.

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

➢ Shut down the generator and call KAESER SERVICE.

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

8 Operation

8.1 Ensuring safety

Here you will find instructions for a safe operation of the machine.
Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Complying with safety notes

Disregard of safety notes can cause unforeseeable dangers!

- ➢ Follow the instructions in chapter 3 'Safety and Responsibility'.
- ➢ Make sure that no one is working on the machine.

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.

Safe working with compressed air tools and hoses

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

- ➢ Pressurise compressed air hoses only after the tool has been connected.
- ➢ Do not pressurise open compressed air hoses.
- ➢ Detach compressed air hoses only after the hose has been purged of compressed air.
- ➢ At working pressures >7 bar, 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 minimise 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 authorised personnel are found in chapter 3.4.2.
Details of dangers and their avoidance are found in chapter 3.5.

8.2 Starting and stopping

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

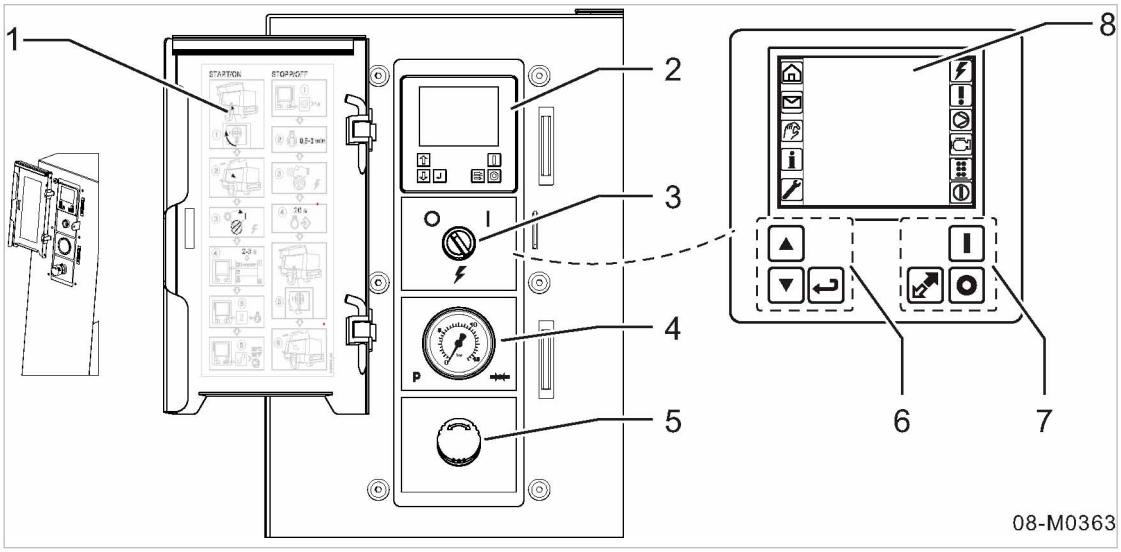


Fig. 26 Starting instruments

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

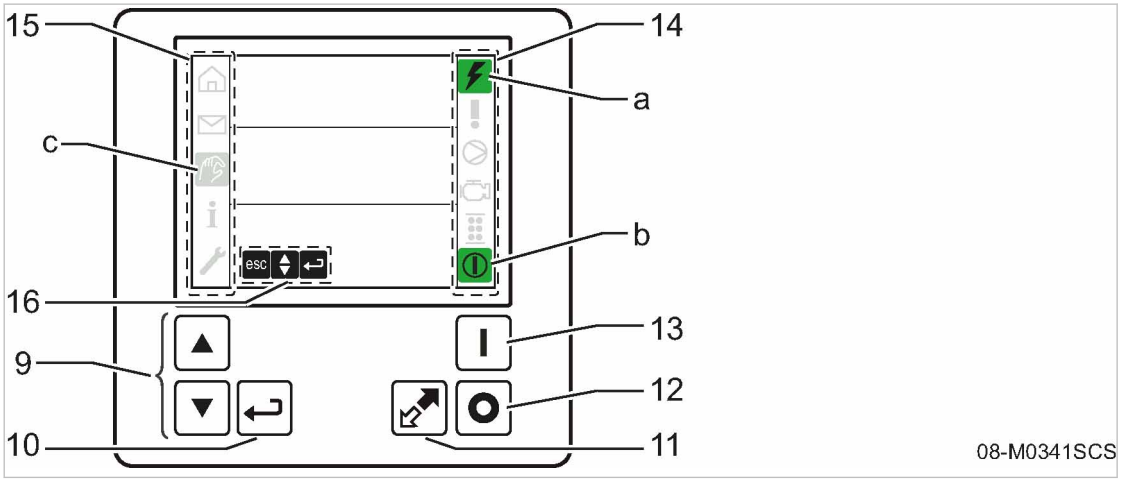


Fig. 27 Instrument panel keys and indicators

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

8.2.1 Follow the brief operating instructions

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

Starting sequence:

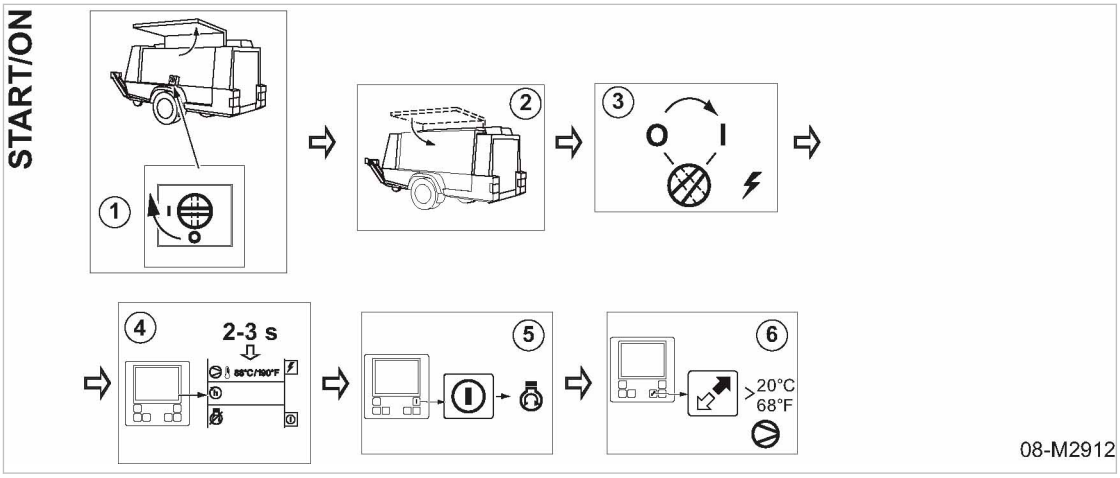


Fig. 28 Brief instructions on starting procedure

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

Shut-down sequence:

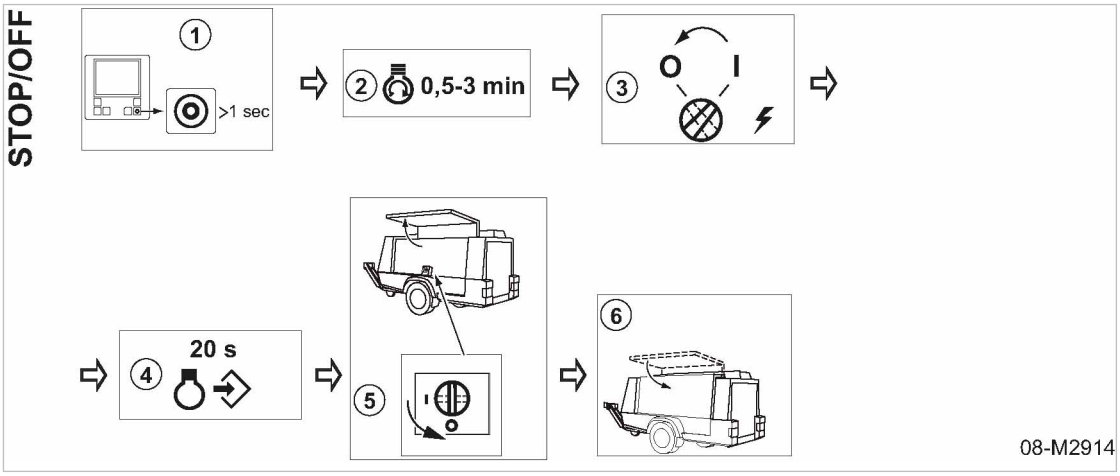


Fig. 29 Brief instructions on stopping procedure

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

The individual steps are fully explained below.

8.2.2 Commissioning the machine

Notes concerning snow and ice:

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

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

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

1. **WARNING!**
   «EMERGENCY STOP» pushbutton locked out.
   The machine cannot be stopped quickly in an emergency.
   ➢ Check the function of the «EMERGENCY STOP» pushbutton.
   ➢ Do not operate the machine if the «EMERGENCY STOP» pushbutton does not work.
2. Push the «EMERGENCY STOP» push-button.
   The «EMERGENCY STOP» push-button cannot be pressed or does not engage: Defrost the «EMERGENCY STOP» push-button.
3. Disengage the «EMERGENCY STOP» push-button again.

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

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

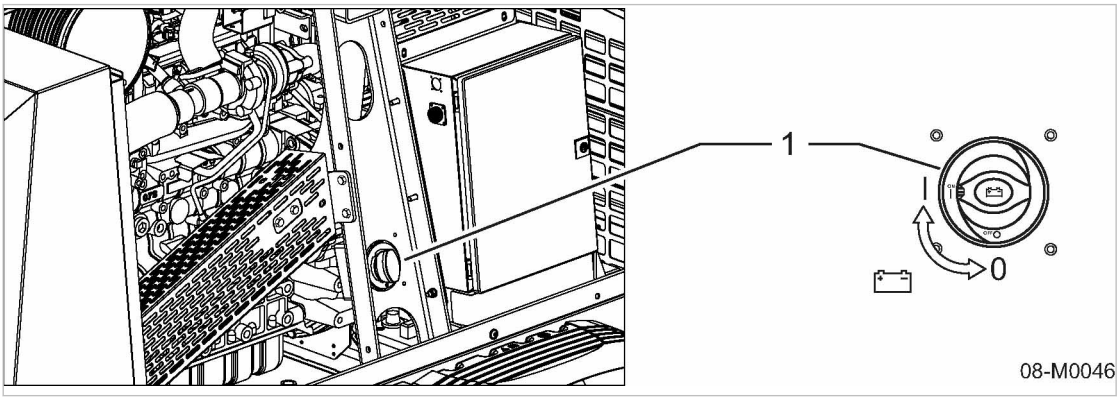


Fig. 30 «Battery isolating switch»

[1] «Battery isolating switch»
I – on
0 – off

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

8.2.3 Starting the machine

NOTICE
Serious damage to the engine from cold starting sprays!
Cold-start assists, such as ether or other sprays, can cause severe engine damage.

➢ Do not use cold start sprays.

Preparing to start:

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

Starting the engine:

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

- The machine is ready to be switched to LOAD as soon as the specified *airend discharge temperature (ADT)* is attained.
  (for temperature settings, see chapter 2.6.4)
- If the starting sequence fails or is interrupted by pressing the «EMERGENCY STOP» push-button, the “re-start inhibitor” is activated for 20 seconds. The display shows the remaining time before another start can be attempted.

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

The engine is still too cold.

➢ Restart the controller.

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

Result The engine preheats once again.

Switching the machine to LOAD operation:

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

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

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

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

8.2.4 Setting the compressed air discharge pressure

The compressed air discharge pressure can be modified only when this option is activated in the machine controller.
(Separate user manual for the SIGMA CONTROL SMART controller).

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

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

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

➢ Use connected compressed air tools only with the pressure appropriate for its purpose (tool working pressure).

➢ Comply with the information and notes provided in the compressed air tool's operating instruction.

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

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

Precondition The controller is switched on
The pressure adjustment option is enabled.

➢ Select the access type.

Quick access from the main menu:

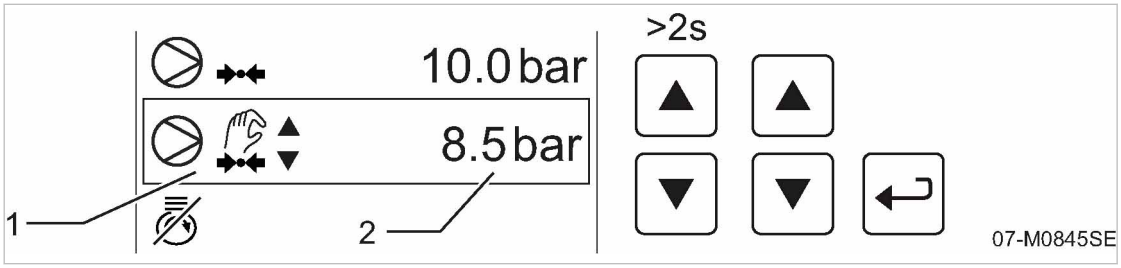


Fig. 31 Quick access adjustment compressed air output pressure
[1] Symbol for setting the compressed air discharge pressure
[2] Set value

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

Access via menu structure:

Precondition The Settings menu (hand symbol) is selected.

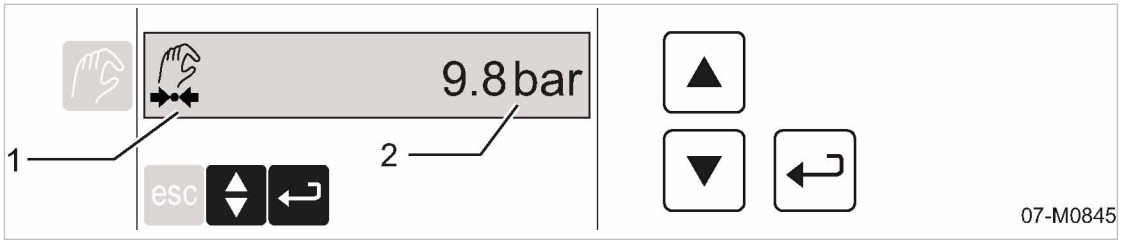


Fig. 32 Setting the compressed air discharge pressure

[1] Adjustment of compressed air discharge pressure
[2] Set value

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

or as an alternative:

1. Press «UP» or «DOWN» until all lines of the Settings menu no longer have a frame.
2. Press «Enter» briefly.
   Jump back to the menu bar, the "Settings menu" symbol receives a black background.

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

8.2.5 Shutting down the machine

NOTICE
Thermal overload of the turbocharger!
Abrupt stopping of the engine under load can cause a fault or damage to the turbo charger.

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

Switching the machine to the run-on phase:

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

Shutting the engine down:

Turn the engine off after the cooling-down phase.

➢ Press and hold the «OFF» key for more than one second.
   - The machine switches to *unloaded run-on*.
     - The engine runs at IDLE speed.
     - The inlet valve closes.
     - Oil separator tank (OST) is vented.
     - The engine switches off, controlled by a timer.



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

Switch the controller off:



1. *NOTICE!*
   Memory fault!
   Damage to the machine electronics and/or controller is possible.
   ➢ Shut down the controller only after the engine control unit has completed save process.
2. ⌛ Wait for approx. 30 seconds until saving is complete.
3. Switch off the «controller ON/OFF» key.

Shutting down the machine:



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



1. *NOTICE!*
   Danger of short circuit!
   Damage to the machine electrics is possible.
   ➢ Use the «battery isolating switch» only when the machine is at standstill.
   ➢ Do not use the «battery isolating switch» as a main or emergency switch.
2. ⌛ Wait for approx. 20 seconds until saving process of engine electronics is complete.

3. Turn off the «battery isolating switch».
   - The battery(ies) is/are disconnected from the machine's electrical system.
4. Close all «compressed air outlet valves» on the air distributor.
5. Close the operating panel cover and all doors. Lock if necessary.

8.2.6 Shutting down in an emergency

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

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

Quick shut-down:

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

Put the machine back into operation:

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

Precondition Fault rectified.

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

8.3 Confirming alarm and warning messages

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

8.3.1 Confirming alarm messages

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

Precondition Fault rectified.

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

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

8.3.2 Confirming warning messages

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

- The assigned signal indicator illuminates orange.

Precondition The cause of the warning is rectified

➢ Confirm the message with the «Enter» key.
The warning message is extinguished.
The warning symbol in the status bar remains active.

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

Acknowledging the message:

The Status bar of the event memory continues to display the confirmed message.
Upon rectification of the fault, the message must be acknowledged by restarting the controller.

Precondition Machine shut down
The fault is rectified.

➢ Switch on the «Controller ON/OFF» key.
- The acknowledged message is deleted.
- The machine can be started.

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

8.4 Operating the options

➢ Comply with all instructions.

8.4.1 Option ob
Operating the machine with the “Automatic start/stop" option

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

The respective current setting is saved.

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

Precondition No personnel are working on the machine
Maintenance doors/panels are locked

Preparing readiness to start:

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

Waiting for start command:

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

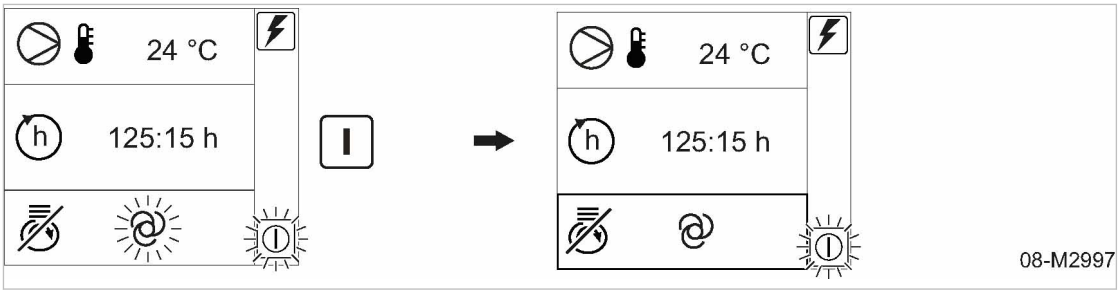


Fig. 33 Preparing start of the "Automatic start/stop"

➢ Press the «START» button.

The machine is ready to start.

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

Further information * For temperature settings, see chapter 2.6.4

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

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

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

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

The machine can be controlled as usual in normal operation.

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

8.4.1.2 Shutting down the machine

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

1. The machine switches to *run-on phase*:
- The engine runs at IDLE speed.
- The inlet valve closes.
- Oil separator tank (OST) is vented.

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

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

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

Switch the controller off:

1. *NOTICE!*
   Memory fault!
   Damage to the machine electronics and/or controller is possible.
   ➢ Shut down the controller only after the engine control unit has completed its save process.
2. ⌛ Wait for approx. 30 seconds until saving is complete.
3. Switch off the «controller ON/OFF» switch.

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

8.4.2 Option ea, ec
Operating the tool lubricator

Precondition: The machine is switched off.
Tool lubricator filled with oil

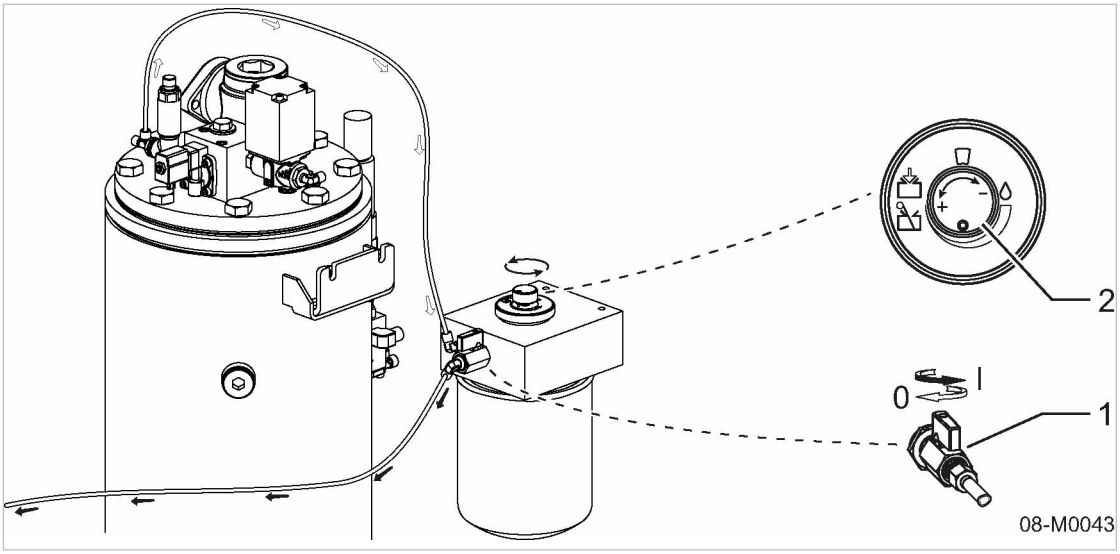


Fig. 34 Setting the tool lubricator

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

➢ Open the right-hand access door.

Adding lubricating oil

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

Setting the oil flow

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

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

- Turning clockwise: reduces the oil flow.
- Turning counter-clockwise: increases the oil flow.

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

Further information Fill the tool lubricator with suitable oil (see chapter 10.11.1)

Shutting off lubricating oil

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

8.4.3 Option ba
Using the low-temperature equipment

Option bb **Pre-heating the engine coolant:**

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

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

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

The bypass enables infinitely variable setting of the compressed air discharge temperature from 7 °C above ambient temperature to approx. 85 °C

➢ Open the left-hand door.

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

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

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

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

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

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

Precondition Machine shut down

Activating the heat exchanger:

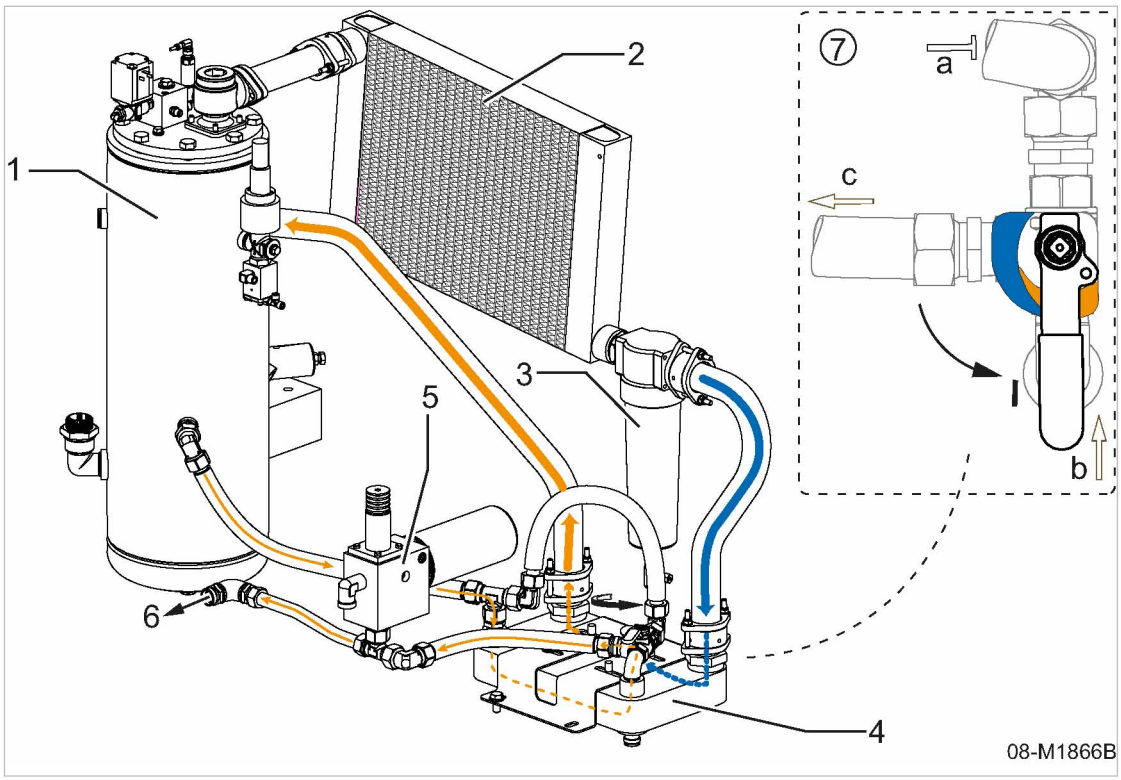


Fig. 35 Heat exchanger without bypass operation (with compressed air heating)

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

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

Result The cooling oil flows directly from b to c. The direct connection between a and c is closed.

The oil/compressed air heat exchanger is part of the compressor's oil circuit. The compressed air fed through the heat exchanger is heated by the hot cooling oil of the compressor. "Condensate-free and heated compressed air" is available at the compressor air distributor.

Deactivating the heat exchanger:

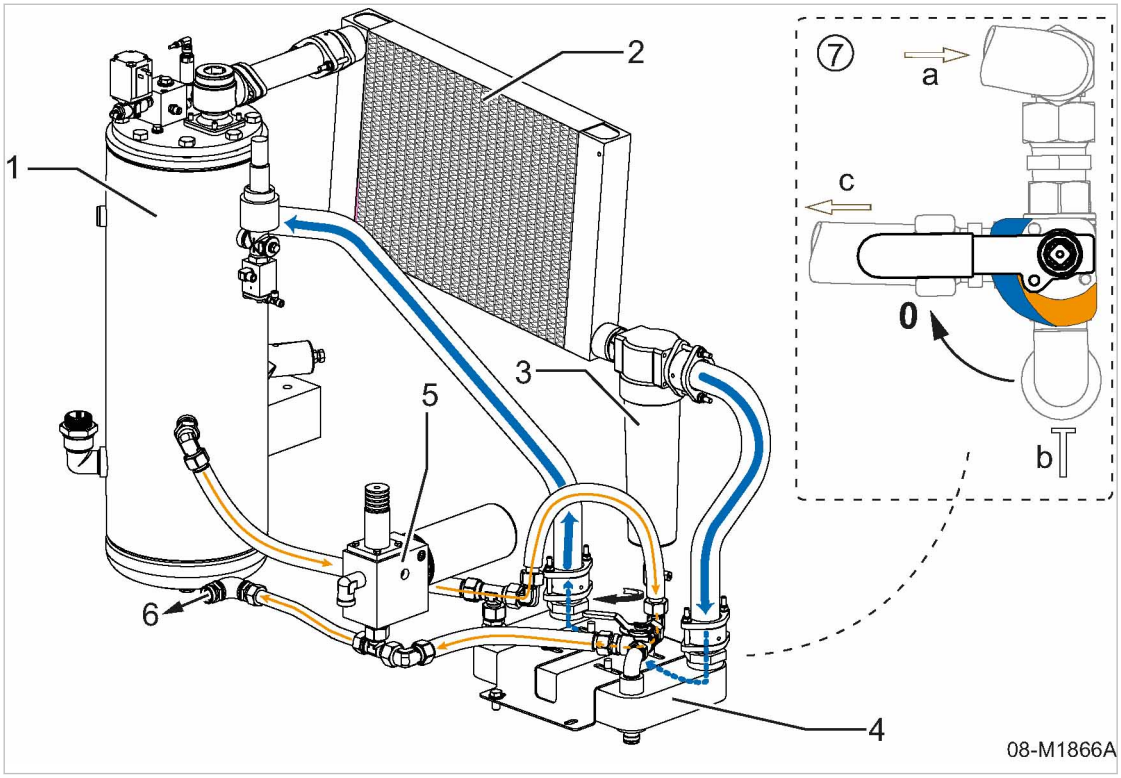


Fig. 36 Heat exchanger with bypass operation (no compressed air heating)

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

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

Result The cooling oil flows from [a] to [c]. The connection between [b] and [c] is closed.

The bypass line bridges the oil/compressed air heat exchanger and is not part of the compressor's oil circuit. The compressed air fed through the heat exchanger is not heated. Only " condensate-free compressed air" is then available at the compressed air distributor.

➢ Close the door.

8.4.4.2 Option da/dd/df
Selecting either G or F compressed air quality

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

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

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

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

Activating the heat exchanger:

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

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

Result The cooling oil flows directly from [b] to [c]. The direct connection between [a] and [c] is closed.

The oil/compressed air heat exchanger is part of the compressor's oil circuit. The compressed air fed through the heat exchanger is heated by the hot cooling oil of the compressor. "Technically oil-free, dry and heated compressed air" is available at the compressed air distributor.

Deactivating the heat exchanger:

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

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

Result The cooling oil flows from [a] to [c], [b] is closed.

The bypass line bridges the oil/compressed air heat exchanger and is not part of the compressor's oil circuit. The compressed air fed through the heat exchanger is not heated. "Technically oil-free and dry compressed air" is available at the compressed air distributor.

➢ Close the door.

8.4.5 Option ga Generator operation

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

➢ Check correct function of the insulation monitoring device daily (see chapter 7.6).

➢ Have the generator and control box checked annually by a qualified electrician (see chapter 3.8.5).

8.4.5.1 Switch on the generator

Precondition LOAD operation.

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

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

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

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

8.4.5.2 Switch off the generator

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



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

8.5 Cleaning the machine after operation

Material High-pressure cleaner

Precondition The machine is switched off.
The machine has cooled down.
The machine is fully vented, the pressure gauge reads 0 bar.
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 70 cm
- Fan jets: approximately 30 cm
- Dirt blasters: approximately 30 cm



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 10.11.7 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 authorised 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 also with local applicable safety provisions!

9.2 Analysing SIGMA CONTROL SMART messages

There are three types of message:

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

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

9.2.1 Alarm messages on the controller (machine off)

Fault with automatic deactivation of the machine.



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

Further information

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

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

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

SW = specialised workshop; KS = KAESER SERVICE; DPF = Diesel particulate filter
SCS - SIGMA CONTROL SMART; ECU - engine control unit

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1110	Fault – coolant temperature (T70) high.	Check the coolant level.	10.4.1	–	–
		Clean the cooler.	10.7	–	–
		Have the coolant cooling checked.	–	X	X
1111	Fault – coolant level too low.	Check the coolant level.	10.4.1	–	–
1121	Fault – turbo air temperature (T73) high.	Check setup conditions. Allow the machine to cool down.	5.2	–	–
1124	Fault - motor/engine fault air flow meter.	Have checked.	–	X	X
1130	Fault – fuel level too low.	Refuel.	–	–	–
1132	Fault – fuel pressure low.	Have checked.	–	–	–
1135	Fault – fuel pump.	Have checked.	–	X	X
1136	Fault – floor pan fluid level.	Drain the liquid.	10.11.7	–	–
1137	Fault - fuel solenoid.	Have checked.	–	X	X
1140	Fault - motor/engine generator does not charge.	Have checked.	–	X	X
1150	Fault – ECU other faults.	Have checked.	–	X	X
1151	Fault – ECU-SCS communication.	Have it checked.	–	X	X
1160	Fault – rail pressure sensor.	Have checked.	–	X	X
1161	Fault – speed sensor.	Have checked.	–	X	X
1162	Fault - drive engine speed high.	Have it checked.	–	X	X
1164	Fault - fuel system.	Have it checked.	–	X	X
1165	Fault - drive motor/engine speed low.	Have checked.	–	X	X
1170	Fault – automatic start mode fault.	Have it checked.	–	X	X
1180	Fault – fault in emission treatment.	Check DPF.	–	X	X
1186	Fault message emission treatment – temperature high.	Check DPF.	–	X	X

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

SCS - SIGMA CONTROL SMART; ECU - engine control unit

Tab. 71 Alarm messages and actions concerning the motor/engine.

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

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

SW = specialised workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator cartridge

Tab. 72 Alarm messages and actions concerning the compressor unit

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

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

SW = specialised workshop; KS = KAESER SERVICE

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

Tab. 73 Alarm messages and actions concerning the controller.

Alarm codes, range 1400 – 1499 “General faults”:

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

SW = specialised workshop; KS = KAESER SERVICE

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

ADT = Airend discharge temperature

Tab. 74 Alarm messages and troubleshooting in "General faults"

9.2.2 Warning messages on the controller

The machine is not shut down.

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

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

Message codes, range 3100 – 3199 “Motor/engine warning":

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3112	Warning - sensor coolant temperature (T70) faulty.	Have checked.	–	–	–

SW = Specialised workshop; KS = KAESER SERVICE

DPF = Diesel particulate filter; ECU = Electronic Control Unit

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

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
3120	Warning - turbo air pressure fault.	Have the turbo air pressure sensor checked.	–	X	X
3124	Warning - air flow meter fault.	Have checked.	–	X	X
3130	Warning – fuel level low.	Refuel.	–	–	–
3135	Warning - fuel pump.	Have checked.	–	X	X
3136	Warning - fuel filter water level.	Empty the fuel filter water trap.	10.4.3	–	–
3150	Warning - ECU miscellaneous error.	Have checked.	–	–	–
3154	Warning – drive motor/ engine sensor fault.	Have checked.	–	X	X
3155	Warning – drive motor/ engine actuator fault.	Have checked.	–	X	X
3164	Warning - fuel system fault	Have checked.	–	X	X
		Clean / replace the fuel filter.	10.4.3	–	–
3185	Warning message - fault in emission treatment.	Check DPF.	–	X	X
3188	Warning - emission treatment - regeneration necessary.	Initiate parked regeneration.	UM SCS	–	–

SW = Specialised workshop; KS = KAESER SERVICE

DPF = Diesel particulate filter; ECU = Electronic Control Unit

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

Tab. 75 Warning messages and measures relating to the engine.

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

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

SW = specialised workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator tank

Tab. 76 Warning messages and measures relating to the compressor

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

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

SW = Specialised workshop; KS = KAESER SERVICE

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

Tab. 77 General warning messages and measures

9.3 Evaluating engine faults and alarms

9.3.1 Engine refuses to start or does not turn over

Possible cause	Measure	Where can I get help?	
		SW	KS
«EMERGENCY STOP» control device activated.	Unlatch the «EMERGENCY STOP» control device, see chapter 8.2.6.	–	–
Defective starter.	Have changed.	X	–
Engine electrical fault	Have repaired/changed.	X	–
Fuel tank empty.	Fill up the fuel tank	–	–
Airlock in the fuel line between fuel tank and injector pump.	Bleed the fuel line (see chapter 10.4.3).	–	–
Fuel filter clogged.	Clean or replace, see chapter 10.4.3.	–	–
Fuel line broken.	Have changed.	X	–
Defective control fuse or relay.	Have repaired or replaced if necessary.	X	X
Discharge temperature too high.	Have checked.	–	X
SIGMA CONTROL SMART defective.	Have repaired/changed.	–	X
Electrical connections and/or cables loose or broken	Tighten the connection or have the cable replaced.	X	–
Defective battery or low charge.	Maintain battery, see chapter 10.9.	–	–
Motor alternator defective.	Have changed.	X	–
Defective alternator regulator.	Have changed.	X	–

SW = Specialised workshop; KS = KAESER SERVICE

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

Tab. 78 Fault: engine refuses to start or comes to a stop.

9.3.2 Engine does not reach full speed

Possible cause	Measure	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 SMART defective.	Have repaired/changed.	–	X
SW = Specialised workshop; KS = KAESER SERVICE			

Tab. 79 Alarm: "engine does not reach full speed".

9.4 Analysing compressor faults and alarms

9.4.1 Working pressure too high

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

Tab. 80 Fault: working pressure too high

9.4.2 Working pressure too low

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

Tab. 81 Fault: working pressure too low

9.4.3 Safety valve blows off

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

Tab. 82 Fault: safety valve blowing off

9.4.4 Machine overheating

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

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

Tab. 83 Fault: machine overheating

9.4.5 Too much oil residue in the compressed air

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

Tab. 84 Alarm: "Too much oil residue in the compressed air"

9.4.6 Oil flows from the compressor air filter after shutdown

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

Tab. 85 Alarm: "Oil flows from the compressor air filter after shutdown"

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

Possible cause	Measure	Where can I get help?	
		SW	KS
Blocked condensate drain on the cyclone separator.	Clean the cyclone separator dirt trap or replace the strainer and nozzle if necessary. See chapter 10.11.2	–	X
SW = Specialised workshop; KS = KAESER SERVICE			

Tab. 86 Fault: high moisture content in the compressed air

9.5 Option ga
Evaluate generator faults and alarms

9.5.1 There is no voltage or too low a voltage from the generator

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

Possible cause	Remedy	Where can I get help?	
		SW	KS
The engine power is reduced because of climatic or other effects.	Keep the generator and compressor load below the rated power	–	–
SW = specialised workshop; KS = KAESER SERVICE			

Tab. 87 There is no voltage or too low a voltage from the generator

9.5.2 Generator voltage too high

Possible cause	Remedy	Where can I get help?	
		SW	KS
Generator/regulator defective	Have repaired.	X	X
Engine speed too high.	Have reset to rated speed.	X	X
SW = specialised workshop; KS = KAESER SERVICE			

Tab. 88 Generator voltage too high

10 Maintenance

10.1 Ensuring safety

Follow the instructions below to ensure safe machine maintenance.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Complying with safety notes

Disregard of safety notes can cause unforeseeable dangers!

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

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

Tab. 89 Advise others that the machine is being serviced.

- ➢ Before switching on, make sure that:

- nobody is working on the machine,
- all protective guards and cover panels are attached,
- all doors, canopy, and panels are closed,
- all tools have been removed from the machine.

- ➢ Do not perform any checks or maintenance while the machine is running.



The access doors are held up by gas struts.

- ➢ Check that the doors remain open.

If door does not remain opened: Have the gas-filled spring changed.

When working on the compressed air system

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

- ➢ Disconnect the air consumers.
- ➢ De-pressurise all pressurised components and enclosures.

- Wait until the machine has automatically vented.
- Carefully open the compressed air outlet valve.
- Check: The pressure gauge must read 0 bar!

➢ Do not open or dismantle any valves.

When working on the drive system

Touching rotating, very hot or current-carrying components can cause severe injuries.

➢ Shut down the machine before opening any doors/canopy.
➢ Switch the «battery isolating switch» to the 'off' position.
➢ Ensure that the machine has cooled down.

Further information Details of authorised personnel are found in chapter 3.4.2.
Details of dangers and their avoidance are found in chapter 3.5.

10.2 Note the maintenance messages on the controller

The SIGMA CONTROL SMART displays selected maintenance intervals for the machine. Display begins 25 hours before the interval will expire.

Upon activation of the controller, the symbols for the component to be services are prominently displayed at the controller.

The operating hours of the maintenance to be performed and message code of the service task are displayed below.

Upon maintenance, the maintenance interval counter must be reset.

➢ Read the message code from the controller's display.

10.2.1 Evaluating the maintenance message

➢ Determine any due maintenance tasks using the table below and perform the maintenance according to the maintenance schedule shown in chapter 10.3.3.1.

Code	Meaning	Remedy	see chapter
Message code, range 2100 – 2199 “engine maintenance”			
2100	Maintenance - change engine oil filter (500h)	Change the engine oil filter.	10.4.7
2101	Maintenance - clean or change the engine air filter (500h)	Clean or change air filter.	10.4.2
2102	Maintenance - change engine oil (500h)	Change the engine oil.	10.4.6
Message codes, range 2200 – 2299 “compressor unit maintenance”			
2200	Maintenance - change compressor oil filter (1000h)	Change the compressor oil filter.	10.6.4
2201	Maintenance - clean or change the compressor air filter (250h)	Clean or change air filter.	10.6.7
h - operating hours			

Code	Meaning	Remedy	see chapter
2202	Maintenance - change compressor cooling oil (1000h)	Change the cooling oil.	10.6.3
h - operating hours			

Tab. 90 Maintenance messages and required actions

10.2.2 Concluding the maintenance

Resetting the maintenance interval counter

Precondition Maintenance is carried out

➢ Reset the maintenance timer as described in the separate operating manual for the SIGMA CONTROL SMART controller, chapter “Reset maintenance timer”.

10.3 Following the maintenance plans

10.3.1 Logging maintenance work

The maintenance intervals given are those recommended for KAESER original components with average operating conditions.

➢ In adverse conditions (e.g. oil and filter changes), perform maintenance work at shorter intervals.

Adverse conditions are, e.g.:

- poor fuel quality
- high/low temperatures
- much dust
- frequent use

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

➢ Logging all maintenance work.
This enables the frequency of individual maintenance tasks and deviations from our recommendations to be determined.

Further information A list is given in chapter 10.12.

10.3.2 Maintenance tasks after commissioning

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

10.3.2.1 Maintenace tasks on the machine after commissioning

➢ Carry out maintenance tasks according to the following schedule:

Component: Task	E10	E50	see Chapter	Note
Engine:				
Check the fuel lines and clamps. If necessary, tighten the hose clamps.		X	10.4.8	KS; SW
Option ga – Generator:				
Check/adjust belt tension.	X		10.11.6	
E10 = after the first 10 operating hours; E50 = after the first 50 operating hours KS = Contact KAESER SERVICE; SW = Contact specialised workshop				

Tab. 91 Maintenance tasks on the machine after commissioning

10.3.3 Regular maintenance tasks

The following table lists the various maintenance intervals.

Maintenance interval	Short description
Daily	–
Every 250 h, at least annually.	A250
Every 500 h, at least annually.	A500
Every 1000 h, at least annually.	A1000
Every 1500 h, at least annually.	A1500
Every 2000 h, at least every two years.	A2000
Every 3000 h, at least every 3 years.	A3000
Every 36000 h, at least every six years.	A36000

Tab. 92 Maintenance intervals and regular maintenance tasks

The table below lists regular maintenance tasks.

1. Carry out maintenance tasks punctually taking ambient and operating conditions into consideration.
2. Change consumables and operating fluids according to each site.

10.3.3.1 Machine maintenance schedule

➢ Carry out maintenance tasks according to the following schedule:

The maintenance work marked with (*) in the tables must additionally be carried out every 6 months if the annual operational performance is more than 500 operational hours.

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See chapter	Note
Engine:										
Check engine air filter maintenance indicator.	X								10.4.2	
Check the engine 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/adjust the drive belt tension.		X							10.4.8	KS; SW
Replace the drive belt.			X						10.4.8	KS; SW
Replace the engine air filter.				X					10.4.2	
Check or have checked the intake air line between air filter and motor.		X								KS; SW
Have the valves adjusted.				X						KS; SW
Have the turbocharger checked.							X			KS; SW
Check the engine coolant level.	X								10.4.1	
Clean the cooler.		X							10.7	
Check the coolant frost protection.		X							10.4.1	KS; SW
Change the coolant.							X		10.4.1	KS; SW
Fill up the fuel tank.	X									
Check/empty the fuel water trap.	X								10.4.3	
Replace the fuel prefilter(*).			X						10.4.3	
Replace the fuel filter(*).			X						10.4.3	KS; SW
Clean the fuel tank.			X							
Clean the tank strainer.			X							
Have injection valve tip checked.					X					KS; SW

KUBOTA = is serviced by the representative of the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See chapter	Note
Have the fuel injection pump checked.							X			KS; SW
Check the battery electrolyte level and maintain the connections.			X						10.4.9	
Change the oil separator element					X				10.4.10	
Have venting valve of crankcase checked.					X					KS; SW
Exhaust gas treatment:										
Check the exhaust system and the components of the exhaust gas treatment system for leaks.	X									
Service the components of the emission after-treatment system.		X							10.5	
Have the DPF cleaned.							X			KUBOTA
Have all lines to and from the DPF checked.			X							KUBOTA
Have exhaust return line system checked.			X							KUBOTA
Have all lines to and from the exhaust return system checked.			X							KUBOTA
Have the cooler exhaust return line checked.			X							KUBOTA
Compressor:										
Check the compressor air filter maintenance indicator.	X								10.6.7	
Check the cooling oil level.	X								10.6.1	
Clean the compressor air filter.		X							10.6.7	
Clean the compressor oil cooler.		X							10.7	
Check/clean the oil separator tank dirt trap(*).			X						10.6.5	
Change the compressor air filter.				X					10.6.7	
Change the cooling oil.				X					10.6.3	
Change the compressor oil filter.				X					10.6.4	

KUBOTA = is serviced by the representative of the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See chapter	Note
Change the oil separator cartridge in the oil separator tank.						X			10.6.6	
Safety functions:										
Check the EMERGENCY STOP device.	X								10.10.1	
Check the EMERGENCY STOP device for correct functioning.			X							KS; SW
Have the safety valve(s) checked.			X						10.10.2	KS
Have the function of the safety shut-down at excessive temperature checked.			X						10.10.3	KS
Bodywork/chassis:										
Check all screw connections, hinges, locks, handles and snap fasteners of the doors for wear and secure seat.		X								
Grease the door hinges.			X							
Carry out rubber sealing strip maintenance.			X						10.9	
Have lifting eye and fixings checked.			X							KS; SW
Pipes and hose lines (fuel hoses, pressure hoses):										
Check all pipes and hose lines of machine for proper seating, leaks and wear; have them replaced if necessary.			X						10.8	KS; SW
Have the fuel lines of the drive engine replaced.								X	10.8.1	KS; SW
Have the pressure hoses of the drive engine replaced.								X	10.8.2	KS; SW
Have the pressure hoses of the compressor replaced.								X	10.8.3	KS; SW
Other maintenance tasks:										
Check all accessible screw fittings, conduits and clamps of machine for wear and tightness.			X							

KUBOTA = is serviced by the representative of the engine manufacturer (Kubota Corporation)

KS = Contact KAESER SERVICE; SW = Contact specialised workshop

DPF = diesel particulate filter

Assembly: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	See chapter	Note
Check that all electrical connections are tight.			X							
KUBOTA = is serviced by the representative of the engine manufacturer (Kubota Corporation)										
KS = Contact KAESER SERVICE; SW = Contact specialised workshop										
DPF = diesel particulate filter										

Tab. 93 Regular machine maintenance tasks

10.3.3.2 Maintenance schedule options

➢ Carry out maintenance tasks according to the following schedule:

The maintenance work marked with (*) in the tables must additionally be carried out every 6 months if the annual operational performance is more than 500 operational hours.

Option: Task	Daily	A250	A500	A1000	A2000	A20000	See chapter	Note
Option ea, ec - tool lubricator:								
Check the oil level in the tool lubricator.	X						10.11.1	
Option da, df, dc, dd – Centrifugal separator:								
Clean and check the dirt trap (*).			X				10.11.2	
Options da, df, dc, dd – compressed air aftercooler:								
Clean the cooler.		X					10.7.2	
Option dd – Filter combination:								
Drain condensate.	X						10.11.3	
Change the filter elements (*).			X				10.11.3	
Option dc – Fresh air filter:								
Drain condensate.	X						10.11.4	
Check the oil level indicator.	X						10.11.4	
Change the filter elements (*).			X				10.11.4	
Option bb; od – Auxiliary electric devices:								
Have the coolant pre-heating, battery charger and connection cable checked.			X					EL KS; SW
Option la – spark arrestor:								
Clean the spark arrestor.		X					10.11.5	
EL = qualified electrician								
KS = Contact KAESER SERVICE; SW = Contact specialised workshop								

Option: Task	Daily	A250	A500	A1000	A2000	A20000	See chapter	Note
Blow out the spark arrester with compressed air.			X					
Option ga – Generator:								
Carry out visual check of drive belt.		X					10.11.6	
Have the generator and generator control box checked.			X				13.9	EL
Replace the drive belt.					X		10.11.6	
Have the generator bearings checked.				X				KS; SW
Have the generator bearings changed.						X		KS; SW
Option oe – sealed floor pan:								
Check the machine interior for liquid accumulations and drain, if required.	X						10.11.7	
EL = qualified electrician KS = Contact KAESER SERVICE; SW = Contact specialised workshop								

Tab. 94 Regular maintenance task options

10.4 Engine maintenance

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

10.4.1 Maintaining the coolant cooler

Material
Coolant
Coolant tester
Receptacle
Funnel
Cleaning cloth

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

WARNING
Danger of scalding from 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 machine!
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 the right-hand access door.

10.4.1.1 Checking coolant level

The coolant level in the engine cooling circuit must be checked daily prior to start-up.
The level is checked on the coolant expansion tank:

- The tank is semi-transparent so the coolant level can be seen from outside.
- The level should be between the *minimum and maximum markings* when the engine has cooled down.

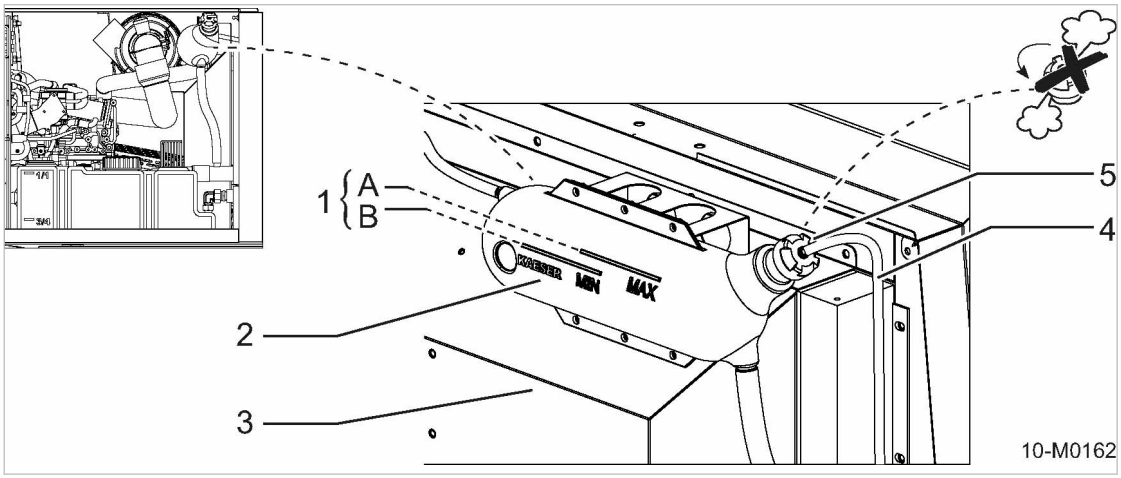


Fig. 37 Checking coolant level

[1] Coolant level
[A] *Maximum mark* (FULL)
[B] *Minimum mark* (LOW)
[2] Coolant expansion tank
[3] Fan casing
[4] Overflow
[5] Filler neck with cap

1. Check the level of coolant in the expansion tank.
   Top up when the coolant level falls below the *minimum check mark* (B): Replenish the coolant.
2. Close the door.

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 measuring

➢ Unscrew and remove the expansion tank filler cap (5).

Performing visual check:

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

➢ Take a coolant sample and analyse.
   The coolant is badly discoloured and/or contains floating particles: Change the coolant.

Perform antifreeze concentration measuring:

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

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

1. *NOTICE!*
   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 freezing.
   ➢ Top up immediately if necessary.
2. Use the coolant tester as instructed by the manufacturer to test the coolant.
   Concentration of antifreeze is too low: Change the coolant.

Performing final work steps:

1. Screw the cover back on again.
2. Close the door.

10.4.1.3 Mixing 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 3 years.

➢ Follow coolant recommendations in chapter 2.7.5!

Preparing coolant:

Precondition Coolant must meet the specification of ASTM D4985.

➢ The coolant should be mixed in the ratio specified by the manufacturer.

Coolant mixture table:

Percentages [% vol.]		Frost protection up to approx. [°C]
Corrosion inhibitor/anti-freeze	Water	
50	50	–37

Tab. 95 Coolant mixture table

Do not use a higher concentration than 55% vol. of corrosion inhibitor/antifreeze even in extremely low ambient temperatures. The maximum frost protection is reached with 55% of corrosion inhibitor/antifreeze. This corresponds to frost protection up to approx. –45°C.

The concentration of antifreeze should not be less than 33% since corrosion protection can no longer be guaranteed and heat transfer properties deteriorate beyond this point!

10.4.1.4 Filling and topping up the coolant

The percentage of antifreeze in the coolant should not fall below 33% to ensure optimal frost and corrosion protection and prevent the build-up of deposits (sludge) 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. Twist and remove the expansion tank filler cap.
2. Mix a quantity of coolant according to the table and replenish to the mark.
   Replenish the coolant just below the *maximum mark* Ⓐ.
3. Screw on the filler cap.
4. Turn on the «battery isolating switch».
5. Close the door.
6. Start the engine and allow to IDLE for about 1 minute.
7. Stop the engine.
8. Open the right-hand access door.
9. Check the coolant level.
   If the coolant level in the coolant expansion tank has decreased: Top up the coolant.
10. Visually inspect for leaks.
11. Close the door.

10.4.1.5 Draining the coolant

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

Draining the cooling oil (machine with chassis)

In machines with chassis (no closed floor pan, no stationary machine), the entire coolant of the cooling circuit is drained directly at the engine's coolant cooler. This is done from a shut-off valve with the aid of a separate drain hose.

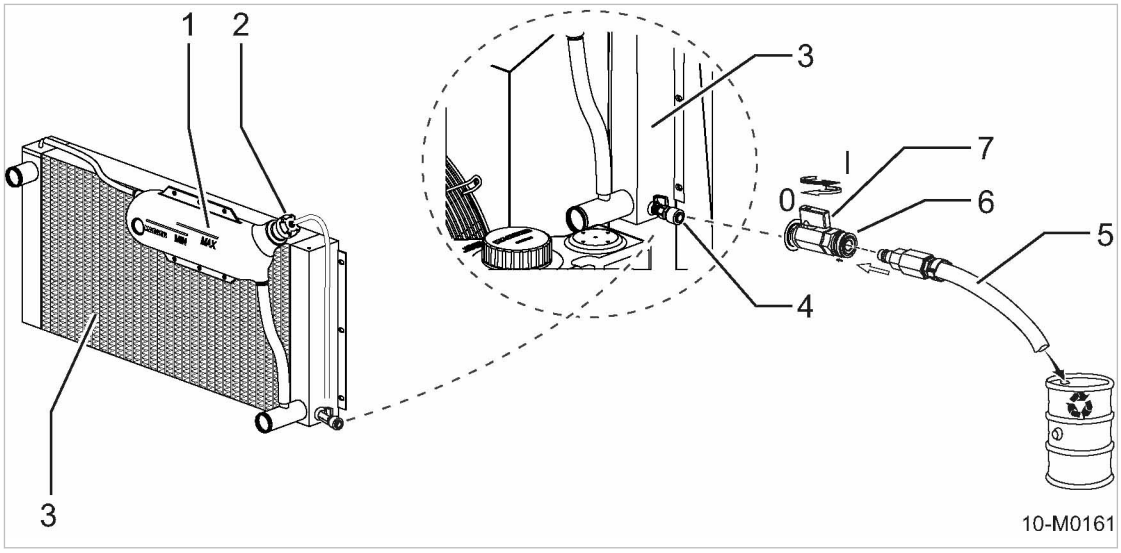


Fig. 38 Draining the coolant from the engine coolant cooler

[1] Coolant expansion tank
[2] Filler cap
[3] Coolant cooler
[4] Coolant drain
[5] Drain hose with male fitting
[6] Quick-release coupling
[7] Shut-off valve (ball valve)
I - Open
0 - Closed

1. Unscrew and remove the expansion tank filler cap [2].
2. Position a collecting vessel beneath the water cooler drain point (hole in the floor panel).
3. Connect a suitable drain hose [5] to the coolant cooler quick-release coupling [6].
4. Place the free end of the hose in the receptacle and secure.
5. Open the shut-off valve [7] and catch the draining coolant.
6. Close the shut-off valve and remove the drain hose.
7. Screw on the filler cap.
8. Close the door.

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

Option oe, rw, rx **Draining the coolant (closed floor pan/stationary machine):**

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines and machines with closed floor pan. The cooling oil is drained via a pipe which is screwed into the drain opening of the cooler and closed with a shut-off valve. The pipe is sealed with a screw plug at the drain end.

Option oe, rw, rx

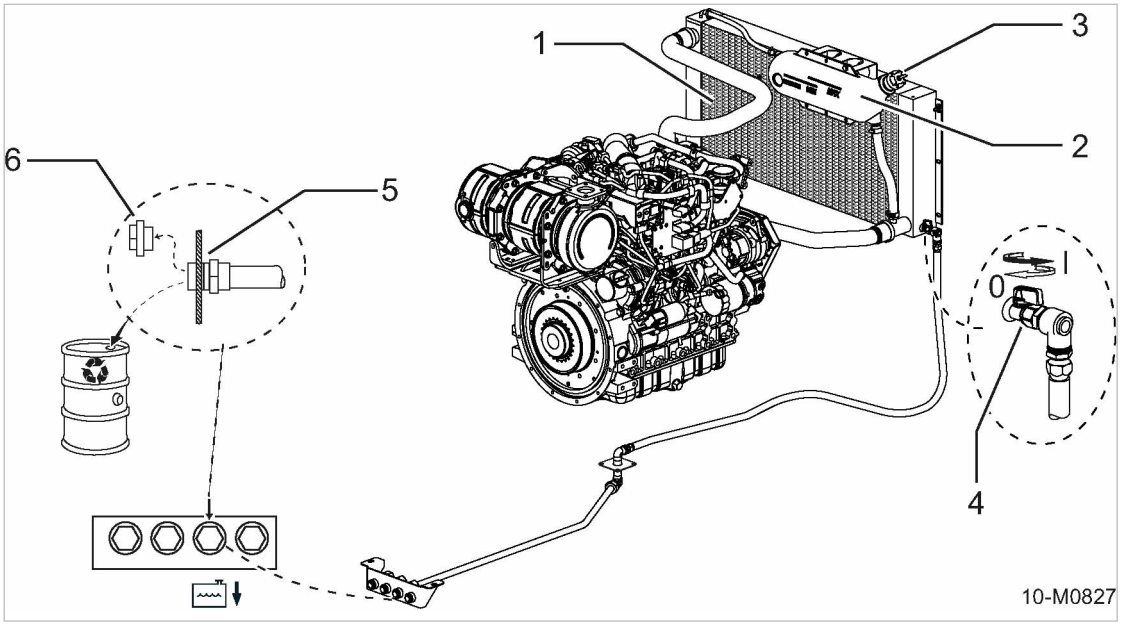


Fig. 39 Draining the coolant from the engine coolant cooler (closed floor pan/stationary machine)

[1] Coolant cooler
[2] Coolant expansion tank
[3] Filler cap
[4] Shut-off valve (ball valve)
I - Open
0 - Closed
[5] Coolant drain
[6] Screw plug

1. Unscrew and remove the expansion tank filler cap.
2. Position a receptacle beneath the drainage location of the coolant cooler.
3. Unscrew the screw plug [6] at the coolant drain.
4. Open the shut-off valve [4] at the water cooler and catch any draining coolant.
5. Close the shut-off valve and replace the screwed sealing cap.
6. Screw in the filler cap.
7. Close the door.

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

Removing scaling within the coolant cooler

After extended periods of use, scale may form in the cooling circuit and within the coolant 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 coolant cooler.
2. Read and follow the manufacturer's instructions regarding the use of cooler cleaning agent.
3. After draining the coolant, use a coolant cleaning agent to descale the water cooler.

10.4.2 Engine air filter maintenance

Clean the filter according to the maintenance schedule or if the maintenance indicator shows this to be necessary.

As well as the filter element the filter contains a safety element.

The filter element can be cleaned and reused up to six times.

The safety element cannot be cleaned and must be replaced after every third cleaning of the filter element.

- To meet the legally stipulated exhaust gas standards, the use of genuine KAESER filter elements is mandatory.
- 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 bar.
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.

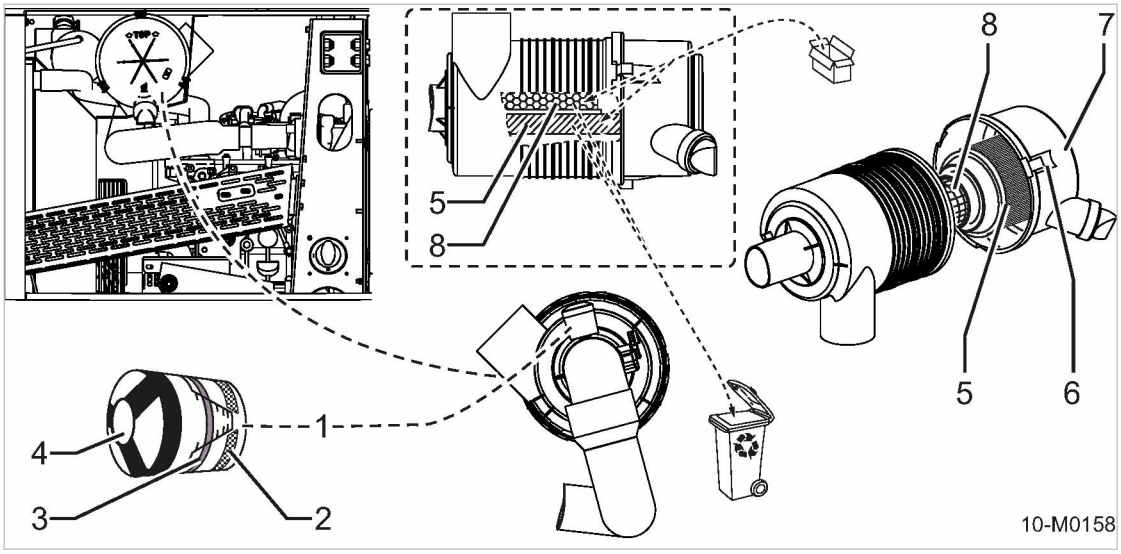


Fig. 40 Engine air filter maintenance

1. Maintenance indicator
2. Red zone indicator scale
3. Indicating piston of the maintenance indicator
4. Reset know maintenance indicator
5. Filter element (main filter element)
6. Retaining clip
7. Filter cap
8. Safety element

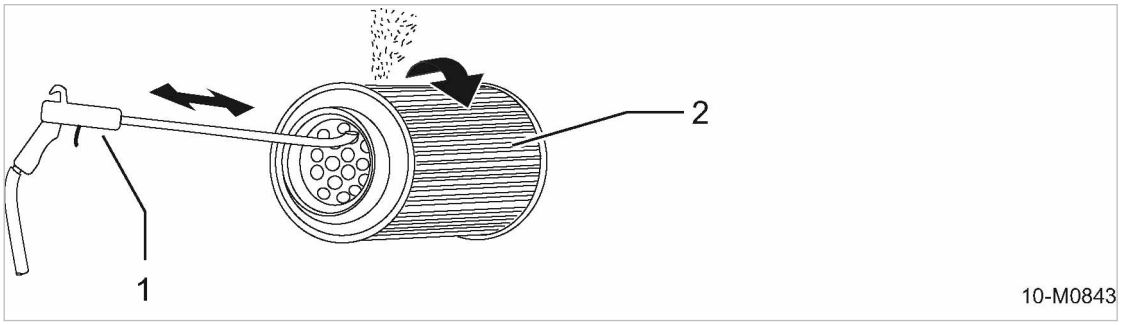


Fig. 41 Cleaning the filter element

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

➢ Open both doors.

Checking the contamination level of the air filter

Air filter maintenance is necessary when the yellow piston inside the maintenance indicator reaches the red zone.

➢ Check the air filter maintenance indicator.

If the yellow piston reaches the red zone, Clean or renew the filter element.

Air filter maintenance (cleaning the filter element)

These tasks must be carried out **each** time the air filter is maintained.

1. Release the retaining clip. Remove the filter cap and take out the filter element.
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 (≤ 5 bar!) 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.

Replacing the safety element:

These tasks must be carried out every **third** time the air filter is maintained.

1. Remove the safety element and dispose of it.
2. Use duct tape to seal off the engine intake port to prevent ingress of dirt.
3. Remove the tape after the filter housing has been cleaned.
4. Fit the new safety element.
5. Insert the cleaned or new filter element into the filter housing.
6. Check that the filter element and safety element are properly seated and their gaskets sealed.

Resetting the maintenance indicator

➢ Repeatedly press the reset knob on the maintenance indicator.

The yellow piston within the indicator is reset and the maintenance indicator is ready for use again.

➢ Close the doors.



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

10.4.3 Fuel system maintenance

Make sure no dirt enters the fuel system during maintenance. Clean components and their surroundings before dismounting.

Material
- Spare parts
- Collecting vessel
- Cleaning cloth

Precondition
- The machine is switched off.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 bar.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
- The «battery isolating switch» is turned off.

DANGER
Fire hazard from spontaneous ignition of fuel!
Serious injury or death could result from the ignition and combustion of fuel.

- ➢ Allow no open flames or sparks at the place of use.
- ➢ Ensure that the maximum ambient temperature is not exceeded at the place of use.
- ➢ Shut down the engine.
- ➢ Wipe up escaped fuel.
- ➢ Keep fuel away from hot machine parts.

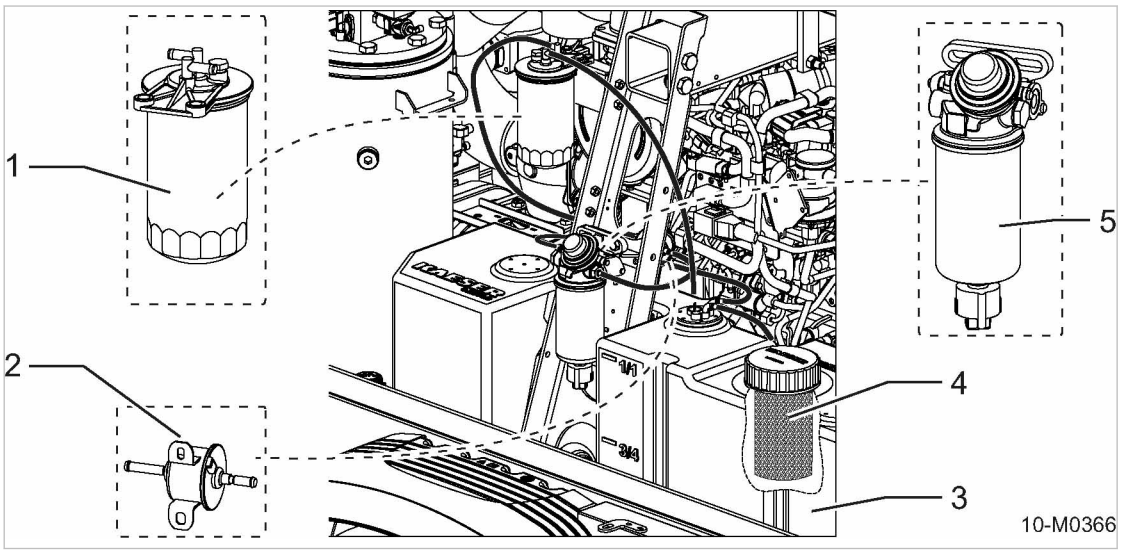


Fig. 42 Service fuel system

[1]	Fuel filter	[4]	Fuel strainer
[2]	Fuel pump	[5]	Fuel prefilter with integrated water separator
[3]	Fuel tank		

- ➢ Open the right-hand access door.

10.4.3.1 Bleeding the fuel system

Air can enter the fuel system if the fuel tank is empty after a fuel filter change or when carrying out work on the fuel lines.
If the engine refuses to start despite a full tank, bleed the fuel system.

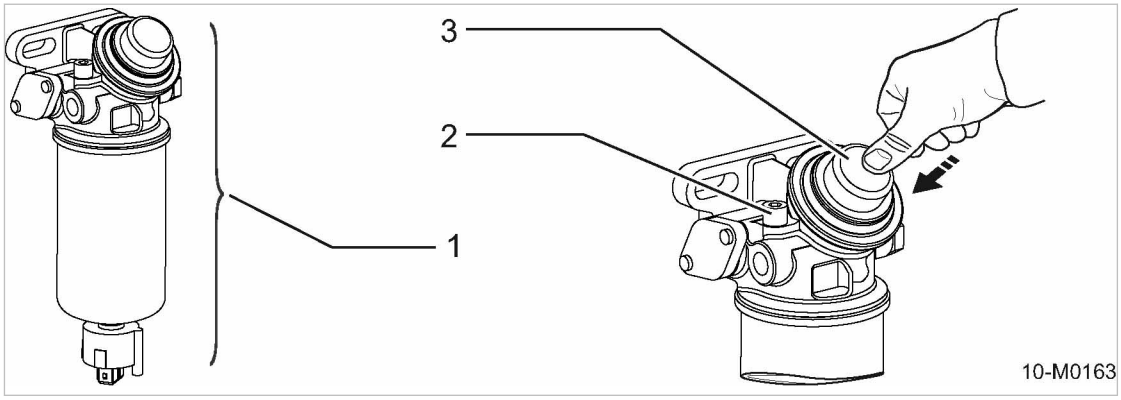


Fig. 43 Bleeding the fuel system

[1] Fuel prefilter with integrated water separator
[2] Bleed screw
[3] Manual fuel pump

1. Place a receptacle beneath the fuel pre-filter housing.
2. Open the bleed screw at the filter head.
3. Actuate the manual fuel pump until the bleed screw does no longer emit air bubbles.
4. Close the bleed screw at the filter head.
5. Remove the receptacle.
6. Open the left-hand door.
7. Turn on the «battery isolating switch».
8. Close the doors.

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

9. Open the right-hand access door.
10. Check the fuel prefilter for leaks.

    Fuel has escaped: Re-tighten filter cartridge and all screw connections.
11. Close the door.

10.4.3.2 Fuel pre-filter maintenance

Emptying the fuel water separator:

The fuel pre-filter is equipped with an integrated water separator. Contaminants in the water are trapped in the water receptacle of the filter cartridge.

The water separator is connected by a sensor to the controller. If the water in the separator reaches a set level, the controller displays a warning.

The display indicates water in the fuel filter by showing *Fuel filter water level*.

The water separator must be emptied immediately when this warning is displayed.

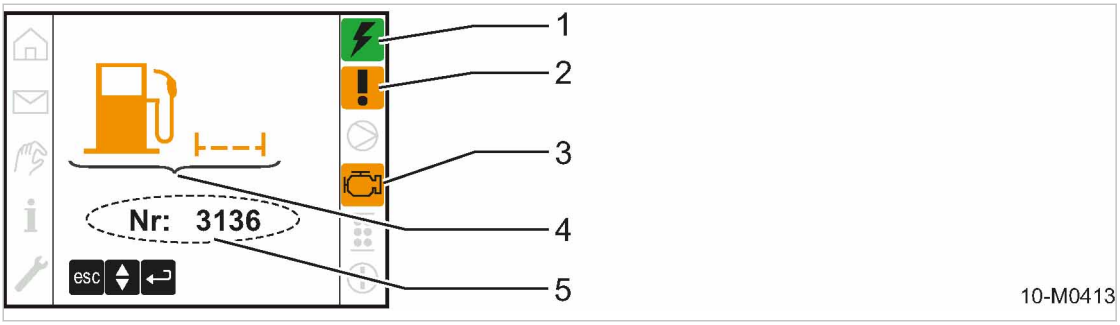


Fig. 44 Warning message: Fuel filter water level

1. *Controller voltage ON* (green) indicator
2. *Warning* indicator (orange)
3. *Engine* (orange display indicates a warning)
4. Symbols for fault localisation (Fuel + level) (orange display indicates warning)
5. Fault code

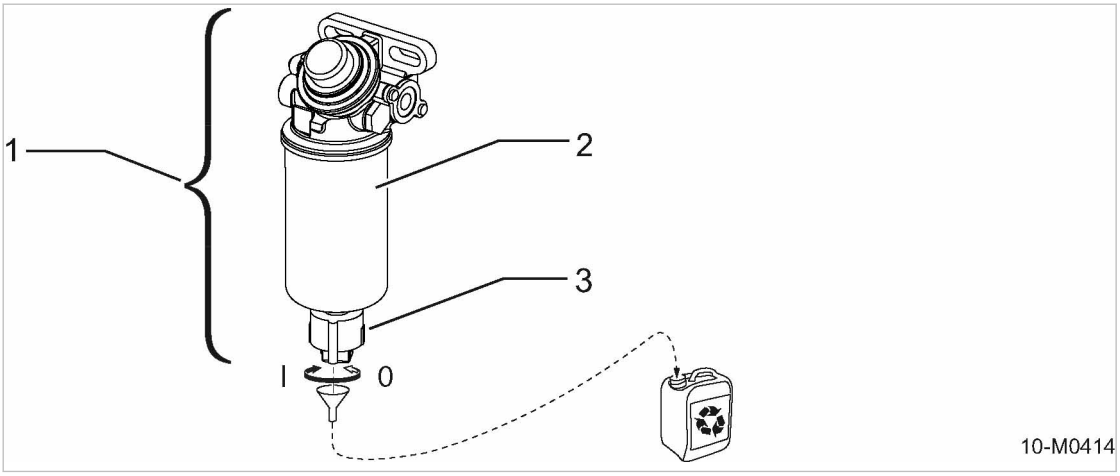


Fig. 45 Empty the fuel prefilter and water separator

1. Fuel prefilter
2. Filter cartridge with integrated water receptacle
3. Water draining stopper with integrated level sensor
   I - open
   0 - close

1. Place a receptacle beneath the fuel pre-filter housing.
2. Unscrew the draining stopper on the bottom of the filter cartridge (2 turns max.) and drain water and contamination.
3. Close the draining stopper.
4. Close the door.

Warning must be acknowledged after the water separator has been emptied.

Precondition The water separator is drained.

➢ Confirm the warning with the «Enter» key.

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

Changing the filter cartridge:

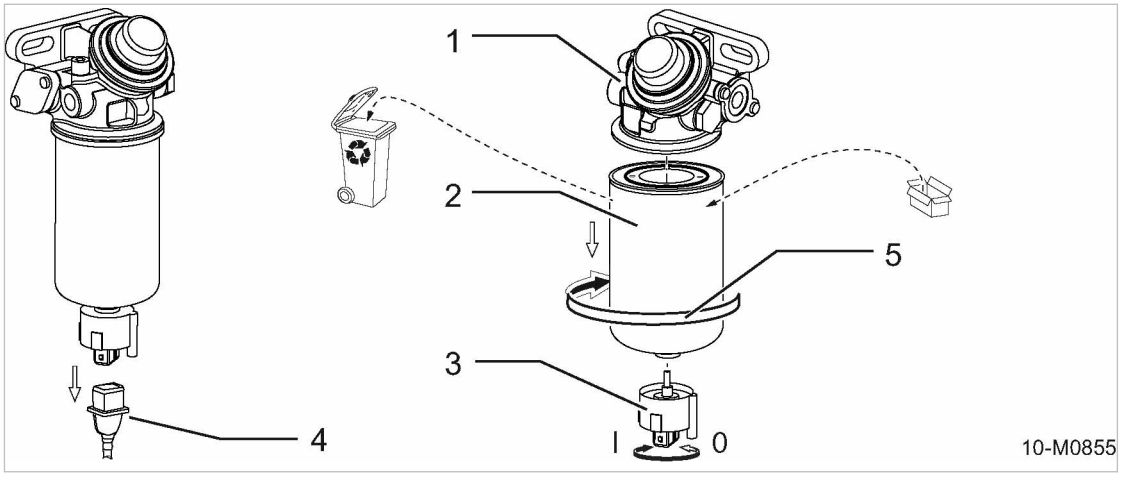


Fig. 46 Change the fuel prefilter cartridge

[1] Filter head
[2] Filter cartridge with integrated water receptacle
[3] Draining stopper with integrated level sensor
[4] Water level sensor connecting plug (fuel filter maintenance)
[5] Direction of rotation to unscrew the filter cartridge and the water trap

1. Place a receptacle beneath the fuel prefilter housing.
2. Unscrew the draining stopper on the bottom of the filter cartridge (2 turns max.) and drain water and contamination.
3. Remove the connecting plug of the water level sensor.
4. Use a standard wrench to loosen and unscrew (counter-clockwise) the filter cartridge.
5. Empty any remaining fuel into a receptacle.
6. Unscrew the draining stopper of the filter cartridge and clean with lint-free cloth.
7. Check the seal of the draining stopper.
   Seal damaged: replace seal.
8. Screw the draining stopper to a new filter cartridge.
9. Clean the sealing faces of the filter cartridge and filter head with a lint-free cloth.
10. Mount the filter cartridge to the filter head:
    - Moisten the sealing faces of the new filter cartridge with some fuel.
    - Manually screw the filter cartridge to the filter head (clockwise), until seal is tight.
    - Continue to manually turn until the filter cartridge is seated tightly (¾ turn approximately).
11. Fasten the connecting plug of the water level sensor.
12. Open the left-hand door.
13. Turn on the «battery isolating switch».
14. Close the doors.

The fuel system must be bled after the filter cartridge has been changed.

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

10.4.3.3 Fuel filter maintenance

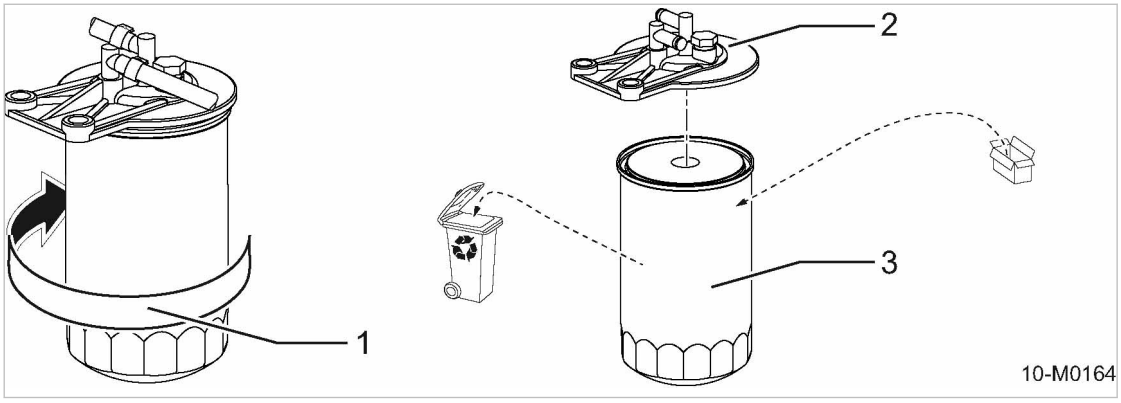


Fig. 47 Fuel filter maintenance

[1] Direction of rotation to unscrew the filter cartridge
[2] Filter holder
[3] Filter cartridge

1. Place a receptacle beneath the fuel filter housing.
2. Use a filter wrench to loosen then unscrew the filter cartridge. Collect any escaping fuel.
3. Clean the sealing faces of the new filter cartridge and the opposite side of the filter holder with a lint-free cloth.
4. Mount the filter cartridge to the filter holder:
   - Moisten the rubber seals of the filter holder and the sealing faces of the new filter cartridge with some fuel.
   - Manually screw the filter cartridge to the filter head (clockwise), until seal is tight.
   - Continue to manually turn until the filter cartridge is seated tightly (½ to ¾ turn approximately).
5. Open the left-hand door.
6. Turn on the «battery isolating switch».
7. Close the doors.

The fuel system must be bled after the filter cartridge has been changed.

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

Starting the machine and performing a test run:

1. Switch the machine on and run it in IDLE mode for approx. 1 minute.
2. Shut down the machine.
3. Open the right-hand access door.
4. Visually check the fuel system for leaks.
5. Tighten all screw connections.
6. Close the door.

10.4.4 Checking the engine oil level

The engine oil is indicated by a dipstick in the oil sump. The oil level should ideally be between the two marks on the dipstick. The oil level should not be allowed to fall below the *minimum level*.

Material Cleaning cloths

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

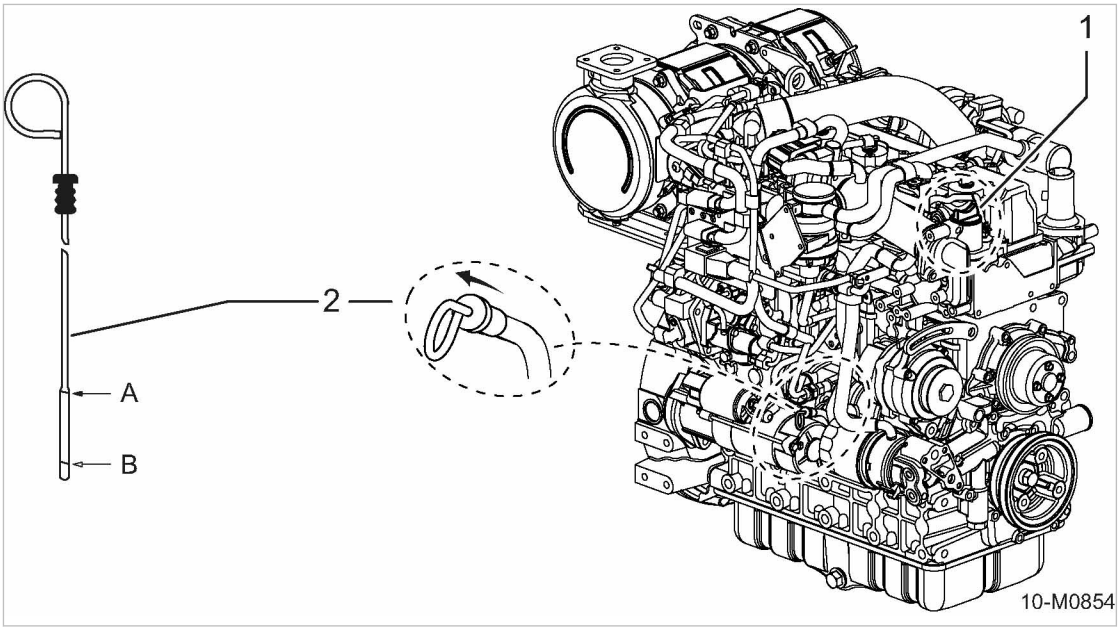


Fig. 48 Checking the engine oil level

1	Oil filler neck cover, engine oil	A	Mark for *maximum oil level*
2	Dip-stick	B	Mark for *minimum oil level*

1. Open the left-hand door.
2. Withdraw the dipstick, wipe with a lint-free cloth and insert fully.
3. Withdraw the dipstick once more and read off the oil level.
   Oil level between both markings: Oil level OK.
   The level has reached the *minimum level* or is below the mark: Replenish engine oil.
4. Close the door.

The marked *maximum oil level* should not be exceeded in order for the level of oil in the crankcase not to reach the crankshaft. If this were to occur, it could create oil bubbles that would reduce the oil's lubricating capability and impair engine performance.

10.4.5 Engine oil filling and topping up

Material
Engine oil
Cleaning cloths
Funnel

Precondition
The machine is switched off.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is turned off.

Filling with engine oil



See chapter 2.7.6 for engine oil filling volume.
The oil dipstick is marked with the «maximum oil level».

1. Open the right-hand access door.
2. Remove the filler cap and fill with fresh oil.
3. Wait 5 minutes then check the oil level.



It takes a few minutes for oil to reach the sump.

Low oil level: Replenish engine oil.

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

Starting the machine and performing a test run:

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
4. Open the right-hand access door.
5. After approximately 5 minutes: Check the engine oil level.
   Low oil level: Replenish engine oil.
6. Visually inspect for leaks.
7. Close the door.

10.4.6 Changing the engine oil

The engine oil should be changed:

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

Material
Engine oil
Oil receptacle
Wrench
Drain hose with quick-release coupling (provided with the machine)
Cleaning cloths

Precondition
The machine is switched off.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
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.

Draining the engine oil (machines with chassis):

In machines with chassis (no stationary machine), the engine oil is drained directly at the machine's oil pan. This is done from a drain valve with the aid of a separate drain hose.

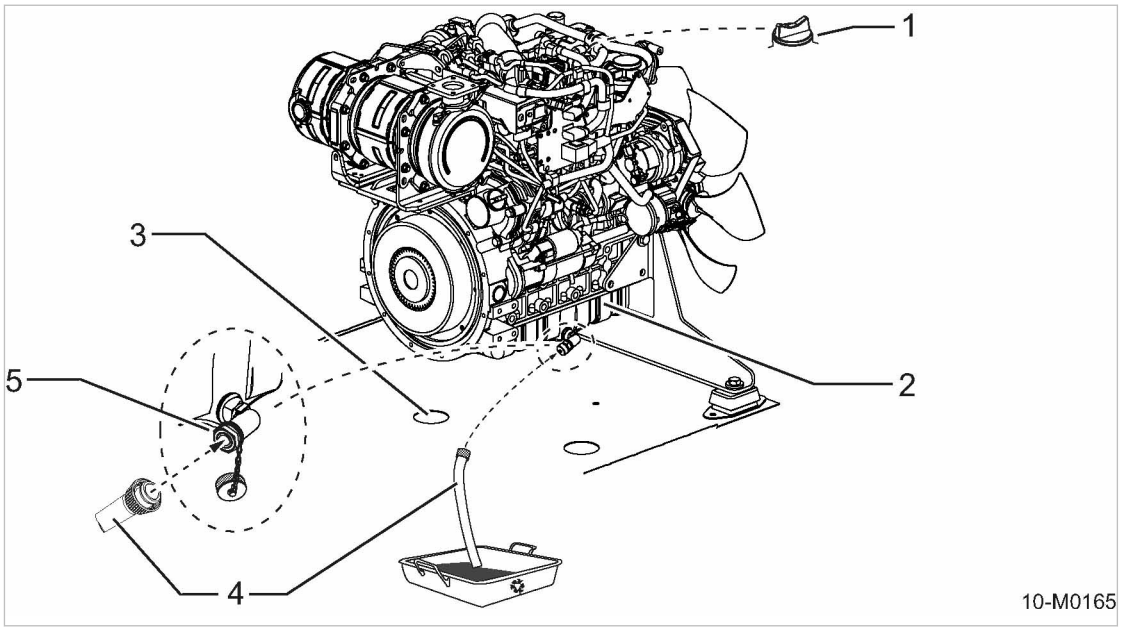


Fig. 49 Draining the engine oil

[1] Oil filler neck cover, engine oil
[2] Engine oil sump
[3] Drain hole in the floor pan
[4] Drain hose with quick-release coupling
[5] Oil drain valve

1. Open the left-hand door.
2. Remove the oil oil filler cover.
3. Place the oil receptacle below the corresponding drain hole [3] in the floor pan.
4. Lead the free end of the drain hose [4] through the hole in the floor pan and into the receptacle.

5. Remove the protective cap from the oil drain valve [5].
6. Screw the drain hose with quick-release coupling onto the oil drain valve.
   The valve opens and oil drains through the hose.
7. When all the oil has drained out, uncouple and remove the drain hose.
8. Replace the protective cap on the oil drain valve.
9. Replace the plug in the filler port.
10. Close the door.

Option rw, rx **Draining the engine oil (stationary machine):**

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines. The engine oil is drained via a hose line which is screwed into the drain opening of the engine block and closed with a shut-off valve. The hose is sealed with a screwed sealing plug at the drain end.

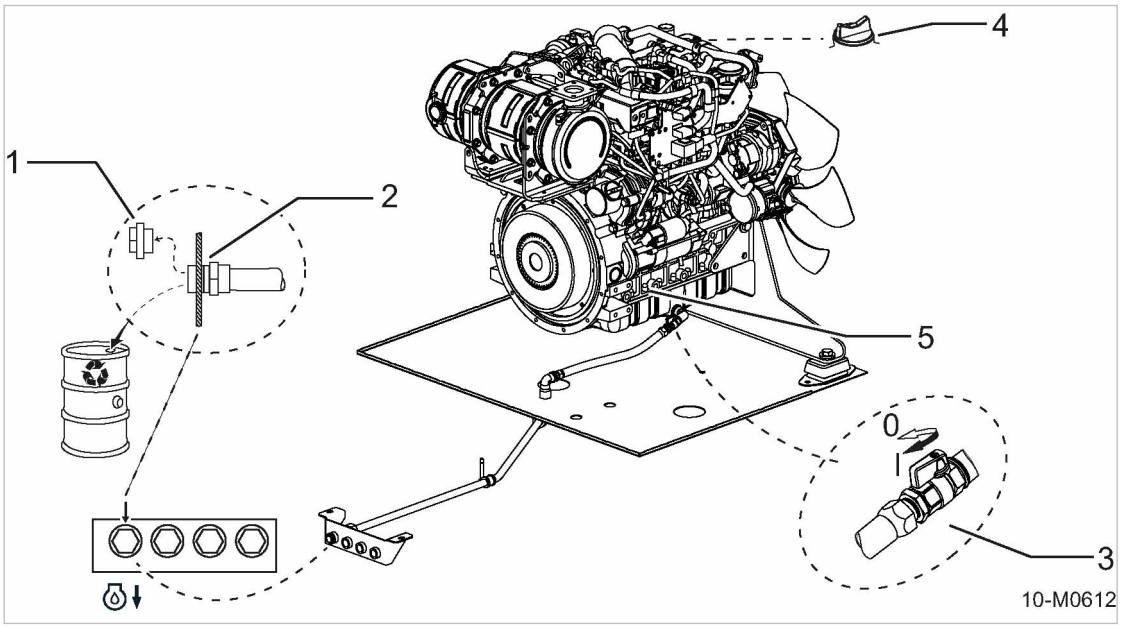


Fig. 50 Draining the engine oil (stationary machine)

[1] Screw plug
[2] Engine oil drain
[3] Shut-off valve (ball valve)
I - open
0 - closed
[4] Oil filler neck cover, engine oil
[5] Engine oil sump

1. Open the left-hand door.
2. Remove the oil oil filler cover.
3. Place the oil receptacle below the drain point.
4. Unscrew the filler plug [1] at the oil drain.
5. Open the shut-off valve [3] at the engine's oil pan and catch the engine oil.
6. Close the shut-off valve and replace the screwed sealing cap.
7. Replace the plug in the filler port.
8. Close the door.

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

Further information See chapter 10.4.5 for engine oil filling.

10.4.7 Replace the engine oil filter

Material
- Spare part
- Filter wrench
- Cleaning cloths
- Oil receptacle

Precondition
- The machine is switched off.
- The machine is fully vented, the pressure gauge reads 0 bar.
- 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.

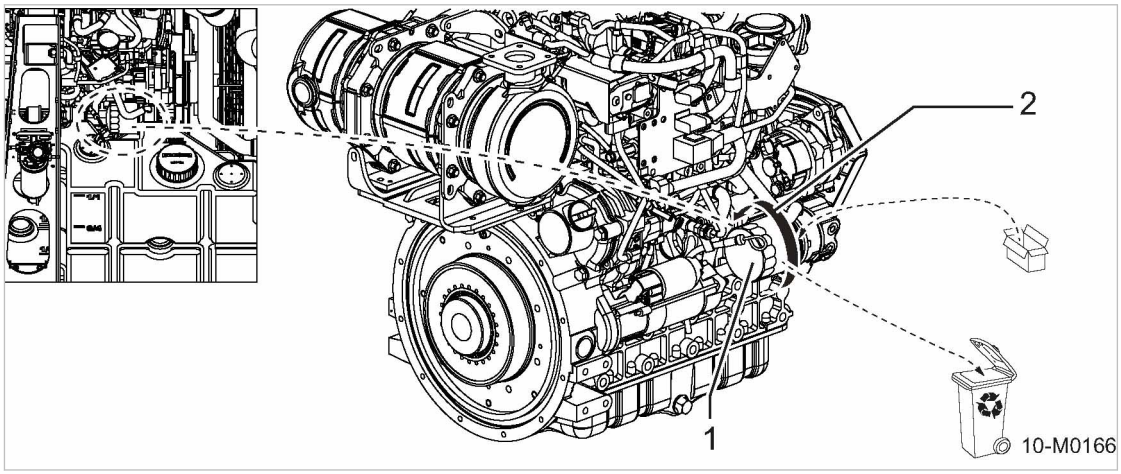


Fig. 51 Change the oil filter
1 Oil filter
2 Direction of rotation to unscrew the filter

1. Open the right-hand access door.
2. Prepare a receptacle.
3. Use a filter wrench to loosen and unscrew the filter. Catch any escaping oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter's gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the engine oil level.
   Low oil level: Replenish engine oil.
8. Open the left-hand door.

9. Turn on the «battery isolating switch».
10. Close the doors.



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

10.4.8 Drive belt maintenance

The lifespan of the drive belts is affected by belt tension.

- Slack belts can slip and become damaged and may result in engine overheating.
- Over-tight belts stretch and fatigue quicker. Over-tight belts also place unnecessary stress on bearings and shorten their life.

Material
Wrench
Suitable clamping lever (short, thin rod)
Spare part

Precondition
The machine is switched off.
The machine is fully vented, the pressure gauge reads 0 bar.
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.
- ➢ Never run the machine without a belt guard.

➢ Open both doors.

Removing the belt guard:

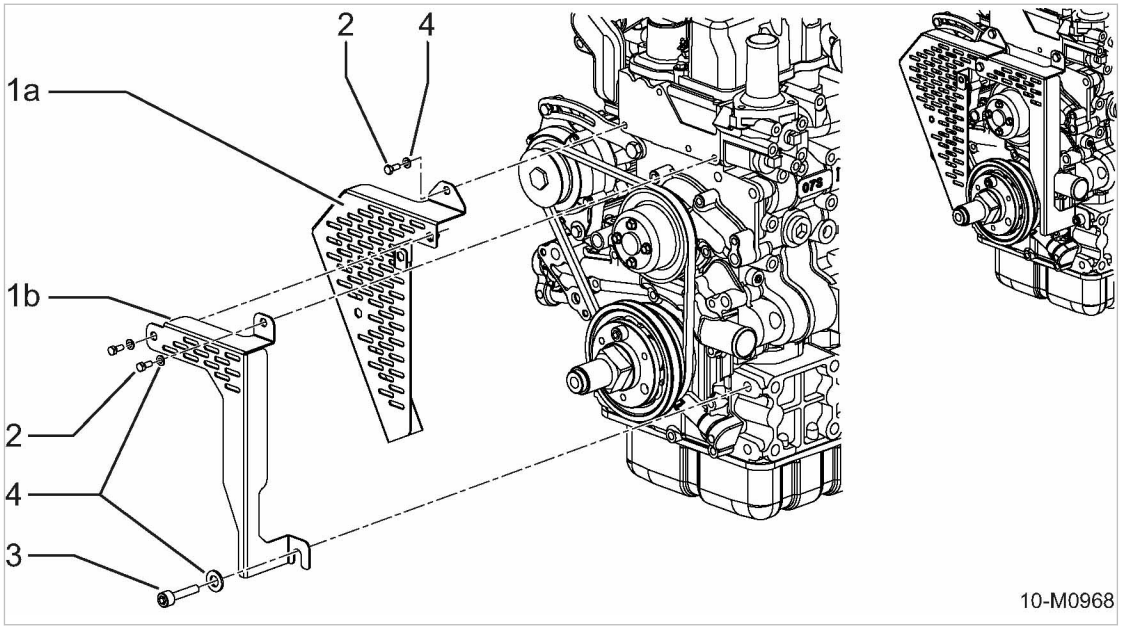


Fig. 52 Belt guard attachment

[1] Belt guard (2-part)
[2] Hexagon bolt
[3] Hex. socket head screw
[4] Washer

➢ Unscrew the fixing scres of both belt guard components and remove the belt guard.

10.4.8.1 Carry out visual check

Visual inspection for damages:

➢ Check the belt thoroughly for cracks, fraying or stretching.
When damaged or worn: Replace the drive belt immediately.

Check the belt seating

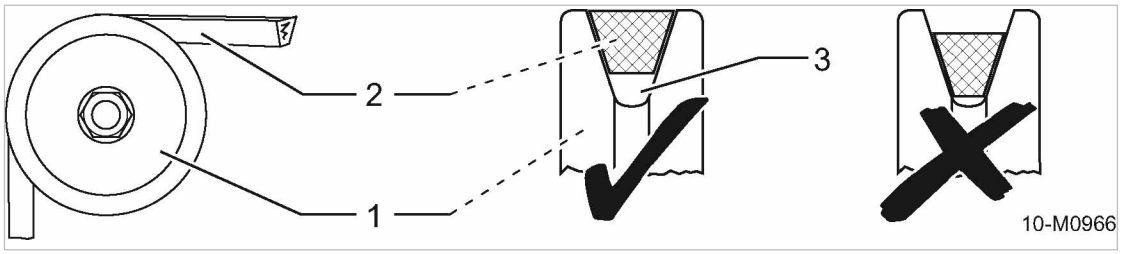


Fig. 53 Checking the drive belt seating

[1] Belt pulley
[2] Drive belt
[3] Pulley guidance groove

➢ Check the drive belt seating.
Belt is positioned too deeply in the guidance groove: Replace the drive belt immediately.

1. Replace the belt guard.

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

10.4.8.2 Checking belt tension

Check belt tension when they are warm, not hot, to avoid length variations through temperature.

The belt tension can be checked by hand: To check the tension, press the belt inwards with the thumb at the mid-point between pulleys.

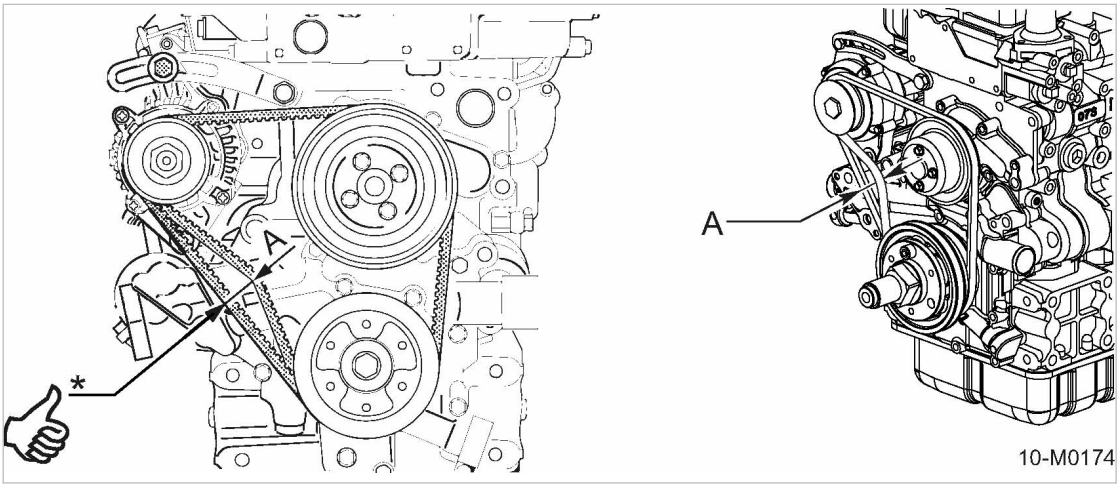


Fig. 54 Manually checking the belt tension

Ⓐ Permissible deflection of the belt
Ⓐ Compressive load approximately: 10 kg
permissible deflection depth: 10 – 12 mm

1. Check belt tension by hand (see Fig. 54).
2. Increase the tension on a loose belt.
3. Replace the belt guard.
4. Turn on the «battery isolating switch».
5. Close the doors.

10.4.8.3 Tension the belt

The drive belt is tensioned via the screw fastening of the alternator.

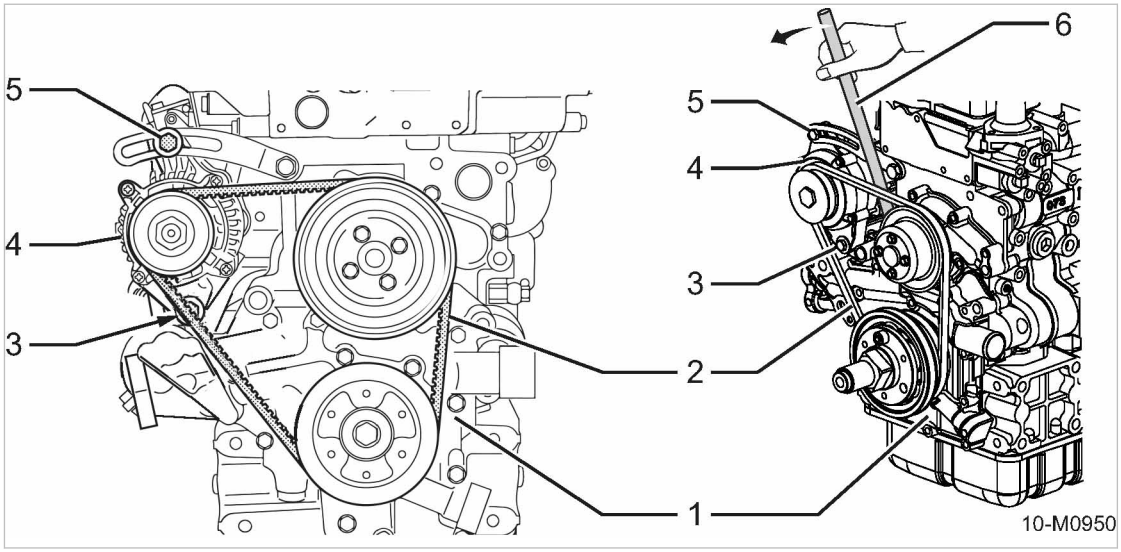


Fig. 55 Tension the belt

1	Engine block	4	Alternator
2	Drive belt	5	Hexagon screw (tensioning screw)
3	Hexagon screw (securing screw)	6	Lever

1. Loosen the alternator securing screw and clamping screw.
2. Place a suitable lever between the alternator and engine block.
3. Gently push the alternator in the direction of the arrow (outwards) using the lever until the drive belt is tensioned.
4. Re-tighten the securing screw and clamping screw.
5. Remove the lever.
6. Check the belt tension (see Fig. 54).

   Belt tension too low: Press the alternator further into arrow direction.
   Belt tension too high: Slightly swivel the alternator against the arrow direction.
7. Replace the belt guard.
8. Turn on the «battery isolating switch».
9. Close the doors.

10.4.8.4 Replace the drive belt.

For machines with alternator, remove the alternator drive belt before replacing the drive belt. See chapter 10.11.6 for more information about removing and replacing the generator drive belt.

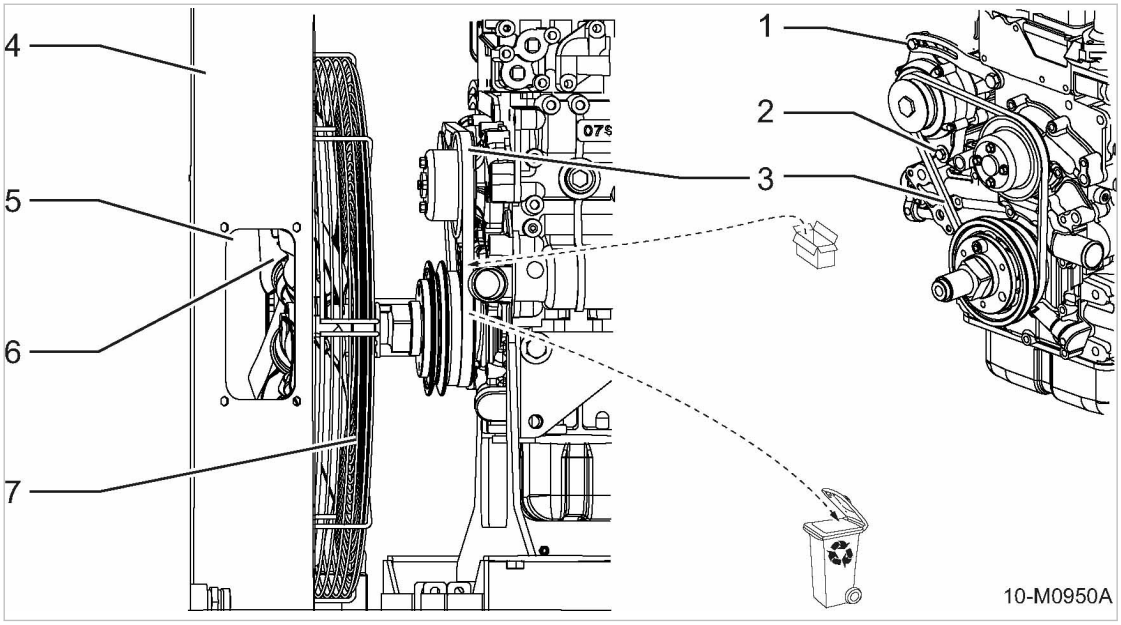


Fig. 56 Replace the drive belt.

1. Hexagon screw (tensioning screw)
2. Hexagon screw (securing screw)
3. Drive belt
4. Fan casing
5. Service opening (without cover)
6. Fan
7. Fan guard

Removing the drive belt:

1. Remove the cover of the service opening at the fan casing.
2. Loosen the alternator securing screw and clamping nut until the drive belt can be taken off the pulleys.
3. Pull off the drive belt and push it through the fan guard opening into the fan casing space.
4. Lift the drive belt over the fan blades and remove it through the service opening from the fan casing.
5. Check the pulleys for dirt and wear.

   Dirty pulley: Clean pulley.
   Worn pulley: Have the pulley changed.

Installing a drive belt:

1. Push the new drive belt through the service opening of the fan casing and lift it over the fan blades.
2. Push the drive belt through the fan guard opening in direction of the belt pulleys.
3. Manually route the drive belt over the pulleys without using force.
4. Tension the drive belt. Ensure that the drive belt is correctly positioned in its guide.

A belt that has been replaced may not be used again.
After running for two to three hours, check the belt tension again.

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

Putting in operation:

1. Install the cover of the service opening.
2. Replace the belt guard.
3. Turn on the «battery isolating switch».
4. Close the doors.

10.4.9 Battery maintenance

➢ Check the charging system if the batteries discharge without obvious reason.

10.4.9.1 Safety

WARNING
Danger of acid burns from escaping electrolyte!

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

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

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

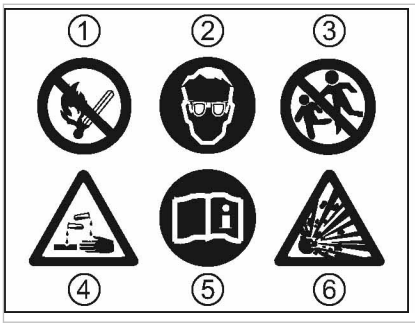


Fig. 57 Safety signs - warning labels on the battery

➢ Take heed of any safety signs on the battery warning label.
The individual safety signs have the following meaning:
- 1 – Fire, sparks, open flame and smoking are forbidden!
- 2 – Eye and face protection must be worn because of the danger of acid burns.
- 3 – Keep children well away from batteries and acids!
- 4 – Wear protective gloves, batteries are filled with caustic electrolyte!
- 5 – Observe the battery manufacturer's instructions!
- 6 – Follow the safety rules, explosion hazard!

Further instructions on working with batteries:

➢ Do not remove battery terminal covers unnecessarily.

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

10.4.9.2 Ensuring the batteries are charged

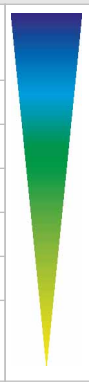
The battery may be subject to self-discharge if the machine has been out of operation for an extended period. The starting voltage is insufficient to start the engine when needed. Moreover, exhaustive discharge of the battery can result in battery damage.



Always consider the following for starter batteries:
Recharge if stored for 30 days or longer!

The current charge level of the starter battery can be read from the operating mode *Battery voltage* at the SIGMA CONTROL SMART display.

Starter battery charge level:

Charge level [%]		Voltage display [V]	Electrolyte density [kg/l]	Notes
100		12.7 - 12.85	1.27	Battery OK, fully charged.
75		12.5	1.24	Recharging required!
65		12.4	1.22	
50		12.3	1.21	Limit of starting capacity!
25		12.0	1.16	Battery discharged below permitted discharge limit.
20		11.9	1.14	
0		11.6	1.09	Battery permanently damaged due to total discharge!
Values 25° C				

Tab. 96 Starter battery charge level

- ➢ Check battery charge and recharge with appropriate charging device, if necessary.

10.4.9.3 Battery removal and installation

Precondition
The machine is switched off.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
The machine has cooled down.
The «battery isolating switch» is turned off.

1. **CAUTION!**
   There is danger of batteries bursting!
   A short-circuited battery heats up quickly and can burst.
   - ➢ Never short-circuit a battery (e.g. with a hand tool).
   - ➢ Wear gloves and eye protection.

2. ***NOTICE!***
   Excessive voltage produced by the engine generator!
   Voltage peaks can destroy the alternator regulator and diodes.
   - ➢ The batteries serve as a buffer and must not be disconnected while the engine is running.
   - ➢ Perform work at batteries only when the machine is switched off.
3. Open the left-hand door.
4. Disconnect the negative cable first, then the positive cable.
5. Unscrew the battery fixing clamp.
6. Replace in the reverse order.
7. Make sure the battery is properly secured.
8. Turn on the «battery isolating switch».
9. Close the door.

Battery replacement:

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

- ➢ Always replace batteries with the same type.

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

10.4.10 Change the oil separator element

Material: Spare part
Cleaning cloths

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

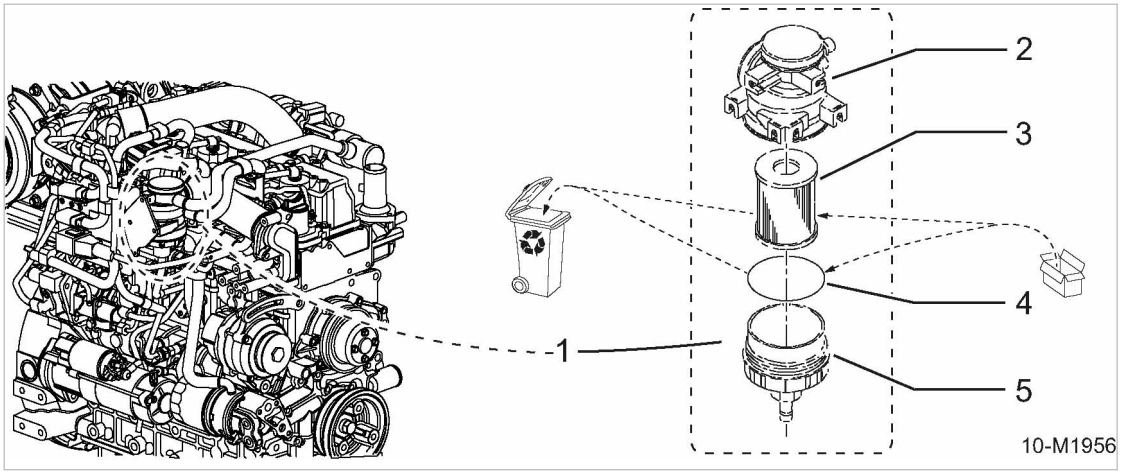


Fig. 58 Change the oil separator element

1 Oil separator assembly
2 Body
3 Oil separator element
4 Sealing ring
5 Enclosure

1. Open the left-hand door.
2. Unscrew the housing.
3. Remove the oil separator element and the sealing ring.
4. Clean the contact surfaces of enclosure and cover with a lint-free cloth and remove any adhering oil and grease residue.
5. Insert a new oil separator element and new sealing ring.
6. Manually screw the cover on.
7. Turn on the «battery isolating switch».
8. Close the door.

