

Operator manual

Portable compressor

MOBILAIR M50E SIGMA CONTROL SMART

No.: 901807_04 E

Manufacturer:

KAESER KOMPRESSOREN SE

96410 Coburg • PO Box 2143 • GERMANY • Tel. +49-(0)9561-6400 • Fax +49-(0)9561-640130

www.kaeser.com

Original instructions
/KKW/M50 2.10 en SBA-E-MOBILAIR

20190517 113742

1	Regarding this document	
1.1	Using this document	1
1.2	Further documents	1
1.3	Copyright	1
1.4	Symbols and labels	1
1.4.1	Warnings	1
1.4.2	Potential damage warnings	2
1.4.3	Other alert notes and their symbols	3
2	Technical Specifications	
2.1	Nameplate	4
2.2	Options – options label	4
2.2.1	Air treatment	5
2.2.2	Tool lubricator	5
2.2.3	Compressed air distributor	5
2.2.4	Low temperature equipment	6
2.2.5	Lighting	6
2.2.6	Frame design for stationary machines	6
2.2.7	Automatic start/stop	6
2.2.8	DUAL Control	7
2.2.9	Sealed floor pan	7
2.2.10	Hose reels	7
2.2.11	Anti-theft device	7
2.2.12	Pedestrian protection	7
2.3	Machine (without options)	7
2.3.1	Total power of the machine	7
2.3.2	Noise emission	8
2.3.3	Tightening torques for screws	8
2.3.4	Ambient conditions	9
2.3.5	Additional information according to the machine's operating licence	9
2.4	Chassis	9
2.4.1	Chassis options	9
2.5	Machines with stationary frame design	9
2.5.1	Mass of machines with stationary frame design	9
2.6	Compressor	10
2.6.1	Working gauge pressure and volumetric flow rate	10
2.6.2	Compressed air outlet	10
2.6.3	Air quality at the compressed air outlets	10
2.6.4	Pressure relief valve	11
2.6.5	Temperature	11
2.6.6	Cooling oil recommendation	12
2.6.7	Cooling oil charge	13
2.7	Drive motor	13
2.7.1	Make	13
2.7.2	Rated power of drive motor	13
2.7.3	Drive motor start mode	14
2.7.4	Electrical connection to machine	14
2.8	Fan motor	15
2.8.1	Fan motor rated power	15
2.9	Options	15
2.9.1	Tool lubricator	15
2.9.2	Low temperature equipment	15
2.9.3	Measuring point connection	16

3	Safety and Responsibility	
3.1	Basic instructions	17
3.2	Specified use	17
3.3	Incorrect Use	17
3.4	User's responsibilities	17
3.4.1	Observe statutory and universally accepted regulations	17
3.4.2	Determining personnel	18
3.4.3	Complying with Inspection Schedules and Accident Prevention Regulations	18
3.5	Dangers	19
3.5.1	Safely dealing with sources of danger	19
3.5.2	Safe machine operation	22
3.5.3	Organisational Measures	24
3.5.4	Danger areas	24
3.6	Safety devices	25
3.7	Service life of safety functions	25
3.8	Safety signs	26
3.9	Emergencies	27
3.9.1	Correct fire fighting	27
3.9.2	Injury from handling operating fluids/materials	28
3.10	Warranty	29
3.11	Environmental protection	29
4	Design and Function	
4.1	Bodywork	30
4.2	Machine structure	31
4.3	Machine function	32
4.4	Operating modes and control modes	33
4.4.1	Machine operating modes	33
4.4.2	PROPORTIONAL control mode	33
4.5	Safety devices	34
4.5.1	Monitoring functions with shut-down	34
4.5.2	Further safety devices	34
4.6	SIGMA CONTROL SMART control panel	34
4.7	Options	35
4.7.1	Air treatment options	35
4.7.2	Tool lubricator	37
4.7.3	Closed floor pan option	38
4.7.4	Hose reel option	38
4.7.5	Anti-theft device	38
4.7.6	Automatic operating modes	38
4.8	Frame design options for stationary machines	40
4.8.1	Chassis types of stationary machines	40
5	Installation and Operating Conditions	
5.1	Ensuring safety	41
5.2	Installation conditions	41
5.2.1	Minimum distance from excavations and slopes	41
5.2.2	Minimum distance to walls	42
5.2.3	Comply with the specified ambient temperature	43
6	Installation	
6.1	Ensuring safety	44
6.2	Reporting Transport Damage	44
6.3	Fastening a stationary machine	44
6.4	Electrical connection	45
6.4.1	Network Conditions	45

6.4.2	Power supply isolating device	45
6.4.3	Connecting the machine to the power supply	46
7	Initial Start-up	
7.1	Ensuring safety	48
7.2	Before Initial Start-up (or Recommissioning)	49
7.2.1	Note when commissioning	49
7.3	After storing the machine for a long period	49
7.4	Checking installation and operating conditions	50
7.5	Comply with requirements for electric supply connection	50
7.6	Correct phase sequence of the power supply	51
7.7	Setting the overload protection relay	52
7.8	Setting the motor overload protection switch	52
7.9	Setting the voltage measuring relay	52
7.10	Low-temperature operation (winter)	53
7.11	Note the automatic operating modes	53
7.11.1	Note the start/stop automatic	53
7.11.2	Note the DUAL control	54
8	Operation	
8.1	Ensuring safety	55
8.2	Switching the machine on	56
8.2.1	Follow the brief instructions	56
8.2.2	Observe with low ambient temperatures	56
8.2.3	Connect the power supply cable	57
8.2.4	Overview of fittings	58
8.2.5	Preparing ready-to-start state	59
8.2.6	Switch on drive motor	61
8.2.7	Allow the machine to run up to operating temperature	61
8.2.8	Switching the machine to LOAD mode:	61
8.3	Setting the compressed air discharge pressure	61
8.4	Switching the machine off	63
8.4.1	Observe the brief instructions "Switching the machine off"	64
8.4.2	Switching off	64
8.4.3	Observe back pressure display	65
8.4.4	Switch off control voltage	65
8.4.5	Switch the main switch off	65
8.4.6	Switch off the on-site power disconnecting device	66
8.4.7	Securing against unauthorized starting	66
8.5	Shutting down machine in the event of an emergency	66
8.6	Confirming alarm and warning messages	68
8.6.1	Confirming and acknowledging alarm messages	68
8.6.2	Confirming and acknowledging warning messages	68
8.7	Cleaning the machine after operation	68
8.7.1	Cleaning the exterior of the machine	69
8.7.2	Cleaning the machine's interior	70
8.8	Operating the options	71
8.8.1	Note the automatic operating modes	72
8.8.2	Operating the tool lubricator	73
8.8.3	Using the hose reel	75
8.8.4	Empty condensate collector after operation	77
9	Fault Recognition and Rectification	
9.1	Basic instructions	78
9.2	Analysing SIGMA CONTROL SMART messages	78
9.2.1	Fault message on the controller (machine off)	78

9.2.2	Warning message at the controller	80
9.3	Drive motor faults and alarms	81
9.3.1	Drive motor refuses to start or stops	81
9.4	Compressor faults and alarms	82
9.4.1	Working pressure too high	82
9.4.2	Working pressure too low.	83
9.4.3	Pressure relief valve blowing off	83
9.4.4	Machine overheating	83
9.4.5	Too much oil residue in the compressed air	84
9.4.6	Oil flows from the compressor air filter after shutdown	85
10	Maintenance	
10.1	Ensuring safety	86
10.2	Note the maintenance messages on the controller	87
10.2.1	Evaluating the maintenance message	88
10.2.2	Concluding the maintenance	88
10.3	Following the maintenance plans	88
10.3.1	Logging maintenance work	88
10.3.2	Regular maintenance tasks	89
10.4	Motor maintenance	92
10.4.1	Maintaining the motor bearings of the drive motor	92
10.4.2	Fan motor maintenance	94
10.5	Compressor Maintenance	94
10.5.1	Check the cooling oil level	95
10.5.2	Cooling oil filling and topping up	96
10.5.3	Changing the cooling oil	97
10.5.4	Replacing the compressor oil filter	101
10.5.5	Oil separator tank dirt trap maintenance	103
10.5.6	Changing the oil separator cartridge	104
10.5.7	Compressor air filter maintenance	108
10.5.8	Check pressure relief valves	111
10.5.9	Checking the excessive temperature shut-down function	111
10.5.10	Check the EMERGENCY STOP device	111
10.6	Oil cooler maintenance	113
10.6.1	Clean the oil cooler.	114
10.7	Checking/replacing hose lines	115
10.7.1	Replace the pressure hoses of the compressor	116
10.8	Maintenance of rubber sealing strips	116
10.9	Maintenance of Optional Items	116
10.9.1	Tool lubricator maintenance	117
10.9.2	Maintaining the compressed air aftercooler	118
10.9.3	Maintenance of the centrifugal separator dirt trap	120
10.9.4	Inspecting/maintaining the condensate drain	122
10.9.5	Draining liquid accumulation within the machine	124
10.10	Documenting maintenance and service work	125
11	Spares, Operating Materials, Service	
11.1	Note the nameplate	126
11.2	Ordering consumable parts and operating fluids/materials	126
11.3	KAESER AIR SERVICE	126
11.4	Replacement parts for service and repair	127
12	Decommissioning, Storage and Transport	
12.1	De-commissioning	170
12.1.1	Temporary de-commissioning	170
12.1.2	Long-term de-commissioning	170

12.2	Transport	171
12.2.1	Safety	172
12.2.2	Transporting with a crane	172
12.2.3	Transport with a forklift truck	173
12.2.4	Transported as load	175
12.3	Storage	176
12.4	Disposal	177
13	Annex	
13.1	Marking	178
13.2	Pipeline and instrument flow diagram (P+I diagram)	178
13.3	Dimensional drawings	182
13.3.1	Dimensional drawing – chassis	182
13.3.2	Dimensional drawing – chassis	184
13.3.3	Dimensional drawing – chassis	186
13.3.4	Dimensional drawing – chassis	188
13.3.5	Dimensional drawing – chassis	190
13.3.6	Dimensional drawing, stationary version	192
13.3.7	Dimensional drawing, stationary version	194
13.4	Electrical Diagram	196
13.5	Lighting and signalling system connection	227

Fig. 1	Location of safety signs	26
Fig. 2	Overview of bodywork	30
Fig. 3	Side view (canopy removed)	31
Fig. 4	Machine overview	32
Fig. 5	Overview of the SIGMA CONTROL SMART control panel	34
Fig. 6	Compressed air options	36
Fig. 7	Tool lubricator	37
Fig. 8	Container for security chain	38
Fig. 9	Minimum distance from excavations and slopes	42
Fig. 10	Minimum distance to walls	42
Fig. 11	Fitting the Mounting Pads.	45
Fig. 12	CEE attachment unit plug/cable bushing	51
Fig. 13	Brief instructions on starting procedure	56
Fig. 14	Connect the power supply cable	57
Fig. 15	Arrangement of operating unit SIGMA CONTROL SMART and fittings	58
Fig. 16	SIGMA CONTROL SMART instrument panel keys and displays	59
Fig. 17	Set the pole changer/load isolating switch	59
Fig. 18	Set the «controller ON/OFF» key	60
Fig. 19	Ready display	60
Fig. 20	Quick access adjustment compressed air output pressure	62
Fig. 21	Setting the compressed air discharge pressure	63
Fig. 22	Brief instructions "Switching the machine off"	64
Fig. 23	Switching off in an emergency	67
Fig. 24	Setting the tool lubricator	73
Fig. 25	Hose reel	76
Fig. 26	Locations of grease nipples	93
Fig. 27	Grease bearings of drive motor	94
Fig. 28	Check the cooling oil level	95
Fig. 29	Plugs, oil separator tank	98
Fig. 30	Draining the compressor cooling oil	99
Fig. 31	Change the oil filter	101
Fig. 32	Oil separator tank dirt trap maintenance	103
Fig. 33	Changing the oil separator cartridge	106
Fig. 34	Maintenance indicator	109
Fig. 35	Compressor air filter maintenance	110
Fig. 36	Cleaning the filter element	110
Fig. 37	Check the EMERGENCY STOP device	112
Fig. 38	Clean the oil cooler.	114
Fig. 39	Tool lubricator maintenance	117
Fig. 40	Cleaning the compressed air aftercooler	119
Fig. 41	Cleaning the dirt trap	121
Fig. 42	Preparing for transport using a forklift truck	173
Fig. 43	Lifting the machine with a forklift truck	174
Fig. 44	Transport with a forklift truck	175
Fig. 45	Guys to secure the freight	176
Fig. 46	Marking	178

Tab. 1	Danger levels and their definition (personal injury)	1
Tab. 2	Danger levels and their definition (damage to property)	2
Tab. 3	Nameplate	4
Tab. 4	Options label	5
Tab. 5	Air treatment options	5
Tab. 6	Tool lubricator option	5
Tab. 7	Compressed air distributor option	5
Tab. 8	Low temperature equipment option	6
Tab. 9	Lighting options	6
Tab. 10	Options for stationary frame design	6
Tab. 11	Automatic start/stop	6
Tab. 12	DUAL control	7
Tab. 13	Closed floor pan option	7
Tab. 14	Hose reel option	7
Tab. 15	Optional anti-theft device	7
Tab. 16	Pedestrian protection option	7
Tab. 17	Total power and permissible tolerance limits of the machine's rated voltage	7
Tab. 18	Guaranteed sound power level	8
Tab. 19	Emission sound pressure level	8
Tab. 20	Tightening torques for screws (property class 8.8, coefficient of friction $\mu = 0,12$)	8
Tab. 21	Torque cover fixing screws oil separator tank	8
Tab. 22	Torques for lifting eye screws	9
Tab. 23	Ambient conditions	9
Tab. 24	Mass of the machine	10
Tab. 25	Working gauge pressure and volumetric flow rate	10
Tab. 26	Compressed air distributor	10
Tab. 27	Interrelation between compressed air treatment and compressed air quality	10
Tab. 28	Relief valve activating pressure	11
Tab. 29	Typical airend discharge temperature with thermostatic valve	11
Tab. 30	Airend discharge temperature with thermostatic valve and anti-frost control	11
Tab. 31	Switching to LOAD mode	11
Tab. 32	Machine temperature	12
Tab. 33	Cooling oil recommendation	12
Tab. 34	Cooling oil recommendation (food processing)	12
Tab. 35	Cooling oil charge	13
Tab. 36	Drive motor make	13
Tab. 37	Drive motor performance data	13
Tab. 38	Drive motor start mode	14
Tab. 39	Connection types at 400 V	14
Tab. 40	Connection types at 230 V	14
Tab. 41	Fan motor performance data	15
Tab. 42	Road breaker lubricant recommendation	15
Tab. 43	Ambient conditions, low temperature equipment	15
Tab. 44	Insulated pressure hoses	15
Tab. 45	Cooling oil for low temperature ranges	15
Tab. 46	Measuring point connection	16
Tab. 47	Inspection intervals according to Ordinance on Industrial Health and Safety	19
Tab. 48	Danger areas	24
Tab. 49	Category and Performance Level	25
Tab. 50	Safety signs	26
Tab. 51	Instrument panel keys and displays	35
Tab. 52	Stationary machines	40
Tab. 53	Maximum inclined position	42
Tab. 54	Design of supply cable cross-sections and fuses	47

Tab. 55	Measures for re-commissioning the compressor after a long period of storage	49
Tab. 56	Installation conditions checklist	50
Tab. 57	Interface of electrical supply line	50
Tab. 58	Main switch depending on type design	51
Tab. 59	Safety sign for automatic starting	53
Tab. 60	Safety sign for automatic starting	54
Tab. 61	Main switch of the machine	65
Tab. 62	High-pressure cleaner setting values	70
Tab. 63	Fault messages and troubleshooting concerning the drive engine	78
Tab. 64	Fault messages and troubleshooting concerning "compressor fault"	79
Tab. 65	Fault messages and troubleshooting concerning "controller fault"	79
Tab. 66	Fault messages and troubleshooting concerning "General faults"	80
Tab. 67	Warning messages and troubleshooting concerning "compressor warning"	81
Tab. 68	Warning messages and troubleshooting concerning "General warning"	81
Tab. 69	Fault: "Drive motor refuses to start or stops"	81
Tab. 70	Fault: working pressure too high	82
Tab. 71	Fault: working pressure too low	83
Tab. 72	Fault: pressure relief valve blowing off	83
Tab. 73	Fault: machine overheating	83
Tab. 74	Alarm: "Too much oil residue in the compressed air"	84
Tab. 75	Alarm: "Oil flows from the compressor air filter after shutdown"	85
Tab. 76	Advise others that the machine is being serviced.	86
Tab. 77	Maintenance messages and required actions	88
Tab. 78	Maintenance intervals and regular maintenance tasks	89
Tab. 79	Regular machine maintenance tasks	89
Tab. 80	Regular maintenance task options	91
Tab. 81	Oil drain valve	99
Tab. 82	Shut-down at excessive temperature	111
Tab. 83	Maintenance log	125
Tab. 84	Compressor consumables	126
Tab. 85	Drive motor consumables	126
Tab. 86	"Temporarily decommissioned" information notice	170
Tab. 87	Long-term decommissioning checklist	171
Tab. 88	Text for the long-term decommissioned information notice	171

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
- Operating manual for SIGMA CONTROL SMART.
- Chassis documentation (where applicable)

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

1 Regarding this document

1.4 Symbols and labels

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 relate the information in this service manual. Options fitted to the machine are listed on the options label (code letters).

The nameplate is to be found:

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



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

MOBILAIR M50E

Material No.

Serial no.

Options fitted

—	—	—	—	—
ea	—	—	—	—
fa	—	—	—	—
ha	—	hc	—	—
—	—	—	—	—
ba	bb	bc	—	—
la	lb	—	—	—
—	—	—	—	—
oa	oe	—	—	—
—	—	—	—	ne
—	—	—	—	—
r1	—	r3	r4	r5
ta	tb	tc	te	—
sf	sg	ua	—	—

* {
r1= rb; rc; rd, rg
r3= rm; ro
r4= rr; rs; rt
r5= rw; rx

02-M0277

* r1 - r5 = place holders for chassis options

Tab. 4 Options label

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

2.2.1 Option da Air treatment

Option	Option code	Provided?
Aftercooler and cyclone separator	da	
—	—	

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	Provided?
Insulated control air lines	ba	
–	–	

Tab. 8 Low temperature equipment option

2.2.5 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. 9 Lighting options

2.2.6 Option rw,rx Frame design for stationary machines



Frame design for stationary machines are defined by option designations as follows:

Frame:

Frame	Option code	Available?
Stationary (rw, rx):		
on skids	rw	
on frame	rx	

Tab. 10 Options for stationary frame design

2.2.7 Option ob Automatic start/stop

Option	Option code	Provided?
Automatic start/stop	ob	

Tab. 11 Automatic start/stop

2 Technical Specifications

2.3 Machine (without options)

2.2.8 Option cd DUAL Control

Option	Option code	Provided?
DUAL control	cd	

Tab. 12 DUAL control

2.2.9 Option oe Sealed floor pan

Option	Option code	Available?
Sealed floor pan	oe	

Tab. 13 Closed floor pan option

2.2.10 Option ua Hose reels

Option	Option code	Available?
Hose reels	ua	

Tab. 14 Hose reel 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 Total power of the machine

Drive motor model	400 V model	230 V model
Total power of the machine [kW]	32	32

2 Technical Specifications

2.3 Machine (without options)

Drive motor model	400 V model	230 V model
Permissible tolerance limits of the machine's rated voltage [V]	360–440	207–253

Tab. 17 Total power and permissible tolerance limits of the machine's rated voltage

2.3.2 Noise emission

Guaranteed sound power level:

Model	M50E
Guaranteed sound power level* [dB(A)]	98
* To Directive 2000/14/EC	

Tab. 18 Guaranteed sound power level

Emission sound pressure level

Model	M50E
Emission sound pressure level* [dB(A)] (according to EN ISO 11203:)	81.0
Measurement distance: d = 1 m	
Logarithmic surface ratio: Q2 = 16.9 dB(A)	
** Calculated from the guaranteed sound power level (2000/14/EC Directive, Sound Emission Standard ISO 3744)	

Tab. 19 Emission sound pressure level

2.3.3 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. 20 Tightening torques for screws (property class 8.8, coefficient of friction $\mu = 0,12$)

2.3.3.1 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	M10	46

Tab. 21 Torque cover fixing screws oil separator tank

2.3.3.2 Torques for lifting eye

Recommended values for screws corresponding to the strength category:

2 Technical Specifications

2.4 Chassis

Screws	Strength category	Thread	Torque [Nm]
Hex-head screw	8.8	M12	80
Stud	8.8	M12	80

Tab. 22 Torques for lifting eye screws

2.3.4 Ambient conditions

Positioning	Limit value
Maximum altitude amsl* [m]	1000
Minimum ambient temperature [°C]	–10
Maximum ambient temperature [°C]	+40

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

Tab. 23 Ambient conditions

2.3.5 Additional information according to the machine's operating licence

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

- Dimensions,
- track width,
- Footprint

are provided in the dimensional drawings, chapter 13.3.



The dimensional drawing also shows the position of the following inlets and outlets:

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

2.4 Chassis

2.4.1 Chassis options

- Chassis instructions are found in the separate chassis documentation.

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. 24 Mass of the machine

2.6 Compressor

2.6.1 Working gauge pressure and volumetric flow rate

Definition of volumetric flow: Constant delivery volume relative to intake conditions

Maximum working pressure [bar]	7	10.0	–	–
SIGMA airend	191	180	–	–
Flow rate [m³/min]	5.0	3.8	–	–

Flow rate as per ISO 1217:2009. Annex C

Tab. 25 Working gauge pressure and volumetric flow rate

2.6.2 Compressed air outlet

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

Tab. 26 Compressed air distributor

2.6.3 Air quality at the compressed air outlets



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

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
ea / ec	Tool lubricator	Lubricated	E

Tab. 27 Interrelation between compressed air treatment and compressed air quality

2.6.4 Pressure relief valve

Maximum working pressure: see machine nameplate

Maximum working overpressure [bar]	7	10.0	–	–
Relief valve activating pressure* [bar]	9.5	13	–	–

*The pressure relief valve is fitted to the oil separator tank.

Tab. 28 Relief valve activating pressure

2.6.5 Temperature

Overview:

- Thermostatic valve
- Thermostatic valve with anti-frost control
- LOAD operation with required airend discharge temperature
- Safety shut-down at maximum airend discharge temperature

2.6.5.1 Thermostatic valve

A thermostatic valve regulates the compressor temperature.

Machine temperature	Value
Typical airend discharge temperature [°C] during operation	75 100

Tab. 29 Typical airend discharge temperature with thermostatic valve

2.6.5.2 Thermostatic valve with Anti-Frost Control

A thermostatic valve with anti-frost control regulates the temperature level of the machine depending on the ambient temperature.

Temperature	Value	
Ambient temperature [°C]	< 10	20
Airend discharge temperature [°C]	90	60–90

Tab. 30 Airend discharge temperature with thermostatic valve and anti-frost control

2.6.5.3 LOAD operation with required airend discharge temperature

Airend discharge temperature for LOAD mode	Value
Required airend discharge temperature [°C] for switching to LOAD mode	20

Tab. 31 Switching to LOAD mode

2.6.5.4 Safety shut-down at maximum airend discharge temperature

Machine temperature	Value
Maximum airend discharge temperature [°C] with automatically resulting safety shut-down	117

Tab. 32 Machine temperature

2.6.6 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. 33 Cooling oil recommendation

Cooling oils for applications in food processing

	SIGMA FLUID	
	FG-460	FG-680
Description	Synthetic oil	Synthetic oil

2 Technical Specifications

2.7 Drive motor

	SIGMA FLUID	
	FG-460	FG-680
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)
Density at 15 °C	0.842 g/cm ³ (ASTM D1298)	0.854 g/cm ³ (ASTM D1298)
Pour point:	–39 °C (ASTM D97)	–39 °C (ASTM D97)

Tab. 34 Cooling oil recommendation (food processing)

2.6.7 Cooling oil charge

Cooling oil	Fluid volume [l]
Machine	9.0

Tab. 35 Cooling oil charge

2.7 Drive motor

2.7.1 Make

Drive motor manufacturer	Siemens
400 V model	1LA9189–2XA96–ZN18
230 V model	1LA9189–2XA96–2N22

Tab. 36 Drive motor make

2.7.2 Rated power of drive motor

Rated voltage [V]	400 / 3 / 50 Hz	230 / 3 / 50 Hz
Rated voltage tolerance [%]	±10	±10
Rated power [kW]	25	25
Rated speed [rpm]	2970	2970

2 Technical Specifications

2.7 Drive motor

Rated voltage [V]	400 / 3 / 50 Hz	230 / 3 / 50 Hz
Rated voltage tolerance [%]	±10	±10
Degree of protection, drive motor	IP 55	IP 55

Tab. 37 Drive motor performance data

2.7.3 Drive motor start mode

Rated voltage [V]	400 / 3 / 50 Hz	230 / 3 / 50 Hz
Start configuration	Star-delta start	Star-delta start
—	—	—

Tab. 38 Drive motor start mode

2.7.4 Electrical connection to machine

Rated voltage [V]	400	400
Connection type	Plug-in connection	Direct connection/clamped connection
Component	CEE add-on socket	Terminal strip
Fuse protection [A]	63	63
required cross-section supply cable [mm ²]	5x16	5x16
— ≙ not present		

Tab. 39 Connection types at 400 V

Rated voltage [V]	230	230
Connection type	Plug-in connection	Direct connection/clamped connection
Component	CEE add-on socket	Terminal strip
Fuse protection [A]	—	100
required cross-section supply cable [mm ²]	—	4x35
— ≙ not present		

Tab. 40 Connection types at 230 V



The following fusing components are recommended:

- gG class safety fuses
- Automatic circuit breakers with C characteristic

2.8 Fan motor**2.8.1 Fan motor rated power**

Rated voltage [V]	400 / 3 / 50 Hz	230 / 3 / 50 Hz
Rated power [W]	210	210
Rated speed [rpm]	2580	2580
Degree of protection, drive motor	IP 54	IP 54

Tab. 41 Fan motor performance data

2.9 Options**2.9.1 Option ea, ec
Tool lubricator**

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

Tab. 42 Road breaker lubricant recommendation

**2.9.2 Option ba
Low temperature equipment****2.9.2.1 Ambient conditions**

Installation	Limit value
Maximum elevation ASL* [m]	1000
Minimum ambient temperature [°C]	-20
Maximum ambient temperature [°C]	+40

* Higher altitudes are permissible only after consultation with the manufacturer

Tab. 43 Ambient conditions, low temperature equipment

2.9.2.2 Insulated hose lines

Name	Material
Insulated pressure hoses for control air	Polyamide

Tab. 44 Insulated pressure hoses

2.9.2.3 Cooling oil for low temperature ranges

Name	Material
Cooling oil	S-460

Tab. 45 Cooling oil for low temperature ranges

2.9.3 Option cd
Measuring point connection

Name	Value
Hose coupling [“]	G 1/4
Pressure transducer [bar / mA]	0–16 / 4–20

Tab. 46 Measuring point connection

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 or 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, §14.
- 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.

3 Safety and Responsibility

3.5 Dangers

- 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	Inspecting 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. 47 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.

3.5 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 information provided here explains how to counter the various types of danger that can arise during machine operation.

Electricity

Touching voltage-carrying components can result in electric shocks, burns or even 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.
- Before commissioning or re-commissioning the machine, the user must ensure adequate protection against electric shock from direct or indirect contact.
- Before starting any work on electrical equipment:
Switch off and lock out the user's power supply isolating device and verify the absence of voltage..

- Switch off all other external power sources.
These could be connections to floating contacts for example.
- Use fuses corresponding to machine power.
- Regularly check that all electrical connections are tight and in perfect condition.

Fire and explosion

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

- Allow no open flames or sparks at the place of use.
- Make sure that the ambient temperature at the machine's place of use is within permissible limits.
- Never refill cooling oil when the machine is running.
- Wipe up spilled cooling oil immediately.
- Provide a fire extinguisher in the immediate vicinity.

Forces of compression

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

- Wait until the compressor has automatically vented (check The pressure gauge 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 no longer ensured.

Spring forces

Sudden release of springs under tension can cause serious injuries.

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

- Do not open or dismantle any valves.

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 and/or for the processing of foodstuffs.
- Use foodstuff-compatible cooling oil whenever compressed air is to come into contact with foodstuffs.

Rotating components

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

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

- Properly install all safety devices and panels before restarting the machine.

Select temperature

- Avoid contact with hot components.
These include: drive motor, airend, oil and compressed air lines, cooler and oil separator tank.
- 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 pressure relief valve blowing off 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 oils, lubricants and chemical substances.
- Avoid contact with skin and eyes.
- Do not inhale oil mist and oil vapours.
- Do not eat or drink while handling oil, cooling and lubricating fluids.
- 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. Unsuitable spare parts compromise the safety of the machine.
- Use only genuine KAESER replacement parts on pressure bearing parts.

Conversion or modification of the machine

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

- Do not convert or modify the machine!
- Do not install any non-approved additional components.

- Do not make any changes to the machine that will increase its weight beyond the permissible limit and/or endanger its safe use or transportation. 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 information will provide you with the necessary code of conduct to ensure 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

In order to prevent accidents, the mass and size of the machine require safety measures to be taken during its transport.

- 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.

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

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

- Do not position the machine directly against a wall. A build-up of heat caused by hot exhaust air 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 2014/34/EU "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.
 - Chock the wheels to prevent unwanted movement.
 - 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.

- Maintenance work should be carried out by authorised personnel only.
- Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.
- Switch off the machine and lock out the supply disconnecting device.
- Wait until the compressor has automatically vented (check The pressure gauge must read 0 bar!)
- Then open the outlet valve carefully to ensure that the line between the minimum pressure / check valve and the compressed air outlet is vented.
- Allow the machine to cool down.
- Do not open the body while the machine is switched on.
- Do not open or dismantle any valves.

3 Safety and Responsibility

3.5 Dangers

- Use only spare parts approved by KAESER for use in this machine.
 - Carry out regular inspections:
 - for visible damage and leakage,
 - of safety devices,
 - of 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.
 - 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.
- 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.

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 applicable environmental regulations.
These include the cooling oil and other lubricants.
- 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!

Task	Danger area	Authorized 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. 48 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 Service life of safety functions

Pursuant to ISO 13849-1:2016, Category and Performance Level (PL) of the machine's safety functions have been analysed and assessed:

Safety function	Category	Performance Level
Safety shut-down due to excessive airend discharge temperature	2	b
EMERGENCY STOP device	1	c

Tab. 49 Category and Performance Level

The safety-relevant components of the safety functions are designed for a working life of 20 years. The working life starts with the commissioning, and is not extended by times during which the machine was not in use.

The following components are affected:

- Resistance thermometer (Pt1000 sensor with signal transducer for measuring the discharge temperature)
- EMERGENCY STOP control device
- Mains contactor

1. The components of the safety functions must be replaced by KAESER SERVICE after a working life of 20 years.
2. Have the KAESER SERVICE check the reliability of the safety functions.

3.8 Safety signs

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

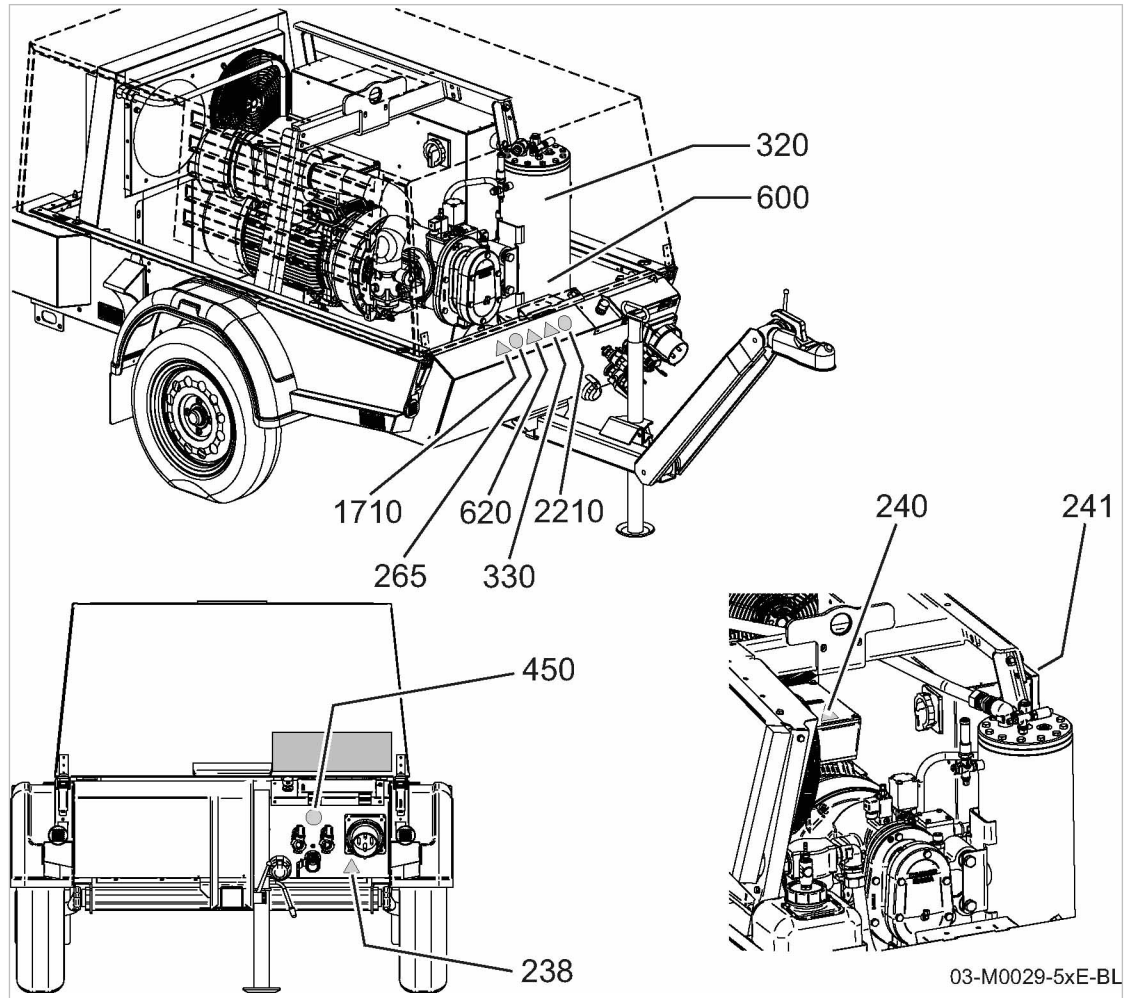


Fig. 1 Location of safety signs

Item	Sign	Meaning
238		Electric arc! Risk of fatal injury when disconnecting network supply line under load. ➤ Switch off the machine. ➤ Wait until the drive motor stands still. ➤ Disconnect CEE coupling.
240/241*		Electric voltage! Danger of fatal injury from contact with electrically live components. ➤ Isolate all phases of the main power supply. ➤ Lock them out. ➤ Verify the absence of any voltage.

* Location within the machine

3 Safety and Responsibility

3.9 Emergencies

Item	Sign	Meaning
265		Personal injury or damage to the machine due to incorrect operation! ➤ Read and understand the operating manual and all safety signs before switching on this machine.
310/2210 311/2211		It is forbidden to operate the machine with open canopy or cover panels! Personal injury or machine damage can result from an open machine enclosure. ➤ Operate only with the enclosure fully closed. ➤ Transport only with the enclosure fully closed.
320*		Loud noise and oil mist! Hearing damage and burns from relief valve blow off. ➤ Wear hearing protectors and protective clothing. ➤ Close the canopy. ➤ Work with caution.
330 331		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.
450/2200		Loud noise and compressed air blast! Damage to hearing and injury if ball valve is opened without a compressed air hose being connected. ➤ Connect a compressed air hose. ➤ Open the ball valve.
600*		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.
620 621		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.
1710		Risk of injury caused by an automatic machine start! ➤ Prior to opening the enclosure, switch off «main switch» of the power disconnecting device and secure against unintentional reactivation.

* Location within the machine

Tab. 50 Safety signs

3.9 Emergencies

3.9.1 Correct fire fighting

Suitable measures

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

- Keep calm.
- Give the alarm.
- Shut down the machine from the instrument panel if possible.
- Make machine volt-free (disconnect from mains) if possible.
- Warn and move endangered personnel to safety.
- Help incapacitated persons.
- Close the canopy.
- When trained accordingly: Attempt to extinguish the fire.

Extinguishing substances

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

3.9.2 Injury from handling operating fluids/materials

The following operating fluids/materials are in the machine:

- Cooling oil
- Tool oil (option)
- Lubricating oils
- Lubricating greases

Eye contact:

Oil, greases and other fluids/materials can cause irritation.

- Rinse open eyes thoroughly for a few minutes under running water.
- Seek medical advice for persistent irritation.

Skin contact:

Oil, greases 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.

Inhalation:

Oil mist may make breathing difficult.

- Clear air passages of oil mist.
- Seek medical help if difficulty with respiration continues.

Ingestion:

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

3.10 Warranty

This 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,
- arbitrary 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 Environmental protection

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

- Do not allow operating materials/condensate to escape into the environment or into the sewage system!
- Store and dispose of all operating materials, condensate and replacement parts in accordance with applicable environmental regulations.
This applies particularly to cooling oil and parts contaminated with cooling oil or other fluids/materials.
- Observe relevant national regulations.

Tool oil (option) is another operating material for example.

4 Design and Function

4.1 Bodywork

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

The bodywork has several functions when it is closed:

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

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

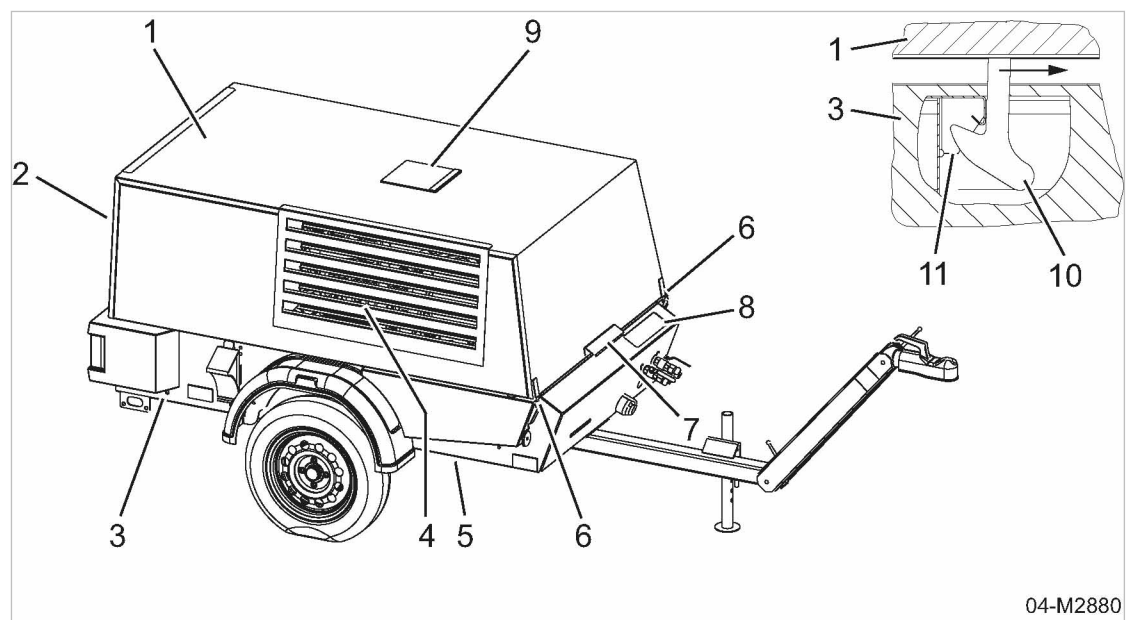


Fig. 2 Overview of bodywork

- | | |
|---------------------------------|--------------------------|
| ① Canopy | ⑦ Handle |
| ② Cooling air outlet | ⑧ Instrument panel cover |
| ③ Lower body | ⑨ Cover for lifting eye |
| ④ Cooling air inlet | ⑩ Canopy safety catch |
| ⑤ Drive motor cooling air inlet | ⑪ Lock |
| ⑥ Snap fastener | |

The canopy ① can be opened via the handle ⑦ when all of the snap fasteners ⑥ and the canopy safety latch ⑩ are released.

The safety latch is positioned inside the canopy on the right side, next to the handle .

The safety latch can be seen when all snap fasteners are released.

When the safety latch is released (pressed in the direction of the arrow) the canopy should open on its own.

Two spring struts hold the canopy open.

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.

4.2 Machine structure

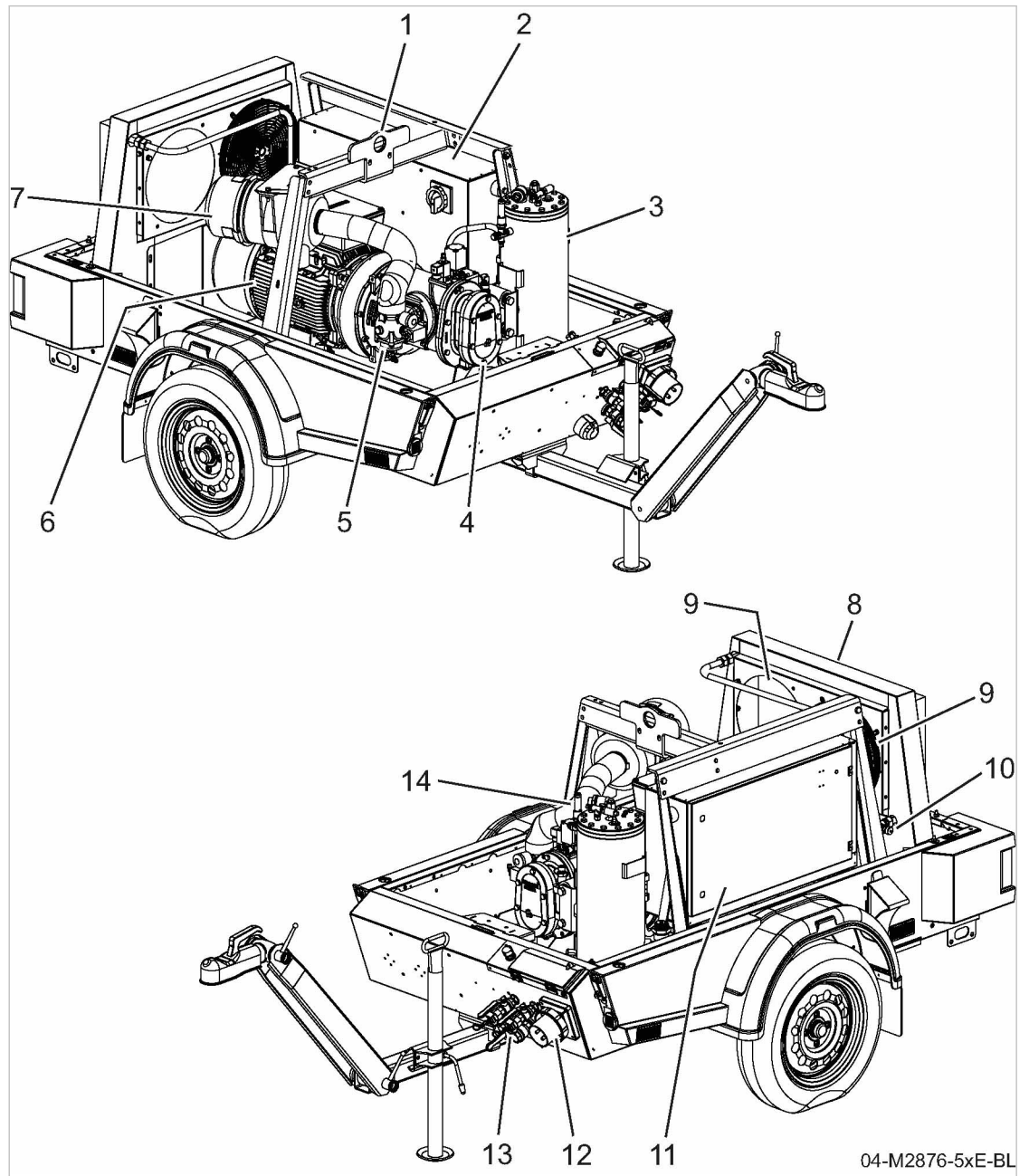


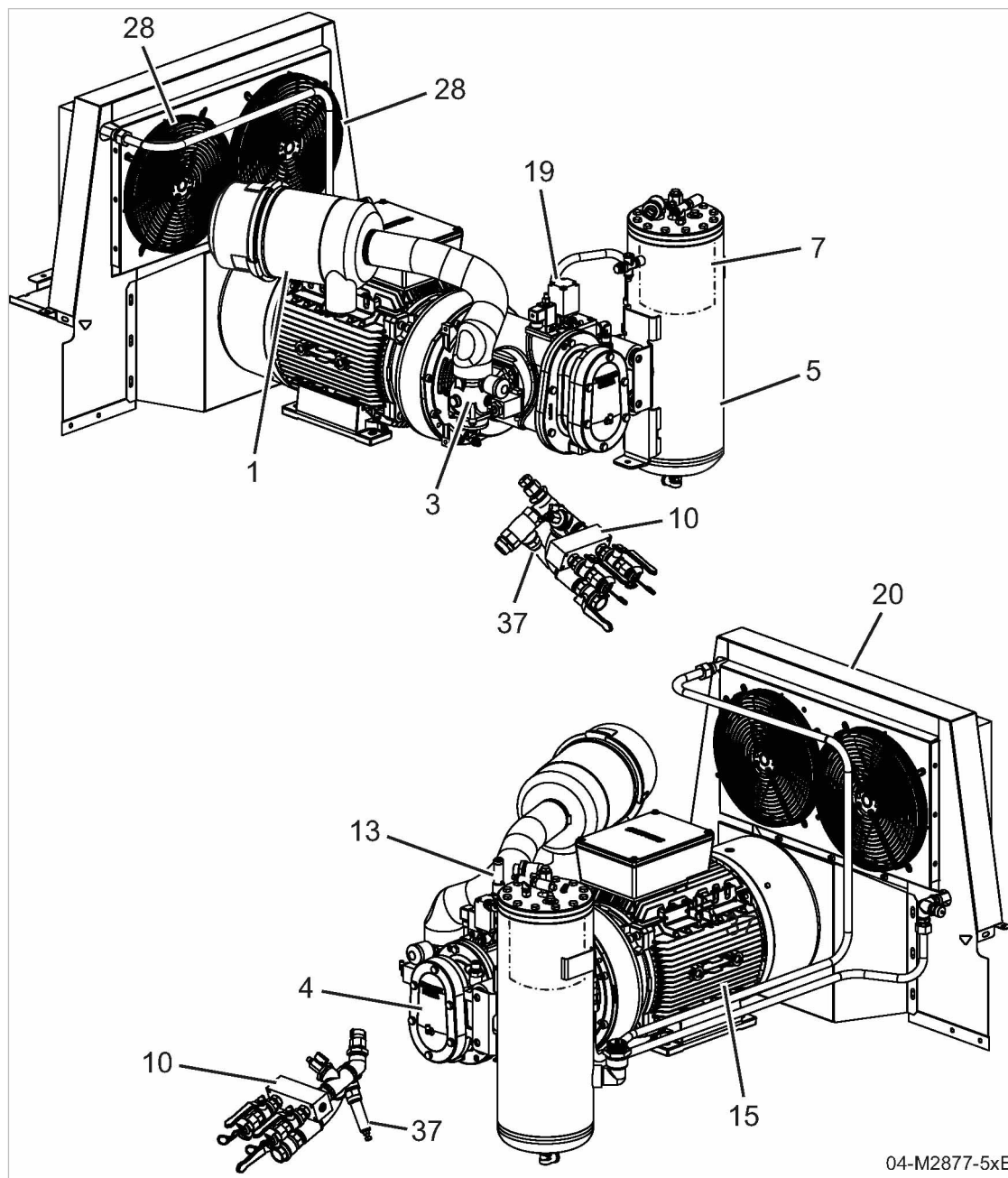
Fig. 3 Side view (canopy removed)

- | | | | |
|---|--------------------|---|--|
| ① | Lifting eye | ⑧ | Oil cooler |
| ② | Control cabinet | ⑨ | Fan |
| ③ | Oil separator tank | ⑩ | Oil drain valve for oil cooler |
| ④ | Airend | ⑪ | Control cabinet door |
| ⑤ | Inlet valve | ⑫ | CEE add-on socket |
| ⑥ | Drive motor | ⑬ | Compressed air outlet of shut-off valves |
| ⑦ | Air filter | ⑭ | Pressure relief valve |

4.3 Machine function

Machine function (without options)

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



04-M2877-5xE

Fig. 4 Machine overview

- | | |
|---------------------------|--------------------------------|
| ① Air filter | ⑬ Pressure relief valve |
| ③ Inlet valve of | ⑮ Drive engine |
| ④ Air end | ⑰ Thermostatic valve |
| ⑤ Oil separator tank | ⑳ Oil cooler |
| ⑦ Oil separator cartridge | ㉘ Fan |
| ⑩ Air distributor | ㉟ Minimum pressure check 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 the electric drive motor (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. For machines with Anti-Frost Control, the ambient temperature is considered.

Compressed air, freed of cooling oil in the oil separator tank (5), flows via 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 two built-in fans (28) of the oil cooler (20) ensure optimum cooling of all components within the closed body. The flow direction of the two oil cooler fans determine the cooling air flow of the machine.

4.4 Operating modes and control modes

4.4.1 Machine operating modes

The machine operates in the following modes:

- **WARM-UP**
 - Discharge temperature cold
 - Switching the machine to LOAD mode blocked
- **IDLE**
 - Discharge temperature warm
 - Switching the machine to LOAD mode enabled
- **LOAD**
 - The inlet valve is open.
 - The airend delivers compressed air.
- **RUN-ON**
 - forced IDLE mode after switching off the motor from LOAD mode.
 - Run-on time is shown on the display of SIGMA CONTROL SMART.
- **STANDSTILL**
 - The inlet valve closes
 - The venting valve opens to de-pressurise the machine.
 - The drive motor comes to a standstill.

4.4.2 PROPORTIONAL control mode

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 power consumption of the drive motor. The load and power consumption of the drive motor rise and fall with the air demand.

4.5 Safety devices

4.5.1 Monitoring functions with shut-down

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

SIGMA CONTROL SMART saves the alarm message in the message memory.

Further information Further information on alarm messages at SIGMA CONTROL SMART 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 used for immediate shut-down of the machine. The drive motor comes to an immediate stop. The pressure system is vented.
- Pressure relief valves:
Pressure relief valves protect the system against unacceptable pressure rise. They are factory set.
- Housing and covers for moving parts and electrical connections:
Protect against accidental contact.

4.6 SIGMA CONTROL SMART control panel

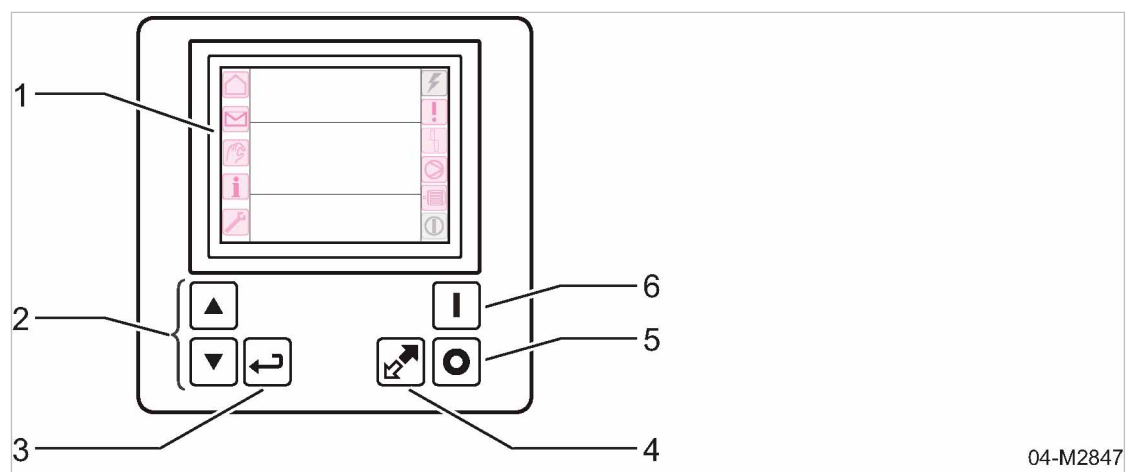


Fig. 5 Overview of the SIGMA CONTROL SMART control panel

Item	Symbol	Description	Function	Background LED indicator
1	–	Indicator field or display	Graphical display.	–
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 submenu 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	Starts the machine.	Flashes when ready to start. Lights continuously, when the drive motor is running.

Tab. 51 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 Options

The options available for your machine are described below.

4.7.1 Option da 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.

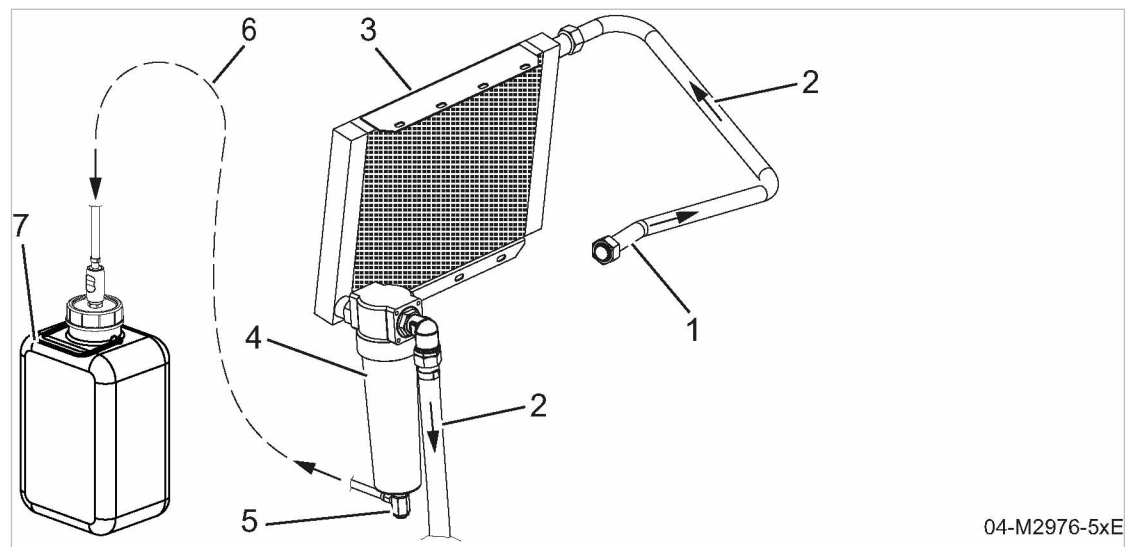


Fig. 6 Compressed air options

- | | |
|-------------------------|------------------------|
| ① Compressed air pipe | ⑤ Dirt trap |
| ② Direction of flow | ⑥ Condensate hose line |
| ③ Aftercooler | ⑦ Condensate collector |
| ④ Centrifugal separator | |

4.7.1.1 Option da Aftercooler

The compressed air aftercooler lowers the compressed air temperature to only 5 K to 10 K above the ambient temperature. Most of the moisture carried in the air is removed in the aftercooler.

4.7.1.2 Option da Centrifugal separator

The centrifugal separator sets the compressed air that still contains moisture into centrifugal motion via a swirl vane. The compressed air loses a significant proportion of its residual moisture load as a result of these centrifugal forces. The accumulating condensate falls to the bottom of the centrifugal separator.

4.7.1.3 Option da Dirt trap with condensate hose line

A dirt trap with a condensate hose line is installed beneath the centrifugal separator. Whilst the condensate flows through the dirt trap, existing dirt particles are retained. Subsequently, the condensate flows into the condensate hose line which leads to the condensate collection container.

4.7.1.4 Condensate collector

The condensate generated during air treatment is fed into a condensate collector. The condensate collection container is positioned in a special bracket inside the machine.

- The filling level of the condensate collection container must be checked daily.

- Proper attachment of the condensate hose line to the condensate collection container must be checked daily.
- The condensate collection container must be emptied prior to any transportation of the machine (which can be driven on roads).



Condensate contains contaminants and is harmful to the environment!

In accordance with applicable environmental regulations, accumulated condensate must be stored in special collector tanks. The content of the collector tanks must be properly disposed of at regular intervals.

Further information Check/maintain condensate drainage, see chapter 10.9.4.

4.7.2 Option ea Tool lubricator

Compressed air containing lubricating oil is needed for the lubrication of certain pneumatic tools. The tool lubricator adds lubricant to the compressed air for this purpose.

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

- Minimum lubricant to lubricate the pneumatic tools and prevent corrosion.
- More lubricant for cleaning and to prevent wear in the tools.

The lubricant content can be controlled by a shut-off valve.

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

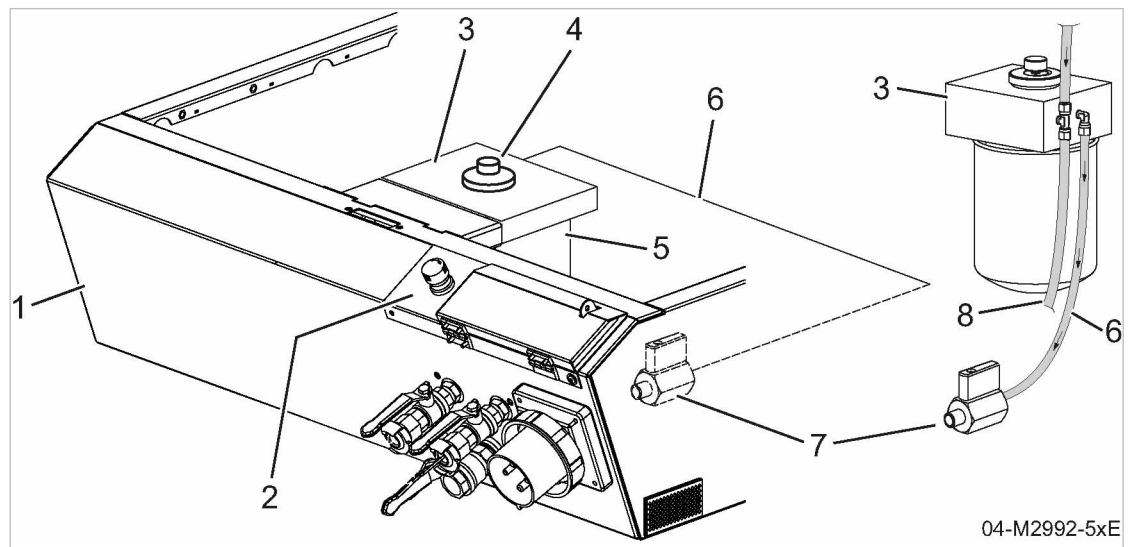


Fig. 7 Tool lubricator

- | | |
|--------------------------------|--------------------------------------|
| ① Machine front side | ⑤ Lubricant container |
| ② «EMERGENCY STOP» push button | ⑥ Air line with additional lubricant |
| ③ Tool lubricator | ⑦ Shut-off ball valve |
| ④ Metering knob | ⑧ Venting line |

Lubricant-free operation of pneumatic tools

Pneumatic tools that must be operated lubricant-free can be damaged by residual amounts of lubricant in the compressed air.



NOTICE

Damage to the pneumatic tools!

- Blow any residual lubricant out of the air line before connecting such a pneumatic tool.

4.7.3 Option oe Closed floor pan option

The machine is fitted with a closed floor pan.

In the event of a leak, all liquids required for the machine's operation are caught in the floor pan. Service openings in the floor pan are closed with plugs. These openings must be tightly re-closed after performing any cleaning work.

4.7.4 Option ua Hose reel option

The machine is provided with an extension hose to allow connection and operation of remote air tools. A hose reel is provided for safe storage of this hose.

4.7.5 Option sf Anti-theft device

The machine is fitted with a security chain as theft protection. Depending on the options installed, the container for the security chain is positioned either inside, or on the front of the machine.

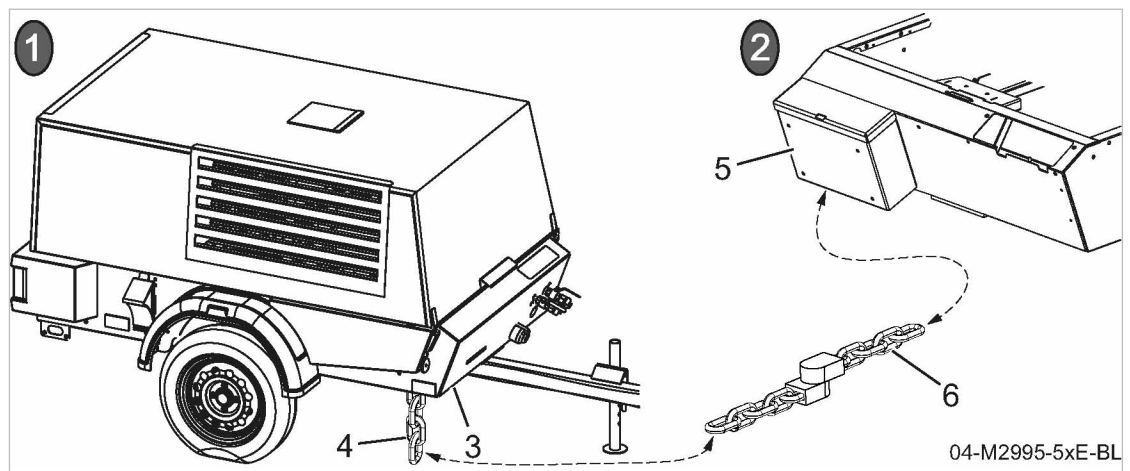


Fig. 8 Container for security chain

- | | |
|--|--|
| ① Machine without compressed air treatment | ④ Security chain (pulled out from container) |
| ② Machine with compressed air treatment | ⑤ Container on the front side of the machine |
| ③ Container inside the machine | ⑥ Security chain |

4.7.6 Automatic operating modes

Overview:

- Automatic start/stop option
 - Floating contacts
- DUAL control option
 - Measuring point connection

**4.7.6.1 Option ob
Start/stop control**

The start/stop control is an automatic operating mode in which a master control system with remote contact demands compressed air from the machine controller.

After the start signal from the master controller has been received, the machine starts automatically. The machine runs through the warm-up phase and automatically switches to LOAD operation.

Further information For setting the start/stop control at the machine controller, see the SIGMA CONTROL SMART operating manual.

Option ob Floating contacts

Floating contacts are provided for the transfer of signals/messages. Information on location, loading capacity and type of message or signal can be found in the wiring diagram.



If the floating relay contacts are connected to an external power source, they may be under power even when the machine is isolated from the supply.

**4.7.6.2 Option cd
DUAL Control**

The DUAL control is a control type which, depending on the compressed air demand, automatically starts the machine and controls the flow rate. When no consumer demands air, the machine is automatically shut down.

