Operating manual

Rotary screw compressor

MOBILAIR M81.2

902508 02 E

Manufacturer:

KAESER KOMPRESSOREN SE

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Contents

1 About this document

Read the operating manual carefully and ensure you are familiar with the contents before using machine.

The operating manual is an integral part of the product and describes the machine at the point of initial delivery following completion. Keep the operating manual throughout the entire lifetime of the machine and pass it on to any subsequent owner or user.

For reasons of improved readability, the simultaneous use of the male, female and plural language forms has been dispensed with. All personal designations apply equally to all genders.

Supplement the manual with any amendments that may be provided by KAESER. Provide the data from the nameplate wherever you are asked to do so. This simplifies orientation for every user.

The illustrations in this manual are basic representations, which may differ from the actual in minor details.

1.1 Further documents

Further documents included with this operating manual:

- Pressure vessel Certificate of Acceptance / operating manual
- Declaration of Conformity in accordance with the applicable directive
- Machine controller user manual
- Chassis documentation for mobile machines

Check that all documents are complete.

Missing documents can be requested from KAESER. Ensure that you provide the nameplate data when ordering documents.

1.2 Warning notices

Warning notices warn of hazards that can lead to personal injury and provide instructions on how to avoid damage. Warning notices precede actions associated with hazards and also apply to sub-chapters if they precede the chapter.

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

Signal word	Consequence if the hazard is not avoided
DANGER	Hazard with a high level of risk that will result in death or serious injury if not avoided
WARNING	Hazard with a medium level of risk that may lead to death or serious injury if not avoided
CAUTION	Hazard with a low level of risk that may lead to minor or moderate injury if not avoided

Tab. 1 Signal words and their consequences

Example:

⚠ WARNING

Description of the hazard, cause and consequences

► Instructions on how to avoid the hazard

1.3 Symbols and pictograms

Symbols and pictograms in this document draw your attention to information that requires special attention. Follow all instructions provided to prevent damage.

Representation	Meaning	Representation	Meaning
A1	Section or information relating to an optional equipment feature	Softkey	Software-dependent button on display for triggering an operating function
►	This symbol indicates an individual action requirement	1. ... 2. ... 3. ...	A series of action requirements are numbered consecutively. Follow the sequence accordingly.
«Operating element»	Visualisation of an operating element, e.g. a key	*Display element*	Visualisation of a display element, e.g. a control indicator
	Safety-related condition that must be fulfilled in order to be able to perform the subsequent activity		Prerequisite that must be met in order to be able to perform the subsequent activity
	Useful information or information that needs to be observed		Reference to another source of information
	Materials and tools		Spare parts
	Tool		Information or action relating to environmental protection
	Assistance relating to an activity		Assistance relating to an individual action step
	Result of an implemented activity		Result of an individual action step

Tab. 2 Symbols and pictograms

1.4 Material damage warnings

Material damage warnings warn of situations that can lead to material/property damage and provide instructions on how to avoid damage. Material damage warnings precede actions associated with risks and also apply to sub-chapters if they precede the chapter.

Material damage warnings are identified by their signal word NOTICE.

Example:

NOTICE

Description of the hazard, cause and consequences

► Instructions on how to avoid the damage

1.5 Warranty

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

The provision of warranty by KAESER is conditional upon the machine being used only for the purposes for which it is intended. As the operator, you are responsible for ensuring that the machine is used only for the purposes for which it is intended in the context of your specific application.

1.6 Protected brands and trademarks

All brands and trademarks mentioned in this operating manual and (where applicable) protected by third parties, are subject without restriction to the stipulations of the applicable trademark law, as well as the ownership rights of the respective registered owner. The mention of a trademark alone does not imply that the trademark in question is not protected by the rights of a third party.

1.7 Copyright

2 Technical data

2.1 Identification markings

The machine is clearly labelled by means of identification markings.

Always use this information when contacting the machine manufacturer or a specialist workshop.

Providing detailed machine information will ensure that every customer query is answered as quickly and accurately as possible.

Overview:

- Vehicle identification number
- Nameplate
- Options label

For positions of the machine identification markings, see chapter 15.1 Code.

2.1.1 Vehicle identification number

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

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

2.1.2 Nameplate

The following information can be found on the machine's nameplate:

- Machine type
- Important technical data for the machine

Fill the nameplate data in here for reference.

Characteristic	
Portable rotary screw compressor	
Material no. / Serial no.	
Actual total weight	
Lifting point load capacity	
Rated power	
Maximum working pressure PS	

2.1.3 Options label

Each of the installed options is represented by a code and indicated on the options label for your machine.

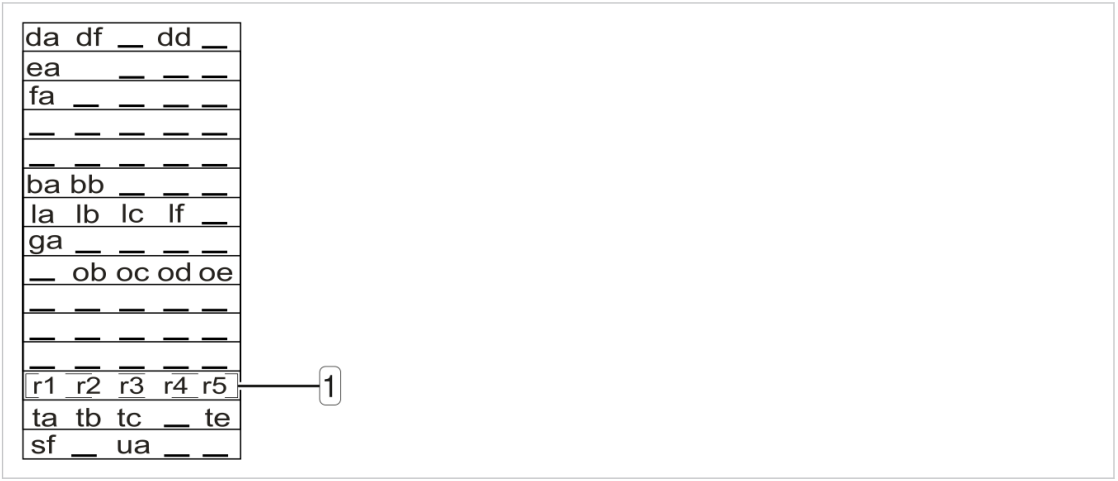


Fig. 1 Example options label: MOBILAIR M81.2 with options information

[1] Chassis options

An overview of the installed options helps you to correlate the information in this operating manual. The corresponding code is displayed on the options label for your machine.

You can find the option code for the chassis in the separate operating manual supplied with the machine.

Fill in the options in the table below for reference.

Options reference

Option	Code	Installed? [1)]
Compressor air filter with mechanical maintenance indicator	aa	
Low-temperature equipment	ba	
Coolant preheating	bb	
Unloaded engine warm-up	cc	
Compressed air aftercooler and centrifugal separator	da	
Heat exchanger	db	
Filter combination	dd	
Heat exchanger with bypass	df	
Compressed air aftercooler with bypass	dg	
Tool lubricator, compressed air outlet not isolated	ea	
Tool lubricator, compressed air outlet isolated upstream from option	eb	

1) Installed: ✓, Not available: —

Option	Code	Installed? [1]
Tool lubricator, compressed air outlet isolated downstream from option	ec	
Compressed air lines not isolated	fa	
Compressed air lines isolated downstream from option	fc	
Compressed air outlet, additional and/or alternative	fe	
Generator without flow rate limiter	ga	
Minimum pressure check valve filter combination	hc	
Minimum pressure check valve with filter combination	hd	
Minimum pressure check valve isolated upstream from option	he	
Spark arrester	la	
Spark arrester and engine air shut-off valve	lb	
Battery isolation switch	oa	
Automatic start/stop	ob	
TELEMATICS	oc	
Battery trickle charging	od	
Closed floor pan	oe	
Control panel cover	pa	
Anti-theft device	sf	
Hose reel	ua	
EC-12 V	tc	
USA-12 V, DOT-compliant	te	

1) Installed: ✓, Not available: —

Tab. 3 Options reference

2.2 Machine

2.2.1 Weight

The values indicated are maximum values. The actual weight of the machine depends on its specific configuration.
The actual weight of the machine can be found on the nameplate.

Characteristic	
Weight [kg]	1800

Tab. 4 Weight

2.2.2 Noise emission

Guaranteed sound power level in accordance with directive 2000/14/EC.

The guaranteed sound power level applies exclusively to machines fitted with soundproofing material.

Characteristic	
Guaranteed sound power level [dB(A)]	98.0
Emission sound pressure level [1), 2)] [dB(A)]	81.0
Measuring distance d [m]	1.0
Measuring surface dimension Q2 [dB(A)]	17.0

1) as per EN ISO 11203

2) calculated from the guaranteed sound power level (directive 2000/14/EC, basic noise measuring standard ISO 3744)

Tab. 5 Guaranteed sound power level

2.2.3 Tightening torque

2.2.3.1 Screw connections with standard threads

The reference values for the tightening torques are dependent upon the size of the screw connection, the strength class, the screw material and the friction coefficient.

Tightening torque reference values for the screw connections used.

- Standard threads M4 – M8 of strength class 8.8, bright zinc-plated, see table.
- Standard threads M10 – M24 of strength class 8.8, matte zinc-flake coating, see table.

Set the torque as appropriate for the surface finish and friction coefficient (e. g. μ = 0.12).

Standards based on VDI 2230

Reference values for screw connections with standard threads

Standard threads	M4	M5	M6	M8
Tightening torque [Nm]	3,0	5,9	10,0	24,5
Screw surface finish: Bright galvanised				
Strength class 8.8				

Tab. 6 Defined tightening torques, standard threads M4…M8

Standard threads	M10	M12	M14	M16	M20	M24
Tightening torque [Nm]	40.0	70.0	105.0	160.0	320.0	550.0
Screw surface finish: Matte zinc-flake coating						
Strength class 8.8						

Tab. 7 Defined tightening torques, standard threads M10 … M24

2.2.3.2 Crane suspension fixing bolts

Thread size	Flat-head screw	Hexagon bolt	Stud	Strength class	Tightening torque [Nm]
M12	●	○	○	8.8	70
M16	●	○	○	8.8	160

●: Applicable
○: Not applicable

Tab. 8 Specific tightening torques for the crane suspension fixing bolts

2.2.4 Ambient conditions

Characteristic	
Maximum installation elevation [1) 2)] [m]	1000
Temperature range [°C]	-10– +45

1) above sea level

2) Higher installation locations only possible following consultation with KAESER

Tab. 9 Ambient conditions at installation location

2.2.5 Additional information as per the machine operating licence

In the dimensional drawing for your machine, you can find:

- Additional information regarding specific technical data:
  - Dimensions
  - Track width
  - Machine footprint
- Positions of relevant inlet and outlet openings:
  - Cooling air inlet and outlet
  - Compressed air outlet
  - Exhaust gas outlet

The dimensional drawing for your machine, as well as further drawing documents, can be found in chapter 13 Documents and drawings.

2.3 Compressor

2.3.1 Working pressure, pressure rating

A specific pressure rating applies to your machine, which is defined by the maximum working pressure of the system. This value determines further characteristics of your machine, such as the pressure adjustment range or the pV control range. Check the maximum working pressure value on your machine nameplate.

Dependent on the maximum working pressure, the version characteristics for your machine are indicated in one of the “Pressure rating” columns in the table below. One of the pressure ratings indicated is applicable to your machine.

Pressure rating	1	2
Maximum working pressure [bar]	**10,3**	**14,0**
Pressure adjustment range [bar]	6,0– 10.3	6.0– 14.0
pV control range [bar]	7.0– 10.3	10.0– 14.0

Tab. 10 Maximum working pressure, pressure adjustment range and pV control range in accordance with pressure rating.

The nominal pressure of the system can also be set below a specified control range for the pV Control.

2.3.2 Variable pressure-flow rate control

In the diagram, the relationship is illustrated between pressure (p) and flow rate (V) in relation to the variable pressure-flow rate control and the pressure adjustment range.

Only one of the diagrams below is applicable to your machine.

Pressure rating 1

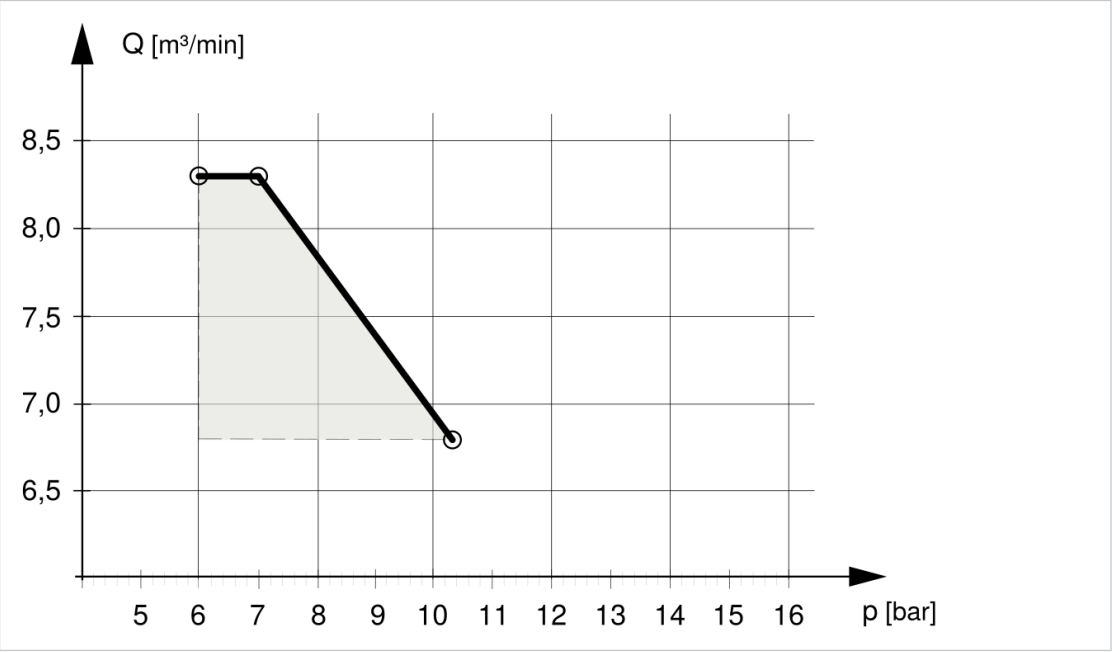


Fig. 2 Pressure–Flow rate–diagram 6,0– 10.3 bar

Working pressure [bar] (nominal pressure control range)	Flow rate [m³/min]	Engine speed [min⁻¹]
7.0	8,3	2600
10,3	6.8	2200

Tab. 11 Flow rate dependent on nominal system pressure and engine speed.

Pressure rating 2

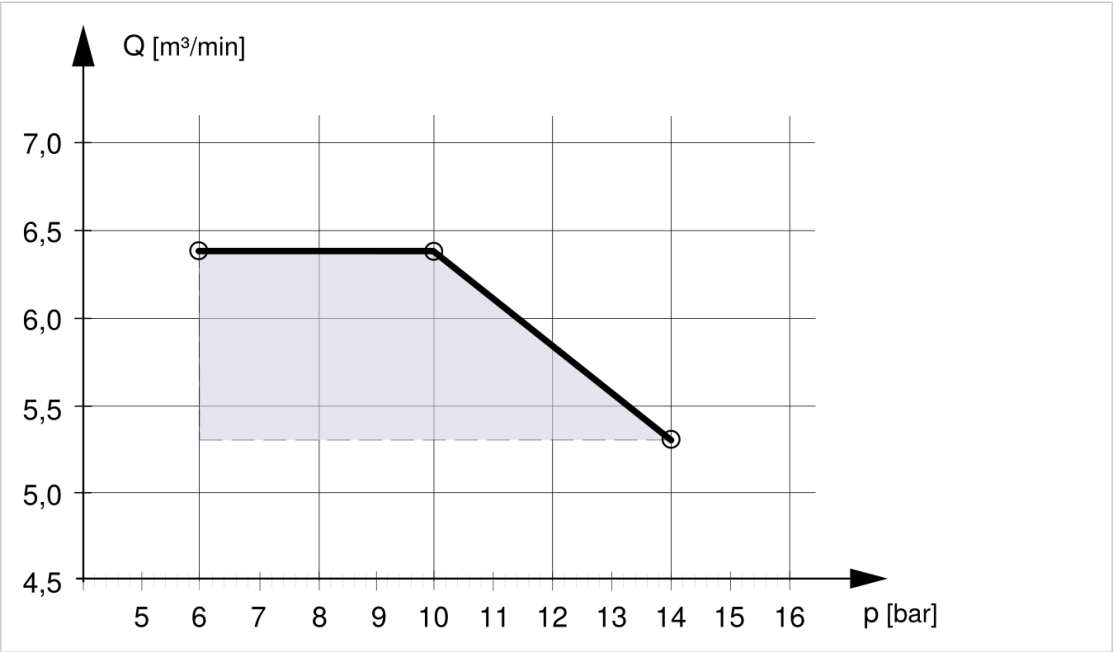


Fig. 3 Pressure–Flow rate–diagram 6.0– 14.0 bar

Working pressure [bar] (nominal pressure control range)	Flow rate [m³/min]	Engine speed [min^{-1}]
10,0	6,4	2600
14,0	5,3	2300

Tab. 12 Flow rate dependent on nominal system pressure and engine speed.

The flow rate as per ISO 1217:2009 (Annexe D) is the continuously delivered volume in relation to intake conditions.

2.3.3 Compressed air outlet

Connection size	Quantity
G $^3/_4$	3
G1 $^1/_2$	1

Tab. 13 Air distributor

2.3.4 Safety valve actuating pressure

Maximum working pressure, see machine nameplate.

Maximum working pressure [bar]	Safety valve actuating pressure [bar]
10,3	15.9

Maximum working pressure [bar]	Safety valve actuating pressure [bar]
14,0	15.9

Tab. 14 Actuating pressure on the safety valve

2.3.5 Temperature

Standby temperature for LOAD operating point [°C]	
Airend discharge temperature (ADT)	20
Engine coolant temperature (ECT)	20

Tab. 15 Standby temperatures

Airend discharge temperature (ADT) [°C]	
Typical airend discharge temperature during operation	75– 100
Maximum airend discharge temperature with automatic safety shutdown	117

Tab. 16 Airend discharge temperature

2.3.6 Compressor oil

2.3.6.1 Compressor oil recommendation

The type of compressor oil used is marked near the filler neck on the oil separator tank.

Compressor oils for general applications

	SIGMA FLUID		
	MOL	**S-460**	**S-570**
Description	Mineral oil	Synthetic oil	Synthetic oil
Application area	Standard oil for all applications except the processing of food products. Particularly suitable for machines with a low duty cycle.	Standard oil for all applications except for the processing of food products. Particularly suitable for machines with high duty cycle. Not suitable for East/Southeast Asian countries.	Special oil for ambient conditions with high temperatures and humidity. Suitable for all applications except for the processing of food products. Particularly suitable for machines with high duty cycle.
Viscosity at 40 °C	46 mm²/s (ASTM D445)	46 mm²/s (ASTM D445)	53 mm²/s (ASTM D445)
Viscosity at 100 °C	6.9 mm²/s (ASTM D445)	7.2mm²/s (ASTM D445)	8.0mm²/s (ASTM D445)
Flash point	230 °C (ASTM D92)	251 °C (ASTM D92)	258 °C (ASTM D92)
Density at 15 °C	0.868 g/cm³ (ASTM D1298)	0.860 g/cm³ (ASTM D1298)	0.869 g/cm³ (ASTM D1298)

	SIGMA FLUID		
	MOL	**S-460**	**S-570**
Pour point	−30 °C (ASTM D97)	−27 °C (ASTM D97)	−54 °C (ASTM D97)

Tab. 17 Compressor oil recommendation

Compressor oils for food-processing applications

	SIGMA FLUID	
	FG-460	**FG-680**
Description	Synthetic oil	Synthetic oil
Application area	Compressor oil for machines that require a lubricant approved in accordance with NSF H1	Compressor oil for machines that require a lubricant approved in accordance with NSF H1
Approval	NSF H1	NSF H1
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. 18 Compressor oil recommendation (food-processing applications)

The term “food processing” encompasses all procedures that alter the original, raw form of a food item to make it suitable for consumption.

2.3.6.2 Compressor oil fill volume

Version	Fill volumes [l]
Machine	20
Machine + db heat exchanger	20
Machine + df heat exchanger with bypass	20

Tab. 19 Compressor oil fill volume

2.4 Drive engine

2.4.1 Engine specification

Characteristic	
Engine manufacturer	HATZ
Type	4H50TICD
Exhaust gas after-treatment	DOC[1)] DPF [2)]
Rated engine power [kW]	55.4
Speed in LOAD [min^{-1}]	2600 – 2300
Speed in IDLE [min^{-1}]	1800
Fuel type	Diesel[3)]
Fuel consumption in LOAD for pressure stage 1 [l/h]	14.1 – 14.0
Fuel consumption in LOAD for pressure stage 2 [l/h]	13.1 – 13.0
Oil to fuel consumption ratio [Vol. %]	Approx. 0.5
Number of cylinders	4

1) Diesel Oxidation Catalytic Converter
2) Diesel Particulate Filter
3) Only use diesel fuels in accordance with EN 590 or EN 15940.

Tab. 20 Engine specification

2.4.2 Engine oil recommendation

The engine oil used must comply with the following classifications: **ACEA E6 „Low SAPS“** (bevorzugt), **E9, C3** / **C4** (HTHS ≥ 3.5 mPas)

Only use engine oils with low white ash build-up. Engine oils that do not meet this condition can reduce the useful life of the drive engine.

A perfectly functioning engine is dependent on the quality of the engine oil used. The use of unlisted engine oils requires prior approval from KAESER.

2.4.2.1 Viscosity class for initial fill

For the initial fill, the drive engine is filled with engine oil of the following viscosity class:

Characteristic	
Viscosity class	SAE 10W-40
Ambient temperature range [°C]	-20 – 45

Tab. 21 Engine oil viscosity class for initial fill

2.4.2.2 Engine oil viscosity class

Viscosity:

The ambient temperature at the installation location and in the application area is decisive when selecting the appropriate viscosity class. Excess viscosity can cause difficulties when starting up, whilst too low a viscosity reduces the lubricating effect of the engine oil, leading to high oil consumption. Viscosity is classified by SAE.

Ambient temperatures [°C]	Viscosity class
-35 – 30	SAE 0W-30 SAE 5W-40 SAE 5W-30
-35 – 45	SAE 5W-40 SAE 0W-40
-30 – 30	SAE 5W-30
-30 – 45	SAE 5W-40

Tab. 22 Engine oil viscosity classes

2.4.3 Fuel specification

To comply with emissions legislation, diesel engines equipped with an exhaust gas after-treatment system must be operated using low-sulphur diesel fuel only. Compliance with the emission requirements but also the durability of the individual exhaust gas treatment components is not assured if this requirement is ignored!

The following fuel specifications are approved:

- Diesel fuels in accordance with EN 590
- Paraffinic diesel fuel in accordance with EN 15940

Never store fuel in galvanised containers.

If the machine is to be fuelled using barrels or jerrycans, the fuel must first be filtered. This helps to avoid faults in the fuel system caused by contamination.

Biodiesel

As per EN 590, a certain proportion of biodiesel is permitted in the fuel.

Depending on the country of origin, biodiesel may be produced from a variety of plant-based raw materials and may therefore possess differing properties. Exposure to temperature, atmospheric oxygen, and time can cause these biodiesel components in the fuel to degrade and damage the fuel system.

2.4.4 Fill volumes

Operating fluids/materials	Fill volumes [l]
Engine oil	7
Coolant[1)]	15
Fuel	130

1) mixing ratio, see 11.3.1.3 Correctly mixing the coolant.

Tab. 23 Operating fluid fill volumes

2.4.5 Carbon dioxide emissions

CO_2 emissions are the mass of carbon dioxide produced when substances containing carbon are burnt.

The CO_2 measurements result from testing a (parent) engine over fixed test cycles, under laboratory conditions.

This engine is representative of the engine family, and can neither imply nor guarantee the performance of an individual engine.

Characteristic	
Engine manufacturer / type	HATZ / 4H50TICD
CO_2 emissions [g/kWh]	787.30

Tab. 24 CO_2 emissions value

2.4.6 Battery

Depending on the equipment fitted to the machine, a higher battery capacity may be required. See chapter 2.5.1 ba bb Low-temperature equipment

Characteristic	
Voltage [V]	12
Capacity [Ah]	85
Cold discharge test current[1)] [A]	800

1) Capacity as per DIN EN 50342-1

Tab. 25 Starter battery

2.5 Options

2.5.1 ba bb Low-temperature equipment

2.5.1.1 ba Low-temperature equipment

Ambient conditions

Characteristic	
Maximum installation elevation ASL [1)] [m]	1000
Temperature range [°C]	-25 – +45

1) Higher installation locations only possible following consultation with KAESER

Tab. 26 Ambient conditions: Low-temperature equipment

2.5.1.2 bb Coolant preheating

Electrical connection data

Characteristic	
Mains voltage [V]	240
Frequency [Hz]	50
Connection type	1~/N/PE
Connection cross section[1)] [mm²]	3 x 2,5
Maximum cable length [m]	50
Power [W]	600
Customer-provided fuse protection [A]	16

1) Cu multicore cable

Tab. 27 Electrical connection data for coolant preheating device

2.5.2 da Heating for compressed air condensate separator

Electrical connection data

Characteristic	
Voltage [V]	12
Power [W]	3

Tab. 28 Electrical connection data for heating, compressed air condensate separator heating mat

2.5.3 ea ec Tool lubricator

Lubricant recommendation

Characteristic	
Special lubricant for breakers	
Temperature range [°C]	-25 – +50
Fill volume [l]	2,5

Tab. 29 Lubricant recommendation for breakers

2.5.4 ga Generator

2.5.4.1 Generator specification

Characteristic	400 V / 3~	
Rated power [kVA] 3-phase/2-phase	13.0	8.5
Nominal power [kVA]	7.0	5.0

Characteristic	400 V / 3~	
Voltage constancy Symmetrical load	±5%	
Voltage constancy Single-phase, asymmetrical load	+6/–10%	
Rated current [A] 3-phase/2-phase	18.8	12.3
Rated current [A] Single-phase	30.4	21.7
Rated current [A] Short circuit	300	260
cos phi	0.8-1	
Frequency [Hz]	50	
Speed [min^{-1}]	3000	
Distortion factor	< 5%	
Type	Electronically controlled synchronous internal pole	
Protection class	IP54	

Tab. 30 Generator specification

2.5.4.2 Compressed air flow rate during generator operation

Nominal power [kVA]	Nominal system pressure 7.0 – 10.3 bar	
	Flow rate [m^3/min] at 7.0	Flow rate [m^3/min] at 10.0
0	7.1	5.2
2	7.1	4.3
4	7.1	3.4
8	5.3	1.5
10	4.3	0.5
12	3.2	0
13	2.7	0

Tab. 31 Compressed air flow rate pressure range 7.0 – 10.3 bar

Nominal power [kVA]	Nominal system pressure 10 – 14 bar	
	Flow rate [m^3/min] at 10,0	Flow rate [m^3/min] at 14,0
0	5.3	5.0
2	5.3	4.1
4	5.3	3.1
8	4.8	1.2
10	3.7	0.2

Nominal power [kVA]	Nominal system pressure 10 – 14 bar	
12	2.5	0
13	1.9	0

Tab. 32 Compressed air flow rate pressure range 10 – 14 bar

When the generator is activated, the compressed air flow rate of the compressor may be below the nominal value – even if no electrical load is connected to the generator. For the intended use of the compressor, the compressed air flow rate values without activated generator are decisive, see chapter 2.3.2 Variable pressure-flow rate control

2.5.4.3 Consumer plug sockets

Type	400 V / 3~
16 A, 230V / 1~ / N / PE	3
16 A, 400 V / 3~ / N / PE	1

Tab. 33 Number of plug sockets for consumers

2.5.4.4 Circuit breaker

Type	400V / 3~
16 A	1
32 A	—

Tab. 34 Number of safety cut-outs

2.5.4.5 Operating limits

Characteristic	
Performance class	G3
Voltage adjustment range [%]	5
Static voltage deviation [%]	1
Maximum dynamic voltage drop [%]	-15
Maximum dynamic voltage rise [%]	20
Maximum voltage settling time [ms]	1500
Maximum voltage asymmetry [%]	1

Tab. 35 Operating limits

2.5.4.6 Maximum network load from current consumers

Examples of current consumers:

Ohmic consumers include: Electric light bulbs and heating devices

Inductive consumers include: Electric motors and transformers

Characteristic	
Maximum installation altitude[1)] [m]	1000 m
Ambient temperature [°C]	25 °C

1) above sea level

Tab. 36 Nominal conditions

Generator	400 V / 3~	400 V / 3~
Nominal power [kVA]	13.0	8.5
Ohmic consumers [kW]	11	8.5
Inductive consumers [kW]	7.5	5.0

Tab. 37 Three-phase current

Generator	400 V / 3~	400 V / 3~
Nominal power [kVA]	13.0	8.5
Ohmic consumers [kW]	6.4	6.4
Inductive consumers [kW]	6.4	6.4

Tab. 38 Alternating current

2.5.4.7 Power reduction at increased ambient temperatures

Ambient temperature [°C]	Generator power
≤30 °C	Full power available
>30 °C	Reduction of 10 % per 10 °C temperature increase

Tab. 39 Power reduction at increased ambient temperatures

2.5.5 oc Telematics

Characteristic	
Supplier / Manufacturer	Proemion
Type	CANlink mobile 3653

Tab. 40 TELEMATICS: GSM/GPS unit

TELEMATICS frequency bands

Frequency band	Frequency range (uplink, downlink) [MHz]
GSM850	824 – 849, 869 – 894
EGSM900	880 – 915, 925 – 960
DCS1800	1710 – 1785, 1805 – 1880
PCS1900	1850 – 1910, 1930 – 1990

Frequency band	Frequency range (uplink, downlink) [MHz]
WCDMA B1	1920 – 1980, 2110 – 2155
WCDMA B2	1850 – 1910, 1930 – 1990
WCDMA B4	1710 – 1755, 2110 – 2155
WCDMA B5	824 – 849, 869 – 894
WCDMA B8	880 – 915, 925 – 960
LTE-FDD B1	1920 – 1980, 2110 – 2170
LTE-FDD B2	1850 – 1910, 1930 – 1990
LTE-FDD B3	1710 – 1785, 1805 – 1880
LTE-FDD B4	1710 – 1755, 2110 – 2155
LTE-FDD B5	824 – 849, 869 – 894
LTE-FDD B7	2500 – 2570, 2620 – 2690
LTE-FDD B8	880 – 915, 925 – 960
LTE-FDD B12	699 – 716, 729 – 746
LTE-FDD B13	777 – 787, 746 – 756
LTE-FDD B18	815 – 830, 860 – 875
LTE-FDD B19	830 – 845, 875 – 890
LTE-FDD 20	832 – 862, 791 – 821
LTE-FDD B25	1850 – 1915, 1930 – 1995
LTE-FDD B26	814 – 849, 859 – 894
LTE-FDD B28	703 – 748, 758 – 803
LTE-TDD B38	2570 – 2620
LTE-TDD B39	1880 – 1920
LTE-TDD B40	2300 – 2400
LTE-TDD B41	2496 – 2690

Tab. 41 TELEMATICS frequency bands

Mains	Maximum transmitting power [dBm]
GPRS	33
Edge	27
UMTS	24
HSPA	24
LTE	23

Tab. 42 Maximum transmitting power

Supported satellite systems:

- GPS/QZSS L1 C/A
- GLOSNASS L10F
- BeiDou B1I
- Galileo E1B/C

2.5.6 od Battery trickle charging

Electrical connection data

Characteristic	
Type	12 V DC / 5 A
Charging voltage [V]	14.0
Charging current [A]	> 0,5
Maximum charging current [A]	5
Protection class	IP 54

Tab. 43 Electrical connection data for battery charger

3 Safety and responsibility

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

- Danger to life and limb for the operator or third parties.
- Damage to the machine and other material assets

To prevent injury, follow all safety instructions.