Dispose of the old oil separator element, sealing ring and contaminated resources according to applicable environment protection regulations.

10.5 Servicing the components of the emission after-treatment system

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

Check the housing of the diesel particulate filter:

➢ Check the housing of the diesel particulate filter for proper seating and damage.
The housing is damaged: Please contact KAESER SERVICE.

Check flange connection between exhaust manifold and diesel particulate filter:

➢ Check flange connection between exhaust manifold and diesel particulate filter; if required, tighten the screw connection.
The flange connection is damaged: Contact KAESER SERVICE or KUBOTA.

10.6 Compressor Maintenance

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

10.6.1 Check the cooling oil level

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

Material
Wrench
Cleaning cloths

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

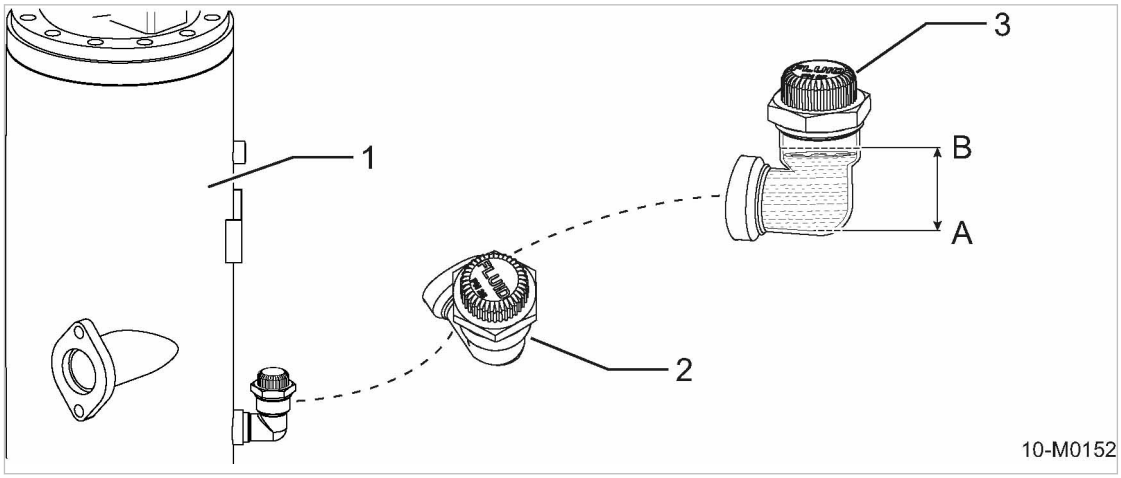


Fig. 59 Check the cooling oil level

[1] Oil separator tank
[2] Oil filler port
[3] Screw plug
[A] Minimum level
[B] Maximum level

1. Open the right-hand access door.
2. Slowly unscrew and withdraw the plug from the oil filler port.
3. Check the cooling oil level.
   If oil is not visible: Top up the cooling oil.
4. Replace the plug in the filler port.
5. Close the door.

10.6.2 Cooling oil filling and topping up

Material
Cooling oil
Funnel
Cleaning cloths
Wrench

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

Filling with cooling oil

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



1. *NOTICE!*
   The machine could be damaged by unsuitable oil!
   - ➢ Never mix different types of oil.
   - ➢ Never top up with a type of oil that differs from the one already used in the machine.
2. Open the right-hand access door.
3. Slowly unscrew and withdraw the plug from the oil filler port.
4. Top up the cooling oil to the maximum level (B) with the help of a funnel.
5. Check the oil level.
6. Check the filler plug gasket for damage.
   Damaged gasket: replace gasket.
7. Replace the plug in the filler port.
8. Turn on the «battery isolating switch».
9. Close the door.

Starting the machine and performing a test run:

1. Start the machine and run in IDLE until the operating temperature is reached.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the right-hand access door.
7. Check the oil level after about 5 minutes.
   Cooling oil level too low: Top up the cooling oil.
8. Visually inspect for leaks.
9. Close the door.

10.6.3 Changing the cooling oil



Drain the oil completely from the following components:

- Oil separator tank
- Oil cooler
- Oil pipes

➢ Always change the oil filter when changing the oil.

Material
Cooling oil
Receptacle
Drain hose with hose coupling is disconnectedly laying at the machine
New gasket for the drain plug
Funnel
Cleaning cloth

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
The machine is at operating temperature.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is off.



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

➢ Open both doors.

10.6.3.1 Draining the cooling oil (machine with chassis)

In machines with chassis (no closed floor pan, no stationary machine), the cooling oil is drained directly at the oil separator tank and the oil cooler.

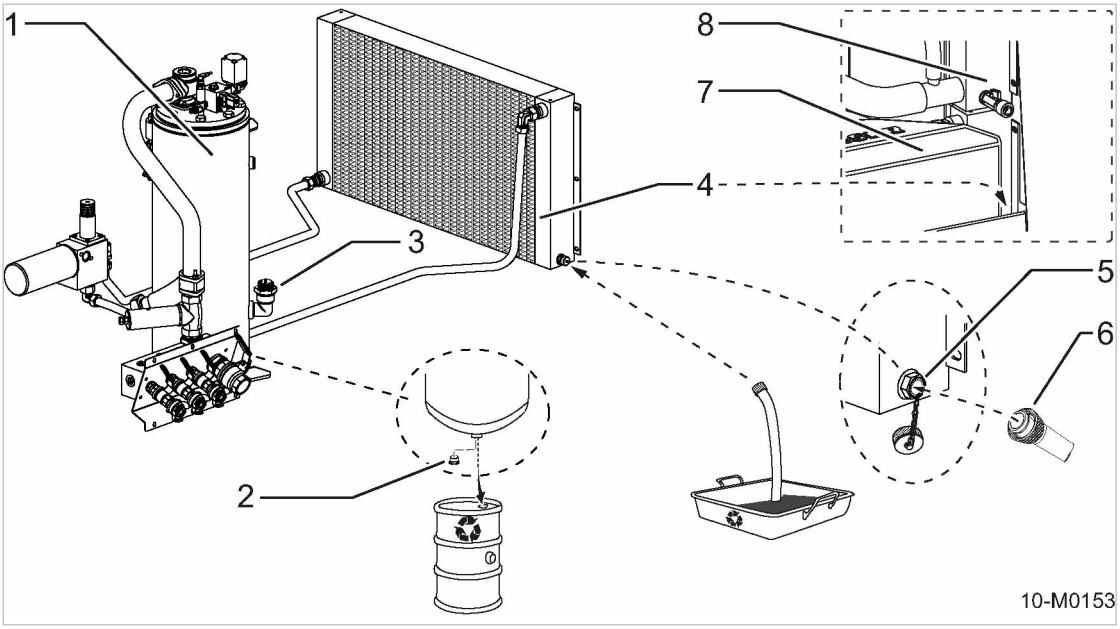


Fig. 60 Draining the compressor cooling oil

[1]	Oil separator tank	[5]	Oil drain valve
[2]	Oil separator tank drain plug	[6]	Drain hose with rapid action hose coupling
[3]	Oil filler plug	[7]	Fuel tank
[4]	Oil cooler	[8]	Coolant cooler (engine)

➢ Remove the plug [3] from the oil separator tank filling port.

Draining the cooling oil from the oil separator tank:

The oil separator tank can be drained from a point accessible through a hole in the floor panel.

1. Place the oil receptacle below the corresponding drain hole in the floor pan.
2. Unscrew the drain plug [2] and allow the cooling oil to drain into the receptacle.
3. Fit a new gasket on the drain plug and screw it back in again.

Draining the oil from the oil cooler

This is done from a oil drain valve with the aid of a separate drain hose.

1. Position a receptacle beneath the oil cooler drain point (accessible through a hole in the floor panel).
2. Lead the free end of the drain hose [6] through the hole in the floor pan and into the receptacle.
3. Remove the protective cap from the oil drain valve [5].
4. Screw the drain hose with quick-release coupling onto the oil drain valve.
   The valve opens and oil drains through the hose.
5. When all the oil has drained out, uncouple and remove the drain hose.
6. Replace the protective cap on the oil drain valve.

Performing final work steps:

1. Replace the plug in the oil separator tank filling port.
2. Close the doors.

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

Further information See chapter 10.6.2 for cooling oil filling.

10.6.3.2 Option oe, rw, rx

Draining the cooling oil (closed floor pan - stationary machine):

Compressor cooling oil and engine coolant drain lines are led to a central point outside the machine on stationary machines and machines with closed floor pan. The cooling oil is drained via pipes which are screwed into the drain openings of the oil separator tank and the airend and are closed with a shut-off valve. The pipes are sealed with a screwed sealing plug at the drain end.

Option oe, rw, rx

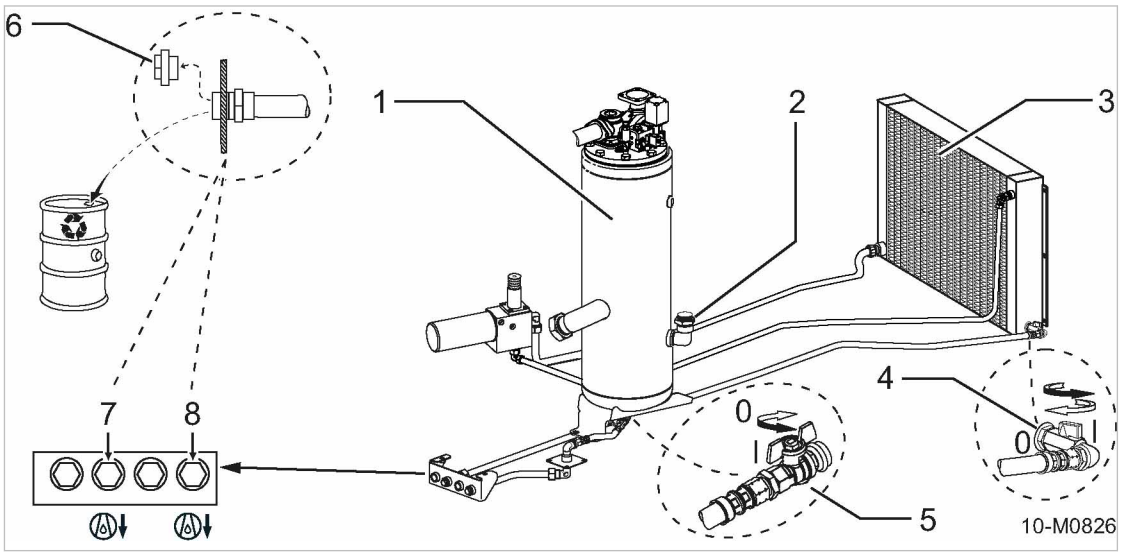


Fig. 61 Draining the cooling oil (closed floor pan - stationary machine)

[1] Oil separator tank
[2] Oil filler plug
[3] Oil cooler
[4/5] Shut-off valve (ball valve)
I - open
0 - closed
[6] Screwed sealing cap - cooling oil drain
[7] Oil cooler drain
[8] Oil separator tank drain

➢ Remove the plug [2] from the oil separator tank filling port.

Draining the cooling oil from the oil separator tank:

1. Position a receptacle beneath the oil drainage point for the oil separator tank's cooling oil [8].
2. Unscrew the corresponding screwed sealing cap at the cooling oil drain.
3. Open the shut-off valve [5] at the oil separator tank and catch any draining cooling oil.
4. Close the shut-off valve and replace the screwed sealing cap.

Draining the oil from the oil cooler

1. Position a receptacle beneath the oil drainage point for the oil cooler's cooling oil [7].
2. Unscrew the corresponding screwed sealing cap at the cooling oil drain.

3. Open the shut-off valve [4] at the oil cooler and catch any draining cooling oil.
4. Close the shut-off valve and replace the screwed sealing cap.

Performing final work steps:

1. Replace the plug [2] to the filling port of the oil separator tank.
2. Close the doors.

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

Further information See chapter 10.6.2 for cooling oil filling.

10.6.4 Replacing the compressor oil filter

Material Spare part
Oil receptacle
Cleaning cloths

Precondition The machine is switched off.
The machine is fully vented, the pressure gauge reads 0 bar.
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.

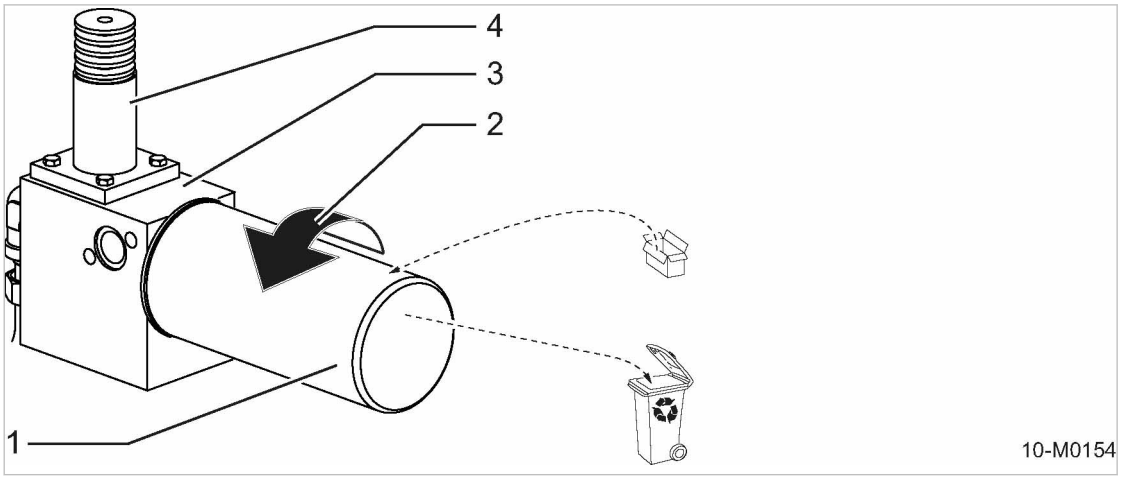


Fig. 62 Change the oil filter

[1] Oil filter
[2] Direction of rotation to unscrew the oil filter.
[3] Thermostatic valve
[4] Ambient temperature sensor (not with Option db)

Changing the oil filter:

1. Open the left-hand door.

2. Prepare a receptacle.
3. Loosen the filter by turning counter-clockwise and catch any escaping oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter's gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the oil level in the oil separator tank.
   Cooling oil level too low: Top up the cooling oil.
8. Turn on the «battery isolating switch».
9. Close the door.



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

Starting the machine and performing a test run:

1. Start the machine and run in IDLE until the operating temperature is reached.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the right-hand access door.
7. After approximately 5 minutes: Check the cooling oil level.
   Cooling oil level too low: Replenish with more cooling oil.
8. Visually inspect for leaks.
9. Close the door.

10.6.5 Oil separator tank dirt trap maintenance

The control valve is mounted on the oil separator tank cover. The control valve has two different dirt traps that must be cleaned at least once a year.

Material
Cleaning cloths
Wrench
Small screwdriver
Maintenance kit, control valve
Petroleum ether or spirit

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

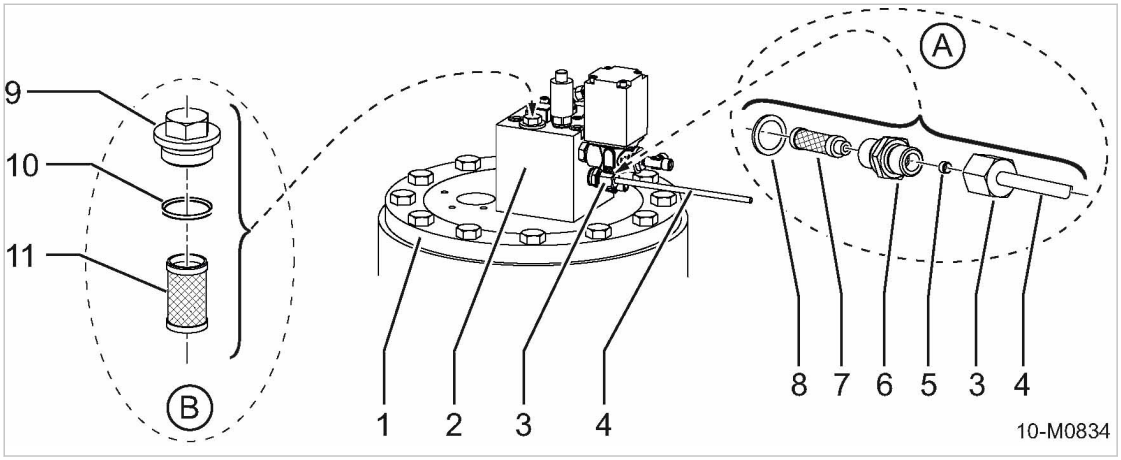


Fig. 63 Oil separator tank dirt trap maintenance

[1] Oil separator tank cover
[2] Control valve
[3] Union nut
[4] Oil return line
[A] Detail: Dirt trap, oil return line
[5] Nozzle
[6] Screw-in connector
[7] Strainer
[8] Sealing ring
[B] Detail: Dirt trap, proportional controller
[9] Screw plug
[10] O-ring
[11] Strainer

➢ Open the right-hand access door.

10.6.5.1 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 screw driver to unscrew the nozzle [5] from the screw-in connector.
5. Clean the housing, strainer and sealing ring [8] with cleaning solvent or spirit.
6. Check the nozzle, strainer and sealing ring for wear.
   When clearly worn: replace components.
7. Fit the nozzle and strainer to the screw-in connector.
8. Screw in the connector making sure the sealing ring seats properly.
9. Refit the oil scavenge line.

10.6.5.2 Maintenance of the proportional controller dirt trap

See Fig. 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.
   When clearly worn: replace components.
4. Place the screw plug on the strainer.
5. Screw in the plug making sure the O-ring seats properly.

Putting in operation:

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



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

Starting the machine and performing a test run:

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
4. Open the outlet valves.
5. Open the right-hand access door.
6. Visually inspect for leaks.
7. Shut down the machine.
8. Close the door.

10.6.6 Changing the oil separator cartridge



The oil separator cartridge cannot be cleaned.

The life of the oil separator cartridge is influenced by:

- contamination in the air drawn into the compressor,
- and adherence to the changing intervals for:
  - Cooling oil
  - Oil filter
  - Air filter

Material
Spare part
Cleaning cloths
Wrench

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

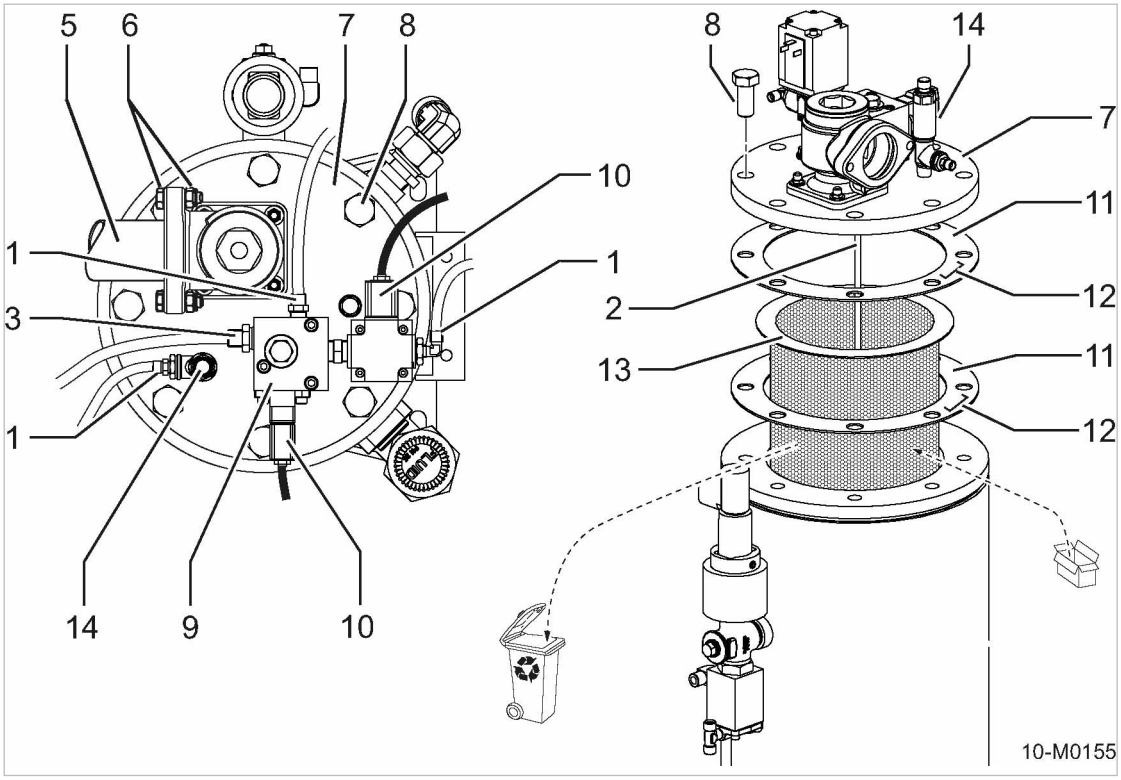


Fig. 64 Changing the oil separator cartridge

1 Control air line union nut
2 Oil scavenge pipe (screwed to the cover)
3 Oil scavenge pipe union nut (lower fitting, screwed to the dirt trap)
5 Air pipe
6 Pipe fitting
7 Cover
8 Fastening screw
9 Control valve
10 Solenoid valve plug
11 Gasket
12 Metal clip
13 Oil separator cartridge
14 Pressure transducer

➢ Open the right-hand access door.

Changing the oil separator cartridge:

1. Unscrew the union nuts 1 and 3 and place the components with connections carefully to one side.
2. Pull out the plugs at the connection cables of the solenoid valves 10 and withdraw the cable.
3. Pull out the plug to the sensor 14 and withdraw the cable.
4. Unscrew the fitting 6 and turn the air pipe 5 to one side.
5. Remove the screws 8 securing the cover 7 of the oil separator tank.
6. Carefully lift the cover and put to one side.

Take care with the pipe of the oil return line 2 screwed under the cover.

7. Remove the old oil separator cartridge 13 and the gaskets 11.

8. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.

Do not remove the metal clips!
The metal parts of the oil separator cartridge are electrically interconnected. The gaskets (11) are fitted with metal clips (12) that fulfil this requirement and provide an electrical path to the oil separator tank and to the frame of the machine.

9. Insert the new oil separator cartridge with gaskets and screw down the cover.
10. Re-position the air pipe (5).
11. Replace and tighten all loosened fittings.
12. Reconnect cables.
13. Check the oil level in the oil separator tank.
    Cooling oil level too low: Top up the cooling oil.

The dirt trap at the oil separator receptacle must also be serviced, whenever the oil separator cartridge is changed.

Further information — Information on control valve dirt trap maintenance is given in chapter 10.6.5.

Putting in operation:

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

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

Starting the machine and performing a test run:

1. Start the machine and run in IDLE until the operating temperature is reached.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the right-hand access door.
7. After approximately 5 minutes: Check the cooling oil level.
   Cooling oil level too low: Top up the cooling oil.
8. Visually inspect for leaks.
9. Close the door.

10.6.7 Compressor air filter maintenance

Clean the filter according to the maintenance schedule or if the maintenance indicator shows this to be necessary.

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 bar.
The machine has cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.

NOTICE
Damaged air filter element.
Machine damage due to contaminated intake air.
➢ Do not try to clean the filter element by striking or knocking it.
➢ Do not wash the filter element.

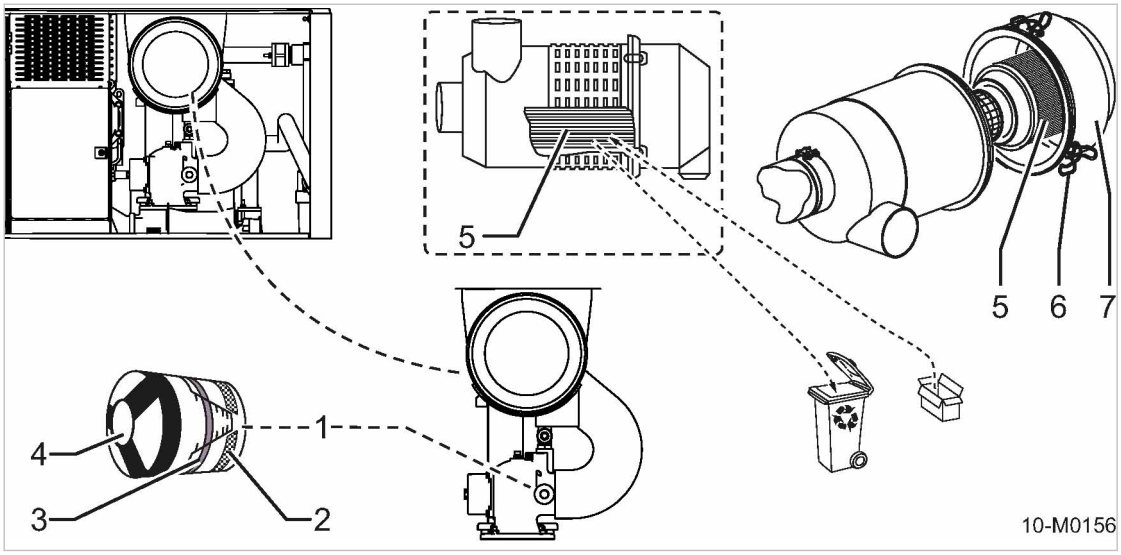


Fig. 65 Compressor air filter maintenance

1 Maintenance indicator
2 Red zone indicator scale
3 Indicating piston of the maintenance indicator
4 Reset know maintenance indicator
5 Filter element
6 Retaining clip
7 Filter cap

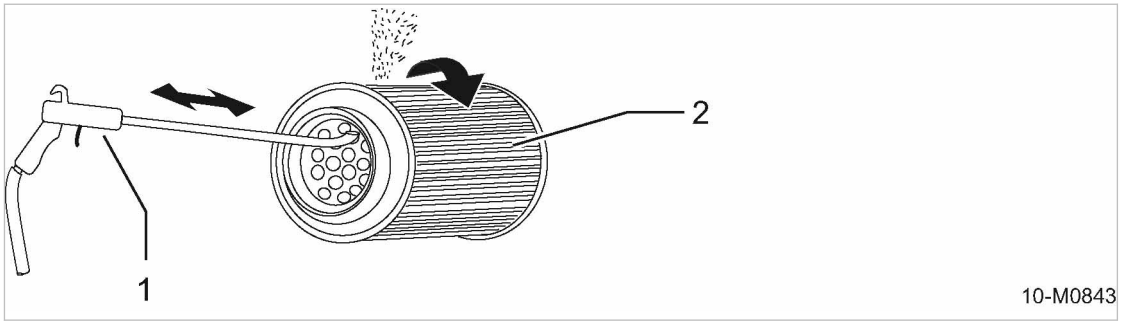


Fig. 66 Cleaning the filter element

[1] Compressed air gun with blast pipe bent to 90° at the end
[2] Filter element

➢ Open both doors.

Checking the contamination level of the air filter

Air filter maintenance is necessary when the yellow piston inside the maintenance indicator reaches the red zone.

➢ Check the air filter maintenance indicator.

If the yellow piston reaches the red zone, Clean or renew the filter element.

Cleaning the air filter:

1. Release the retaining clamps, lift off the cap an 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 (≤ 5 bar!) at an angle to blow dust from the element from inside to outside until no further dust develops.
   - The blast pipe must be long enough to reach the bottom of the element.
   - The tip of the blast pipe must not touch the element.
   - Clean sealing faces.
4. Inspect the element carefully for any damage.

   Damaged filter element: Replace filter element.
5. Insert the cleaned or new filter element into the filter housing. Make sure it is properly in place and sealed by its gaskets.
6. Replace the cap and secure with the clip.

Resetting the maintenance indicator

➢ Repeatedly press the reset knob on the maintenance indicator.

The yellow piston within the indicator is reset and the maintenance indicator is ready for use again.

➢ Close the doors.

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

10.7 Cleaning the cooler

The frequency of cleaning is mainly dependent on local operating conditions.
Severe clogging of the coolers causes overheating and machine damage.
Check coolers regularly for clogging.
Avoid creating dust swirls. Wear breathing protection if necessary.
Do not clean the coolers/radiators with a sharp instrument as they may be damaged.
A severely contaminated cooler/radiator should be cleaned by KAESER SERVICE.

Material
Compressed air
Breathing mask (if necessary)
Water or steam jet blaster

Precondition
The machine is placed over a washing station equipped with an oil separator.
The machine is switched off.
The machine has cooled down.
The machine is fully vented, the pressure gauge reads 0 bar.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is turned off.



NOTICE
Damage can be caused to the machine by water or steam jets!
Direct water or steam jets can damage or destroy electrical components and display instruments.

- ➢ Cover up electrical components such as the control cabinet, generator, starter and display instruments.
- ➢ Do **not** direct water or steam jets at sensitive components such as the generator, starter or indicating instruments.
- ➢ Deploy the extension pole of the pressure washer at a distance of at least 50 cm and at an approximate 90° angle to the cooler/radiator surface.

➢ Open both doors.

10.7.1 Cleaning the compressor cooler and engine radiator

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

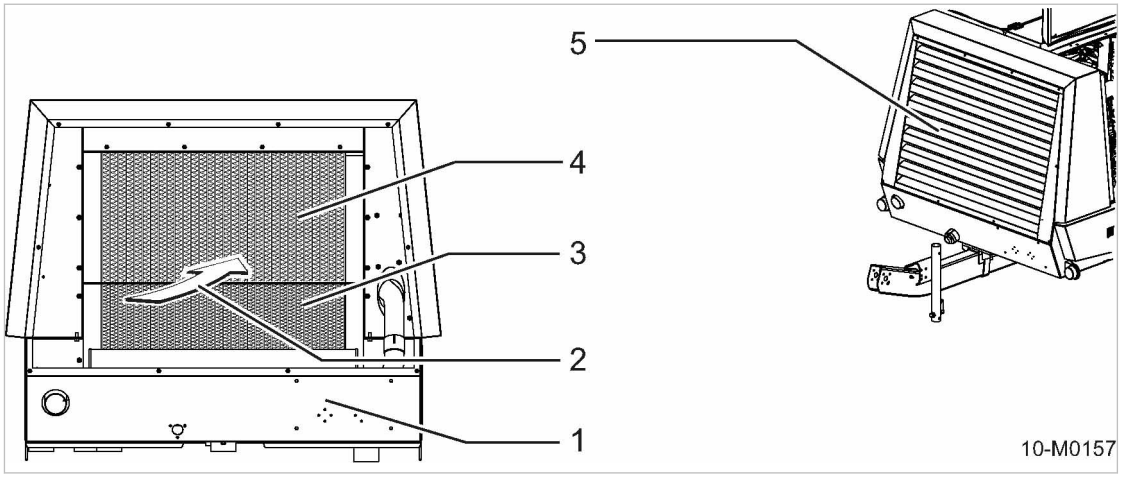


Fig. 67 Cleaning the compressor cooler and engine radiator

[1] Front end of machine, sound insulation (radiator grill) removed
[2] Direction of impacting water or steam jet (from outside to inside)
[3] Oil cooler (compressor)
[4] Coolant cooler (engine)
[5] Sound damping louvres

Cooler cleaning:

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.
2. Remove the sound damping louvres in front of the cooler/radiator.
3. Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from outside to inside).
4. Replace the sound damping louvre.
5. Remove the protective coverings from the air filters.
6. Turn on the «battery isolating switch».
7. Close the doors.
8. Start the machine and run up to operating temperature so that excess water is evaporated.

Check the cooler for leaks:

1. Open both doors.
2. Visually inspect for leaks. Is oil/coolant leaking out?

Is a cooler leaking?

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

➢ Close the doors.

Clean the cooler fins only in a washing area equipped with an oil separator!

10.7.2 Option da, df, dc, dd Cleaning the compressed air after-cooler

The compressed air after-cooler is located near the air treatment devices.

Option da, df, dc, dd

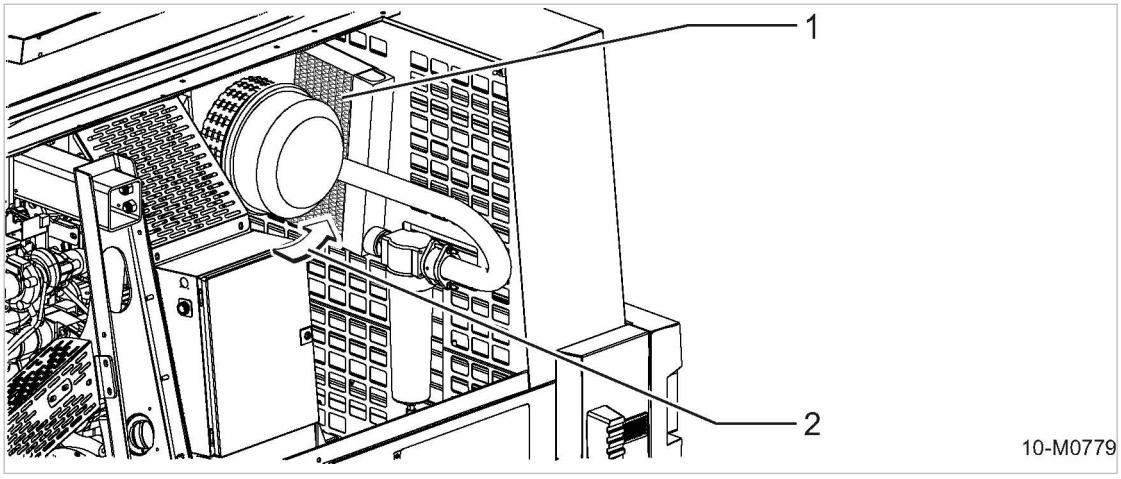


Fig. 68 Cleaning the compressed air after-cooler

[1] Compressed air after-cooler
[2] Direction of impacting water or steam jet (from inside to outside).

1. Seal off the air intakes of the engine and compressor air filters before starting cleaning.
2. Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from inside to outside).
3. Remove the protective coverings from the air filters.
4. Turn on the «battery isolating switch».
5. Close the doors.
6. Start the machine and run up to operating temperature so that excess water is evaporated.

Clean the cooler fins only in a washing area equipped with an oil separator!

10.8 Check/replace hose lines

Overview of hose lines of machine:

- Fuel lines of the drive engine
- Pressure hoses of the drive engine
- Pressure hoses of the compressor

The hose line are subject to natural ageing regardless of proper storage or permitted utilisation during machine operation. This ageing changes the material and compound properties and reduces the performance capability of the hose lines. As a result the period of use for hose lines is limited.

The operator must ensure that all hose lines are checked at reasonable intervals and are replaced if required, see maintenance schedule 10.3.3.1

➢ Comply with all instructions!

10.8.1 Replace the fuel lines of the drive engine.

➢ Have a KAESER SERVICE technician replace the fuel lines of the drive engine.

10.8.2 Replace the pressure hoses of the drive engine.

Overview of all pressure hoses at drive engine:

- Engine oil
- Coolant for the coolant cooler
- Charge air (if available)

➢ Have a KAESER SERVICE technician replace the pressure hoses of the drive engine.

10.8.3 Replace the pressure hoses of the compressor

Overview of all pressure hoses on the compressor:

- Cooling oil
- Compressed air
- Control air
- Condensate

➢ Have a KAESER SERVICE technician replace the pressure hoses of the compressor.

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 bar.

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 Check safety functions

➢ Perform inspection tasks/have them performed according to the maintenance schedule in chapter 10.3.3.1.

10.10.1 Check the EMERGENCY STOP device

In order to shut down the machine in the event of danger, the machine is equipped with an EMERGENCY STOP device. The EMERGENCY STOP device of the machine is referred to as «EMERGENCY» pushbutton

The position of the «EMERGENCY-STOP» pushbutton is shown in Chapter 4.2 "Machine Design".

Use the «EMERGENCY STOP» pushbutton to stop the machine only in emergencies!

Check the mechanical function of the «EMERGENCY STOP» pushbutton daily with the machine shut down.

WARNING
«EMERGENCY STOP» pushbutton locked out!
The machine cannot be stopped quickly in an emergency.
- ➢ Check the function of the «EMERGENCY STOP» pushbutton.
- ➢ Do not operate the machine if the «EMERGENCY STOP» pushbutton does not work.

Precondition The machine is switched off.

The drive engine stands still.

1. Push the «EMERGENCY STOP» pushbutton.
2. Check if «EMERGENCY STOP» pushbutton locks properly and remains locked.
3. Check if the «EMERGENCY STOP» pushbutton unlocks by turning it in the direction of the arrow.

The «EMERGENCY STOP» pushbutton cannot be pressed or does not engage.
- ➢ Do not start the machine.
- ➢ Have the «EMERGENCY STOP» pushbutton replaced.

10.10.2 Have the actuating pressure of the safety valve checked

The machine should shut down if the actuating pressure of the safety valve reaches a maximum of $P_{max.}$ ($P_{max.}$ see table 97).

Check in accordance with section: "Check actuating pressure of safety valve" in the separate operating manual for the SIGMA CONTROL SMART controller, chapter “Have safety functions checked”.

Maximum working pressure: see machine nameplate

Maximum working pressure [bar]	Activating pressure [bar]
7	10
10	13
12	15
14	15.9

Tab. 97 Safety valve actuating pressure

Material Hearing protection

Eye protection



WARNING
Risk of hearing damage when air is blown out through the safety valve!
- ➢ Close all the doors/enclosure.
- ➢ Wear hearing protection.



WARNING
Risk of burns due to released cooling oil and compressed air when blowing off the safety valve!
- ➢ Wear eye protection.

➢ Have the actuating pressure of the safety valve checked.

Result When the "activating pressure" is reached, the pressure release valve actuates (blows off).



When the "activating pressure" is reached, the pressure release valve does not actuate (blow off).
- ➢ Immediately shut down the machine and cease any further operation.
- ➢ Request an inspection and/or replacement of the safety valve.

10.10.3 Having excessive temperature shut-down function checked

The machine should shut down if the discharge temperature reaches a maximum of $T_{max.}$; $T_{max.}$ [°C] see table 98.



Check in accordance with section: "Check safety shut-down at excessive airend discharge temperature" in the separate operating manual for the SIGMA CONTROL MOBIL controller, chapter “Have safety functions checked”.

Machine temperature	Value
Maximum airend discharge temperature (automatic safety shut-down) [°C]	117

Tab. 98 Safety shut-down at excessive airend discharge temperature

➢ Have shut-down at excessive airend discharge temperature checked.

Result When the maximum airend discharge temperature is exceeded, the SIGMA CONTROL MOBIL controller switches the machine off.



The machine does not shut down?

The excessive temperature shut-down function is no longer ensured.
- ➢ Immediately shut down the machine and cease any further operation.
- ➢ Have machine checked.

10.11 Maintenance of Optional Items

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

10.11.1 Option ea, ec
Tool lubricator maintenance

Material Tool oil (special lubricant for road breakers),
Funnel
Cleaning cloths

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

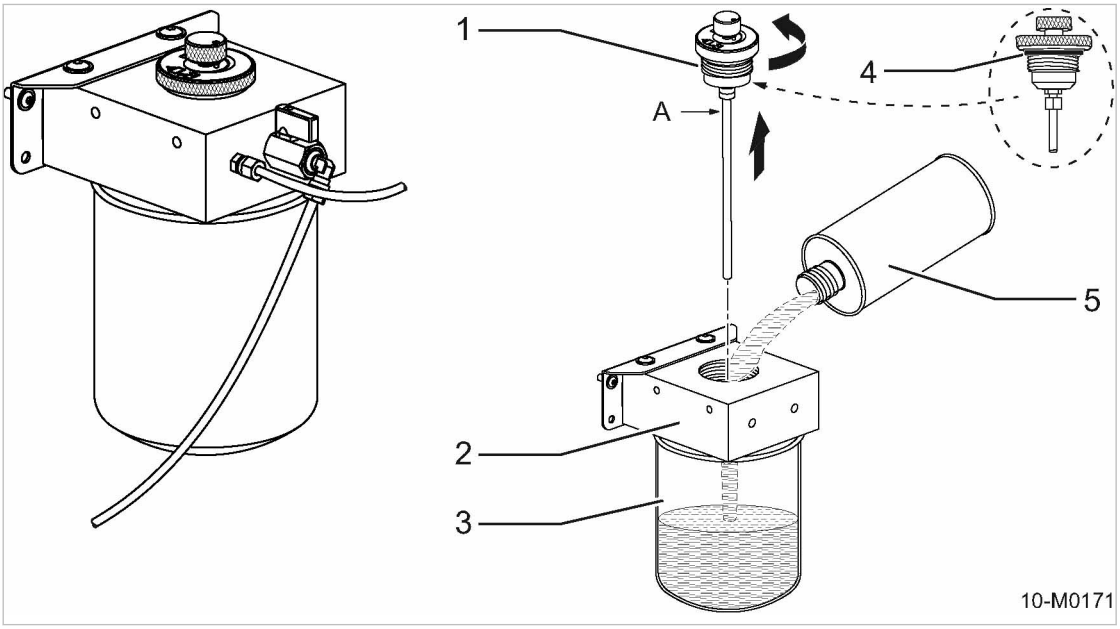


Fig. 69 Tool lubricator maintenance

[1] Filler plug with dipstick and integrated riser tube
[A] Minimum and recommended oil level
[2] Tool lubricator upper part with oil filling port
[3] Oil tank
[4] O-ring
[5] Tool oil

➢ Open the right-hand access door.

Checking the tool lubricator oil level

Check the oil level daily.
A dip stick is attached to the underside of the oil filler plug with which to measure the oil level.
The oil level should be in the upper third of the dipstick.

1. Slowly unscrew and withdraw the oil filler plug.
2. Wipe off the dipstick with a lint-free cloth or rag and screw the plug fully in again.

3. Unscrew and withdraw the plug once more and read off the oil level on the dipstick.
   Oil level at the upper third of the dip stick: Oil level is correct.
   If oil does not reach this level: Immediately replenish tool oil.
4. Close the door.

Filling and topping up with tool lubricator oil

1. Slowly unscrew and withdraw the oil filler plug.
2. Use a funnel to pour in the oil to the maximum level (10 – 15 mm below the top of the tank).
3. Check the oil level.
4. Check the filler plug O-ring for external damage.
   Skadet O-ring: replace the O-ring.
5. Insert the plug in the filler port.
6. Close the door.

Further information — See chapter 2.8.1.1 for suitable oil grade and volume.

10.11.2 Option da, df, dc, dd Centrifugal 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 switched off.
The machine has cooled down.
The machine is fully vented, the pressure gauge reads 0 bar.
All compressed air consumers are disconnected and the air outlet valves are open.
The «battery isolating switch» is turned off.

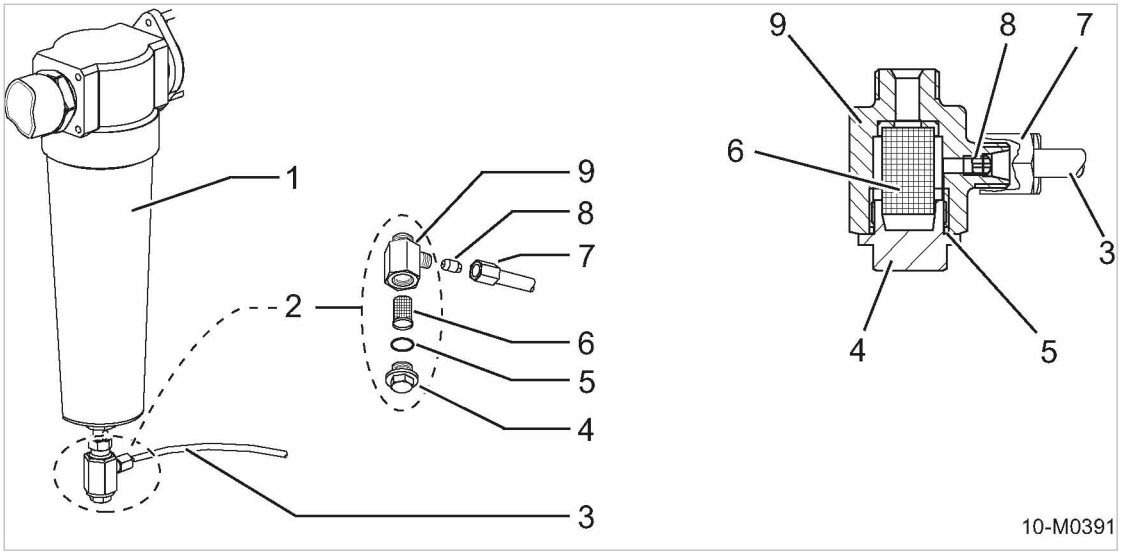


Fig. 70 Cleaning the condensate drain

[1] Centrifugal separator
[2] Dirt trap
[3] Condensate drain hose
[4] Screw plug
[5] O-ring
[6] Strainer
[7] Union nut condensate drain hose
[8] Nozzle
[9] Dirt trap housing

➢ Open the left-hand door.

Clean the dirt trap:

1. Unscrew the plug [4] and remove the strainer.
2. Loosen the union nut [7] and detach the condensate drain hose [3] from the dirt trap
3. Use the small screwdriver to unscrew the nozzle [8] from the dirt trap housing.
4. Clean the nozzle, strainer, screw plug, O-ring [5] and dirt trap housing [9] with cleaning solvent or spirit.
5. Check the nozzle, strainer and O-ring for wear.
   When clearly worn: replace components.
6. Place the strainer on the screw plug.
7. Screw in the plug making sure the O-ring seats properly.
8. Screw in the nozzle and re-attach the condensate drain hose.

Putting in operation:

1. Turn on the «battery 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 bar!

4. Open the outlet valves.
5. Open the left-hand door.
6. Check the cyclone separator housing and hose line for leaks.
7. Close the door.

10.11.3 Option dd Combination filter maintenance

Precondition
The machine is switched off.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
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 bar!
➢ De-pressurise the combination filter.

Option dd

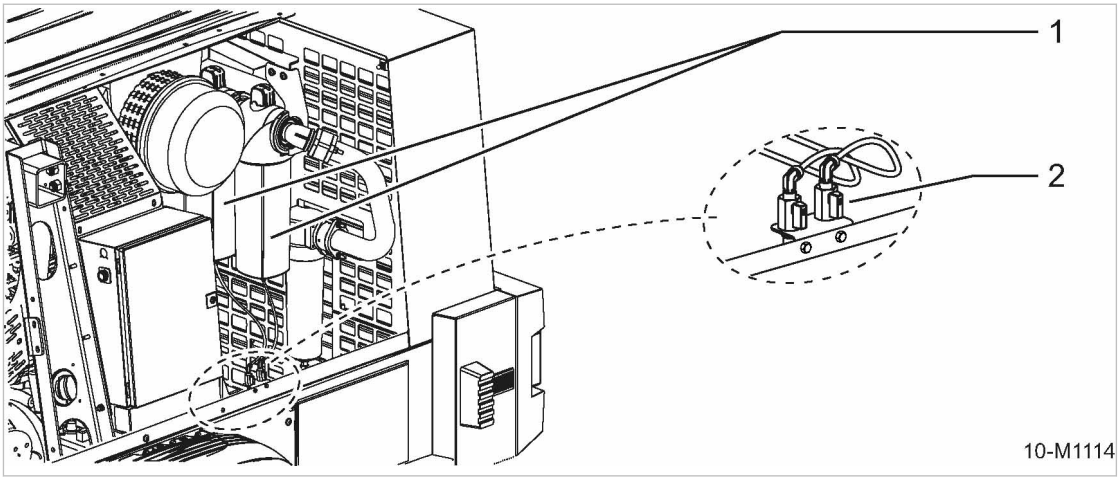


Fig. 71 Filter combination
[1] Filter combination
[2] Shut-off valve condensate drain

Option dd

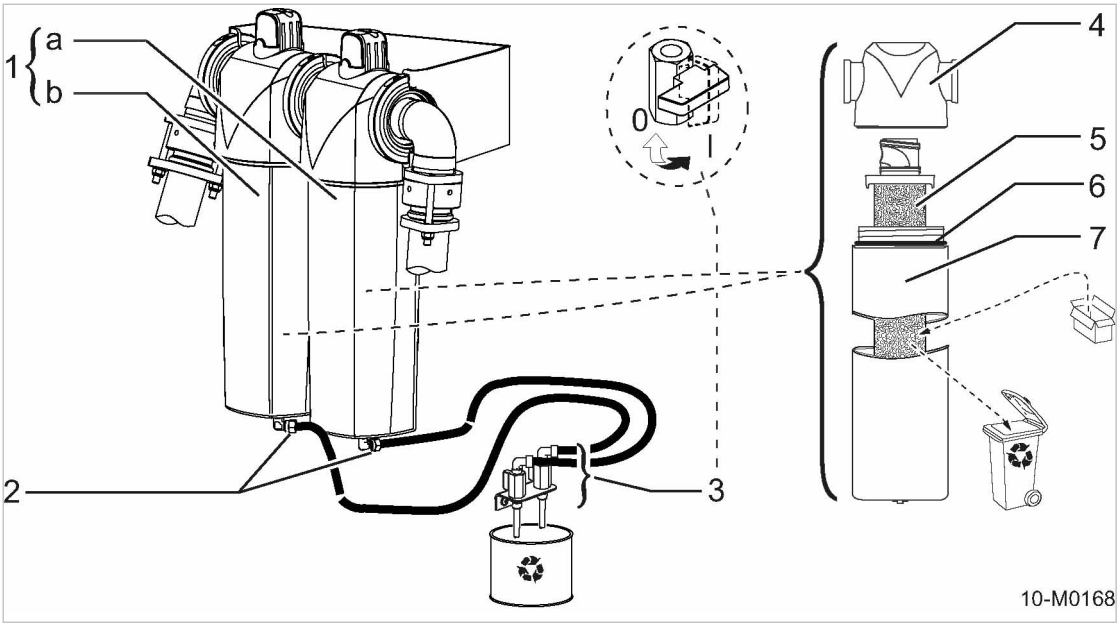


Fig. 72 Combination filter maintenance

[1]	Filter combination	[4]	Filter head
[a]	Prefilter	[5]	Filter element
[b]	Microfilter	[6]	Casing gasket
[2]	Condensate drain hose fitting	[7]	Filter housing
[3]	Shut-off valves (ball valve) for condensate drain 0 – Closed I – Open		

➢ Open the left-hand door.

10.11.3.1 Drain condensate

Material Oil receptacle
Cleaning cloths

1. Place the receptacle under the combination filter hose lines.
2. Open the pre-filter and micro-filter condensate drain shut off valves.
3. Close the door.
4. Start up the machine and run in IDLE.
   The condensate collecting in the filter housings is blown out.
5. Stop the compressor as soon as air escapes.
6. Open the left-hand door.
7. Close the shut-off valve.
8. Close the door.

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

10.11.3.2 Changing the filter elements

The pre-filter and microfilter contain different elements and these must be changed as a pair. Note location!

Using the combination filter without an element installed is not permitted.

Handle new filter elements only with clean fabric gloves. Do not touch the new filter elements with bare fingers – Contamination risk!

Material
Spare parts
Filter wrench
Wrench
Cleaning cloths
Clean fabric gloves

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

Ensure that the combination filter is not under pressure.

➢ Slowly open the pre-filter and micro-filter condensate drain shut off valves.
Remaining pressure escapes.

Gaining access to the filter housing

➢ Loosen the screw fitting of the condensate drain hoses from the filter housings of pre-filter and micro-filter and remove the drain hoses.

Changing the prefilter element

1. Unscrew the filter housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the filter head, housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.
   Housing gasket is damaged: replace gasket.
5. Insert a new filter element.

Wear gloves!

6. Screw on the filter housing clockwise.

Changing the pre-filter element

1. Unscrew the filter housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the filter head, housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.
   Housing gasket is damaged: replace gasket.

5. Insert a new filter element.



Wear gloves!

6. Screw on the filter housing clockwise.

Putting in operation:

1. Screw the condensate drain hoses to the housings of the pre-filter and the micro-filter.
2. Close the condensate drain shut-off valves.
3. Tighten the filter combination fittings.
4. Turn on the «battery isolating switch».
5. Close the door.



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

Further information — Further information on changing elements can be found in the filter instructions in chapter 13.7.

Starting the machine and performing a test run:

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
4. Open the outlet valves.
5. Open the left-hand door.
6. Check the combination filter housing and hose lines for leaks.
7. Close the door.

10.11.4 Option dc
Fresh air filter maintenance

Before commencing work on the fresh air filter, read and understand the operating instructions given in chapter 13.8.

Precondition — The machine is switched off.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 bar.
All compressed air consumers are disconnected and the air outlet valves are open.

Option dc

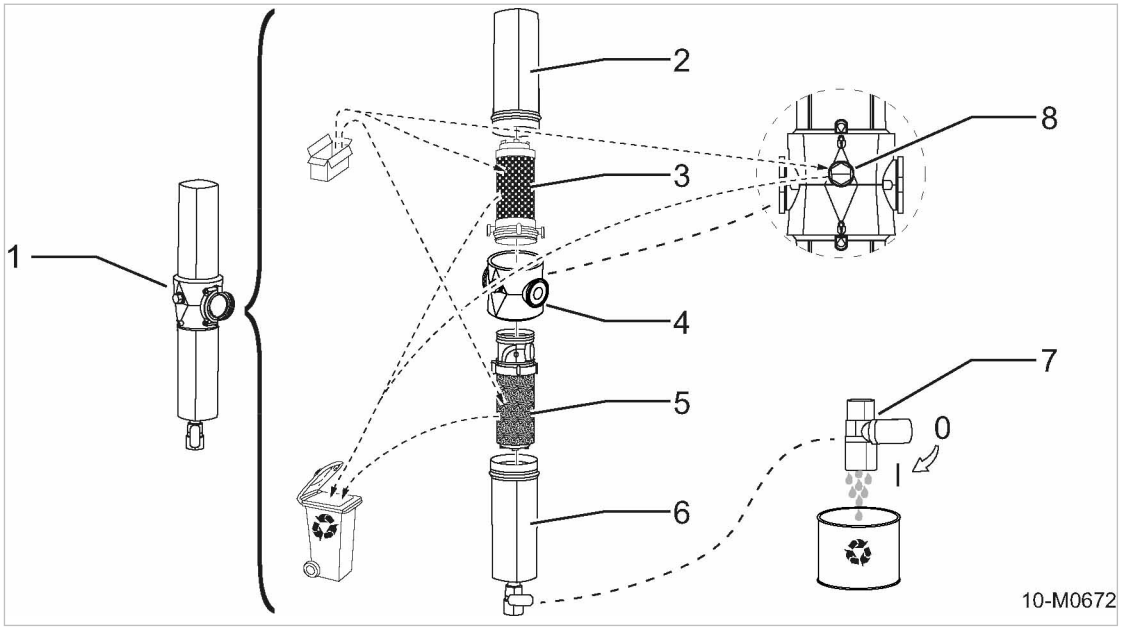


Fig. 73 Fresh air filter maintenance

[1] Fresh air filter
[2] Upper housing
[3] Upper element (adsorption element)
[4] Body
[5] Lower filter element (high capacity element)
[6] Lower housing
[7] Drain valve (condensate drain for manual draining)
0 - Closed
I - Open
[8] Oil indicator

➢ Open the left-hand door.

10.11.4.1 Drain condensate

Material Oil receptacle
Cleaning cloths

1. Place the receptacle below the fresh air filter condensate drain point.
2. Open the condensate drain valve.
3. Close the door.
4. Switch the machine on and run it in IDLE mode for approx. 2 minutes.
   The condensate collecting in the filter housings is blown out.
5. Shut down the machine.
6. Open the left-hand door.
7. Close the drain valve.
8. Carefully remove the receptacle.
9. Close the door.

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

10.11.4.2 Check the oil indicator

The fresh air filter is fitted with an oil indicator. When the indicator is blue, the filtration function can no longer be ensured and the filter must not be used. Both filter elements and the oil indicator must be changed (regardless of the maintenance schedule).

The oil indicator must be checked at least once daily.

The oil indicator does not give information on the filter element changing interval.

➢ Check the oil indicator.

Indicator is blue: Replace both filter elements + oil level indicator.

10.11.4.3 Changing consumable parts

The fresh air filter contains two different elements which must be changed as a pair. Note location!

Using the fresh air filter without installed filter elements is not permitted!

Handle new filter elements only with clean fabric gloves. Do not touch the new filter elements with bare fingers – Contamination risk!

Material
Spare parts
Filter wrench
Wrench
Cleaning cloths
Clean fabric gloves

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

Ensure the fresh air filter is de-pressurised:

➢ Open the fresh air filter drain tap to release any remaining pressure.

Change the lower filter element (high performance element)

1. Unscrew the lower housing counter-clockwise.
2. Draw the filter element down and out.
3. Clean the lower housing and sealing surface with a lint-free cloth.
4. Check the housing gasket.
   Housing gasket is damaged: replace gasket.
5. Insert a new lower filter element.

Wear gloves!

6. Screw on the lower housing clockwise.

Change the upper filter element (adsorption insert):

1. Unscrew the upper housing counter-clockwise.
2. Draw the filter element up and out.
3. Clean the lower housing and sealing surface with a lint-free cloth.

4. Check the housing gasket.
   Housing gasket is damaged: replace gasket.
5. Insert a new filter element.



Wear gloves!

6. Screw on the upper housing clockwise.

Replace the oil indicator:

1. Unscrew the oil indicator.
2. Clean the housing and sealing surface with a lint-free cloth.
3. Screw in the new oil indicator.

Putting in operation:

1. Close the drain valve.
2. Turn on the «battery isolating switch».
3. Close the door.



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

Further information

Further information on changing elements can be found in the operating instructions for pressurised air filters (fresh air filters) in chapter 13.8.

Starting the machine and performing a test run:

1. Switch the machine on and run it in IDLE mode for approx. 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   Pressure gauge reads 0 bar!
4. Open the outlet valves.
5. Open the left-hand door.
6. Check the fresh air filter housing and hose line for leaks.
7. Close the door.

10.11.5 Option Ia
Spark arrestor cleaning

The spark arrestor must be cleaned of any soot residue every two months to prevent the emission of glowing particles from the exhaust silencer.

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

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

DANGER
Danger of suffocation from toxic exhaust fumes.
Exhaust fumes from internal combustion engines contain carbon monoxide, which is odourless 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 gloves.
- ➢ Wear eye protection.

Cleaning the spark arrestor (floor pan with service openings)

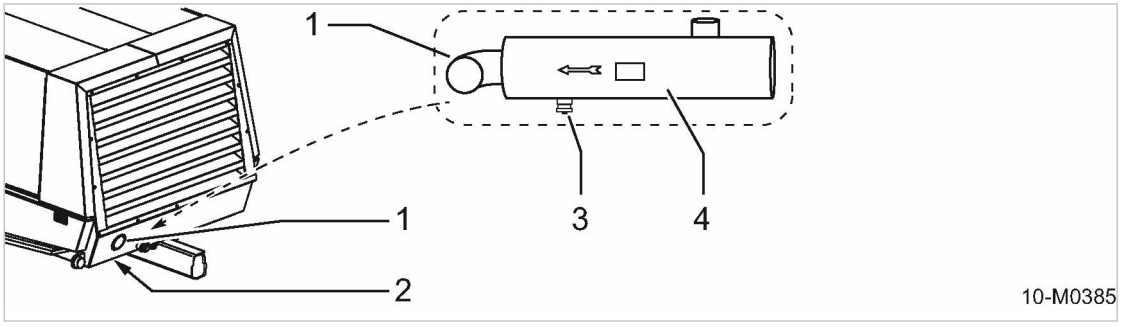


Fig. 74 Cleaning the spark arrestor (floor pan with service openings)

[1] Exhaust silencer end pipe
[2] Opening in floor panel to access drain port
[3] Soot drain port with plug
[4] Exhaust silencer with integrated spark arrestor

1. Unscrew the soot drain plug.
2. Push one end of the hose over the drain port and place the other end in the receptacle.
3. Start the compressor engine.
4. In order to increase the pressure in the exhaust system, partially cover the exhaust discharge pipe with a fire-proof object.
   Soot will drain through the hose into the receptacle.
5. Shut down the engine.
6. Remove the hose and replace the plug.

It is recommended to blow out the spark arrestor with compressed air once a year.

Dispose of soot according to environment protection regulations.

Option oe Cleaning the spark arrestor (closed floor pan)

In machines with closed floor pan, the service openings are closed with bungs. In order to access the port of the soot drain, you must remove the appropriate bung.

Option oe

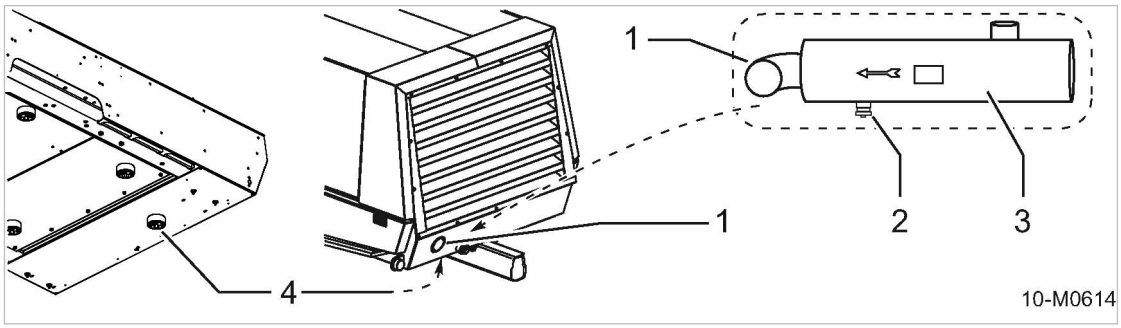


Fig. 75 Cleaning the spark arrestor (closed floor pan)

[1] Exhaust silencer end pipe
[2] Soot drain port with plug
[3] Exhaust silencer with integrated spark arrestor
[4] Service opening, closed with bung (access to drain port)

1. Unscrew the bung.
2. Unscrew the soot drain plug.
3. Push one end of the hose over the drain port and place the other end in the receptacle.
4. Start the compressor engine.
5. In order to increase the pressure in the exhaust system, partially cover the exhaust discharge pipe with a fire-proof object.

   Soot will drain through the hose into the receptacle.
6. Shut down the engine.
7. Remove the hose and replace the plug.
8. Screw the bung into the floor pan.

It is recommended to blow out the spark arrestor with compressed air once a year.

Dispose of soot according to environment protection regulations.

10.11.6 Option ga Maintaining the generator drive belt

Correct belt tension is extremely important for the function of the generator and the operational life of the belt itself. The lifespan of the drive belts is affected by belt tension.

- Slack V-belts can cause belt slip and damage to the belts.
- Over-tight belts stretch and fatigue quicker. Over-tight belts also place unnecessary stress on bearings and shorten their life.

Material Wrench

Spare parts (if required)

Precondition The machine is switched off.

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

The machine has cooled down.

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

The «battery isolating switch» is turned off.



WARNING

Beware of rotating pulleys and moving belts.

Touching the moving drive belt may result in severe bruising or even loss of limb or extremities.

➢ Check the belt only when the compressor is shut down.

➢ Never run the machine without a belt guard.

➢ Open both doors.

Removing the belt guard:

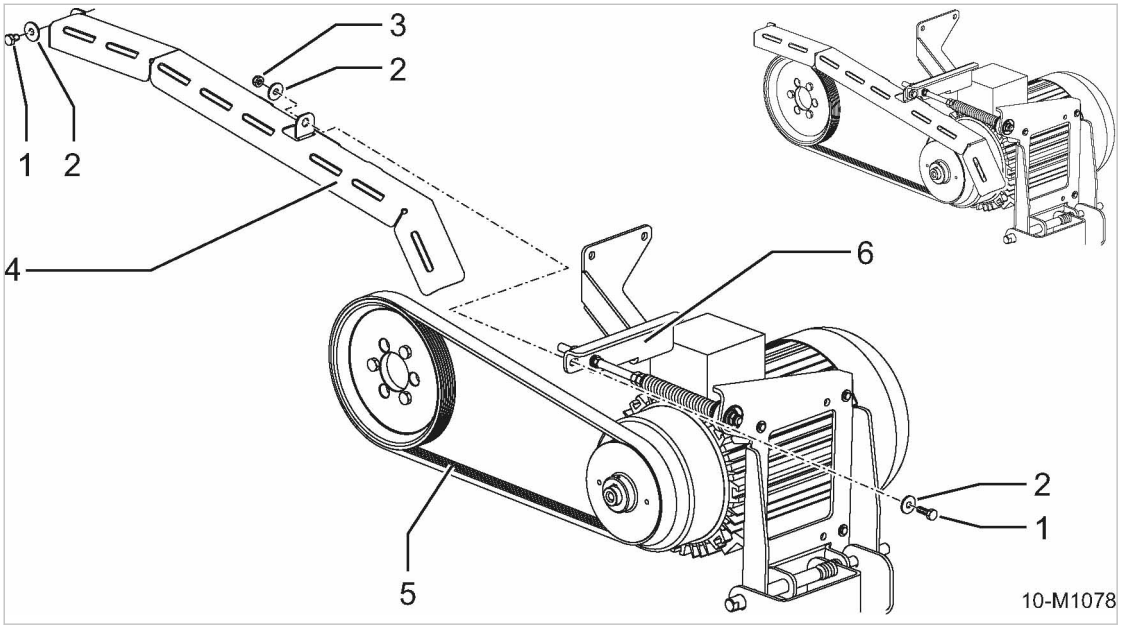


Fig. 76 Securing the belt guard at the generator

1 Hexagon bolt
2 Washer
3 Hexagonal nut
4 Belt guard
5 Generator belt
6 Support for belt tensioner

➢ Unscrew the securing screws of the belt guard and remove the belt guard.

10.11.6.1 Carry out visual check

➢ Check the belt thoroughly for cracks, fraying or stretching.
When damaged or worn: Replace the drive belt immediately.

10.11.6.2 Checking belt tension

Check belt tension when they are warm, not hot, to avoid length variations through temperature.

The tensioning device uses spring force to apply correct tension to the belts over a certain range. The tensioning dimension [A] is controlled by adjusting the belt (see fig. 77).

Tensioning dimension:

- **Setting distance:** 10 mm
- **Minimum distance**: 5 mm

➢ Check the tensioning distance [A] at the belt adjustment [9].
Tensioning distance under minimum distance: Re-tension the belt.

10.11.6.3 Changing/tensioning the drive belt

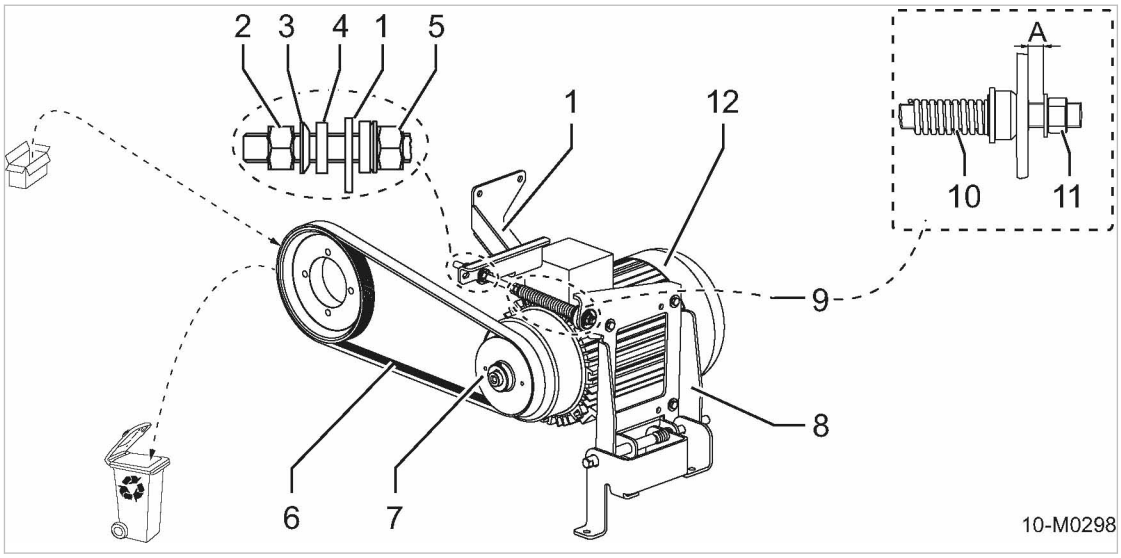


Fig. 77 Tighten the generator drive belt

[1] Support for belt tensioner
[2] Hexagonal nut
[3] Spherical seat washer
[4] Conical seat washer
[5] Hexagon nut (locknut)
[6] Drive belt
[7] Generator drive pulley
[8] Generator swing frame
[9] Belt adjustment
[10] compression spring
[11] Hexagon nut (self locking)
[12] Generator
[A] Tensioning dimension

Tensioning the drive belt:

1. Loosen the nut [2].

2. Turn the tensioning nut [5] to tighten the drive belt [6] until the tensioning dimension [A] matches the setting distance.
3. Tighten the nuts [2] and [5].

Changing the belts

1. Loosen the nut [5] until the drive belt [6] can be slipped off the pulleys.
2. Remove the belt.
3. Check the pulleys for dirt and wear.
   Dirty pulley: Clean pulley.
   Worn pulley: Have the pulley changed.
4. Without using force, place the new belt over the engine and generator pulleys.
5. Turn the tensioning nut [5] to tighten the drive belt [6] until the tensioning dimension [A] matches the setting distance.
6. Tighten the nuts [2] and [5].
7. Putting in operation.
8. Run the compressor under LOAD operation for 15–20 minutes.
9. Check the belt again and re-tension if necessary.

- Check the belt again after a further 2 operating hours.
- A belt that has been replaced may not be used again.

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

10.11.6.4 Putting in operation:

1. Replace the belt guard.
2. Turn on the «battery isolating switch».
3. Close the doors.

A belt that has been replaced may not be used again.

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

10.11.7 Option oe
Draining liquid accumulation within the machine

The so-called "closed floor pan" contributes to the protection of the environment by preventing a contamination of the soil in the event of leaking operating fluids.
Liquid accumulations within the machine's body can also cause corrosion or electrical faults.
Liquid accumulations must be removed as quickly as possible to avoid any faults of the machine.
For draining the liquid, maintenance openings have been added to the floor panel of the machine which are closed with bungs.

In order to clean the machine, see chapter 4.8.10 for the location of the service openings.

Material: Oil receptacle
Cleaning cloths

Precondition: The machine is switched off.
The machine is standing level.
The machine is secured against moving.
The machine is fully vented, the pressure gauge reads 0 bar.
The machine has cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.

➢ Open all doors.

Checking the machine interior for liquid accumulations:

1. Check the machine interior for liquid accumulations.
   If liquid is present in the floor pan: Drain the liquid.
2. Close the doors.

Draining the liquid:

1. Place a receptacle underneath the service opening(s).
2. Unscrew and remove the bung(s) from the service openings.
   The liquid will drain.
3. Clean the bungs and service openings.
4. Close all service openings with bungs.
   The machine body is sealed.
5. Using the cleaning cloth, remove any dirt within the machine.
6. Close the doors.



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

10.12 Documenting maintenance and service work

Machine number:

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

Date	Maintenance task carried out	Operating hours	Signature

Tab. 99 Maintenance log

11 Spares, Operating Materials, Service

11.1 Note the nameplate

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

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

11.2 Ordering consumable parts and operating fluids/materials

KAESER consumable parts and operating materials are original products. They are specifically selected for use in our machines and ensure trouble-free operation.

Unsuitable or poor-quality consumable parts and operating fluids/materials may result in damage to the machine or significantly impair its proper function.

Personal injury may result from damage.

WARNING
There is risk of personal injury or damage to the machine resulting from the use of unsuitable spares or operating fluids/materials!

➢ Use only original parts and operating fluids/materials.

➢ Do not use alternative consumable parts and operating fluids and materials.

Compressor

Name	Number/quantity	Number
Air filter element	1	1260
Compressor oil filter	1	1210
Oil separator cartridge (complete set)	1	1450
Cooling oil	1	1600

Tab. 100 Compressor consumables

Kubota engine parts

Name	Number/quantity	Number
Air filter insert (kit)	1	1280
Fuel prefilter	1	1910
Fuel filter (cartridge)	1	1920
Fuel water separator	1	1980
Engine oil filter (cartridge)	1	1905
Oil drain seal	1	4496
Injector nozzle	1	4475
Injector nozzle seal	1	4476
Engine belt	1	4470

Name	Number/quantity	Number
Glow plug	1	4466
Engine oil	1	1925

Tab. 101 Consumable engine parts

Option dd Filter combination

Name	Number/quantity	Number
Filter element for prefilter	1	1550
Filter element for micro-filter	1	1551
Casing gasket	2	1548

Tab. 102 Replacement parts, combination filter

Option dc Fresh air filter

Name	Number/quantity	Number
Filter elements, fresh air filter (Filter kit)	1	1549
Indicator insert	1	3930

Tab. 103 Replacement parts, fresh air filter

11.3 KAESER AIR SERVICE

KAESER AIR SERVICE offers:

- authorised 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 spares,
- Increased legal certainty as all regulations are kept to.

➢ It make sense to sign a maintenance agreement for KAESER AIR SERVICE.
The advantages:
lower costs and higher compressed air availability.

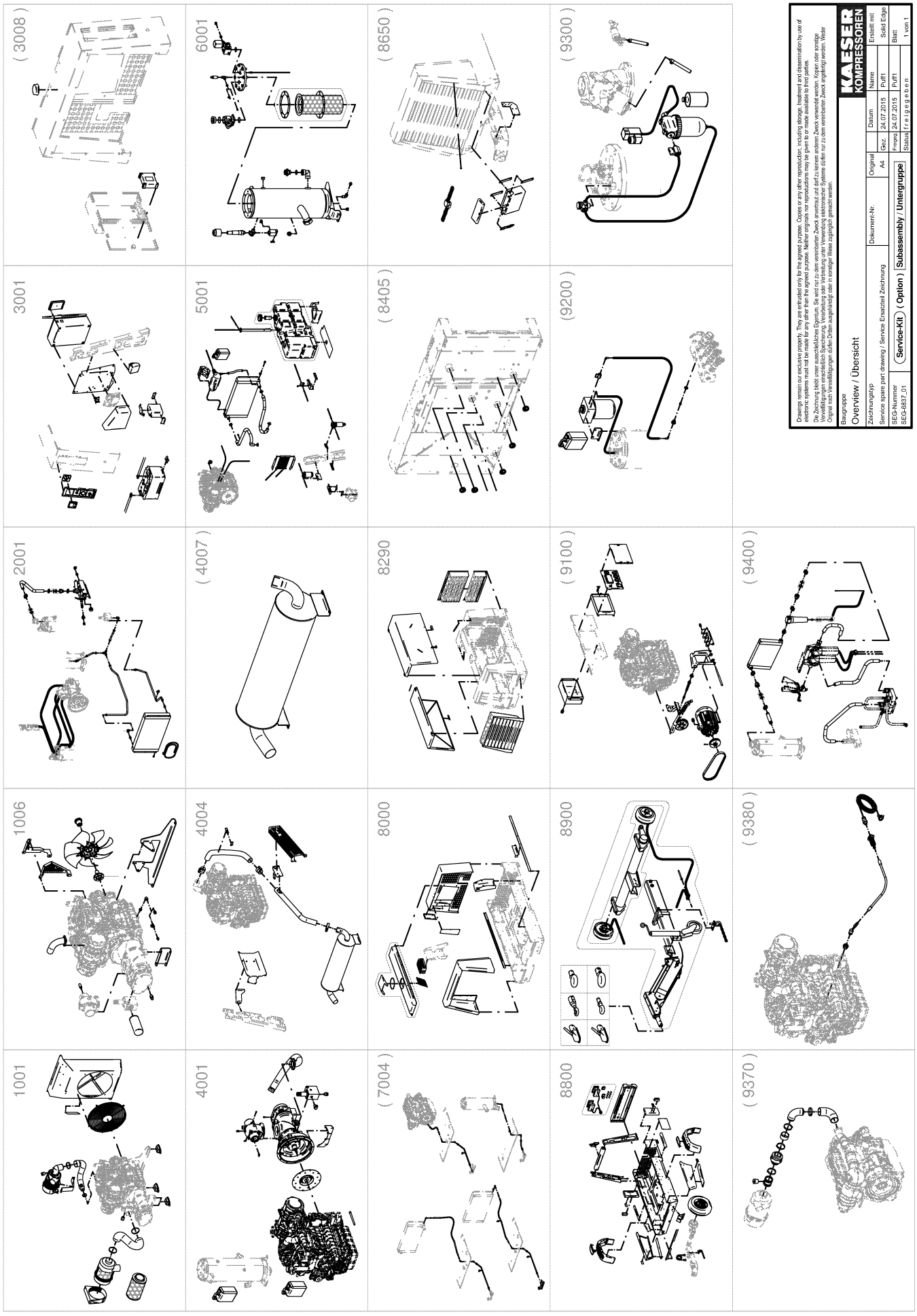
11.4 Replacement parts for service and repair

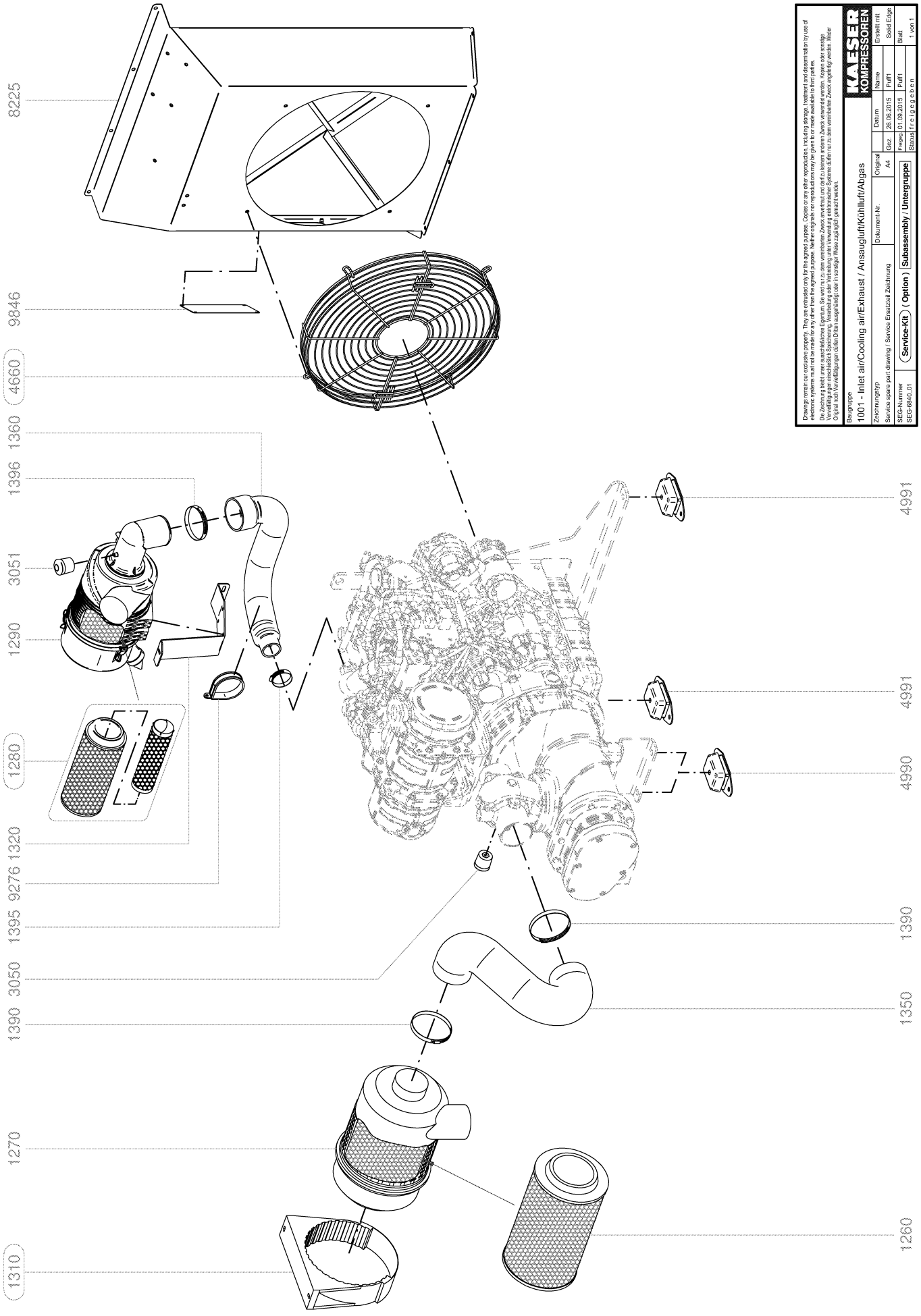
With the help of the below spare parts list you can plan your material requirement according to operating conditions, and order the spare parts you need.

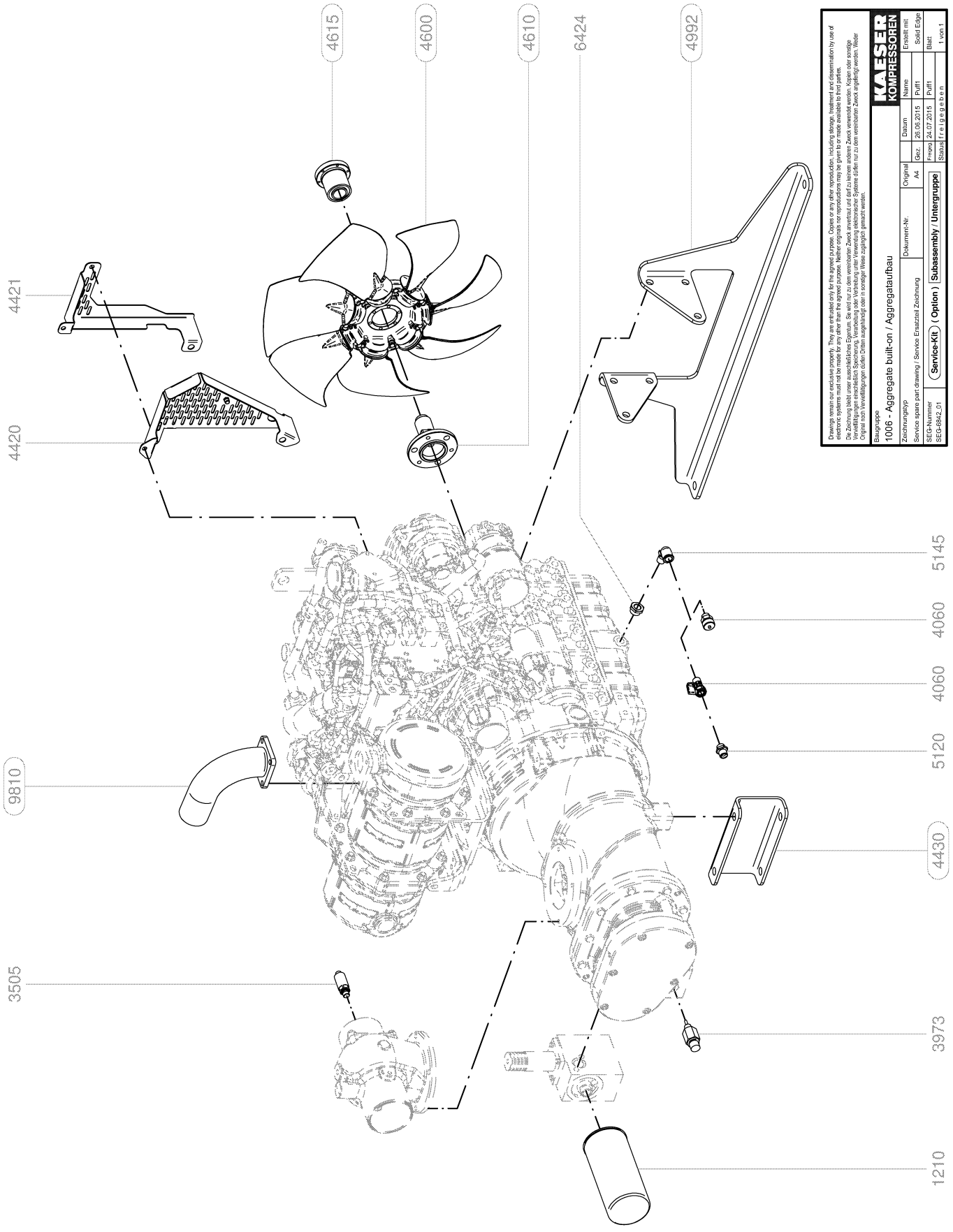


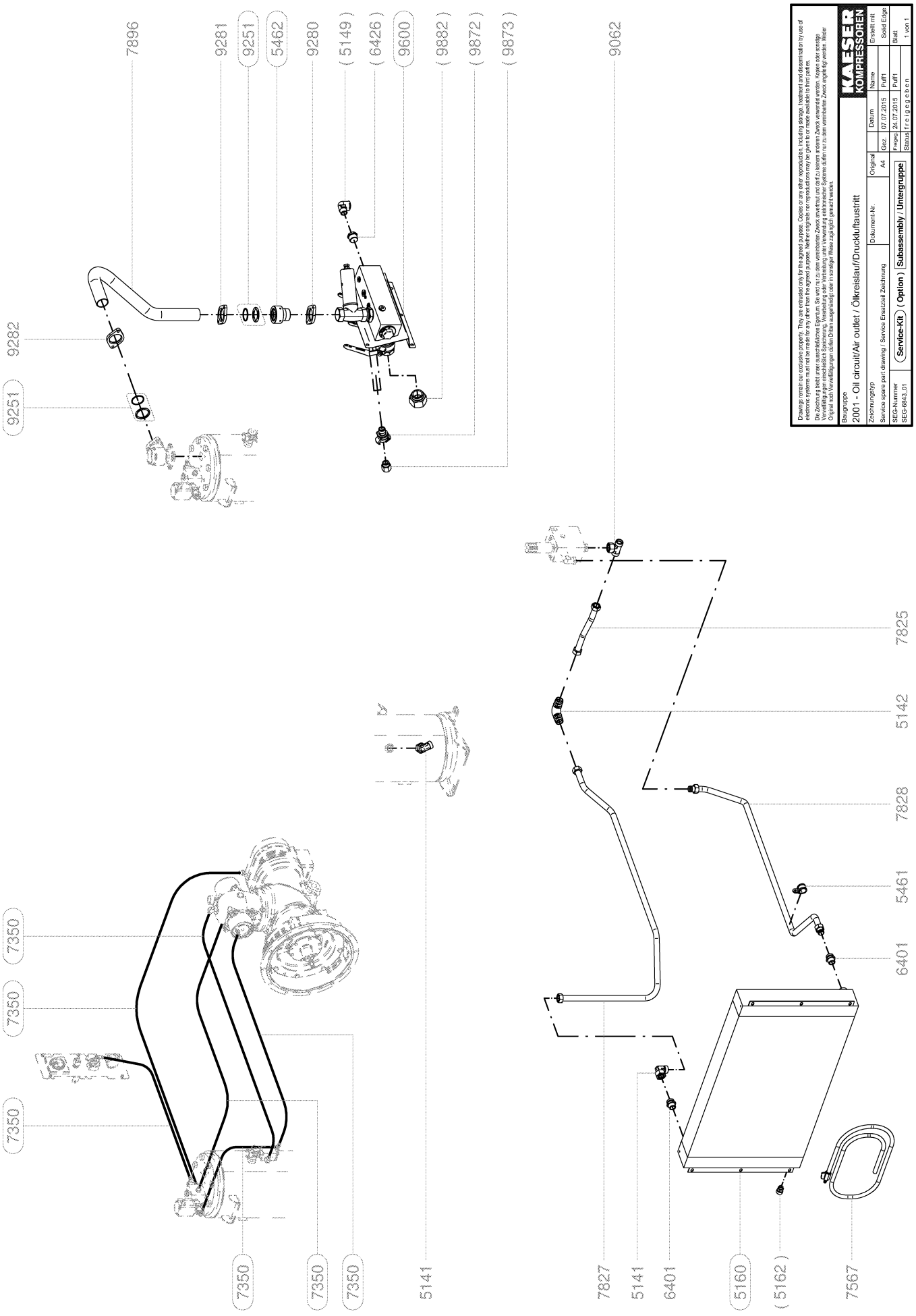
WARNING
Personal injury or machine damage due to incorrect working on the machine!
Incorrect inspection, service or repair can damage the machine or severely impair its function. Personal injury may result from damage.

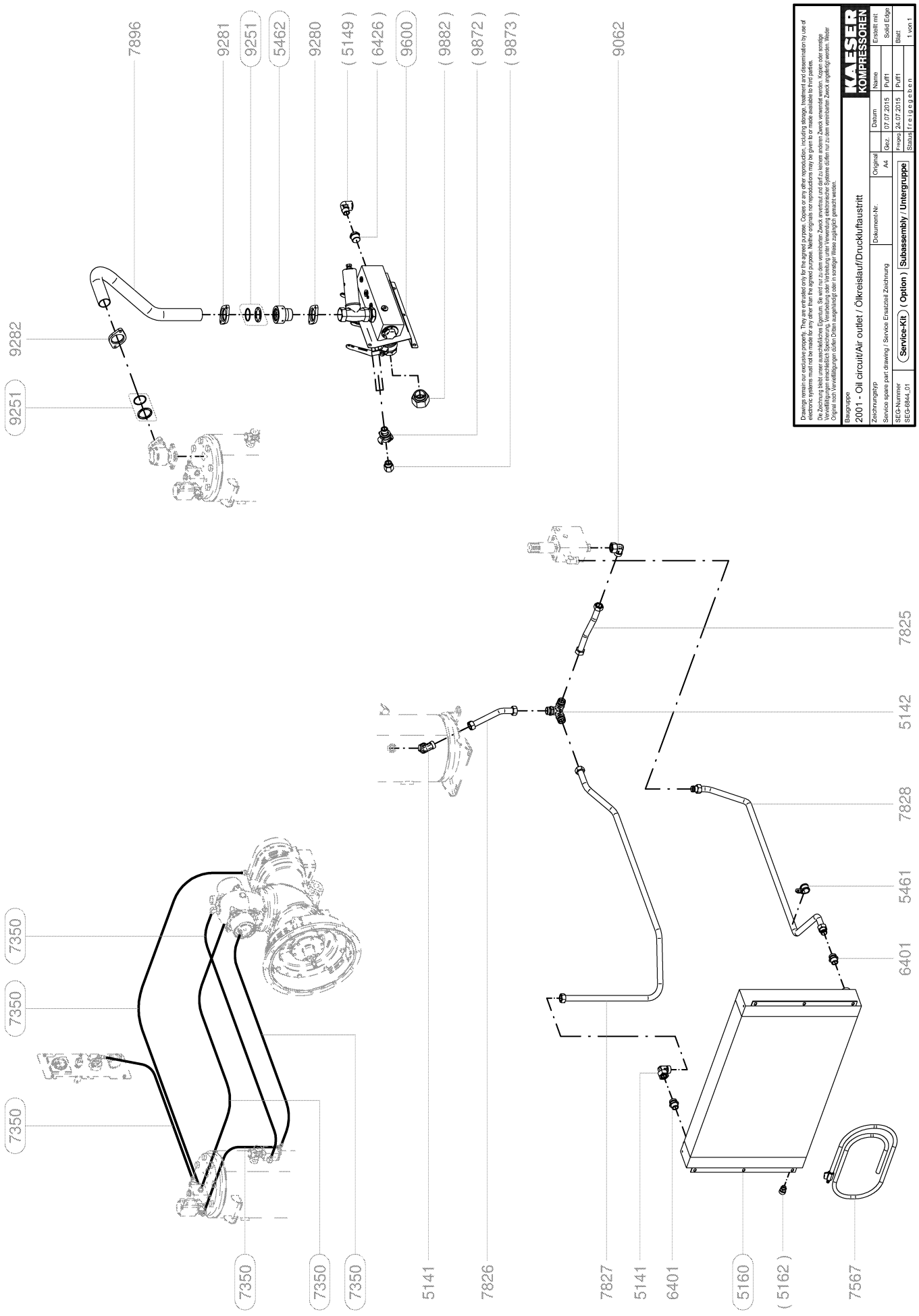
- ➢ Inspections, preventive maintenance or repair tasks not described in this manual must not be carried out by unqualified personnel.
- ➢ Have further tasks, not described in this operating manual, carried out by motor vehicle workshops or KAESER SERVICE.

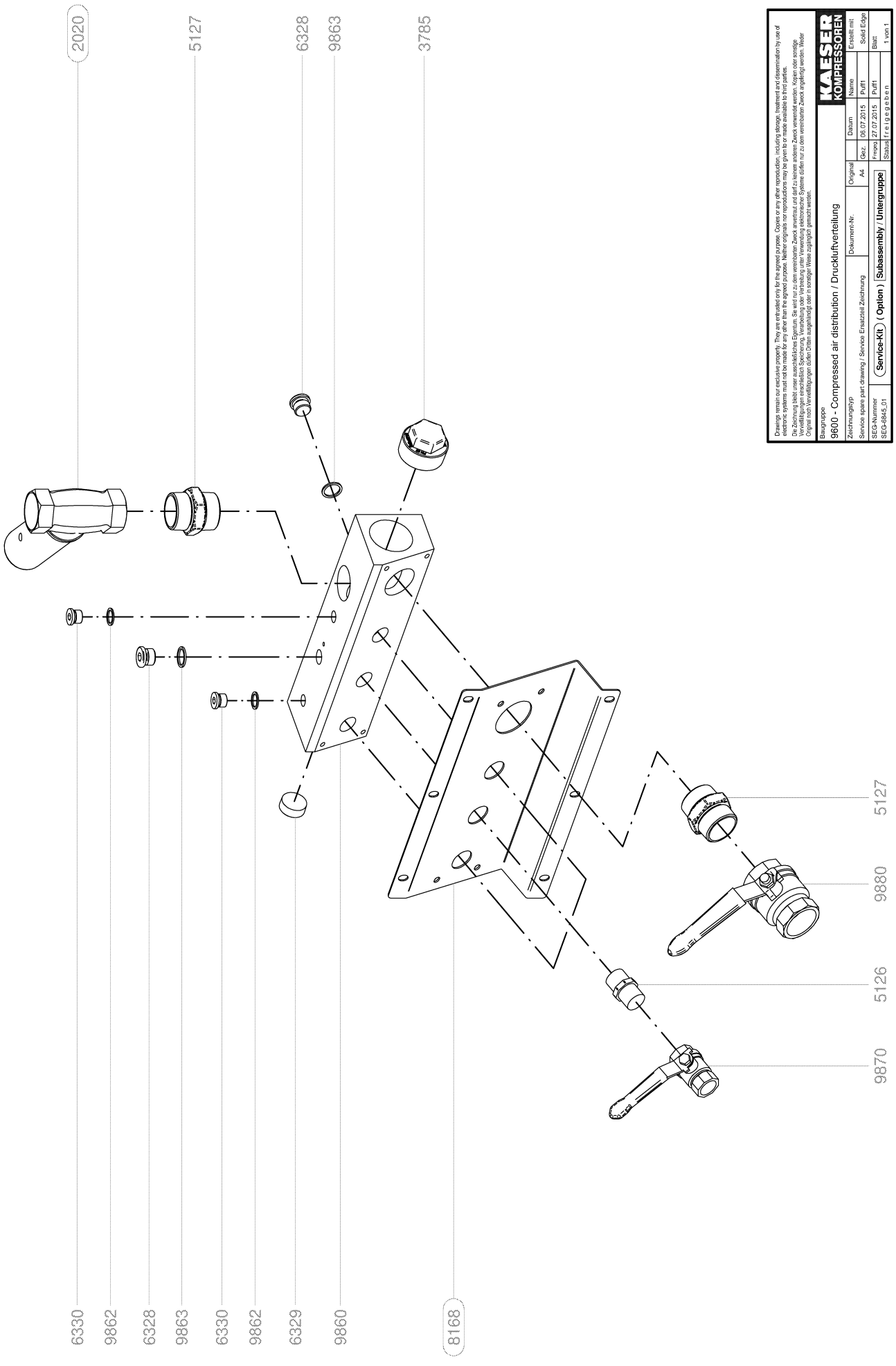

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KAESER KOMPRESSOREN
Baugruppe
Overview / Übersicht
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Name
Datum
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SEG-Nummer
SEG-9837_01
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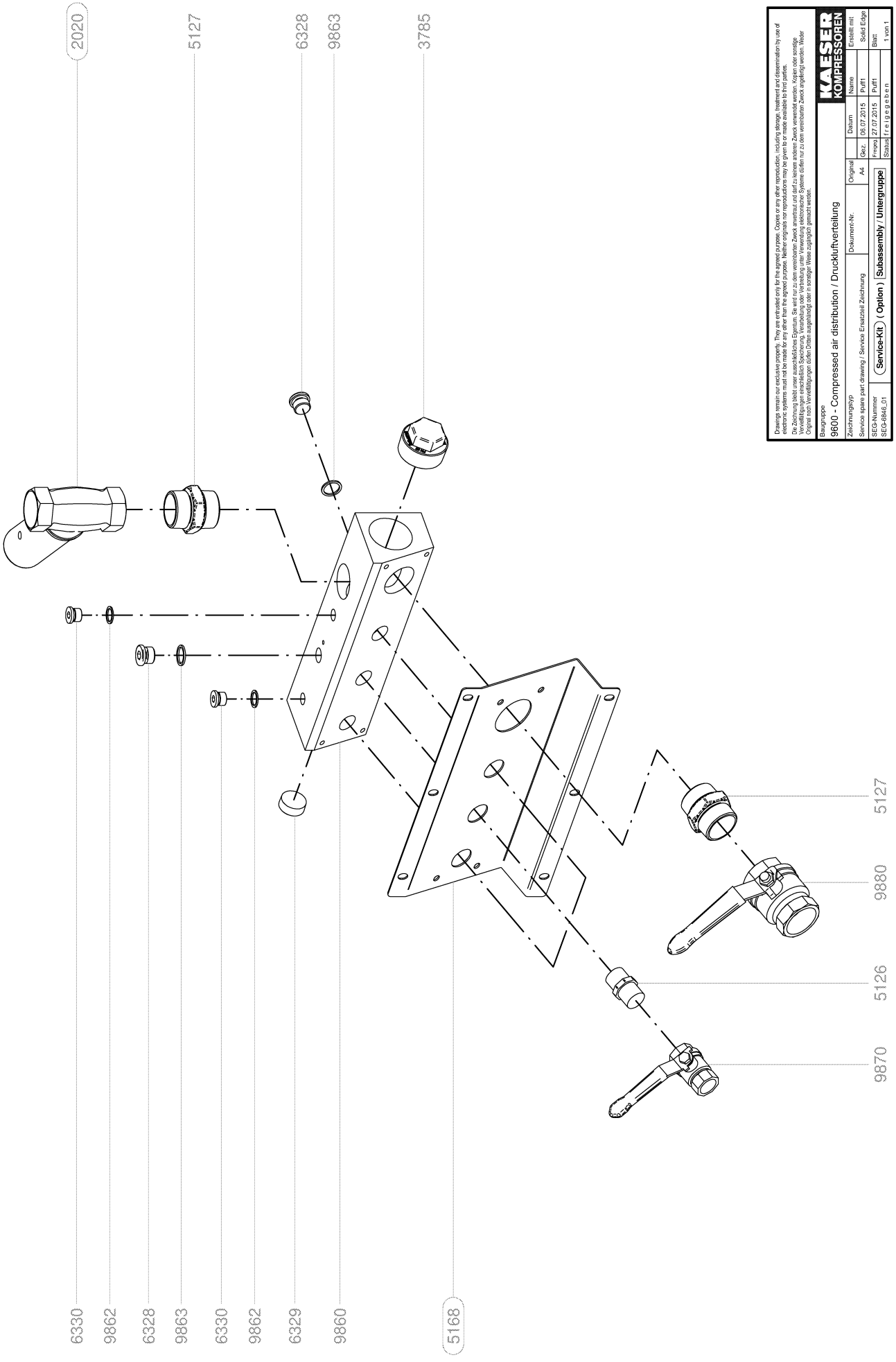

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Baugruppe
1001 - Inlet air/Cooling air/Exhaust / Ansaugluft/Kühlluft/Abgas
Zeichnungstyp
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Dokument-Nr.
Original
Datum
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Erstellt mit
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A4
Freigabe 01.09.2015 Puffl Blatt
Status freigegeben 1 von 1
SEG-Nummer
SEG-0840_01
Service-Kit (Option) Subassembly / Untergruppe


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KAESER KOMPRESSOREN
Baugruppe
1006 - Aggregate built-on / Aggregataufbau
Zeichnungstyp
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Original
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Erstellt mit
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KAESER KOMPRESSOREN
Baugruppe
2001 - Oil circuit/Air outlet / Ölkreislauf/Druckluftaustritt
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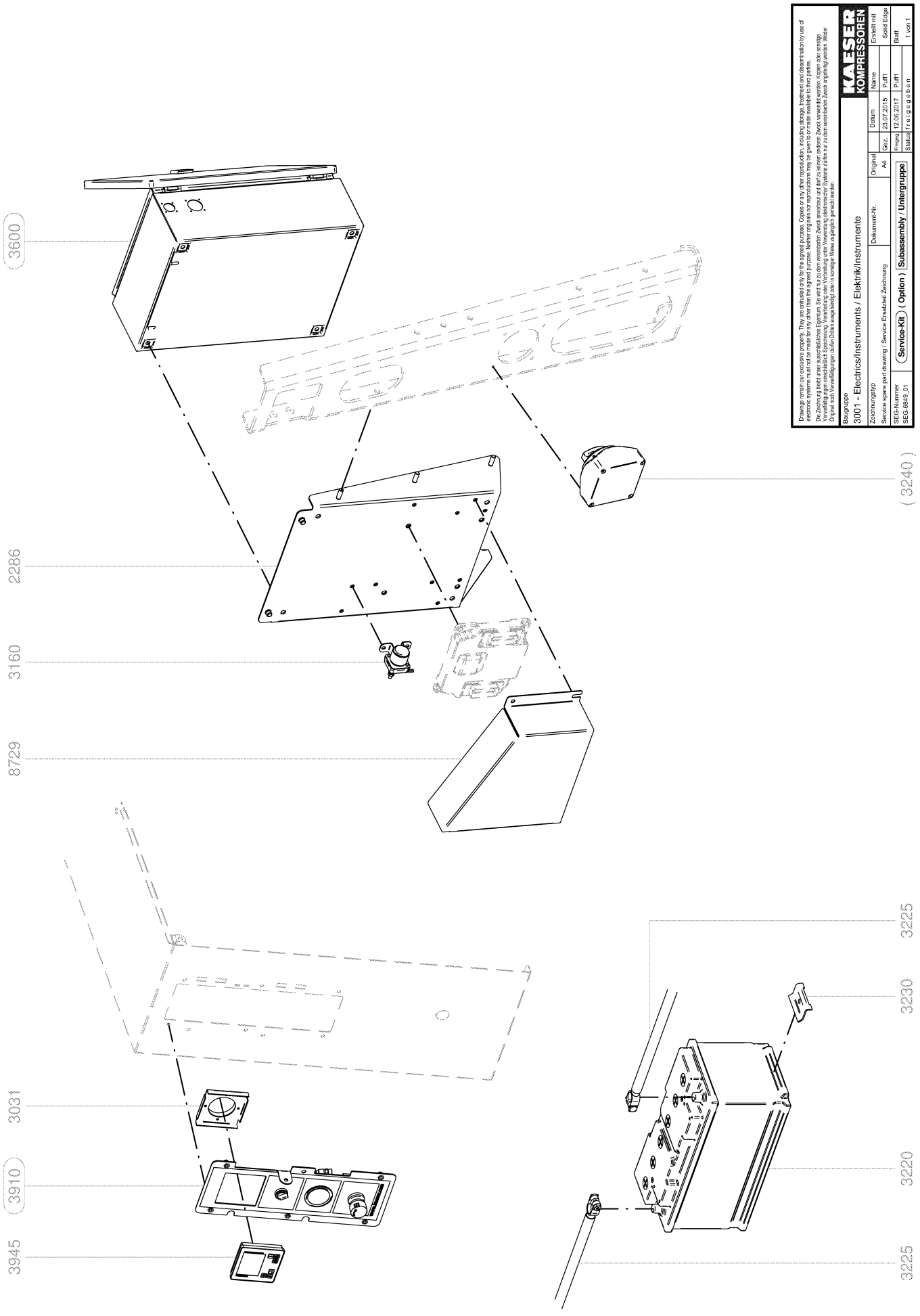

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Baugruppe
2001 - Oil circuit/Air outlet / Ölkreislauf/Druckluftaustritt
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Baugruppe
9600 - Compressed air distribution / Druckluftverteilung
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Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
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Freigs 27.07.2015
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SEG-Nummer
SEG-0845.01
Service-Kit (Option) Subassembly / Untergruppe



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Baugruppe: 9600 - Compressed air distribution / Druckluftverteilung				KAESER KOMPRESSOREN	
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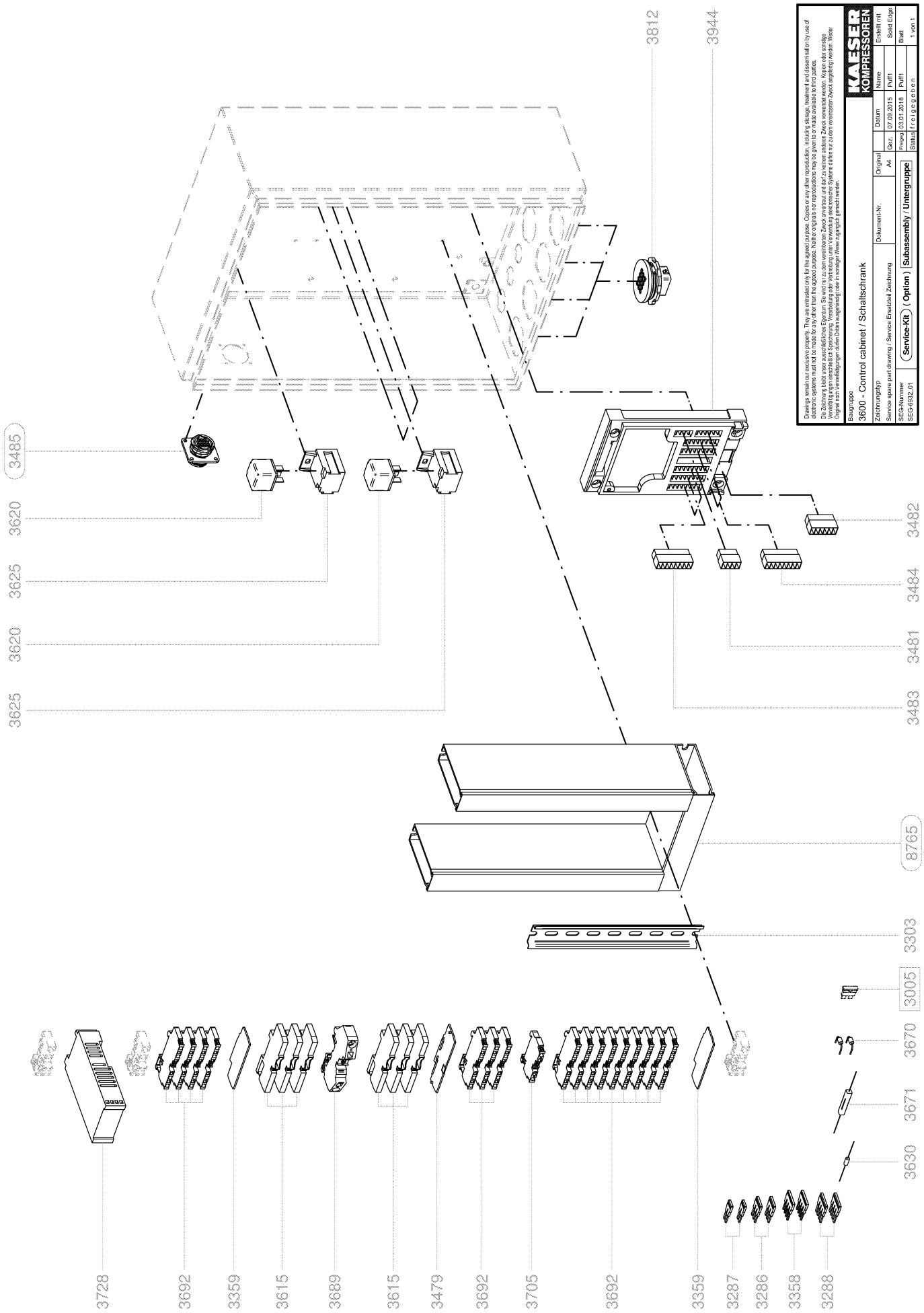