When DUAL control is activated and the pressure falls below the cut-in pressure, the SIGMA CONTROL SMART starts the machine. As soon as the specified airend discharge pressure is attained, SIGMA CONTROL SMART switches the machine to LOAD.

SIGMA CONTROL SMART starts the run-on time when the specified cut-out pressure is reached. In run-on time, the machine continues to run in LOAD mode to level the compressed air demand for the application.

Upon expiry of the run-on time, SIGMA CONTROL SMART switches the machine to IDLE. The machine cools down during unloaded IDLE operation. If, during this time, the compressed air pressure lies above the cut-in pressure, SIGMA CONTROL SMART switches the machine to READY (the drive motor stands still).

As soon as the internal machine pressure is reduced and the time set for the restart inhibitor is expired (in consideration of the maximum starting frequency of the drive motor), SIGMA CONTROL SMART again allows restarting. If, after allowing a restart, the compressed air pressure drops below the cut-in pressure, the machine immediately switches to LOAD.

Further information For setting the DUAL control at the machine controller, see the SIGMA CONTROL SMART operating manual.

Option cd Measuring point connection

An additional hose coupling has been installed at the machine enabling measurement of the system pressure of the external compressed air system. This hose coupling is fitted with a pressure transducer at the machine end.

The hose coupling is installed between the compressed air outlet and the CEE add-on device plug and/or the conductor bushing.

4.8 Frame design options for stationary machines

4.8.1 Option rw, rx Chassis types of stationary machines

Option	Designation	Characteristics
rw	Skids	■ 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. 52 Stationary machines

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

5 Installation and Operating Conditions

5.1 Ensuring safety

The conditions in which the machine is installed and operated have a decisive impact on safety. Warning instructions are located directly at a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Compliance with safety instructions

Ignoring safety instructions 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 oil vapours or parts of the machine.
- Do not store flammable 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 in force.
For instance, the requirements of ATEX Directive 2014/34/EU "Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres".
- Keep suitable fire extinguishing agents ready for use.
- Ensure that required ambient conditions are maintained with regard to.

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 sulphide.

5.2 Installation conditions

The installation conditions must be complied with to ensure safe operation of the machine.

- Comply with all instructions.

5.2.1 Minimum distance from excavations and slopes

Precondition A level surface must be available at the installation location

The ground must be firm and capable of bearing the corresponding weight of the machine.

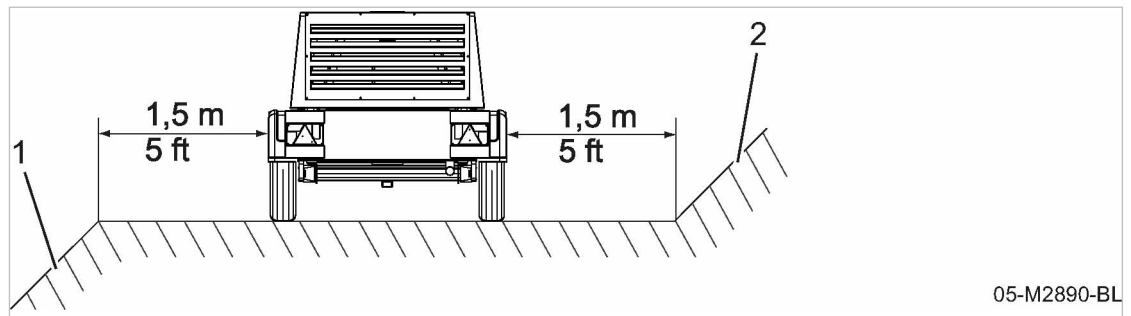


Fig. 9 Minimum distance from excavations and slopes

- ① Excavation
- ② Slope

1. Keep sufficient distance (at least 1.5 metres) from the edges of excavations and slopes, see Fig. 9.
2. Ensure that the machine is as level as possible.

Temporarily, the machine may also be operated in an inclined position, see table 53

Setting up the machine	Value
Maximum inclined position [degree]	15

Tab. 53 Maximum inclined position

3. Machines with option oe (closed floor pan) must always be set up in a level position.
4. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

5.2.2 Minimum distance to walls

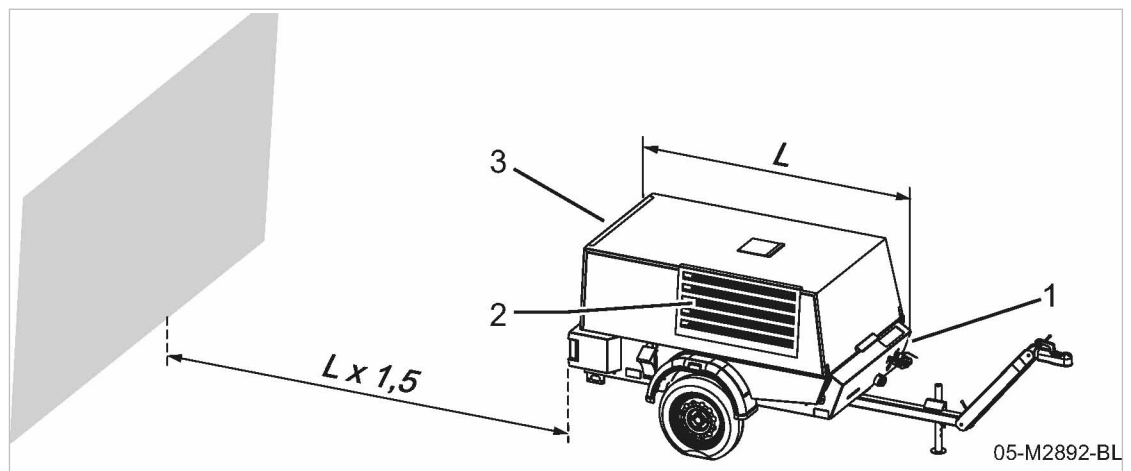


Fig. 10 Minimum distance to walls

- ① Machine
- ② Cooling air inlet
- ③ Cooling air outlet

**1. CAUTION!**

Fire hazard because of heat build-up!

Insufficient distance to walls may well cause heat build-up that could damage the machine.

- Do not position the machine directly against a wall.
- Check that there sufficient ventilation space around the machine.

2. Observe minimum distance for cooling air outlet from the machine to walls, see figure 10.
3. Set up the machine with the corresponding minimum distance.
4. Ensure that there is enough free space all round and above the machine.
5. Keep cooling air inlet and outlet openings free of obstructions so that the air can flow freely through the machine.
6. Do not allow wind to blow into the cooling air outlet.
7. Heated cooling air must not be drawn into the machine.
8. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

5.2.3 Comply with the specified ambient temperature**1. CAUTION!**

Ambient temperature too low!

Frozen condensate and highly viscous compressor oil can cause damage when starting the machine.

- Use low viscosity compressor oil.

2. At ambient temperatures below 0 °C, follow the instructions in chapter 7.10.

6 Installation

6.1 Ensuring safety

Here you will find instructions for a safe installation of the machine.

Warning instructions are located directly at a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Compliance with safety instructions

Ignoring safety instructions can cause unforeseeable dangers!

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

When working on live components

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

- Installation work on electrical equipment may be carried out by authorised electricians only.
- Switch off and lock out the power supply isolating device.
- Verify the absence of any voltage.
- Check that the floating relay contacts are voltage-free.

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 Option rx, rw Fastening a stationary machine

When stationary machines are ordered with bolt-down mounts (anti-vibration elements), a complete set of these bolt-down machine mounts are provided in a separate cardboard box. If the machine mounts have not been purchased with the machine, you may separately order them from KAESER.

Use bolt-down machine mounts to correctly fasten the stationary machine on the installation surface. These machine mounts, designed for the overall machine mass, also ensure a vibration-reducing positioning of the machine.

You may use machine mounts with or without rubber pads. When using machine mounts with rubber pads, take the changed height of the machine into consideration.

Bores for the fastening bolts of the machine mounts are provided in the frame or skid. See the corresponding dimensional drawing in chapter 13.3 to see the precise distances of the bores for your machine.

Select the fastening bolts according to the properties of the installation surface.

Material Bolt-down machine feet (anti-vibration mounts)

Fixing screws

Wrench

Precondition The machine is switched off.

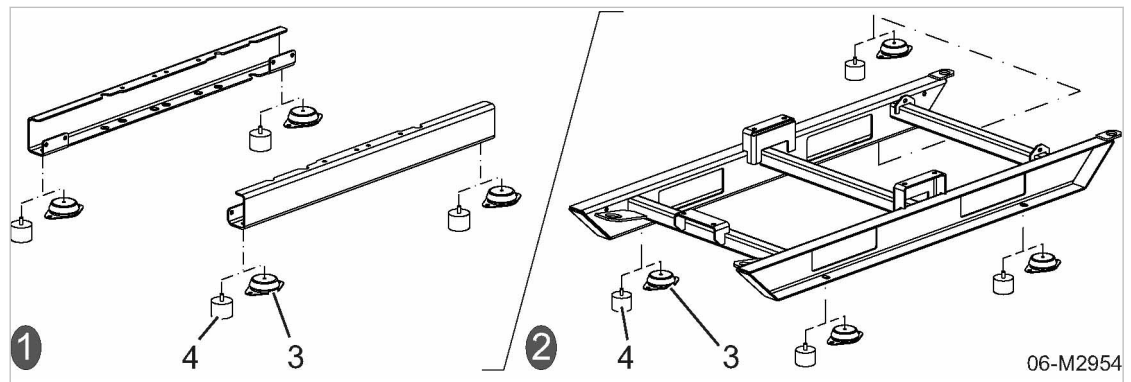


Fig. 11 Fitting the Mounting Pads.

- | | |
|---------------------|-----------------|
| ① Frame (Option rx) | ③ Machine mount |
| ② Skid (Option rw) | ④ Rubber pad |

1. Lift the machine with appropriate hoisting gear.
2. Place square timbers under the frame or skid.
3. Set the machine down carefully.
4. Bolt all machine mounts to the frame or skid.
5. Lift the machine and position it on a suitable surface as specified in chapter 5.2, Installation conditions.
6. Use appropriate fastening bolts for attaching the machine mounts.

6.4 Electrical connection

6.4.1 Network Conditions

This machine is designed for the operation in an industrial environment with proprietary power supply network separated from the public supply by a transformer or generator. The operator must ensure that this machine is connected only to a power supply network that meets these conditions.

- Ensure that the electrical supply network meets these requirements.

6.4.2 Power supply isolating device



The power supply isolating device and its correct on-site installation is not part of the delivery scope of the machine. Accordingly the manufacturer of the machine is not responsible for the correct installation of a suitable power supply isolating device; it is rather the responsibility of the machine operator.

The pole changer switch built into the machine is absolutely not suited to function as a power supply isolating device.

1. Determine technical data for designing an on-site power supply isolating device in accordance with EN 60204-1: 2006, 5.3, or have it determined.
2. The suitable on-site power supply isolating device must be installed by authorised installation personnel or an authorised electrician only.

Further information The authorised KAESER SERVICE can provide you with detailed information concerning the design or installation of a suitable power supply isolating device for your machine.

6.4.2.1 Examples for power supply isolating devices



If your machine is equipped with a CEE plug-in connection, this connector/socket combination with flexible lines pursuant to EN60204-1 is considered a suitable power supply isolating device. In this case, a separate power supply isolating device on site is not required!

Further suitable power supply isolating devices:

- Load isolating switch, with or without fuses, pursuant to IEC-60947-3 for utilisation categories AC-23B or DC-23B;
- Control and protective devices with isolating functions, pursuant to IEC-60947-6-2;
- Circuit breaker, suitable for isolating power, pursuant to IEC60947-2;
- Any other switching device pursuant to one of the IEC product standards for this device that meets the requirements for power isolating devices and the suitable utilisation category and/or operational demand requirements defined in the product standards;

➤ You must use one of the suitable power supply isolating devices!

6.4.3 Connecting the machine to the power supply

Precondition The power supply network is switched off, the device is locked off, the absence of any voltage has been verified.

The tolerance limits of the mains voltage (power supply) are within the permissible tolerance limits of the rated voltage (machine).

1. The electrical connection for a machine with clamping connection must be established by authorised installation personnel or an authorised electrician only.
2. Carry out safety measures as stipulated in relevant regulations (IEC 364 or DIN VDE 0100) and in national accident prevention regulations (BGV A3 in Germany). In addition, observe the regulations of the local electricity supplier.
3. Test the overcurrent protective device (backup fuse) to ensure that the time it takes to shut down in response to a fault is within the permitted limit.
4. Select supply cable conductor diameters and fuse ratings in accordance with local regulations.
5. The user is required to fit a machine with clamping connection with a lockable power supply isolating device which must comply with the requirements of EN60204-1:2006, 5.3. This could be, for example, a load disconnect switch with fused input. If a circuit breaker is used it must be suitable for the engine starting characteristics.
6. Check that the control transformer is connected according to the mains voltage. If not, change the connections of the control transformer to suit the mains voltage.



7. DANGER!

Danger of fatal injury from electric shock!

- Switch off and lock out the power supply isolating device and verify the absence of voltage.

8. Connect the machine to the power supply.
9. Ensure that the control cabinet again complies with the required protection class.

Further information The wiring diagram in chapter 13.4 contains further details of the electrical connection.

6.4.3.1 Supply cable cross-sections and fuses

The supply cable cross sections and fuses (utilisation class gG) are designed according to German DIN VDE 0100 Part 430 (IEC 60364-4-43) and DIN VDE 0298-4:2013-06 standards under the following conditions:

Conditions	Value
multi-wired copper conductor maximum working temperature [°C]	70
Cable length [m]	< 50
Ambient temperature [°C]	30
Type of wiring, without cable contact	C
Current carrying capacity of cables	Table 3, column 11(European Harmonisation Directive HD 60364-5-52:2011)
Bundled cables	Table 12, Single layer on wall or floor, clearance $\geq$ outer diameter.

Tab. 54 Design of supply cable cross-sections and fuses

- For other application conditions, check and determine the supply cable cross-sections according to DIN VDE 0100 and DIN VDE 0298-4:2013-06 or the local energy provider.

Other application conditions would include, for example:

- Higher ambient temperature
- Other type of wiring
- Other cable bundling
- Cable length > 50 m

7 Initial Start-up

7.1 Ensuring safety

Here you will find instructions for a safe commissioning of the machine.
Warning instructions are located directly at a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Compliance with safety instructions

Ignoring safety instructions 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 the enclosure and panels are closed.

When working on live components

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

- Work on electrical equipment may only be carried out by authorised electricians.
- Switch off and lock out the power supply disconnecting (isolating) device and check that no voltage is present.
- Check that there is no voltage on potential-free contacts.

Working on the pressure system (the machine provides compressed air for connected consumers)

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

- Close shut-off valves or otherwise isolate the machine from the compressed air network to ensure that no compressed air can flow back into the machine.
- Disconnect the air consumers.
- Fully vent all pressurised components and enclosures.
- Check that individual components are in vented state.
- Do not open or dismantle any valves.

Working on the pressure system (the machine provides compressed in the compressed air system)

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

- Close shut-off valves or otherwise isolate the machine from the compressed air network to ensure that no compressed air can flow back into the machine.
- Fully vent all pressurised components and enclosures.
- Check that individual components are in vented state.
- Do not open or dismantle any valves.

When working on the drive system

Touching voltage carrying components can result in electric shocks, burns or death. Touching the fan wheel, the coupling or the belt drive while the machine is switched on can result in serious injury.

- Switch off and lock out the power supply isolating device and verify the absence of voltage.
- Do not open the enclosure whilst the machine is switched on.

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.

7.3 After storing the machine for a long period

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

Storage period longer than:	Remedy
5 months	➤ Remove the desiccant from the openings in the air intake filters. ➤ Check the air and oil filters. ➤ Drain the preserving oil from the separator tank. ➤ Fill with compressor oil. ➤ Check all compressor oil lines for leaks, loose connections, wear and damage. ➤ Clean the bodywork with a grease and dirt dissolving agent. ➤ Check the tyre pressures.
12 months	➤ Change motor bearings. ➤ Change the bearing grease.
36 months	➤ Have the overall technical condition checked by an authorised KAESER SERVICE technician.

Tab. 55 Measures for re-commissioning the compressor after a long period of storage

7.4 Checking installation and operating conditions

- Check and confirm all the items in the check list before first start-up of the machine.

Task	See chapter	Confirmed?
➤ Are the operators fully conversant with safety regulations?	–	
➤ Have all the positioning conditions been fulfilled?	5	
➤ Is a user-supplied lockable power supply disconnection device installed?	6.4.3	
➤ Are the tolerance limits of the mains voltage (industrial supply network) within the permissible tolerance limits of the nominal voltage of the drive motor?	–	
➤ Are the power supply cable conductor diameters and fuse ratings adequate?		
➤ Drive motor overload protection relay set according to the mains voltage?	7.7	
➤ Drive motor overload protection switch set according to the mains voltage?		
➤ Is there sufficient cooling oil in the oil separator tank?	10.5.1	
➤ Is the maintenance indicator on the air intake filters OK?	10.5.7	
➤ Is there sufficient lubricant in the tool lubricator?	10.9.1	
➤ Enclosure closed and all panels in place?	–	

Tab. 56 Installation conditions checklist

7.5 Comply with requirements for electric supply connection

In order to connect the electrically driven machine to the power supply network, the electric supply line must be connected. Depending on the type, two variants are available:

Type	Machine I	Machine II
Connection	Plug-in connection	Direct connection/clamped connection
Component	CEE attachment unit plug	Terminal strip
Item	Front side of machine (left side in direction of travel)	Control cabinet (within the machine)

Tab. 57 Interface of electrical supply line

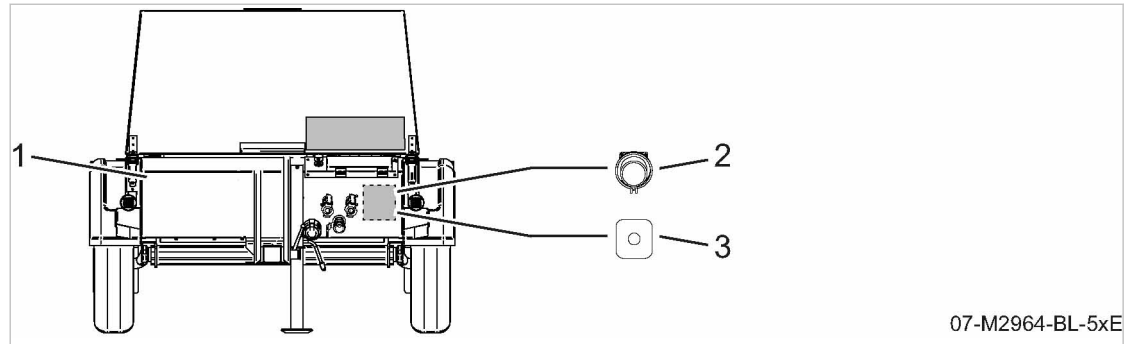


Fig. 12 CEE attachment unit plug/cable bushing

- ① Front side, machine
- ② CEE attachment unit plug
- ③ Cable bushing

➤ Check with which variant of electrical connection your machine is equipped with!



Machines with direct connection/clamping connection can easily be recognised by the cable bushing at the front of the machine (left side in direction of travel). Only qualified and authorized electricians may connect machines with direct connection/clamping connection.

Furthermore, we would like to point out the different types of main switches depending on the design types of the machines.

Type	Machine I	Machine II
Connection	Plug-in connection	Direct connection/clamped connection
«Main switch» of the machine	«Pole changer switch»	«Load isolating switch»
Position of «main switch» within the machine	Rear of control cabinet	Rear of control cabinet
Switch position "0"	Power supply voltage switched off	Power supply voltage switched off
Switch position "1"	Power supply voltage switched on	Power supply voltage switched on
Switch position "2"	Power supply voltage with exchanged phase sequence switched on.	—
— ≙ not present		

Tab. 58 Main switch depending on type design



With incorrect direction of rotation of the drive motor, the phase sequence can be corrected to a clockwise rotation by resetting the «pole changer switch» to position "2". The load isolating switch only separates the machine from the power supply network.

➤ Consider different main switch types when producing ready state!

7.6 Correct phase sequence of the power supply

During the machine's commissioning, the drive motor does not start. The warning message *1165 direction of rotation* is shown on the display of SIGMA CONTROL SMART.

7 Initial Start-up

7.7 Setting the overload protection relay

The phase sequence of the power supply is not correct. In order to correct the phase sequence of the power supply, the «pole changer switch» must be set to position ②. The «pole changer switch» is located behind the control cabinet, inside the machine.



The «pole changer switch» is only built into machines that are equipped with a plug-in connection (CEE attachment unit plug)!

1. Open the enclosure.
2. Turn the «Control ON/OFF» switch to the *OFF* position.
3. Set the «pole changer» to position ②.
The phase sequence of the supply of the power supply is set to clockwise rotation.
4. Turn the «Control ON/OFF» switch to the *ON* position.
Operational states: Symbol drive motor *Ready* is shown, *READY* display flashes green.
5. Close the enclosure.
6. Press the «START» key on the SIGMA CONTROL SMART operating panel to start the drive motor.

7.7 Setting the overload protection relay

See Electrical Diagram, Chapter 13.4 for information on set points for the overload protection relay. With star-delta starting, the phase current is fed via the overload relay. This phase current is 0.58-times the rated drive motor current.

To prevent the overload relay being triggered by voltage fluctuations, temperature influences or component tolerances, the setting can be higher than the arithmetical phase current.

- Check the settings of the overload relay.



The overload relay shuts the machine down despite being correctly set?
➤ Contact the authorised KAESER SERVICE.

7.8 Setting the motor overload protection switch

See Electrical Diagram, Chapter 13.4 for information on setting values for the motor overload protection switch.



To prevent the motor overload protection switch from being triggered by voltage fluctuations, temperature influences or component tolerances, the setting can be higher than the rated motor current.

- Check the motor overload protection switch setting.



The overload protection switch shuts the machine down despite being correctly set?
➤ Contact authorised KAESER SERVICE.

7.9 Setting the voltage measuring relay

See Electrical Diagram, Chapter 13.4 for information on set points for the voltage measuring relay.

The voltage measuring relay monitors a three-phase network for the following faults:

- Undervoltage
- Overvoltage
- Phase loss
- Phase sequence

In the event of one or several of these faults, SIGMA CONTROL SMART creates an alarm message.

1. Set «pole changer switch» to “2” position (change phase sequence).
2. If necessary, have professional electrician check the connection on site.



- The voltage measuring relay shuts the machine down despite being correctly set?
- Contact the authorised KAESER SERVICE.

7.10 Low-temperature operation (winter)

During times of low ambient temperatures, low viscosity compressor oil facilitates the machine start. Short compressed air hoses reduce the risk of freezing of air tools.

1. Use low viscosity compressor oil.
2. Use short compressed air hoses.

7.11 Note the automatic operating modes

Overview:

- Start/stop/automatic option
 - DUAL control option
- Follow all instructions.

7.11.1 Option ob Note the start/stop automatic

If your machine is connected to a master control system and is equipped with the automatic start/stop option, this machine can be operated in the start/stop automatic operation mode.

A safety sign on the machine points out the automatic starting of the machine, see illustration in Table 59. Position of the safety sign on the machine, see Chapter 3.8.

Option	Safety sign
Start/stop automatic	
—	—

Tab. 59 Safety sign for automatic starting

1. Check whether there is a safety sign for automatic starting on the machine.
2. Inform operators regarding automatic starting of machine.

Further information Observe start procedure for machine with automatic start/stop option, see Chapter 8.8.1.
Operate machine with automatic start/stop or in manual mode, see operating manual for SIGMA CONTROL SMART.

7.11.2 Option cd Note the DUAL control

If your machine is equipped with the DUAL control option, you can operate this machine in automatic DUAL control mode.

A safety sign on the machine points out the automatic starting of the machine, see illustration in Table 60. Position of the safety sign on the machine, see Chapter 3.8.

Option	Safety sign
DUAL control	
—	—

Tab. 60 Safety sign for automatic starting

1. Check whether there is a safety sign for automatic starting on the machine.
2. Inform operators regarding automatic starting of machine.

Further information Observe the start procedure for a machine with DUAL option, see Chapter 8.8.1.
Operate the machine with DUAL control or in manual mode, see the SIGMA CONTROL SMART operating manual.

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 Switching the machine on

Overview:

- Follow the brief instructions
- Observe with low ambient temperatures
 - Machine with plug-in connection
 - Machine with direct connection
- Overview of fittings
 - Operating unit SIGMA CONTROL SMART
 - Compressed air outlet pressure gauge
 - «EMERGENCY STOP» pushbutton
- Preparing ready-to-start state
- Switch on drive motor
- Allow the machine to run up to operating temperature
- Switching the machine to LOAD mode:
 - Comply with all instructions.

8.2.1 Follow the brief instructions

Brief operating instructions, shown as the symbols for the start and switch-off procedure, are found on a sticker outside the machine. The label is positioned above the instrument panel cover of SIGMA CONTROL SMART.

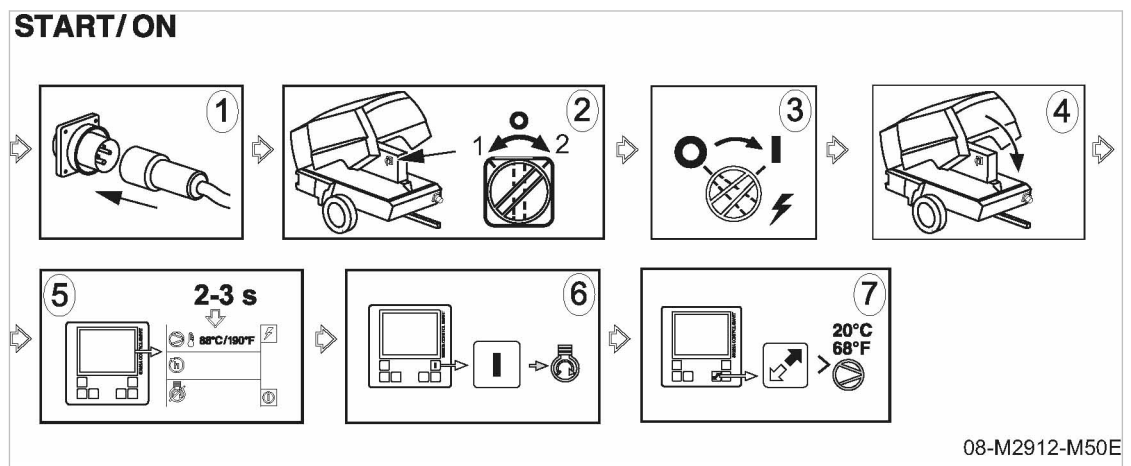


Fig. 13 Brief instructions on starting procedure

- Follow the brief instructions.

8.2.2 Observe with low ambient temperatures

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» push-button does not work.

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

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

3. Disengage the «EMERGENCY STOP» pushbutton again.


The «EMERGENCY STOP» pushbutton still does not function after defrosting.

- Have the «EMERGENCY STOP» pushbutton replaced.

8.2.3 Connect the power supply cable

The attachment unit plug or the cable bushing is located on the front left-hand side in the direction of travel.



Connecting the machine with direct connection on site must only be carried out by a professional electrician. For safety reasons, the key to the control cabinet is therefore not included with the delivery. The KAESER SERVICE electricians are equipped with the necessary key to the control cabinet and will properly connect your machine by complying with all required safety measures. Contact the authorised KAESER SERVICE to ensure proper connection of your machine.

Precondition Ensure that local power supply is available.

The electrical connection has been inspected (clockwise rotation), see Commissioning.

The on-site «main switch» of the power disconnecting device is switched off.

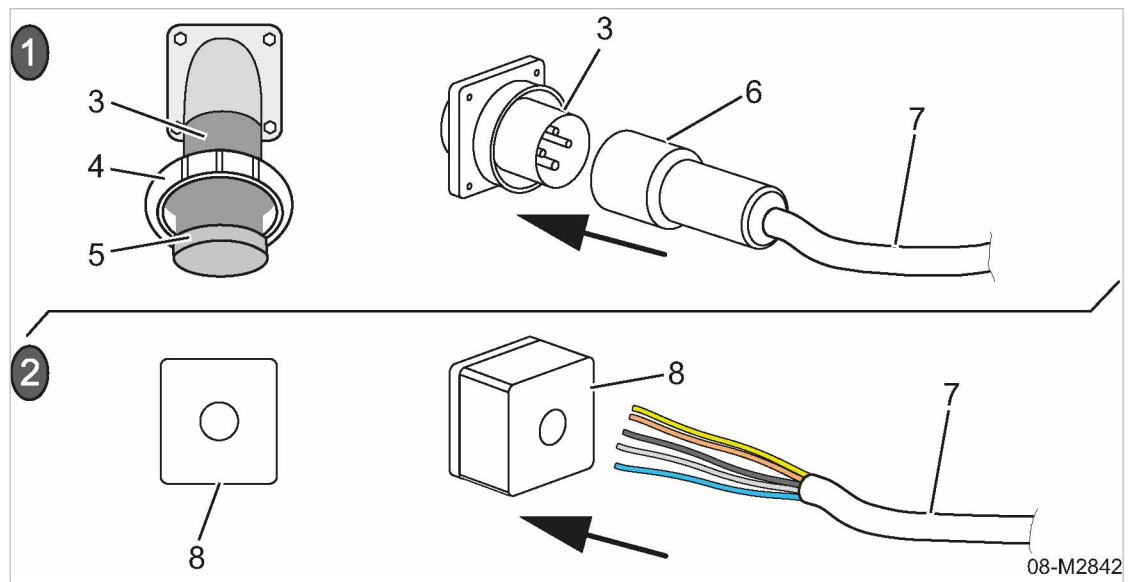


Fig. 14 Connect the power supply cable

- | | |
|-----------------------------------|----------------------|
| ① Machine with plug-in connection | ⑤ Protective cap |
| ② Machine with direct connection | ⑥ CEE coupling |
| ③ CEE attachment unit plug | ⑦ Power supply cable |
| ④ Circlip [disengaged] | ⑧ Cable bushing |

Machine with plug-in connection	Machine with direct connection
1. Check whether power supply cable with CEE coupling is available. 2. Turn circlip of the CEE attachment unit plug in clockwise direction in order to unlock the protective cap. 3. Remove the protective cap from the CEE attachment unit plug. 4. Plug the power supply cable with CEE coupling into the CEE attachment unit plug of the machine.	1. Check whether the power supply cable is available. 2. Contact authorised KAESER SERVICE. 3. Have a professional electrician insert the power supply cable through the cable bushing in the body. 4. Have a professional electrician open the door to the control cabinet. 5. Have a professional electrician insert the power supply cable through the cable bushing underneath the control cabinet into the control cabinet. 6. Have a professional electrician connect the wires of the power supply cable. 7. Have a professional electrician close the door to the control cabinet. See Electrical Diagram, Chapter 13.4 for detailed information on connecting the power supply cable.

8.2.4 Overview of fittings

The operating unit SIGMA CONTROL SMART and compressed air outlet pressure gauge are located behind the instrument panel cover.

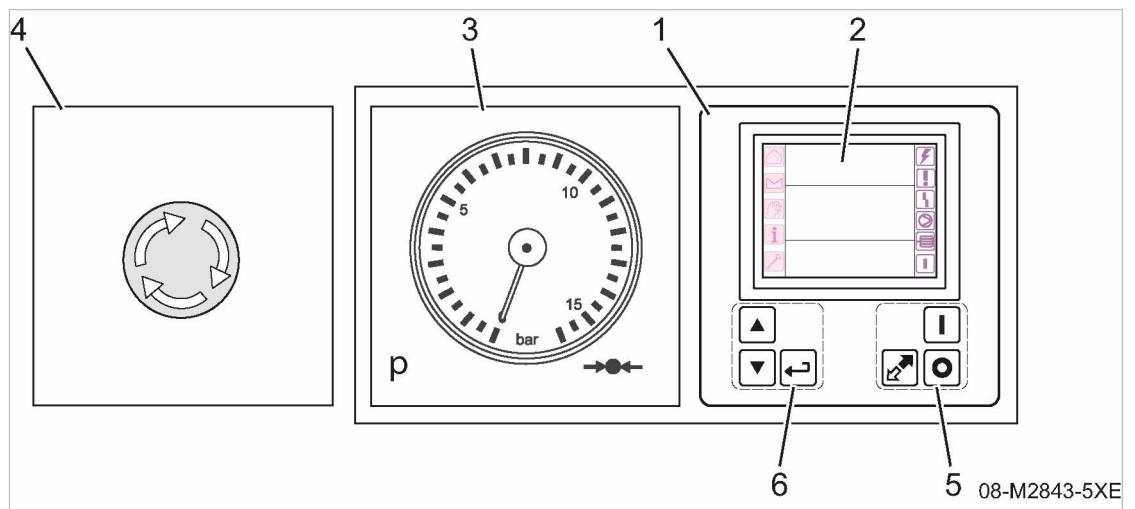


Fig. 15 Arrangement of operating unit SIGMA CONTROL SMART and fittings

- | | |
|--|-------------------------------|
| ① Operating unit SIGMA CONTROL SMART | ④ «EMERGENCY STOP» pushbutton |
| ② Display SIGMA CONTROL SMART | ⑤ «Operating mode» keys |
| ③ Compressed air outlet pressure gauge | ⑥ «Menu bar navigation» keys |

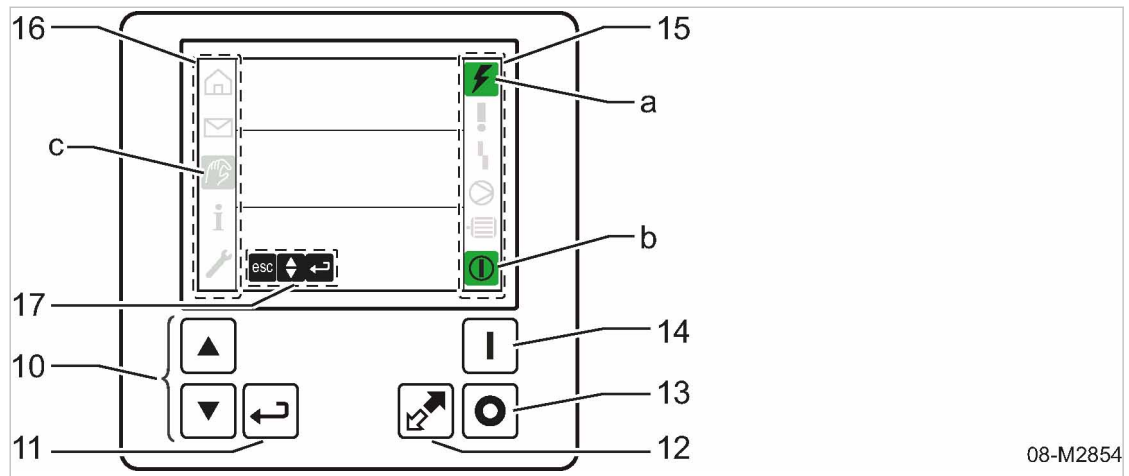


Fig. 16 SIGMA CONTROL SMART instrument panel keys and displays

- | | |
|---------------------------|-------------------------------------|
| 10 «up» and «down» keys | a Display <i>Control voltage On</i> |
| 11 «Enter» key | b Display <i>READY</i> (flashes). |
| 12 «LOAD/IDLE» toggle key | 16 Menu bar |
| 13 «STOP» key | c Display <i>Settings Menu</i> |
| 14 «START» key | 17 Navigation menu display |
| 15 Status bar | |

➤ Memorise information.

8.2.5 Preparing ready-to-start state

Precondition Enclosure is open.

1. Switch on the on-site «main switch» of the power disconnecting device.

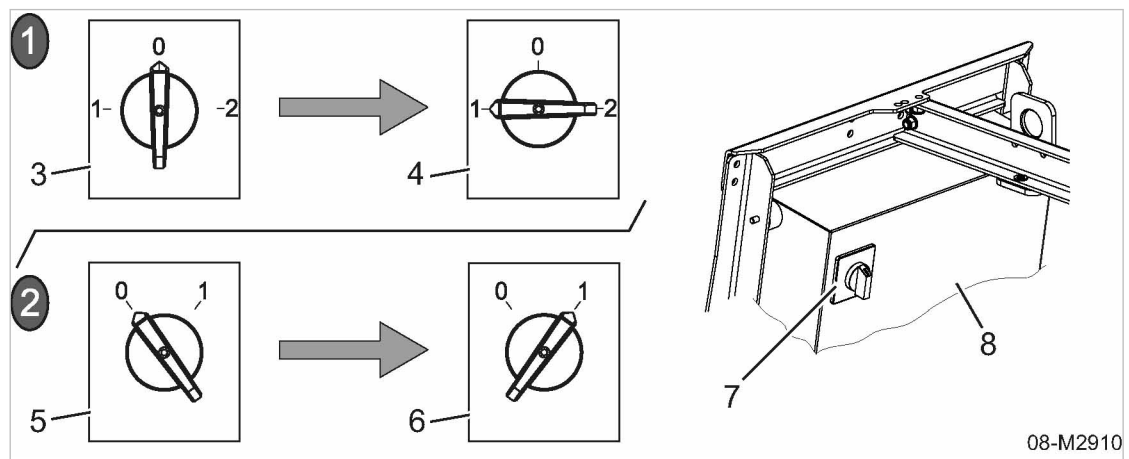


Fig. 17 Set the pole changer/load isolating switch

- | | |
|---|---|
| 1 Machine with plug-in connection | 5 «Load isolating switch» in "0" position |
| 2 Machine with direct connection | 6 «Load isolating switch» in "1" position |
| 3 «Pole changer switch» in "0" position | 7 Location of the «pole changer switch» or «load isolating switch» within the machine |
| 4 «Pole changer switch» in "1" position | 8 Rear of control cabinet |

2. Set the «pole changer» or «load isolating switch» to the "1" position.

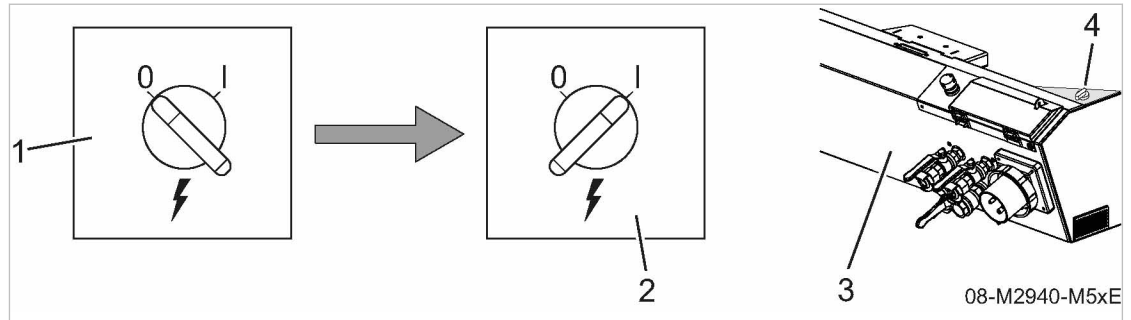


Fig. 18 Set the «controller ON/OFF» key

- | | |
|---|---|
| ① «Control ON/OFF» switch to position "OFF" | ③ Machine front side |
| ② «Control ON/OFF» switch to position "ON". | ④ Location of the «controller ON/OFF» switch within the machine |

3. Turn the «Control ON/OFF» switch to position ON.

The control voltage for SIGMA CONTROL SMART is switched on.

4. Open the control panel cover of SIGMA CONTROL SMART.

If there is no error message, the following operating data/operational states are shown on the display of SIGMA CONTROL SMART:

- Operating data
 - Airend discharge temperature
 - Operating hours
- Operating modes
 - Drive motor *ready* symbol
 - The *READY* display flashes green.

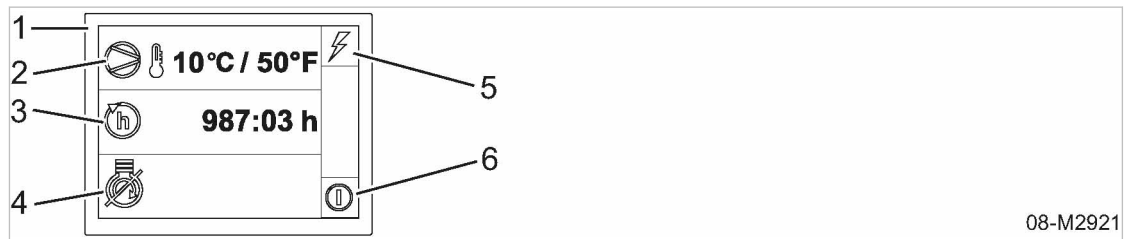


Fig. 19 Ready display

- | | |
|--------------------------------|--------------------------------|
| ① Display SIGMA CONTROL SMART | ④ Ready symbol |
| ② Airend discharge temperature | ⑤ Control voltage ON status |
| ③ Operating hours | ⑥ READY status (flashes green) |

5. Close the enclosure.

The machine is ready to start.



The machine is not ready to start / error messages are shown on the display of SIGMA CONTROL SMART.

- Read error messages.
- Correct cause by observing operational safety.

8.2.6 Switch on drive motor

Precondition Nobody is working on the machine.
Enclosure is closed

- Press «START» key on the operating panel of SIGMA CONTROL SMART.
Drive motor of the machine starts.
The *READY* display of SIGMA CONTROL SMART (status bar) is permanently green.

8.2.7 Allow the machine to run up to operating temperature

After the drive motor has started, the machine initially runs through the WARM-UP PHASE.
In the WARM-UP PHASE, the machine is brought to the working temperature in an unloaded state.

1. Let the machine run in the WARM-UP PHASE.
Machine warms up unloaded.
2. Wait until the setpoint of the discharge temperature has been reached.

Result The machine is switching to IDLE mode.

Result The machine has warmed up unloaded and is ready for switching to LOAD mode.

8.2.8 Switching the machine to LOAD mode:

Precondition Compressed air hoses/compressed air consumers are connected to the shut-off valves of the compressed air outlet.
Compressed air hoses/compressed air consumers are secured.

1. Press the «LOAD/IDLE» key on the operating panel of SIGMA CONTROL SMART.
The machine is switches to LOAD mode.
2. Open the shut-off valves at the compressed air outlet.

Result The machine provides compressed air for connected consumers.

8.3 Setting the compressed air discharge pressure

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

(See also the separate user manual for SIGMA CONTROL SMART.)

The compressed air discharge pressure (nominal pressure) can be set when the drive motor is in standstill (SIGMA CONTROL SMART switched on) or during operation (with the machine running).

- The pressure can only be set lower than the nominal working pressure of the machine.
- You can adjust the settings in increments of 0.1 bar or 1 psi.
- The adjustment is displayed.


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 Controller (SIGMA CONTROL SMART) is switched on
 The pressure adjustment option is enabled

- Select the access type.

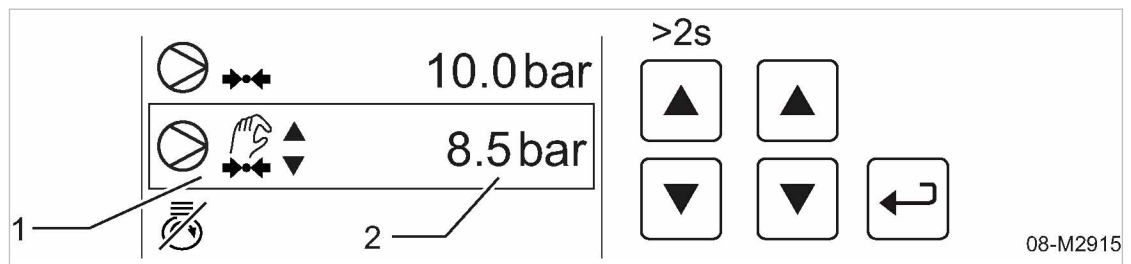
Quick access from the main menu:


Fig. 20 Quick access adjustment compressed air output pressure

- ① Compressed air discharge pressure setting symbol
- ② Setting value

1. Press «UP» or «DOWN» key 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».
 Jump back to the menu bar, the "Main menu" symbol receives a black background.

Access via menu structure:

Precondition The Settings menu (hand symbol) is selected.

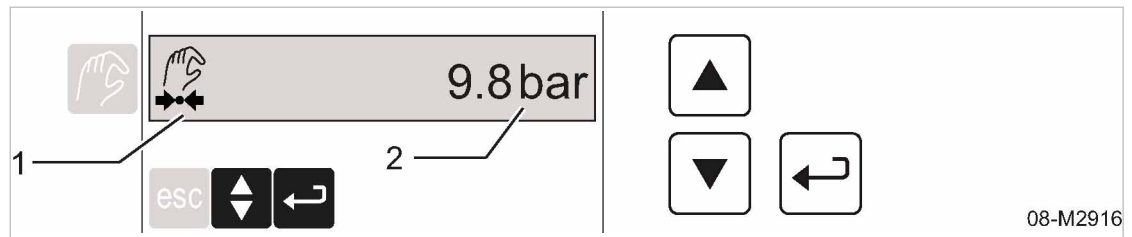


Fig. 21 Setting the compressed air discharge pressure

- ① Adjustment compressed air discharge pressure
- ② Setting 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 receives a black background.

or:

1. Press «UP» or «DOWN» until all lines of the Settings menu no longer have a frame.
2. Press «Enter» for just a moment.
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.

8.4 Switching the machine off

Overview:

- Observe the brief instructions "Switching the machine off"
- Switching the machine off
 - Switching the machine to the run-on phase
 - Switch the machine off after the cooling-down phase
- Switch off control voltage for SIGMA CONTROL SMART

- Switch off pole changer
 - Switch off pole changer
 - Switch off load isolating switch
 - Securing against unauthorized starting
 - Machine with plug-in connection
 - Machine with direct connection
- Comply with all instructions.

8.4.1 Observe the brief instructions "Switching the machine off"

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

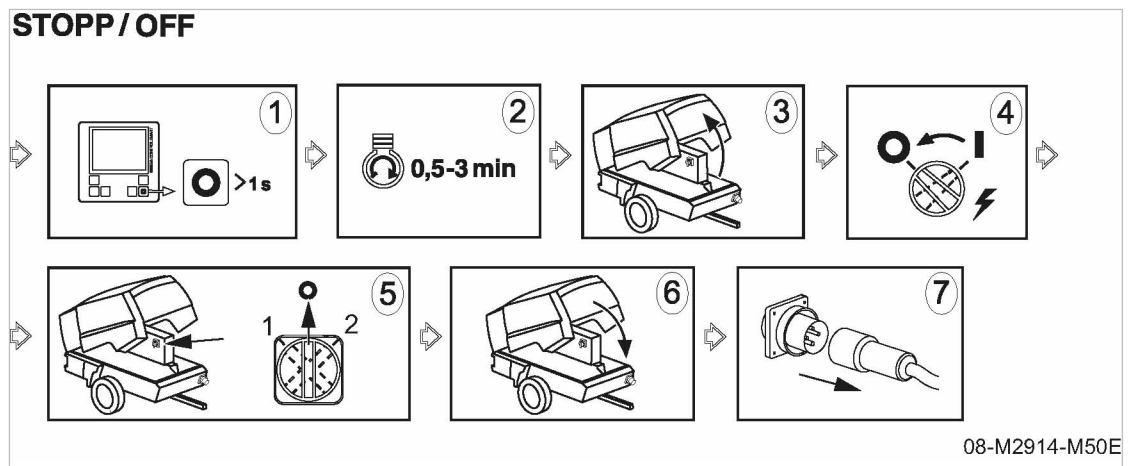


Fig. 22 Brief instructions "Switching the machine off"

1. Open the control panel cover.
2. Follow the brief instructions.

8.4.2 Switching off

The machine may only be switched off from the operating panel of SIGMA CONTROL SMART



DANGER

Death or serious injury can result from pulling off the CEE coupling during operation

- Switch the machine off from the operating panel of SIGMA CONTROL SMART only.

Switching the machine to the run-on phase	Shutting down the machine after the cooling phase
- Press «LOAD/IDLE». The drive motor is running in IDLE mode. The oil separator tank is vented. The inlet valve closes. ⌚ 0.5 - 3 minutes (drive motor can be switched off). - Press and hold the «STOPP» key for more than 1 second. The drive motor shut down.	- Wait for cooling phase. - Press and hold the «Stop» key for more than one second. The machine switches to <i>unloaded run-on</i>. The drive motor is running in IDLE mode. Oil separator tank (OST) is vented. The inlet valve closes. The drive motor switches off, controlled by a timer.

8.4.3 Observe back pressure display



- The display of SIGMA CONTROL SMART shows *back pressure* if the pressure in the oil separator tank (OST) is still > 1 bar.
- When the machine is fully vented, the display changes from *back pressure* to *READY*.
- When the OST is fully vented after shut down, the "re-start inhibitor" is activated and is indicated by the timer on the display counting down.

➤ Follow instructions

8.4.4 Switch off control voltage

In order to switch off SIGMA CONTROL SMART the «Control ON/OFF» button must be set to the *OFF* position.

Precondition The oil separator tank has been fully vented, *back pressure* symbol is no longer lit.
The *READY* symbol is shown.

- Open the enclosure.
- Turn the «Control ON/OFF» switch to the *OFF* position.
All the displays of SIGMA CONTROL SMART are switching off.

8.4.5 Switch the main switch off

Type	Machine I	Machine II
Connection type	Plug-in connection	Direct connection/clamped connection
Main switch of the machine	«Pole changer switch»	«Load isolating switch»

Tab. 61 Main switch of the machine

Switch off pole changer	Switch off load isolating switch
- Set «pole changer switch» to "0" position. - Close the enclosure.	- Set «load isolating switch» to "0" position. - Close the enclosure.

8.4.6 Switch off the on-site power disconnecting device

1. Switch off the on-site «main switch» of the power disconnecting device.
2. Secure on-site «main switch» of the power supply disconnecting device against unintentional restart.

8.4.7 Securing against unauthorized starting

Precondition The enclosure and the instrument panel cover of SIGMA CONTROL SMART are closed and secured against unauthorized opening.

Machine with plug-in connection	Machine with direct connection
The on-site «main switch» of the power disconnecting device is switched off. 1. Pull CEE coupling from the CEE attachment unit plug. 2. Place protective cap onto the CEE attachment unit plug and turn circlip in anticlockwise direction in order to lock the protective cap. 3. Remove the power supply cable.	The on-site «main switch» of the power disconnecting device is switched off. 1. Open the enclosure. 2. Have a professional electrician open the door to the control cabinet. 3. Have a professional electrician disconnect the wires of the power supply cable. 4. Pull the power supply cable from the cable bushing of the control cabinet. 5. Close the control cabinet. 6. Pull the power supply cable from the cable bushing of the body. 7. Close the enclosure.

8.5 Shutting down machine in the event of an emergency



The «EMERGENCY STOP» pushbutton may be used in case of an **emergency** only in order to shut down the machine.

The «EMERGENCY STOP» pushbutton is located non the left ext to the instrument panel cover of SIGMA CONTROL SMART, see Fig. 23.

In the event of an emergency around or relating to the machine, it must be shut down immediately.

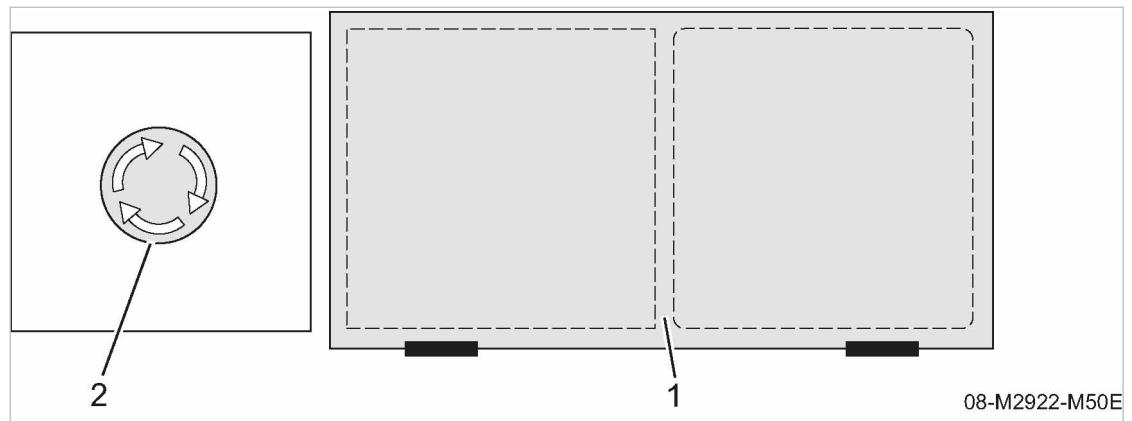


Fig. 23 Switching off in an emergency

- ① Control panel cover of SIGMA CONTROL SMART (closed)
- ② «EMERGENCY STOP» push button
- ③ Direction of arrow

Shut down machine in the event of an emergency

- Press the «EMERGENCY STOP» pushbutton.

Result Drive motor switches off, the machine stands still.
 «EMERGENCY STOP» pushbutton is locked.
 Pressure system is vented.
 Machine is secured against an automatic restart.

Removing the fault on the machine

Precondition Operational safety at the machine and its environment is ensured.

1. Determine the cause of the fault.
2. Rectify the cause of the shut-down.

Unlock «EMERGENCY STOP» pushbutton

«EMERGENCY STOP» pushbutton remains locked after shutting down in the event of an emergency.

«EMERGENCY STOP» pushbutton must be unlocked manually.

- Turn the «EMERGENCY STOP» pushbutton in the direction of the arrow until it automatically unlocks.

Put the machine back into operation:

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

Precondition «EMERGENCY STOP» pushbutton is unlocked.

- Press the «Enter» key on the SIGMA CONTROL SMART operating panel to confirm the fault message.

Result The machine is again ready for operation.

8.6 Confirming alarm and warning messages

- The information evaluated by SIGMA CONTROL SMART is stored in the event memory.
- The warning and alarm messages are shown on the display of SIGMA CONTROL SMART.
- The message is stored in the event memory of SIGMA CONTROL SMART at the same time.

8.6.1 Confirming and acknowledging 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.

1. Press «Enter» to accept the alarm message.
The alarm indicator is extinguished.
The alarm symbol in the status bar remains active.
2. Restart SIGMA CONTROL SMART in order to acknowledge the alarm message.

8.6.2 Confirming and acknowledging 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

1. Press «Enter» to confirm the warning message.
The warning message is extinguished.
The warning symbol in the status bar remains active.
2. Restart SIGMA CONTROL SMART in order to acknowledge the warning message.

Further information See separate operating manual for SIGMA CONTROL SMART for further information on the event memory.

8.7 Cleaning the machine after operation



Being in a clean condition is part of the machine's proper technical condition. Especially the interior of the machine must not be contaminated too excessively with oil.

When cleaning the interior of the machine by using a high-pressure cleaner you must take appropriate measures to effectively protect the electrical equipment from any penetrating water.

- Cleaning work should be carried out by authorised and trained personnel only!



Cleaning with dry-ice jets is strictly forbidden! Unforeseeable subsequent damages can be the result.

Material Eye protection (protective glasses)
Cleaning cloth
Cleaning agents
High-pressure cleaner

Precondition The machine has been set down in cleaning area with oil separator,
The machine has been set down on level ground and has cooled down.
The machine is isolated from any voltage,
the absence of voltage is verified.
The machine is completely de-pressurised,
the pressure gauge reads 0 bar!

**WARNING**

Swirled up dirt particles and hazardous materials!
Injuries to eyes.

- Wear safety glasses.

**NOTICE**

Hose water can damage the machine!
Direct hose water may damage or destroy electrical components.

- Do not use hose water to clean electrical components.
- Do not use hose water to clean sensitive indicating instruments.

- Follow all instructions.

8.7.1 Cleaning the exterior of the machine

Overview:

- Open closed floor pan (option)
- Close the control panel cover
- Clean the exterior
- Clean sensitive indicating instruments

Option oe Open closed floor pan

In order to prevent liquid accumulation inside the machine the closed floor pan must be opened.

1. Remove all bungs.
2. Clean all bungs.

Close the control panel cover

- Close control panel cover of SIGMA CONTROL SMART.
Sensitive indicating instruments are protected against direct hose water.

Cleaning the machine from the outside



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

- Circular section jets: approximately 70 cm
- Fan jets: approximately 30 cm
- Dirt blasters: approximately 30 cm

➤ Clean the machine from the outside with a high-pressure cleaner.

Result Exterior cleaning completed.

Cleaning indicating instruments:

Precondition Exterior cleaning completed.

1. Open the control panel cover of SIGMA CONTROL SMART.
2. Manually clean sensitive indicating instruments with a cleaning cloth.

8.7.2 Cleaning the machine's interior

Overview:

- Set the high-pressure cleaner
- Cover sensitive components
- Clean the machine's interior
- Remove the cover
- Clean sensitive components
- Seal the floor pan (option)

Setting the high-pressure cleaner:

➤ For setting the high-pressure cleaner, see chapter 62.

High-pressure cleaner	Value
Interior diameter of the jet [mm]	6.3
Flow rate [l/min]	12.5

Tab. 62 High-pressure cleaner setting values

Cover sensitive components:

1. Check if the control panel cover of SIGMA CONTROL SMART is closed.
2. If necessary, close the control panel cover.
3. Cover the control cabinet with a plastic sheet and close with adhesive tape.

Result Sensitive indicating instruments and the control cabinet are protected against splash water.

Cleaning the machine's interior:

Precondition The values for the high-pressure cleaner according to table 62 have been set.



1. **NOTICE!**
Hose water can damage the machine!
 - Do not use hose water to clean electric drive motor.
2. Do **not** direct hose water at the electric drive motor and its connector box.
3. Do **not** direct hose water at the covered control cabinet.
4. Do **not** direct hose water at the solenoid valves and electrical plug-in connections.
5. Clean dirty components/areas in the machine's interior that are not sensitive.



Remove water accumulations in the closed floor pan.

- Remove the bungs.
- Let the water drain.



See chapter 10.9.5 for information on draining liquids from inside the machine.

Remove the cover:

- Remove the control cabinet cover from the machine's interior.

Result The plastic sheet and adhesive tape have been removed from the machine's interior.

Clean sensitive components:

In the event of excessive contamination of the drive motor or the control cabinet you can additionally use a cleaning agent with slightly grease-removing properties. The cleaning agent must not change the surfaces of the drive motor or the control cabinet.

- Manually clean the following components with a cleaning cloth:
 - Cooling fins of the electric drive motor
 - Connector box of the electric drive motor
 - Control cabinet
 - Solenoid valves
 - electrical plug-in connections



Store dirty cleaning cloths that are soaked in solvents in a closed container.

Option oe Seal the floor pan:

Precondition Liquid inside the machine has completely drained.

1. If required, remove any remaining dirt with a cleaning cloth.
2. Install all bungs.



Dispose of dirty covers, adhesive and cleaning cloths in accordance with applicable environmental protection regulations.

8.8 Operating the options

- Comply with all instructions.

8.8.1 Note the automatic operating modes

Overview:

- Observe the automatic start/stop
- Note the DUAL control



WARNING

Risk of injury caused by an automatic machine start!

- Close enclosure after switching on the control voltage for SIGMA CONTROL SMART.

Option ob Note the automatic start/stop

The readiness of the machine in start/stop/automatic mode is ensured when these conditions are met:

- The control voltage for SIGMA CONTROL SMART is switched on.
- All required settings have been made in the *<Settings>* menu of SIGMA CONTROL SMART.
- The «START» key on the operating panel of SIGMA CONTROL SMART has been pressed once.

1. Switch on the SIGMA CONTROL SMART control voltage.
2. Close the machine canopy.
3. Make all required settings in the *<Settings>* menu of SIGMA CONTROL SMART.
4. Check whether the machine canopy is closed and locked.
5. Press the «START» key on the operating panel of SIGMA CONTROL SMART once only.

Result After the start signal from the master controller has been received, the machine starts automatically. The machine runs through the warm-up phase and automatically switches to LOAD operation.

Option cd Note the DUAL control

The readiness of the automatically-operated machine in DUAL mode is ensured when these conditions are met:

- The control voltage for SIGMA CONTROL SMART is switched on.
- All required settings have been made in the *<Settings>* menu of SIGMA CONTROL SMART.
- The «START» key on the operating panel of SIGMA CONTROL SMART has been pressed once.

1. Switch on the SIGMA CONTROL SMART control voltage.
2. Close the machine canopy.
3. Connect the compressed air hose (system pressure) to the measuring point.
4. Make all required settings in the *<Settings>* menu of SIGMA CONTROL SMART.
5. Check whether the machine canopy is closed and locked.
6. Press the «START» key on the operating panel of SIGMA CONTROL SMART once only.

Result The machine starts automatically, if the compressed air pressure in the air network is lower than the cut-in pressure of the pressure switch. The machine runs through the warm-up phase and automatically switches to LOAD operation.

8.8.2 Option ea Operating the tool lubricator

Pneumatic tools for which a certain amount of lubricant in the compressed air is necessary must be operated with enabled lubricant addition.

Precondition The machine is switched off.
 Enclosure is open.
 «Control ON/OFF» switch is set to *OFF* position,
 «pole changer switch/load isolating switch» is in "0" position.
 The on-site main switch is switched off,
 the device is locked off,
 the absence of voltage has been verified.
 The machine is at operating temperature.
 The machine is fully vented, the pressure gauge reads 0 bar.
 Lubricant tank is full.



NOTICE

Damage to the pneumatic tool!

- Only use a pneumatic tool that is suited for compressed air with lubricant content.

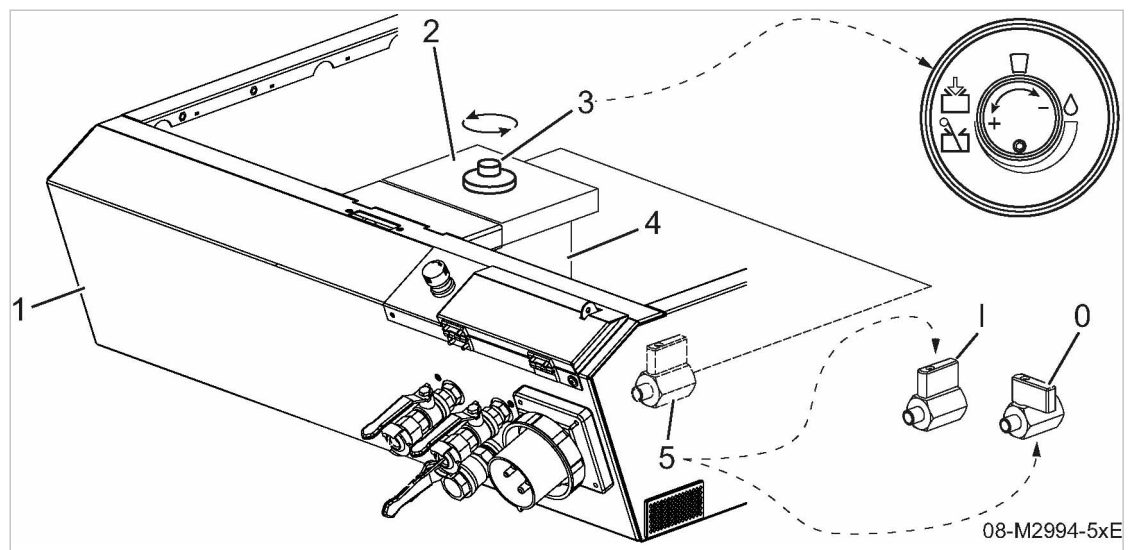


Fig. 24 Setting the tool lubricator

- ① Machine front side
- ② Tool lubricator
- ③ Metering knob

- ④ Lubricant container
- ⑤ Shut-off valve
- I – open
- 0 – closed

Switch on the lubricant addition:

- Open the shut-off valve ⑤, see Fig. 24

Setting the lubricant content:

The amount of lubricant 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 content of the added lubricant can be controlled by the metering valve:

- Turning clockwise: Reduce lubricant content.
- Turning counter-clockwise: Increase lubricant content.
- Set the required lubricant content at the metering valve [3].