Only use the machine as intended.

Only use the machine if it is in perfect technical condition. Faults that could impair safety must be rectified immediately.

3.1 Intended use

The machine is designed for the use of specialist personnel in trades or industrial applications.

The function of the machine is to compress ambient air.

ga The additional generator is designed to supply portable operating equipment with electrical power.

Any other use shall be considered improper. The manufacturer shall not be liable for any damage that may result from improper use. The operator shall be solely liable for any risks incurred.

In particular, please note the following:

- Follow the instructions in this operating manual; only operate the machine within the specified performance limits and in accordance with the permissible ambient conditions.
- The use of compressed air as breathing air or in contact with food products is permitted only in combination with the appropriate treatment.
- The use of exhaust heat is only permitted in conjunction with suitable measures which preclude any health risk for humans and animals.
- Only use genuine KAESER spare parts for pressure-bearing components.

3.2 Improper use

No toxic, acidic, alkaline, inflammable or explosive gases or vapours may be drawn in for compression.

Modifications to the machine or controller can result in unforeseen dangers. The operator shall be solely liable for any risks incurred.

In particular, please note the following:

- Never direct compressed air at people or animals.
- It is prohibited to operate the machine in potentially explosive areas.
- Do not make any unauthorised modifications or conversions to the machine.
- ga Do not use the generator to supply fixed electrical installations.

3.3 Dangers

This section provides information regarding the various types of danger that can arise in connection with operating the machine.

Observe the following whenever any work is performed on the machine:

- Allow work to be performed by authorised personnel only.
- Fully vent all pressurised components and enclosures, and verify the absence of all pressure.
- Do not use any part of the machine as a climbing aid.

- Pay strict attention to cleanliness during all work.
- To prevent dirt ingress, cover components and exposed openings with clean cloths, paper, or masking tape.
- Do not leave any loose components, tools, or cleaning cloths on or in the machine.
- Do not open or destroy any dismantled components.
- Check the following regularly on the machine:
  - For visible damage
  - Safety devices
  - Components that require monitoring

Wear your personal protective equipment for all work, e.g.:

- Approved, long-sleeved work clothing, close-fitting and flame-retardant
- Protective gloves
- Safety shoes
- Eye protection
- Ear protection

Pressure

Compressed air is stored energy. Release of this energy can cause serious injury or death:

- Verify that all enclosures are completely free from pressure.
- Install pressure lines only when they are in a pressure-free state.
- Close shut-off valves or otherwise isolate the machine from the compressed air network so as to ensure that no compressed air can flow back into the machine.
- Do not carry out welding, heat treatment or mechanical modifications on pressure-bearing components (e.g. piping, pressure vessels).

Compressed air quality

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

- Use suitable compressed air treatment systems when using compressed air from this machine for the purposes of supplementary ventilation with fresh air or for the processing of food products.
- Use food-grade compressor oil for applications where the compressed air may come into contact with food products.

Spring tension

Springs under tension store energy. Release of this energy can cause serious injury or death. Minimum pressure check valves, safety valves and inlet valves are all under powerful spring tension.

- Do not dismantle any valves.
- Return removed valves to KAESER or an authorised service partner.

Rotating components

Touching rotating components whilst the machine is switched on can result in serious injury:

- Ensure that safety guards and covers are fitted properly before switching on the machine.
- Ensure that the bodywork remains closed.
- If you wear your hair long, use protective clothing and a suitable hairnet.

Heat

High temperatures are generated during the compression of gases. Touching hot components may lead to injury.

- Allow the machine to cool down sufficiently.
- Wear protective gloves in the event that it is necessary to handle the compressed air outlet.
- When performing welding work on or in the vicinity of the machine, take suitable measures to prevent sparks or high temperatures from igniting oil vapours or machine components.

Sound

Machine noise is suppressed to a low level. This sound insulation is only effective when the bodywork is closed.

- Only operate the machine when the bodywork is closed.
- Wear ear protection. In particular, the safety valve blow-off results in high noise emission.

Exhaust gases

Exhaust gases from internal combustion engines contain carbon monoxide and soot. Soot contains particles that are hazardous to the health. Carbon monoxide is a colourless and odourless but highly toxic gas. Carbon monoxide can be fatal even in the smallest quantities:

- Park the machine in such a manner that exhaust gases cannot reach the operating personnel.
- Only use the machine outdoors.
- Do not inhale exhaust gases.

Fire and explosion

Fires resulting from spontaneous ignition of fuel can cause serious injury or death. Ensure that there are no open flames or sparks at the installation location:

- Do not smoke when refuelling.
- Only refuel when the machine is switched off and has cooled down.
- When refuelling, do not allow fuel to overflow.
- Wipe up spilled fuel immediately.
- Keep suitable fire-extinguishing media close to hand.

Hot coolant

The cooling system of a liquid-cooled engine at operating temperature is under pressure. When opening the cover cap on the coolant expansion tank, hot coolant can spray out and cause burns:

- Allow the machine to cool down before opening the cooling system.
- Loosen the cover cap by a maximum of a quarter to a half turn.
- Allow excess pressure to be released.
- Fully loosen and remove the cover cap.

Electricity

Touching live components can result in electric shocks, burns or death:

- Allow only qualified and authorised certified electricians or trained personnel under the supervision of a qualified and authorised certified electrician to carry out work on electrical equipment in accordance with electrical engineering regulations.
- As the operator, before each commissioning of the machine you must establish and check protection against direct or indirect touch voltages.
- Verify the absence of voltage from any external voltage sources.
  External voltage sources could include connections to floating contacts or electrical coolant preheating, for example.
- Regularly check that all electrical connections are tightened and in proper condition.

Transportation

In order to prevent accidents, the weight and size of the machine require that safety measures be taken during transportation:

- Ensure that the danger zone is clear of personnel.
- Ensure that the machine is transported only by personnel who, due to their training, possess the appropriate authorisation for safe handling of motor vehicles and transported goods.
- When transporting by crane:
  - Use suitable hoists that comply with local safety regulations.
  - The lifting eye is intended exclusively for the attachment of a crane hook.
  - Do not interfere with the fastening points on the crane eye.
  - After dismantling the crane suspension, use new, self-locking nuts.
  - Never lift and move the machine over people or residential buildings.

- Extreme centre of gravity shifts due to excessive loads or add-on equipment (tilting) must be avoided.
- Do not exceed the load capacity of the lifting point on the machine (crane suspension).
- Avoid jolting during lifting, as this may damage components.
- Loads must be lifted slowly and set down carefully.
- Never leave the load hanging from the hoist.

The following are prohibited:

- Transport by air (lifting the machine by helicopter via the lifting eye).
- Dropping the machine by parachute.

- When transporting as a trailer:
  - The maximum permissible trailer load for the towing vehicle and the maximum permissible load for the trailer coupling must not be exceeded.
  - Extreme centre of gravity shifts due to excessive or incorrectly distributed loads must be avoided.
  - Do not tow in a manner that imposes excessive stress on the machine, or the chassis in particular.
  - Adjust driving speed in accordance with the prevailing road conditions. This applies particularly to unpaved roads and when negotiating bends.
  - Do not attach the machine at an inclined angle and transport it, since this can lead to problems with driving dynamics (unsafe driving characteristics) and cause damage to the towing vehicle and / or the machine.
  - Before moving the machine, ensure any immobiliser devices (e.g. anti-theft chain) are removed or deactivated. Use suitable tension belts that comply with local safety regulations.
- When transporting as a trailer on public roads:
  - Do not tow machines without lighting and signalling devices on public roads.
  - Ensure that all running gear (e.g. chassis, wheels, brakes, signalling and lighting devices) on the trailer is in a safe condition.
  - National laws and regulations pertaining to safe transportation on public roads must be adhered to.
- When transporting by forklift:
  - Use a suitable forklift that complies with local safety regulations.
  - Never lift mobile machines using a forklift.
  - Only lift stationary machines equipped with option rw by forklift.
  - Insert the full length of both forks into both lifting pockets.
- When transporting as a load:
  - Use suitable tension belts that comply with local safety regulations.
  - Never arrange tension belts across enclosures, doors or bodywork components.
  - Lash a machine exclusively at the designated lashing points.
  - On mobile machines, relieve the load on the support stand.
  - Never use the lashing points as crane lifting points.

Installation

A suitable installation location prevents accidents and helps to ensure reliable operation of the machine:

- Install the machine on a level surface capable of bearing the weight.
- Secure mobile machines against rolling away.
- Ensure a minimum distance from the exhaust outlet to walls or covers, in order to prevent heat build-up due to the hot exhaust gases.
- Ensure that sufficient cooling air can flow through the interior of the machine.
- Ensure that hot exhaust air can flow out from the interior of the machine.
- Ensure clean intake air with no damaging contaminants. Damaging contaminants include, for example:
  - Explosive or chemically unstable gases and vapours
  - Acids or base-forming chemicals such as ammonia, chlorine, or hydrogen sulphide

- Ensure suitable accessibility so that all work on the machine can be carried out without danger or hindrance.
- Ensure that the working conditions in the immediate vicinity of the machine are not impaired.
- Do not operate the machine in areas where specific requirements apply in relation to explosion protection. For example, the requirements for “proper use in potentially explosive atmospheres” as per 2014/34/EU[1)]

Installation

Note the following when performing installation work:

- Only use pressure lines that are suitable and approved for the maximum working pressure and the intended medium.
- Compensate for the force exerted by pipework on the machine, so that no forces are transferred to the connection points.

Operating fluids/materials

The operating fluids and materials used can cause adverse health effects. To prevent injury, take the appropriate precautionary measures:

- Follow all safety regulations relating to fuel, oils, lubricants, antifreeze, or chemical substances.
- Avoid contact with the skin and eyes.
- Do not inhale fuel vapours.
- Do not inhale oil mist or oil vapours.
- Do not eat or drink if you have been handling fuel, oils, lubricants, antifreeze, or chemical substances.
- Fire, naked flame, and smoking must all be prohibited.
- Keep suitable fire-extinguishing media close to hand.
- Only use KAESER-approved operating fluids/materials.
- Dispose of used operating fluids/materials via a certified disposal specialist, in accordance with the applicable local regulations.

Spare parts

Unsuitable spare parts compromise the safety of the machine.

- Only use spare parts approved by KAESER for use in this machine.
- Only use genuine KAESER spare parts on pressure-bearing components.
- Dispose of any spare parts contaminated with environmentally harmful operating fluids/materials in accordance with the applicable local regulations.

Machine modifications

Modifications to the machine or controller can result in unforeseen dangers.

- Do not make modifications to the machine.
- Obtain written approval from KAESER prior to making any technical modifications or enhancements to the machine, the controller, or the control programs.

Expanding or modifying the compressed air station

When appropriately dimensioned, safety valves reliably prevent impermissible pressure rise.

- Check the actuating pressure and blow-off capacity of the safety valves in the downstream compressed air network prior to installing any additional compressed air generators.
- Install appropriately dimensioned safety valves.

3.4 Danger areas

The following table provides information regarding the areas which are potentially dangerous to personnel.

1) ATEX Directive

Only authorised personnel may access these areas:

Task	Danger area	Authorised personnel
Transportation	3 m radius around the machine	Installation personnel for transport preparation No personnel during transportation
	Beneath the raised machine	No personnel
Installation	Inside the machine 1 m radius around the machine and its power supply cables	Installation personnel
Operation	1 m radius around the machine	Operating personnel
Maintenance	Inside the machine 1 m radius around the machine	Maintenance personnel

Tab. 44 Danger areas

3.5 Safety and information signs

In the following illustrations, you will find the locations of the signs used on the exterior and interior of the machine.

NOTICE

Damage due to cleaning

During maintenance or cleaning work, it must be ensured that the attached safety signs are not damaged.

► It must furthermore be ensured that any removed or poorly legible safety signs (e.g. that have faded outdoors) are replaced.

The meaning of the signs used is explained in the respective table beneath each illustration.

Overview of safety and information signs on the machine exterior:

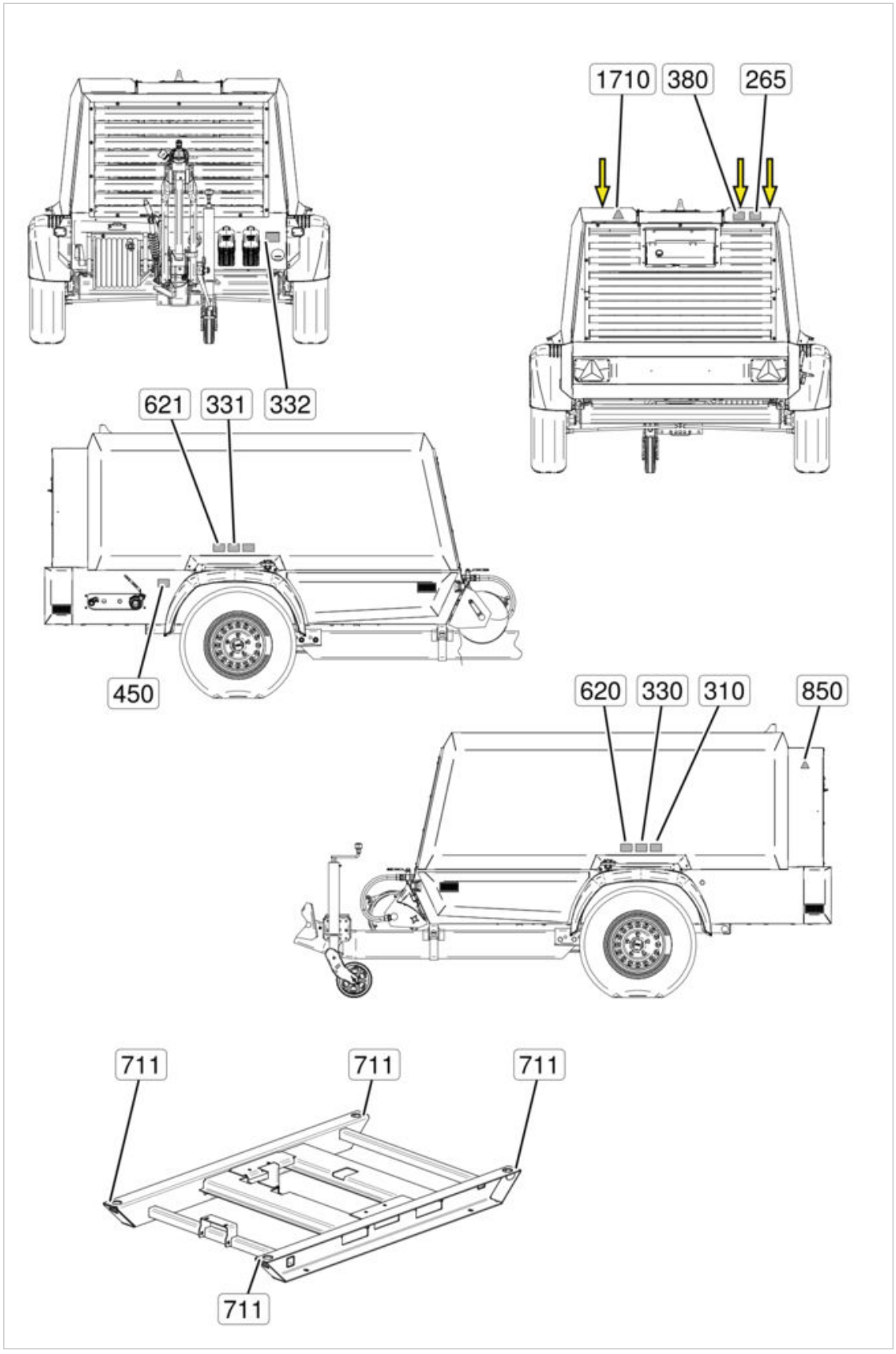


Fig. 4 Location of safety and information signs on the machine exterior

Item	Symbol	Meaning
265		**Danger of injury from incorrect operation** ► Ensure that you have read and understood the operating manual and all related safety information before starting this machine.
310		**Danger of injury from operating the machine with the doors or cover panels open** ► Only operate the machine with the enclosure fully closed. ► Only transport the machine with the enclosure fully closed.
330 331 332 333		**Danger of injury from hot components** ► Do not touch hot surfaces. ► Allow the machine to cool down. ► Wear long-sleeved clothing and protective gloves.
380		**Danger of injury to respiratory organs from released exhaust gases** ► Only use the machine outdoors. ► Never operate the machine in enclosed spaces. ► Do not inhale exhaust gases.
450		**Danger of injury from loud noise and compressed air blast** Damage to hearing and injuries are possible if the ball valve is opened without a compressed air hose being connected. ► Wear ear protection. ► Connect a compressed air hose. ► Open the ball valve.
620 621		**Danger of injury to hands or severing of limbs from rotating components** ► Operate the machine exclusively with the safety guards installed and the doors and cover panels closed. ► Stop and shut down the machine before opening the doors or cover panels. ► When opening or closing doors and cover panels, keep your hands clear of the crushing zone.
710 711		**Danger of injury from machine tilting or tipping over** ► Never use lashing points as crane lifting points. ► Read the operating manual.
850 851		**Danger of fatal injury from contact with live components** ► Observe protective measures before switching on the generator.
1710		**Danger of injury from automatic start-up of the machine** Prior to starting any work on the machine: ► Stop the machine ► Switch off the «Controller ON/OFF» switch. ► Only operate the machine with the doors and cover panels closed.

Tab. 45 Meaning of safety and information signs on the machine exterior

Overview of safety and information signs on the machine interior:

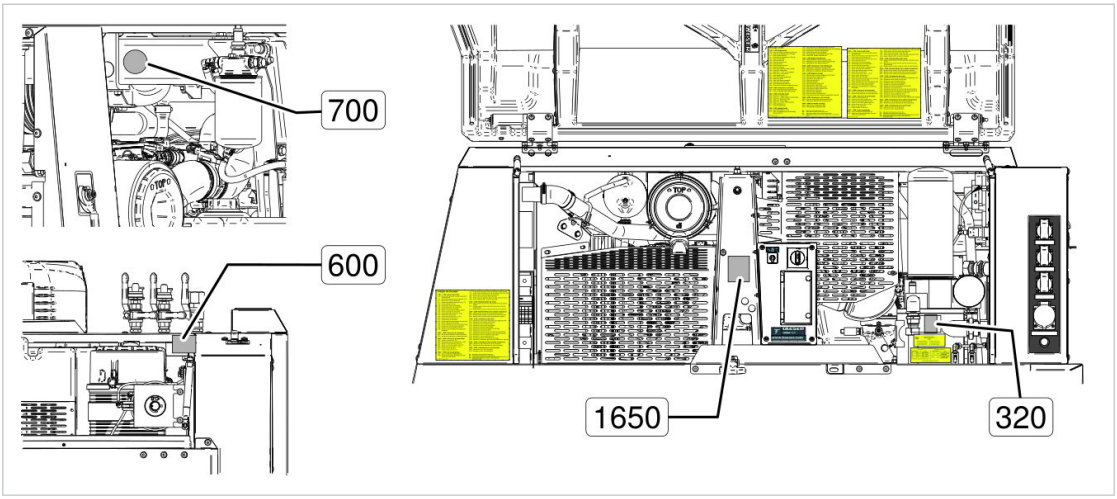


Fig. 5 Location of safety and information signs on the machine interior

Item	Symbol	Meaning
320 321		**Danger of injury from loud noise and hot oil mist** Risk of hearing damage and burns. ► Wear ear protection and protective clothing. ► Close the enclosure or doors. ► Proceed with caution.
600 601		**Danger of fatal injury from spring force and pressure** ► Do not open or disassemble valves. ► Call an authorised service agent in the event of a fault.
700		**Use the crane lifting point as instructed when transporting by crane** ► Open the cover over the machine crane lifting point. ► Correctly insert the crane hook into the lifting eye indicated as the crane lifting point.
1650		**Damage to the machine from switching off when the drive engine is running** ► Only activate the battery isolating switch when the drive engine is at standstill. ► Do not use the battery isolating switch as an emergency or main switch.

Tab. 46 Meaning of safety and information signs on the machine interior

3.6 Operator responsibilities

Observe the relevant statutory regulations and recognised technical rules when installing, operating and performing maintenance on the machine.

Statutory regulations and recognised rules are, for example, the European directives implemented in national law, or the laws, safety regulations and accident prevention regulations applicable in the country of use.

3.6.1 Determining suitable personnel

The machine may only be operated by specialists who are of legal age and who have read and understood these instructions. Personnel must have specialist training, experience and knowledge of the relevant regulations and therefore be able to perform work accordingly, as well as to recognise dangers.

Personnel tasked with commissioning, operation and maintenance must be familiar with the safety concepts and regulations relating to the following technical fields:

- Compressed air technology
- Electrical engineering
- Automotive technology

Ensure that personnel entrusted with commissioning, operation and maintenance have the relevant qualifications and authorisation required for the respective task.

3.6.2 Organisational measures

As the operator, you must take the following organisational measures:

- Determine personnel and regulate responsibilities.
- Regulate the obligation to report any faults with or damage to the machine.

3.6.3 Complying with inspection intervals

The machine is subject to national inspection regulations. Determine the regulations applicable at the installation site and organise the necessary measures.

3.6.3.1 Regular inspection of crane suspension

The operator must ensure that, in accordance with national regulations, the crane suspension is inspected at regular intervals for wear and damage.

3.6.3.2 lc Checking the diesel particulate filter

The machine is subject to local inspection intervals.

Arrange for the recurring inspection to be carried out as per Tab. 47 Checking the diesel particulate filter.

Exhaust emissions inspection as per	Inspection interval	Inspection authority
TRGS 554	Annually	Authorised service partners
Legislative authority	2-yearly	Approved inspection body

Tab. 47 Checking the diesel particulate filter

3.7 Emergencies

3.7.1 Correct conduct in the event of fire

In the event of a fire, calm and considered action can save lives:

- Remain calm.
- Report the fire:

- Give your name and location.
- Provide a telephone number on which you can be reached.
- Describe what has occurred, what is on fire, who is injured or in need of help and where.
- Give the location of the fire as precisely as possible and provide directions for the fire brigade.

- If any people are in danger, warn them or assist them to safety.
- Close all doors and windows.

Only attempt to extinguish a fire using the following media if you possess sufficient knowledge of how to do so:

- Extinguishing foam
- Carbon dioxide
- Sand or earth

3.7.2 First aid measures following contact with compressor oil

In the event of accident or illness, call a doctor immediately. In case of doubt or should symptoms appear, always consult a doctor.

Contact with the eyes

Compressor oil can cause irritation to the eyes:

- If contact lenses are worn, remove them if possible and gently rinse the eyes with water for a few minutes.
- In the event of eye irritation, consult a doctor.

Skin contact

Compressor oil can cause irritation following prolonged contact with the skin:

- Remove dirty clothing or clothes soaked with compressor oil.
- Wash the skin gently with water.
- In the event of skin irritation, consult a doctor.

Inhalation

Oil mist can impair the breathing and cause breathing difficulties:

- Move outside to fresh air and allow injured persons to breathe without hindrance.
- In the event of breathing difficulties or respiratory arrest, begin artificial respiration.

Ingestion

In the event of ingestion, compressor oil can cause irritation to the mucous membranes:

- Immediately rinse the mouth and drink plenty of water.
- DO NOT induce vomiting.
- Never administer anything by mouth to an unconscious person or someone who is experiencing convulsions.

3.8 Environmental protection

Operating fluids/materials, particularly oils and greases, must not be released into the environment or sewer system. Store and dispose of all operating fluids/materials and used parts in accordance with the applicable national environmental protection regulations.

Batteries contain substances that are harmful to living things and the environment. For this reason, batteries must not be disposed of with unsorted municipal waste. They must be delivered to a national battery collection system. This facilitates the correct handling and recycling of batteries. Directive (EU) 2023/1542 stipulates that, in EU member states, used batteries must be returned to the point of sale or delivered to a designated disposal system.

Components containing batteries are labelled as follows:

Fig. 6 Battery labelling

3.9 ga Operating the generator

3.9.1 Protective measures against shock currents

Protection against shock currents is regulated by the “Low Voltage Electrical Installations” Directive IEC 60364–5–551 (DIN VDE 0100–551). The protective measure “Protective separation, insulation monitoring and shutdown” is applied here. In accordance with this protective measure, the electricity producer (generator) is equipped with a safety cut-out with shunt release for all poles and an insulation monitoring device.

Comply with the regulations relating to “protection against shock currents” when operating the generator.

3.9.2 Operating the generator safely

Observe the following in order to ensure safe machine operation with the generator:

- Check daily that the insulation monitoring device is functioning properly.
- Do not earth the neutral line (N) or connect it to the protective conductor/potential equaliser (PE).
- Ensure that potential equalisation is without interruption (generator/machine through cables to electrical consumer).
- Only operate the generator in an IT power network.
- Work on the generator or generator control box must only be performed by a certified electrician. This certified electrician is responsible for the effectiveness of the protective measures.
- Do not use the generator for feeding power distributors on construction sites.
- A generator with insulation monitoring must not be connected to any other insulation monitoring device, as the monitoring devices can then influence one another.
- Do not use residual current devices (RCDs), as they are inherently non-functional in unearthed networks (IT power network, such as that supplied by the generator) due to the lack of earthing. The “protective separation” protective measure provided by the generator, however, renders downstream protection via an RCD unnecessary.
- Follow the regulations of the local electricity supplier and obtain any necessary approvals.
- When cleaning the interior of the machine, do not direct water or steam jets at the generator or its terminal box.
- Regularly check electrical connections for secure seating and proper condition.

3.9.3 Connecting an extension cable

In order to comply with the regulations for connecting extension cables or portable distribution networks during operation of the generator, the following must be observed:

In accordance with DIN 6280-10, their total length:

- must not exceed 60 m for a cross section of 1.5 mm².
- must not exceed 100 m for a cross section of 2.5 mm².

► For portable distribution networks, use H07RN-F cables as a minimum in accordance with DIN VDE 0282, Part 4 (IEC 60245-4/HD 22.4).

3.9.4 Do not exceed the maximum network load

In order to avoid exceeding the maximum network load via the connected consumers when operating the generator, the following must be observed:

- The power consumption values of simultaneously operating consumers must be added up.
- The maximum continuous power load of the generator by the connected consumers is limited by the circuit breakers.

3.9.5 Performing regular checks on the generator

Arrange for the generator to be checked daily by authorised operating personnel prior to commissioning.

- Check that the insulation monitoring device is functioning properly.

Arrange for the generator to be inspected annually by a trained and authorised, certified electrician.

- Inspect the generator and generator control box for mechanical damage.
- Inspect the protective conductor.
- Check that the generator is functioning correctly.
- Check that the generator fan is functioning correctly.
- Clean the cooling air openings.
- Check the screw connections on the generator and generator control box.
- Check the protective cover on the safety cut-out for damage.
- Check that the protective covers on the plug-in sockets for consumers are not damaged.
- Check that the protective covers on the plug-in sockets for consumers are tightly sealed.
- Check that all signs and warning labels are present and complete.

4 Design and function

4.1 Bodywork

The bodywork is the external structure of the machine atop the chassis.

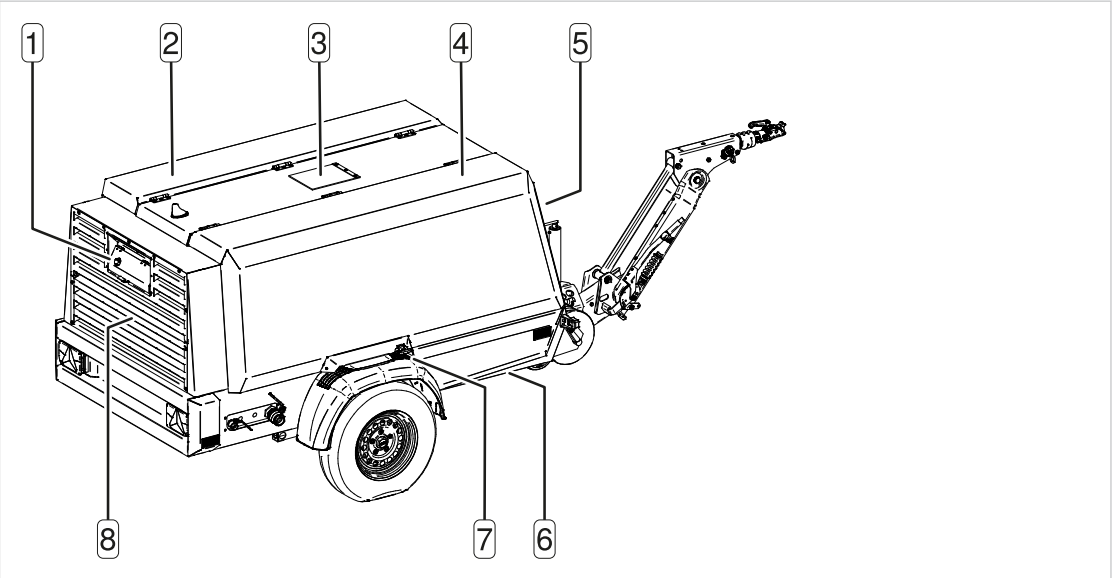


Fig. 7 Bodywork

1 Control panel with cover
2 Left-hand wing door
3 Lifting eye with cover
4 Right-hand wing door
5 Cooling air outlet
6 Lower body
7 Handle with toggle latch
8 Cooling air inlet

The bodywork fulfils several functions when closed:

- Weather protection
- Sound insulation
- Contact protection
- Cooling air flow

The bodywork is fundamentally unsuitable for the following uses:

- Walking on, standing on or sitting on
- Placing or storing any kind of load

Each wing door is equipped with a handle. The handle is the suitable add-on part to use for correctly swinging open the wing door. Gas-pressure springs facilitate manual opening of the wing doors and ensure they remain open independently.

The wing door handles also serve as attachment points for the flexible toggle latches. The flexible toggle latches secure both closed wing doors in place.