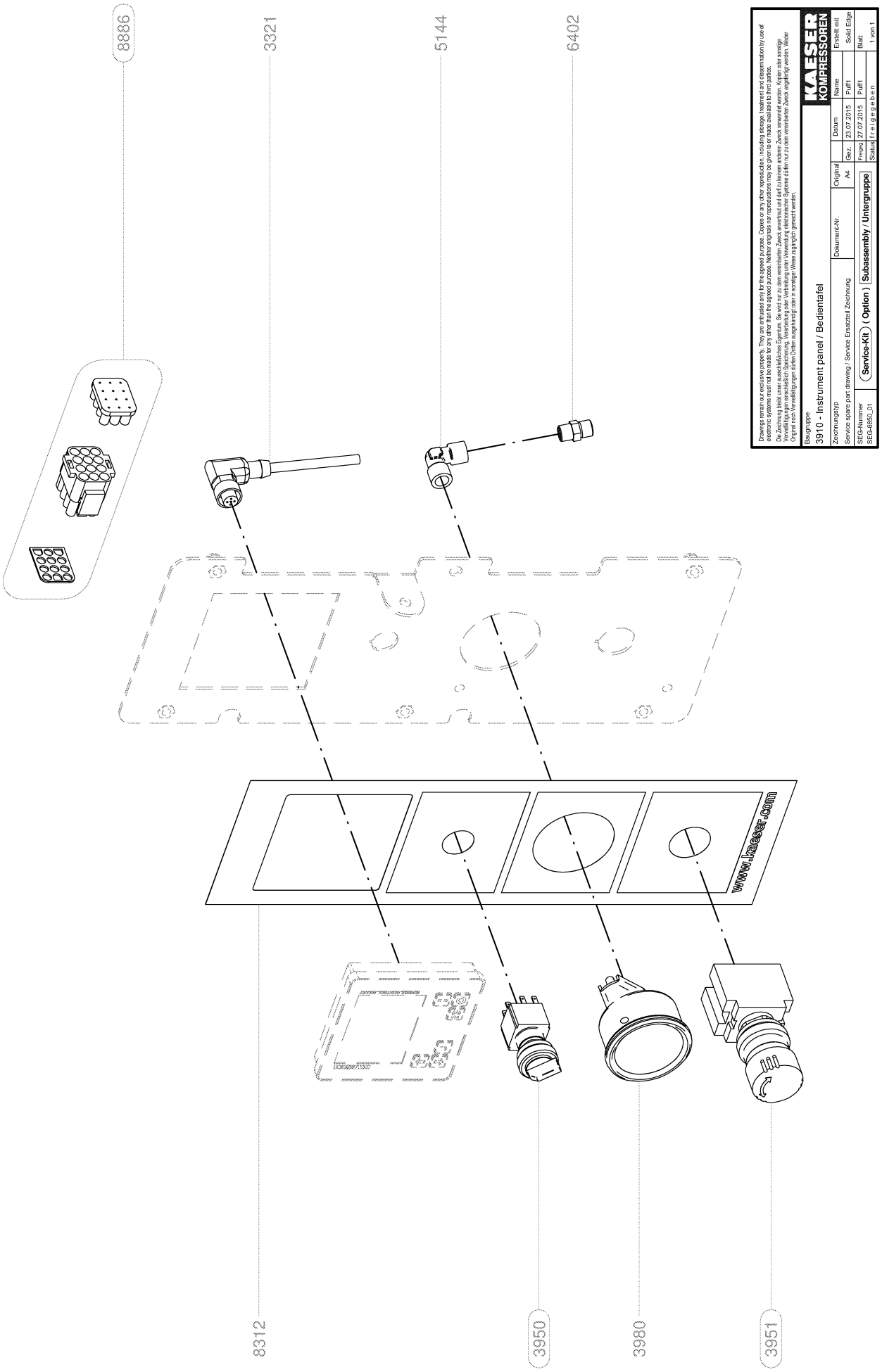
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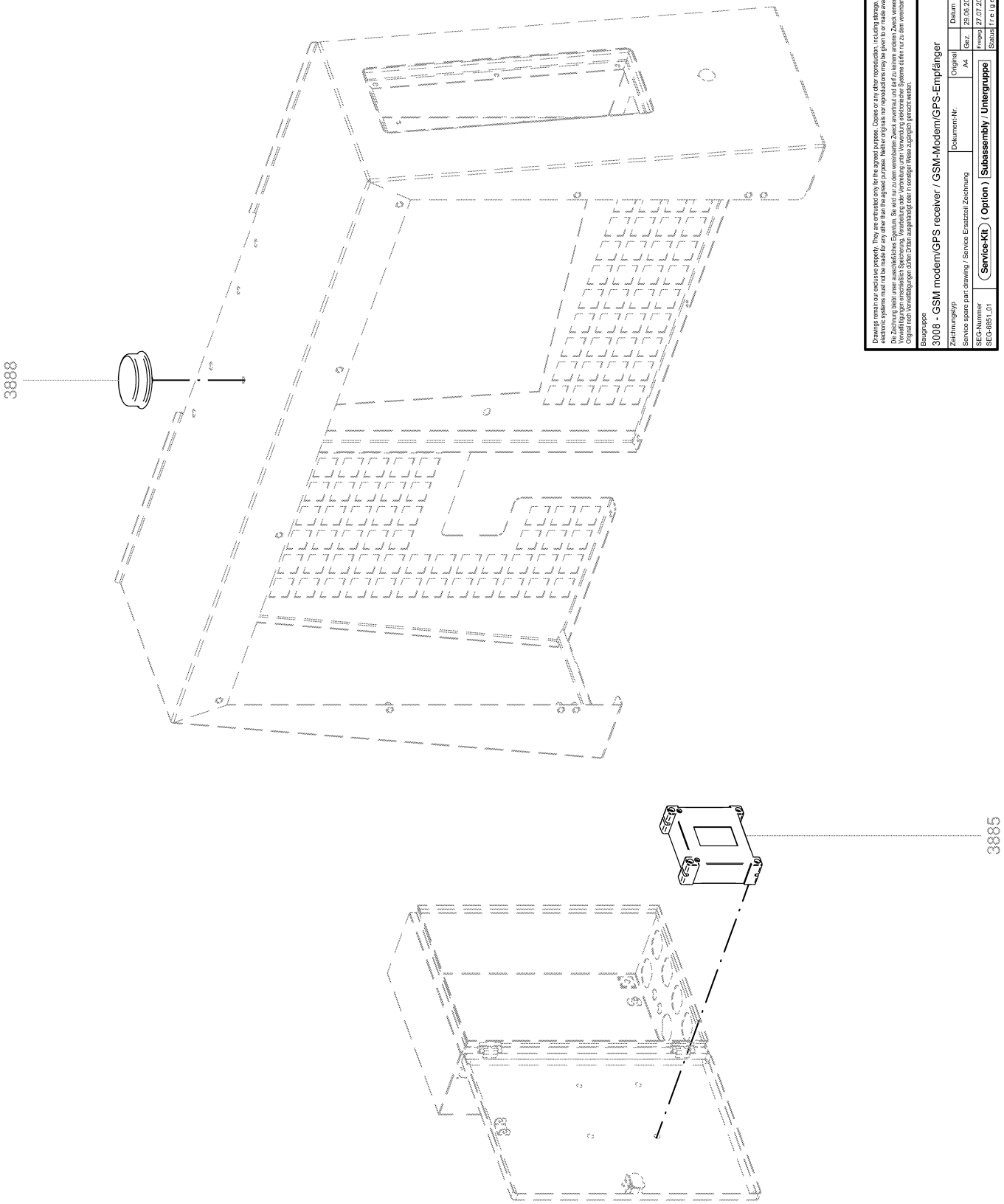
KAESER KOMPRESSOREN

Baugruppe
3001 - Electrics/Instruments / Elektrik/Instrumente

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KAESER KOMPRESSOREN
Baugruppe
3600 - Control cabinet / Schaltschrank
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
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07.09.2015
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03.01.2018
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Service-Kit (Option) Subassembly / Untergruppe
Status
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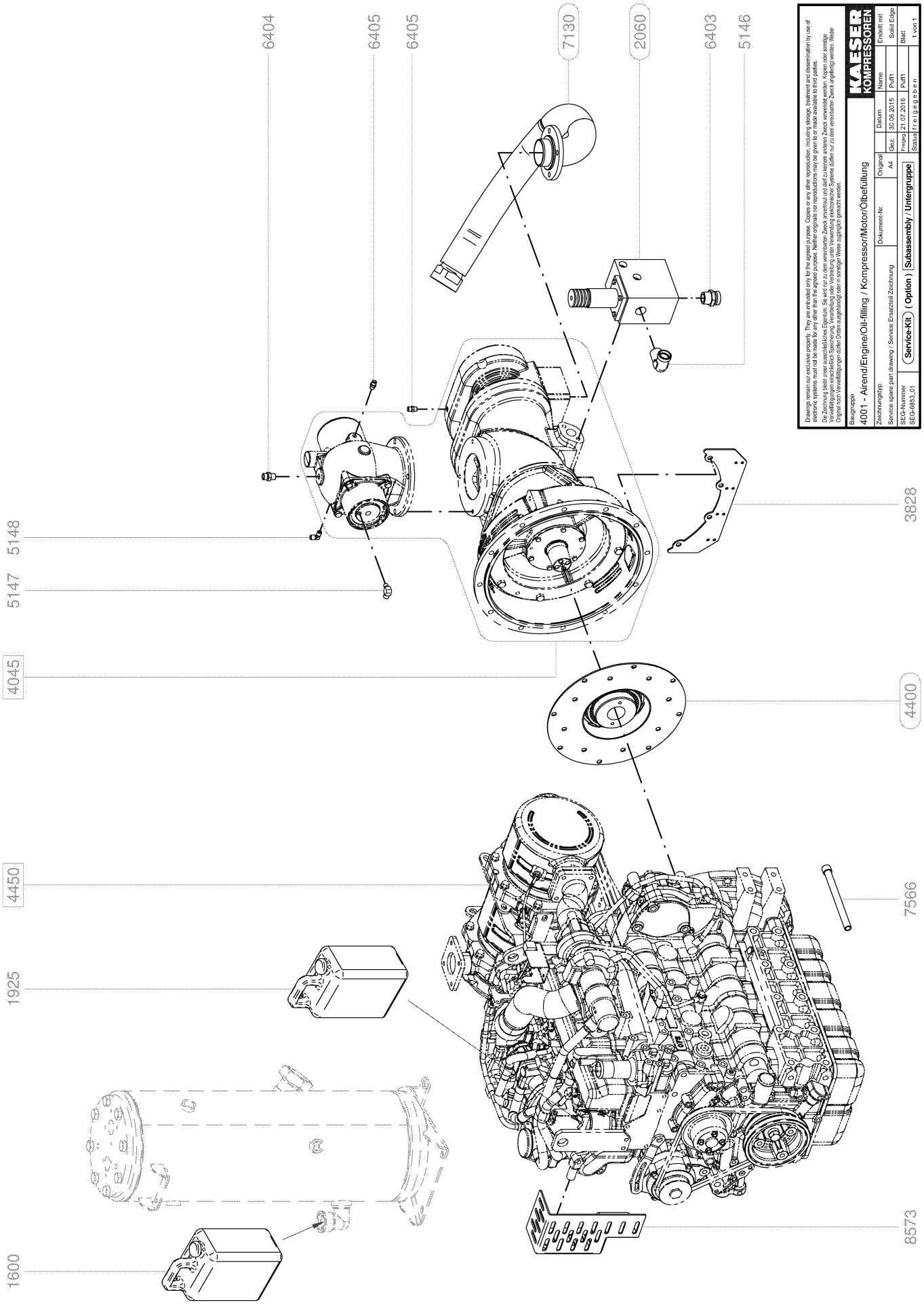

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KAESER KOMPRESSOREN
Baugruppe
3910 - Instrument panel / Bedientafel
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-0850_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Gez. 23.07.2015 Puff1 Solid Edge
Freigg. 27.07.2015 Puff1
Blatt
Status freigegeben
1 von 1

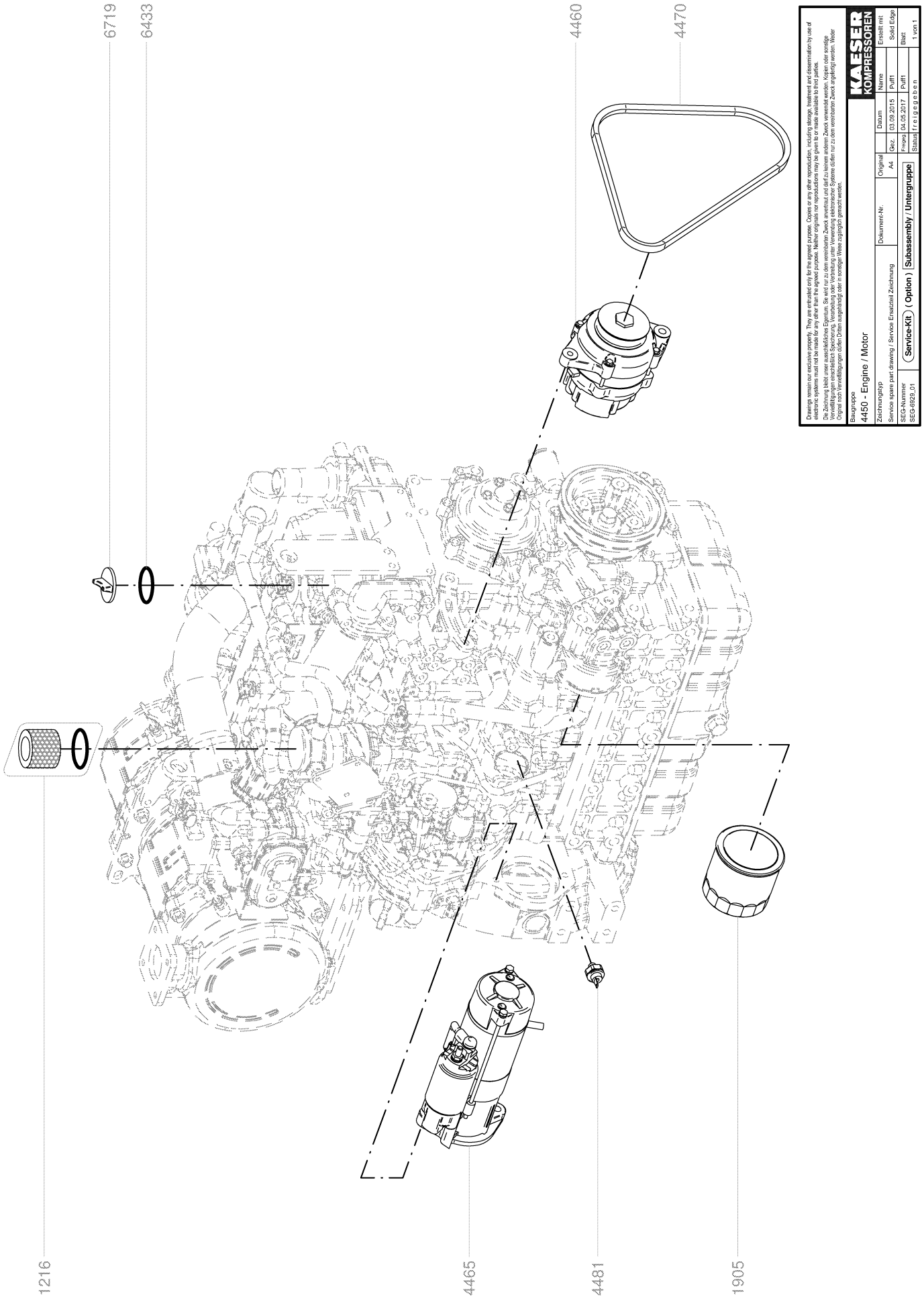


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Baugruppe
3008 - GSM modem/GPS receiver / GSM-Modem/GPS-Empfänger

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 29.06.2015	Puff	SolidEdge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigg. 27.07.2015	Puff	Blatt
SEG-8851_01			Status freigegeben		1 von 1

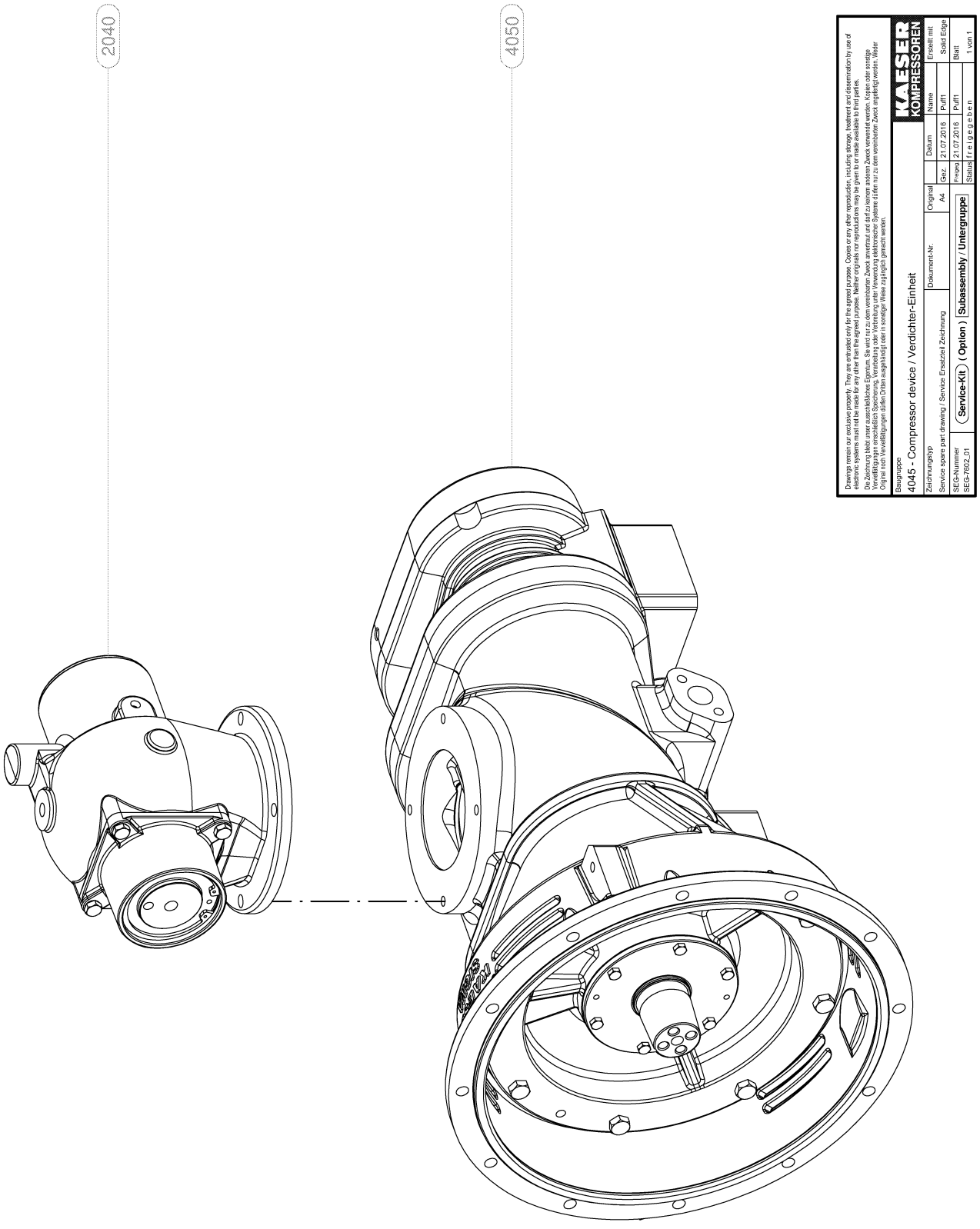

6404
6405
6405
7130
2060
6403
5146
5148
5147
4045
3828
4400
4450
7566
1925
8573
1600
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KAESER KOMPRESSOREN
Baugruppe
4001 - Airend/Engine/Oil-filling / Kompressor/Motor/Ölbefüllung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Gez. 30.06.2015
Freigb. 21.07.2016
Status freigegeben
Name
Puff1
Puff1
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-0853_01
Service-Kit (Option) Subassembly / Untergruppe

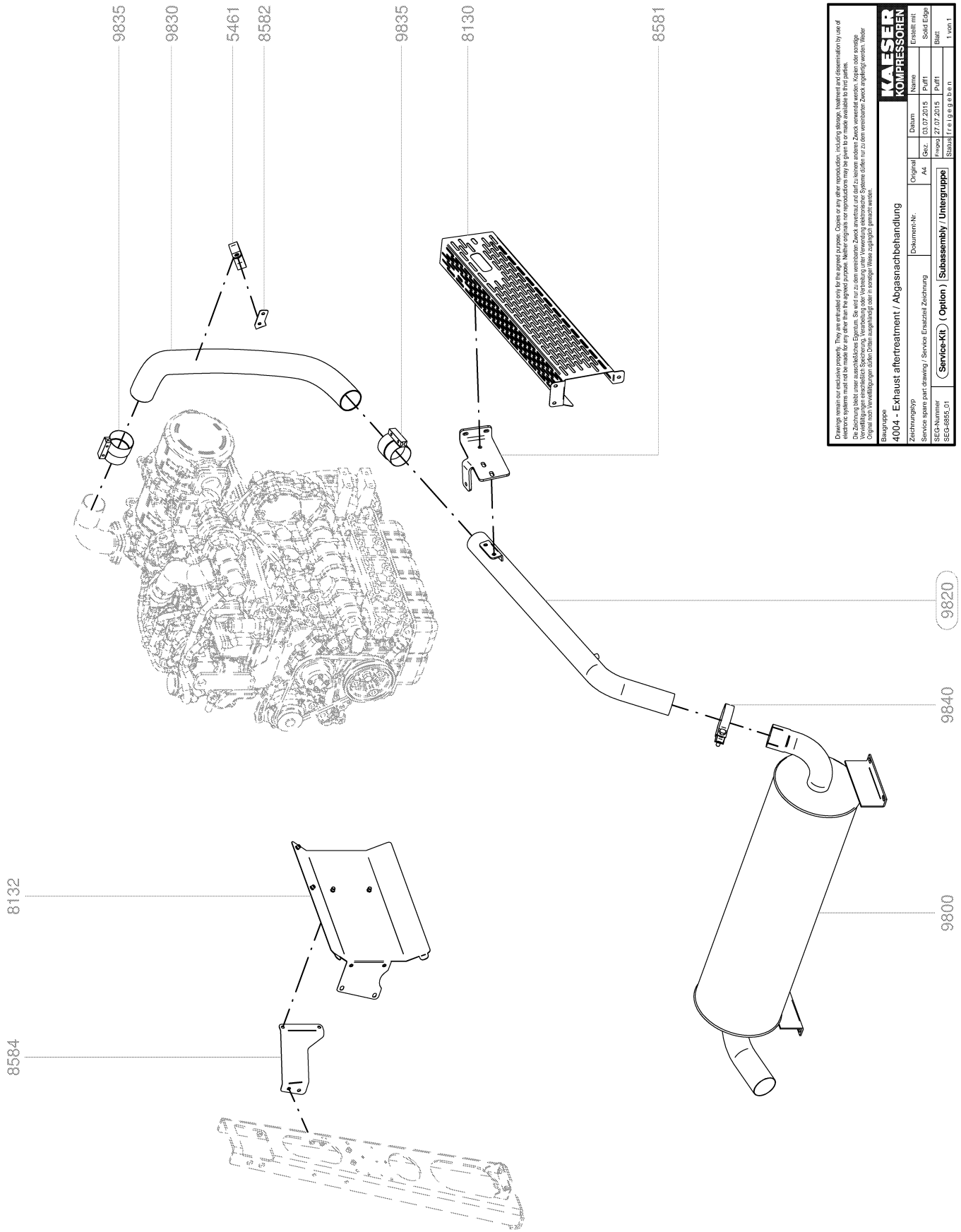


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Baugruppe: 4450 - Engine / Motor				Datum	Name	Erstellt mit
Zeichnungstyp	Dokument-Nr.	Original	Gez.	03.09.2015	Puff	Solid Edge
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Freigag	04.05.2017	Puff	Blatt
SEG-Nummer: Service-Kit (Option) Subassembly / Untergruppe			Status	f r e i g e g e b e n		1 von 1
SEG-6928_01						


2040
4050
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KAESER KOMPRESSOREN
Baugruppe
4045 - Compressor device / Verdichter-Einheit
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Gez. 21.07.2016
Freigabe 21.07.2016
Status freigegeben
Name
Puff
Puff
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-7602_01
Service-Kit (Option) Subassembly / Untergruppe

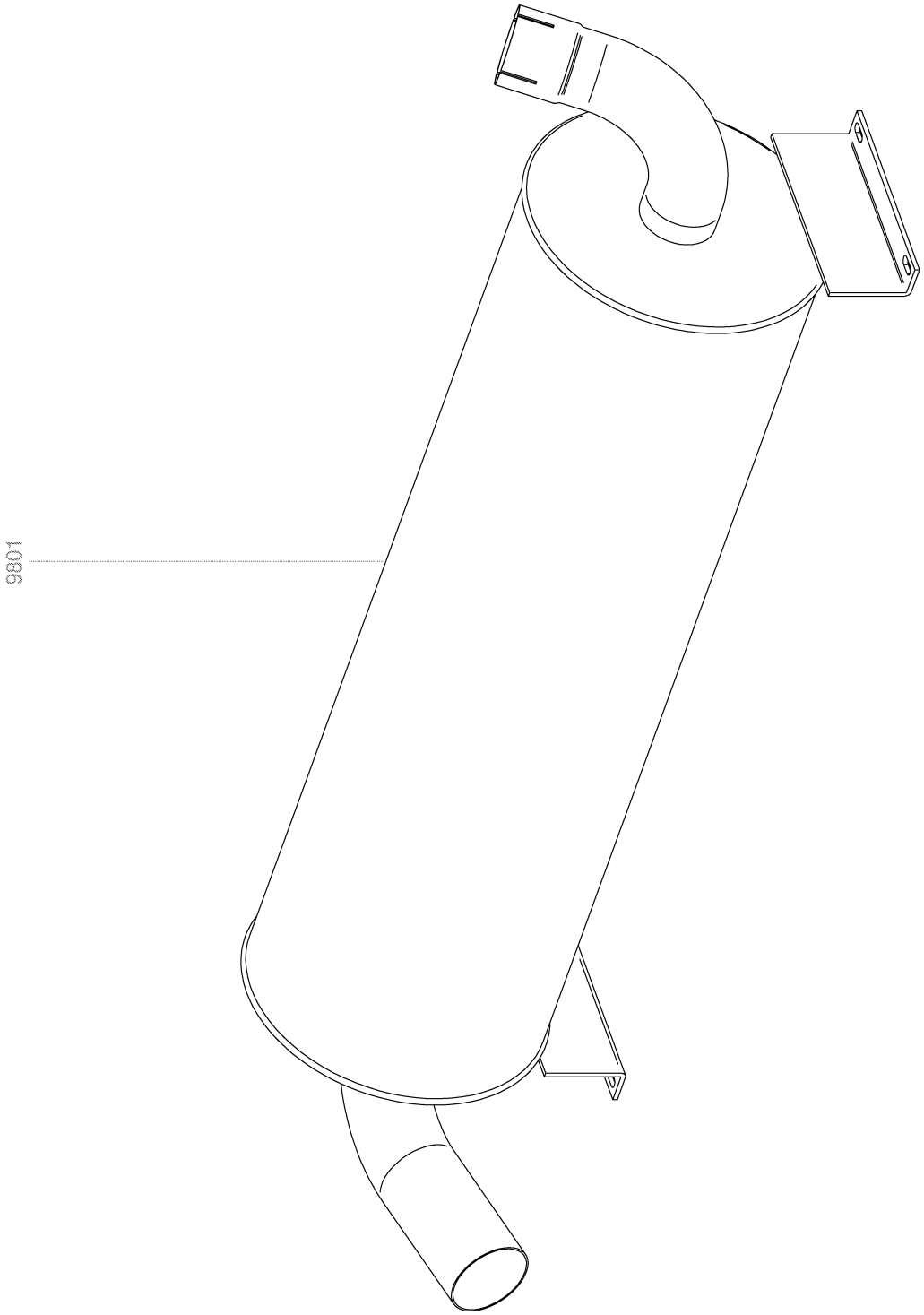

9835
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8584
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KAESER KOMPRESSOREN
Baugruppe
4004 - Exhaust aftertreatment / Abgasnachbehandlung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
SEG-Nummer
SEG-9855_01
Service-Kit (Option) Subassembly / Untergruppe
Freigabe 27.07.2015 Pulfl
Status freigegeben
Blatt
1 von 1

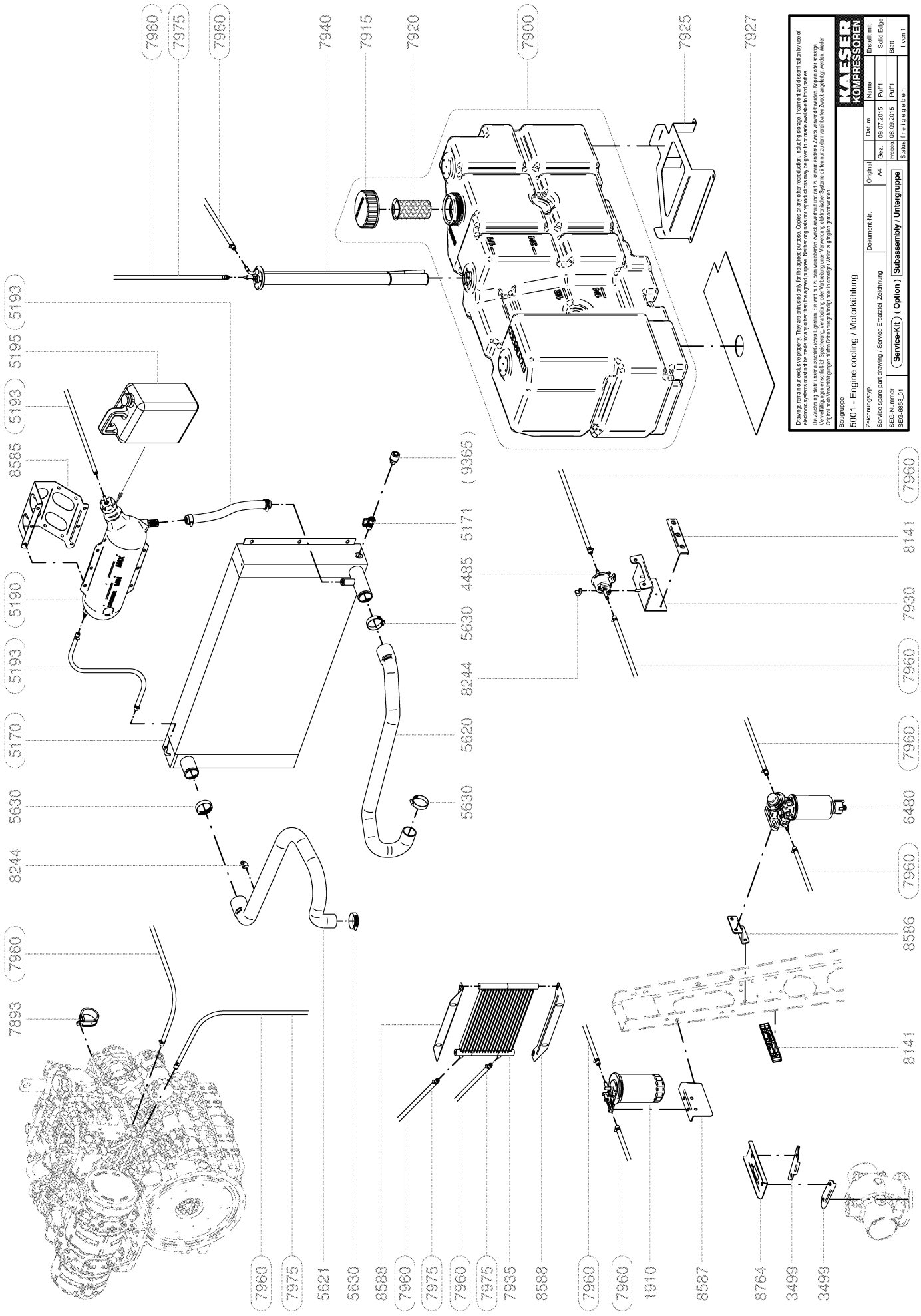
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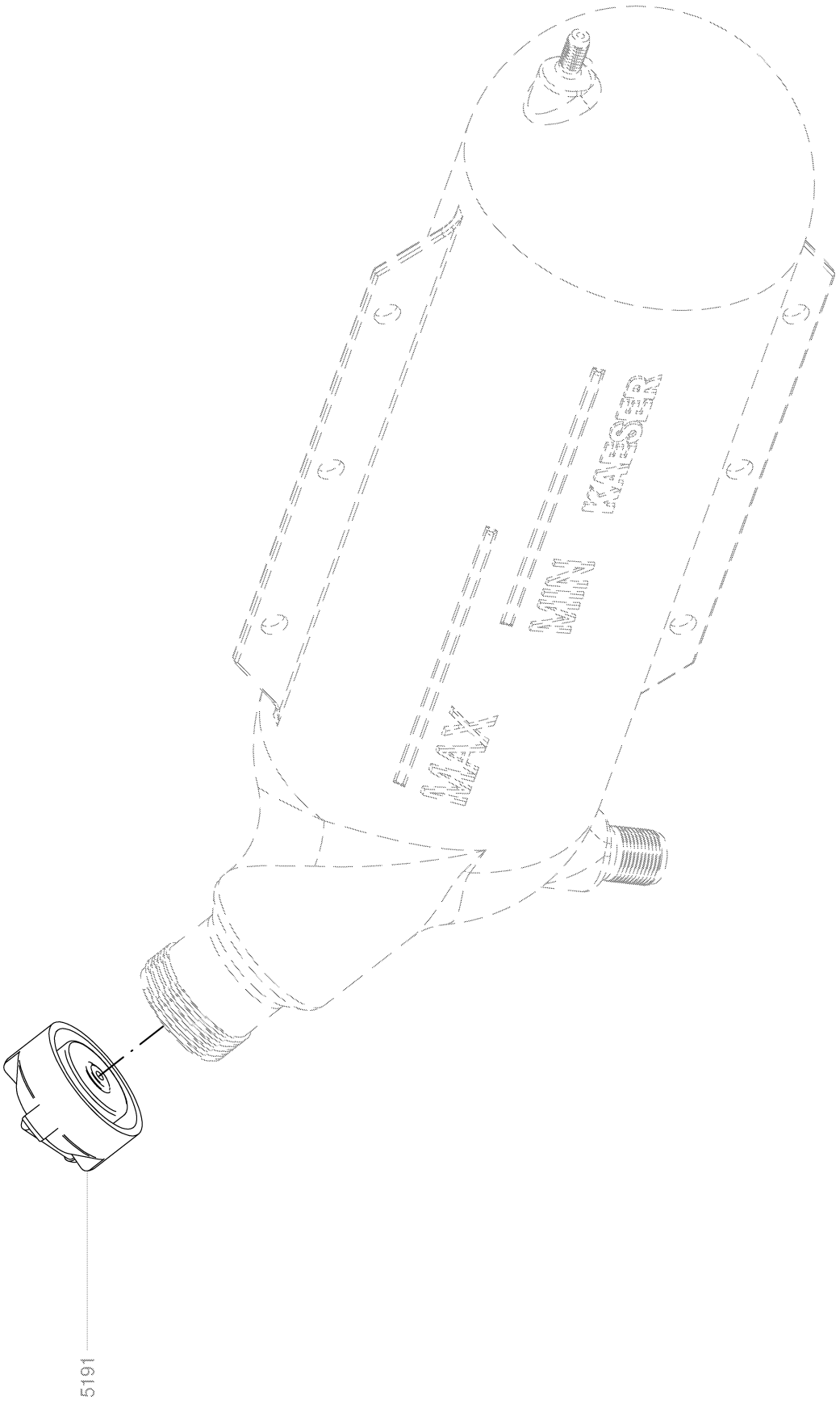
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Baugruppe
4007 - Set sparkarrestor / Satz Funkenfänger

Zeichnungstyp	Dokument-Nr.	Original		Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	06.07.2015	Pufft	Solid Edge
SEG-Nummer	Service-Kit (Option) Subassembly / Untergruppe		Freigab	27.07.2015	Pufft	Blatt
SEG-0856_01			Status	f r e i g e g e b e n		1 von 1




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7975
5621
5630
8588
7960
7975
7960
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7935
8588
7960
7960
1910
8587
8764
3499
3499
(9365)
5171
4485
5630
8244
5620
5630
7960
8141
7930
7960
7960
6480
7960
8586
8141
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5001 - Engine cooling / Motorkühlung
Service spare part drawing / Service Ersatzteil Zeichnung
Service-Kit (Option) Subassembly / Untergruppe

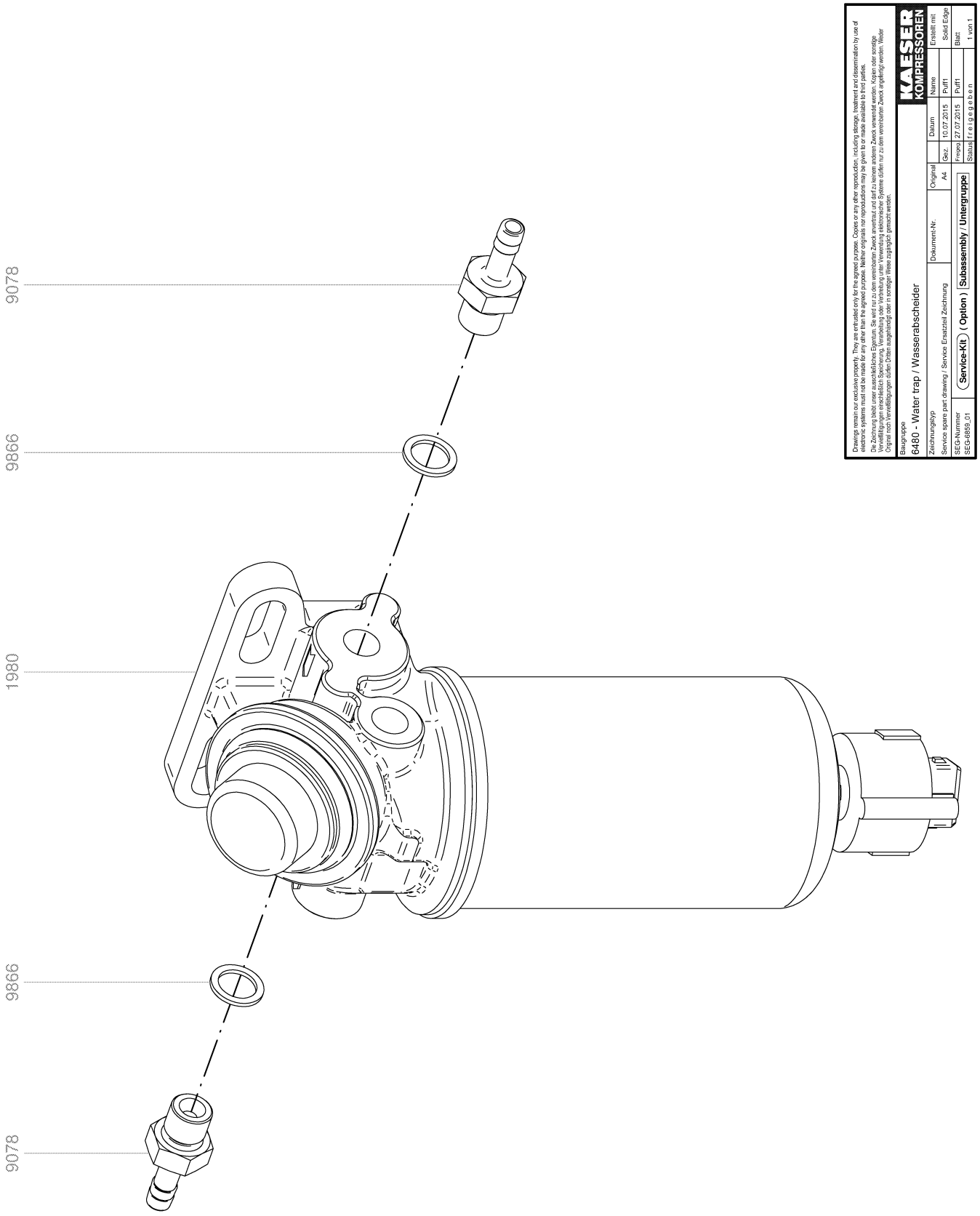


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Baugruppe
5190 - Expansion tank / Ausgleichsbehälter

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 18.06.2015	Puff1	Solid Edge
SEG-Nummer			Freigabe 18.06.2015	Puff1	Blatt
SEG-1846_01	Service-Kit (Option) Subassembly / Untergruppe		Status freigegeben		1 von 1



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Baugruppe
6480 - Water trap / Wasserabscheider

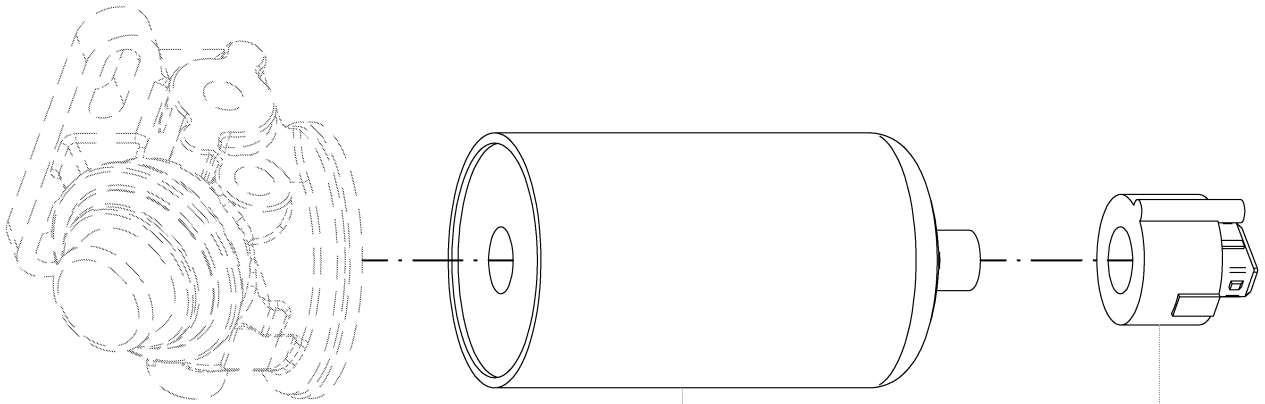
Zeichnungstyp	Dokument-Nr.	Original		Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	10.07.2015	Puff	SolidEdge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigabe	27.07.2015	Puff	Blatt
SEG-9869_01			Status	f r e i g e g e b e n		1 von 1

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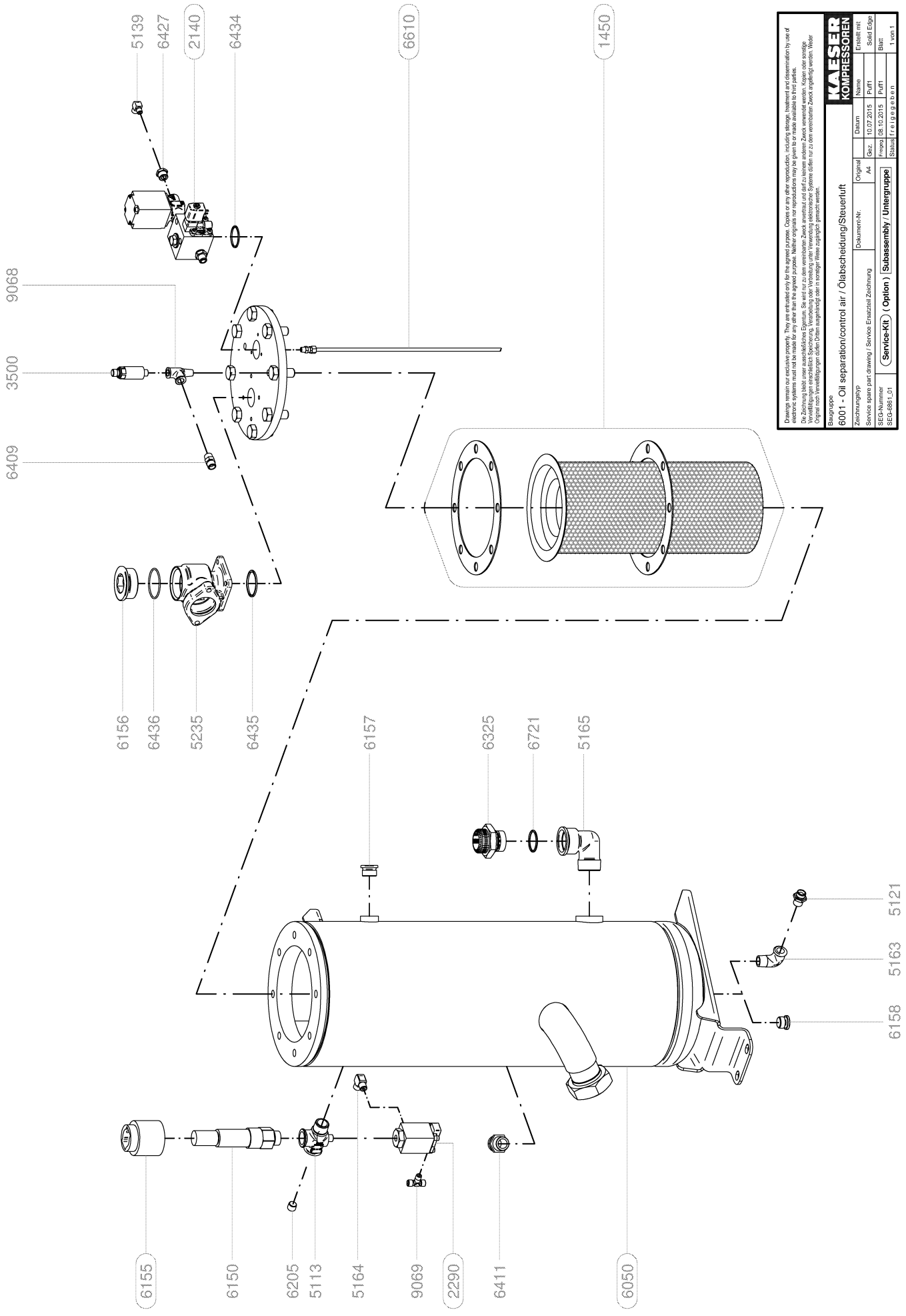
Baugruppe
1980 - Fuel water trap / Kraftstoff-Wasserabscheider

Zeichnungstyp		Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung			A4	Gez. 10.07.2015	Puff1	Solid Edge
SEG-Nummer	(Service-Kit) (Option) Subassembly / Untergruppe			Freigabe 27.07.2015	Puff1	Blatt
SEG-0860_01				Status freigegeben		1 von 1



1985

1982

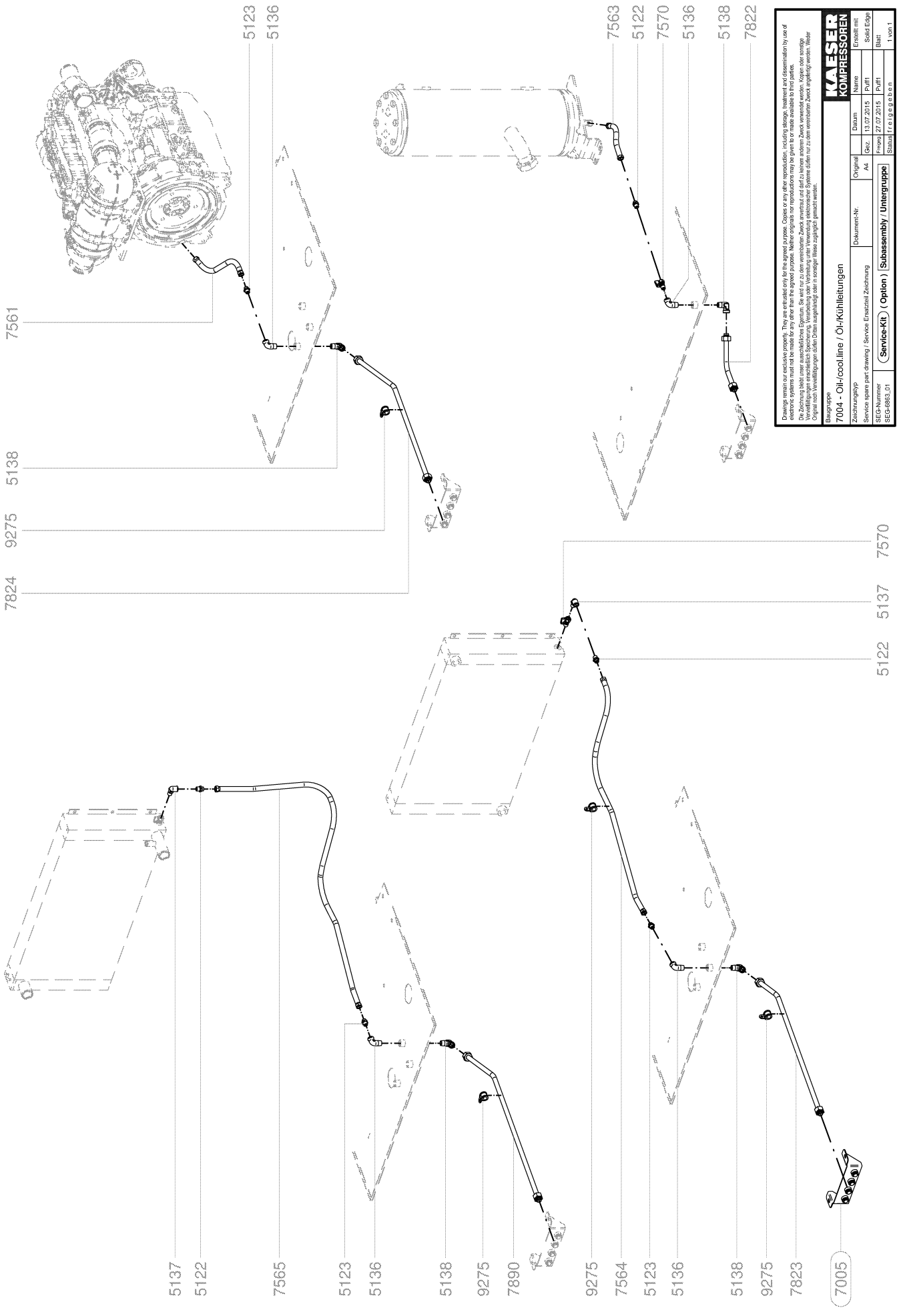


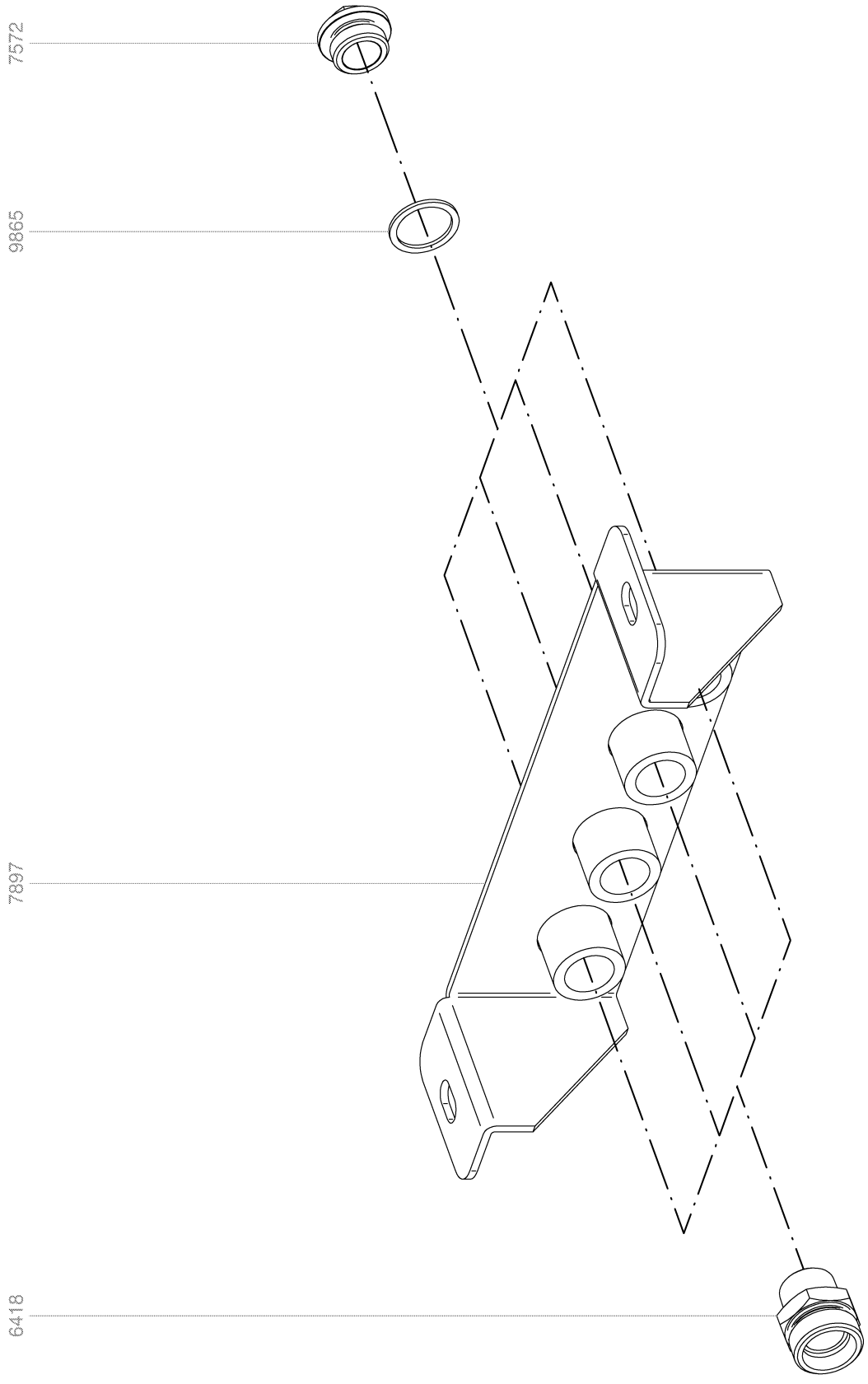
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Baugruppe
6001 - Oil separation/control air / Ölabscheidung/Steuerluft

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Skz. 10.07.2015	Puff	Solid Edge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigg. 08.10.2015	Puff	Blatt
SEG-6861_01			Status freigegeben		1 von 1


5123
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7565
5123
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9275
7564
5123
5136
5138
9275
7823
7005
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Baugruppe
7004 - Öl-/cool.line / Öl-/Kühlleitungen
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-0863_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 13.07.2015 Puff
Freigabe 27.07.2015 Puff
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1

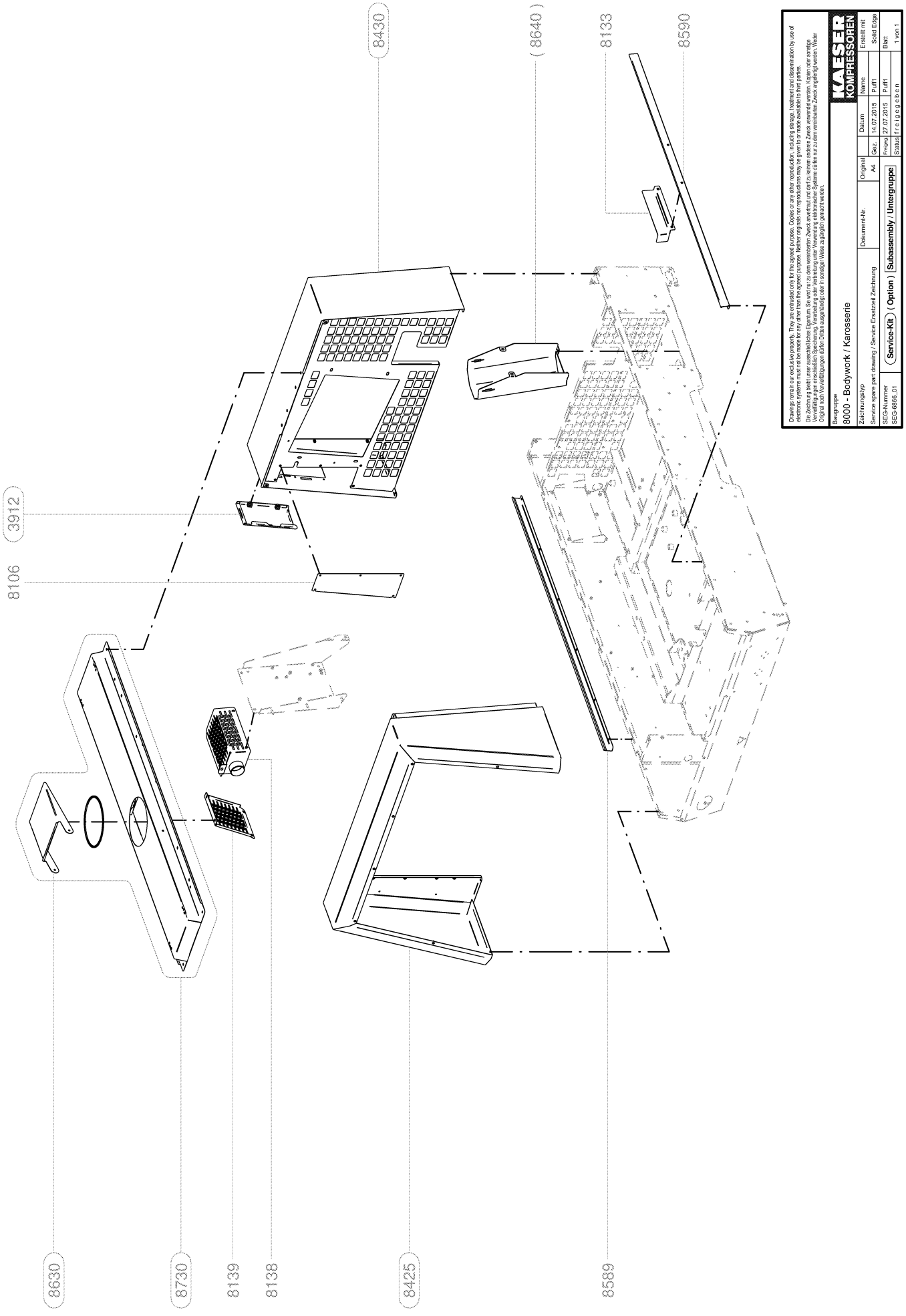


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Baugruppe
7005 - Öl-/cool.line outlet / Öl-/Kühlleitungen Ausgang

KAESER KOMPRESSOREN

Zeichnungstyp	Dokument-Nr.	Original		Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	10.07.2015	Puff	Solid Edge
SEG-Nummer			Freigab	27.07.2015	Puff	Blatt
SEG-9864_01	Service-Kit (Option) Subassembly / Untergruppe		Status	f r e i g e g e b e n		1 von 1

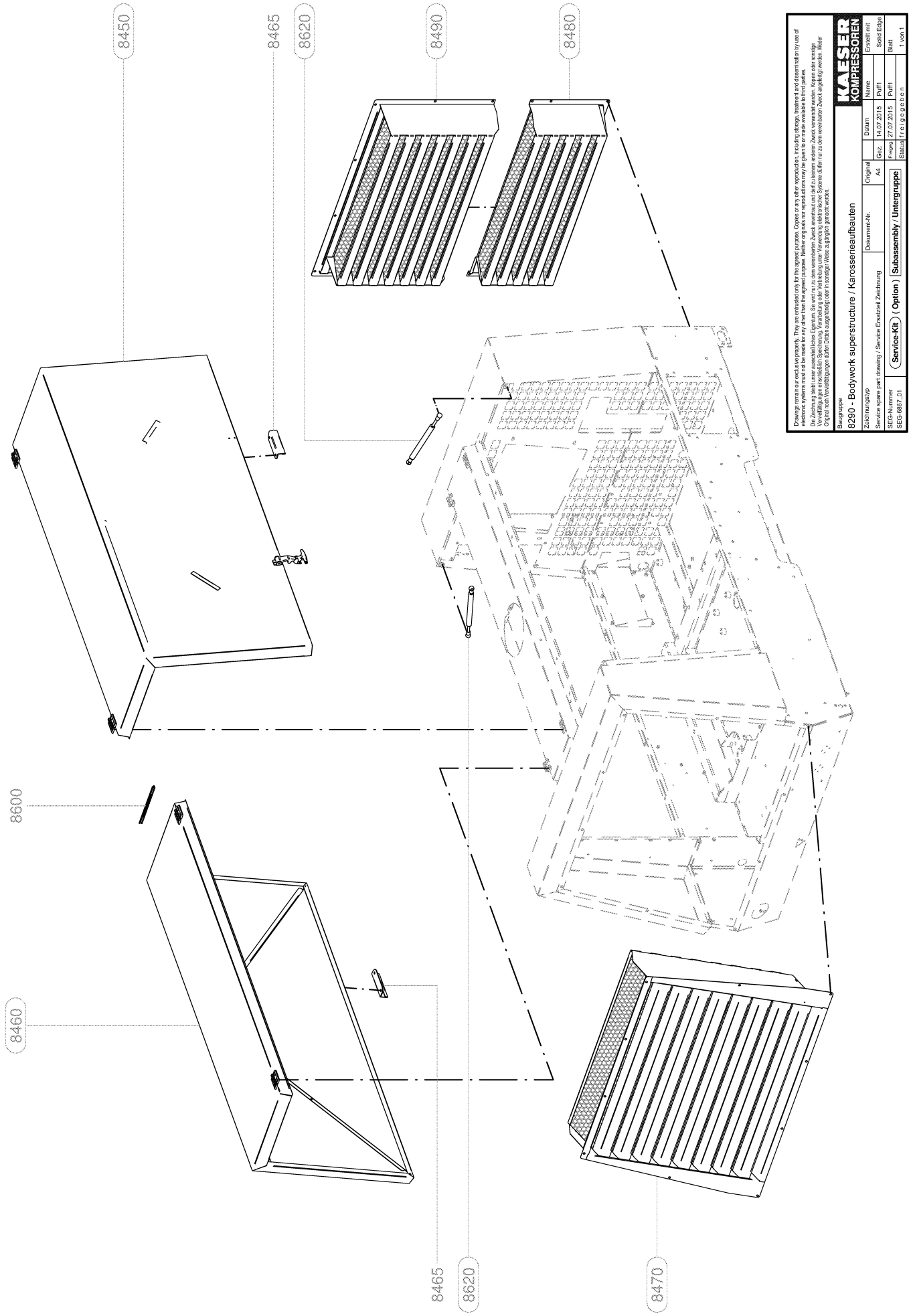


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Baugruppe
8000 - Bodywork / Karosserie

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 14.07.2015	Puff1	Solid Edge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigabe 27.07.2015	Puff1	Blatt
SEG-0866_01			Status freigegeben		1 von 1

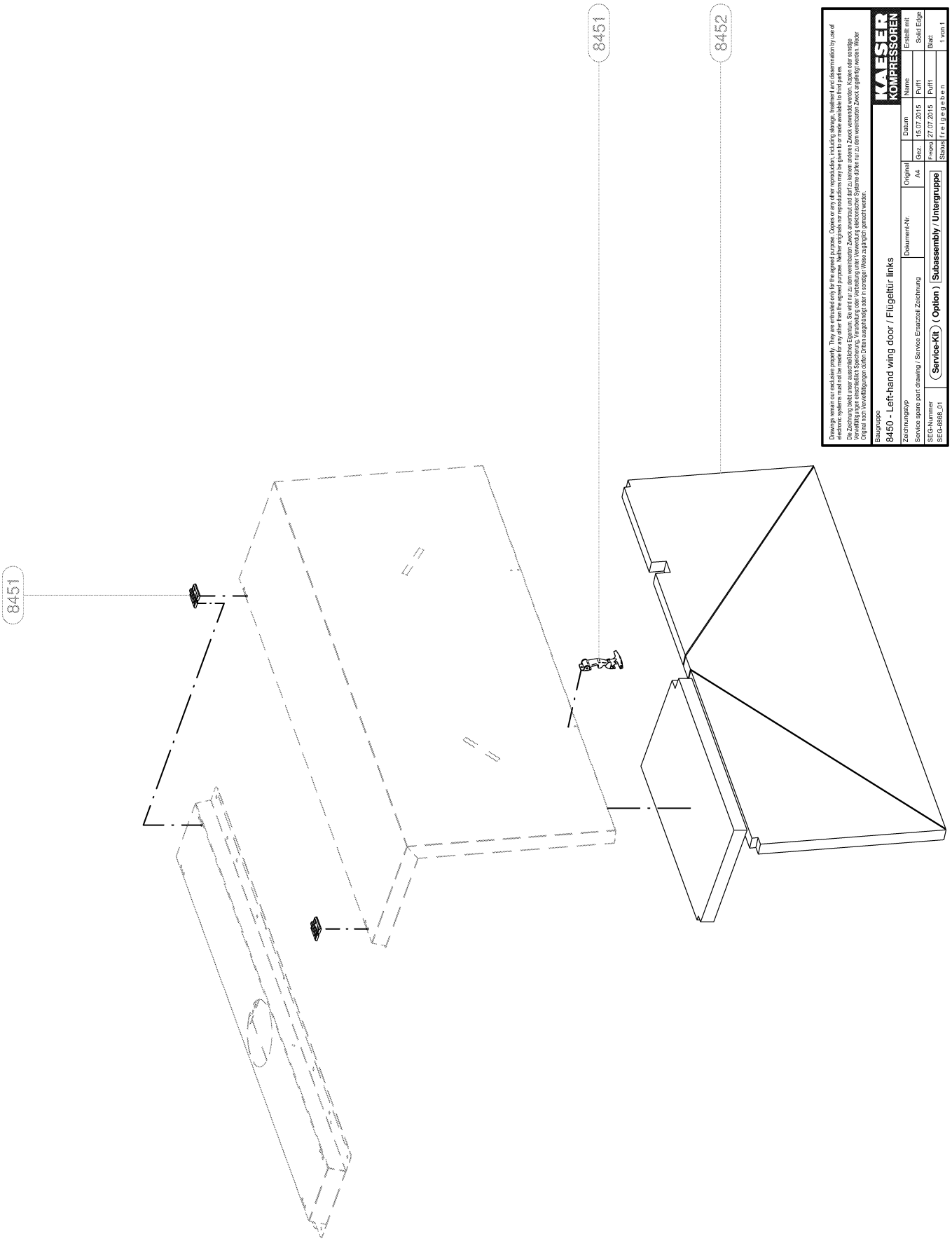


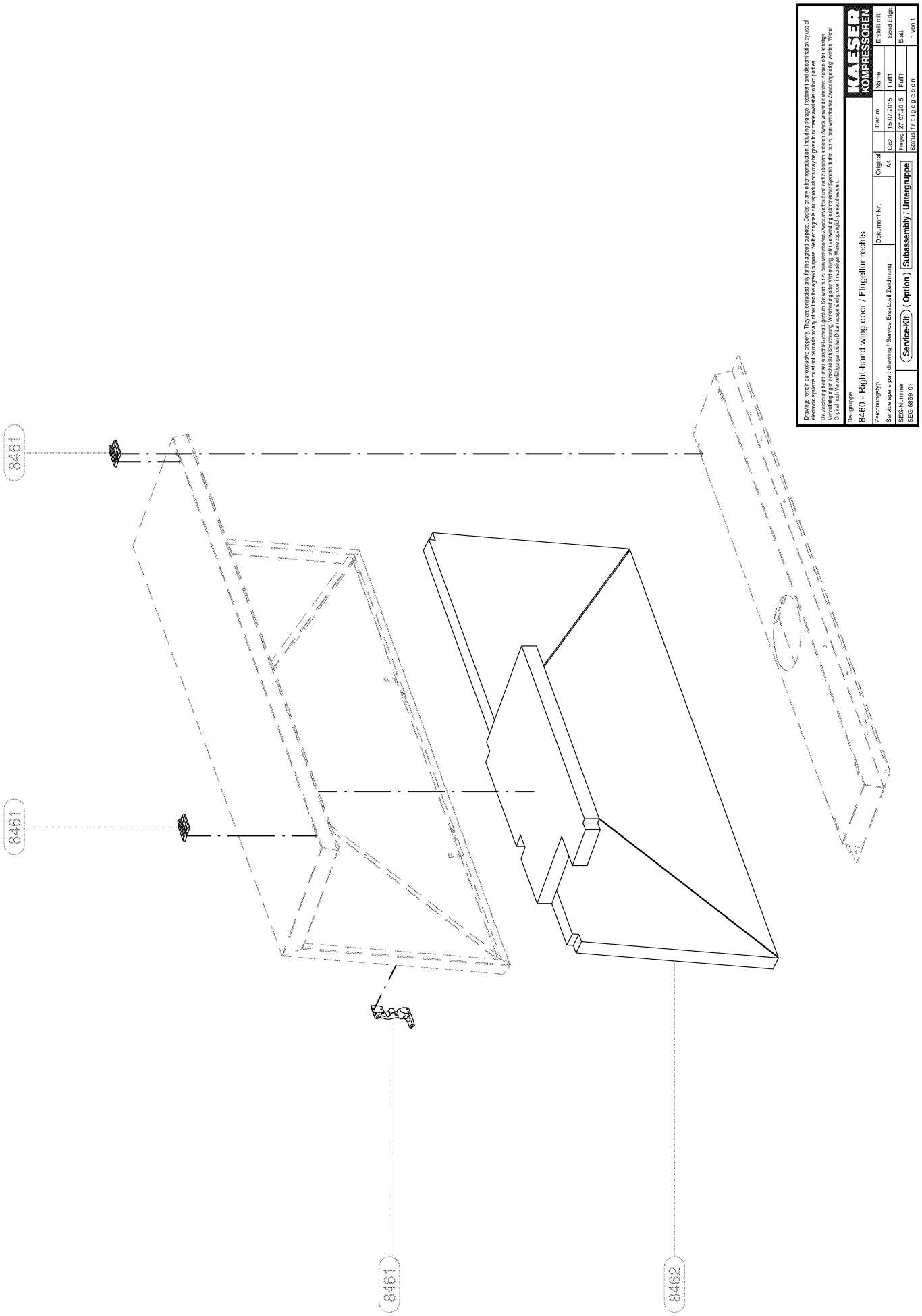
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Baugruppe
8290 - Bodywork superstructure / Karosserieaufbauten

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 14.07.2015	Pufft	Solid Edge
SEG-Nummer SEG-0867_01	Service-Kit (Option)	Subassembly / Untergruppe	Freigg. 27.07.2015	Pufft	Blatt 1 von 1
			Status freigegeben		


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KAESER KOMPRESSOREN
Baugruppe
8450 - Left-hand wing door / Flügeltür links
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-0868_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Gez. 15.07.2015 Puffl
Freigabe 27.07.2015 Puffl
Blatt
Status freigegeben
1 von 1

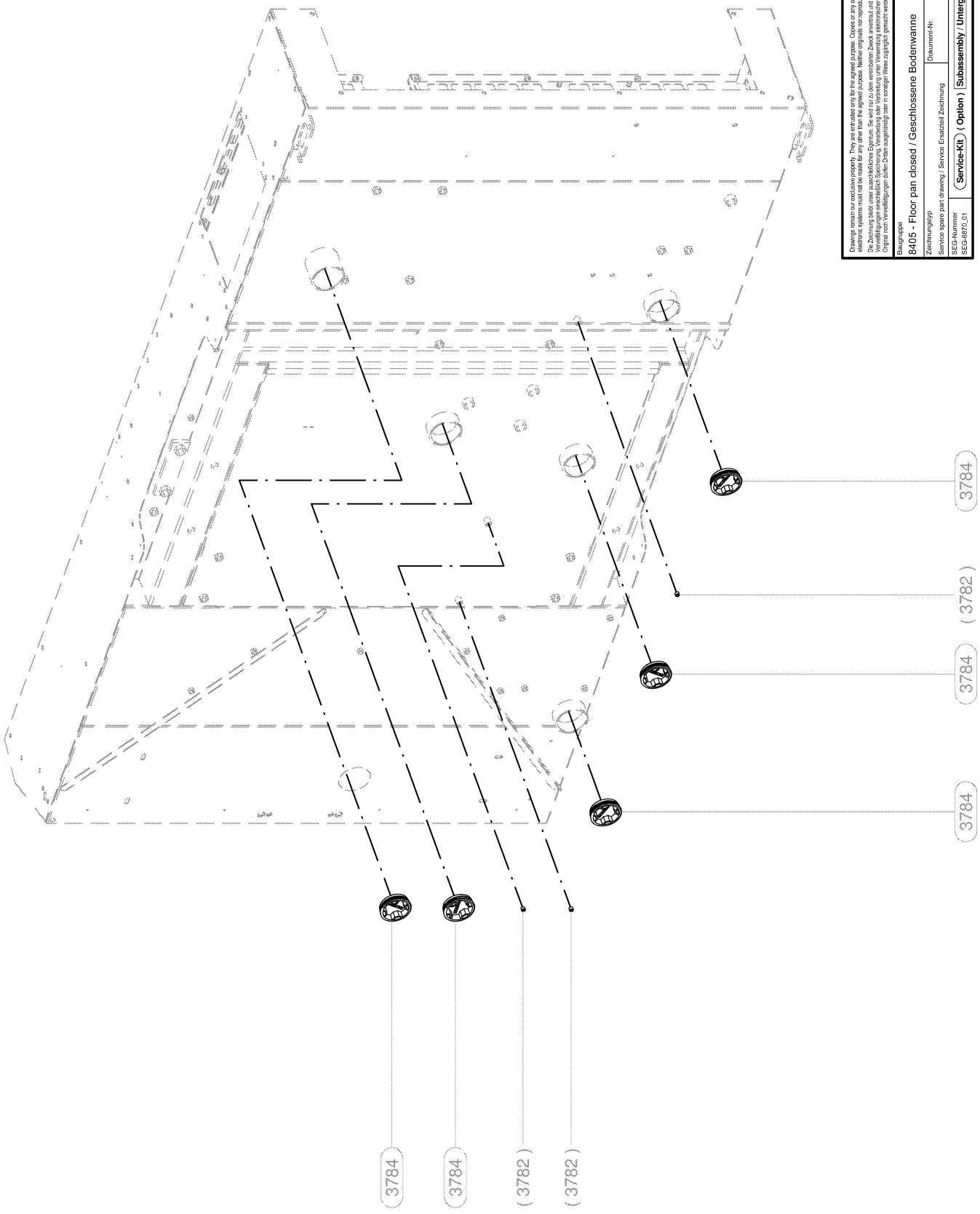


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KAESER KOMPRESSOREN

Baugruppe
8460 - Right-hand wing door / Flügeltür rechts

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Skiz. 15.07.2015	Pufft	Solid Edge
SEG-Nummer			Freigag. 27.07.2015	Pufft	Blatt
SEG-8869_01	Service-Kit (Option) Subassembly / Untergruppe		Status freigegeben		1 von 1

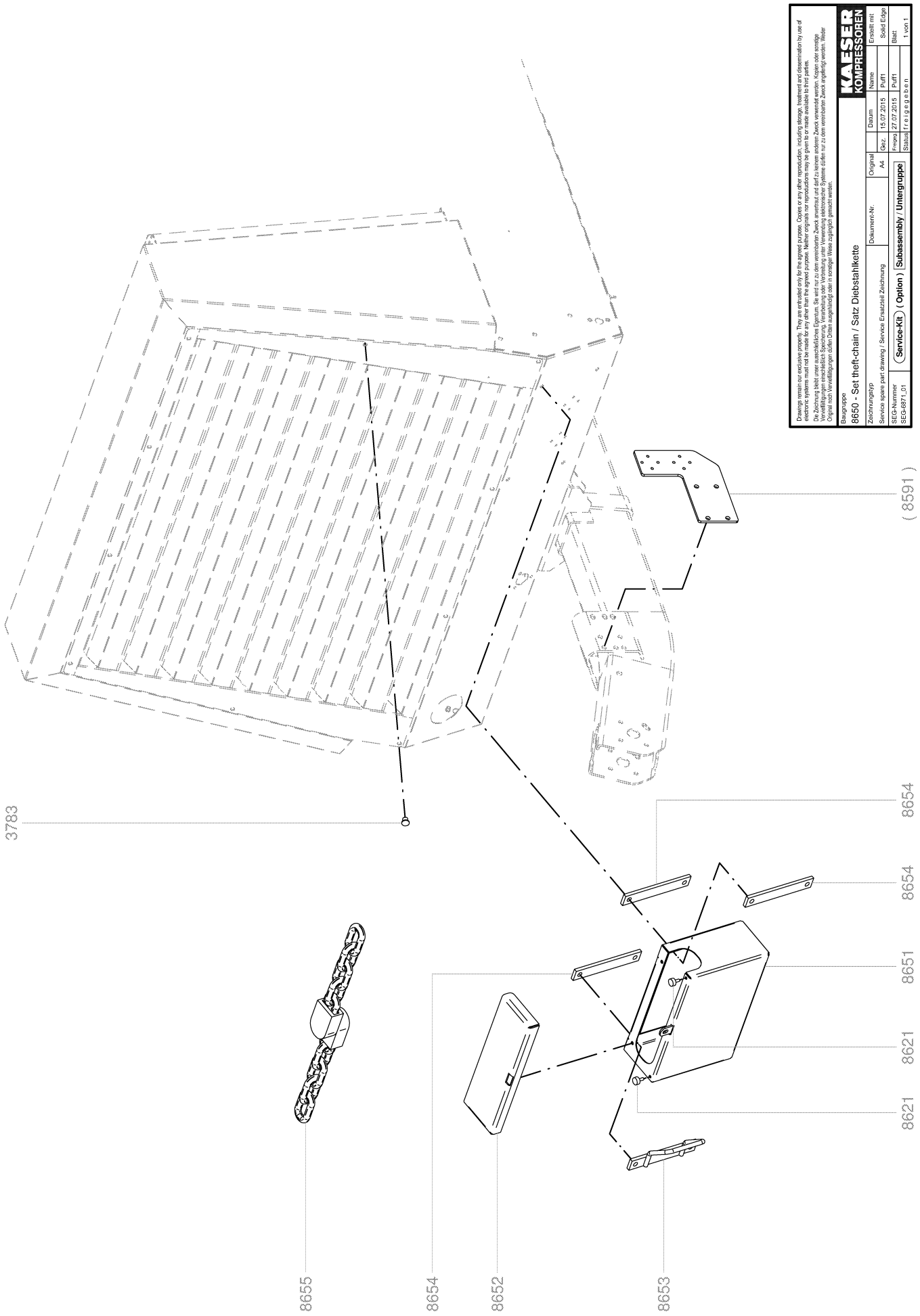


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Baugruppe
8405 - Floor pan closed / Geschlossene Bodenwanne

Zeichnungstyp	Dokument-Nr.	Original		Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	15.07.2015	Puff1	Solid Edge
SEG-Nummer	Service-Kit (Option) Subassembly / Untergruppe		Freigab	27.07.2015	Puff1	Blatt
SEG-6870_01			Status	freigegeben		1 von 1

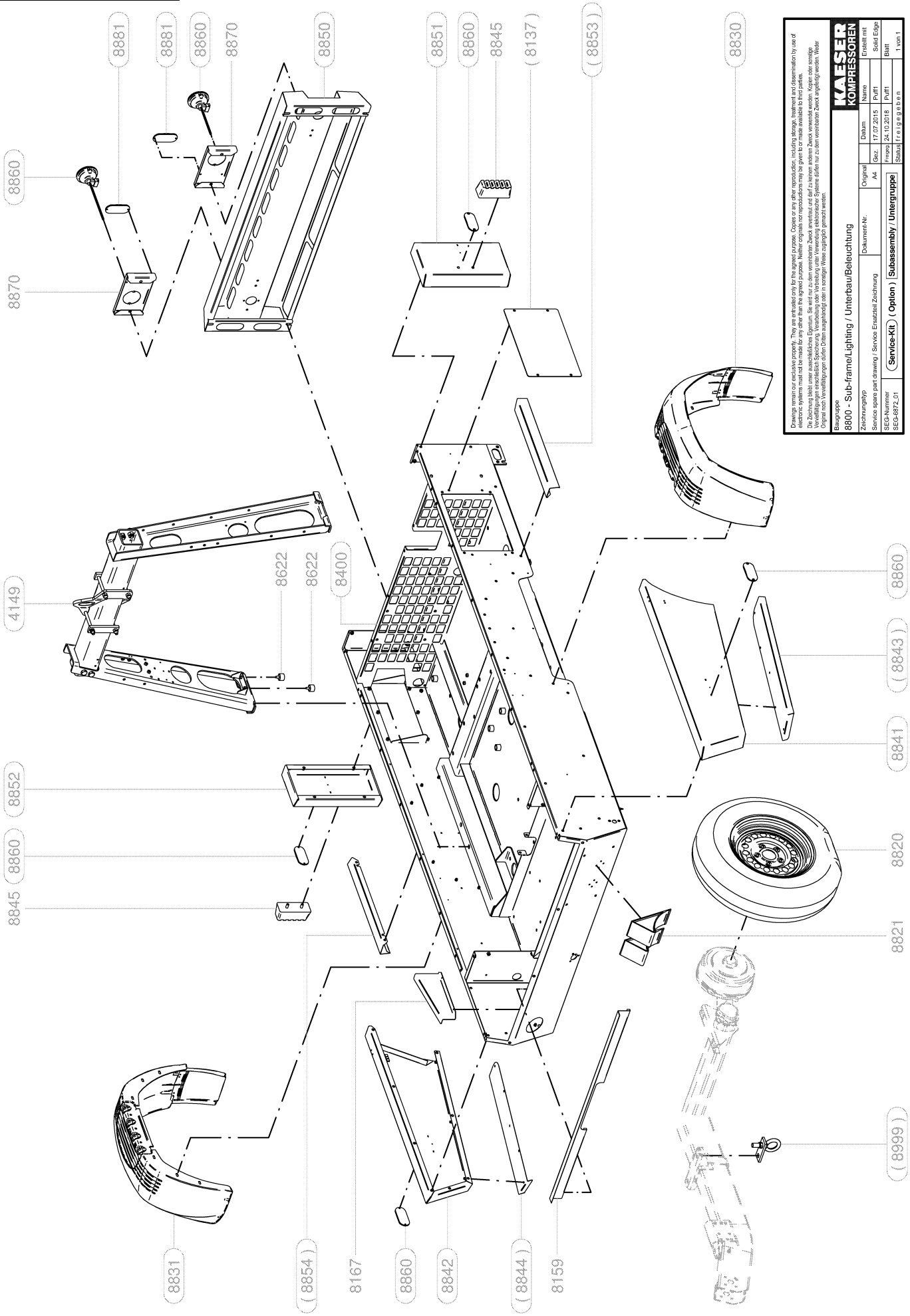


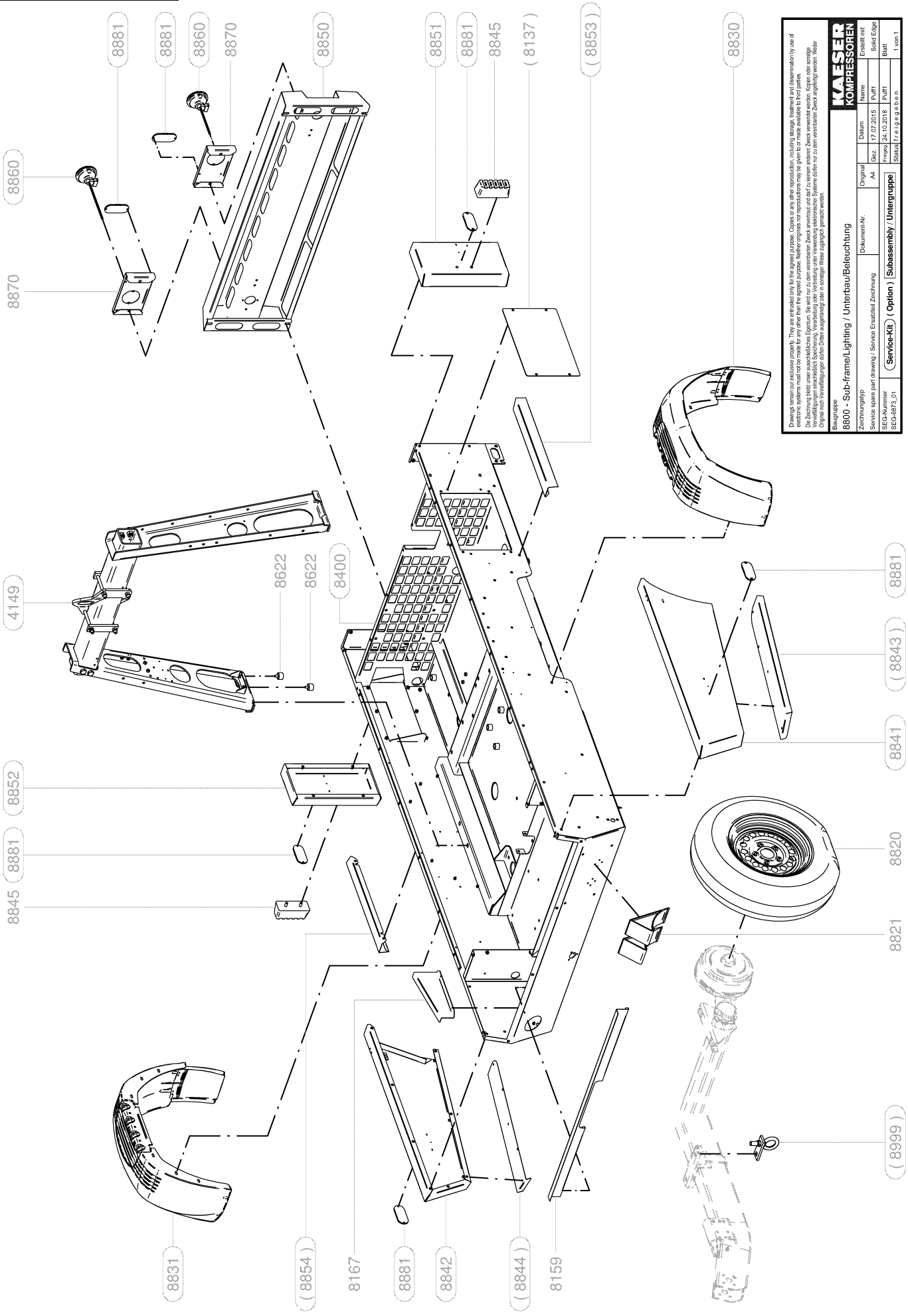
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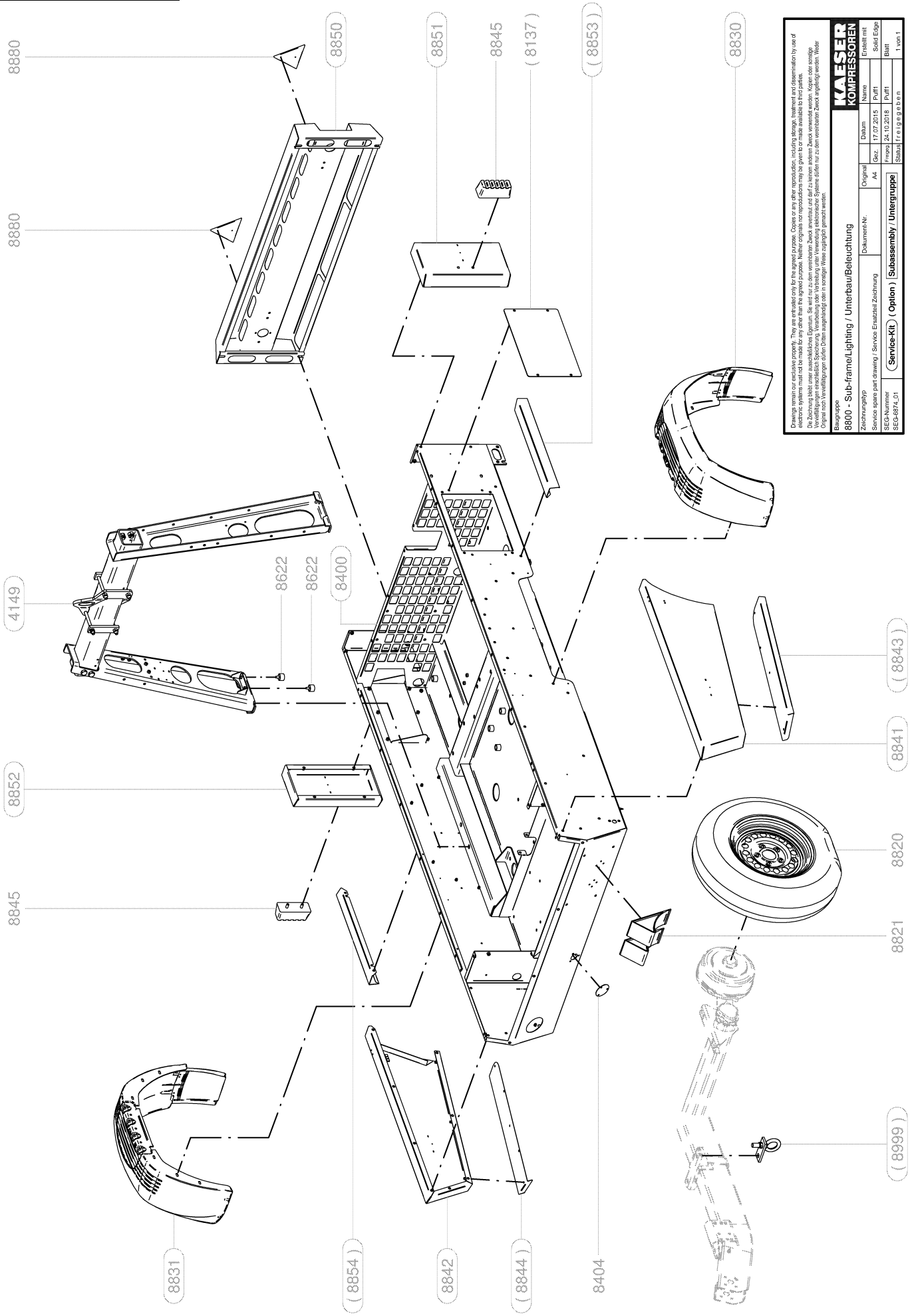
KAESER KOMPRESSOREN

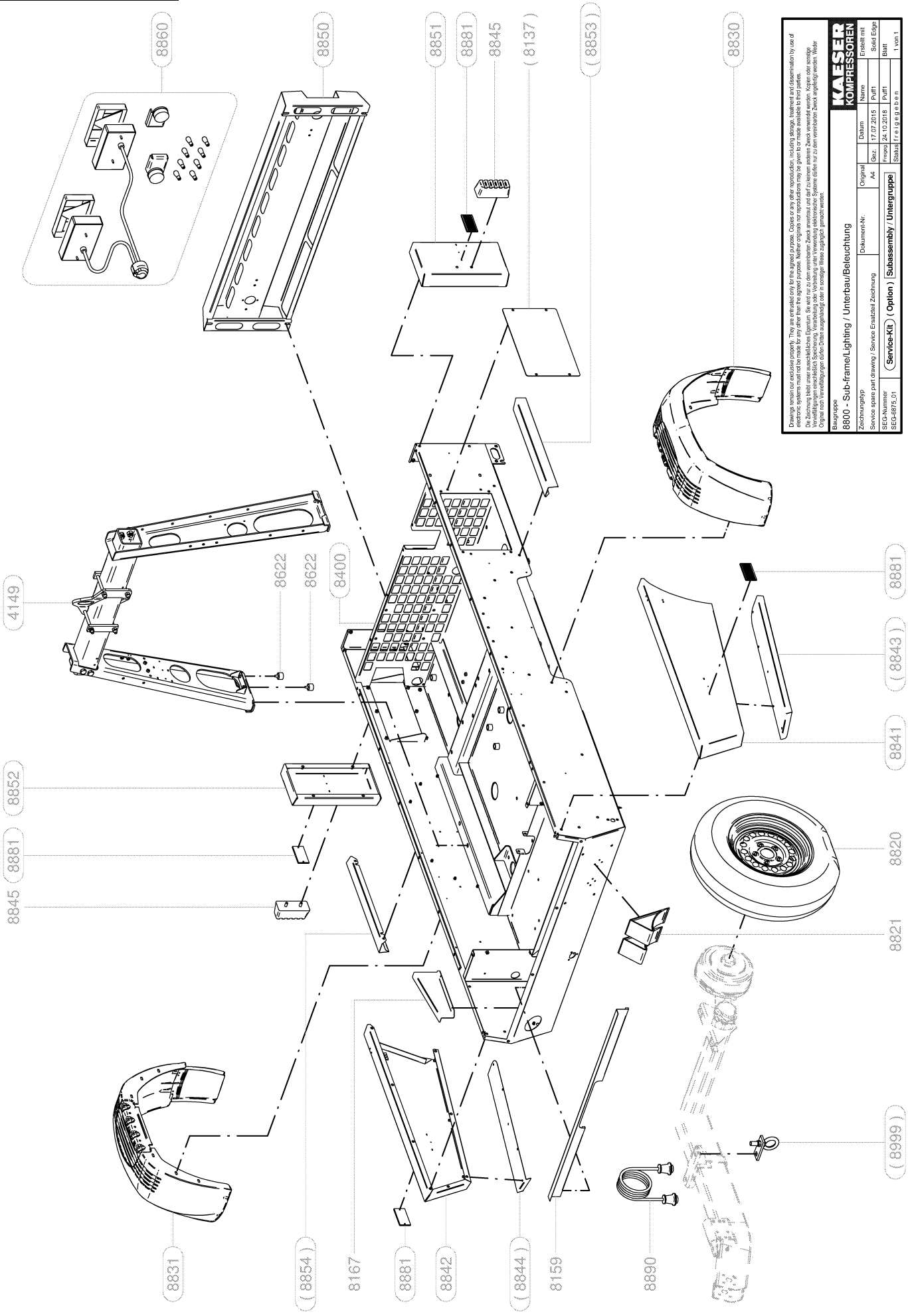
Baugruppe
8650 - Set theft-chain / Satz Diebstahlkette

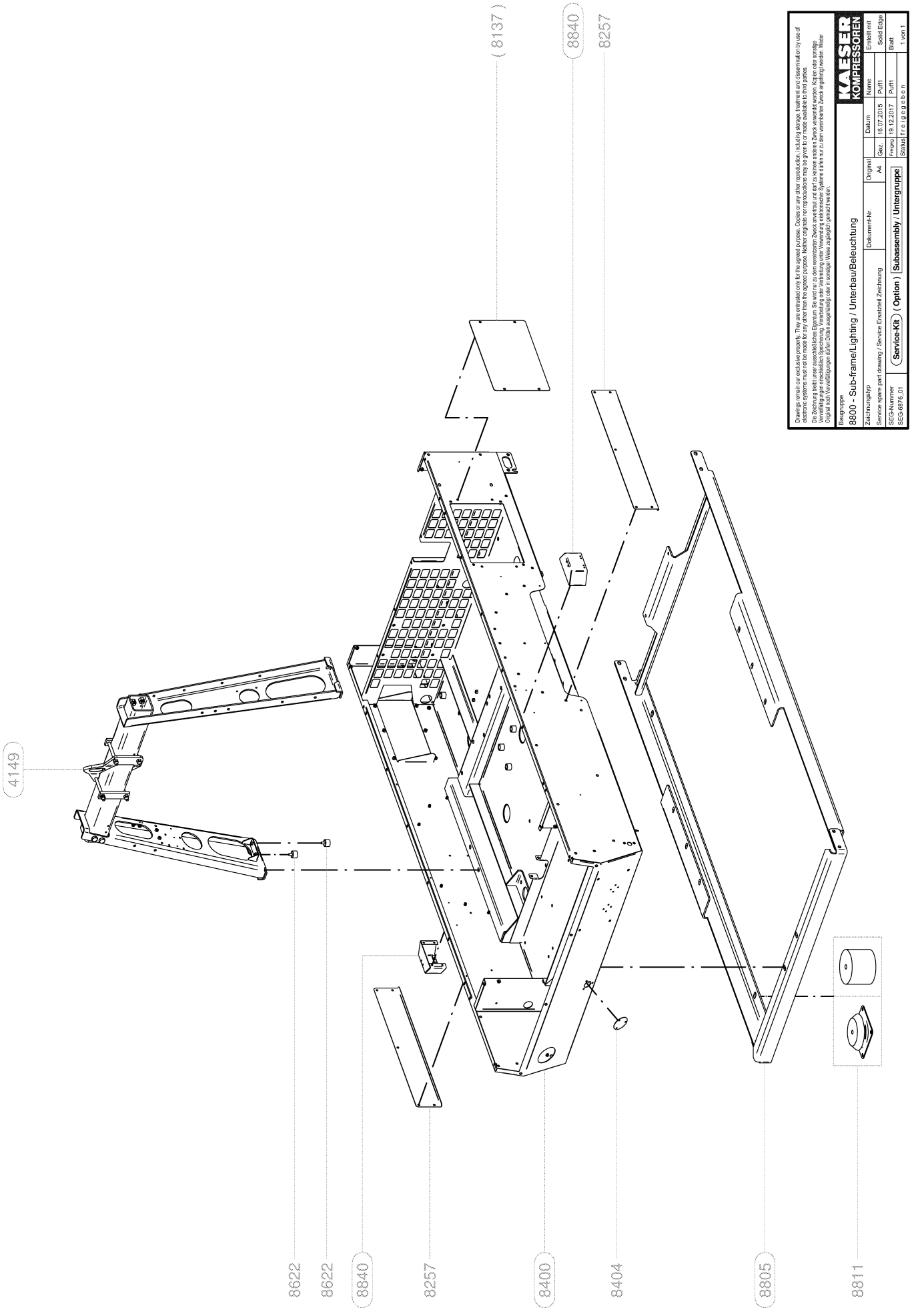
Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 15.07.2015	Puff	SolidEdge
SEG-Nummer			Freigg. 27.07.2015	Puff	Blatt
SEG-6871_01	Service-Kit (Option)	Subassembly / Untergruppe	Status freigegeben		1 von 1

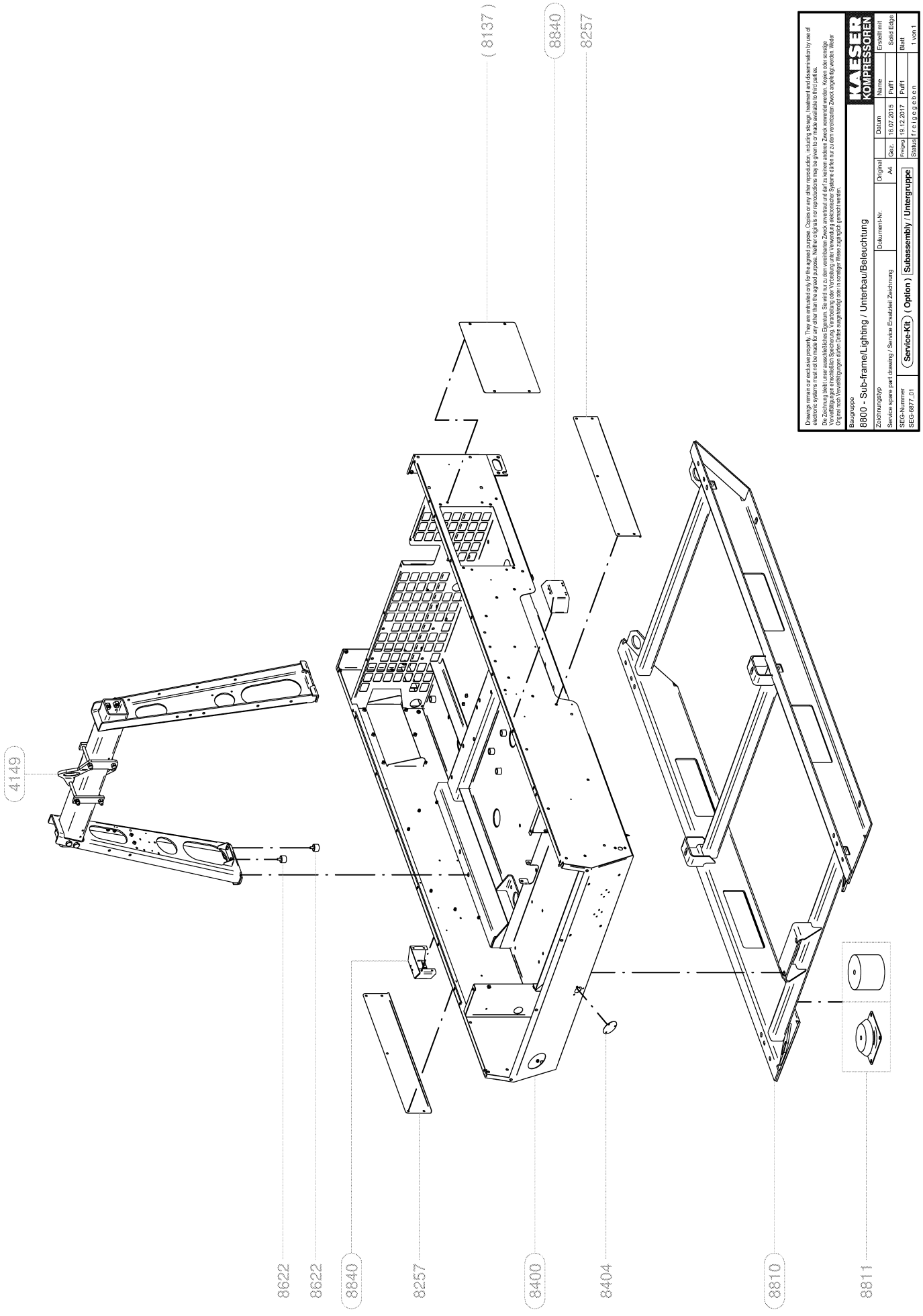

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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Gez. 17.07.2015 Puffl
Erstellt mit
Solid Edge
SEG-Nummer
SEG-0872_01
Service-Kit (Option) Subassembly / Untergruppe
Freigabe 24.10.2018 Puffl
Blatt
Status freigegeben
1 von 1

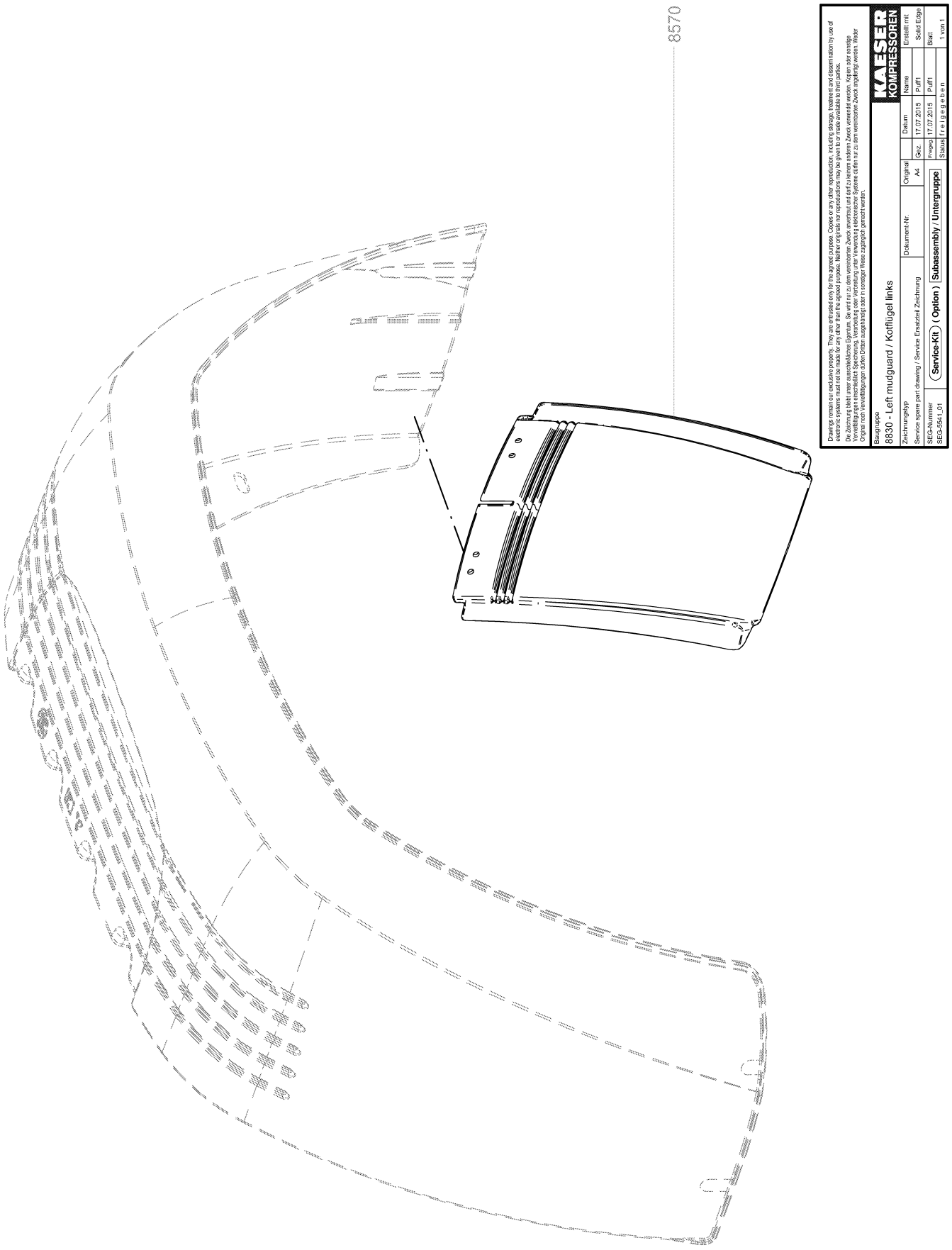

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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Sez. 17.07.2015 Pufft
Freigg. 24.10.2018 Pufft
Blatt
1 von 1
SEG-Nummer
SEG-6973_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben

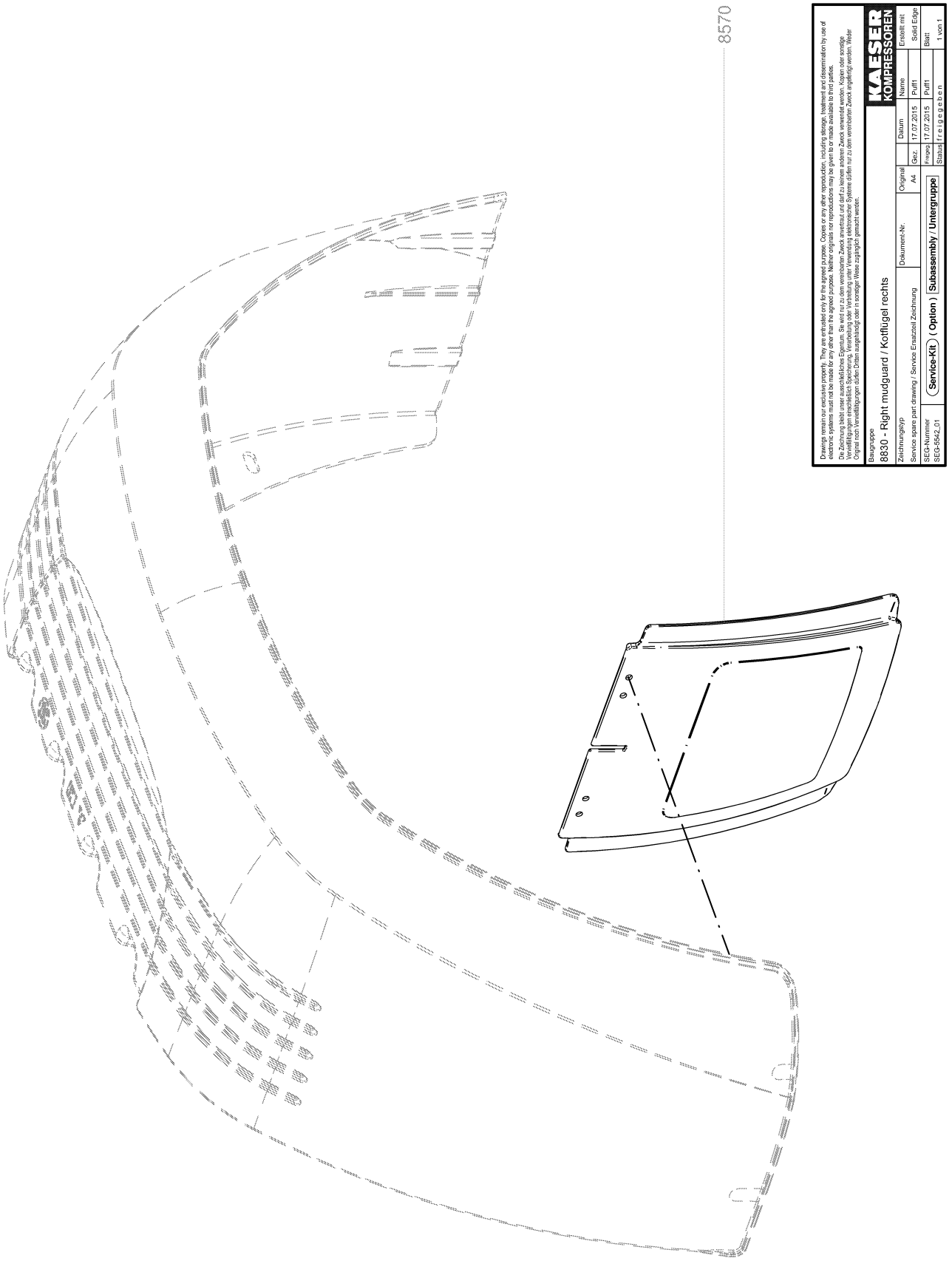

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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Gez. 17.07.2015 Puffl
Freigegeben 24.10.2018 Puffl
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-0874_01
Service-Kit (Option) Subassembly / Untergruppe