Further information Fill the tool lubricator with lubricant (see chapter 10.9.1).

Putting in operation:

1. Switch on on-site «main switch.»
2. «Set the pole changer/load isolating switch» to position "1".
3. Turn the «Control ON/OFF» switch to position *ON*.
4. Close the enclosure.

Start the machine

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
The machine is running in IDLE mode.
2. Switch the machine that is at operating temperature to LOAD mode.

Activating the pneumatic tool

- Activating appropriate pneumatic tool.

8.8.2.1 Switch off the lubricant addition

The lubricant addition must be blocked for pneumatic tools that must not be lubricated.

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is in "0" position.
The on-site main switch is switched off,
the device is locked off,
the absence of voltage has been verified.
The machine is at operating temperature.
The machine is fully vented, the pressure gauge reads 0 bar!

**NOTICE**

Damage to the pneumatic tool!

- Only use a pneumatic tool that is suited for compressed air without lubricant content.
- Blow any residual lubricant out of the air line before connecting such a pneumatic tool.

Block the lubricant addition:

- Close the shut-off valve, see Fig. 24

Putting in operation:

1. Switch on on-site «main switch.»
2. «Set the pole changer/load isolating switch» to position *"1"*.
3. Turn the «Control ON/OFF» switch to position *ON*.
4. Close the enclosure.

Start the machine

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
The machine is running in IDLE mode.
2. Switch the machine that is at operating temperature to LOAD mode.

Clean air line

- With the outlet valve open, blow any residual lubricant out of the air line.

Result The compressor provides compressed air without lubricant addition.

Activating the pneumatic tool

- Activating appropriate pneumatic tool.

8.8.3 Option ua

Using the hose reel

The hose reel is positioned at the front of the machine.

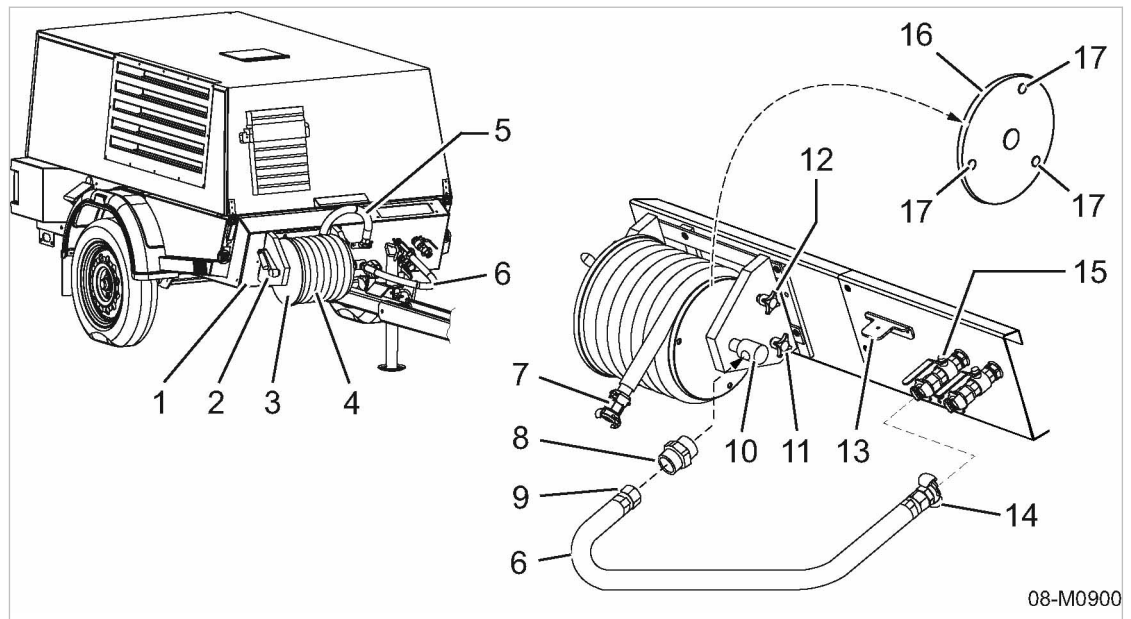


Fig. 25 Hose reel

- | | | | |
|---|-------------------------------|---|-----------------------------|
| ① | Front side, machine | ⑩ | Connecting bore |
| ② | Winding handle (fold out) | ⑪ | Clamping screw |
| ③ | Hose reel | ⑫ | Transport securing bolt |
| ④ | Compressed air extension hose | ⑬ | Bracket |
| ⑤ | Hose end in safety position | ⑭ | Claw coupling |
| ⑥ | Connecting hose | ⑮ | Compressed air outlet valve |
| ⑦ | Claw coupling | ⑯ | Side wall with safety bores |
| ⑧ | Adapter | ⑰ | Securing holes |
| ⑨ | Union nut | | |

8.8.3.1 Operating the machine with an extension air hose

A connecting hose ⑥ supplies the extension hose with compressed air.

Precondition The connecting hose is installed.

The compressed air outlet valve is closed.

1. Pull the hose coupling ⑦ of the bracket ⑬.
2. Loosen the transport securing bolt ⑫.
3. Loosen the clamping screw ⑪.
4. Unfold the crank ②.
5. Reel out the required length of the extension hose ④.
6. Tighten the clamping screw ⑪.
The reel is locked against unwanted reeling in or out.
7. Fold the crank ②.
8. Connect the air tool.
9. Activate the machine
10. Hold the air consumer at its handle.
11. Open the compressed air outlet valve for the compressed air extension hose ⑮.

8.8.3.2 Operating the machine without an extension air hose

1. Close the shut-off valve for the compressed air extension hose.
2. Disconnect the air consumer.
3. Unfold the crank.
4. Coil the hose evenly and tightly.
5. Tighten the clamping knob.
The reel is locked against unwanted reeling in or out.
6. Fold the crank.

8.8.3.3 Securing the hose reel for transport

1. Check that the compressed air extension hose is firmly and evenly reeled in.
2. Reel again, if necessary.
3. Tighten the clamping knob.
4. Engage the securing screw fully.
5. Plug the hose coupling onto the bracket.

**8.8.4 Option da
Empty condensate collector after operation**

When you operate the machine, especially if the ambient air is very humid, significant amounts of condensate will precipitate. Empty the condensate collection tank each time after operating the machine, see also Chapter 10.9.4.

Material Tank

Precondition The machine is switched off.

Enclosure is open.

«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.

The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.

The machine is installed on level ground,
the machine has cooled down.

Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!

1. Loosen and remove the lid from the condensate collection tank.
2. Remove condensate collection tank from the bracket inside the machine.
3. Fill the condensate into a container environmentally appropriately.
4. Place emptied condensate collection tank back into bracket inside the machine.
5. Close condensate collection tank professionally with lid.



Due to the low weight of your drivable machine, energy costs are reduced when transporting the machine as a trailer on public roads later. In addition, you will be contributing to environmental protection.

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:

- Fault messages, see chapter 9.2.1.
- Warning messages, see chapter 9.2.2.
- Maintenance messages, see chapter 10.2

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

9.2.1 Fault message on the controller (machine off)

Alarm with automatic shutdown of the machine.



You must acknowledge the fault message upon correction of the fault before you can re-start the machine.

Further information Further information on acknowledging fault messages can be found in chapter 8.6.

Error code, range 1100 – 1199 "Drive engine faults":

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1166	Fault - drive engine overload	Have it checked.	–	–	X
1167	Fault - drive engine direction of rotation	Have it checked.	–	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 63 Fault messages and troubleshooting concerning the drive engine

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

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1200	Fault - ADT high.	Check setup conditions.	5.2	–	–
		Check/clean the cooling air inlet		–	–
		Checking fan function.		–	–
		Clean the cooler.	10.6	–	–
		Check the cooling oil level.	10.5.1	–	–
		Wait until the airend discharge temperature has dropped below the value of the safety shut-down.	2	–	–
1201	Fault - OST pressure high.	Have it checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator cartridge

Tab. 64 Fault messages and troubleshooting concerning “compressor fault”

Error 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
1310	Fault – Fault in Watchdog.	Have it checked.	–	–	X

SW = Specialised workshop; KS = KAESER SERVICE

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

Tab. 65 Fault messages and troubleshooting concerning “controller fault”

Error codes, range 1400 – 1499 "General faults":

Code	Meaning	Remedy	See chapter	Where can I get help?	
				SW	KS
1400	Fault – EMERGENCY STOP	Disengage «EMERGENCY STOP» key.	8.5	–	–
		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	Have it checked.	–	–	X
1420	Fault – venting valve open circuit.	Have it checked and repaired.	–	–	X
1424	Fault - inlet valve	Have it checked.	–	–	X
1429	Fault - fan motor	Have it checked and repaired.	–	–	X
1440	Fault – power supply feed	Have it checked.	–	–	X
1441	Fault - Mains contactor malfunction	Have it checked and repaired.	–	–	X

SW = Specialised workshop; KS = KAESER SERVICE

OST = Oil separator tank

ADT = Airend discharge temperature

Tab. 66 Fault messages and troubleshooting concerning "General faults"

9.2.2 Warning message at the controller

The machine is not shut down.



- In the case of an excessive 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 acknowledging warning messages can be found in chapter 8.6.

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.	10.5.2	–	–
		Clean the cooler.	10.6	–	–
3201	Warning – OST pressure high.	Have it checked.	–	–	X

SW = specialised workshop; KS = KAESER SERVICE

ADT = Airend discharge temperature; OST - Oil separator tank

Tab. 67 Warning messages and troubleshooting concerning “compressor warning”

Error 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. 68 Warning messages and troubleshooting concerning “General warning”

9.3 Drive motor faults and alarms

9.3.1 Drive motor refuses to start or stops

Possible cause	Remedy	Where can I get help?	
		SW	KS
Voltage too high or too low	Check the electrical connection.	X	–
Overcurrent relay is set incorrectly or defective.	Adjust or replace	X	X
Control switch defective	Replace	X	X
Defective coupling relay and/or relay	Replace	X	X

SW = Specialised workshop; KS = KAESER SERVICE

Possible cause	Remedy	Where can I get help?	
		SW	KS
Drive motor must start against pressure	Wait until the machine has vented	–	–
Drive motor defective, bearing damage, winding connection	Have the drive motor replaced.	–	X
Incorrect phase sequence of the electric supply (direct connection)	Correct the electrical connection.	X	–
Incorrect phase sequence of the electric supply (plug-in connection)	Actuating pole changer switch.	–	–
Defective ADT sensor giving no enable signal.	Replace	–	X
Electrical connections and/or cables loose or broken	Tighten connection or replace cable	X	–
Compressor block defective.	Replace	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 69 Fault: "Drive motor refuses to start or stops"

9.4 Compressor faults and alarms

9.4.1 Working pressure too high

Possible cause	Remedy	Where can I get help?	
		SW	KS
Proportional controller maladjusted or defective.	Check the diaphragm and clean the nozzle or replace proportional controller if necessary.	–	X
Inlet valve does not close.	Check the controller, the control air line and the inlet valve and replace if necessary.	–	X
Pressure gauge indicating false pressure.	Replace	–	X
Venting valve does not blow off.	Check the connections and function and repair or replace as necessary.	–	X

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 70 Fault: working pressure too high

9.4.2 Working pressure too low.

Possible cause	Remedy	Where can I get help?	
		SW	KS
Proportional controller maladjusted or defective.	Check the diaphragm and clean the nozzle or replace proportional controller if necessary.	–	X
Inlet valve not opening or only opening partially.	Repair or replace if necessary.	–	X
Pressure gauge indicating false pressure.	Replace	–	X
Pressure relief valve maladjusted and/or leaking.	Replace if necessary.	–	X
Venting valve does not close.	Check the connections and function and repair or replace as necessary.	–	X
Compressor air filter clogged.	Clean or replace, see chapter 10.5.7.	–	–
Oil separator cartridge heavily clogged.	Change, see chapter 10.5.6.	–	–

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 71 Fault: working pressure too low

9.4.3 Pressure relief valve blowing off

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

SW = Specialised workshop; KS = KAESER SERVICE

Tab. 72 Fault: pressure relief valve blowing off

9.4.4 Machine overheating

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

SW = Specialised workshop; KS = KAESER SERVICE

9 Fault Recognition and Rectification

9.4 Compressor faults and alarms

Possible cause	Remedy	Where can I get help?	
		SW	KS
Oil cooler surface clogged.	Clean surface, see chapter 10.6.	–	–
The working element of the thermostatic valve not workingl.	Replace	–	X
Working pressure too high (proportional controller maladjusted).	Reset to the permissible value or replace.	–	X
Oil separator cartridge heavily clogged.	Change oil separator cartridge, see chapter 10.5.6.	–	X
Compressor oil filter cartridge clogged.	Change, see chapter 10.5.4.	–	–
Compressor oil level too low.	Top up, see chapter 10.5.2.	–	–
Oil pipes leaking.	Seal leaks or change pipes.	X	X
Defective cooling fan of the drive motor.	Repair.	X	X
Ambient temperature too high.	See conditions given in chapter 5.2.	–	–
SW = Specialised workshop; KS = KAESER SERVICE			

Tab. 73 Fault: machine overheating

9.4.5 Too much oil residue in the compressed air

Possible cause	Remedy	Where can I get help?	
		SW	KS
Oil separator cartridge scavenge line clogged.	Clean the strainer in the separator cartridge dirt trap or change if necessary (see chapter 10.5.6).	–	X
Fractured oil separator cartridge.	Change, see chapter 10.5.6.	–	–
Compressor oil level too high.	Reduce to maximum level, see chapters 10.5.1 and 10.5.3.	–	–
SW = Specialised workshop; KS = KAESER SERVICE			

Tab. 74 Alarm: "Too much oil residue in the compressed air"

9.4.6 Oil flows from the compressor air filter after shutdown

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

Tab. 75 Alarm: "Oil flows from the compressor air filter after shutdown"

10 Maintenance

10.1 Ensuring safety

Follow the instructions below to ensure safe machine maintenance.

Warning instructions are located directly at a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

Compliance with safety instructions

Ignoring safety instructions can cause unforeseeable dangers!

- Follow the instructions in chapter 3 'Safety and Responsibility'.
- Allow maintenance work to be carried out only by authorised personnel.
- 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. 76 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.

When working on live components

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

- Work on electrical equipment may only be carried out by authorised electricians.
- Switch off and lock out the power supply disconnecting device.
- Verify the absence of any voltage.
- Check that the floating relay contacts are voltage-free.
- If necessary, remove electrical connections.

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 instructions relate to any work on components that could be under pressure.

- Disconnect the air consumers.
- De-pressurise all pressurised components and enclosures. Verify the vented state.
- Wait until the machine has automatically vented.
- Carefully open all compressed air outlet valves.
- Check: The pressure gauge must read 0 bar!
- Do not open or dismantle any valves.
- When operating the machine on a compressed air system, close shut-off valves or otherwise isolate the machine from the compressed air system to ensure that no compressed air can flow back into the machine.

When working on the drive system

Touching voltage carrying components can result in electric shocks, burns or death. Touching rotating or very hot components can cause severe injuries.

- Switch off and lock out the power supply disconnecting device.
- Verify the absence of any voltage.
- If necessary, remove electrical connections.
- Ensure that the machine has cooled down.
- Do not open the enclosure and/or panels whilst the machine is switched on.

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

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

Upon switching on SIGMA CONTROL SMART, the symbols for the component to be serviced are prominently displayed at SIGMA CONTROL SMART.

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.

- Message code is shown on the display of SIGMA CONTROL SMART.

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 10.3.2.1.

Code	Meaning	Remedy	See chapter
Message code, range 2100 – 2199 “motor maintenance”			
2103	Maintenance message drive motor – grease bearings.	Grease motor bearings.	10.4.1
Message codes, range 2200 – 2299 “compressor unit maintenance”			
2200	Maintenance - change compressor oil filter (1000h)	Change the compressor oil filter.	10.5.4
2201	Maintenance - clean or change the compressor air filter (250h)	Clean or change air filter.	10.5.7
2202	Maintenance - change compressor cooling oil (1000h)	Change the cooling oil.	10.5.3

h - operating hours

Tab. 77 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, perform maintenance work at shorter intervals.

Adverse conditions are, e.g.:

- high 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 10.10.

10.3.2 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 operating hours	A3000
Every 20000 operating hours	A20000
Every 36000 h, at least every six years.	A36000
every 120000 h; at the latest after 20 years	A120000

Tab. 78 Maintenance intervals and regular maintenance tasks

The table below lists regular maintenance tasks.

- Carry out maintenance tasks punctually taking ambient and operating conditions into consideration.

10.3.2.1 Machine maintenance schedule

- Carry out maintenance tasks according to the following schedule:

Component: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	A120000	See chapter	Note
Drive motor:											
SIGMA CONTROL SMART display: Have the bearing of drive motor lubricated/checked.				X							KS, FW
Compressor:											
Check the compressor air filter contamination indicator.	X									10.5.7	
SIGMA CONTROL SMART display: Clean the compressor air filter.		X								10.5.7	
SIGMA CONTROL SMART display: Change the compressor air filter.				X						10.5.7	

KS ≙ contact KAESER SERVICE,
 FW ≙ contact specialised workshop

Component: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	A120000	See chapter	Note
Check the cooling oil level.	X									10.5.1	
SIGMA CONTROL SMART display: Change the cooling oil.				X						10.5.3	
SIGMA CONTROL SMART display: Change the compressor oil filter.				X						10.5.4	
Clean the compressor oil cooler.		X								10.6	
Check/clean the oil separator tank dirt trap.			X							10.5.5	
Change the separator cartridge in the oil separator tank.						X				10.5.6	
Have the pressure relief valve(s) checked.			X							10.5.8	KS, FW
Safety functions:											
Check the functions of the safety shut-down due to excessive airdend discharge temperature.			X							10.5.9	
Check the «EMERGENCY STOP» push-button.	X									10.5.10	
Check the functions of the EMERGENCY STOP device.			X							10.5.10	
Body:											
Check all screw connections, hinges, locks, catches, handles and snap fasteners for wear and secure fixing.		X									
Carry out rubber sealing strip maintenance.			X							10.8	
Have lifting eye and fixings checked.			X								KS, FW
Hose lines:											
Check all hose lines of the machine for proper seating, leaks and wear; have them replaced if necessary.			X							10.7	KS, FW
Have the pressure hoses of the compressor replaced.								X		10.7.1	KS, FW
KS ≙ contact KAESER SERVICE, FW ≙ contact specialised workshop											

Component: Task	Daily	A250	A500	A1000	A1500	A2000	A3000	A36000	A120000	See chapter	Note
Other maintenance tasks											
Check all accessible screw fittings, lines and clamps for wear and tightness.			X								KS, FW
Check that all electrical connections are tight.			X								KS, FW
Check the lighting system's function.	X										
Have safety-relevant components of the safety functions replaced.									X	3.7	KS, FW
KS ≙ contact KAESER SERVICE, FW ≙ contact specialised workshop											

Tab. 79 Regular machine maintenance tasks

10.3.2.2 Maintenance schedule for options

- Carry out maintenance tasks according to the following schedule:

Option: Task	Daily	A250	A500	A1000	A1500	A2000	A20000	See chapter	Note
Option ea – Tool lubricator:									
Check lubricant level.	X							10.9.1	
Option da - compressed air aftercooler:									
Clean the cooler.		X						10.9.2	
Option da - cyclone separator:									
Clean/check the dirt trap.			X					10.9.3	
Options da – condensate hose line:									
Check that the condensate hose line and condensate collector are properly installed.	X							10.9.4	
Option da – condensate collection tank:									
Check filling level /empty if necessary.	X							10.9.4	
Option oe – sealed floor pan:									
KS ≙ Contact KAESER SERVICE, FW ≙ Contact specialised workshop, EF ≙ Contact qualified electrician									

Option: Task	Daily	A250	A500	A1000	A1500	A2000	A20000	See chapter	Note
Check the machine interior for liquid accumulations.	X							10.9.5	

KS ≙ Contact KAESER SERVICE,
 FW ≙ Contact specialised workshop,
 EF ≙ Contact qualified electrician

Tab. 80 Regular maintenance task options

10.4 Motor maintenance

- Perform maintenance tasks according to the schedule in chapter 10.3.2.1.

10.4.1 Maintaining the motor bearings of the drive motor



Use only the high temperature grease UNIREX N3 for the motor bearings. The machine's nameplate provides further information about the grease and correct grease quantity. Position of the nameplate, see Figure 27. Damage to bearings caused by the use of other brands of grease is excluded from the warranty.

Material Bearing grease UNIREX N3

Weight of bearing grease per bearing location [g] =10

Grease gun

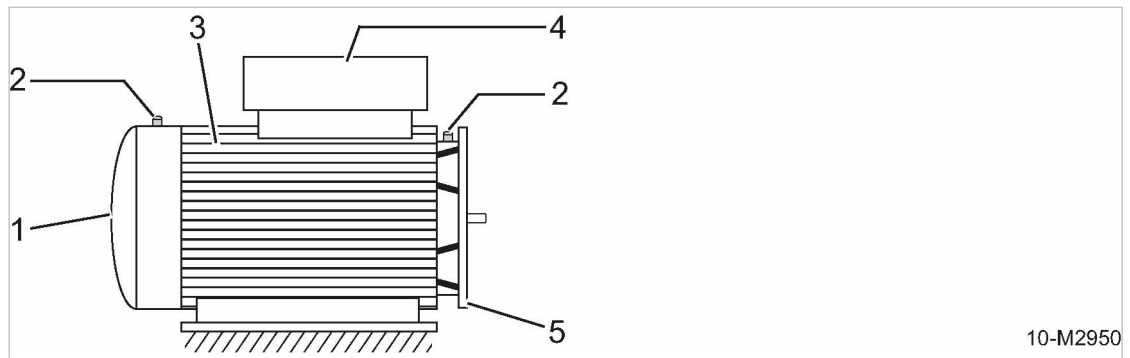
Cleaning cloth

Precondition Maintenance personnel wears appropriate tight-fitting protective clothing.
 Maintenance personnel wears protective goggles and gloves.
 Maintenance personnel uses hearing protection.

Clean the cooling fins and grease nipples

See figure 26 for the location of the two grease nipples.

Precondition The machine is switched off.
 «Controller ON/OFF» switch is set to position *OFF*.
 The user's power supply isolating device is switched off,
 the device is locked off,
 the absence of voltage has been verified.
 The machine has been set down on level ground,
 the machine has cooled down.
 The machine is fully vented, the pressure gauge reads 0 bar!



10-M2950

Fig. 26 Locations of grease nipples

- | | | | |
|---|------------------------|---|----------------------------|
| ① | Drive motor | ④ | Connector box |
| ② | Grease nipple position | ⑤ | Flange side of drive motor |
| ③ | Cooling fins | | |

1. Open the enclosure.
2. Clean the cooling fins.
3. Clean the grease nipples.
4. Close the enclosure.

Grease motor bearings

The maintenance activity "Grease motor bearings" must be carried out with the machine running!

- Comply with measures concerning protective clothing, gloves, goggles and hearing protection!
- Open the enclosure of the machine only quickly for the actual greasing of the motor bearings.
- Keep a safe distance from rotating parts and hot surfaces.
- Work with caution.

Precondition Cooling fins and grease nipple have been cleaned.

Grease gun has been filled with suitable high temperature grease

On-site power supply isolating device has been switched on,
pole changer switch has been set to position "1".

Switch «Controller ON/OFF» has been set to position *ON*.

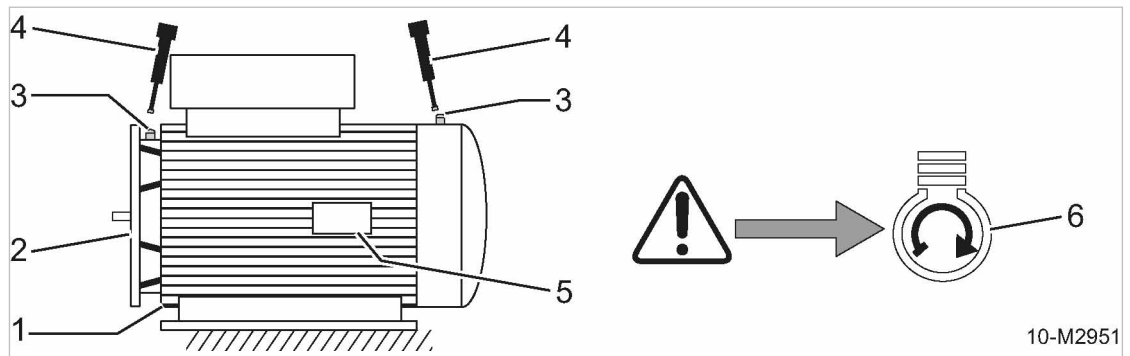


Fig. 27 Grease bearings of drive motor

- | | |
|------------------------------|-------------------------------------|
| ① Drive motor | ④ Grease gun |
| ② Flange side of drive motor | ⑤ Nameplate of drive motor |
| ③ Grease nipple position | ⑥ <i>Drive motor running symbol</i> |

1. Press «START» key on the control panel of SIGMA CONTROL SMART.
2. Let machine run in IDLE mode.
3. Open the enclosure.
4. Pick up the grease gun.
5. Grease both motor bearings with a grease gun.
6. Switch off drive motor by using the «STOP» key on the operating panel of SIGMA CONTROL SMART.

Resetting the maintenance timer

- Reset the maintenance timer as described in the separate User Manual for the SIGMA CONTROL SMART controller, chapter "Reset maintenance timer".

Switch off the machine and the on-site power supply isolating device

1. Turn the «Controller ON/OFF» switch to position *OFF*.
2. Set the pole changer switch to position "0".
3. Switch off the user's power supply isolating device.
4. Close the enclosure.

10.4.2 Fan motor maintenance

The following components are cooled by electric fans:

- Oil cooler
- After-cooler (optional)
- Control cabinet

- Have the corresponding fan motors checked by a KAESER SERVICE technician during the course of a maintenance visit.

10.5 Compressor Maintenance

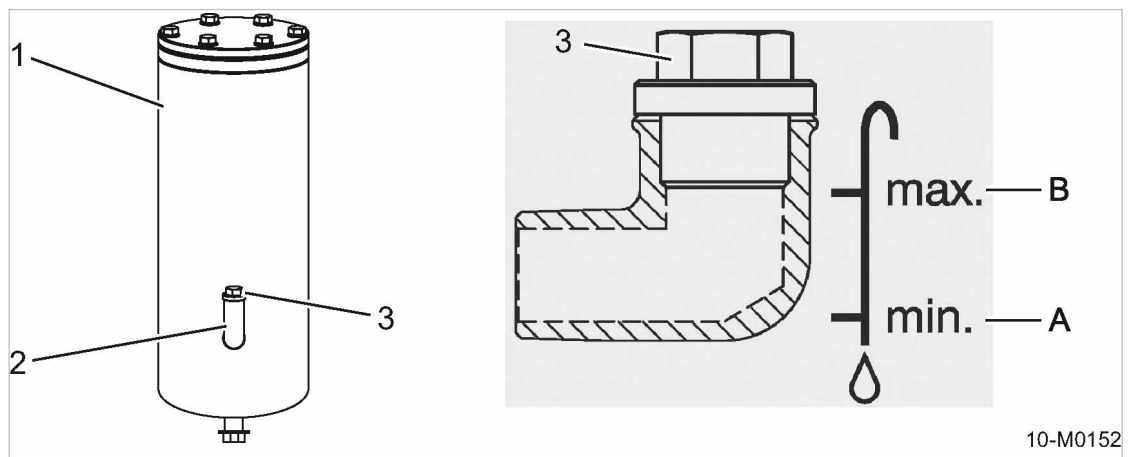
- Perform maintenance tasks according to the schedule in chapter 10.3.2.1.

10.5.1 Check the cooling oil level

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

Material Wrench
Cleaning cloth

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!



10-M0152

Fig. 28 Check the cooling oil level

- ① Oil separator tank
- ② Oil filler
- ③ Screw plug

- Ⓐ Minimum level
- Ⓑ Maximum level

1. Slowly unscrew and withdraw the plug from the oil filler.
2. Check the cooling oil level.
If oil is not visible: Top up the cooling oil.
3. Replace the plug in the filler.
4. Close the enclosure.

10.5.2 Cooling oil filling and topping up

Material Cooling oil
Funnel
Cleaning cloth
Wrench

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is in "0" position
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!

Filling with cooling oil

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

**1. NOTICE!**

Incompatible types of cooling oil damage the machine

- Never mix different types of cooling oil.
- Never top up with a type of cooling oil that differs from the one already used in the machine.

2. Slowly unscrew and withdraw the plug from the oil filler port.
3. Top up the cooling oil to the maximum level  with the help of a funnel.
4. Check the oil level.
5. Check the filler plug gasket for damage.
Damaged gasket: replace gasket.
6. Replace the plug in the filler port.

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site main switch.
3. Open the enclosure.
4. «Set the pole changer/load isolating switch» to position "1".
5. Turn the «Control ON/OFF» switch to position *ON*.
6. Close the enclosure.

Starting the machine and performing a test run:

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.

2. Warm up machine by letting it run in IDLE operation.
Warm-up has been successful when required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the enclosure.
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 enclosure.

10.5.3 Changing the cooling oil



Drain the oil completely from the following components:

- Compressor block
 - Oil separator tank
 - Oil cooler
 - Oil pipes
- Always change the oil filter when changing the oil.

Material	See chapter 2.6.7 for oil filling volume. Receptacle Hose coupling is disconnectedly laying at the machine. Funnel Cleaning cloth
Precondition	The machine is switched off. Enclosure is open. «Control ON/OFF» switch is set to <i>OFF</i> position, pole changer switch/load isolating switch is in "0" position. The on-site main switch is switched off, is locked off, the absence of voltage has been verified, the electric connecting cable has been removed. The machine has been set down on level ground, the machine is at operating temperature. Air consumers are disconnected, the outlet valves are open, the machine is fully vented, the pressure gauge reads 0 bar!


CAUTION

Danger of burning from hot components and oil.

- Wear long-sleeved clothing and gloves.

- Comply with all instructions.

10.5.3.1 Draining the cooling oil

To drain the entire cooling oil from the machine, you must remove the screw plug of the oil separator tank and open the oil drain valve of the oil cooler. If the machine is fitted with a closed floor pan, you must remove the bungs from the floor panel.

- If necessary, remove the bungs from the floor panel.
- Remove the screw plug from the oil filler of the oil separator tank.
- Remove the screw plug from the tank floor of the oil separator tank.
- Open the oil drain valve on the oil cooler.
- Remove the oil filter.

- Comply with all instructions.

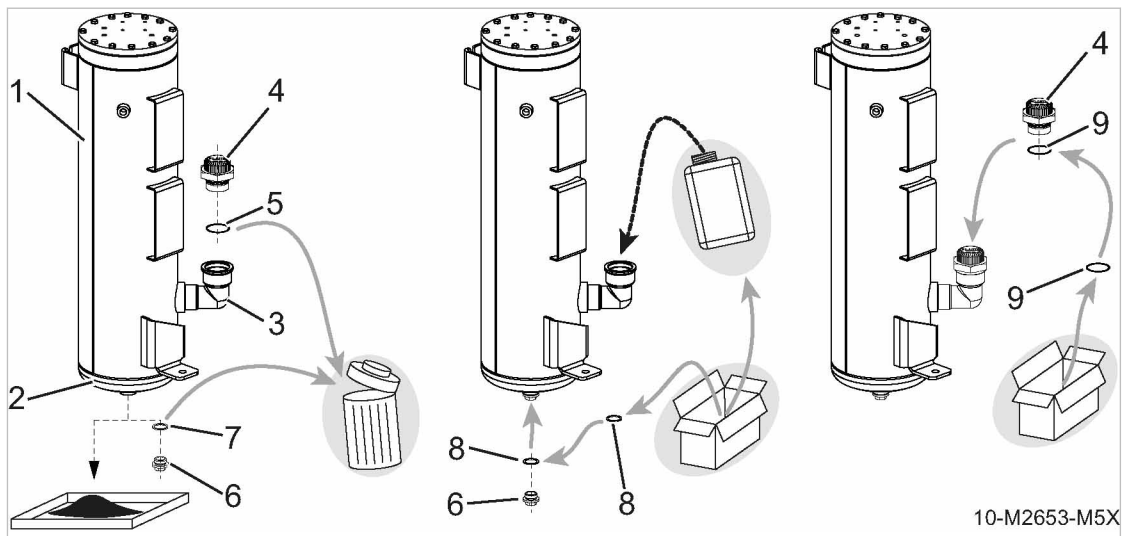
Draining the oil from the separator tank


Fig. 29 Plugs, oil separator tank

- | | |
|----------------------------------|--------------|
| ① Oil separator tank | ⑥ Screw plug |
| ② Tank floor, oil separator tank | ⑦ Gasket |
| ③ Oil filler | ⑧ New gasket |
| ④ Screw plug | ⑨ New gasket |
| ⑤ Gasket | |

1. Position a receptacle beneath the oil separator tank (accessible through a hole in the floor panel).
2. Remove the screw plug from the oil filler port of the oil separator tank.
3. Remove the gasket at the oil filler port.
4. Dispose of the old gasket.
5. Loosen and remove the screw plug from the tank floor of the oil separator tank.

6. Remove the gasket at the tank floor of the oil separator tank.
7. Dispose of the old gasket.

Result Cooling oil drains out.

Draining the cooling oil from the oil drain valve

For increased convenience, an oil drain valve has been installed for draining cooling oil from the oil cooler.

The protective cap must be removed prior to draining the oil. The cap protects the oil drain valve from contamination. Drain the oil by screwing the hose coupling on the oil drain valve.

	Machine status	Protective cap	Male hose coupling	Oil drain valve status
1	Mode (machine runs)	connected	is supplied with the machine as accessory.	closed
2	Oil drain (Machine de- commissioned)	removed	connected	open

Tab. 81 Oil drain valve

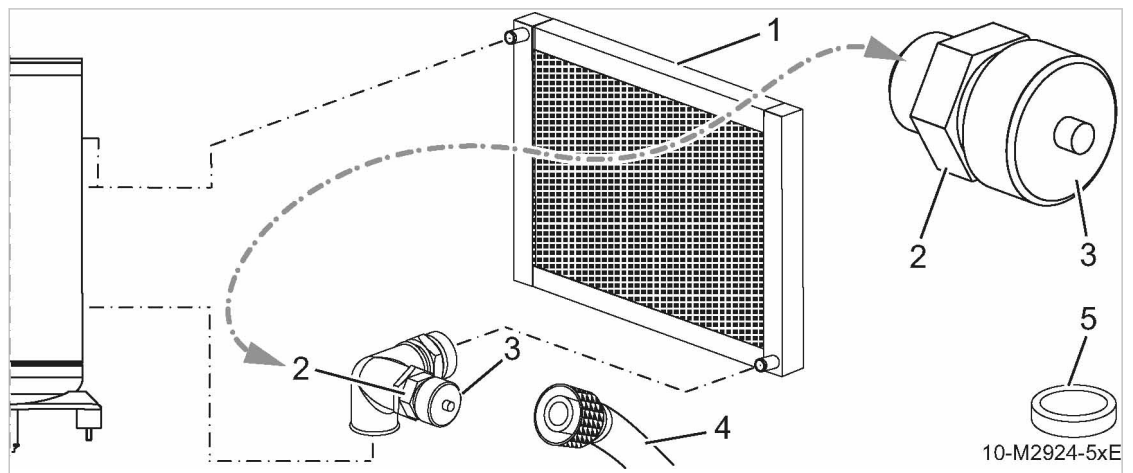


Fig. 30 Draining the compressor cooling oil

- | | |
|-------------------|----------------------|
| ① Oil cooler | ④ Male hose coupling |
| ② Oil drain valve | ⑤ Bung |
| ③ Protective cap | |

1. Position a collection receptacle beneath the oil drain valve of the oil cooler (accessible through a hole in the floor panel).
2. Feed the free end of the hose through the opening in the floor panel.
3. Suspend and fasten the free end of the hose in the receptacle.
4. Turn and detach the protective cap ③ of the oil drain valve.
5. Screw the hose coupling ④ onto the oil drain valve ②.

Result Cooling oil drains out.

Removing the oil filter component

- Remove the oil filter (see chapter 10.5.4).

Draining the machine's cooling oil

- Drain the entire cooling oil from the machine at operating temperature.
If the machine is at operating temperature, the oil cooler is automatically emptied.

Closing the drain opening of the oil separator tank

1. Turn the screw plug with a new gasket into the floor panel of the oil separator tank.
2. Tighten the screw plug.

Result The drain opening of the oil separator tank is closed.

Closing the oil drain valve of the oil cooler

1. Unscrew and remove the hose coupling.
The oil drain valve is closed.
2. Additionally close the oil drain valve off with the protective cap.

Installing the oil filter component

- For installing of the new oil filter, see chapter 10.5.4.

Filling with cooling oil

1. Fill new cooling oil into the oil filler port of the oil separator tank.
2. Turn the screw plug with a new gasket into the oil filler port of the oil separator tank.
3. Tighten the screw plug.

Further information See chapter 10.5.2 for cooling oil filling.

Performing final work steps:

- Close the canopy.



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

10.5.4 Replacing the compressor oil filter

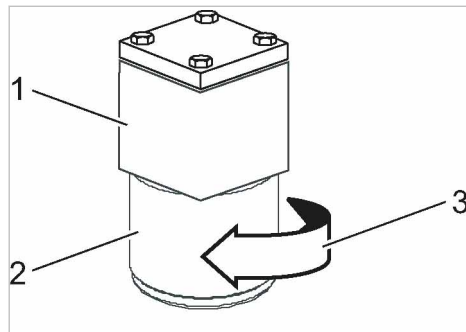
Material Spare part
Tool
Receptacle
Cleaning cloth

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!

**CAUTION**

Danger of burning from hot components and oil.

- Wear long-sleeved clothing and gloves.



10-M0154-M5xE

Fig. 31 Change the oil filter

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

Changing the oil filter:

1. Prepare a receptacle.
2. Loosen the filter by turning counter-clockwise and catch any escaping oil.
3. Carefully clean sealing surfaces using lint-free cloth.
4. Lightly oil the new filter's gasket.
5. Turn the oil filter clockwise by hand to tighten.
6. Check the oil level in the oil separator tank.
Cooling oil level too low: Top up the cooling oil.



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

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site «main switch».
3. «Set the pole changer/load isolating switch» to position “1”.
4. Turn the «Control ON/OFF» switch to position *ON*.
5. Close the enclosure.

Starting the machine and performing a test run:

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Warm up machine by letting it run in IDLE operation.
Warm-up has been successful when required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the enclosure.
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 enclosure.

Resetting the maintenance interval counter

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

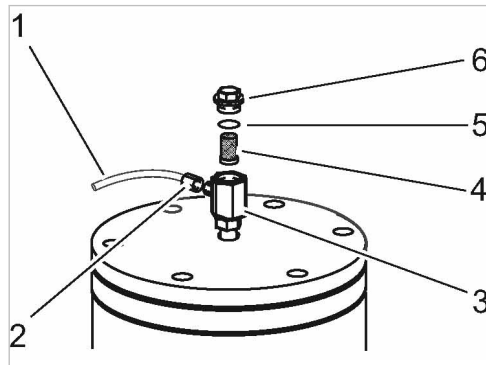
10.5.5 Oil separator tank dirt trap maintenance

Material

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

Precondition

- The machine is switched off.
- Enclosure is open.
- «Control ON/OFF» switch is set to *OFF* position,
- «pole changer switch/load isolating switch» is in "0" position.
- The user's supply disconnecting device is switched off,
- the device is locked off,
- the absence of voltage has been verified,
- the power supply cable has been removed.
- The machine has been set down on level ground,
- the machine has cooled down.
- Air consumers are disconnected,
- the outlet valves are open,
- the machine is fully vented, the pressure gauge reads 0 bar!



10-M0834

Fig. 32 Oil separator tank dirt trap maintenance

- | | |
|---------------------|--------------------|
| ① Oil return line | ④ Strainer |
| ② Union nut | ⑤ O-ring |
| ③ Dirt trap housing | ⑥ Screw connection |

➤ Comply with all instructions.

Dirt trap maintenance:

1. Undo the union nut ② and bend the oil return line ① to one side.
2. Unscrew the dirt trap ③.
3. Remove and clean strainer ④ and O-ring ⑤.
4. Check the strainer and O-ring for function and wear.
When clearly worn: replace components.
5. Clean the housing and fitting ⑥ of the dirt trap.
6. Re-insert the strainer and O-ring in the housing and close with the fitting.
7. Refit the oil return line and tighten the union nut.

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site main switch.
3. «Set the pole changer/load isolating switch» to position "1".
4. Turn the «Control ON/OFF» switch to position *ON*.

Starting the machine and performing a test run:

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Let machine warm up in IDLE mode.
Warm-up has been successful when required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the enclosure.
7. Visually inspect for leaks.
8. Close the enclosure.



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

10.5.6 Changing the oil separator cartridge

The dirt trap must be cleaned/replaced whenever the oil separator cartridge is changed.
See Chapter 10.5.5 for instructions on dirt trap maintenance.



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 replacement intervals for:
 - Cooling oil
 - Oil filter
 - Air filter

The individual components of the oil separator tank should be connected by electrically conductive means!

In order to ensure the electrical conductivity between the individual components of the oil separator tank and the machine frame, every gasket must be equipped with a metal clip, please see image 33. Do not remove the metal clips from the gasket!

Material Spare part
Cleaning cloth
Wrench

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is in "0" position.
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!

**NOTICE**

Improper installation during maintenance
Damage to delicate components

- Work with caution.
- Comply with all instructions.

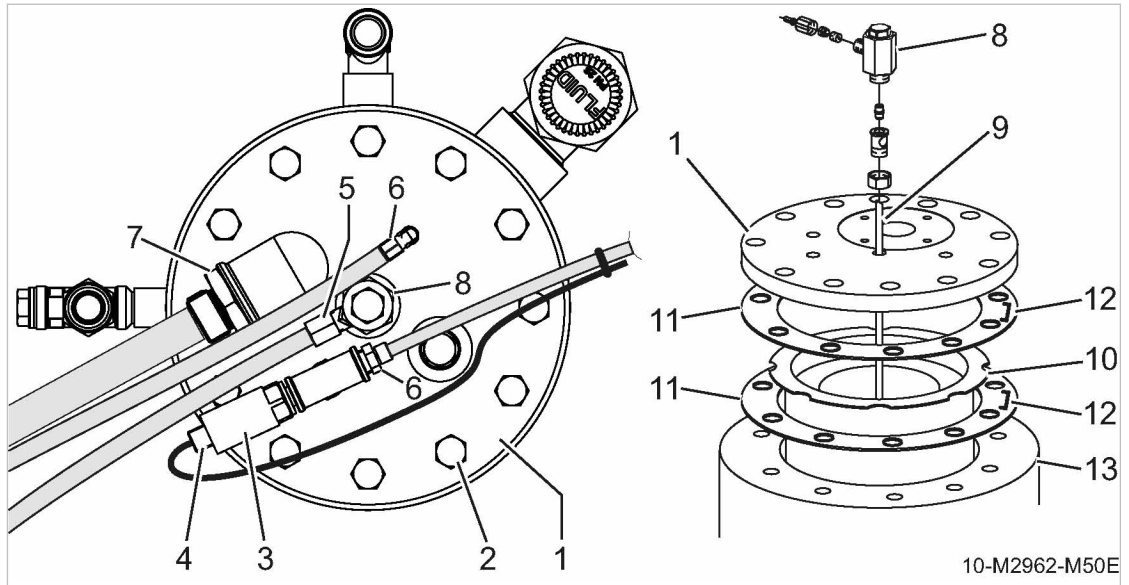
10.5.6.1 Changing the oil separator cartridge


Fig. 33 Changing the oil separator cartridge

- | | |
|-------------------------------------|--|
| ① Oil separator tank cover | ⑧ Dirt trap |
| ② Fixing screw | ⑨ Oil return line (screwed to the cover) |
| ③ Pressure transducer | ⑩ Oil separator cartridge |
| ④ Pressure transducer cable fitting | ⑪ Gasket |
| ⑤ Oil scavenge pipe union nut | ⑫ Metal clip |
| ⑥ Control air line union nut | ⑬ Oil separator tank |
| ⑦ Compressed air hose union nut | |

Detach components

1. Loosen the union nuts at ⑤, ⑥ and ⑦.
2. Remove the oil return line, control lines and compressed air hose.
3. Loosen pressure transducer cable fitting.
4. Remove cable.
5. Loosen and unscrew the dirt trap ⑧.

Unfasten the oil separator tank cover

1. Undo all fixing screws ② on the separator tank cover ①.
2. Remove all fixing screws.

Lift up the oil separator tank cover

The pipe of the oil return line ⑨ is screwed to the oil separator tank cover.

1. Lift the cover carefully.
2. Lift the cover until the pipe of the oil return line completely protrudes from the oil separator tank.
3. Carefully place down the cover so that you do not damage the pipe.

Remove wear parts

1. Remove top gasket.
2. Pull old oil separator cartridge from the oil separator tank.
3. Remove bottom gasket.

Clean sealing surfaces

1. Clean the sealing surfaces of the oil separator tank.
2. Ensure that no foreign bodies (dirt particles) fall into the oil separator tank.
3. Clean the sealing surfaces of the cover.

Check new gaskets

- Make sure that every gasket is equipped with a metal clip.



The gaskets are not equipped with a metal clip?

- Contact KAESER SERVICE.

Install spare parts

The pipe of the oil return line ⑨ is screwed to the oil separator tank cover.

1. Place the first seal on the sealing surface of the oil separator tank.
2. Align new oil separator cartridge so that the flange points upward.
3. Insert new oil separator cartridge into the oil separator tank.
Bottom flange surface of the oil separator cartridge is positioned on top of the first gasket.
4. Place the second gasket on the flange surface of the oil separator cartridge.
5. Align the new oil separator cartridge and both gaskets with the drilled holes of the oil separator tank.
6. Carefully place the cover with the pipe of the oil return line onto the second seal.
7. Align the cover with the drilled holes of the oil separator tank.

Attach oil separator tank cover

1. Position all fixing screws.
2. Tighten all fixing screws hand-tight.
3. Tighten all fixing screws of the oil separator tank with the specific torque (see chapter 2).

Install components

1. Position cleaned/replaced dirt trap and tighten hand-tight.
2. Tighten the dirt trap with the corresponding torque.
3. Tighten the union nuts of the oil return line, control lines and the compressed air hose.
4. Attach pressure transducer cable fitting.

Check the cooling oil level

1. Check the oil level in the oil separator tank.
Cooling oil level too low.
2. Top up the cooling oil.

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site «main switch».
3. «Set the pole changer/load isolating switch» to position “1”.
4. Turn the «Control ON/OFF» switch to position *ON*.
5. Close the enclosure.

Starting the machine and performing a test run:

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Let machine warm up in IDLE mode.
Warm-up has been successful when the required airend discharge temperature (ADT) has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.
6. Open the enclosure.
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 enclosure.



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

10.5.7 Compressor air filter maintenance**Compressor air filter maintenance:**

- The filter element must be cleaned at the latest when the corresponding maintenance indicator responds.
- As stipulated in the maintenance table, replace the filter element after one year.



- Using the machine without an air filter element is not permitted!
- Do not use filter elements with damaged surface or seals.
- 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 Spare part
Cleaning cloth

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!

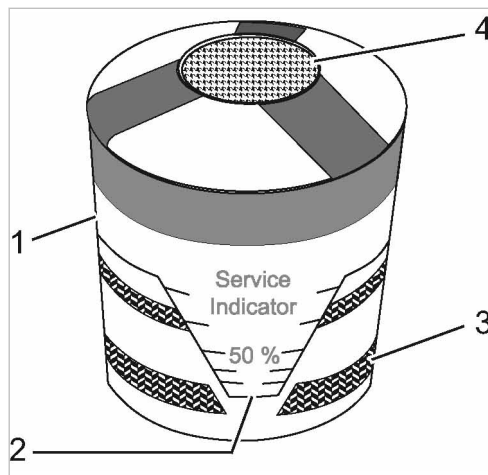


NOTICE

Air filter element is dirty
Loss of machine performance
➤ Replace the filter element.

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.



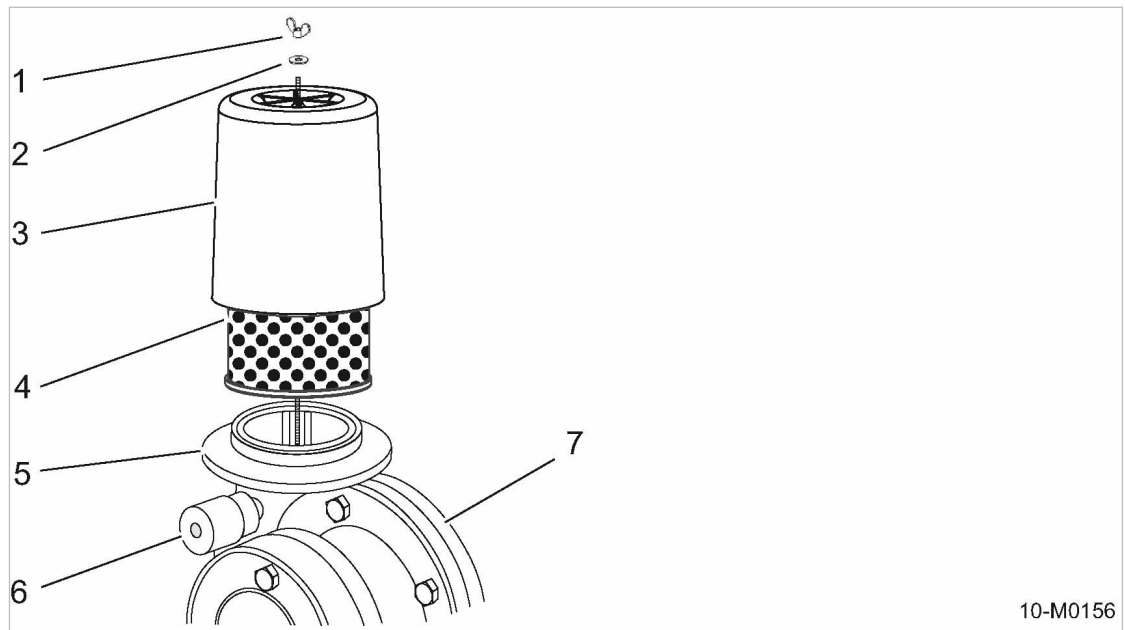
10-M1387

Fig. 34 Maintenance indicator

- | | |
|--|--|
| ① Maintenance indicator | ③ Red zone indicator scale |
| ② Indicating piston of the maintenance indicator | ④ Reset knob for the maintenance indicator |

- Check the air filter maintenance indicator.
If the yellow piston reaches the red zone, Cleaning the filter element.

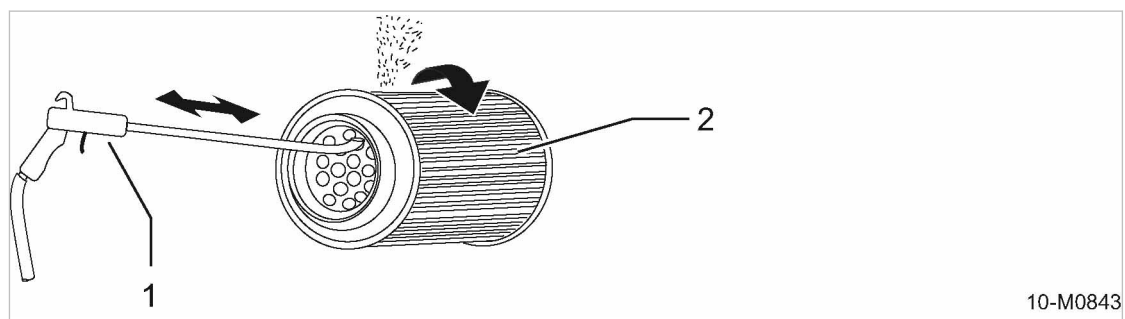
Cleaning the filter element:



10-M0156

Fig. 35 Compressor air filter maintenance

- | | |
|------------------|-------------------------|
| ① Wing nut | ⑤ Inlet valve |
| ② Washer | ⑥ Maintenance indicator |
| ③ Filter cap | ⑦ Compressor block |
| ④ Filter element | |



10-M0843

Fig. 36 Cleaning the filter element

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

1. Remove the wing nut and washer.
2. Remove the cover.
3. Remove the filter element.
4. Clean the filter housing and all sealing faces carefully with a damp cloth.
5. Cleaning the filter element:
 - Use dry compressed air (≤ 5 bar!) at an angle to blow dust from the element diagonally 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 surfaces

6. Inspect the element carefully for any damage.
Damaged filter element: Replace filter element.
7. Insert the cleaned or new filter element into the filter housing. Make sure it is properly in place and sealed by its gaskets.
8. Replace the cover.
9. Secure the cover with washer and wing nut.
10. Check the correct attachment of the filter cover.

Resetting the maintenance indicator

1. 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.
2. Close the enclosure.



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

Resetting the maintenance interval counter

- Reset the maintenance timer as described in the separate operating manual for the SIGMA CONTROL SMART controller, chapter "Reset maintenance timer".

10.5.8 Check pressure relief valves

- Have pressure relief valves checked by KAESER SERVICE in accordance with the maintenance schedule.

10.5.9 Checking the excessive temperature shut-down function

The machine should shut down if the discharge temperature reaches a maximum of $T_{max.}$ [°C].
 $T_{max.}$ [°C] see table 82.

Machine temperature	Value
Maximum block discharge temperature [°C]	117

Tab. 82 Shut-down at excessive temperature

- Check the excessive temperature shut-down function as described in the SIGMA CONTROL SMART operating manual.



The machine does not shut down?
The excessive temperature shut-down function is no longer ensured.
➤ Shut down the machine immediately and call KAESER SERVICE.

10.5.10 Check the EMERGENCY STOP device



In order to shut down the machine in the event of an emergency, the machine is equipped with an EMERGENCY STOP device.
The EMERGENCY STOP device must only be used in the event of an emergency.

To enable shut-down of the machine in the event of an emergency, the EMERGENCY STOP device must be fully functional at all times.

Overview:

- Check «EMERGENCY STOP» pushbutton daily with the machine shut down.
- Check function of EMERGENCY STOP device once a year with the machine running.

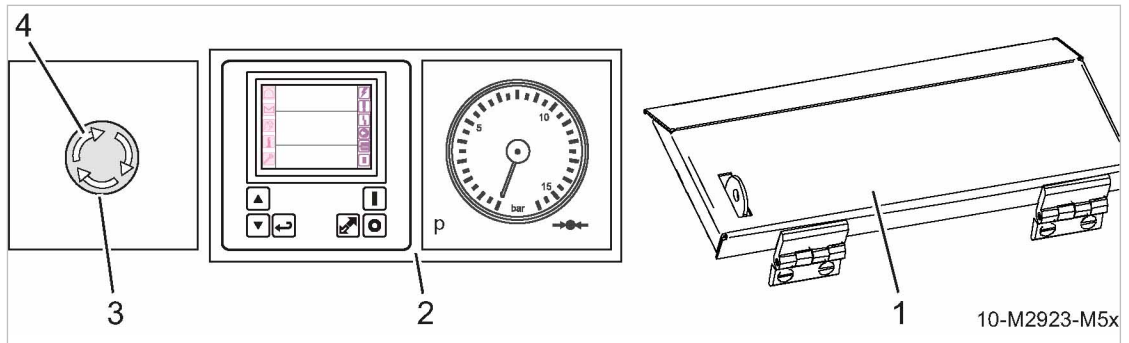


Fig. 37 Check the EMERGENCY STOP device

- | | |
|--------------------------|--------------------------------|
| ① Instrument panel cover | ③ «EMERGENCY STOP» push button |
| ② Control panel | ④ Direction of arrow |

Check «EMERGENCY STOP» pushbutton with the machine shut down

Precondition The machine is switched off.
The drive motor stands still.

1. Press the «EMERGENCY STOP» pushbutton.
2. Check if «EMERGENCY STOP» pushbutton locks properly and remains locked.
3. Check if the «EMERGENCY STOP» pushbutton properly unlocks by turning it in the direction of the arrow.



Proper functioning of the «EMERGENCY STOP» pushbutton is no longer ensured?
➤ Shut down the machine immediately and call KAESER SERVICE.

Check EMERGENCY STOP device with the machine running.

Precondition The machine is switched on and is running in IDLE mode.

1. Press the «EMERGENCY STOP» pushbutton.
The drive motor stops, the pressure system is vented, and the machine is prevented from automatically re-starting.



The drive motor does not stop?
The safety function of the EMERGENCY STOP device is no longer ensured.
➤ Shut down the machine immediately and call KAESER SERVICE.

2. Unlock the «EMERGENCY STOP» pushbutton by turning it in the direction of the arrow.
3. Acknowledge the alarm message.

10.6 Oil cooler maintenance

The frequency of cleaning is mainly dependent on local operating conditions.

Severe clogging of the oil cooler causes excessive temperatures and thus overheating of the machine.

Check the oil cooler regularly for clogging.

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 switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.
The on-site main switch is switched off,
is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down in cleaning area with oil separator,
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!



CAUTION

Swirling dust due to cleaning with compressed air!
Illness of the respiratory tract.

- Wear breathing mask.



NOTICE

Damage to the machine can be caused by water or steam jets.
Direct water or steam jets can damage or destroy electrical components and indicating instruments.

- Cover up electrical components such as the control cabinet, alternator, starter and instruments.
- Do **not** direct water or steam jets at sensitive components such as the display instruments.
- Deploy the extension pole of the pressure washer at a distance of at least 50 cm and an approximately 90° angle to the cooler/radiator surface.



NOTICE

Improper cleaning with hard objects!
Damages to oil cooler.

- Do not use hard objects to clean the oil cooler.
- Comply with all instructions.

10.6.1 Clean the oil cooler.


The cleaning direction by means of compressed air, water or steam jet must always be in the opposite direction of the cooling air flow.

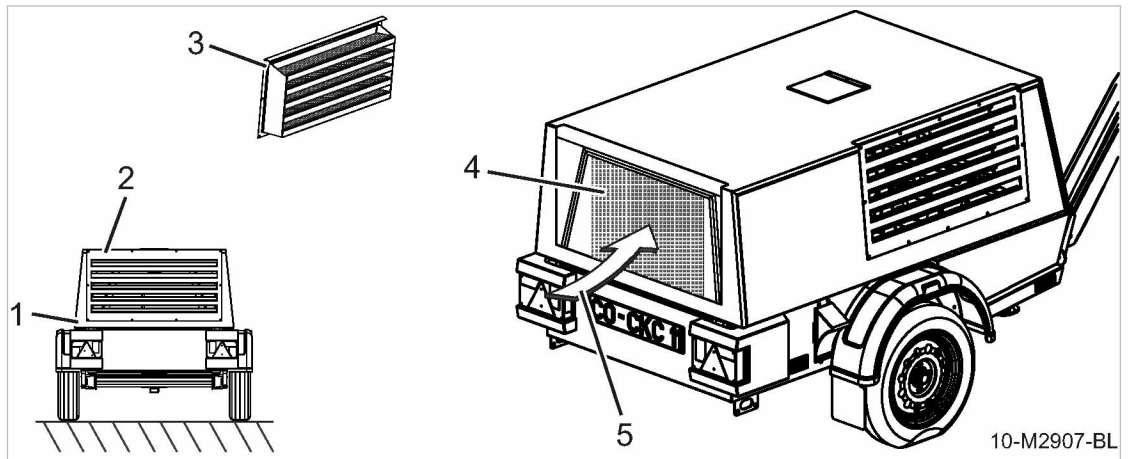


Fig. 38 Clean the oil cooler.

- | | |
|--|---|
| <ul style="list-style-type: none"> ① Rear of the machine ② Location of the exhaust air grille on the machine ③ Exhaust air grille with integrated noise damping inserts | <ul style="list-style-type: none"> ④ Oil cooler ⑤ Direction of cleaning water or steam jet (from outside to inside) |
|--|---|

Cover the intake opening of the air filter:

1. Cover the intake opening of the air filter.
2. Close the enclosure.

Removing the exhaust air grille:

1. Loosen all screws of the exhaust air grille.
2. Remove all screws.
3. Remove the exhaust air grille with integrated noise damping inserts.

Clean the oil cooler:

- Clean the cooling fins with compressed air, water or steam jet in the opposite direction to the cooling air flow (from inside to outside).

Installing the exhaust air grille:

1. Position the exhaust air grille with integrated noise damping inserts.
2. Position all screws.
3. Tighten screws.

Uncover the intake opening of the air filter:

1. Open the enclosure.
2. Remove the protective covering from the air filter's intake opening.

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site «main switch».
3. «Set the pole changer/load isolating switch» to position “1”.
4. Turn the «Control ON/OFF» switch to position *ON*.
5. Close the enclosure.

Commissioning the machine

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Start the machine in IDLE mode and run up to operating temperature so that excess water is evaporated.
Warm-up has been successful when required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.

Check the oil cooler for leaks:

1. Open the enclosure.
2. Visually inspect for leaks: Does oil escape?



Is a oil cooler leaking?

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

➤ Close the enclosure.



Clean the cooler blades only at cleaning locations equipped with an oil separator!

10.7 Checking/replacing hose lines

The machine's hose lines comprise the pressure hoses of the compressor.



The hose lines 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 10.3.2.1

➤ Comply with all instructions!

10.7.1 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.

10.8 Maintenance of rubber sealing strips

The rubber sealing strips between the lower body and the enclosure serve both as a soundproofing measure and to prevent ingress of rain water.

The rubber sealing strips must be regularly maintained in order to prevent damages to the rubber sealing strips when the enclosure is opened, see Maintenance Schedule, Chapter 10.3.2.1.

Especially before the winter season, oiled or greased rubber sealing strips prevent damages when the enclosure is opened.

Material Cleaning cloth
 Silicone or Vaseline

Precondition The machine is switched off.
 Enclosure is open.
 «Control ON/OFF» switch is set to *OFF* position,
 «pole changer switch/load isolating switch» is in "*0*" position.
 The user's supply disconnecting device is switched off,
 the device is locked off,
 the absence of voltage has been verified,
 the power supply cable has been removed.
 The machine has been set down on level ground,
 the machine has cooled down.
 Air consumers are disconnected,
 the outlet valves are open,
 the machine is fully vented, the pressure gauge reads 0 bar!