4.2 Machine layout

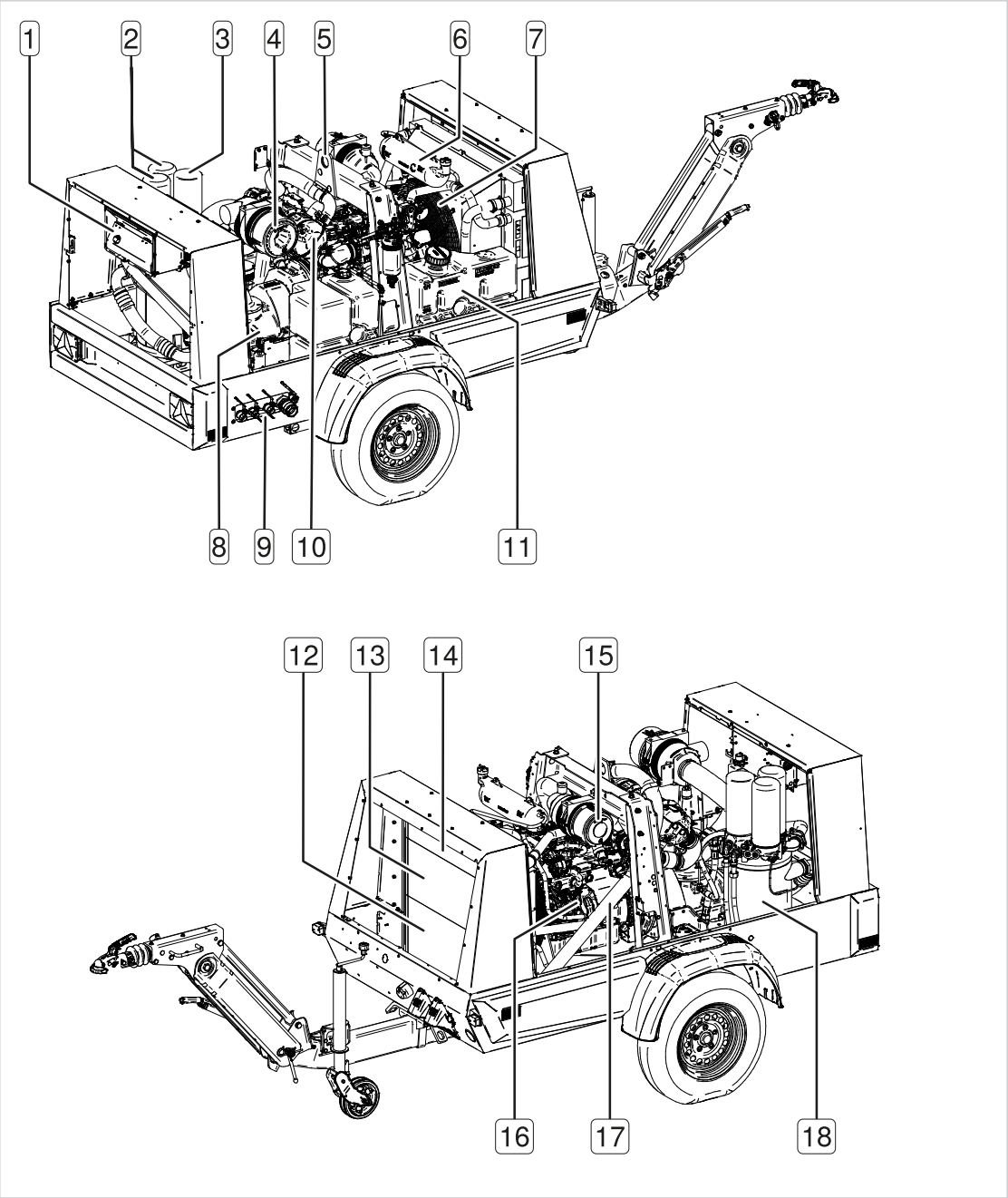


Fig. 8 Overview: Machine without options

1 Control panel cover
2 Oil separator cartridges
3 Oil filter
4 Compressor air filter
5 Lifting eye
6 Coolant expansion tank
7 Fan wheel
8 Airend
9 Compressed air outlet
10 Exhaust gas after-treatment
11 Fuel tank
12 Oil cooler
13 Coolant cooler
14 Charge air cooler
15 Engine air filter
16 Drive engine
17 Exhaust gas pipe
18 Oil separator tank

4.3 Machine function

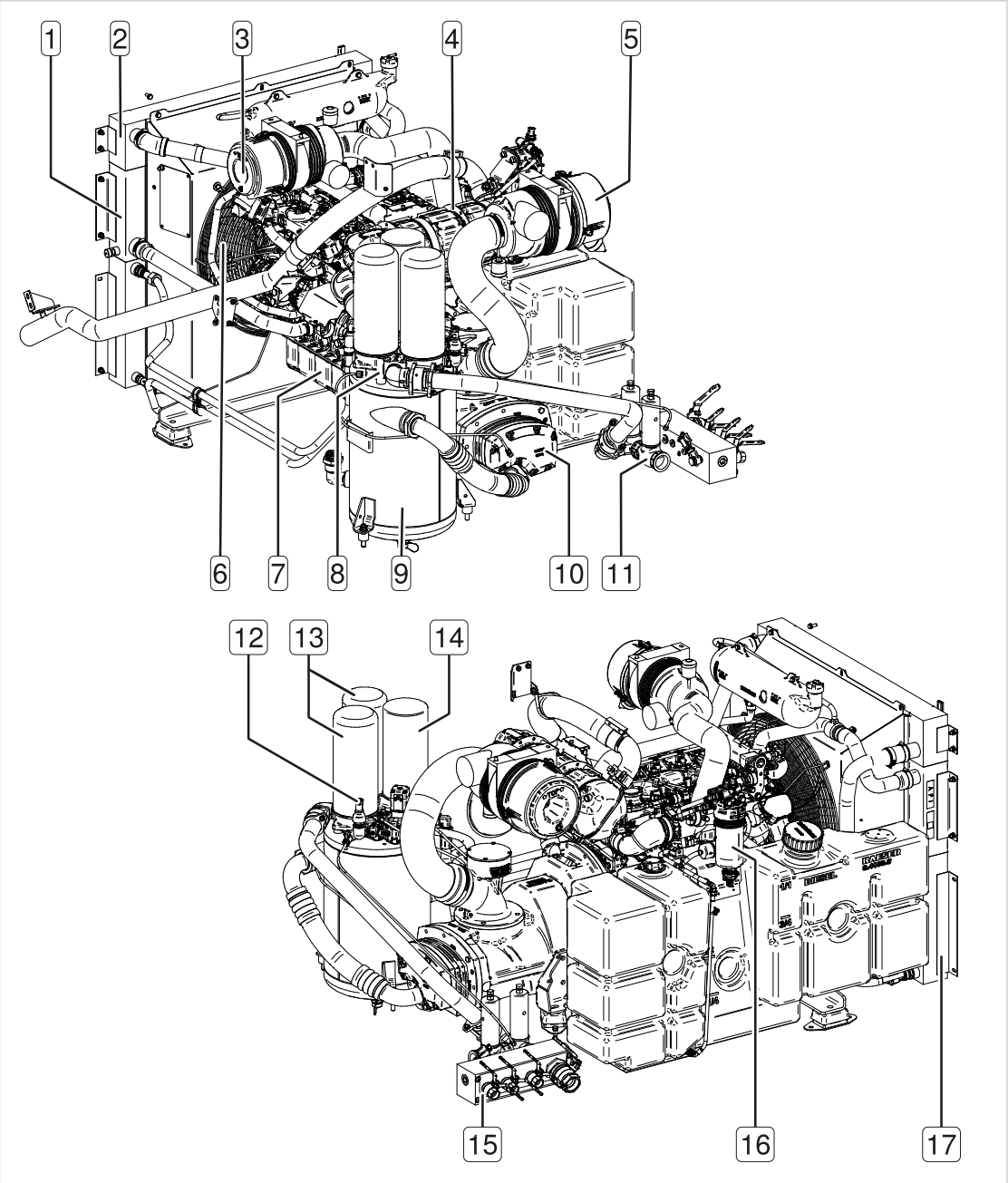


Fig. 9 Unit without options

1 Coolant cooler
2 Charge air cooler
3 Engine air filter
4 Exhaust gas after-treatment
5 Compressor air filter
6 Fan wheel
7 Combustion engine
8 Fluid distribution module
9 Oil separator tank
10 Airend
11 Minimum pressure check valve
12 Safety valve
13 Oil separator cartridges
14 Oil filter
15 Air distributor
16 Fuel-water separator
17 Oil cooler

A combustion engine 7 drives the airend.

A diesel oxidation catalytic converter and a diesel particulate filter provide the exhaust gas after-treatment [4].

The airend [10] draws in ambient air via the compressor air filter [5] and then compresses it. The compressor air filter cleans the intake air.

The compressor oil injected into the airend lubricates moving parts and forms a seal between the rotors and between the rotors and the housing. This direct cooling inside the compression chamber ensures a very low airend discharge temperature.

The oil separator tank [9] separates the compressor oil from the compressed air. The oil cooler [17] cools the compressor oil. The compressor oil flows through the oil filter [14] and returns to the point of injection. The machine's internal pressure keeps the oil circulating through the compressor oil circuit. A separate pump is not required. The thermostatic valve integrated into the fluid distribution module [8] regulates and optimises the compressor oil flow and compressor oil temperature. The fluid distribution module is located on the cover of the oil separator tank.

The oil separator cartridges [13] reduce the oil content of the compressed air. The compressed air then passes through the minimum pressure check valve [11] to the air distributor [15]. The minimum pressure check valve always maintains a minimum system pressure so as to ensure a continuous flow of cooling oil inside the machine.

The flow direction of the fan wheel [6] and the layout of the cooling air inlet and outlet determine the machine's cooling air flow within the closed bodywork. The cooling air flows continuously through the oil cooler, coolant cooler and charge air cooler.

4.4 Operating points and control modes

4.4.1 Machine operating points

STANDSTILL

The machine is in the STANDSTILL operating point:

- The inlet valve is closed.
- The venting valve is open.
- The machine is vented.
- The drive engine is at standstill.
- Drive engine speed 0 min^{-1}.

READY

The machine controller voltage has been switched on with the Controller «ON/OFF» key:

- The *Controller voltage* indicator is illuminated in green.
- The *Ready* indicator flashes green.
- The drive engine is at standstill.
- Drive engine speed 0 min^{-1}.

IDLE

The drive engine runs unloaded and consumes little fuel:

- The inlet valve is closed.
- The recirculation valve opens, allowing the compressed air inside the oil separator tank to flow into the inlet valve.
- This compressed air is then directed in a closed circuit through the airend, oil separator tank and recirculation valve.
- The pressure in the oil separator tank remains constant.
- The drive engine runs at minimum speed.

LOAD

The drive engine runs under load:

- The inlet valve is open.
- The drive engine runs at maximum speed.
- The airend delivers compressed air.

4.4.2 MODULATING CONTROL

MODULATING CONTROL continuously adjusts the machine's flow rate in line with compressed air demand. The proportional controller adjusts the degree of opening for the inlet valve whilst the machine is delivering compressed air. The generated compressed air is adjusted according to actual air demand.

This infinitely variable regulation of the flow rate minimises drive engine fuel consumption. The load and fuel consumption of the drive engine rise and fall with the compressed air demand.

4.5 Safety devices

4.5.1 Monitoring function with shutdown

The SIGMA CONTROL SMART controller monitors important machine parameters.

The machine is shut down automatically should a fault occur.

The SIGMA CONTROL SMART message memory saves the fault.

4.5.2 Further safety devices

Modifications to the following safety devices are prohibited:

Safety device	Function
«EMERGENCY STOP» button	Shuts the machine down safely in an emergency situation: ▪ The drive engine is shut down immediately ▪ The pressure system is vented
Safety valve / safety valves	Protect(s) the pressure system against an impermissible pressure rise
▪ Wing doors ▪ Safety guard ▪ Covers ▪ Removable access panels	Protect against accidental contact with components: ▪ Moving parts ▪ Electrical connections ▪ Hot surfaces

Tab. 48 Machine safety devices

4.6 SIGMA CONTROL SMART control unit

4.6.1 Controller overview

SIGMA CONTROL SMART controls, regulates, monitors, and protects the machine.

The SIGMA CONTROL SMART is used to display and set all of the parameters required for machine operation. Various user-dependent password levels protect the parameters from unauthorised modification.

The control and regulating function enables optimal duty cycles for the combustion engine with lowest possible energy consumption, adapted to the actual compressed air demand of the connected consumers.

The monitoring function enables:

- Monitoring of maintenance-relevant components in the,combustion engine and compressor via interval counters.
- Display of warning messages or maintenance messages, as an indication of upcoming maintenance tasks.

The protection function enables automatic shutdown in the event of a fault, such as excessive temperature or overpressure, that could result in damage to the machine.

4.6.2 Operating elements

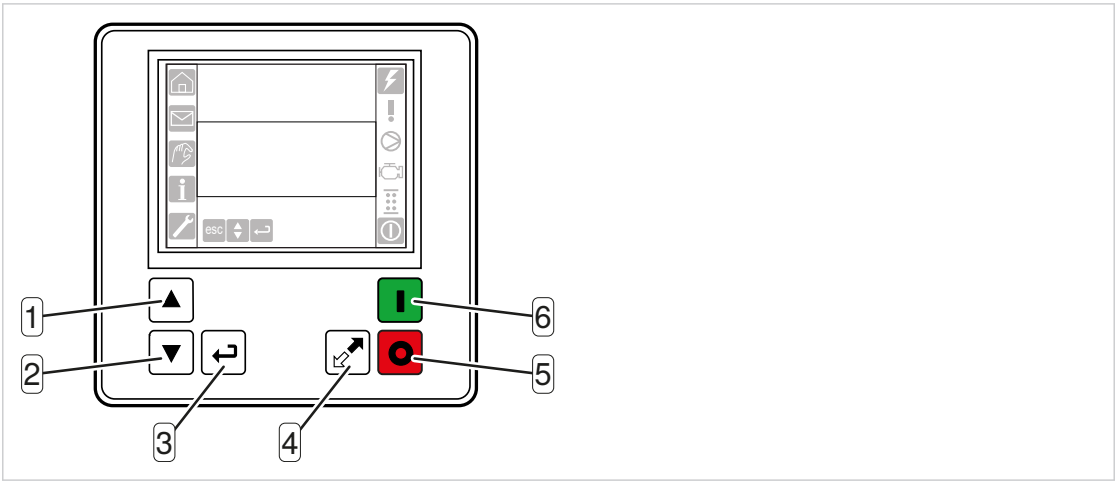


Fig. 10 Operating elements

Item	Operating element	Symbol	Function
1	«Up»	▲	▪ Scrolls the menu up ▪ Increases a parameter value
2	«Down»	▼	▪ Scrolls the menu down ▪ Reduces a parameter value
3	«Enter»	↵	▪ Opens the selected submenu ▪ Exits Edit mode and saves
4	«LOAD/IDLE»	⇗	Switches between the «LOAD/IDLE» operating points
5	«OFF»	O	Switches the machine off
6	«ON»	I	Switches the machine on

Tab. 49 Operating elements

4.6.3 Display elements

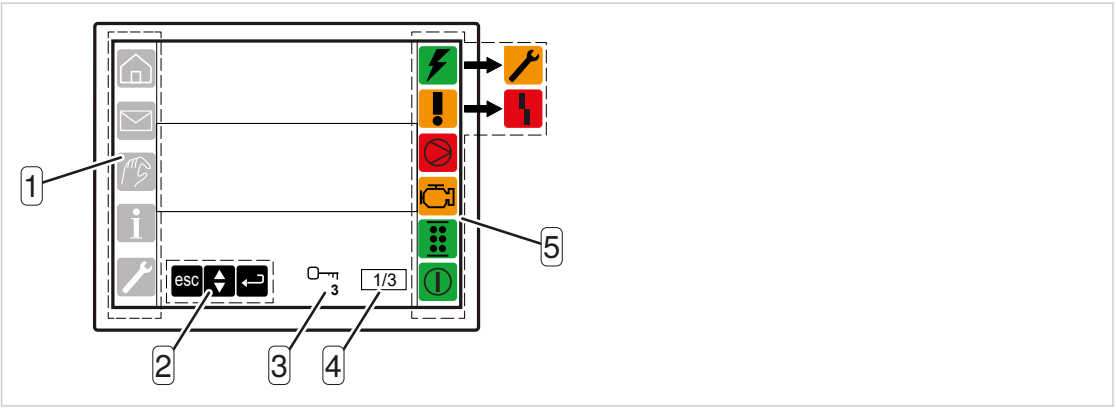


Fig. 11 Display elements

Item	Display element	Symbol	Function
1	Menu bar		**Main menu** Displays current operating data
			Error memory Displays current faults and warnings
			Settings menu Displays the current parameters
			System information Displays data relating to the machine and software
			Maintenance Displays time remaining until next maintenance due
2	Navigation menu	esc	**Escape** ▪ Navigates to the next menu level up ▪ Operation with the «Enter» key enabled
			Up/Down Navigation by means of the «Up» and «Down» keys enabled
			Enter Operation with the «Enter» key enabled
3	Password level	1	Displays the current password level (password level 1 shown)
4	Current page	1/3	Displays the current page
5	Status bar		**Controller voltage** ▪ Illuminates in green when the controller voltage is switched on ▪ Is extinguished when maintenance is pending

Item	Display element	Symbol	Function
			**Maintenance** ▪ Illuminates in orange when maintenance is pending ▪ In this case, replaces the Controller voltage symbol
			**Warning** ▪ Illuminates in orange when a warning is pending ▪ Is extinguished when a fault is pending ▪ The machine is not shut down
			**Fault** ▪ Illuminates in red when a fault is pending ▪ In this case, replaces the Warning symbol ▪ The machine is shut down
			**Compressor** ▪ Illuminates in orange when a compressor warning is pending ▪ Illuminates in red when a compressor fault has occurred
			**Combustion engine** ▪ Illuminates in orange when a combustion engine warning is pending ▪ Illuminates in red when a combustion engine fault has occurred
			**Diesel particulate filter** ▪ Illuminates in green during “normal operation” ▪ Illuminates in green and orange with “Active regeneration request” ▪ Illuminates in orange when a warning is pending ▪ Illuminates in orange and red when “Parked regeneration” requested ▪ Illuminates in red when a fault has occurred
			**Ready to start** ▪ Flashes green when ready to start ▪ Illuminates in green when combustion engine running ▪ Is extinguished in the event of a fault ▪ Inactive when restart inhibitor activated

Tab. 50 Display elements

Status display in menu bar

Symbol	Symbol display	Menu bar
	Black	Active
	Grey	Passive
	Black background	Active and selected symbol

Symbol	Symbol display	Menu bar
	Grey background	Selected symbol and activated menu

Tab. 51 Example: Status display of system information symbol on machine

4.7 Variable pressure-flow rate control

The machine is equipped with variable pressure-flow rate control.

The flow rate can be flexibly adjusted dependent on the preselected pressure setting and the respective engine speed. This allows the machine to be operated in the minimum pressure range as well as at maximum working pressure.

The air pressure and flow rate are continuously controlled according to the current system requirement.

The maximum limit for the nominal pressure is set via the SIGMA CONTROL SMART control unit.

As soon as the lowest engine speed is reached, inlet valve control is additionally applied.

You can find technical data for the pressure-flow rate control in chapter 2.3 Compressor.

4.8 Exhaust gas after-treatment

The exhaust gases from a diesel engine contain invisible particles that are damaging to health.

State-of-the-art engine technology is used to reduce emissions of these harmful substances and thereby meet the strictest exhaust gas standards.

In order to achieve the right balance, all of the parameters that influence combustion must be optimally matched to one another. Particularly when used in conjunction with fuel injection and turbocharging, exhaust gas recirculation produces combustion with significantly lower levels of nitrogen oxide.

Furthermore, the drive engine is equipped as standard with different after-treatment devices in accordance with the respective version. All of these measures contribute collectively to the protection of health and the environment.

4.8.1 Drive engine specification according to version

Version (EU)2016/1628 - 5	Abbreviation
Exhaust gas turbocharger	—
Charge air cooling	—
Exhaust gas recirculation	EGR
Diesel oxidation catalytic converter	DOC
Diesel particulate filter	DPF

Tab. 52 Specification version

4.9 Options function

4.9.1 ba bb Low-temperature equipment

4.9.1.1 ba Ambient conditions

Your machine is provided with low-temperature equipment for operation at extremely cold ambient temperatures.

The compressed air hoses for control air are manufactured from polyamide with increased material strength. This increased material strength effectively insulates the control air against low ambient temperatures.

The electrical system starts your machine's drive engine at ambient temperatures down to -10 °C.

4.9.1.2 bb Coolant preheating

Improve the cold-start characteristics at low ambient temperatures by preheating the drive engine coolant.

An electric preheater is installed. The heating element for the preheater protrudes directly into the drive engine coolant. A fuse protects against overheating.

The ideal preheating time depends on the ambient temperature. Approx. 3 Hours of pre-heating time results in thermal balance. This means that any subsequent heat input serves only to maintain the existing temperature. The remainder of the heat input is emitted into the surrounding environment.

To commission the pre-heating device you only need to connect the power cable to the machine's connection and the user's power socket.

4.9.2 da db dd df dg Compressed air treatment

4.9.2.1 Compressed air quality classification at the compressed air outlet

Compressed air quality		Compressed air treatment	
Code	**Characteristics**	**Components**	**Code**
A	▪ Cool ▪ Condensate-free	▪ Compressed air aftercooler ▪ Water separator	da
B	▪ Dry ▪ Warm	▪ Compressed air aftercooler ▪ Water separator ▪ Heat exchanger	da + df
F	▪ Dry ▪ Technically oil-free	▪ Compressed air aftercooler ▪ Water separator ▪ Filter combination	da + dd
G	▪ Dry ▪ Technically oil-free ▪ Warm	▪ Compressed air aftercooler ▪ Water separator ▪ Filter combination ▪ Heat exchanger	da + dd + df

Compressed air quality		Compressed air treatment	
Code	**Characteristics**	**Components**	**Code**
E	Containing lubricant	Tool lubricator	ea eb ec

Tab. 53 Compressed air quality classification

4.9.2.2 da Compressed air aftercooler

The compressed air aftercooler cools the compressed air temperature down to only around 5 K to 10 K above ambient.

- The compressed air temperature is reduced via an exchange of heat.
- The moisture contained in the compressed air condenses into water.
- A large part of the moisture in the compressed air is removed.
- The water collects in the water separator.

4.9.2.3 da Water separator

The water separator is positioned at the lowest point of the compressed air aftercooler.

The accumulating condensate collects in the water separator.

4.9.2.4 da Dirt trap with condensate drain line

A dirt trap is located beneath the water separator.

- The condensate flows through the dirt trap.
- The dirt trap filters out any existing dirt particles.
- The condensate flows through the condensate drain line into the exhaust pipe.
- The condensate is completely evaporated due to the high exhaust temperatures.

4.9.2.5 da dg Compressed air aftercooler with bypass

To obtain condensate-free compressed air, the compressed air flows through a compressed air aftercooler. The compressed air is cooled down. The cooling process condenses a large portion of the moisture contained in the compressed air. This accumulated condensate is removed via the downstream centrifugal separator.

Should compressed air treatment not be required, the bypass can be used to circumvent the compressed air aftercooler.

The compressed air aftercooler with bypass is available exclusively in combination with options ba low-temperature equipment or bb coolant preheating. Options dd prefilter with microfilter and df heat exchanger are not available in this version.

Availability of this application depends on the relevant country-specific variant.

4.9.2.6 dd Filter combination

A filter combination consisting of prefilter and microfilter removes any remaining oil from the moisture-reduced compressed air.

- The moisture-reduced compressed air flows through the combined prefilter and microfilter.
- The combined prefilter and microfilter removes solid particles and any remaining oil from the moisture-reduced compressed air.

4.9.2.7 df Heat exchanger

You can activate or bypass the heat exchanger by adjusting a directional control valve.

If the heat exchanger is bypassed, the cooled, moisture-reduced compressed air is conveyed directly to the compressed air outlet.

If the heat exchanger is activated, the cooled, moisture-reduced compressed air is conveyed through the heat exchanger via another bypass. In this way, the cool compressed air is heated by the hot compressor oil. This heated, dry compressed air is ideal for applications such as sandblasting.

4.9.2.8 ea ec Tool lubricator

If you are using air tools that require lubrication, the compressed air must be enriched with lubricant.

Switch the lubricant on or off for each specific application by means of the shut-off valve.

Select the lubricant dosage for each specific application by means of the metering wheel.

Lubricant content	Function
Less lubricant	▪ Lubricating the air tool ▪ Protecting the air tool from corrosion
More lubricant	▪ Cleaning the air tool ▪ Protecting the air tool from icing

Tab. 54 Adjusting the lubricant content

Should the air flow rate change, the lubricant volume is automatically adapted to the new air volume, e.g. when multiple tools are operated simultaneously.

4.9.3 ga Generator

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

Option code	Version	Description
ga	Generator without flow rate limiter	Switching on the generator does not limit the compressed air flow rate. The compressor delivers its full compressed air flow rate regardless of whether the generator is switched on or not.

Tab. 55 Generator versions

4.9.3.1 Operating instruments

The switches and sockets for connection of electrical consumers are located on the generator control box. Individual consumers are connected exclusively via these sockets. The fuses are located inside the machine.

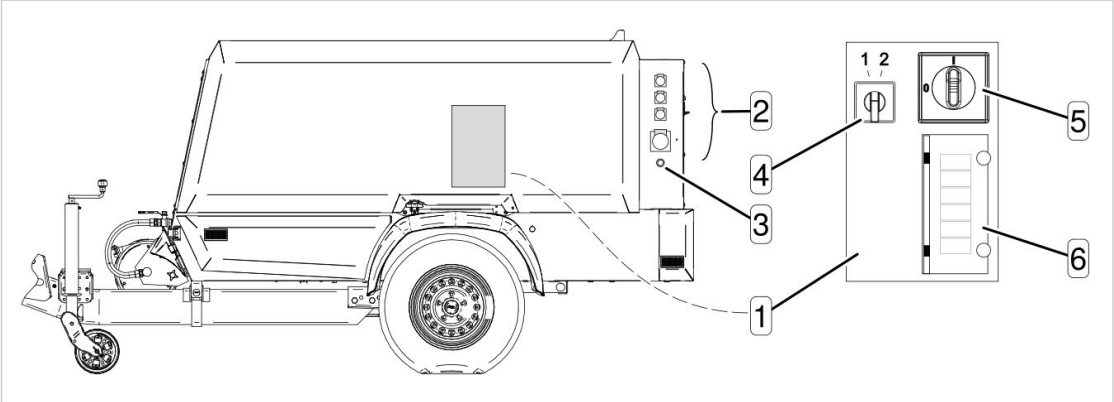


Fig. 12 Generator control box

1 Generator control box
2 Socket panel
3 «Insulation monitoring» test key
4 «Operating mode» selector switch
5 «Main switch»
6 Protective cover for safety cut-out

4.9.3.2 Operating modes

There are two operating modes for the generator:

- Automatic cut-in
- Continuous load

Automatic cut-in operating mode:
The drive engine runs automatically at maximum speed if the electrical power consumption is more than 100 VA. The drive engine runs on at maximum speed for approx. 2 Minutes if the power consumption is below the minimum value. The drive engine consumes less fuel, since continuous switching between maximum and minimum speed is avoided.

Continuous load operating mode:
The drive engine runs continually at maximum speed. This ensures that the generator delivers constant power without delay.

What do you wish to supply?	Main switch	Operating mode selector switch
Compressed air	OFF	—
Compressed air and electrical power	ON	Position 1 Automatic cut-in
Electrical power and compressed air	ON	Position 2 Continuous load

Tab. 56 Operating mode preselection

4.9.3.3 Electrical protection measures

Generators without the “Insulation monitoring with shutdown function” option comply with the protective measure “Protective separation with potential equalisation conductor” in accordance with DIN VDE 0100, Part 728
Generators with the “Insulation monitoring with shutdown function” option comply with the higher-grade protective measure “Protective separation with insulation monitoring” in accordance with DIN VDE 0100, Part 728.

It is not necessary to earth the generator (e.g. via an earth rod) for proper function of the electrical protection measures mentioned. However, should earthing still be desired, or required in specific cases, a defined earthing of the generator housing must be implemented, or the generator housing

must be incorporated into the potential equalisation of other devices. For this purpose, use only the designated earthing points marked with the earthing symbol.

⚠ DANGER

Danger of fatal injury from electric shock

- ► Never earth the neutral conductor for the generator.
- ► Should the neutral conductor require earthing in spite of this, it must be performed exclusively by a qualified and certified electrician. An earth leakage circuit breaker (ELCB) must be connected downstream from the generator output. Confirm the effectiveness of the electrical protection measures by taking corresponding measurements.

4.9.3.4 IT power network connection

Operate the generator exclusively in an IT power network.

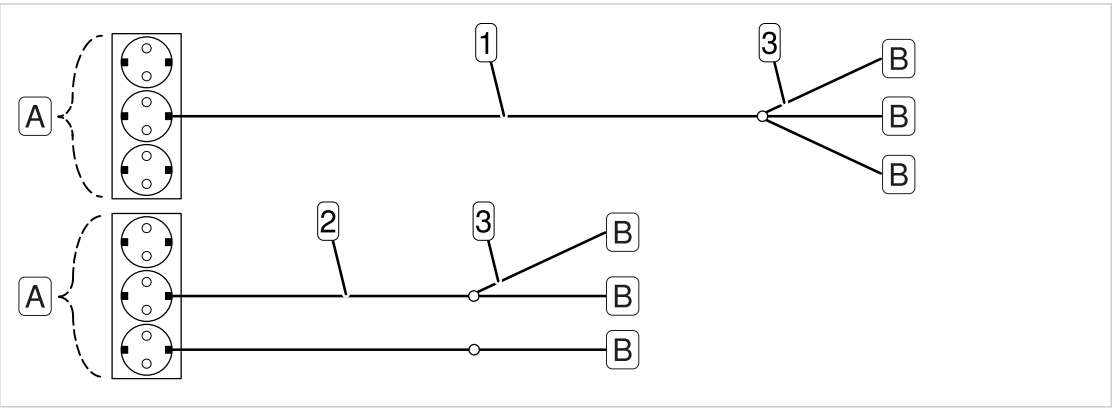


Fig. 13 IT power network connection

A Generator
B Consumer
1 100 m
2 50 m
3 10 m

4.9.3.5 Commissioning the generator

If portable generators of version A are being operated with only one consumer, no further protective measures are required. Commissioning of the generator can be performed without a certified electrician.

If portable generators of version A are being operated with multiple consumers, additional protective measures are required:

- Residual current protective device (RCD) with a rated differential current of ≤30 mA for every additional consumer.
- Isolating transformer for every additional consumer in cases of increased electrical hazard due to a conductive environment with limited freedom of movement.

4.9.4 Ia Ib Operation in fire hazard areas

Diesel engines represent a potential source of ignition in environments where concentrations of gas, vapour or dust are present and can cause fires.