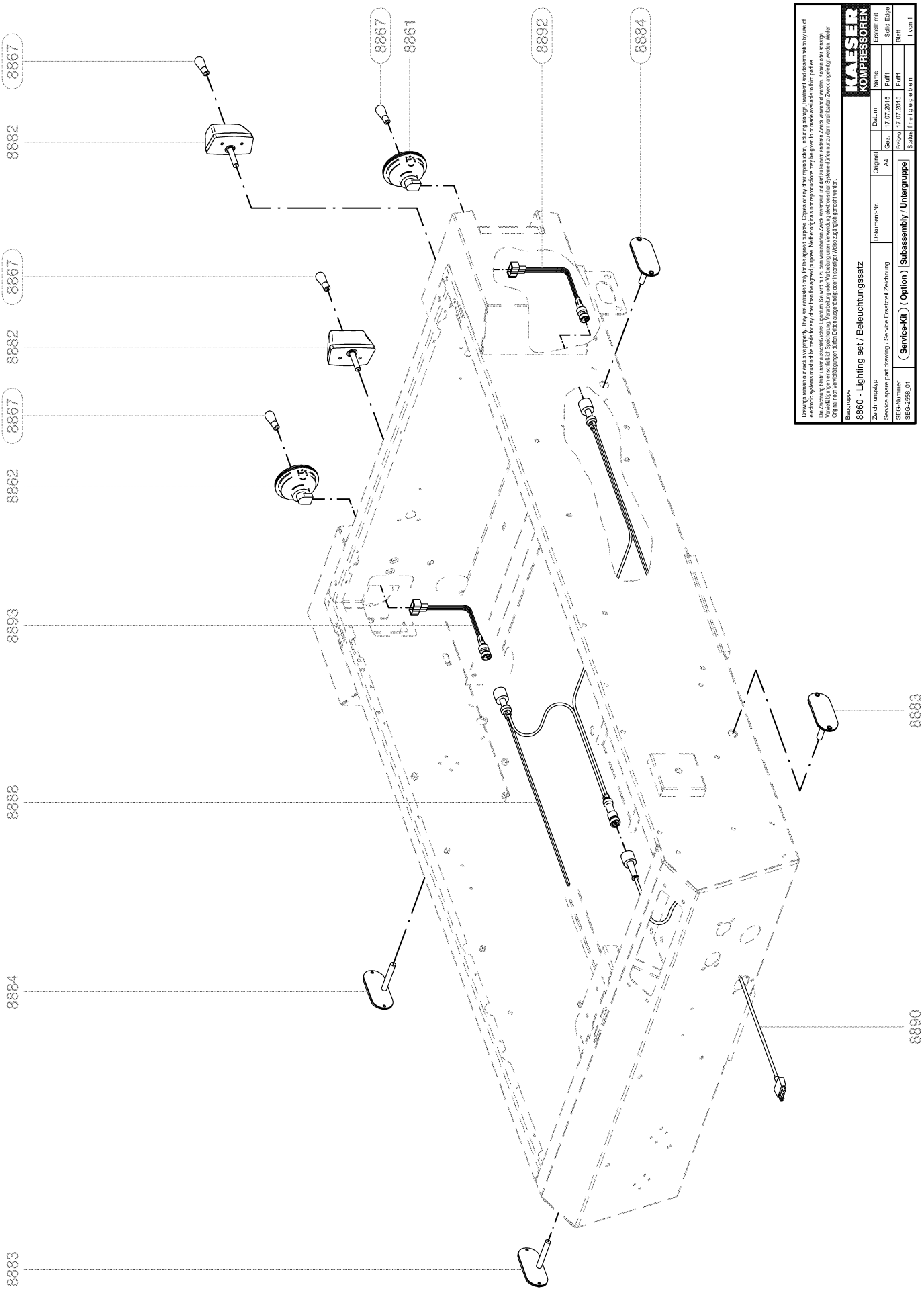

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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Name
Datum
Erstellt mit
Solid Edge
Gez.
17.07.2015
Pufft
Freigg.
24.10.2018
Pufft
Blatt
1 von 1
SEG-Nummer
SEG-6979_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben

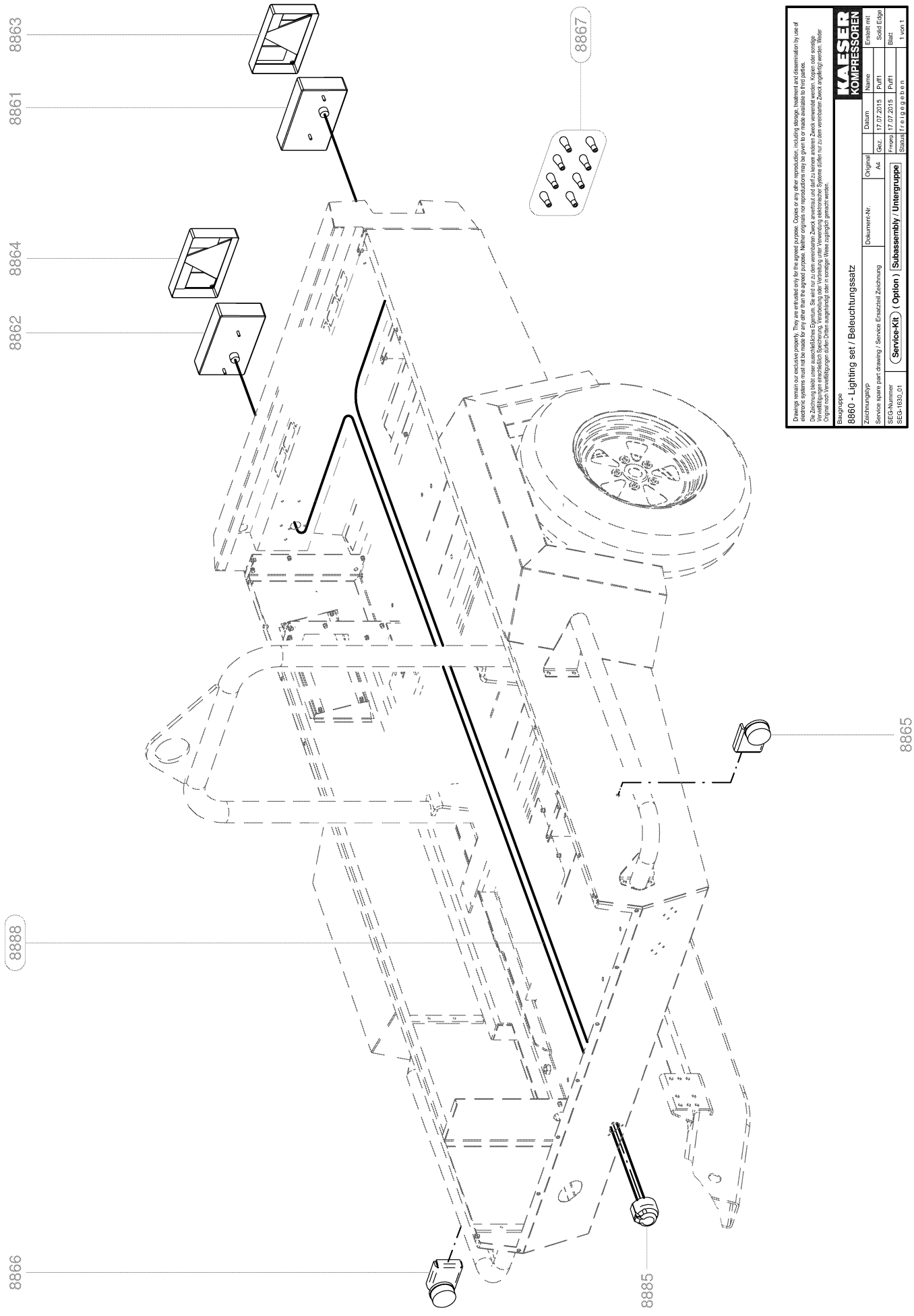

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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Gez. 16.07.2015 Puffi
Solid Edge
Freigb. 19.12.2017 Puffi
Blatt
Status freigegeben
1 von 1
SEG-Nummer
SEG-6876_01
Service-Kit (Option) Subassembly / Untergruppe


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KAESER KOMPRESSOREN
Baugruppe
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Skiz.
16.07.2015
Puff
Solid Edge
SEG-Nummer
SEG-6977_01
Service-Kit (Option) Subassembly / Untergruppe
Freigg.
19.12.2017
Puff
Blatt
Status
freigegeben
1 von 1


8570
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KAESER KOMPRESSOREN
Baugruppe
8830 - Left mudguard / Kotflügel links
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-5541_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Name
Datum
Gez. 17.07.2015 Puff1
Freigab 17.07.2015 Puff1
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1


8570
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KAESER KOMPRESSOREN
Baugruppe
8830 - Right mudguard / Kotflügel rechts
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Gez. 17.07.2015 Pufft
Freigg. 17.07.2015 Pufft
Blatt
1 von 1
SEG-Nummer
SEG-5942_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben


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KAESER KOMPRESSOREN
Baugruppe
8860 - Lighting set / Beleuchtungssatz
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-2556_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
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Gez. 17.07.2015 Puff1
Freigg. 17.07.2015 Puff1
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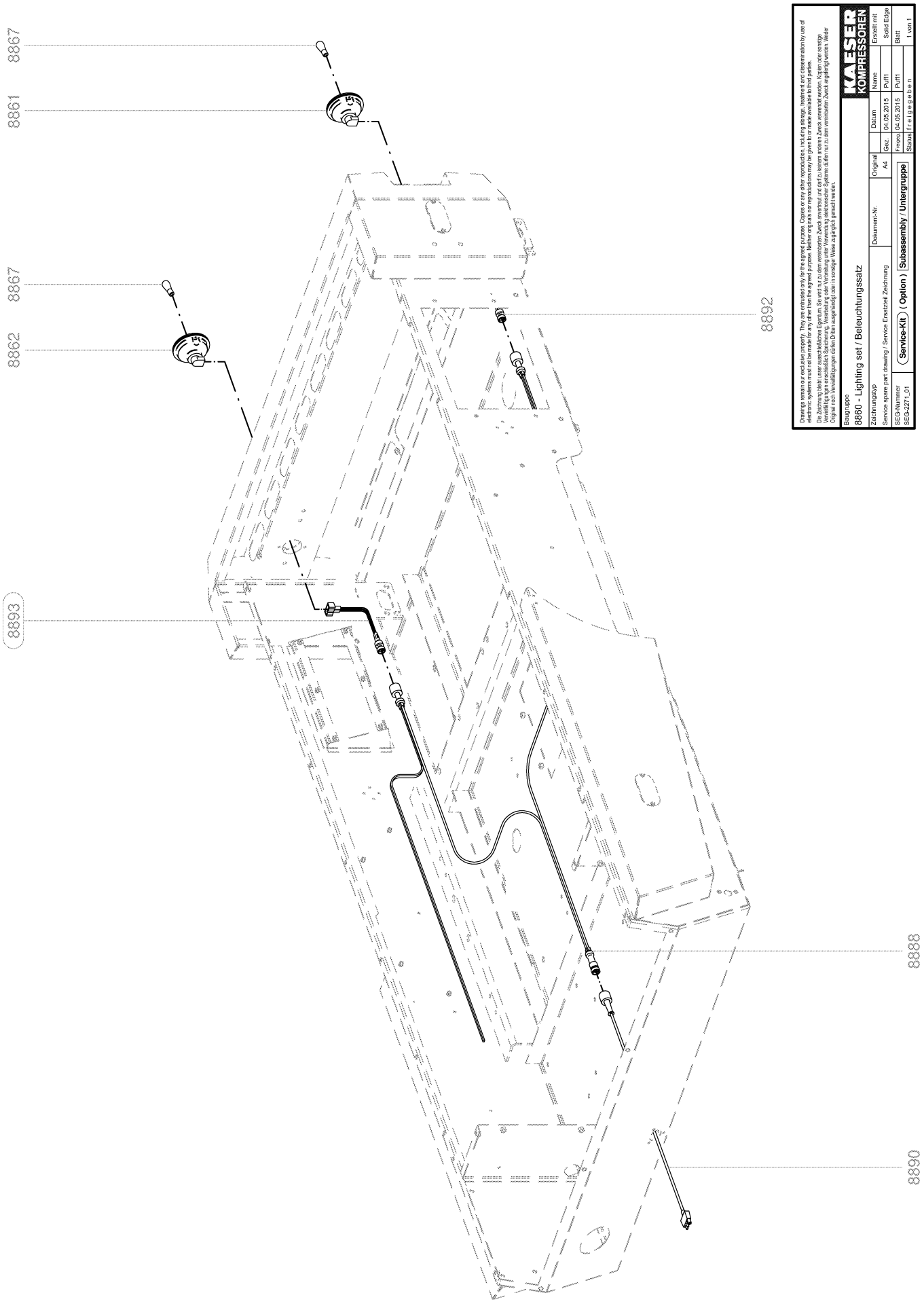


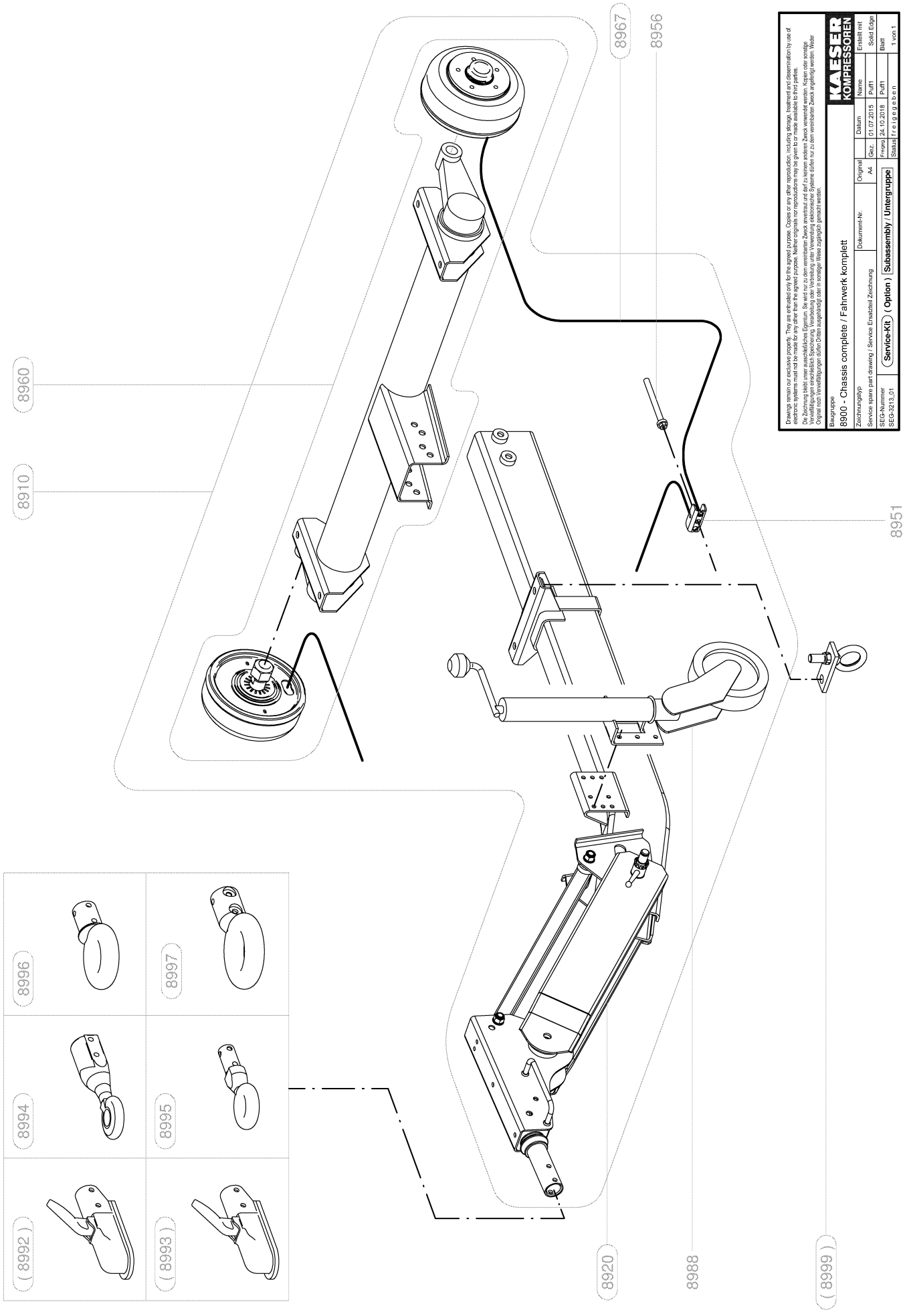
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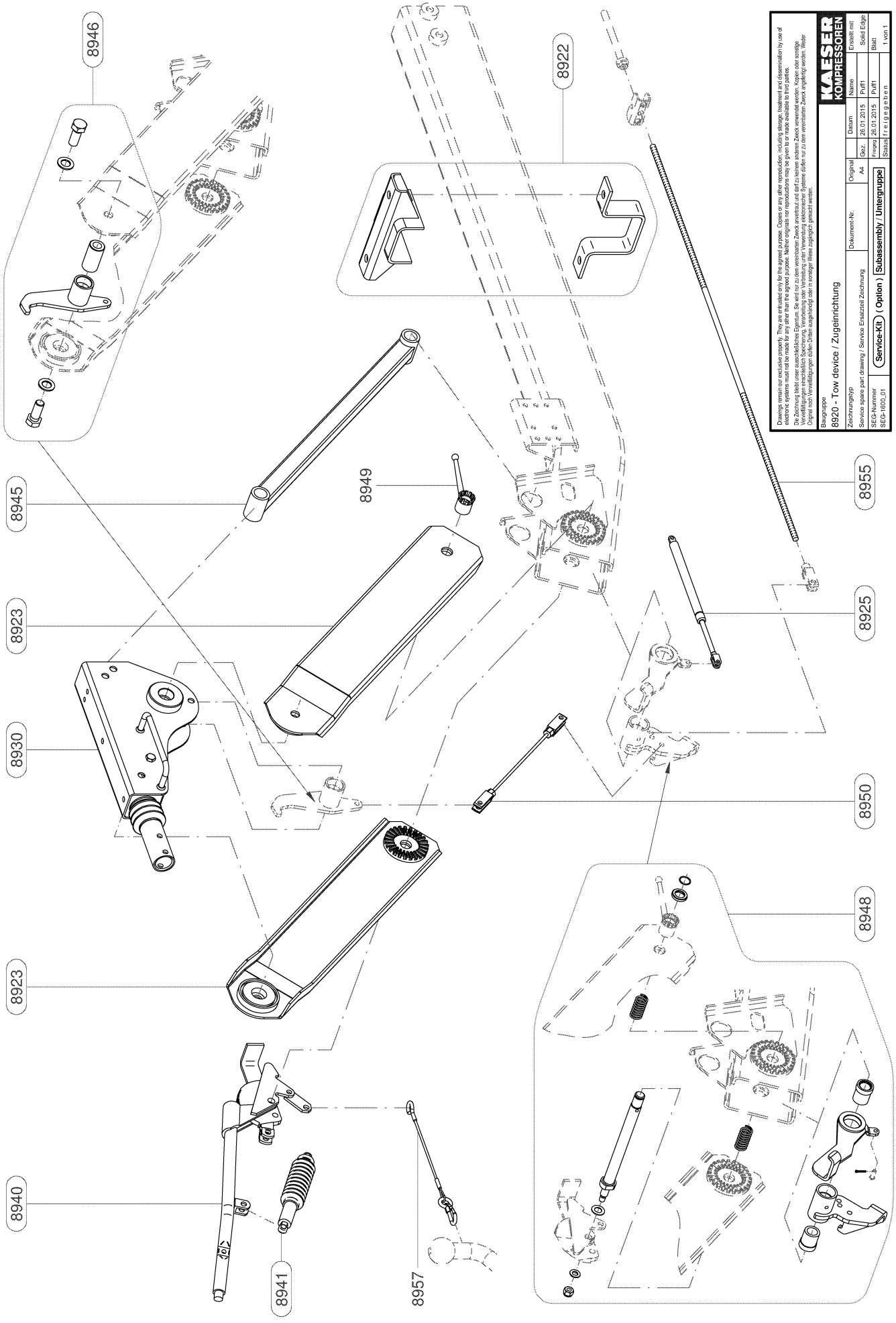
KAESER KOMPRESSOREN

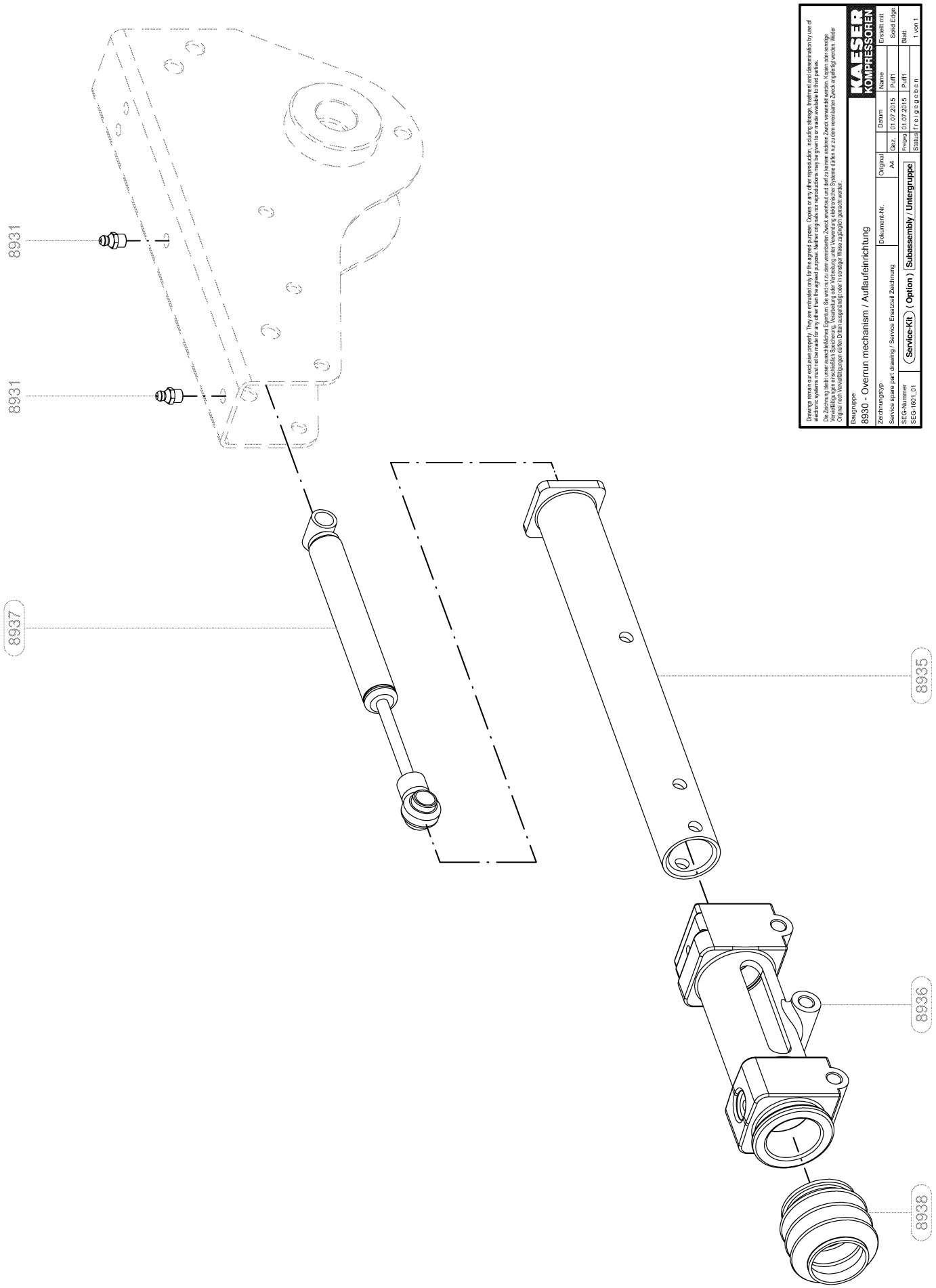
Baugruppe
8860 - Lighting set / Beleuchtungssatz

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	17.07.2015	Puff	SolidEdge
SEG-Nummer		Freigag	17.07.2015	Puff	Blatt
SEG-1630_01	Service-Kit (Option) Subassembly / Untergruppe	Status	f r e i g e g e b e n		1 von 1


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KAESER KOMPRESSOREN
Baugruppe
8860 - Lighting set / Beleuchtungssatz
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-2271_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 04.05.2015 Puff1
Freigegeben 04.05.2015 Puff1
Status freigegeben
Erstellt mit
SolidEdge
Blatt
1 von 1


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Baugruppe
8900 - Chassis complete / Fahrwerk komplett
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
01.07.2015
24.10.2018
Name
Pufft
Pufft
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-3213_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben


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KAESER KOMPRESSOREN
Baugruppe
8920 - Tow device / Zugeinrichtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-1600_01
Service-Kit (Option)
Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Gez. 26.01.2015
Freigg. 26.01.2015
Status freigegeben
Name
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Erstellt mit
Solid Edge
Blatt
1 von 1

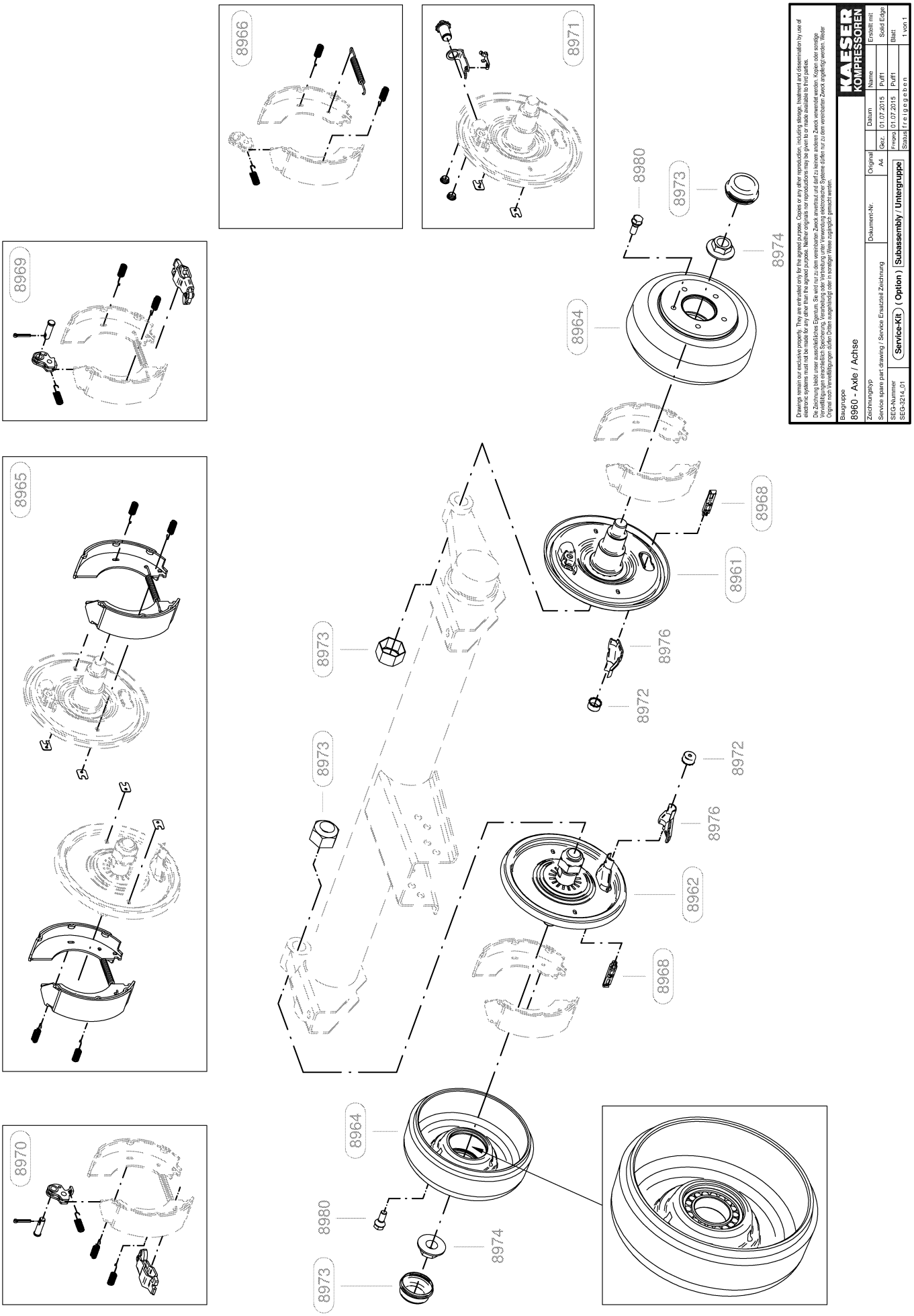


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KAESER KOMPRESSOREN

Baugruppe
8930 - Overrun mechanism / Auflaufeinrichtung

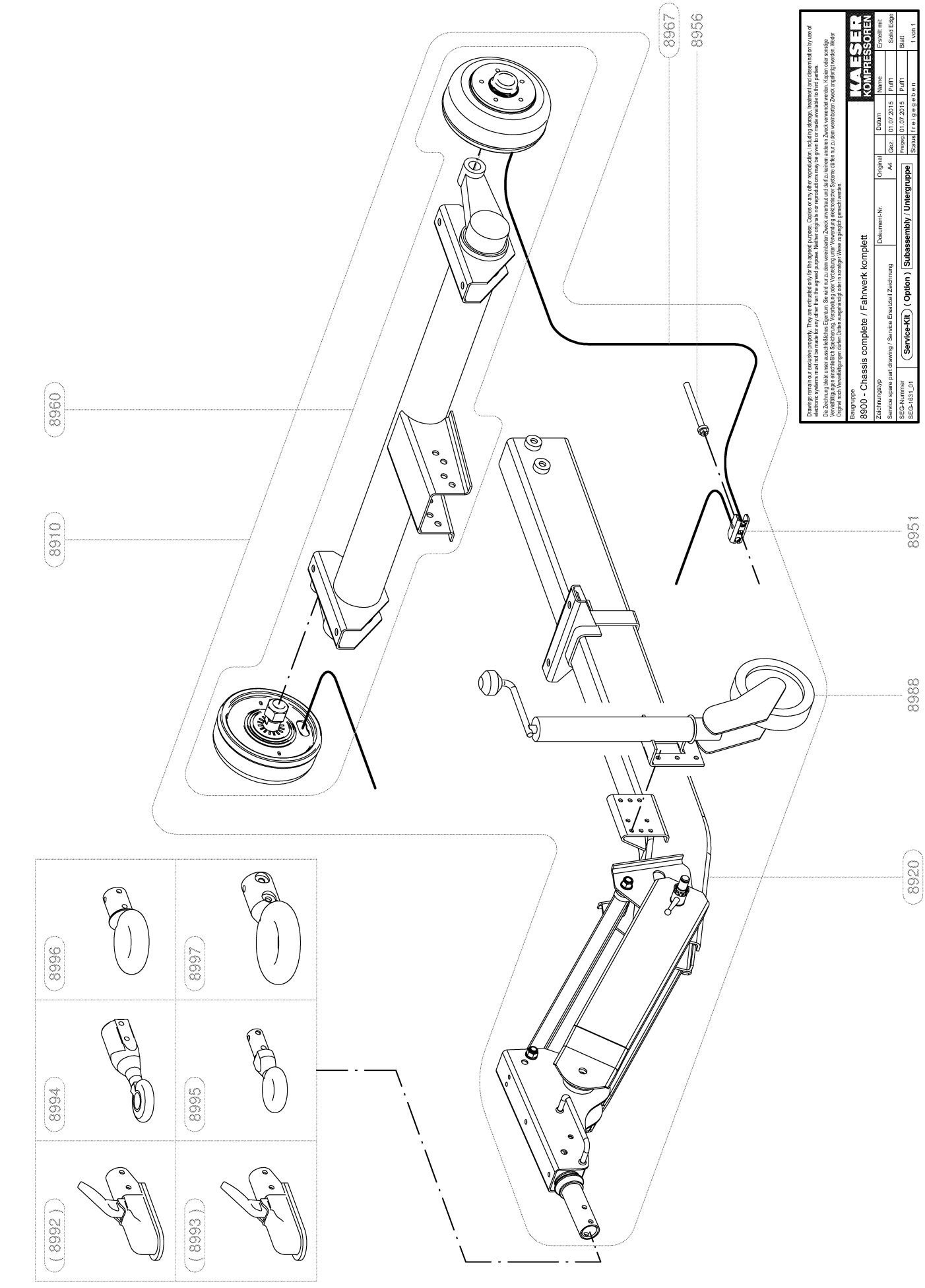
Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 01.07.2015	Puff	SolidEdge
SEG-Nummer			Freigag. 01.07.2015	Puff	Blatt
SEG-1601_01	Service-Kit (Option) Subassembly / Untergruppe		Status freigegeben		1 von 1

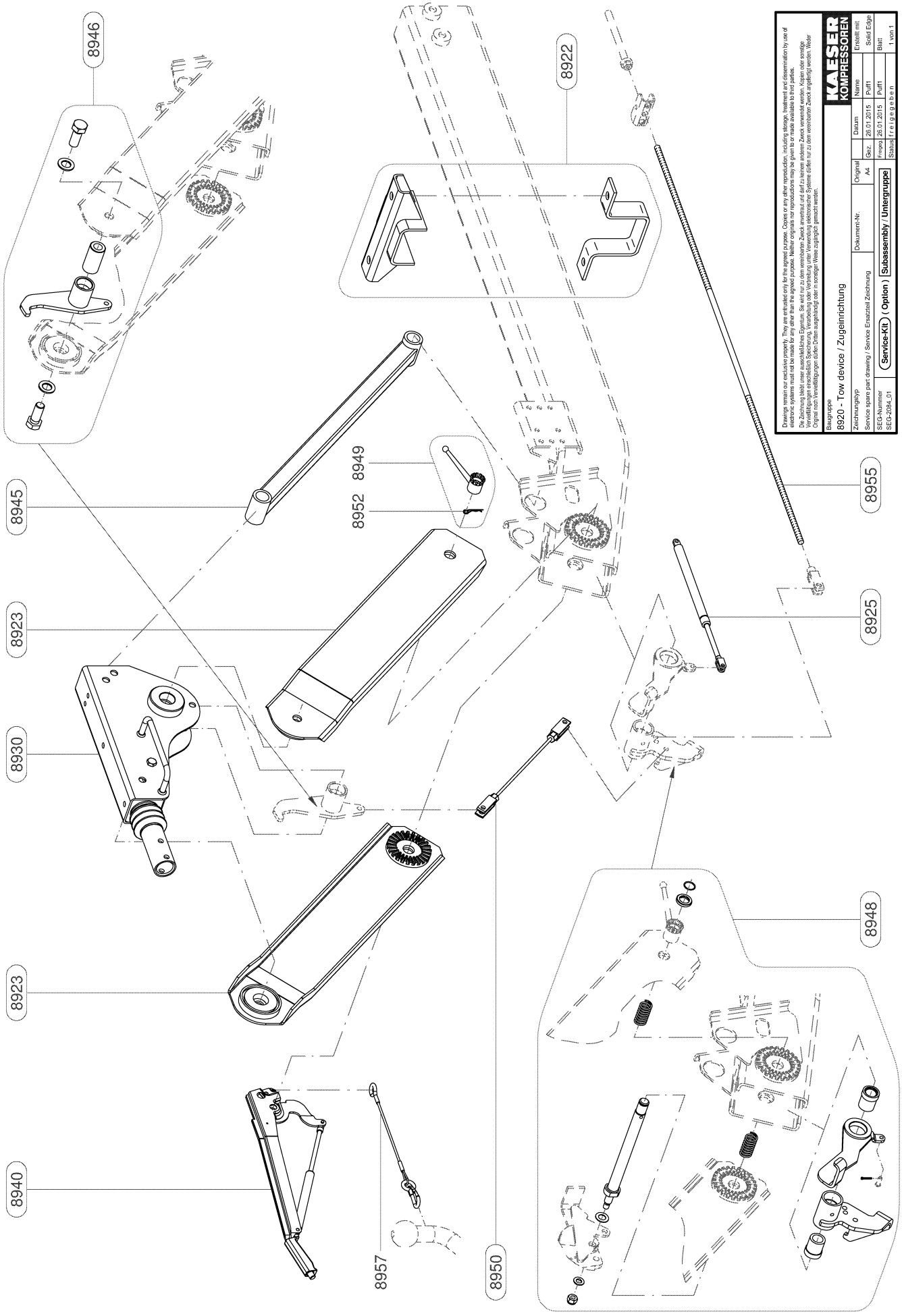


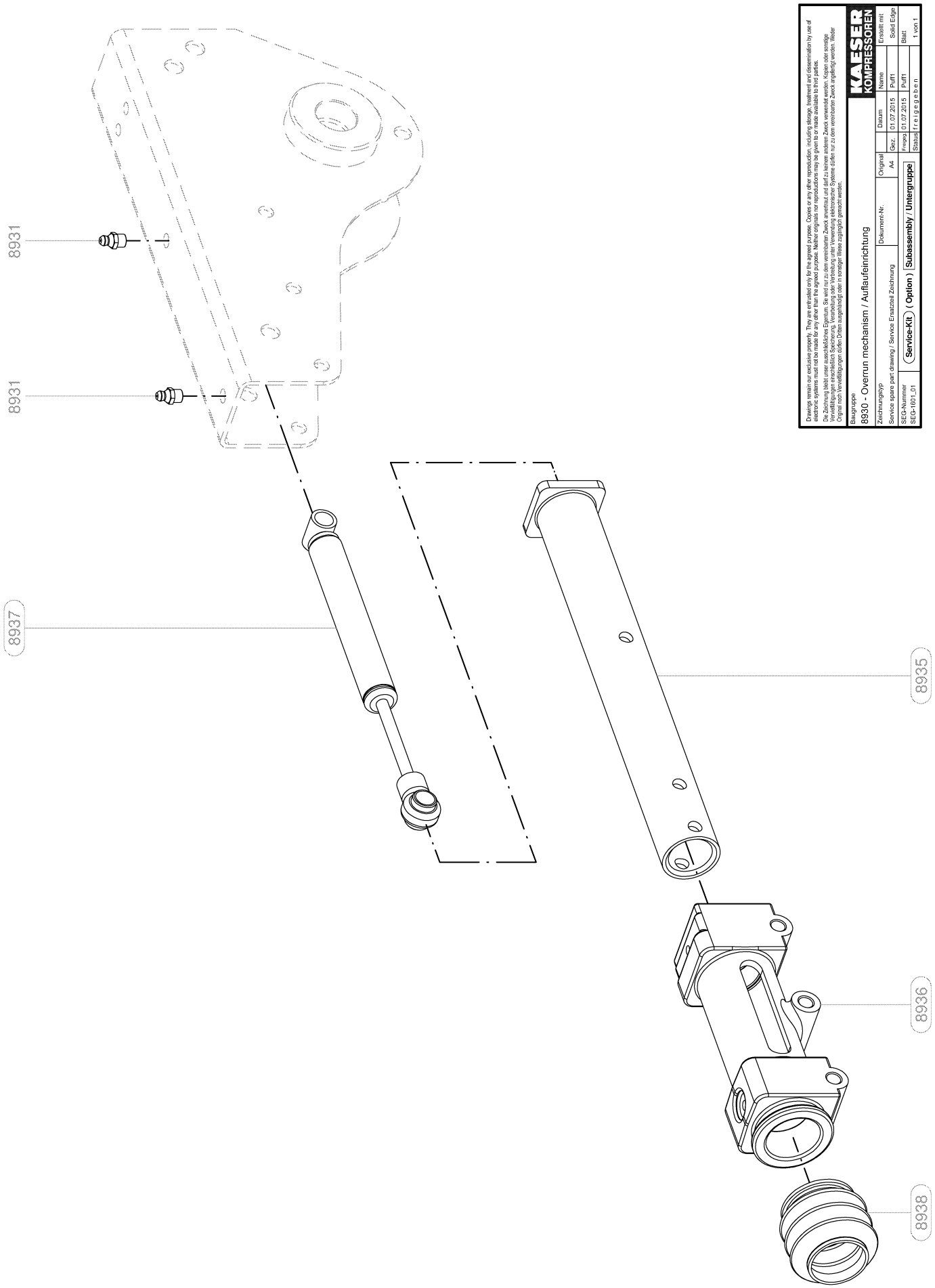
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KAESER KOMPRESSOREN

Baugruppe					
8960 - Axle / Achse					
Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 01.07.2015	Puff1	Solid Edge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigab 01.07.2015	Puff1	Blatt
SEG-3214_01			Status freigegeben		1 von 1


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KAESER KOMPRESSOREN
Baugruppe
8900 - Chassis complete / Fahrwerk komplett
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Skiz. 01.07.2015 Puff1 SolidEdge
SEG-Nummer
SEG-1631_01
Service-Kit (Option) Subassembly / Untergruppe
Freigeg 01.07.2015 Puff1 Blatt
Status freigegeben 1 von 1


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KAESER KOMPRESSOREN
Baugruppe
8920 - Tow device / Zugeinrichtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-2084_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 26.01.2015 Puff
Freigg. 26.01.2015 Puff
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1

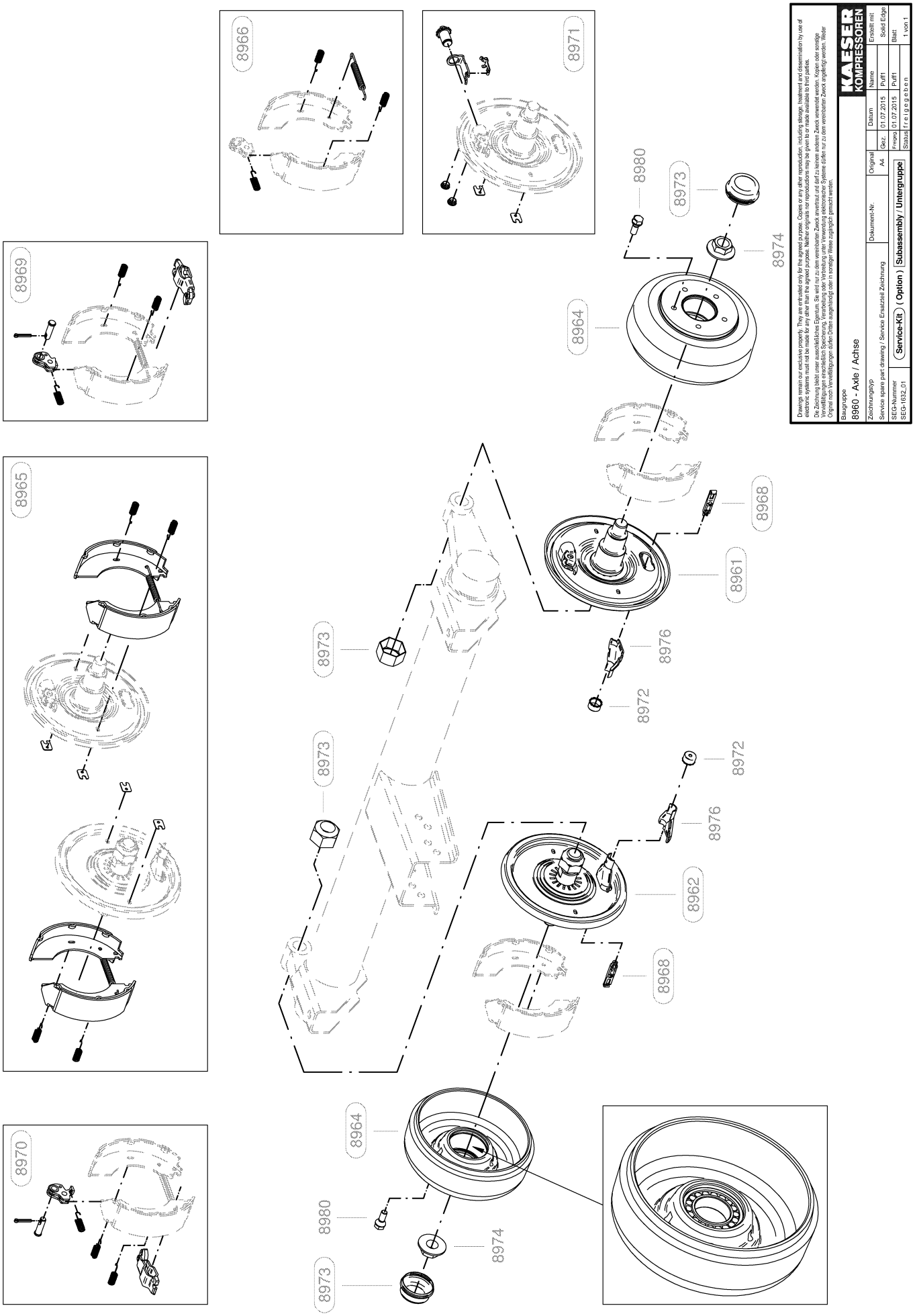


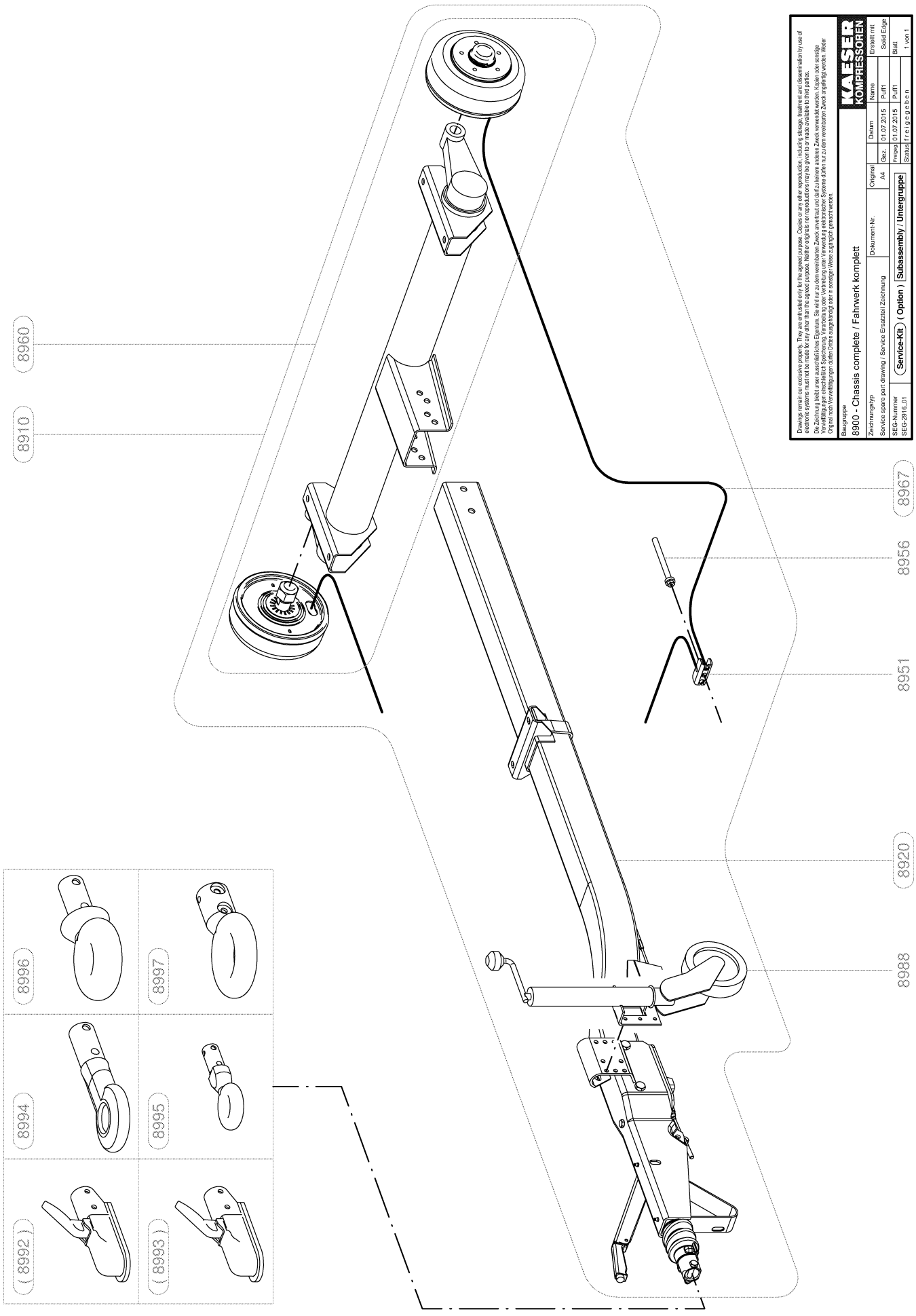
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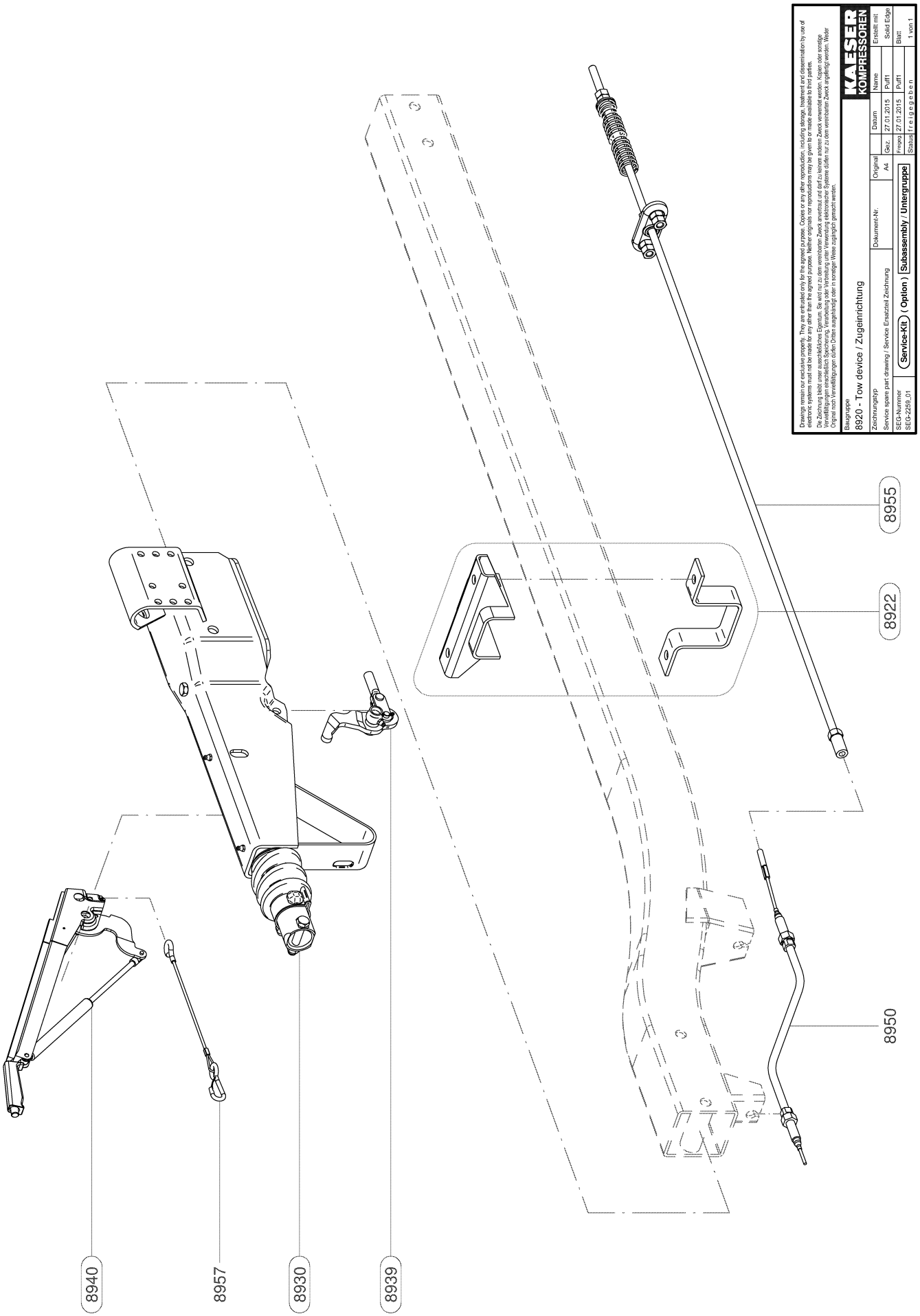
KAESER KOMPRESSOREN

Baugruppe
8930 - Overrun mechanism / Auflaufeinrichtung

Zeichnungstyp	Dokument-Nr.	Original		Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	01.07.2015 Puff	Solid Edge
SEG-Nummer			Freigeg.	01.07.2015 Puff	Blatt
SEG-1601_01	Service-Kit (Option) Subassembly / Untergruppe		Status	freigegeben	1 von 1


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KAESER KOMPRESSOREN
Baugruppe
8960 - Axle / Achse
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-1632_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 01.07.2015 Puffl
Freigabe 01.07.2015 Puffl
Status f r e i g e g e b e n
Ersetzt mit
Solid Edge
Blatt
1 von 1


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KAESER KOMPRESSOREN
Baugruppe
8900 - Chassis complete / Fahrwerk komplett
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Skiz.
01.07.2015
Puff
Solid Edge
SEG-Nummer
SEG-2916_01
Freigeg.
01.07.2015
Puff
Blatt
Status
freigegeben
1 von 1
Service-Kit (Option) Subassembly / Untergruppe

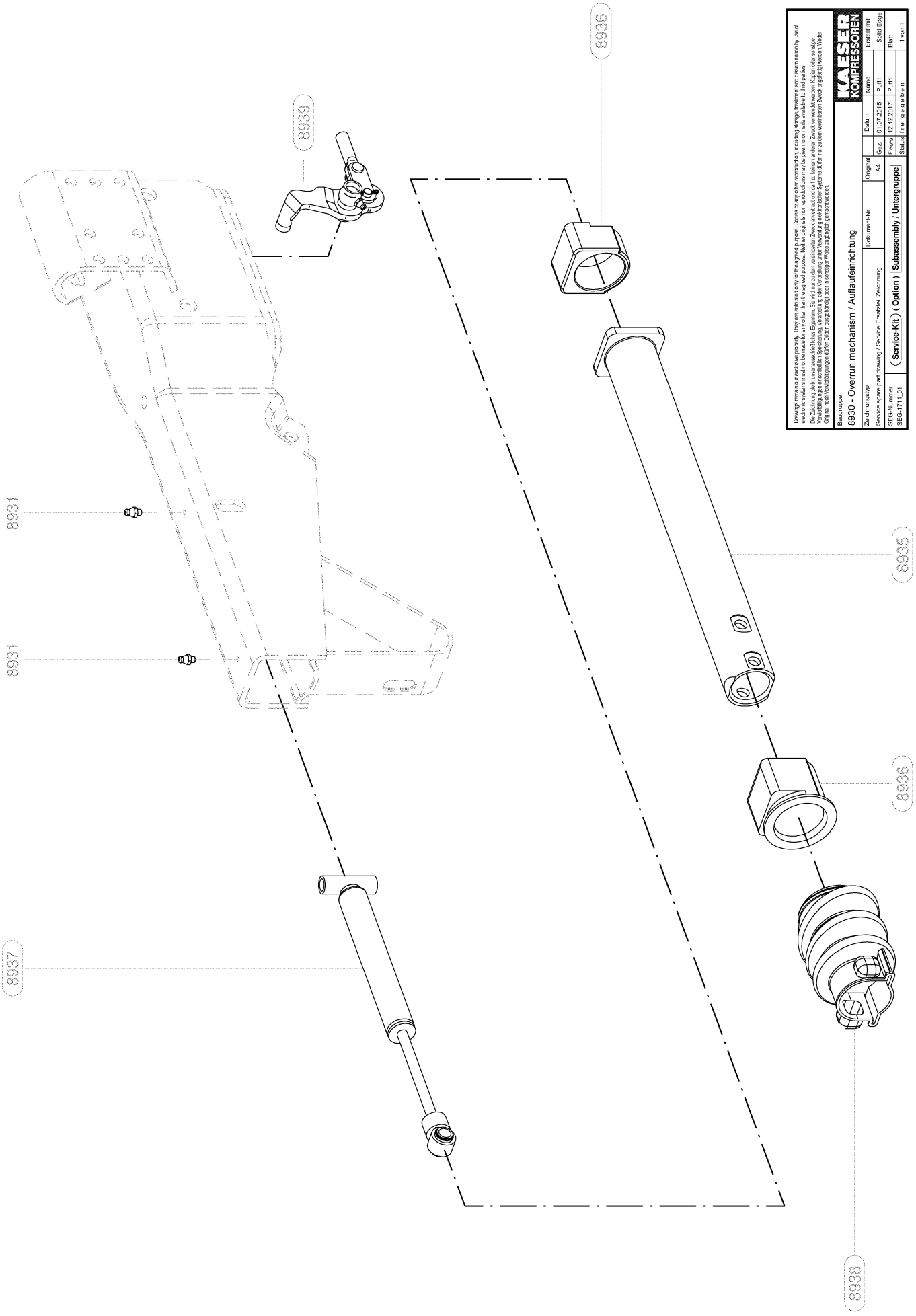


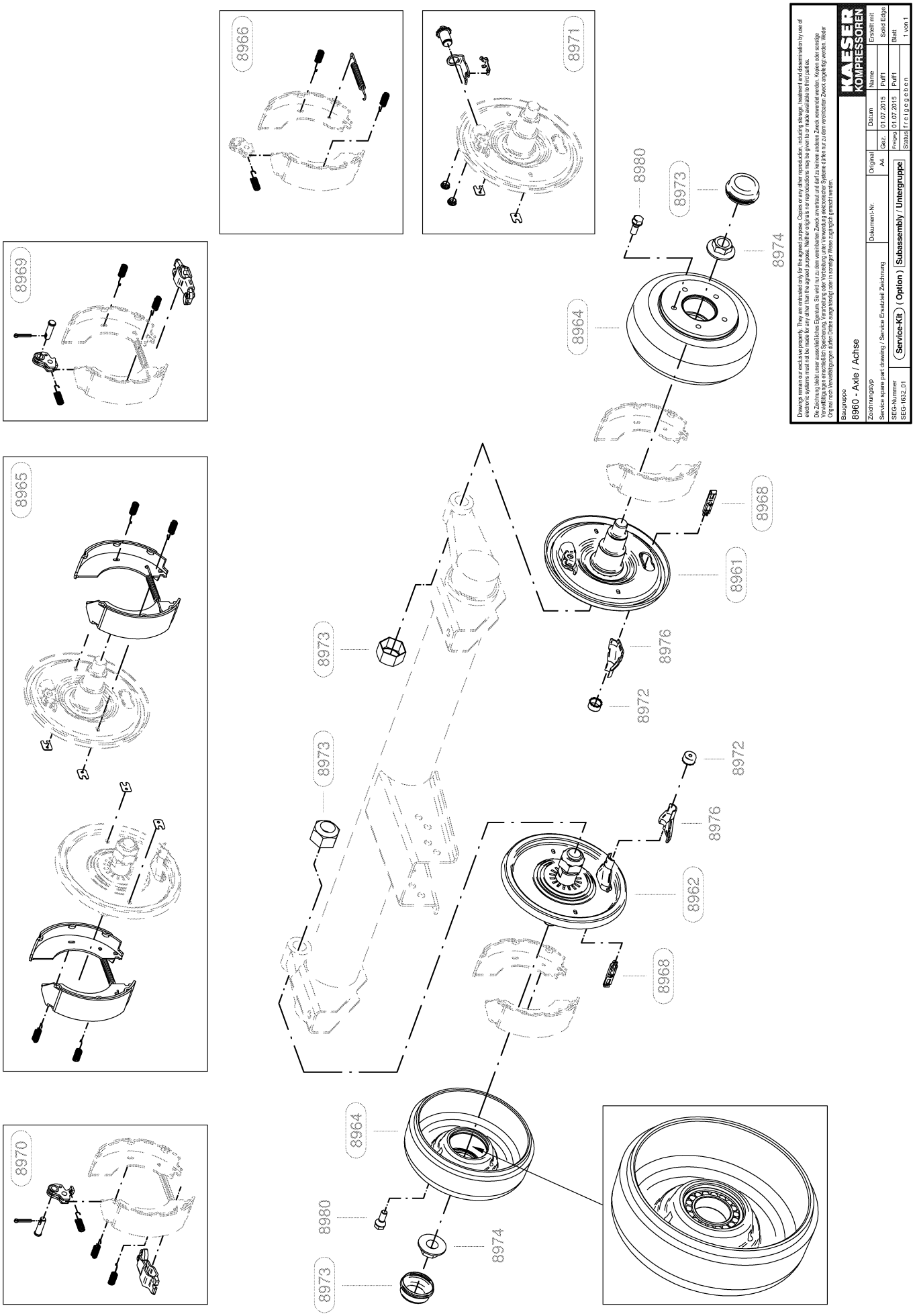
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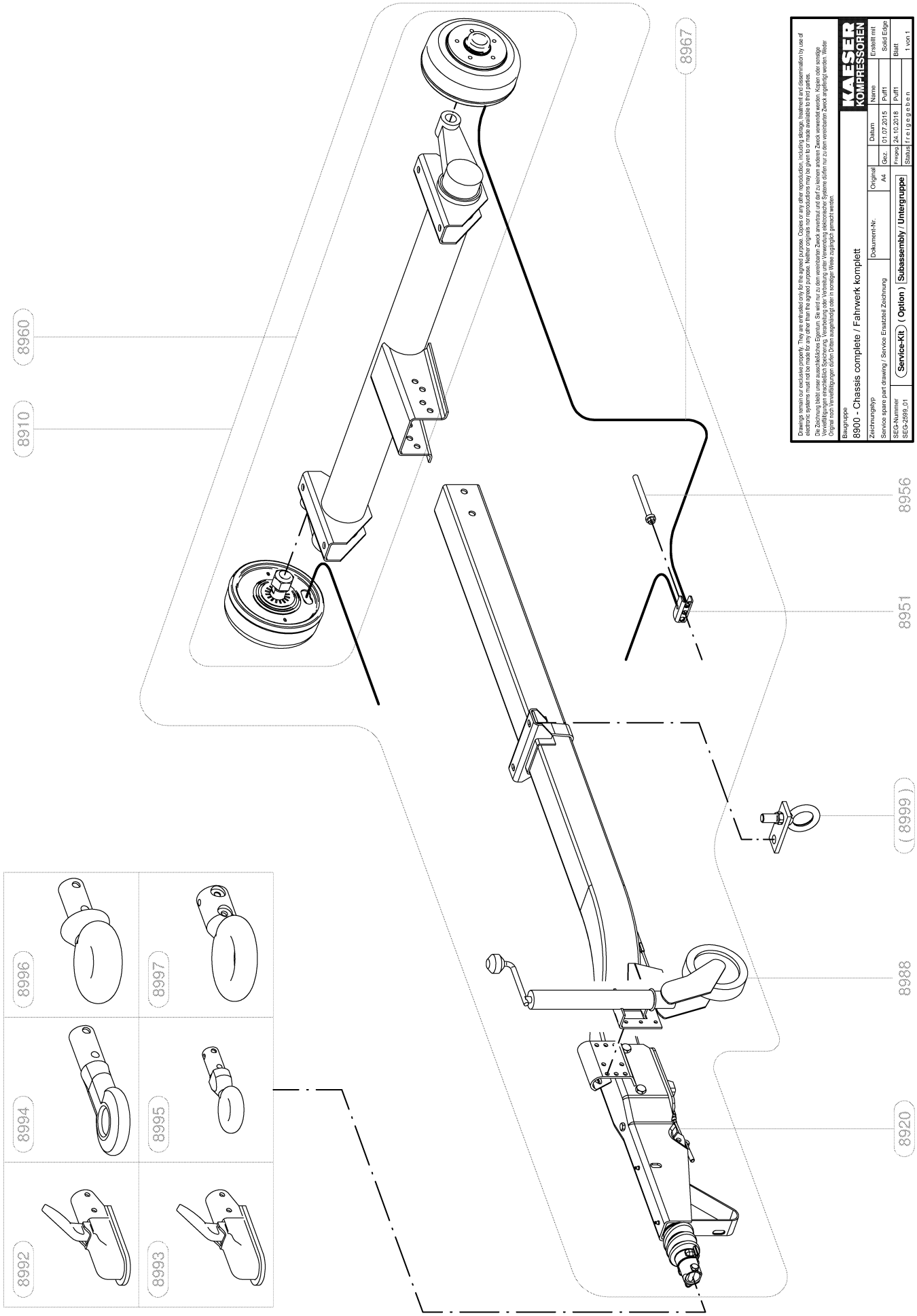
KAESER KOMPRESSOREN

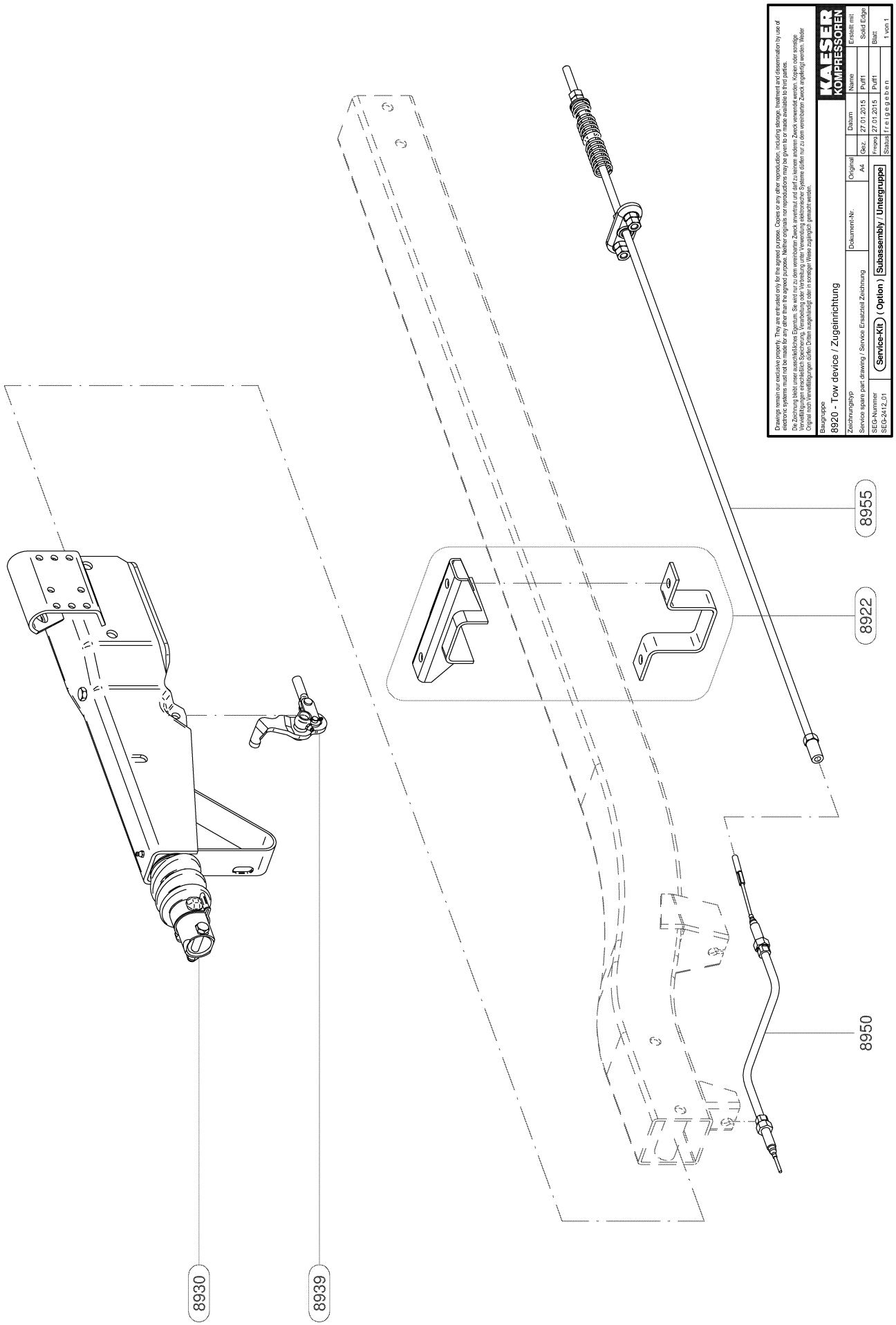
Baugruppe
8920 - Tow device / Zugeinrichtung

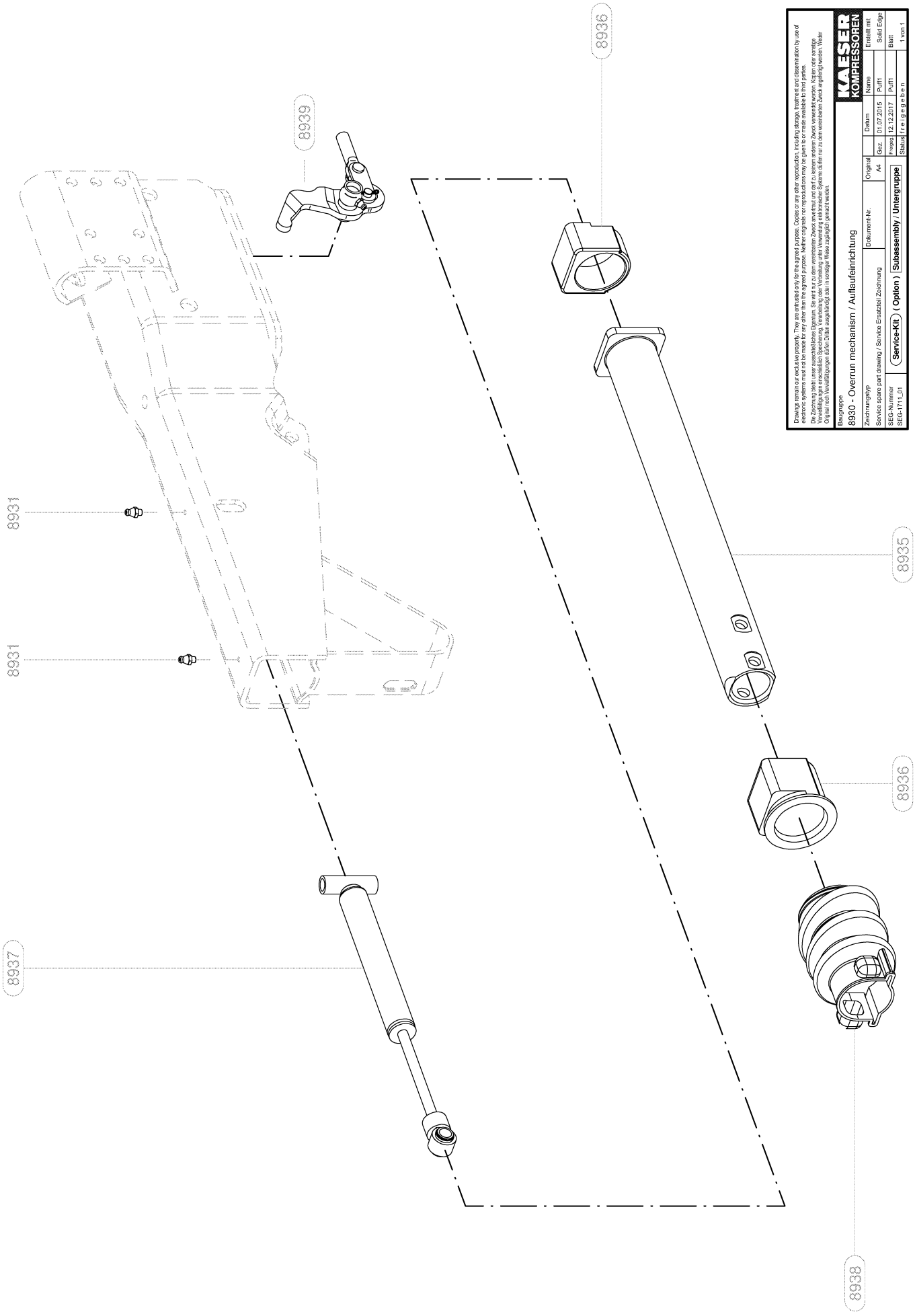
Zeichnungstyp	Dokument-Nr.	Original		Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez.	27.01.2015	Puff	Solid Edge
SEG-Nummer			Freigabe	27.01.2015	Puff	Blatt
SEG-2256_01	Service-Kit (Option)	Subassembly / Untergruppe	Status	freigegeben		1 von 1

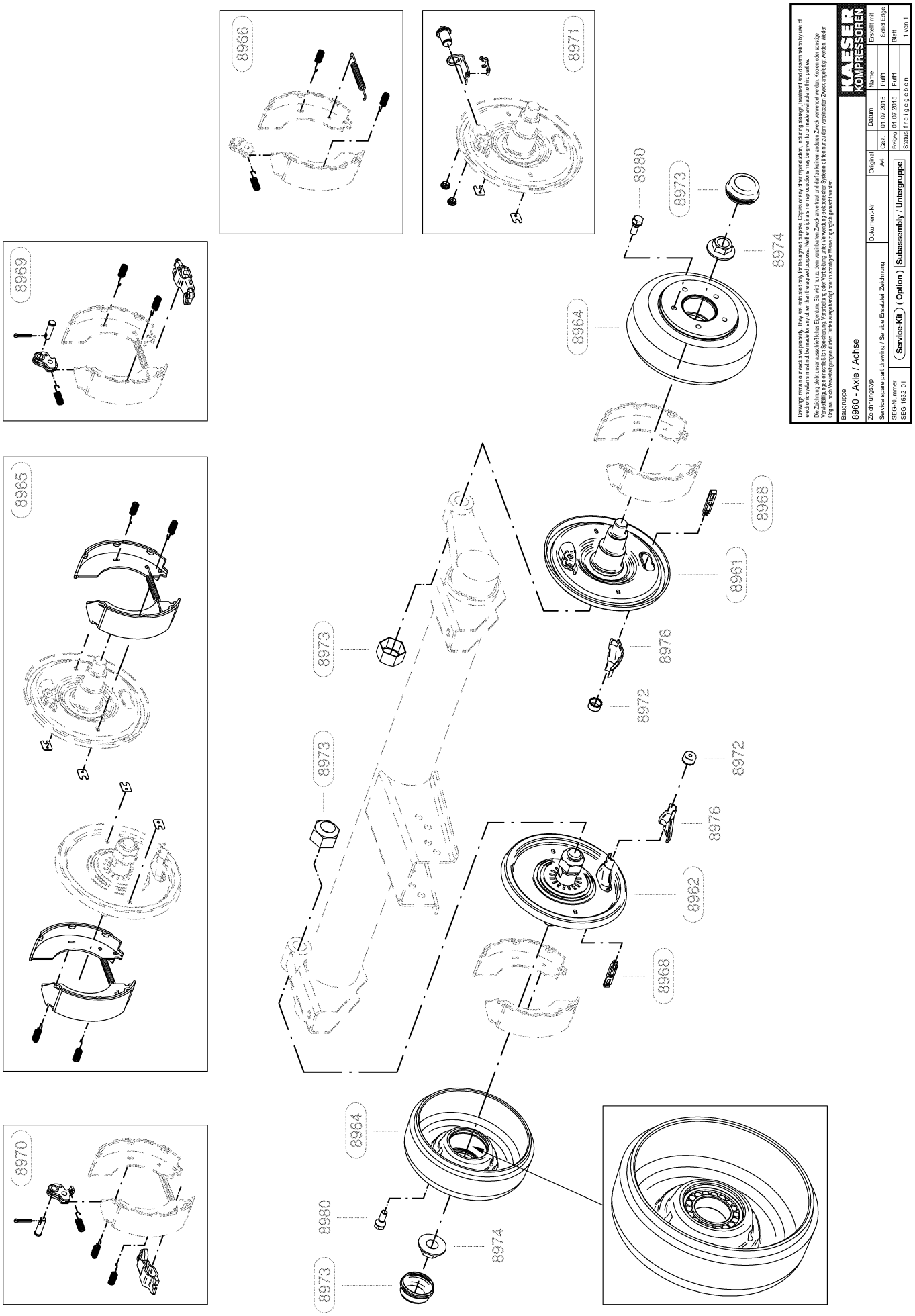

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KAESER KOMPRESSOREN
Baugruppe
8930 - Overrun mechanism / Auflaufeinrichtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Gez. 01.07.2015 Puff1
Freigeg. 12.12.2017 Puff1
Blatt
1 von 1
SEG-Nummer
SEG-I7I1_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben

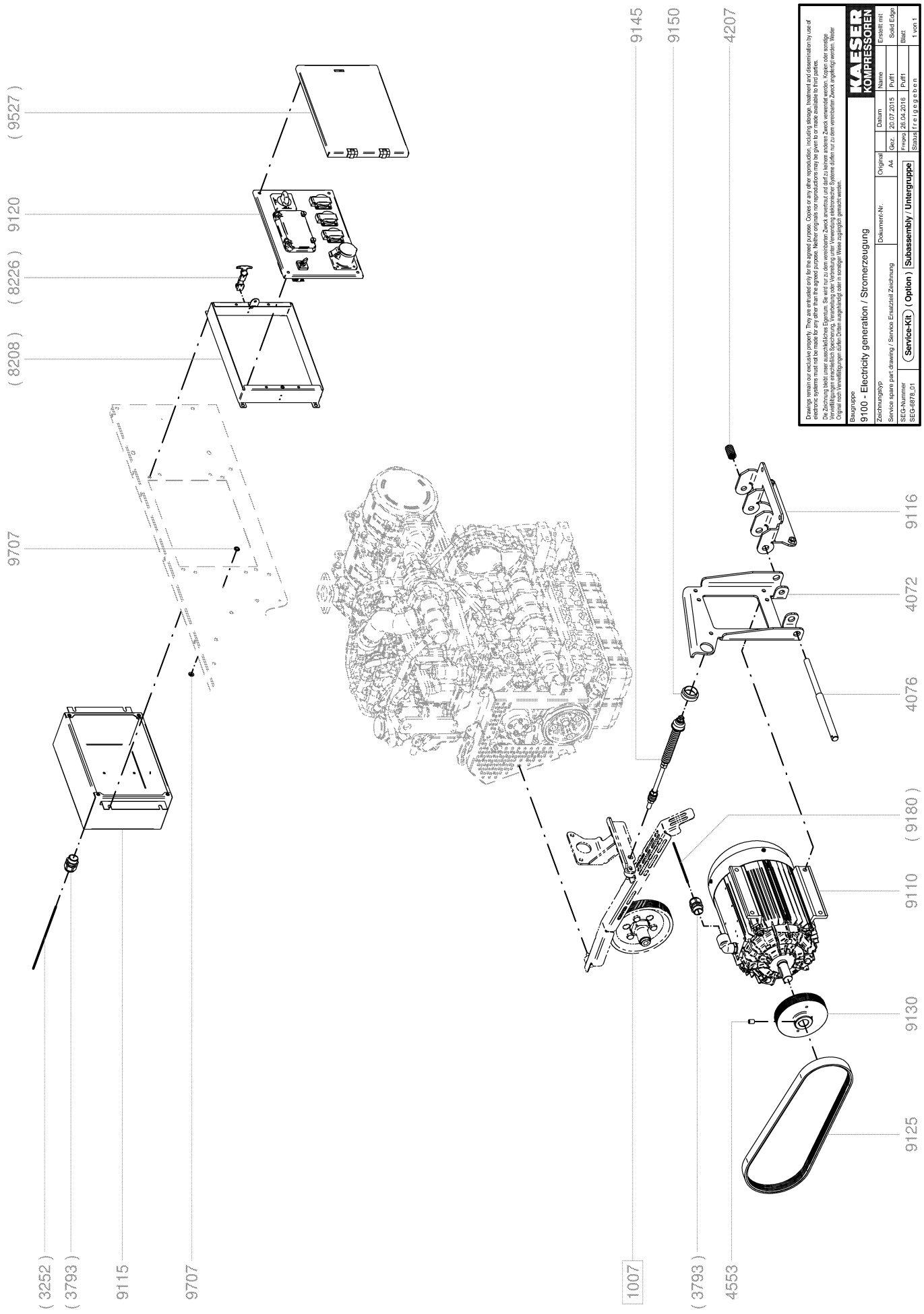

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KAESER KOMPRESSOREN
Baugruppe
8960 - Axle / Achse
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-1632_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Gez. 01.07.2015
Freigabe 01.07.2015
Status f r e i g e g e b e n
Name
Puffl
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Ersetzt mit
Solid Edge
Blatt
1 von 1

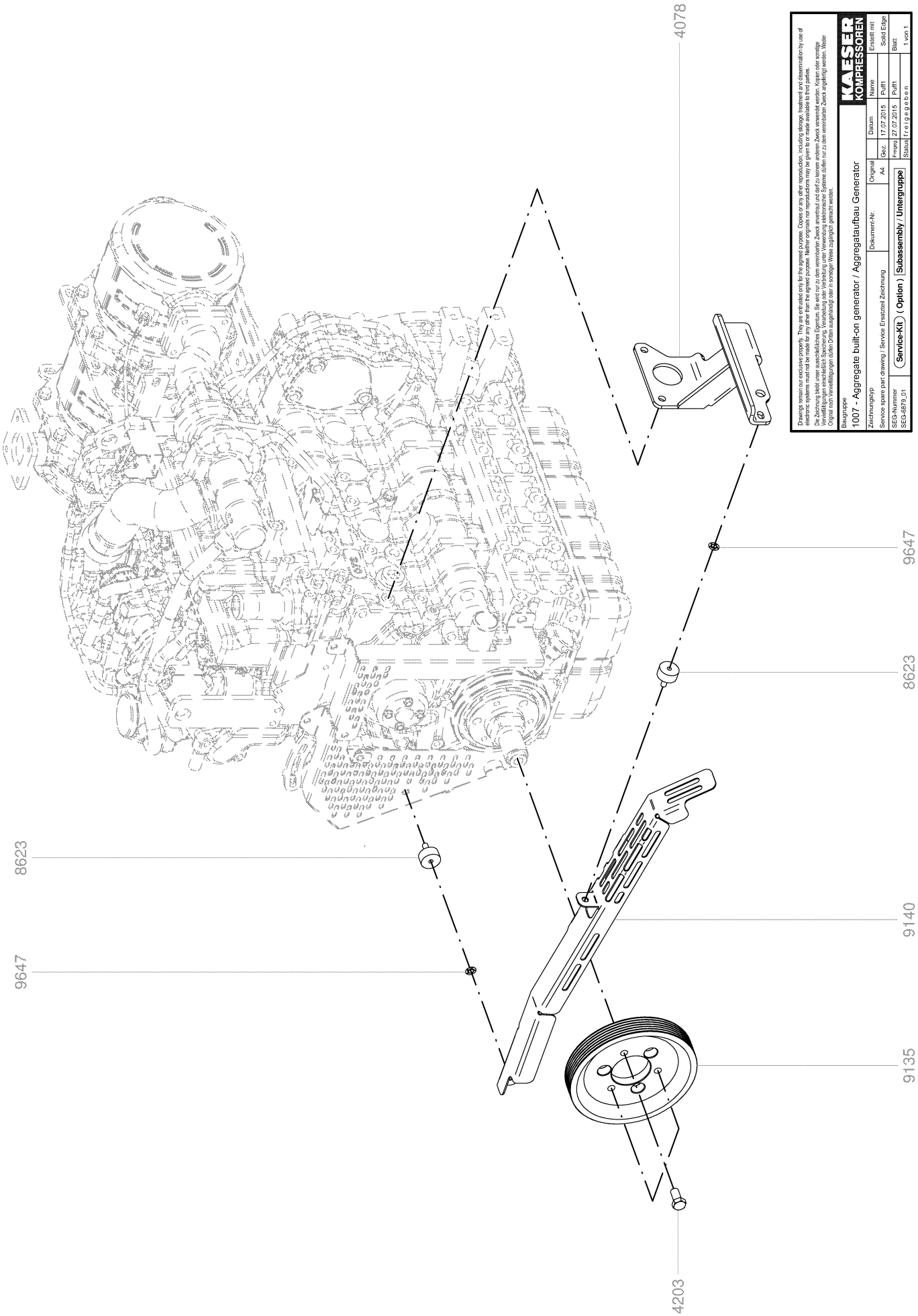

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KAESER KOMPRESSOREN
Baugruppe
8900 - Chassis complete / Fahrwerk komplett
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Sez. 01.07.2015 Puff
Freigag 24.10.2018 Puff
Blatt
1 von 1
SEG-Nummer
SEG-2999_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben

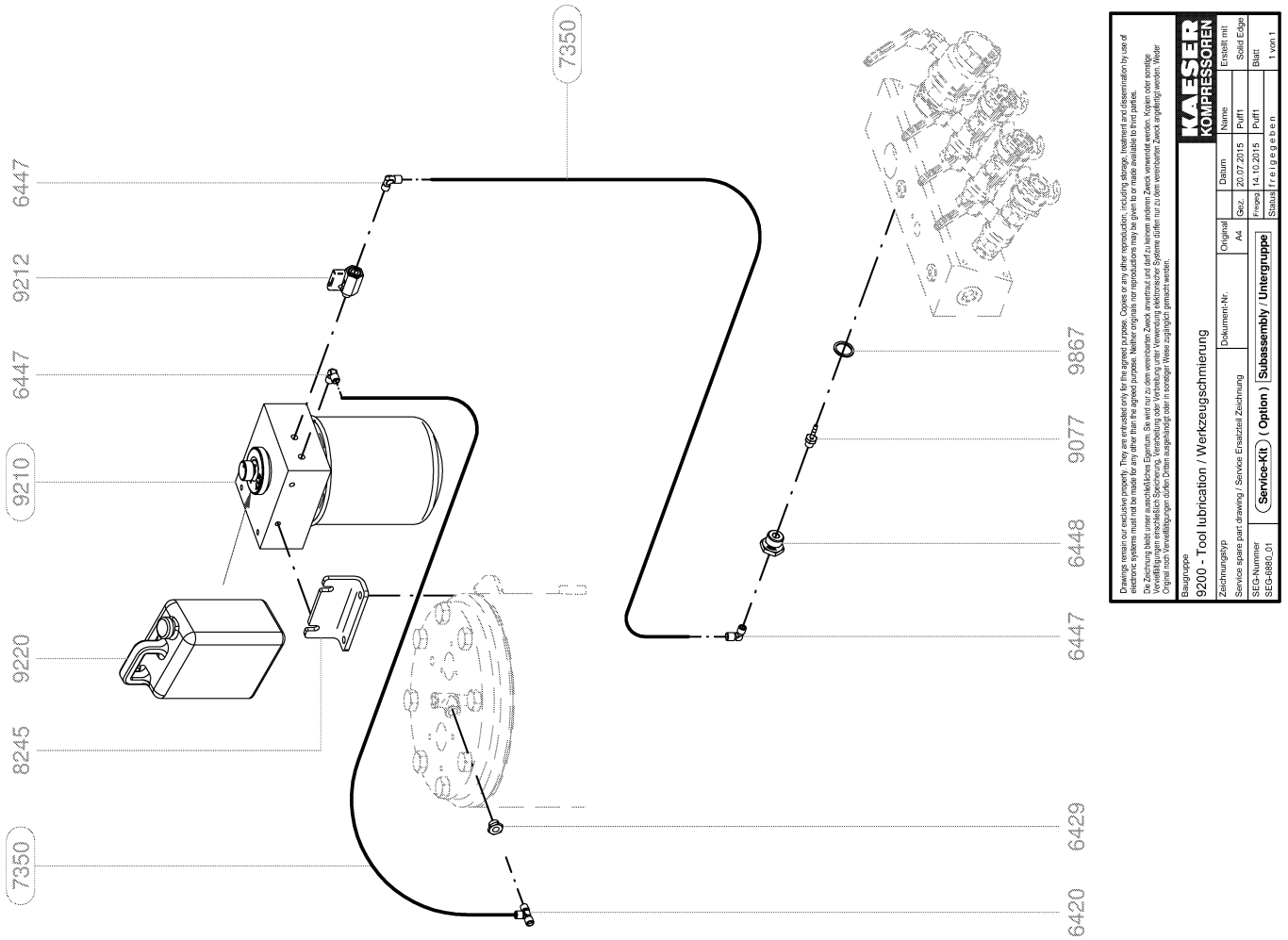

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KAESER KOMPRESSOREN
Baugruppe
8920 - Tow device / Zugeinrichtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-2412_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Gez. 27.01.2015 Puffl Solid Edge
Freigabe 27.01.2015 Puffl Blatt
Status freigegeben 1 von 1

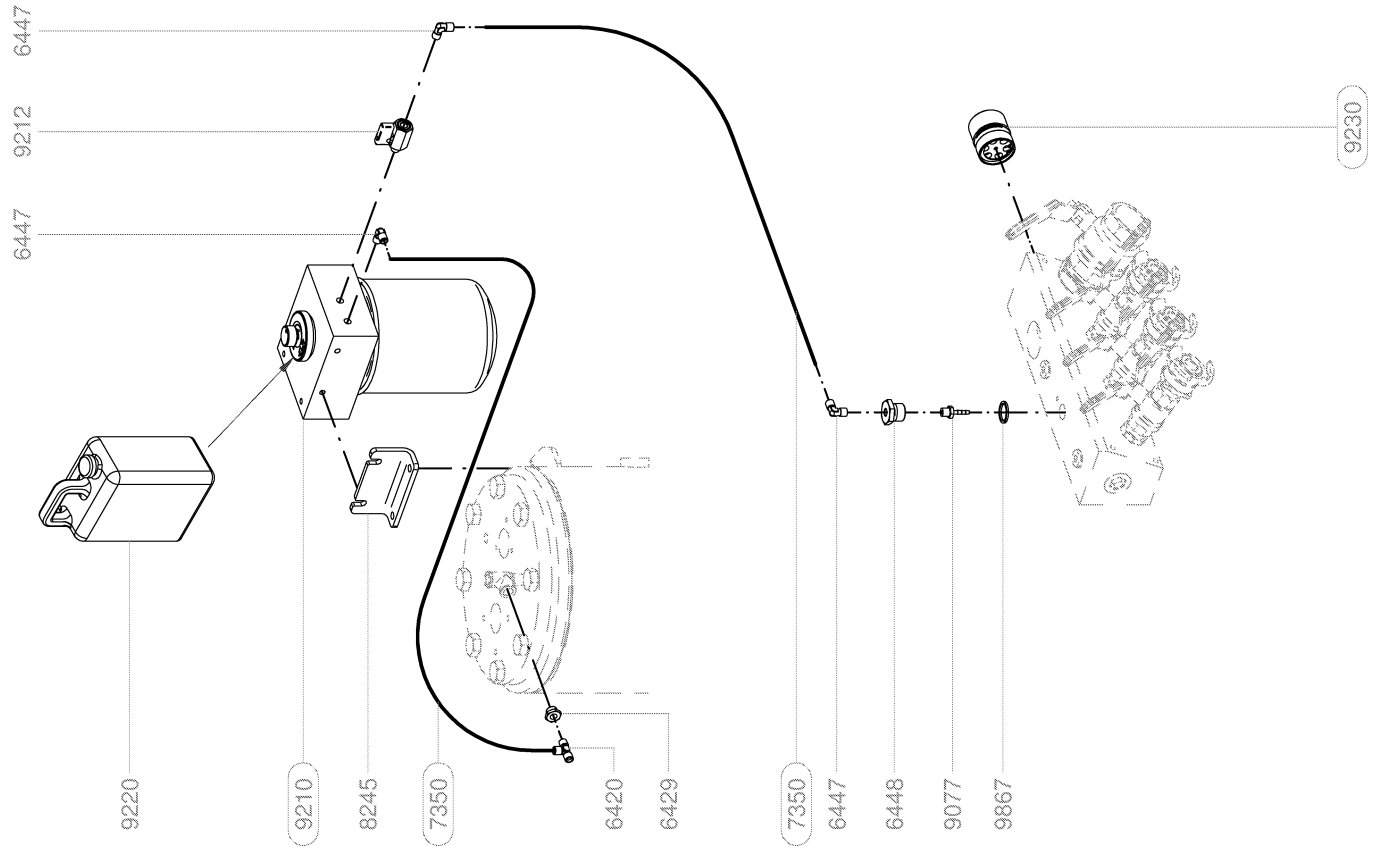

8936
8939
8931
8931
8935
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8937
8938
KAESER KOMPRESSOREN
Baugruppe
8930 - Overrun mechanism / Auflaufeinrichtung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
SEG-Nummer
SEG-I7I1_01
Service-Kit
(Option)
Subassembly / Untergruppe
Freigegeben
Blatt
1 von 1


8966
8971
8969
8980
8973
8974
8964
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8968
8961
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8980
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8973
8970
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KAESER KOMPRESSOREN
Baugruppe
8960 - Axle / Achse
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-1632_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 01.07.2015 Pufft
Freigegeben 01.07.2015 Pufft
Status freigegeben
Ersetzt mit
Solid Edge
Blatt
1 von 1


(9527)
9120
(8226)
(8208)
9707
(3252)
(3793)
9115
9707
9145
9150
4207
9116
4072
4076
(9180)
9110
9130
9125
1007
(3793)
4553
KAESER KOMPRESSOREN
Baugruppe
9100 - Electricity generation / Stromerzeugung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Name
Datum
Erstellt mit
Solid Edge
Ersatz
20.07.2015
Puff
Freigabe
26.04.2016
Puff
Blatt
1 von 1
Status
freigegeben
SEG-Nummer
SEG-8978_01
Service-Kit (Option) Subassembly / Untergruppe


4078
9647
8623
9140
9135
4203
8623
9647
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KAESER KOMPRESSOREN
Baugruppe
1007 - Aggregate built-on generator / Aggregataufbau Generator
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-6879_01
Service-Kit (Option) Subassembly / Untergruppe
Dokument-Nr.
Original
A4
Datum
Name
Gez. 17.07.2015 Pufft
Freigabe 27.07.2015 Pufft
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1

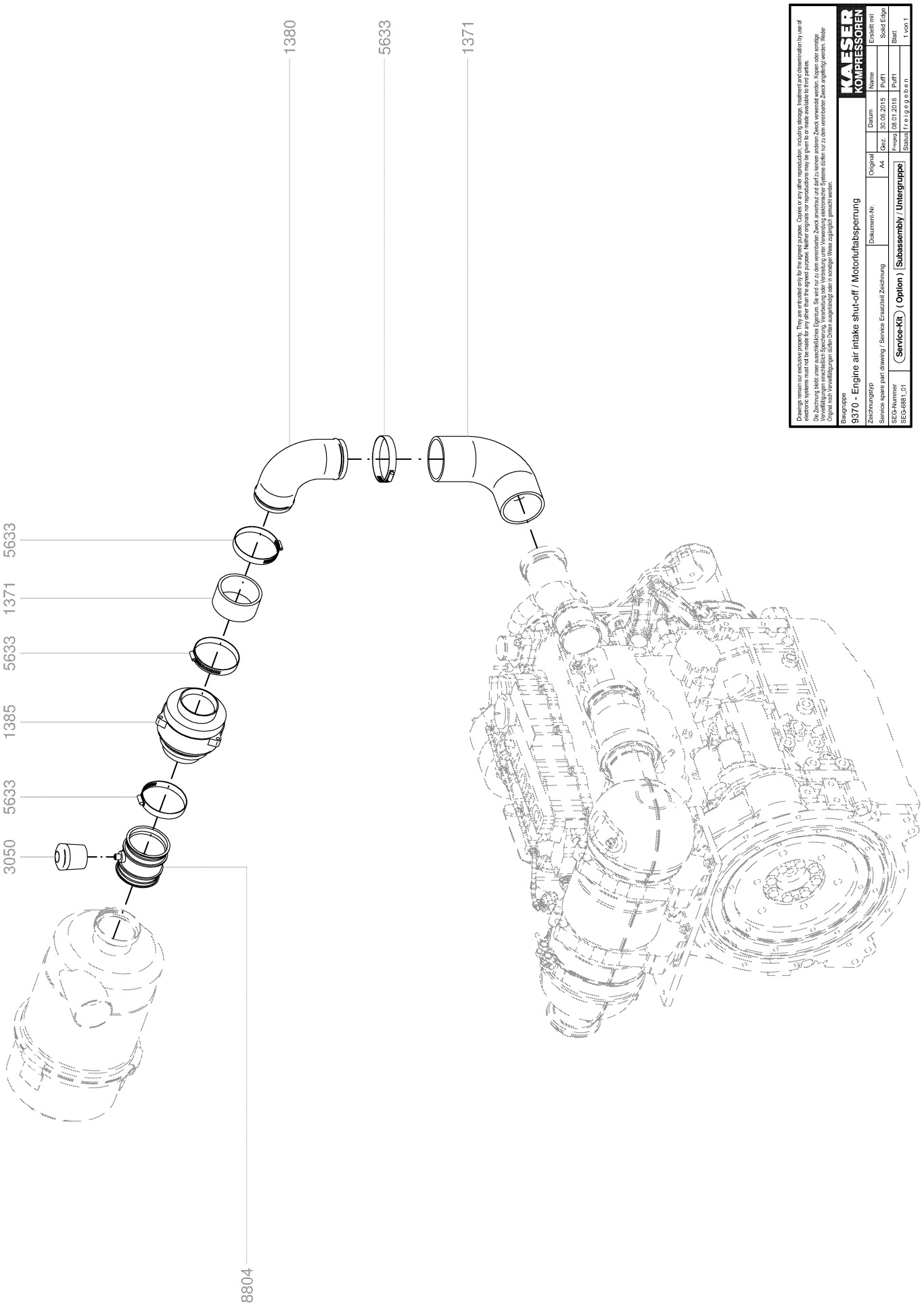


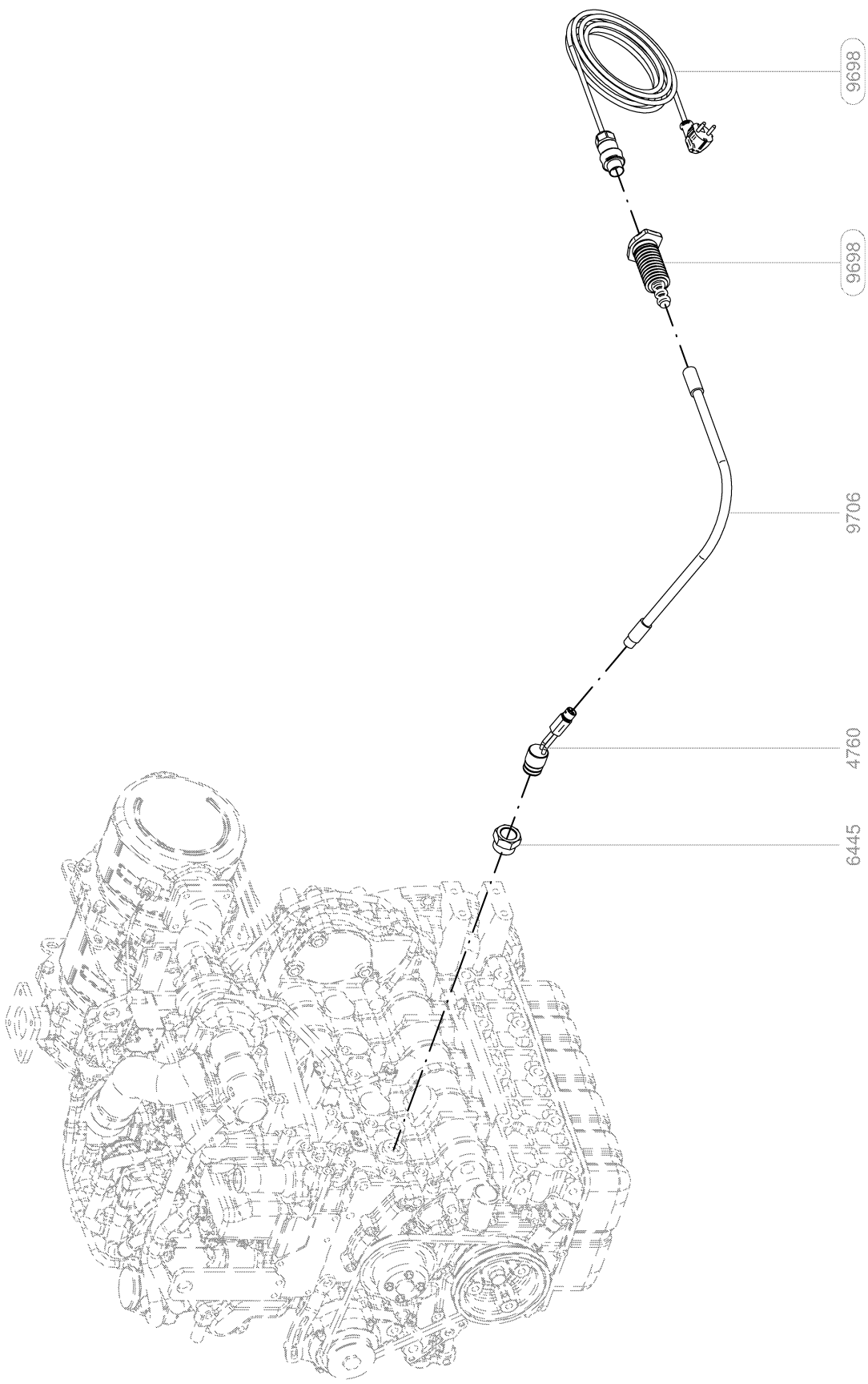


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KAESER KOMPRESSOREN

Baugruppe: 9200 - Tool lubrication / Werkzeugschmierung					
Zeichnungstyp: Service spare part drawing / Service Ersatzteil Zeichnung	Dokument-Nr.	Original A4	Datum	Name	Erstellt mit: Solid Edge
			Gez. 20.07.2015	Puff	
SEG-Nummer: SEG-8860_01	Service-Kit (Option)	Subassembly / Untergruppe	Freigg. 14.10.2015	Puff	Blatt: 1 von 1
			Status: f r e i g e g e b e n		


1380
5633
1371
5633
1371
5633
1385
5633
3050
8804
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KAESER KOMPRESSOREN
Baugruppe
9370 - Engine air intake shut-off / Motorluftabsperrung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Gez. 30.06.2015
Freigabe 08.01.2016
Status freigegeben
Name
Puff1
Puff1
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-0881_01
Service-Kit (Option) Subassembly / Untergruppe

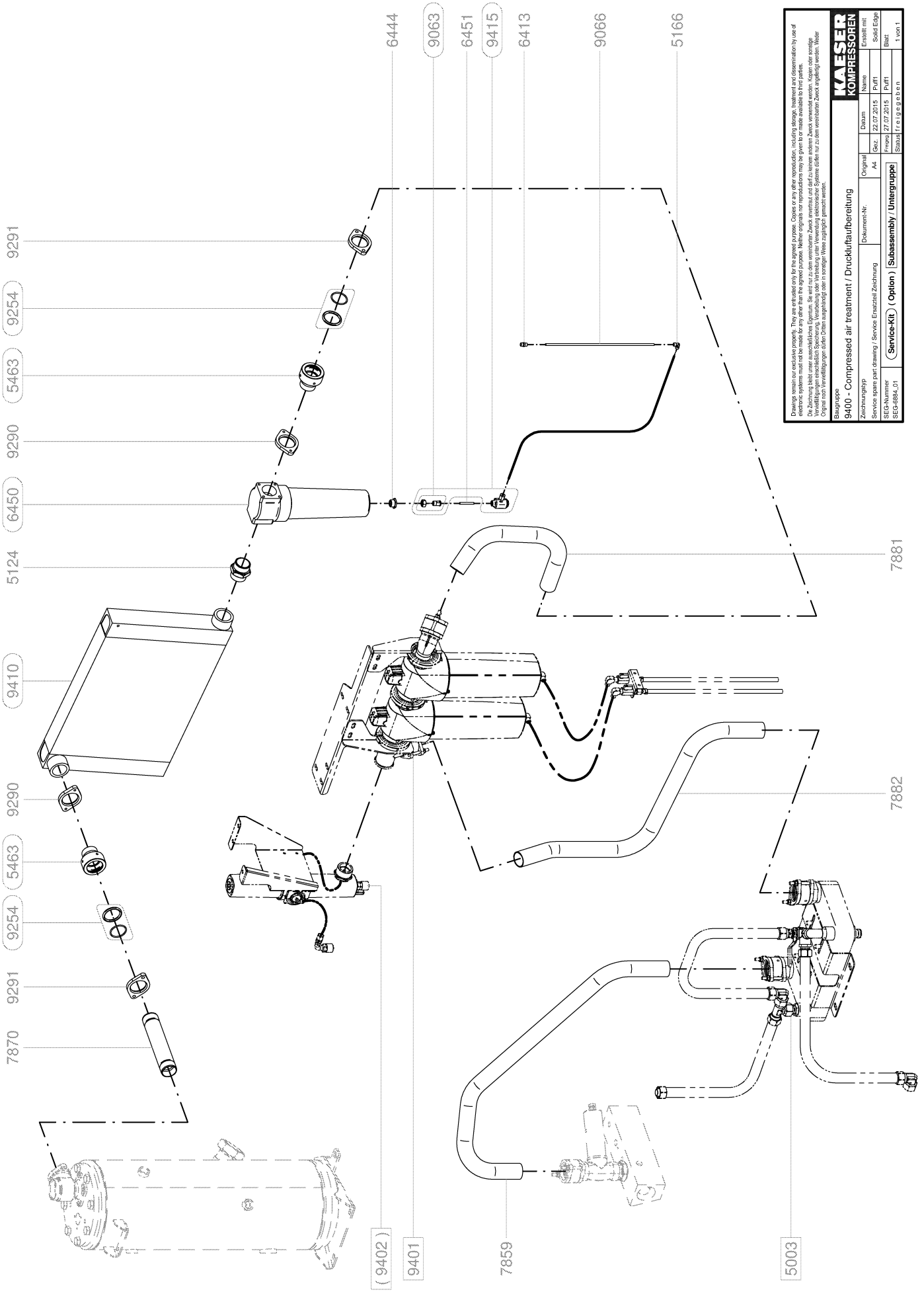


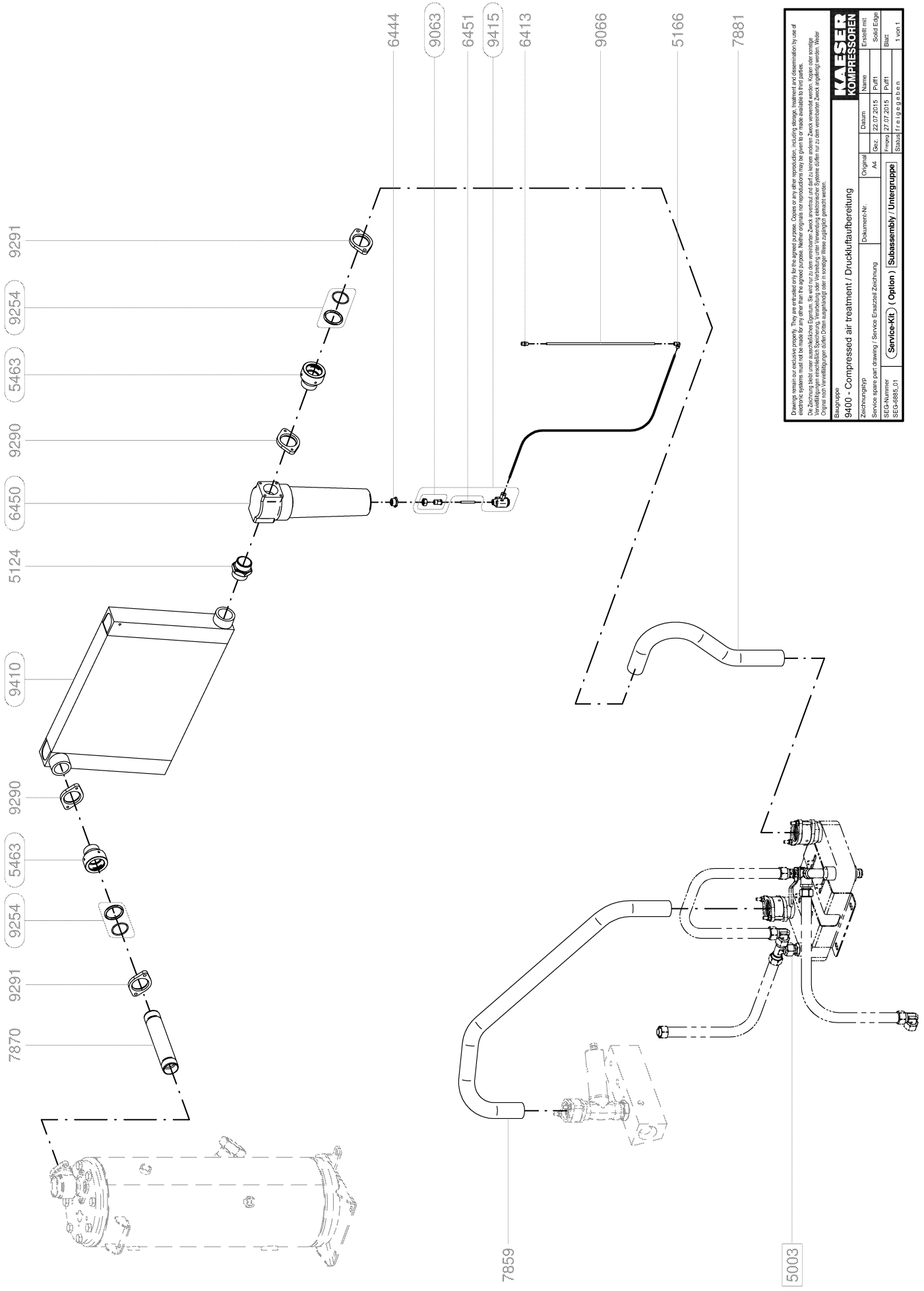
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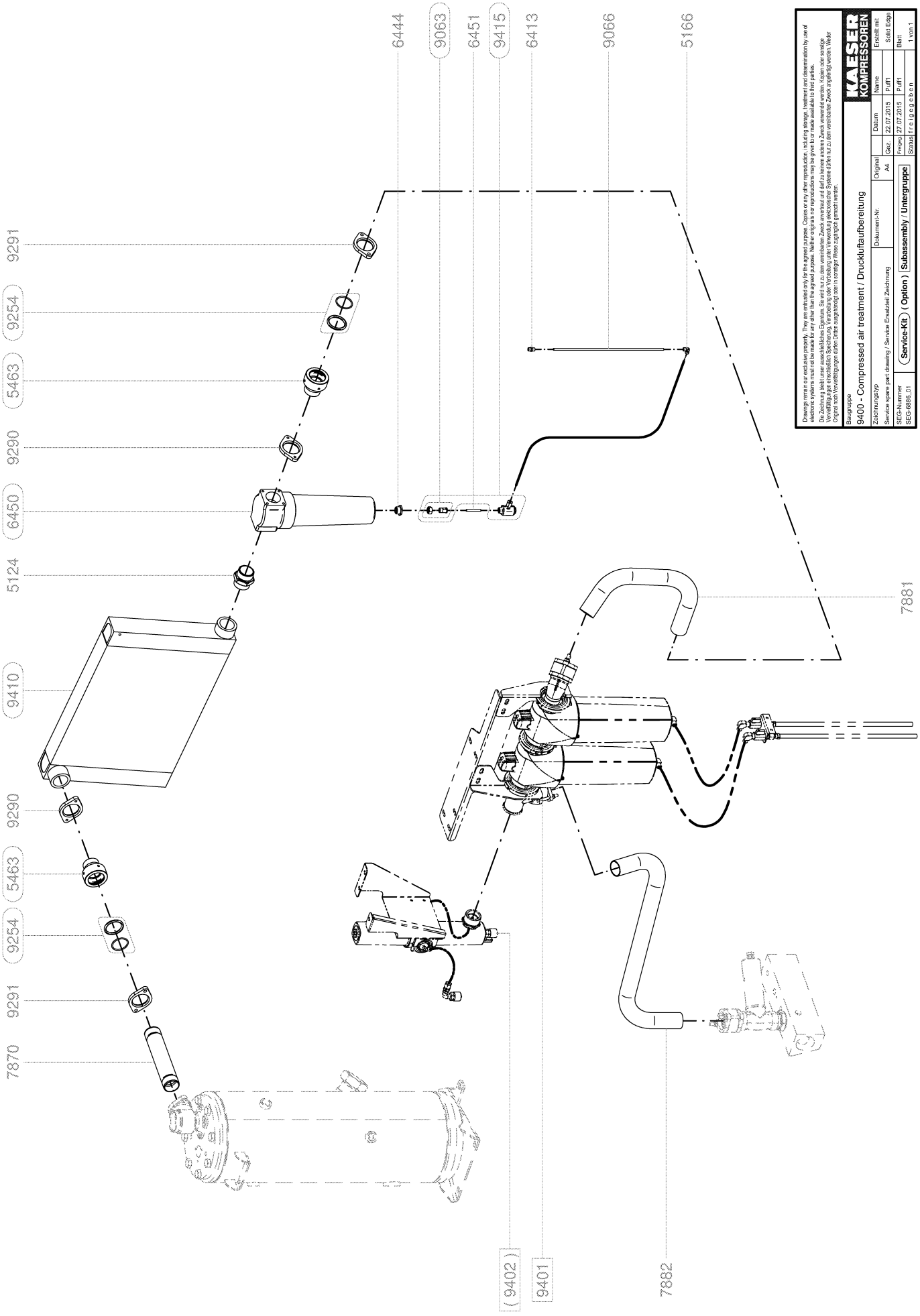
KAESER KOMPRESSOREN