1. Carefully clean rubber sealing strips using a lint-free cloth.
2. Clean the rubber sealing strips and check for cracks, holes and other damage.



Rubber sealing strips show for cracks, holes and other damage.

➤ Have the rubber sealing strips replaced by an authorized KAESER SERVICE technician.

3. Properly oil/grease the rubber strips.
4. Close the enclosure.

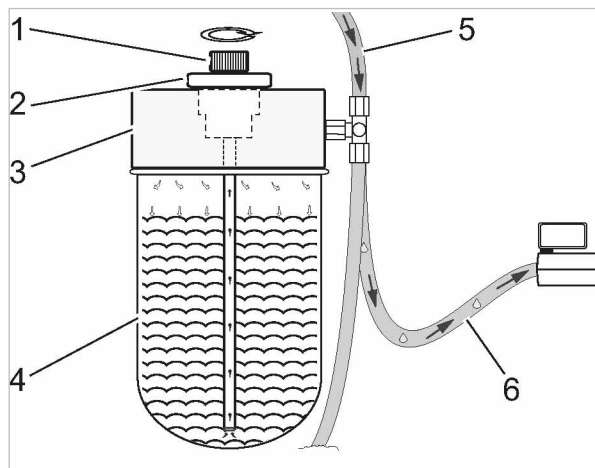
10.9 Maintenance of Optional Items

➤ Perform maintenance tasks according to the schedule in chapter 10.3.2.2.

10.9.1 Option ea Tool lubricator maintenance

Material Special lubricant for road breakers
 Funnel
 Cleaning cloth

Precondition The machine is switched off.
 Enclosure is open.
 «Control ON/OFF» switch is set to *OFF* position,
 «pole changer switch/load isolating switch» is set to "0" position.
 The user's supply disconnecting device is switched off,
 the device is locked off,
 the absence of voltage has been verified,
 the power supply cable has been removed.
 The machine has been set down on level ground,
 the machine has cooled down.
 Air consumers are disconnected,
 the outlet valves are open,
 the machine is fully vented, the pressure gauge reads 0 bar!



10-M2999-5xE

Fig. 39 Tool lubricator maintenance

- | | |
|--|---------------------------|
| ① Metering knob | ④ Lubricant container |
| ② Screw plug with dipstick and integrated riser tube | ⑤ Compressed air input |
| ③ Tool lubricator top with lubricant filler neck | ⑥ Air line with lubricant |

➤ Comply with all instructions.

Check filling level

Check the lubricant level in the lubricant container daily.

A dipstick is attached to the underside of the screw plug of the filler neck with which you can measure the filling level.

The level should be in the upper third of the dipstick.

1. Slowly unscrew and withdraw the screw plug from the filler neck.
2. Wipe off the dipstick with a lint-free cloth or rag and screw the plug in again all the way.

3. Unscrew and withdraw the plug once more and read off the filling level on the dipstick.
Filling level in the upper third of the dipstick: Lubricant level is OK.
If lubricant does not reach this level: Top up the lubricant.

Fill in and top up the lubricant:

1. Slowly unscrew and withdraw the screw plug from the filler neck.
2. Use a funnel to fill in the lubricant to the maximum level (10 – 15 mm below the top of the tank).
3. Check filling level.
4. Check the filler plug O-ring for damage.
 O-ring is damaged.
➤ Replace O-ring.
5. Close the filler neck with the screw plug.
6. Close the enclosure.

Further information See chapter 2.9.1 for suitable lubricant grade and volume for tool lubricator.

10.9.2 Maintaining the compressed air aftercooler

The compressed air aftercooler is installed separately to the compressed air treatment components. The frequency of cleaning is heavily dependent on local operating conditions.

Check the compressed air aftercooler regularly for contamination.

Have severe contamination cleaned by KAESER SERVICE.

Material Compressed air
Breathing mask (if necessary)
Water or steam jet blaster

Precondition The machine is switched off.
Enclosure is open.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch/load isolating switch» is set to "0" position.
The on-site main switch is switched off,
is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down in cleaning area with oil separator,
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!



CAUTION

Swirling dust due to cleaning with compressed air!
Risk of injury to respiratory tract
➤ Wear breathing mask.

**NOTICE**

Damage to the machine can be caused by water or steam jets!

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

- Cover up electrical components such as the control cabinet, alternator, starter and instruments.
- Do **not** direct water or steam jets at sensitive components such as the display instruments.
- Deploy the extension pole of the pressure washer at a distance of at least 50 cm and an approximately 90° angle to the cooler/radiator surface.

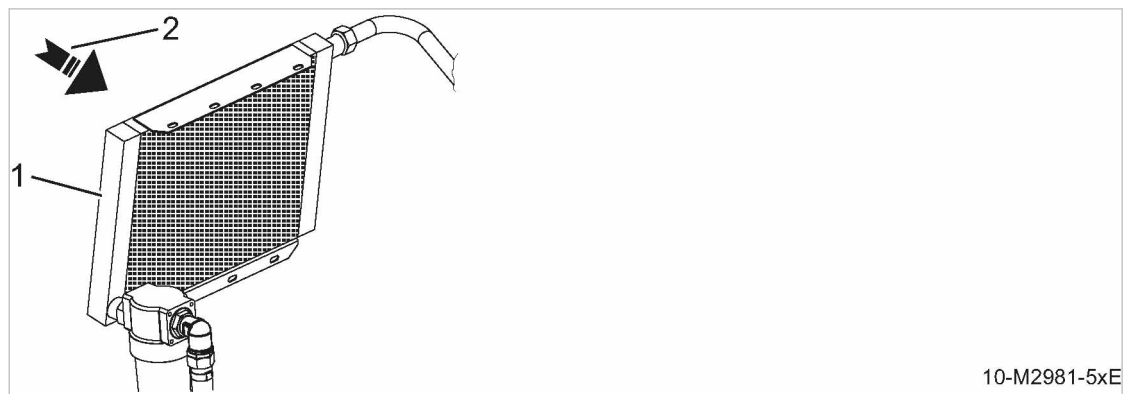
**NOTICE**

Improper cleaning with hard objects!

The compressed air aftercooler will be damaged.

- Do not clean the compressed air aftercooler with hard objects.

- Follow all instructions!

10.9.2.1 Cleaning the compressed air aftercooler

10-M2981-5xE

Fig. 40 Cleaning the compressed air aftercooler

- ① Compressed air aftercooler
- ② Cleaning direction for water or steam jet

Cover the intake opening of the air filter:

1. Cover the intake opening of the air filter.
2. Close the enclosure.

Cleaning the compressed air aftercooler

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

Uncover the intake opening of the air filter:

1. Open the enclosure.
2. Remove the protective covering from the air filter's intake opening.

Putting in operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site main switch.
3. «Set the pole changer/load isolating switch» to position "1".
4. Turn the «Control ON/OFF» switch to position *ON*.
5. Close the enclosure.

Start the machine

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Start the machine in IDLE mode and run up to operating temperature so that excess water is evaporated.
Warm-up has been successful when required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the discharge valves.

Inspect compressed air aftercooler for leaks:

1. Open the canopy.
2. Visually inspect for leaks: Does condensate escape?



Is the compressed air aftercooler leaking?

- Have defective compressed air aftercooler immediately repaired/replaced by authorised KAESER SERVICE.



Clean the cooler fins only in cleaning stations equipped with an oil separator!

10.9.3 Maintenance of the centrifugal separator dirt trap

Clean the centrifugal separator dirt trap if the moisture content in the compressed air is too high. The dirt trap ④ is mounted below the centrifugal separator ③.

Material

- Cleaning cloth
- Wrench
- Small screwdriver
- Dirt trap maintenance kit
- Cleaning solvent or spirit

Precondition

- The machine is switched off.
- Enclosure is open.
- «Control ON/OFF» switch is set to *OFF* position,
- «pole changer switch/load isolating switch» is in "0" position.
- The user's supply disconnecting device is switched off,
- the device is locked off,
- the absence of voltage has been verified,
- the power supply cable has been removed.
- The machine is installed on level ground,
- the machine has cooled down.
- Air consumers are disconnected,
- the outlet valves are open,
- the machine is fully vented, the pressure gauge reads 0 bar!

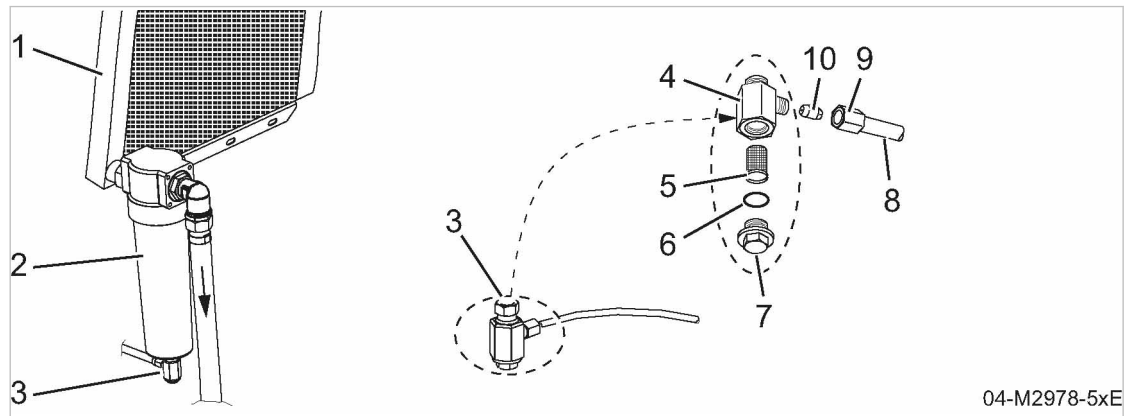


Fig. 41 Cleaning the dirt trap

- | | | | |
|---|-----------------------|---|--------------------------------|
| ① | Aftercooler | ⑥ | O-ring |
| ② | Centrifugal separator | ⑦ | Screw plug |
| ③ | Dirt trap | ⑧ | Condensate hose line |
| ④ | Dirt trap housing | ⑨ | Condensate hose line union nut |
| ⑤ | Strainer | ⑩ | Nozzle |

➤ Comply with all instructions.

Cleaning the dirt trap:

1. Loosen and remove the screw plug ⑦.
2. Pull off the strainer ⑤.
3. Loosen the union nut ⑨.
4. Remove union nut ⑨ and detach condensate hose line ⑧ from the dirt trap.
5. Use a screwdriver to unscrew the nozzle ⑩.
6. Remove the nozzle ⑩ from the dirt trap housing.

7. Clean the nozzle, strainer, screw plug, O-ring (6) and dirt trap housing (4) with cleaning solvent or spirit.

8. Check the nozzle, strainer and O-ring for wear.



Components are damaged or show signs of wear.

➤ Replace components.

9. Position the O-ring and the strainer on the screw plug.

10. Screw screw plug into the dirt trap housing.

11. Position the nozzle and using the screwdriver screw it into the dirt trap housing.

12. Install the condensate hose line with the union nut.

Putting into operation:

1. Connect on-site power supply and machine by means of power supply cable.
2. Switch on on-site main switch.
3. «Set the pole changer/load isolating switch» to position "1".
4. Turn the «Control ON/OFF» switch to position *ON*.
5. Close the enclosure.

Starting the machine and performing a test run:

1. Switch on machine by using the «START» key on the operating panel of SIGMA CONTROL SMART.
2. Warm-up machine by letting it run in IDLE mode.
Warm-up has been successful when the required discharge temperature has been reached.
3. Press and hold the «STOP» key on the operating panel of SIGMA CONTROL SMART for more than 1 second.
The machine is shut down.
4. Wait until the machine has automatically vented.
Pressure gauge reads 0 bar!
5. Open the outlet valves.

Check the dirt trap and condensate hose line for leaks:

1. Open the enclosure.
2. Visually inspect dirt trap for leaks.
3. Visually inspect condensate hose line for leaks.

10.9.4 Option da Inspecting/maintaining the condensate drain

If the ambient air is very humid, significant amounts of condensate will precipitate when operating the machine. The condensate is fed into the condensate collector of the machine via a hose line. The maximum fill capacity of the condensate collection tank is limited. Therefore, the condensate collector must be checked/maintained daily.

Material Cleaning cloth
 Tank

Precondition The machine is switched off.
 The canopy is open.
 The «Control ON/OFF» switch is set to *OFF*, the
 «pole changer switch/load isolating switch» is set to "0" position.
 The user's supply disconnecting device is switched off,
 the device is locked off,
 the absence of voltage has been verified,
 the power supply cable has been removed.
 The machine is parked on level ground,
 the machine has cooled down.
 Air consumers are disconnected,
 the outlet valves are open,
 the machine is fully vented, the pressure gauge reads 0 bar!

➤ Comply with all instructions.



Condensate is contaminated and harmful to the environment!

Therefore proceed as follows in accordance with applicable environmental regulations:

- Store condensate in special containers.
- Dispose of the container contents regularly and properly.

10.9.4.1 Emptying the condensate collection tank

1. Loosen and remove the lid from the condensate collector.
The condensate hose line remains fixed on the lid.
2. Place the lid so that the condensate collector can be removed without difficulty.
3. Remove the condensate collector the bracket inside the machine.
4. Fill the condensate into an external container.
5. Place the emptied condensate collector in the holder inside the machine.
6. Properly close the condensate collector with the lid.

10.9.4.2 Checking the condensate hose line

In order for all of the accumulated condensate to reach the condensate collector, the condensate hose must always be properly affixed to the lid of the collector.

1. Check daily whether the condensate hose is properly affixed to the lid of the condensate collector.
2. Check daily whether the lid of the condensate collector is properly closed.
3. After operation of the machine, check for leakages within the machine.



Leakages of condensate are visible.

- Check the condensate hose line for leaks.
- Check proper attachment.

4. Close the canopy.

10.9.5 Option oe Draining liquid accumulation within the machine

The so-called "closed floor pan" contributes to the protection of the environment by preventing a contamination of the soil in the event of leaking operating fluids.

Liquid accumulations within the machine's body can also cause corrosion or electrical faults.

Liquid accumulations must be removed as quickly as possible in order to avoid potential machine faults.

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

Material Receptacle
 Cleaning cloth

Precondition The machine is switched off.
 Enclosure is open.
 «Control ON/OFF» switch is set to *OFF* position,
 «pole changer switch/load isolating switch» is set to "0" position.
 The user's supply disconnecting device is switched off,
 the device is locked off,
 the absence of voltage has been verified,
 the power supply cable has been removed.
 The machine has been set down on level ground,
 the machine has cooled down.
 Air consumers are disconnected,
 the outlet valves are open,
 the machine is fully vented, the pressure gauge reads 0 bar!

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 enclosure.



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

10.10 Documenting maintenance and service work

Machine number:

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

Tab. 83 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 matched to application 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 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
Oil filter	1	1210
Oil separator cartridge set	1	1450
Cooling oil	1	1600

Tab. 84 Compressor consumables

Drive motor

Name	Number/Quantity	Number
Bearing grease [100 g]	1	9.0915.0
Bearing grease [400 g]	1	6.3234.0

Tab. 85 Drive motor consumables

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

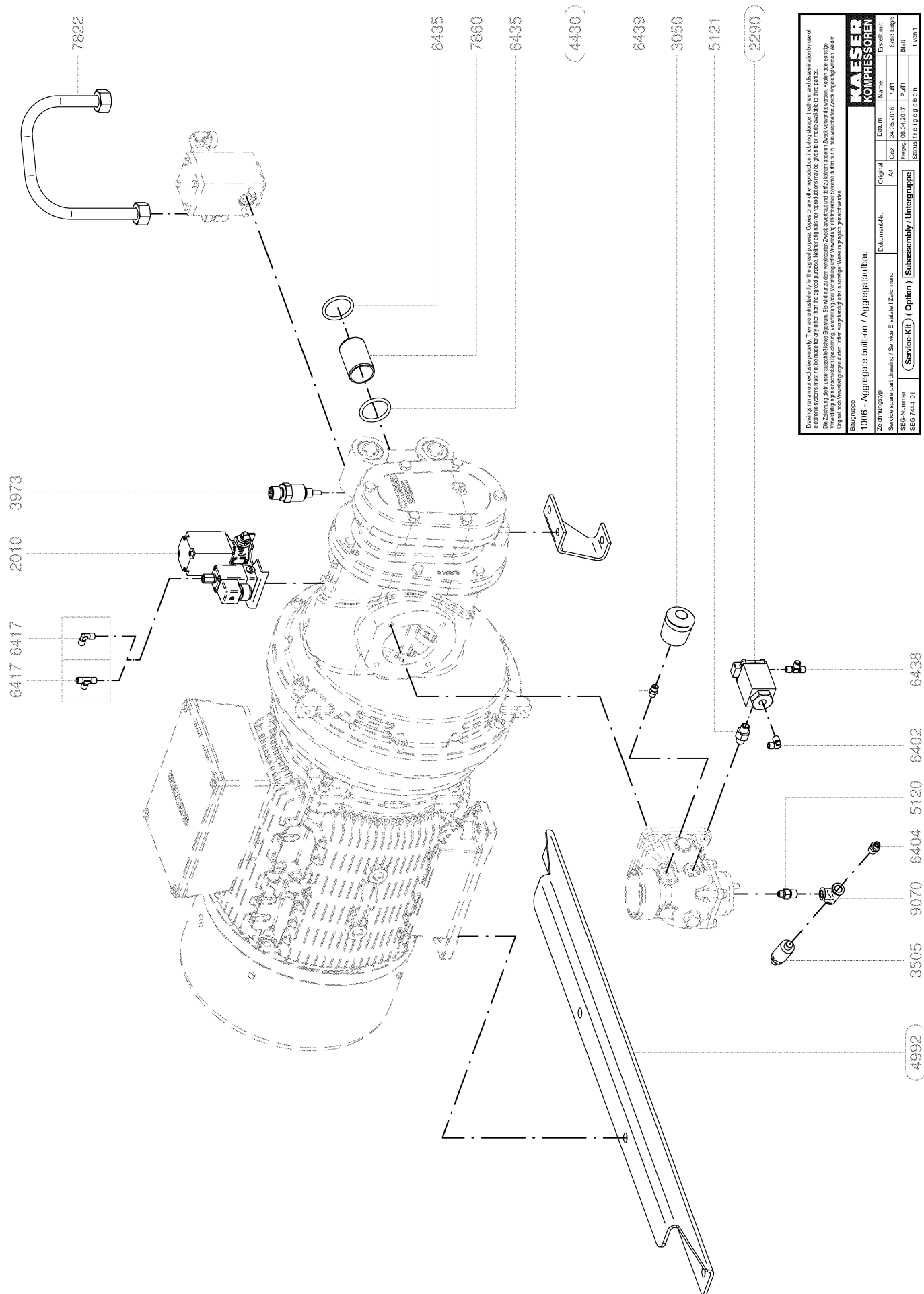
Use these parts lists to plan your material requirement according to operating conditions and to order the required spare parts.



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 specialist workshops or the authorised KAESER SERVICE technician.



KAESER KOMPRESSOREN

1006 - Aggregate built-on / Aggregataufbau

Zeichnungsgruppe: 1006

Service spare part drawing / Service Ersatzteil Zeichnung

SEGA-Nummer: SEG-7444_01

Original: A4

Erstellt mit: 24.05.2015

Gez.: 06.04.2017

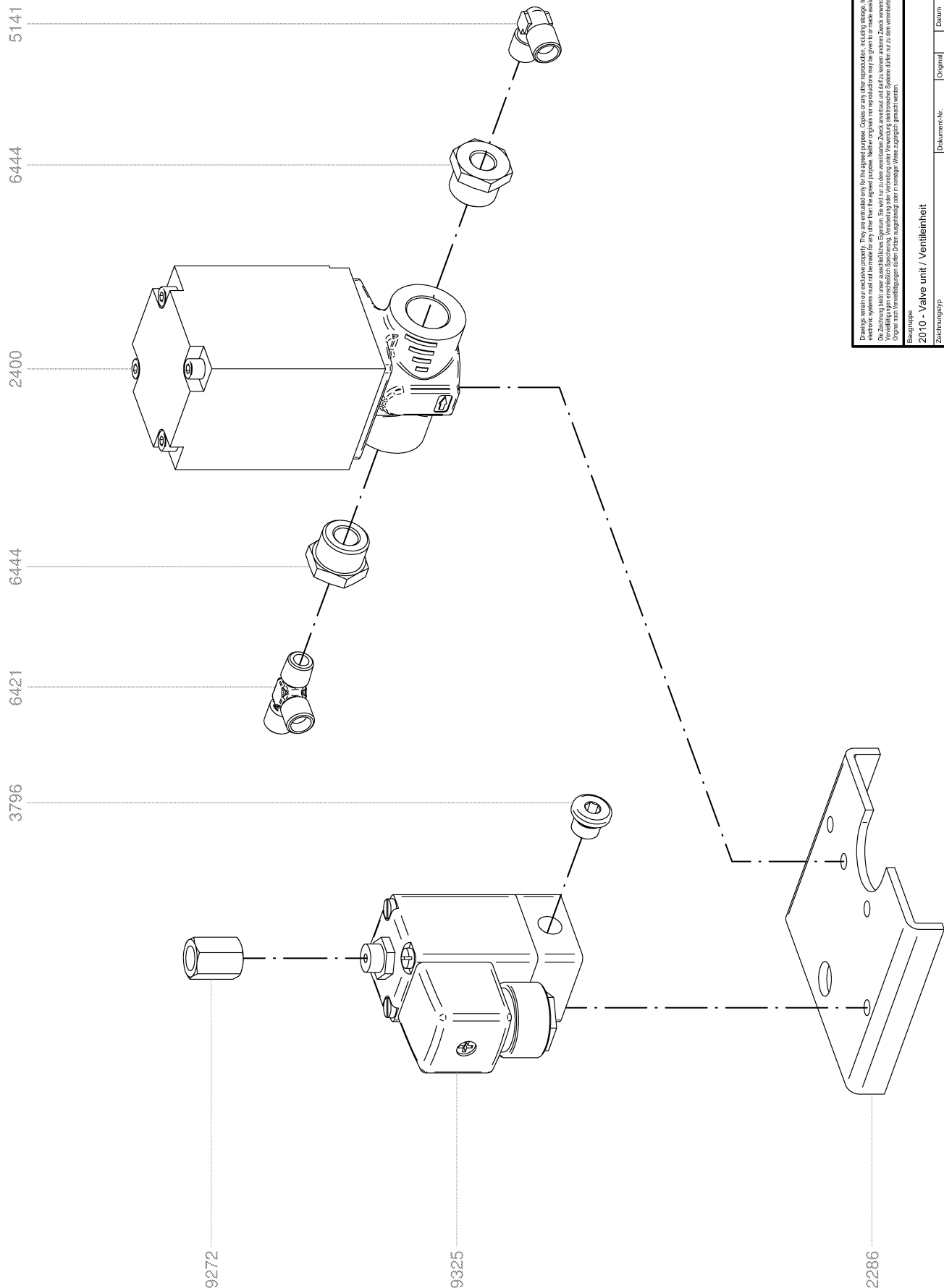
Blatt: 1 von 1

Service-Kit / (Option) / Subassembly / Untergruppe

Stand: 1.2.2015

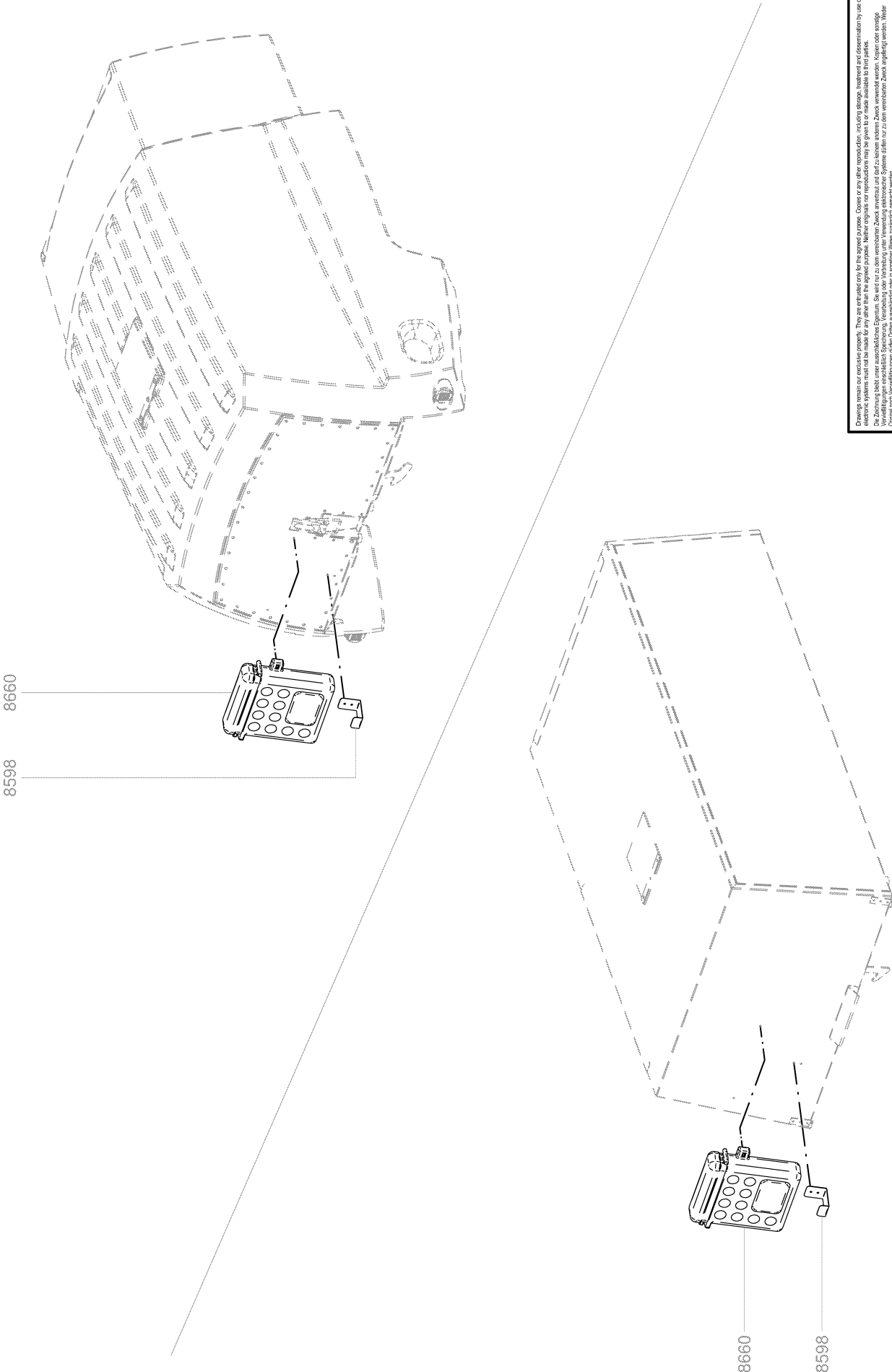
1 von 1

Die Zeichnung ist ein technisches Dokument. Sie ist als solche zu behandeln und darf nicht kopiert, verändert oder anderweitig in irgendeiner Weise weitergegeben werden. Die Zeichnung ist Eigentum der KAESER KOMPRESSOREN. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen ohne schriftliche Genehmigung der KAESER KOMPRESSOREN sind ausdrücklich untersagt. Die Zeichnung ist Eigentum der KAESER KOMPRESSOREN. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen ohne schriftliche Genehmigung der KAESER KOMPRESSOREN sind ausdrücklich untersagt.

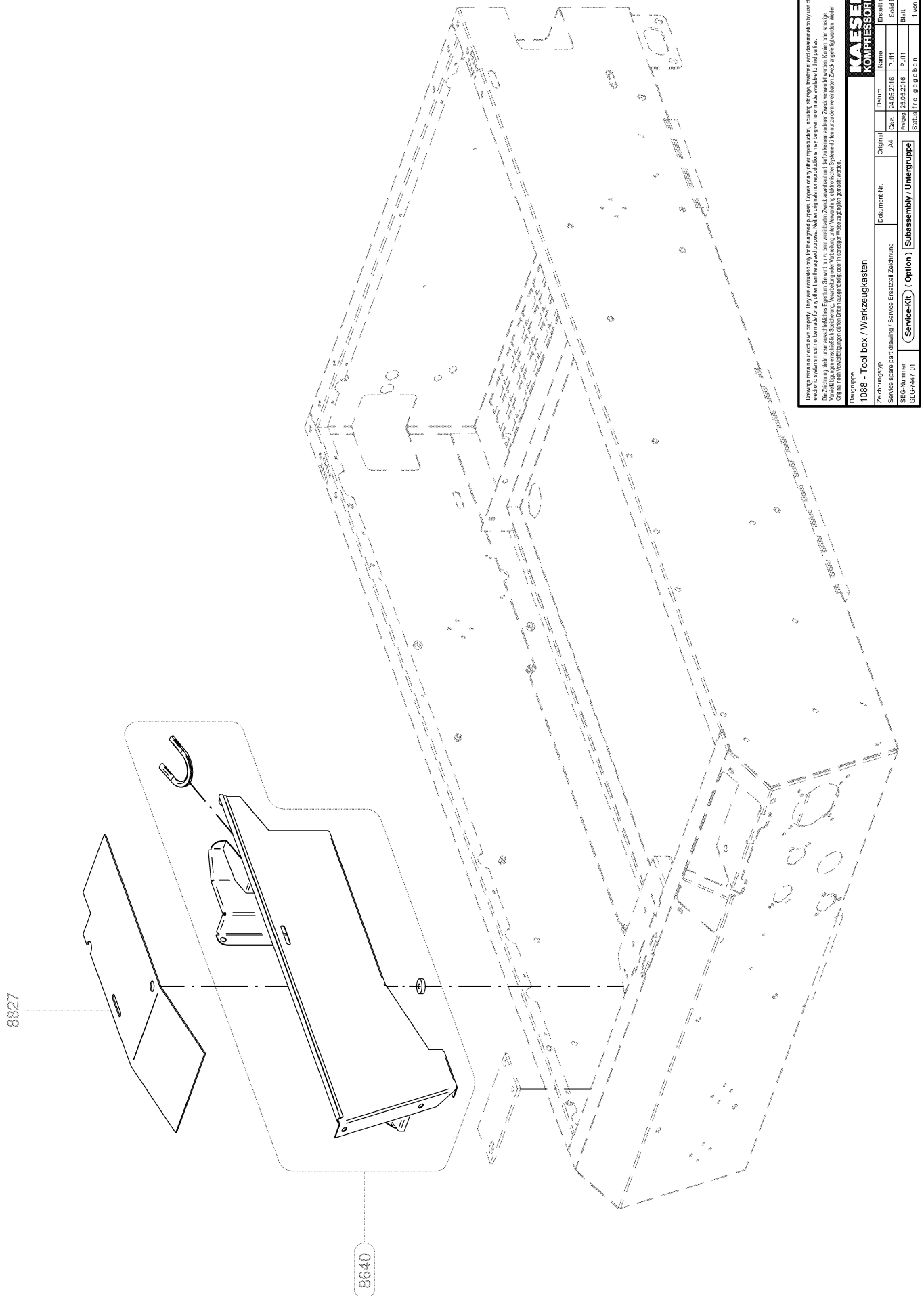


Patents, even in relative novelty. They are entitled only for the agreed period. Copies or any other reproduction, including drawings, invention and dissemination by use of electronic systems must not be made for any other purpose. Where originals are not reproductions may be given to or made available to third parties. The Zeichnungs-Mittel unter ausschließlicher Eigenart. Sie dürfen nur zum vereinbarten Zweck ausverleihen werden. Nachdruck, Verbreitung oder Verbreitung durch elektronische Systeme ist untersagt. Wo Originalen nicht Reproduktionen sind, dürfen sie nur zu dem vereinbarten Zweck entliehen werden. Weiter Original nur für vereinbarte Zwecke. Nachdruck, Verbreitung oder Verbreitung durch elektronische Systeme ist untersagt. Weiter Original nur für vereinbarte Zwecke.

Baureihe		KAESER		KOMPRESSOREN	
2010 - Valve unit / Ventileinheit					
Zachstempel		Name		Ersatzteil mit	
Service spare part drawing / Service Ersatzteil Zeichnung		A4		PuV1	
Date		Datum		Festz. 24.05.2016	
SEFZ-Nummer		Original		PuV1	
SEG/7445_01		Document-Nr.		Blatt	
		(Service-Kit) (Option)		1 von 1	
		Subassembly / Untergruppe		Subst. / c a t a l o g b e t r e i b	



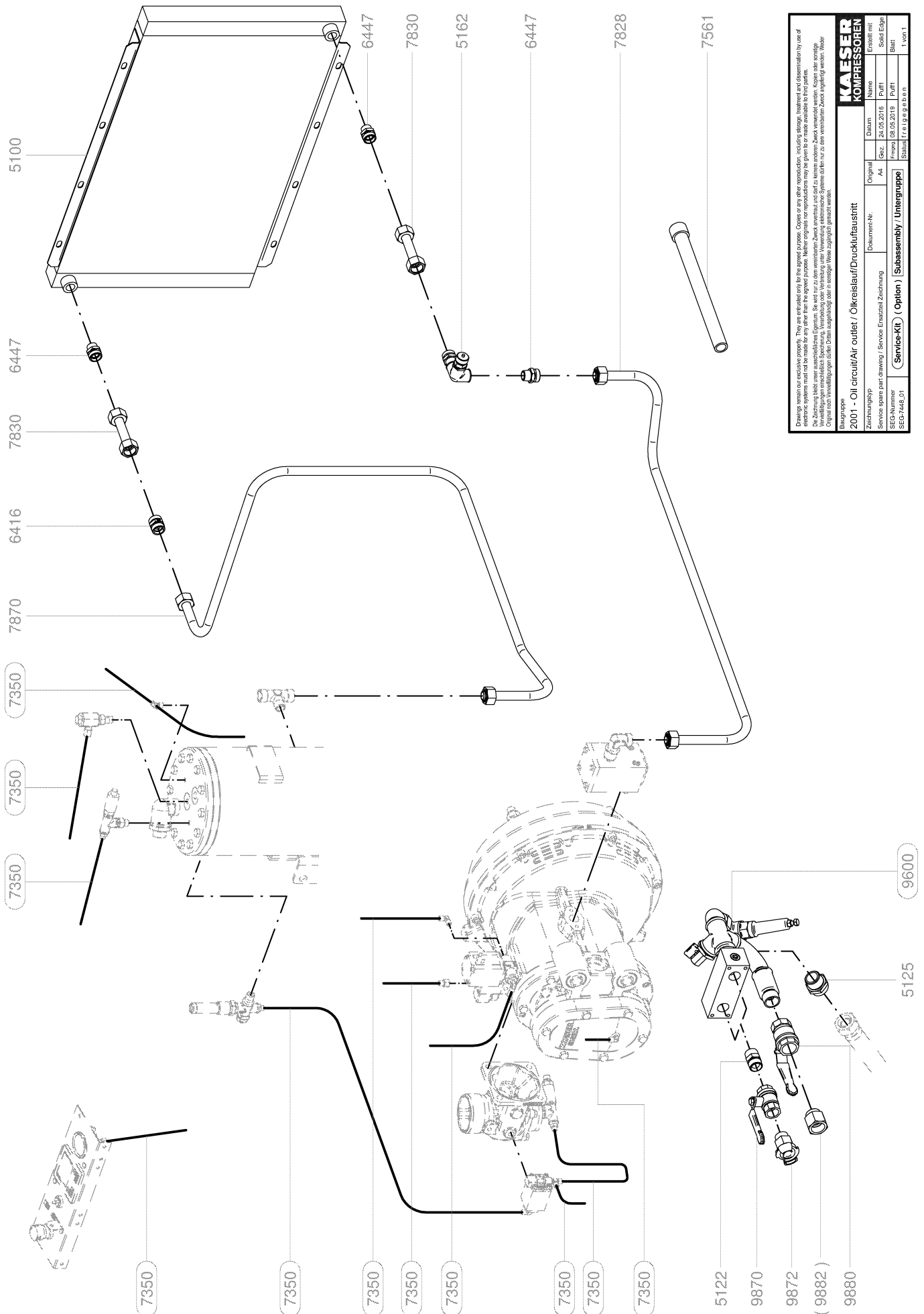
KAESER KOMPRESSOREN									
1087 - Set document-box / Satz Dokumenttasche									
Zeichnungsgruppe		Dokument-Nr.		Original		Datum		Erstellt mit	
Service spare part drawing / Service Ersatzteil Zeichnung		A4		Gez.		24.05.2015		Perf1	
SEGA-Nummer		Perf1		Perf1		Blatt		1 von 1	
SEG-7448_01		Subassembly / Untergruppe		Status		1 von 1		1 von 1	



Drawings remain our exclusive property. They are released only for the agreed purpose. Copies or any other reproduction, including drawings, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions may be given or be made available to third parties.

Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck ausgeteilt und darf in keiner anderen Weise verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Veränderung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weiter Original nach Vervielfältigungen dürfen Dritten ausgeteilt oder in sonstiger Weise zugänglich gemacht werden.

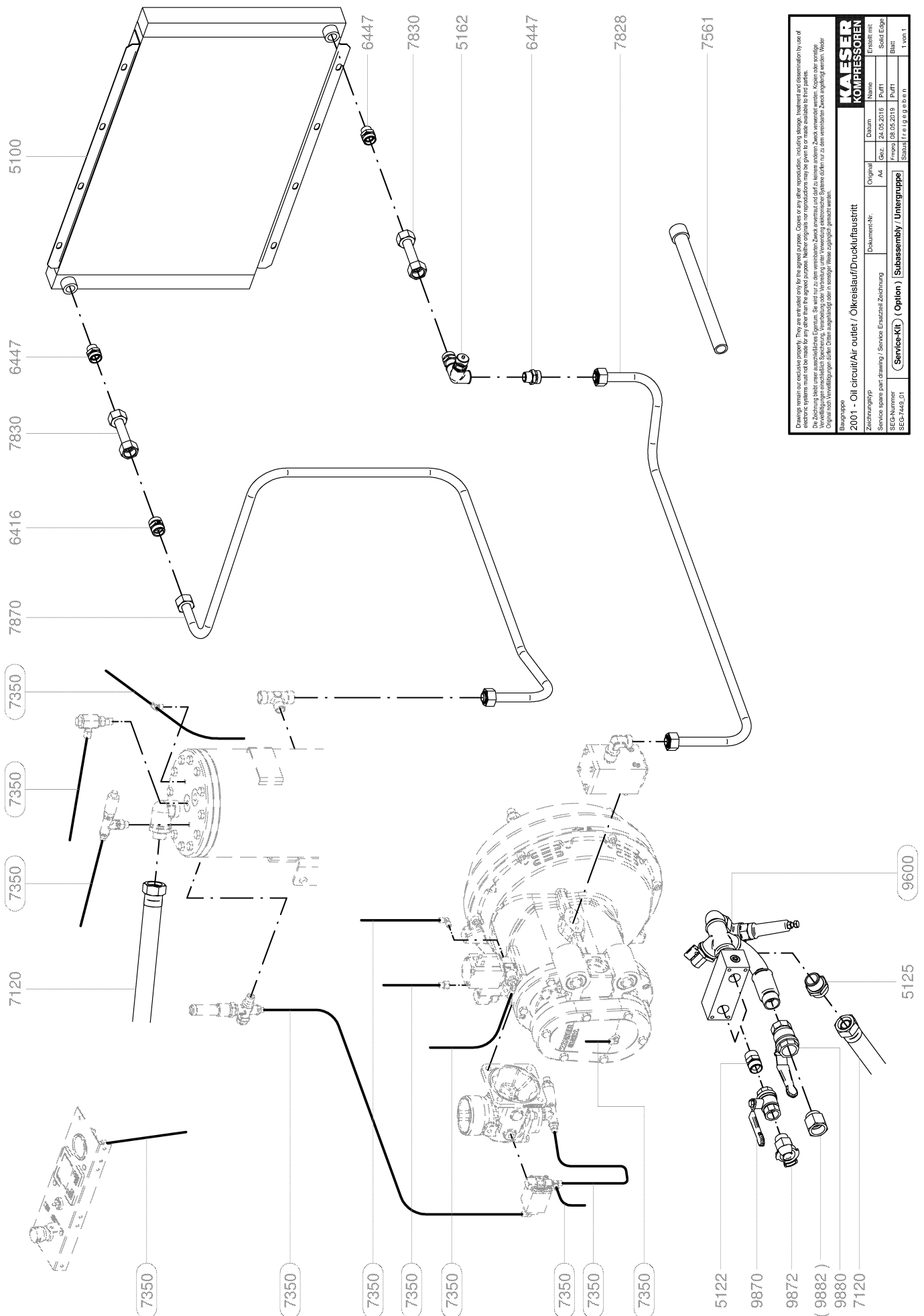
Baugruppe		1088 - Tool box / Werkzeugkasten		KAESER KOMPRESSOREN	
Zuzeichnungssprache		Original		Einheit mit	
Service parts per drawing / Service Ersatzteil Zeichnung		A4		Puffl	
SFC-Nummer		Gez. 24.05.2016		Puffl	
SEG-442_01		Insges. 25.05.2016		Blatt	
(Service-Kit) (Option)		Subassembly / Untereinheit		1 von 1	



Products remain our exclusive property. They are intended only for the intended purpose. Copies or any other reproduction, including storage, hardware and dissemination by use of electronic systems may not be made for any other purpose. Neither copyright nor reproduction may be given to or made available to third parties.

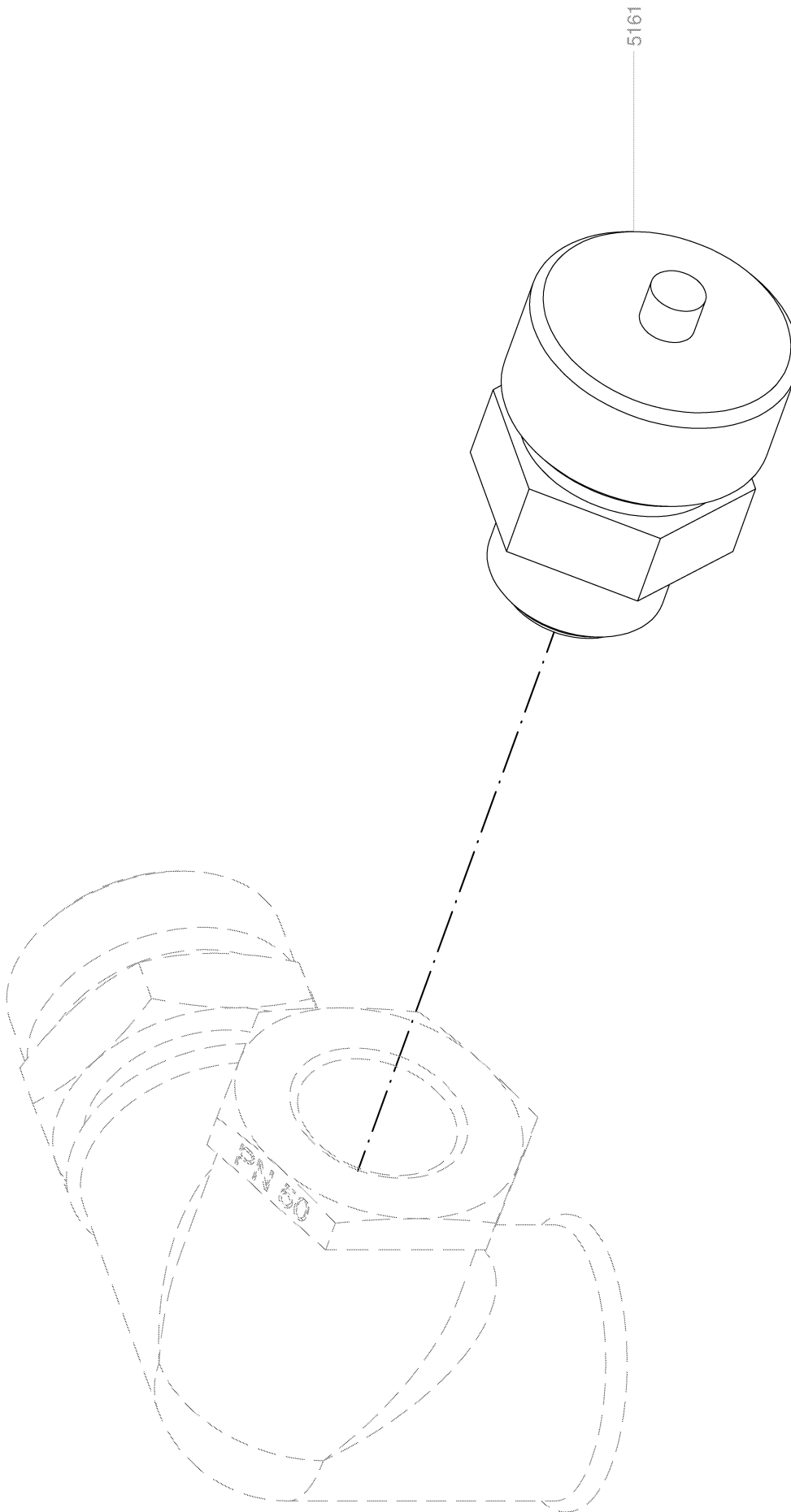
Das Zeichen bleibt unser ausschließliches Eigentum. Sie dürfen nur zum vorgesehenen Zweck verwendet werden. Nachbildungen, Kopien oder andere Vervielfältigungen sind ausdrücklich untersagt. Weder Urheberrechte noch Reproduktionen dürfen Dritten oder in dem elektronischen Bereich weitergegeben werden. Weder

KAESER					
KOMPRESSOREN					
Baureihe					
2007 - Oil circuit/Air outlet / Ölkreislauf/Druckluftaustritt					
Zachgründung	Dokument-Nr.	Original A4	Name	Eingestellt mit	
Schleifenspeicher Service spare part drawing / Service Ersatzteil Zeichnung			Bearb. 24.08.2016	Puffl	Sales Edge
SEGS Nummer SEG-1448_01			Insges. 02.02.2019	Puffl	Stat
(Service-Kit) (Option) (Zusammenbau)				1 von 1	



Drawings remain our exclusive property. They are not to be used for any other purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproduction may be given to or made available to third parties. The Zeichnungsbild darf nicht für andere Zwecke als die vereinbarte Nutzung, weder auszudrucken, noch elektronisch zu speichern, zu übertragen oder weiterzugeben sein. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Verwertung elektronischer Systeme dürfen nicht zu dem vereinbarten Zweck angefertigt werden. Weitergabe an Dritte ist ebenfalls untersagt. Die Zeichnungsbild ist ausschließlich Eigentum. Es darf nicht für andere als die vereinbarte Nutzung, weder auszudrucken, noch elektronisch zu speichern, zu übertragen oder weiterzugeben sein. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Verwertung elektronischer Systeme dürfen nicht zu dem vereinbarten Zweck angefertigt werden. Weitergabe an Dritte ist ebenfalls untersagt.

Bauteil		2009-01		Oil circuit/Air outlet / Ölkreislauf/Druckluftaustritt		 KAESER KOMPRESSOREN	
Zeichnungsgruppe		Dokument-Nr.		Original		Name	
Service spare part drawing / Service Ersatzteil Zeichnung		A4		Giz		Enschl mit	
SEB-Nummer		Gew.		Prüf		Solid Edge	
SEG 74.01		Prüfung		09.05.2016		Blatt	
		Status		Zust		1 von 1	
		Option		Subassembly / Unterggruppe			
		Service-Kit					



Drawings remain our exclusive property. They are released only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other use than the agreed purpose. Neither original nor reproductions may be given or made available to third parties.

Wir behalten uns alle Rechte an den Zeichnungen und den damit verbundenen Unterlagen ausdrücklich vor. Die Zeichnungen werden ausschließlich für den vereinbarten Zweck zur Verfügung gestellt. Vervielfältigungen, Verbreitungen oder sonstiger Gebrauch der Zeichnungen ist ohne unsere schriftliche Genehmigung ausdrücklich untersagt. Die Weitergabe der Zeichnungen an Dritte ist ebenfalls ausdrücklich untersagt.

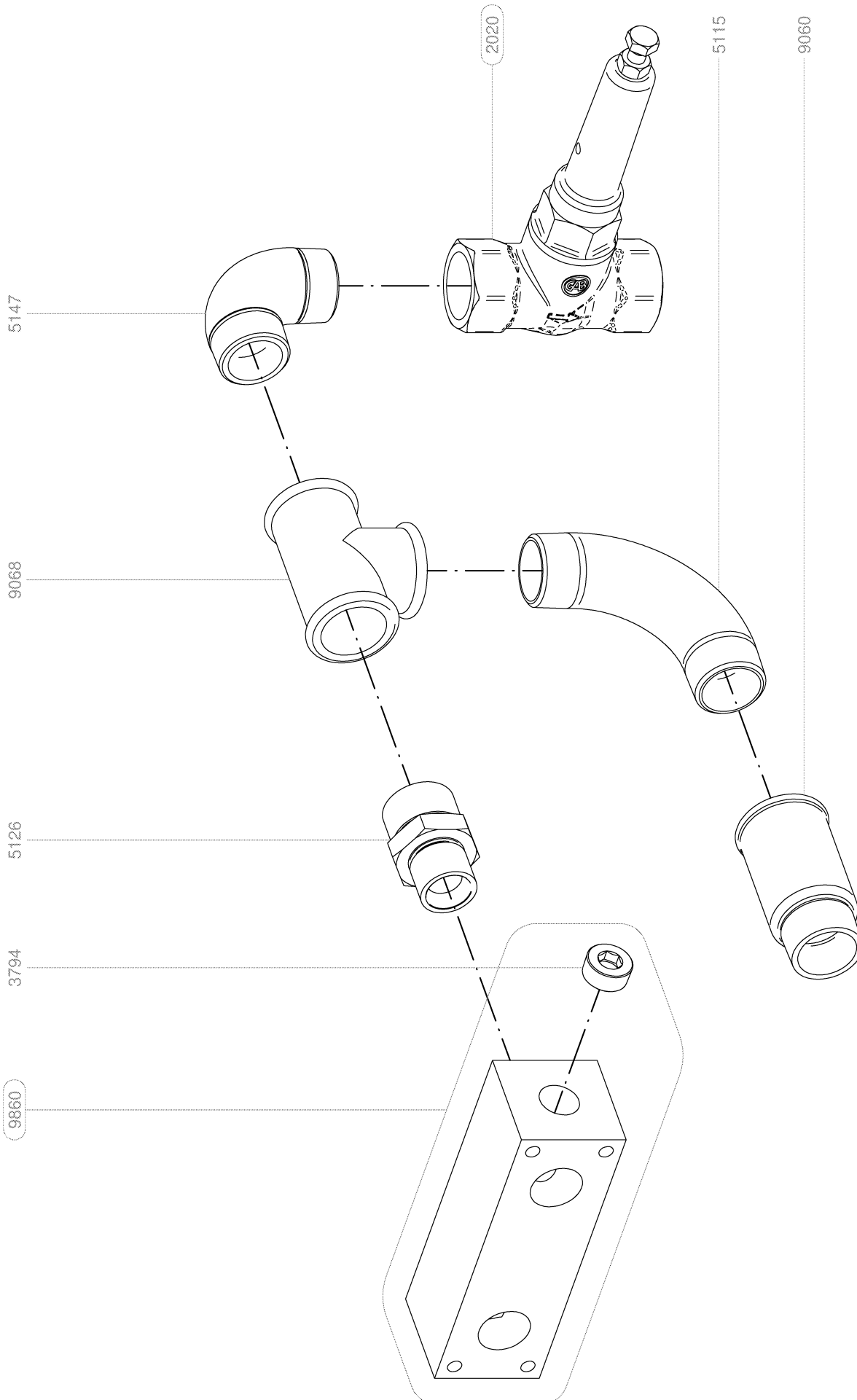
Alle Rechte vorbehalten. Die Zeichnungen werden ausschließlich für den vereinbarten Zweck zur Verfügung gestellt. Vervielfältigungen, Verbreitungen oder sonstiger Gebrauch der Zeichnungen ist ohne unsere schriftliche Genehmigung ausdrücklich untersagt.

Original

KAESER
KOMPRESSOREN

5162 - Compressor cooler oil drain / Ölablass Kompressorölkühler

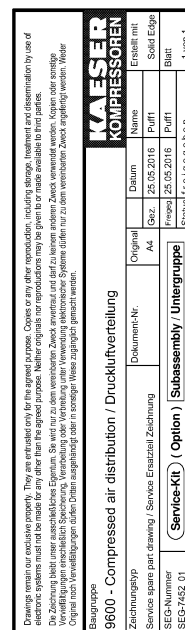
Zeichnungsart	Document-Nr.	Name	Datum	Erstellt mit
Zeichnung spez. part drawing / Service Ersatzteil Zeichnung	A4	Profil	24.05.2016	SoSe Edge
SEIG-Nummer	(Service-Kit)	Profil	24.05.2016	Blatt
SEIG-Modul	(Option)	Stand / (reigabe)		1 von 1

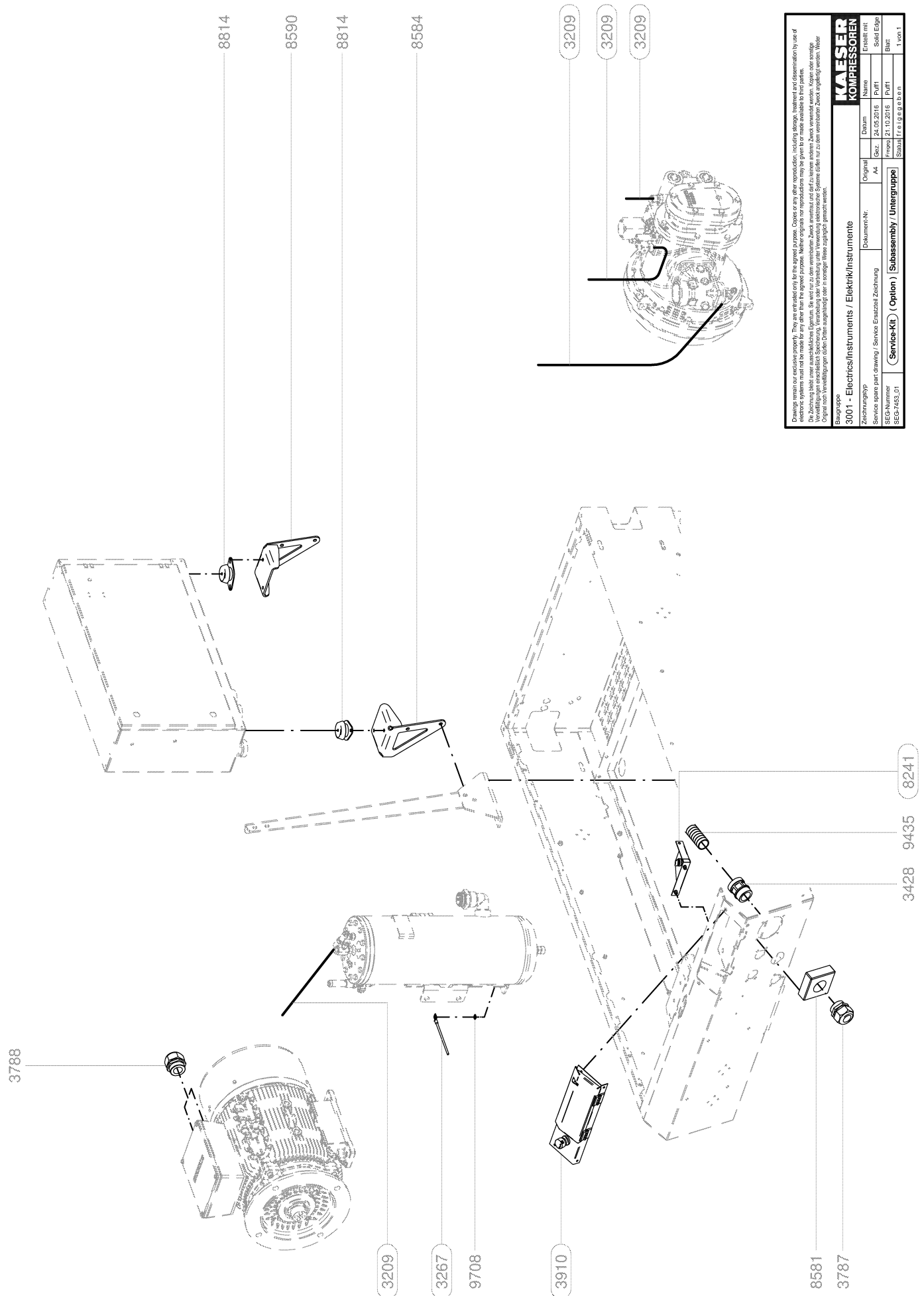


Drawings result on exclusive property. They are articulated only for the signed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the signed purpose. No reproductions may be given or be made available to third parties.

Das Zeichnungsblatt unter ausschließlicher Eigentümung. Es wird nur zum besagten Zweck ausgestellt und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbeitung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zum vereinbarten Zweck angefertigt werden. Weiter Original nicht Vervielfältigung oder in sonstiger Weise zugänglich gemacht werden.

Baureihe	9600 - Compressed air distribution / Druckluftverteilung		KAESER KOMPRESSOREN	
	Zachschneidspitze	Original	Name	Einseitig mit
Service spare part drawing / Service Ersatzteil Zeichnung	A4			Sold Edge
SEF-Nummer SEG 7451_01			Komp. 25.05.2016	Puffi
			Komp. 25.05.2016	Puffi
				Blatt
				Staub / <i>verfälscht</i>
				1 von 1

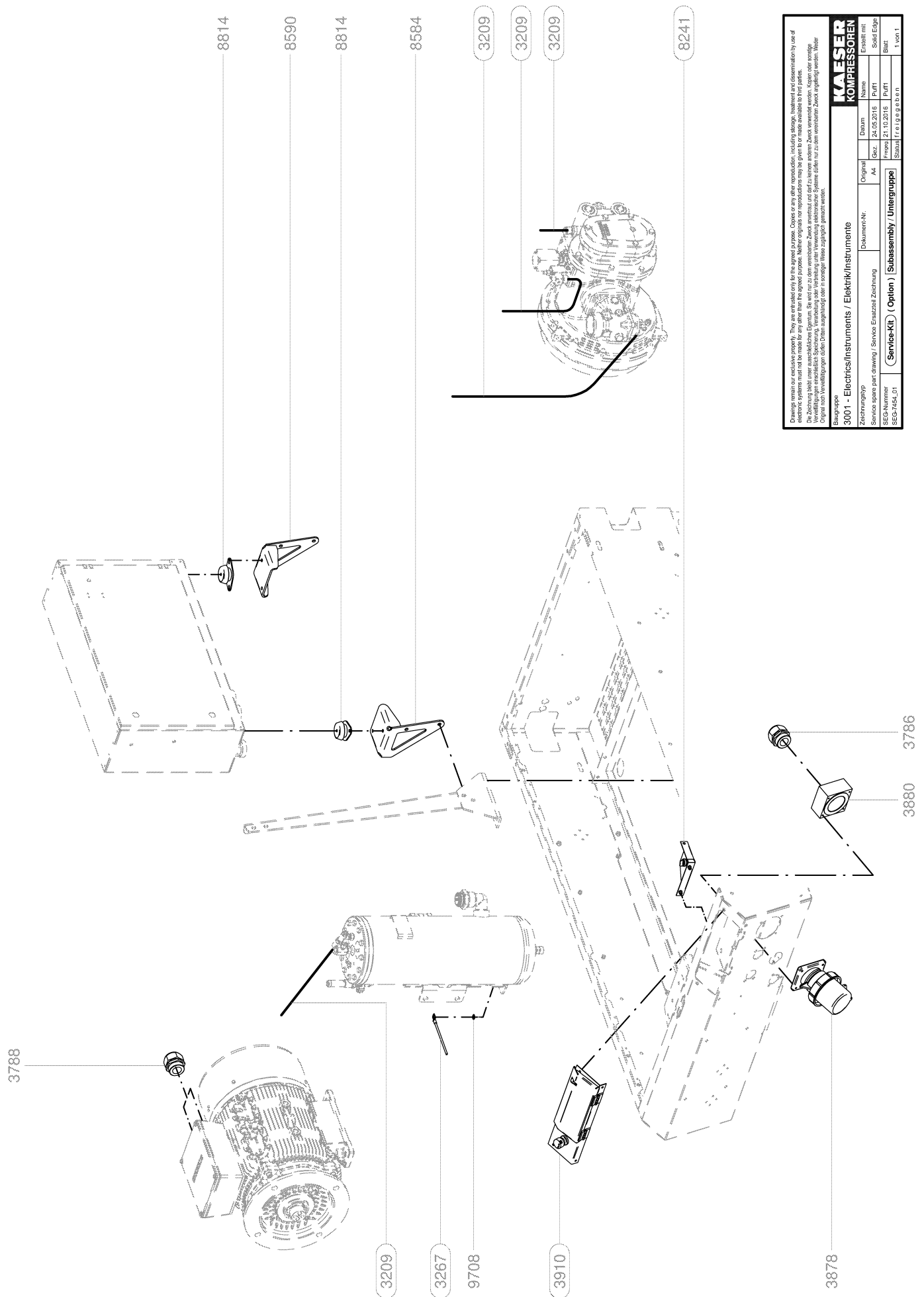




Drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. No reproductions may be given to or made available to third parties.

Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Vorführung unter Verwendung elektronischer Systeme dürfen nicht zum weiteren Zweck angedreht werden. Weiter Original nicht Vervielfältigen! Dritten auszuhändigen oder in sonstige Weise zugänglich werden.