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

- Ia Spark arrestor
- Ib Spark arrestor + engine air shut-off valve

Spark arrestor

A spark arrestor for the exhaust silencer is required when operating a diesel engine in a fire hazard area, or in forestry and agricultural applications. In such applications, a spark can ignite inflammable materials.

The spark arrestor is a safety device that prevents any glowing combustion residue from being emitted via the exhaust silencer.

Engine air shut-off valve

Diesel engines are usually stopped by interrupting the fuel supply. When a combustible gas mixture is drawn into the air inlet of a diesel engine, interrupting the fuel supply is no longer sufficient to stop the engine. In order to reliably stop the diesel engine, the intake of combustion air must be shut off.

The self-closing engine air shut-off valve is a safety device for shutting off the supply of combustion air.

Should the diesel engine exceed the maximum permissible speed, the engine air shut-off valve will close automatically:

- The intake air supply is blocked
- The diesel engine comes to a standstill

4.9.5 oa Battery isolating switch

The machine is equipped with a battery isolating switch, so that the battery can be disconnected completely from the machine's electrical system (fire prevention, battery discharge protection).

NOTICE

Danger of short circuit!

- ► Damage to the machine's electrical system is possible.
- ► Use the battery isolation switch only when the machine is shut down.
- ► Do not use the battery isolation switch as an emergency or main switch.

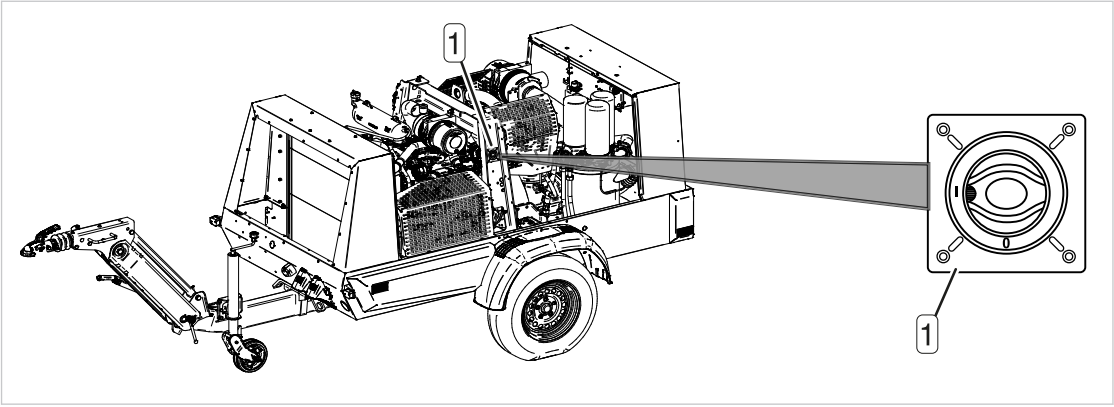


Fig. 14 Battery isolating switch

1 Battery isolating switch

4.9.6 ob Automatic START/STOP

An automatic START/STOP function can be configured via the SIGMA CONTROL SMART controller to enable automatic start-up of the machine.

4.9.7 OC TELEMATICS

Telematics is a technology that links the fields of telecommunications and information technology. Applications such as fleet and vehicle park management are concerned with the administration, planning, control and monitoring of vehicle fleets.

Determine the status of your portable machines by means of telemetric data from the GLOBAL POSITIONING SYSTEM, as well as technical data regarding the current condition of the vehicle.

The machine is intended for use in all EU member states.

The machine must only be operated with the antenna provided. Non-compliance may result in the loss of CE certification.

Personnel should remain a distance of 20 cm from the machine.

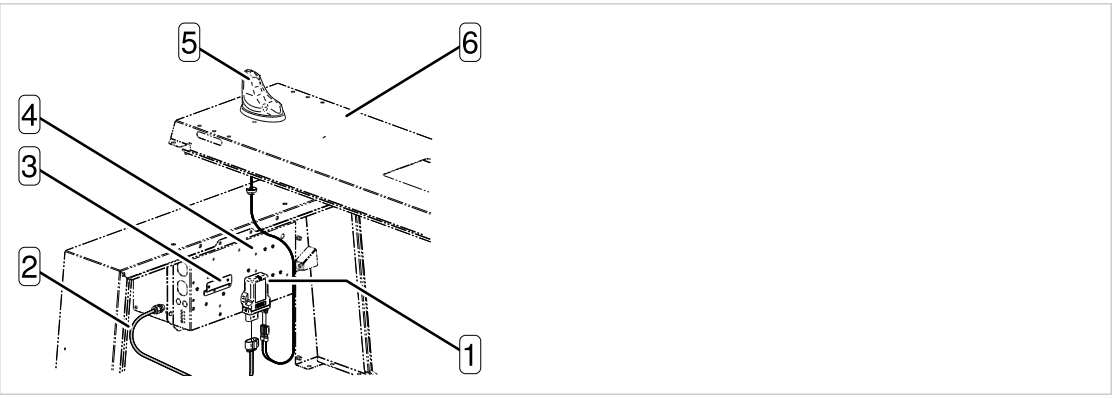


Fig. 15 Location of modem inside the machine

1 Modem
2 Signal cable
3 Modem bracket
4 Control box
5 Antenna
6 Central section of enclosure

4.9.7.1 Interfaces and indicator elements

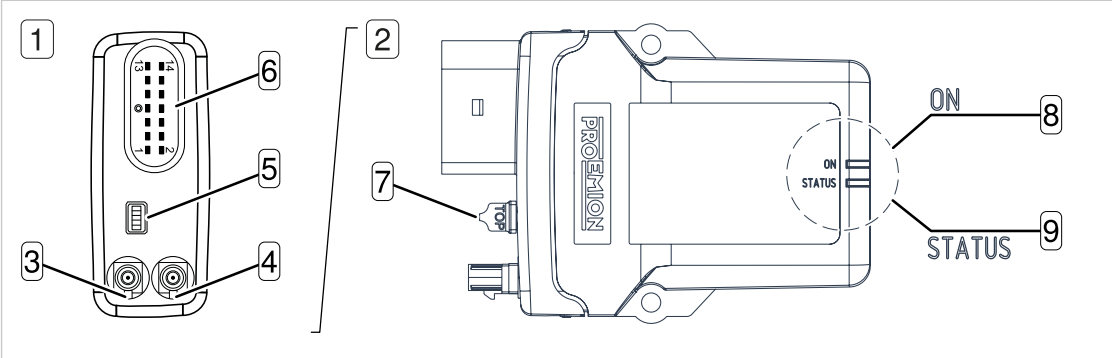


Fig. 16 Interfaces and indicator elements

1 View – Interfaces
2 View – Indicator elements
3 GNSS antenna connection
4 Mobile communications antenna connection
5 Micro USB connection
6 Main plug connector
7 Protective cap for micro USB connection
8 *ON* LED indicator element
9 *STATUS* LED indicator element

4.9.7.2 ON LED indicator element

The *ON* LED indicates the status of the power supply.

Colour	Status	Meaning
—	Off	Device is switched off or in Sleep mode.
Green	On	Device is switched on. Terminal 30 voltage is in the permissible range.
Red	On	Device is switched on. Terminal 30 voltage is outside the permissible range.
Green	Flashing	Device is in Diagnostics or Update mode.

Tab. 57 *ON* LED indicator element

4.9.7.3 STATUS LED indicator element

The *STATUS* LED indicates the operating status of the active connections.

The different colours are displayed in order of priority.

- The highest priority is Level 1
- The lowest priority is Level 5

If more than one operating status is active at the same time, the *STATUS* LED will always display the status with the highest priority level.

Colour	Status	Connection	Priority	Meaning
—	Off	—	—	Device is switched off.

Colour	Status	Connection	Priority	Meaning
Green	On	Various	—	Connected to PROEMION server.
Blue	On	Mobile communications Internet	1	Not connected to PROEMION server.
Red	On	CAN 1	2	Connection error.
Orange	On	CAN 2	3	Connection error.
Magenta	On	GNSS	4	No status / antenna found.

Tab. 58 *Status* LED indicator element

4.9.8 od Battery trickle charging

At all times, the battery must be sufficiently charged to start the machine. To ensure that this is the case, a battery charger must be used.

The battery charger is pre-wired ready for operation. Voltage is supplied via a separate mains supply. A flexible mains connector cable is provided for the connection.

4.9.9 oe Closed floor pan

The closed floor pan prevents small leakages of operating fluids or fuel inside the machine from reaching the outside environment.

Bung plugs provide oil-tight sealing of the maintenance holes in the floor panel in order to ensure the floor pan remains leak-free.

4.9.10 sf Anti-theft device

The machine is fitted with a security chain for anti-theft protection.

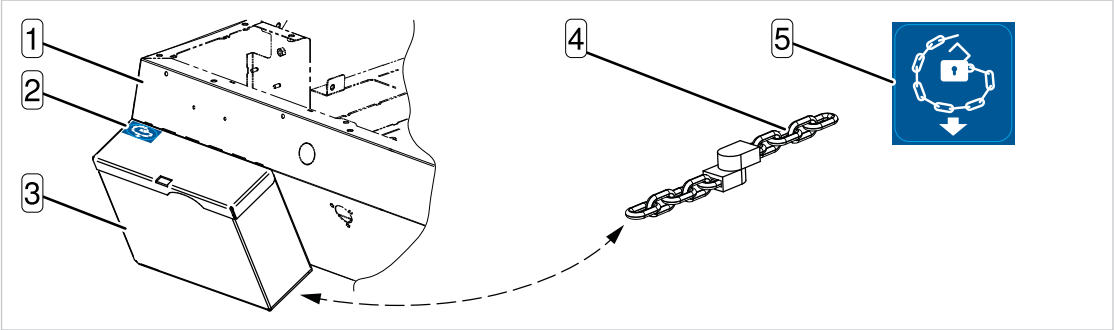


Fig. 17 Container for security chain

1 Front end of machine
2 Indicating label location
3 Container
4 Security chain
5 Security chain indicating label

4.9.11 ua Hose reel

For flexible connection of air tools operated at distance from the machine, a compressed air extension hose is provided.

A user-friendly hose reel facilitates rolling up and unrolling of the compressed air extension hose.

The hose reel also provides secure storage for the compressed air extension hose.

4.9.12 Document bag

Store important accompanying documents for the machine safely and cleanly inside the document bag. This ensures that operating personnel always have access to the accompanying documents for the mobile machine, regardless of location.

You can find the document bag on the inside of the right-hand wing door.

- The document bag does not constitute part of the standard equipment
- The document bag can be selected optionally

5 Transport and storage

5.1 Transport damage

The machine is shipped in perfect condition. Nevertheless, damage may have occurred during transportation.

Check the machine for visible transport damage. If damage has occurred, report it immediately to the carrier or supplier.

5.2 Transporting the machine by crane

A lifting eye is positioned inside the machine as the central lifting point for transportation by crane. The lifting eye is indicated by a mandatory sign, see Fig. 18 Lifting eye mandatory sign.

The position of the lifting eye ensures that the machine remains level when lifted. The lifting eye is rated for the permissible total weight of the machine.

Only a crane hook should be inserted through the lifting eye, in accordance with the mandatory sign.

Fig. 18 Lifting eye mandatory sign

Snow or ice on the machine can have the following effects:

- Unfavourable shift in the machine's centre of gravity
- Permissible load of the crane and machine hoists exceeded

Remove any snow or ice from the machine.

Ensure that the lifting eye cover is freely accessible and can be opened.

5.2.1 Attaching a crane hook and lifting the machine

The lifting eye is positioned inside the machine, in the central section of the enclosure.

⚠ WARNING

Danger of falling when lifting

- ► Use a crane hook of the correct dimensions for the size of the lifting eye.
- ► Correctly insert the crane hook into the lifting eye.

1. Open the lifting eye cover.
2. Position the crane hook vertically above the lifting eye.
3. Lower the crane hook.
4. Manually insert the crane hook into the lifting eye.
   ✓ The crane hook remains movable within the lifting eye.
5. Slowly raise the crane hook until the cable is taut.
   ✓ The crane hook automatically aligns itself vertically.
6. Lift and lower slowly and with care.

5.3 rw Transporting the machine by forklift

Only transport stationary machines fitted with skids by forklift. Stationary machines fitted with skids are equipped with two lifting pockets for a suitable forklift.

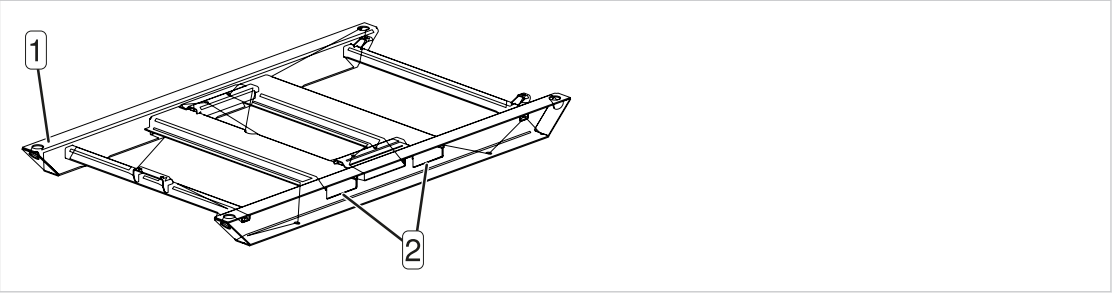


Fig. 19 Lifting pockets for transport by forklift

1 Skid
2 Lifting pocket

► Drive the full length of both forks carefully into the lifting pockets on the skids.

5.4 Transporting as a load

The type of packing and securing required is determined by the mode of transport. Packing and securing methods are designed so that, with proper handling, the goods arrive at their destination in perfect condition.

Always observe the applicable accident prevention and safety regulations during transportation.

National guidelines and regulations for the securing of loads during transportation must be adhered to. The load must be secured in such a manner that it cannot slide, fall, roll around or cause avoidable noise in case of emergency braking or sudden turns.

Responsibility for proper securing of the load rests with the driver, owner and carrier.

Example for Germany: Guideline CTU/VDI 2700

► Observe the recognised technical rules.

5.4.1 Load securing for mobile machines

Attach tension belts exclusively at the designated lashing points.

⚠ WARNING

Danger of crushing due to machine slipping, tipping over or rolling away

► Ensure that tensions belts are rated correctly.
► Use squared timbers.

NOTICE

Damage due to incorrect bracing

Damage to parts of the bodywork and the chassis support device is possible.

► Only brace mobile machines using the lashing points indicated.
► Protect the jockey wheel/support stand against overload when lashing.

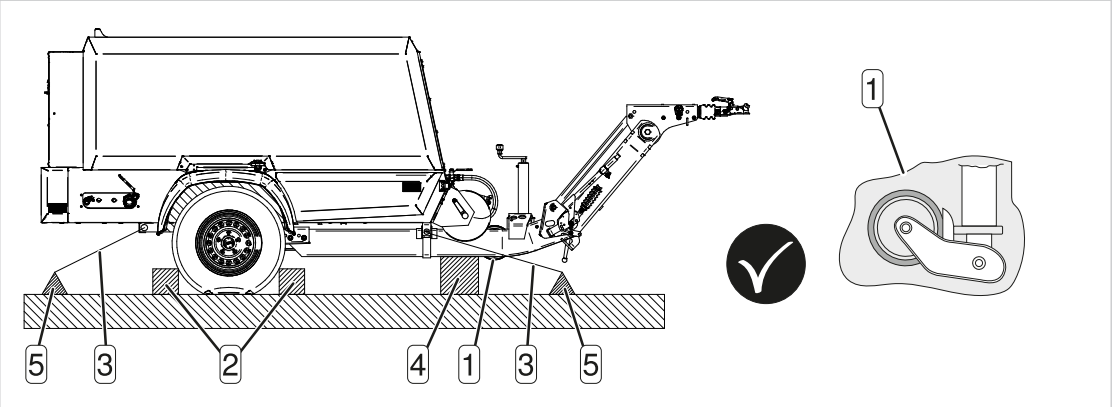


Fig. 20 Example of proper load securing

1 Properly relieved jockey wheel
2 Squared timber
3 Proper bracing
4 Squared timber
5 Lashing points on load bed

1. Crank the jockey wheel/prop stand in or out until the machine is standing level.
2. Position a squared timber 2 in front of and behind the wheels.
3. Position a squared timber 4 by the jockey wheel/prop stand beneath the drawbar tube.
4. Crank in the jockey wheel/prop stand as far as the limit stop.
5. Lash the machine down properly with all of the tension belts.

The lashing forces on the forward area of the machine are acting on the drawbar tube and the squared timber.

The jockey wheel/prop stand is relieved.

The mobile machine is secured against sliding, tipping over and rolling.

5.4.2 Load securing for stationary machines

If required, attach tension belts at the four lashing points.

⚠ WARNING

Danger from machine tilting or tipping over

► Do not use lashing points as crane lifting points.

⚠ WARNING

Danger of crushing due to machine slipping or tipping over

► Ensure that tensions belts are rated correctly.

NOTICE

Damage due to bracing

Forces of movement cause damage to the bodywork.

► Only brace stationary machines using the lashing points provided.

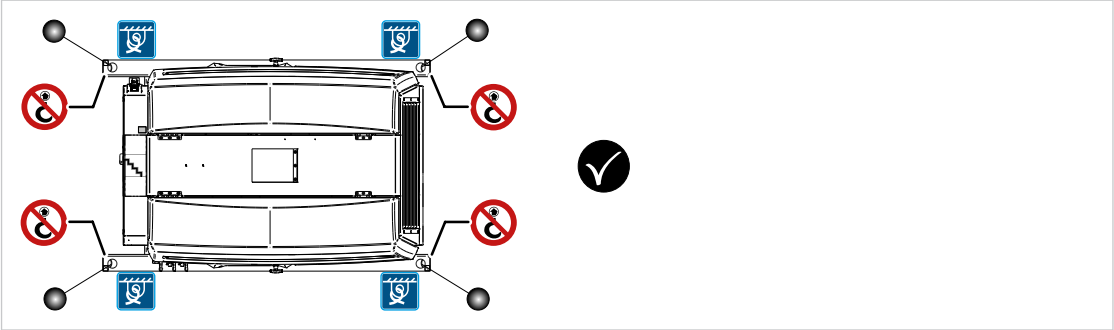


Fig. 21 Bracing as load securing for stationary versions of a machine

► Lash the machine down properly with all of the tension belts.

The stationary machine is secured against sliding and tipping over.

5.4.3 Transporting the machine by air freight

Transporting the machine by air freight requires it to be classified as dangerous goods.

Non-compliance with this can result in high penalties.

⚠ WARNING

Danger of fire or explosion from operating fluids/materials

► Remove all dangerous materials before transporting by air freight.

1. Remove all fuel.
2. Remove all fuel gases.
3. Remove all lubricating oil from the drive engine.
4. Remove electrolyte from rechargeable batteries.
5. Remove all lubricating oil from the compressor.
6. Remove any residual quantities of lubricant from the tool lubricator.

5.5 Decommissioning the machine

Decommission the machine in the following circumstances:

- The machine is to be temporarily taken out of commission
- The machine is to be taken out of commission for an extended period of time
- The machine is to be permanently taken out of commission and scrapped

- Plastic sheeting
- Moisture-resistant adhesive tape
- Desiccant
- Preservative

1. Carry out the activities described each time the machine is decommissioned.
2. Attach a notice to the control panel indicating the decommissioning measures taken.

5.5.1 Temporary decommissioning

Decommissioning the machine for periods of up to approximately 4 Months.

1. Fully disconnect the battery.
2. Close all discharge valves at the compressed air outlet.
3. Seal off the following openings on the machine using plastic sheeting and adhesive tape:
   a) Seal off the air intake for the engine air filter.
   b) Seal off the air intake for the compressor air filter.
   c) Seal off the exhaust outlet.
4. Attach the following notice to the control panel indicating the decommissioning measures taken.

Caution!
1. Machine has been temporarily decommissioned.
2. The following openings have been sealed off:
▪ Air intake on engine air filter ▪ Air intake on compressor air filter ▪ Exhaust gas outlet
3. Recommission in accordance with the operating manual.
Date and signature:

Tab. 59 Example notice in the event of temporary decommissioning

5.5.2 Long-term decommissioning

Decommissioning the machine for periods of approximately 5 Months.

1. Check the drive engine coolant.
2. Arrange for preservation measures to be carried out on the drive engine by a specialist workshop.
3. Fully disconnect the battery and store in a frost-protected location.
4. Close all discharge valves at the compressed air outlet.
5. Seal off the following openings on the machine using plastic sheeting and adhesive tape:
   a) Seal off the air intake for the engine air filter.
   b) Seal off the air intake for the compressor air filter.
   c) Seal off the exhaust outlet.
6. Clean the bodywork.
7. Apply a preservative to the bodywork.
8. Attach the following notice to the control panel indicating the decommissioning measures taken.

Caution!
1. Machine has been decommissioned.
2. Preservation measures have been carried out on the drive engine.
3. The following openings have been sealed off:
▪ Air intake on engine air filter ▪ Air intake on compressor air filter ▪ Exhaust outlet

Caution!
4. To recommission:
▪ Recommission in accordance with the operating manual. ▪ Carry out measures for recommissioning following long-term decommissioning.
Date and signature

Tab. 60 Example notice in the event of long-term decommissioning

6 Installation and operating conditions

The operator is responsible for correct installation of the portable machine designed for outdoor use. Since the operating location for this machine can change frequently, the installation conditions must be complied with at each location.

Set up the portable machine correctly at each operating location. For each installation, observe the information contained in Tab. 61 Installation conditions at installation location.

Secure mobile machines against rolling away.

6.1 Installation conditions at installation location

Installation condition	Measure
Level installation surface[1)]	Find a suitable installation surface.
Stable ground[2)]	Check that the ground is capable of bearing the weight.
Minimum distance from excavation pits ≥ 1.5 m	Check the minimum distance from any excavation pits, see Fig. 22 Example: Minimum distance from excavation pits and slopes.
Minimum distance from slopes ≥ 1.5 m	Check the minimum distance from any slopes, see Fig. 22 Example: Minimum distance from excavation pits and slopes.
Minimum distance between exhaust outlet and walls = L[3)] x 1.5	Check the minimum distance from any walls, see Fig. 23 Example: Minimum distance from exhaust outlet to walls.
Cooling air inlet pointing in direction of wind	Position the cooling air inlet in the direction of the wind, see Fig. 24 Example: Note the direction of the wind when positioning.
Exhaust outlet positioned against direction of wind.	Position the exhaust outlet against the direction of the wind, see Fig. 24 Example: Note the direction of the wind when positioning

1) Temporary operation at a maximum incline of 15° is possible

2) Ground is capable of bearing the weight of the machine

3) Length of machine without drawbar tube

Tab. 61 Installation conditions at installation location

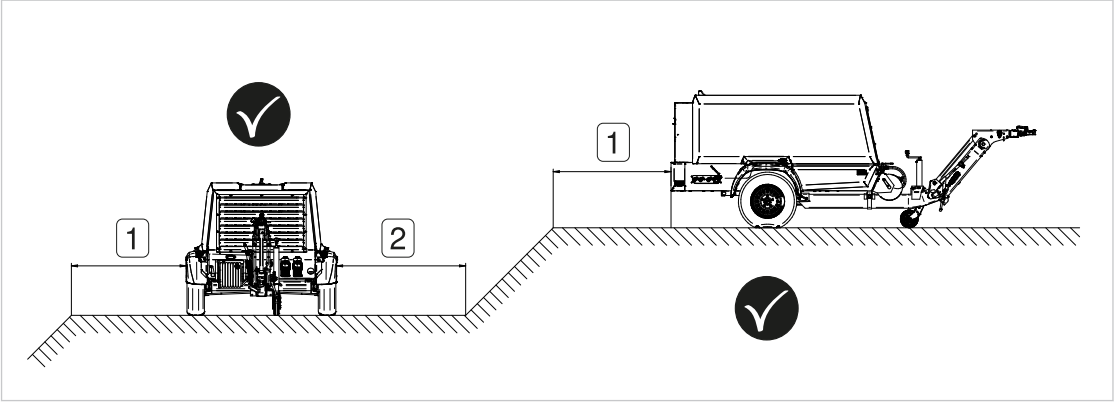


Fig. 22 Example: Minimum distance from excavation pits and slopes

1 Minimum distance from excavation pits
2 Minimum distance from slopes

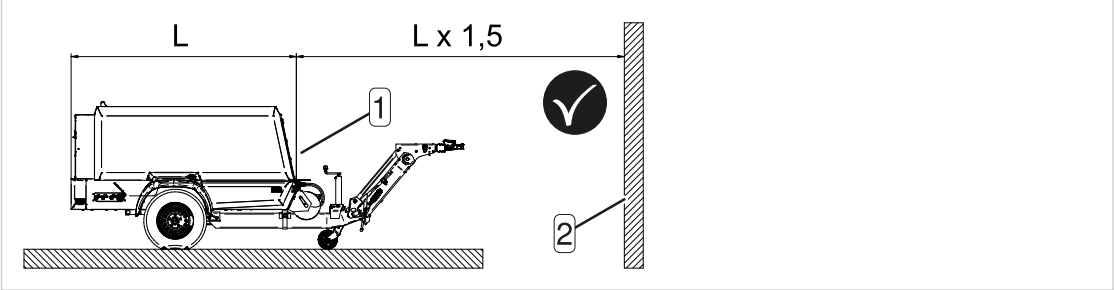


Fig. 23 Example: Minimum distance from exhaust outlet to walls

1 Exhaust outlet side
2 Wall

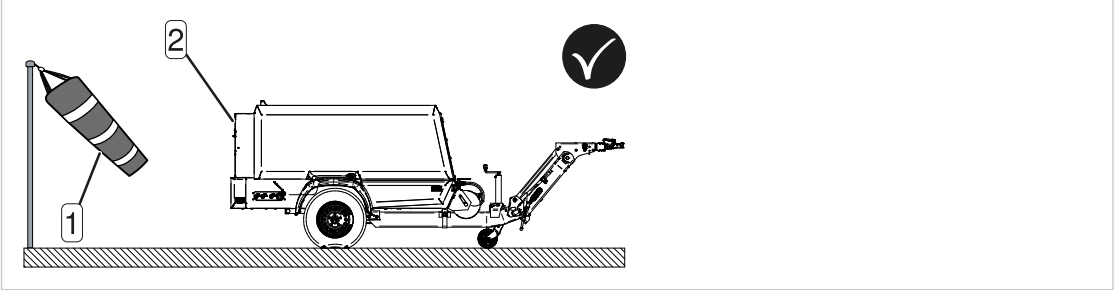


Fig. 24 Example: Note the direction of the wind when positioning

1 Wind direction
2 Machine cooling air inlet

6.2 Ensuring accessibility

Ensure the following points when installing the machine:

- Control panel accessibility
- Full opening and closing of the enclosure
- Full opening and closing of all cover panels

7 Assembly and installation

7.1 Determining anti-vibration elements

Metal anti-vibration elements and rubber buffers isolate machine vibrations and reduce acceleration.

Fix your stationary machine in place using metal anti-vibration elements or rubber buffers.

This will increase the service life of the machine and protect the immediate surroundings.

Metal anti-vibration elements and rubber buffers:

- Are not included in the standard equipment supplied by the machine manufacturer
- Can be optionally selected

Determine anti-vibration elements in accordance with the specific installation conditions

Installation condition	Measure
Installation surface subject to acceleration Example: HGV loading bed	Use machine feet
Example: Static installation	Use optional machine feet or rubber buffers.

Tab. 62 Determining anti-vibration elements for stationary machines

1. Check the installation conditions for the machine.
2. Determine suitable anti-vibration elements.

7.2 Installing vibration elements

In the machine support frame, you will find fixing bores for bolt-down machine feet or rubber buffers.

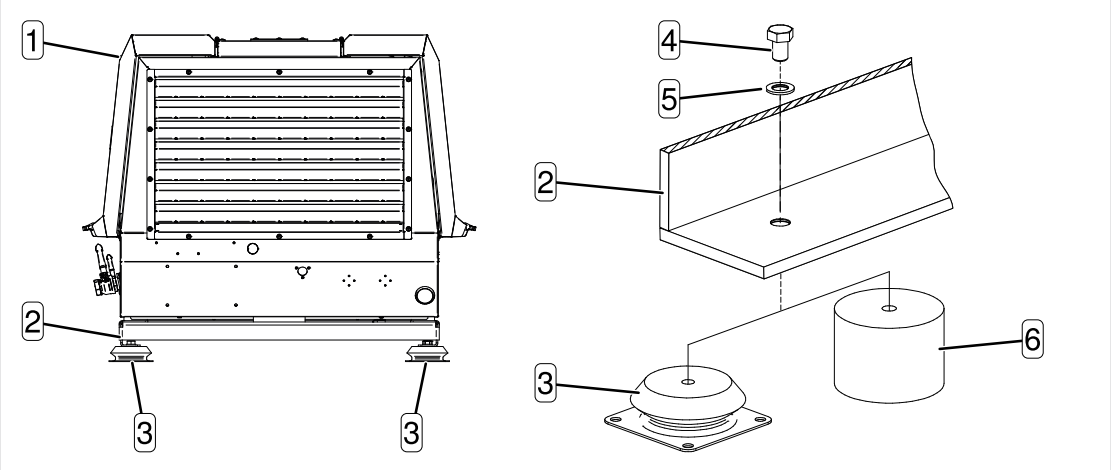


Fig. 25 Example: Installing vibration elements on stationary machines

1 Machine
2 Stationary machine support frame
3 Machine foot
4 Fixing screw
5 Washer
6 Rubber buffer

1. Lift the machine correctly.
2. Position the machine foot beneath the corresponding bore in the support frame.
3. Insert the fixing screw through the bore in the support frame.

4. Establish the screw connection with the machine foot.
5. Correctly tighten all fixing screws.
6. Mount and tighten all of the other machine feet in the same way.

You can find information regarding the dimensions of the bore in the support frame in the separate document Drawings and Plans.

7.3 Performing assembly work on the chassis

A chassis operating manual is included amongst the documents supplied with your machine.

The manner in which the machine is delivered determines the assembly work required.

Machines that are only partially assembled at despatch must be completed by trained personnel before final delivery to the customer.

See the separate chassis operating manual document for instructions regarding assembly work on the chassis.

8 Commissioning

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

Allow only trained and authorised installation personnel to perform all commissioning activities.

Comply with all information signs on the machine.

> **NOTICE**
> **Danger of short circuit when connecting the starter battery**
> ► First check that the Controller ON/OFF switch is switched off.
> ► Then connect the negative cable to the battery.

8.1 To be observed during initial commissioning

Initial commissioning of the machine takes place at the manufacturer's facility. Every machine undergoes an extensive test run and a meticulous inspection.

1. Remove all transport and packaging materials on and inside the machine.
2. Monitor the machine during the first few hours of operation in order to identify any errors.

8.2 Recommissioning following storage or decommissioning

Storage or decommissioning	
More than 5 Months	**More than 36 Months**
8.2.1 Checking the condition of the drive engine	8.2.4 Arranging for the technical condition of the machine to be checked
8.2.2 Checking the condition of the compressor	—
8.2.3 Maintaining the bodywork	—

Tab. 63 Recommissioning following long-term storage or decommissioning

► Properly carry out the following recommissioning tasks.