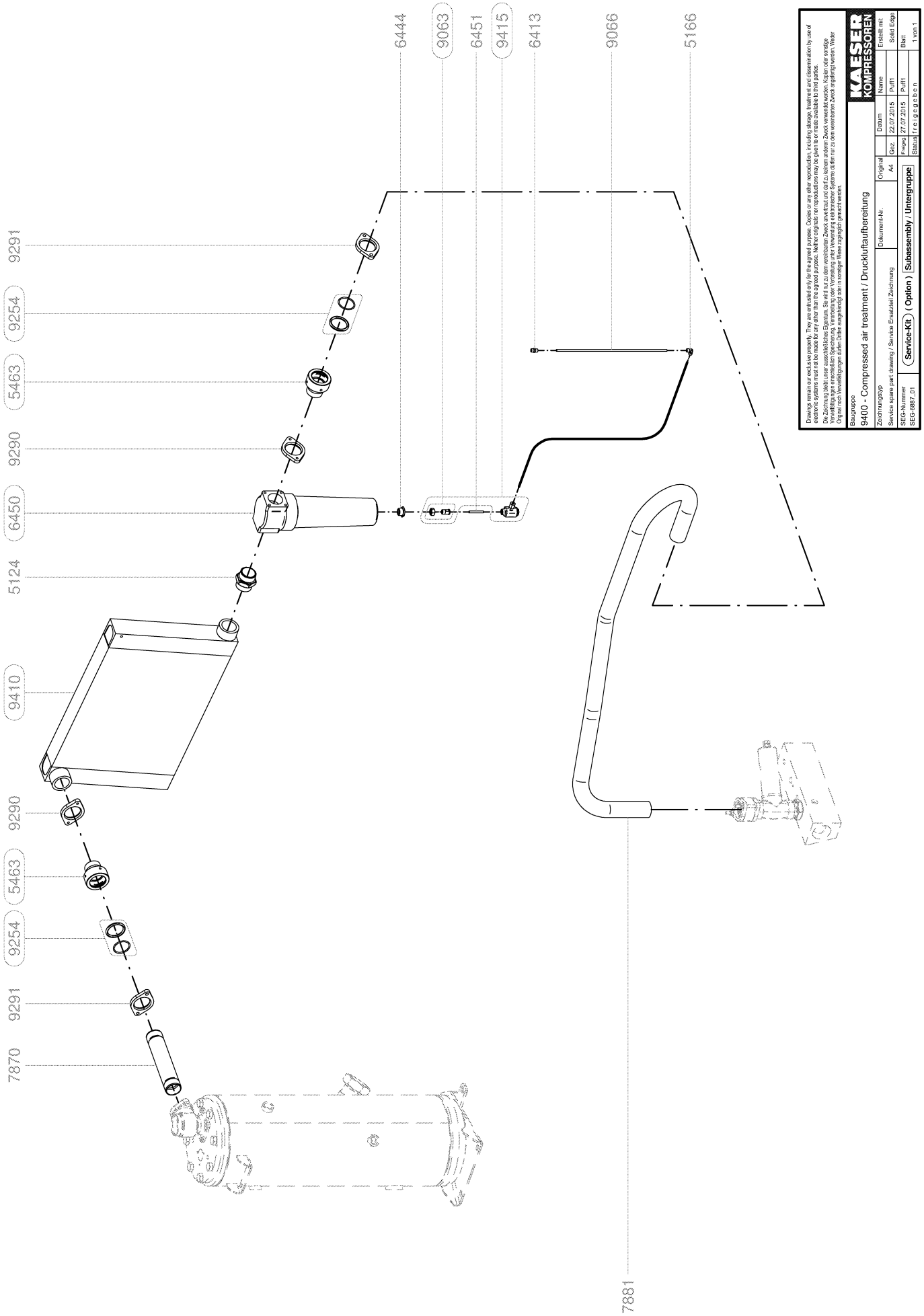
Baugruppe
9380 - Motor preheather / Motorvorwärmung

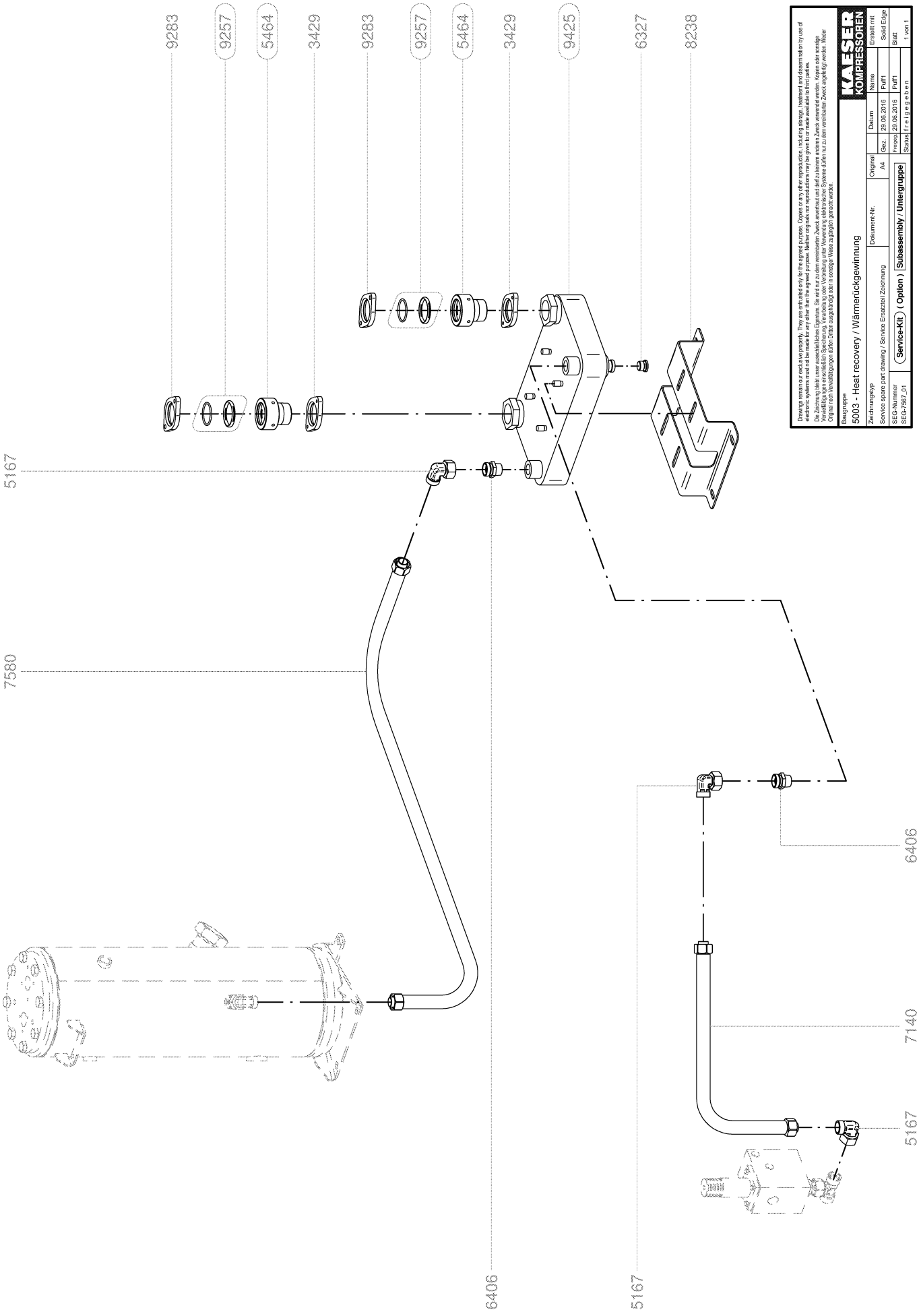
Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 20.07.2015	Puff	Solid Edge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigab 27.07.2015	Puff	Blatt
SEG-9883_01			Status freigegeben		1 von 1

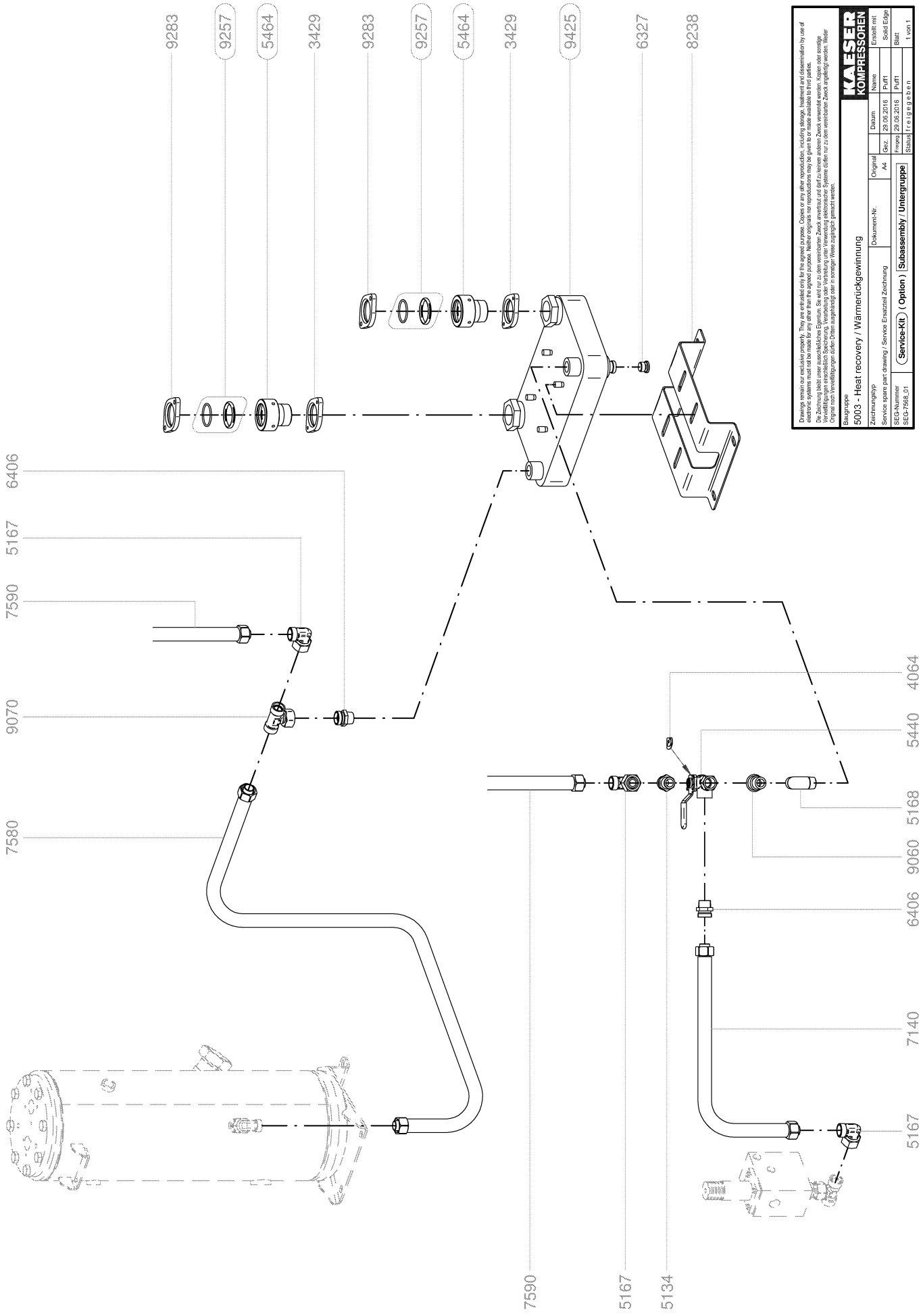

6444
9063
6451
9415
6413
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5166
9291
9254
5463
9290
6450
5124
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5463
9254
9291
7870
7881
7882
(9402)
9401
7859
5003
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KAESER KOMPRESSOREN
Baugruppe
9400 - Compressed air treatment / Druckluftaufbereitung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Gez. 22.07.2015 Puff
Freigabe 27.07.2015 Puff
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-0884_01
Service-Kit (Option) Subassembly / Untergruppe

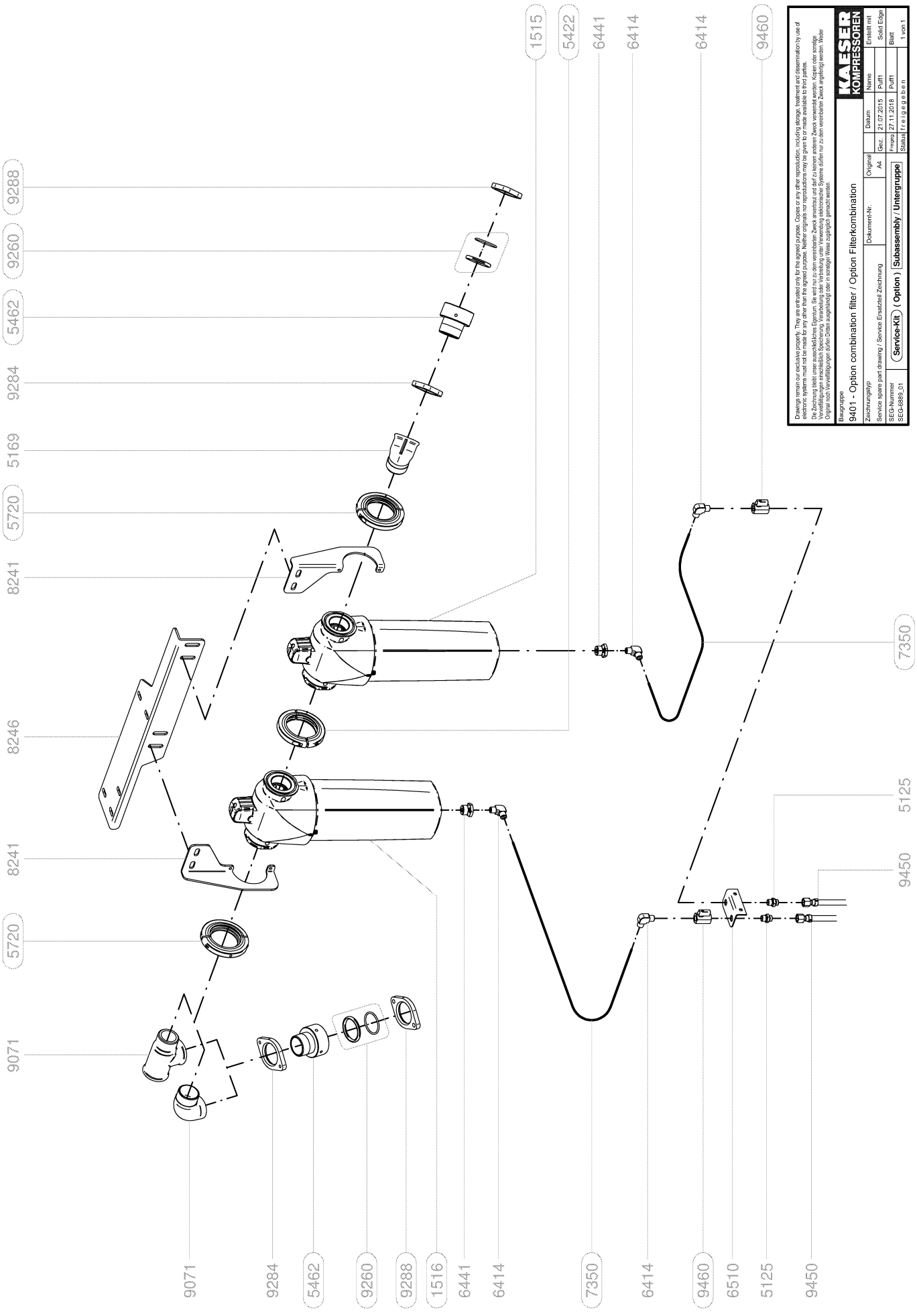

6444
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5003
KAESER KOMPRESSOREN
Baugruppe
9400 - Compressed air treatment / Druckluftaufbereitung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
SEG-Nummer
SEG-9885_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben
1 von 1

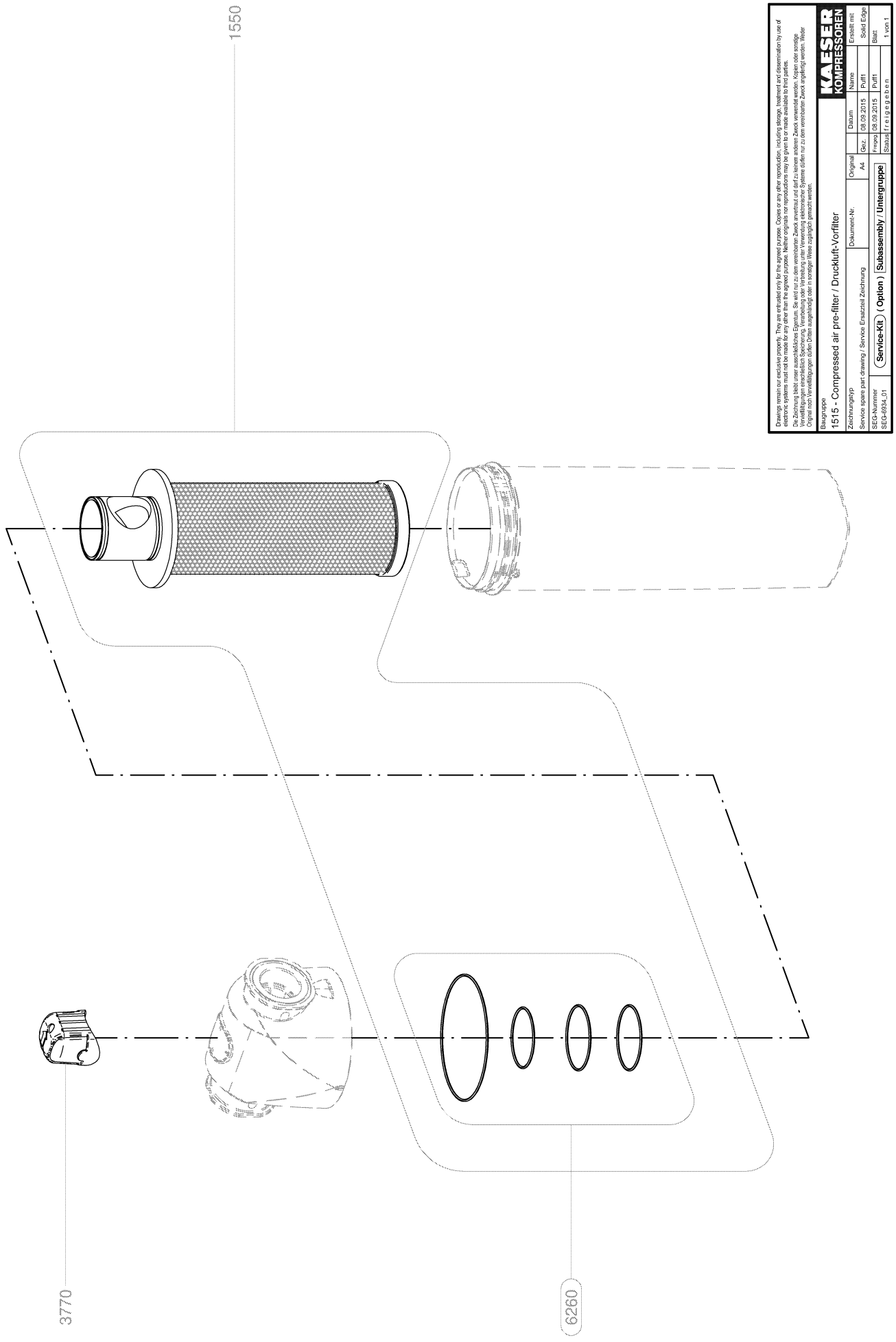

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(9402)
9401
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KAESER KOMPRESSOREN
Baugruppe
9400 - Compressed air treatment / Druckluftaufbereitung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Gez. 22.07.2015
Freigabe 27.07.2015
Status freigegeben
Name
Puff
Puff
Erstellt mit
Solid Edge
Blatt
1 von 1
SEG-Nummer
SEG-0886_01
Service-Kit (Option) Subassembly / Untergruppe


6444
9063
6451
9415
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5166
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7870
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KAESER KOMPRESSOREN
Baugruppe
9400 - Compressed air treatment / Druckluftaufbereitung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
SEG-Nummer
SEG-9887_01
Service-Kit (Option) Subassembly / Untergruppe
Ersetzt
27.07.2015
Puff
Puff
Status
f r e i g e g e b e n
Blatt
1 von 1


9283
9257
5464
3429
9283
9257
5464
3429
9425
6327
8238
5167
7580
6406
6406
7140
5167
5167
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KAESER KOMPRESSOREN
Baugruppe
5003 - Heat recovery / Wärmerückgewinnung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
SEG-Nummer
SEG-7567_01
Service-Kit (Option) Subassembly / Untergruppe
Original
A4
Datum
Name
Gez. 29.06.2016 Pufft
Freigab 29.06.2016 Pufft
Status freigegeben
Erstellt mit
Solid Edge
Blatt
1 von 1


9283
9257
5464
3429
9283
9257
5464
3429
9425
6327
8238
6406
5167
7590
9070
7580
4064
5440
5168
9060
6406
7140
5167
7590
5167
5134
KAESER KOMPRESSOREN
Baugruppe
5003 - Heat recovery / Wärmerückgewinnung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
Gez.
29.06.2016
Puff
Freigep.
29.06.2016
Puff
Blatt
1 von 1
Status
freigegeben
SEG-Nummer
SEG-7568_01
Service-Kit (Option) Subassembly / Untergruppe


1515
5422
6441
6414
6414
9460
9288
9260
5462
9284
5169
5720
8241
8246
8241
5720
9071
7350
5125
9450
9071
9284
5462
9260
9288
1516
6441
6414
7350
6414
9460
6510
5125
9450
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KAESER KOMPRESSOREN
Baugruppe
9401 - Option combination filter / Option Filterkombination
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
SEG-Nummer
SEG-0885_01
Service-Kit (Option) Subassembly / Untergruppe
Original
A4
Datum
Name
Gez. 21.07.2015 Puffl
Freigab 27.11.2018 Puffl
Status freigegeben
Ersetzt mit
Solid Edge
Blatt
1 von 1

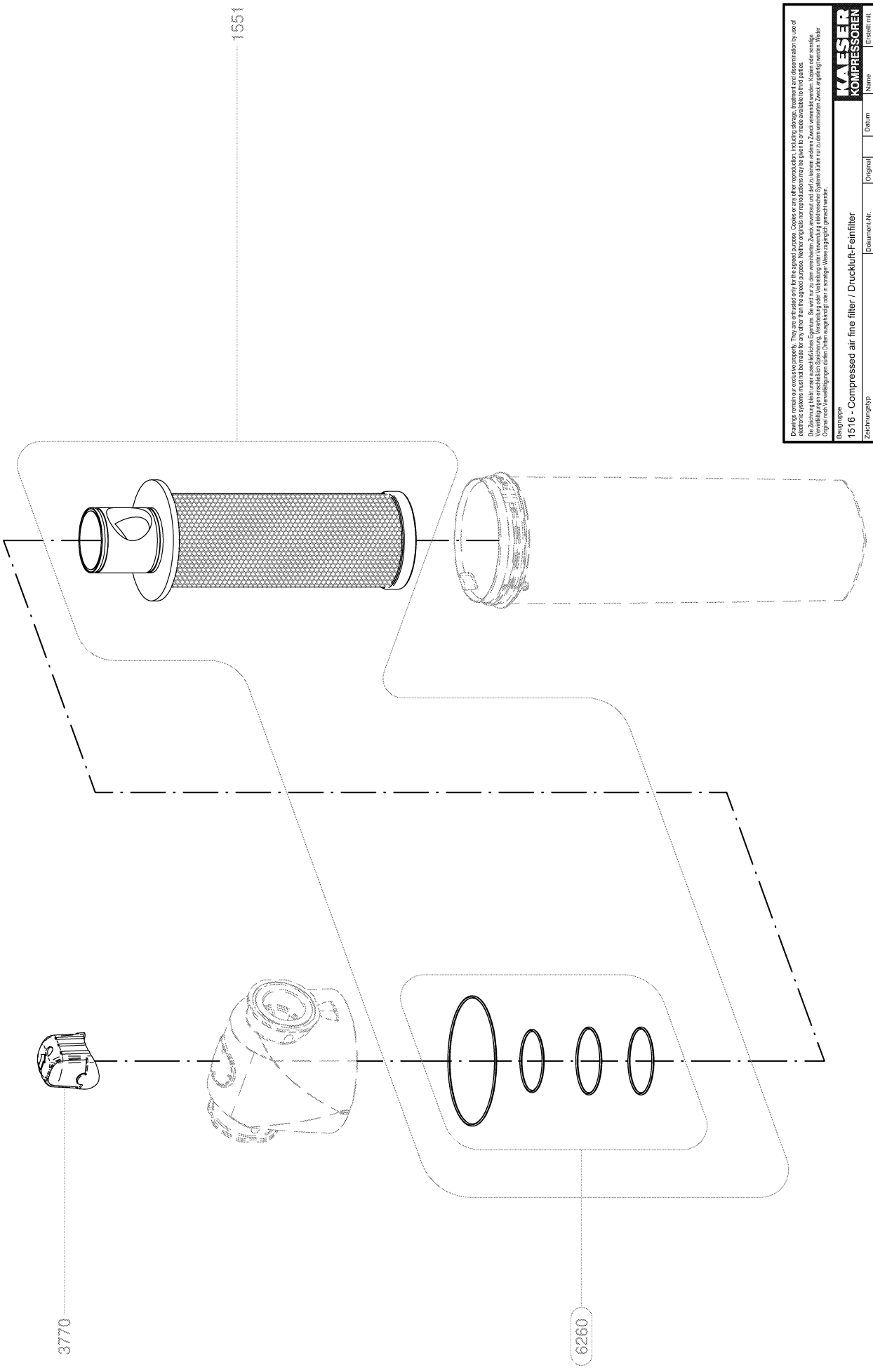


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KAESER KOMPRESSOREN

Baugruppe
1515 - Compressed air pre-filter / Druckluft-Vorfilter

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 08.09.2015	Pufft	Solid Edge
SEG-Nummer	Service-Kit (Option)	Subassembly / Untergruppe	Freigg. 08.09.2015	Pufft	Blatt
SEG-9934_01			Status freigegeben		1 von 1

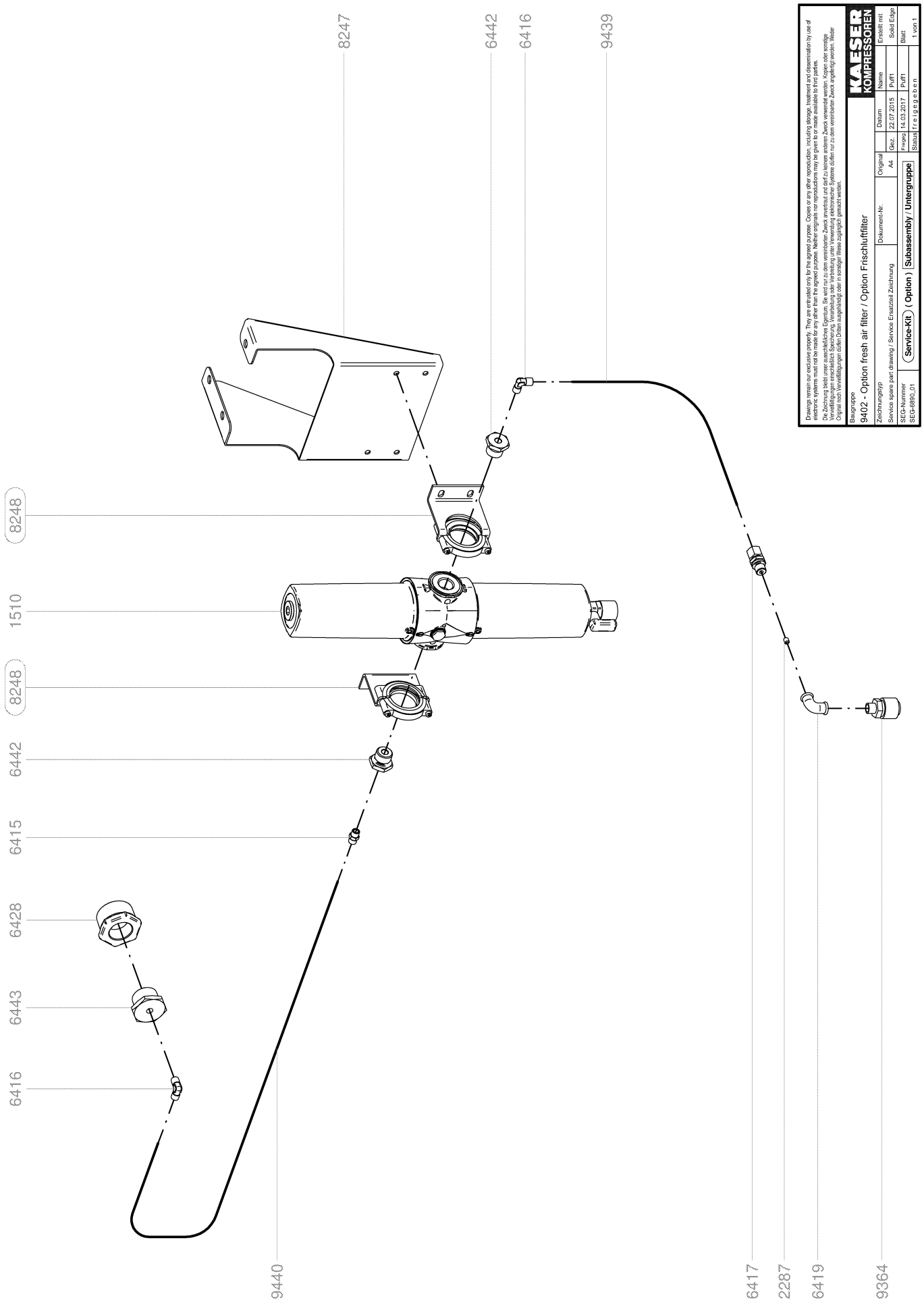


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KAESER KOMPRESSOREN

Baugruppe
1516 - Compressed air fine filter / Druckluft-Feinfilter

Zeichnungstyp	Dokument-Nr.	Original	Datum	Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung		A4	Gez. 08.09.2015	Puff1	Solid Edge
SEG-Nummer SEG-0935_01	Service-Kit (Option) Subassembly / Untergruppe		Freigab 08.09.2015	Puff1	Blatt 1 von 1
			Status f r e i g e g e b e n		


8247
6442
6416
9439
8248
1510
8248
6442
6415
6428
6443
6416
9440
6417
2287
6419
9364
KAESER KOMPRESSOREN
Baugruppe
9402 - Option fresh air filter / Option Frischluftfilter
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
A4
Datum
Name
Erstellt mit
Solid Edge
SEG-Nummer
SEG-8990_01
Service-Kit (Option) Subassembly / Untergruppe
Status freigegeben
1 von 1

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 minus 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. 104 "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 −10 °C.
   - ➢ 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 de-commissioning and storage

De-commissioning the machine for 5 months or longer.

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

➢ The following measures must be taken for long-term decommissioning and storage:

Long-term decommissioning and storage tasks	See chapter	Confirmed?
➢ Check engine coolant.	10.4.1	
➢ Drain the engine oil.	10.4.6	
➢ Drain the oil from the oil separator tank and the oil cooler.	10.6.3	
➢ Fill the separator tank and engine with preserving oil.	10.6.2 10.4.5	
➢ Run the machine for about 10 minutes to coat all parts with a protective oil film.	–	
➢ Disconnect the battery, the minus 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.	–	
➢ Cover the following openings with plastic foil and moisture-proof duct tape: ■ Engine air inlet ■ Compressor air inlet ■ Exhaust silencer	–	
➢ Clean the bodywork and treat with preservative.	–	

Long-term decommissioning and storage tasks	See chapter	Confirmed?
➢ Attach a notice on the instrument panel informing of the decommissioning measurements taken.	–	

Tab. 105 "Long-term decommissioning and storage" checklist

➢ Attach the following notice on the instrument panel showing the de-commissioning measures taken.

Attention!

1. The machine is de-commissioned.
2. It is filled with preserving oil.
3. For re-commissioning:

- Perform actions provided for re-commissioning after a long period of storage.
- Re-commission according to service manual.

Date / signature

Tab. 106 Notice text: "Long-term decommissioned and storage"

➢ Store in a dry place with even temperature.

12.2 Transport

Precondition Machine switched off and locked off
(«battery isolating switch »off)

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

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 under tow.
   ➢ Riding on the machine while it is under tow is strictly forbidden.
2. Make sure the danger area is clear of personnel.

12.2.2 Transporting the machine as trailer

➢ Note the instructions in the separate document "Chassis Operating Manual" regarding the topic "transport of the machine as trailer".

12.2.3 Transport by crane

Additional precautions for conditions of snow and ice:

Considerable snow or ice may build up on the machine under low temperature conditions.
This may adversely effect the machine's centre of gravity (tilting).
It is possible that the permissible load 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 moving the machine by crane:

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

Precondition The machine is standing firm and level.

The machine is switched off.

The machine has cooled down.



1. CAUTION!
   Hot components in the machine interior!
   ➢ Allow the machine to cool down.



2. CAUTION!
   The machine can be damaged by jerky lifting!
   Components may break.
   ➢ Lift the machine carefully.
3. Open one of the two doors.
4. Unlock the cover from the inside by actuating the built-in hand lever and lift up.
5. Close the door.
6. Position the crane hook vertically over the lifting eye.
7. Engage the hook in the eye.
8. Close and lock the access doors.
9. 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 down.
   ➢ Set the machine down carefully.
   ➢ Do not set down unevenly.
2. Set the machine down slowly and carefully.
1. Unhook the crane hook.
2. Press the lifting eye cover down and close. Make sure it locks into place.

12.2.4 Option rw
Transport with a forklift truck

Precondition The machine is switched off.

All connecting lines and hoses disconnected and removed.

CAUTION
Damage to the machine by incorrect lifting with a fork truck.
The machine may fall or be damaged by the forks.

- ➢ Do not use a fork truck to lift towable machines.
- ➢ Only stationary machines with skids may be transported with a fork truck.
- ➢ Pick up the machine only from the side with the forks through the lifting lugs.

Option rw

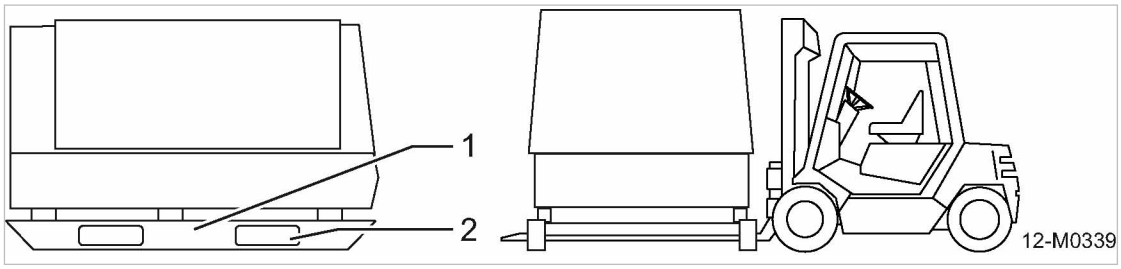


Fig. 78 Transporting using a forklift truck

[1] Skids
[2] Lifting lugs

1. Close and lock the access doors or canopy.
2. Position the fork truck to the side of the machine with the forks lined up with the lifting lugs.
3. Drive the forks fully through the lifting lugs as far as possible.
   The forks are fully under the machine.
4. Lift the machine carefully.

12.2.5 Transporting the machine as load

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

Additional measures must be taken for the transport of machines by sea or air. Please contact KAESER SERVICE for more information.

Material Chocks

Restraints or timber balks

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 balks for securing the load.
If necessary, use straps across the chassis and the towbar.

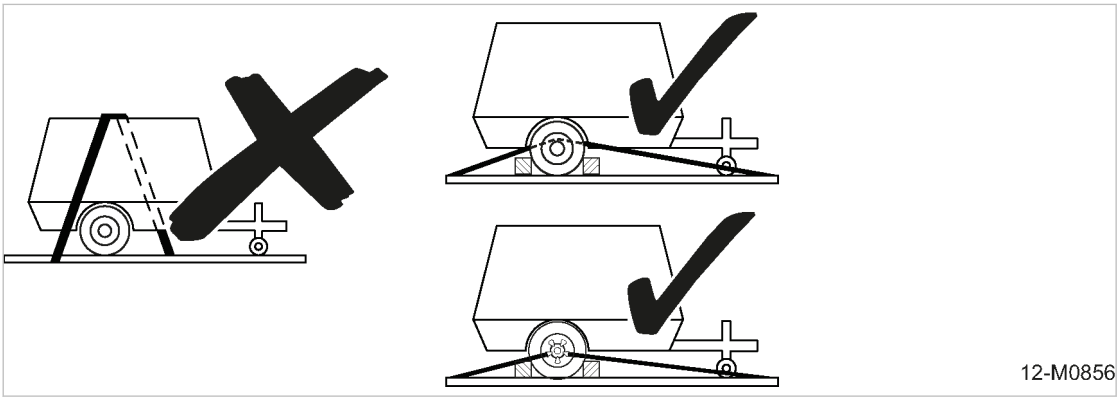


Fig. 79 Guys to secure the freight

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
   - Residual quantities of tool lubricating oil in the tool lubricator (option ea, ec)

12.3 Storage

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

Frozen moisture can damage components, valve diaphragms and gaskets.

The following measures also apply to machines not yet commissioned.



Please consult with KAESER if you have questions to the appropriate storage and commissioning.



NOTICE
Moisture and frost can damage the machine!
- ➢ Prevent ingress of moisture and formation of condensation.
- ➢ Maintain a storage temperature of >0 °C.

➢ 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 authorised disposal expert.



- ➢ Operating materials and components contaminated with fuel, cooling oil or engine oil must be disposed of in accordance with local environment protection regulations.
- ➢ Old batteries are hazardous waste and must be disposed of correctly in accordance with local environment protection regulations

13 Annex

13.1 Marking

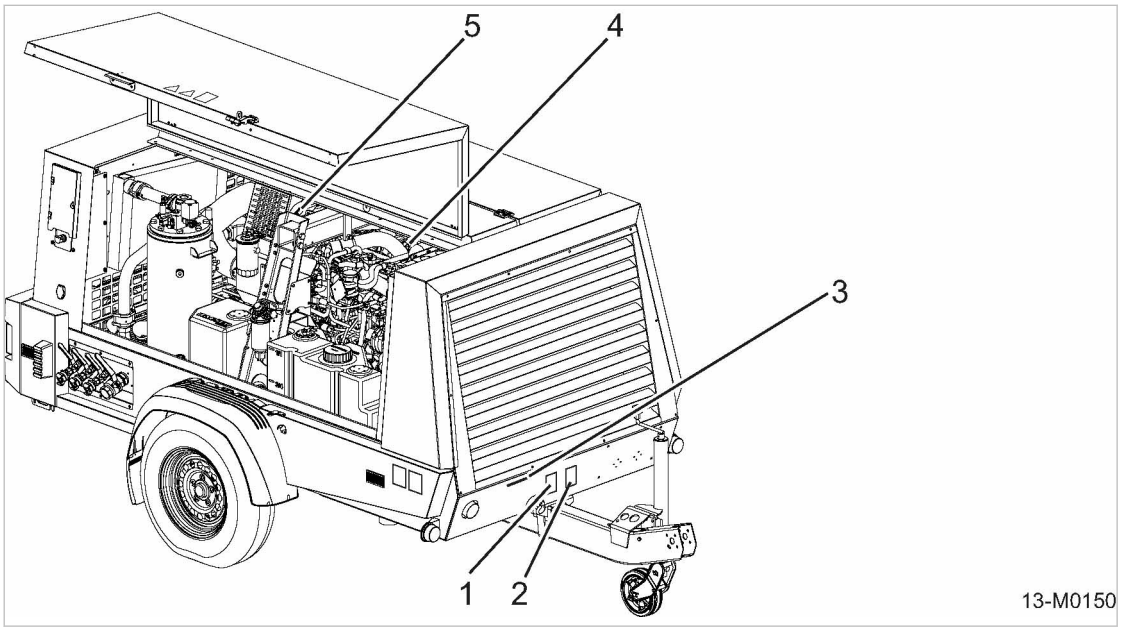
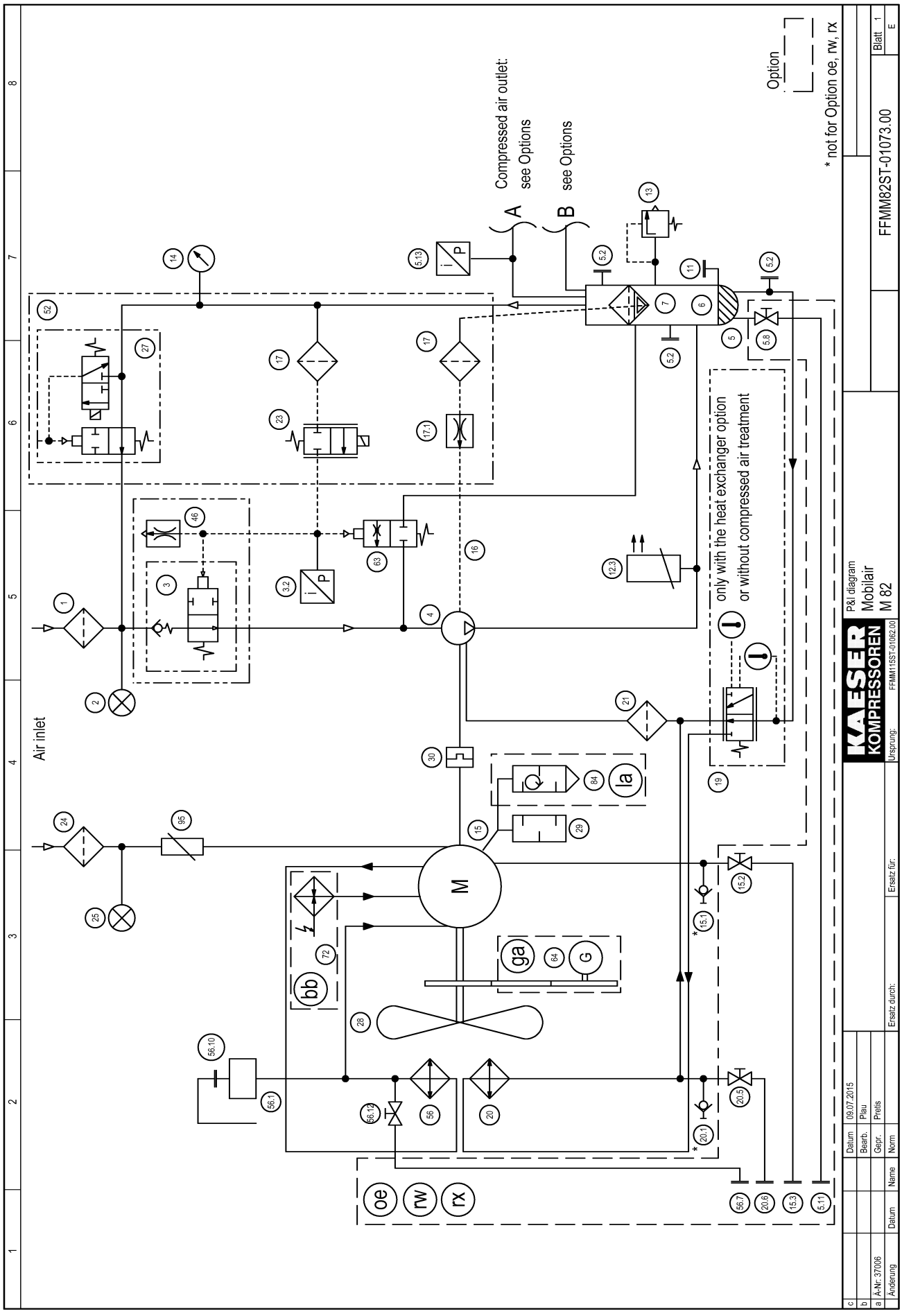


Fig. 80 Marking

[1] Machine nameplate with system serial number
[2] Options label
[3] VIN *) (stamped in the bodywork)
* Vehicle identity number
[4] Diesel particulate filter nameplate
[5] Engine nameplate with engine serial number

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

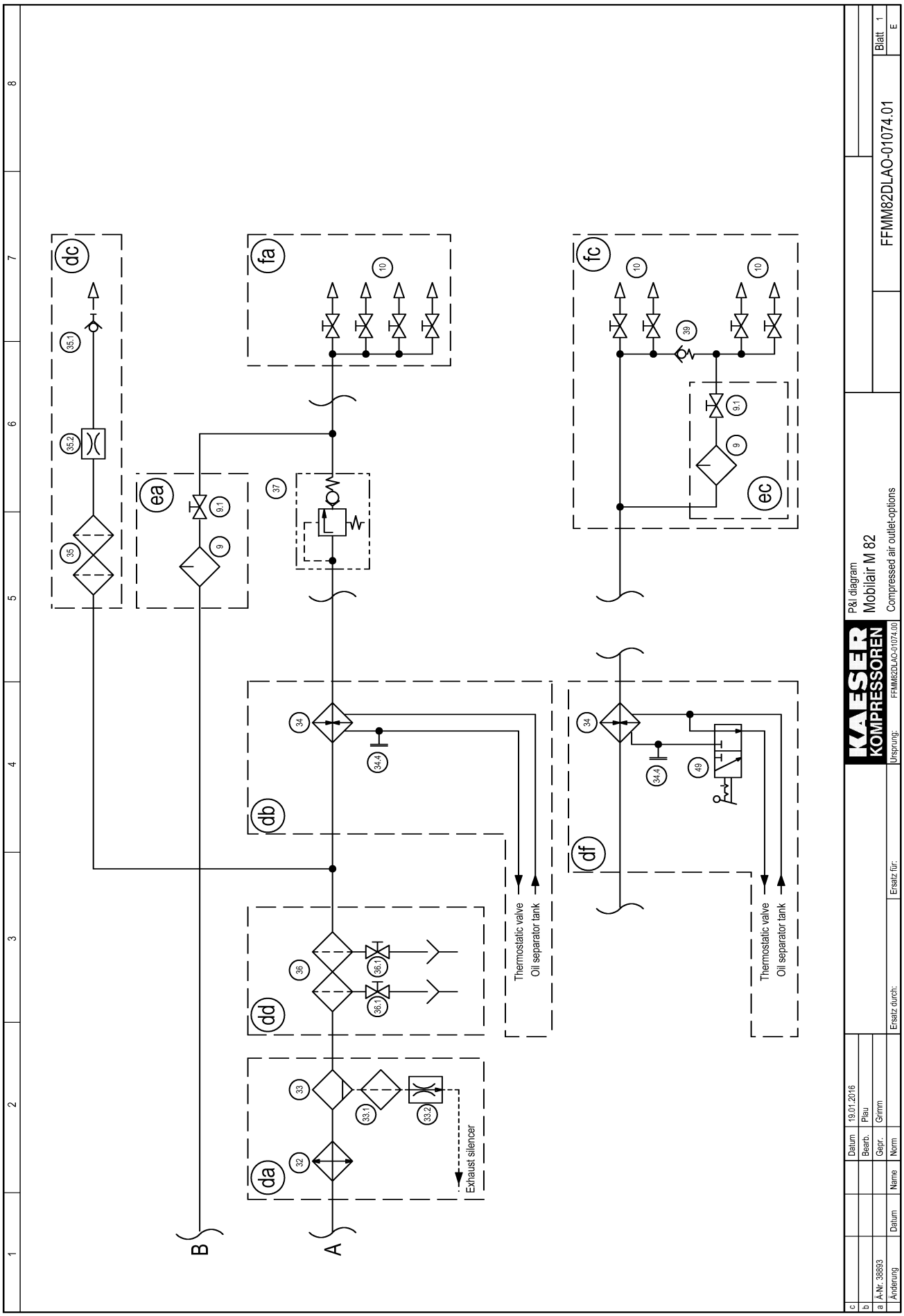

Compressed air outlet:
see Options
see Options
A
B
Option
* not for Option oe, rw, rx
only with the heat exchanger option
or without compressed air treatment
Air inlet
M
oe
rw
rx
FFMM82ST-01073.00
P&I diagram
Mobilair
M 82
KAESER KOMPRESSOREN
FFMM1 16ST-01092.00

1	2	3	4	5	6	7	8

1	Compressor - Air filter	21	Oil filter
2	Maintenance indicator, Compressor -Air filter	23	Electric proportional controller
3	Inlet valve	24	Motor - Air filter
3.2	Pressure transducer - Control pressure	25	Maintenance indicator, Motor - Air filter
4	Rotary screw airend	27	Venting valve
5	Oil separator tank	28	Fan
5.2	Screw plug	29	Exhaust silencer
5.8	Shut-off valve - Oil drain device	30	Coupling
5.11	Screw plug - Oil drain device	46	Nozzle (Secondary end Proportional controller)
5.13	Pressure transducer - Internal pressure	52	Control valve
6	Oil reserve	56	Water cooler
7	Oil separator cartridge	56.1	Cooling water expansion tank
11	Oil filler port with plug	56.7	Screw plug - Water drain device
12.3	Sensor - Airend discharge temperature	56.10	Water filling port with plug and pressure relief valve
13	Pressure relief valve	56.12	Shut-off valve - Water drain device
14	Pressure gauge Compressed air - Control panel	63	Regulating valve (Directional control valve)
15	Diesel engine	64	Generator
15.1	Hose coupling - Oil drain device*	72	Fail-safe heat exchangers
15.2	Shut-off valve - Oil drain device	84	Spark arrestor
15.3	Screw plug - Oil drain device	95	Air flow meter
16	Oil return line		
17	Dirt trap	Option	
17.1	Nozzle	bb	Coolant pre-heating
19	Thermostatic valve	ga	Generator
20	Oil cooler	la	Spark arrestor
20.1	Hose coupling- Oil drain device*	oe	Closed floor pan
20.5	Shut-off valve- Oil drain device	rw	stationary, on skids
20.6	Screw plug - Oil drain device	rx	stationary on frame

* not for Option oe, rw, rx

c				Datum	09.07.2015		KAESER KOMPRESSOREN	P&I diagram legend Mobilair M 82		
b				Bearb.	Plau					
a				Gepr.	Pretis					
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: FFMM115ST-01062.00	FFMM82ST-01073.00	Blatt 2 E


dc
fa
fc
ea
ec
db
df
dd
da
Thermostatic valve
Oil separator tank
Exhaust silencer
B
A
P&I diagram
Mobilair M 82
Compressed air outlet-options
FFMM82DLAO-01074.01
KAESER KOMPRESSOREN
Ursprung: FFMM82DLAO-01074.00
Ersatz durch:
Ersatz für:
Datum 19.01.2016
Bearb. Plau
Gepr. Grimm
Norm
Name
Datum
Änderung
A-Nr. 38893
Blatt 1
E

1	2	3	4	5	6	7	8

9 Tool lubricator

9.1 Shut-off valve

10 Air distributor

32 Compressed air cooler

33 Centrifugal separator

33.1 Dirt trap

33.2 Nozzle

34 Heat exchanger

34.4 Screw plug - Oil drain device

35 Fresh air filter

35.1 Hose coupling

35.2 Nozzle

36 Filter combination

36.1 Condensate drain shut-off valve

37 Minimum pressure check valve

39 Check valve

49 3-Directional shut-off valve

Option

da After-cooler + Centrifugal separator

db Heat exchanger

df Heat exchanger with bypass

dc Fresh air filter

dd Filter combination

ea Tool lubricator, with option fa

ec Tool lubricator, with option fc

fa Direct air flow

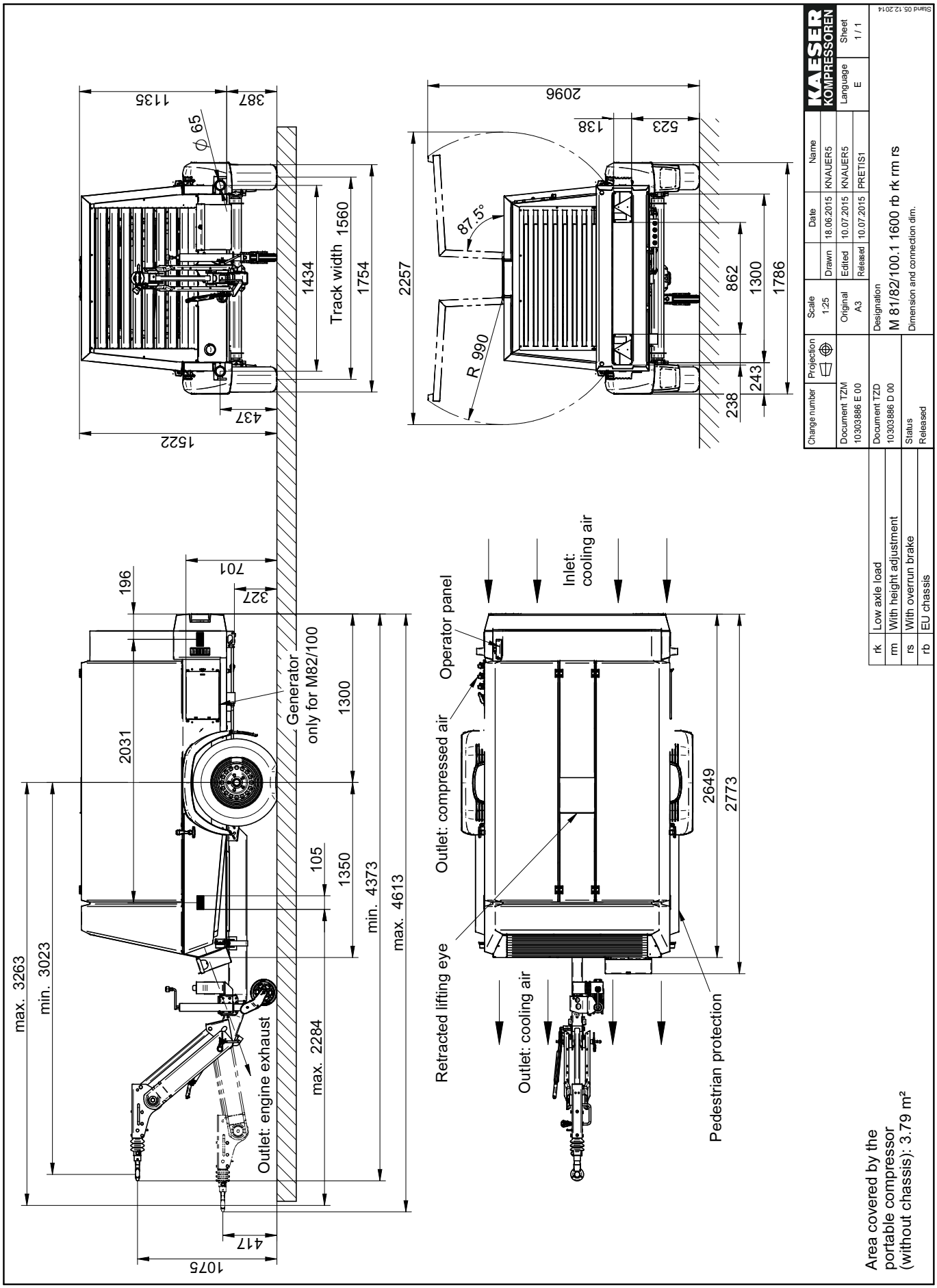
fc Air flow split downstream of options

c				Datum	19.01.2016		KAESER KOMPRESSOREN	P&I diagram legend	
b				Bearb.	Plau			Mobilair M 82	
a				Gepr.	Grimm			Compressed air outlet-options	FFMM82DLAO-01074.01 Blatt 2
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: FFMM82DLAO-01074.00	E

13.3 Dimensional drawings

13.3.1 Option rb/rk/rm/rs Dimensional drawing – chassis

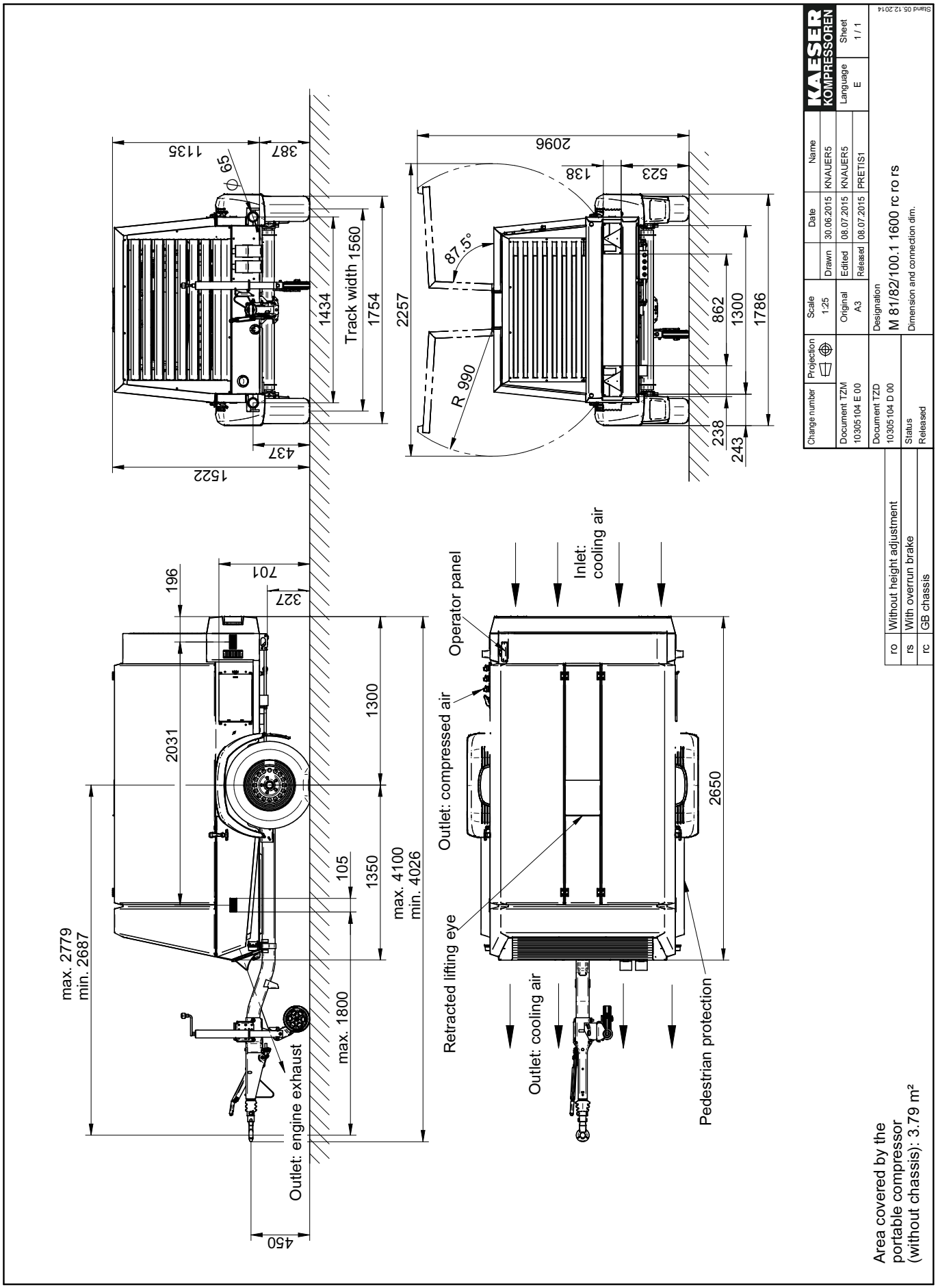
- Option rb - Chassis, EU type
- Option rk - Chassis with low axle load
- Option rm - Chassis with height adjustment
- Option rs - Chassis with overrun brake



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Subject to development-related changes.
Drawing may be altered only via CAD.

13.3.2 Option rc/ro/rs Drawing chassis

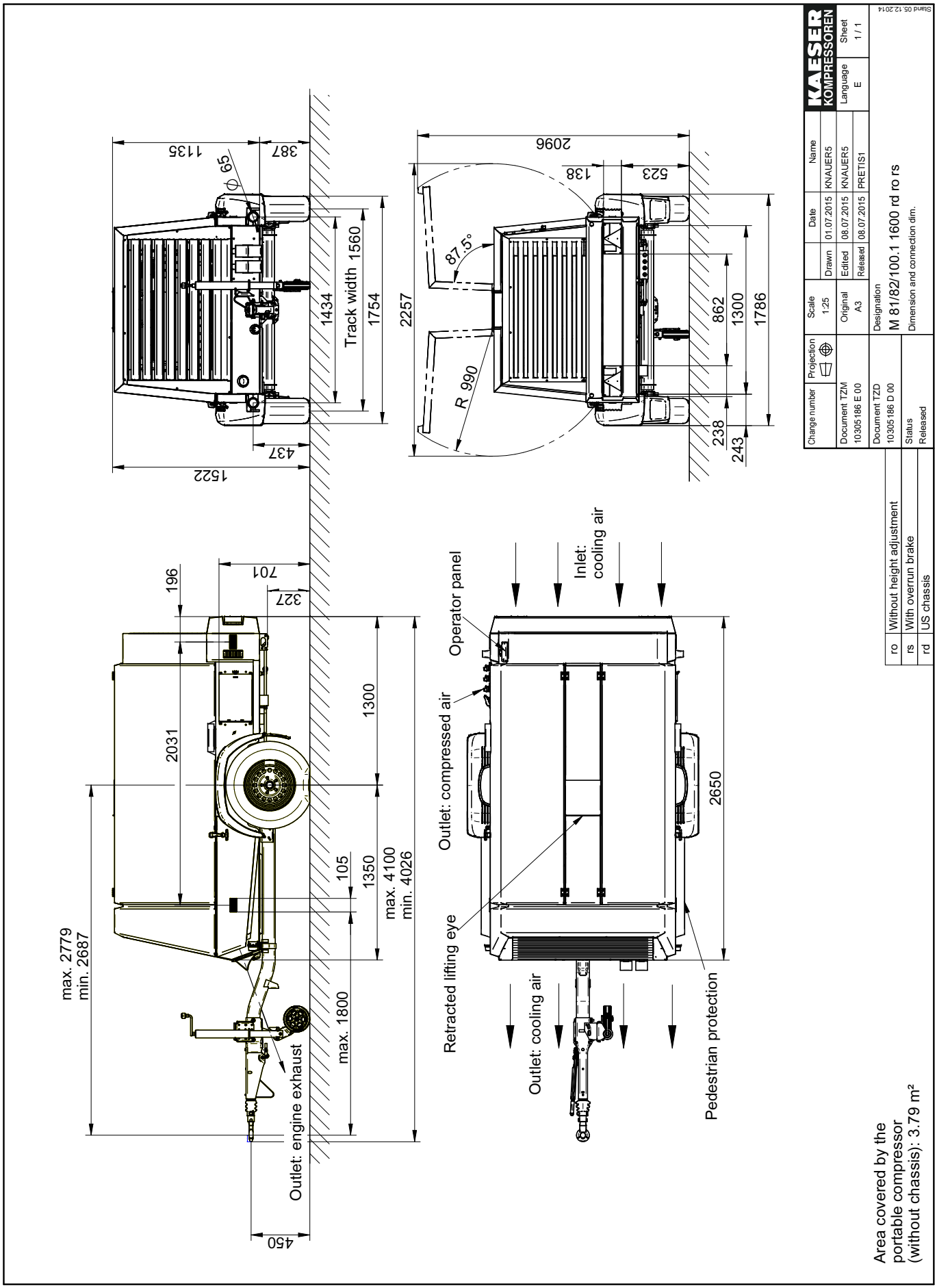
- Option rc - chassis GB version
- Option ro - chassis with fixed height tow bar
- Option rs - chassis with overrun brake



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13.3.3 Option rd/ro/rs Drawing chassis

- Option rd - chassis USA version
- Option ro - chassis with fixed height tow bar
- Option rs - chassis with overrun brake



Change number	Projection	Scale		Date	Name
		1:25	Drawn	01.07.2015	KNAUER5
Document TZM		Original	Edited	08.07.2015	KNAUER5
10305186 E 00		A3	Released	08.07.2015	PRETIS1
Document TZD		Designation			
10305186 D 00		M 81/82/100.1 1600 rd ro rs			
Status		Dimension and connection dim.			
Released					

KAESER KOMPRESSOREN — Language E — Sheet 1 / 1

Stand 05.12.2014

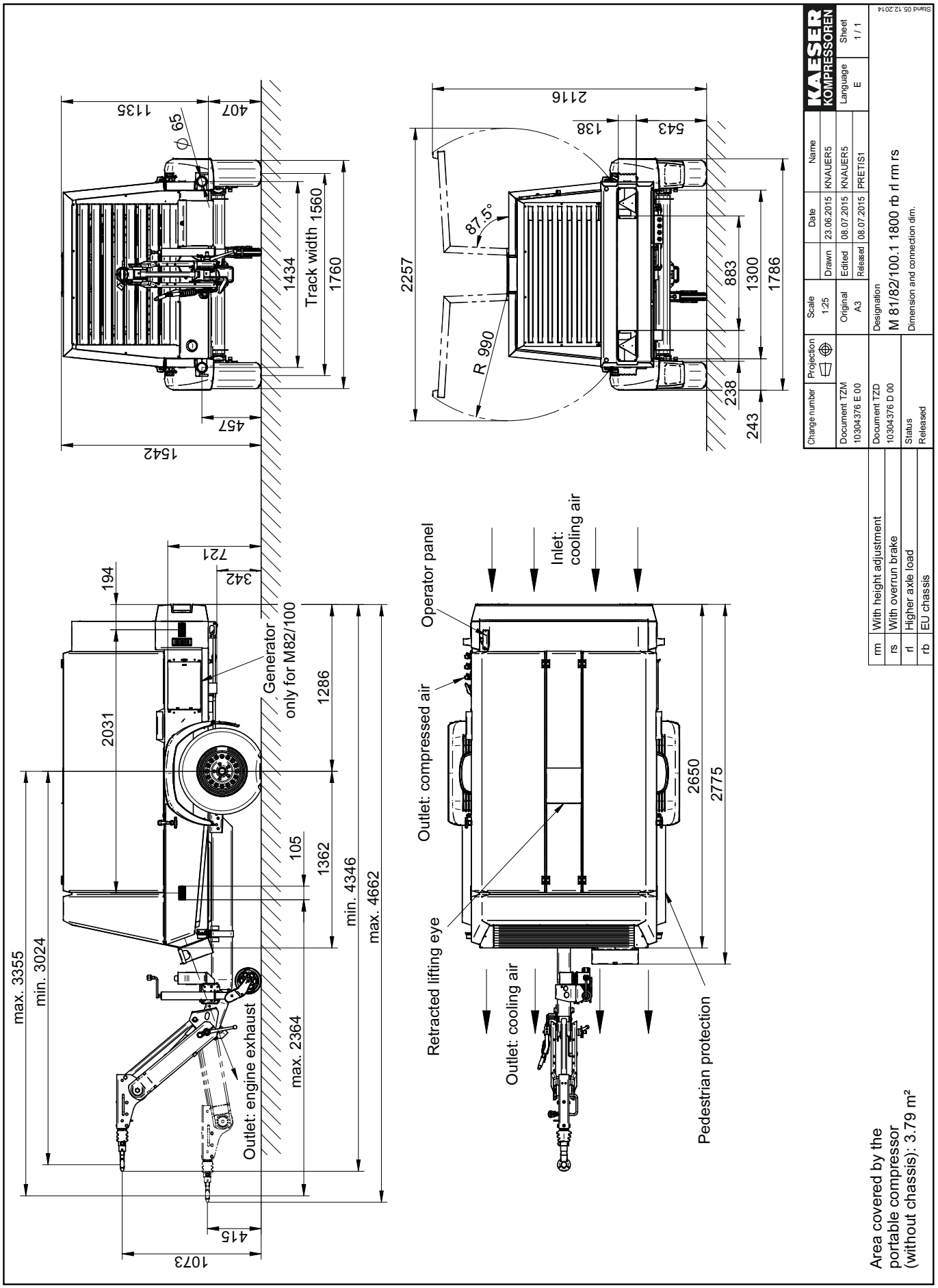
ro	Without height adjustment
rs	With overrun brake
rd	US chassis

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13.3.4 Option rb/rl/rm/rs Drawing chassis

- Option rb - chassis EU version
- Option rl - Chassis with higher axle load
- Option rm - chassis with height-adjustable tow bar
- Option rs - chassis with overrun brake



Change number	Projection	Scale		Date	Name
		1:25	Drawn	23.06.2015	KNAUER5
Document TZM 10304376 E 00		Original A3	Edited	08.07.2015	KNAUER5
			Released	08.07.2015	PRETIS1

KAESER KOMPRESSOREN — Language E — Sheet 1 / 1

Designation
M 81/82/100.1 1800 rb rl rm rs
Dimension and connection dim.

Document TZD 10304376 D 00	Status Released

rm	With height adjustment
rs	With overrun brake
rl	Higher axle load
rb	EU chassis

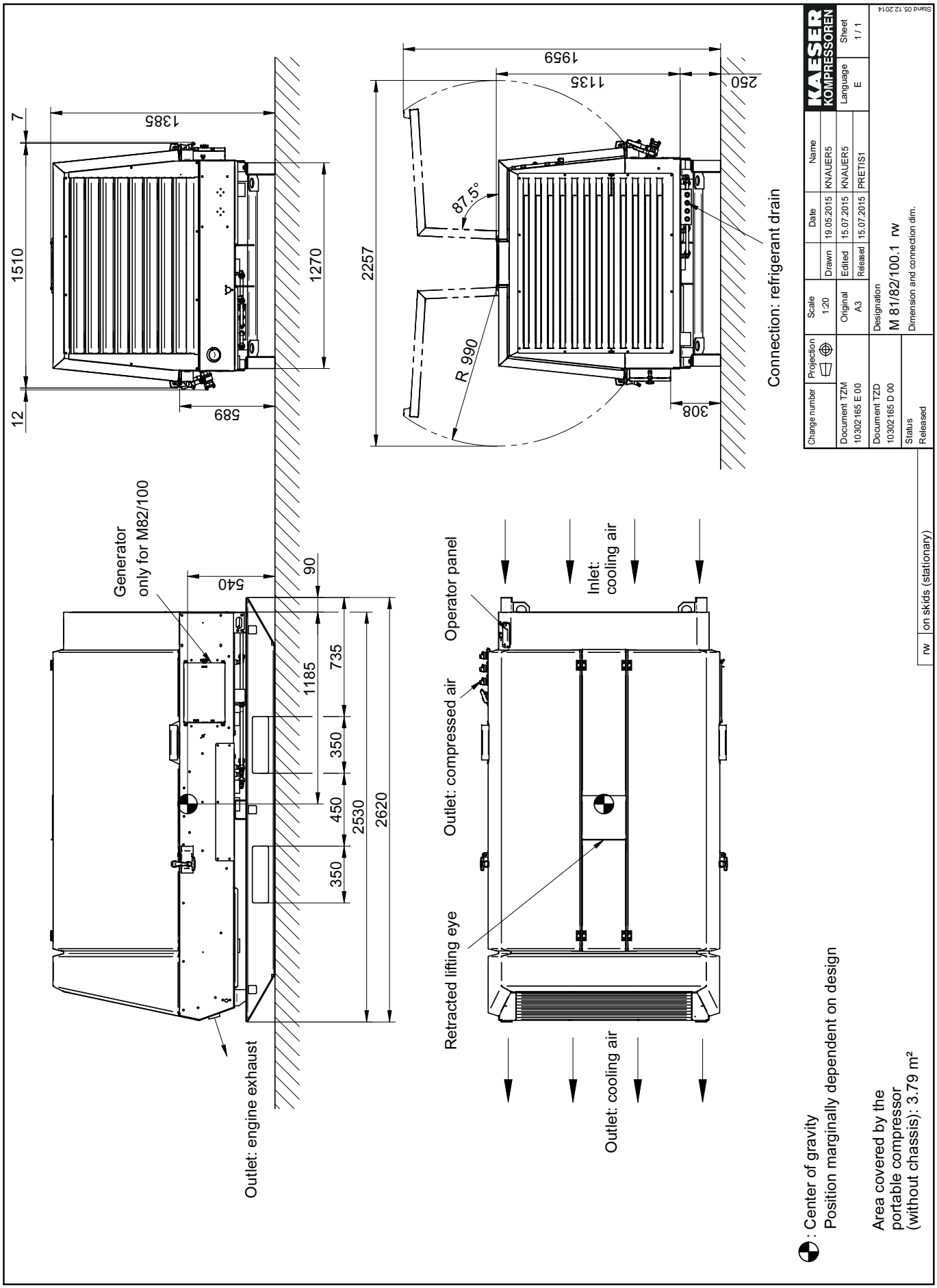
Stand 05.12.2014

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Subject to development-related changes.
Drawing may be altered only via CAD.

13.3.5 Option rw
Dimensional drawing, stationary version

- Option rw - Skid frame on runners



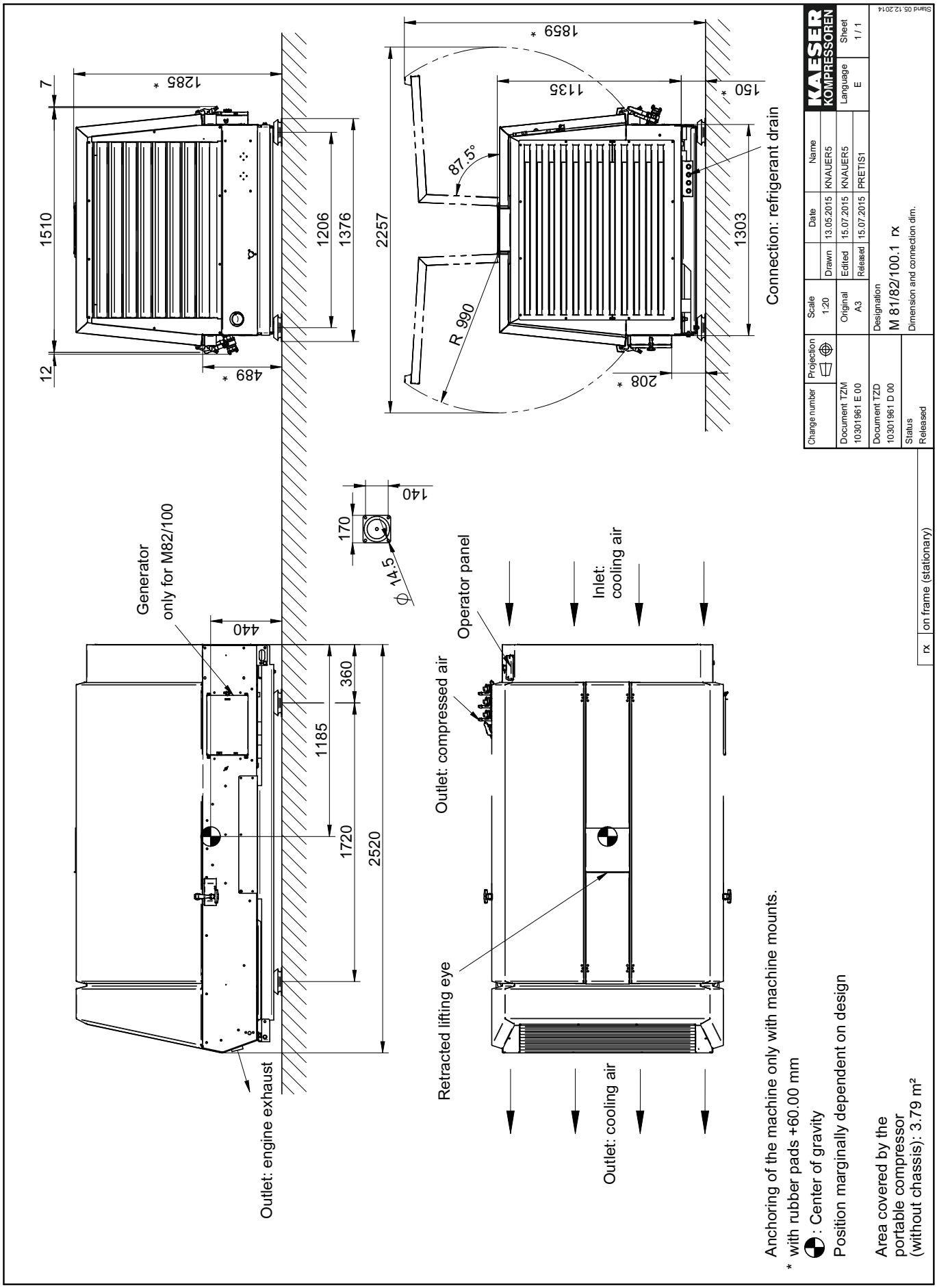
Change number	Projection	Scale 1:20		Date	Name	KAESER KOMPRESSOREN
Document TZM 10302165 E 00		Original A3	Drawn	19.05.2015	KNAUER5	Language E / Sheet 1 / 1
			Edited	15.07.2015	KNAUER5	
Document TZD 10302165 D 00		Designation M 81/82/100.1 rw	Released	15.07.2015	PRETIS1	
Status Released		Dimension and connection dim.				
rw	on skids (stationary)					

Stand 05.12.2014

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13.3.6 Option rx
Dimensional drawing, stationary version

- Option rx - Frame



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Subject to development-related changes.
Drawing may be altered only via CAD.

13.4 Wiring diagrams

13.4.1 Electrical Diagram

Electrical diagrams

MOBILAIR M82 - SCS

KUBOTA - Engine Tier 4F / stage V

Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

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c				Date	11.12.2019 E	KAESER KOMPRESSOREN	Cover page MOBILAIR M82	=	
b				Drawn	Sitter			+	
a				Released	Weid / Fischer C.			DFA82-03012.04	page 1
A	Change	Date	Name						1 Sht.

Lfd. Nr. No.	Benennung Name		Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page			DFA82-03012.04	1	
2	List of contents			ZFA82-03012.04	1	
3	Block diagram			UFA82-03012.04	1	
4	Block diagram			UFA82-03012.04	2	
5	Block diagram	cabling		UFA82-03012.04	3	
6	Circuit diagram			SFA82.IKM-03012.04	1	=IKM
7	Circuit diagram	Cable set Engine		SFA82.IKM-03012.04	2	=IKM
8	Circuit diagram	Cable set Engine		SFA82.IKM-03012.04	3	=IKM
9	Circuit diagram	activation ECU		SFA82.SK-03012.04	1	=SK
10	Circuit diagram			SFA82.SK-03012.04	2	=SK
11	Circuit diagram			SFA82.SK-03012.04	3	=SK
12	Circuit diagram	analogue input building group		SFA82.SK-03012.04	4	=SK
13	Circuit diagram	analogue input building group		SFA82.SK-03012.04	5	=SK
14	Circuit diagram	analogue input building group		SFA82.SK-03012.04	6	=SK
15	Circuit diagram	Digital output assembly		SFA82.SK-03012.04	7	=SK
16	Circuit diagram			SFA82.SK-03012.04	8	=SK
17	Circuit diagram	GSM/GPS Modem - option oc		SFA82.SK-03012.04	9	=SK
18	Equipment parts list	Control cabinet		GFA82-03012.04	1	
19	Equipment parts list	Control panel/unit components		GFA82-03012.04	2	
20	Terminal schedule	Terminal strip -X1		KFA82-03012.04	1	=SK
21	Terminal schedule	Plug connection -X21		KFA82-03012.04	10	=SK
22	Terminal schedule	Plug connection -X24		KFA82-03012.04	11	=SK
23	Terminal schedule	Plug connection -X25		KFA82-03012.04	12	=SK
24	Terminal schedule	Plug connection -X31		KFA82-03012.04	20	=SK
25	Component layout	Control panel		AFA82-03012.04	1	
26	Component layout	Control cabinet		AFA82-03012.04	2	
27	Component layout	Control cabinet outer side bottom		AFA82-03012.04	3	

c				Date	11.12.2019	KAESER KOMPRESSOREN	List of contents	=	
b				Drawn	Sitter		MOBILAIR M82	+	
a				Released	Weid / Fischer C.			ZFA82-03012.04	page 1
B	Change	Date	Name						1 Sht.

general instructions

Control voltage 12VDC

All non-designated conductors FLRY 0,75mm² white

All control lines marked a) are 1,5mm² FLRY white

All control lines marked b) are 2,5mm² FLRY white

All control lines marked c) are 0,75mm² FLRY brown

potentials:

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

wiring colors:

BU	= blue	OG	= orange
BN	= brown	PK	= pink
YE	= yellow	RD	= red
GN	= green	BK	= black
GNYE	= green-yellow	VT	= violet
GY	= grey	WH	= white

option ga = generator

option ob = Automatic-start-stop

option oc = GSM/GPS Modem

c				Date	11.12.2019		Block diagram	=	
b				Drawn	Sitter		MOBILAIR M82	+	
a				Released	Weid / Fischer C.			UFA82-03012.04	page 1
C	Change	Date	Name						3 Sht.

1	2	3	4	5	6	7	8

components Control cabinet

-K20	Control board SCS
-K22	Control board
-F13,-F15,-F20, -F30,-F39,-F100	Fuse
-K30	Relay Starter
-K31	glow relay
-K32	Relay fuel pump
-K38	Relay ECU ON
-K39	Relay ECU
-R2	Diode
-R3,-R10,-R11,-R13	Resistor
-T20	Voltage transformer DC/DC
-X1	Terminal strip
-X21,-X24,-X25,-X31	plug connection
-X100	Diagnostic socket KAESER

model-dependent components:

-G3	generator
-X4	interface generator
-K27	GSM/GPS Modem
-T27	GSM/GPS antenna
-X13	GSM/GPS Modem interface

components Control panel

-S10	switch "Control ON"
-S1	EMERGENCY STOP pushbutton
-K21	Operating unit SCS

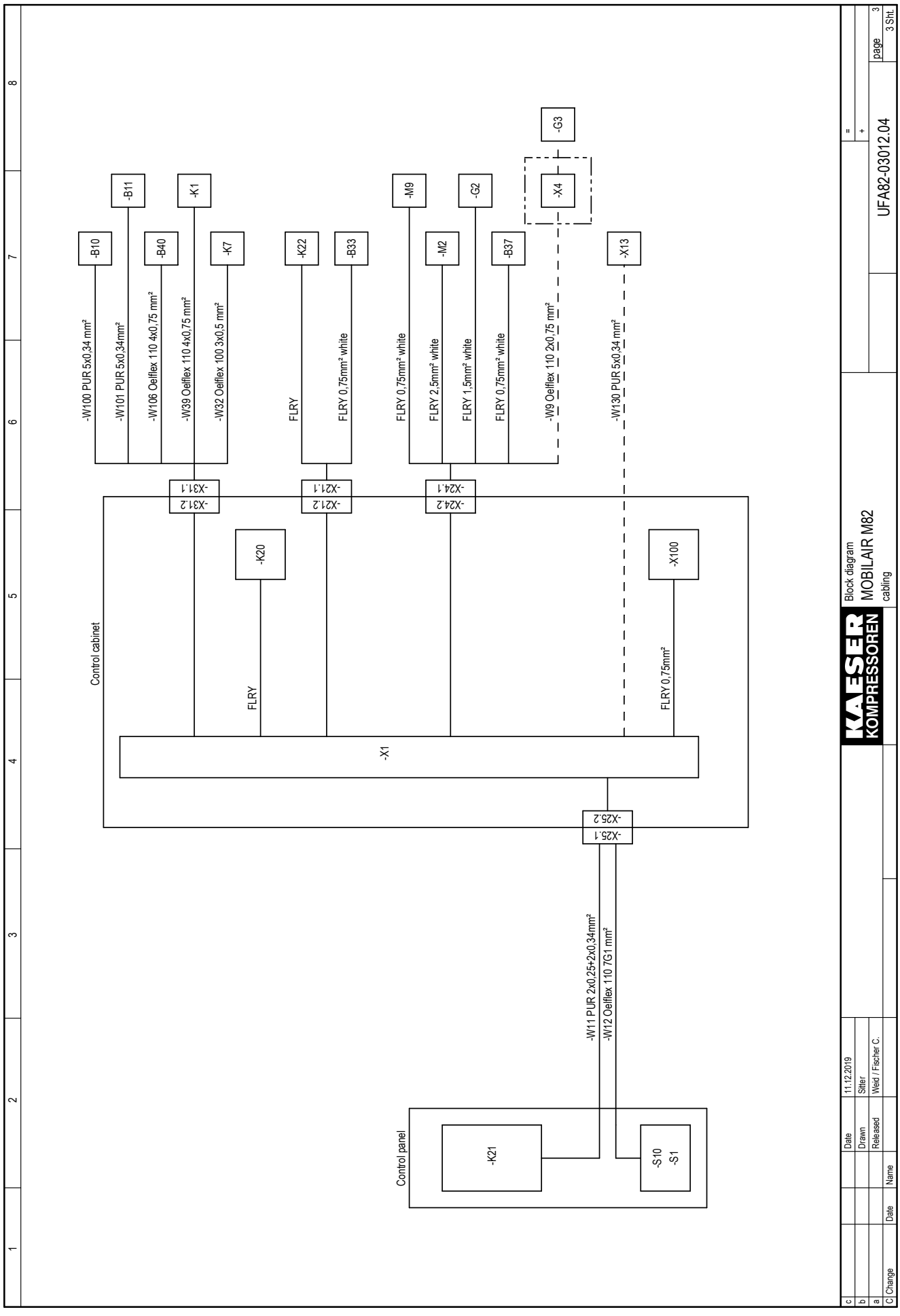
components unit

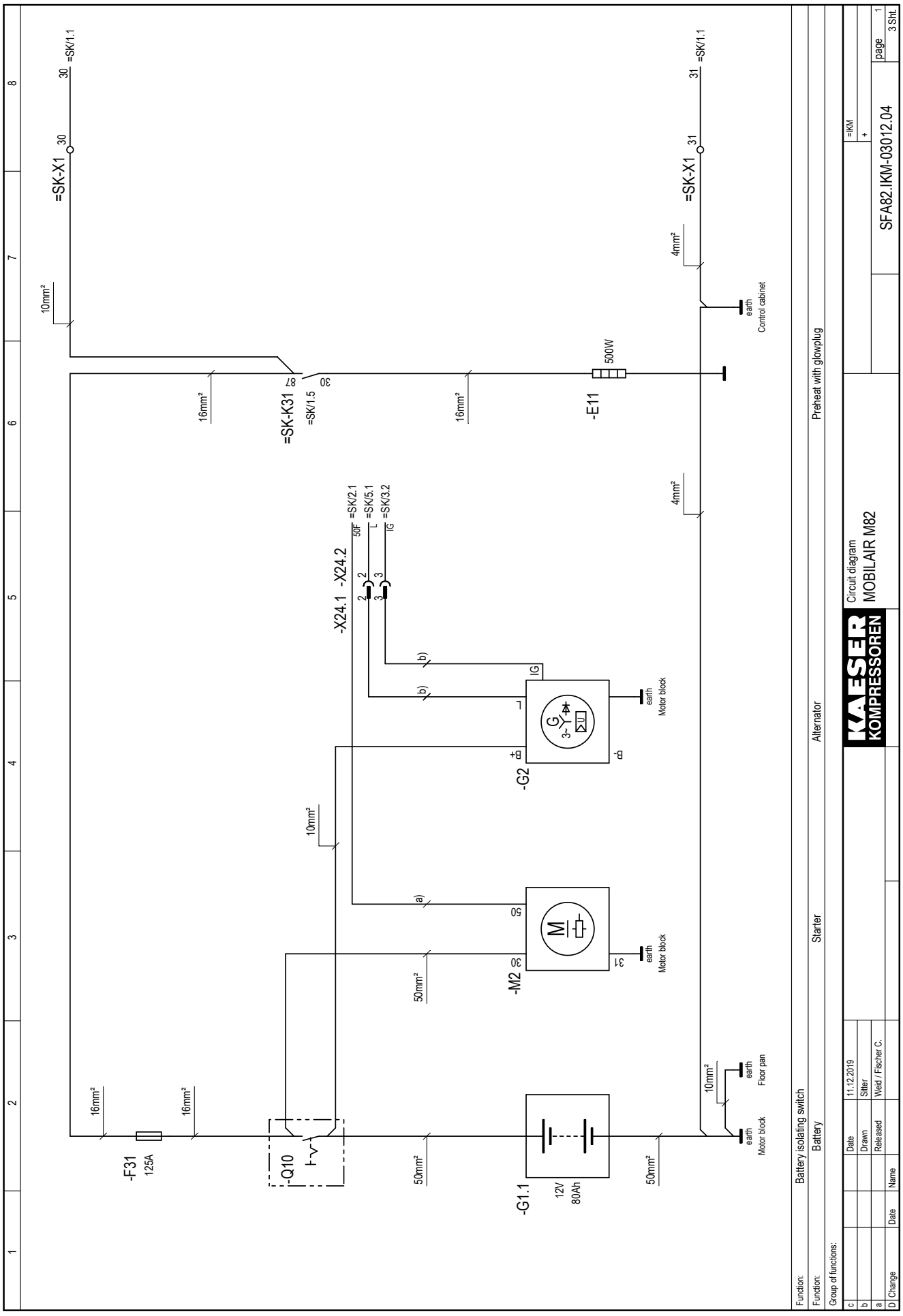
-B10	Pressure transducer Oil separator
-B11	Pressure transducer Inlet valve
-B33	Filter maintenance fuel
-B37	sensor fuel level
-B40	temperature sensor Airend discharge temperature
-K1	Control valve Inlet valve
-K7	Valve Venting
-F31	Fuse
-M9	fuel pump

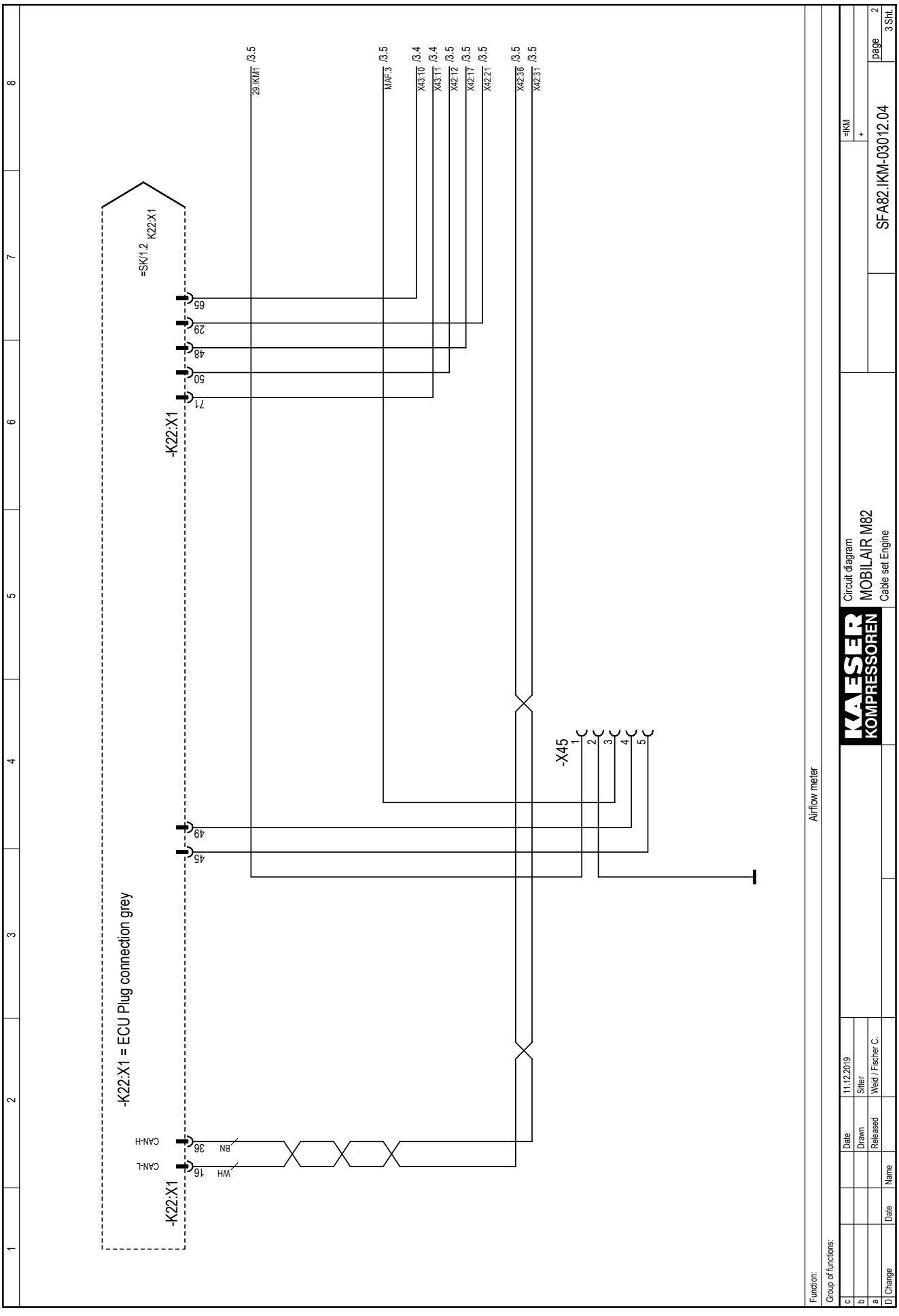
components Drive motor

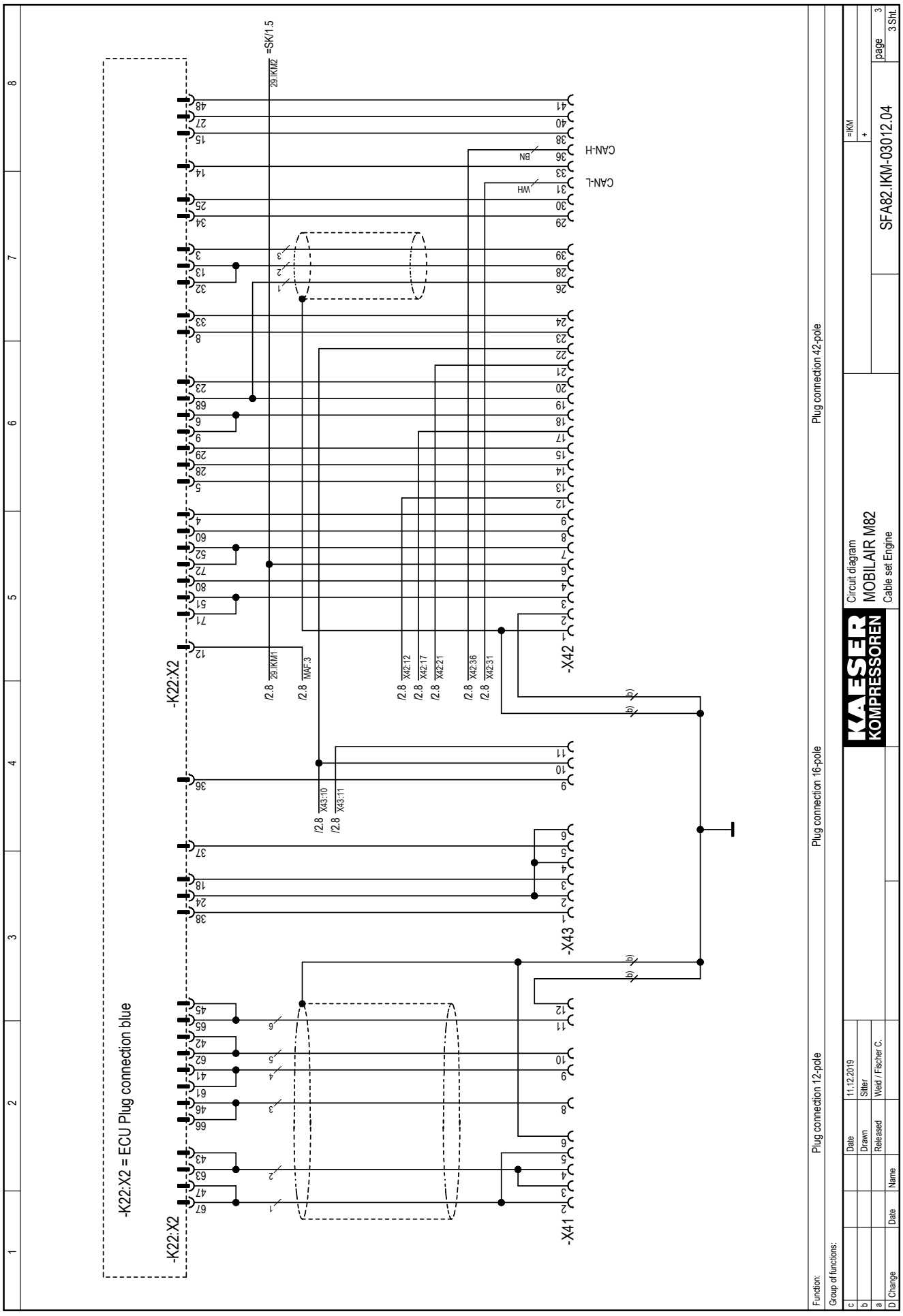
-G2	Alternator
-G1.1	Battery
-M2	Starter
-Q10	Battery isolating switch
-E11	heating flange

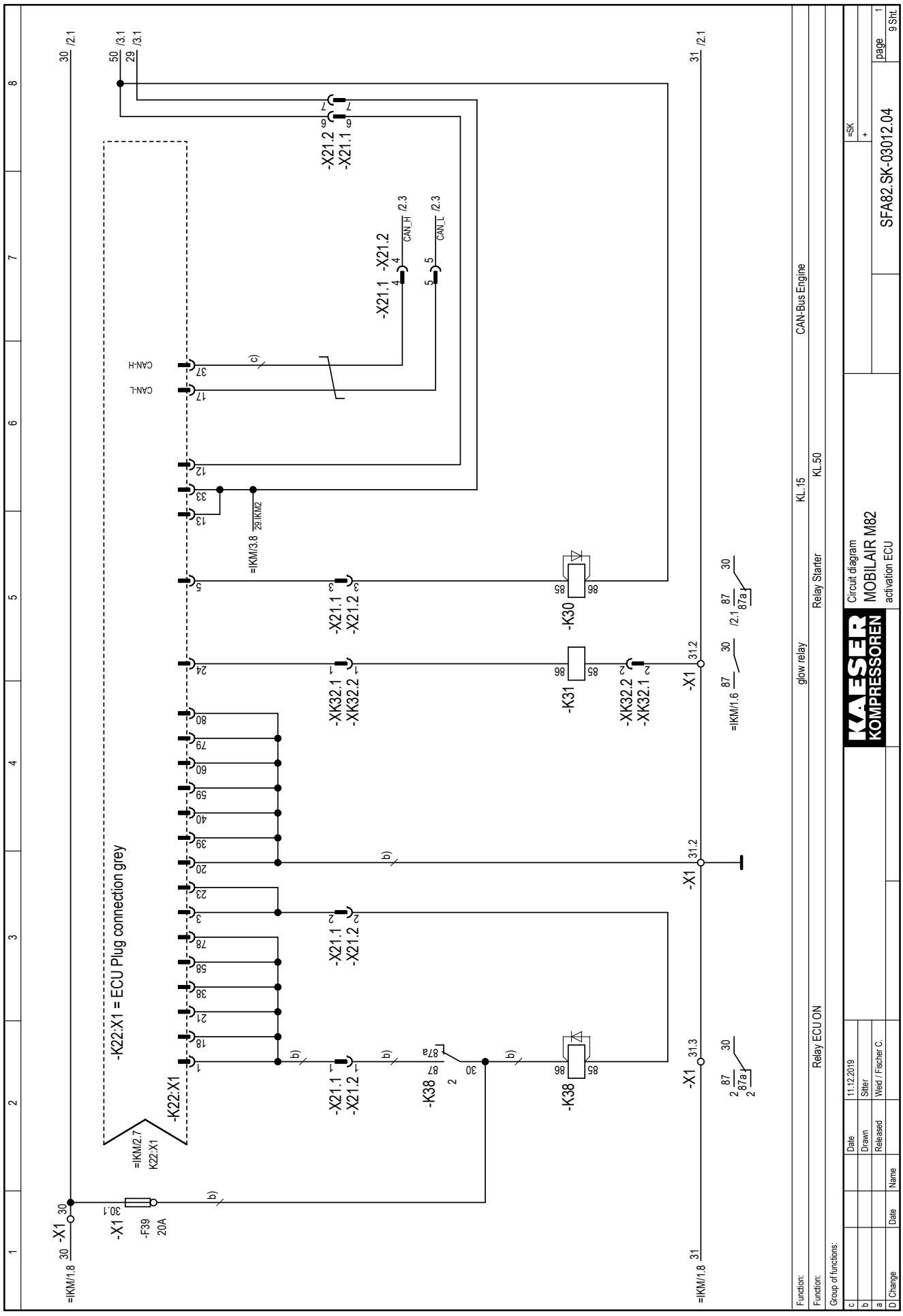
c				Date	11.12.2019	KAESER KOMPRESSOREN	Block diagram	=	
b				Drawn	Sitter		MOBILAIR M82	+	
a				Released	Weid / Fischer C.				
C	Change	Date	Name					UFA82-03012.04	page 2 / 3 Sht.