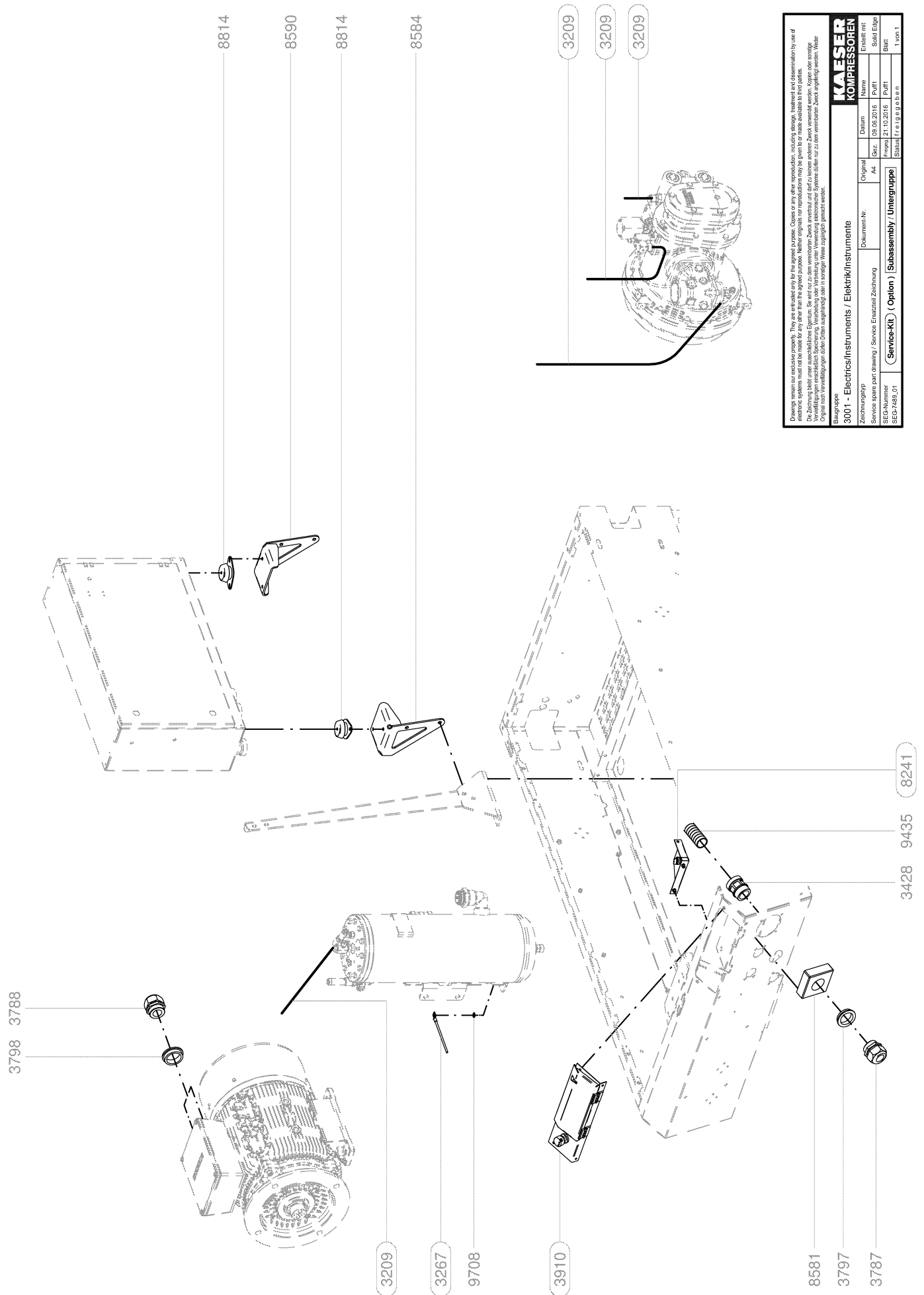
[illegible]



Drawings remain our exclusive property. They are entitled only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Further original or reproductions may be given or made available to third parties.
 Die Zeichnungen bleiben unser Eigentum. Sie sind ausschließlich für den vereinbarten Zweck vorgesehen. Vervielfältigungen, Speicherung, Weiterverarbeitung, Kopieren oder sonstige Verbreitung der Zeichnungen ist ohne unsere schriftliche Genehmigung ausdrücklich untersagt. Weitergabe der Zeichnungen an Dritte ist ohne unsere schriftliche Genehmigung ebenfalls untersagt.
 Original und Vervielfältigungen dürfen Dritten ausnahmsweise oder in sonstige Weise zur Verfügung gestellt werden.

Original
 Baugruppe

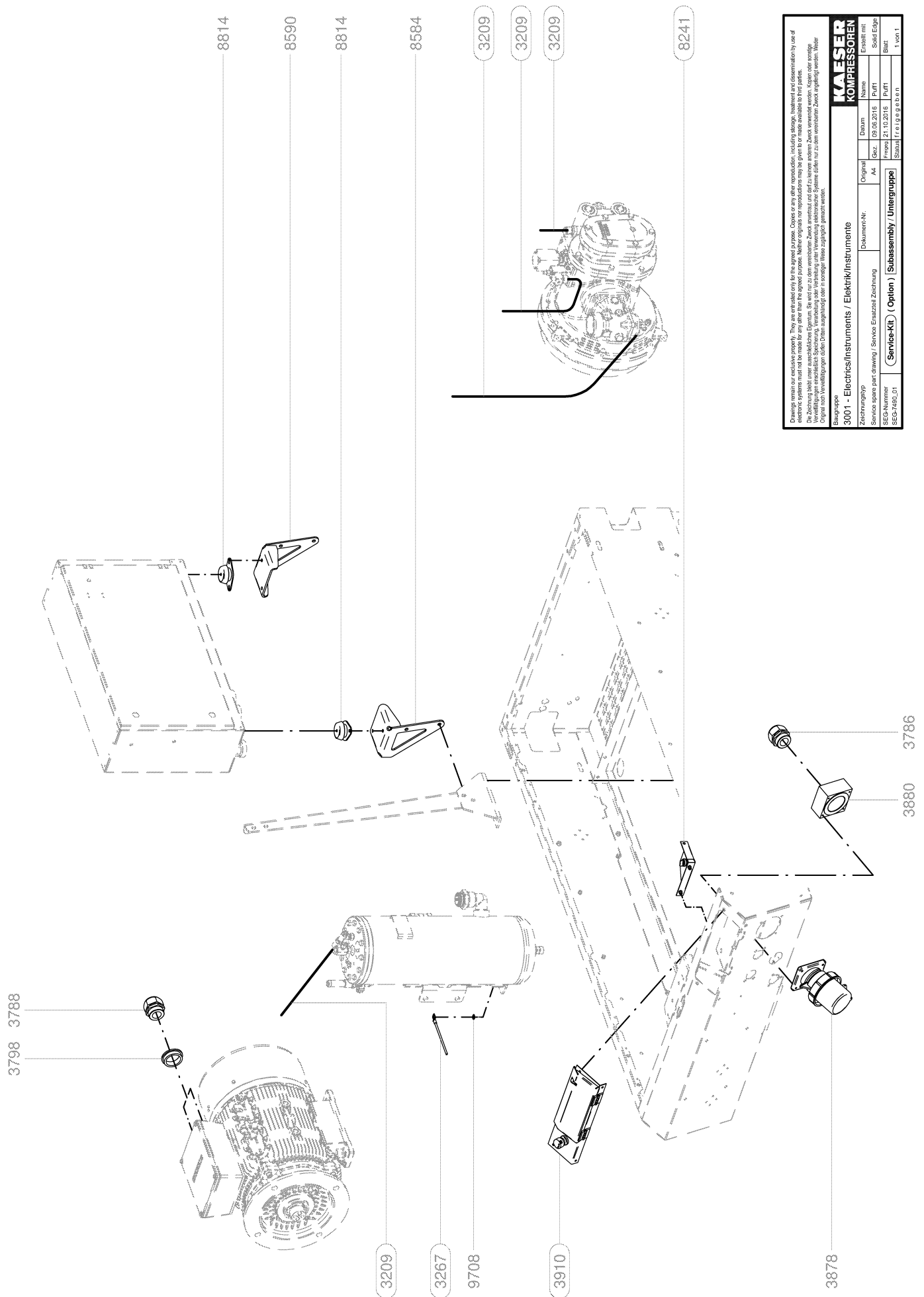
3001 - Electrics/Instruments / Elektrik/Instrumente									
Zeichnungsart	Service space part drawing	Service Electrical Zeichnung	Document-Nr.	Original	Datein	Name	Erstellt mit		
SEG-Nummer	SEG-Modul	SEG-Modul		A4	Gsz.				
SEG-454-01					24.05.2016	ProfIt	Skat Edge		
	(Service-Kit)	(Option)	Subassembly / Untergruppe			ProfIt	Blatt		
						Status	1 von 1		



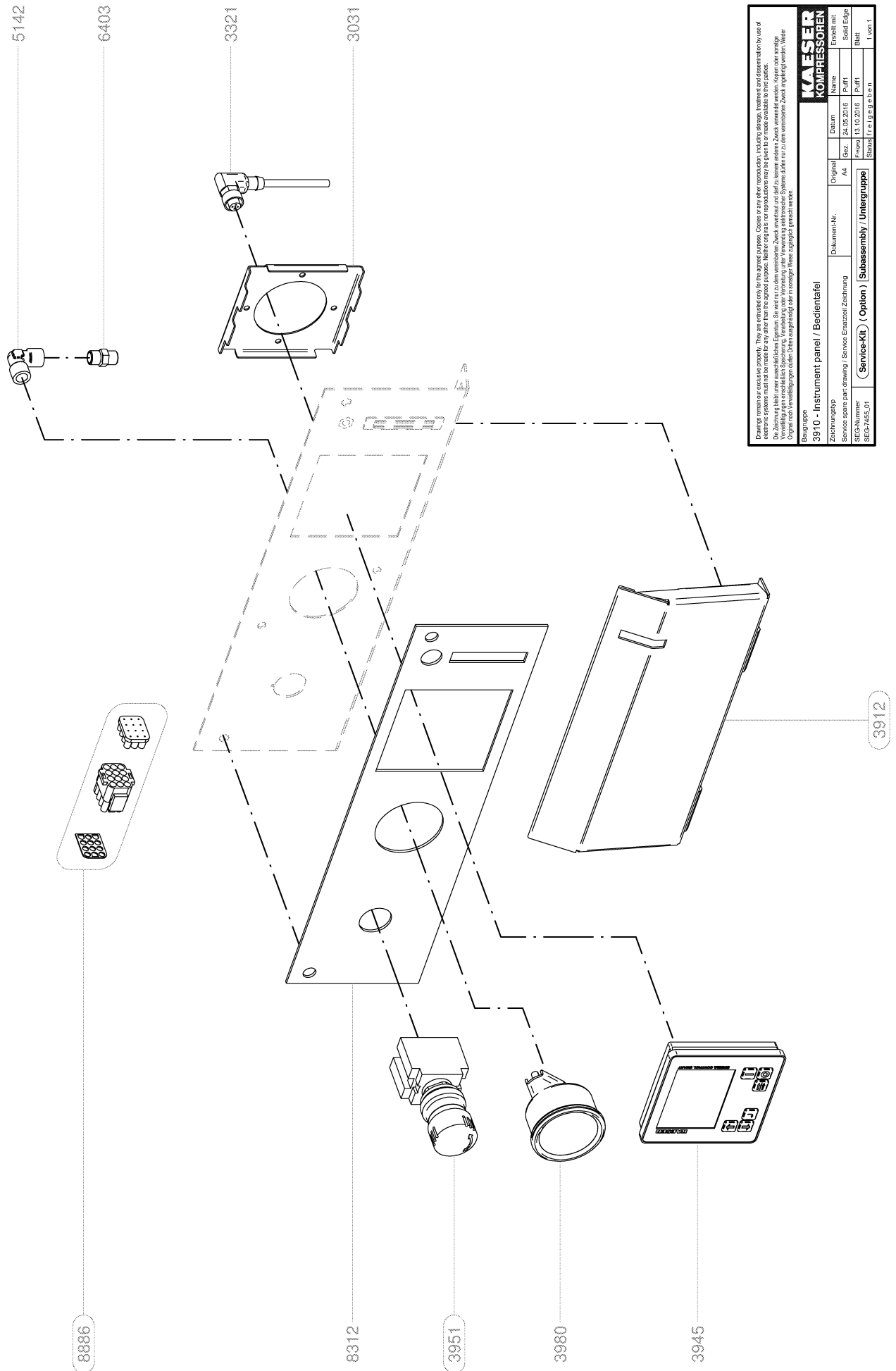
Drawings result on exclusive property. They are articulated only for the signed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the signed purpose. No reproductions may be given or be made available to third parties.

Das Zeichnungsblatt unter ausschließlicher Eigentümung. Es wird nur zum beschilderten Zweck ausgestellt und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Verwertung elektronischer Systeme dürfen nur zum vereinbarten Zweck angefertigt werden. Weiter Original nicht Vervielfältigung oder Dritten auszuhändigen oder in sonstiger Weise zugänglich gemacht werden.

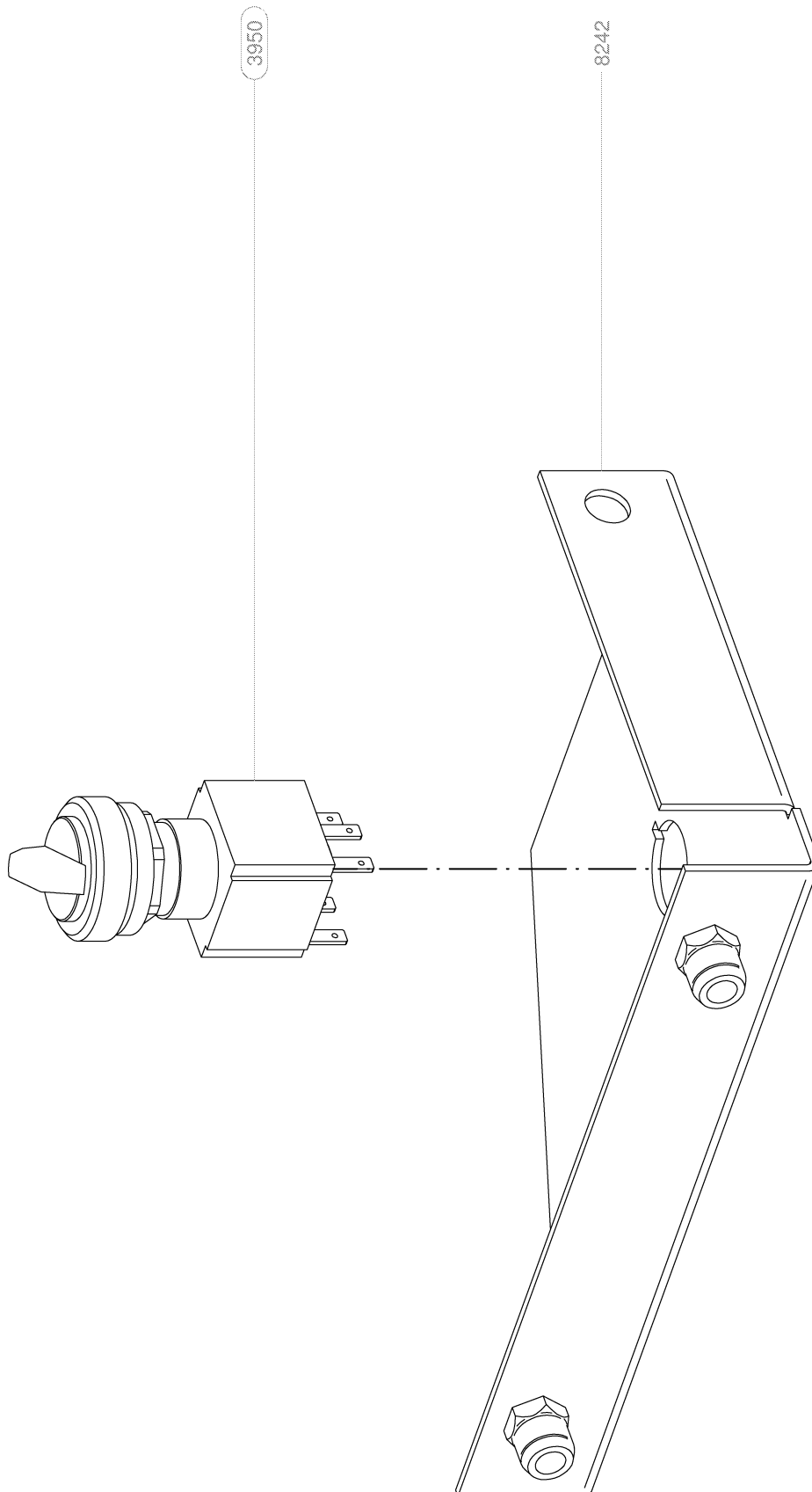
Bezeichnung	3001 - Electrics/Instruments / Elektrik/Instrumente		KAESER	
	Zeilchenotyp		KOMPRESSOREN	
Service spare part drawing / Service Ersatzteil Zeichnung	Dokument-Nr.	Original	Datum	Name
SEK-Nummer	A4		09.10.2016	Enschel mit
SEG 7489.01			01.02.2016	Salz Edge
				Blatt
				Seite
				1 von 1



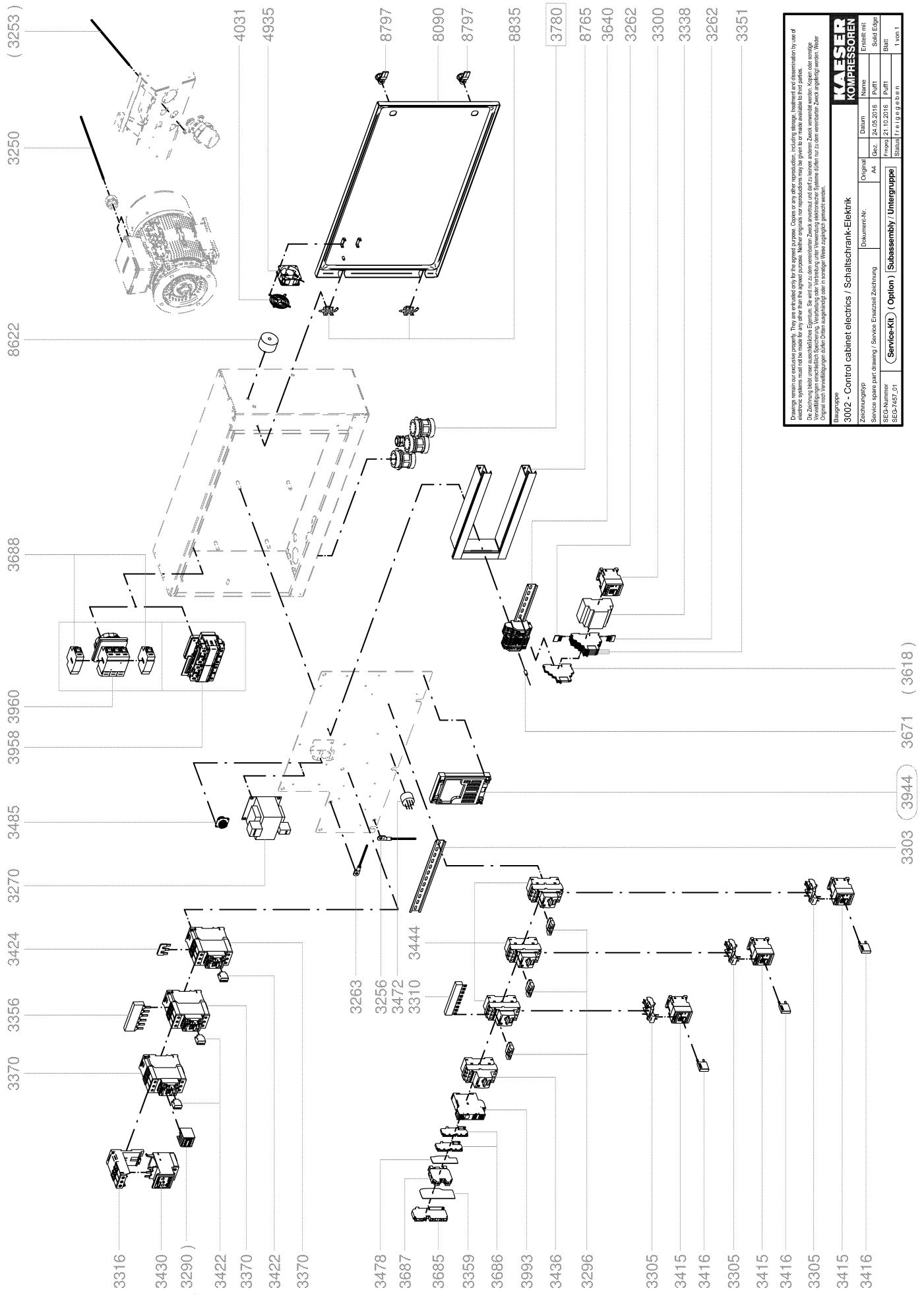
Zachungsspez. part drawing / Service-Ersatzteil Zeichnung		Original	Datum	Name	Ersatzteil mit
		A4	Gaz.	09.05.2016	Sticht. Edge
SEB-Nummer	(Service-Kit) (Option) / Subassembly / Untergruppe			Prozess	Blatt
SEB-7440-01				1/1	von 1



KAESER KOMPRESSOREN Die Zeichnung ist ein technisches Dokument. Sie ist als Ersatzteilzeichnung zu verstehen. Änderungen sind vorbehalten. Jede Art von Nachbau, Nachbearbeitung oder Modifikation ist untersagt. Die Zeichnung ist als Ersatzteilzeichnung zu verstehen. Änderungen sind vorbehalten. Jede Art von Nachbau, Nachbearbeitung oder Modifikation ist untersagt.									
Baugruppe		3910 - Instrument panel / Bedientafel		Zeichnungsgruppe		Service spare part drawing / Service Ersatzteil Zeichnung		Original	
SEK-Nummer		SEK-74545_01		Dokument-Nr.		A4		Datei	
Status		Standard		Option		Subassembly / Untergruppe		Blatt	
1 von 1									

[illegible]

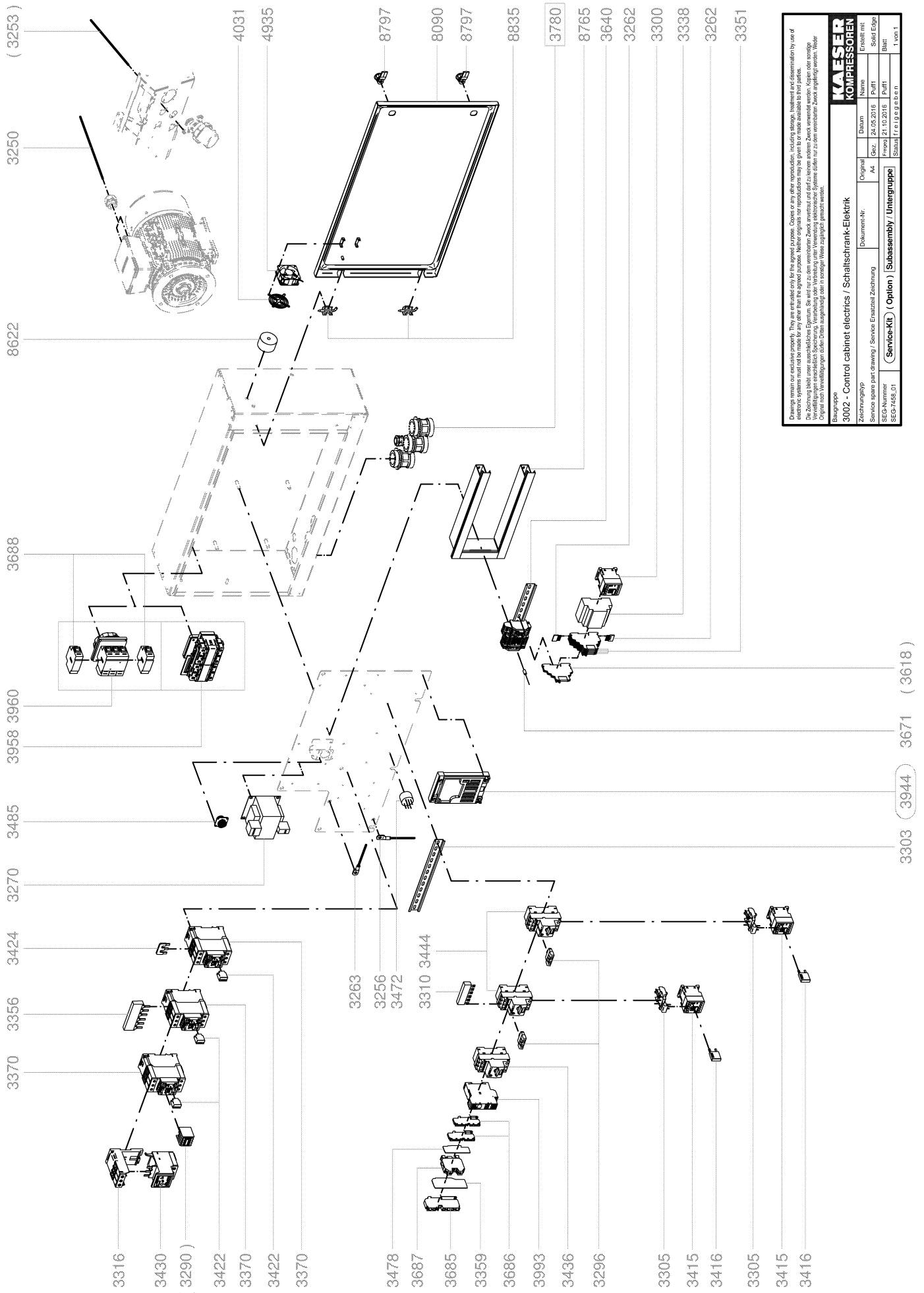
11.4 Replacement parts for service and repair



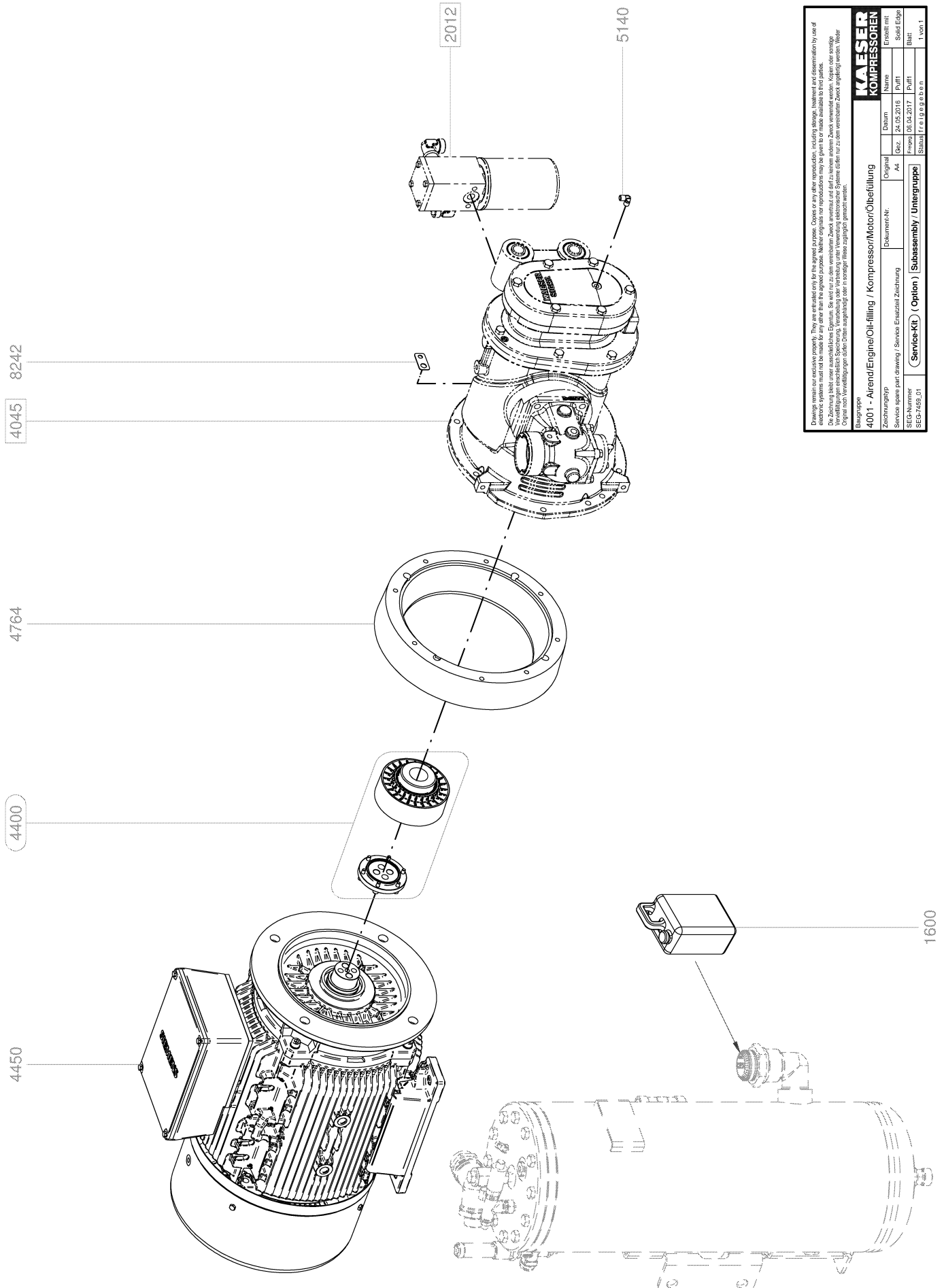
Drawings remain our exclusive property. They are not to be used for any other purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproduction may be given or be made available to third parties.

Das Zeichnungsblatt ist unser ausschließliches Eigentum. Sie sind zu keinem anderen Zweck, unmittelbar und/oder zu einem anderen Zweck, verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Verwertung über elektronische Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weiter Original nicht Vervielfältigung oder in sonstiger Weise zugänglich gemacht werden.

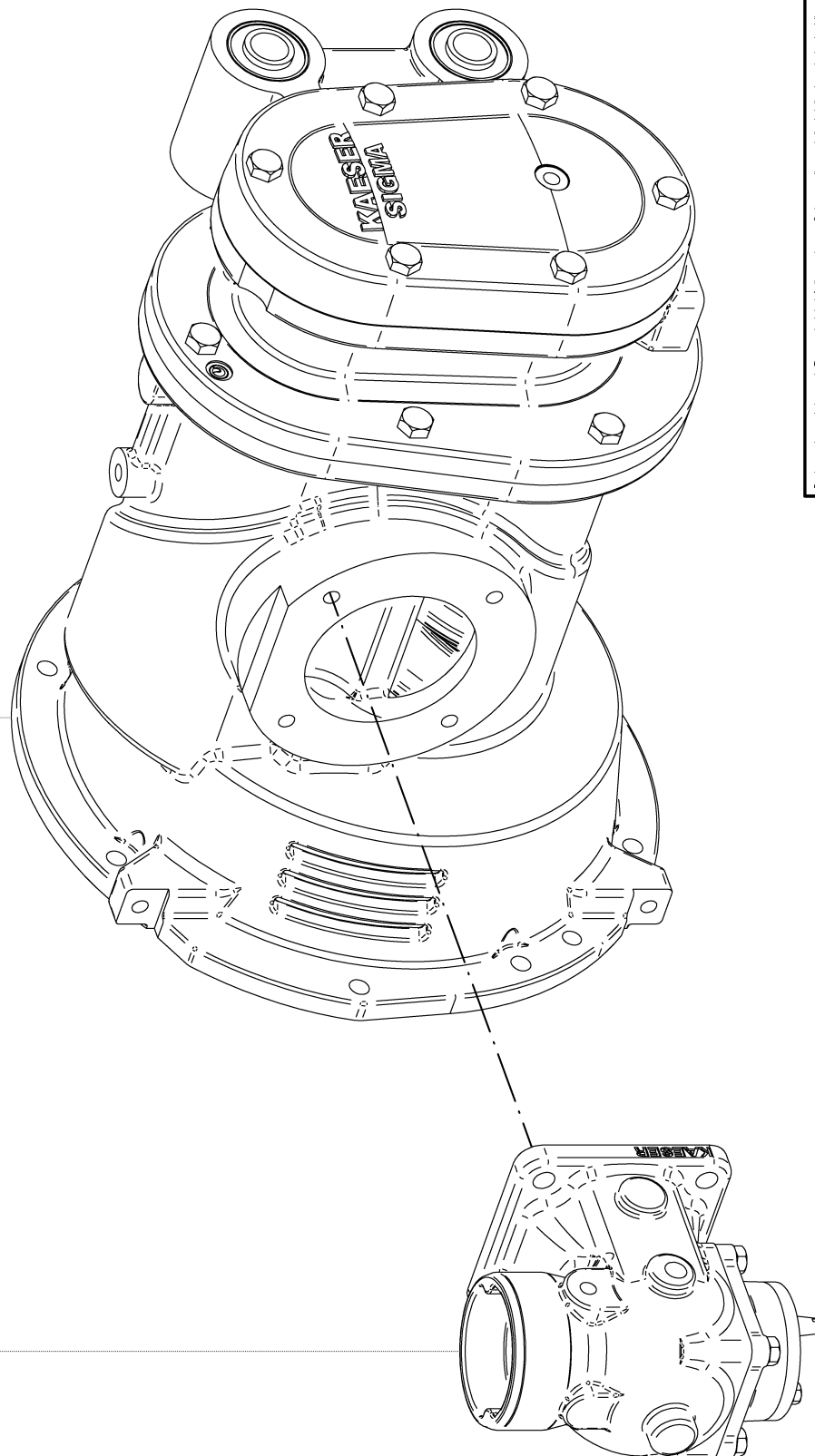
Baureihe	Zeichnungsart	Dokument-Nr.	Original	KAESER			
				KOMPRESSOREN			
3002 - Control cabinet electrics / Schallschrank-Elektrik	Service spare part drawing / Service Ersatzteil Zeichnung		A4	Name	Enschel mit		
				Datum	21.10.2016	1x11	
				Gez.	21.10.2016	1x11	
SEB-Nummer				Blatt			
SEG 7457.01				Stapel	1	von 1	

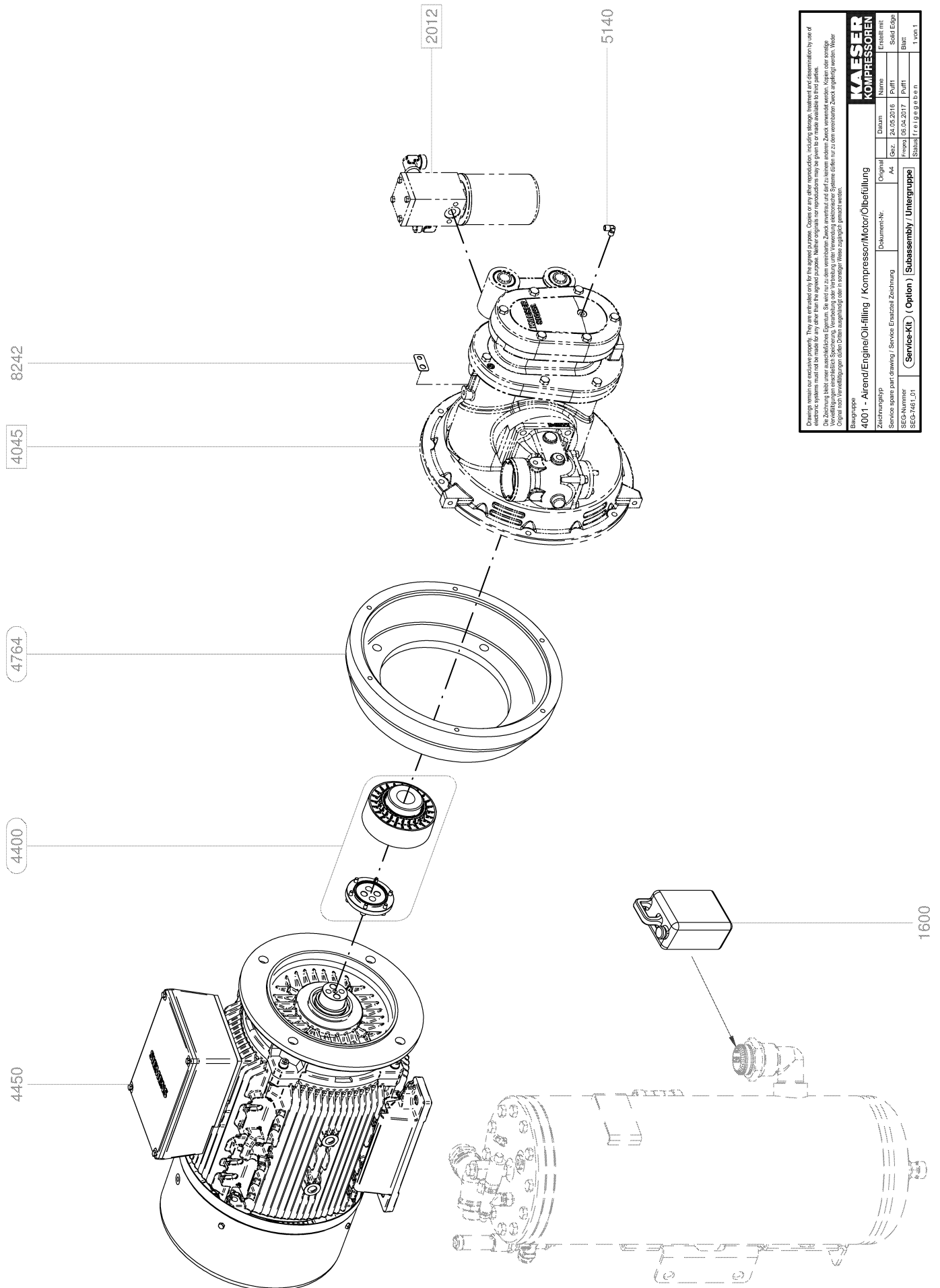


KAESER KOMPRESSOREN			
3002 - Control cabinet electrics / Schaltschrank-Elektrik			
Original Name Datum Zeichnungsgrupp Service spare part drawing / Service Ersatzteil Zeichnung SEGA-Nummer SEG-7458_01	Original Name Datum Zeichnungsgrupp Service spare part drawing / Service Ersatzteil Zeichnung SEGA-Nummer SEG-7458_01	Original Name Datum Zeichnungsgrupp Service spare part drawing / Service Ersatzteil Zeichnung SEGA-Nummer SEG-7458_01	Original Name Datum Zeichnungsgrupp Service spare part drawing / Service Ersatzteil Zeichnung SEGA-Nummer SEG-7458_01

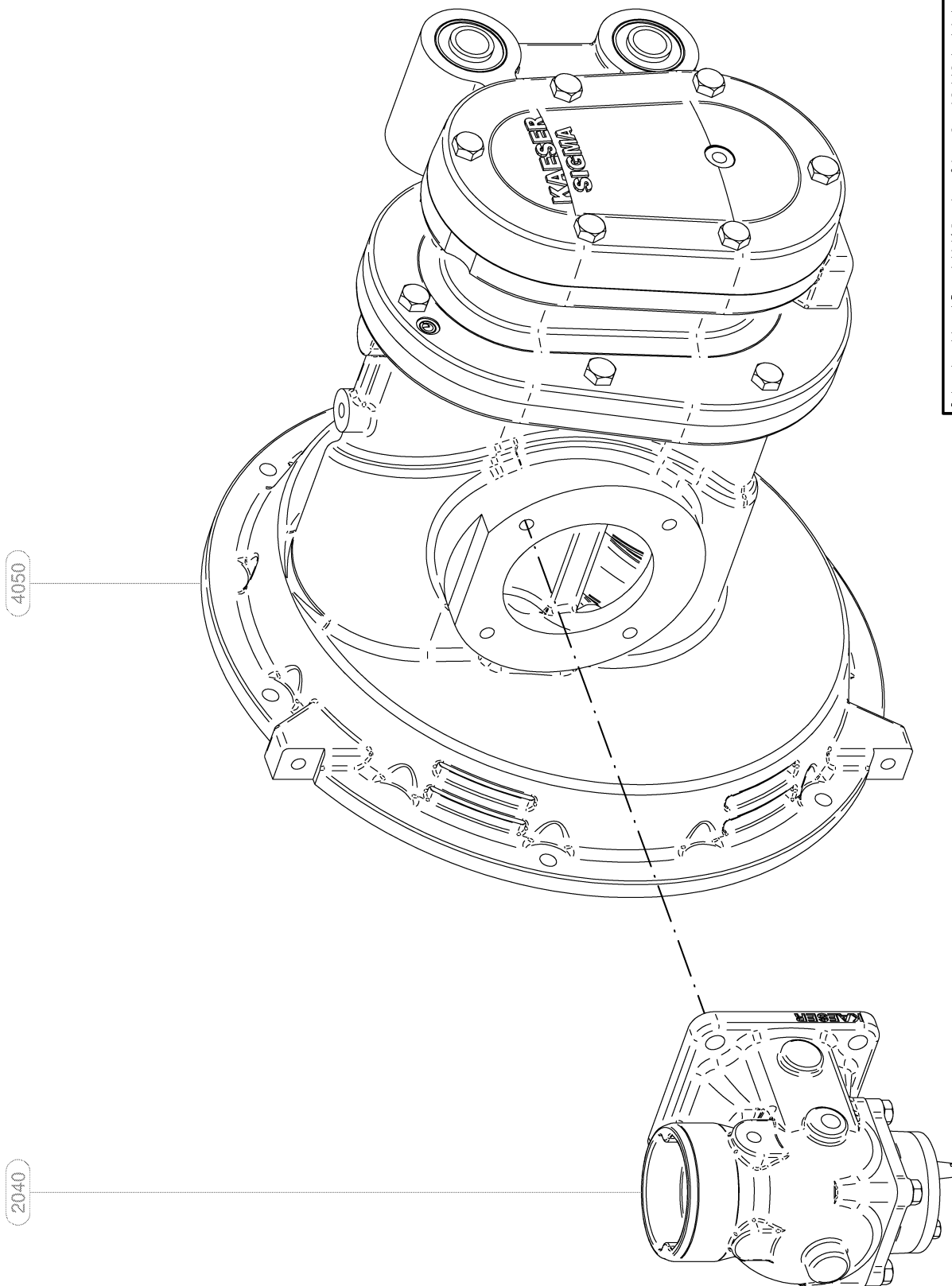


Die Zeichnung ist ein technisches Dokument. Sie ist als solche zu behandeln und darf nicht kopiert, verändert oder weitergegeben werden. Die Zeichnung ist Eigentum der KAESER KOMPRESSOREN GmbH. Die Weitergabe oder die Verwendung der Zeichnung ohne schriftliche Genehmigung der KAESER KOMPRESSOREN GmbH ist untersagt. Die Zeichnung ist Eigentum der KAESER KOMPRESSOREN GmbH. Die Weitergabe oder die Verwendung der Zeichnung ohne schriftliche Genehmigung der KAESER KOMPRESSOREN GmbH ist untersagt.				KAESER KOMPRESSOREN			
Bezeichnung: 4001 - Airend/Engine/Oil-filling / Kompressor/Motor/Ölbelegung		Zeichnungsgruppe: Original		Erstellt mit: Perfl		1 von 1	
Service spare part drawing / Service Ersatzteil Zeichnung		Dokument-Nr.: A4		Gez.: 24.05.2015		Perfl	
SEGA-Nummer: SEG-7459_01		Gez.: 08.04.2017		Perfl		Blatt:	
(Service-Kit) (Option) / Subassembly / Untergruppe		Status: Freigegeben					

[illegible]



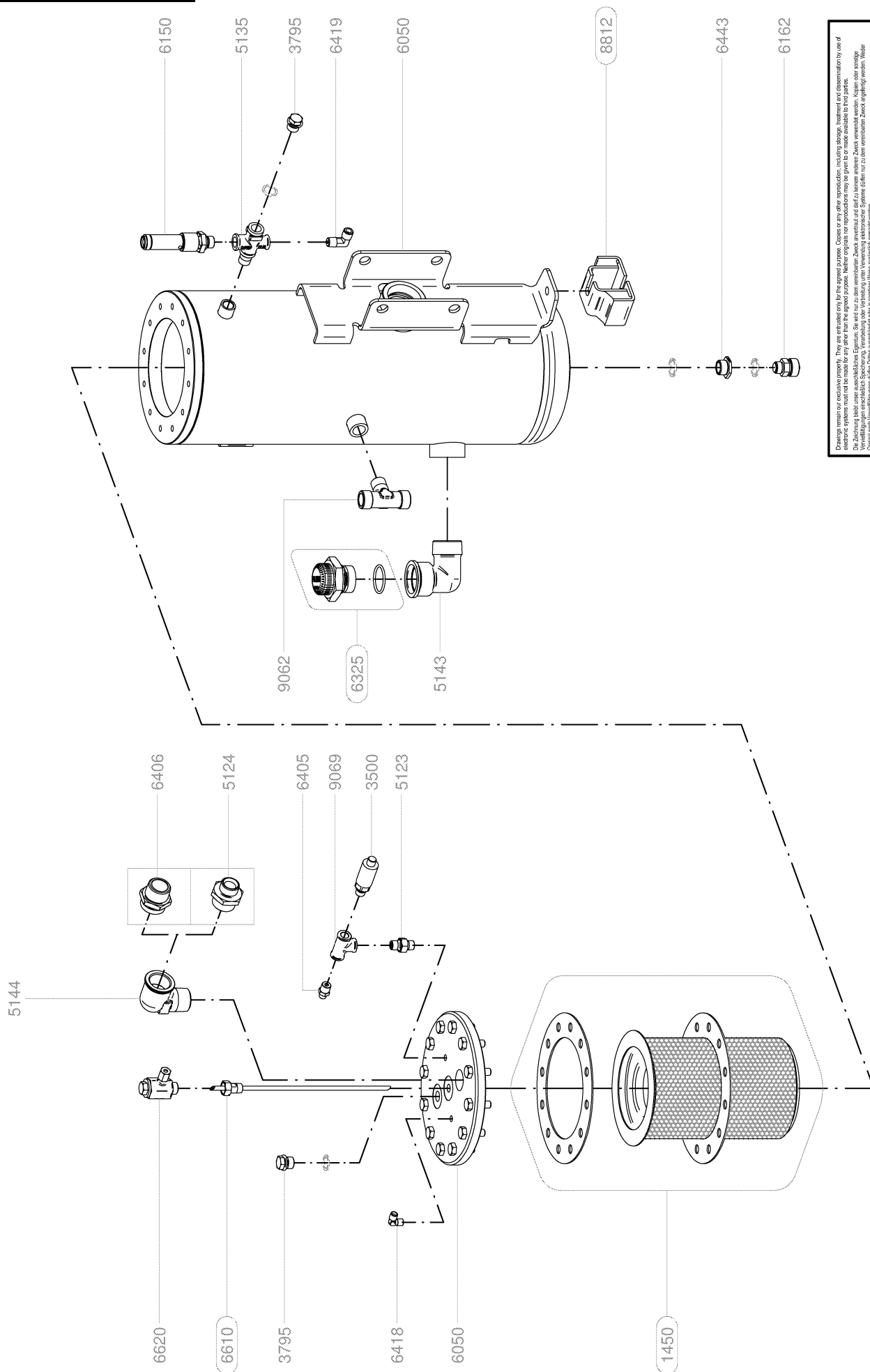
Die Zeichnung ist ein technisches Dokument. Sie ist urheberrechtlich geschützt. Ohne schriftliche Genehmigung ist das Kopieren, die Weitergabe oder die Verwendung für andere Zwecke untersagt. Nachdruck ist ohne Genehmigung des Herstellers strafbar. Die Zeichnung bleibt unter allen Umständen Eigentum des Herstellers. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Veränderungen ohne schriftliche Genehmigung des Herstellers sind untersagt. Nachdruck ist ohne Genehmigung des Herstellers strafbar.				KAESER KOMPRESSOREN			
Baugruppe		4001 - Airend/Engine/Oil-filling / Kompressor/Motor/Ölbefüllung		Original		Erstellt mit	
Zeichnungsgruppe		Dokument-Nr.		Datum		Name	
Service spare part drawing / Service Ersatzteil Zeichnung		A4		24.05.2015		Perfi	
SEGA-Nummer		08.04.2017		Perfi		Solid Edge	
SEG-7461_01		(Service-Kit) (Option) / Subassembly / Untergruppe		Blatt		1 von 1	



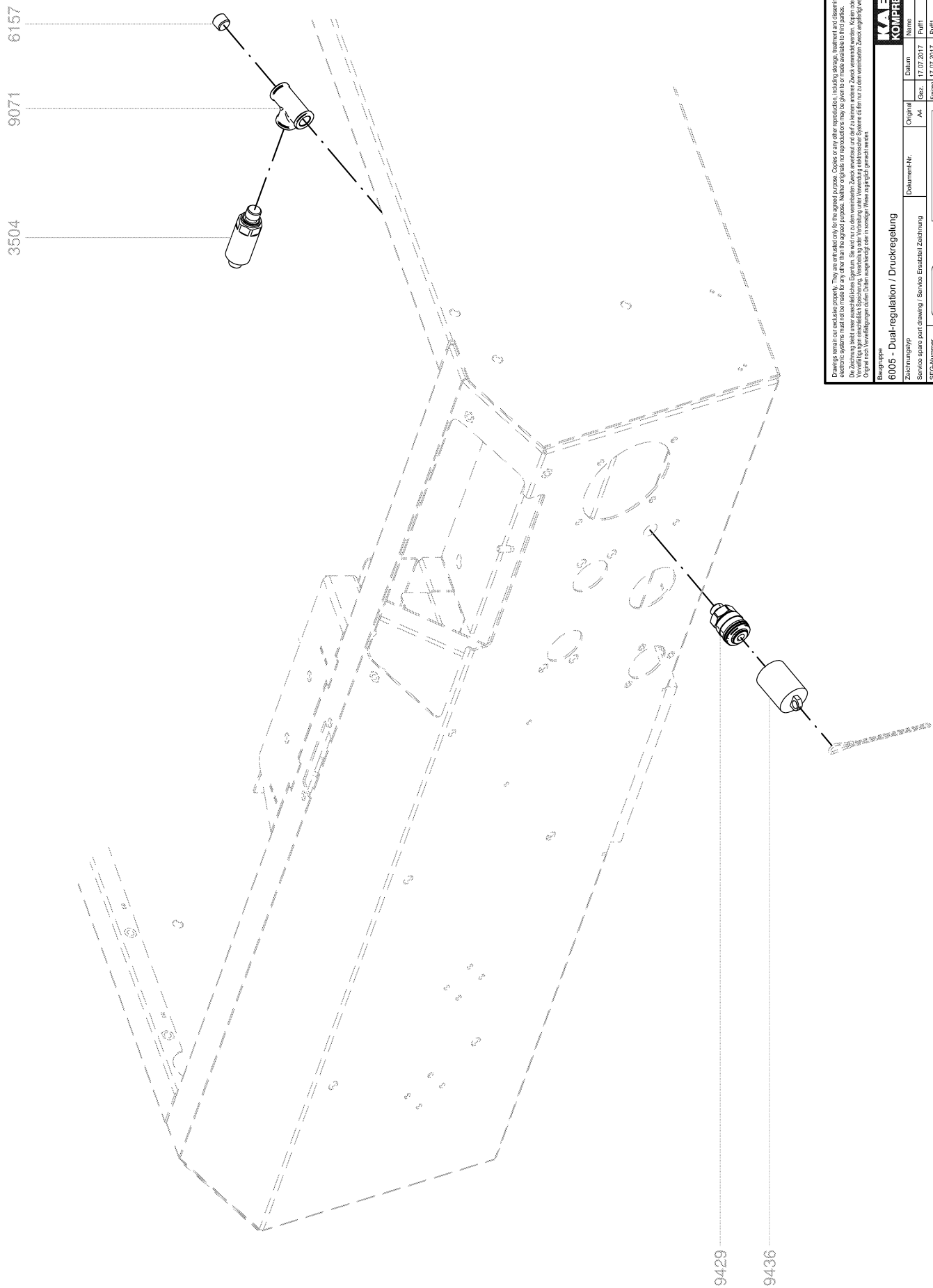
Drawings remain our exclusive property. They are created only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions may be given to or made available to third parties. The drawings are not to be used for any other purpose without the written consent of the manufacturer. The manufacturer is not responsible for damages of any kind resulting from the use of the drawings for any other purpose. The drawings are not to be used for any other purpose without the written consent of the manufacturer. The manufacturer is not responsible for damages of any kind resulting from the use of the drawings for any other purpose.

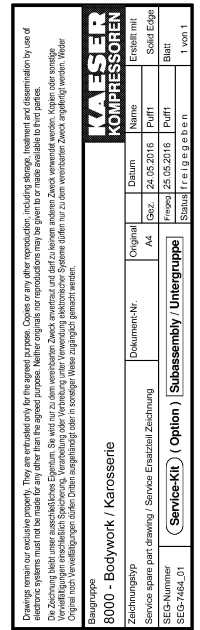
Wir bestätigen hiermit, dass die Zeichnungen ausschließlich für den vorgesehenen Zweck erstellt wurden und nicht für andere Zwecke verwendet werden dürfen. Die Zeichnungen sind Eigentum des Herstellers und dürfen nicht ohne schriftliche Genehmigung des Herstellers reproduziert, kopiert oder in irgendeiner Weise weitergegeben werden. Die Haftung für Schäden, die aus der Verwendung der Zeichnungen für andere Zwecke resultieren, ist ausgeschlossen.

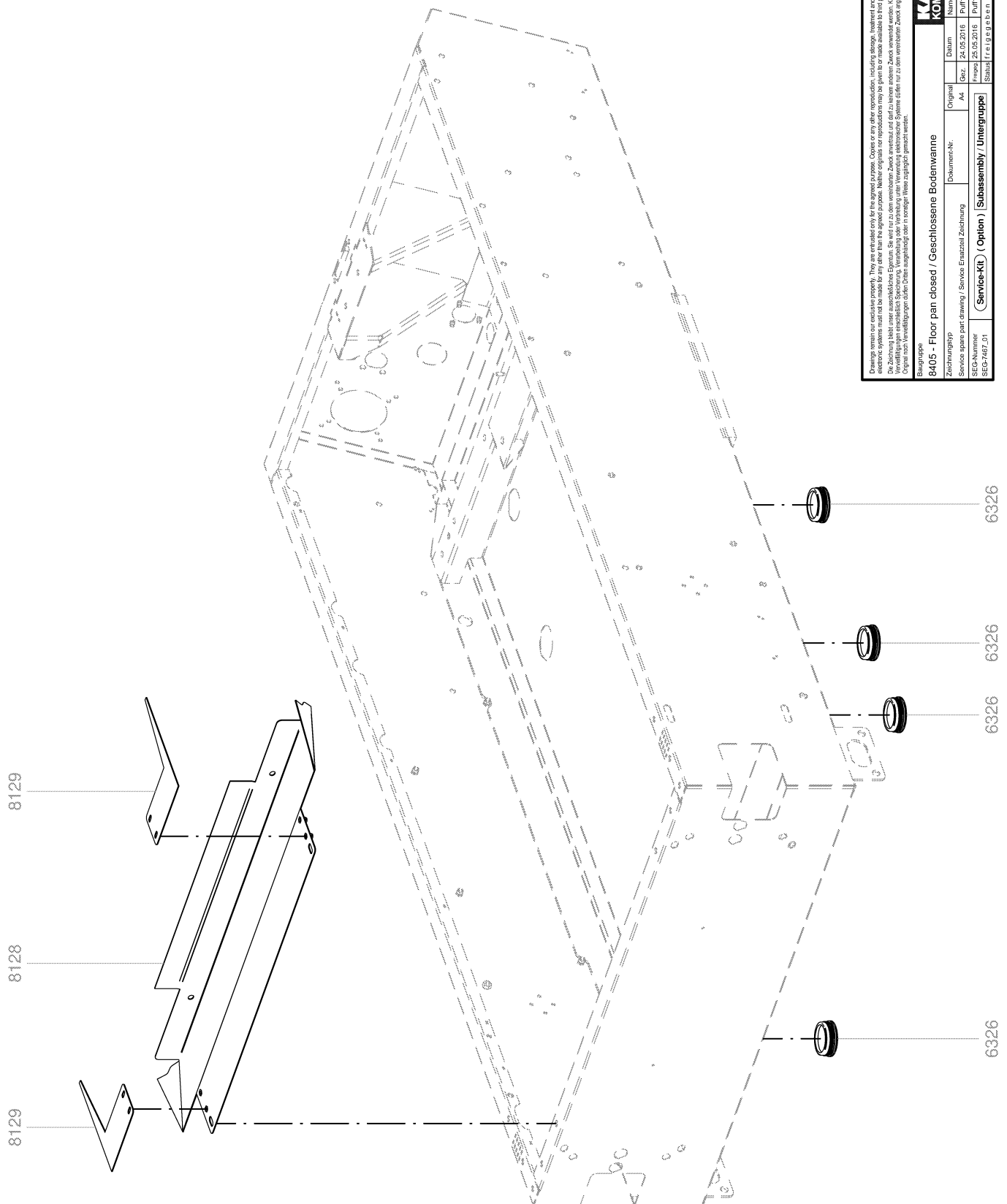
Original
 4045 - Compressor device / Verdichter-Einheit
 Zeichnungs-Nr.
 Service spare part drawing / Service Ersatzteil Zeichnung
 Zeichnungsart
 SEG-Nummer
 SEG-Mat.Nr.
 (Service-Kit) (Option) (Subassembly Untergruppe)
 Blatt:
 1 von 1



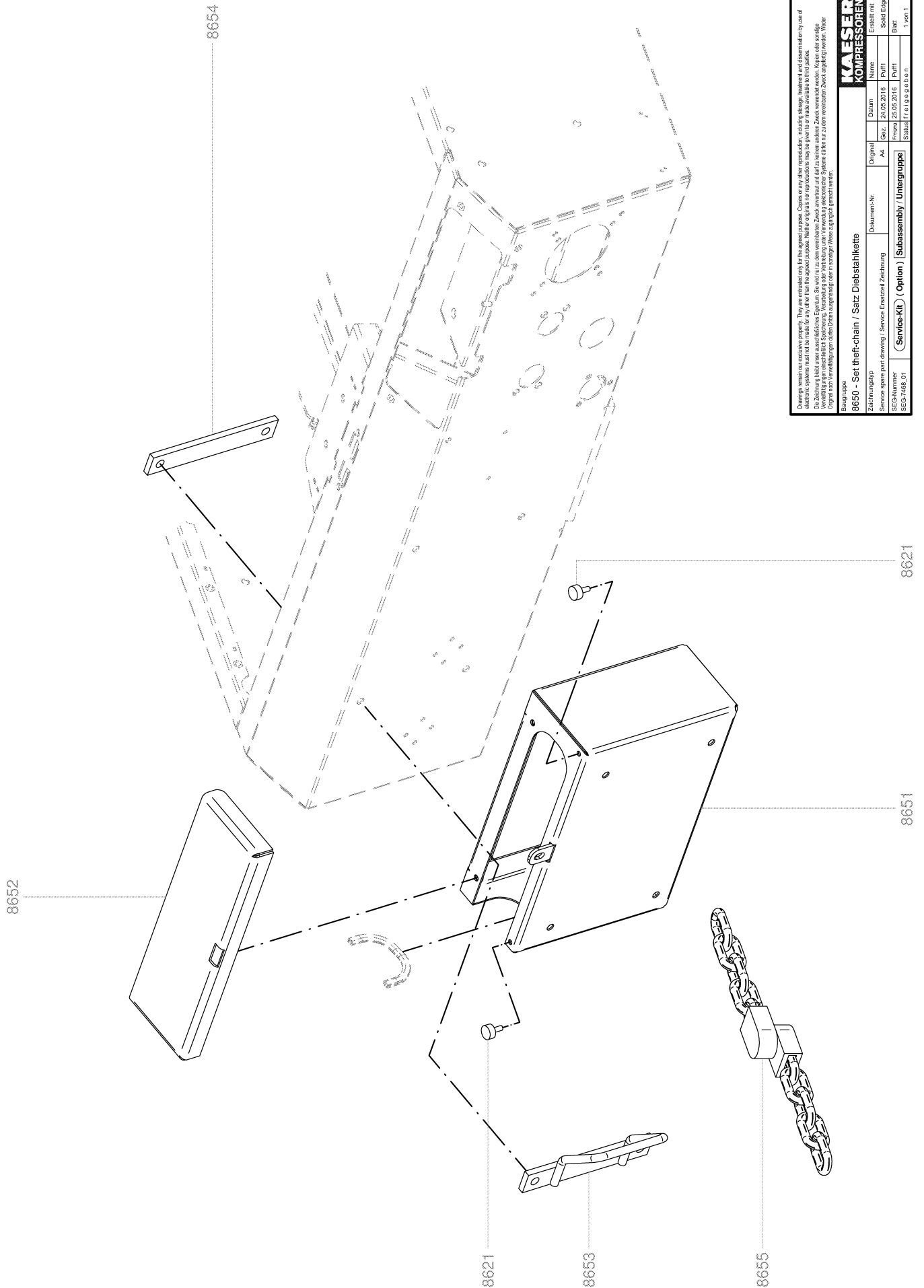
KAESER KOMPRESSOREN					
Baugruppe 6001 - Oil separation/control air / Ölabscheidung/Steuerluft					
Zeichnungsgruppe		Dokument-Nr.		Original	
Service spare part drawing / Service Ersatzteil-Zeichnung		A4		Erstellt mit	
SEGA-Nummer		24.05.2015		Perf1	
SEG-7463_01		25.05.2015		Perf1	
(Service-Kit) (Option) / Subassembly / Untergruppe		Blatt		1 von 1	

[illegible]



[illegible]

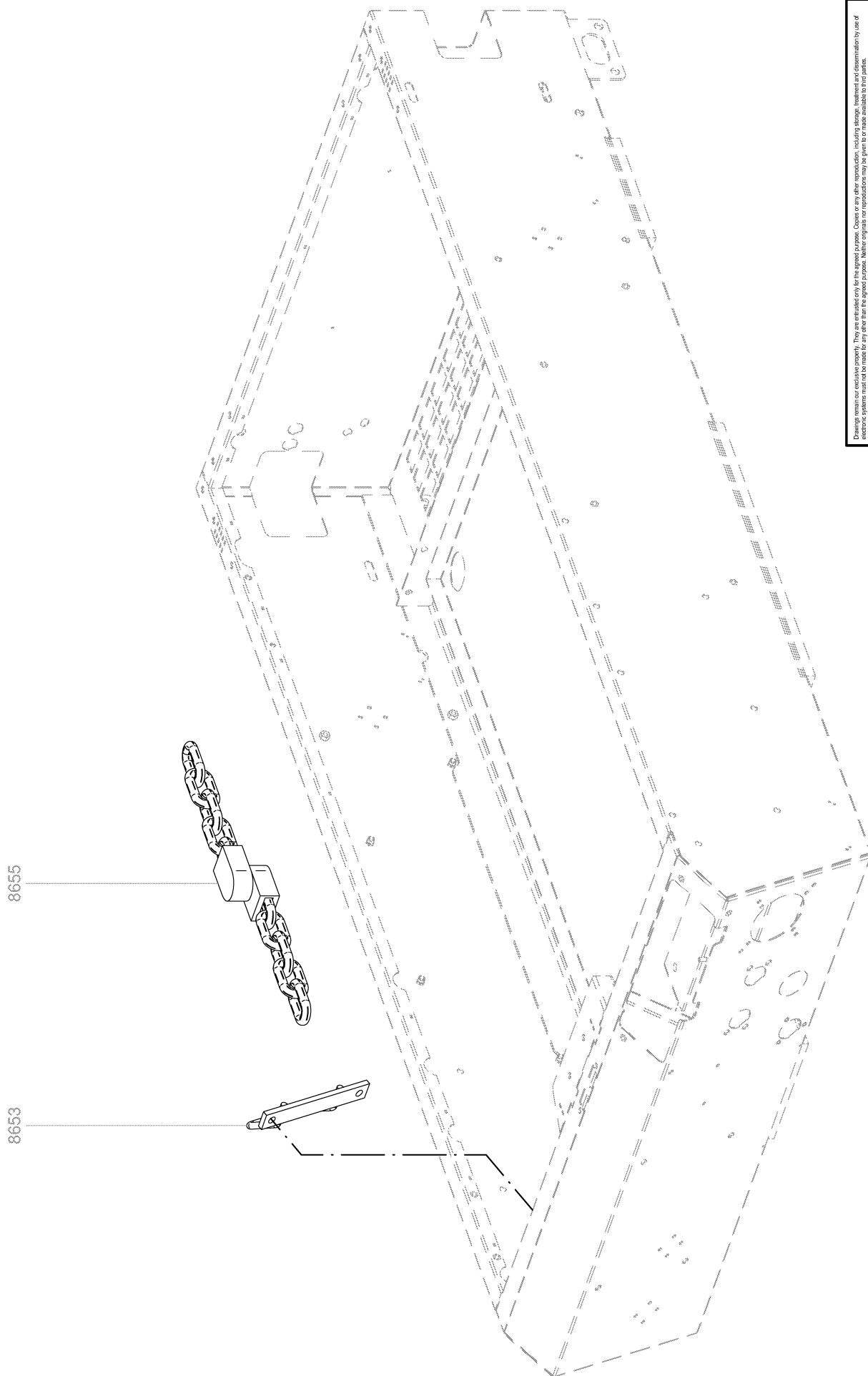
		KAESER KOMPRESSOREN	
Bezeichnung 8406 - Floor pan closed / Geschlossene Bodenwanne	Zeichnungs-Nr. 8406	Dokument-Nr. A4	Name Engels mit
Service span part drawing	Service Ersatzteil Zeichnung	Datum 24.08.2016	Profiz Sold Edge
StG-Nummer SGS-460.201	(Service-Kit)	Option	Statt 1 von 1
Subassembly / Untergruppe		Statt 1 von 1	



Drawings remain our exclusive property. They are entitled only for the agreed purpose. Copies or any other reproduction, including abridge, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproductions may be given to or made available to third parties.

Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zum vereinbarten Zweck verwendet und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige elektronische Reproduktionen dürfen nicht zu anderen Zwecken als dem vereinbarten Zweck verwendet werden. Weder Original noch Vervielfältigungen dürfen Dritten ausgestellt oder in sonstiger Weise zugänglich gemacht werden.

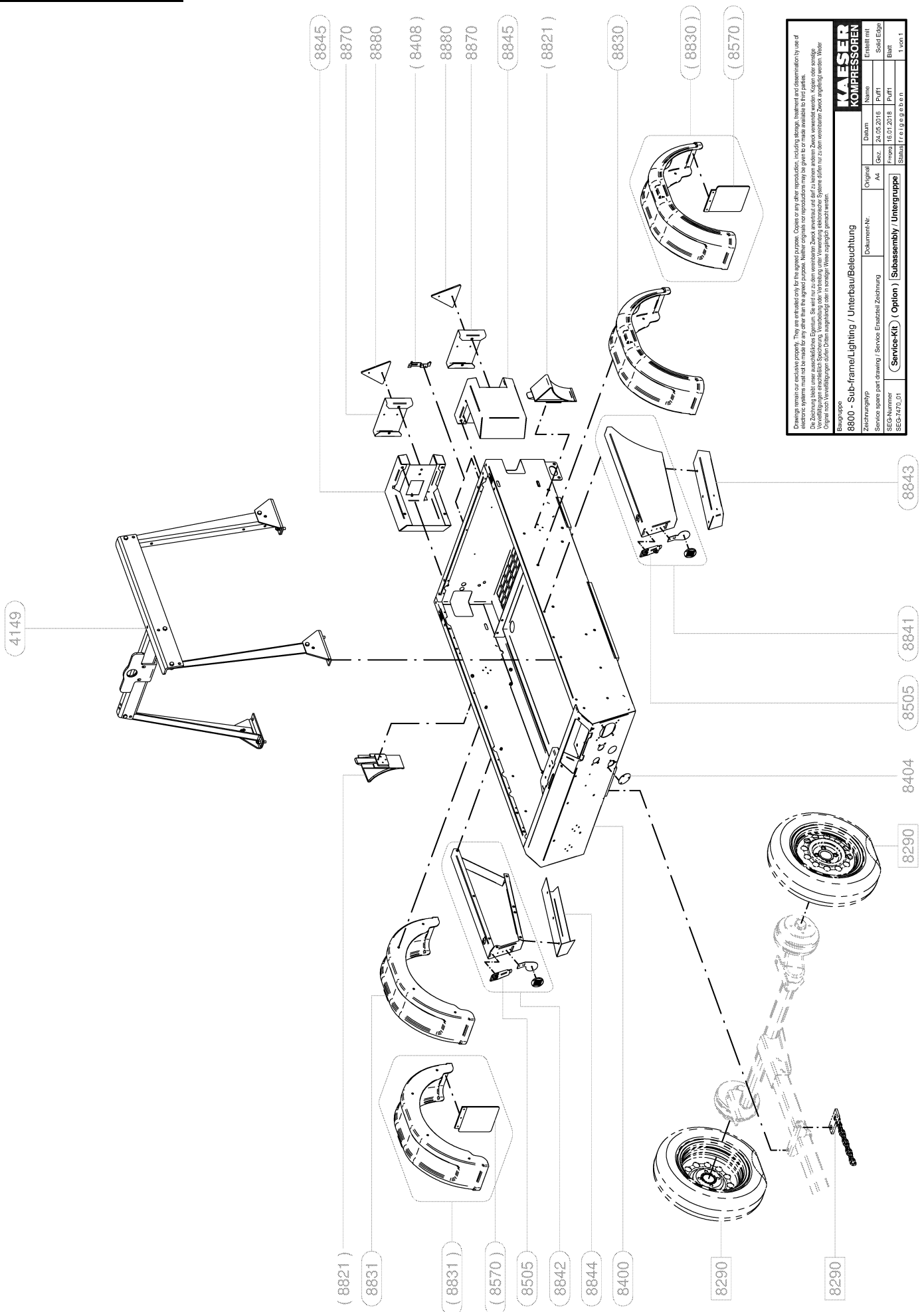
KAESER KOMPRESSOREN		8650 - Set self-chain / Satz Diebstahlschleife 8650 - Set self-chain / Satz Diebstahlschleife	
Zeichnungsgruppe Zeichnungsgruppe	Dokument-Nr. A4	Original A4	Erstellt mit Solid Edge
Service-Kit Service spare part drawing / Service Ersatzteil Zeichnung	Option SEG-7468_01	Option 29.05.2016	Blatt 1 von 1



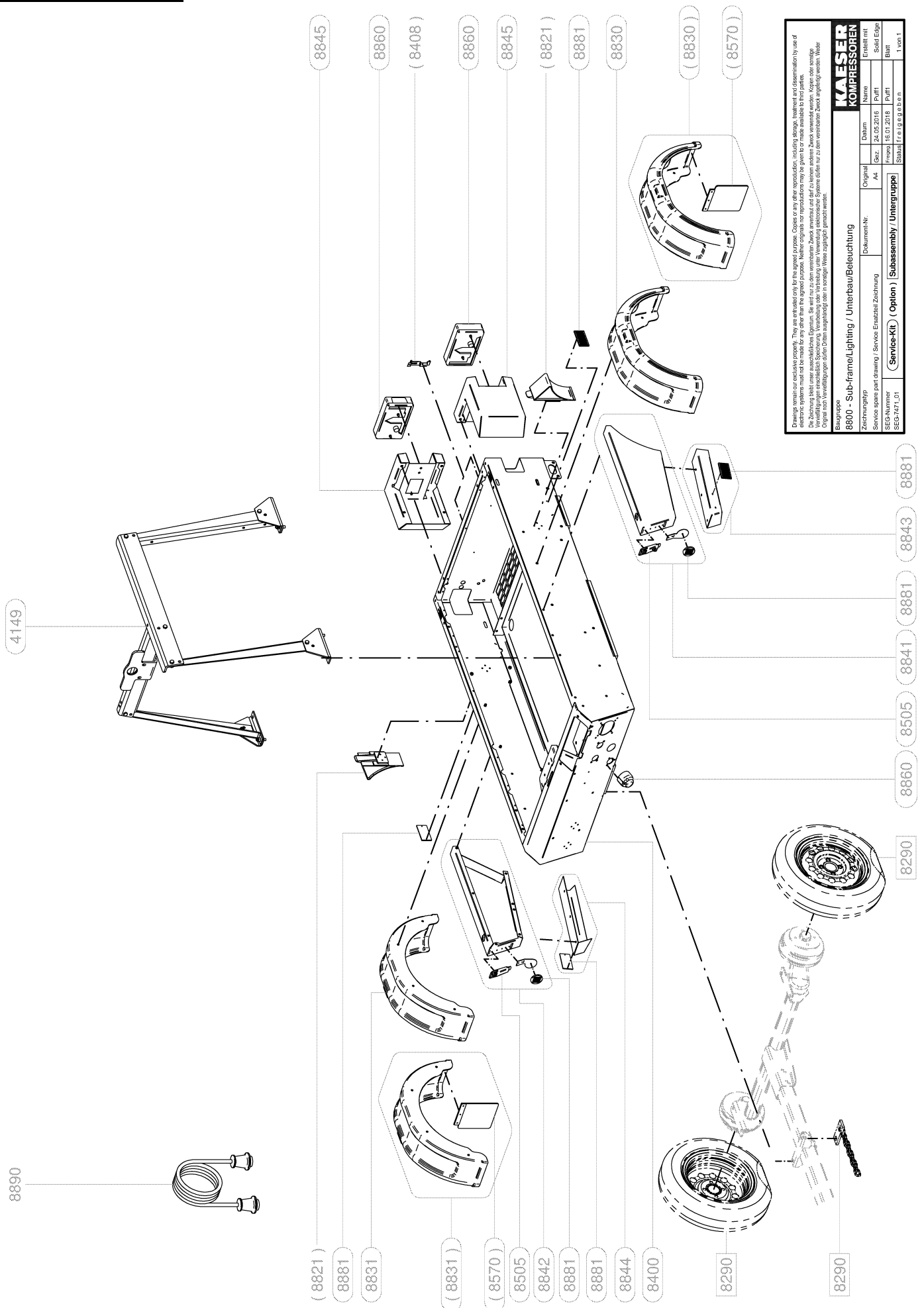
Patents cover not only a property. They are awarded only for the *inventive* process. Cases of any other application, including design, trademark and dissemination by use of electronic means should not be made for the above purpose. Neither requests nor registrations may be given for a mark available to the first parties.

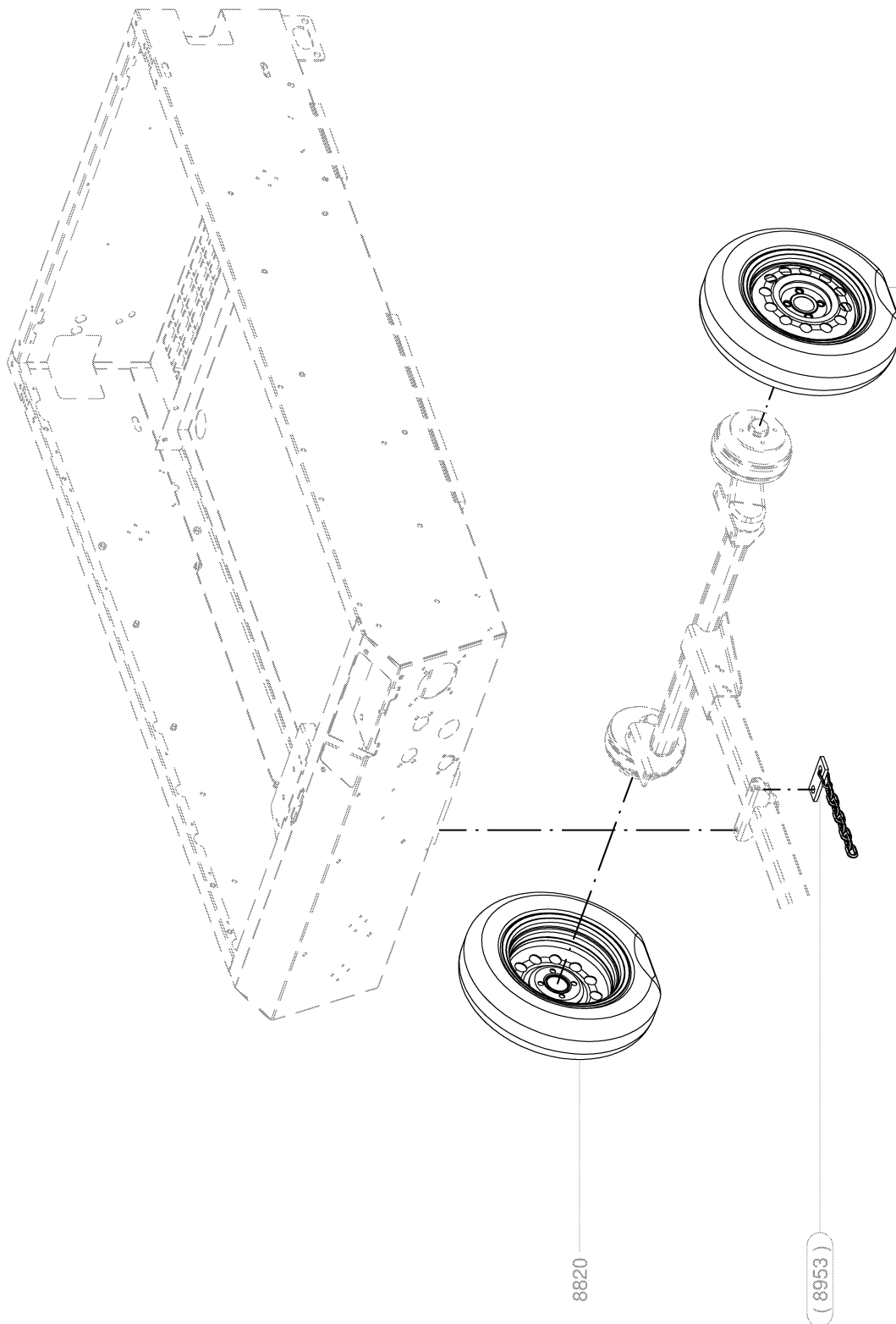
The Zeichnungs-Nr. (drawing number) is given. Since it is the main identifier, it should be as clear as possible. Zeich. entspricht auch: Kopie, oder sonstige Verfertigungen (mündlichlich Schreibern, Vermittlung oder Vervielfältigung anderer Verfertigungen elektronischer Systeme dürfen nur zu dem vereinbarten Zweck modifiziert werden. Weiter Original nicht Vervielfältigungen dürfen Dritten zugänglich oder in sonstiger Weise zugänglich gemacht werden).

Baugruppe		8650 - Set tieft-chain / Satz Diebstahlschleife		KAESER KOMPRESSOREN	
Ziehungsgep.	Datum	Name	Original	Einzelteil mit	
Service spare part drawing / Service Ersatzteil Zeichnung	Ges.	24.05.2016	A4	Pu/Fl	
SEK-Nummer	Proj.	23.05.2016	Pu/Fl		Baufl.
1727-7469 01	(Service-Kit) (Option) Subassembly / Untergruppe		Zeichnung / Drawing / Zeichnung Blatt / Sheet / Blatt		



KAESER KOMPRESSOREN									
Baugruppe		Name		Datum		Erstellt mit		1 von 1	
8800 - Sub-frame/Lighting / Unterbau/Beleuchtung		Original		24.05.2015		Solid Edge			
Zeichnungsgruppe		A4		Perfl		Blatt			
Service spare part drawing / Service Ersatzteil Zeichnung		Dokument-Nr.		Perfl		Blatt			
SEGA-Nummer		16.01.2015		Perfl		Blatt			
SEG-7470_01		Status		16.01.2015		Perfl			
		(Service-Kit) (Option) / Subassembly / Untergruppe							

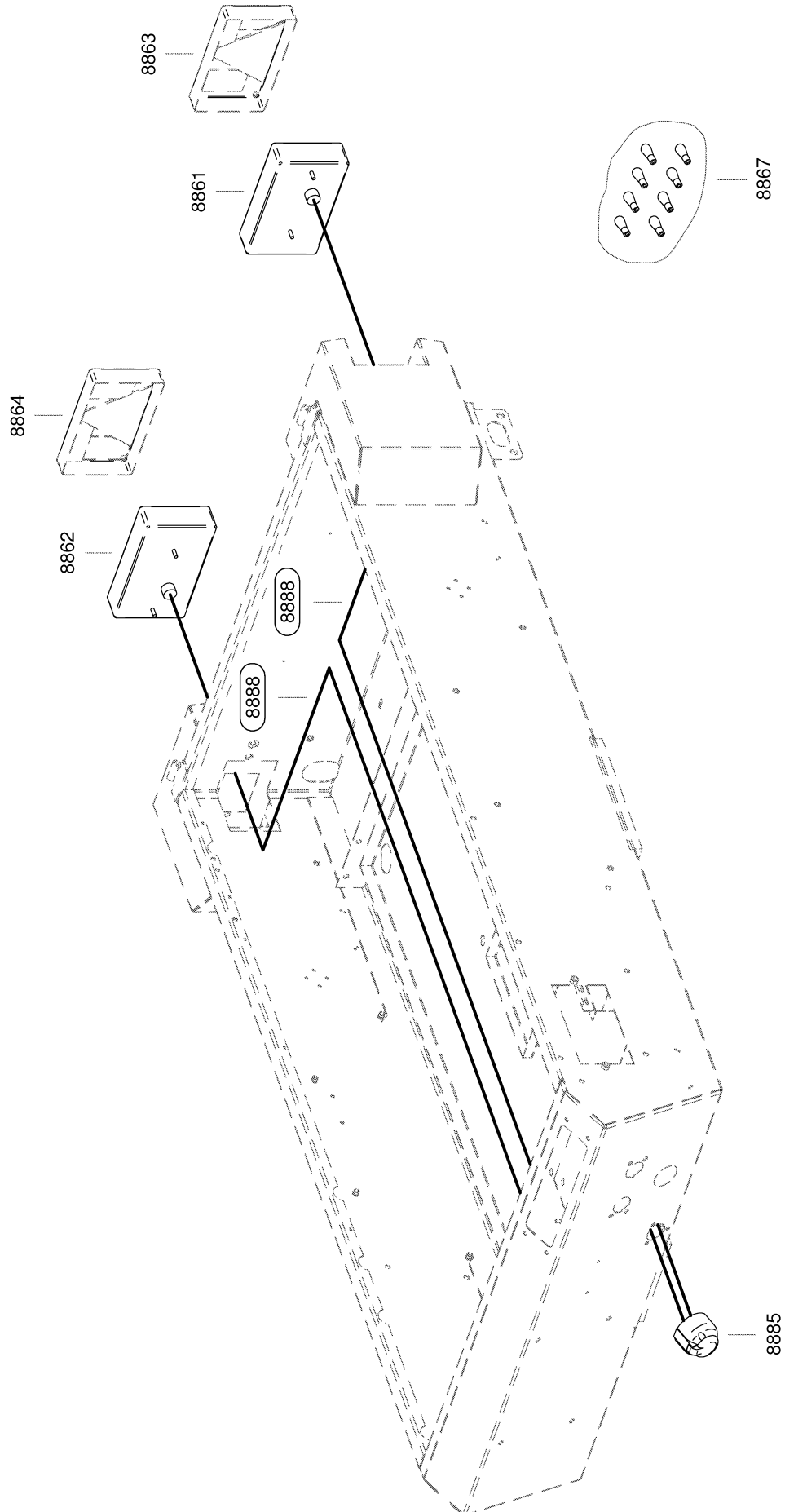


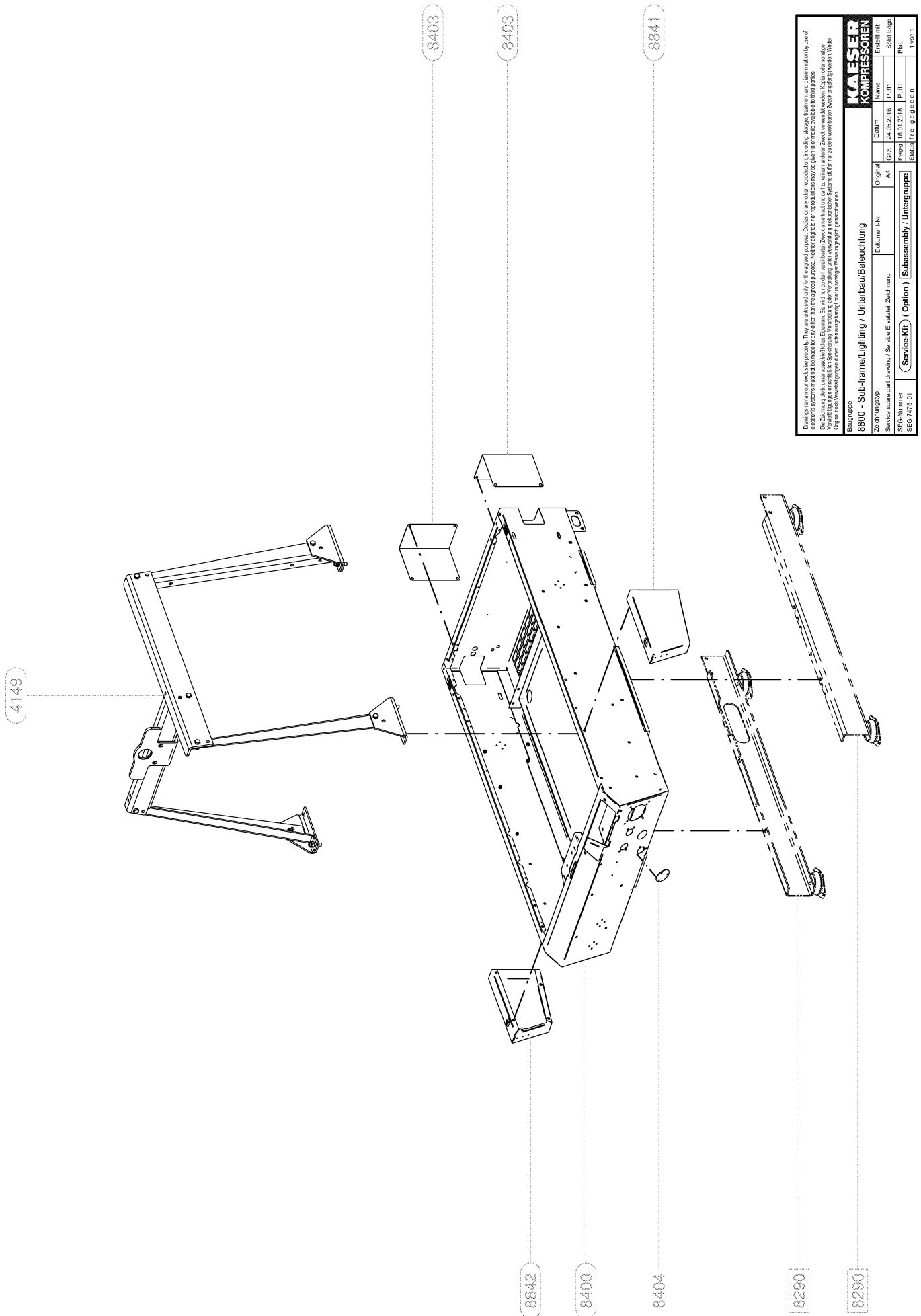


Drawings result in exclusive property. They are entitled only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions may be given or be made available to third parties.

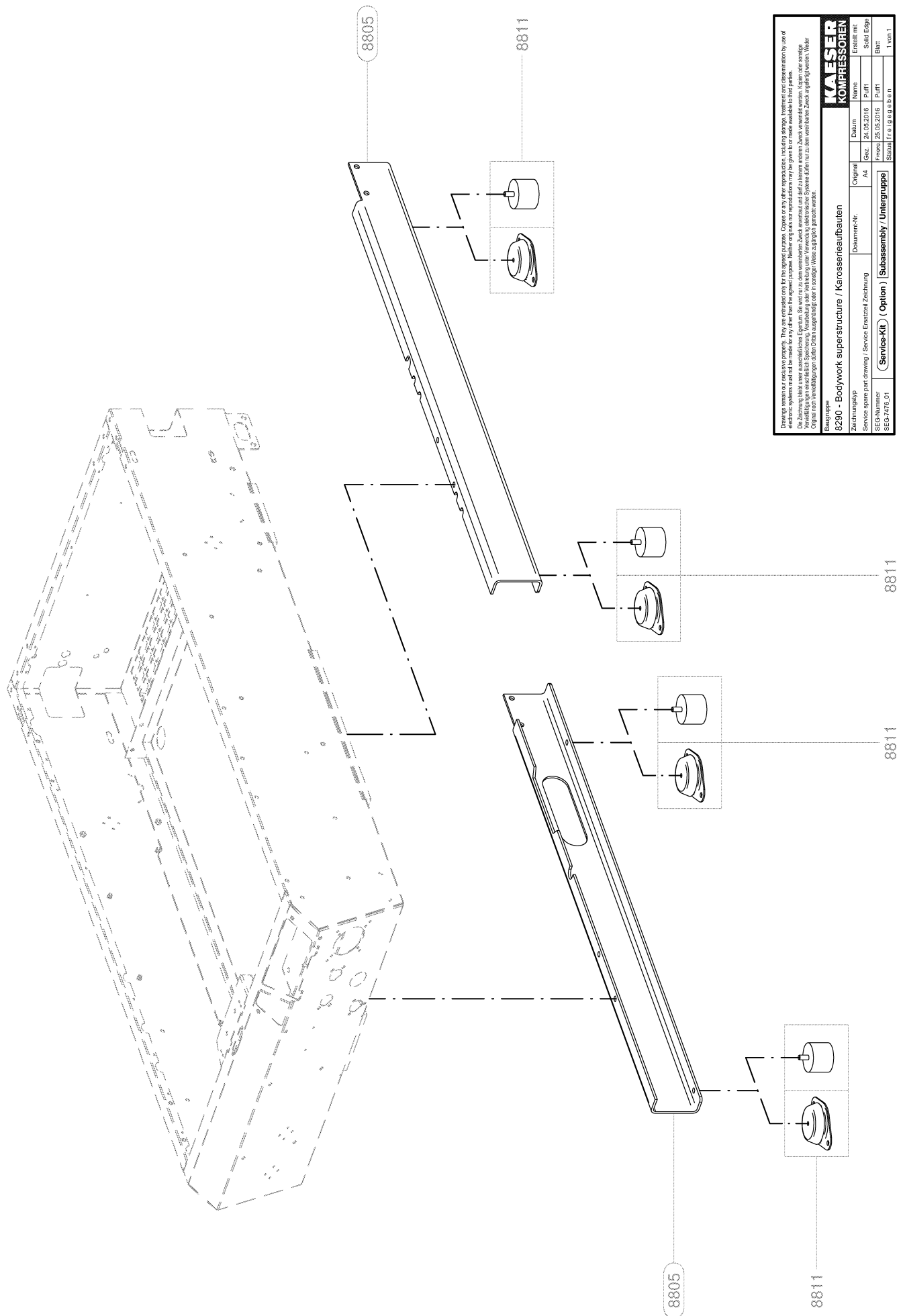
Das Zeichnungsblatt ist ausschließlich Eigentum. Sie sind zu dem vereinbarten Zweck anzufertigen und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung über Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck anfertigt werden. Weiter Original nicht Vervielfältigen! Dritten auszuhändigen oder in sonstige Weise zugänglich gemacht werden.

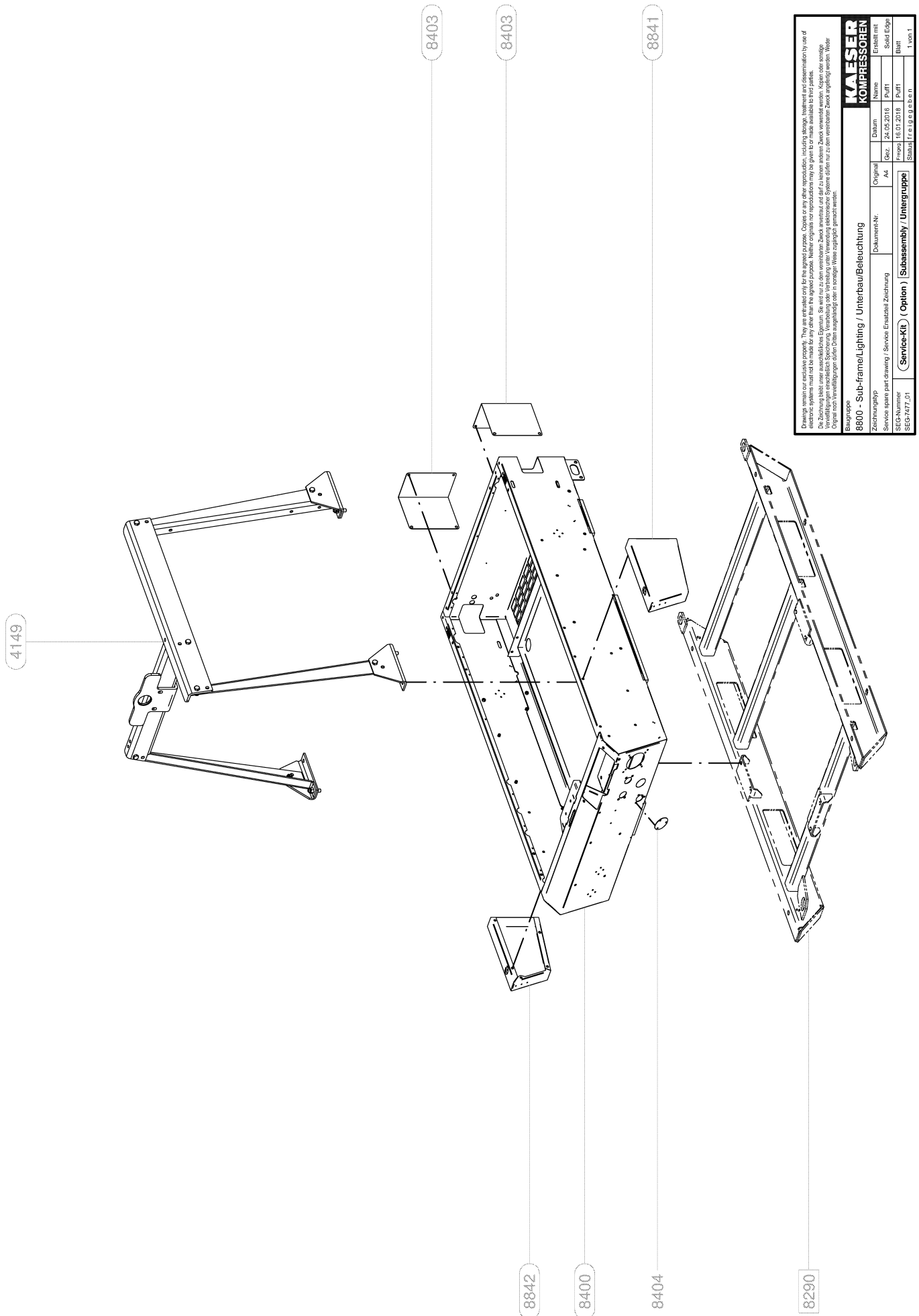
Baugruppe 8290 - Bodywork superstructure / Karosserieaufbauten Zeichnungsgruppe Service spare part drawing / Service Ersatzteil Zeichnung SEFZ-Nummer SEG-7474_01	KAESER KOMPRESSOREN		Original	Name	Erstellt mit
			A4	Pu11	Std Edg
				Pu11	Bild
					1 von 1
(Service-Kit) (Option) Subassembly / Untergruppe			Status: (a) (g) (o) (b) (r)		

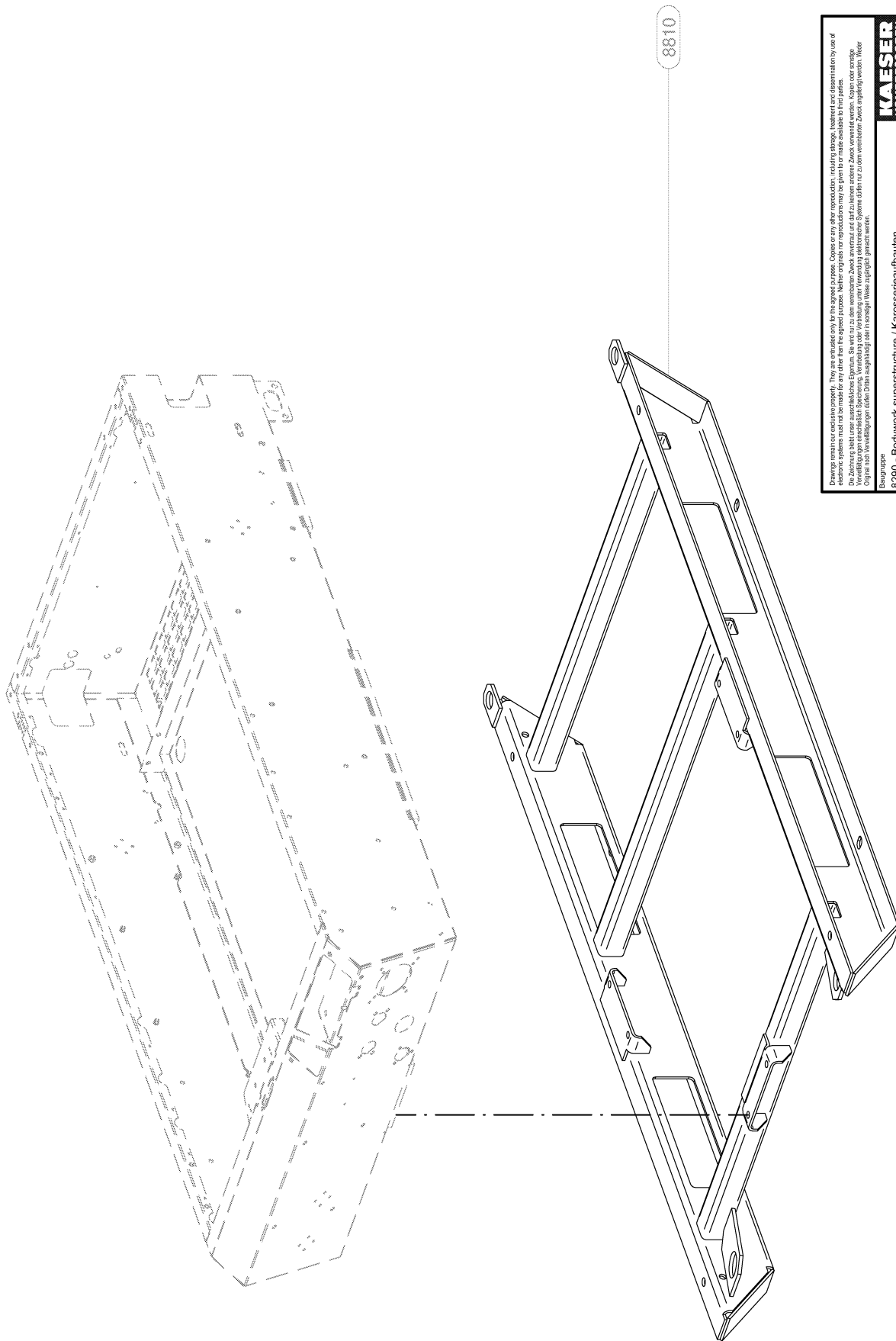




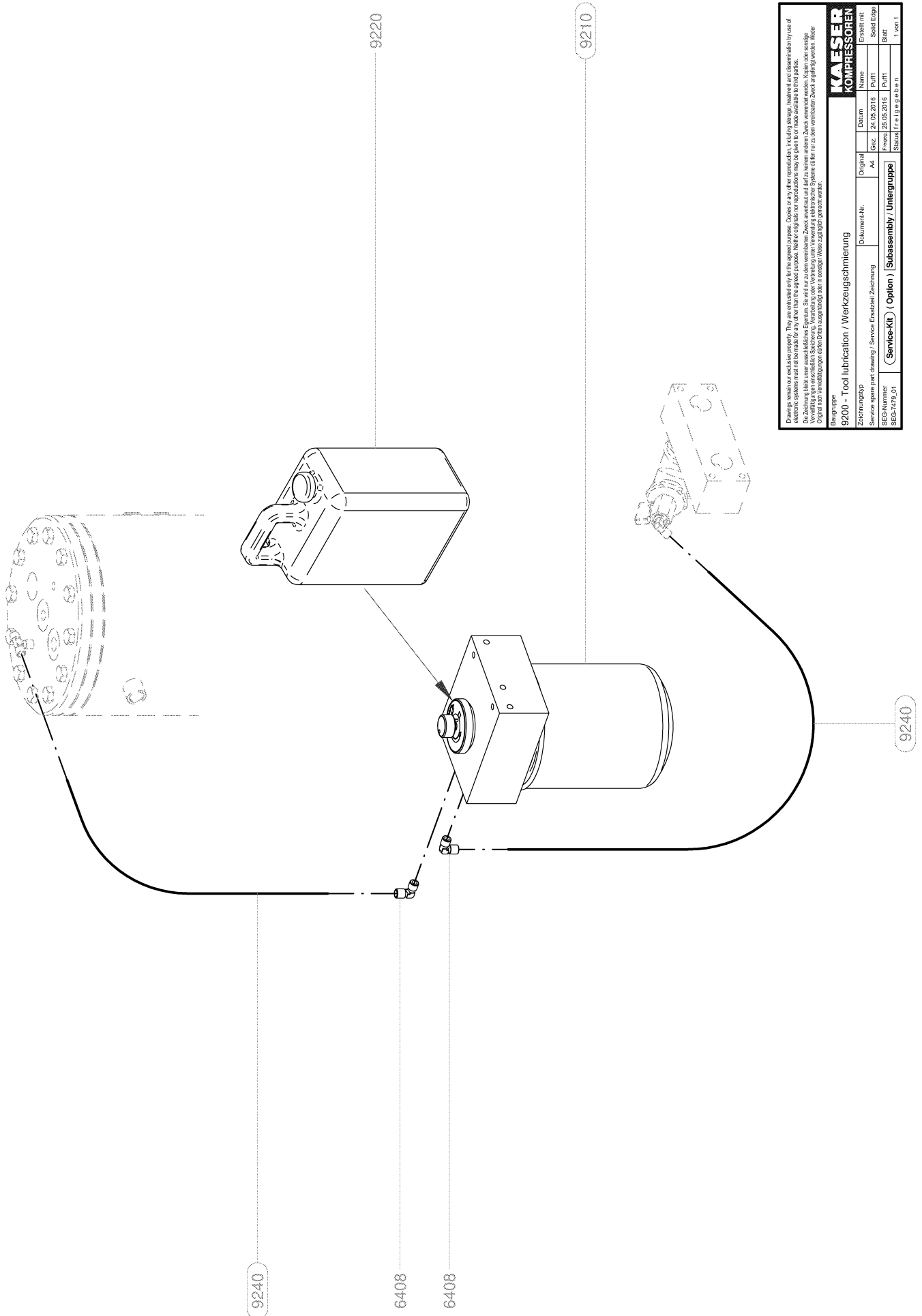
Original KAESER KOMPRESSOREN				
Drawings remain our exclusive property. They are created only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproductions may be given or made available to third parties. All rights are reserved. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Kaeser Kompressoren AG. Alle Rechte vorbehalten. Weitergabe und Vervielfältigung dieses Dokuments, auch auszugsweise, ist ohne schriftliche Genehmigung der Kaeser Kompressoren AG. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without prior written permission from Kaeser Kompressoren AG. All rights reserved.				
Original not available/Original nicht verfügbar/Original nicht vorhanden				

[illegible]

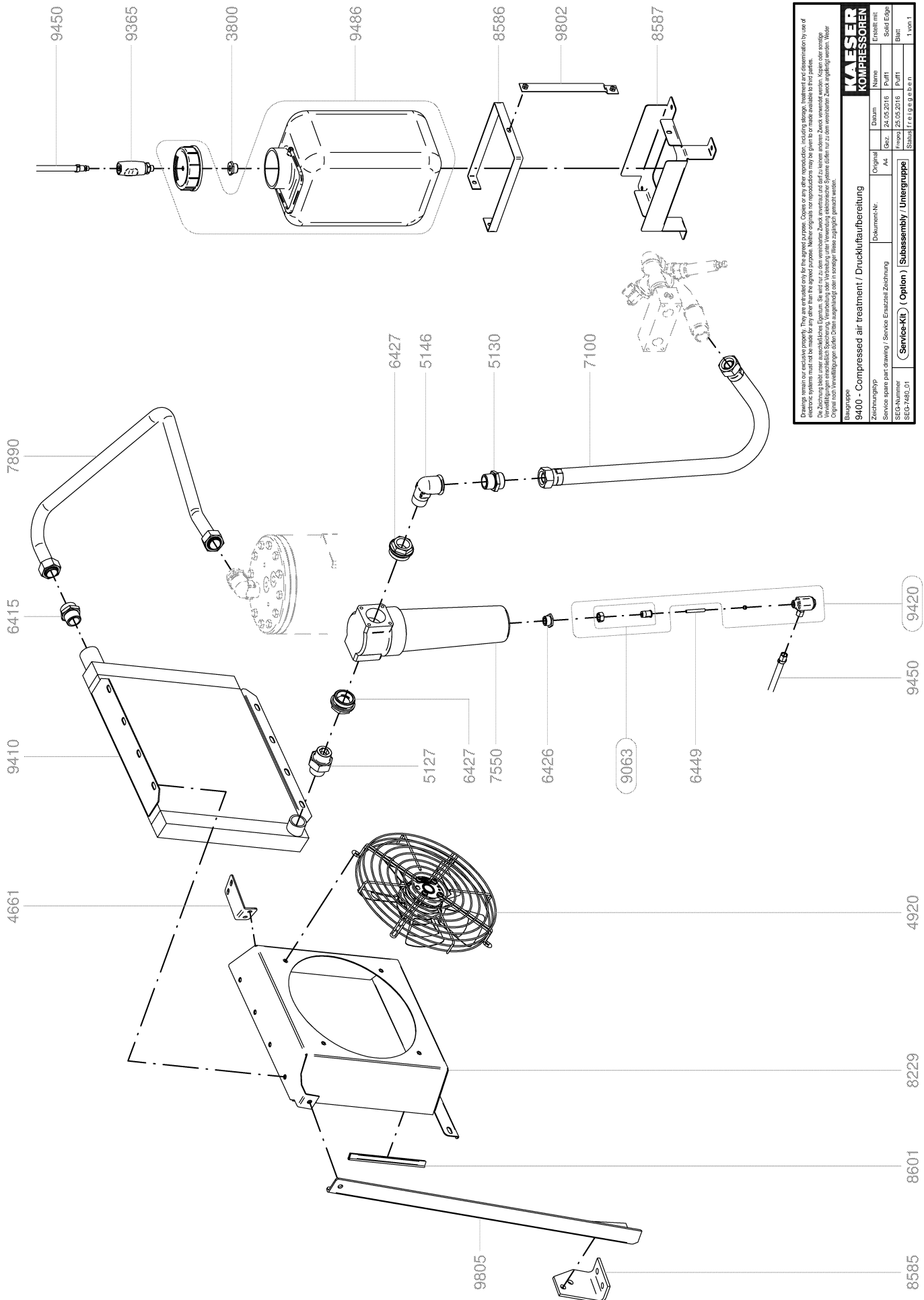




KAESER KOMPRESSOREN Drinking water is not suitable for drinking. This is intended only for the intended purpose. Other use is not recommended. Liability for damage, injury and death is excluded by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproduction may be given to or made available to third parties. Die Zeichnung bleibt unter ausschliesslichem Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Veränderung oder Verbreitung unter Verletzung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weitergabe an Dritte ist untersagt. Nachdruck ist ohne schriftliche Genehmigung des Herstellers ausdrücklich untersagt.									
Bezeichnung: 8290 - Bodywork superstructure / Karosserieaufbauten									
Zeichnungsgruppe:		Dokument-Nr.:		Datum:		Name:		Erstellt mit:	
Service spare part drawing / Service Ersatzteil-Zeichnung		A4		24.05.2015		Perfi		Solid Edge	
SEGA-Number		Perfi		Perfi		Perfi		Blatt:	
SEG-7478_01		Subassembly / Untergruppe		Status		1 von 1			



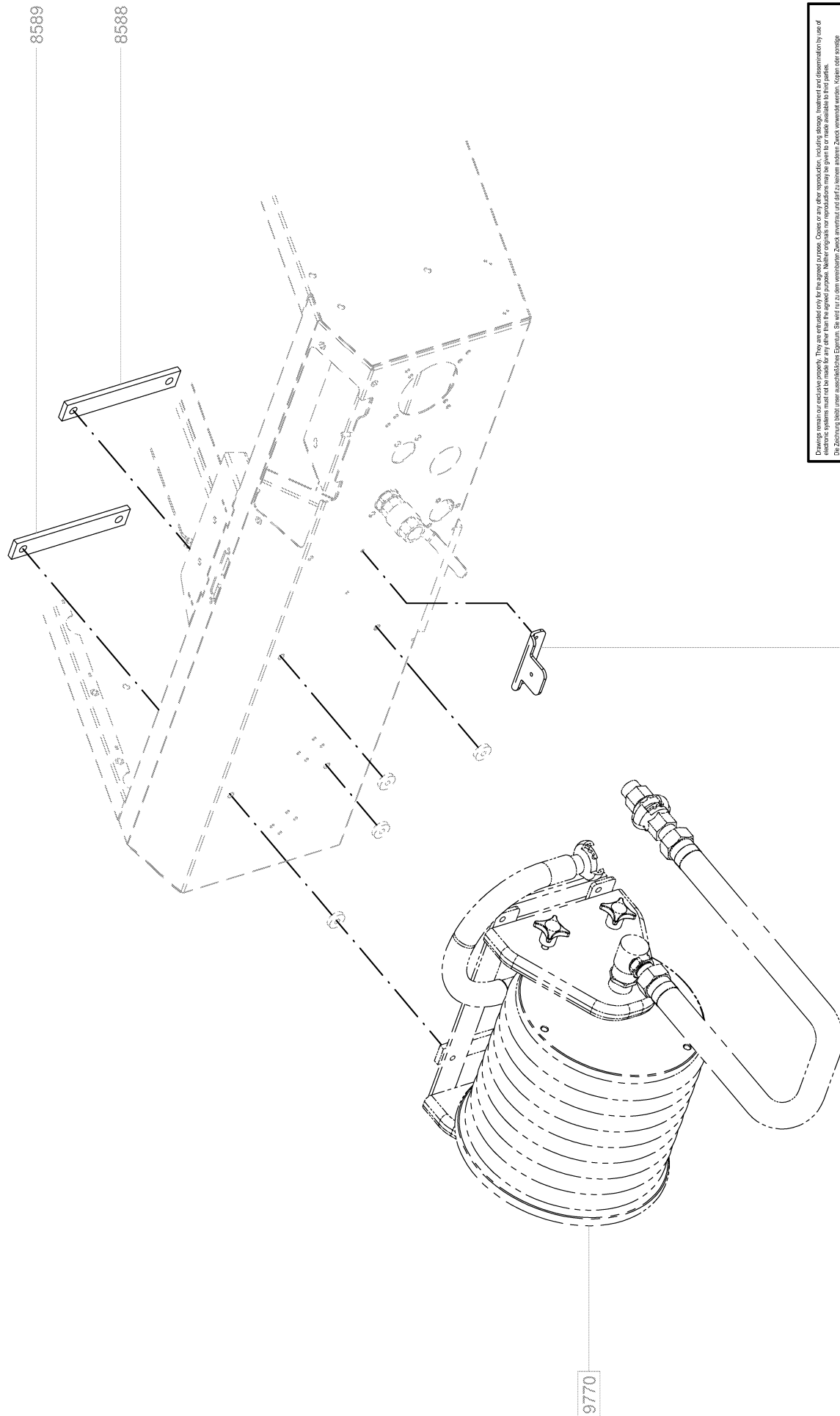
Druckwasser ist nicht geeignet zum Trinken. Dies ist eine Warnung für den Benutzer. Achtung: Trinken Sie kein Wasser direkt aus dem Schlauch. Das Trinken von Wasser wird durch den Gebrauch elektronischer Systeme nicht empfohlen. Dieses Produkt darf nicht für andere Zwecke als für den vorgesehenen Zweck verwendet werden. Weder Original noch Ersatzteile dürfen an Dritte weitergegeben werden. Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen ohne schriftliche Genehmigung sind strafbar. Nachdruck, Verbreitung oder sonstiger Gebrauch ist ohne schriftliche Genehmigung des Herstellers ist strafbar.									
KAESER KOMPRESSOREN									
9200 - Tool lubrication / Werkzeugschmierung									
Zeichnungsgruppe	Zeichnungs-Nr.	Original	Datum	Name	Erstellt mit				
Service spare part drawing / Service Ersatzteil Zeichnung	A4	Perf1	24.05.2015	Perf1	Solid Edge				
SEGA-Nummer	SEGA-Nummer	Perf1	Perf1	Perf1	Perf1				
SEG-7479_01	SEG-7479_01	Perf1	Perf1	Perf1	Perf1				
Standard / Zeichnung									
1 von 1									



Drawings remain our exclusive property. They are entitled only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither original nor reproductions may be given to or made available to third parties.

Die Zeichnung bleibt unser ausschließliches Eigentum. Sie sind nur zum vereinbarten Zweck bestimmt und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung einer Vervielfältigung elektronischer Systeme dürfen nicht zu den vereinbarten Zweck angefertigt werden. Weder Original noch Vervielfältigungen dürfen Dritten ausgestellt oder in sonstiger Weise zugänglich werden.

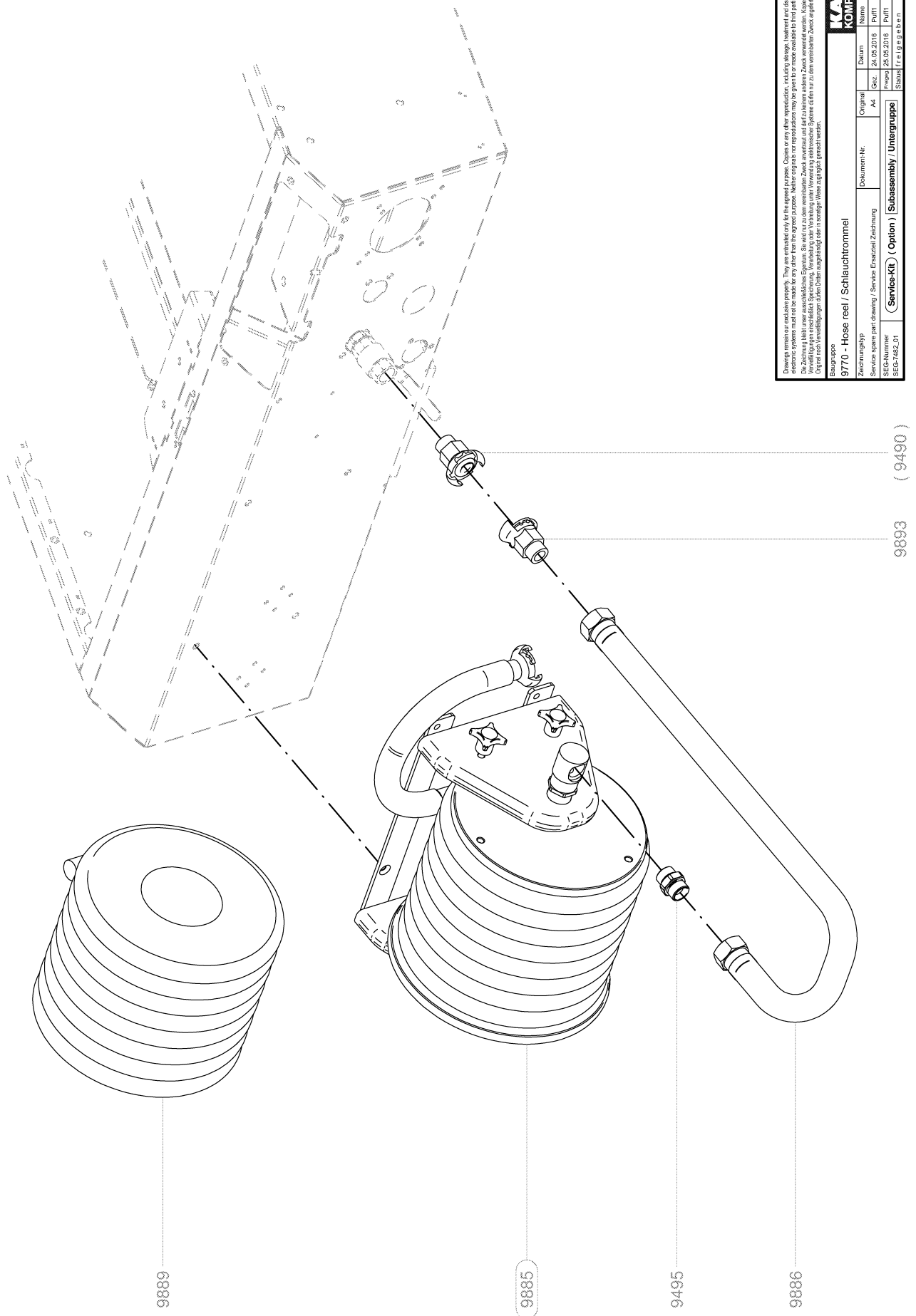
[illegible]



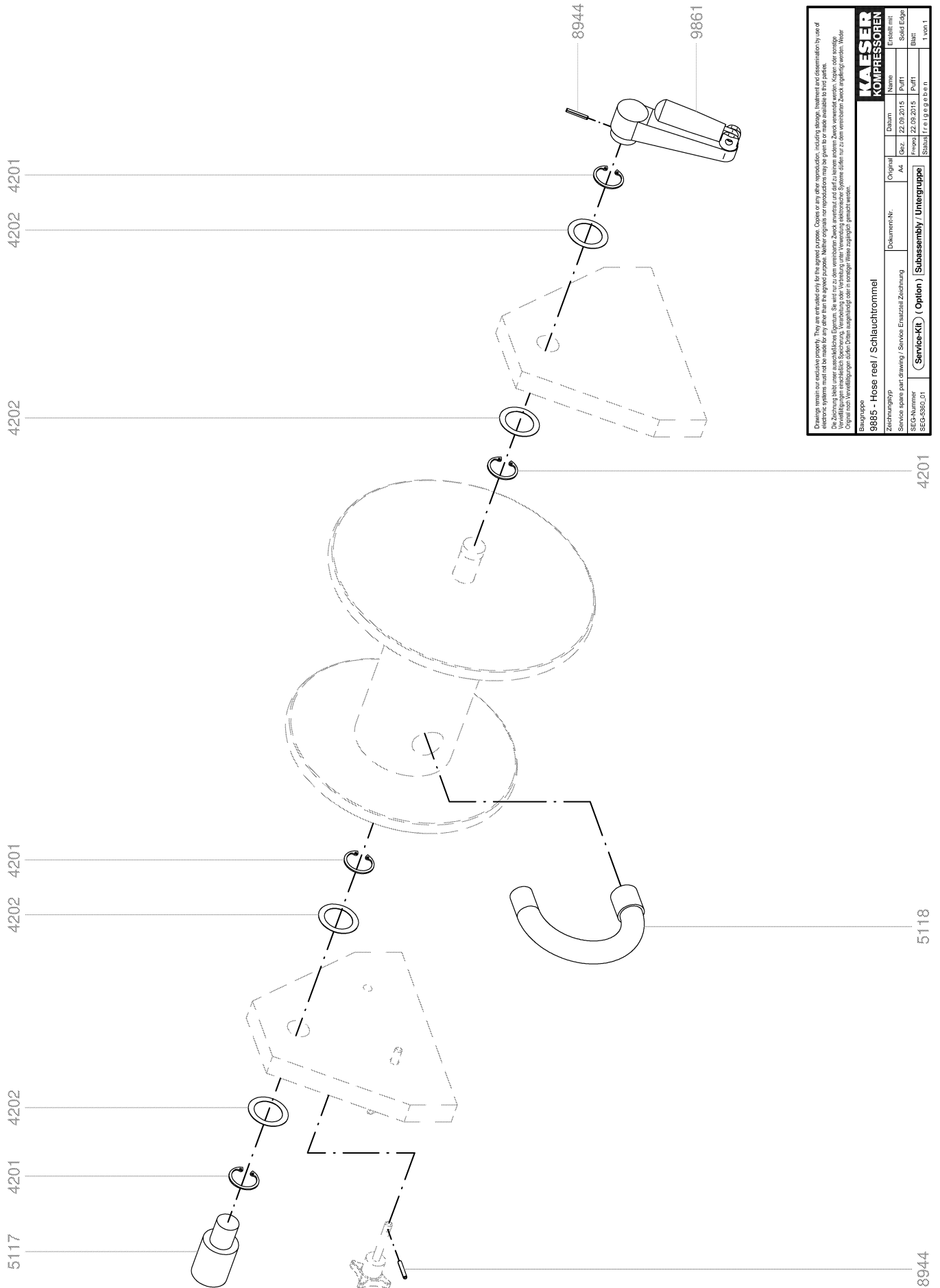
Drawings result in exclusive property. They are articulated only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Where originals, nor reproductions may be given or be made available to third parties.

Das Zeichnungsbild ist urheberrechtlich geschützt. Es wird nur zu dem vereinbarten Zweck erstellt und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verbreitung oder Verwertung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weiter Original nicht Vervielfältigung oder Dritten auszuhändigen oder in sonstiger Weise zugänglich gemacht werden.

Baureihe	9500 - Hose reel / Schlauchaufroller		KAESER KOMPRESSOREN	
	Zuschlagssatz	Original	Datum	Erstellt mit
	Service spare part drawing / Service Ersatzteil Zeichnung	A4	Frei, 24.05.2016	Puffi
	SEF-Nummer		Frei, 25.05.2016	Puffi
	SEG/7481_01		Staub / c r e g g e n	1 von 1



KAESER KOMPRESSOREN			
Zeichnungsgruppe	Original	Datum	Erstellt mit
9770 - Hose reel / Schlauchtrommel	A4	24.05.2015	Perf1
Zeichnungsgruppe	Service Ersatzteil Zeichnung	Gez.	24.05.2015
Service spare part drawing / Service Ersatzteil Zeichnung	Perf1	Perf1	Perf1
SEGA-Nummer	Subassembly / Untergruppe	Freigegeben	24.05.2015
SEG-7482_01	(Service-Kit) (Option)	Statistik	1 von 1



KAESER KOMPRESSOREN					
Baugruppe		9885 - Hose reel / Schlauchtrommel			
Zeichnungsgruppe		Service spare part drawing / Service Ersatzteil Zeichnung			
Dokument-Nr.		A4			
Name		Erstellt mit			
Datum		Perf1			
Gez.		Solid Edge			
Version		Perf1			
Blatt		1 von 1			
SEGA-Nummer		SEG-6980_01			
Status		Standard			

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. Close the air inlet opening with plastic foil and moisture-resistant adhesive tape.
2. Attach the following notice on the instrument panel showing the de-commissioning measures taken.

Attention!

1. The machine is temporarily decommissioned.
2. The air inlet opening of the compressor has been closed.
3. Recommission according to service manual.

Date / signature:

Tab. 86 "Temporarily decommissioned" information notice

12.1.2 Long-term de-commissioning

De-commissioning the machine for 5 months or longer.

Material Receptacle

Preserving oil

Preservative

Desiccant

Plastic sheeting

Moisture-resistant adhesive tape

- The following measures must be taken for long-term decommissioning:

Long-term decommissioning tasks	See chapter	Confirmed?
➤ Drain the oil from the oil separator tank and the oil cooler.	10.5.3	
➤ Fill the separator tank with preserving oil.	10.5.2	
➤ Run the machine for about 10 minutes to coat all parts with a protective oil film.	–	
➤ Close the compressed air outlet valves.	–	
➤ Cover the following openings with plastic foil and moisture-proof duct tape: – Compressor air inlet	–	
➤ Clean the bodywork and treat with preservative.	–	
➤ Attach a notice on the instrument panel informing of the decommissioning measurements taken.	–	

Tab. 87 Long-term decommissioning 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:
 - Take measures for re-commissioning after a long period of storage.
 - Recommission according to service manual.
- Date / signature:

Tab. 88 Text for the long-term decommissioned information notice

- Store in a dry place with even temperature.

12.2 Transport

To locally move the machine or to transport the machine as load, you can, depending on the option, decide for one of these transport options:

- Transport with a crane.
 - Transport by crane is allowed for all machines with crane lifting eye.
- Transport with a forklift truck.
 - Transport by forklift truck is allowed only for stationary machines with the frame designed as skid (Option rw).
- Transporting the machine as load.



Transporting the machine as trailer on public roads is shown in the chassis operating manual.

- Precondition The machine is switched off.
«Control ON/OFF» switch is set to *OFF* position,
«pole changer switch» is in "0"position.
The user's supply disconnecting device is switched off,
the device is locked off,
the absence of voltage has been verified,
the power supply cable has been removed.
The machine has been set down on level ground,
the machine has cooled down.
Air consumers are disconnected,
the outlet valves are open,
the machine is fully vented, the pressure gauge reads 0 bar!
All connecting cables of the shut-down machine are disconnected and removed,
any loose or movable parts that may fall when transporting the machine are removed or secured.
- Comply with all instructions.

12.2.1 Safety



Allow transport only by personnel trained in safely dealing with motor vehicles and the transport 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 transported is strictly forbidden.
2. Make sure the danger area is clear of personnel.

12.2.2 Transporting with a crane

Additional precautions for conditions of snow and ice:

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

- 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 canopy.

- Precondition The canopy is closed and locked
1. Open the lifting eye cover.
 2. Position the crane hook vertically over the lifting eye.
 3. Engage the hook in the eye.
 4. Lift the machine carefully.

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.

12.2.3 Option rw Transport with a forklift truck

Stationary machines with skid frame (Option rw) are fitted with lifting lugs into which forks can be driven. Only stationary machines with skid-type frames may be lifted and locally transported with a forklift truck.

- Precondition** The machine mass is known (nameplate).
 A suitable forklift truck (designed for the machine mass) is available.
 The machine is switched off.
 All connecting lines and hoses disconnected and removed.
- Comply with all instructions.

12.2.3.1 Preparing for transport

When using a forklift truck to transport a stationary machine with skid-type frame, you must first drive the forks into the lifting lugs.



NOTICE

Incorrect fork placement can damage the machine.

- Insert the lifting forks only into the lifting lugs provided.