8.2.1 Checking the condition of the drive engine

1. Take note of the information sign regarding long-term storage/decommissioning.
   a) Check whether preservation measures have been carried out on the drive engine.
   b) If preservation measures have been carried out, arrange for the entire oil reserve in the drive engine to be replaced by a specialist workshop.
2. Check the engine oil filter.
3. Check the engine oil level.
4. Remove any desiccant from the engine air filter.
5. Check the engine air filter.
6. Check the coolant level.
7. Check the battery charge level.
8. Connect the battery.
9. Check all fuel hoses for leaks, loose connections, wear and damage.
10. Check all pressure hoses on the drive engine for leaks, loose connections, wear and damage.

8.2.2 Checking the condition of the compressor

1. Remove any desiccant from the compressor air filter.
2. Check the compressor air filter.
3. Check the compressor oil filter.
4. Check the compressor oil level.
5. If required, replenish the compressor oil.
6. Check all pressure hoses/lines on the compressor for leaks, loose connections, wear and damage.

8.2.3 Maintaining the bodywork

1. Clean the exterior of the machine with a grease- and dirt-removing agent.
2. Check the labelling for legibility.
3. Clean the labelling.

8.2.4 Arranging for the technical condition of the machine to be checked

► Arrange for the overall technical condition to be checked by an authorised SP[1)].

8.3 Checking installation and operating conditions

Check and confirm that all of the items on the checklist have been fulfilled before commissioning the machine.

Component	Task	See chapter	Fulfilled?
—	Operating personnel are fully conversant with the safety regulations.	3 Safety and responsibility	
Machine	All installation conditions have been fulfilled.	6 Installation and operating conditions	
	All assembly conditions been fulfilled.	7 Assembly and installation	
Drive motor	There is sufficient oil in the drive engine.	11.3.4 Servicing the engine oil circuit	
	The maintenance indicator for the drive engine air filter is in order.	11.3.2 Engine air filter maintenance	
	There is sufficient coolant in the coolant expansion tank.	11.3.1 Checking the coolant	
	There is sufficient fuel in the fuel tank.	9.2 Filling the fuel tank with fuel	
Compressor	There is sufficient compressor oil in the oil separator tank.	11.4.1.1 Checking the compressor oil level	

1) Service Partner

Component	Task	See chapter	Fulfilled?
	The maintenance indicator for the compressor air filter is in order.	11.4.4 Servicing the compressor air filter	
Bodywork	All wing doors are closed.	—	
	All body panels are attached: ▪ Covers ▪ Removable access panels	—	

Tab. 64 Checklist for installation and operating conditions

8.4 To be observed during operation at low temperatures

- Comply with the permissible total weight of the machine
- Check the function of the EMERGENCY STOP device
- Adjust operating fluids/materials and components accordingly at low ambient temperatures
- If required, activate the automated start-up procedure

Designation	Measure
Comply with the permissible total weight of the machine	Remove snow or ice from the machine.
Check the function of the EMERGENCY STOP device	Defrost the «EMERGENCY STOP» button.
Adjust the operating fluids/materials	▪ Use winter engine oil ▪ Use low-viscosity compressor oil ▪ Use winter diesel fuel
Adjust the components	Use short compressed air hoses.
Check the warm-up function when temperatures are low	Activate the automated start-up procedure.

Tab. 65 Measures to be taken at low ambient temperatures

8.4.1 Checking the warm-up function in low temperatures

In low ambient temperatures, SIGMA CONTROL SMART starts the machine by means of an automated start-up procedure.

SIGMA CONTROL SMART starts the drive engine in a maximum of three automatic start cycles of 30 Seconds each.

Following every false start, the machine is vented.

After each venting of the machine, the next start-up cycle begins automatically.

Should the third start-up cycle end with another false start, the operator must manually switch off the controller voltage and, after a defined time interval, switch it back on again.

8.4.1.1 Activating the automated start-up procedure

The following indicators on the SIGMA CONTROL SMART control unit signal that the machine is ready to start:

- The *Controller voltage* indicator is illuminated.
- The *READY* indicator flashes.

► Press the «START» key on the SIGMA CONTROL SMART control panel.
✓ The machine begins a maximum of three automatic start-up cycles of 30 Seconds each.
The machine is automatically vented should a false start occur.
After the machine has been vented, a new start-up cycle begins automatically.

The automated start-up process for low-temperature conditions ends after three automatic start-up cycles with false starts.

- Reactivate the automated start-up procedure.

8.4.1.2 Reactivating the automated start-up procedure

1. Switch off the «Controller ON/OFF» switch.
2. 20 Seconds Wait.
3. Switch the «Controller ON/OFF» switch back on.
   ✓ The *Controller voltage* indicator is illuminated.
   The *READY* indicator flashes.
4. Press the «START» key on the SIGMA CONTROL SMART control panel.

Three more automatic start-up cycles are available.

One of the three automatic start-up cycles successfully starts up the machine.

8.4.2 Starting assistance

Should the charge level of your battery be insufficient, start your machine with the aid of a suitable jump starter battery.

Do not attempt starting assistance if any of the following deficiencies apply to your battery:

- Receiver battery is deeply discharged.
- Receiver battery is frozen.
- Receiver battery housing is damaged.
- Receiver battery housing is leaking electrolyte.

⚠ DANGER
Danger of explosion due to oxyhydrogen gas mixture

Hydrogen and oxygen gas are produced when jump starting.

► Prevent fire, sparks and open flames.
► Do not smoke.
► Do not bend directly over the battery.
► Prevent short circuits.
► Adhere to the correct sequence when connecting and disconnecting the jump leads.
► Do not connect the black jump lead to the negative terminal on the receiver battery.

⚠ WARNING
Danger of chemical burns from leaking electrolyte

► Wear face and eye protection.
► Wear personal protective equipment.
► Wear acid-proof protective gloves.

- Jump leads with insulated cable clamps.
- Jump leads with minimum cable cross section of 50 mm².

- The nominal voltage for both batteries is the same.
- The capacity of both batteries is roughly the same.
- The charge level of the jump starter battery is 100 %.
- The controller voltage for the other vehicle with the jump starter battery is switched off.
- The controller voltage for the receiver machine is switched off.
- The bodywork of the jump starter vehicle and the receiver machine are not in physical contact.
- All terminal protector caps on both batteries have been removed.

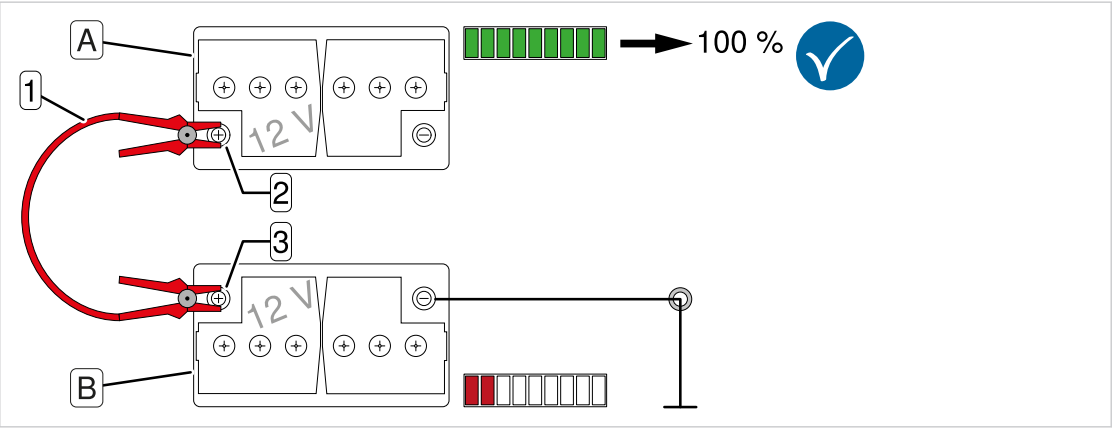


Fig. 26 Connecting the red jump lead

A Jump starter battery
B Receiver battery
1 Red jump lead
2 Jump starter battery positive terminal
3 Receiver battery positive terminal

1. Connect the red jump lead:
   a) Connect the first cable clamp to the positive terminal 2 on the jump starter battery.
   b) Connect the second cable clamp to the positive terminal 3 on the receiver battery.
   ✓ The red jump lead is connected properly.

Use a bare metal point on the engine block 6 as an earth connection.

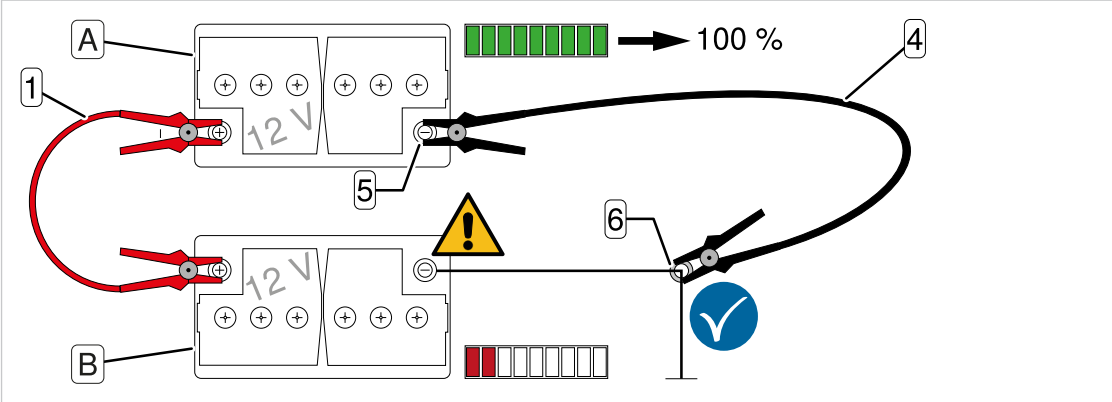


Fig. 27 Connecting the black jump lead

A Jump starter battery
B Receiver battery
1 Red jump lead
4 Black jump lead
5 Jump starter battery negative terminal
6 Receiver machine earth connection

2. Connect the black jump lead:
   a) Connect the first cable clamp to the negative terminal 5 on the jump starter battery.
   b) Connect the second cable clamp to the earth connection 6 on the receiver machine.
   ✓ The black jump lead is connected properly.
3. Start the other vehicle with the jump starter battery.
4. Start the machine with the receiver battery:
   a) Switch on the controller voltage.
   b) Start the machine and run it for approx. 2 Minutes.
5. First disconnect the black jump lead in the order 6, then 5.
6. Next disconnect the red jump lead in the order 3, then 2.
7. Reattach all terminal protector caps.

9 Operation

Only operate the machine outdoors.

Always operate the machine with the doors and body panels closed.

Do not perform inspection work or adjust settings when the machine is running.

Only activate the discharge valves at the compressed air outlet when wearing protective gloves.

Only fill the fuel tank when the machine is switched off and has cooled down.

⚠ DANGER

Danger of poisoning from released exhaust gases

- ► Only use the machine outdoors.
- ► Never operate the machine in enclosed spaces.
- ► Do not inhale exhaust gases.

⚠ WARNING

Danger of burns from fuel igniting

- ► Only refuel the machine after switching it off and allowing it to cool down.
- ► Never refuel the machine in the vicinity of open flames or sparks.
- ► Do not overfill the fuel tank.
- ► Do not spill fuel.
- ► Do not smoke.

⚠ WARNING

Danger of shearing and crushing from contact with rotating components

- ► Keep all machine doors and cover panels closed.
- ► Do not perform inspections and adjustments whilst the machine is running.
- ► Stop the machine before opening any doors or cover panels.

⚠ WARNING

Danger of injury from loud noise and compressed air blast

Damage to hearing and injuries possible if discharge valves are opened without a consumer being connected.

- ► Wear ear protection.
- ► Keep discharge valves closed when no consumer is connected.

⚠ CAUTION

Danger of burns from hot surfaces

- ► Keep all machine doors and cover panels closed.
- ► Wear personal protective equipment.
- ► Maintain your distance.

NOTICE

Damage to air receivers and compressed air tools from corrosion

- ► Use the shortest compressed air hoses possible.
- ► Drain the condensate regularly.

9.1 Starting and stopping

In this chapter, you will find out how to start and stop the machine correctly.

9.1.1 Following the quick reference guide

Numbered pictograms guide you through the start-up and stop procedure.

You can find the quick reference guide as a sticker directly above the control panel cover.

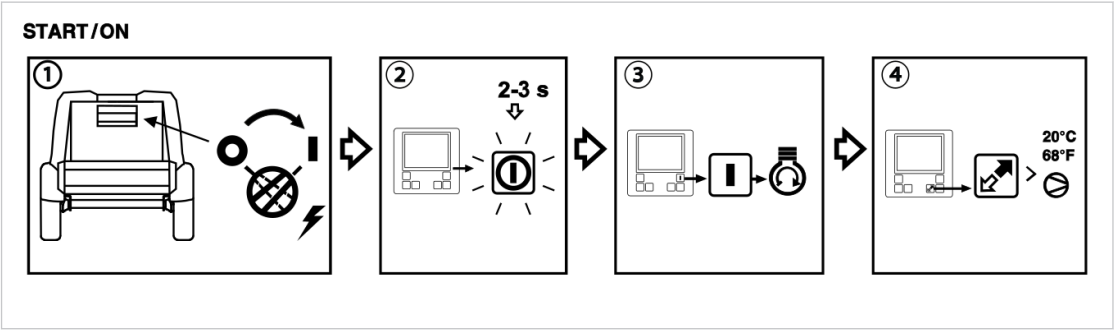


Fig. 28 Start-up procedure

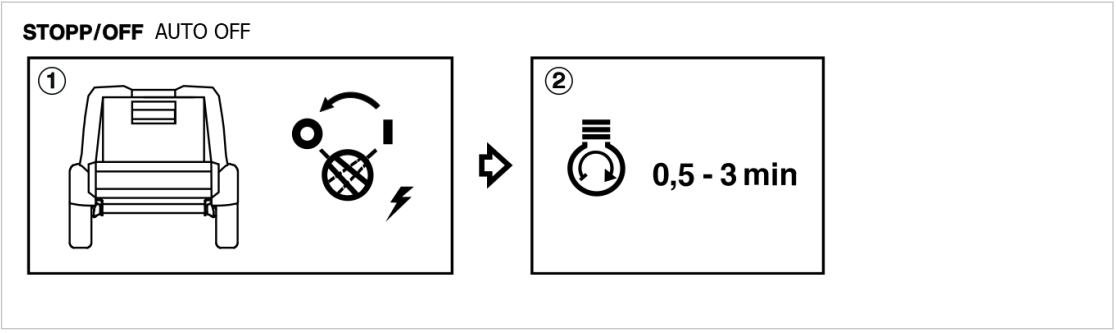


Fig. 29 Stop procedure

9.1.2 Control panel

To ensure material-friendly operation, always stop the machine using the «STOP» key.

Use the «EMERGENCY STOP» button for emergencies only.

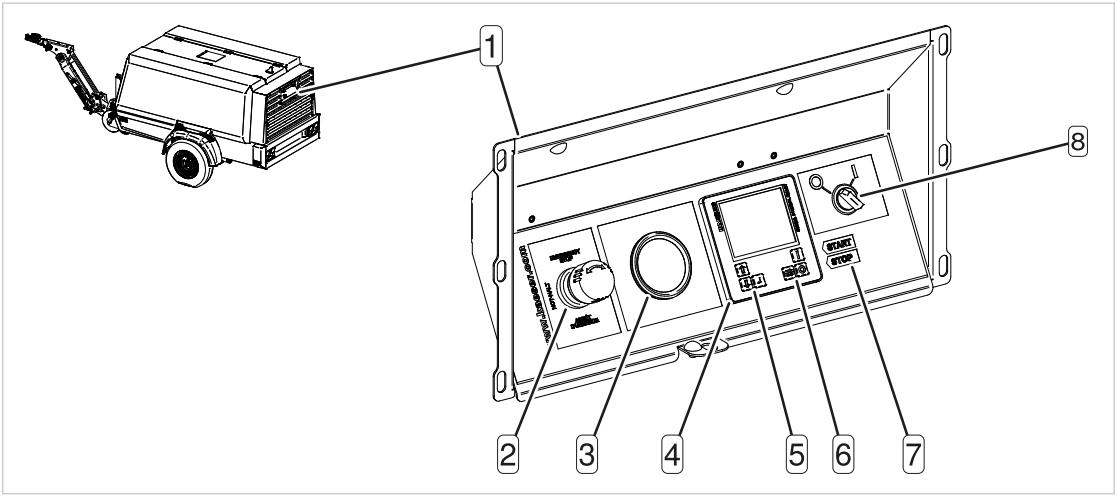


Fig. 30 Control panel overview

1 Control panel
2 «EMERGENCY STOP» button
3 Compressed air outlet pressure gauge
4 SIGMA CONTROL SMART control unit
5 Navigation keys
6 Operating keys
7 *START* and *STOP* indicating label
8 «Controller ON/OFF» switch

The switch for the controller voltage is located on the control panel. The controller voltage is switched on when you turn the «Controller ON/OFF» switch to the *ON* position.

To ensure material-friendly operation, always stop the machine using the «STOP» key.

Use the «EMERGENCY STOP» button for emergencies only.

9.1.3 Start the machine

NOTICE

Damage due to cold-start aids

Cold start sprays, such as ether or engine start sprays, can cause damage to the drive engine.

► Do not use cold-start aids.

9.1.3.1 Ensuring the machine is ready to start

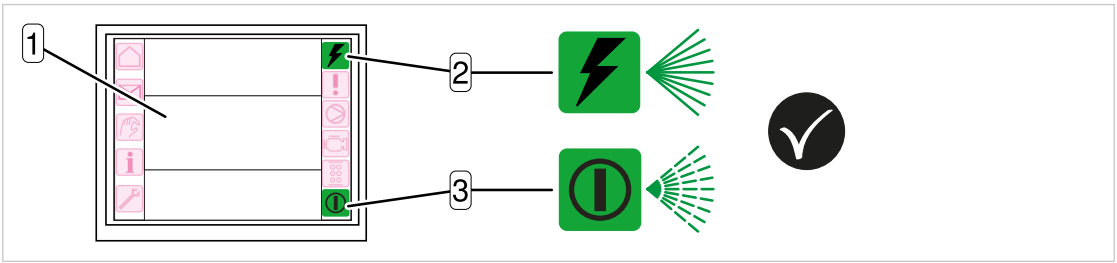


Fig. 31 Indicators at ‘Ready´status

1 Display
2 *Controller voltage* indicator
3 *Ready* indicator

► Switch on the «Controller ON/OFF» switch.

The controller voltage is switched on.

The *Controller voltage* indicator is illuminated.

The *Ready* indicator flashes provided that no errors are present in the SIGMA CONTROL SMART.

9.1.3.2 Starting the drive engine

► Press the «START» key on the SIGMA CONTROL SMART control panel.
✓ The drive engine initially runs in the warm-up phase in the IDLE operating point. The drive engine is then switched to the LOAD operating point when the setpoint for the airend discharge temperature is reached.

The drive engine does not start at low ambient temperatures.

- Activate the automated low-temperature start-up procedure, see chapter 8.4 To be observed during operation at low temperatures.

9.1.4 Setting the compressed air discharge pressure

The SIGMA CONTROL SMART display indicates the setting value.

It is possible to enter a setting when the controller is switched on and the drive engine is stopped, as well as during operation of the machine. You can only set the compressed air discharge pressure to a value below the maximum working pressure.

1. Open the separate user manual for the SIGMA CONTROL SMART controller.
2. Read and comply with the instructions for {9]Setting the compressed air discharge pressure{10].

9.1.5 Stopping the machine

Two alternative shutdown procedures are available for stopping the machine properly.

- Shut the machine down using AUTO OFF
- Shut the machine down with the SIGMA CONTROL SMART controller

NOTICE

Thermal overload from stopping the drive engine at high load

Failure of or damage to the turbocharger is possible.

► Shut the machine down properly.
► Only use the «EMERGENCY STOP» button in the event of an emergency.

KAESER recommends using the AUTO OFF shutdown procedure.

9.1.5.1 Shutting the machine down using AUTO OFF

The automated AUTO OFF shutdown procedure properly shuts down your machine with a single press of the «Controller ON/OFF» switch.

- The machine is switched on
- The SIGMA CONTROL SMART control panel cover is open

► Switch the «Controller ON/OFF» switch to the *OFF* position.
✓ The machine switches to the AUTO OFF shutdown procedure.
  - The machine switches to the IDLE operating point and begins to vent.
  - The machine switches to the STANDSTILL operating point and vents completely.

- The controller voltage switches itself off automatically.

The automated AUTO OFF shutdown procedure switches the controller voltage off. Battery starting capacity and performance are assured.

9.1.5.2 Shutting the machine down with the SIGMA CONTROL SMART controller.

- The machine is switched on
- The SIGMA CONTROL SMART control panel cover is open

1. Actuate the «LOAD/IDLE» key.
   The machine switches to the unloaded run-on phase.
2. Wait for approx. 3 MinutenMinutes until the turbocharger has cooled down sufficiently.
3. Press and hold down the «STOP» key for longer than 1 SekundeSecond
   The drive engine stops.

9.1.5.3 Switching off the controller voltage

NOTICE

Damage to the engine electronics and controller due to memory error

► Only switch off the controller voltage once the engine control unit has completed the saving procedure.

1. Wait for approx. 30 Seconds until the engine control unit's back-up procedure has completed.
2. Switch the «Controller ON/OFF» switch to off.

9.1.6 Closing daily operation

1. Close all compressed air discharge valves at the compressed air outlet.
2. Close the control panel cover for SIGMA CONTROL SMART.
3. Set the «battery isolation switch» to position **0**.
4. Close and lock both wing doors.
5. Secure each wing door with a lock.
   The machine is secured against unauthorised use.

9.1.7 Shutting the machine down in an emergency

An emergency can occur with the machine or in its immediate vicinity.

Shut the machine down using the «EMERGENCY STOP» button.

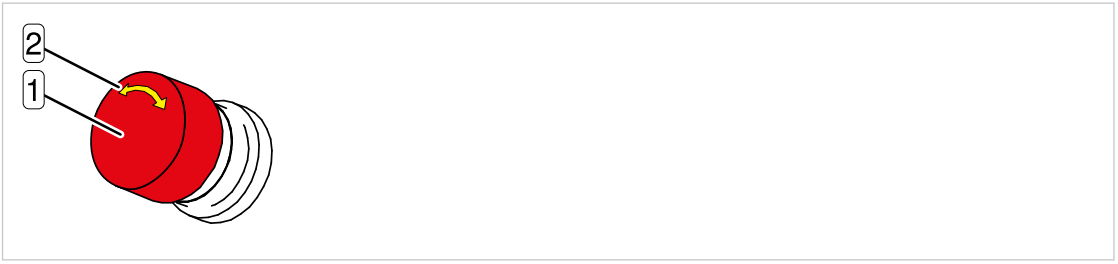


Fig. 32 «EMERGENCY STOP» safety device button

1 «EMERGENCY STOP» button
2 Unlock the «EMERGENCY STOP» button in the direction of the arrow

1. Press the «EMERGENCY STOP» button.
   ✓ Drive engine stopped.
   Machine pressure system vented.
   «EMERGENCY STOP» button is locked.
   Machine is secured against reactivation.
2. Ensure operational safety of the machine and its immediate environment:
   a) Determine the cause of the fault.
   b) Rectify the fault appropriately.
3. Commissioning the machine:
   a) Turn the «EMERGENCY STOP» button in the direction of the arrow until it unlocks automatically.
   b) Press the «Enter» key to confirm the fault message.
   c) Restart the SIGMA CONTROL SMART.
   ✓ The fault message is acknowledged.
   The machine is ready for operation.

9.2 Filling the fuel tank with fuel

Accidents caused by igniting fuel can be avoided by exercising special care when filling the fuel tank.

⚠ WARNING

Danger of burns from fuel igniting

- ► Only refuel the machine after switching it off and allowing it to cool down.
- ► Never refuel the machine in the vicinity of open flames or sparks.
- ► Do not overfill the fuel tank.
- ► Do not spill fuel.
- ► Do not smoke.

⚠ CAUTION

Danger of environmental pollution from fuel

- ► Do not overfill the fuel tank.
- ► Do not spill fuel.

9.2.1 Using the proper fuel type

Fill the fuel tank exclusively with liquid fuel of the proper fuel type. A label on the fuel tank in the vicinity of the filler port indicates the proper fuel type.

Super unleaded petrol lacks the specific lubricating qualities of diesel fuel. Operation with super unleaded petrol will result in immediate damage to the precision components in the injection system.

NOTICE

Damage from using an incorrect fuel type

- ► Do not start the drive engine.
- ► Empty the fuel tank and arrange for it to be cleaned.
- ► Arrange for the fuel system to be cleaned if the drive engine was started.

► Check that the fuel you fill the tank with is of the proper type.

For the required measures following use of an improper fuel type, see chapter 10.1 Evaluating drive engine errors and faults.

9.2.2 Correctly filling the fuel tank

Liquid fuels expand at high ambient temperatures.

In order to prevent the fuel from overflowing, only fill the fuel tank as far as the *maximum fill level* marking 2.

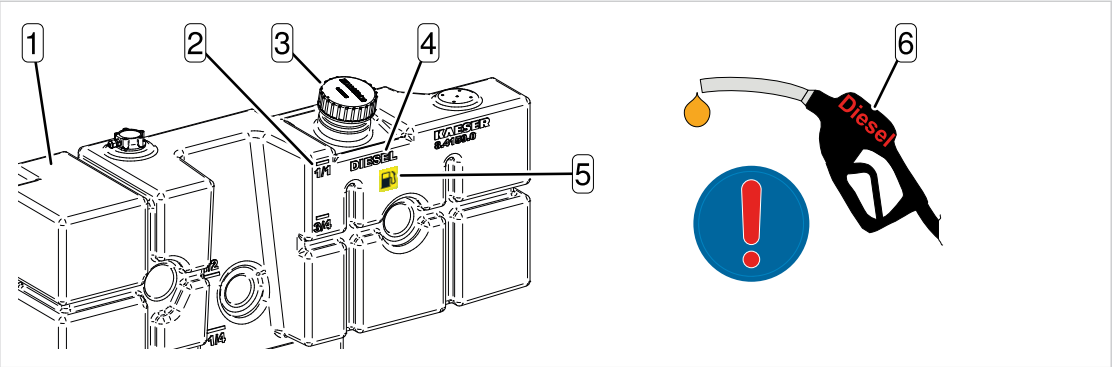


Fig. 33 Refilling the tank with the proper fuel type

1 Fuel tank
2 *Maximum fill level* marking
3 Cover cap
4 *Fuel type* label
5 *Refuelling* label
6 Diesel fuel nozzle

1. Loosen and remove the cover cap for the fuel tank.
2. Insert the diesel fuel nozzle into the filler port and activate.
3. Fill with diesel up to the *maximum fill level* marking.
4. Shut off and remove the fuel nozzle.
5. Close the fuel tank filler port with the cover cap.

No fuel nozzle is available at the installation location.

- Use a funnel to fill with diesel fuel directly from a jerrycan.

9.3 Using the options

9.3.1 bb Using the coolant preheating

You can find the corresponding mains supply cable inside the machine.

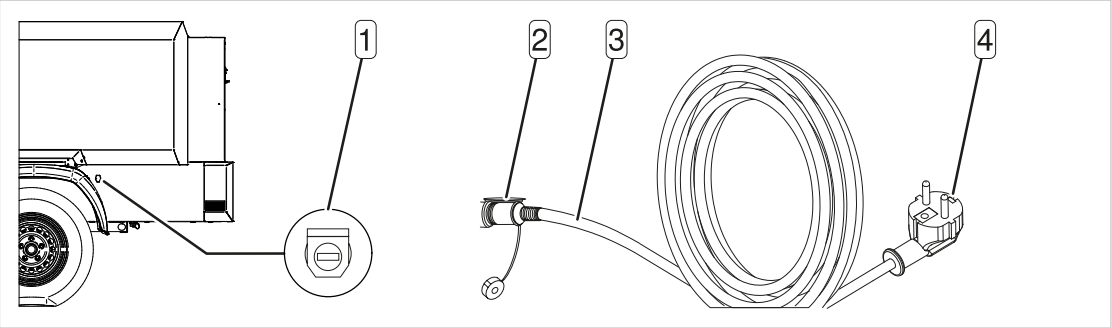


Fig. 34 Using the coolant preheating

1 Socket
2 Device plug
3 Mains connector cable
4 Mains plug

1. Open the protective cap for the socket and insert the device connector into the socket.
2. Insert the mains plug into the user-end mains socket.
   The drive engine coolant is preheated.
3. Preheat the coolant for approx. 3 Hours.

9.3.2 da dg Compressed air aftercooler with bypass

The compressed air generated by the machine is cooled via the compressed air aftercooler. This treatment stage can be circumvented by means of the optional compressed air aftercooler bypass. A directional control valve is installed in the machine for this purpose.

Adjust the directional control valve in accordance with your requirements.

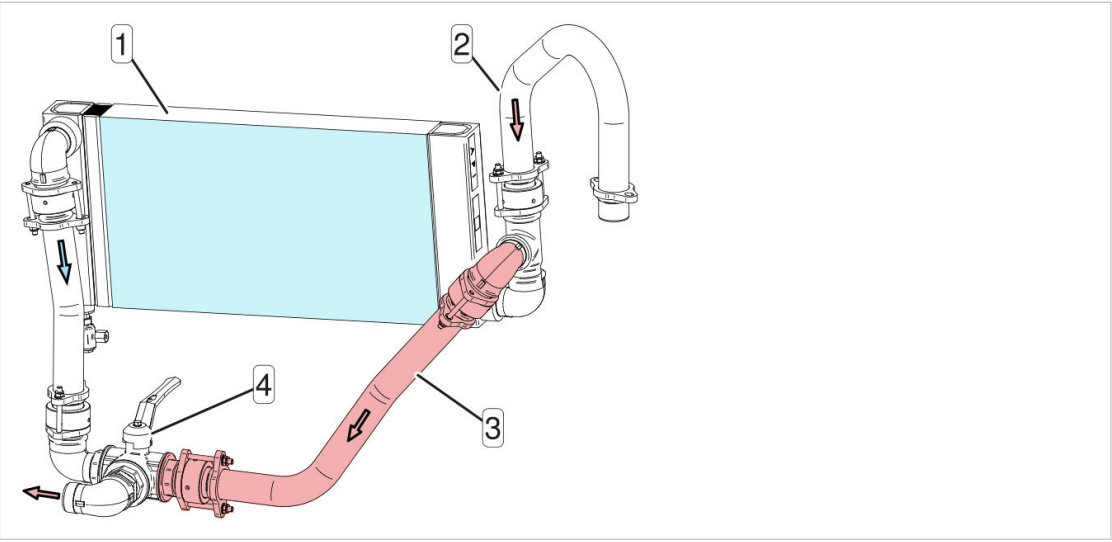
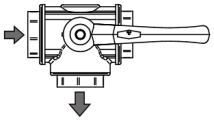
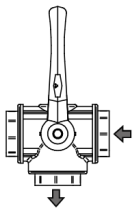


Fig. 35 Compressed air aftercooler with bypass

1 Compressed air aftercooler
2 Supply line for generated compressed air
3 Bypass line
4 Directional control valve in position: Bypass activated (ON)

The following options can be selected for the compressed air treatment:

Position	Compressed air quality at compressed air outlet
	Bypass OFF Compressed air is conveyed through the compressed air aftercooler and cooled, thereby removing a large proportion of the condensable moisture contained in the air. Accumulating condensate is separated via the water separator. Cool, dry compressed air is available from the air distributor.
	Bypass ON Compressed air generated by the compressor is not conveyed through the compressed air aftercooler. Only untreated compressed air is available from the air distributor.