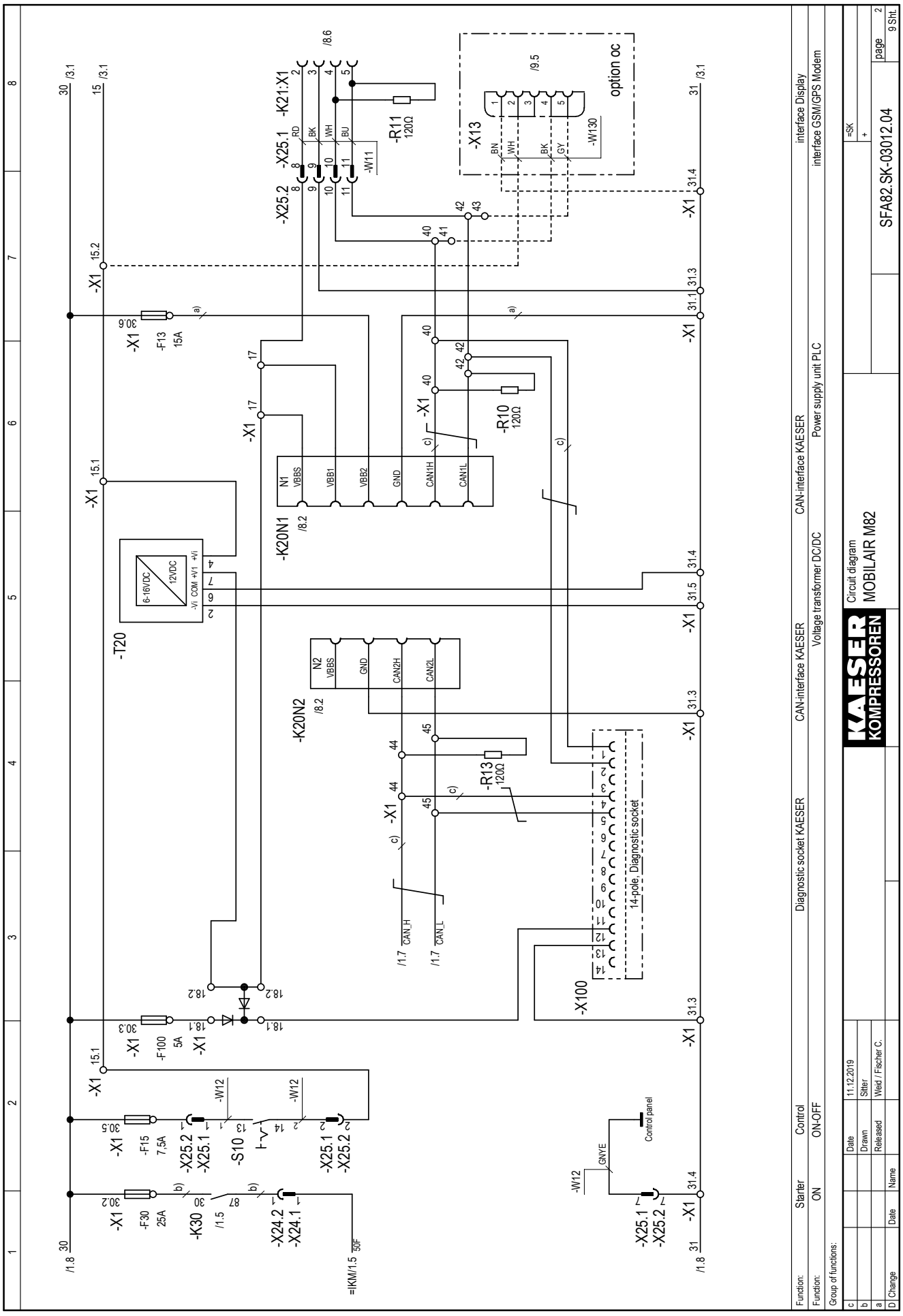

-G3
-X4
-B11
-K1
-M9
-G2
-B10
-B40
-K7
-K22
-B33
-M2
-B37
-X13
-W100 PUR 5x0,34 mm²
-W101 PUR 5x0,34mm²
-W106 Oelflex 110 4x0,75 mm²
-W39 Oelflex 110 4x0,75 mm²
-W32 Oelflex 100 3x0,5 mm²
FLRY
FLRY 0,75mm² white
FLRY 0,75mm² white
FLRY 2,5mm² white
FLRY 1,5mm² white
FLRY 0,75mm² white
-W9 Oelflex 110 2x0,75 mm²
-W130 PUR 5x0,34 mm²
-X31.1
-X31.2
-X21.1
-X21.2
-X24.1
-X24.2
Control cabinet
-K20
-X100
FLRY
FLRY 0,75mm²
-X1
-X25.1
-X25.2
-W11 PUR 2x0,25+2x0,34mm²
-W12 Oelflex 110 7G1 mm²
Control panel
-K21
-S10
-S1
KAESER KOMPRESSOREN
Block diagram
MOBILAIR M82
cabling
UFA82-03012.04
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3 Sht.
Date
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Change
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Name

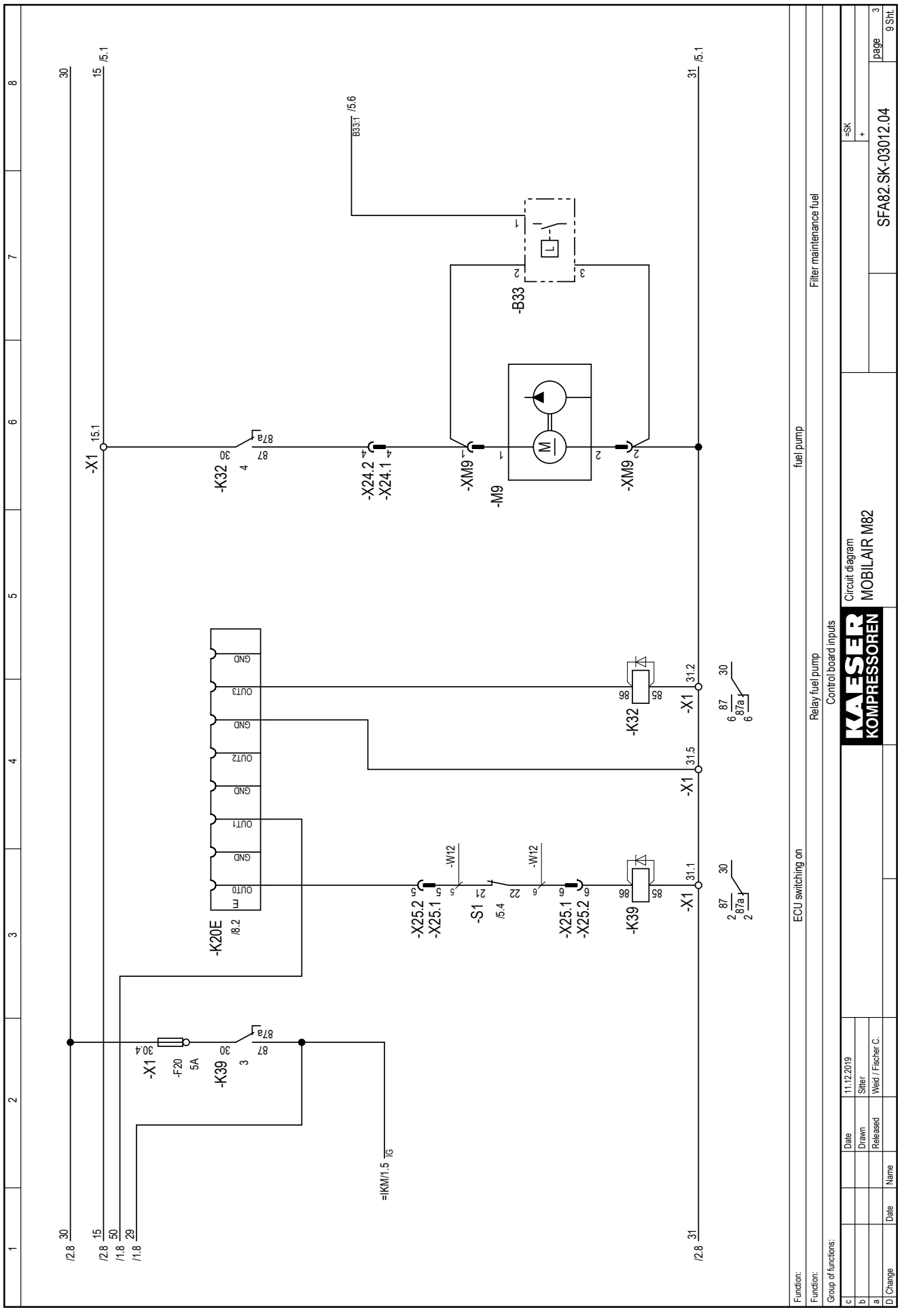

=SK-X1 30
=SK/1.1 30
=SK-X1 31
=SK/1.1 31
10mm²
16mm²
=SK-K31
87
30
=SK/1.5
-E11
500W
4mm²
earth
Control cabinet
-X24.1 -X24.2
50F =SK/2.1
L =SK/5.1
IG =SK/3.2
-G2
B+
B-
IG
L
earth
Motor block
-M2
50
30
31
50mm²
-F31
125A
-Q10
-G1.1
12V
80Ah
earth
Floor pan
Function: Battery isolating switch
Function: Battery
Starter
Alternator
Preheat with glowplug
Group of functions:
Circuit diagram
MOBILAIR M82
KAESER KOMPRESSOREN
=IKM
SFA82.IKM-03012.04
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3 Sht.
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Change

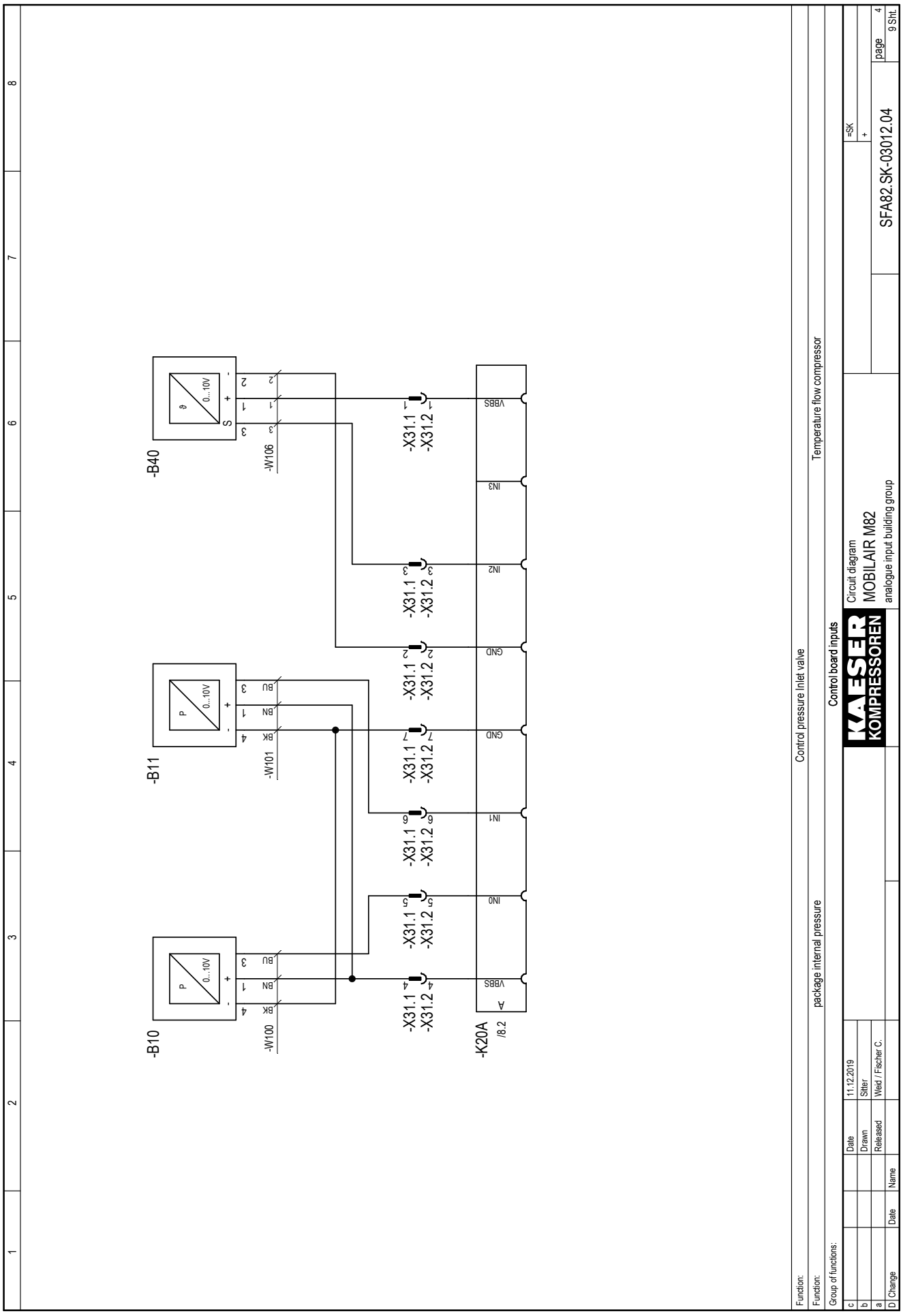

=SK/1.2 K22:X1
-K22:X1 = ECU Plug connection grey
-K22:X1
-K22:X1
65
29
48
50
71
49
45
36
16
CAN-H
CAN-L
BN
WH
29.IKM1 /3.5
MAF-3 /3.5
X43:10 /3.4
X43:11 /3.4
X42:12 /3.5
X42:17 /3.5
X42:21 /3.5
X42:36 /3.5
X42:31 /3.5
-X45
1
2
3
4
5
Airflow meter
Function:
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
Cable set Engine
=IKM
+
page 2
3 Sht.
SFA82.IKM-03012.04
Date
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11.12.2019
Sitter
Weid / Fischer C.
Name
Change
1 2 3 4 5 6 7 8

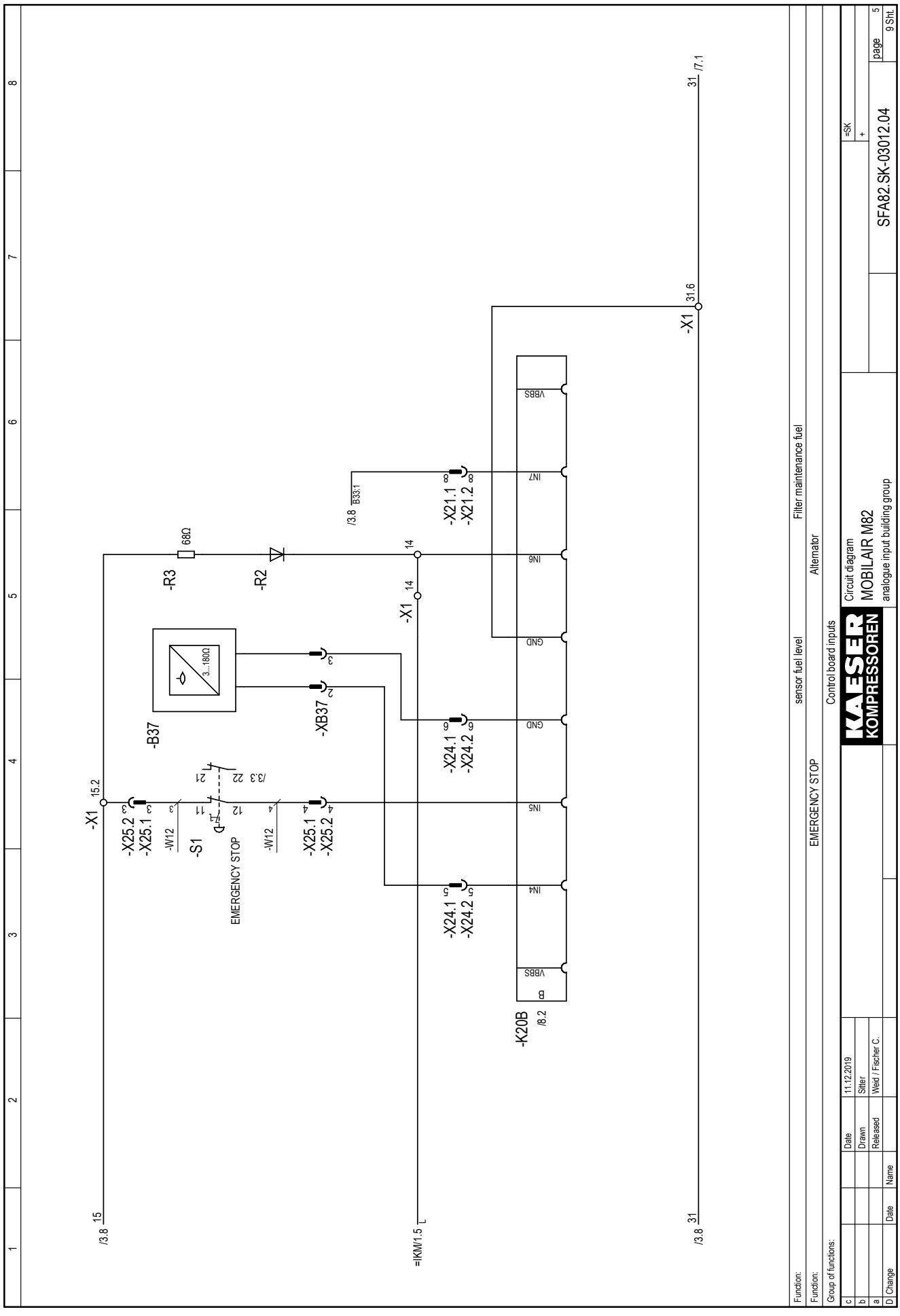

-K22:X2 = ECU Plug connection blue
-K22:X2
-K22:X2
=SK/1.5
29/.IKM2
CAN-H
CAN-L
BN
WH
-X42
-X43
-X41
Plug connection 42-pole
Plug connection 16-pole
Plug connection 12-pole
Function:
Group of functions:
Date
Drawn
Released
Name
11.12.2019
Sitter
Weid / Fischer C.
Change
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
Cable set Engine
SFA82.IKM-03012.04
=IKM
page 3
3 Sht.

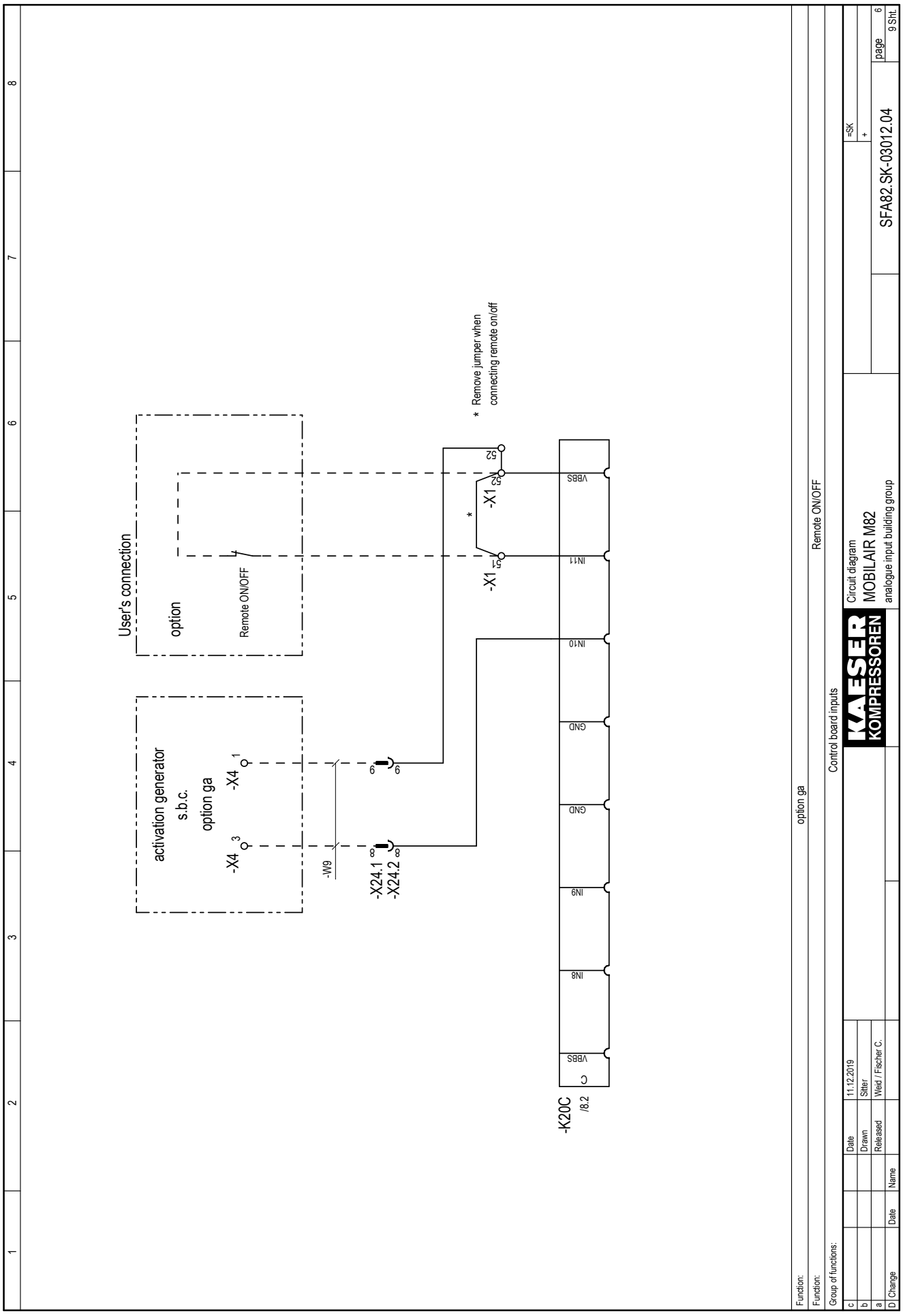

-K22:X1 = ECU Plug connection grey
-K22:X1
-X1
-F39
20A
-K30
-K31
-K38
-X21.1
-X21.2
-XK32.1
-XK32.2
CAN_H
CAN_L
CAN-H
CAN-L
=IKM/1.8
=IKM/2.7
K22:X1
=IKM/3.8
=IKM/1.6
Relay ECU ON
glow relay
Relay Starter
KL.15
KL.50
CAN-Bus Engine
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
activation ECU
SFA82.SK-03012.04
page 1
9 Sht.
=SK
Date
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Name
Change

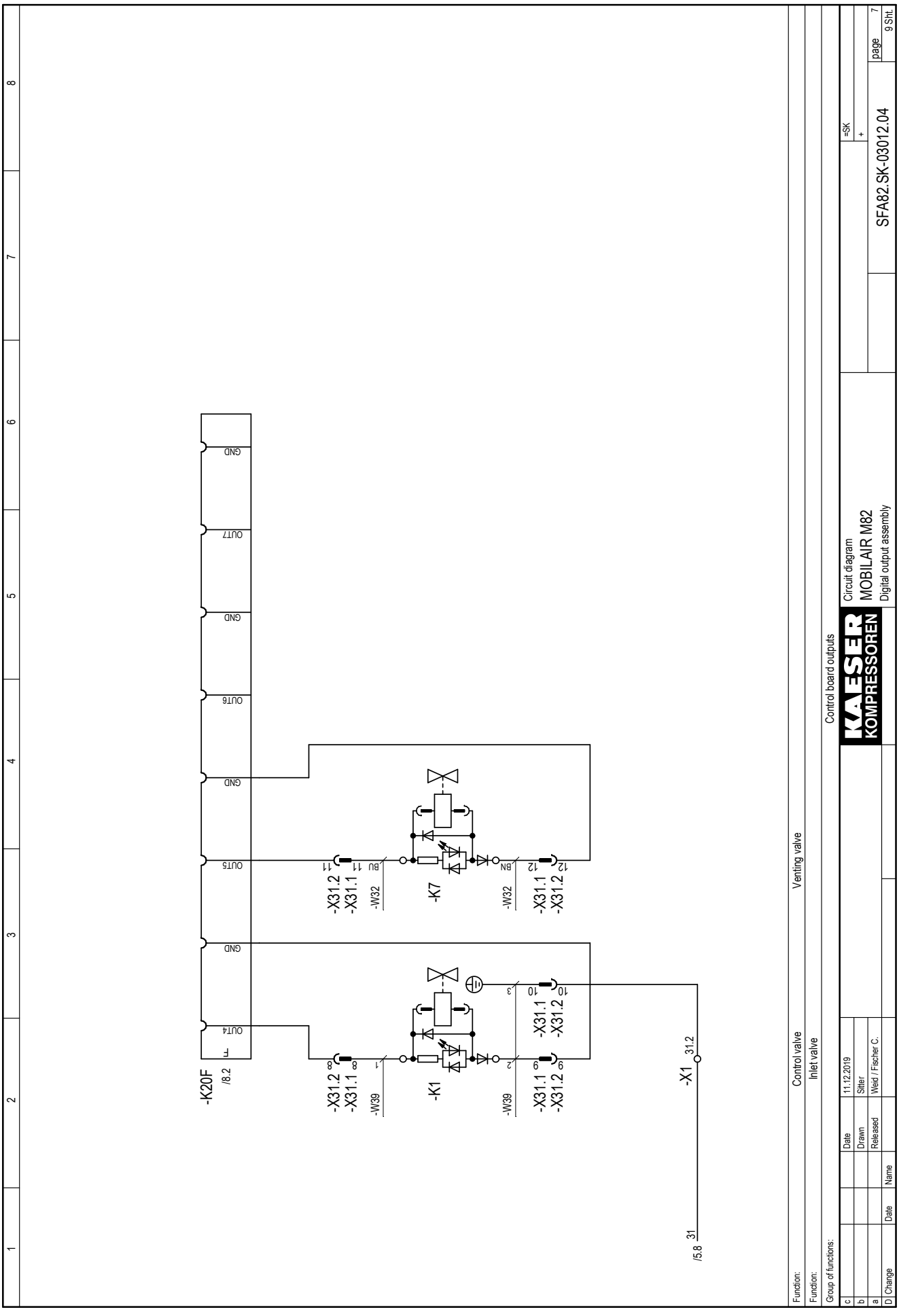

-K21:X1
-X25.1
-X25.2
-R11 120Ω
-W11
-X13
option oc
-W130
-K20N1
-K20N2
-R10 120Ω
-R13 120Ω
-T20
-F13 15A
-F100 5A
-F15 7,5A
-F30 25A
-S10
-K30
-X24.1
-X24.2
-X25.1
-X25.2
-X100
-W12
Control panel
14-pole, Diagnostic socket
CAN_H
CAN_L
=IKM/1.5 50F
Function: Starter Control Diagnostic socket KAESER CAN-interface KAESER CAN-interface KAESER interface Display
Function: ON ON-OFF Voltage transformer DC/DC Power supply unit PLC interface GSM/GPS Modem
Group of functions:
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Circuit diagram
MOBILAIR M82
=SK
SFA82.SK-03012.04
page 2
9 Sht.

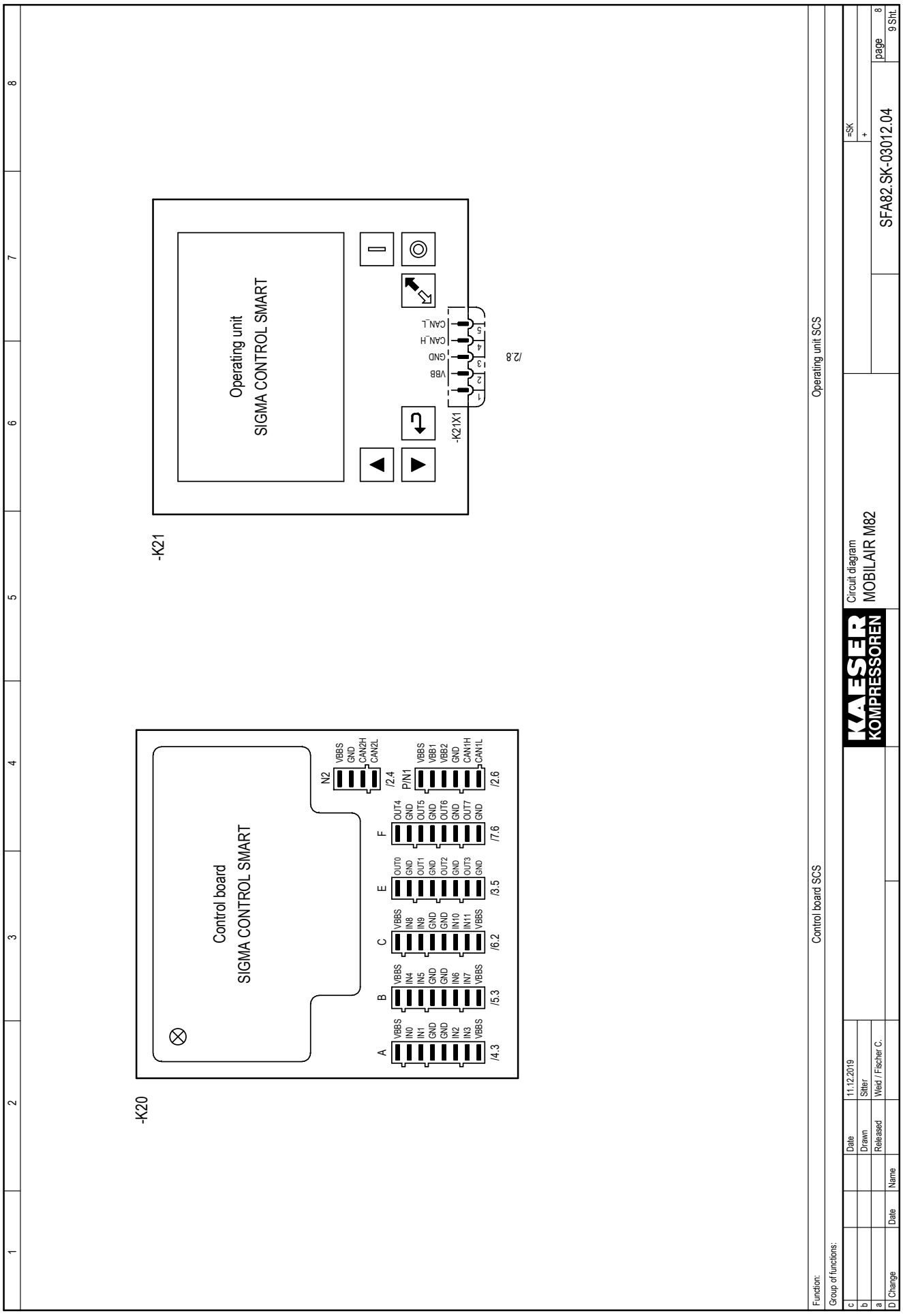

Function: ECU switching on
Function: Relay fuel pump
Group of functions: Control board inputs
Function: fuel pump
Filter maintenance fuel
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
SFA82.SK-03012.04
page 3
9 Sht.
=SK
Date 11.12.2019
Drawn Sitter
Released Weld / Fischer C.
Name
Change
-X1
-F20 5A
-K39
-K20E
-K32
-S1
-K39
-X25.2 -X25.1
-X25.1 -X25.2
-W12
-X24.2 -X24.1
-XM9
-M9
-B33
-K32
-X1
=IKM/1.5 1G

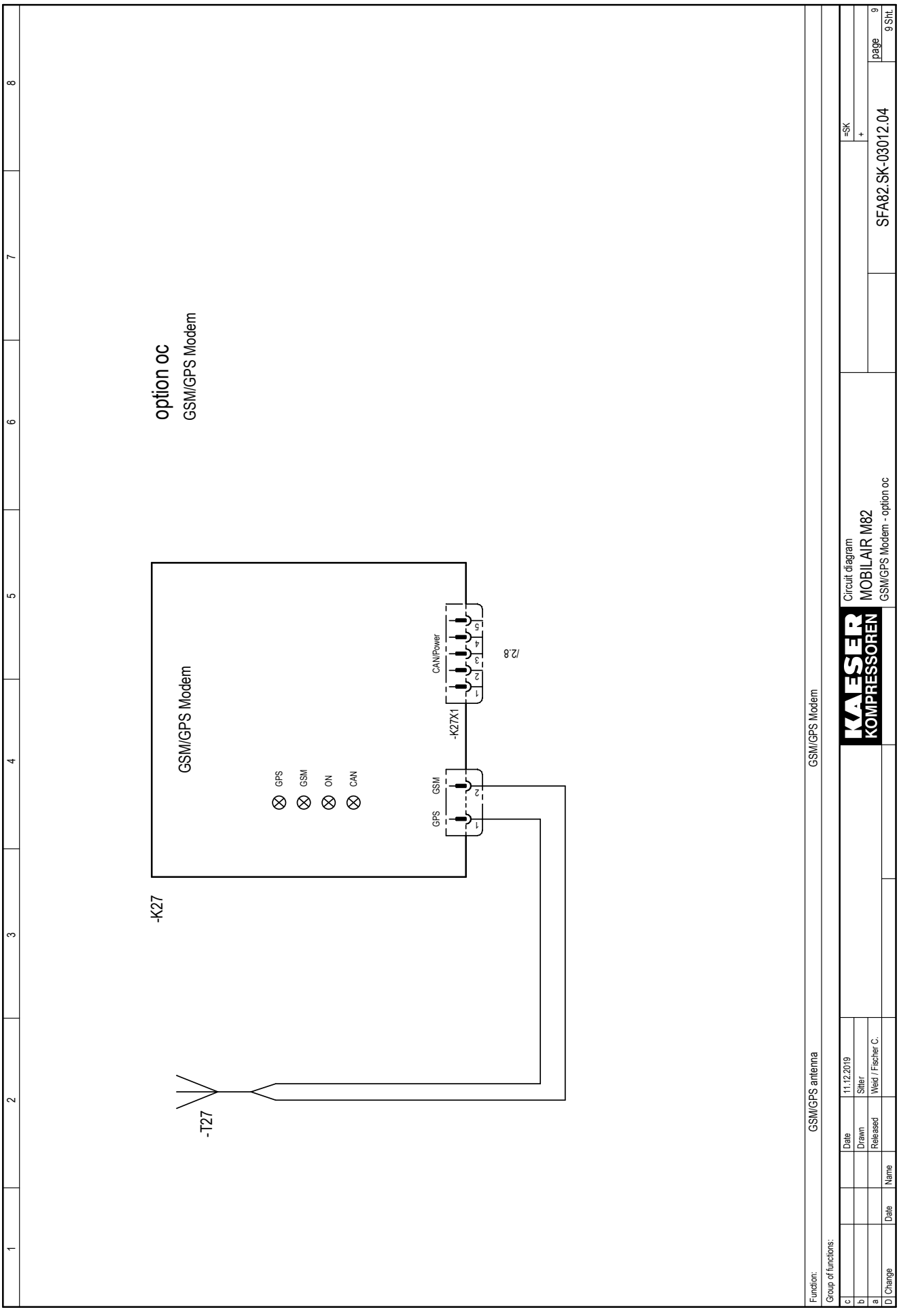

-B40
-B11
-B10
-K20A
/8.2
-W106
-W101
-W100
-X31.1
-X31.2
VBBS
IN3
IN2
GND
GND
IN1
IN0
VBBS
0...10V
Control pressure Inlet valve
Temperature flow compressor
package internal pressure
Control board inputs
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
analogue input building group
SFA82.SK-03012.04
=SK
page 4
9 Sht.
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Date
D Change


-X1 31.6
31 /7.1
-X1 15.2
/3.8 15
=IKM/1.5 L
/3.8 31
-R3 68Ω
-R2
-B37
3...180Ω
-XB37
-S1
EMERGENCY STOP
/3.3 22 21
-W12
-X25.2 -X25.1
-X25.1 -X25.2
-X1 14
/3.8 B33:1
-X21.1 -X21.2
-X24.1 -X24.2
-K20B /8.2
VBBS
IN7
IN6
GND
GND
IN5
IN4
VBBS
B
Function: sensor fuel level Filter maintenance fuel
Function: EMERGENCY STOP Alternator
Group of functions: Control board inputs
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
analogue input building group
SFA82.SK-03012.04
=SK
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Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Date
Change


User's connection
option
Remote ON/OFF
activation generator
s.b.c.
option ga
-X4
-X4
-W9
-X24.1
-X24.2
-X1
-X1
* Remove jumper when connecting remote on/off
*
-K20C
/8.2
VBBS
IN11
IN10
GND
GND
IN9
IN8
VBBS
Function:
option ga
Function:
Remote ON/OFF
Group of functions:
Control board inputs
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
analogue input building group
SFA82.SK-03012.04
=SK
+
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Date
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Released
11.12.2019
Sitter
Weid / Fischer C.
Name
Change


-K20F
/8.2
OUT4
GND
OUT5
GND
OUT6
GND
OUT7
GND
-X31.2
-X31.1
-W39
-K1
-X31.1
-X31.2
-X1
31.2
/5.8 31
-X31.2
-X31.1
-W32
-K7
-X31.1
-X31.2
Function: Control valve
Venting valve
Function: Inlet valve
Group of functions: Control board outputs
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
Digital output assembly
SFA82.SK-03012.04
=SK
+
page 7
9 Sht.
Date 11.12.2019
Drawn Sitter
Released Weld / Fischer C.
Name
Date
Change


Operating unit
SIGMA CONTROL SMART
-K21
-K21X1
/2.8
VBB
GND
CAN_H
CAN_L
Control board
SIGMA CONTROL SMART
-K20
N2
P/N1
/2.4
/2.6
/4.3
/5.3
/6.2
/3.5
/7.6
Function:
Control board SCS
Operating unit SCS
Group of functions:
Date
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Name
Change
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
=SK
+
SFA82.SK-03012.04
page 8
9 Sht.


option oc
GSM/GPS Modem
GSM/GPS Modem
GPS
GSM
ON
CAN
-K27
-K27X1
CAN/Power
GPS
GSM
2.8
-T27
GSM/GPS antenna
GSM/GPS Modem
Function:
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M82
GSM/GPS Modem - option oc
SFA82.SK-03012.04
=SK
+
page 9
9 Sht.
Date
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Name
Change

1	2	3	4	5	6	7	8

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller / Identification data Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer			D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 / Identifying symbol of device	F Stromlaufplan Planabschnitt / Circuit diagram sheet No.; section No.	G Einbauort / Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Control cabinet:											
1	Control cabinet	300x400x155mm	7.3146.02400	Rittal								
1	Mounting plate		7.3146.01770	Rittal								
1	Control board SCS	CR9052	7.9200.11000	ifm		-K20						
4	Relay	12V, 1W, 30/40A	8.6544.00050	FTM		-K30,-K32,-K38,-K39						
4	Relay socket		7.3411.00020	FTM		-K30,-K32,-K38,-K39						
1	glow relay		8.9041.0	KUBOTA		-K31						
1	Terminal	WKFN 4/35	7.3149.01810	Phoenix		-X1						
18	Terminal	WKFN 2,5D2/2/35	7.3149.02080	Wieland		-X1						
1	Terminal	WKF 16/35 PV/WKFN	7.3149.02170	Wieland		-X1						
1	Terminal	WKFN 2,5E/35/G2	7.3149.02680	Wieland		-X1						
6	Fuse terminal	WKFN 4FSI	7.3149.02160	Wieland		-X1						
2	Fuse UNIVAL	5 A	7.6411.00040	FTM		-F20,-F100						
1	Fuse UNIVAL	7,5 A	7.6411.00100	FTM		-F15						
1	Fuse UNIVAL	15 A	7.6411.00060	FTM		-F13						
1	Fuse UNIVAL	20 A	7.6411.00080	FTM		-F39						
1	Fuse UNIVAL	25 A	7.6411.00070	FTM		-F30						
2	Resistor	120 Ω	7.5392.00030	Bürklin		-R10,-R13						
1	Resistor	68 Ω	7.5392.00020	Bürklin		-R3						
1	Diode	BY550-600	7.4780.00030	Bürklin		-R2						
1	Voltage transformer	6-16VDC/12VDC	7.9235.0	TDK-Lambda		-T20						
1	Diagnostic socket KAESER	14-pole	7.6589.02000	Boersig		-X100						
1	plug connection 4-pole		7.9200.01300	Boersig		-K20N2						
1	plug connection 6-pole		7.9200.01310	Boersig		-K20N1						
3	plug connection 8-pole		7.9200.01320	Boersig		-K20A,-K20B,-K20C						
2	plug connection 8-pole		7.9200.01330	Boersig		-K20E,-K20F						
4	plug connection 12-pole	1604941-1	7.6589.00520	Boersig		-X21,-X24,-X25,-X31						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Spalten B und C angegebenen Daten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung dieser Gerätestücklisten-Nummer anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

In Zweifelsfällen gilt die deutsche Fassung.

When reordering the equipment, all data enclosed by the heavy lines of columns B and C should be stated. In addition, the data in columns D to G should be given together with the No. of this list of equipment, insofar as they ar helpful in answering technical enquiries. 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.

*) Versandanschrift - Kennzeichen

c				Date	11.12.2019	KAESER KOMPRESSOREN	Equipment parts list MOBILAIR M82 Control cabinet	=
b				Drawn	Sitter			+
a				Released	Weid / Fischer C.		GFA82-03012.04	page 1
F	Change	Date	Name					2 Sht.

1	2	3	4	5	6	7	8

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung (Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller) Identification data (Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer)			D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Control panel											
1	Operating unit SCS	CR9047	7.9200.11010	ifm		-K21						
1	EMERGENCY STOP	QRUV	7.3217.0	Schlegel		-S1						
1	Switching element	MHT00	7.3218.0	Schlegel		-S1						
1	switch Control voltage ON/OFF	RKWA	7.9027.10050	Schlegel		-S10						
1	Switching element	BTL5 24VCD, 2A	7.9027.10030	Schlegel		-S10						
1	plug connection 12-pole	350735-1	7.6589.00500	Boersig		-X25						
	unit components											
1	Pressure transducer	0...16 bar	7.9204.0	Huba		-B10						
1	Pressure transducer	-1...5 bar	7.9203.0	Huba		-B11						
1	Temperature probe	-30...130 °C	7.9202.40010	Bedia		-B40						
1	sensor fuel level	sensor l=571mm	7.9254.20010	Euroswitch		-B37						
1	Fuel filter		8.9038.0	KUBOTA		-B33						
1	Fuse	125A	7.6411.00025	FTM		-F31						
1	Heating	500W		KUBOTA		-E11						
1	Solenoid valve	12V DC G3/8 2/2W	7.7089.00010	Bürkert		-K1						
1	fuel pump		8.9164.0	KUBOTA		-M9						
1	Control board			Bosch		-K22						
	model-dependent components											
1	GSM/GPS Modem	Ifm CR3114	7.9208.01000	Proemion		-K27						
1	GSM/GPS antenna		7.9208.01010	Proemion		-T27						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des

In Zweifelsfällen gilt die deutsche Fassung.

Spalten B und C angegebenen Daten dieser Gerätestücklisten-Nummer Für Ersatzteilbestellung ist zusätzlich Erzeugnisses genannt ist.

When reordering 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 ar helpful in answering technical enquiries. When ordering spare parts, product if stated on the rating plate.

The German version applies in cases of doubt.

B and C should be stated. In this list of equipment, insofar as also quote the serial No. of the

*) Versandanschrift - Kennzeichen

c			Date	11.12.2019	
b			Drawn	Sitter	
a			Released	Weid / Fischer C.	
F	Change	Date	Name		

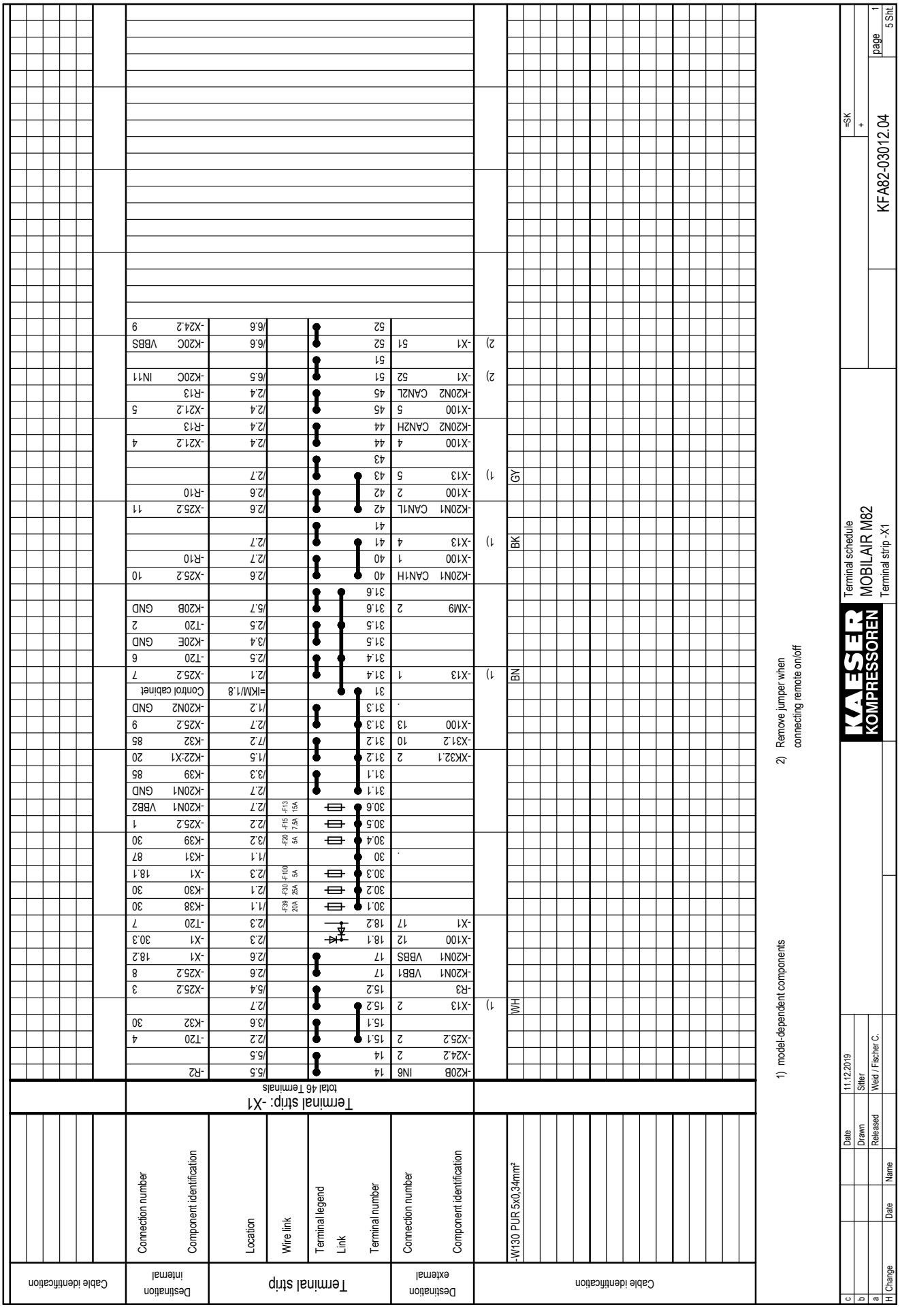
KAESER KOMPRESSOREN

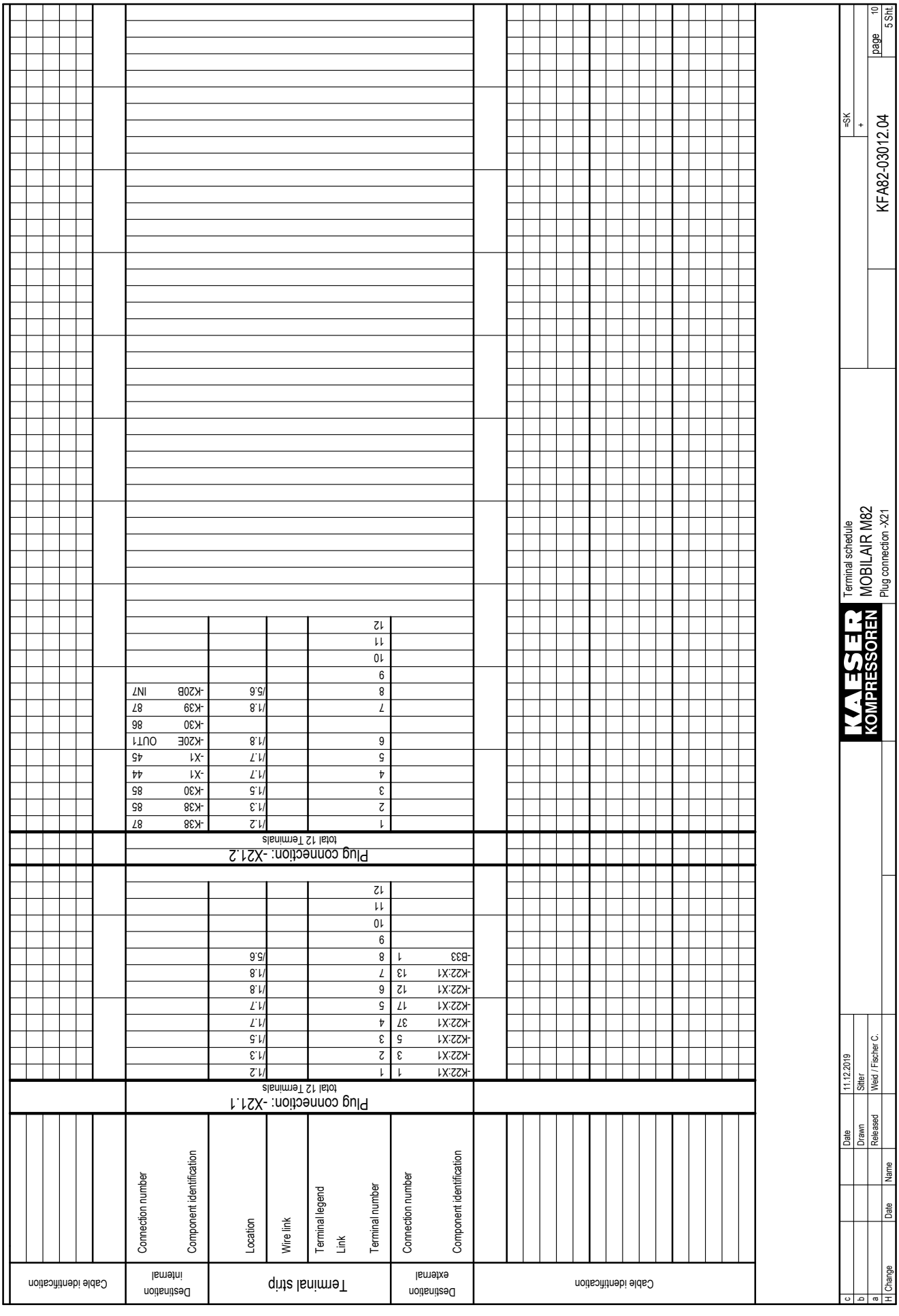
Equipment parts list
MOBILAIR M82
Control panel/unit components

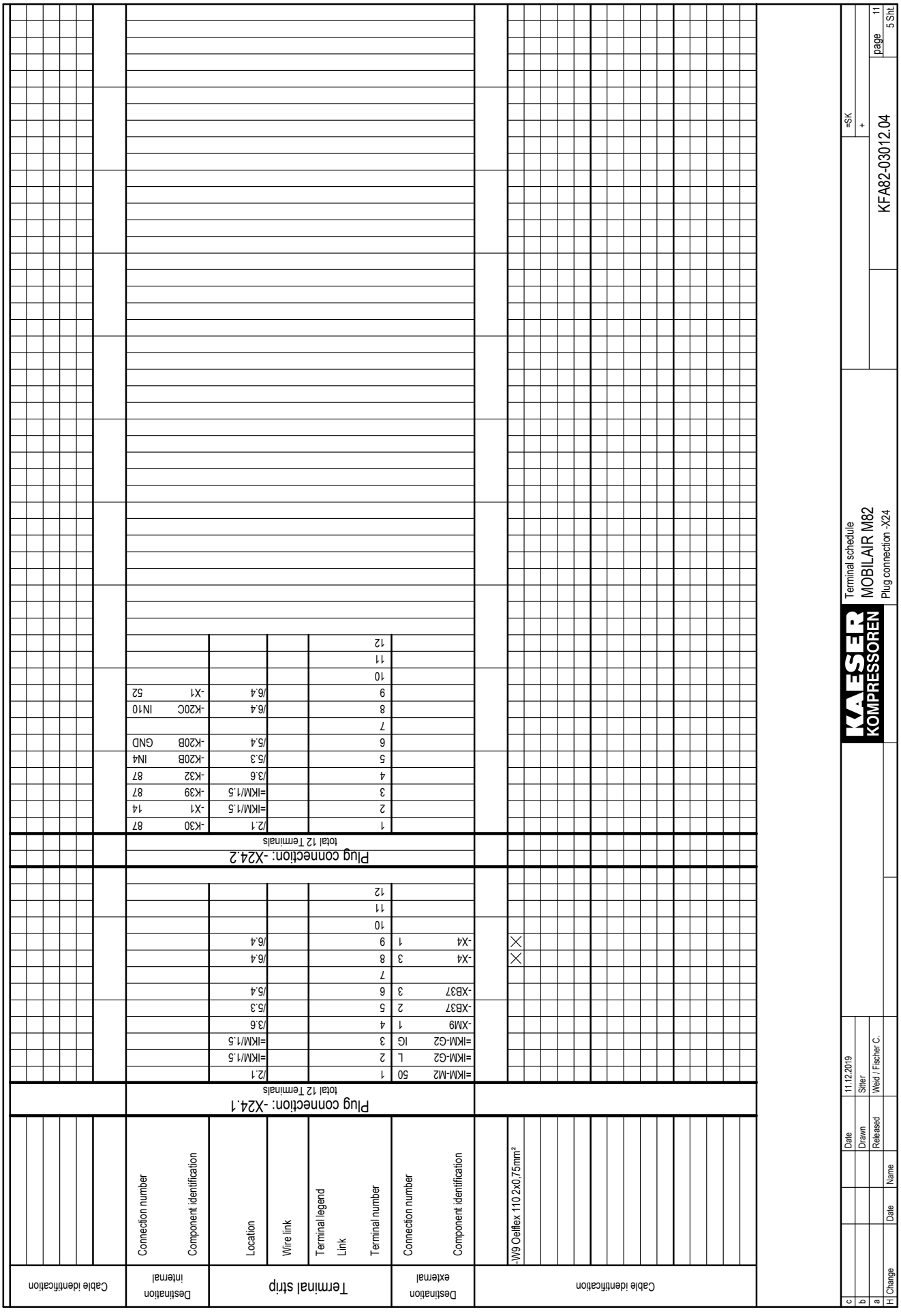
=
+

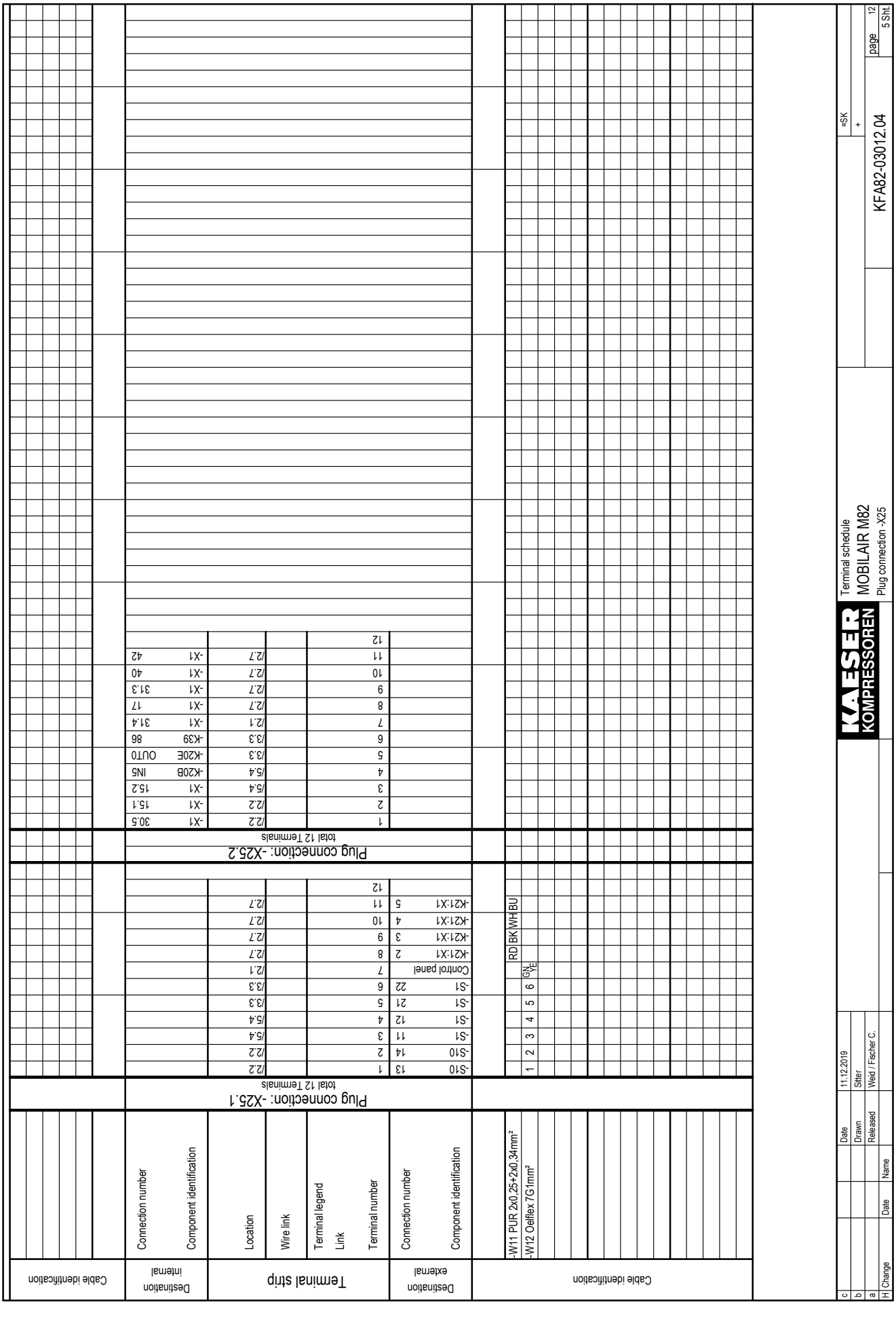
GFA82-03012.04

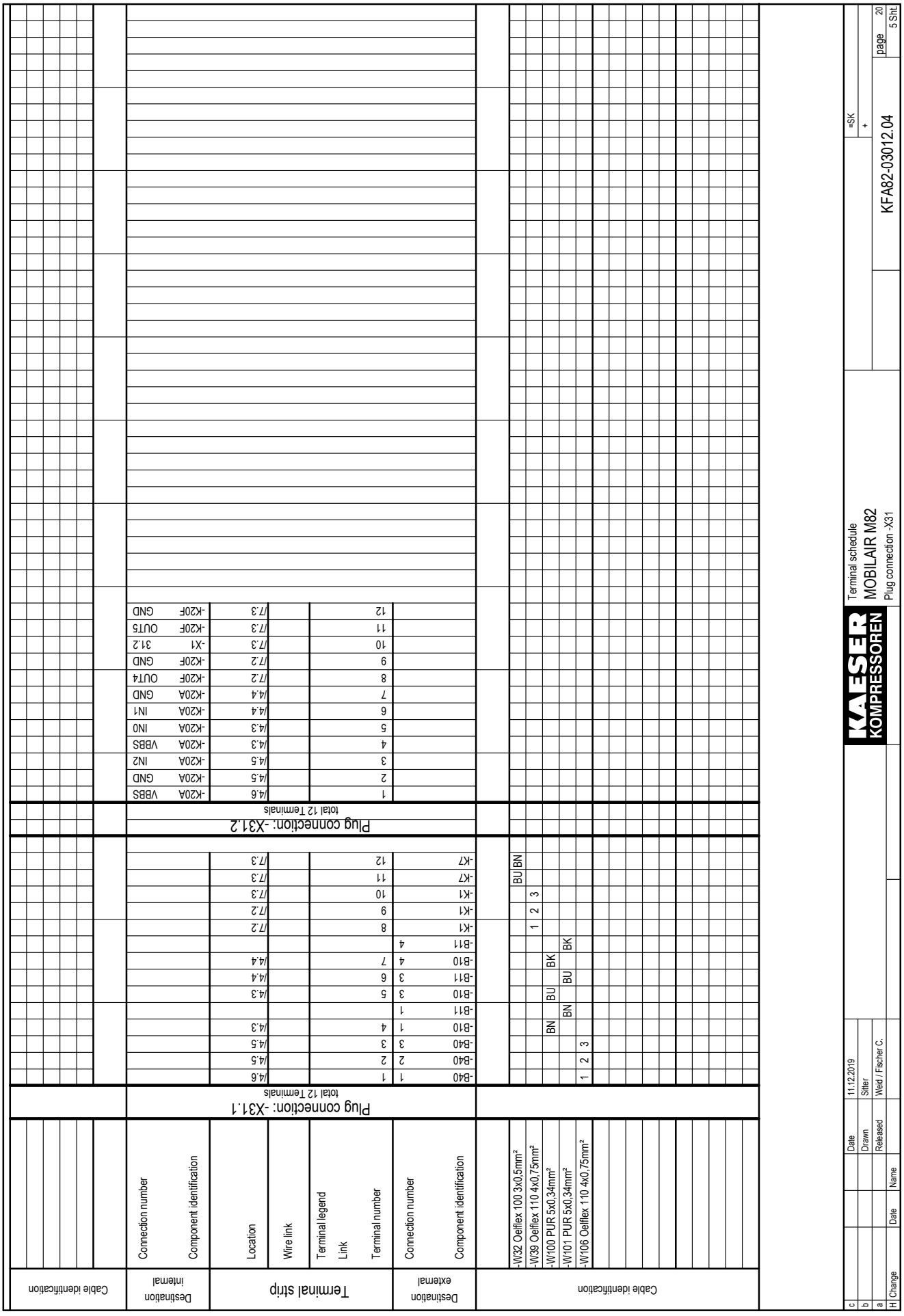
page 2
2 Sht.

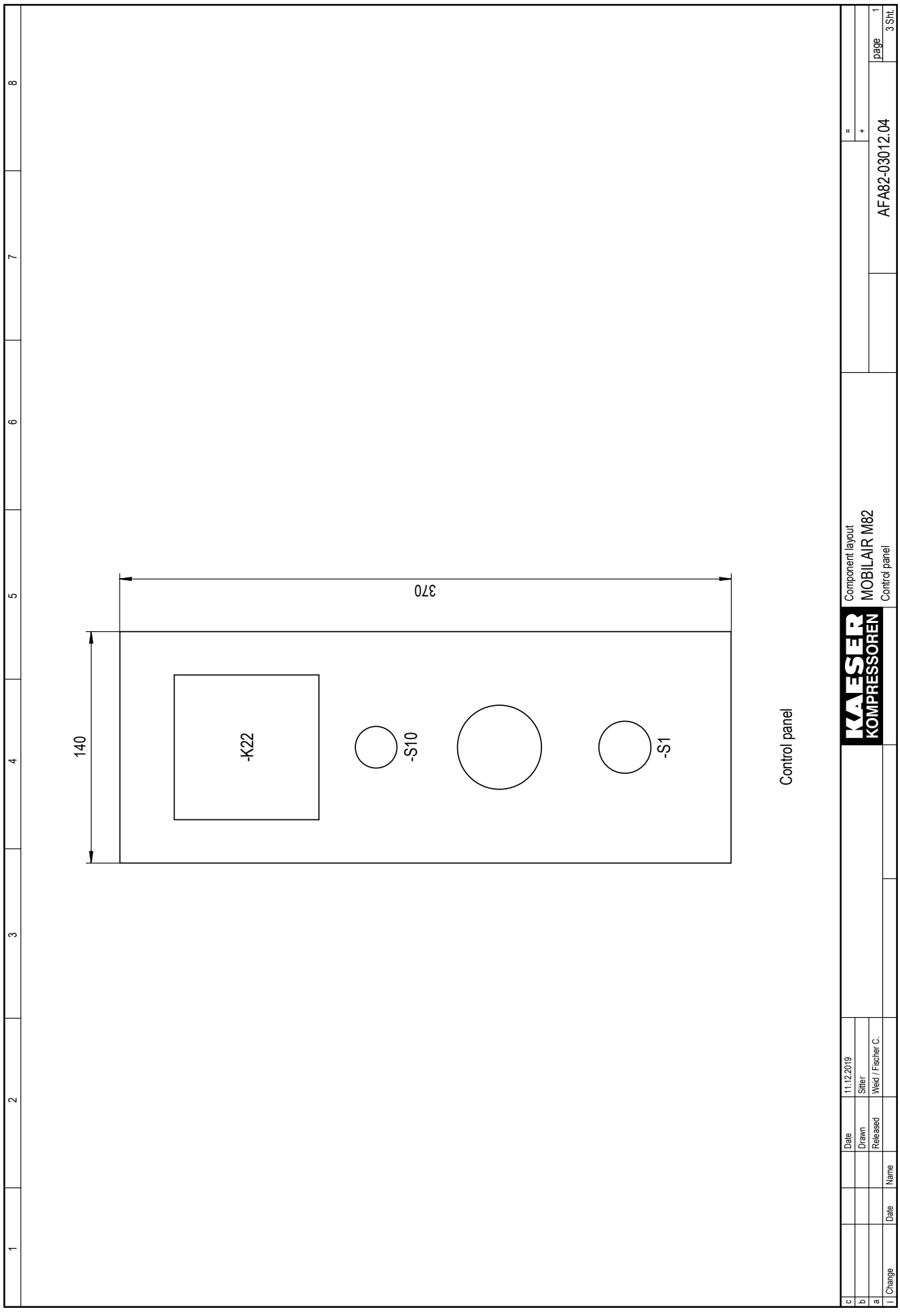

Terminal strip: -X1
total 46 Terminals
Destination external
Terminal strip
Destination internal
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
-W130 PUR 5x0,34mm²
1) model-dependent components
2) Remove jumper when connecting remote on/off
KAESER KOMPRESSOREN
Terminal schedule
MOBILAIR M82
Terminal strip - X1
KFA82-03012.04
=SK
page 1
5 Sht.
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Date
H Change

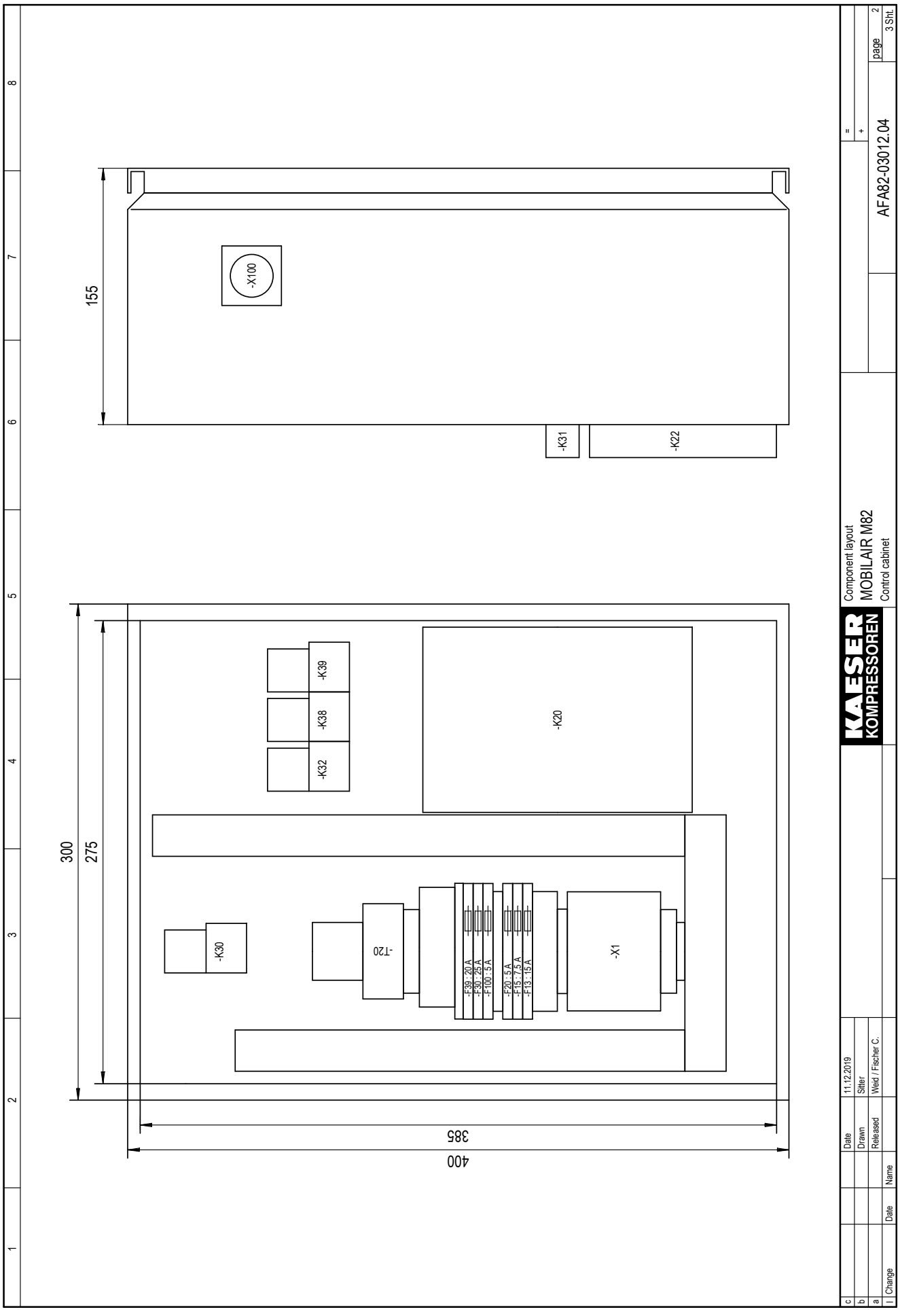

Cable identification
Destination external
Terminal strip
Destination external
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Component identification
Connection number
Plug connection: -X21.1
total 12 Terminals
-K22:X1 1 /1.2
-K22:X1 3 /1.3
-K22:X1 5 /1.5
-K22:X1 37 /1.7
-K22:X1 17 /1.7
-K22:X1 12 /1.8
-K22:X1 13 /1.8
-B33 1 /5.6
Plug connection: -X21.2
total 12 Terminals
1 /1.2 -K38 87
2 /1.3 -K38 85
3 /1.5 -K30 85
4 /1.7 -X1 44
5 /1.7 -X1 45
6 /1.8 -K20E OUT1
-K30 86
7 /1.8 -K39 87
8 /5.6 -K20B IN7
9
10
11
12
Cable identification
Destination internal
Terminal schedule
MOBILAIR M82
Plug connection -X21
KAESER KOMPRESSOREN
=SK
+
KFA82-03012.04
page 10
5 Sht.
c
b
a
H Change
Date
Name
Date
11.12.2019
Sitter
Weid / Fischer C.
Drawn
Released

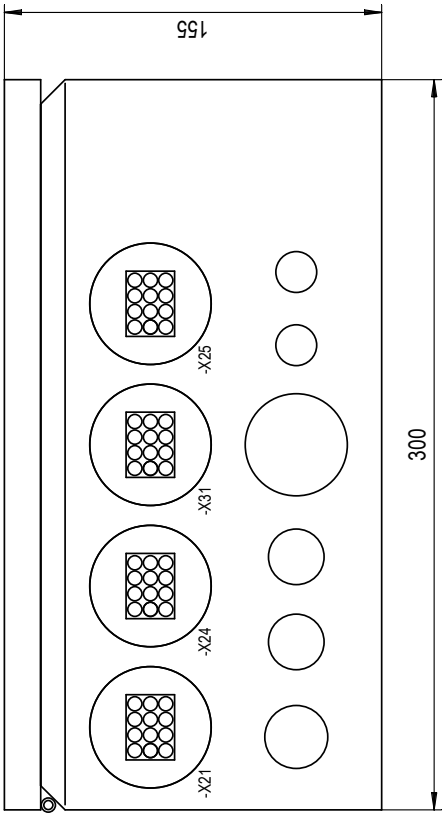

Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Component identification
Connection number
Plug connection: -X24.1
total 12 Terminals
=IKM-M2 50 1 /2.1 -K30 87
=IKM-G2 L 2 /2.1 -X1 14
=IKM-G2 IG 3 =IKM/1.5 -K39 87
-XM9 1 4 /3.6 -K32 87
-XB37 2 5 /5.3 -K20B IN4
-XB37 3 6 /5.4 -K20B GND
7
-X4 1 9 /6.4
-X4 3 8 /6.4 -K20C IN10
10 /6.4 -X1 52
11
12
Plug connection: -X24.2
total 12 Terminals
1 /2.1 -K30 87
2 =IKM/1.5 -X1 14
3 =IKM/1.5 -K39 87
4 /3.6 -K32 87
5 /5.3 -K20B IN4
6 /5.4 -K20B GND
7
8 /6.4 -K20C IN10
9 /6.4 -X1 52
10
11
12
-W9 Oelflex 110 2x0,75mm²
Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
Terminal schedule
MOBILAIR M82
Plug connection -X24
KAESER KOMPRESSOREN
=SK
+
KFA82-03012.04
page 11
5 Sht.
c
b
a
H Change
Date
Name
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.


Terminal schedule
MOBILAIR M82
Plug connection -X25
KFA82-03012.04
page 12
5 Sht.
=SK
+
Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Plug connection: -X25.1
total 12 Terminals
Plug connection: -X25.2
total 12 Terminals
-W11 PUR 2x0,25+2x0,34mm²
-W12 Oelflex 7G1mm²
-S10
-S1
Control panel
-K21:X1
-K20B
-K20E
-K39
-X1
/2.2
/5.4
/3.3
/2.1
/2.7
/5.2
/5.1
/3.4
/3.1
30.5
15.1
15.2
IN5
OUT0
86
17
31.3
40
42
RD BK WH BU
GN YE
Date
Name
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Change


Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Component identification
Connection number
Plug connection: -X31.1
total 12 Terminals
-W32 Oelflex 100 3x0,5mm²
-W39 Oelflex 110 4x0,75mm²
-W100 PUR 5x0,34mm²
-W101 PUR 5x0,34mm²
-W106 Oelflex 110 4x0,75mm²
-B40 1 1 /4.6
-B40 2 2 /4.5
-B40 3 3 /4.5
-B10 1 4 /4.3
-B11 1 /4.3
-B10 3 5 /4.3
-B11 3 6 /4.4
-B10 4 7 /4.4
-B11 4 /7.2
-K1 8 /7.2
-K1 9 /7.2
-K1 10 /7.3
-K7 11 /7.3
-K7 12 /7.3
Plug connection: -X31.2
total 12 Terminals
1 /4.6 -K20A VBBS
2 /4.5 -K20A GND
3 /4.5 -K20A IN2
4 /4.3 -K20A VBBS
5 /4.3 -K20A IN0
6 /4.4 -K20A IN1
7 /4.4 -K20A GND
8 /7.2 -K20F OUT4
9 /7.2 -K20F GND
10 /7.3 -X1 31.2
11 /7.3 -K20F OUT5
12 /7.3 -K20F GND
KAESER KOMPRESSOREN
Terminal schedule
MOBILAIR M82
Plug connection -X31
KFA82-03012.04
page 20
5 Sht.
=SK
+
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Date
H Change
a
b
c


370
140
-K22
-S10
-S1
Control panel
Component layout
MOBILAIR M82
Control panel
AFA82-03012.04
page 1
3 Sht.
Date
Drawn
Released
11.12.2019
Sitter
Weid / Fischer C.
Name
Change


155
-X100
-K31
-K22
300
275
-K39
-K38
-K32
-K20
-K30
-T20
-F39 : 20 A
-F30 : 25 A
-F100 : 5 A
-F20 : 5 A
-F15 : 7,5 A
-F13 : 15 A
-X1
385
400
KAESER KOMPRESSOREN
Component layout
MOBILAIR M82
Control cabinet
AFA82-03012.04
page 2
3 Sht.
Date 11.12.2019
Drawn Sitter
Released Weid / Fischer C.
Name
Date
Change



c								=	
b								+	
a				Date	11.12.2019				
				Drawn	Sitter				
				Released	Weid / Fischer C.				
	Change	Date	Name					page	3
									3 Sht.

KAESER KOMPRESSOREN
Component layout
MOBILAIR M82
Control cabinet outer side bottom
AFA82-03012.04

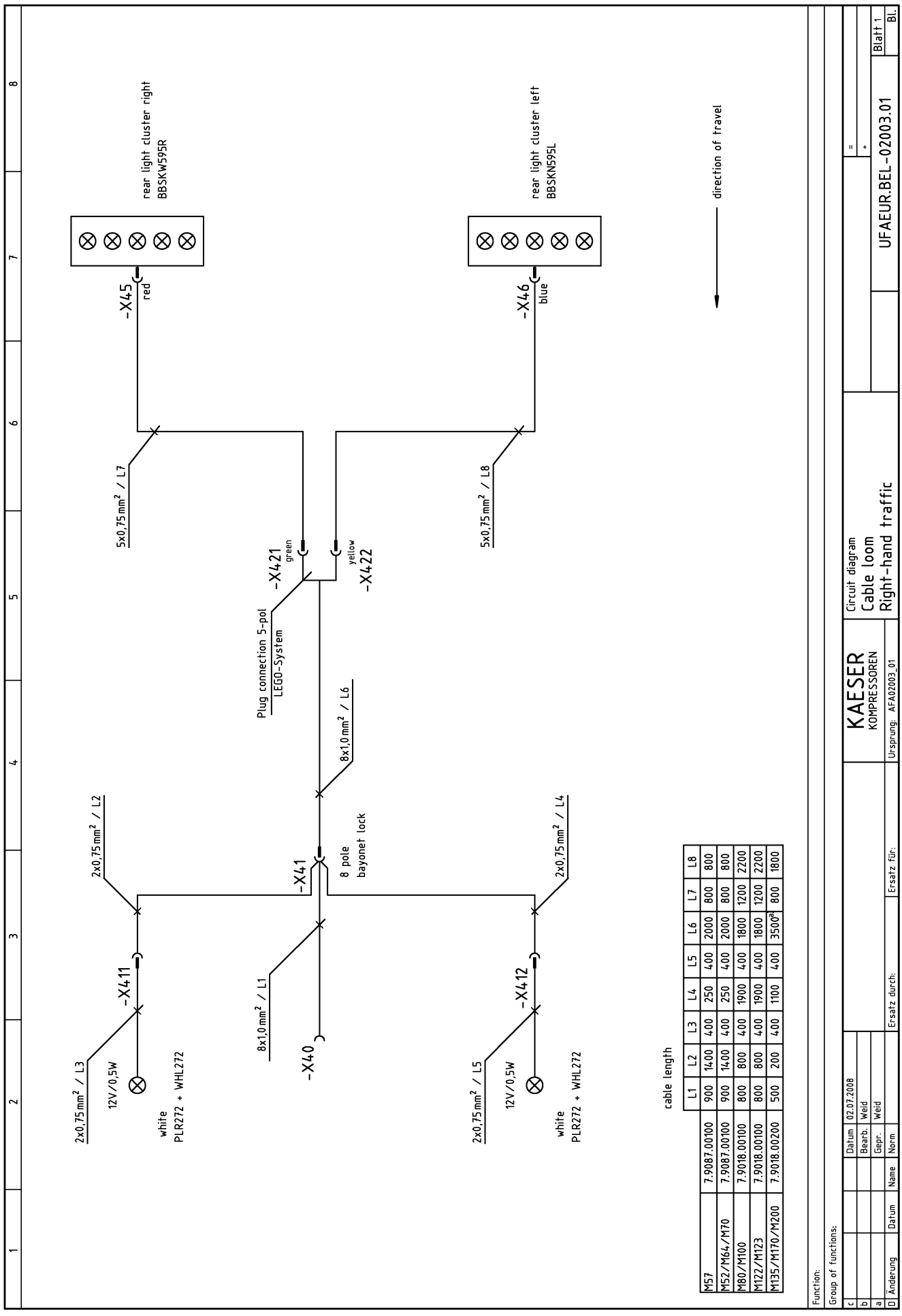
13.4.2 Option tc
Lighting and signalling system connection

Electrical diagrams
MOBILAIR
Lighting equipment
connection 12V/13-pole

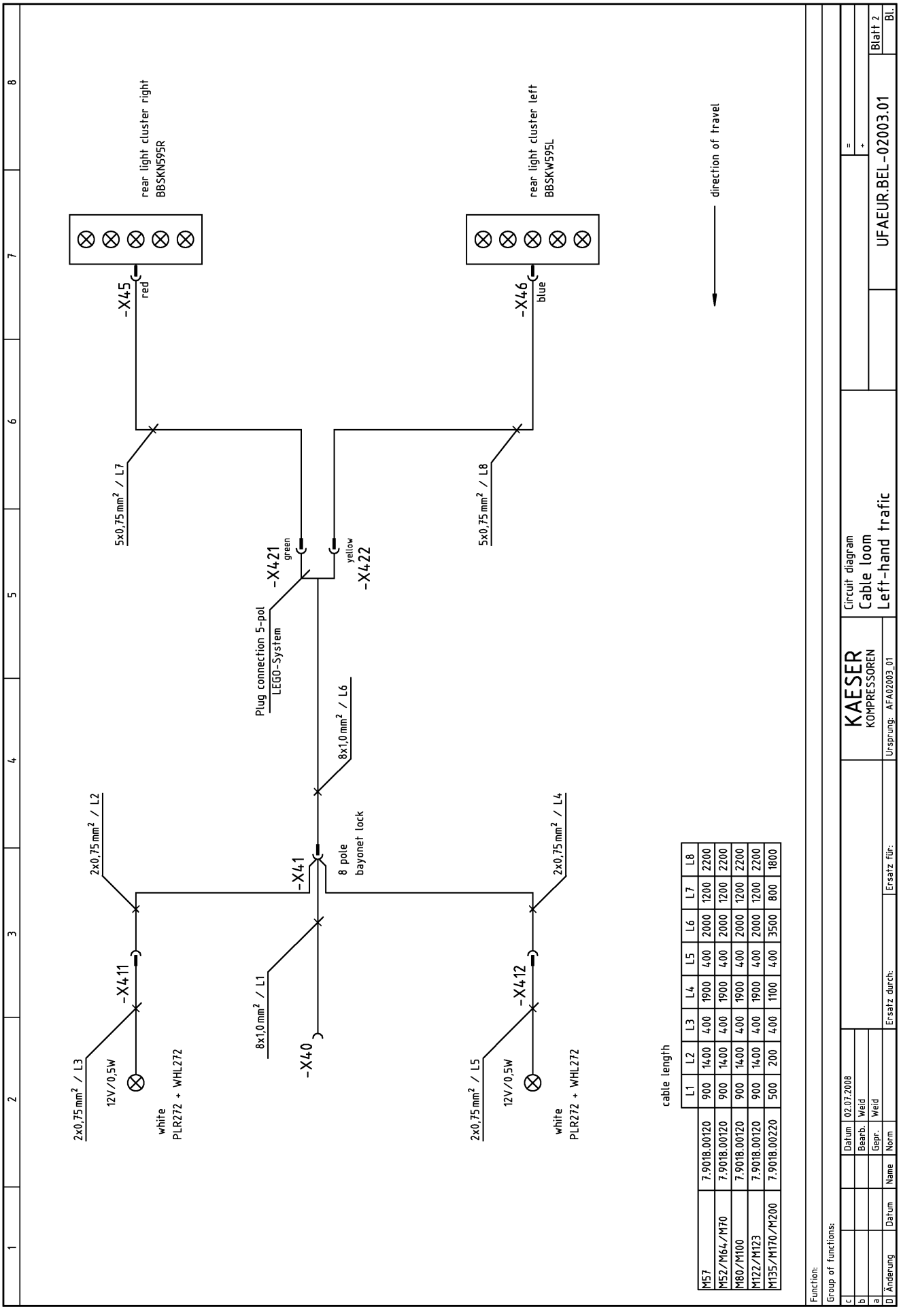
Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

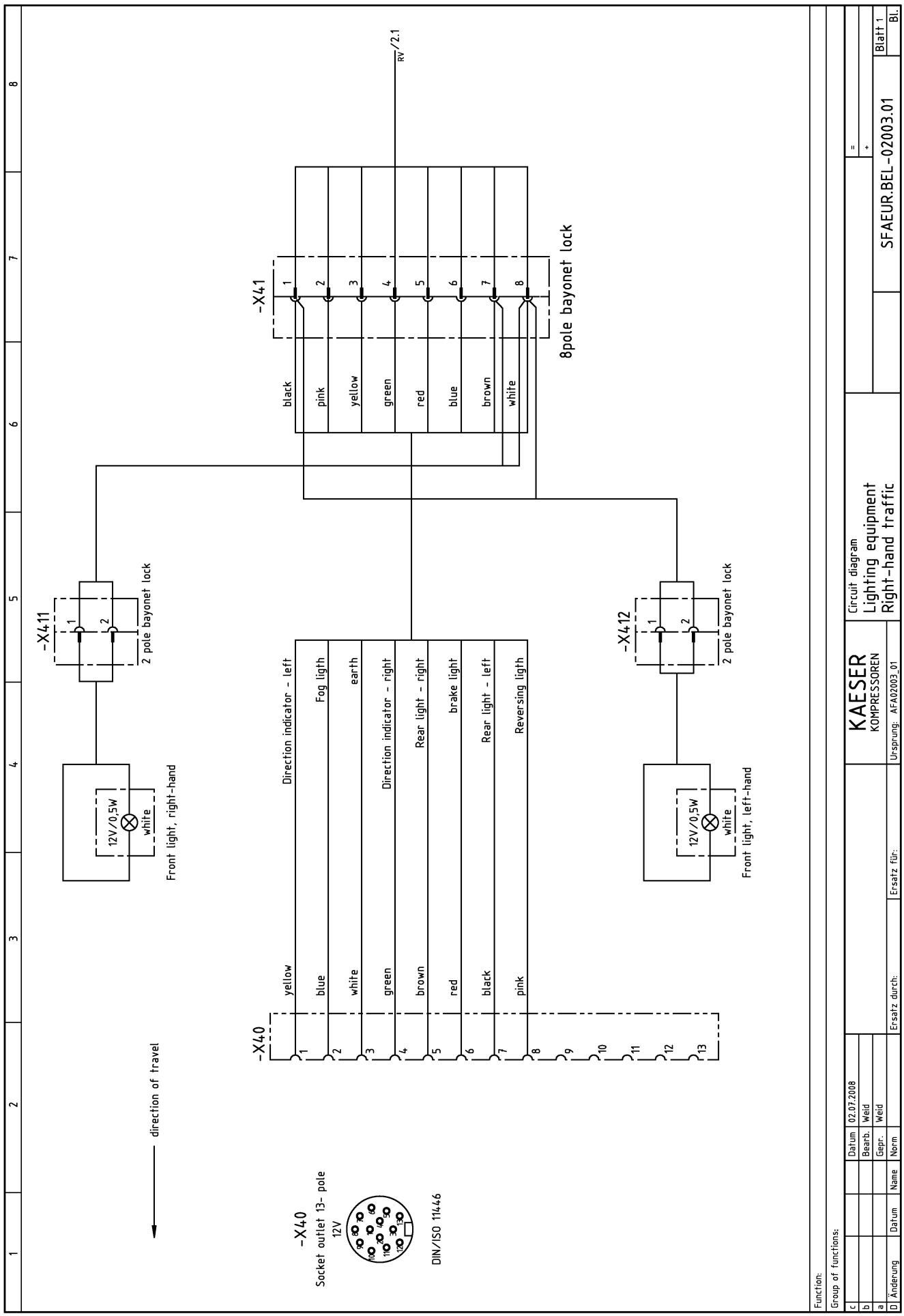
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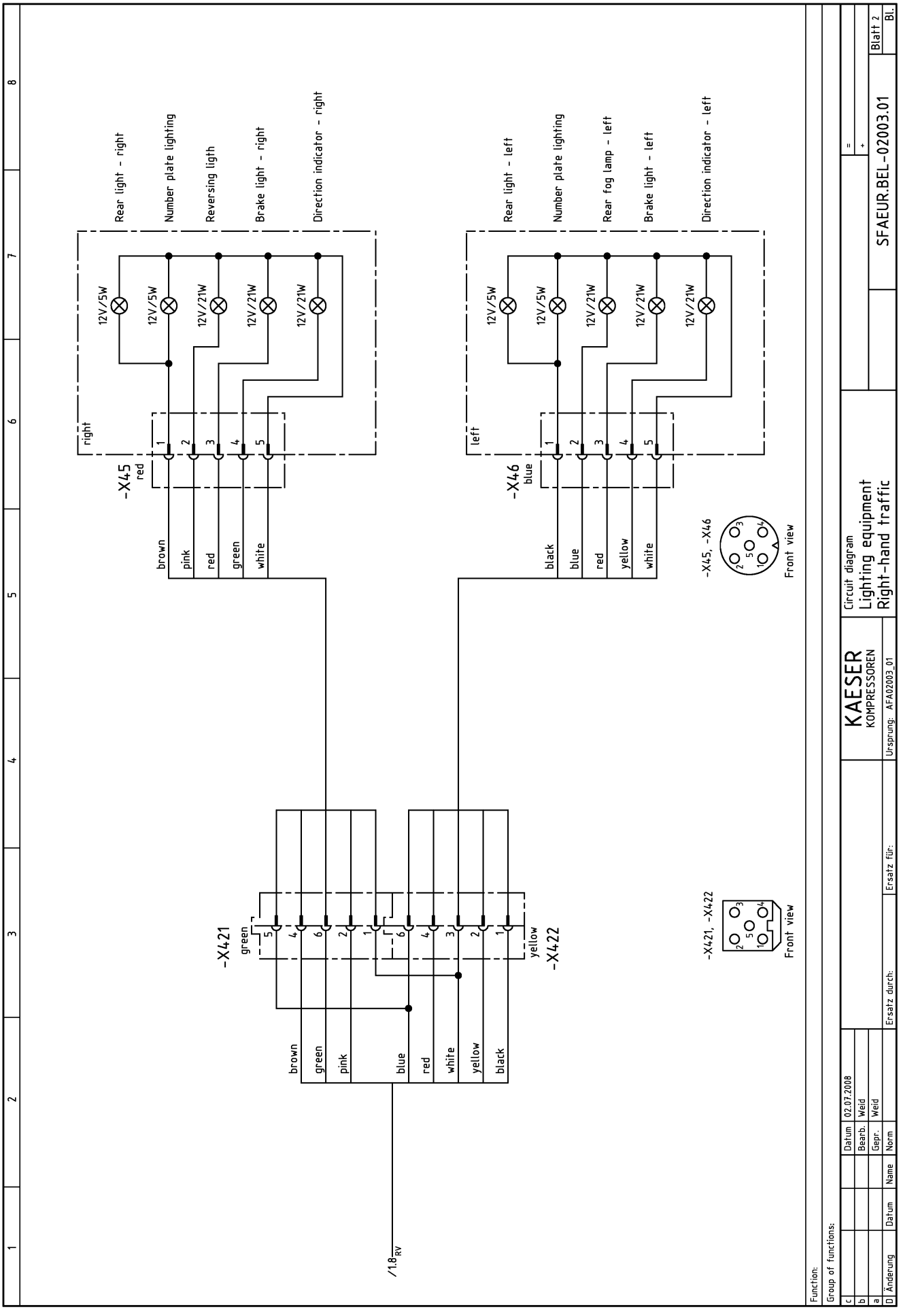
c				Datum	02.07.2008 E		KAESER KOMPRESSOREN	Cover page MOBILAIR Lighting equipment	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
D	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AFA02003_01		DFAEUR.BEL-02003.01 Blatt 1 Bl.

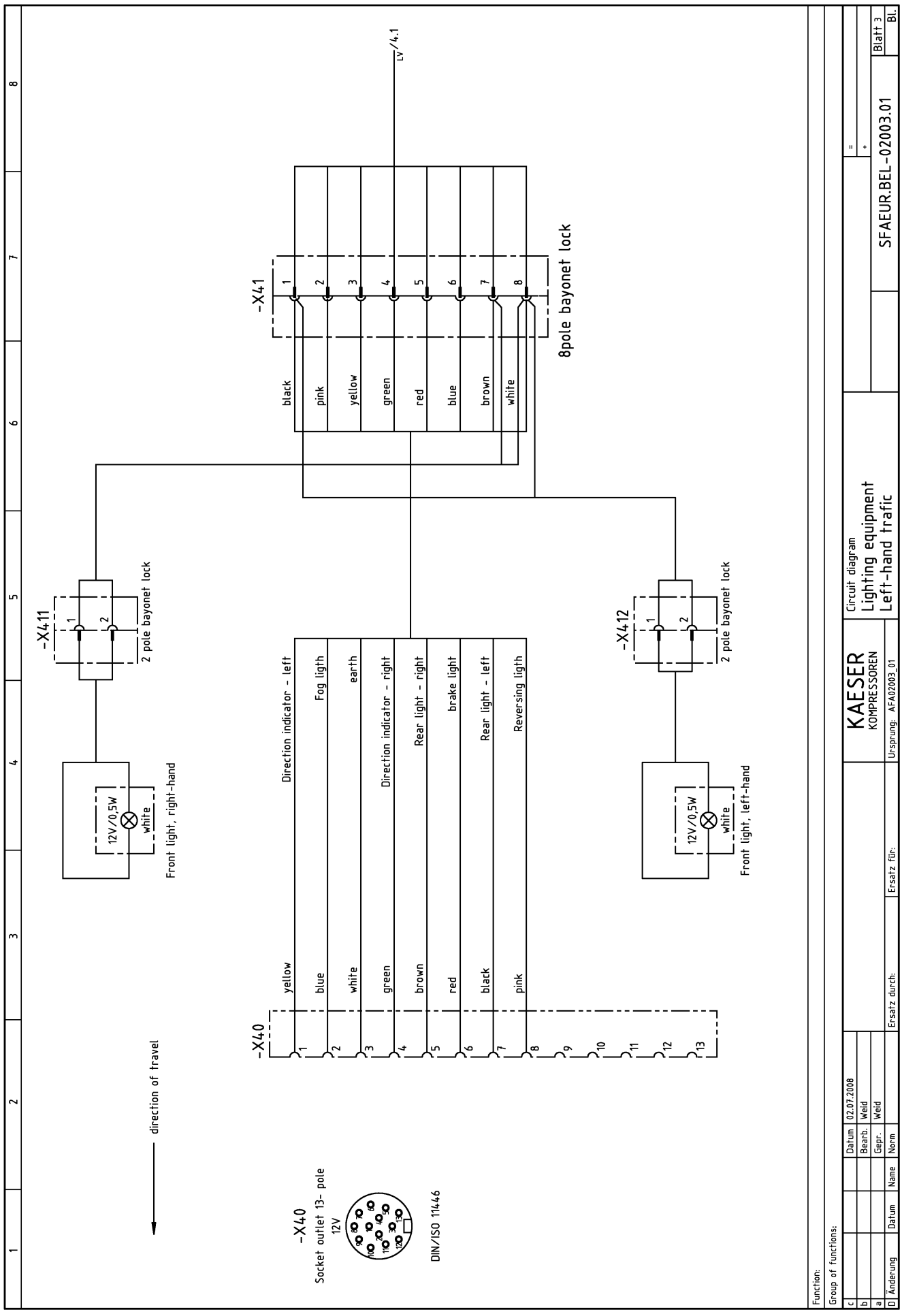


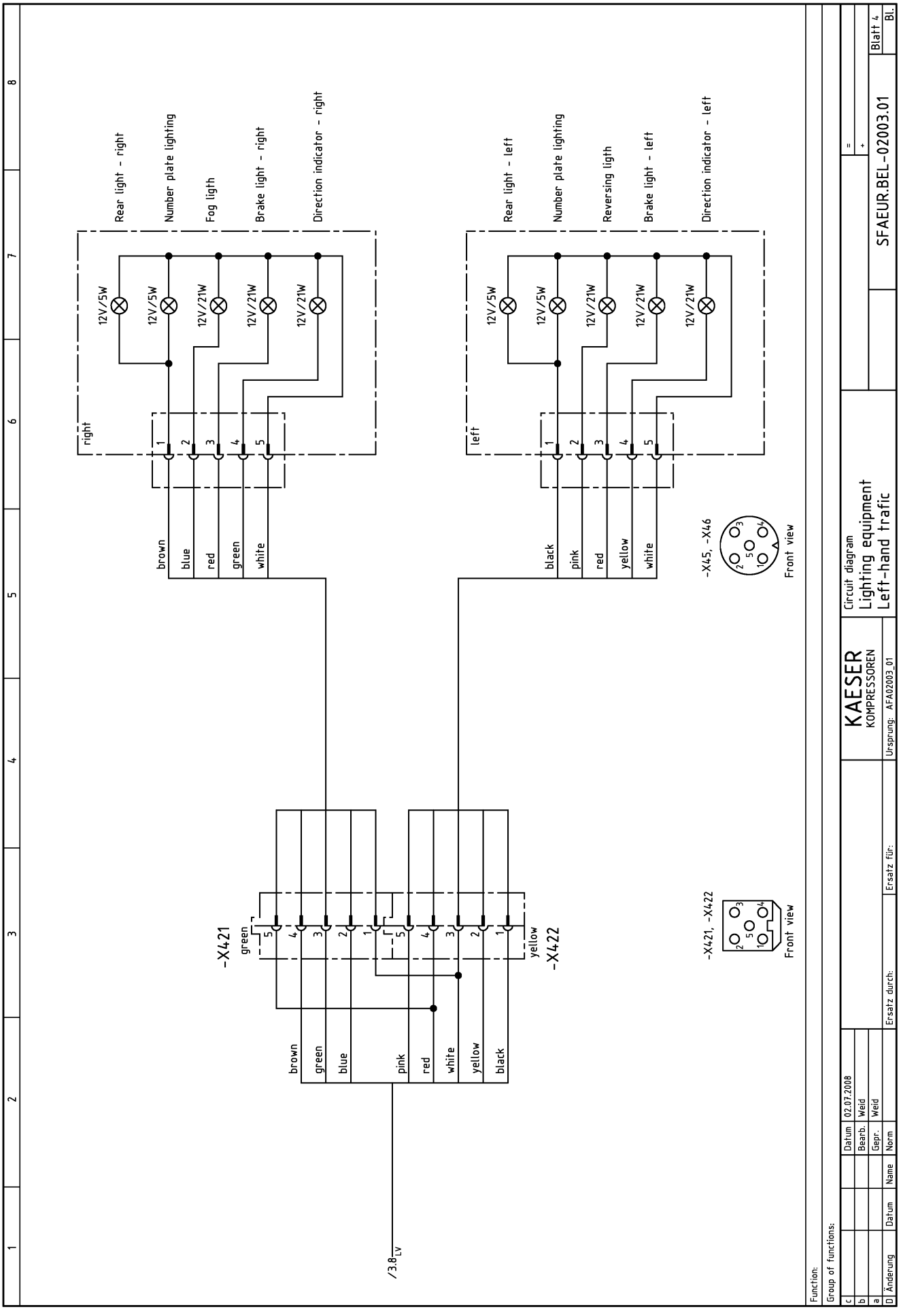
	L1	L2	L3	L4	L5	L6	L7	L8
M57	7.9087.00100	900	1400	400	250	400	2000	800	800
M52/M64/M70	7.9087.00100	900	1400	400	250	400	2000	800	800
M80/M100	7.9018.00100	800	800	400	1900	400	1800	1200	2200
M122/M123	7.9018.00100	800	800	400	1900	400	1800	1200	2200
M135/M170/M200	7.9018.00200	500	200	400	1100	400	3500[a]	800	1800


rear light cluster right
BBSKN595R
rear light cluster left
BBSKW595L
direction of travel
-X45
red
-X46
blue
5x0,75 mm² / L7
5x0,75 mm² / L8
-X421
green
-X422
yellow
Plug connection 5-pol
LEGO-System
8x1,0 mm² / L6
-X41
8 pole
bayonet lock
2x0,75 mm² / L2
2x0,75 mm² / L4
-X411
-X412
12V/0,5W
white
PLR272 + WHL272
2x0,75 mm² / L3
2x0,75 mm² / L5
8x1,0 mm² / L1
-X40
cable length
M57 7.9018.00120 900 1400 400 400 1900 400 2000 1200 2200
M52/M64/M70 7.9018.00120 900 1400 400 400 1900 400 2000 1200 2200
M80/M100 7.9018.00120 900 1400 400 400 1900 400 2000 1200 2200
M122/M123 7.9018.00120 900 1400 400 400 1900 400 2000 1200 2200
M135/M170/M200 7.9018.00220 500 200 400 1100 400 3500 800 1800
KAESER KOMPRESSOREN
Circuit diagram
Cable loom
Left-hand trafic
UFAEUR.BEL-02003.01
Blatt 2
Datum 02.07.2008
Bearb. Weid
Gepr. Weid
Name
Norm
Ersatz durch:
Ersatz für:
Ursprung: AFA02003_01
Function:
Group of functions:


-X41
8pole bayonet lock
black
pink
yellow
green
red
blue
brown
white
RV/2.1
-X411
2 pole bayonet lock
12V/0,5W
white
Front light, right-hand
-X412
2 pole bayonet lock
12V/0,5W
white
Front light, left-hand
-X40
yellow
blue
white
green
brown
red
black
pink
Direction indicator - left
Fog ligth
earth
Direction indicator - right
Rear light - right
brake light
Rear light - left
Reversing ligth
direction of travel
-X40
Socket outlet 13- pole
12V
DIN/ISO 11446
KAESER KOMPRESSOREN
Circuit diagram
Lighting equipment
Right-hand traffic
SFAEUR.BEL-02003.01
Blatt 1
Function:
Group of functions:
Datum 02.07.2008
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AFA02003_01


Rear light - right
Number plate lighting
Reversing ligth
Brake light - right
Direction indicator - right
12V/5W
12V/5W
12V/21W
12V/21W
12V/21W
right
-X45
red
brown
pink
red
green
white
Rear light - left
Number plate lighting
Rear fog lamp - left
Brake light - left
Direction indicator - left
12V/5W
12V/5W
12V/21W
12V/21W
12V/21W
left
-X46
blue
black
blue
red
yellow
white
-X45, -X46
Front view
-X421
green
-X422
yellow
brown
green
pink
blue
red
white
yellow
black
-X421, -X422
Front view
/1.8 RV
Function:
Group of functions:
Datum 02.07.2008
Bearb. Weid
Gepr. Weid
Norm
Ersatz durch:
Ersatz für:
KAESER KOMPRESSOREN
Ursprung: AFA02003_01
Circuit diagram
Lighting equipment
Right-hand traffic
SFAEUR.BEL-02003.01
Blatt 2
Änderung
Name
Datum


-X41
8pole bayonet lock
black
pink
yellow
green
red
blue
brown
white
LV/4.1
-X411
2 pole bayonet lock
12V/0,5W
white
Front light, right-hand
-X412
2 pole bayonet lock
12V/0,5W
white
Front light, left-hand
-X40
yellow
blue
white
green
brown
red
black
pink
Direction indicator - left
Fog ligth
earth
Direction indicator - right
Rear light - right
brake light
Rear light - left
Reversing ligth
direction of travel
-X40
Socket outlet 13- pole
12V
DIN/ISO 11446
KAESER KOMPRESSOREN
Circuit diagram
Lighting equipment
Left-hand trafic
SFAEUR.BEL-02003.01
Blatt 3
Function:
Group of functions:
Datum 02.07.2008
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AFA02003_01


Rear light - right
Number plate lighting
Fog ligth
Brake light - right
Direction indicator - right
12V/5W
12V/5W
12V/21W
12V/21W
12V/21W
right
brown
blue
red
green
white
Rear light - left
Number plate lighting
Reversing ligth
Brake light - left
Direction indicator - left
12V/5W
12V/5W
12V/21W
12V/21W
12V/21W
left
black
pink
red
yellow
white
-X45, -X46
Front view
-X421
-X422
green
yellow
brown
green
blue
pink
red
white
yellow
black
-X421, -X422
Front view
/3.8 LV
Function:
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
Lighting equipment
Left-hand trafic
SFAEUR.BEL-02003.01
Blatt 4
Datum 02.07.2008
Bearb. Weid
Gepr. Weid
Norm
Ersatz durch:
Ersatz für:
Ursprung: AFA02003_01
Änderung
Name
Datum

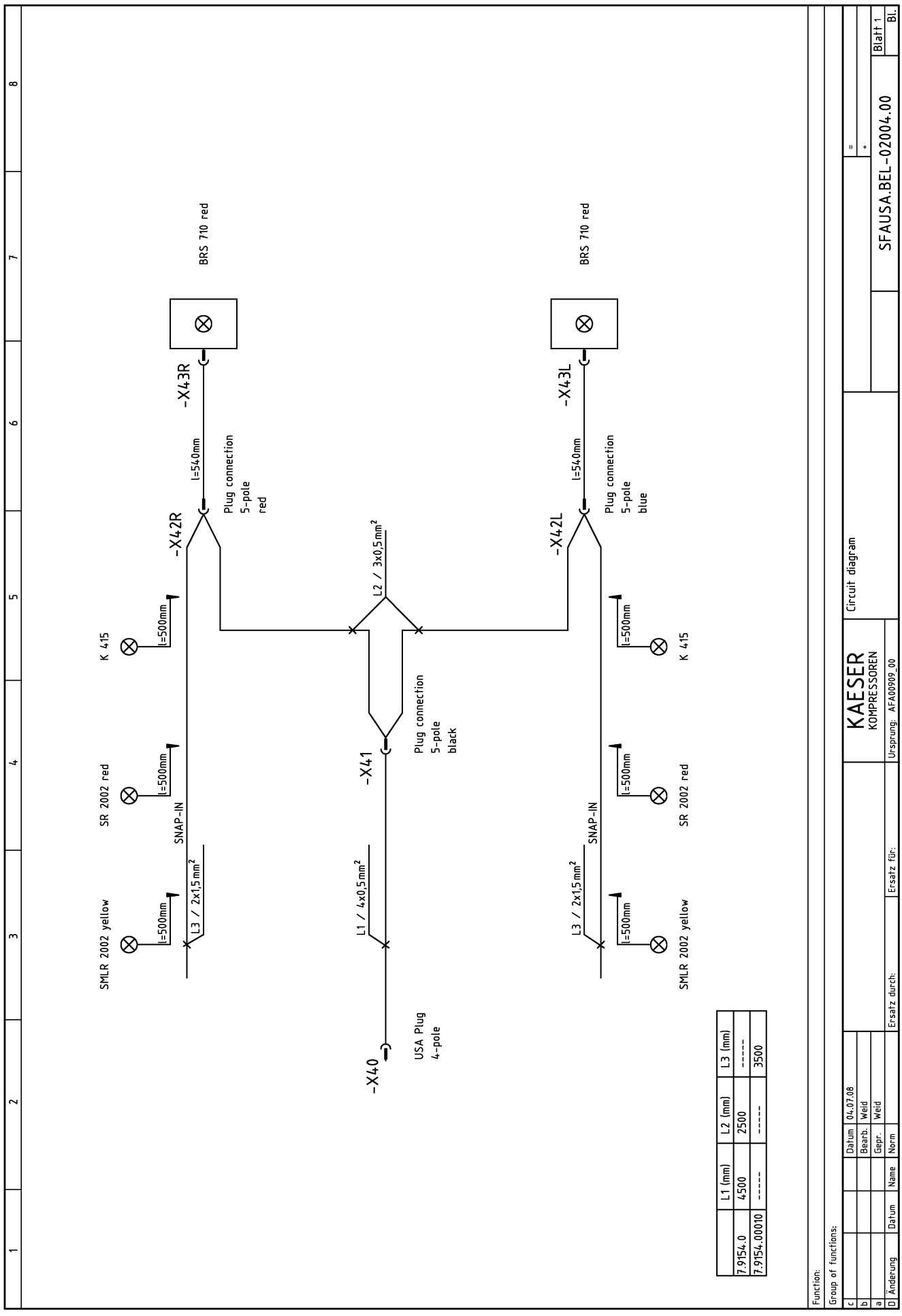
13.4.3 Option te
Lighting and signalling system connection

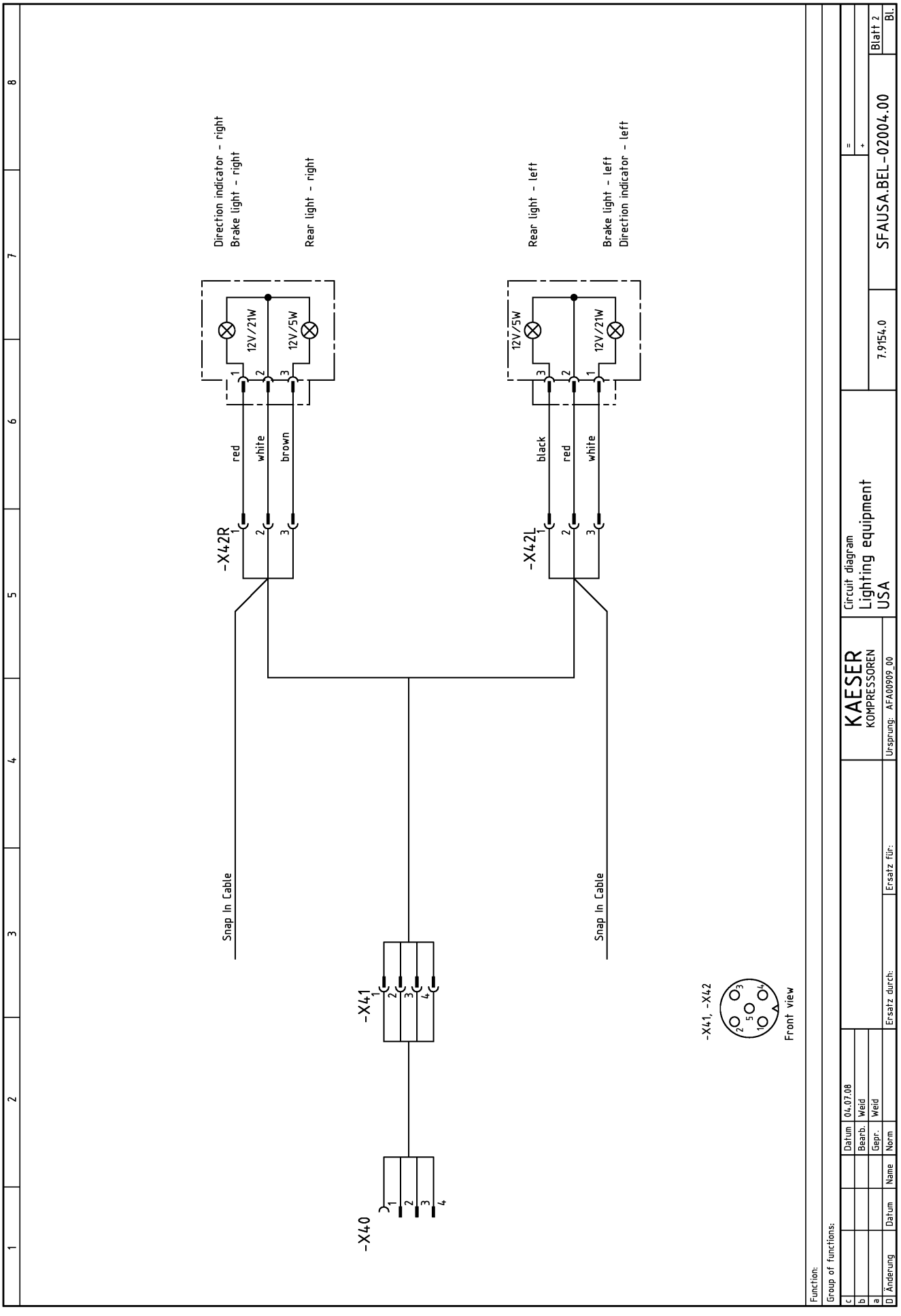
Electrical diagrams
MOBILAIR
Lighting equipment
for USA / CAN

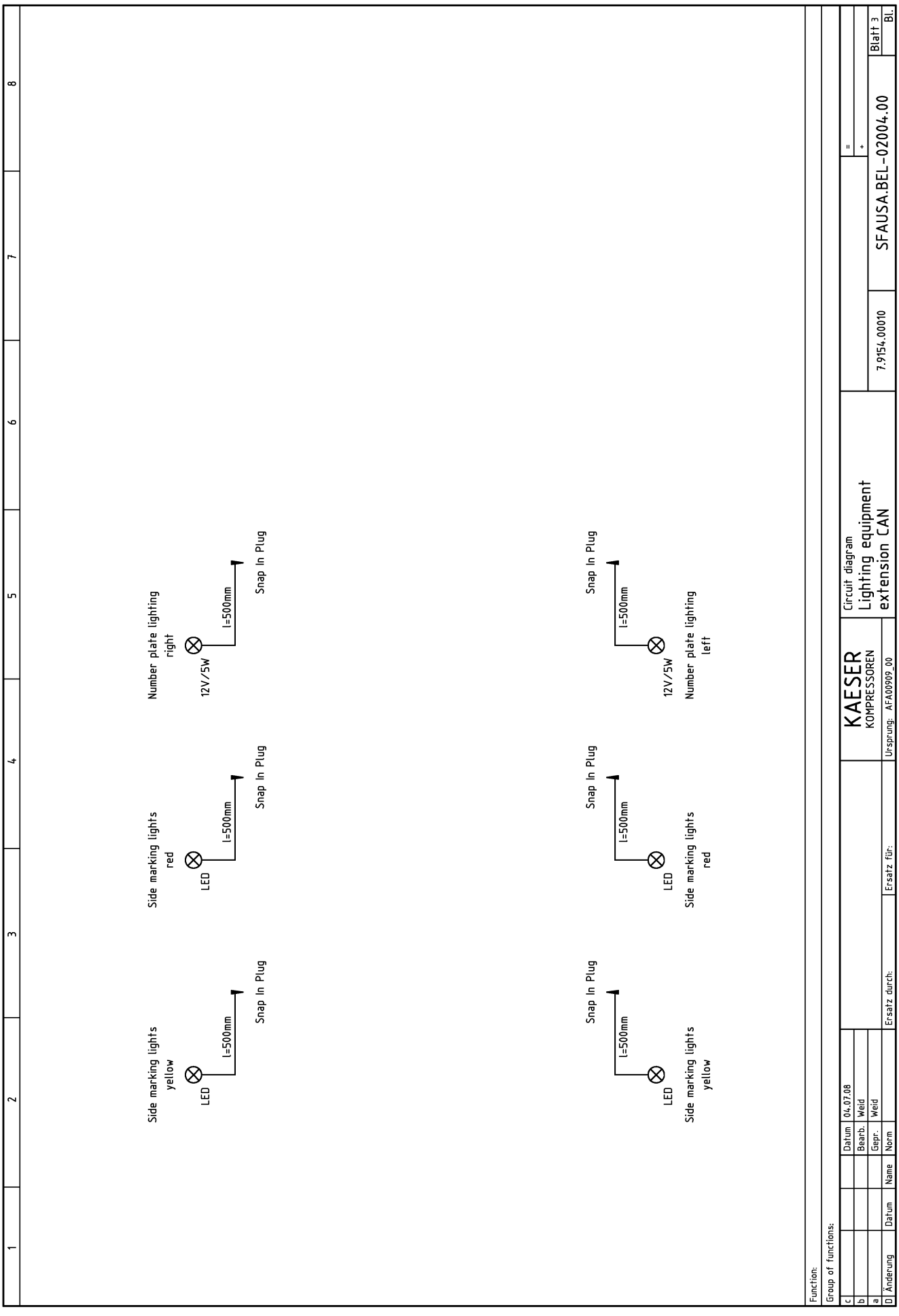
Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
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c				Datum	04.07.08 E		KAESER KOMPRESSOREN	Cover page MOBILAIR Lighting equipment	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
D	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AFA00909_00		DFAUSA.BEL-02004.00 Blatt 1 Bl.