Option rw

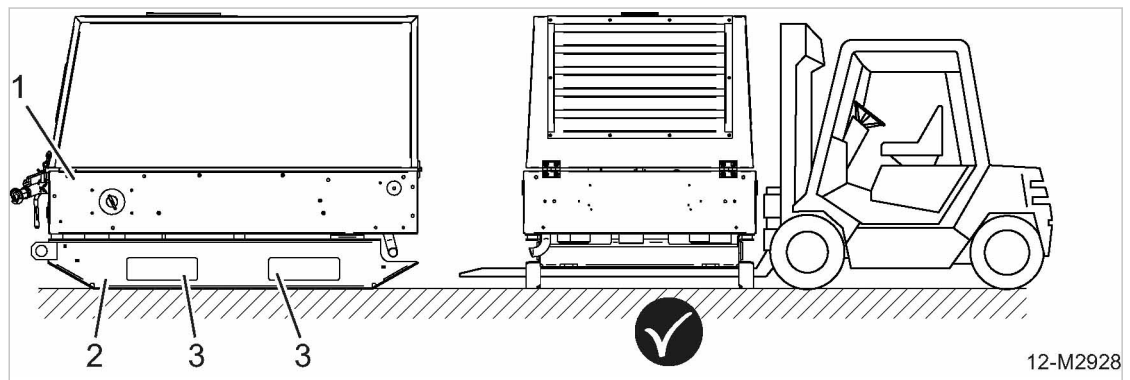


Fig. 42 Preparing for transport using a forklift truck

- | | |
|--------------------------|-------------------------------------|
| ① Transverse side | ③ Lifting lugs |
| ② Skid-type frame design | ④ Forks pushed through lifting lugs |

- Precondition** The machine is parked on even ground.

1. Close and lock the canopy.

2. Position the forklift truck to the transverse side of the machine with the forks opposite to the lifting lugs.
3. Align the forks with the machine's lifting lugs.
4. Carefully drive the forks over the full length through the lifting lugs.

Result Forks are driven over the full length through the lifting lugs.

12.2.3.2 Lifting the machine with a forklift truck

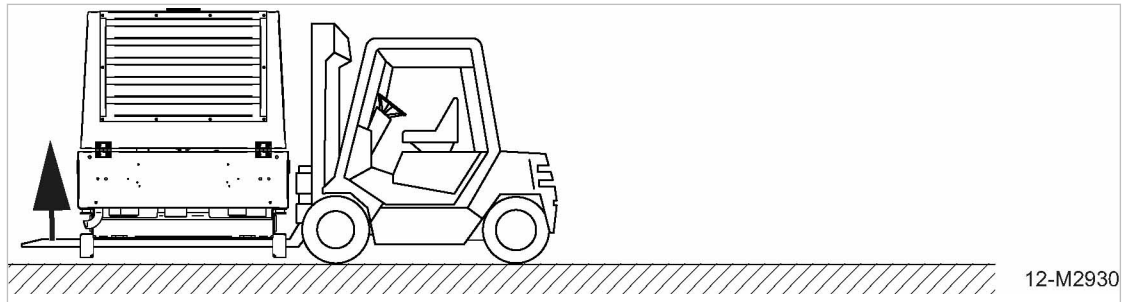


Fig. 43 Lifting the machine with a forklift truck

Precondition The machine is parked on even ground.

- Lift the machine carefully.

Result The machine rests fully on the lifting forks.
Proper transport position and transport elevation (minimum clearance to ground) for horizontal transport are given.

12.2.3.3 Transport with a forklift truck

Example: The machine is unloaded from the loading bay/lorry loading platform and transported from A to B.

Following the unloading from a loading bay or lorry loading platform, always lower the elevated forks as a prerequisite for horizontal transport.

Precondition The machine is unloaded and rests on the forks.
The forks are elevated, see Fig. 44.



CAUTION

The machine falls off the elevated forks during transport.
Heavy machine damage

- After unloading from the loading bay/lorry load platform, lower the forks immediately.

Option rw

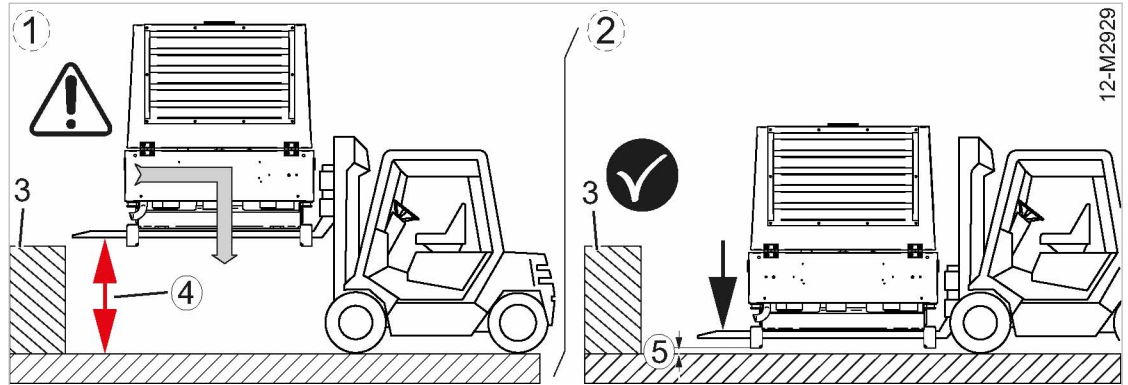


Fig. 44 Transport with a forklift truck

- | | |
|---|--------------------------------|
| ① Lifting the machine from loading bay or lorry load platform | ④ Improper transport elevation |
| ② Lowering the machine for horizontal transport | ⑤ Proper transport elevation |
| ③ Loading bay/lorry load platform | |

1. Carefully reverse the forklift truck with machine from the loading bay or lorry load platform.
2. Reverse the forklift truck until you have sufficient clear space to lower the forks.
3. Lower the forks immediately.
4. Lower the forks until the proper transport elevation (minimum clearance to the ground) is reached.
5. Transport the machine on the lowered forks from A to B.

12.2.4 Transported 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 beams
 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 beams for securing the load.

If necessary, use tension belts or other restraints across the chassis and the drawbar tube.

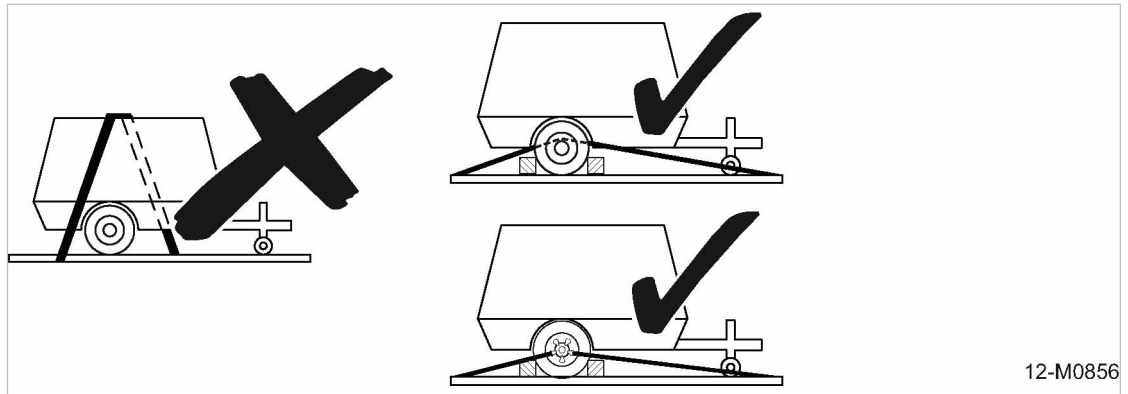


Fig. 45 Guys to secure the freight



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 compressor is fitted with an airend.

- Any dangerous fluids/materials contained within the machine must be removed before transport.

2. Remove all dangerous fluids/materials.

These include:

- Oil in the airend.
- Residual quantities of lubricant in the tool lubricator (option ea, ec)

12.3 Storage

Moisture can lead to corrosion, particularly in the 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 $>0\text{ }^{\circ}\text{C}$.
-
- 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 cooling oil from the machine.
2. Remove used filters and the oil separator cartridge.
3. Hand the machine over to an authorized disposal expert.



- Dispose of contaminated working materials and components according to applicable environmental protection regulations.

13 Annex

13.1 Marking

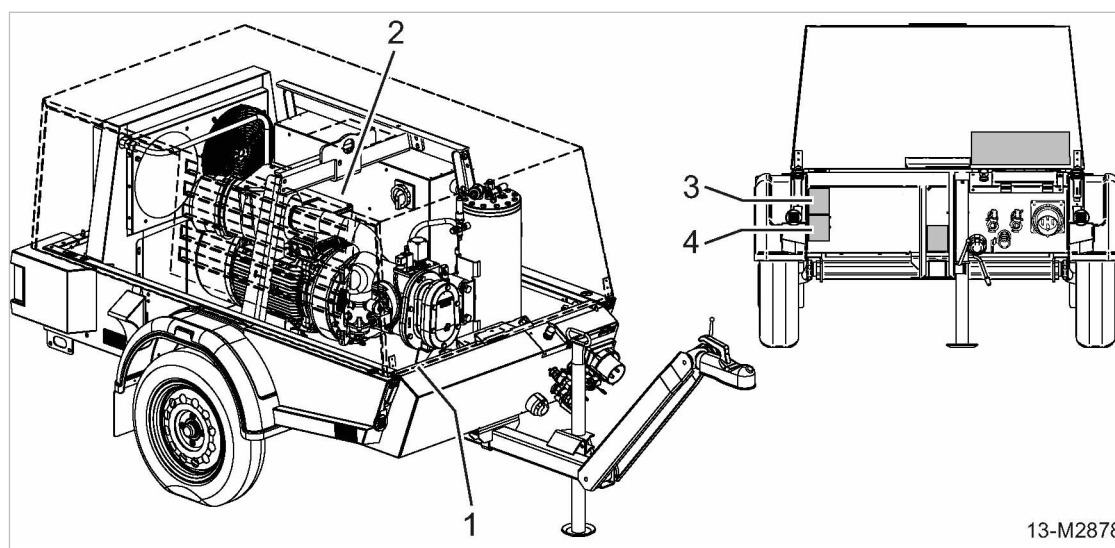
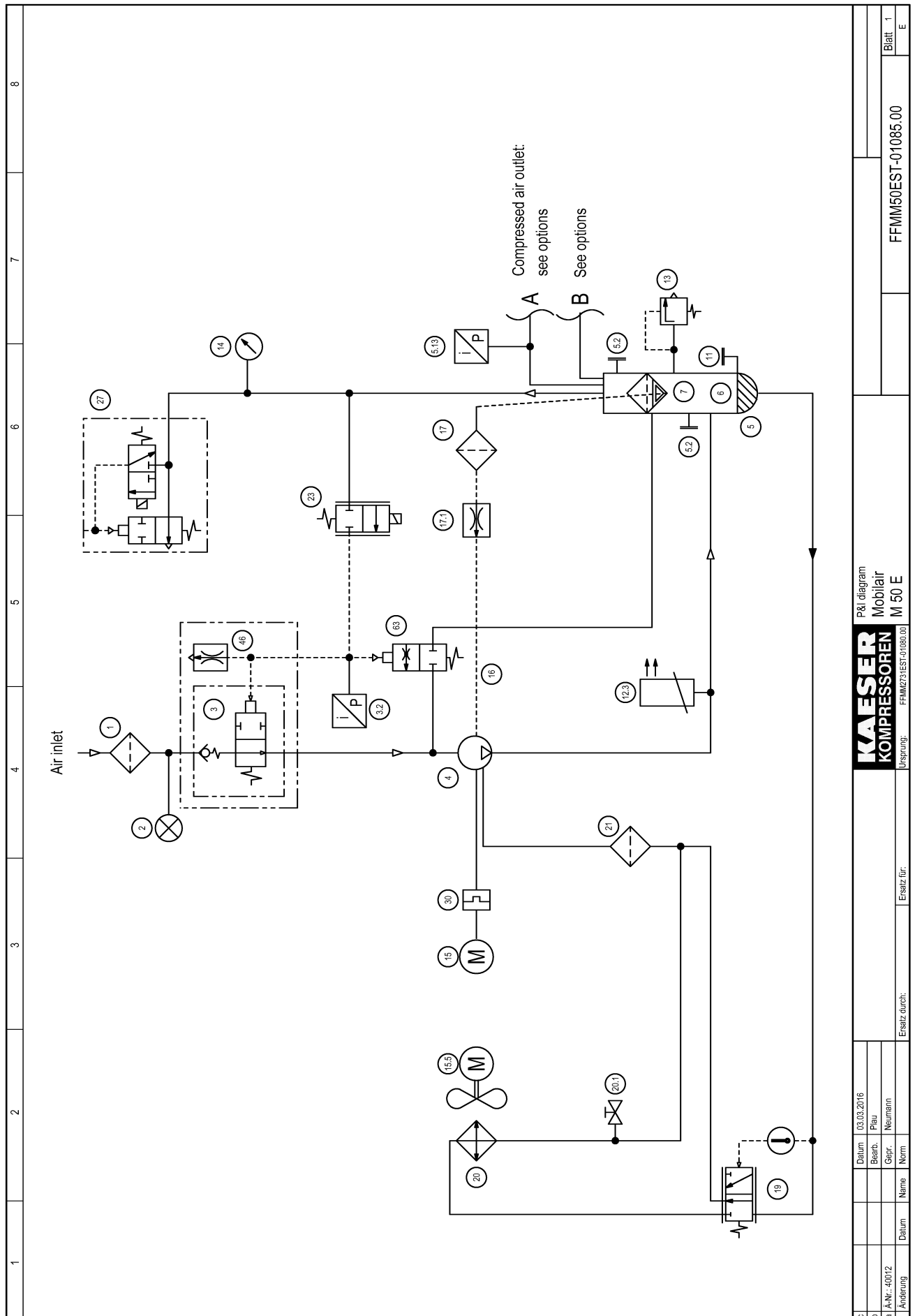
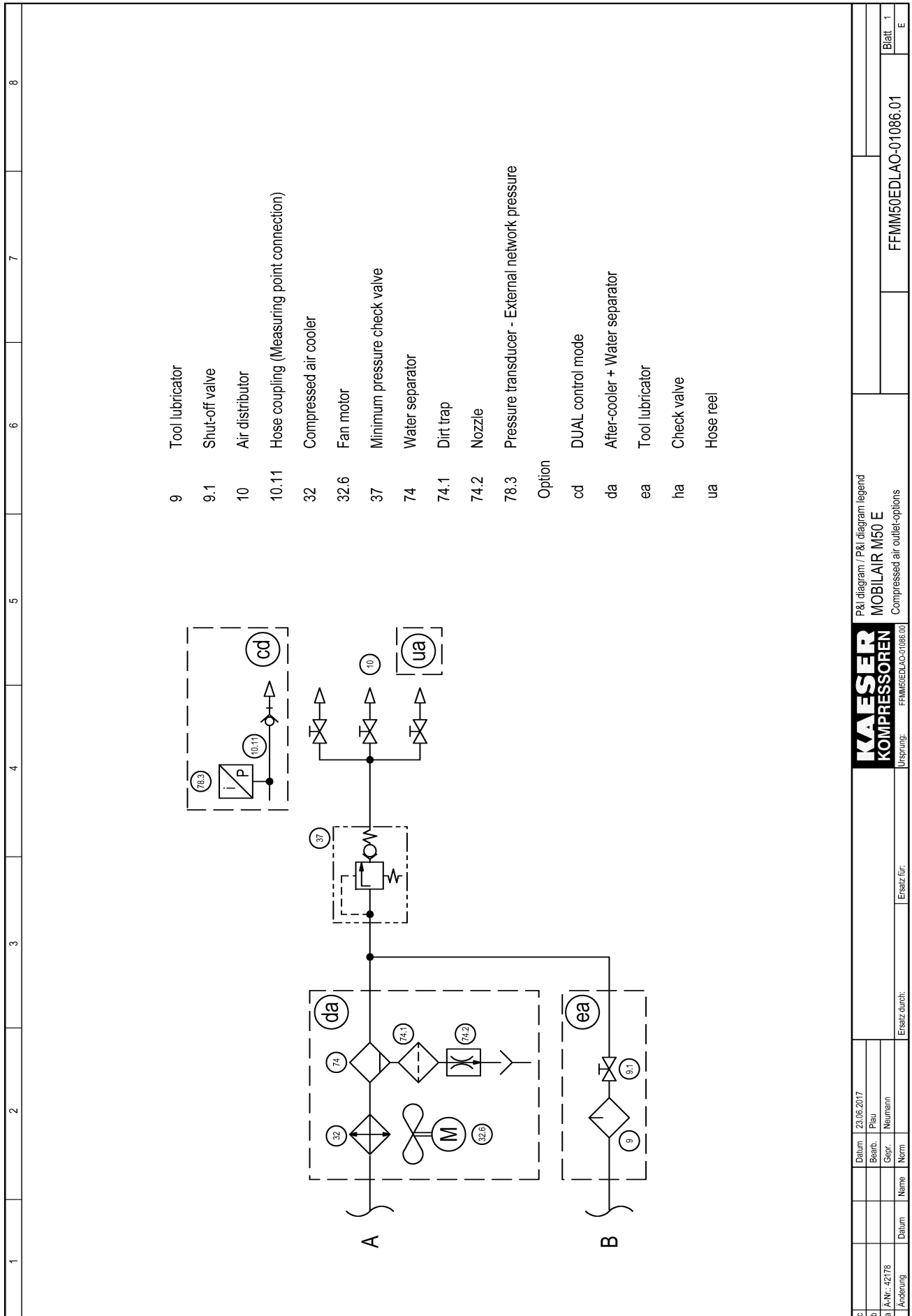


Fig. 46 Marking

- | | |
|---|---|
| ① VIN *)
* Vehicle identity number | ③ Machine nameplate with system serial number |
| ② Drive motor nameplate, with drive motor serial number | ④ Options label |

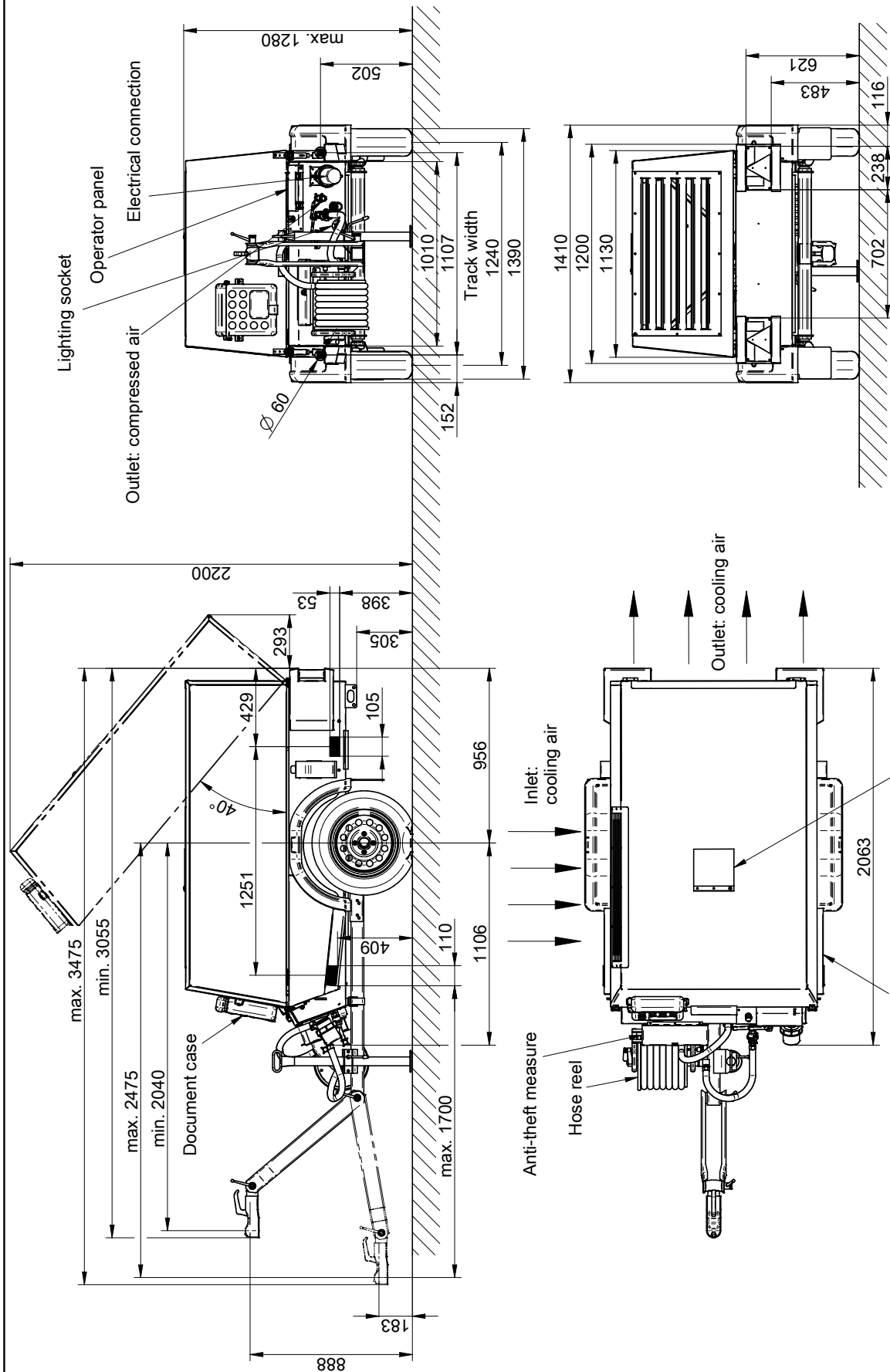
13.2 Pipeline and instrument flow diagram (P+I diagram)





13.3 Dimensional drawings**13.3.1 Option rb/rm/rr****Dimensional drawing – chassis**

- Option rb - chassis EU version
- Option rm - Chassis with height adjustment
- Option rr - Chassis without service brake



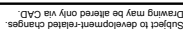
Change number		Projection	Scale	Name		KAESER KOMPRESSOREN	
		1:20	Drawn	Date			
Document TZM		Original	13.06.2016	KNAUER5			
10325792 E 00		A3	Released	13.06.2016	KNAUER5		
Document TZD		Designation					
10325792 D 00		M 50E. 1 750 rb mm rr					
Status		Dimension and connection dim.					
Released							
		Language E Sheet 1 / 1					

Area covered by the portable compressor (without chassis): 2.40 m²

rr	Without service brake
rm	With height adjustment
rb	EU chassis

13.3.2 Option rb/rm/rs
Dimensional drawing – chassis

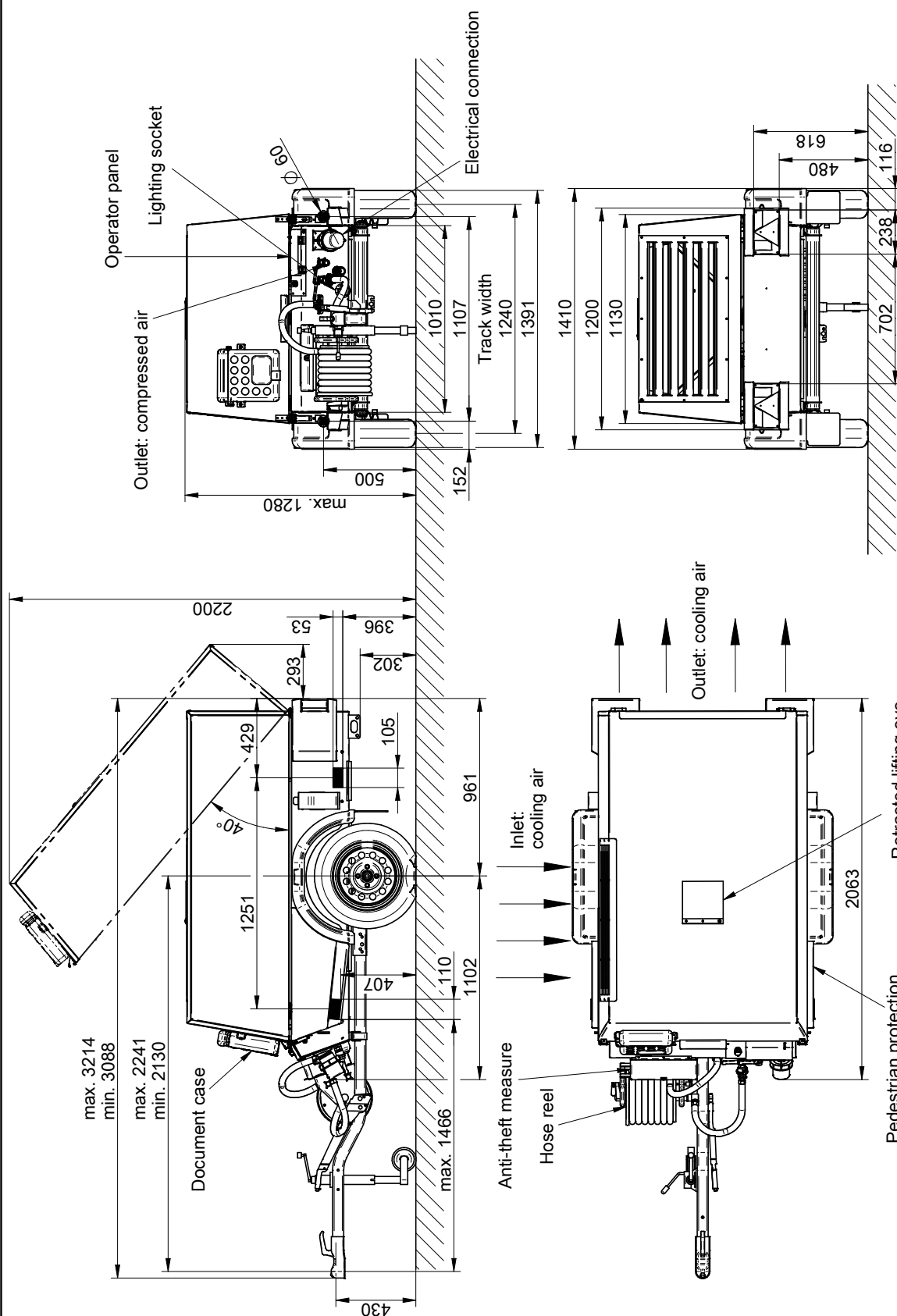
- Option rb - chassis EU version
- Option rm - Chassis with height adjustment
- Option rs - Chassis with overrun brake



Area covered by the portable compressor (without chassis): 2.40 m²

13.3.3 Option rc/ro/rr
Dimensional drawing – chassis

- Option rc - Chassis, GB type
- Option ro - Chassis without height adjustment
- Option rr - Chassis without service brake

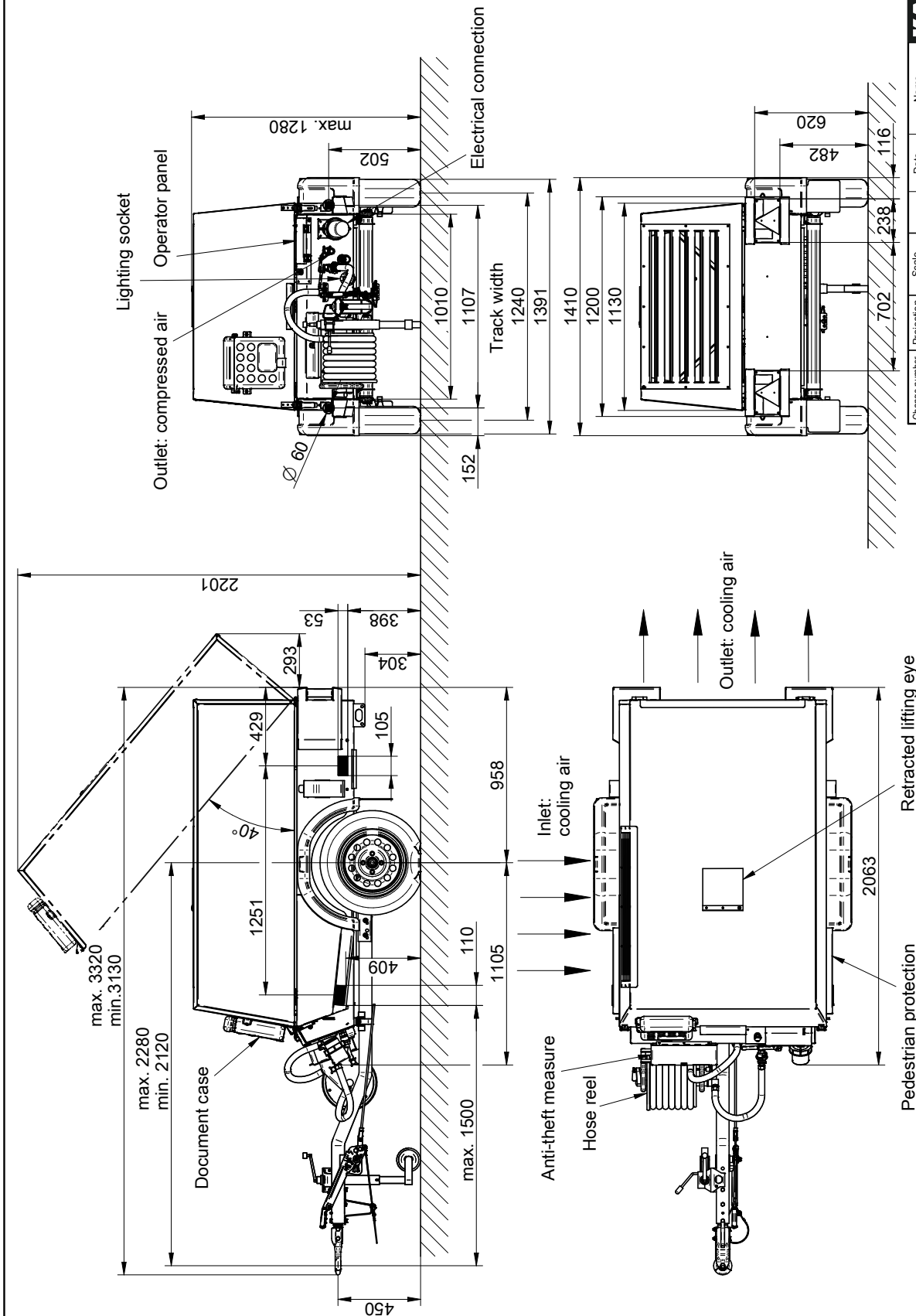


ro	Without height adjustment	Document T2D	Designation	Scale	Name	KAESER KOMPRESSOREN
rr	Without service brake	Document T2D	Designation	Scale	Name	
CP	CP - chassis	Document T2D	Designation	Scale	Name	

Area covered by the portable compressor (without chassis): 2.40 m²

13.3.4 Option rg/rp/rr
Dimensional drawing – chassis

- Option rg - Chassis, GB type
- Option rs - Chassis with anti-twist protection
- Option rr - Chassis without service brake



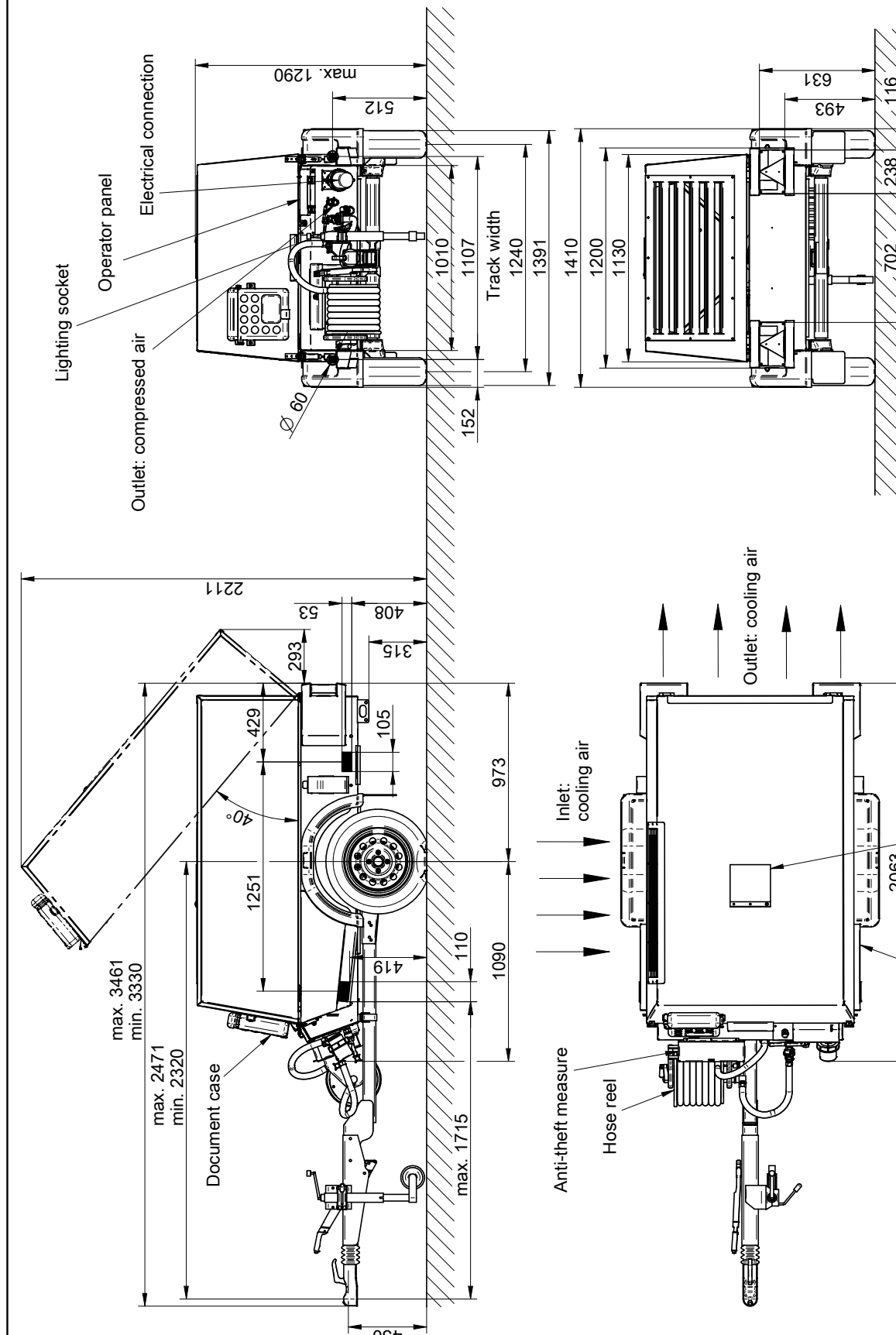
e			Change number	Projection 	Scale 1:20	Date	Name	KAESER KOMPRESSOREN
	rr	Without service brake	Document T2M 10326677 E 00	Original	Drawn 06.04.2016	02.06.2016	KNAUER S	
	rp	with rotating shaft	Released	A3	Released	02.06.2016	KNAUER S	
	rg	EN chassis					NEUMANN G	
			Status Released	Designation M 50E: 1 750 rg rp rr				
			Dimension and connection dim.					

Printed 30.06.2015

Area covered by the portable compressor (without chassis): 2.40 m²

13.3.5 Option rc/ro/rs
Dimensional drawing – chassis

- Option rc - Chassis, GB type
- Option ro - Chassis without height adjustment
- Option rs - Chassis with overrun brake

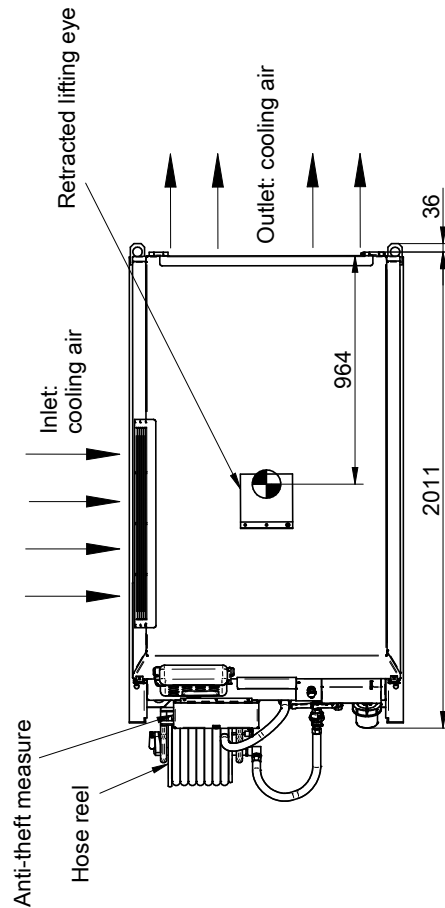
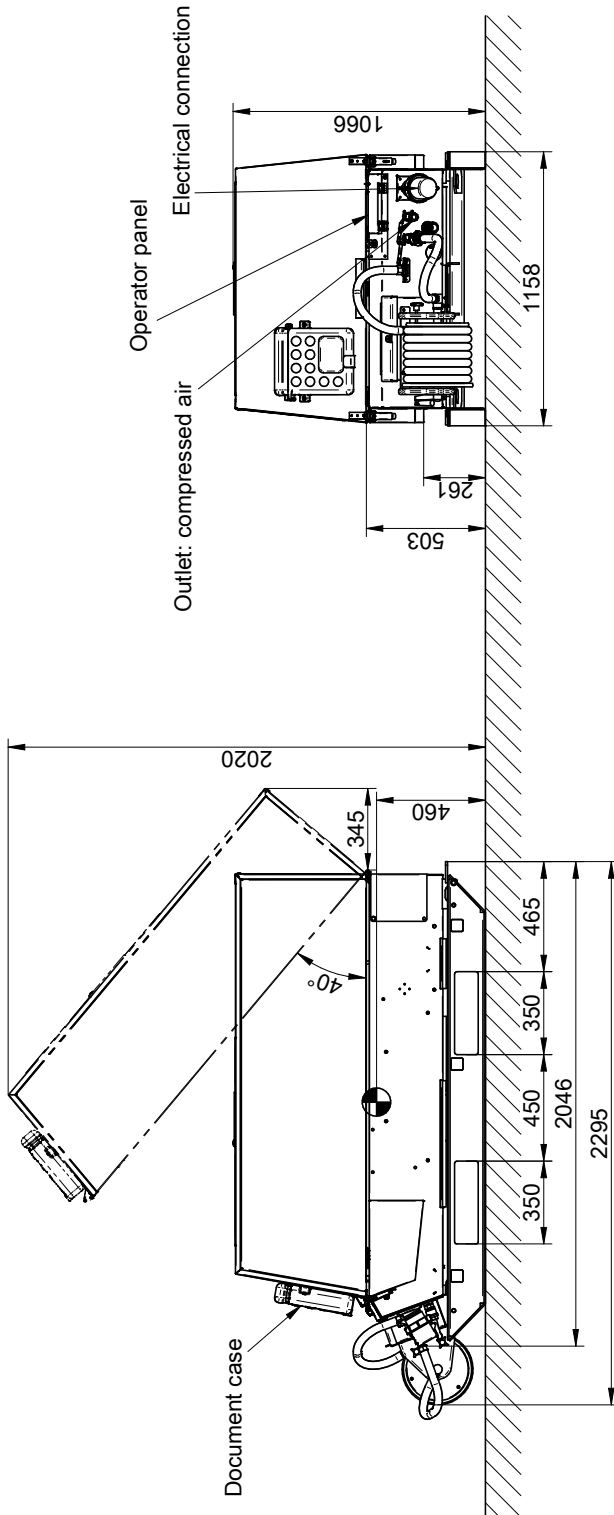


		Change number	Projection	Scale	Date	Name	KAESER KOMPRESSOREN
		Document T2M		1:20	Drawn	KNAUER5	
		10325428 E 00		Original	Edited	KNAUER5	Sheet
				A3	Released	NEUMANN6	Language
							E
							1 / 1
				Designation			
				M 50E.1 850 rc rs			
				Dimension and connection dim.			

Area covered by the
portable compressor
(without chassis): 2.40 m²

13.3.6 Option rw**Dimensional drawing, stationary version**

- Option rw - Skid frame on runners



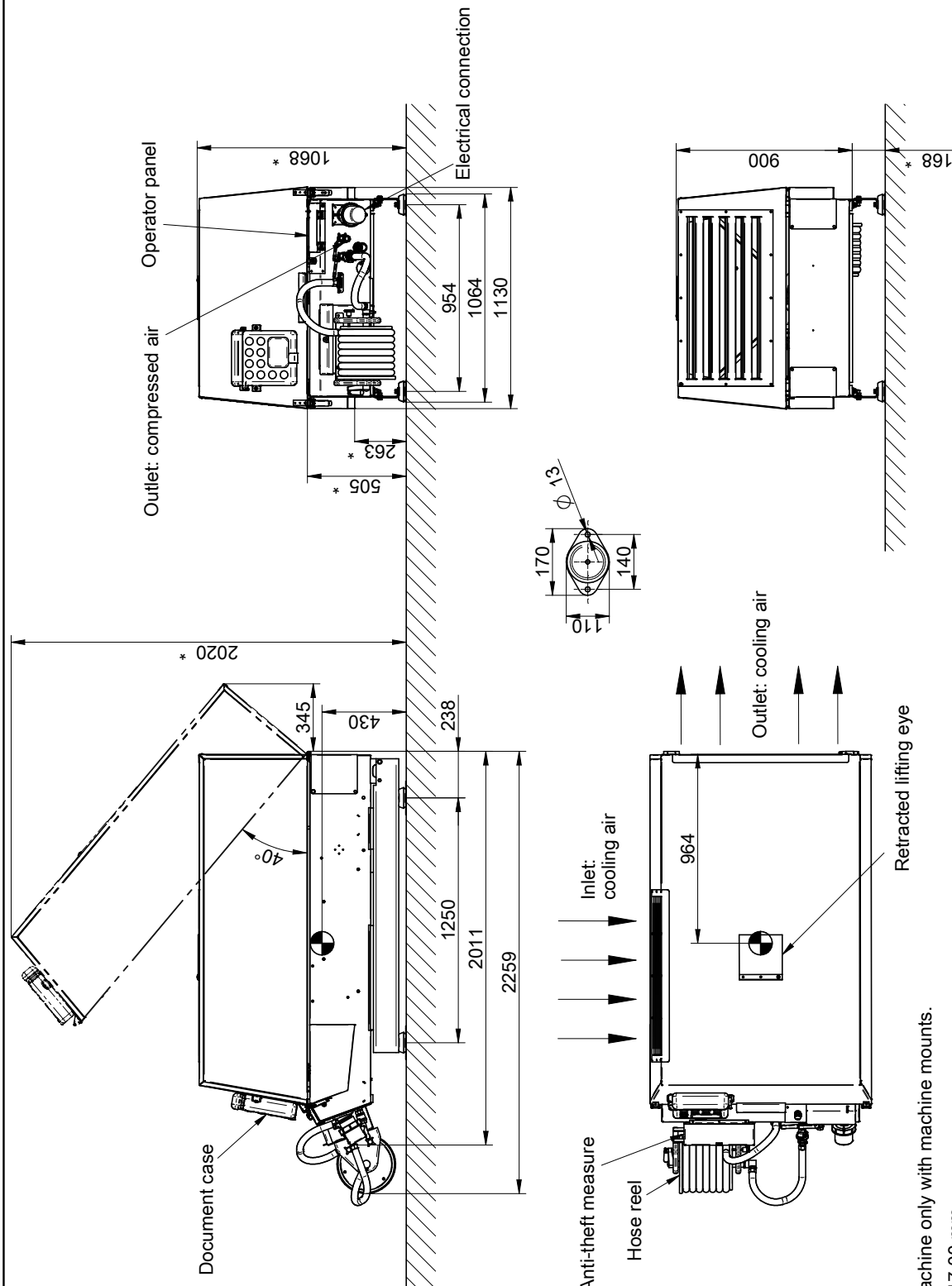
Center of gravity
Position marginally dependent on design

Area covered by the
portable compressor
(without chassis): 2,10 m²

Change number		Projection	Scale	Date		Name	KAESER KOMPRESSOREN	
			1:20	Drawn	22.03.2016	KNAUER5		
Document TZM			Original A3	Edited	13.05.2016	KNAUER5	Language	Sheet
10324916 E 00				Released	18.05.2016	PRETIS1	E	1 / 1
Document TZD			Designation M 50E.1 rw					
10324916 D 00				Dimension and connection dim.				
Status								
Released			Stand 30.06.2015					

13.3.7 Option rx
Dimensional drawing, stationary version

- Option rx - Frame



Anchoring of the machine only with machine mounts.

* with rubber pads +17.00 mm

⊙ : Center of gravity

Position marginally dependent on design

Area covered by the portable compressor (without chassis): 2.10 m²

Change number		Projection	Scale	Date	Name	KAESER KOMPRESSOREN	
Document TZM		1:20	22.03.2016	Drawn	KNAUER5	Language	Sheet
Document TZD		Original	13.05.2016	Edited	KNAUER5	E	1 / 1
10324918 D 00		A3	18.05.2016	Released	PRETIS1		
10324918 D 00							
Status							
Released							
Designation							
M 50E.1 rx							
Dimension and connection dim.							

rx on frame (stationary)

Subject to development-related changes.
Drawing may be altered only via CAD.

Drawings remain our exclusive property.
They are intended only for the agreed purpose.
Neither originals nor reproductions may be given to or made available to third parties.
Copies or any other reproduction, including storage, treatment and distribution by use of electronic systems is not allowed for any other than the agreed upon purpose.

13.4 Electrical Diagram

1	2	3	4	5	6	7	8
Electrical diagrams MOBILAIR M50E SIGMA CONTROL SMART 230V±10% 50Hz 400V±10% 50Hz TT/TN power supply with common point grounding ATTENTION !!! The document gives collective information on power supply voltages and frequencies for all machines. The voltage and frequency and local conditions under which any particular machine may be used are given on the nameplate of the machine and in the accompanying service manual. The drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions must be forwarded or otherwise made accessible to third parties.							
				Manufacturer:		KAESER KOMPRESSOREN SE Postfach 2143 96410 Coburg	
				Cover page		DFA50E-03018.01	
				MOBILAIR M50E		page 1	
				KOMPRESSOREN		1 Bl.	
				Ersatz durch:		Ersatz für:	
				Datum		13.06.2017	
				Bearbeiter		Sitter	
				Geprüft		Fischer C.	
				Name		Norm	
				Datum		E	
				A. Änderung			

Lfd. Nr. No.	Benennung Name	Zeichnungsnummer (Kunde) Drawing No. (customer)	Ziehungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page		DFA50E-03018.01	1	
2	List of contents		ZFA50E-03018.01	1	
3	general instructions		UFA50E-03018.01	1	
4	electrical equipment identification		UFA50E-03018.01	2	
5	Equipment parts list		UFA50E-03018.01	3	
6	Circuit diagram	Supply via plug-in connection	SFA50E-03018.01	1	
7	Circuit diagram	Supply at control cabinet	SFA50E-03018.01	2	
8	Circuit diagram	Power switching Compressor unit fan / Power supply monitoring	SFA50E-03018.01	3	
9	Circuit diagram	Power switching Compressor unit fan	SFA50E-03018.01	4	
10	Circuit diagram	Control voltage tapping	SFA50E-03018.01	5	
11	Circuit diagram		SFA50E-03018.01	6	
12	Circuit diagram		SFA50E-03018.01	7	
13	Circuit diagram		SFA50E-03018.01	8	
14	Circuit diagram		SFA50E-03018.01	9	
15	Circuit diagram		SFA50E-03018.01	10	
16	Circuit diagram		SFA50E-03018.01	11	
17	Circuit diagram		SFA50E-03018.01	12	
18	Circuit diagram	Volt-free contacts	SFA50E-03018.01	13	
19	Circuit diagram	transformer diagrams	SFA50E-03018.01	14	
20	Circuit diagram	Handling: Terminals	SFA50E-03018.01	15	
21	Circuit diagram		SFA50E-03018.01	16	
22	Circuit diagram	Feed line connection	SFA50E-03018.01	17	
23	Terminal schedule	Terminal strip -X0;-X11;-X12;-X2	KFA50E-03018.01	1	
24	Terminal schedule	Plug connection -X4	KFA50E-03018.01	2	
25	Terminal schedule	Plug connection -X5	KFA50E-03018.01	3	
26	Terminal schedule	Plug connection -X6	KFA50E-03018.01	4	
27	Terminal schedule	Plug connection -X25	KFA50E-03018.01	5	
28	Terminal schedule	Plug connection -X31	KFA50E-03018.01	6	
29	Component layout	Supply via plug-in connection	AFA50E-03018.01	1	
30	Component layout	Supply at control cabinet	AFA50E-03018.01	2	

= +

ZFA50E-03018.01page 1 RI

1	2	3	4	5	6	7	8	
general instructions ATTENTION !!! Install supplies, grounding and shock protection to local safety regulations. Do not make or break live plug-in connectors. control cabinet wiring for non-designated conductors with multi-standard stranded conductors primary circuits: black Control voltage AC: red 1mm² H05V-K, 18AWG UL-Style 1015, CSA-TEW Control voltage DC: blue 1mm² H05V-K, 18AWG UL-Style 1015, CSA-TEW external voltage: orange 1,5mm² H07V-K, 16AWG UL-Style 1015, CSA-TEW measuring circuits: violet 1mm² H05V-K, 18AWG UL-Style 1015, CSA-TEW earth conductor: green/yellow H07V-K, UL-Style 1015, CSA-TEW wiring colors: BU = blue BN = brown YE = yellow GN = green GNYE = green-yellow GY = grey OG = orange PK = pink RD = red BK = black VT = violet WH = white								
option da = Compressed air aftercooler option ob = Automatic-start-stop option cd = DUAL control mode								
c			Datum	13.06.2017	general instructions			=
b			Bearbeiter	Sitter	MOBILAIR M50E			+
a			Geprüft	Fischer C.	Ursprung:			
C Änderung	Datum	Name	Ersatz durch:		Ersatz für:	UFA50E-03018.01		page 1
								3 Bl.

1	2	3	4	5	6	7	8
electrical equipment identification							
general components							
-B28	Monitoring relay (Direction of rotation, Voltage)						
-B29	Overload relay,						
-F4,-F5,-F6	Compressor motor						
	Overload protection switch,						
-F11	Fan motor						
	Overload protection switch,						
-K20	Control transformer						
-K21	Control board SIGMA CONTROL SMART						
-K40	Operating unit SIGMA CONTROL SMART						
-K51	Auxiliary contactor EMERGENCY STOP						
-K52	Coupling relay Mains contactor						
-K53	Coupling relay Delta contactor						
-K54	Coupling relay Star contactor						
-K61	Coupling relay Fan motor						
-M1	Coupling relay Control ON						
-M4,-M5,-M6	Compressor motor						
-M7	Fan motor						
-Q1	Control cabinet ventilator						
-Q2	Mains contactor						
-Q3	Delta contactor						
-Q4,-Q5,-Q6	Star contactor						
-Q11	Fan motor contactor						
-Q12	Changeover switch						
-R10,-R11	Switch-disconnector						
-R28	Resistor						
-S1	Power supply filter						
-S10	EMERGENCY STOP pushbutton						
-T11	switch Control ON/OFF						
-T21	Control transformer						
	Power unit						
sensors/actuators							
-B10	Pressure transducer,						
-B11	system pressure						
-B13	Pressure transducer,						
-B40	package internal pressure						
	Pressure transducer,						
-K1	Air main pressure external, pN						
-K7	Temperature probe,						
	Airend discharge temperature						
	Control valve						
	Venting valve						
terminal strips, plug connection							
-X0	Terminal strip						
-X1	Plug, Power supply						
-X2	Terminal strip, Volt-free contacts						
-X11	Terminal strip, Control 230VAC						
-X12	Terminal strip, Control 24VDC						
-X4,-X5,-X6	plug connection Fan motor						
-X25	plug connection Control panel						
-X31	plug connection sensors/actuators						
-X100	Programming interface						
electrical equipment identification							
electrical equipment identification				MOBILAIR M50E			
KAESER KOMPRESSOREN				Ursprung:			
Datum				Ersatz für:			
13.06.2017				Ersatz durch:			
Bearbeiter				Sitzer			
Geprüft				Fischer C.			
Name				Norm			
Datum				Ersatz durch:			
C/Änderung				Ursprung:			
=				UFA50E-03018.01			
+				page 2			
				3 Bl.			

		Equipment parts list										3	
model		M50E										page 3 of 3	
machine power supply		230 V ±10 %, 50 Hz		400 V ±10 %, 50 Hz									
Motor	-M1	25 kW		25 kW									
Motor	-M4/-M5/-M6	210 W/ diagram 2, Sht. 3+ 4		210 W / diagram 1, Sht. 3+ 4									
CEE-Plug	-X1	---		7.2295.10010									
	Mennekes			63A 5-pol. 6h 400 V (model 1259)									
Changeover switch	-Q11	---		7.3910.00030									
	Siemens			3LD2724-7UK01									
Switch-disconnector	-Q12 : U1/N1/W1	7.3140.05220		7.3140.05220									
Supply at control cabinet		3LD2704-0TK51		3LD2704-0TK51									
	-Q12 : N/PE	2x 7.3140.05230		2x 7.3140.05230									
	Siemens	3LD9280-2B		3LD9280-2B									
	Torque	2,5-3 Nm		2,5-3 Nm									
	Stripped length	13,5-15 mm		13,5-15 mm									
supply	connection	fig. 10, Sht. 17		fig. 10, Sht. 17									
Terminal strip	-X2/-X11/-X12	7.9262.0 Wieland		7.9262.0 Wieland									
	Handling	fig. 1, Sht. 16		fig. 1, Sht. 16									
Contactar	-Q1/-Q2/-Q3	7.8740.00130		7.8740.00100									
		3RT2038-1AL20		3RT2035-1AL20									
Interference suppressor		7.8740.05120		7.8740.05120									
	Siemens	3RT2936-1CD00		3RT2936-1CD00									
Auxiliary switch	-Q1	7.8740.05010		7.8740.05010									
	Siemens	3RH2911-1HA11		3RH2911-1HA11									
Contactar	-Q4/-Q5/-Q6	7.8740.00010		7.8740.00010									
		3RT2016-1AP01		3RT2016-1AP01									
Interference suppressor		7.8740.05100		7.8740.05100									
	Siemens	3RT2916-1CD00		3RT2916-1CD00									
Auxiliary contactor	-K40	7.8740.04200		7.8740.04200									
	Siemens	3RH2140-1JB40		3RH2140-1JB40									
Coupling relay	-K51...K54/-K61	7.3172.00310		7.3172.00310									
	Phoenix	RIF-0-RPT-24DC/21		RIF-0-RPT-24DC/21									
Power supply filter	-R28	---		7.7549.00020									
	BK			F15420347									
Monitoring relay	-B28	7.9225.0		7.9225.0									
	Siemens	3UG4617-2CR20		3UG4617-2CR20									
Overload relay	-B29	7.8741.00100		7.8741.00090									
		3RB3036-1WB0 (20-80 A)		3RB3036-1UB0 (12-50 A)									
		setting: 50 A		setting: 29 A									
Adapter		7.8741.05020		7.8741.05020									
	Siemens	3RU2936-3AA01		3RU2936-3AA01									
Overload protection switch	-F4/-F5/-F6	7.8742.01090		7.8742.00060									
		3RV2021-0JA10 (0,7-1,0 A)		3RV2011-0FA10 (0,35-0,5 A)									
		setting: 0,74 A		setting: 0,43 A									
Auxiliary switch		7.8742.05000		7.8742.05000									
	Siemens	3RV2901-1E		3RV2901-1E									
Overload protection switch	-F11	7.8742.01110		7.8742.01110									
		3RV2021-1AA10 (1,1-1,6 A)		3RV2021-1AA10 (1,1-1,6 A)									
	Siemens	setting: 1,2 A		setting: 1,1 A									
Transformer	-T11	7.2239.20080		7.0772.2									
		USTE 250/2X115 (250 VA)		B0001090 (250 VA)									
	Block	diagram 2, Sht. 15		diagram 1, Sht. 15									
Power supply	-T21	7.7030.1		7.7030.1									
	Siemens	230 VAC/24 VDC 2,5 A		230 VAC/24 VDC 2,5 A									
connection	-W10	---		4G16 mm², 500 V, 90°C									
connection	-W11.1/2	1x35 mm² black 500 V, 90°C		1x16 mm² black 500 V, 90°C									
connection	-W11.3	1x35 mm² green/yellow 500 V, 70°C		1x16 mm² green/yellow 500 V, 70°C									
connection	-W12	1x25 mm² black 500 V, 90°C		1x10 mm² black 500 V, 90°C									
connection	-W13/-W14	7.3140.02120		7.3140.02120									
		3RV1935-1A		3RV1935-1A									
cables	-W19.1/2	4G16 mm², 500 V, 90°C		4G10 mm², 500 V, 90°C									
Control board	-K20	7.9200.11000		7.9200.11000									
SIGMA CONTROL SMART	IFM	CR9052		CR9052									
Operating unit	-K21	7.9200.11010		7.9200.11010									
SIGMA CONTROL SMART	IFM	CR9047		CR9047									
EMERGENCY STOP pushbutton	-S1	7.3217.0 / QRUV		7.3217.0 / QRUV									
Switching element	Schlegel	7.3218.0 / MTHOO		7.3218.0 / MTHOO									
Control switch	-S10	7.9027.10050 / RKWA		7.9027.10050 / RKWA									
Switching element	Schlegel	7.9027.10030 / BTL5		7.9027.10030 / BTL5									
Control cabinet ventilator	-M7	7.9660.0		7.9660.0									
	ebm-papst	614 NGML-283		614 NGML-283									

Equipment parts list

MOBILAIR M50E

KAESER

KOMPRESSOREN

Ursprung:

Ersatz für:

Ersatz durch:

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

Fischer C.

13.06.2017

Shter

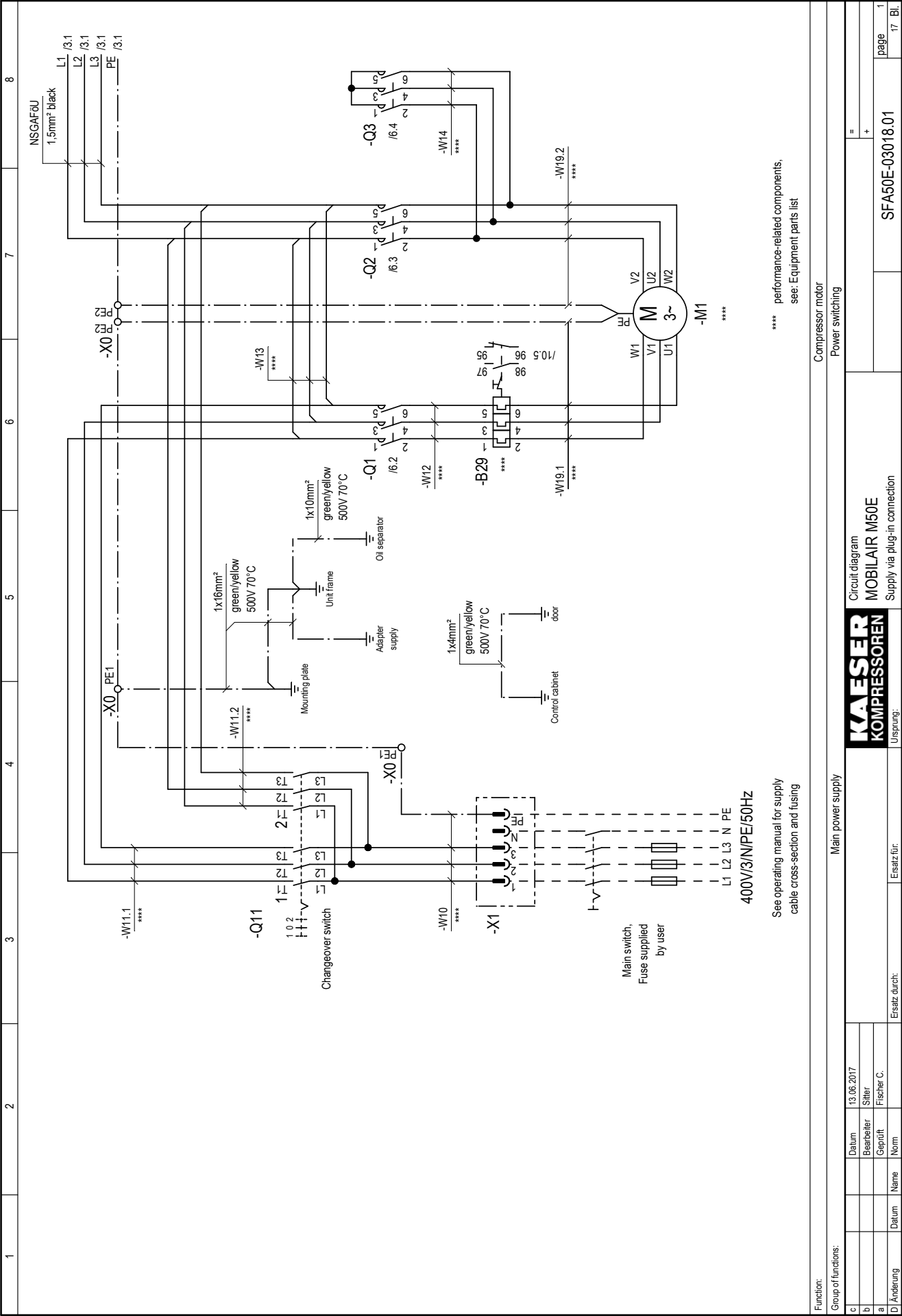
Fischer C.