Tab. 66 Directional control valve position and selected compressed air quality

The directional control valve should be either fully open or fully closed.

dg Activating the bypass

Adjust the directional control valve in accordance with your requirements.

At low ambient temperatures:

- Start the machine with Option da activated, without bypass
- Allow the machine to warm up at IDLE speed for a few minutes

⚠ CAUTION

Danger of burns from hot surfaces

► Wear personal protective equipment.

► Always wear protective gloves when adjusting the directional control valve lever.

- The machine is switched off
- Compressed air consumers are disconnected
- The discharge valve is open
- The machine is fully vented, the pressure gauge reads 0 bar.

► Actuate the directional control valve as far as the limit stop.

9.3.3 df Switching on the heat exchanger

You have the option of conveying the treated compressed air through the heat exchanger via a bypass.

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

For this purpose, a directional control valve is fitted, which can be adjusted manually via a lever on the exterior of the machine. The directional control valve can conveniently be adjusted during operation in accordance with the requirements of your application.

⚠ CAUTION

Danger of burns from hot surfaces

► Wear personal protective equipment.

► Always wear protective gloves when adjusting the directional control valve lever.

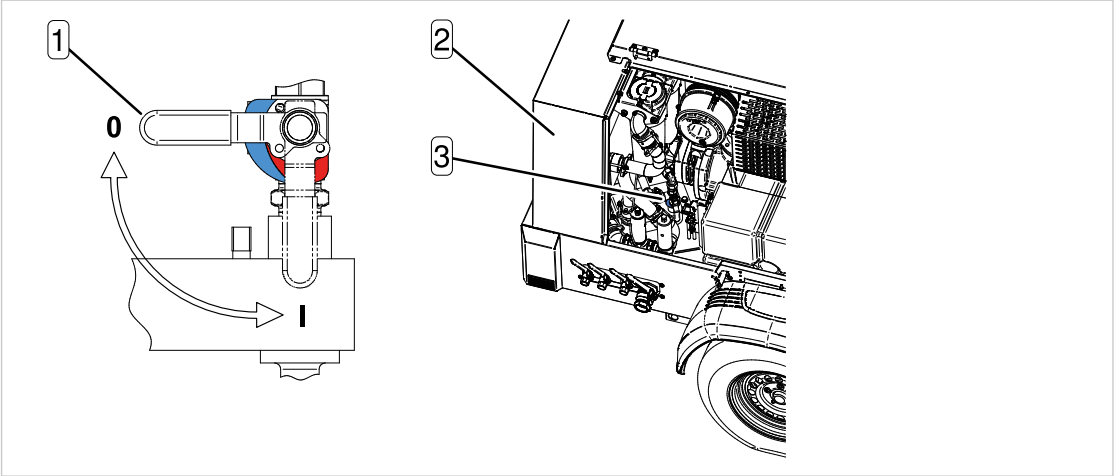


Fig. 36 Bypassing or activating the heat exchanger

1 Directional control valve lever
2 Right-hand side of machine
3 Location of lever on machine

9.3.3.1 Selecting compressed air quality B or A

Switch position Directional control valve	Compressed air quality	Code for compressed air quality
I	▪ Condensate-free ▪ Warm	B
0	Condensate-free	A

Tab. 67 Directional control valve switch position and compressed air quality

1. Decide upon compressed air quality based on the application.
2. Set the directional control valve according to the compressed air quality.

9.3.3.2 Selecting compressed air quality G or F

Switch position Directional control valve	Compressed air quality	Code for compressed air quality
I	▪ Moisture-reduced ▪ Technically oil-free ▪ Warm	G
0	▪ Moisture-reduced ▪ Technically oil-free	F

Tab. 68 Directional control valve switch position and compressed air quality

1. Decide upon compressed air quality based on the application.
2. Set the directional control valve according to the compressed air quality.

9.3.4 ea ec Using the tool lubricator

NOTICE

Damage from compressed air containing lubricant

- ► Read the operating instructions for the air tool.
- ► Block lubricant additive for unsuitable air tools.
- ► Blow lubricant residue out of the air line.

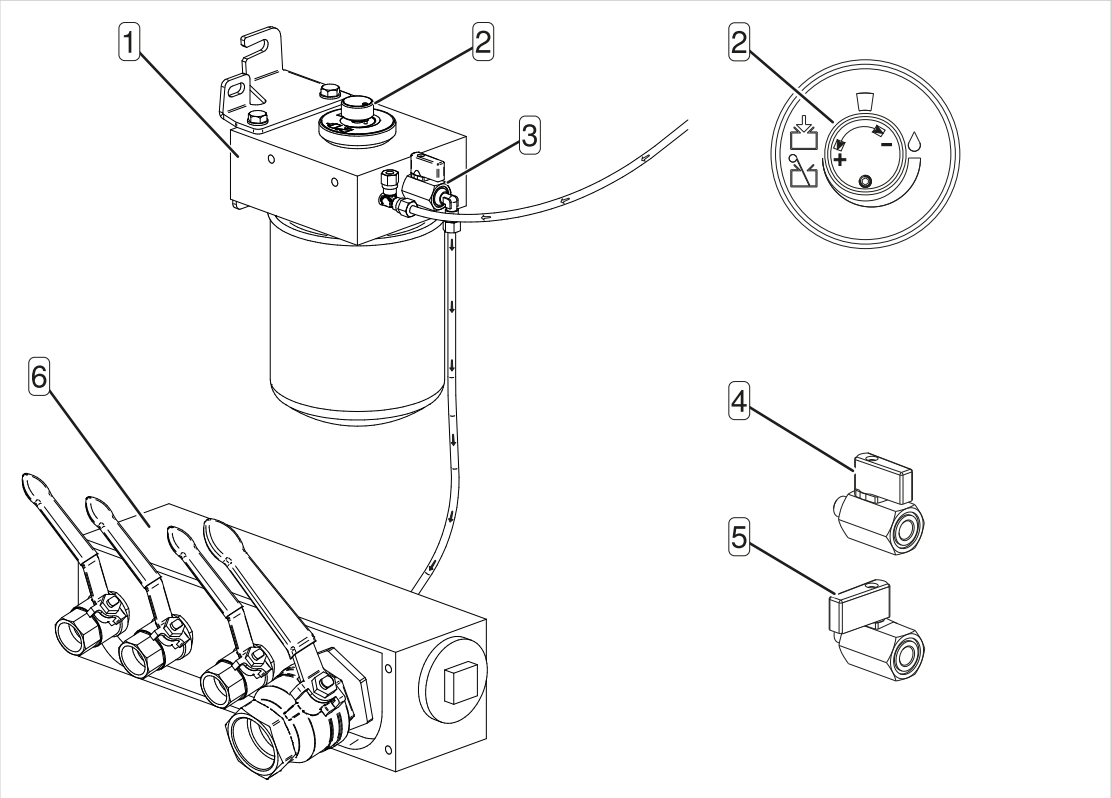


Fig. 37 Using the tool lubricator

1. Tool lubricator
2. Metering wheel
3. Shut-off valve
4. Shut-off valve open
5. Shut-off valve closed
6. Compressed air outlet

1. Read the operating instructions for the air tool.
2. Check whether the air tool must be operated with or without lubricant additive.

Service the tool lubricator, see chapter 11.11 Servicing the options.

9.3.4.1 Switching on the lubricant additive

You can open the shut-off valve by turning the shut-off valve knob in the direction of flow.

- ► Open the shut-off valve.
  - ✓ Connected air tools will be operated with compressed air containing lubricant.

9.3.4.2 Metering the lubricant content

The lubricant content in the compressed air is dependent upon the specific application.

The lubricant content in the compressed air depends on:

- The air tools used
- The compressed air hoses connected

Select the lubricant dosage in the compressed air in accordance with your specific application by turning the metering wheel:

Action	Result
Turning the metering wheel clockwise	Reduces the lubricant content
Turning the metering wheel anticlockwise	Increases the lubricant content

► Set the lubricant content via the metering wheel in accordance with your specific application.

9.3.4.3 Blocking the lubricant additive

You can close the shut-off valve by turning the shut-off valve knob at right angles to the direction of flow.

► Close the shut-off valve.
✓ Connected air tools will be operated without compressed air containing lubricant.

9.3.5 ga Operating the generator

Carry out the steps in the following sequence:

- Test the insulation monitoring device
- Install the electrical equipment
- Switch on the generator to generate electricity
- Switch on the electrical equipment
- Ensure material-friendly shutdown of the generator

► Follow all instructions carefully.

9.3.5.1 Testing the insulation monitoring device

⚠ DANGER

Danger of fatal injury from contact with live components

► Always test the insulation monitoring device first.
► Only activate the generator after successfully testing the insulation monitoring device.

Test the insulation monitoring device every day with the drive engine running.

The «insulation monitoring test key» is equipped with an integrated *warning lamp*.

You can also find the test instructions directly on the machine's generator control box.

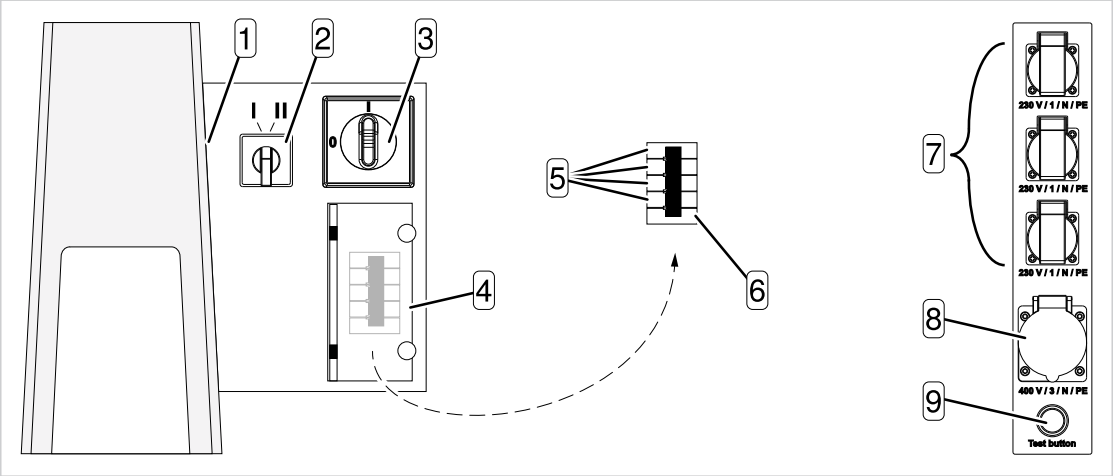


Fig. 38 Testing the insulation monitoring device

1. Generator control box
2. Operating mode selector switch
3. Main switch
4. Safety cut-out cover
5. Main fuse
6. Shunt release
7. Sockets 230 V/N/PE, 16 A
8. Socket 400 V/3/N/PE, 16 A
9. Insulation monitoring test key

1. Start the machine.
2. Testing the insulation monitoring device:
   a) Switch on the main fuse 5.
   b) Actuate the test key 9 for three Seconds.

The main fuse is tripped.

The generator can be used to generate electricity.

The main fuse is not tripped.

The integrated warning lamp on the test key is illuminated.

- Decommission the generator and contact an authorised KAESER SERVICE agent.

9.3.5.2 Installing electrical equipment

Each socket on the machine's socket panel is clearly labelled.

1. Check that the electrical equipment and its connecting cable are in perfect condition.
2. Check that the electrical equipment is switched off.
3. Insert the plug for the electrical equipment into a suitable socket on the socket panel.

9.3.5.3 Activating the generator to generate electricity

You can use the generator without earthing.

1. Switch the machine to LOAD.
2. Switch on the «generator main switch».
3. Switch on the «main fuse».
4. Set the «operating mode selector switch» to the specific operating mode.

9.3.5.4 Using electrical equipment

Proceed as follows:

- Switch equipment with a high starting current on first
- Always switch multiple electrical equipment on one after the other

⚠ WARNING

Danger of injury from electrical equipment starting up in an uncontrolled manner

- ► Only switch on stationary equipment when the danger area is clear of personnel.
- ► Hold hand-held equipment before switching on.

1. Correctly switching on stationary electrical equipment:
   a) Ensure that the danger area is clear of personnel.
   b) Switch on the stationary electrical equipment.
   c) Start up the stationary electrical equipment under visual monitoring.
2. Correctly switching on hand-held electrical equipment:
   a) Firstly, hold the hand-held electrical equipment.
   b) Switch on the hand-held electrical equipment.
   c) Start up the hand-held electrical equipment in a controlled manner.

9.3.5.5 Shutting down the generator

NOTICE

Thermal overload from shutting down the generator at high load

Failure of or damage to the generator is possible.

- ► Switch the machine first to the unloaded run-on phase.

1. Turn the «main switch» to position *0*.
2. Turn the «generator main switch» to position *0*.
3. Activate the «LOAD/IDLE» key.
   ✓ The machine switches to the unloaded run-on phase.
4. Wait for approx. 2 Minutes until the generator has cooled down sufficiently.

9.3.6 ua Using the hose reel

At the front end of the machine is a hose reel equipped with a compressed air extension hose. A crank handle is provided for user-friendly unreeling of the compressed air extension hose to the required length.

⚠ WARNING

Danger of impact from loose hose ends whipping around in an uncontrolled manner

- ► Do not pressurise loose compressed air hoses.
- ► Only pressurise compressed air hoses when the air tool has been connected.
- ► Only detach air tools when the compressed air hose has been vented.
- ► At a working pressure of > 7 bar, compressed air hoses should be secured to the discharge valve by a cable.

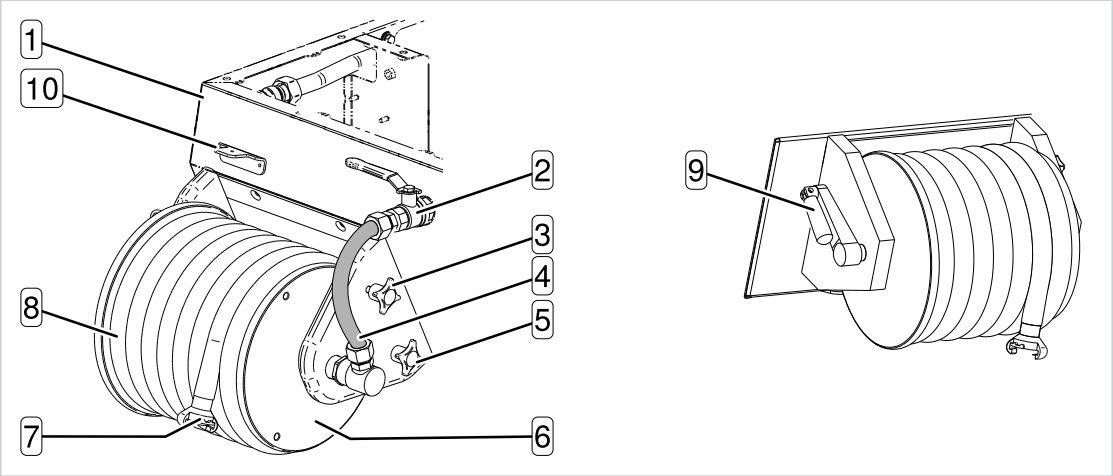


Fig. 39 Hose reel with compressed air extension hose

1	Front end of machine	6	Hose drum
2	Discharge valve	7	Claw coupling
3	Clamping screw	8	Compressed air extension hose
4	Compressed air hose	9	Crank handle
5	Transport locking screw	10	Bracket

1. Remove the claw coupling for the compressed air extension hose from the bracket.
   a) Loosen the transport locking screw.
   b) Loosen the clamping screw.
2. Swing out the crank handle.
   a) Unreel the compressed air extension hose to the required length.
   b) Tighten the clamping screw.
   c) Swing the crank handle back in.
3. Attach the air tool to the claw coupling.
4. Start the machine.
   a) Hold the air tool by its handle.
   b) Open the discharge valve 2 for the compressed air extension hose.

The air tool is ready for operation.

10 Fault recognition and rectification

10.1 Evaluating drive engine errors and faults

Error	Possible cause	Measure
Drive engine does not start or stops.	«EMERGENCY STOP» button is locked.	Unlock the «EMERGENCY STOP» button.
	Starter defective.	Contact a SW[3)]
	ECU fault.	Contact a SW[3)]
	Fuel tank empty.	Refill the fuel tank.
	Air pockets in fuel line between fuel tank and injection pump.	Vent the fuel line.
	Fuel line broken.	Contact an authorised SP[2)]
	Fuel filter clogged.	Clean or replace the fuel filter.
	Control fuse or relay defective.	Contact a SW[3)]
	ADT[1)] too high.	Contact an authorised SP[2)]
	SCS controller defective.	Contact an authorised SP[2)]
	Electrical connections and/or cables loose or broken.	▪ Tighten ▪ Contact an authorised SP[2)]
	Battery defective or charge too low.	Service the battery.
Drive engine not reaching LOAD speed.	Air pockets in fuel line between fuel tank and injection pump.	Vent the fuel line.
	Fuel filter clogged.	Clean or replace the fuel filter.
	Fuel line broken.	Contact a SW[3)]
	ECU fault.	Contact a SW[3)]
	SCS controller defective.	Contact an authorised SP[2)]
Drive engine losing power.	Engine air filter clogged.	▪ Check the maintenance indicator ▪ Clean the filter element or ▪ replace the filter element
	Turbocharger defective.	Contact a SW[3)]
	Turbocharger hoses leaking.	Check the turbocharger hoses.
	Injector malfunctioning.	SW[3)]

1) Airend Discharge Temperature

2) Service Partner

3) Specialist Workshop

Error	Possible cause	Measure
Error noticed when refuelling.	Fuel tank filled with incorrect, “Super” fuel type.	Arrange for the fuel tank to be drained / pumped out by a SW[3)]
Drive engine knocks, splutters or fails to start	Fuel tank filled with incorrect, “Super” fuel type and drive engine started.	▪ Stop the machine immediately ▪ Arrange for the fuel tank to be drained / pumped out by a SW[3)] ▪ Arrange for the injection pump to be replaced by a SW[3)] ▪ Arrange for the drive engine to be checked by a SW[3)]

1) Airend Discharge Temperature
2) Service Partner
3) Specialist Workshop

Tab. 69 Drive engine errors and faults

10.2 Evaluating compressor errors and faults

Error	Possible cause	Action
Working pressure too high	Proportional controller defective.	Contact an authorised SP[3)]
	Inlet valve not closing.	Arrange for the regulator, control line and inlet valve to be checked by an authorised SP[3)]
	Pressure gauge displaying incorrect reading.	Contact an authorised SP[3)]
	Venting valve not blowing off.	Arrange for the connections and function to be checked by an authorised SP[3)]
Working pressure too low	Proportional controller defective.	Contact an authorised SP[3)]
	Inlet valve not opening or only partially opening.	Contact an authorised SP[3)]
	Pressure gauge displaying incorrect reading.	Contact an authorised SP[3)]
	Safety valve incorrectly adjusted or leaking.	Contact an authorised SP[3)]
	Venting valve blowing off.	Contact an authorised SP[3)]

1) Oil Separator Cartridge
2) Oil Separator Tank
3) Service Partner

Error	Possible cause	Action
	Drive engine not running at LOAD operating point.	See chapter 10.1 Evaluating drive engine errors and faults
	Compressor air filter clogged.	Clean or replace.
	OSC[1] heavily contaminated.	Replace OSC[1].
Safety valve blowing off	OSC[1] heavily contaminated.	Replace OSC[1].
	Inlet valve not closing.	Arrange for the regulator, control line and inlet valve to be checked by an authorised SP[3].
	Safety valve incorrectly adjusted or leaking.	Contact an authorised SP[3]
Machine overheating	Fan wheel defective.	Arrange for the blades or complete fan wheel to be replaced by an authorised SP[3].
	Oil cooler surface contaminated.	Clean oil cooler.
	Working element in thermostatic valve defective.	Contact an authorised SP[3]
	Working pressure too high due to incorrectly adjusted proportional controller	Contact an authorised SP[3]
	OSC[1] heavily contaminated.	▪ Measure differential pressure ▪ If the pressure differential is greater than 1 bar, replace
	Compressor oil filter cartridge clogged.	Replace compressor oil filter cartridge
	Compressor oil level low.	Replenish compressor oil
	Oil lines leaking.	Tighten or arrange replacement by an authorised SP[3]
	Drive engine cooling system defective.	Contact an authorised SP[3]
	Cooling air blower defective.	Contact an authorised SP[3]
	Residue in coolant cooler.	Clean coolant cooler.
	Ambient temperature too high.	Check ambient temperature at installation location
High oil content in compressed air	Oil return line for OSC[1] contaminated.	▪ Clean dirt trap for oil separator cartridge ▪ Replace strainer and nozzle if required
	OSC[1] torn.	Replace oil separator cartridge

1) Oil Separator Cartridge
2) Oil Separator Tank
3) Service Partner

Error	Possible cause	Action
	Compressor oil level too high in OST[2].	Reduce compressor oil level to maximum
Oil leaking from compressor air filter after machine has been shut down	Non-return function on inlet valve defective.	Contact an authorised SP[3]
High moisture content in compressed air	Condensate drain on water separator contaminated.	Clean dirt trap on water separator

1) Oil Separator Cartridge
2) Oil Separator Tank
3) Service Partner

Tab. 70 Compressor errors and faults

10.3 ga Evaluating generator errors and faults

Error	Possible cause	Measure
Generator producing no or too little voltage	Drive belt defective.	Contact an authorised SP[1]
	Generator / regulator defective.	Contact an authorised SP[1]
	Circuit breaker triggered due to overload or defect.	▪ Check the power of the connected consumers ▪ Reduce the power of the connected consumers ▪ Arrange for the consumers to be checked for short circuit by an authorised SP[1] ▪ Arrange for the circuit breaker to be checked by an authorised SP[1]
	Drive engine speed too low.	Arrange for the rated speed to be adjusted by an authorised SP[1]
	Generator not switched on.	Switch the generator on.
	▪ Working pressure for compressor set too high ▪ Speed dropping due to engine overload	Arrange for the working pressure to be adjusted by an authorised. SP[1].
	Drive engine power reduced due to climatic or other influences.	Do not load the generator and compressor up to their rated power.
Generator voltage too high	Generator / regulator defective.	Contact an authorised SP[1]

1) Service Partner

Error	Possible cause	Measure
	Drive engine speed too high.	Arrange for the rated speed to be adjusted by an authorised SP[1)]

1) Service Partner

Tab. 71 Generator errors and faults

11 Maintenance

Proper maintenance ensures safe and effective operation of the machine.

Perform maintenance work only when the machine has been shut down, is fully vented and has cooled down. Park mobile machines levelly and secure against rolling away.

For the sake of your own health and to protect the environment, exercise caution when handling fuel, operating fluids or batteries.

Permit work on live components to be performed by a certified electrician only.

⚠ DANGER

Danger of force being exerted on the body due to sudden release of pressure

- ► Stop the machine and wait until it has vented.
- ► Open all discharge valves at the compressed air outlet.
- ► Check that the pressure gauge reads 0 bar.
- ► Ensure that all pressurised components are fully vented.

⚠ DANGER

Danger of poisoning from released exhaust gases

- ► Only use the machine outdoors.
- ► Never operate the machine in enclosed spaces.
- ► Do not inhale exhaust gases.

⚠ WARNING

Danger of injury from careless use of personal protective equipment

- ► Wear suitable personal protective equipment when performing all maintenance work.

⚠ WARNING

Danger of burns from fuel igniting

- ► Stop the drive engine and allow it to cool down.
- ► Keep fuel away from hot machine components.
- ► Wipe up spilled fuel immediately.
- ► Do not smoke.

⚠ WARNING

Danger of shearing and crushing from contact with rotating components

- ► Stop the machine.
- ► Secure the machine against being restarted.
- ► Only remove safety guards and cover panels after securing the machine against being restarted.

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

⚠ CAUTION

Danger from contact with live components

- ► Disconnect the negative cable from the battery before performing any work on electrical components.

Labelling the machine

Warn third persons in particular by blocking off access to the work area and displaying appropriate signage whilst work is being performed on the machine:

Symbol	Meaning
	Do not switch on the machine
	Work taking place on the machine Machine not ready for use

Tab. 72 Labelling the machine

Perform a test run:

The test run is the first run of the machine following completion of a maintenance task. The test run serves to test the functions and performance of the machine.

Test run following completion of a maintenance task	
Prepare for operation:	▪ Connect the negative cable to the battery. ▪ Switch on the «Controller ON/OFF» switch. ▪ Close both wing doors.
Open the control panel cover:	Press the «START» key on the SIGMA CONTROL SMART control panel.
Run the machine for approx. 5 Minutes in the IDLE operating point.	
Check the operating characteristics of the machine:	▪ Check the running characteristics. ▪ Check the running noise. ▪ Check smoke emission from the exhaust. ▪ Visually check for leaks outside the machine.
Stop the machine:	▪ Press the «STOP» key on the SIGMA CONTROL SMART control panel. ▪ Wait until the machine has vented automatically, Pressure gauge reads 0 bar. ▪ Open all discharge valves at the compressed air outlet. ▪ Allow the machine to cool down. ▪ Switch off the «Controller ON/OFF» switch.

Check the interior of the machine:	▪ Visually check for leaks.
	▪ Check all of the newly serviced components again for the following:
	  ▪ Operating fluid fill levels
	  ▪ Tightness and secure fit
	  ▪ Correct belt tension
	▪ Check all safety devices for secure fit:
	  ▪ Heat shield
	  ▪ Belt guard
	  ▪ Fan wheel guard
	  ▪ Covers for electrical connections

Tab. 73 Performing a test run

11.1 Ordering spare parts and operating fluids/materials

Compressor

Designation	Unit/quantity	Number
Primary filter element, air filter	1	1260
Secondary filter element, air filter	1	1261
Filter element, oil filter	1	1210
Oil separator cartridge, complete set	1	1455
Compressor oil	1	1600

Tab. 74 Ordering spare parts and operating fluids/materials for the compressor

HATZ drive engine

Designation	Unit/quantity	Number
Primary filter element, air filter	1	1280
Secondary filter element, air filter	1	1281
Fuel-water separator	1	1980
Fuel filter (cartridge)	1	1920
Oil filter (cartridge)	1	1905
Injector nozzle	3	4475
Injector nozzle seal	3	4476
Engine belt	1	4470
Glow plug	3	4466
Engine oil	1	1925

Tab. 75 Ordering spare parts and operating fluids/materials for the drive engine

11.2 Following the maintenance schedule

11.2.1 Logging maintenance work

The maintenance intervals are recommended intervals for genuine KAESER parts. These recommendations apply to average operating conditions. In the event of unfavourable operating conditions, maintenance intervals for e.g. oil changes and filter replacement are reduced.

Unfavourable operating conditions include, for example:

- Heavy dust content in the ambient air
- High / low ambient temperatures
- Poor fuel quality
- Heavy use

1. Adjust maintenance intervals in accordance with the local operating conditions.
2. Log all maintenance work in order to identify any deviations from manufacturer recommendations.

11.2.2 Regular maintenance intervals

Regular machine maintenance intervals can be found in the following table.

Maintenance interval	Short description
Daily	—
Every 250 operating hours, every year at a minimum	A250
Every 500 operating hours, every year at a minimum	A500
Every 1000 operating hours, every 2 years at a minimum	A1000
Every 1500 operating hours, every 3 years at a minimum	A1500
Every 3000 operating hours, every 6 years at a minimum	A3000

Tab. 76 Regular maintenance intervals

1. Maintenance tasks should be carried out in a timely manner in accordance with the prevailing ambient and operating conditions.
2. Replace spare parts and operating fluids/materials in accordance with their respective service lives.

11.2.3 Maintenance schedule following initial commissioning

Carry out maintenance tasks on time, in accordance with the maintenance schedule.

Assembly Task	E10[1)]	E50[2)]	Note
11.3 Servicing the drive engine:			
Check fuel lines and hose clamps. Tighten hose clamps if required.	○	●	
11.11.5 ga Servicing the generator:			
Check belt tension	●	○	

1) after the first 10 operating hours
2) after the first 50 operating hours

Tab. 77 Maintenance tasks following initial commissioning

11.2.4 Machine maintenance schedule

Carry out maintenance tasks on time, in accordance with the maintenance schedule.