BRS 710 red
-X43R
l=540mm
Plug connection
5-pole
red
-X42R
L2 / 3x0,5mm²
K 415
l=500mm
SR 2002 red
SNAP-IN
L3 / 2x1,5mm²
SMLR 2002 yellow
-X41
Plug connection
5-pole
black
L1 / 4x0,5mm²
-X40
USA Plug
4-pole
BRS 710 red
-X43L
l=540mm
Plug connection
5-pole
blue
-X42L
K 415
SR 2002 red
SNAP-IN
SMLR 2002 yellow
L1 (mm) L2 (mm) L3 (mm)
7.9154.0 4500 2500 -----
7.9154.00010 ----- ----- 3500
KAESER KOMPRESSOREN
Circuit diagram
SFAUSA.BEL-02004.00
Blatt 1
Function:
Group of functions:
Datum 04.07.08
Bearb. Weid
Gepr. Weid
Name Norm
Ersatz durch:
Ersatz für:
Ursprung: AFA00909_00
Änderung Datum Name


Direction indicator - right
Brake light - right
Rear light - right
Rear light - left
Brake light - left
Direction indicator - left
12V/21W
12V/5W
12V/5W
12V/21W
red
white
brown
black
red
white
-X42R
-X42L
Snap In Cable
Snap In Cable
-X41
-X40
-X41, -X42
Front view
Function:
Group of functions:
Datum 04.07.08
Bearb. Weid
Gepr. Weid
Ersatz durch:
Ersatz für:
Norm
Name
Datum
Änderung
KAESER KOMPRESSOREN
Ursprung: AFA00909_00
Circuit diagram
Lighting equipment
USA
7.9154.0
SFAUSA.BEL-02004.00
Blatt 2
Bl.


Side marking lights
yellow
LED
l=500mm
Snap In Plug
Side marking lights
red
LED
l=500mm
Snap In Plug
Number plate lighting
right
12V/5W
l=500mm
Snap In Plug
Snap In Plug
l=500mm
Side marking lights
yellow
LED
Snap In Plug
l=500mm
Side marking lights
red
LED
Snap In Plug
l=500mm
Number plate lighting
left
12V/5W
Function:
Group of functions:
Datum 04.07.08
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AFA00909_00
KAESER KOMPRESSOREN
Circuit diagram
Lighting equipment extension CAN
7.9154.00010
SFAUSA.BEL-02004.00
Blatt 3
Bl.

13.4.4 Option ga
Generator electrical diagram, 400V, 3-ph

Electrical diagrams

Synchronous generator

400V/3~/50Hz, 8,5/13 kVA

with Insulation monitoring

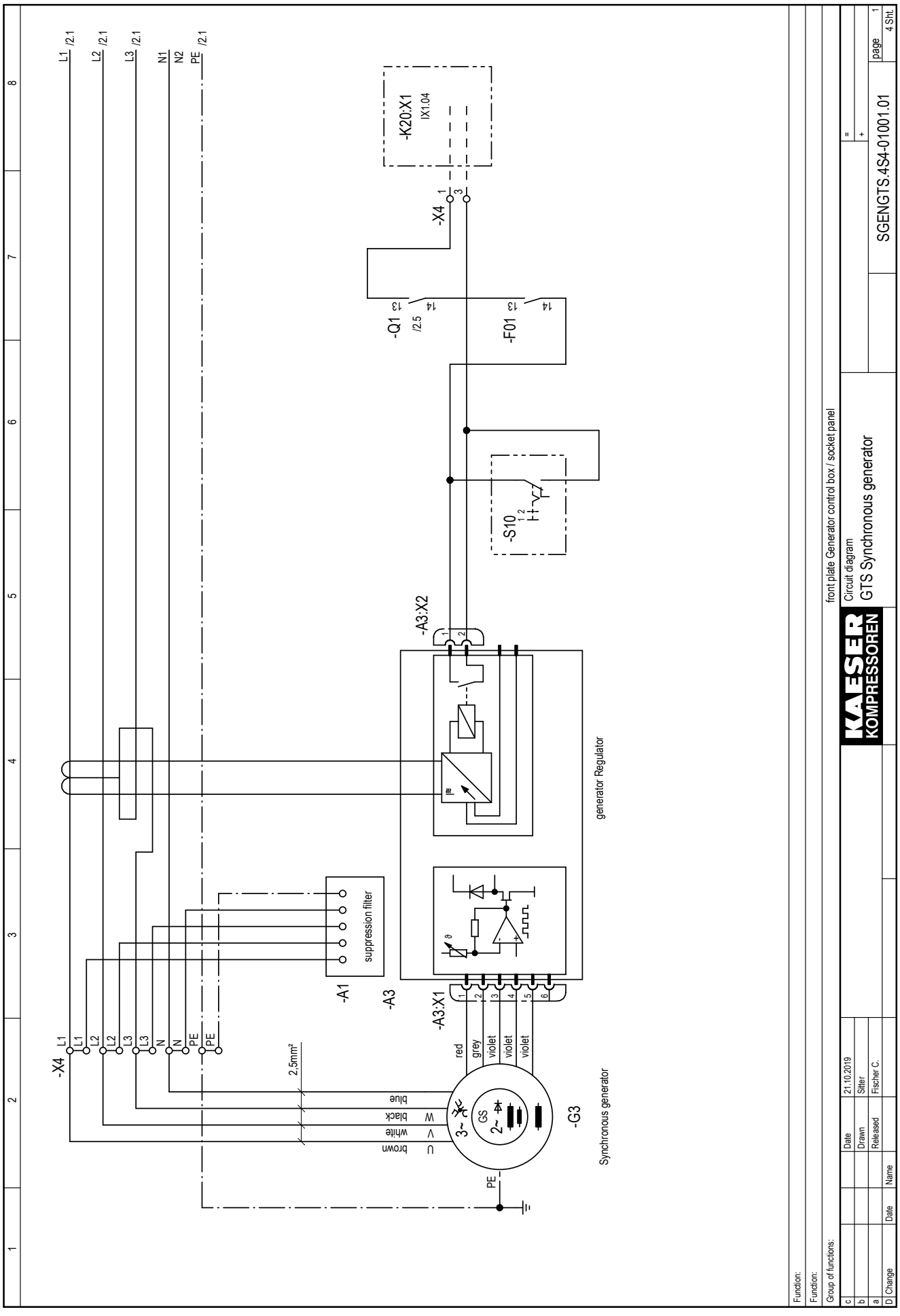
Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

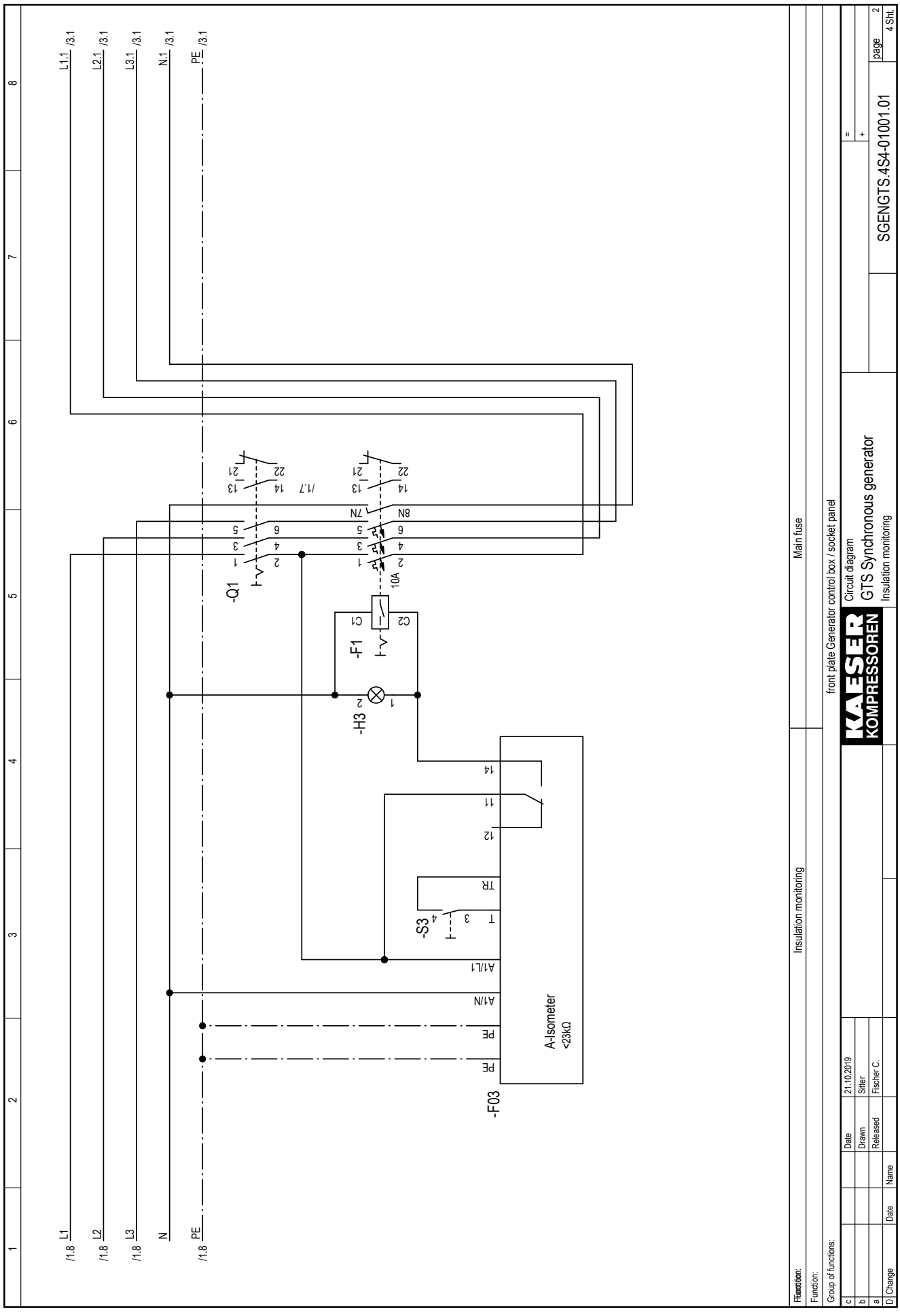
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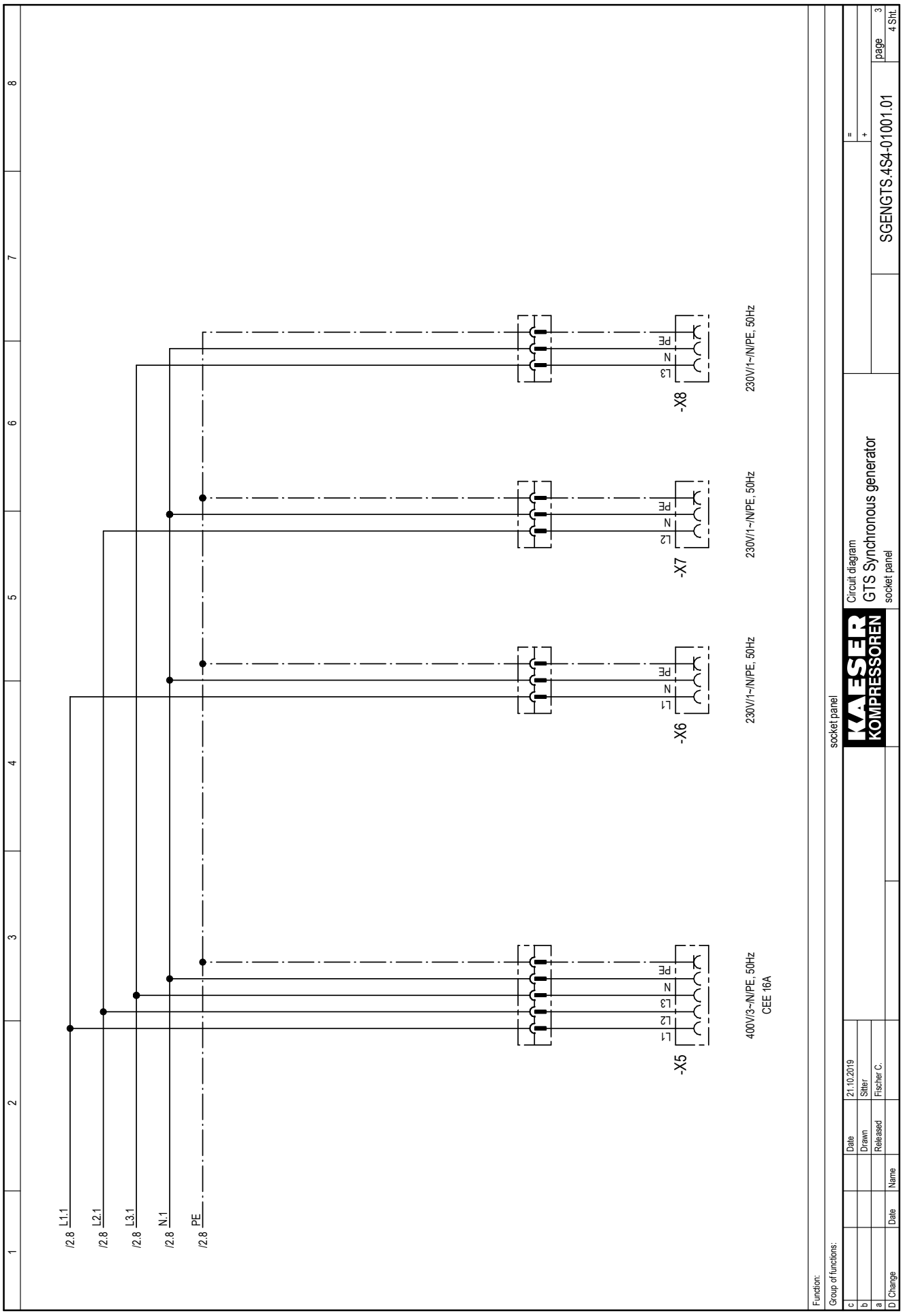
c				Date	21.10.2019 E	KAESER KOMPRESSOREN	Cover page	=	
b				Drawn	Sitter		GTS Synchronous generator	+	
a				Released	Fischer C.				
A	Change	Date	Name				DGENGTS.4S4-01001.01	page 1	1 Sht.

Lfd. Nr. No.	Benennung Name	Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DGENGTS.4S4-01001.01	1	
2	List of contents		ZGENGTS.4S4-01001.01	1	
3	Circuit diagram		SGENGTS.4S4-01001.01	1	
4	Circuit diagram Insulation monitoring		SGENGTS.4S4-01001.01	2	
5	Circuit diagram socket panel		SGENGTS.4S4-01001.01	3	
6	electrical equipment identification		SGENGTS.4S4-01001.01	01	
7	Equipment parts list		GGENGTS.4S4-01001.01	1	
8	Component layout front plate		AGENGTS.4S4-01001.01	1	

c				Date	21.10.2019		KAESER KOMPRESSOREN	List of contents	=
b				Drawn	Sitter			GTS Synchronous generator	+
a				Released	Fischer C.				page 1
B	Change	Date	Name					ZGENGTS.4S4-01001.01	1 Sht.


L1 /2.1
L2 /2.1
L3 /2.1
N1
N2
PE /2.1
-K20:X1
IX1.04
-X4
-Q1
/2.5
-F01
-S10
-A3:X2
-A3:X1
-A1
suppression filter
-A3
generator Regulator
-X4
2,5mm²
red
grey
violet
violet
violet
blue
black
white
brown
U
V
W
PE
3~
GS
2~
-G3
Synchronous generator
front plate Generator control box / socket panel
Function:
Function:
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
GTS Synchronous generator
SGENGTS.4S4-01001.01
page 1
4 Sht.
Date 21.10.2019
Drawn Sitter
Released Fischer C.
Name
Change


L1.1 /3.1
L2.1 /3.1
L3.1 /3.1
N.1 /3.1
PE /3.1
-Q1
-F1
-H3
-S3
-F03
A-Isometer
<23kΩ
Insulation monitoring
Main fuse
front plate Generator control box / socket panel
KAESER KOMPRESSOREN
Circuit diagram
GTS Synchronous generator
Insulation monitoring
SGENGTS.4S4-01001.01
page 2
4 Sht.
Date
Drawn
Released
21.10.2019
Sitter
Fischer C.
Change
Name


socket panel
Function:
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
GTS Synchronous generator
socket panel
SGENGTS.4S4-01001.01
page 3
4 Sht.
Date 21.10.2019
Drawn Sitter
Released Fischer C.
Name
Date
D Change
/2.8 L1.1
/2.8 L2.1
/2.8 L3.1
/2.8 N.1
/2.8 PE
-X5
400V/3~/N/PE, 50Hz
CEE 16A
-X6
230V/1~/N/PE, 50Hz
-X7
230V/1~/N/PE, 50Hz
-X8
230V/1~/N/PE, 50Hz

-A1	suppression filter
-A3	generator-Regulator
-F01	Cut-out with overcurrent release
-F03	Insulation monitoring
-G3	generator
-H03	earth leakage lamp
-Q1	Main switch
-S3	Test button, Insulation monitoring
-S10	Selector switch
-X4	connection generator
-X5	Socket outlet 400V/3~/N/PE, 50Hz
-X6,-X7,-X8	Socket outlet 230V/1~/N/PE,50Hz
-X42	Terminal strip, Valve interference suppression

c				Date	21.10.2019	KAESER KOMPRESSOREN	electrical equipment identification	=	
b				Drawn	Sitter		GTS Synchronous generator	+	
a				Released	Fischer C.			SGENGTS.4S4-01001.01	page 01
E	Change	Date	Name						4 Sht.

1	2	3	4	5	6	7	8					
A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller Identification data Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer		D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr.			
								H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Type: Synchronous generator 8,5 kVA										
1	Synchronous generator GTS 8,5 kVA, 400 V	DWG (BL4) 8,5/5,0 - 2 ZE	8.6037.30100		-G3						
1	socket panel + Load-sensing speed control	400 V / 230 V, 50 Hz, 16 A	8.6075.3		-F01,-F03						
					-X5,-X6,-X7,-X8						
	Type: Synchronous generator 13 kVA										
1	Synchronous generator GTS 13 kVA, 400 V	DWG (BL4) 13/7,0 - 2 ZE	8.6043.2		-G3						
1	socket panel + Load-sensing speed control	400 V / 230 V, 50 Hz, 16 A	8.6075.3		-F01,-F03						
					-X5,-X6,-X7,-X8						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Spalten B und C angegebenen Daten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung dieser Gerätestücklisten-Nummer anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

In Zweifelsfällen gilt die deutsche Fassung.

When reordering the equipment, all data enclosed by the heavy lines of columns B and C should be stated. In addition, the data in columns D to G should be given together with the No. of this list of equipment, insofar as they ar helpful in answering technical enquiries. 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.

*) Versandanschrift - Kennzeichen

c				Date	21.10.2019
b				Drawn	Sitter
a				Released	Fischer C.
F	Change	Date	Name		

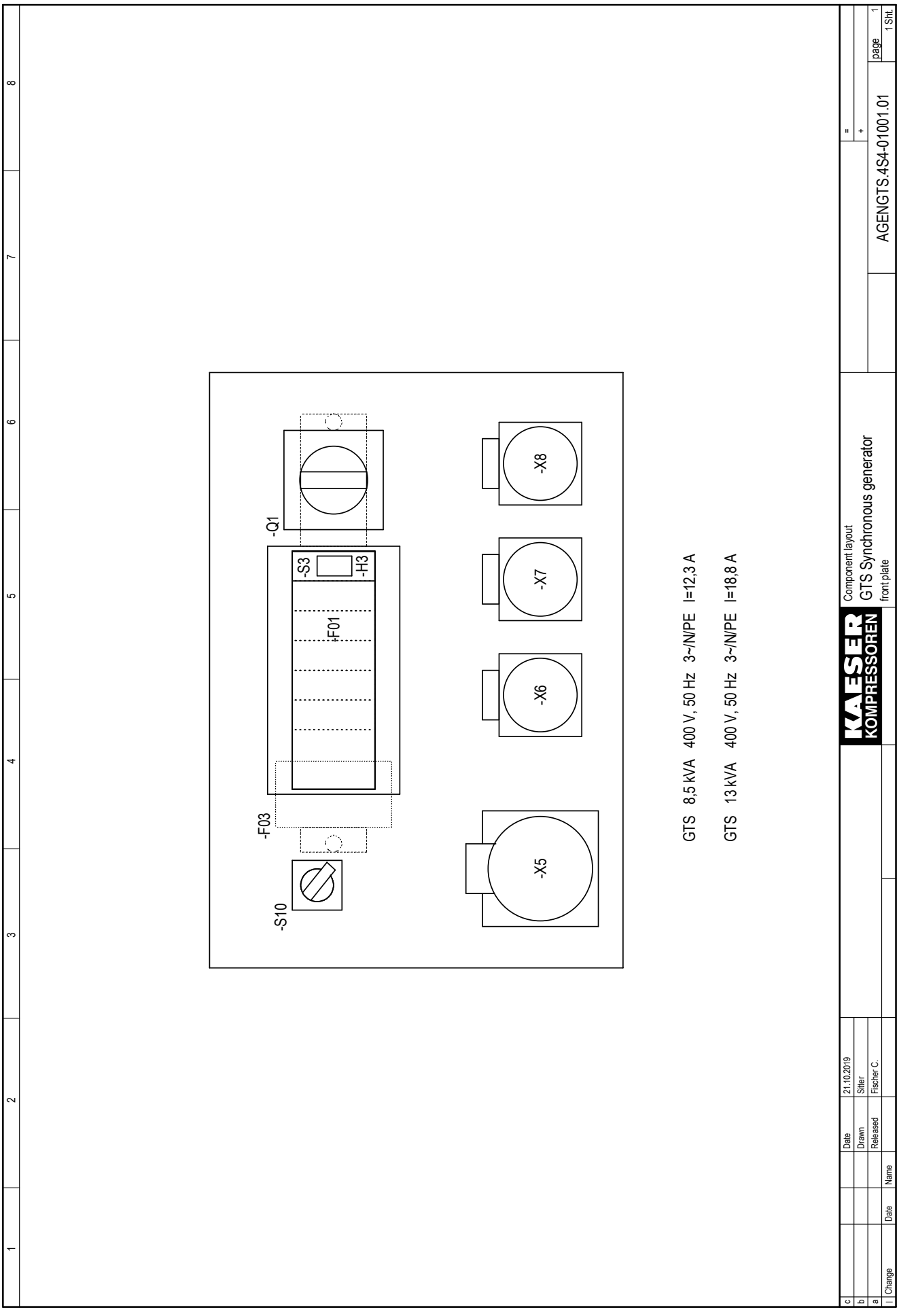
KAESER KOMPRESSOREN

Equipment parts list
GTS Synchronous generator

GGENGTS.4S4-01001.01

=
+

page 1
1 Sht.


-Q1
-S3
-H3
-F01
-F03
-S10
-X5
-X6
-X7
-X8
GTS 8,5 kVA 400 V, 50 Hz 3~/N/PE I=12,3 A
GTS 13 kVA 400 V, 50 Hz 3~/N/PE I=18,8 A
KAESER KOMPRESSOREN
Component layout
GTS Synchronous generator
front plate
AGENGTS.4S4-01001.01
page 1
1 Sht.
Change
Date
Name
Drawn
Released
21.10.2019
Sitter
Fischer C.

13.4.5 Option ga
Generator electrical diagram, 230V, 3-ph

Electrical diagrams
Synchronous generator
230V/3~/50Hz, 8,5/13kVA
with Insulation monitoring

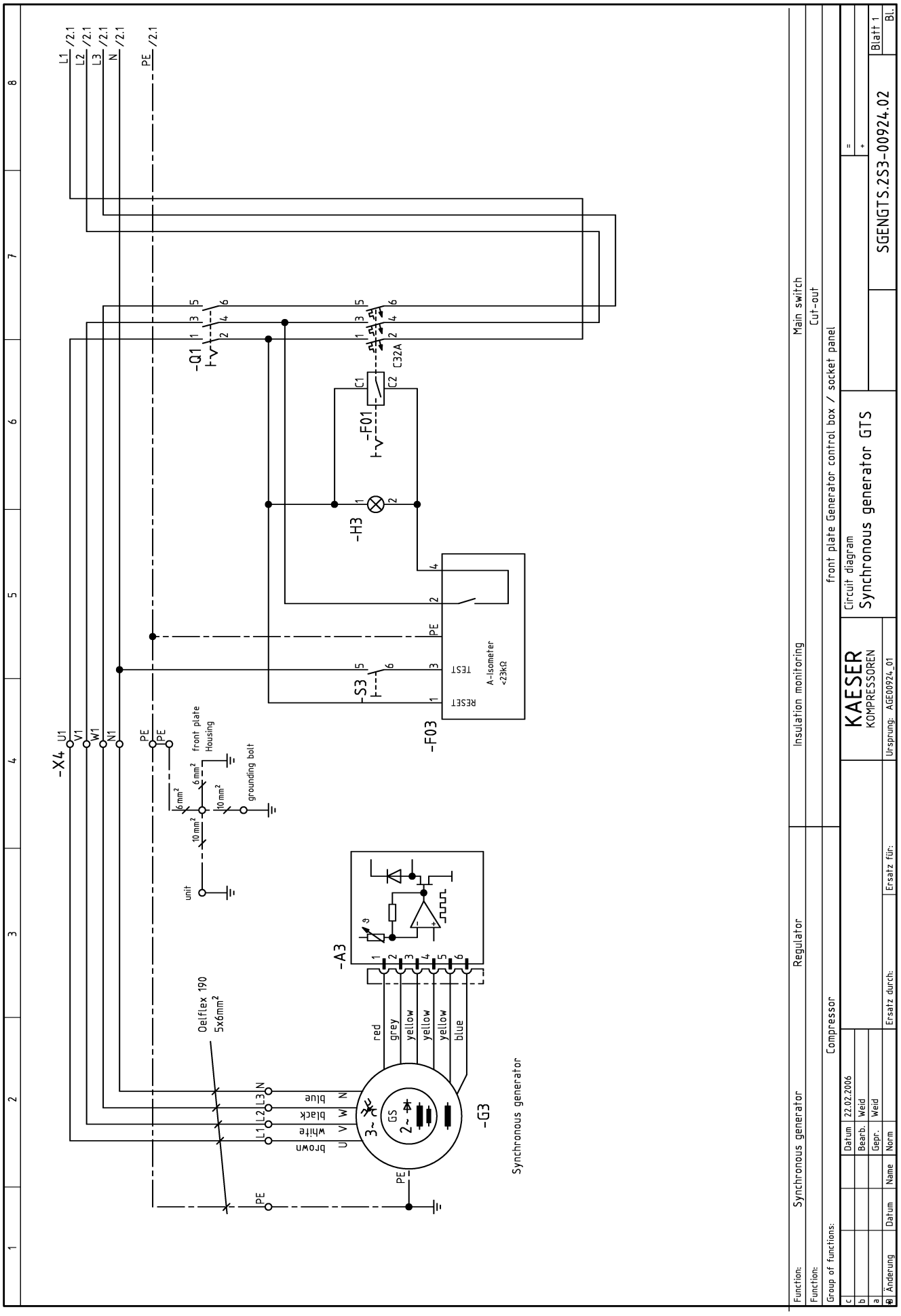
Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

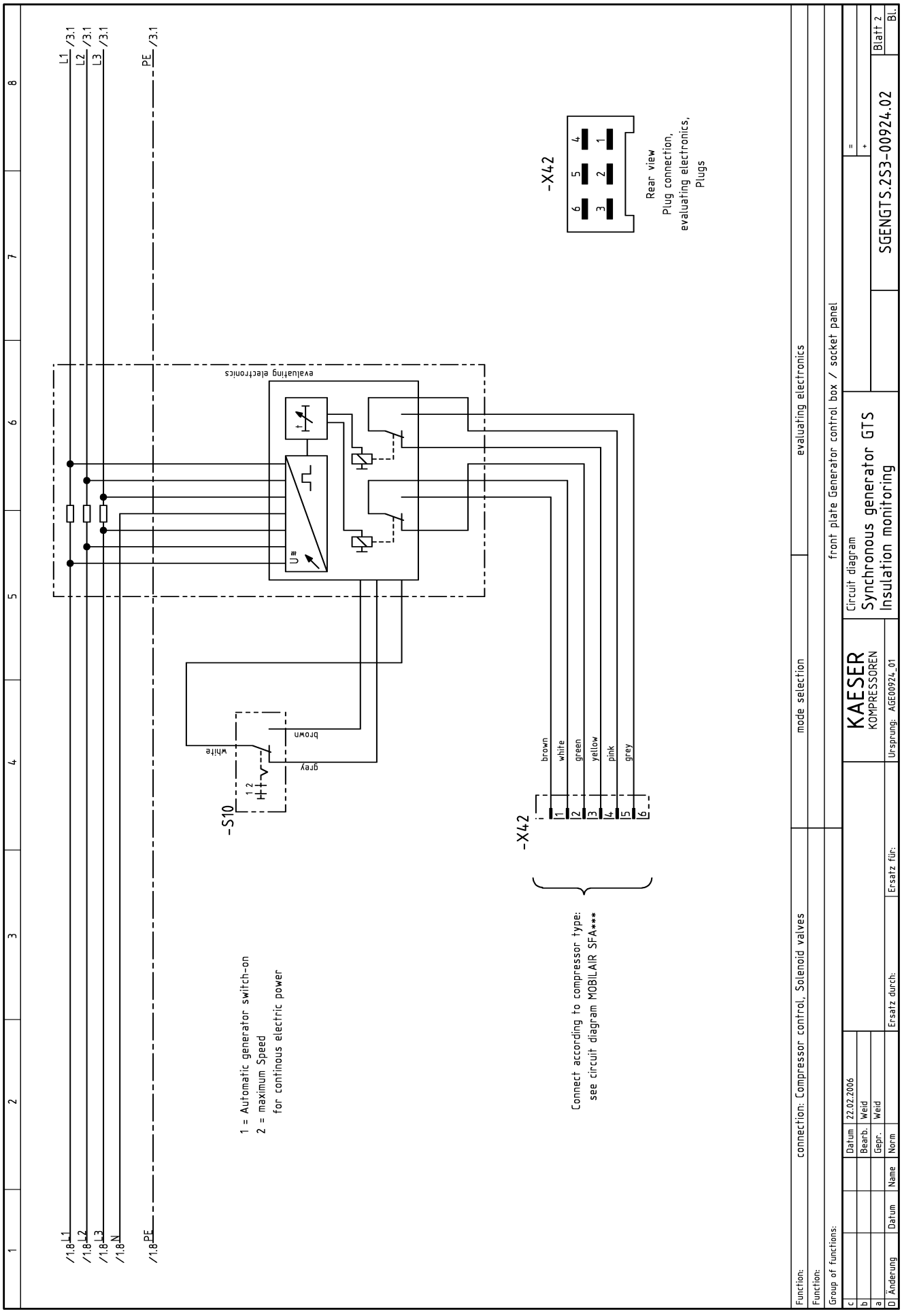
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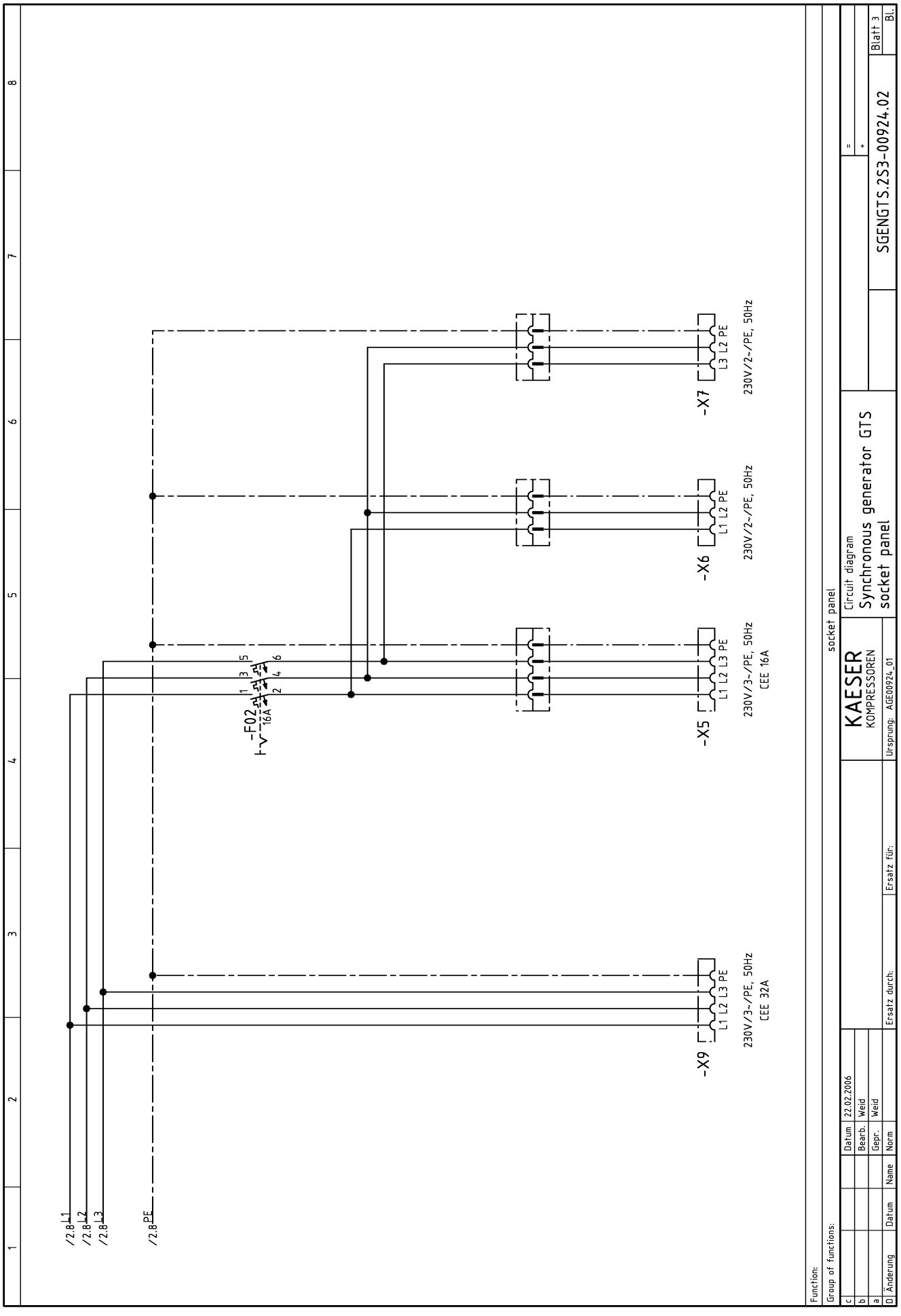
c				Datum	22.02.2006 E		KAESER KOMPRESSOREN	Cover page Synchronous generator GTS	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
A	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AGE00924_01	DGENGTS.2S3-00924.02 Blatt 1 Bl.

Lfd. Nr. No.	Benennung Name		Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page			DGENGTS.2S3-00924.02	1	
2	List of contents			ZGENGTS.2S3-00924.02	1	
3	Circuit diagram			SGENGTS.2S3-00924.02	1	
4	Circuit diagram	Insulation monitoring		SGENGTS.2S3-00924.02	2	
5	Circuit diagram	socket panel		SGENGTS.2S3-00924.02	3	
6	Electrical equipment identification			SGENGTS.2S3-00924.02	01	
7	Equipment parts list			GGENGTS.2S3-00924.02	1	
8	Component layout	front plate		AGENGTS.2S3-00924.02	1	

c				Datum	22.02.2006		KAESER KOMPRESSOREN	List of contents GTS Synchronous generator	=
b				Bearb.	Weid				+
a				Gepr.	Weid				Blatt 1
B	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AGE00924_01	ZGENGTS.2S3-00924.02	Bl.


L1 /2.1
L2 /2.1
L3 /2.1
N /2.1
PE /2.1
-Q1
-F01
C32A
-H3
-S3
-F03
RESET
TEST
A-Isometer <23kΩ
-X4
U1
V1
W1
N1
PE
front plate
Housing
grounding bolt
6mm²
10mm²
unit
-A3
Oelflex 190 5x6mm²
red
grey
yellow
yellow
yellow
blue
brown
white
black
blue
L1 L2 L3 N
U V W N
3~
2~
GS
-G3
Synchronous generator
Function: Synchronous generator
Regulator
Insulation monitoring
Main switch
Cut-out
front plate Generator control box / socket panel
Group of functions: Compressor
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator GTS
SGENGTS.2S3-00924.02
Blatt 1
Bl.
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Ersatz durch:
Ersatz für:
Ursprung: AGE00924_01
Änderung
Datum
Name


L1 /3.1
L2 /3.1
L3 /3.1
PE /3.1
/1.8 L1
/1.8 L2
/1.8 L3
/1.8 N
/1.8 PE
evaluating electronics
-S10
white
brown
grey
-X42
brown
white
green
yellow
pink
grey
1 = Automatic generator switch-on
2 = maximum Speed
for continous electric power
Connect according to compressor type:
see circuit diagram MOBILAIR SFA***
-X42
Rear view
Plug connection,
evaluating electronics,
Plugs
Function: connection: Compressor control, Solenoid valves
Function: mode selection
Group of functions: evaluating electronics
front plate Generator control box / socket panel
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator GTS
Insulation monitoring
SGENGTS.2S3-00924.02
Blatt 2
Bl.
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AGE00924_01


/2.8 L1
/2.8 L2
/2.8 L3
/2.8 PE
-F02
16A
-X9
L1 L2 L3 PE
230V/3~/PE, 50Hz
CEE 32A
-X5
L1 L2 L3 PE
230V/3~/PE, 50Hz
CEE 16A
-X6
L1 L2 PE
230V/2~/PE, 50Hz
-X7
L3 L2 PE
230V/2~/PE, 50Hz
socket panel
Function:
Group of functions:
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AGE00924_01
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator GTS
socket panel
SGENGTS.2S3-00924.02
Blatt 3
Bl.

-A3	generator-Regulator
-F01	Cut-out with overcurrent release
-F02	Cut-out
-F03	Insulation monitoring
-G3	generator
-H03	Earth leak lamp
-Q1	Main switch
-S3	Test button, Insulation monitoring
-S10	Selector switch
-X4	Generator terminals
-X5	Socket outlet 230V/3~/PE, 50Hz 16A
-X6,-X7	Socket outlet 230V/2~/PE, 50Hz 16A
-X9	Socket outlet 230V/3~/PE, 50Hz 32A
-X42	Plug connection, Valve interference suppression

c				Datum	22.02.2006		KAESER KOMPRESSOREN	Electrical equipment identification	=
b				Bearb.	Weid			Synchronous generator GTS	+
a				Gepr.	Weid				Blatt 01
E	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AGE00924_01	SGENGTS.2S3-00924.02	Bl.

1	2	3	4	5	6	7	8						
A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller / Identification data Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer		D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Type: Synchronous generator 8,5kVA										
1	Synchronous generator GTS 8,5 kVA, 230 V	DWG (BL4) 8,5 - 2ZE - 230 V	8.6043.20010		-G3						
1	socket panel +	230 / 230 V, 50 Hz, 32 A	8.6075.00030		-F01,-F02,-F03						
	Load-sensing speed control				-X5,-X6,-X7,-X9						
	Type: Synchronous generator 13kVA										
1	Synchronous generator GTS 13 kVA, 230 V	DWG 13 - 2ZE - 230V	8.6043.00010		-G3						
1	socket panel +	230 / 230 V, 50 Hz, 32 A	8.6075.00010		-F01,-F02,-F03						
	Load-sensing speed control				-X5,-X6,-X7,-X9						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Spalten B und C angegebenen Daten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung dieser Gerätestücklisten-Nummer anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

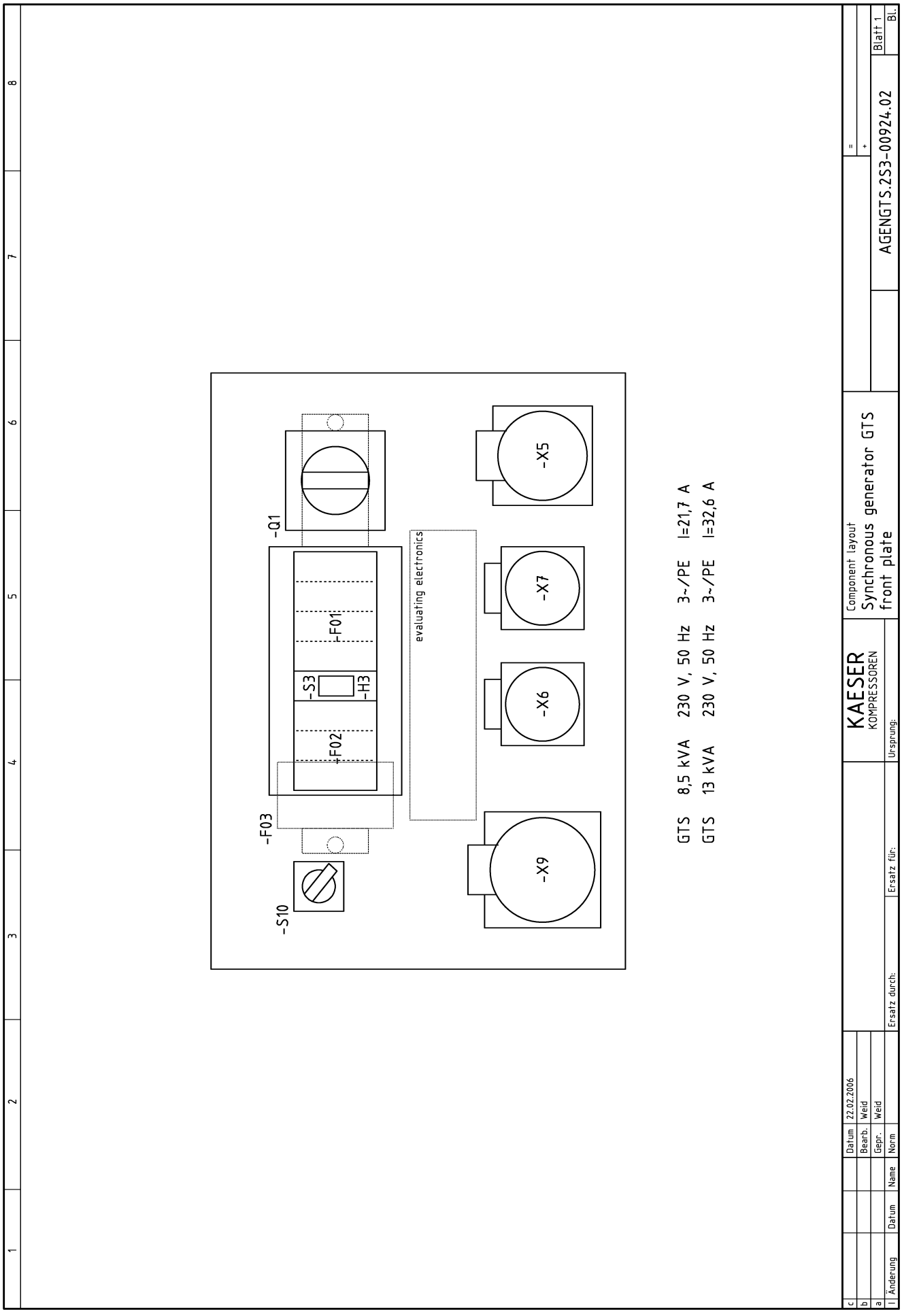
In Zweifelsfällen gilt die deutsche Fassung.

When reordering the equipment, all data enclosed by the heavy lines of columns B and C should be stated. In addition, the data in columns D to G should be given together with the No. of this list of equipment, insofar as they ar helpful in answering technical enquiries. 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.

*) Versandanschrift - Kennzeichen

c				Datum	22.02.2006		KAESER KOMPRESSOREN	Equipment parts list Synchronous generator GTS	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
F	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AGE00924_01	GGENGTS.2S3-00924.02 Blatt 1 Bl.


-Q1
-F01
-S3
-H3
-F02
-F03
-S10
evaluating electronics
-X5
-X7
-X6
-X9
GTS 8,5 kVA 230 V, 50 Hz 3~/PE I=21,7 A
GTS 13 kVA 230 V, 50 Hz 3~/PE I=32,6 A
KAESER KOMPRESSOREN
Component layout
Synchronous generator GTS
front plate
AGENGTS.2S3-00924.02
Blatt 1
Bl.
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung:

13.4.6 Option ga
Generator electrical diagram, 115V, 2-ph

Electrical diagrams
Synchronous generator GTS
7/5 kVA, 115 V 50Hz
with Insulation monitoring

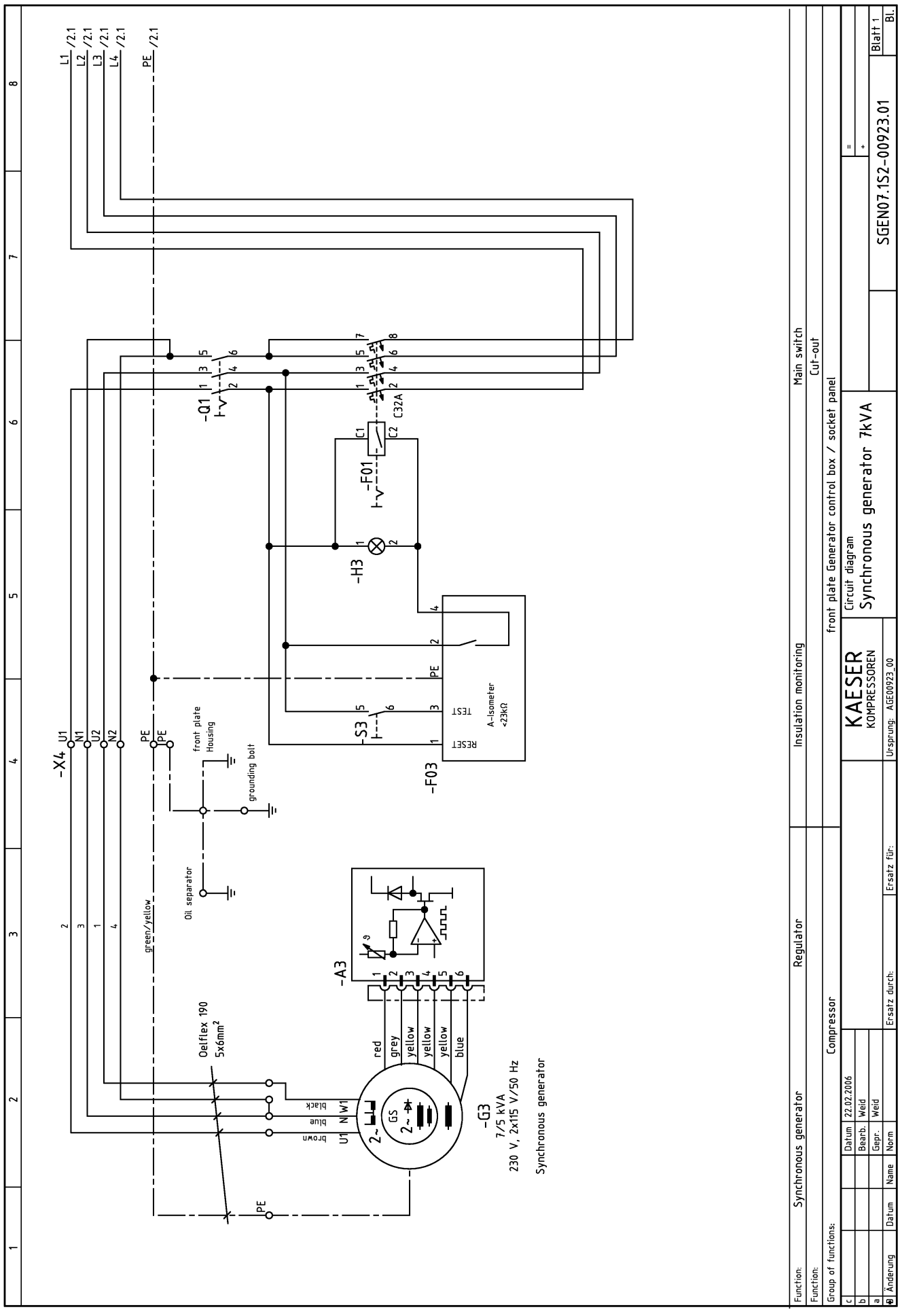
Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

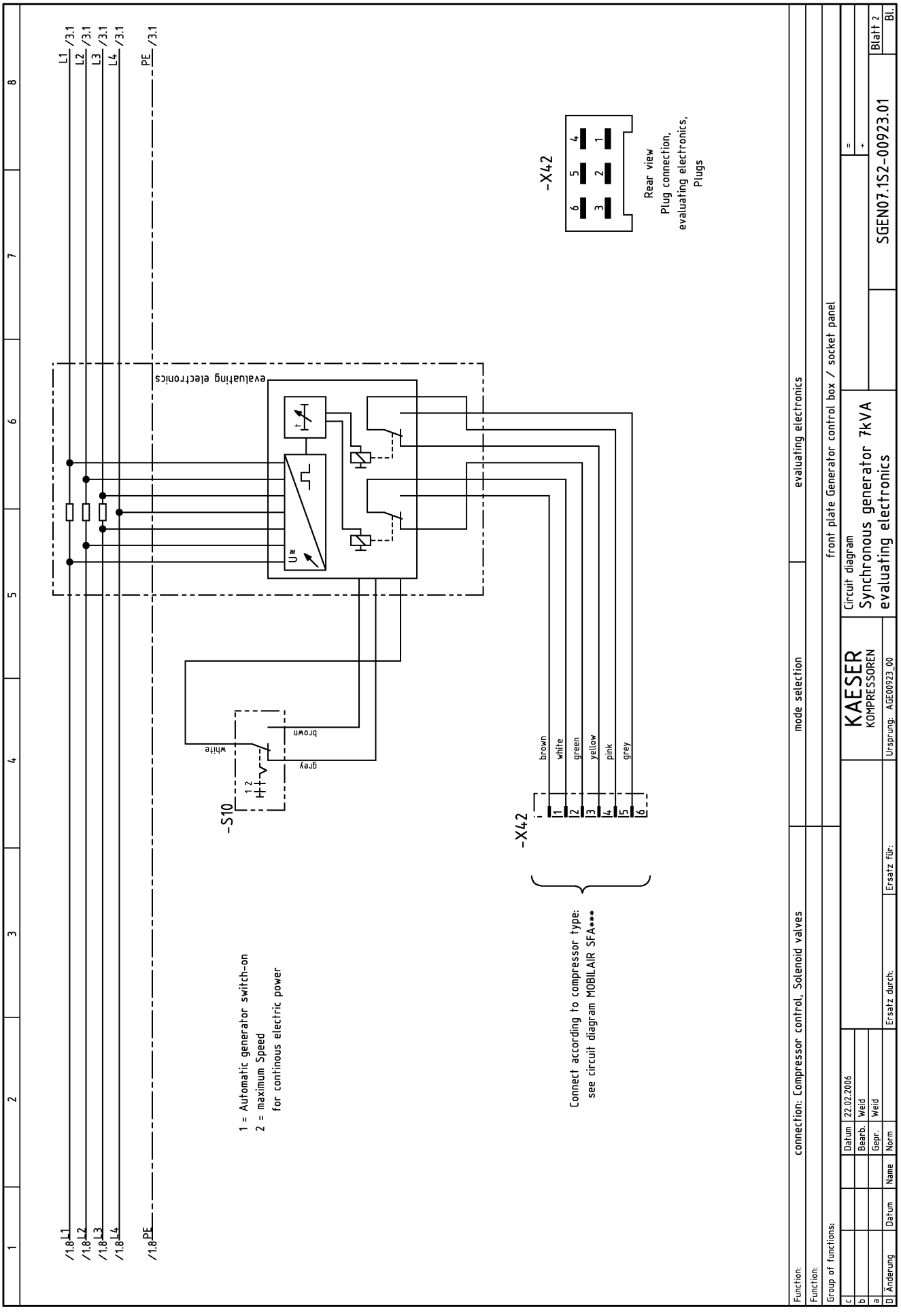
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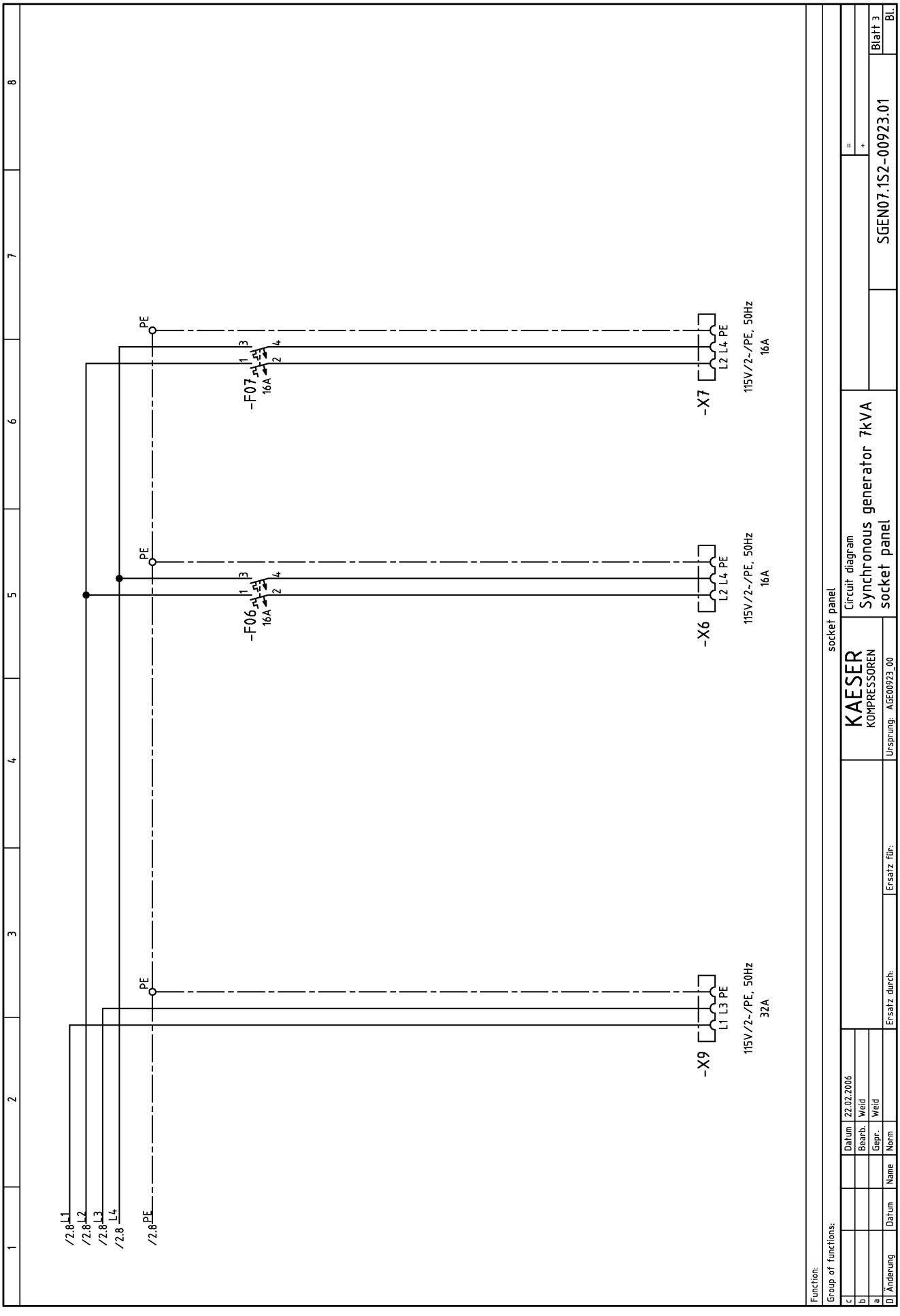
c				Datum	22.02.2006 E		KAESER KOMPRESSOREN	Cover page Portable Compressor Synchronous generator	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
A	Änderung	Datum	Name	Norm		Ersatz durch:	Ursprung: AGE00923_00	DGEN07.1S2-00923.01	Blatt 1 Bl.
						Ersatz für:			

Lfd. Nr. No.	Benennung Name		Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page	Synchronous generator		DGEN07.1S2-00923.01	1	
2	List of contents			ZGEN07.1S2-00923.01	1	
3	Circuit diagram			SGEN07.1S2-00923.01	1	
4	Circuit diagram	evaluating electronics		SGEN07.1S2-00923.01	2	
5	Circuit diagram	socket panel		SGEN07.1S2-00923.01	3	
6	Electrical equipment identification	Electrical equipment identification		SGEN07.1S2-00923.01	01	
7	Circuit diagram			GGEN07.1S2-00923.01	1	
8	Component layout	front plate		AGEN07.1S2-00923.01	1	

c				Datum	22.02.2006		KAESER KOMPRESSOREN	List of contents GTS Synchronous generator	=
b				Bearb.	Weid				+
a				Gepr.	Weid				Blatt 1
B	Änderung	Datum	Name	Norm		Ersatz durch: / Ersatz für:	Ursprung: AGE00923_00	ZGEN07.1S2-00923.01	Bl.


L1 /2.1
L2 /2.1
L3 /2.1
L4 /2.1
PE /2.1
-Q1
C32A
-F01
C1
C2
-H3
-S3
TEST
RESET
A-Isometer <23kΩ
-F03
-X4
U1
N1
U2
N2
PE
front plate
Housing
grounding bolt
Oil separator
green/yellow
-A3
Oelflex 190 5x6mm²
red
grey
yellow
yellow
yellow
blue
black
blue
brown
U1 N W1
2~ LLL
GS
2~
-G3
7/5 kVA
230 V, 2x115 V/50 Hz
Synchronous generator
Function: Synchronous generator
Regulator
Main switch
Insulation monitoring
Cut-out
Function:
front plate Generator control box / socket panel
Group of functions:
Compressor
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator 7kVA
SGEN07.1S2-00923.01
Blatt 1
Bl.
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Name
Norm
Ersatz durch:
Ersatz für:
Ursprung: AGE00923_00
Änderung
Datum


L1 /3.1
L2 /3.1
L3 /3.1
L4 /3.1
PE /3.1
/1.8 L1
/1.8 L2
/1.8 L3
/1.8 L4
/1.8 PE
evaluating electronics
-X42
6 5 4
3 2 1
Rear view
Plug connection,
evaluating electronics,
Plugs
-S10
1 2
white
brown
grey
-X42
brown
white
green
yellow
pink
grey
1 2 3 4 5 6
1 = Automatic generator switch-on
2 = maximum Speed
for continous electric power
Connect according to compressor type:
see circuit diagram MOBILAIR SFA***
Function: connection: Compressor control, Solenoid valves
Function: mode selection
evaluating electronics
Group of functions:
front plate Generator control box / socket panel
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator 7kVA
evaluating electronics
SGEN07.1S2-00923.01
Blatt 2
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Ersatz durch:
Ersatz für:
Ursprung: AGE00923_00
Änderung Datum Name


/2.8 L1
/2.8 L2
/2.8 L3
/2.8 L4
/2.8 PE
PE
-F07
16A
-X7
L2 L4 PE
115V/2~/PE, 50Hz
16A
-F06
16A
-X6
L2 L4 PE
115V/2~/PE, 50Hz
16A
-X9
L1 L3 PE
115V/2~/PE, 50Hz
32A
Function:
socket panel
Group of functions:
KAESER KOMPRESSOREN
Circuit diagram
Synchronous generator 7kVA
socket panel
SGEN07.1S2-00923.01
Blatt 3
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung: AGE00923_00

-A3	generator-Regulator
-F01	Cut-out with overcurrent release
-F06,-F07	Cut-out
-F03	Insulation monitoring
-G3	generator
-H3	Earth leak lamp
-Q1	Main switch
-S3	Test button, Insulation monitoring
-S10	Selector switch
-X4	Generator terminals
-X6,-X7	Socket outlet 115V/2~/PE, 50Hz 16A
-X9	Socket outlet 115V/2~/PE, 50Hz 32A
-X42	Plug connection, Valve interference suppression

c				Datum	22.02.2006		KAESER KOMPRESSOREN	Electrical equipment identification	=
b				Bearb.	Weid			Synchronous generator GTS	+
a				Gepr.	Weid			Electrical equipment identification	SGEN07.1S2-00923.01 Blatt 01
E	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AGE00923_00	Bl.

1	2	3	4	5	6	7	8

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller Identification data Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer		D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
1	Synchronous generator GTS 7 kVA, 230/115 V	DWG (BL4) 7,0/5-2ZE	8.6037.20120		-G3						
1	socket panel + Load-sensing speed control	2 x 115 V, 50 Hz, 2 x 31 A	8.6075.00020		-F01,-F03,-F06,-F07						
					-X6,-X7,-X9						
1	Cable set generator connection	115 VAC, 12/24 VDC	7.9061.00020		-X31,-X42						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten Spalten B und C angegebenen Daten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung dieser Gerätestücklisten-Nummer anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. Für Ersatzteilbestellung ist zusätzlich die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des Erzeugnisses genannt ist.

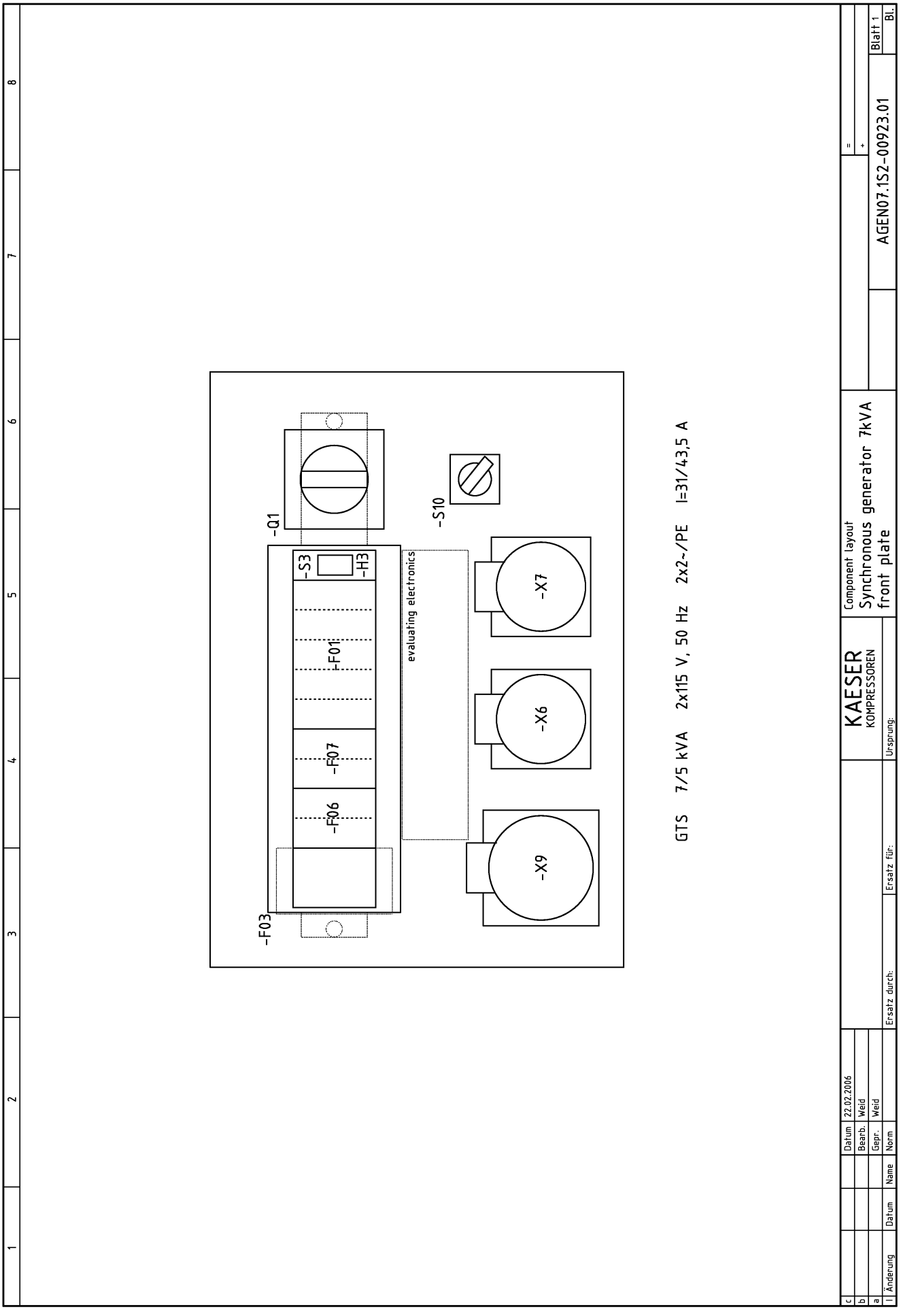
In Zweifelsfällen gilt die deutsche Fassung.

When reordering the equipment, all data enclosed by the heavy lines of columns B and C should be stated. In addition, the data in columns D to G should be given together with the No. of this list of equipment, insofar as they ar helpful in answering technical enquiries. 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.

*) Versandanschrift – Kennzeichen

c				Datum	22.02.2006		KAESER KOMPRESSOREN	Circuit diagram Synchronous generator 13kVA	=
b				Bearb.	Weid				+
a				Gepr.	Weid				
F	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: AGE00923_00	GGEN07.1S2-00923.01 Blatt 1 Bl.


-Q1
-S10
-S3
-H3
-F01
-F07
-F06
-F03
evaluating electronics
-X7
-X6
-X9
GTS 7/5 kVA 2x115 V, 50 Hz 2x2~/PE I=31/43,5 A
KAESER KOMPRESSOREN
Component layout
Synchronous generator 7kVA
front plate
AGEN07.1S2-00923.01
Blatt 1
Bl.
Datum 22.02.2006
Bearb. Weid
Gepr. Weid
Norm
Name
Datum
Änderung
Ersatz durch:
Ersatz für:
Ursprung:

13.4.7 Option od
Battery charger electrical diagrams

Electrical diagrams

Battery charger 12V DC / 4A

Power supply:

230V / 1~ / N / PE / 50Hz
12V - System

Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

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c				Datum	20.03.2018 E			Cover page		=	
b				Bearbeiter	Sitter			MOBILAIR		+	
a				Geprüft	Fischer C.			Battery charger			
A	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung:	DFABLG-03039.00	page 1	1 Bl.

1	2	3	4	5	6	7	8

general instructions

Control voltage : 230V AC

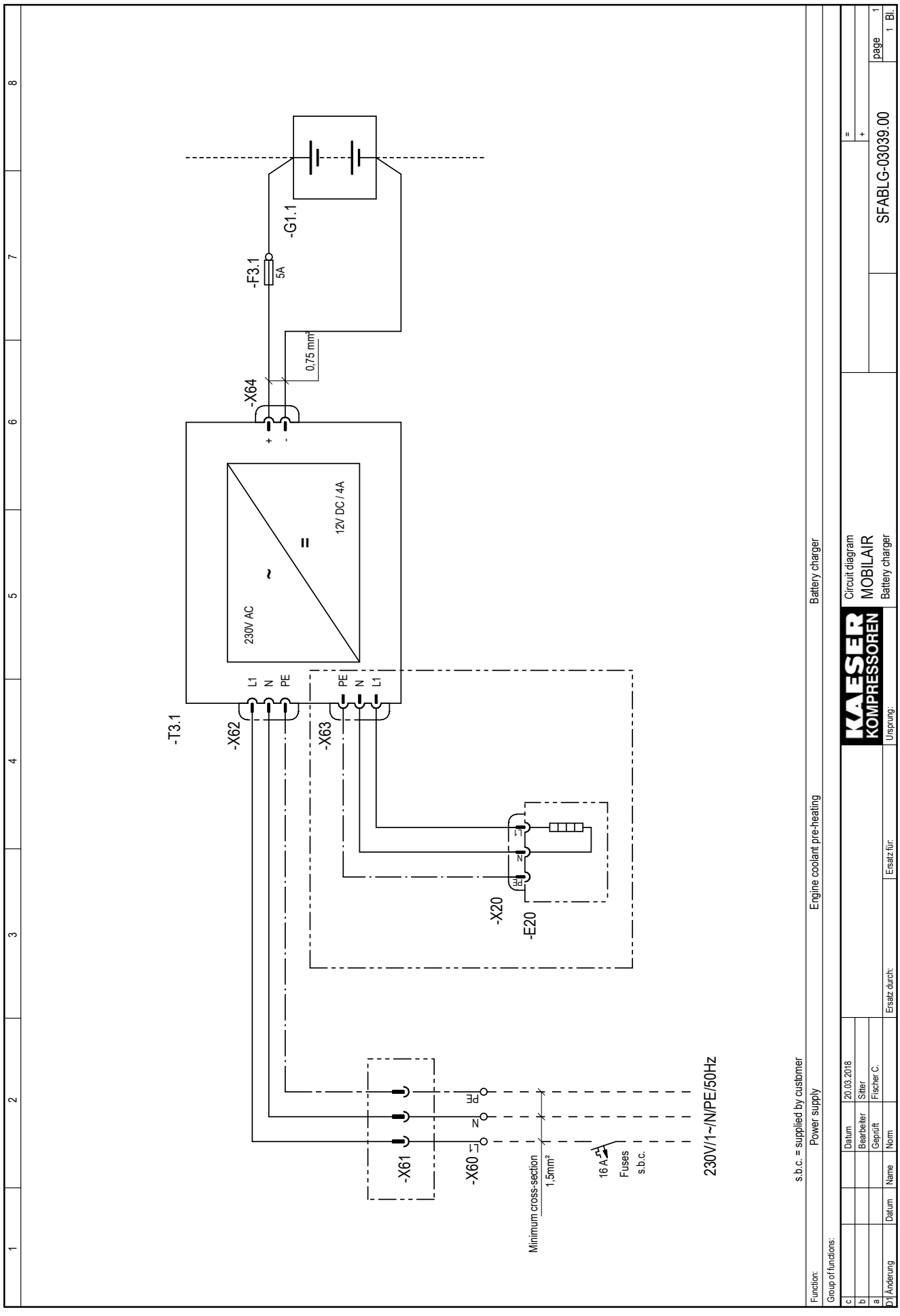
components option Battery charger

-T3.1	Battery charger
-F3.1	Fuse
-G1.1	Battery
-X60...-X64	plug connection

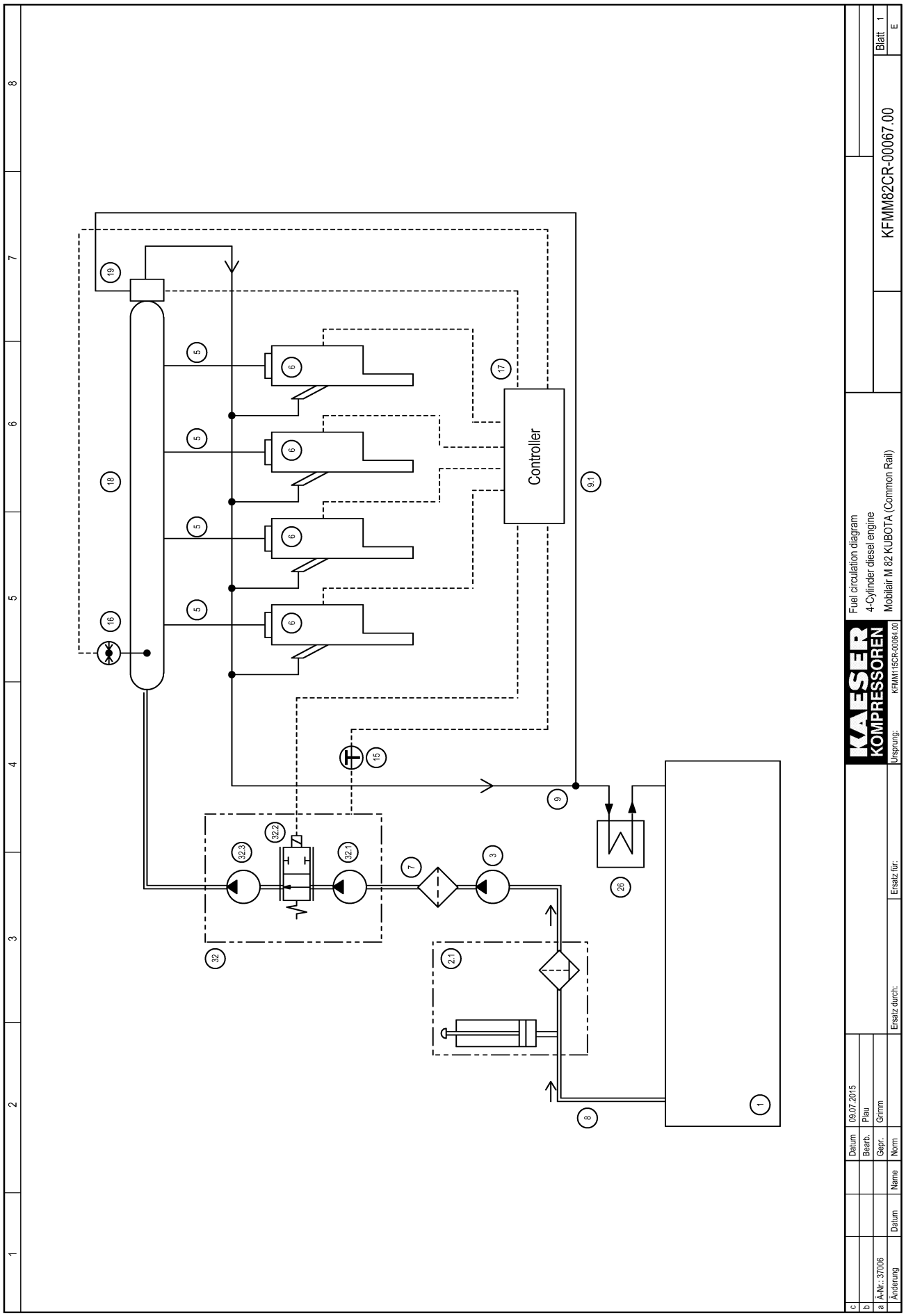
components option Engine coolant pre-heating

-E20	Heating Engine coolant pre-heating
-X20	plug connection

c				Datum	20.03.2018		KAESER KOMPRESSOREN	Block diagram general instructions	
b				Bearbeiter	Sitter				+
a				Geprüft	Fischer C.				
C 1	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung:	UFABLG-03039.00	page 1 / 1 Bl.


-G1.1
-F3.1
5A
0,75 mm²
-X64
+
-
12V DC / 4A
230V AC
-T3.1
L1
N
PE
-X62
-X63
-X20
-E20
-X61
-X60
Minimum cross-section
1,5mm²
16 A
Fuses
s.b.c.
230V/1~/N/PE/50Hz
s.b.c. = supplied by customer
Function:
Power supply
Engine coolant pre-heating
Battery charger
Group of functions:
Datum
20.03.2018
Bearbeiter
Sitter
Geprüft
Fischer C.
Name
Norm
Ersatz durch:
Ersatz für:
Ursprung:
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR
Battery charger
SFABLG-03039.00
page 1
1 Bl.
Änderung
Datum

13.5 Fuel circulation diagram


Controller
Fuel circulation diagram
4-Cylinder diesel engine
Mobilair M 82 KUBOTA (Common Rail)
KFMM82CR-00067.00
KFMM115CR-00064.00
Ursprung:
Ersatz für:
Ersatz durch:
Datum
Name
Norm
Gepr.
Bearb.
Änderung
A-Nr.: 37006
09.07.2015
Plau
Grimm
Blatt 1
E

1	2	3	4	5	6	7	8

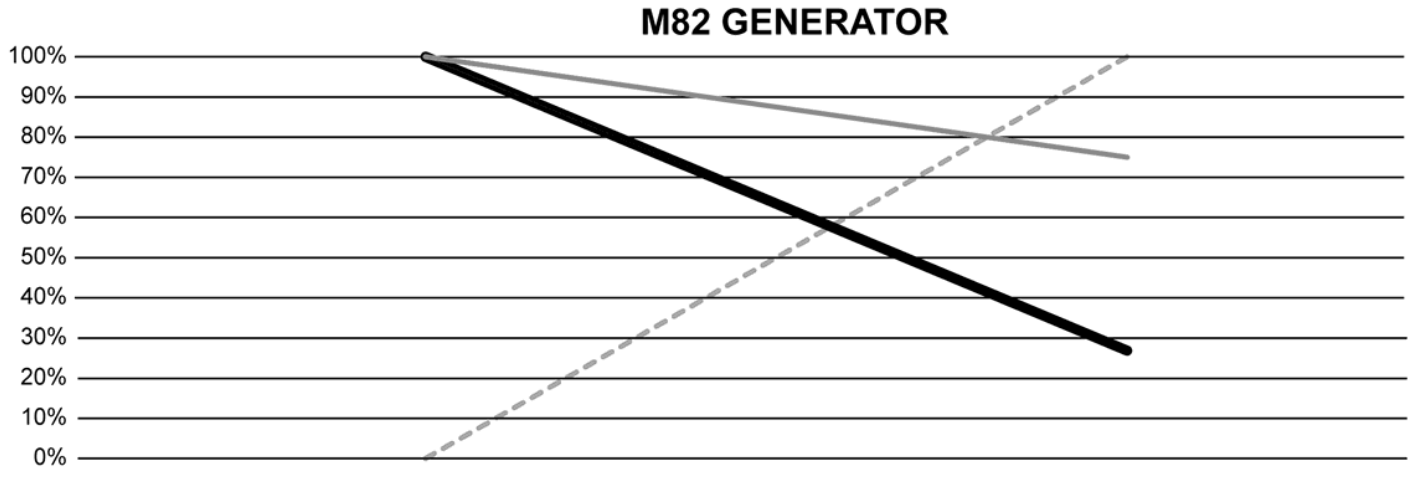
1	Fuel tank
2.1	Fuel prefilter with water trap and integrated hand pump
3	Fuel feed pump
5	High pressure line
6	Injector nozzle
7	Fuel filter
8	Fuel supply line
9	Fuel return line
9.1	Fuel leakage pipe
15	Temperature sensor
16	Pressure transducer
17	Electronic control unit
18	Distributing pipe
19	Pressure limiting valve
26	Fuel cooler
32	High-pressure pump
32.1	Feed pump (engine-mounted)
32.2	Intake control valve
32.3	Pump unit

c				Datum	09.07.2015		KAESER KOMPRESSOREN	Fuel circulation diagram	
b				Bearb.	Plau			4-Cylinder diesel engine	
a				Gepr.	Grimm			Mobilair M 82 KUBOTA (Common Rail)	KFMM82CR-00067.00 Blatt 2
	Änderung	Datum	Name	Norm		Ersatz durch:	Ersatz für:	Ursprung: KFMM115CR-00064.00	E

13.6 Compressed air flow rate in generator mode

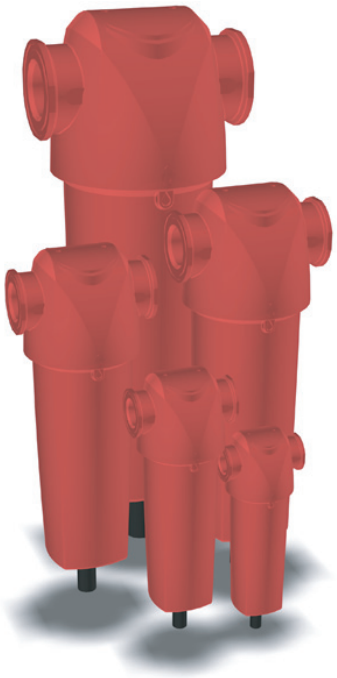
M82 8,5kVA GENERATOR										
GENERATOR	kVA	0% 0,0	12,5% 1,1	25% 2,1	37,5% 3,2	50% 4,3	62,5% 5,3	75% 6,4	87,5% 7,4	100% 8,5
COMPRESSOR		100%	97%	94%	91%	88%	84%	81%	78%	75%
@ 7 bar	m³/min	8,4	8,1	7,9	7,6	7,4	7,1	6,8	6,6	6,3
@ 10 bar	m³/min	6,8	6,6	6,4	6,2	6,0	5,7	5,5	5,3	5,1
@ 12 bar	m³/min	6,1	5,9	5,7	5,5	5,3	5,1	5,0	4,8	4,6
@ 14 bar	m³/min	5,5	5,3	5,2	5,0	4,8	4,6	4,5	4,3	4,1

M82 13kVA GENERATOR										
GENERATOR	kVA	0% 0,0	12,5% 1,6	25% 3,3	37,5% 4,9	50% 6,5	62,5% 8,1	75% 9,8	87,5% 11,4	100% 13
COMPRESSOR		100%	91%	82%	73%	63%	54%	45%	36%	27%
@ 7 bar	m³/min	8,4	7,6	6,9	6,1	5,3	4,6	3,8	3,0	2,3
@ 10 bar	m³/min	6,8	6,2	5,6	4,9	4,3	3,7	3,1	2,4	1,8
@ 12 bar	m³/min	6,1	5,5	5,0	4,4	3,9	3,3	2,8	2,2	1,6
@ 14 bar	m³/min	5,5	5,0	4,5	4,0	3,5	3,0	2,5	2,0	1,5



M82 Generator Option

13.7 Option dd
Operating instructions for compressed air filter (combination filter)



Filters for Compressed Air

005-055 (AO, AA, ACS, AR, AAR)

EN Original Language

NL DE FR FI SV NO DA EL ES PT IT PL

SK CS ET HU LV LT RU SL TR MT RO

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker domnick hunter

ENGINEERING YOUR SUCCESS.

FILTER DH-OIL-X EVO AO AA 01-

FILTER DH-OIL-X EVO AO AA 01-

Warning

- Highlights actions or procedures, which if not performed correctly, may lead to personal injury or death.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, lichamelijk letsel of de dood kunnen veroorzaken.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Verletzungen und tödlichen Unfällen führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent entraîner des dommages corporels ou la mort.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin 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.
- Tõstab esile toimingud või protseduurid, mis väära teostamise 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 mirti.
- 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 korriment jew mewt
- Evidențiază acțiuni sau proceduri care, dacă nu sunt corect efectuate, pot duce la leziuni personale sau la deces.

Caution

- Highlights actions or procedures, which if not performed correctly, may lead to damage to this product.
- Benadrukt de acties of procedures die, indien niet juist uitgevoerd, schade kunnen berokkenen aan dit product.
- Weist auf Aktionen oder Verfahren hin, die bei fehlerhafter Durchführung zu Schäden am Gerät führen können.
- Met en relief les actions ou procédures qui, si elles ne sont pas exécutées correctement, peuvent endommager ce produit.
- Osoittaa toimenpiteitä tai menettelytapoja, jotka väärin 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.
- Tõstab esile toimingud või protseduurid, mis väära teostamise korral võivad käesolevat 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 ħsara 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 giyilmelidir
- Este necesară purtarea unor mănuşi 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 použít vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia mūvėti tinkamas pirštines.
- Uporabiti je treba ustrezne rokavice.
- Għandhom jintlibsu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggooien 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 bortskaffelse 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.
- Tõstab esile kasutatud osade ja jäätkide 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 wieħed jarmi l-partijiet użati u l-iskart
- Evidențiază cerințele pentru depunerea la deșeuri a pieselor uzate și a reziduurilor.



- Pressure. • Druk • Druck. • Pression.
- Paine. • Tryck • Trykk • Tryk
- Πίεση • Presión. • Pressão. • Pressione.
- Ciśnienie • Tlak.. • Tlak. • Surve.
- Nyomás alatt. • Spiediens. • Slėgis. • Давление
- Tlak • Basınç • Pressjoni • Presiune.



- Release Pressure. • Druk aflaten. • Druck ablassen.
- Évacuation de pression. • Vapauta paine. • Tryckutsläpp.
- Avlast trykk • Aflast tryk • Εκτόνωση πίεσης
- Despresurizar. • Liberta Pressão. • Scaricare la pressione.
- Ciśnienie spustowe • Uvoľnite tlak. • Uvolnění tlaku.
- Surve väljalase • Engedje ki a nyomást. • Pazeminiet spiedienu.
- Išleiskite slėgį. • Стравить давление • Sprostitev tlaka.
- Basıncı Kaldırın • Neħħi l-pressjoni • Depresurizare.



- Replace every year • Elk jaar vervangen • Jährlich austauschen
- Remplacer tous les ans. • Vaihda vuosittain. • Byt varje år
- Skift ut hvert år • Udskift en gang om året • Αντικατάσταση κάθε χρόνο
- Sustituir anualmente • Substituir todos os anos • Sostituire ogni anno
- Należy wymieniać raz w roku • Každý rok vymieňajte • Nutná výměna každý rok.
- Asendage igal aastal • Évente cserélje • Nomainiet reizi gadā
- Keiskite kartą per metus • Заменять каждый год. • Zamenjajte vsako leto.
- Her yıl değiştirin • Ibdel kull sena • Înlocuire anuală



- Filter housing / Model • Filterhuis / Model • Filtergehäuse / Modell
- Logement du filtre/modèle. • Suodatinkotelo/-malli • Filterhus/modell
- Filterhus/-modell • Filterhus/modell • Υποδοχή/μοντέλο φίλτρου
- Caja de filtro/modelo. • Caixa / Modelo do filtro • Corpo del filtro / Modello
- Obudowa filtra / model. • Kryt filtra / Model • Kryt filtru / Model
- Filtri korpus/mudel • Szűrőház / típus • Filtra korpuss / modelis
- Filtro korpusas / modelis • Корпус фильтра / модель • Ohišje filtra / Model
- Filtre muhafazası / Model • Kontenitur tal-filtru - Mudell • Carcasă filtru / Model



- High efficiency filter element • Zeer efficiënt filterelement
- Hochleistungsfilterelement • Cartouche filtrante haute efficacité.
- Tehokas suodatinelementti • Högeffektivt filterelement
- Høyeffektivt filterelement • Högeffektivt filterelement
- Φίλτρο υψηλής απόδοσης • Elemento filtrante de gran eficiencia.
- Elemento do filtro de elevado rendimento • Elemento filtrante ad alta efficienza
- Wysokowydajny wkład filtra • Vysoko účinný filtračný článok
- Vysoce účinný filtrační prvek • Kõrgtootlik filterelement
- Nagy hatékonyságú szűrőelem • Augstas produktivitātes filtra elements
- Labai efektyvus filtravimo elementas • Высокоэффективный фильтрующий элемент
- Visoko učinkovit filtrirni element • Yüksek etkinlikli filtre öğesi
- Element tal-filtru b'effiċjenza kbira • Element filtrant cu eficienţă ridicată



- Ensure correct tool is used • Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden.
- Zorg dat het juiste gereedschap wordt gebruik • Käytettävä oikeaa työkalua
- Vérifier que les outils adéquats sont utilisés. • Pass på at korrekt verktøy brukes
- Se till att rätt verktyg används. • Βεβαιωθείτε ότι χρησιμοποιείται το σωστό εργαλείο
- Sørg for at benytte korrekt værktøj • Certifique-se de que é utilizada a ferramenta correcta
- Asegúrese de que se utiliza la herramienta adecuada • Należy używać odpowiedniego narzędzia.
- Assicurarsi di utilizzare l'utensile corretto • Zkontrolujte použití správného nástroje
- Uistite sa, že používate správny nástroj • Mindig a célnak megfelelő szerszámot használja
- Tagage õige tööriista kasutamine • Įsitikinkite, kad naudojamas reikiamas įrankis
- Izmantojiet tikai atbilstošus darbarīkus • Poskrbite, da boste uporabili ustrezno orodje
- Убедитесь, что используется правильный инструмент • Kun żgur li tintuża l-għodda t-tajba
- Doğru alet kullanılmasını sağlayın • Asigurați-vă că este utilizată scula corectă
-



- Next service date (month/year) • Volgende onderhoudsdatum (maand / jaar)
- Nächster Wartungstermin (Monat/Jahr) • Date de la prochaine révision (mois/année)
- Seuraava huollon päivämäärä (kuukausi/vuosi) • Nästa servicedatum (månad/år)
- Neste servicedato (måned/år) • Næste servicedato (måned/år)
- Επόμενη ημερομηνία σέρβις (μήνας / έτος) • Fecha de siguiente revisión (mes/año)
- Data da próxima intervenção técnica (mês / ano) • Prossimo intervento di assistenza (mese / anno)
- Data następnego serwisu (miesiąc/rok) • Dátum nasledujúcej opravy (mesiac/rok)
- Datum příští prohlídky (měsíc / rok) • Järgmise hoolduse kuupäev (kuu / aasta)
- Következő szerviz dátuma (hó / év) • Nākamais apkopes datums (mēnesis / gads)
- Kitos techninės priežiūros data (ménuo / metai) • Дата следующего обслуживания (месяц/год)
- Datum naslednjega servisa (mesec / leto) • Bir sonraki servis tarihi (ay / yıl)
- Id-data tas-servis li jmiss (xahar / sena) • 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

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.

Сохраните это руководство пользователя, чтобы обращаться к нему в дальнейшем

Opozorilo!
Izdelek lahko namestijo in vzdržujejo le usposobljeni in pooblaščeni delavci, ki morajo pri tem strogo upoštevati navodila za uporabo, vse standarde in zakonske zahteve, ki veljajo za posamezno situacijo.

Shranite ta navodila za uporabo za v prihodnje

Dikkat!
Bu ürün yalnızca yetkili ve kalifiye personel tarafından monte edilmeli ve bakımı yapılmalıdır. Kullanım talimatına, ilgili standartlara ve yasal şartlara harfiyen uyulmalıdır.

Bu kullanım kılavuzunu ileride başvurmak için saklayın.

Twissija!
Dan il-prodott għandu jiġi installat u jingħata l-manutenzjoni minn personal kompetenti u awtorizzat biss, taħt sorveljanza stretta ta' dawn l-istruzzjonijiet tat-tħaddim, u kwalunkwe standards u ħtiġijiet legali rilevanti fejn hu xieraq.

Erfa' 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
EN	Model	BSPT/NPT Port Size	Flow Rate	Dimensions	Weight	Operating Parameters	Filter Grade	Filter Models	Max Operating Pressure	Max Operating Temperature	Min Operating Temperature
NL	Model	BSPT/NPT poortafmeting	Stroom snelheid	Afmetingen	Gewicht	Bedrijfs parameters	Filter kwaliteitsgraad	Filter modellen	Maximale bedrijfs druk	Maximale bedrijfs temperatuur	Minimale bedrijfs temperatuur
DE	Modell	BSPT/NPT Anschlussgröße	Durchfluss-rate	Abmessungen	Gewicht	Betriebsparameter	Filterklasse	Filtermodell	Max. Betriebs-druck	Max. Betriebstemperatur	Min. Betriebstem peratur
FR	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.
F	Malli	BSPT NPT-portin koko	Virtaus-nopeus	Mitat	Paino	Käyttö-parametrit	Suodatin-luokka	Suodatin-mallit	Suurin käyttö-paine	Suurin käyttö-lämpötila	Pienin käyttö-lämpötila
SV	Modell	BSPT NPT-öppningsstorlek	Flödes-hastighet	Mått	Vikt	Drifts-parametrar	Filter-klass	Filter-modeller	Högsta drifts-tryck	Högsta drifts-temperatur	Lägsta drifts-temperatur
NO	Modell	BSPT NPT-Portstørrelse	Strømnings-hastighet	Mål	Vekt	Drifts-parametere	Filter-type	Filter-modeller:	Maks. drifts-trykk	Maks. drifts-temperatur	Min.drifts-temperatur
DA	Model	BSPT NPT-portstørrelse	Flow-hastighed	Mål	Vægt	Drifts-parametre	Filter-kvalitet	Filter-modeller	Maks. drifts-tryk	Maks. drifts-temperatur	Min.drifts-temperatur
EL	Μοντέλο	Μέγεθος θύρας BSPT/NPT	Ρυθμός παροχής	Διαστάσεις	Βάρος	Παράμετροι λειτουργίας	Κατηγορία φίλτρου	Μοντέλα φίλτρων	Μέγ. πίεση λειτουργίας	Μέγ. θερμοκρασία λειτουργίας	Ελάχ. θερμοκρασία λειτουργίας
ES	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
PT	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
T	Modello	Dimensioni collega-mento BSPT/NPT	Portata	Dimensioni	Peso	Parametri di esercizio	Grado di filtrazione	Filtri	Pressione di esercizio massima	Temperatura di esercizio massima	Temperatura di esercizio minima
PL	Model	Wielkość otworu BSPT/NPT	Prędkość przepływu	Wymiary	Ciężar	Parametry pracy	Klasa filtra	Typy filtrów	Maks. ciśnienie robocze	Maks. temperatura pracy	Min. temperatura pracy
SK	Model	BSPT/NPT Veľkosť portu	Prietoková rýchlosť Rate	Rozmery	Hmotnosť	Prevádzkové parametre	Trieda filtra	Typy filtrov	Max. prevádzkový tlak	Max. prevádzková teplota	Min. prevádzková teplota
CS	Model	Velikost závitu BSPT/NPT	Rychlost průtoku	Rozměry	Hmotnost	Provozní parametry	Klasifikace filtru	Modely filtru	Maximální provozní tlak	Maximální provozní teplota	Minimální provozní teplota
ET	Mudel	BSPT/NPT pordi suurus	Voolukulu	Mõõtmed	Kaal	Talitlusparameetrid	Filtratsiooniaste	Filtri mudelid	Maksimaalne töösurve	Maksimaalne töötemperatuur	Minimaalne töötemperatuur
HU	Típus	BSPT/NPT Csőcsonk mérete	Áramlási sebesség	Méretek	Tömeg	Üzemi paraméterek	Szűrő fokozat	Szűrő típusa	Max. üzemi nyomás	Max. Üzemi hőmérséklet	Min. Üzemi hőmérséklet
LV	Modelis	BSPT/NPT porta lielums	Plūsmas ātrums	Izmēri	Svars	Darbības parametri	Filtru kategorija	Filtru modeli	Maks. darbības spiediens	Maks. darbības temperatūra	Min. darbības temperatūra
LT	Modelis	BSPT/NPT Prievado dydis	Srauto tėkmgreitisės	Matmenys	Svoris	Darbiniai parametrai	Filtro klasė	Filtro modeliai	Maks. darbinis slėgis	Maks. darbinė temperatūra	Min. darbinė temperatūra
RU	Модель	Диаметр отверстия BSPT/NPT	Скорпотока	Габариты	Вес	Рабочие параметры	Качество фильтра	Модели фильтров	Макс. рабочее давление	Макс. рабочая температура	Мин. рабочая температура
SL	Model	Velikost vrat BSPT/NPT	Hitrost pretoka	Mere	Teža	Delovni parametri	Razred filtra	Modeli filtrov	Maks. delovni tlak	Maks. delovna temperatura	Min. delovna temperatura
TR	Model	BSPT/NPT Port Boyu	Akım Hızı	Boyutlar	Ağırlık	İşletim Parametreleri	Filtre Derecesi	Filtre Modelleri	Azami İşletme Basıncı	Azami İşletme Isısı	Asgari İşletme Isısı
MT	Mudell	Daqs tal-Port BSPT/NPT	Rata tal-Fluss	Dimensjonijiet	Piż	Parametri ta l-Operar	Grad tal-Filtru	Mudelli tal-Filtru	Pressjoni Massima ta' l-Operar	Temperatura Massima ta' l-Operar	Temperatura Minima ta' l-Operar
RO	Mode	Dimensiune port BSPT/NP	Debi	Dimensiun	Greutat	Parametri de funcţionar	Gradul filtrului	Modele de filtr	Presiune maxim„ de funcţionar	Temperatur„ maxim„ de funcţionar	Temperatur„ minim„ de funcţionar

1. Technical Specification

• Technische specificaties • Technische Angaben • Caractéristiques techniques • Tekniset tiedot • Tekniska specifikationer
• Tekniske spesifikasjoner • Tekniske specifikationer • Τεχνικές προδιαγραφές • Especificaciones técnicas • Especificações Técnicas
• Caratteristiche tecniche • Dane techniczne • Technická špecifikácia • Technická specifikace • Tehnilised andmed • Műszaki adatok
• Tehniskā specifikācija • Techninė specifikacija • Технические характеристики • Tehnične specifikacije • Teknik Spesifikasyon
• Speċifikazzjoni Teknika • **Specificație tehnică**

Model	Pipe Size	L/s	m³/min	m³/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

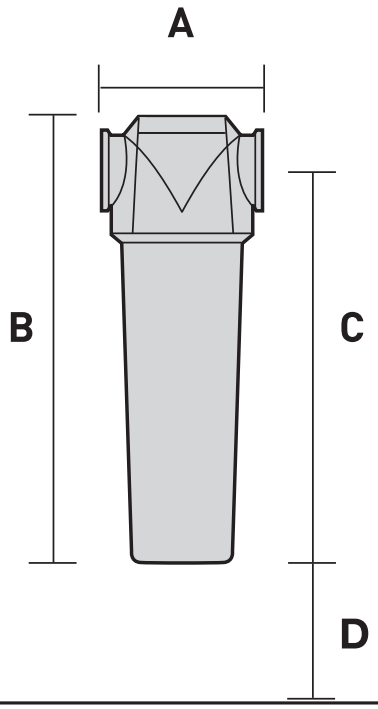
- B = BSPT
- N = NPT

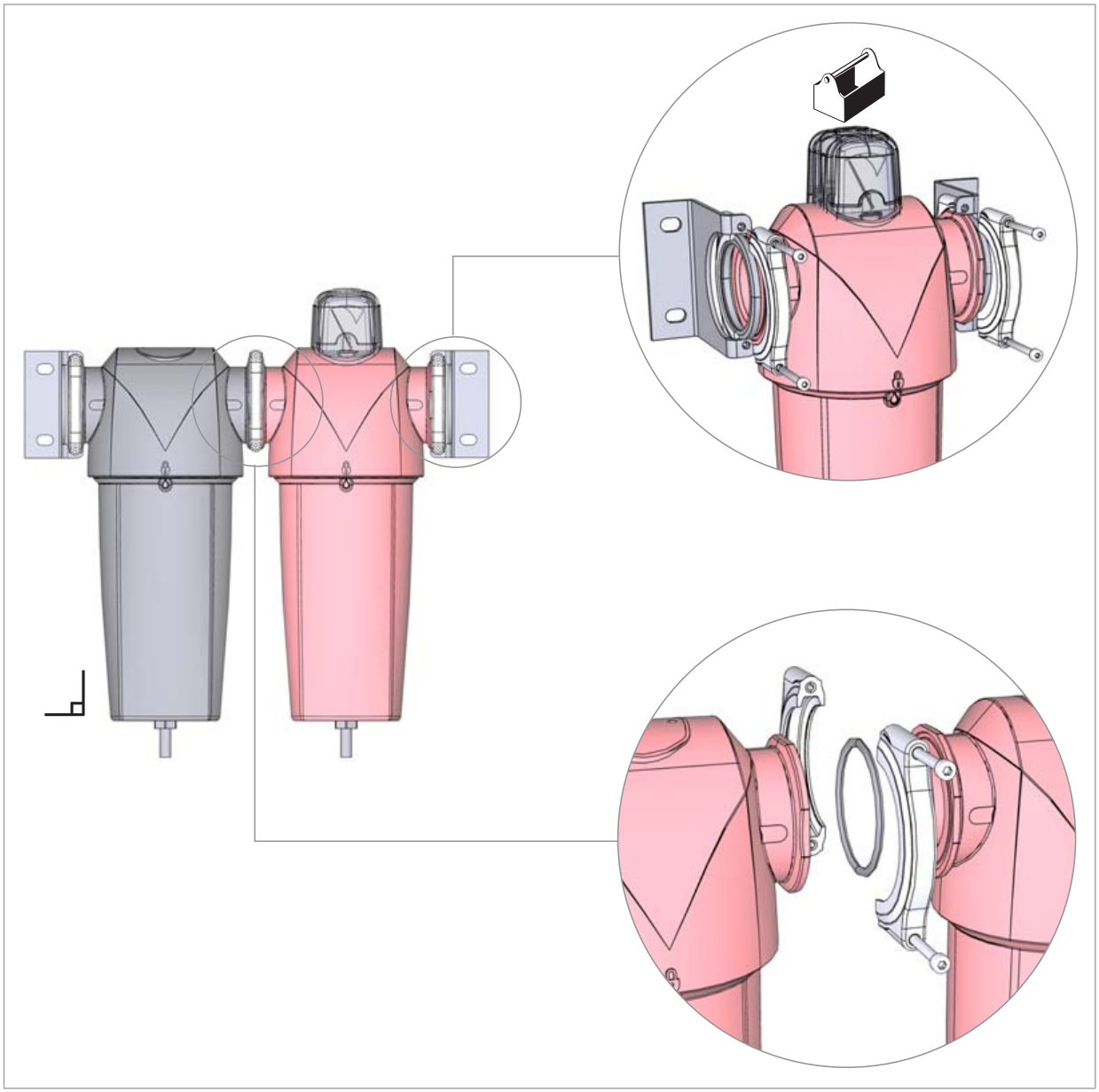
Filter Grade	Models	Max Operating Pressure		Max Recommended Operating Temperature		Min Recommended Operating Temperature	
		bar g	psi g				
AO	005□□F□-055□□F□	16	232	80ºC	176ºF	1.5ºC	35ºF
AO	005□□M□-055□□M□	20	290	100ºC	212ºF	1.5ºC	35ºF
AA	005□□F□-055□□F□	16	232	80ºC	176ºF	1.5ºC	35ºF
AA	005□□M□-055□□M□	20	290	100ºC	212ºF	1.5ºC	35ºF
AR	005□□M□-055□□M□	20	290	100ºC	212ºF	1.5ºC	35ºF
AAR	005□□M□-055□□M□	20	290	100ºC	212ºF	1.5ºC	35ºF
ACS	005□□M□-055□□M□	20	290	50ºC	122ºF	1.5ºC	35ºF

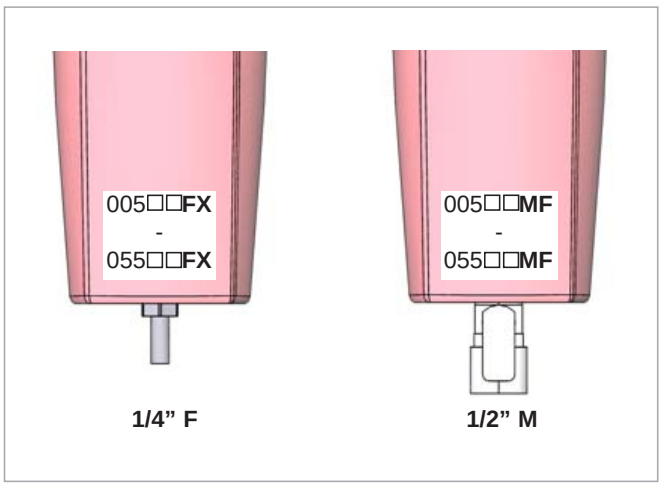
Weights and Dimensions

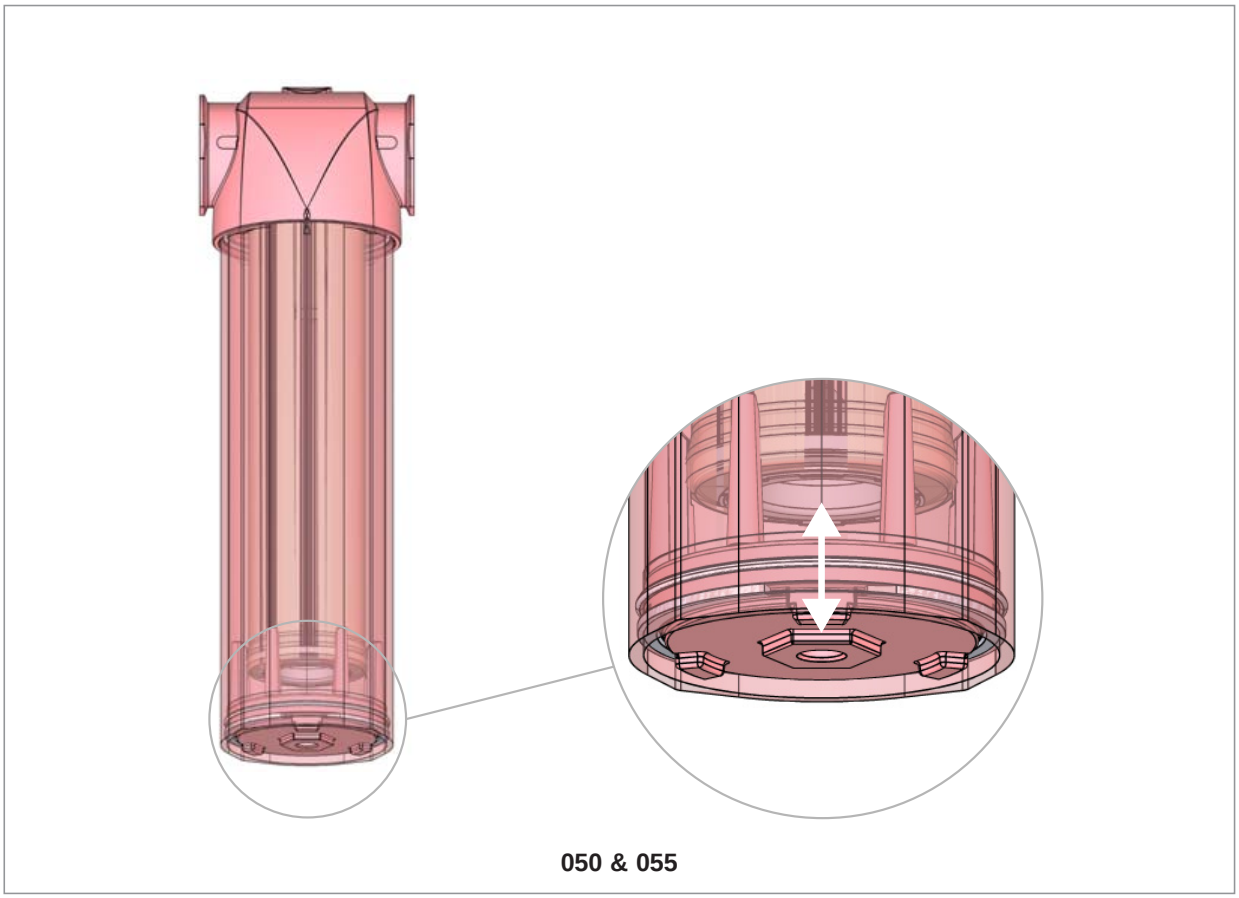
• Gewichten en afmetingen • Gewicht und Abmessungen • Poids et dimensions • Painot ja mitat • Vikter och mått • Vekt og dimensjone • Vægt og mål • VΨgt og m¨l • Pesos y dimensiones • Pesos e Dimensões • Pesi e dimensioni • Ciężary i wymiary • Hmotnosti a rozmery • Hmotnost arozměry • Kaalud ja mõõtmed • Tömeg és méretek • Svars un izmēri • Svoris ir matmenys • Вес игабариты • Teže in mere • Ağırlıklar ve Boyutlar • Piżijiet u Dimensjonijiet • **Greutăți și 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	⅜"	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	⅜"	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	⅜"	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






005□□FX
-
055□□FX
005□□MF
-
055□□MF
1/4” F
1/2” M



050 & 055

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.

PL Pokrywa dolna może się przesuwać, gdy filtr nie będzie pod ciśnieniem.

SK Ak filter nie je natlakovaný, spodná uzatváracia platňa sa môže posunúť.

CS Spodní uzavírací deska se může pohybovat, pokud je filtr pod tlakem.

ET Alumine sulgurplaat võib liikuda, kui filter ei ole rõhu all.

HU Az alsó zárólemez elmozdulhat, ha a szűrő nincs nyomás alatt.

LV Apakšējā noslēgplāksne var kustēties, ja filtrs nav zem spiediena.

LT Jeigu filtre nėra 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 għandhom ikunu mqabbdin ma' l-ert - art

RO Placa inferioară de acoperire se poate deplasa atunci când filtrul nu este presurizat

3. Startup and Operation

• **Starten en bediening** • Start und Betrieb • **Démarrage et exploitation** • Käynnistys ja toiminta • **Start och drift** • Oppstart og betjening • **Start og drift** • Έναρξη λειτουργίας και χειρισμός • **Puesta en marcha y funcionamiento** • Arranque e Operação • **Avvio e funzionamento** • Uruchomienie i eksploatacja • Spustenie a prevádzka • Spuštění a provoz • Käikulaskmine ja töötamine • Beindítás és üzemeltetés • Darbības uzsākšana un darbība • Paleidimas ir naudojimas • Запуск и эксплуатация • Zagon in uporaba • **Çalıştırma ve İşletme** • Kif Tixghel u Kif Thaddem

EN

1. Open inlet valve slowly to gradually pressurise the unit.

2. Open outlet valve slowly to re-pressurise the downstream piping

Do not open inlet or outlet valves rapidly or subject unit to excessive pressure differential or damage may occur.