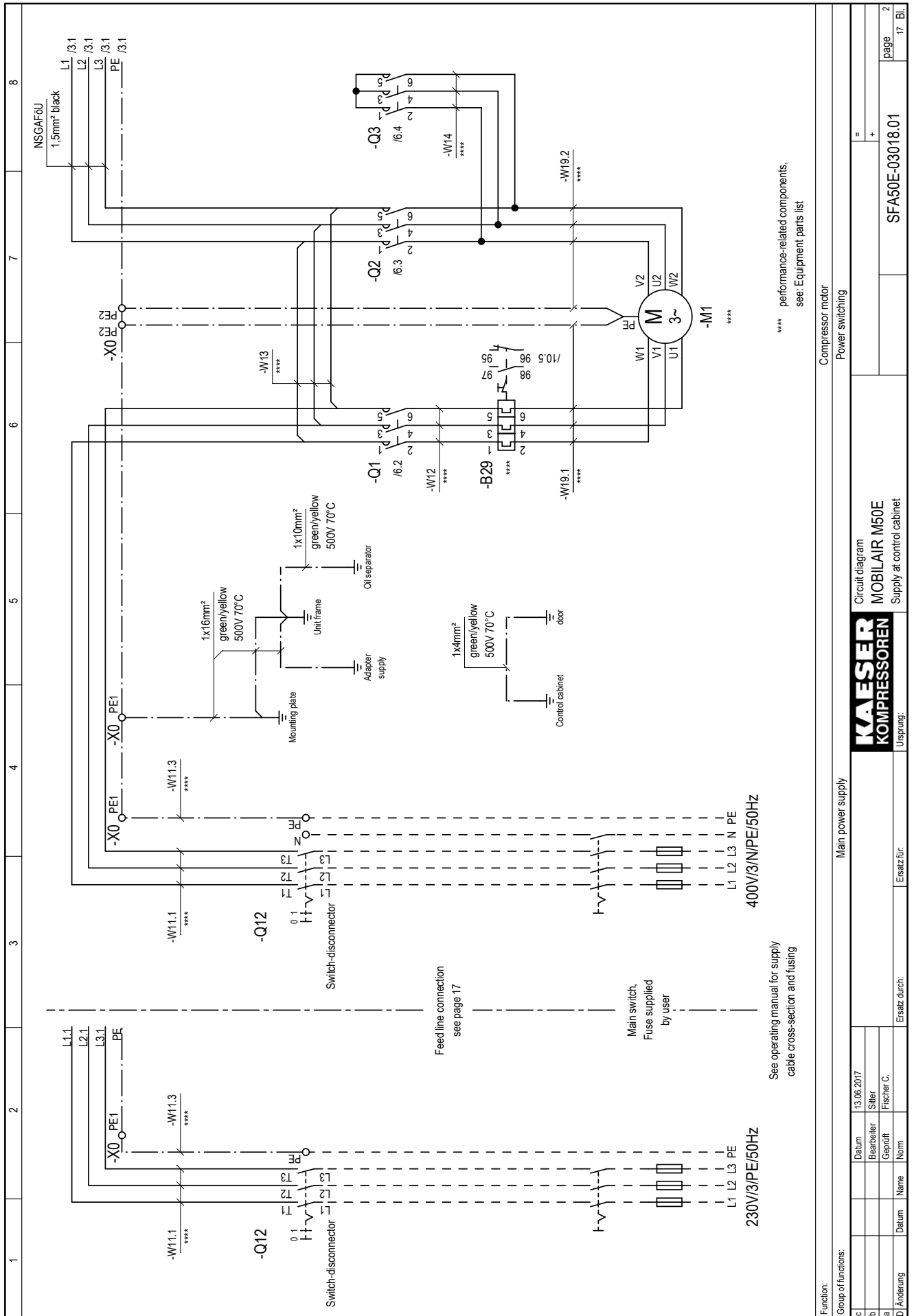
13.06.2017

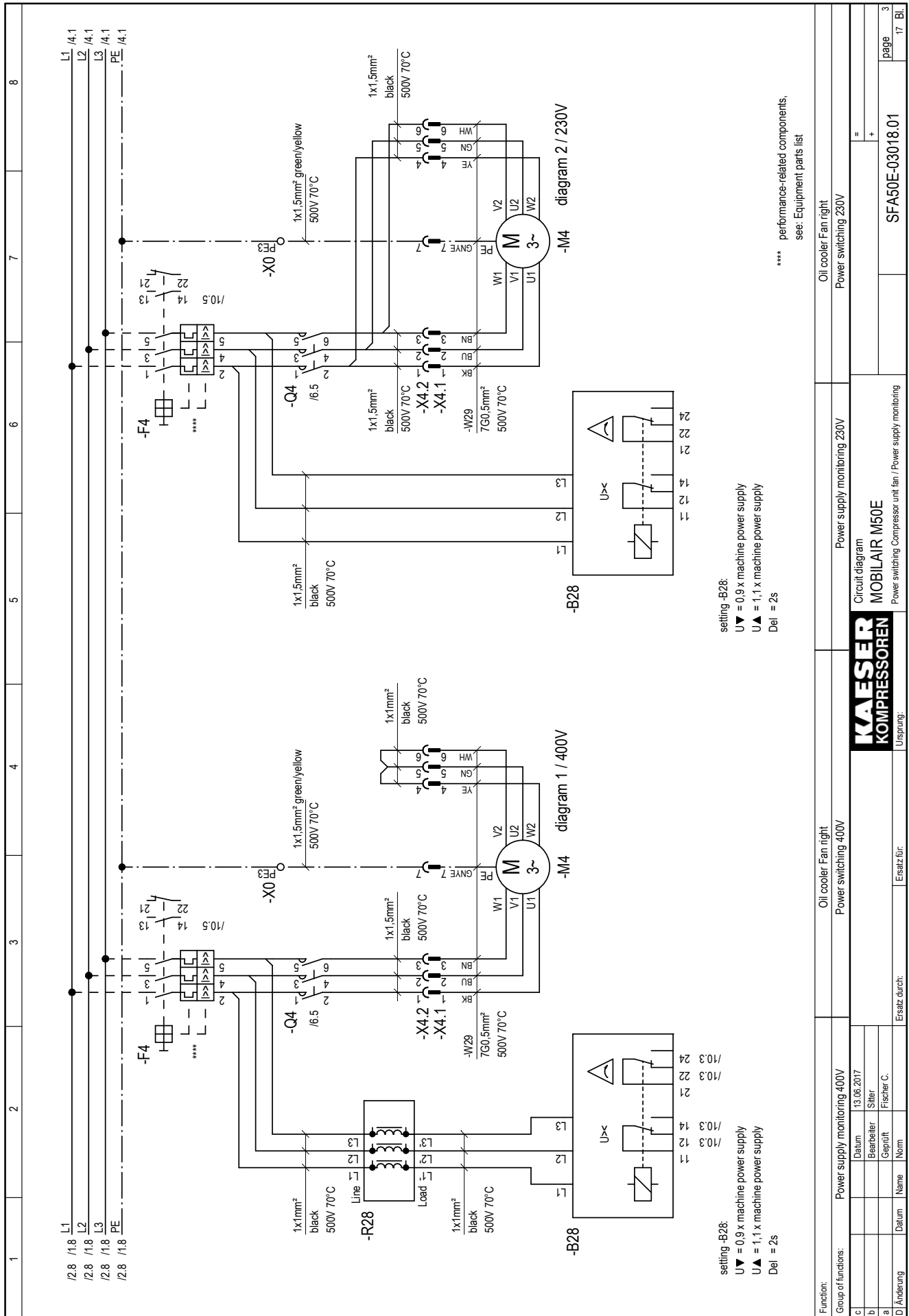
Shter

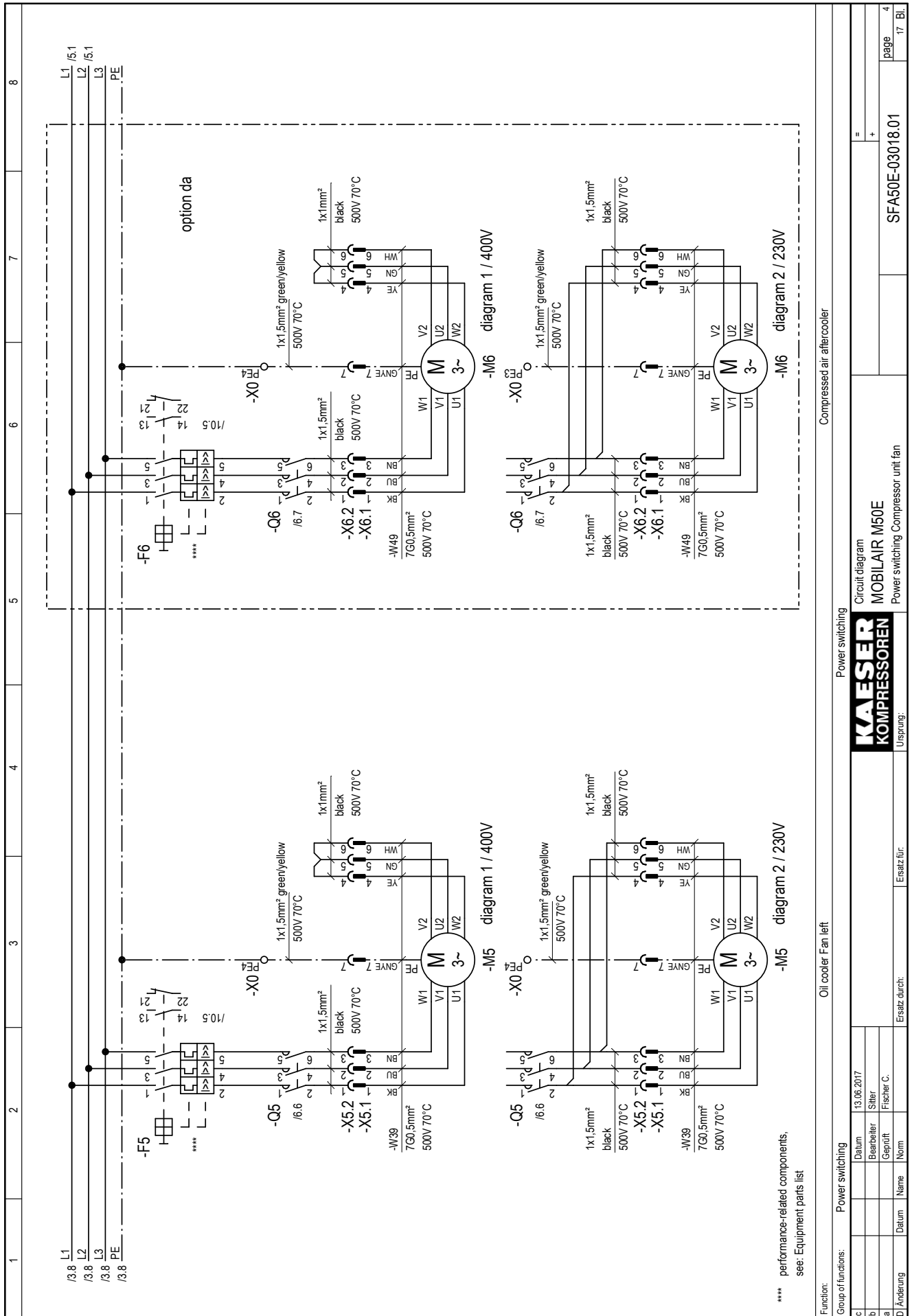
Fischer C.

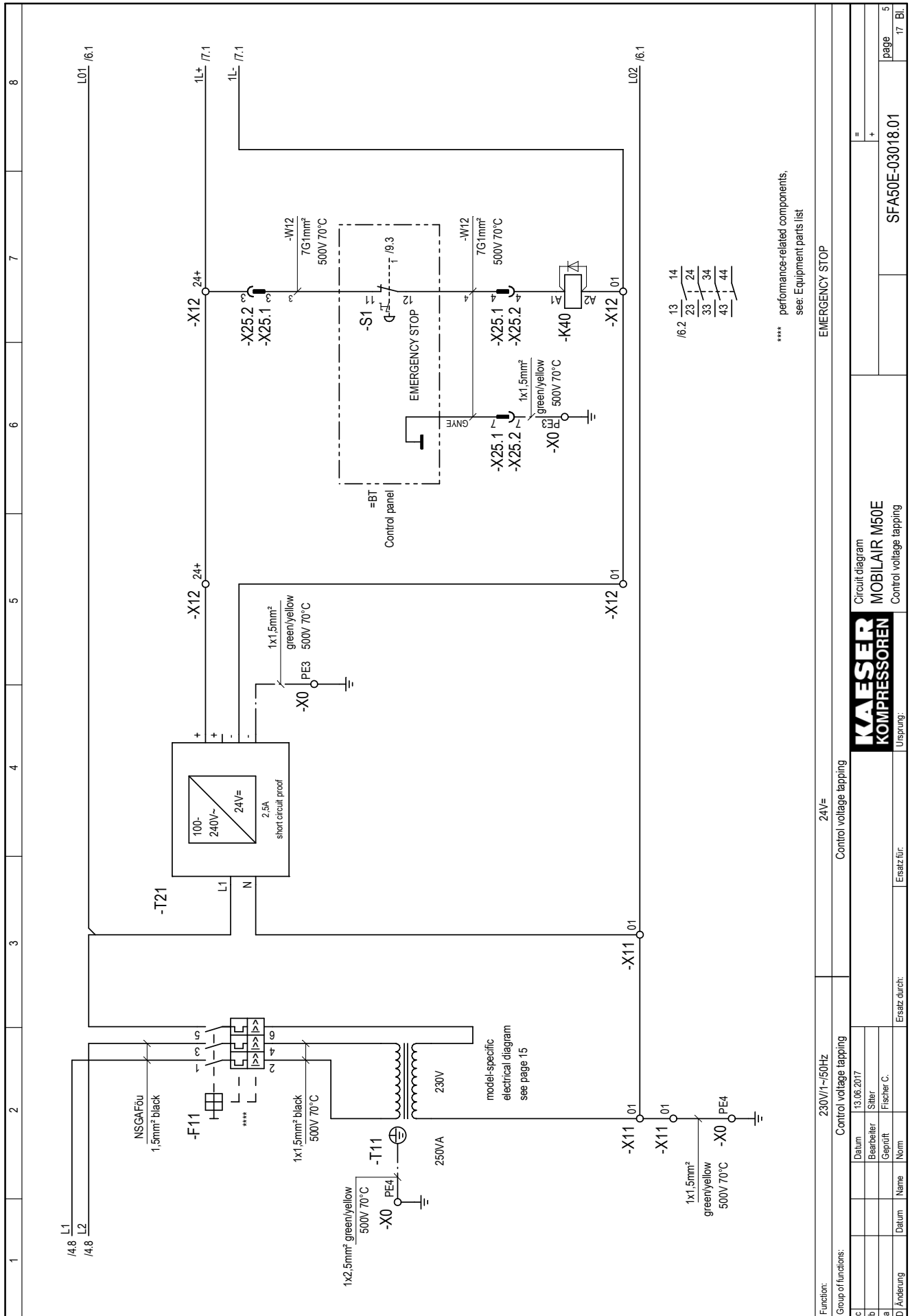
<

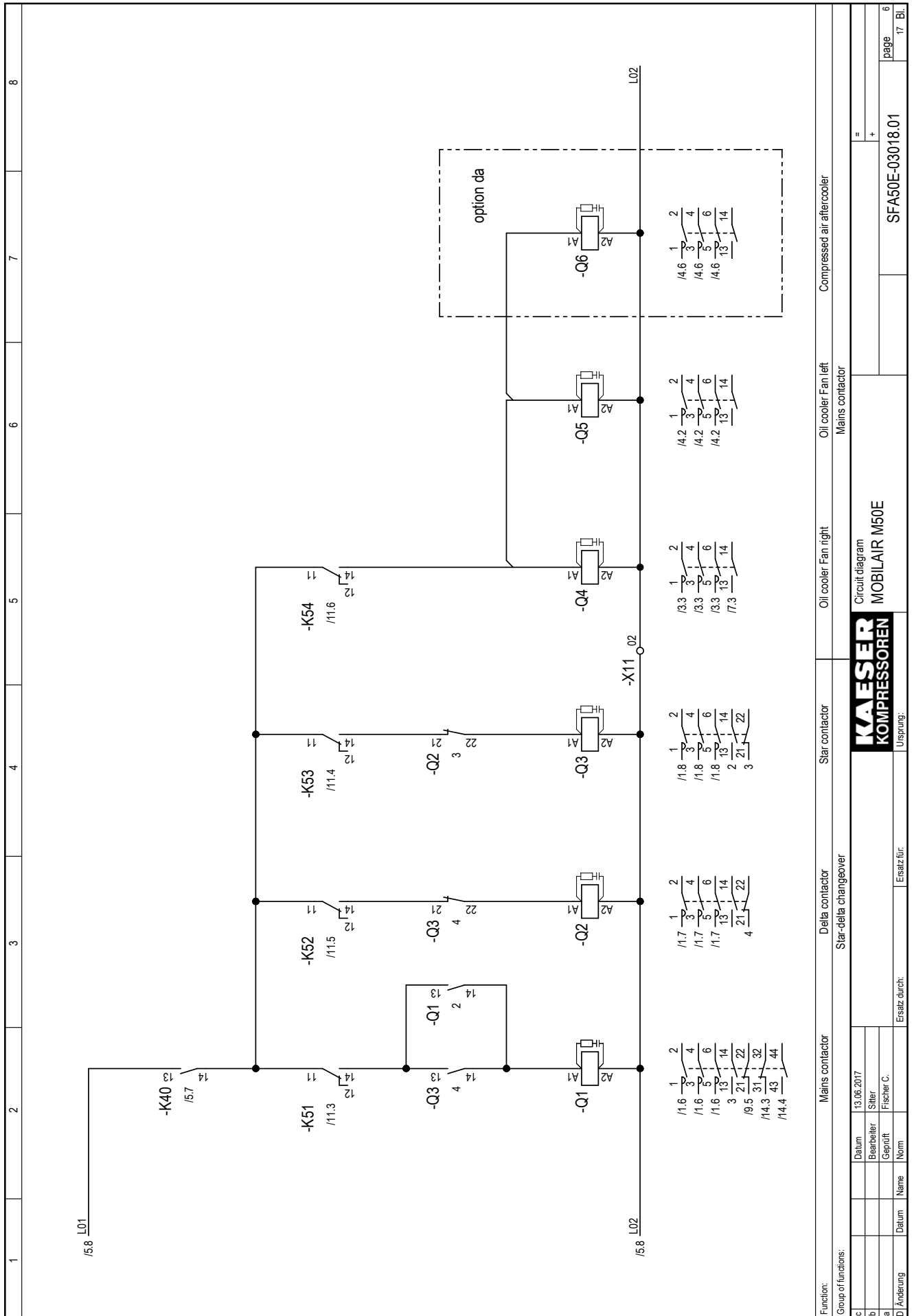


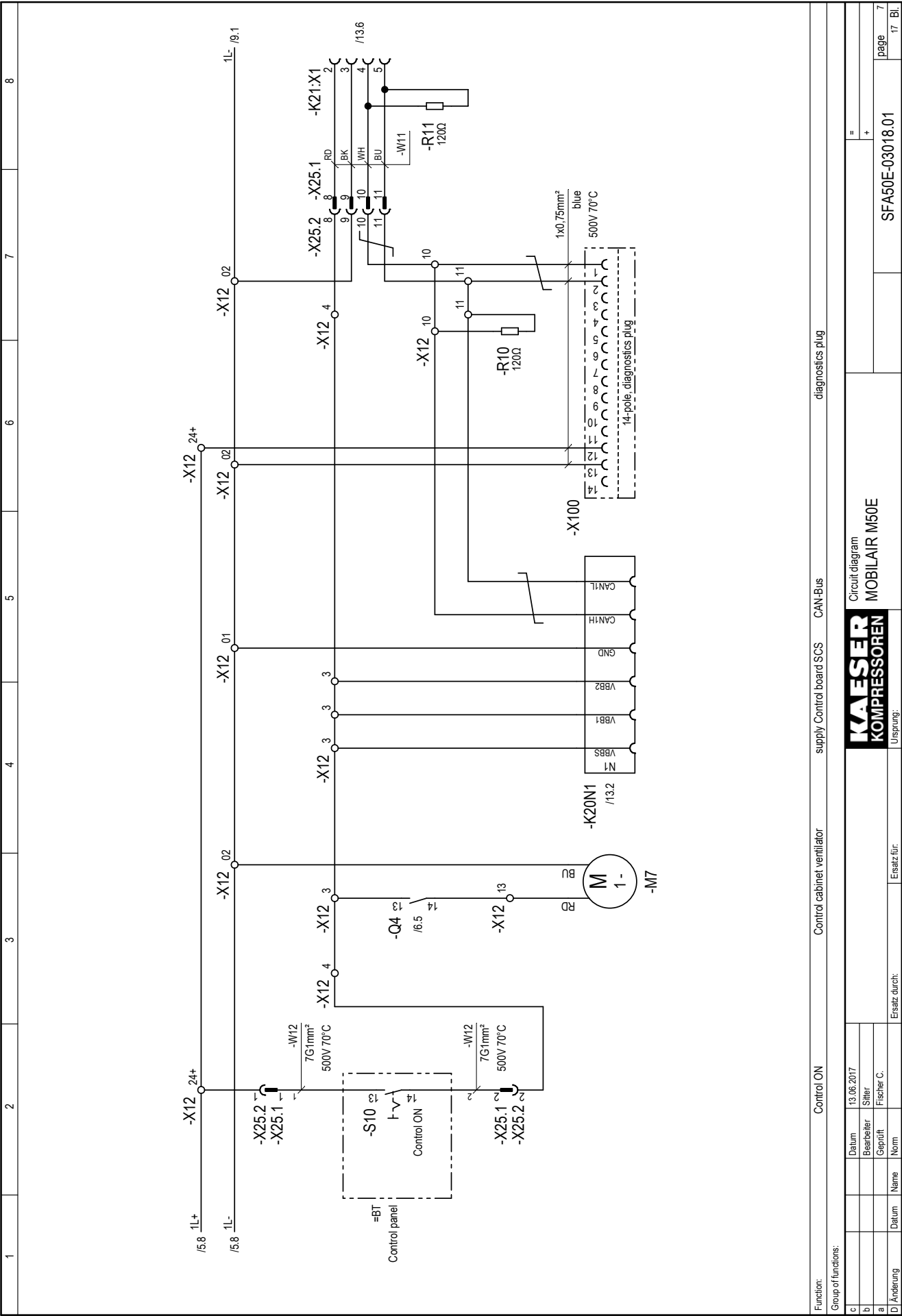


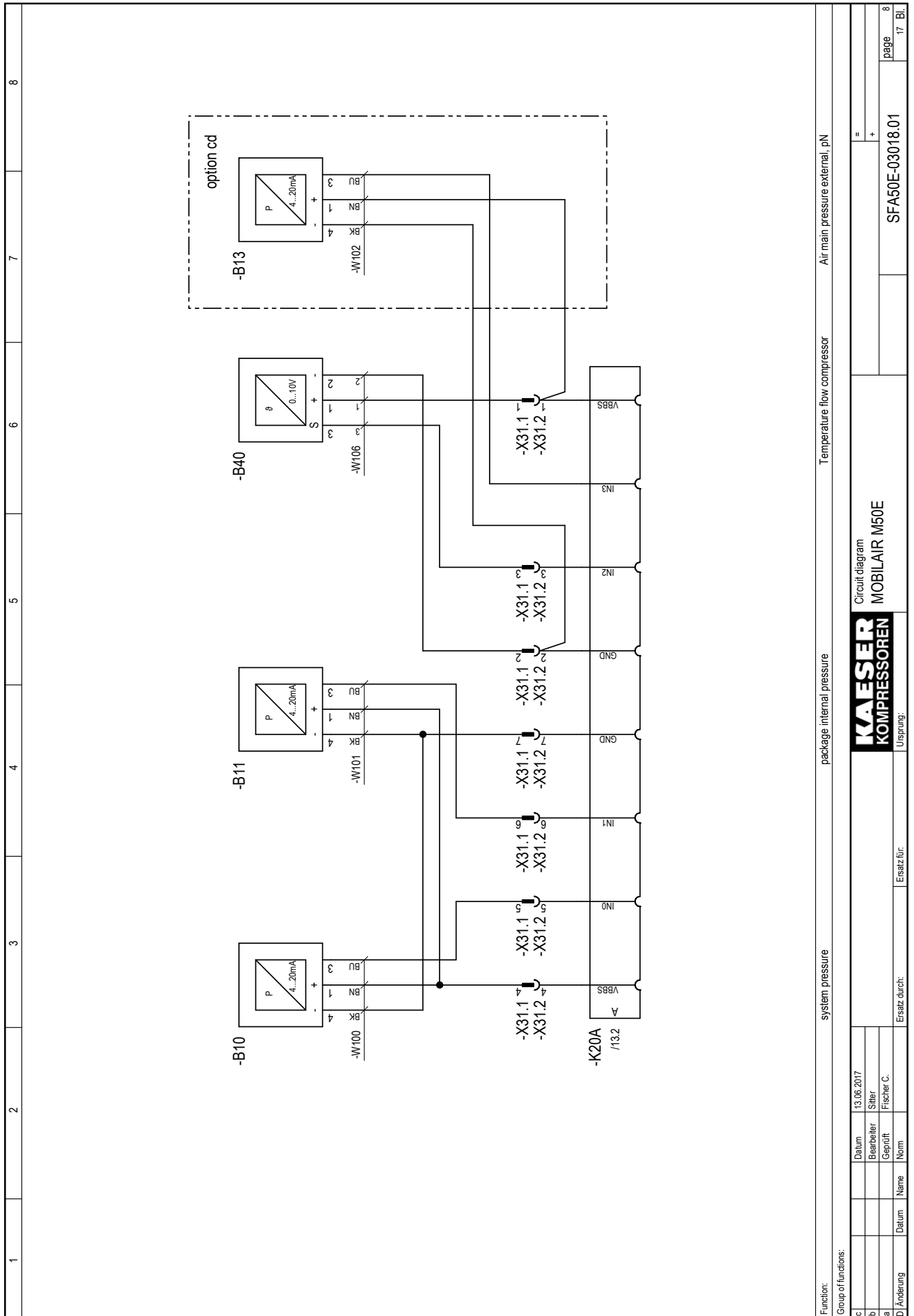


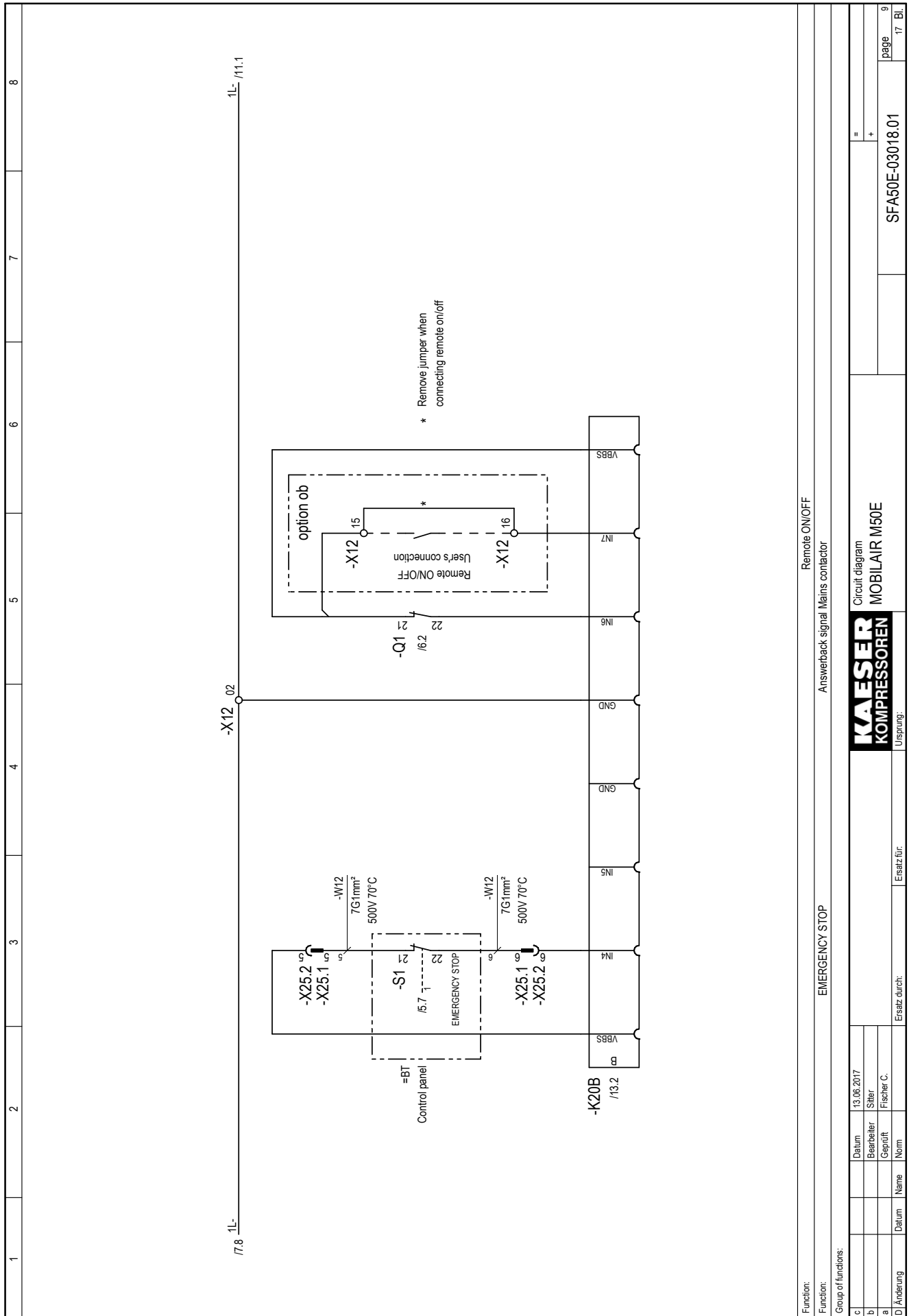


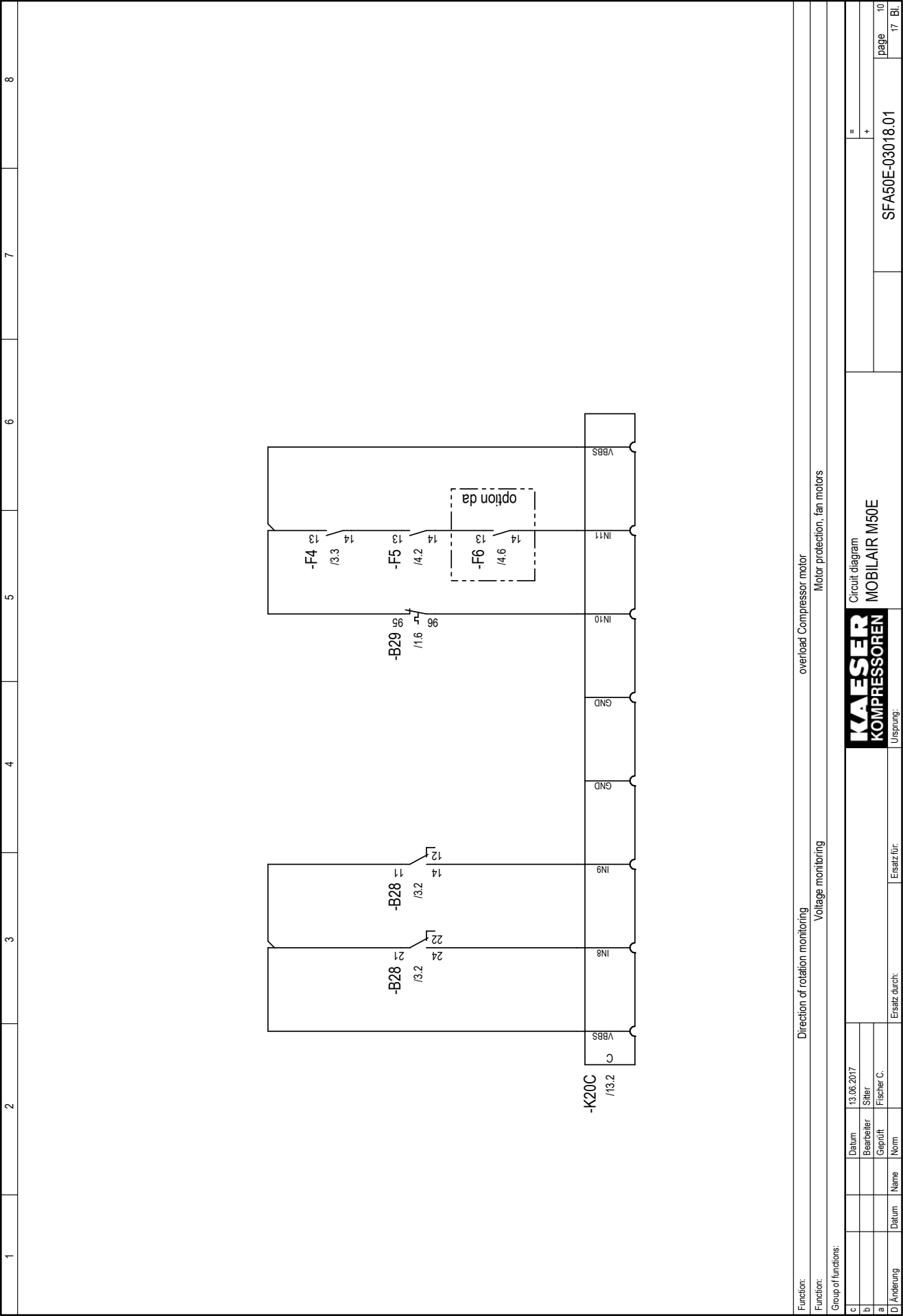


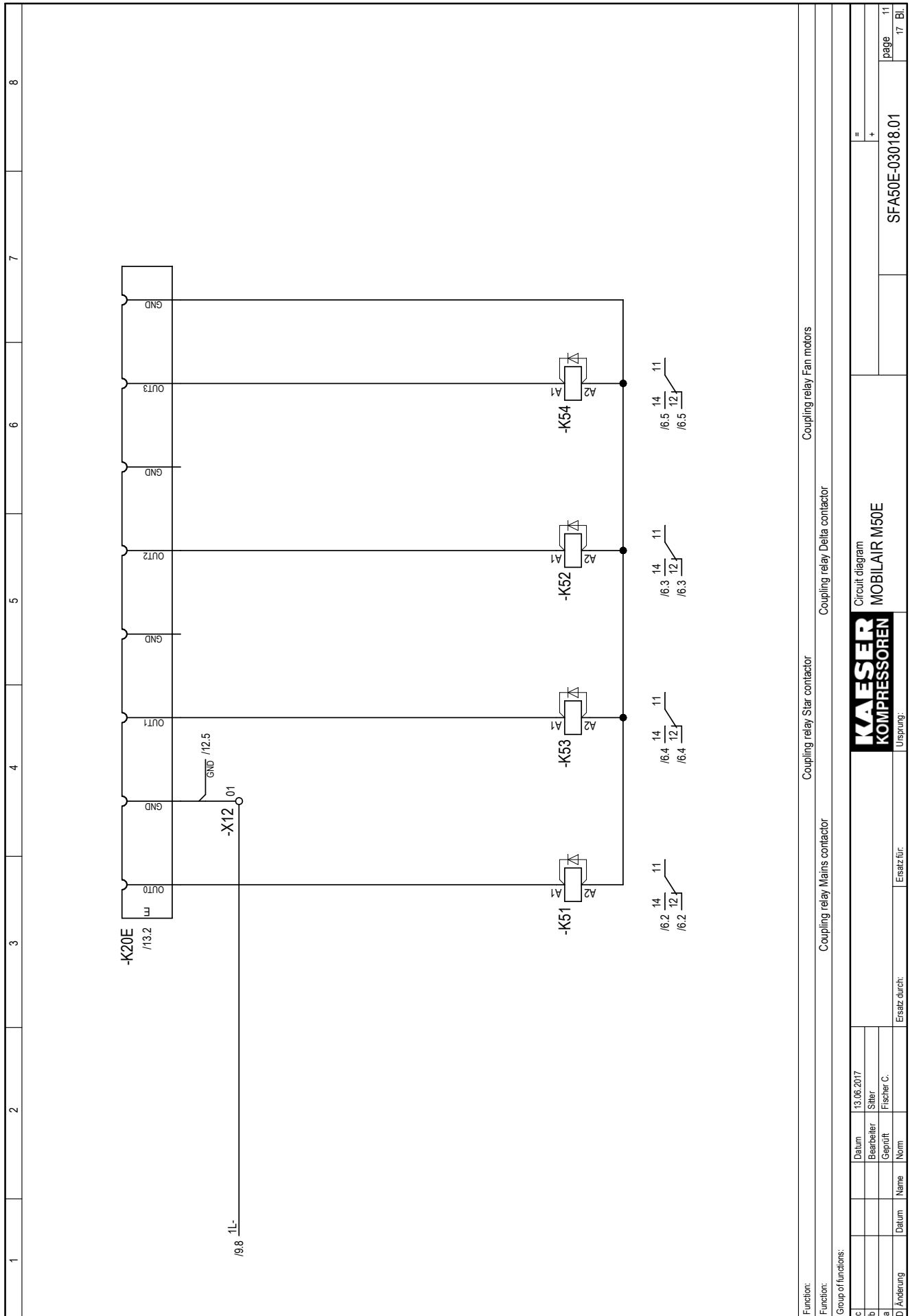


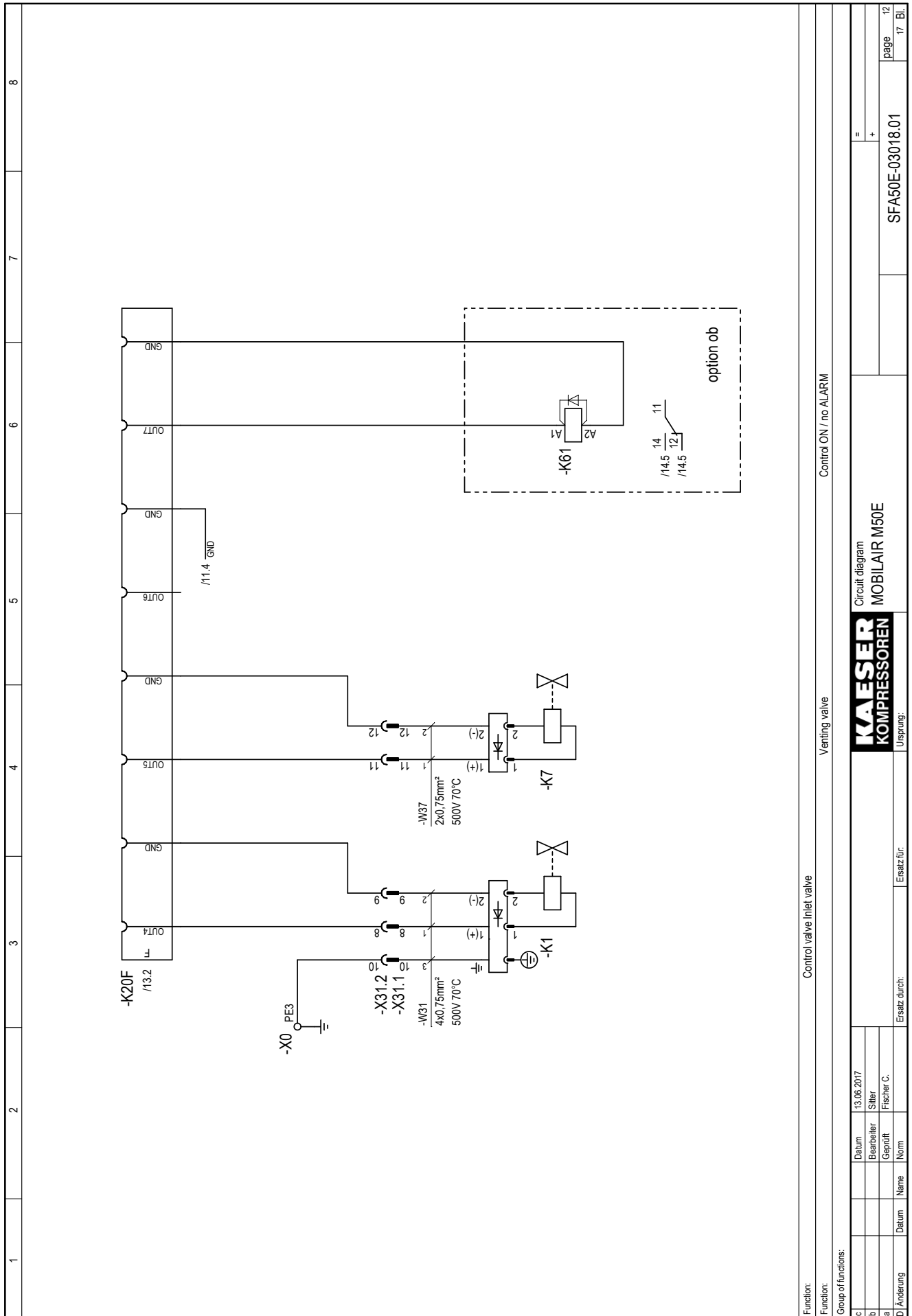


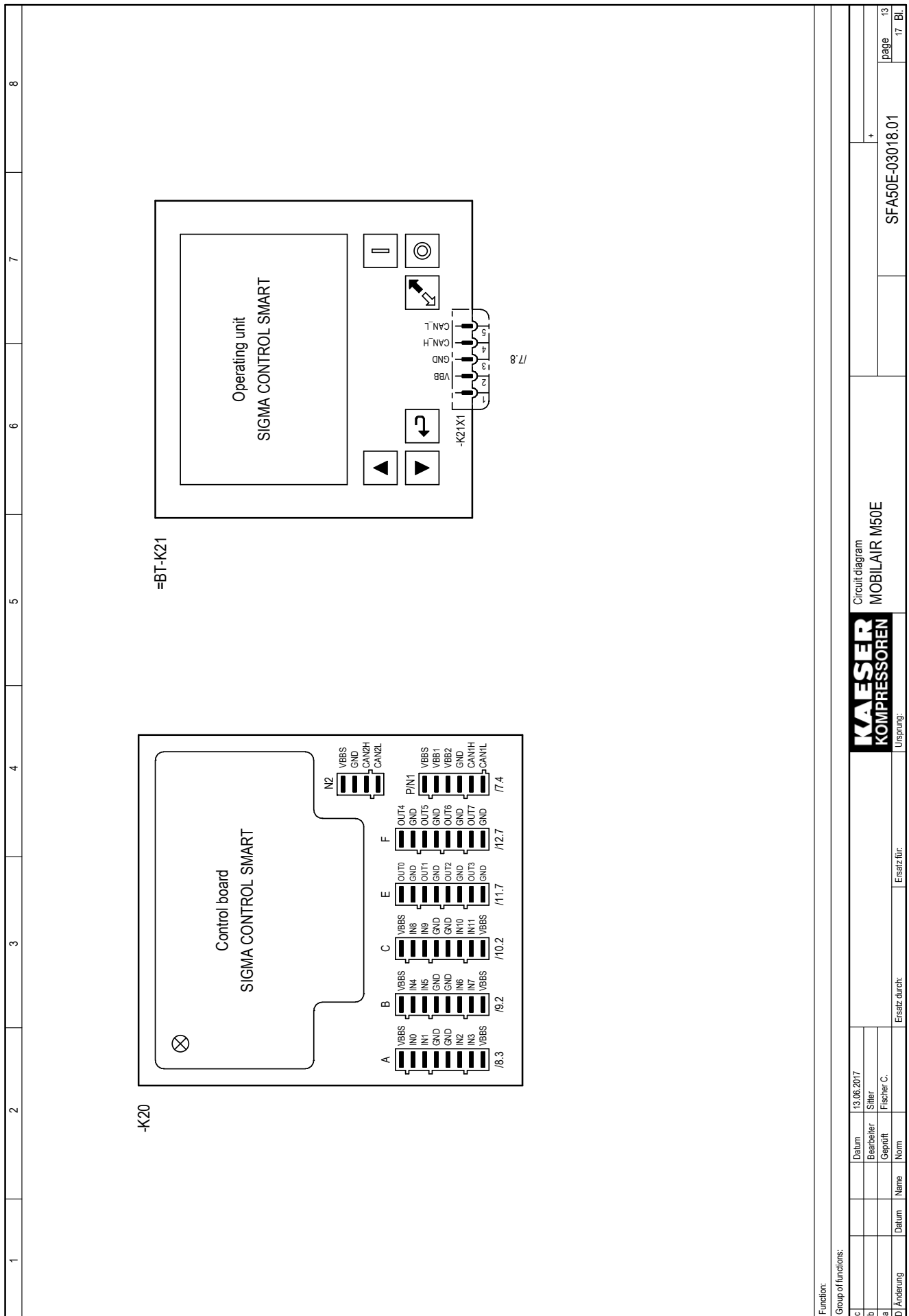


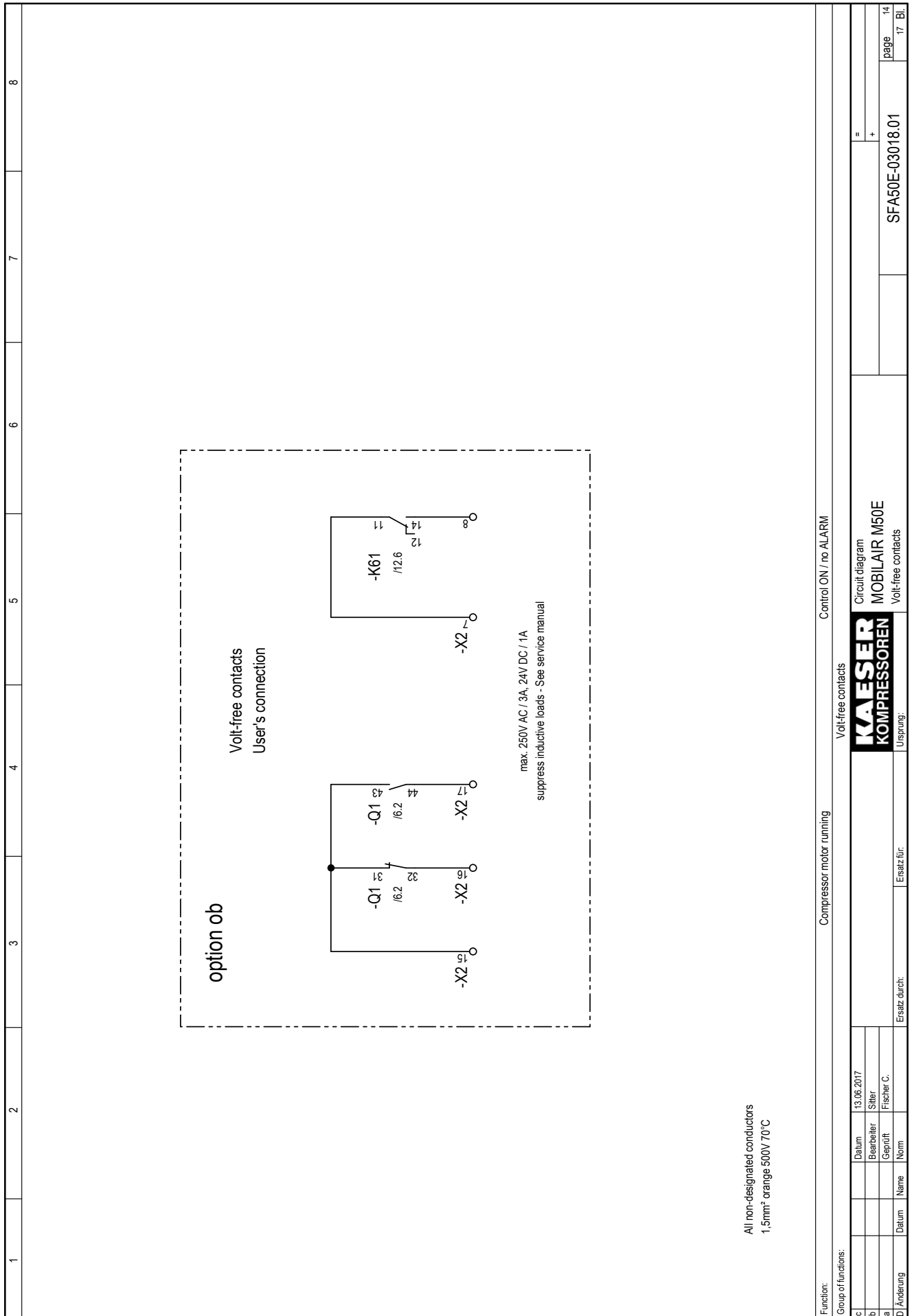




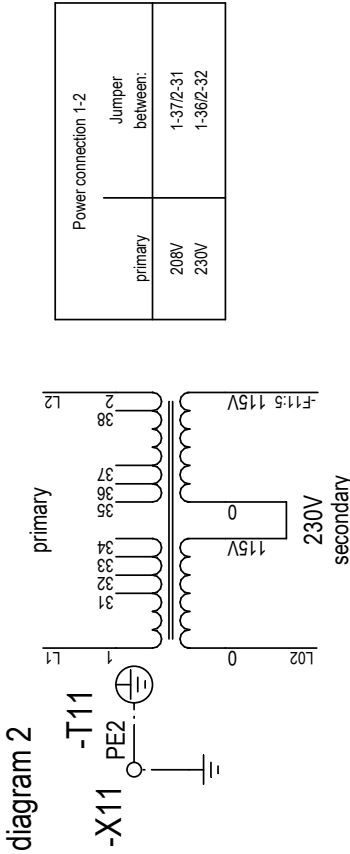
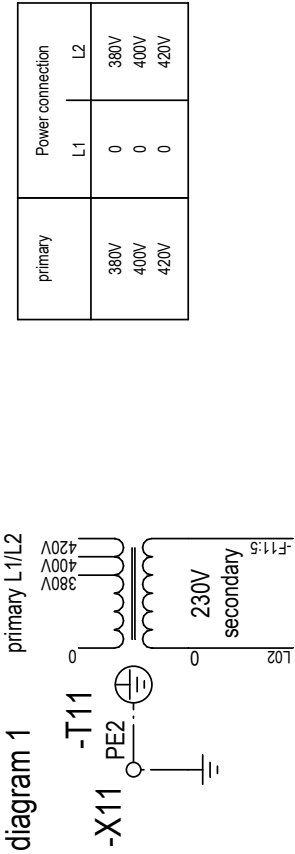






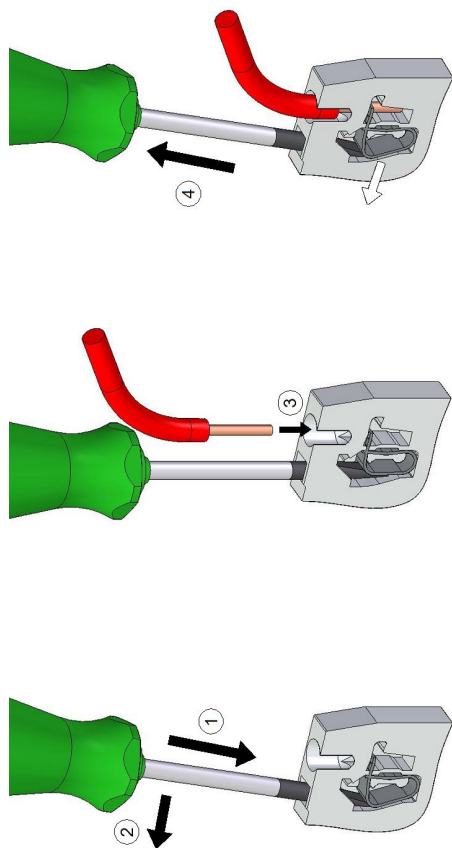


1 2 3 4 5 6 7 8



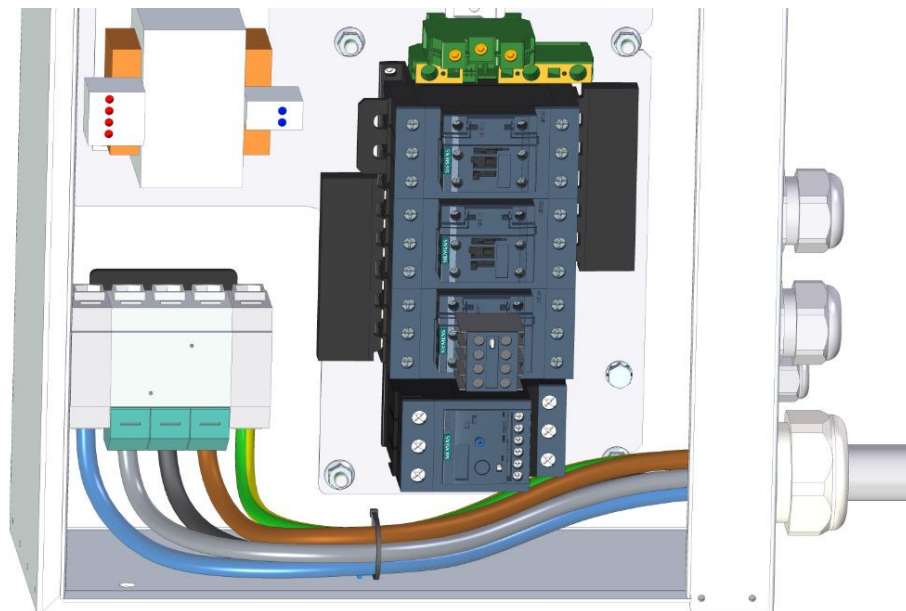
c	Datum	13.06.2017	Circuit diagram		=	
b	Bearbeiter	Sitter	MOBILAIR M50E		+	
a	Geprüft	Fischer C.	transformer diagrams		SFA50E-03018.01	
D/Änderung	Datum	Name	Ersatz durch:	Ersatz für:	page	15
					17	Bl.

fig. 1: Handling: Control line terminal



c			Datum	13.06.2017	KAESER KOMPRESSOREN	Circuit diagram MOBILAIR M50E Handling: Terminals	= +	page 16 17 Bl.
b			Bearbeiter	Stiller				
a			Geprüft	Fischer C.				
D Änderung		Datum	Name	Norm				
Ersatz durch:					Ersatz für:	Ursprung:		

fig. 10: Feed line connection
Supply at control cabinet



c			Datum	13.06.2017	KAESER KOMPRESSOREN Circuit diagram MOBILAIR M50E Feed line connection		=
b		Bearbeiter	Sitter				
a		Geprüft	Fischer C.				
D Änderung	Datum	Name	Norm	Ersatz durch:		Ersatz für:	Ursprung:
					SFA50E-03018.01		
					page 17		
					17 Bl.		

[illegible]

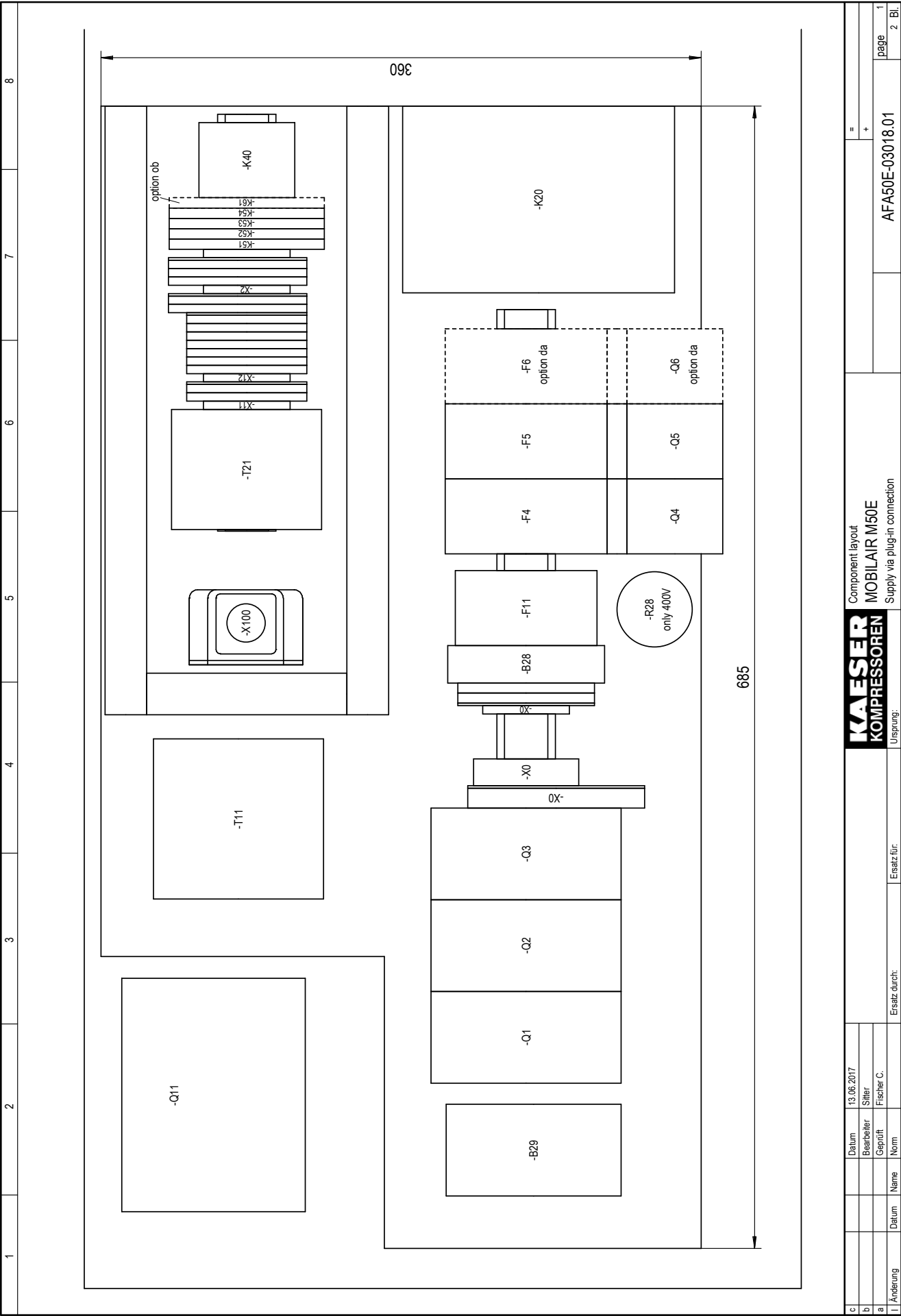
c		Datum		13.06.2017		Terminal schedule		=		+		KFA50E-03018.01		page 2	
a		Bearbeiter		Sitter		MOBILAIR M50E		Ursprung:				Ersatz für:		6 Bl.	
b		Geprüft		Fischer C.		Plug connection -X4		Ersatz durch:				Ersatz für:		6 Bl.	
b		Name		Norm		BK BU BN YE GN WH PE		400V		230V		Plug connection -X4		6 Bl.	
b		-W29 7G0.5mm² 500V 70°C													
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															
b															

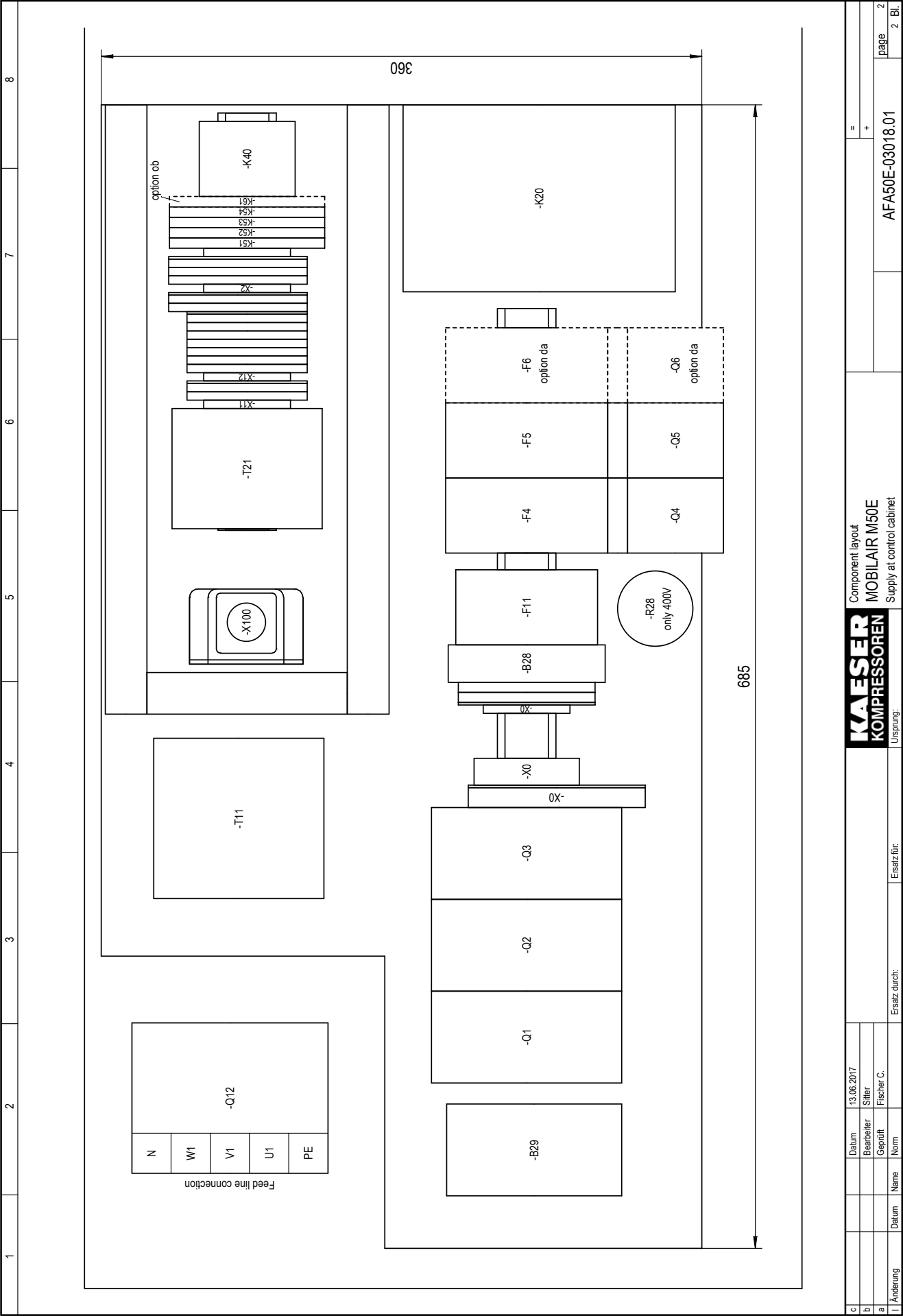
Cable identification		Date		13.06.2017		Terminal schedule		=		+		KFA50E-03018.01		page 3		6 Bl.	
Destination		a		b		c		d		e		f		g		h	
Terminal strip		Internal		Connection number		Component identification		Location		Wire link		Terminal legend		Terminal number		Connection number	
Destination		External		Connection number		Component identification		Location		Wire link		Terminal legend		Terminal number		Connection number	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1		-M5 V1 2		-M5 W1 3		-M5 W2 4		-M5 U2 5		-M5 V2 6	
Cable identification		-W39 7G0.5mm² 500V 70°C		BK BU BN YE GN WH V-VE		-M5 U1 1											

[illegible]

[illegible]

c				Datum	13.05.2017	Terminal schedule		=		+		KFA50E-03018.01		6	RI
b				Bearbeiter	Stiller	MOBILAIR M50E								page	
a				Geprüft	Fischer C.	KOMPRESSOREN									
Änderung	Datum	Name	Norm	Ersatz durch:	Ersatz für:	Usenno									
Cable identification		-W102 PUR 5x0,34mm²		Plug connection: -X31.1 total 12 Terminals		Plug connection: -X31.2 total 12 Terminals		BN		BK					
Destination		Connection number		Component identification		Component identification		BN		BK					
Terminal strip		Location		Wire link		Terminal legend		BN		BK					
Destination		Connection number		Component identification		Component identification		BN		BK					
Cable identification		-W31 4x0,75mm² 500V 70°C		Plug connection: -X31.1 total 12 Terminals		Plug connection: -X31.2 total 12 Terminals		BN		BK					
Destination		-W37 2x0,75mm² 500V 70°C		Component identification		Component identification		BN		BK					
Destination		-W100 PUR 5x0,34mm²		Component identification		Component identification		BN		BK					
Destination		-W101 PUR 5x0,34mm²		Component identification		Component identification		BN		BK					
Destination		-W106 Celflex 110 4G0,75mm²		Component identification		Component identification		BN		BK					





13.5 Option to Lighting and signalling system connection

1	2	3	4	5	6	7	8
Electrical diagrams MOBILAIR Lighting equipment connection 12V/13-pole							
Manufacturer: Kaeser Kompressoren GmbH Postfach 2143 96410 Coburg							
The drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions must be forwarded or otherwise made accessible to third parties.							
c			Datum	30.08.2010	E	Cover page	
b			Bearb.	Weid		MOBILAIR	
a			Gepr.	Norm		Lighting equipment	
Änderung	Datum	Name	Ersatz durch:		Ersatz für:	DFAEUR.BEL-02005.01	
					=		Blatt 1
					+		Bl.