Assembly Task	Daily	A250	A500	A1000	A1500	A3000	Note
11.3 Servicing the drive engine:							

1) Exhaust Gas Recirculation
2) Specialist Workshop
3) Service Partner

Assembly Task	Daily	A250	A500	A1000	A1500	A3000	Note
11.3.2.1 Checking the engine air filter maintenance indicator	●	○	○	○	○	○	
11.3.4.1 Checking the engine oil level	●	○	○	○	○	○	
11.3.4.3 Changing the engine oil	○	○	●	○	○	○	
11.3.4.4 Replacing the engine oil filter	○	○	●	○	○	○	
11.3.5.3 Checking the belt tension	○	○	●	○	○	○	SW[2)]
11.3.5.5 Replace drive belt	○	○	○	○	○	●	SW[2)]
11.3.2.7 Cleaning the primary filter element in the engine air filter, replace if required	○	●	○	○	○	○	
Replace primary filter element, see 11.3.2 Engine air filter maintenance	○	○	●	○	○	○	
Replace secondary filter element, see 11.3.2 Engine air filter maintenance	○	○	●	○	○	○	
Check intake air line between air filter and drive engine	○	○	●	○	○	○	SW[2)]
11.3.1.1 Checking the coolant level	●	○	○	○	○	○	
11.3.1.2 Checking the coolant quality	○	○	●	○	○	○	SW[2)], SP[3)]
11.3.1.5 Changing the coolant	○	○	○	○	●	○	SW[2)], SP[3)]
11.3.1.6 Removing residue from the coolant cooler	○	○	○	○	●	○	SW[2)], SP[3)]
Clean coolant cooler, see 11.5 Cleaning the coolers	○	●	○	○	○	○	
Clean charge air cooler, see 11.5 Cleaning the coolers	○	●	○	○	○	○	
Fill fuel tank	●	○	○	○	○	○	
11.3.3.2 Emptying the fuel-water separator	●	○	○	○	○	○	
11.3.3.3 Replace fuel prefilter	○	○	●	○	○	○	

1) Exhaust Gas Recirculation
2) Specialist Workshop
3) Service Partner

Assembly Task	Daily	A250	A500	A1000	A1500	A3000	Note
11.3.3.4 Replacing the fuel filter cartridge	○	○	●	○	○	○	SW[2], SP[3]
Check fuel tank for contamination.	○	○	●	○	○	○	
11.3.3.1 Cleaning the tank strainer	○	○	●	○	○	○	
11.3.7 Servicing the battery	○	○	●	○	○	○	
11.3.6 Servicing the exhaust gas after-treatment:							
Check exhaust system for leaks, including exhaust gas after-treatment components.	●	○	○	○	○	○	
Service exhaust gas after-treatment components	○	○	●	○	○	○	SW[2], SP[3]
Arrange for EGR[1] to be cleaned	○	○	○	○	○	●	SW[2], SP[3]
11.4 Servicing the compressor:							
11.4.4.1 Checking the compressor air filter maintenance indicator	●	○	○	○	○	○	
11.4.1.1 Checking the compressor oil level	●	○	○	○	○	○	
Clean compressor oil cooler, see 11.5 Cleaning the coolers	○	●	○	○	○	○	
11.4.2 Dirt trap maintenance on the fluid distribution module	○	○	○	●	○	○	
11.4.4.7 Cleaning the primary filter element in the compressor air filter, replace if required	○	○	●	○	○	○	
Replace primary filter element, see 11.4.4 Servicing the compressor air filter	○	○	○	●	○	○	
Replace secondary filter element, see 11.4.4 Servicing the compressor air filter	○	○	○	●	○	○	
11.4.1.3 Changing the compressor oil	○	○	○	●	○	○	
11.4.1.4 Replacing the compressor oil filter	○	○	○	●	○	○	
11.4.3 Replacing the oil separator cartridge	○	○	○	●	○	○	

1) Exhaust Gas Recirculation

2) Specialist Workshop

3) Service Partner

Assembly Task	Daily	A250	A500	A1000	A1500	A3000	Note
11.10 Testing the safety functions:							
11.10.1 Checking the EMERGENCY STOP device	●	○	○	○	○	○	
Test EMERGENCY STOP device.	○	○	●	○	○	○	SW[2], SP[3]
2.3.4 Safety valve actuating pressure	○	○	●	○	○	○	SW[2], SP[3]
11.10.3 Testing the excess temperature safety shutdown	○	○	●	○	○	○	SW[2], SP[3]
11.8 Checking the wing doors:							
11.8.1 Maintaining the rubber seals	○	○	●	○	○	○	
11.8.2 Checking the closing function of the wing doors	○	○	●	○	○	○	
11.8.3 Checking the connection elements on the wing doors	○	○	●	○	○	○	
Bodywork							
11.7 Check sound insulation material	○	○	●	○	○	○	
Arrange for crane suspension to be checked	○	○	●	○	○	○	SW[2], SP[3]
11.9 Checking or replacing hose lines:							
Check all pipes and hose lines are tightly seated and without leaks or wear; replace if necessary	○	○	●	○	○	○	SW[2], SP[3]
Other maintenance tasks:							
Check all accessible screw connections, lines and clamps on the machine are free from wear and tightly seated, see 11.6 Checking screw connections	○	○	●	○	○	○	
Check electrical connections for tightness.	○	○	●	○	○	○	

●: Applicable
○: Not applicable

1) Exhaust Gas Recirculation
2) Specialist Workshop
3) Service Partner

11.2.5 Options maintenance schedule

Carry out maintenance tasks on time, in accordance with the maintenance schedule.

Option designation Task	Daily	A250	A500	A1000	A1500	A20000	Note
11.11.1 da Servicing the compressed air aftercooler:							
Clean compressed air aftercooler	○	●	○	○	○	○	
11.11.2 da Servicing the dirt trap on the water separator:							
Clean dirt trap	○	○	●	○	○	○	
11.11.3 dd Servicing the filter combination:							
Blow out condensate	●	○	○	○	○	○	
Replace filter elements	○	○	●	○	○	○	
Replace filter element seal	○	○	●	○	○	○	
11.11.4 ea ec Maintaining the tool lubricator:							
Check supply vessel fill level	●	○	○	○	○	○	
11.11.5 ga Servicing the generator:							
Check drive belt	○	○	●	○	○	○	
Arrange for generator and generator control box to be checked	○	○	●	○	○	○	
Replace drive belt	○	○	○	●	○	○	
Arrange for generator bearings to be checked	○	○	●	○	○	○	SW[1)], SP[2)]
Arrange for generator bearings to be replaced	○	○	○	○	○	●	SW[1)], SP[2)]
11.11.6 la Servicing the spark arrester:							
Blow out soot							
11.11.7 lb Maintaining the engine air shut-off valve:							
Clean and check engine air shut-off valve.	○	○	●	○	○	○	SW[1)], SP[2)]
11.11.8 oe Servicing the closed floor pan:							
Check machine interior for liquid accumulation.	●	○	○	○	○	○	

●: Applicable
○: Not applicable

1) Specialist Workshop
2) Service Partner

11.3 Servicing the drive engine

Carry out maintenance in accordance with chapter 11.2 Following the maintenance schedule.

11.3.1 Checking the coolant

⚠ WARNING

Danger of scalding from hot coolant

- ► Stop the machine and allow it to cool down.
- ► Open the cover cap on the coolant expansion tank slowly.

⚠ CAUTION

Danger of chemical burns from coolants containing antifreeze

- ► Wear eye protection.
- ► Wear protective gloves.

NOTICE

Damage caused by drive engine overheating

- ► Check the coolant level on a daily basis.

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

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

11.3.1.1 Checking the coolant level

You can view the fill level in the transparent coolant expansion tank.

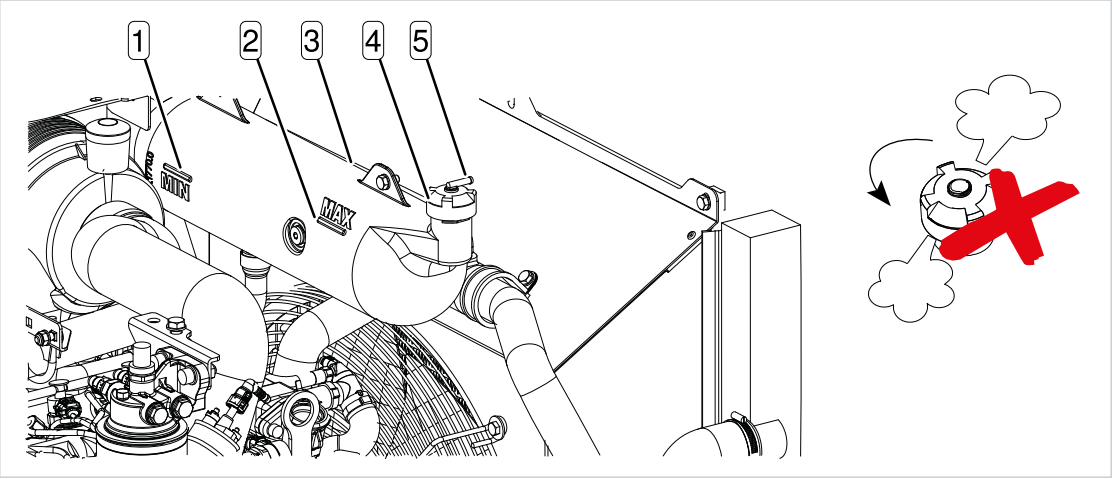


Fig. 40 Checking the coolant level

1 Minimum coolant level
2 Maximum coolant level
3 Coolant expansion tank
4 Cover cap
5 Overflow

► Perform a visual check of the coolant level every day.

11.3.1.2 Checking the coolant quality

In order to ensure the quality and service life of the coolant, check the coolant in accordance with the maintenance schedule.

The following parameters determine the quality of the coolant:

- Visual check
- Antifreeze concentration measurement

1. Loosen the cover cap from the filler port.
2. Remove the cover cap.

Visually checking the coolant quality

Proceed as follows:

1. Extract a coolant sample from the coolant expansion tank.
2. Check the coolant sample for discolouration.
3. Check the coolant sample for loose, floating particles.

Checking the antifreeze content

The coolant is a mixture of clean, fresh water with special additives.

These consist of corrosion protection/antifreeze and other additives.

A minimum antifreeze percentage of 33 % guarantees sufficient corrosion protection inside the cooling circuit.

Check the antifreeze content of the coolant using a suitable coolant testing device.

For example, a refractometer is a suitable coolant testing device.

Read and observe the manufacturer's test instructions.

To test the antifreeze content of the coolant, proceed as follows:

1. Extract a coolant sample from the coolant expansion tank.
2. Use the refractometer in accordance with the manufacturer's test instructions.
3. Check the antifreeze content of the coolant using the refractometer.
4. Change the coolant if the test value is below the minimum level.

11.3.1.3 Correctly mixing the coolant

The mixing ratio determines the degree of frost protection.

Designation	Frost protection up to approx. [°C]	Medium	Proportion [%]
Recommended frost protection	-37	Anti-corrosion agent/antifreeze	50
		Water	50
Max. frost protection	-45	Anti-corrosion agent/antifreeze	55
		Water	45

Tab. 78 Coolant mixing ratio

An adhesive label with the machine manufacturer's recommended mixing ratio is positioned in the immediate vicinity of the coolant expansion tank.

To mix the coolant correctly, proceed as follows:

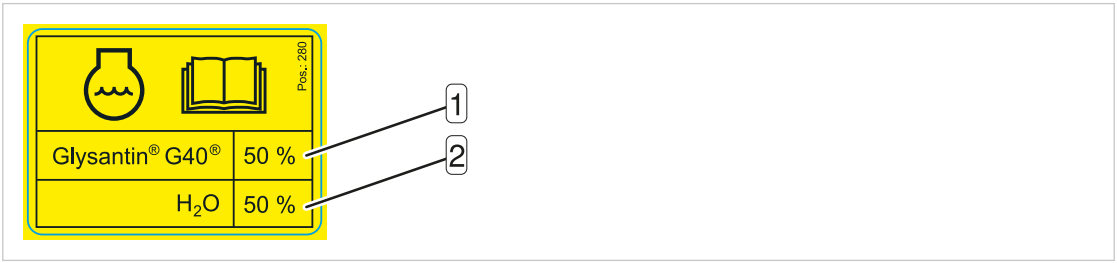


Fig. 41 Machine manufacturer recommended mixing ratio

[1] Anti-corrosion agent/antifreeze
[2] Proportion of water

1. Take note of the mixing ratio.
2. Mix the coolant correctly.

11.3.1.4 Replenishing the coolant

The coolant expands as it heats up.

Ensure sufficient expansion space so that the coolant does not overflow.

To replenish the coolant, proceed as follows:

1. Loosen and remove the coolant expansion tank cover cap.
2. Fill with fresh coolant up to the *max. fill level* mark.
3. Replace the cover cap.

11.3.1.5 Changing the coolant

The coolant cooler is equipped with a hose coupling for user-friendly coolant drainage.

The hose coupling is located on the right-hand side of the coolant cooler.

The maintenance opening in the floor pan is located directly beneath the hose coupling.

For user-friendly drainage of the coolant, proceed as follows:

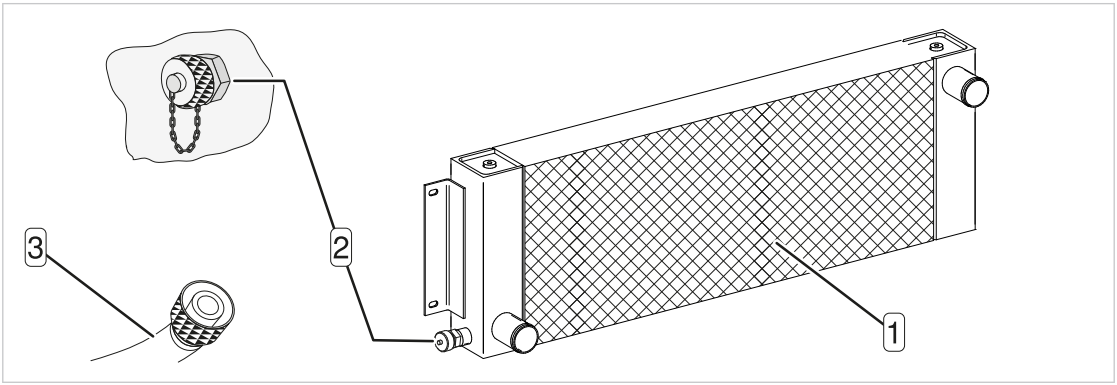


Fig. 42 Draining the coolant via the hose coupling

[1] Coolant cooler
[2] Hose coupling
[3] Male hose coupling

1. Place a receptacle beneath the maintenance opening.
2. Loosen and remove the cover cap on the coolant expansion tank.
3. Suspend and fasten the free end of the male hose coupling in the receptacle.
4. Loosen and remove the protective cap from the hose coupling.
5. Attach the male hose coupling to the hose coupling.
   ✓ The hose coupling is open.
   The coolant drains completely.
6. Remove the male hose coupling from the hose coupling.
   ✓ The hose coupling is closed.
7. Refit the protective cap on the hose coupling.
8. Correctly fill with fresh coolant.
9. Close the cover cap on the coolant expansion tank.

Dispose of used coolant in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.1.6 Removing residue from the coolant cooler

Following extended periods of machine use, scaling may form inside the coolant cooler.

Residue inside the coolant cooler impairs heat dissipation. It is possible that the drive engine may overheat.

NOTICE

Damage caused by drive engine overheating

► Remove calcification from the coolant cooler.

To remove calcification from inside the coolant cooler, proceed as follows:

1. Drain the coolant.
2. Read and adhere to the manufacturer's instructions regarding the use of cooler cleaning agent.
3. Use a cooler cleaning agent to remove calcification from the coolant cooler.

11.3.2 Engine air filter maintenance

Operating the drive engine without filter elements fitted is not permitted.

Replace the filter element after the following occurrences:

- The maintenance indicator is actuated.
- The maintenance interval has expired in the maintenance schedule.
- A maintenance message is indicated on the SIGMA CONTROL SMART display

NOTICE

Damage caused by destroyed filter element

Drive engine wear from contaminated intake air.

► Do not try to clean the filter element by striking or tapping it.
► Do not wash the filter element.

1. The machine is stopped
2. Compressed air consumers are disconnected
3. Compressed air discharge valves on the compressed air outlet are open
4. The machine has been fully vented

5. Pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Set the «battery isolation switch» to position **0**.

11.3.2.1 Checking the engine air filter maintenance indicator

Carry out maintenance on the engine air filter as soon as the yellow maintenance indicator piston reaches the red zone of the indicator scale.

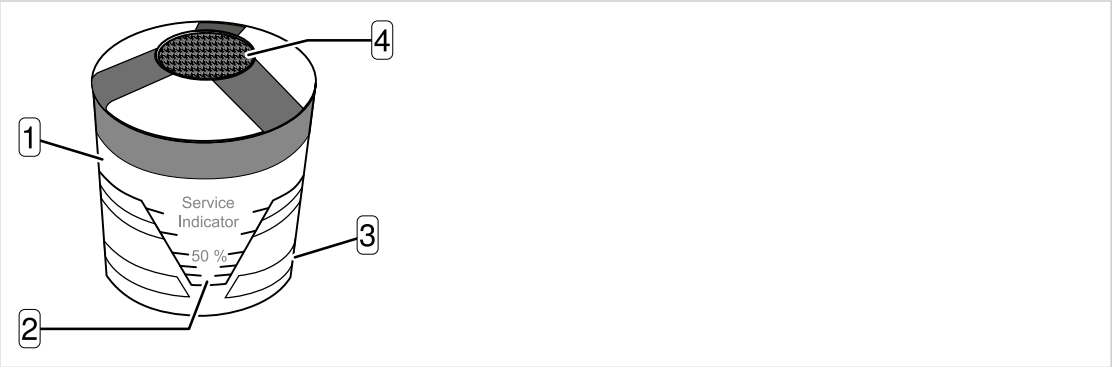


Fig. 43 Checking the maintenance indicator in the intake air line for the engine air filter

1 Maintenance indicator
2 Yellow indicator piston
3 Red zone of indicator scale
4 Reset knob

► Check the position of the yellow indicator piston.

11.3.2.2 Cleaning the dust evacuator valve

Coarse dirt particles in the intake air fall to the base of the filter housing and are deposited in the area around the dust evacuator valve.

To clean the dust evacuator valve, proceed as follows:

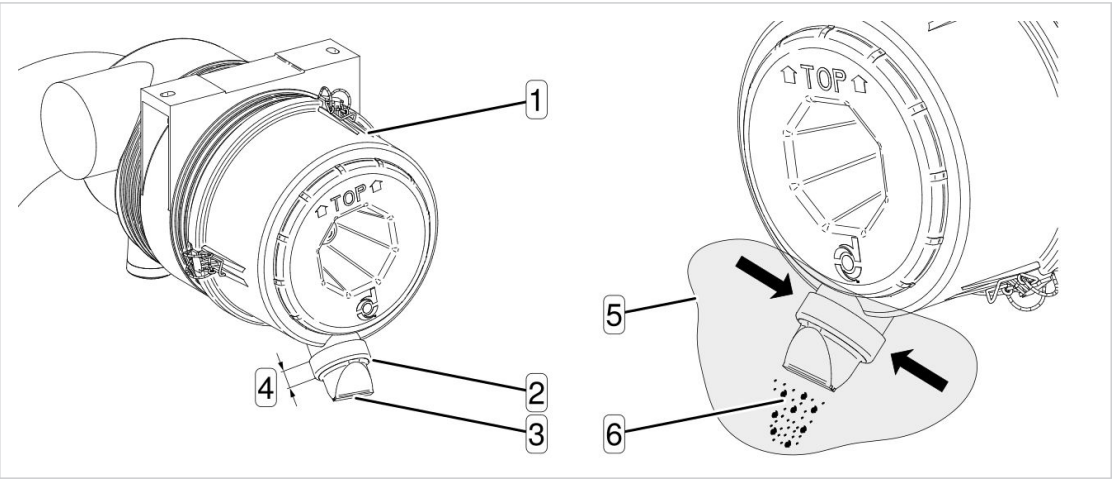


Fig. 44 Cleaning the dust evacuator valve

1 Filter cap
2 Dust evacuator valve
3 Sealing lips
4 Valve area
5 Cleaning procedure
6 Coarse dirt particles

1. Squeeze the valve area to remove coarse dirt particles.
2. Clean both sealing lips.

3. Check that the two sealing lips remain in contact.

11.3.2.3 Removing the filter cap

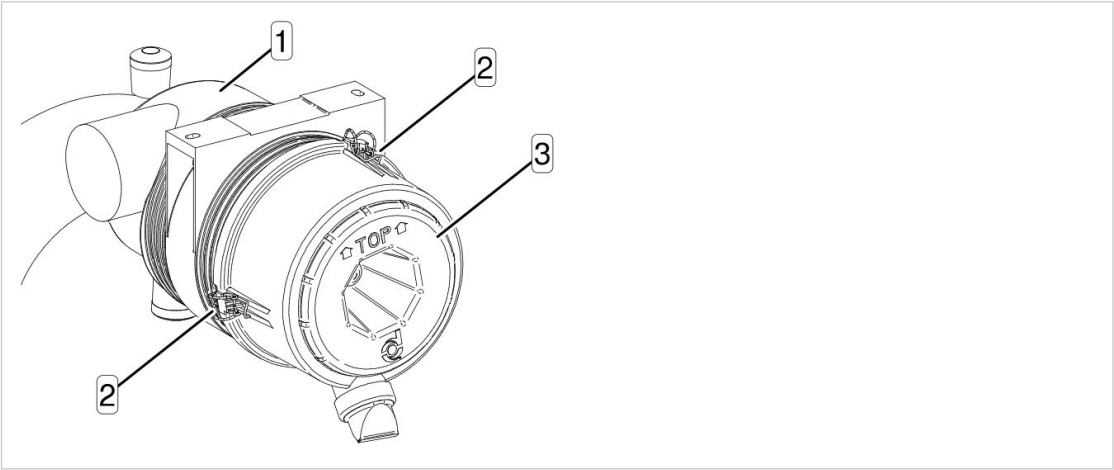


Fig. 45 Removing the filter cap

1 Filter housing
2 Retaining clamp
3 Filter cap

1. Unlock all three retaining clips 2.
2. Remove the filter cap 3.

11.3.2.4 Replacing the filter elements

The engine air filter is fitted with a primary filter element and a secondary filter element.

Replace the secondary filter element at every third change of the primary filter element, or after two years at the latest. The secondary filter element cannot be cleaned and reused.

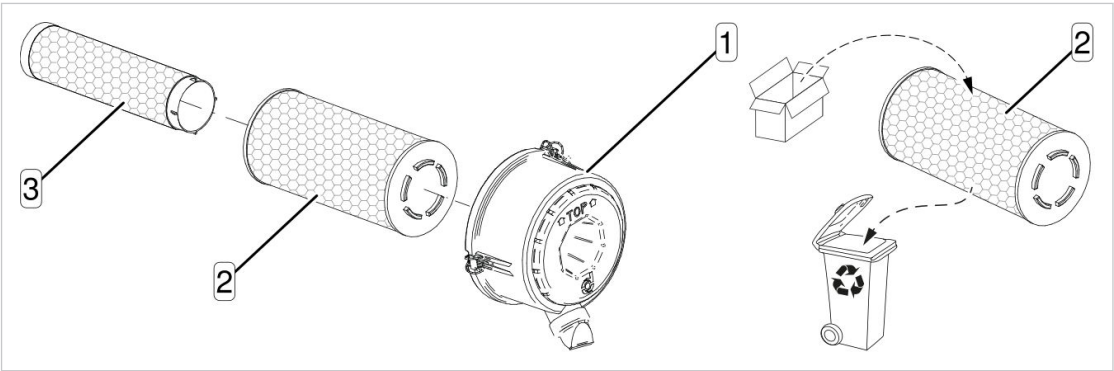


Fig. 46 Replacing the filter elements

1 Filter cap
2 Primary filter element
3 Secondary filter element

1. Remove both used filter elements.
2. Clean the filter housing, filter cap and sealing surfaces with a damp cloth.
3. Insert a new secondary filter element into the filter housing.
4. Insert a new primary filter element into the filter housing.

Dispose of used filter elements and filter dust in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.2.5 Fitting the engine air filter cap

Align the filter cap so that the dust evacuator valve is pointing vertically downwards.

A deflection of ±30° to the vertical axis is permitted.

1. Align the filter cap and position in front of the filter housing.
2. Place the filter cap on the filter housing and press down lightly.
3. Secure the filter cap with all three retaining clamps.

11.3.2.6 Resetting the engine air filter maintenance indicator

► Press the reset button for the maintenance indicator repeatedly.
✓ The maintenance indicator is ready for operation.

11.3.2.7 Cleaning the primary filter element in the engine air filter

Always use new filter elements if possible.

Reuse cleaned primary filter elements only in exceptional cases.

To clean the primary filter element, proceed as follows:

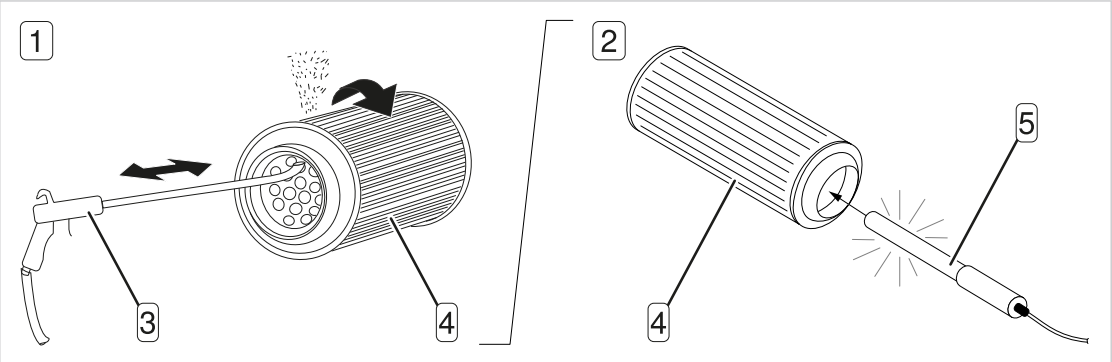


Fig. 47 Cleaning the primary filter element

1 Cleaning the primary filter element
2 Checking the primary filter element
3 Compressed air gun with blow-out pipe
4 Primary filter element
5 Torch

1. Use dry compressed air 5 bar to blow out dirt from the primary filter element at an angle, from the inside to the outside.
2. Blow out the primary filter element until no more dust appears.
3. In a darkened room, use a suitable torch to shine a light through the cleaned primary filter element.
   ✓ The cleaned primary filter element displays no cracks or holes.
   The cleaned primary filter element is in the correct condition.
4. Insert the cleaned and checked primary filter element into the filter housing.

11.3.3 Servicing the fuel system

Loosen old filter cartridges with a filter key or strap.

Fit new filter cartridges using manual force. Use a filter key if you cannot bring sufficient manual force due to an unfavourable installation position. Observe any additional installation information from the filter cartridge manufacturer.

⚠ WARNING

Danger of burns from fuel igniting

- ► Stop the drive engine and allow it to cool down.
- ► Keep fuel away from hot machine components.
- ► Wipe up spilled fuel immediately.
- ► Do not smoke.

NOTICE

Damage to property caused by dirt particles

Unclean surroundings and dirt particles can damage the fuel system.

- ► Clean removed parts and the working environment before disassembling.

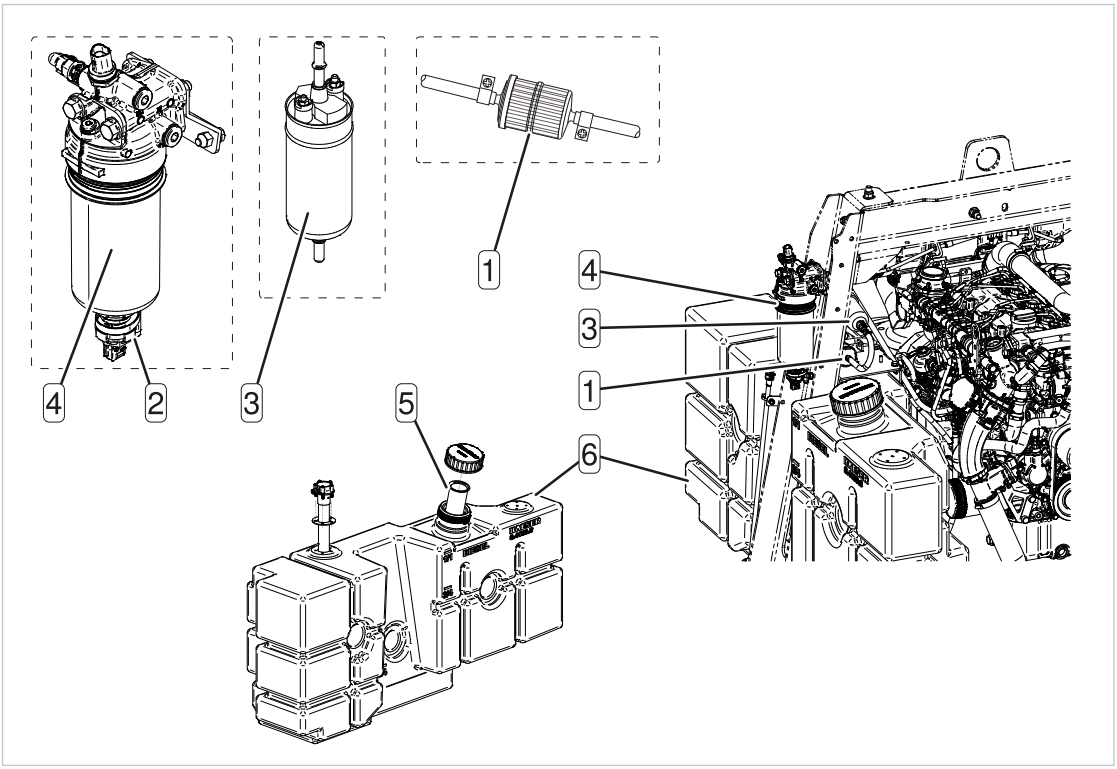


Fig. 48 Fuel system overview

1 Fuel prefilter
2 Drain plug
3 Fuel pump
4 Fuel filter
5 Fuel strainer
6 Fuel tank

- Filter key
- Strap
- Receptacle
- Cleaning cloth

- Fuel prefilter cartridge
- Fuel filter cartridge

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

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

11.3.3.1 Cleaning the tank strainer

1. Open the fuel tank cover cap.
2. Pull out the tank strainer and clean it.
3. Insert a suitable tank strainer into the filler port.
4. Close the fuel tank with the cover cap.

11.3.3.2 Emptying the fuel-water separator

The fuel-water separator is an integral part of the fuel prefilter cartridge. Water and contaminants are trapped by the water collector in the filter cartridge.

The water separator is connected to the controller via a level sensor. Should the water level rise above a certain value, a warning message is triggered.

The SIGMA CONTROL SMART display indicates the warning message *Fuel filter water level*.

Empty the water separator when the SIGMA CONTROL SMART displays this warning message.

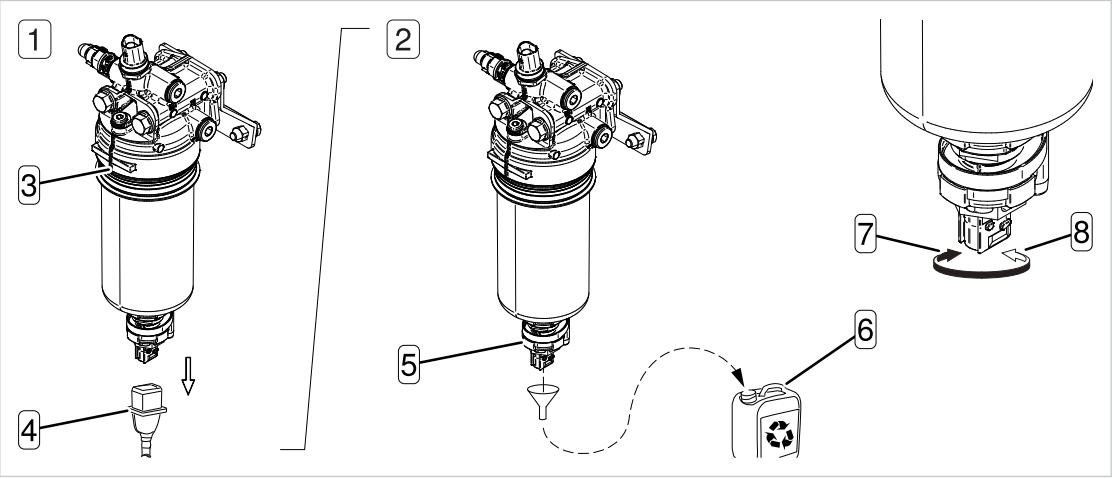


Fig. 49 Emptying the fuel-water separator

1 Removing the level sensor connector plug
2 Opening the drain plug
3 Fuel prefilter cartridge
4 Level sensor connector plug
5 Drain plug
6 Receptacle
7 “Open” direction arrow
8 “Close” direction arrow

1. Remove the level sensor connector plug.
2. Open the drain plug:
   a) Turn the drain plug a maximum of two rotations in the direction of arrow 7.
   b) Allow the water and any contaminants to drain away.