NL

1. Doe de inlaatklep langzaam open om het toestel geleidelijk onder druk te zetten.

2. Doe de uitlaatklep langzaam open om de leidingen verderop in het systeem opnieuw onder druk te zetten.

De inlaat- en uitlaatkleppen niet snel openen en het toestel niet aan een te groot drukdifferentieel blootstellen om schade te voorkomen.

DE

1. Einlassventil langsam öffnen, damit Einheit allmählich mit Druck beaufschlagt wird.

2. Auslassventil langsam öffnen, damit nachgeschaltete Rohrleitungen erneut mit Druck beaufschlagt werden.

Einlass- und Auslassventil nicht schnell öffnen. Einheit nicht extremen Druckunterschieden aussetzen. Gefahr von Schäden.

FR

1. Ouvrez lentement la soupape d'admission pour mettre progressivement l'unité sous pression.

2. Ouvrez lentement la soupape de refoulement pour faire remonter la pression des conduits en aval.

Évitez d'ouvrir la soupape d'admission ou la soupape de refoulement trop rapidement ou de soumettre l'unité à une pression différentielle trop importante au risque d'entraîner des dommages.

FI

1. Paineista yksikkö asteittain avaamalla tuloventtiili.

2. Paineista laskuputkisto uudelleen avaamalla lähtöventtiili hitaasti

Älä avaa tulo- tai lähtöventtiiliä nopeasti tai altista yksikköä liialliselle paine-erolle, sillä yksikkö voi vaurioitua.

SV

1. Öppna inloppsventilen långsamt så att enheten trycksätts gradvis.

2. Öppna utloppsventilen långsamt för att trycksätta rören nedströms på nytt.

Öppna inte inlopps- eller utloppsventilerna snabbt och utsätt inte enheten för överdrivet differentialtryck, eftersom det kan orsaka skador.

NO

1. Åpne inntaksventilen langsomt for å sette enheten gradvis under trykk.

2. Åpne uttaksventilen langsomt for å sette nedstrømsrørene under trykk igjen.

Ikke åpne inntaks- eller uttaksventilene rast eller utsett enheten for høyt differensialtrykk, da dette kan føre til skade.

DA

1. Åbn langsomt indgangsventilen for gradvist at sætte enheden under tryk.

2. Åbn langsomt udløbsventilen for at sætte rørene længere fremme under tryk igen.

Åbn ikke indgangs- eller udgangsventiler hurtigt, og udsæt ikke enheden for store trykforskelle, da det kan medføre skader.

EL

1. Ανοίξτε αργά τη βαλβίδα εισαγωγής για να ανέβει σταδιακά η πίεση της μονάδας.

2. Ανοίξτε αργά τη βαλβίδα εξαγωγής για να ανέβει η πίεση της σωλήνωσης κατάντι

Μην ανοίγετε γρήγορα τις βαλβίδες εισαγωγής ή εξαγωγής και μην υποβάλλετε τη μονάδα σε υπερβολική διαφορική πίεση, διότι μπορεί να προκύψει βλάβη.

ES

1. Abra lentamente la válvula de admisión para presurizar progresivamente la unidad.

2. Abra lentamente la válvula de descarga para volver a presurizar las tuberías aguas abajo.

Para evitar daños, no abra bruscamente las válvulas de admisión o de descarga ni someta la unidad a una diferencia de presiones excesiva.

PT

1. Abra lentamente a válvula de entrada para pressurizar gradualmente a unidade.

2. Abra lentamente a válvula de saída para pressurizar novamente a tubagem a jusante

Não abra rapidamente as válvulas de entrada ou saída nem sujeite a unidade a uma pressão diferencial excessiva, caso contrário poderão ocorrer danos.

IT

1. Aprire lentamente la valvola di mandata per aumentare gradualmente la pressione nell'unità.

2. Aprire lentamente la valvola di scarico per pressurizzare i tubi a valle

Non aprire rapidamente le valvole di mandata o scarico o sottoporre l'unità a una differenza di pressione eccessiva; rischio di danni.

PL

1. Powoli otwórz zawór wlotowy, aby stopniowo zwiększyć ciśnienie w urządzeniu.

2. Powoli otwórz zawór wylotowy, aby zwiększyć ciśnienie w rurach w dół przepływu.

Nie wolno szybko otwierać zaworów wlotowych ani wylotowych, ponieważ może to doprowadzić do zbyt dużej różnicy ciśnień w urządzeniu i do jego uszkodzenia.

SK

1. Pre postupné natlakovanie jednotky pomaly otvorte prívodný ventil.

2. Pre 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 survelangu, 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.

LV

1. Lēnām atveriet ieplūdes vārstu, lai iekārtā pamazām paaugstinātu spiedienu.
2. Lēnām atveriet izplūdes vārstu, lai caurulēs plūsmas virzienā samazinātu spiedienu

Neatveriet ieplūdes un izplūdes vārstus strauji, pretējā gadījumā attiecīgajā iekārtā var rasties pārmērīgi liels spiediens vai tā var sabojāties.

LT

1. Lėtai atidarydami įleidimo vožtuvą, palaipsniui sudarykite 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 впускной клапан, чтобы создать давление в системе трубопровода

Запрещено резко открывать впускной или выпускной клапаны, а также используемое устройство, так как это может привести к перепаду давления и повреждениям.

SL

1. Za počasno dajanje pod pritisk počasi odprite dovodni ventil.
2. Počasi odprite dovodni ventil za ponovno dajanje spodnjih cevi pod pritisk.

Dovodne ali odvodne ventile odpirajte počasi in enote ne izpostavljajte prevelikim nihanjem tlaka, saj lahko to povzroči škodo.

TR

1. Giriş valfini yavaşça açıp üniteye yavaş 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

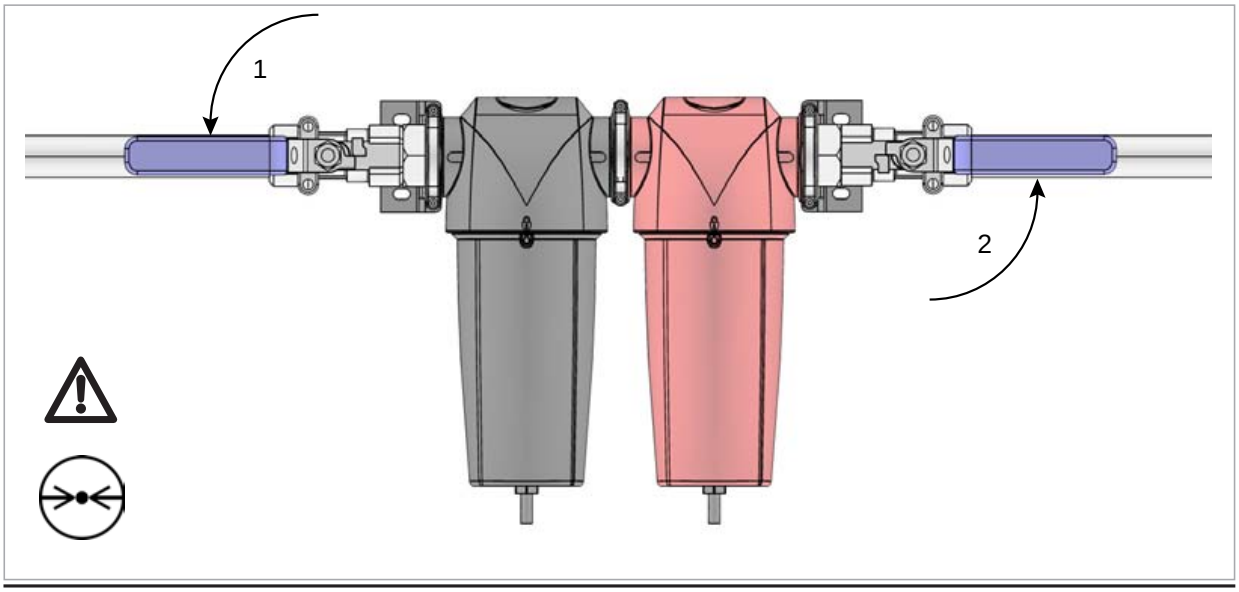
1. Iftaħ il-valv tad-dħul bil-mod, biex bil-mod tiżdied il-pressjoni fit-tagħmir.
2. Iftaħ il-valv tal-ħruġ bil-mod biex terġa' tibni l-pressjoni fil-pajps li jwasslu 'l isfel

Ara li ma tiftaħx il-valvs tad-dħul jew tal-ħruġ f'daqqa jew b'xi mod tikkawża differenza eċċessiva fil-pressjoni tat-tagħmir għax tista' tagħmel il-ħsara.

RO

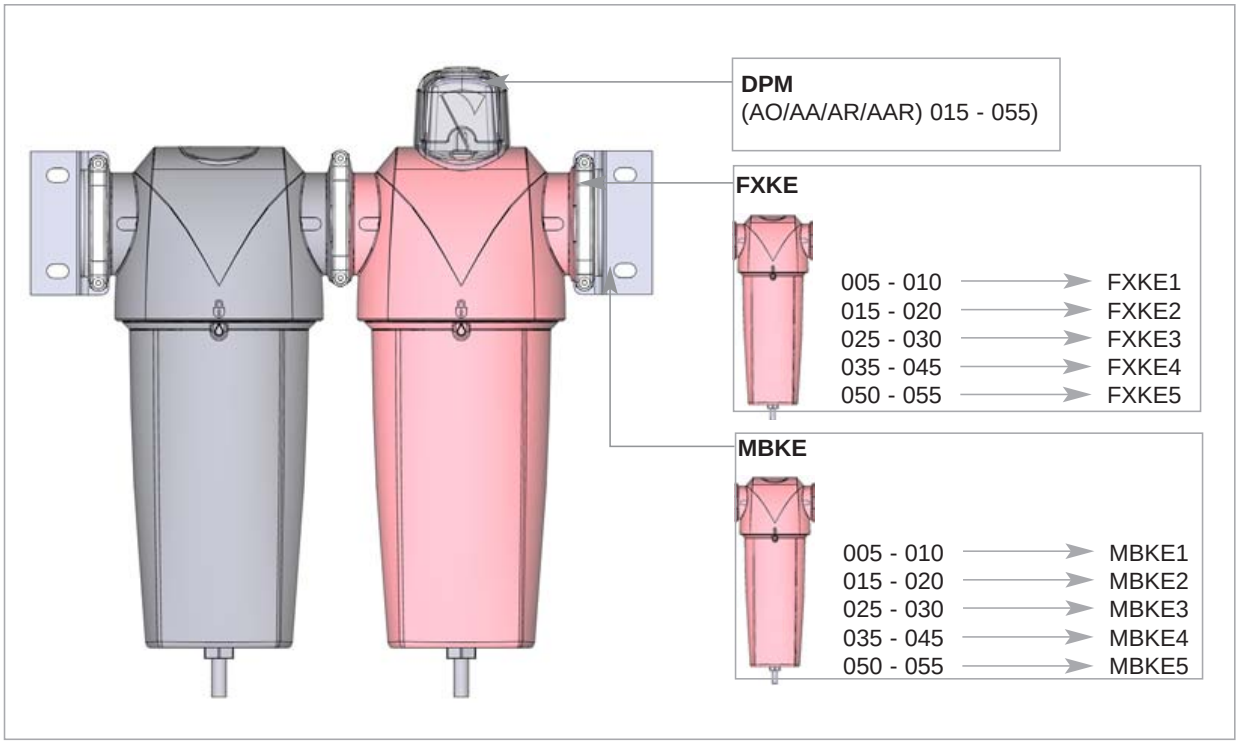
1. Deschide¸i lent supapa de admisie, pentru a presuriza gradat aparatul.
2. Deschide¸i lent supapa de evacuare pentru a represuriza sistemul de conducte din aval

Nu deschide¸i rapid supapele de admisie sau de evacuare ƒi nu supune¸i aparatul la o diferen¸„ excesiv„ de presiune; Ón caz contrar, aparatul poate suferi deterior„ri



4. Accessories

• **Toebehoren** • Zubehör • **Accessoires** • Lisävarusteet • **Tillbehör** • Tilbehør • **Tilbehør** • Εξαρτήματα • **Accesorios** • Acessórios • **Accessori** • Wyposażenie • Príslušenstvo • Příslušenství • Tarvikud • Tartozékok • Piederumi • Priedai • Принадлежности • Dodatna oprema • **Aksesuarlar** • Аċċessorji • **Accesorii**



AO, AA, ACS, AR, AAR 005 - 055

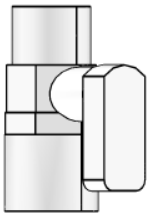
5. Spare Parts (Service Kits)

• **Reserve-onderdelen (servicekits)** • Ersatzteile (Service-Kits) • **Pièces de rechange (nécessaires d'entretien)** • Varaosat (Huoltopakkaukset) • **Reservdelar (servicesatser)** • 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) • Rezerves daļas (apkopes komplekti) • Atsarginės dalys (priežiros detalių komplektai) • Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • **Yedek parça (Servis kitleri)** • Partijiet Ghat-Tibdil (Kitts tas-Servizz) • **Piese de schimb (Truse de service)**



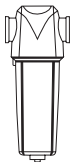
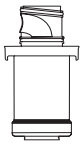
EF1

- **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
- AUTOMĀTISKA IZTECINĀŠANA
- AUTOMATINIS IŠLEIDIMAS
- АВТОМАТИЧЕСКИЙ ДРЕНАЖ
- SAMODEJNI ODTOK
- **OTOMATİK SÜZDÜRÜCÜ**
- **DREJN AWTOMATIKU**
- **EVACUARE AUTOMAT√**

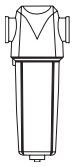
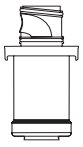


EM1

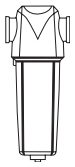
- **MANUAL DRAIN**
- **MANUELLER ABLAUF**
- **VIDANGE MANUELLE**
- **MANUEEL AFTAPPEN**
- **DRENAJE MANUAL**
- **SCARIO MANUALE**
- **MANUELT AFLØB**
- **DRENO MANUAL**
- ΧΕΙΡΟΚΙΝΗΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ
- **MANUELL DRÄNERING**
- **KÄSIKÄYTTÖINEN**
- **TYHJENNYSKAPPALE**
- DREN RĘCZNY
- RUČNÉ VYSUŠENIE
- RUČNÍ VYPOUŠTĚNÍ
- KÄSITSI VÄLJALASE
- KÉZI LEERESZTÉS
- MANUĀLA IZTECINĀŠANA
- RANKINIS IŠLEIDIMAS
- ДРЕНАЖ ВРУЧНУЮ
- ROČNI ODTOK
- **ELLE KULLANILACAK SÜZDÜRÜCÜ**
- **DREJN MANWALI**
- **EVACUARE MANUAL√**

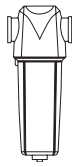
AO005A	005AO
AO005B	005AO
AO005C	005AO
AO010A	010AO
AO010B	010AO
AO010C	010AO
AO015B	015AO
AO015C	015AO
AO020C	020AO
AO020D	020AO
AO020E	020AO
AO025D	025AO
AO025E	025AO
AO030E	030AO
AO030F	030AO
AO030G	030AO
AO040G	040AO
AO040H	040AO
AO045H	045AO
AO050I	050AO
AO050J	050AO
AO055I	055AO
AO055J	055AO

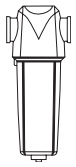
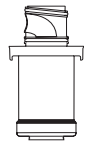
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AA005C	005AA
AA010A	010AA
AA010B	010AA
AA010C	010AA
AA015B	015AA
AA015C	015AA
AA020C	020AA
AA020D	020AA
AA020E	020AA
AA025D	025AA
AA025E	025AA
AA030E	030AA
AA030F	030AA
AA030G	030AA
AA040G	040AA
AA040H	040AA
AA045H	045AA
AA050I	050AA
AA050J	050AA
AA055I	055AA
AA055J	055AA




ACS005A	005ACS
ACS005B	005ACS
ACS005C	005ACS
ACS010A	010ACS
ACS010B	010ACS
ACS010C	010ACS
ACS015B	015ACS
ACS015C	015ACS
ACS020C	020ACS
ACS020D	020ACS
ACS020E	020ACS
ACS025D	025ACS
ACS025E	025ACS
ACS030E	030ACS
ACS030F	030ACS
ACS030G	030ACS
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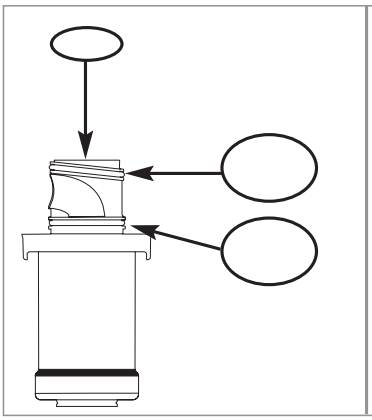


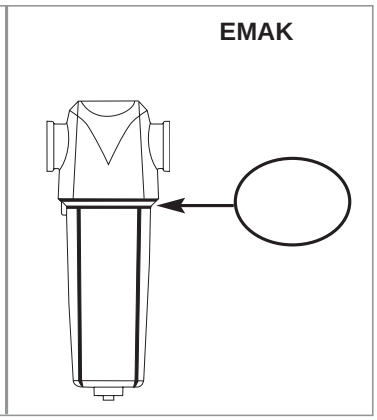

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AR005C	005AR
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AR010B	010AR
AR010C	010AR
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AR015C	015AR
AR020C	020AR
AR020D	020AR
AR020E	020AR
AR025D	025AR
AR025E	025AR
AR030E	030AR
AR030F	030AR
AR030G	030AR
AR040G	040AR
AR040H	040AR
AR045H	045AR
AR050I	050AR
AR050J	050AR
AR055I	055AR
AR055J	055AR

AAR005A	005AAR
AAR005B	005AAR
AAR005C	005AAR
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AAR020C	020AAR
AAR020D	020AAR
AAR020E	020AAR
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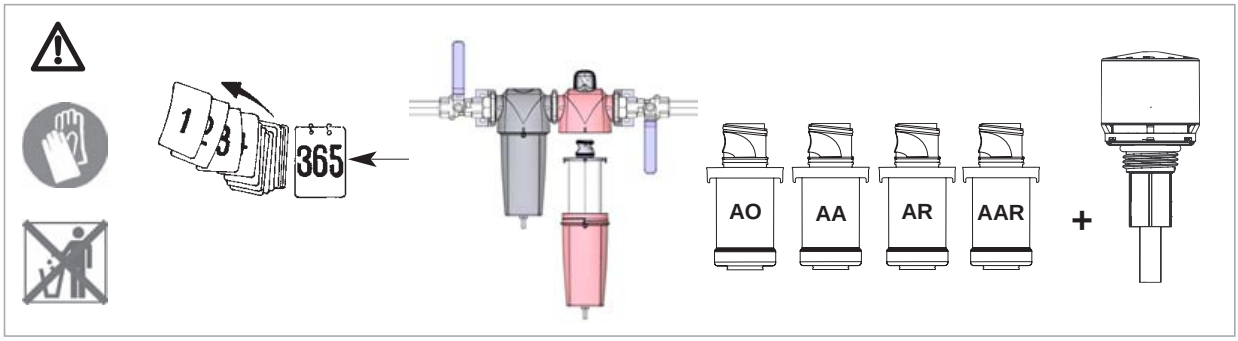
EMAK1	005 - 010
EMAK2	015 - 020
EMAK3	025 - 030
EMAK4	035 - 045
EMAK5	050 - 055

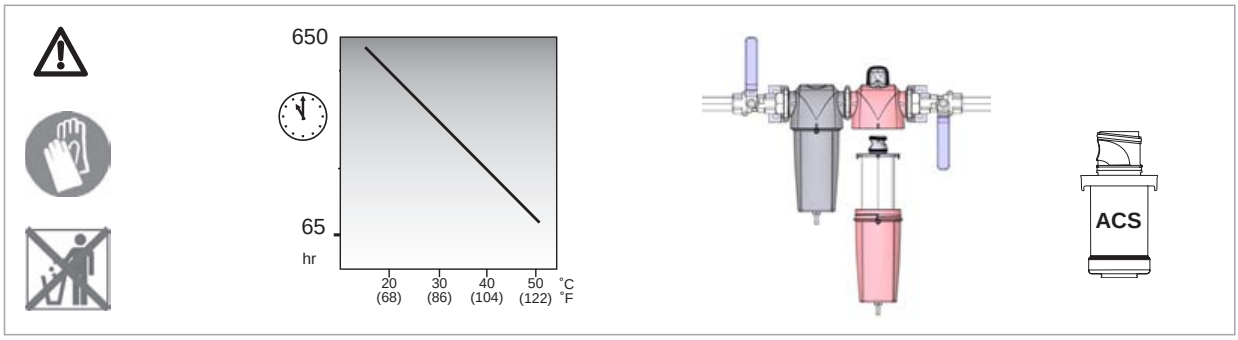




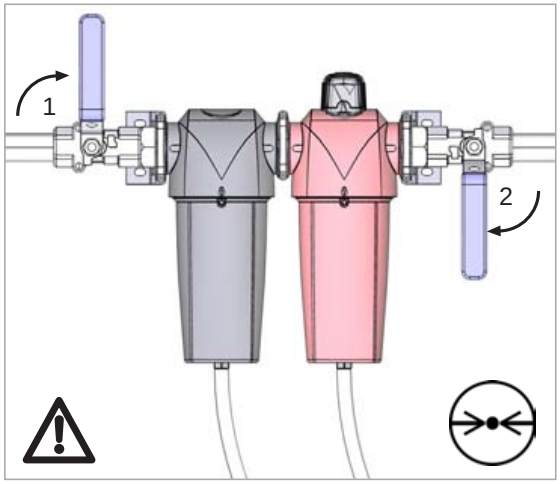
6. Maintenance

• **Onderhoud** • Wartung • **Entretien** • Kunnossapito • **Underhåll** • Vedlikehold • **Vedligeholdelse** • Συντήρηση • **Mantenimiento** • Manutenção • **Manutenzione** • Konserwacja • Údržba • Údržba • Hooldus • Karbantartás • Tehniskā apkope • Techninė priežiūra • Обслуживание • Vzdrževanja • **Bakım** • ~~Manutenzjoni~~ • **Întreținere**

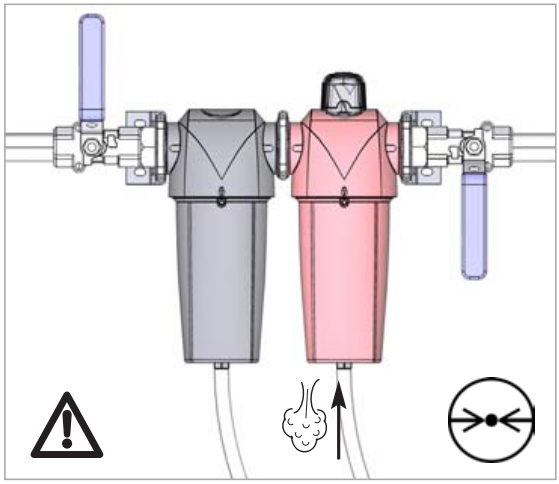




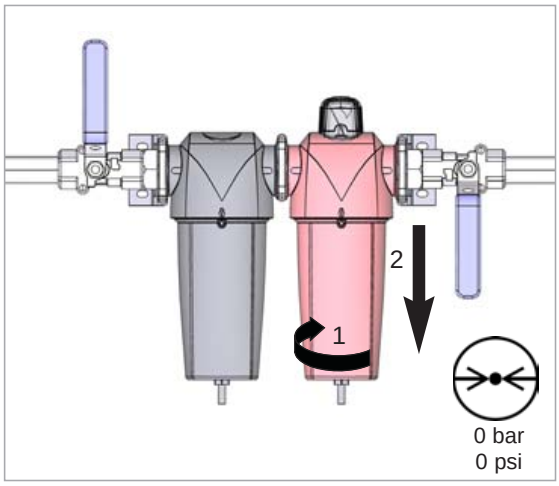
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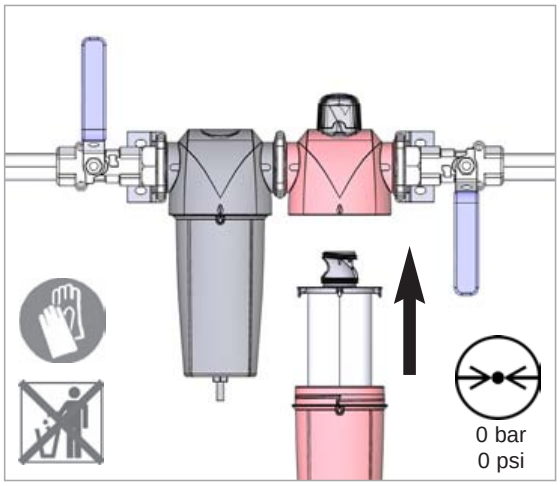
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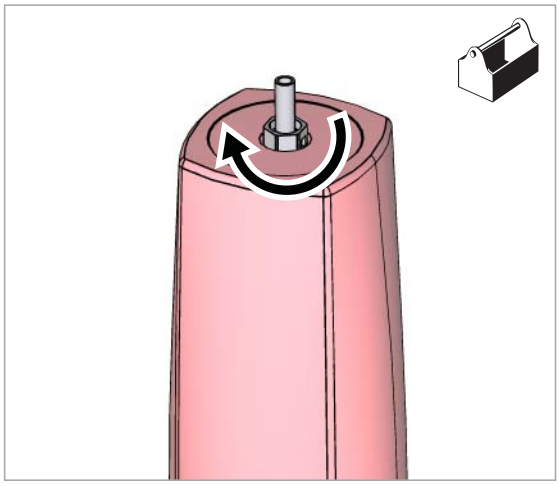
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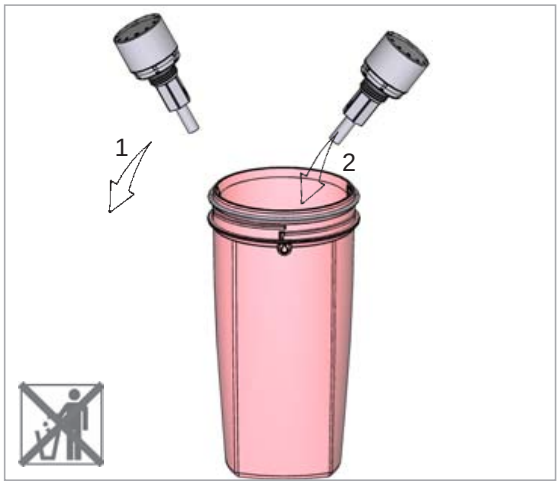
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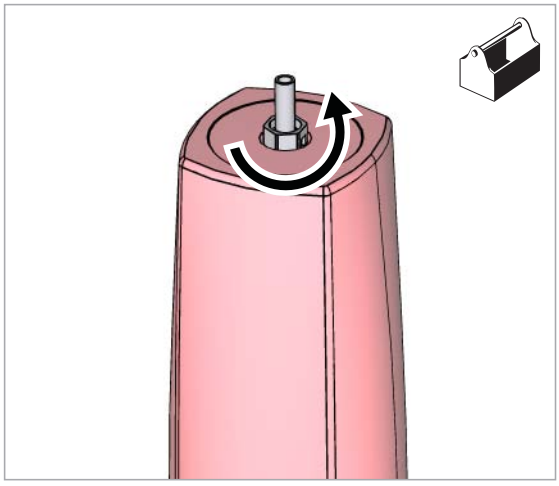
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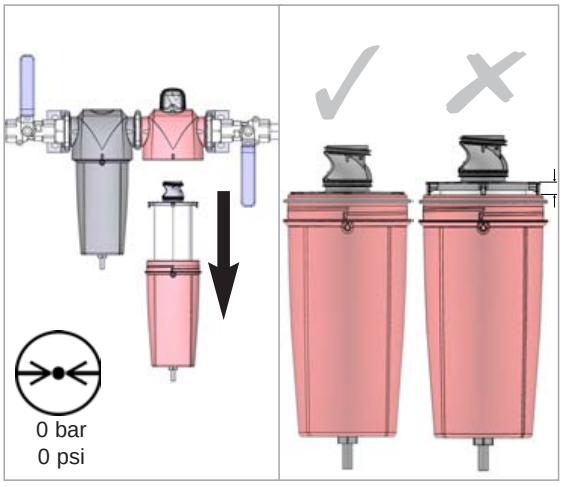
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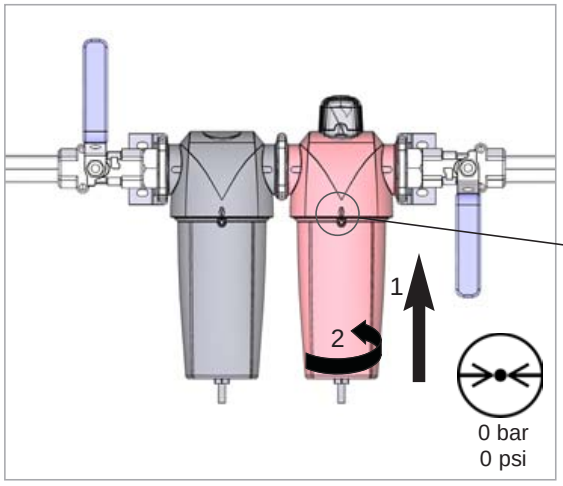
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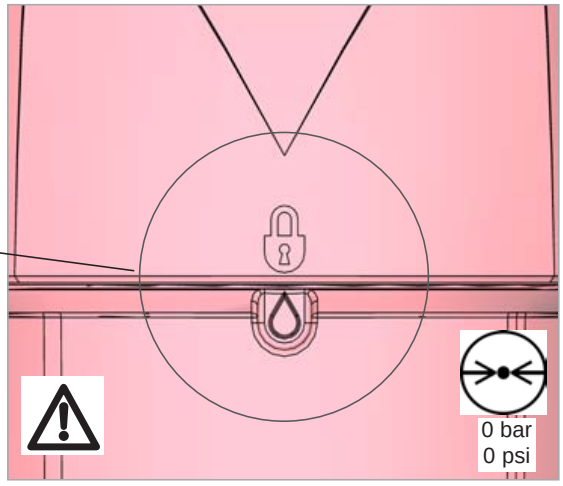
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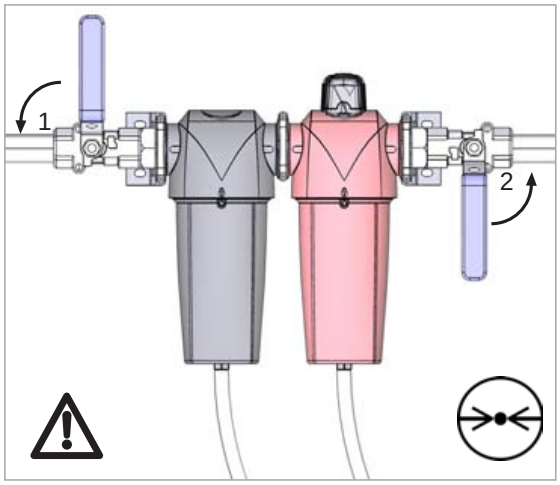
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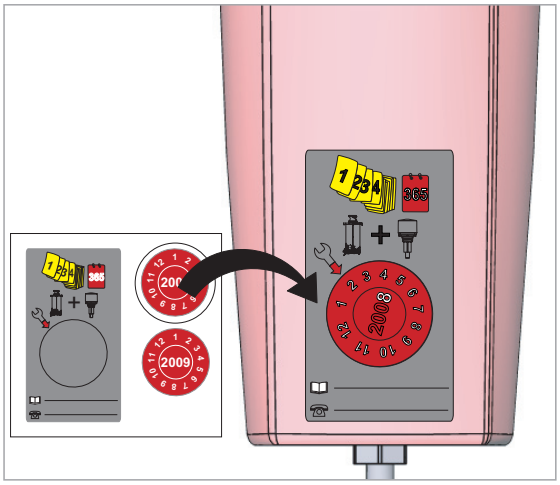
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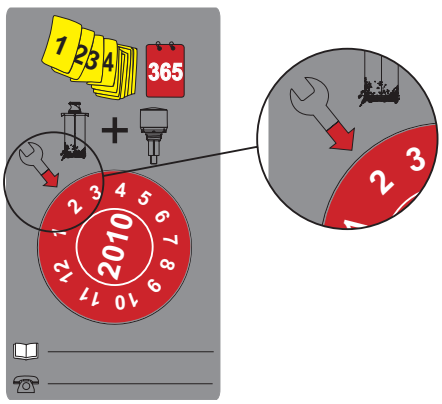


11



12





(EN) Align the arrow to the month and year of the next ervice
(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 de näch ten Wartung termin Alignez la flèche ur
(FR) le moi et l'année de la prochaine révi ion
(FI) Kohdi ta nuoli euraavan huollon kuukauteen ja vuoteen
(SV) Rikta pilen mot månaden och året för nä ta ervice
(NO) Ju ter pilen til måneden og året for ne te ervice
(DA) Stil pilen på måned og år for næ te ervice
(EL) Ευθυγραμμίστε το βέλος με το μήνα και έτος του επόμενου σέρβις
(ES) Alinee la flecha con el me y año de la iguiente revi ión
(PT) Alinhe a eta com o mê e o ano da próxima intervenção técnica
(IT) Allineare la freccia in corri pondenza del me e e anno del pro imo intervento di a i tenza
(PL) Należy ustawić strzałkę na miesiąc i rok daty następnego serwisu
(SK) Šípku nasmerujte na mesiac a rok nasledujúcej opravy
(CS) Umístěte šipku na měsíc a rok příští prohlídky
(ET) Joondage nool järgmi e hooldu e kuu ja aa taga
(HU) Irányítsa a nyilat a következő szerviz hónapjára és évére
(LV) Irányítsa a nyilat 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 yılına 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



ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ЭКОЛОГИЧЕСКОМУ, ТЕХНОЛОГИЧЕСКОМУ И АТОМНОМУ НАДЗОРУ

РАЗРЕШЕНИЕ

№ РРС 00-32481

На применение

Оборудование (техническое устройство, материал):
Оборудование, работающее под давлением, в соответствии с перечнем в приложении к настоящему разрешению.

Код ОКП (ТН ВЭД): Оборудование комплектное, коды ОКП (ТН ВЭД) в соответствии с технической документацией.

Изготовитель (поставщик): Фирма "Parker Hannifin Ltd. domnick hunter division" (Великобритания).

Основание выдачи разрешения: Техническая документация, заключение экспертизы промышленной безопасности ООО "ХАНК" № 419-840-2008 от 27.10.2008 г., сертификаты соответствия ОС ООО "ХАНК" № РОСС GB.ГС03.В00284 - №РОСС GB.ГС03.В00286 от 29.10.2008 г.

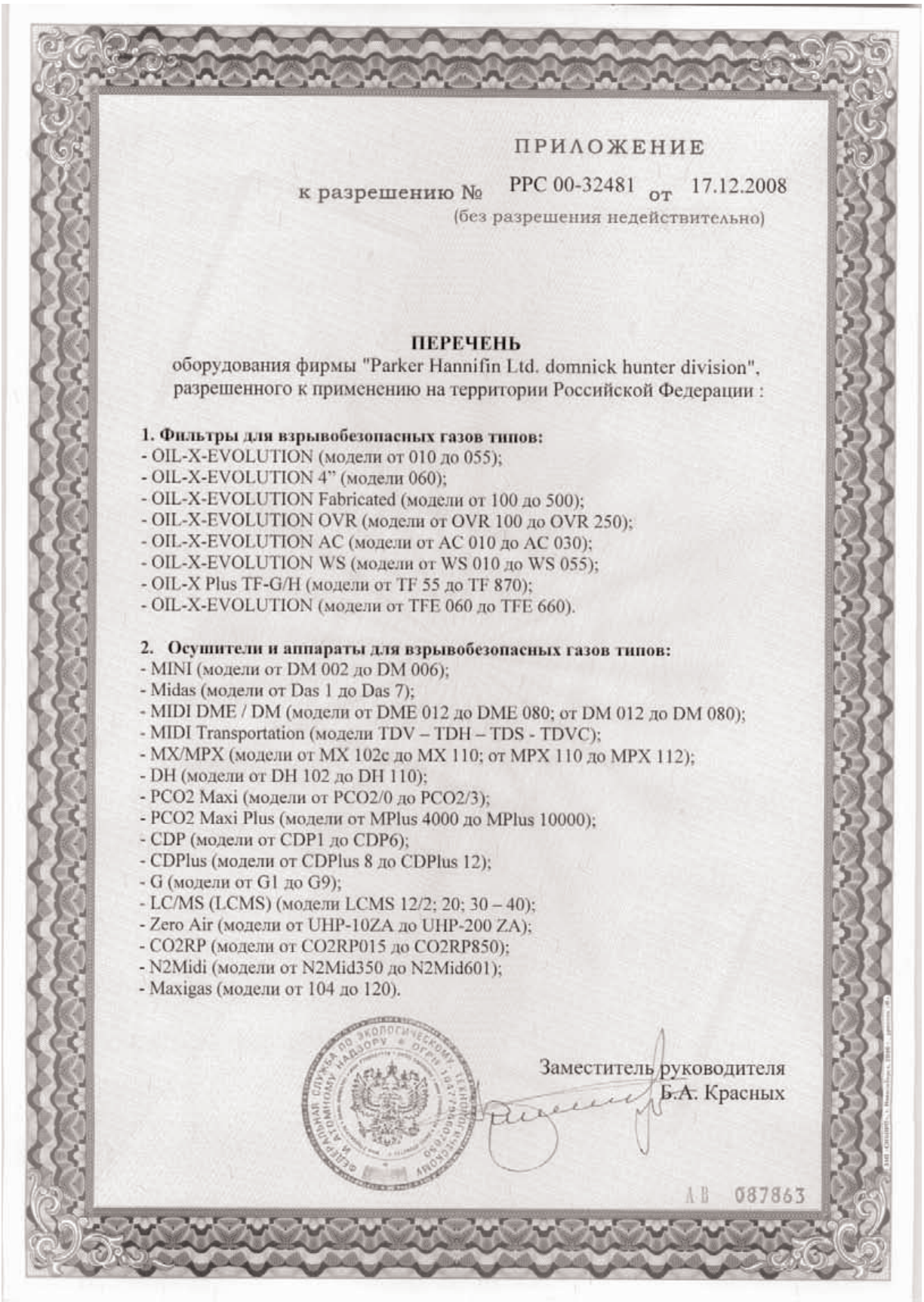
Условия применения:
1. Оформление технической документации на оборудование (паспортов, чертежей, инструкций по монтажу и эксплуатации) в соответствии с требованиями действующих в России правил промышленной безопасности на русском языке.
2. Осуществление монтажа, ввода в работу и эксплуатации оборудования в соответствии с требованиями "Правил устройства и безопасной эксплуатации сосудов, работающих под давлением".

Срок действия разрешения до 17.12.2013

Дата выдачи 17.12.2008

Заместитель руководителя
Б.А. Красных

АВ 009261



ПРИЛОЖЕНИЕ

к разрешению № PPC 00-32481 от 17.12.2008

(без разрешения недействительно)

ПЕРЕЧЕНЬ

оборудования фирмы "Parker Hannifin Ltd. domnick hunter division", разрешенного к применению на территории Российской Федерации :

1. Фильтры для взрывобезопасных газов типов:
- OIL-X-EVOLUTION (модели от 010 до 055);
- OIL-X-EVOLUTION 4" (модели 060);
- OIL-X-EVOLUTION Fabricated (модели от 100 до 500);
- OIL-X-EVOLUTION OVR (модели от OVR 100 до OVR 250);
- OIL-X-EVOLUTION AC (модели от AC 010 до AC 030);
- OIL-X-EVOLUTION WS (модели от WS 010 до WS 055);
- OIL-X Plus TF-G/H (модели от TF 55 до TF 870);
- OIL-X-EVOLUTION (модели от TFE 060 до TFE 660).

2. Осушители и аппараты для взрывобезопасных газов типов:
- MINI (модели от DM 002 до DM 006);
- Midas (модели от Das 1 до Das 7);
- MIDI DME / DM (модели от DME 012 до DME 080; от DM 012 до DM 080);
- MIDI Transportation (модели TDV – TDH – TDS - TDVC);
- MX/MPX (модели от MX 102c до MX 110; от MPX 110 до MPX 112);
- DH (модели от DH 102 до DH 110);
- PCO2 Maxi (модели от PCO2/0 до PCO2/3);
- PCO2 Maxi Plus (модели от MPlus 4000 до MPlus 10000);
- CDP (модели от CDP1 до CDP6);
- CDPlus (модели от CDPlus 8 до CDPlus 12);
- G (модели от G1 до G9);
- LC/MS (LCMS) (модели LCMS 12/2; 20; 30 – 40);
- Zero Air (модели от UHP-10ZA до UHP-200 ZA);
- CO2RP (модели от CO2RP015 до CO2RP850);
- N2Midi (модели от N2Mid350 до N2Mid601);
- Maxigas (модели от 104 до 120).

Заместитель руководителя
Б.А. Красных

АВ 087863

FILTER DH-OIL-X EVO AO AA 01-

Declaration of Conformity **EN**

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

Directives	97 23/EC
Standards used	Genera ly in accordance wi h 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 AR AAR 050 055)
Notified body for PED	Lloyds Register Ve if cation 71 Fenchurch St London EC3M 4BS
EC Type exam nat on Certificate	COV0413459/TEC
Authorised Representative	Derek Bank er Divisional Qual ty Manager Parker Hannifin ltd domn ck hunter d v s on

Declaration

I declare that as the author sed representat ve he above information n relation to the supply / manufacture of this product s n conformity wi h he standards and o her related documents fo low ng the provisions of the above D rect ves

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	Géné alement conforme à ASMEVIII d v 1 2004
Mé hode 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 AR AAR 050 055)
Organisme de notificat on pour la directive d'équipement sous pression	Lloyds Reg ster Ver fication 71 Fenchurch St London EC3M 4BS
Certificat d'examen de type CE	COV0413459/TEC
Représentant agréé	Derek Bankier D v s onal Quality Manager Parker Hannif n td 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 l és décla és selon les dispos tions des d rect ves susment onnées

S gnature **Date** 8/8/2007

N° de déclaration 0002/8807

Verklaring van Conformiteit **NL**

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

Richtlijnen	97 23/EC
Gehanteerde normen	Gewoonlijk volgens ASMEV II D v 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 AR AAR 050 055)
Aangemelde instantie voor PED	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
EC Type onderzoekscertif caat	COV0413459/TEC
Bevoegde vertegenwoord ger	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter d v s on

Verklar ng

Als bevoegde vertegenwoord ger verklaar k dat bovenstaande informatie met betrekking tot de levering / vervaard ging van dit product overeenstemt met de normen en andere b jbehoorende 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

Direkti vit	97/23/EC
Käytetyt standardit	Yleensä seuraavan standardin muka sesti ASMEV II D v 1 2004
PED arviointi menettely	Art kla 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 AR AAR 050 055)
PED säännösten lmoitettu laitos	Lloyds Reg ster Verificat on 71 Fenchurch St London EC3M 4BS
EY tyyppihyväksynnän sertifikaatti	COV0413459 TEC
Valtuutettu edustaja	Derek Bank er Divisional Qual ty Manager Parker Hann fin ltd domnick hunter d v s on

Vakuutus

Valtuutettuna edustajana vakuutan e tä y lä olevat tiedot jotka l ittyvät tämän tuotteen toimi tamiseen tai valm stamiseen ovat standardien ja muiden asiaan l ittyvien as akirjoien mukaisia ja noudattavat yllä ma n ttuja d rekti vejä

Allek rjoitus **Pä väys** 8 8/2007

Vakuutuksen numero 0002/8807

Konformitätserk ärung **DE**

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

Richtlinien	97/23/EC
Angewandte Normen	Allgemein in Übere nst mmung m t ASMEVIII Div 1 2004
Beurteilungsroute der Druckgeräter chtlinie	Art kel 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)
Benannte Stelle für die Druckgeräter chtlinie	Lloyds Reg ster Verificat on 71 Fenchurch St London EC3M 4BS
EG Baumusterprüfbesche nigung	COV0413459 TEC
Bevollmächtigter Vertreter	Derek Bank er Divisional Qual ty Manager Parker Hann fin ltd domnick hunter d v s on

Erklärung

Hiermit erklä e ch als bevollmächtigter Vertreter die Konformität der oben aufgeführten Informationen in Bezug auf die Lieferung/Herste lung d eses Produkts mit den Normen und ande en zugehörigen Dokumenten gemäß den Best mmungen der oben genannten R chtlin en

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	Gene el t i enl ghet 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 AR AAR 050 055)
Anmält organ för PED	Lloyds Reg ster Ver fication 71 Fenchurch St London EC3M 4BS
EG intyg om typprovning	COV0413459/TEC
Auktoriserad representant	Derek Bankier D v s onal Quality Manager Parker Hannif n td domn ck hunter division

Försäkran

Jag försäkrar i egenskap av auktoriserad representant att ovannämnda info mation avseende leverans ti verkn ng av denna produkt öve ensstämmer med standarder och övriga relaterade dokument enligt vil koren i ovanstående d rekt v

Underskrift **Datum** 8/8/2007

Försäkran nummer 0002/8807

Konformitetserk ær ng **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
Rute for vurdering av PED (d rekt vet for trykkpålagt 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 AR AAR 050 055)
Underrettet organ for PED	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
EC typegodkjenn ngssertifikat	COV0413459/TEC
Autorisert representant	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter d v s on

Erklæring

Jeg erklærer som autor sert representant at nformasjonen ovenfor med hensyn til levering/produksjon av dette produktet er i overensstemmelse med standardene og and e relaterte dokumenter følge bestemmelsene i direkt vene ovenfor

Signatur **Dato** 8/8/2007

Erklæring nr 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 ut lizadas	Generalmente de conform dad 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 AR AAR 050 055)
Organismo not ficado para la normativa PED	Lloyds Register Ver fication 71 Fenchurch St London EC3M 4BS
Cert ficado de examen CE de t po	COV0413459/TEC
Representante autorizado	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter division

Declarac ón

Como representante autorizado declaro que la información anter ormente expuesta en relac ón con el sum n stro y/o fabr cac ón de este p oducto cumple las normativas ndicadas y otros documentos afines según las disposiciones de las Direct vas c tadas anteriormente

Firma **Fecha** 8 8/2007

Número de declaración 0002/8807

Overensstemmelseserklæring **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 AR AAR 050 055)
Not ficeret organ for PED	Lloyds Reg ster Ver fication 71 Fenchurch St London EC3M 4BS
EF typeafprøvningsattest	COV0413459/TEC
Autoriseret repræsentant	Derek Bankier D v s onal Quality Manager Parker Hannif n td domn ck hunter division

Erklæring

Jeg erklærer hermed som autor seret repræsentant at ovennævnte oplysninger ved arende levering/produkt on af dette produkt er i overensstemmelse med de anførte standarder og øvrige tilknyttede dokumenter i henhold t l bestemmelserne i ovenstående d rekt ver

Underskrift **Dato** 8/8/2007

Erklær ngsnummer 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 concordânc a com ASMEV II D v 1 2004
Percurso de Aval ação 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 AR AAR 050 055)
Not ficado para o PED	Lloyds Reg ster Ver ficat on 71 Fenchurch St London EC3M 4BS
Cert ficado de Inspecção Tipo CE	COV0413459 TEC
Revendedor Autorizado	Derek Bankier D v s onal Quality Manager Parker Hannif n td domnick hunter division

Declaração

Declaro na qualidade de representante auto izado que as nformações acima contidas referentes ao fornec mento / fabrico deste produto estão em conformidade com as normas e outros documentos relac onados de acordo com as dispos ções das Directivas anteriores

Assinatura **Data** 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	Γεν κά σε συμφων α με το ASMEVIII Div 1 2004
Δ αδρομή αξιολόγησης για κανον σμούς PED	Άρθρο 3 3 (AO AA ACS AAR 005 010 015 020 025 030) Ενότητα A (AO AA ACS AAR 035 040 045) Ενότητα B (AO AA ACS AR AAR 050 055)
Ενήμερος οργανισμός για κανον σμούς PED	Lloyds Register Verif cation 71 Fenchurch St London EC3M 4BS
Π στοποιητ κό εξέτασης τύπου ΕΚ	COV0413459/TEC
Εξουσιοδοτημένος αντ πρόσωπος	Derek Bankier Divisional Qual ty Manager Parker Hannifin ltd domn ck hunter divis on

Δήλωση

Δηλώνω ως ο εξουσιοδοτημένος αντ πρόσωπος ότι οι παραπάνω πληροφορ ες σε σχέση με τη δ άθεση / κατασκευή αυτού του προ όντος συμμορφώνονται ως προς τα πρότυπα και ως προς τα άλλα σχετ κά έγγραφα που συνοδεύουν τ ς δ ατάξεις των πιο πάνω οδηγ ών

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

Direttive	97 23 EC
Norme util zzate	Generalmente confo me a ASMEVIII Div 1 2004
Procedura di valutazione PED	Articolo 3 3 (AO AA ACS AAR 005 010 015 020 025 030) Moduli A (AO AA ACS AAR 035 040 045) Moduli B (AO AA ACS AR AAR 050 055)
Organismo accreditato per PED	Lloyds Register Ver fication 71 Fenchurch St London EC3M 4BS
Attestato di certif cazione tipo CE	COV0413459/TEC
Rappresentante autor zzato	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter division

Dichiarazione

In qualità di rappresentante auto izzato dichiaro che le informaz oni di cui sopra in mer to alla fornitura fabbr caz one del prodotto n oggetto sono conformi alle norme ndicate e a qualsiasi a tro documento correlati a la forn tura basato su quanto prescri to dalle dire tive menzionate

Firma **Data** 8 8/2007

Dichiarazione numero 0002/8807

FILTER DH-OIL-X EVO AO AA 01-

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

Dyrektywy	97/23/EC
Stosowane standardy	Ogólnie zgodny z ASMEVIII dział 1 2004
Ścieżka potwierdzania zgodności z PED	Artykul 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)
Organ/instytucja powiadamiana na mocy PED	Lloyds Reg ster Ver fication on 71 Fenchurch St London EC3M 4BS
Certyfikat badan a typu WE	COV0413459 TEC
Autoryzowany przedstawiciel	Derek Bankier D v s onal Quality Manager Parker Hannif n td domn ck hunter division

Deklaracja

Ośw adczam jako auto yzowany przedstawiciel że powyższe informacje dotyczące dostawy / wytworzen a niniejszego produktu są zgodne ze standardami i innymi dokumentami powiązanymi zgodn e 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

Direkti vid	97/23 EC
Kasutatud standardid	Üld selt vastavuses standard ga ASMEVI I D v 1 2004
PED vastavushinnangu jaotus	A tikkel 3 3 (AO AA ACS AAR 005 010 015 020 025 030) Moodul A (AO AA ACS AAR 035 040 045) Moodul B (AO AA ACS AR AAR 050 055)
PEDist (surveseadmete direktiivist) teav tatud asutus	Lloyds Register Ver fication 71 Fenchurch St London EC3M 4BS
EÜ tüübih ndamistõend	COV0413459/TEC
Volitatud es ndaja	Derek Bankier D v s onal Quality Manager Parker Hannif n ltd domn ck hunter division

Deklaratsioon

Volitatud esindajana kinn tan et üialtoodud teave seoses antud toote tarn m se/tootmisega on vastavuses standardite ja muude seotud dokumentidega vastava t üialtoodud d rekti v de sätetele

Allkiri **Kuupäev** 8 8/2007

Deklaratsiooni number 0002/8807

Vyhlásenie 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
Použ 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 AR AAR 050 055)
Oboznámený orgán podľa smernice PED	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
Osvedčenie typovej skúšky ES	COV0413459/TEC
Splnomocnený zástupca	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter d v s on

Vyhlásenie

Ako splnomocnený zástupca vyhlasujem že nformácie uvedené vyššie sú v súv slosti s dodávkou / výrobou tohto výrobku v zhode s normami a nými súvisiac mi dokumentmi podľa ustanovení uvedených smern c

Podpis **Dátum** 8/8/2007

Číslo vyhlásen a 0002 8807

Megfelelőségi nyi atkozat **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	Á talánosan a következő alapján ASMEV II D v 1 2004
PED értékelési irányvonal	3 3 as c kkely (AO AA ACS AAR 005 010 015 020 025 030) Modulok A (AO AA ACS AAR 035 040 045) Modulok B (AO AA ACS AR AAR 050 055)
PED del kapcsolatban értes tett testület	Lloyds Reg ster Verificat on 71 Fenchurch St London EC3M 4BS
EC t pusvizsgálati bizonyítvány	COV0413459 TEC
Hivatalos képviselő	De ek Bankier Divisional Quality Manager Parker Hannif n td domnick hunter division

Nyilatkozat

Hivatalos képviselőként kijelentem hogy a termék szállításával / gyártásával kapcsolatos fent olvasható informác ók megfelelnek a fenti Direktívák elő 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

Směrn ce	97 23/EC
Použ té normy	Obecně v souladu ASMEVIII Div 1 2004
Metoda stanovení shody pro tlaková zař zení (PED)	Článek 3 3 (AO AA ACS AAR 005 010 015 020 025 030) D lčí část A (AO AA ACS AAR 035 040 045) D lčí část B (AO AA ACS AR AAR 050 055)
Notif kovaný orgán pro PED	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
Osvědčení o zkoušce typu ES	COV0413459/TEC
Oprávněný zástupce	Derek Bank er Divisional Qual ty Manager Parker Hann fin ltd domnick hunter d v s on

Prohlášení

Jako oprávněný zástupce prohlašuji že výše uvedené nformace týkající se dodávky /výroby tohoto produktu jsou v souladu s normami a j nými souv sej cími dokumenty vyplývajícími z ustanovení výše uvedených směrnic

Podpis **Datum** 8/8 2007

Č slo 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 saskaņa ar ASMEVI I D v 1 2004
PED novērtējums	Pants 3 3 (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)
Par PED informētā organizāc ja	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
EK sastādīts 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 pilnvarots pārstāvis ar šo pazinoju ka iepriekšminētā informācija kas a tiecas uz šī produkta piegādi / ražošanu atbilst standartiem un c tiem a bilstošiem dokumentiem saskaņā ar iep iekšm nētajām D rektīvām

Paraksts **Datums** 8/8/2007

Deklarāc jas numurs 0002/8807

Atitikties deklaracija LT

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

Direktyvos	97 23/EC
Naudoti standartai	Atitinka bendrąsias ASMEVIII Div 1 : 2004 nuostatas
PED įvertinimo pakopa:	3 3 stra psn 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 notifikuotoji institucija	Lloyds Register Ver fication 71 Fenchu ch St London EC3M 4BS
EB t po testavimo sertifikatas	COV0413459/TEC
Įgaliotasis atstovas	Derek Bankier D v s onal Quality Manager Parker Hannifin ltd domn ck hunter d v s on

Deklaracija

Aš, įgaliotasis atstovas, patvirtinu, kad aukščiau pateikta gaminio tiekimo/pagaminimo 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 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

Direktifler	97/23 EC
Kullanılan standartlar	Genelde ASMEV II D v 1 2004'e uygun
PED (Basınçlı Ekipman Direktifi) Değerlendirmesi Yolu	Madde 3 3 (AO AA ACS AAR 005 010 015 020 025 030) Modül A (AO AA ACS AAR 035 040 045) Modül B (AO AA ACS AR AAR 050 055)
PED için bild rimde bulunulan kuruluş:	Lloyds Reg ster Ver fication 71 Fenchurch St London EC3M 4BS
AT Tip İncelemesi Sertifikası:	COV0413459/TEC
Yetkili Temsilci	Derek Bankier D v s onal Quality Manager Parker Hannif n td domn ck hunter division

Beyan

Yetkili 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 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

Требования	97 23 EC
Применяемые стандарты	В большинстве случаев обеспечивается соответствие стандарту ASMEVIII, Раздел 1: 2004.
Система обеспечения качества PED	Статья 3.3 (AO, AA, ACS, AAR - 005, 010 015 020 025 030) Модуль A (AO, AA, ACS, AAR - 035, 040 045) Модуль B (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 domn ck hunter division

Декларация

Как уполномоченный представитель, я заявляю, что приведенная выше информация относительно поставки/производства данного продукта соответствует стандартам, другим связанным документам и положениям указанных выше требований.

Подпись: **Дата:** 8 8/2007

Номер декларации: 0002/8807

Dikjarazzjoni tal Konformità MT

Parker Hannifin ltd domn ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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' ASMEVIII Div 1 : 2004
Rotta ta' l Assessjar 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 Reg ster Ver fication 71 Fenchurch St London EC3M 4BS
Ċertifikat tal-KE ta' l-eżaminazzjoni tat-Tip:	COV0413459/TEC
Rappreżentant Awtorizzat	Derek Bankier D v s onal Quality Manager Parker Hannif n td domn ck hunter division

D kjarazzjoni

Niddikjara li bħala r-rappreżentant awtorizzat, l-informazzjoni ta' hawn fuq, f'dak li għandu x'jaqsam mal-formiment/manifattura ta' dan il-prodott, hija f'konformità ma' l-istandards u d-dokumenti l-oħra relatati li jsegwu d-dispożizzjonijiet tad-Direttivi msemmija hawn fuq

Firma **Data** 8/8/2007

Numru tad Dikjarazzjoni 0002 8807

Izjava o skladnosti SL

Parker Hannifin ltd domn ck hunter division
Dukesway TVTE Gateshead Tyne & Wear NE11 0PZ UK

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 ASMEVIII Div 1 2004
Ocenjevalna pot PED	Članek 3.3 (AO, AA, ACS, AAR - 005, 010, 015, 020, 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AR AAR 050 055)
Priglašeni organ za PED	Lloyds Register Ver fication 71 Fenchurch St London EC3M 4BS
Cert fikat o tipskem pregledu ES	COV0413459/TEC
Pooblaščeni zastopnik	Derek Bankier D v s onal Quality Manager Parker Hannif n ltd domn ck hunter division

Izjava

Kot pooblaščeni zastopnik izjavljam, da so zgornji podatki glede dobave/pro zvodnje tega zdelka skladni s standardi n ostalimi sorodnimi dokumenti, ki sledijo določbam zgornjih direktiv.

Podpis **Datum** 8/8 2007

Štev lka izjave 0002/8807

Declaraţie de conformitate RO

Parker Hannifin ltd domnick 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 ilizate	Splošno skladno z ASMEV II D v 1 2004
Traseu de evaluare PED	Članek 3.3 (AO, AA, ACS, AAR - 005, 010, 015, 020, 025 030) Modul A (AO AA ACS AAR 035 040 045) Modul B (AO AA ACS AR AAR 050 055)
Organism no ificat pentru PED	Lloyds Reg ster Verificat on 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 Hannif n td domnick hunter division

Declaraţie

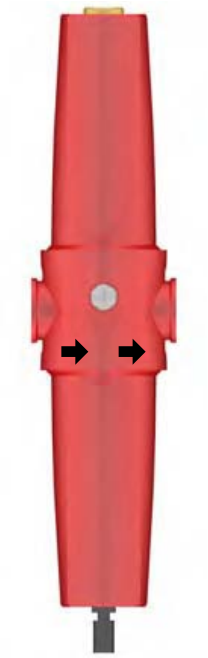
În calitate de reprezentant autorizat, declar că informaţiile de mai sus, referitoare la furnizarea / fabricaţia acestui produs, sunt în conformitate cu standardele şi alte documente corelate care respectă prevederile Directivelor de mai sus.

Semnătura: **Data:** 8 8/2007

Număr declaraţie: 0002/8807

13.8 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
(FR) FILTRES D'ÉLIMINATION DES ODEURS ET DES VAPEURS D'HUILE
(SV) FILTER FÖR AVLÄGSNING AV OLJEÅNGOR OCH LUKT
(DA) FILTER FÖR AVLÄGSNING AV OLJEÅNGOR OCH LUKT
(ES) FILTROS DE ELIMINACIÓN DE OLORES Y VAPORES DE ACEITE
(IT) FILTRI PER L'ELIMINAZIONE DEGLI ODORI E DEI VAPORI D'OLIO
(SK) FILTRE NA ODSTRAŇOVANIE OLEJOVÝCH VÝPAROV A ZÁPACHU
(ET) ÕLISUDU JA -HAISU EEMALDUSFILTRID
(LV) EĻĻAS TVAIKU UN AROMĀTA NOVĒRŠANAS FILTRI
(RU) ФИЛЬТРЫ ДЛЯ УСТРАНЕНИЯ ЗАПАХА И ПАРОВ МАСЛА
(TR) YAĞ BUHARI VE KOKUSU GİDERİCİ FİLTRELER
(DE) FILTER ZUM ENTFERNEN VON ÖLNEBEL UND GERÜCHEN
(FI) ÖLJYHÖYRYN JA HAJUN POISTOSUODATTIMET
(NO) OLJEDAMP- OG OLJELUKTFJERNINGSFILTRE
(EL) ΦΙΛΤΡΑ ΑΦΑΙΡΕΣΗΣ ΑΤΜΩΝ & ΟΣΜΩΝ ΛΑΔΙΟΥ
(PT) VAPOR DO ÓLEO E FILTROS DE REMOÇÃO DOS CHEIROS
(PL) FILTRY DO USUWANIA OPARÓW I ZAPACHU OLEJU
(CS) OLEJOVÉ A PROTIPACHOVÉ FILTRY
(HU) OLAJGŐZ- ÉS SZAGELTÁVOLÍTÓ SZŰRŐK
(LT) ALYVOS GARŲ IR KVAPO ŠALINIMO FILTRAI
(SL) FILTRI ZA ODSTRANJEVANJE OLJNIH HLAPOV IN VONJAV
(MT) FILTRI LI JNEĦĦU L-FWAR TAŻ-ŻJUT U L-IRWEJJAĦ

1 FILTER-DH-OIL-XEVOLUTION 01

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.
- Upozorněnní na činnosti nebo postupy, jejichž nesprávné provádění může vést ke zranění nebo usmrcení osob.
- Tõstab esile toimingud või protseduurid, mis väära teostamise 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 mirti.
- 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 korriment 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.
- Upozorněnní na činnosti nebo postupy, jejichž nesprávné provádění může vést k poškození tohoto výrobku.
- Tõstab esile toimingud või protseduurid, mis väära teostamise korral võivad käesolevat toodet kahjustada.
- Olyan műveleteket vagy eljárásokat jelöl, amelyek nem megfelelő módon történő végrehajtása a termék károsodásához vezethet.
- Uzsver darbības vai procedűras, 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 ħsara lil dan il prodott



- 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 giyilmelidir
- Altijd geschikte handschoenen dragen.
- Le port de gants adaptés est obligatoire.
- Använd lämpliga handskar.
- Der skal anvendes egnede handsker.
- Se deben llevar puestos guantes apropiados.
- Indossare guanti di protezione.
- Je nutné použít vhodné rukavice.
- Viseljen megfelelő védőkesztyűt.
- Reikia mūvėti tinkamas pirštines.
- Uporabiti je treba ustrezne rokavice.
- Għandhom jintlibsu ingwanti adatti



- Highlights the requirements for disposing of used parts and waste.
- Benadrukt de vereisten voor het weggooien 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 bortskaffelse 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.
- Upozorněnní na požadavky týkající se likvidace použitých dílů a odpadu.
- Tõstab 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 wieħed jarmi l-partijiet użati u l-iskart

AC010 - AC030



- Pressure.
- Paine.
- Πίεση
- Ciśnienie
- Nyomás alatt.
- Tlak
- Druk
- Tryck
- Presión.
- Tlak..
- Spiediens.
- Basınç
- Druck.
- Trykk
- Pressão.
- Tlak.
- Slėgis.
- Pressjoni
- Pression.
- Tryk
- Pressione.
- Surve.
- Давление



- Release Pressure.
- Évacuation de pression.
- Avlast trykk
- Despresurizar.
- Ciśnienie spustowe
- Surve väljalase
- Išleiskite slėgį.
- Basıncı Kaldırın
- Druk aflaten.
- Vapauta paine.
- Aflast tryk
- Liberta Pressão.
- Uvoľnite tlak.
- Engedje ki a nyomást.
- Стравить давление
- Neħħi l-pressjoni
- Druck ablassen.
- Tryckutsläpp.
- Εκτόνωση πίεσης
- Scaricare la pressione.
- Uvolnění tlaku.
- Pazeminiet spiedienu.
- Sprostitev tlaka.



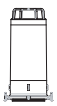
- Replace every year
- Remplacer tous les ans.
- Skift ut hvert år
- Sustituir anualmente
- Należy wymieniać raz w roku
- Asendage igal aastal
- Keiskite kartą per metus
- Her yıl değiştirin
- Elk jaar vervangen
- Vaihda vuosittain.
- Udskift en gang om året
- Substituir todos os anos
- Każdy rok vymieňajte
- Évente cserélje
- Заменять каждый год.
- Ibdel kull sena
- Jährlich austauschen
- Byt varje år
- Αντικατάσταση κάθε χρόνο
- Sostituire ogni anno
- Nutná výměna každý rok.
- Nomainiet reizi gadā
- Zamenjajte vsako leto.



- 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
- Filterhuis / Model
- Suodatinkotelo/-malli
- Filterhus/modell
- Caixa / Modelo do filtro
- Kryt filtra / Model
- Szűrőház / típus
- Корпус фильтра / модель
- Kontenitur tal-filtru - Mudell
- Filtergehäuse / Modell
- Filterhus/modell
- Υποδοχή/μοντέλο φίλτρου
- Corpo del filtro / Modello
- Kryt filtru / Model
- Filtra korpuss / modelis
- Ohišje filtra / Model



- 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
- Zeer efficiënt filterelement
- Cartouche filtrante haute efficacité.
- Högeffektivt filterelement
- Högeffektivt 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 öğesi



- Adsorption filter cartridge - Granular carbon
- Adsorptionsfiltereinsatz - Granulatkohle
- Adsorptiosuodatinelementti – rakeinen hiili
- Adsorpsjonsfilterpatron – Karbon i kornform
- Φυσίγγιο φίλτρου προσρόφησης - Κοκκώδης άνθρακας
- Cartucho do filtro de absorção - Carvão granular
- Adsorpcyjny wkład filtrujący z węgla ziarnistego
- Adsorpční filtrační prvek – granulovaný uhlík
- Adszorpciós szűrőbetét – granulált szén
- Adsorbcinio filtro kasetė – anglies granulės
- Kaseta adsorpcijskega filtra – zrnasti ogljik
- Kaxxa assorbenti tal-filtru – Karbonju mrammel
- Adsorptiefilter cartridge - korrelvormige actieve kool
- Cartouche filtrante d'adsorption - Charbon en granulés.
- Adsorptionsfilterkassett – Kornigt kol
- Adsorptionsfilterkassett – Kornigt kol
- Cartucho filtrante de adsorción, gránulos de carbón.
- Filtro a cartuccia ad adsorbimento - granuli di carbone
- Adsorpčná filtračná kazeta – Granulovaný uhlík
- Adsorptsioonfiltri kassett – teraline süsi
- Absorbējoša filtra kasetne – graudains ogleklis
- Адсорбционный фильтрующий элемент – гранулированный уголь
- Adsorpsiyon filtresi kartuşu – Taneli karbon



- 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
- Adsorpčný filtračný článok – Zabalená uhlíková tkanina
- Adsorpční filtrační prvek – zabalená uhlíková tkanina
- Adsorptsioonfiltri element – isoleeritud süsinikriie
- Adszorpciós szűrőelem – göngyölt szénszövet
- Absorbējošs filtra elements – satīta oglekļa drāniņa
- Adsorbcinis filtravimo elementas – susuktas anglies audinys
- Адсорбционный фильтрующий элемент – ткань из углеродистого волокна
- Adsorpcijski filtrirni element – navita ogljikova krpa
- Adsorpsiyon filtresi öğesi - Sarılı karbon kumaş
- Element tal-filtru li jassorbixxi - Xoqqa tal-karbonju mgeżwra



- Ensure coorrect 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 õige tööriista kasutamine
- Izmantojiet tikai atbilstošus darbarīkus
- Убедитесь, что используется правильный инструмент
- Doğru alet kullanılmasını sağlayın
- Stellen Sie sicher, dass Sie das richtige Werkzeug verwenden.
- Käytettävä oikeaa työkalua
- Pass på at korrekt verktøy 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
- Įsitikinkite, kad naudojamas reikiamas įrankis
- Poskrbite, da boste uporabili ustrezno orodje
- Kun żgur li tintuża l-għodda t-tajba



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

AC010 - AC030

MT

Rakkomandazzjonijiet għall-Installazzjoni

Nirrakkomandaw li l-arja kompressata tiġi trattata qabel ma tidħol fis-sistema ta' distribuzzjoni kif ukoll fil-punti ċ l-applikazzjonijiet kritiċi ta' l-użu.

L-installazzjoni ta' tagħmir li jnixxef l-arja kumpressata fuq sistema li kienet imxarrba jista' jirriżulta f'aktar tagħbija ta' ħmieġ għall-filtri li jintużaw f'punt wieħed, għall-perjodu sakemm is-sistema ta' distribuzzjoni tinxef. L-elementi tal-filtri jista' jkollhom bżonn li jinbidlu aktar spiss matul dan il-perjodu.

Għal installazzjonijiet fejn jintużaw kumpressuri mingħajr żejt, xorta jkun hemm preżenti ajrusols u partijiet ta' l-ilma, għalhekk xorta għandhom jintużaw gradi bi skop ġenerali u b'effiċċjenza kbira.

Filtru għal skopijiet ġenerali għandu dejjem jiġi installat biex jipproteġi l-filtru ta' effiċjenza kbira mill-volum kbir ta' ajrusols likwidi u partijiet solidi.

Installa tagħmir 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.

Tagħmir tal-purifikazzjoni fil-punt ta' l-użu għandu jiġi installat kemm jista' jkun qrib tal-post fejn għandu japplika.

It-tagħmir ta' purifikazzjoni m'għandux jiġi installat aktar 'l isfel mill-valvs li jifthu malajr u għandu jkun protett minn possibilità ta' fluss b'lura jew kundizzjonijiet oħra stressanti.

Naddaf il-pajps kollha li jwasslu għat-tagħmir ta' purifikazzjoni qabel tinstalla u l-papjs kollha wara li tinstalla t-tagħmir ta' purifikazzjoni u qabel ma tqabbad ma' l-applikazzjoni finali.

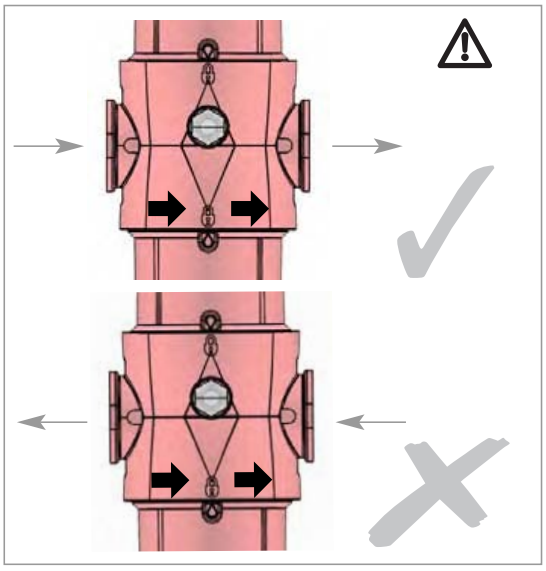
Jekk tiffittja linji ta' by-pass madwar it-tagħmir ta' purifikazzjoni, kun żgur li hemm biżżejjed filtrazzjoni ffittjata mal-linja tal-by-pass biex ma thallix li jkun hemm kontaminazzjoni tas-sistema aktar 'l isfel.

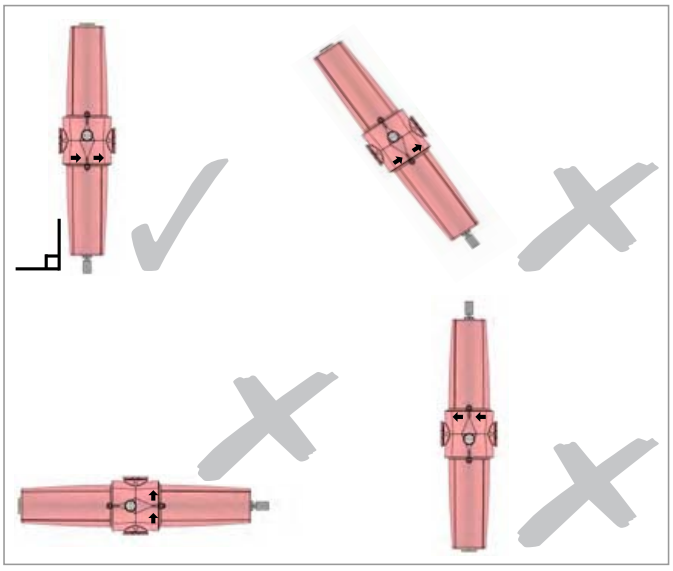
Ipprovdi faċilità biex tiddrejnja l-likwidi li jinġabru mit-tagħmir tal-purifikazzjoni. Il-likwidi li jinġabru għandhom jiġu trattati u mormija b'mod risponsabbli.

Iż-żmien kemm idumu jservu l-elementi tal-filtru li jneħħi l-fwar taż-żjut huwa affettwat mill-konċentrazzjoni taż-żejt tad-dħul, l-umdità relattiva u t-temperatura tas-sistema ta' l-arja kumpressata. L-elementi li jneħħu l-fwar taż-żjut ikollhom bżonn jinbidlu aktar ta' sikwit mill-element shih ekwivalenti.

Mudelli AC010□□□I - AC030□□□I huma ffittjati b'indikatur tal-volum taż-żejt. Kemm l-elementi tal-filtru kif ukoll l-indikatur għandhom jinbidlu jekk l-indikatur isir ta' kulur blu.

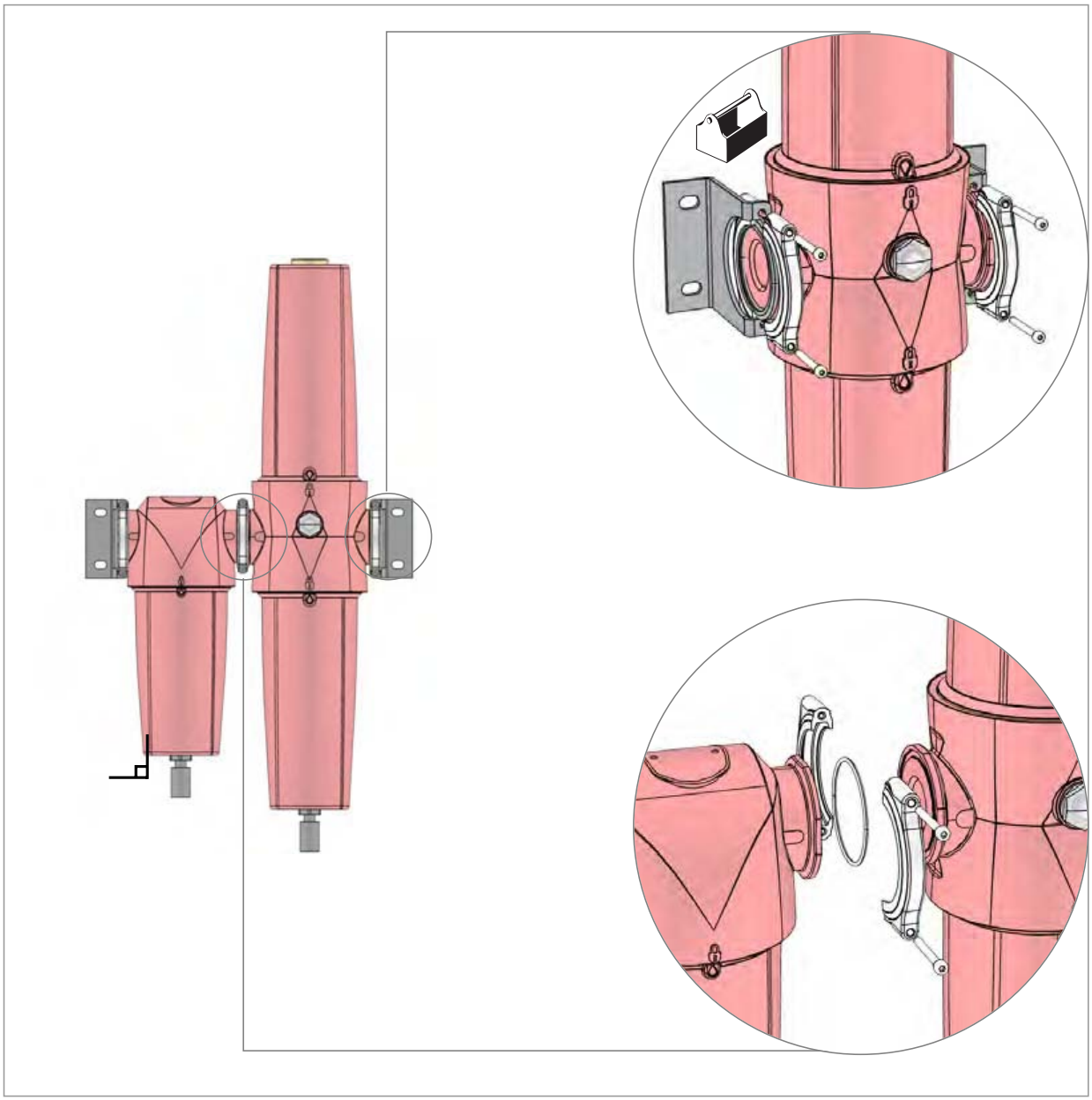
Jekk Jogħġbok Innota - Dan hu indikatur tal-volum taż-żejt u ma jindikax iż-żmien li jdum iservi l-element tal-filtru.

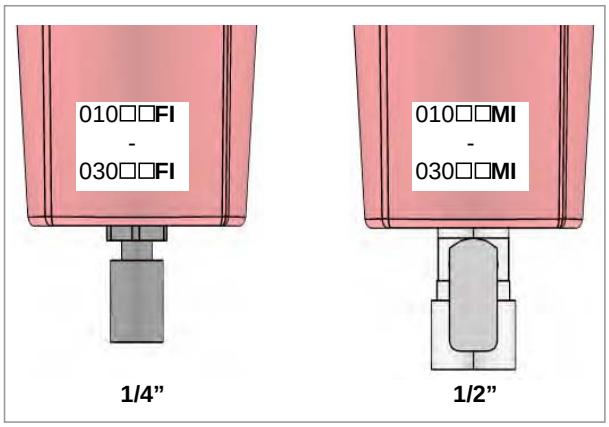




5 FILTER-DH-OIL-XEVOLUTION 01

20





6 FILTER-DH-OIL-XEVOLUTION 01

21

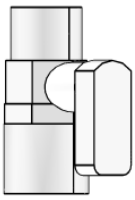
5. Spare Parts (Service Kits)

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) • Rezerves daļas (apkopes komplekti) • Atsarginės dalys (priežiros detalių komplektai) • Запасные части (ЗИП) • Nadomestni deli (servisni kompleti) • **Yedek parça (Servis kitleri)** • Partijiet Ghat-Tibdil (Kitts tas-Servizz)



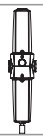
EF1

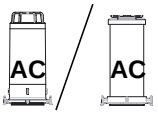
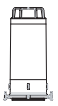
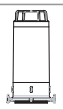
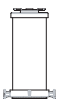
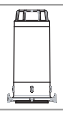
- **AUTOMATIC DRAIN**
- **AUTOMATISCHER ABLAUF**
- **VIDANGE AUTOMATIQUE**
- **AUTOMISCHAFTAPPEN**
- **DRENAJE AUTOMATICO**
- **SCARIO AUTOMATICO**
- **AUTOMATISK AFLØB**
- **DRENO AUTOMÁTICO**
- ΑΥΤΟΜΑΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ
- **AUTOMATDRÄNERING**
- **AUTOMAATTINEN**
- **TYHJENNYSKAPPALE**
- DREN AUTOMATYCZNY
- AUTOMATICKÉ VYSUŠENIE
- AUTOMATICKÉ VYPOUŠTĚNÍ
- AUTOMAATNE VÄLJALASE
- AUTOMATIKUS LEERESZTÉS
- AUTOMĀTISKA IZTECINĀŠANA
- AUTOMATINIS IŠLEIDIMAS
- АВТОМАТИЧЕСКИЙ ДРЕНАЖ
- SAMODEJNI ODTOK
- **OTOMATİK SÜZDÜRÜCÜ**
- **DREJN AWTOMATIKU**

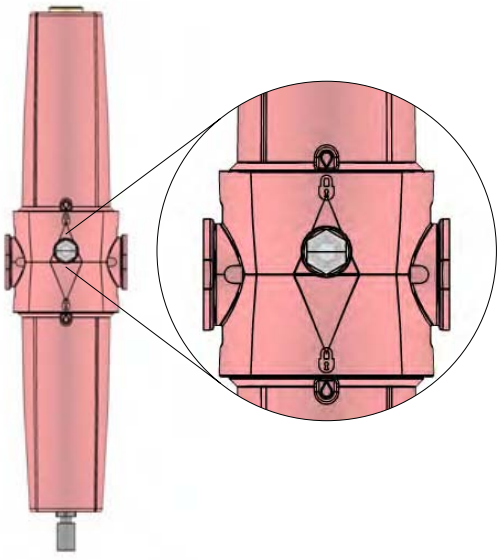


EM1

- **MANUAL DRAIN**
- **MANUELLER ABLAUF**
- **VIDANGE MANUELLE**
- **MANUEEL AFTAPPEN**
- **DRENAJE MANUAL**
- **SCARIO MANUALE**
- **MANUELT AFLØB**
- **DRENO MANUAL**
- ΧΕΙΡΟΚΙΝΗΤΗ ΑΠΟΣΤΡΑΓΓΙΣΗ
- **MANUELL DRÄNERING**
- **KÄSIKÄYTTÖINEN**
- **TYHJENNYSKAPPALE**
- DREN RĘCZNY
- RUČNÉ VYSUŠENIE
- RUČNÍ VYPOUŠTĚNÍ
- KÄSITSI VÄLJALASE
- KÉZI LEERESZTÉS
- MANUĀLA IZTECINĀŠANA
- RANKINIS IŠLEIDIMAS
- ДРЕНАЖ ВРУЧНУЮ
- ROČNI ODTOK
- **ELLE KULLANILACAK SÜZDÜRÜCÜ**
- **DREJN MANWALI**


010 A
010 B
010 C
015 B
015 C
020 C
020 D
020 E
025 D
025 E
030 E
030 F
030 G

 AA	 AC / AC
010AA	010AC 
015AA	015AC 
020AA	020AC 
025AA	025DAC 
025AA	025EAC 
030AA	030AC 

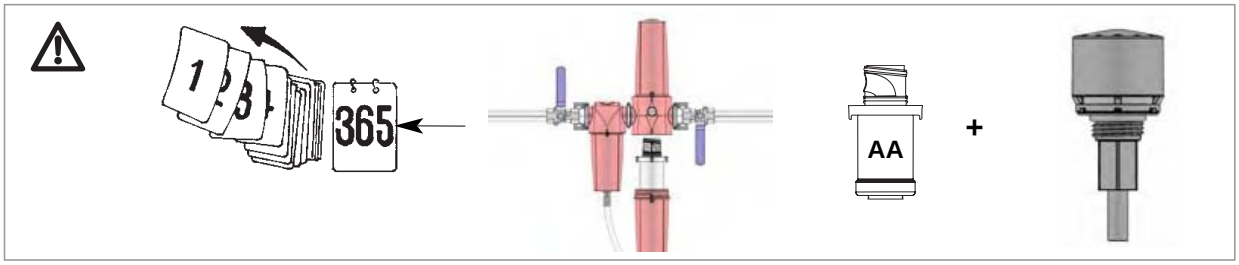


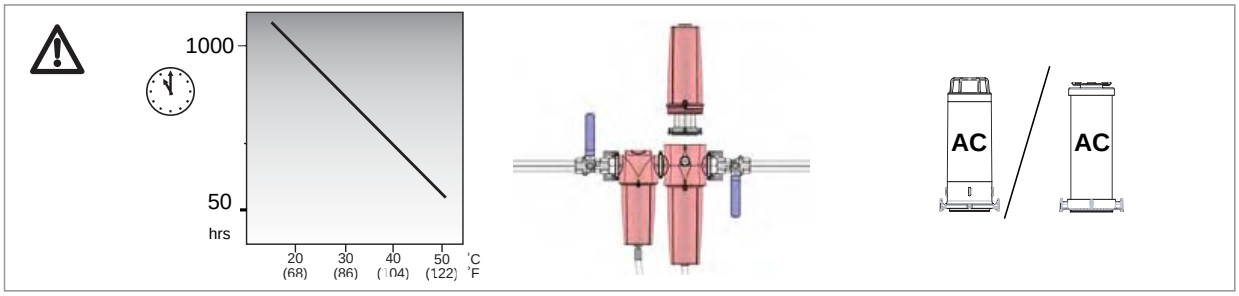
BOIE1
AC010 □□□ I - AC030 □□□ I

AC010 - AC030

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





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 öljynilmaisin. Sekä suodatinelementit että ilmaisin on vaihdettava, jos ilmaisin on sininen.

Huomautus – Tämä on öljynilmaisin. Se ei ilmaise suodatinelementin ikää.

Modell AC010□□□I - AC030□□□I har en indikator för större mängder olja. Både filterelement och indikator ska bytas om indikatorn har blå färg.

Observera –- indikatorn visar oljeförekomst, den indikerar inte filterelementets livslängd.

Modell AC010□□□I - AC030□□□I er montert med bulkvolum oljeindikator. Både filterelementer og indikator skal skiftes når indikatoren er blå.

Merk – Dette er en bulkvolum oljeindikator, den indikerer ikke filterelementets levetid.

Modell AC010□□□I - AC030□□□I har en indikator för större mängder olja. Både filterelement och indikator ska bytas om indikatorn har blå färg.

Observera –- indikatorn visar oljeförekomst, den indikerar inte filterelementets livslängd.

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.

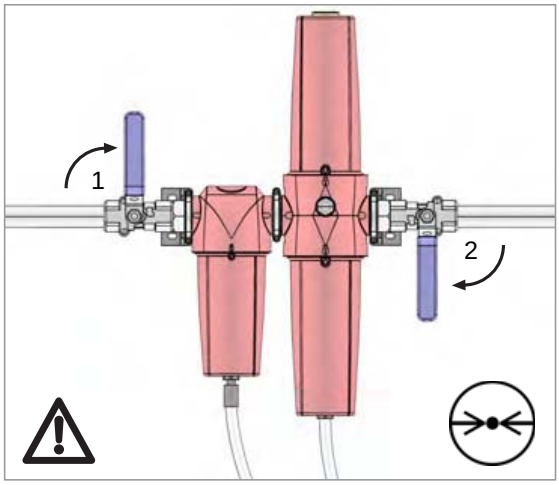
Modelos AC010□□□I - AC030□□□I são instalados com um indicador do óleo em bruto. Ambos os elementos do filtro e o indicador deverão ser mudados se o indicador estiver azul.

Nota - Este é um indicador do óleo em bruto, não indica a vida útil do elemento do filtro.

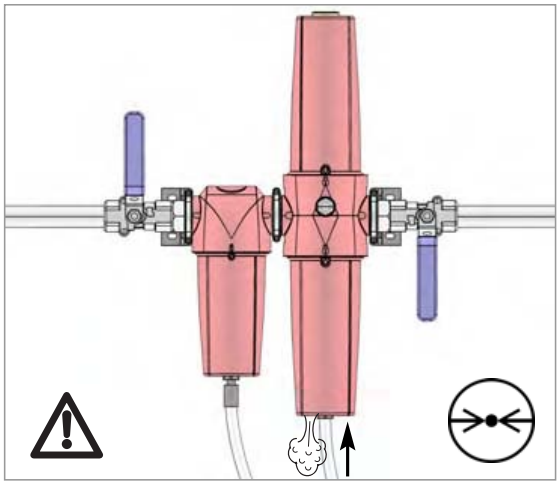
I modelli AC010□□□I - AC030□□□I sono provvisti di un indicatore degli oli misti. Sostituire gli elementi filtranti e l'indicatore quando il secondo assume una colorazione blu.

Nota - L'indicatore segnala la presenza di oli misti, ma non la durata dell'elemento filtrante.

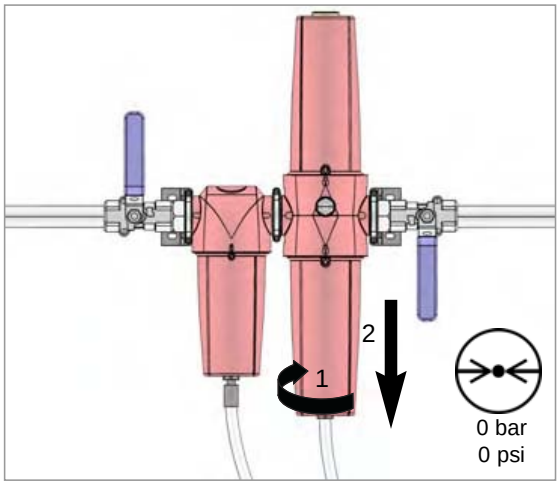
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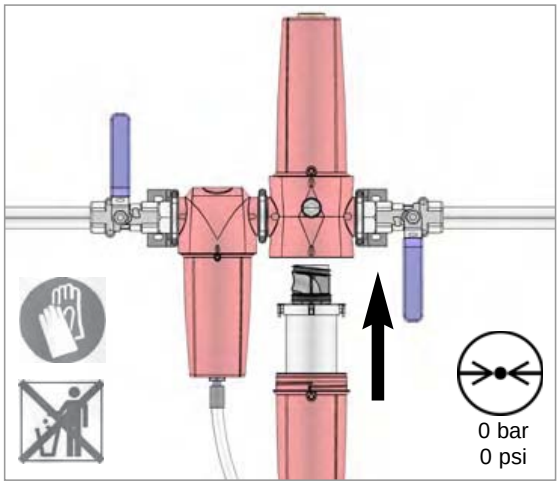
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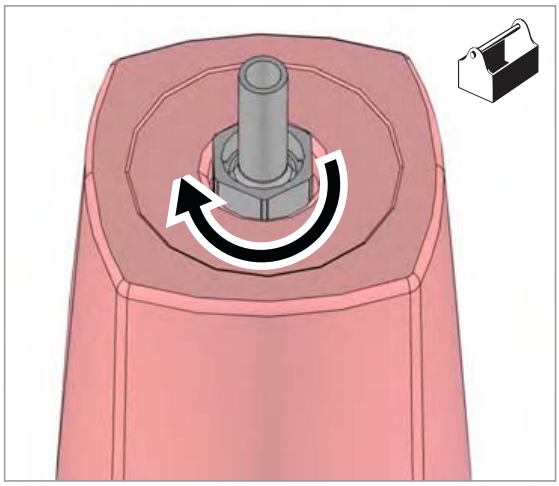
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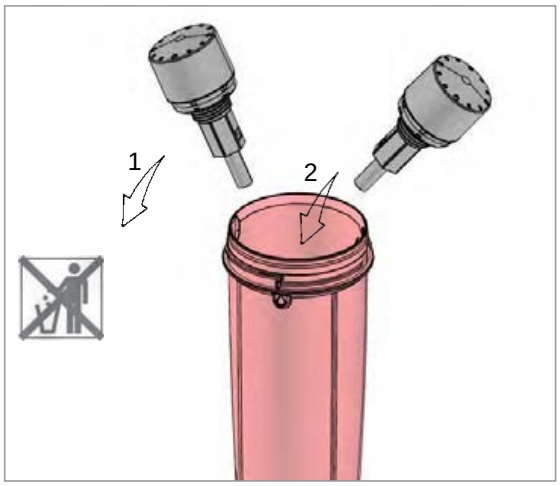
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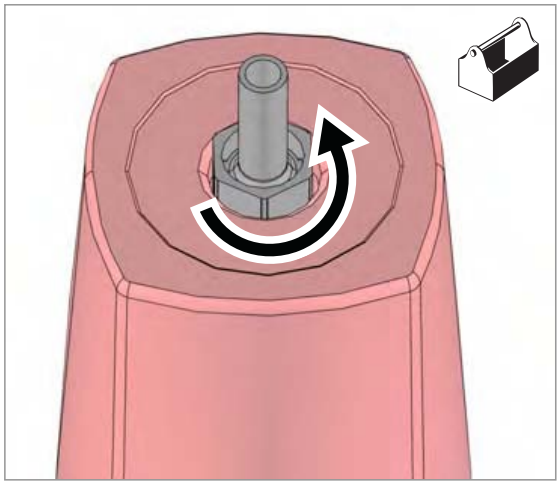


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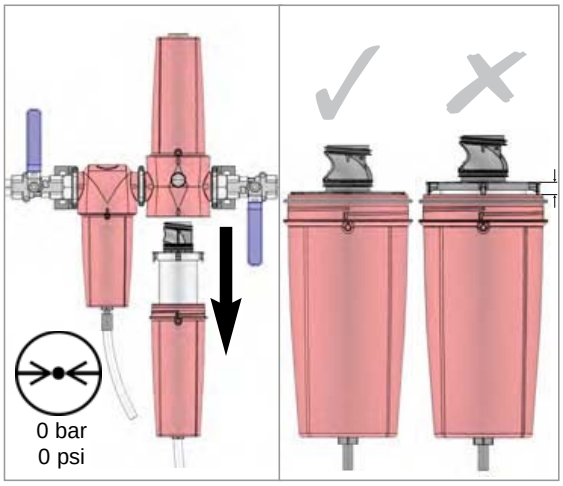


9 FILTER-DH-OIL-XEVOLUTION 01

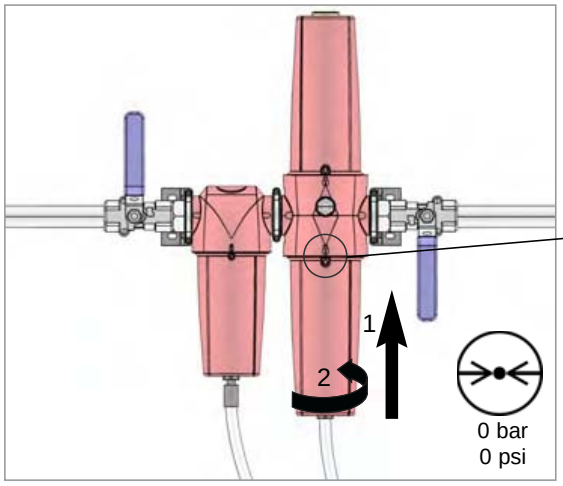
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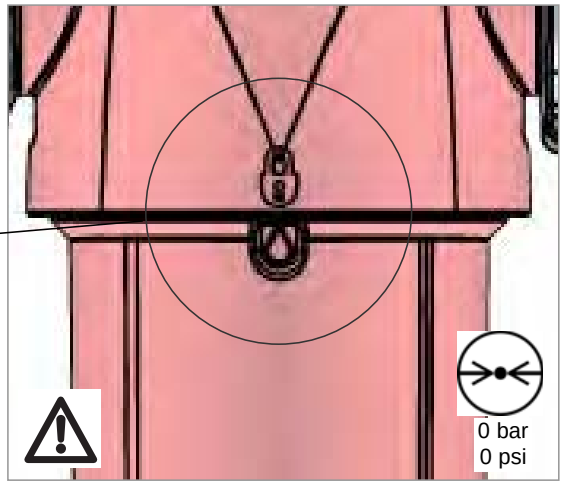
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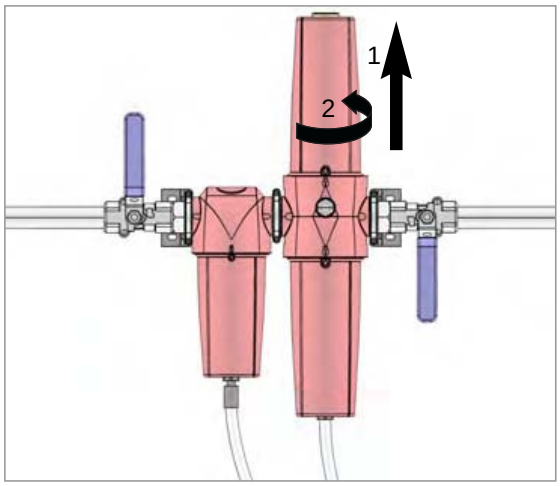
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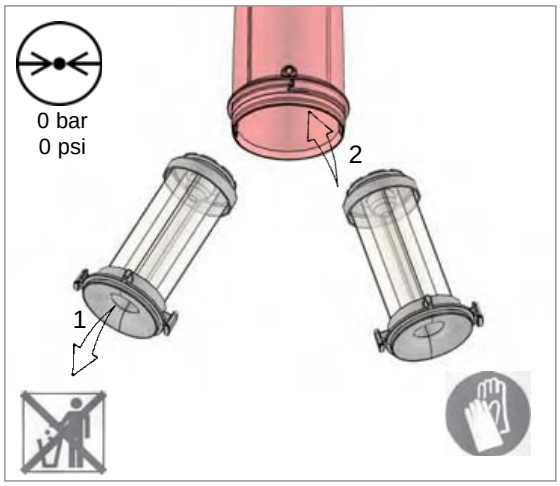
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11

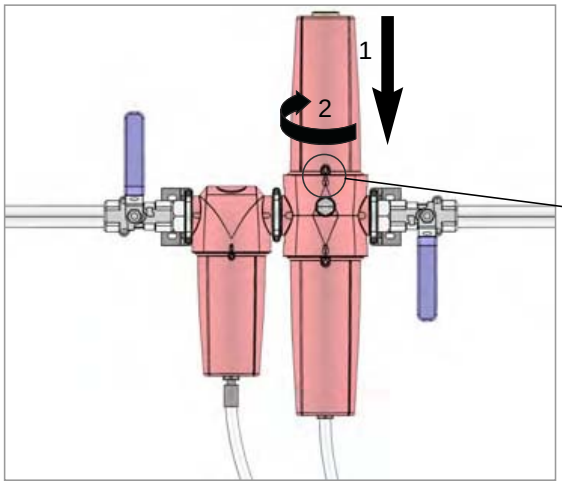


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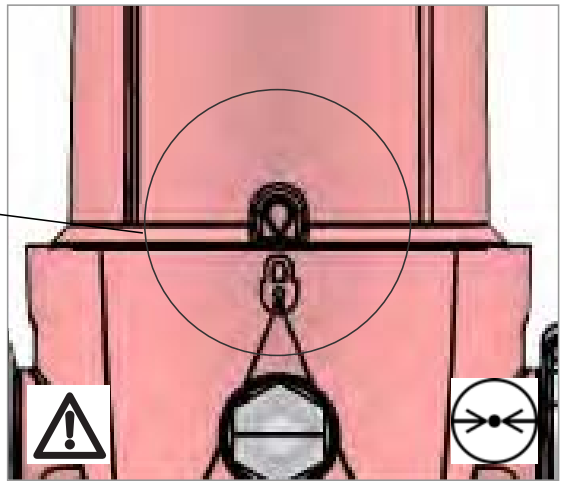


10 FILTER-DH-OIL-XEVOLUTION 01

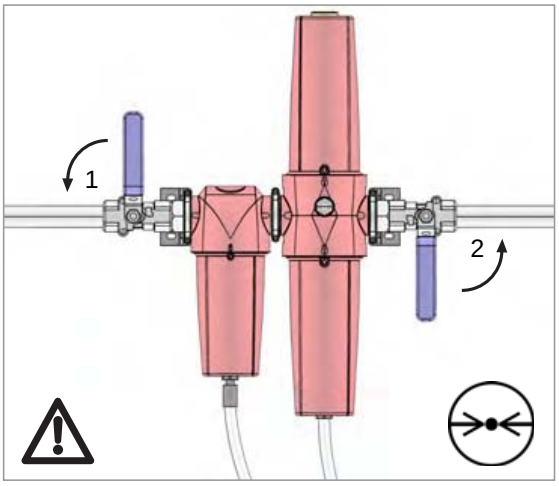
13



14



15



Declaration of Conformity EN

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

AC010, 015, 020 025, 030

Directives	97/23/EC,
Standards used	Generally in accordance with ASMEVIII Div 1 : 2004.
PED Assesment Route :	Article 3.3 (AC 010, 015, 020, 025) Module A (AC 030)
Notified body for PED:	N/A
EC Type-examination Certificate:	N/A
Authorised Representative	Barry Wade Business Systems Improvement Manager domnick hunter ltd

Declaration

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.

Signature: **Date:** 28 / 09 / 05

Declaration Number: 0001/280905

Verklaring van Conformiteit NL

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. GB

AC010, 015, 020 025, 030

Richtlijnen	97/23/EC,
Gehanteerde normen	Gewoonlijk volgens ASMEVIII Div 1 : 2004.
PED-beoordelingstraject:	Artikel 3.3 (AC 010, 015, 020, 025) Module A (AC 030)
Aangemelde instantie voor PED:	N/A
EC Type onderzoekscertificaat:	N/A
Bevoegde vertegenwoordiger	Barry Wade Manager Bedrijfssysteemverbetering domnick hunter ltd

Verklaring

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.

Handtekening: **Datum:** 28 / 09 / 05

Verklaringnummer: 0001/280905

Konformitätserklärung DE

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear NE11 0PZ GROSSBRITANNIEN

AC010, 015, 020 025, 030

Richtlinien	97/23/EC,
Angewandte Normen	Allgemein in Übereinstimmung mit ASMEVIII Div 1 : 2004.
Beurteilungsroute der Druckgeräterichtlinie:	Artikel 3.3 (AC 010, 015, 020, 025) Modul A (AC030)
Benannte Stelle für die Druckgeräterichtlinie:	N/A
EG-Baumusterprüfbescheinigung:	N/A
Bevollmächtigter Vertreter	Barry Wade Business Systems Improvement Manager domnick hunter ltd

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:** 28 / 09 / 05

Nummer der Erklärung: 0001/280905

Déclaration de conformité FR

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ GB

AC010, 015, 020 025, 030

Directives	97/23/EC,
Normes utilisées	Généralement conforme à ASMEVIII div. 1 : 2004.
Méthode d'évaluation de la directive d'équipements de pression :	Article 3.3 (AC010, 015, 020, 025, 030) Module A (AC030)
Organisme de notification pour la directive d'équipement sous pression :	N/A
Certificat d'examen de type CE :	N/A
Représentant agréé	Barry Wade Business Systems Improvement Manager domnick hunter ltd

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 déclarés selon les dispositions des directives susmentionnées.

Signature : **Date :** 28 / 09 / 05

N° de déclaration : 0001/280905

Vaatimustenmukaisuusvakuutus FI

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear NE11 0PZ ISO-BRITANNIA

AC010, 015, 020 025, 030

Direktiivit	97/23/EC,
Käytetyt standardit	Yleensä seuraavan standardin mukaisesti: ASMEVIII Div 1: 2004.
PED-arviointimenettely:	Artikla 3.3 (AC010, 015, 020, 025, 030) Moduuli A (AC030)
PED-säännösten ilmoitettu laitos:	N/A
EY-tyyppihyväksynnän sertifikaatti:	N/A
Valtuutettu edustaja	Barry Wade Yritysjärjestelmien kehityspäällikkö domnick hunter ltd

Vakuutus

Valtuutettuna edustajana vakuutan, että yllä olevat tiedot, jotka liittyvät tämän tuotteen toimittamiseen tai valmistamiseen, ovat standardien ja muiden asiaan liittyvien asiakirjojen mukaisia ja noudattavat yllä mainittuja direktiivejä.

Allekirjoitus: **Päiväys:** 28 / 09 / 05

Vakuutuksen numero: 0001 /280905

Försäkran om överensstämmelse SV

domnick hunter
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ, Storbritannien

AC010, 015, 020 025, 030

Direktiv	97/23/EC,
Använda standarder	Generellt i enlighet med ASMEVIII Div 1: 2004.
Fastställningsväg för PED:	Artikel 3.3 (AC010, 015, 020, 025, 030) Modul A (AC030)
Anmält organ för PED:	N/A
EG-intyg om typprovning:	N/A
Auktoriserad representant	Barry Wade Business Systems Improvement Manager domnick hunter ltd

Försäkran

Jag försäkrar, i egenskap av auktoriserad representant, att ovannämnda information avseende leverans/tillverkning av denna produkt överensstämmer med standarder och övriga relaterade dokument enligt villkoren i ovanstående direktiv.

Underskrift: **Datum:** 28 / 09 / 05

Försäkran nummer: 0001/280905

13.9 Option ga
Service tasks - Generator

In order to ensure a safe operation of the machine, the generator must be inspected once every year by a trained and authorised electrician.

Have the following tasks performed by a specialist electrician or the KAESER SERVICE:

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

13.10 Oil-injected MOBILAIR service intervals

Maintenance strategy 000510 (1x service per year):

Package sequence	A	B	A	B	A	C	from the beginning
Years	1	2	3	4	5	6	

Tab. 107 Service maintenance package - (1x service per year)

Change intervals apply to favourable ambient conditions, such as good fuel quality, cool to medium ambient temperatures, low humidity and low to medium dust exposure.

Group	Item Parts list	Change intervals and maintenance packages					Note
Part (with mounting location)		A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Filter SET (compressor and engine):	550	X	X	X	1		The composition of the sets may vary depending on the machine type.
Compressor oil filter	1210						
Engine oil filter	1905						
Intake air filter, compressor	1260						
Intake air filter, engine	1280						
Fuel prefilter	1910, 1915						
Fuel filter	1920						
Water separator filter element	1985						

Tab. 108 Service intervals for MOBILAIR parts, Filter SET group (compressor and engine)

Compressor group	Item	Change intervals and maintenance packages					Note
Part (with mounting location)	Parts list	A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Cooling oil	1600, 1601	X	X	X	1	1000	
Compressor oil filter	1210	X	X	X	1	1000	
Intake air filter, compressor	1260	X	X	X	1	1000	
Oil separator cartridge	1450		X	X	2	2000	
Drive belt, fan wheel, cooler	1801		X	X	2	2000	
Generator belt	9125		X	X	2	2000	
Service kit for dirt trap	9416	X			1		in extraction line for oil separator tank *Option da:* to compressed air aftercooler
Service kit, dirt trap, control valve	2148	X	X	X	1		
Service kit for dirt trap	9420	X	X	X	1		*Option da:* to compressed air aftercooler
Compressed air pre-filter filter element	1550	X	X	X	1	500	*Option dd*
Compressed air micro-filter element	1551	X	X	X	1	500	*Option dd*
Pre-/micro-filter element seal	1548	X	X	X	1	500	*Option dd*
Fresh-air filter element set	1549	X	X	X	1	500	*Option dc*
Fresh air extraction line	9439, 9440			X	6		*Option dc*
Insert for condensate drain	9475	X	X	X	1	1000	*Option dd*
Service kit for condensate drain compressed air filter	9601	X	X	X	1	500	*Option dd*

Compressor group	Item	Change intervals and maintenance packages					Note
Part (with mounting location)	Parts list	A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Pressure hoses - oil, compressed air, condensate and control air	7110, 7120, 7130, 7140, 7160, 7170, 7172, 7180, 7190, 7195, 7200, 7205, 7230, 7250, 7360, 7560 – 7566, 7580, 7590, 9450, 9485,9886			X	6		The type and quantity depends on the machine model.

Tab. 109 Service intervals for MOBILAIR parts, compressor group

Group	Item	Change intervals and maintenance packages					Note
Part (with mounting location)	Parts list	A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Engine filter SET:	551	X					The composition of the sets may vary depending on the machine type.
Engine oil filter	1905						
Fuel prefilter	1910, 1915						
Fuel filter	1920						
Water separator filter element	1985						

Tab. 110 Service intervals for MOBILAIR parts, Filter SET group Engine

Engine group	Item	Change intervals and maintenance packages					Note
Part (with mounting location)	Parts list	A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Engine oil	1925	X					
Engine oil filter	1905	X	X	X	1	500	
Intake air filter, engine	1280	X	X	X	1	500/1000	
Fuel prefilter	1910; 1915 – 1919	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Fuel filter	1920	X	X	X	1	500/1000	The type and quantity depends on the machine model.
Water separator filter element	1985	X	X	X	1	500	in fuel supply line
Engine coolant	5195		X	X	3; 6	2000; 12000	Glysantin; CAT ELC
Engine coolant addition	5197		X	X	2; 3		SCA additive; CAT ELC refresher
Engine drive belt (for engine fan and engine units)	1800, 4470	X	X	X	1	500/1000	The type and quantity depends on the machine model.
			X	X	2	2000	
			X	X		3000	
Crankcase ventilation filter element	1216	X	X	X	1	1000	Oil separator element
Air filter element	1250	X	X	X	1	1000	M235 Add-on filter, tank venting
Fuel return line	7975		X	X	2		
Fuel hoses	5193, 7960 - 7962, 9350			X	6		The type and quantity depends on the machine model.

Engine group	Item	Change intervals and maintenance packages					Note
Part (with mounting location)	Parts list	A 1 year	B 2 years	C 6 years	Years max.	Operating hours max.	
Pressure hoses - coolant , charge air and oil	4511 - 4513, 5620 5621, 5664 - 5667, 5670 – 5672, 7100, 7120, 7400, 7402, 7404, 7500, 7502, 7504, 7510, 7600, 7907			X	6		The type and quantity depends on the machine model.

Tab. 111 Service intervals for MOBILAIR parts, Engine group