3. Close the drain plug:
   a) Turn the drain plug in the direction of arrow 8.
   b) Clean the drain plug.
4. Insert the level sensor connector plug.
5. Acknowledge the *Fuel filter water level* warning message with the «Enter» key.

Dispose of water and contaminated fuel in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.3.3 Replace fuel prefilter

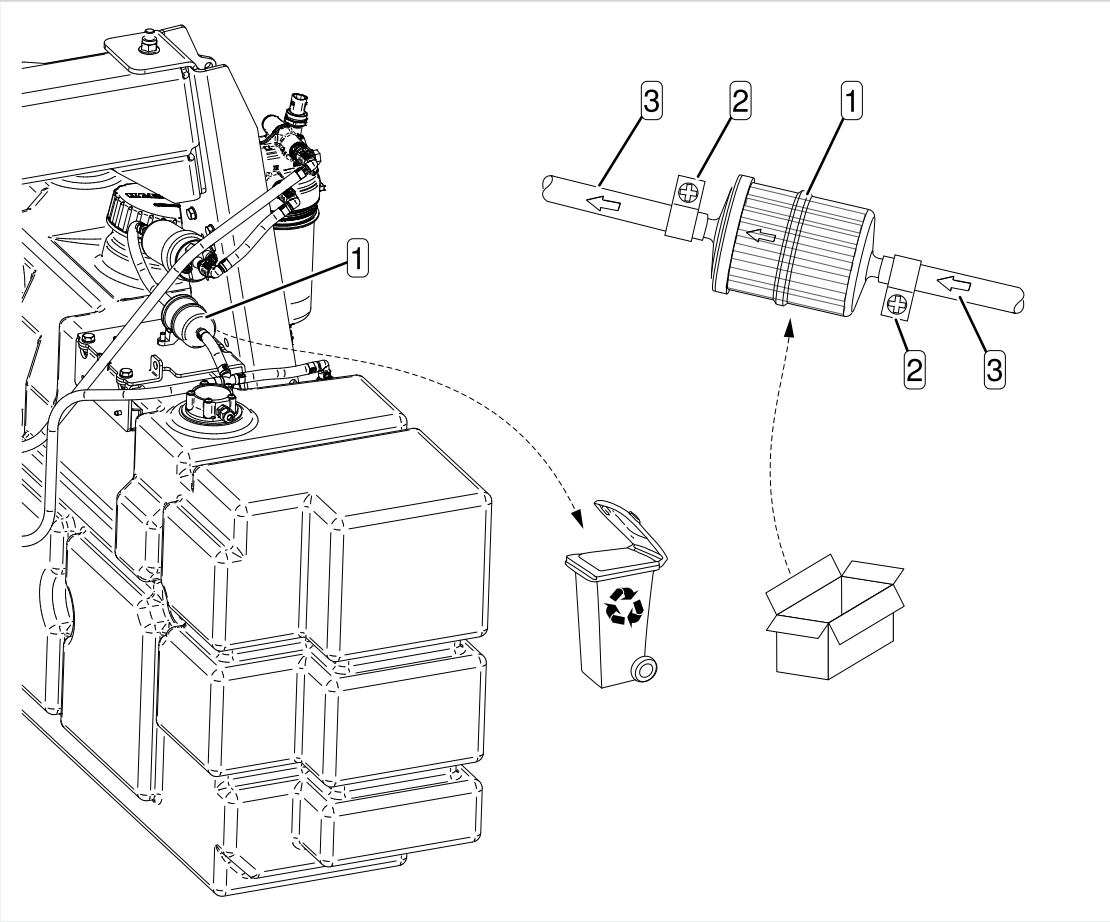


Fig. 50 Replacing the fuel prefilter cartridge

1 Fuel prefilter
2 Hose clamps
3 Fuel line

1. Remove the fuel prefilter 1 from the bracket.
2. Position a receptacle under the fuel prefilter.
3. Loosen the hose clamps 2.
4. Pull out the fuel lines 3 and secure against leakage.
5. Remove the old fuel prefilter
6. Insert a new filter into the fuel lines, taking the direction of flow into account.
7. Affix the fuel prefilter to the bracket.
8. Tighten the hose clamps.

9. Vent the fuel system as described.

Dispose of old fuel prefilters, collected fuel, and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.3.4 Replacing the fuel filter cartridge

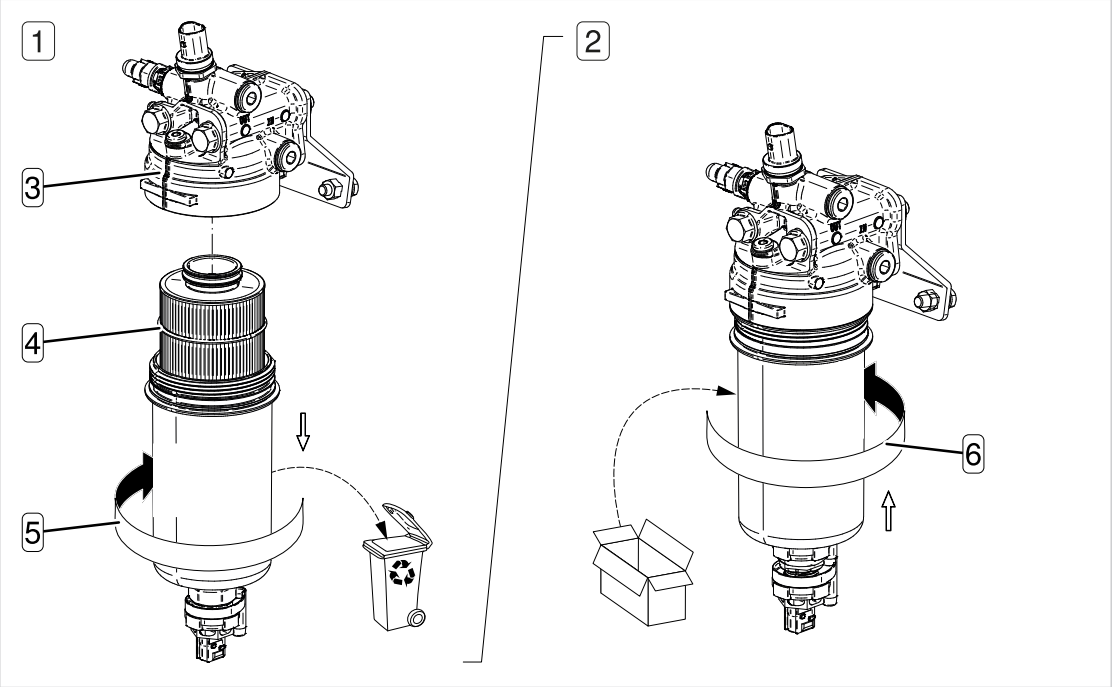


Fig. 51 Replacing the fuel filter cartridge

1 Removing the filter cartridge
2 Inserting the filter cartridge
3 Filter holder
4 Filter cartridge
5 Loosening in direction of arrow
6 Tightening in direction of arrow

1. Position a receptacle.
2. Remove the old filter cartridge:
   a) Turn the filter cartridge in the direction of the arrow 5.
   b) Remove the filter cartridge.
   c) Catch escaping fuel in the receptacle.
3. Clean the sealing surface of the filter holder.
4. Moisten the seal on the new filter cartridge with engine oil.
5. Insert the new filter cartridge:
   a) Hold the new filter cartridge underneath the filter holder.
   b) Turn the new filter cartridge in the direction of the arrow 6 until the seal is touching it.
   c) Hand-tighten the new filter cartridge.

Dispose of old fuel filter cartridges, collected fuel, and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.3.5 Venting the fuel system

Air enters the fuel system during the following maintenance tasks:

- Replacing the fuel prefilter cartridge

- Replacing the fuel filter cartridge
- Replacing the fuel pump
- Work on the fuel lines

When the controller voltage is switched on, the electric fuel pump starts and vents the fuel system.

► Perform a test run, see Tab. 73 Performing a test run.

11.3.4 Servicing the engine oil circuit

► Always carry out maintenance tasks in clean surroundings.

11.3.4.1 Checking the engine oil level

Check the engine oil level using the dipstick on the drive engine.

⚠ CAUTION

Danger of burning from hot surfaces

► Stop the machine and allow it to cool down.
► Wear personal protective equipment.

NOTICE

Damage to the drive engine from insufficient oil level

► Check the engine oil level correctly.
► Only check the engine oil level when the machine is standing level.

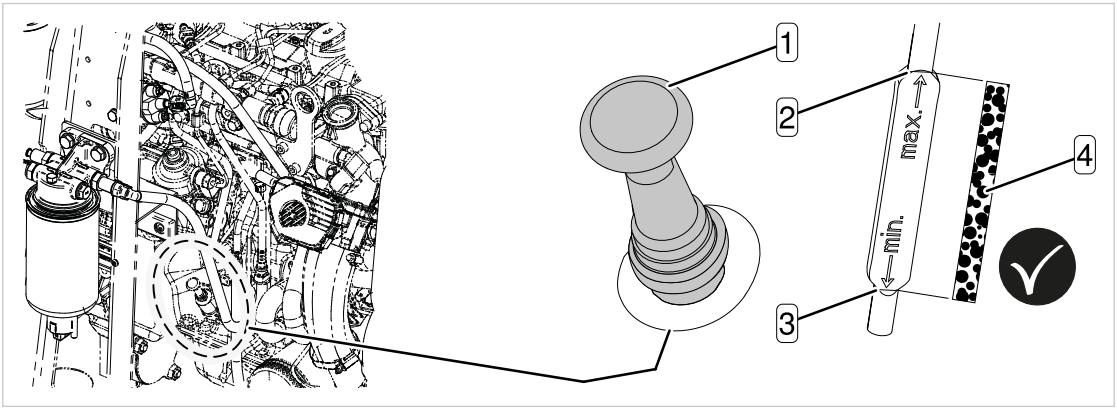


Fig. 52 Checking the engine oil level

1 Dipstick
2 *Maximum oil level* mark
3 *Minimum oil level* mark
4 *Correct oil level* range

- The machine is standing level
- The drive engine has cooled down for 5 Minutes

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Pull out the dipstick.
3. Wipe the dipstick with a cleaning cloth.
4. Push the dipstick back in.
5. Pull the dipstick out again.
6. Read off the actual oil level from the dipstick.
7. Take appropriate measures, see chapter 11.3.4.2 Filling with and replenishing the engine oil.

11.3.4.2 Filling with and replenishing the engine oil

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

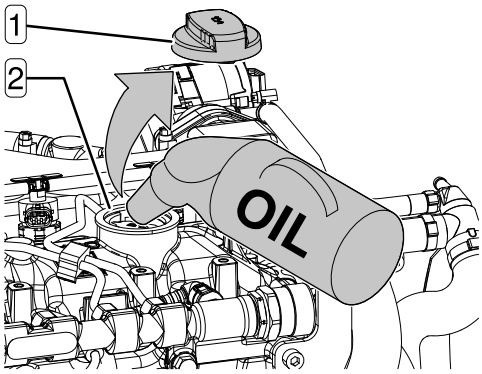


Fig. 53 Filling with engine oil

1 Oil filler cap
2 Oil filler opening

- Fresh engine oil
- Cleaning cloth

1. Switch off the «Controller ON/OFF» switch.
2. Loosen and remove the oil filler cap.
3. Fill with a suitable quantity of fresh engine oil.
4. Wait for at approx. five minutes.
5. Check the engine oil level correctly.
6. Replace the cap on the oil filler opening.
7. Perform a test run, see Tab. 73 Performing a test run.

11.3.4.3 Changing the engine oil

The following components ensure user-friendly drainage of the engine oil:

- Hose coupling on drive engine oil pan
- Male hose coupling

The male hose coupling is supplied loose inside the machine.

⚠ CAUTION

Danger of burns from hot surfaces and escaping engine oil

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

To change the engine oil, proceed as follows:

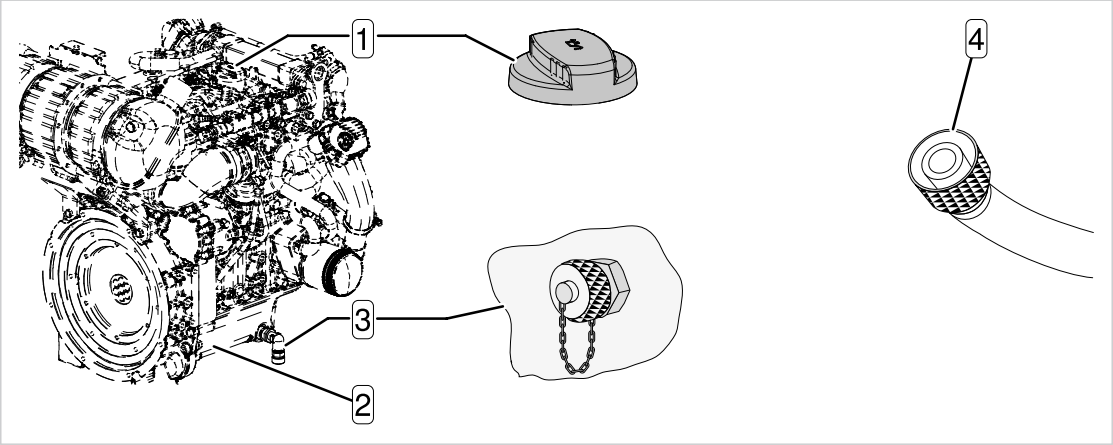


Fig. 54 Draining the engine oil

1 Oil filler cap
2 Oil pan
3 Hose coupling
4 Male hose coupling

- Fresh engine oil
- Cleaning cloth

- The machine is standing level
- The drive engine is at operating temperature

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Loosen and remove the oil filler cap.
3. Suspend and fasten the free end of the male hose coupling in the receptacle.
4. Loosen and remove the protective cap from the hose coupling.
5. Attach the male hose coupling to the hose coupling.
6. Allow the engine oil to drain out completely.
7. Loosen and remove the male hose coupling.
8. Close the hose coupling with the protective cap.
9. Fill with new engine oil, see chapter 11.3.4.2 Filling with and replenishing the engine oil .

Dispose of used engine oil and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.4.4 Replacing the engine oil filter

Loosen the old engine oil filter with a filter key or strap.

Fit the new engine oil filter using manual force. Use a filter key if you cannot bring sufficient manual force due to an unfavourable installation position. Observe any additional installation information from the engine oil filter manufacturer.

Replace the engine oil filter after the following occurrences:

- A maintenance message with a specific message code is indicated on the SIGMA CONTROL SMART display.

- The interval has expired in the maintenance schedule.

⚠ CAUTION

Danger of burns from hot surfaces and escaping engine oil

► Stop the machine and allow it to cool down.
► Wear personal protective equipment.

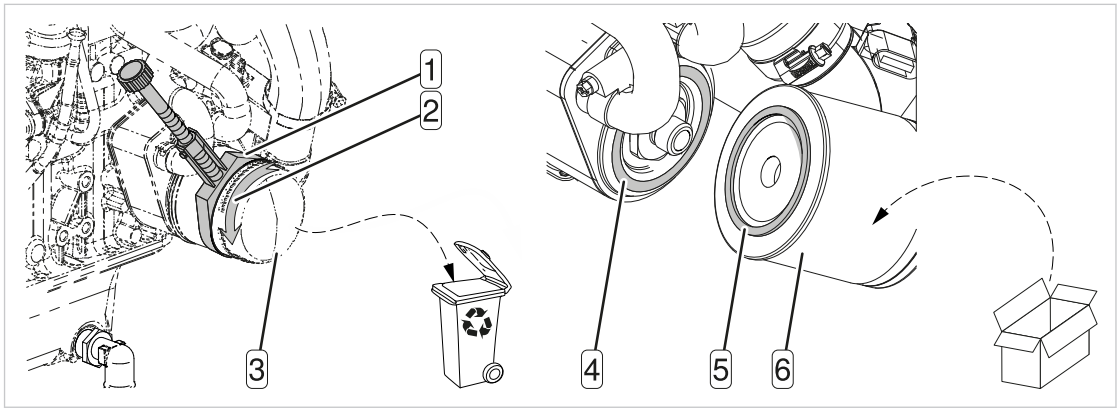


Fig. 55 Replacing the engine oil filter

1 Filter key
2 Direction of arrow
3 Used engine oil filter
4 Sealing surface
5 Seal
6 New engine oil filter

- Filter key
- Strap

- Engine oil filter

- The machine is standing level
- The drive engine is at operating temperature
- The old engine oil is past the expiry date, see chapter 11.3.4.3 Changing the engine oil
- The hose coupling on the oil pan is closed

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the engine oil filter:
   a) Attach the filter key.
   b) Turn the engine oil filter in the direction of the arrow and remove.
   c) Clean the sealing surface on the drive engine.
3. Fit the new engine oil filter:
   a) Lightly oil the seal on the new engine oil filter.
   b) Position the new engine oil filter before the sealing surface.
   c) Turn the new engine oil filter clockwise until the seal touches the sealing surface.
   d) Hand-tighten the new engine oil filter clockwise.
4. Fill with new engine oil, see chapter 11.3.4.2 Filling with and replenishing the engine oil .
5. Perform a test run, see Tab. 73 Performing a test run.

Dispose of collected engine oil, old engine oil filters, and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.4.5 Maintaining the crankcase oil separator

The oil separator for the crankcase is made of plastic.

Adhere to the defined tightening torque of 4 Nm for the four fixing screws.

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

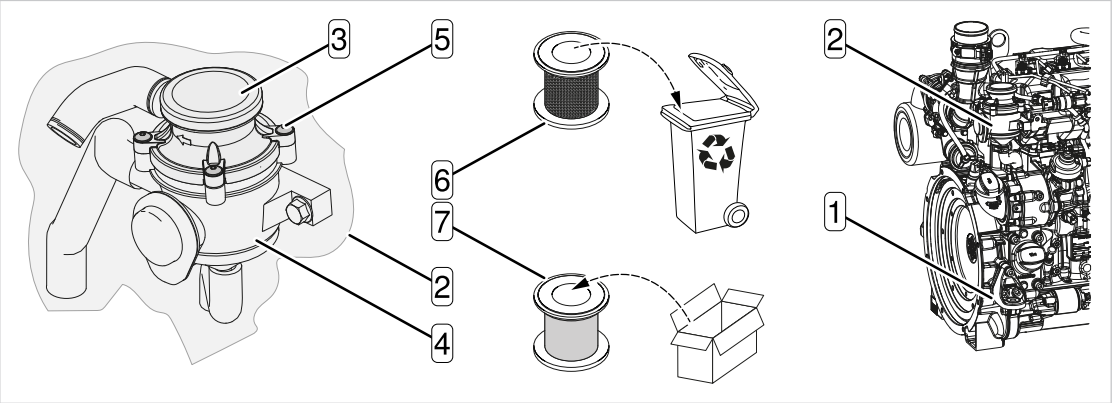


Fig. 56 Replacing the oil separating element

1 Drive engine
2 Crankcase oil separator
3 Housing, upper section
4 Housing, lower section
5 Fixing screw
6 Used oil separating element
7 New oil separating element

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the upper section of the housing:
   a) Loosen and remove all four fixing screws.
   b) Detach and remove the venting hose.
   c) Lift off the upper section of the housing.
   d) Remove the used oil separating element.
3. Properly clean both housing sections of the oil separator:
   a) Remove any oil or grease residue from the lower section of the housing.
   b) Remove any oil or grease residue from the upper section of the housing.
4. Insert a new oil separating element into the lower section of the housing.
5. Reinstall the oil separator:
   a) Place the upper section of the housing on top of the lower section.
   b) Attach the venting hose.
   c) Place all four fixing screws in position.
   d) Tighten all four fixing screws with the defined tightening torque.

6. Perform a test run, see Tab. 73 Performing a test run

Dispose of old oil separating elements and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.5 Servicing the drive belt

⚠ WARNING

Danger of shearing and crushing from contact with rotating components

- ► Stop the machine.
- ► Secure the machine against being restarted.
- ► Only remove safety guards and cover panels after securing the machine against being restarted.

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

NOTICE

Danger of irreparable damage to the retainers

- ► Only loosen the fixing screws.
- ► Do not remove the fixing screws from the belt guard grille.

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

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

11.3.5.1 Removing the belt guard grille

Each screw connection is fitted with a clamping ring which functions as a retainer.

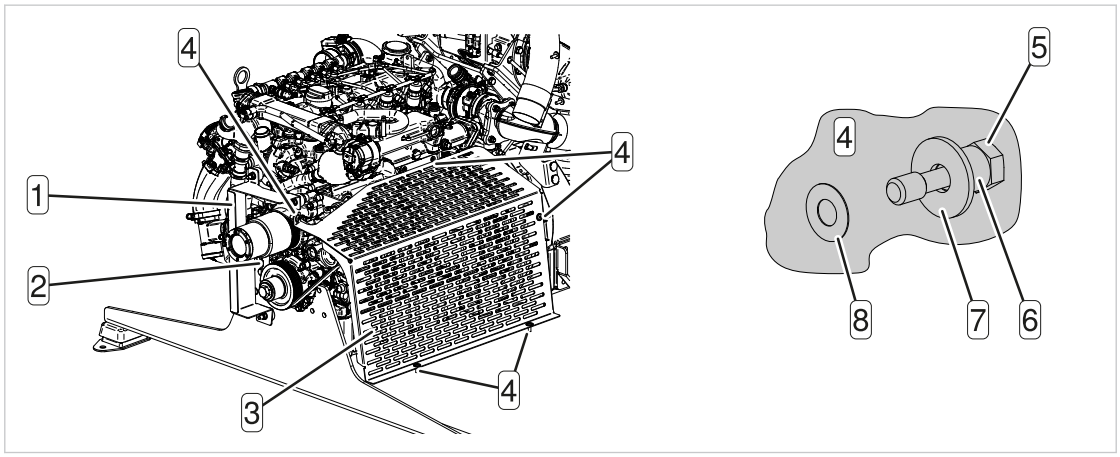


Fig. 57 Detaching the belt guard grille

1 Belt guard
2 Drive belt
3 Belt guard grille
4 Screw with retainer
5 Screw
6 Distance sleeve
7 Washer
8 Clamping ring

► Loosen all screws on the belt guard grille.

11.3.5.2 Performing a visual inspection

The drive belt on your machine is of the V-ribbed belt type.

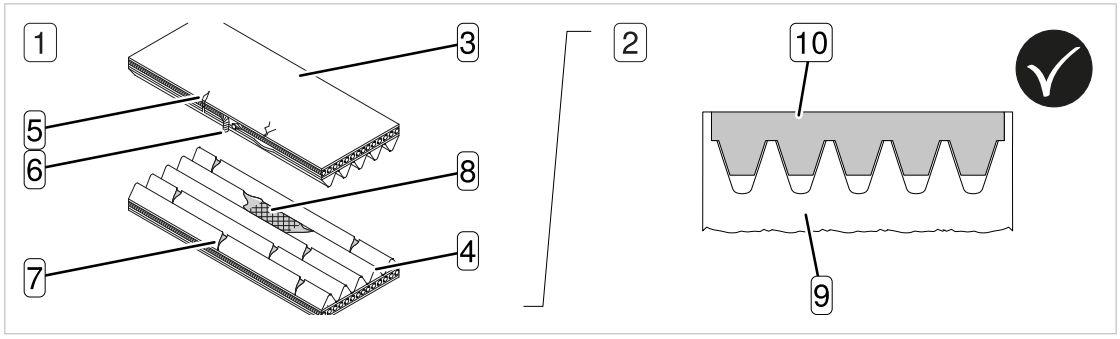


Fig. 58 Damage to the V-ribbed belt

1 Damage
2 Proper seating
3 Rear side
4 Ribbed side
5 Transverse tears on rear side
6 Fraying at flanks
7 Transverse tears to multiple ribs
8 Broken ribs
9 Belt pulley
10 V-ribbed belt

1. Inspect the full length of the V-ribbed belt for damage.
2. Check the V-ribbed belt for proper seating.

11.3.5.3 Checking the belt tension

Always allow the drive belt to warm up before checking the belt tension.

- Manufacturer-recommended belt tension measuring device

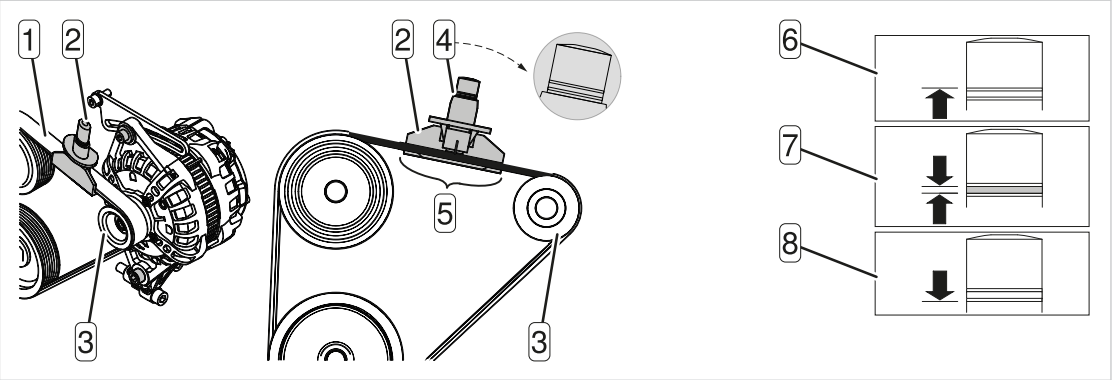


Fig. 59 Checking the belt tension

1 Drive belt
2 Belt tension measuring device
3 Three-phase alternator belt pulley
4 Belt tension measuring device indicator
5 Measuring point
6 *New belt* indicator
7 *Following maintenance interval* indicator
8 *Minimum tension* indicator

► Check the belt tension using the belt tension measuring device.

11.3.5.4 Tensioning the drive belt

The belt tension affects the service life of the drive belt.

Insufficient belt tension will cause the belt to slip and the drive engine to overheat. Too much belt tension will cause excessive stretching and high stress on the shaft bearings.

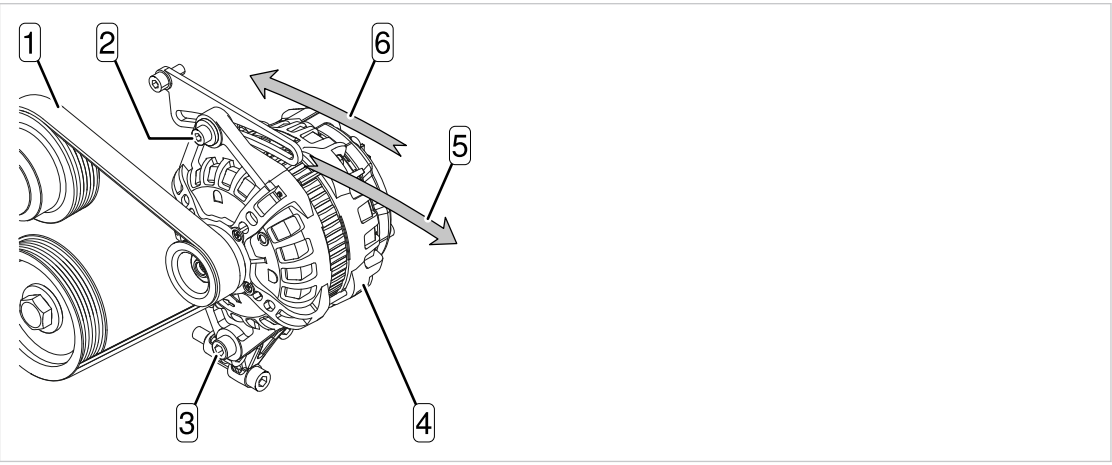


Fig. 60 Tensioning the drive belt

1 V-ribbed belt
2 Clamping screw
3 Fixing screw
4 Three-phase alternator
5 Direction of arrow
6 Direction of arrow

1. Loosen the clamping screw and fixing screw on the three-phase alternator.
2. Push the three-phase alternator in the direction of the arrow 5 until the drive belt is sufficiently tensioned:
   a) Leave the three-phase alternator in this position.
   b) Tighten the clamping screw and fixing screw.
3. Check the belt tension.

11.3.5.5 Replace drive belt

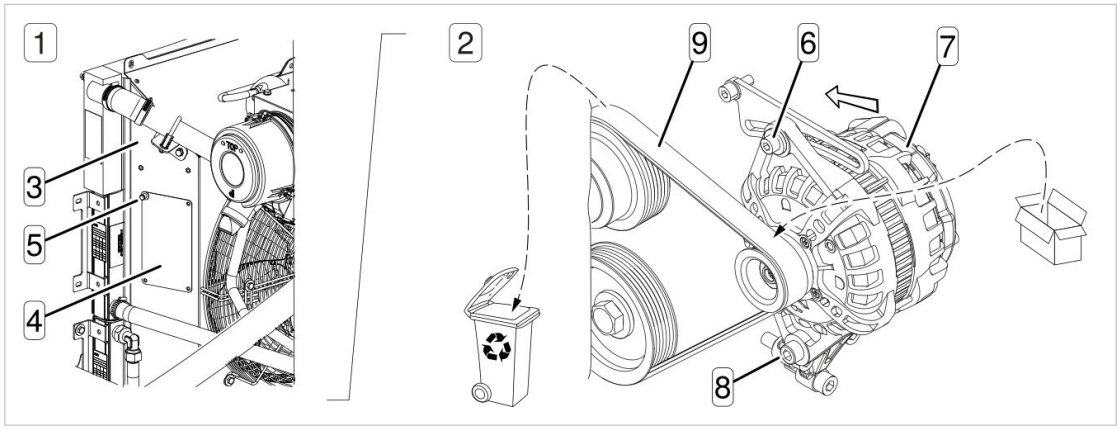


Fig. 61 Replace drive belt

1 Removing the cover plate
2 Replacing the drive belt
3 Cooler shroud
4 Cover plate
5 Screw with retainer
6 Clamping screw
7 Three-phase alternator
8 Fixing screw
9 Antriebsriemen

- Drive belt: V-belt

1. Remove the cover plate from the cooling shroud.
2. Remove the old drive belt:
   a) Loosen the fixing screw and clamping screw on the three-phase alternator.
   b) Push the three-phase alternator in the direction of the arrow until the limit stop.
   c) Remove the loosened drive belt from the belt pulley.
   d) Lift the drive belt over one blade of the fan wheel.
   e) Turn the fan wheel further in an anticlockwise direction.
   f) Lift the drive belt over all of the fan wheel blades by continuing to turn it in this fashion.
   g) Remove the old drive belt.
3. Check the belt pulleys:
   a) Clean the pulleys if they are dirty.
   b) Arrange replacement of worn pulleys.
4. Installing a new drive belt:
   a) Lift the new drive belt over one wing of the fan wheel.
   b) Turn the fan wheel further in a clockwise direction.
   c) Lift the drive belt over all of the fan wheel blades by continuing to turn it in this fashion.
   d) Position the new drive belt over the pulleys by hand, without using force.
   e) Check correct seating on the belt pulleys.
   f) Tension the drive belt.
5. Perform a test run, see chapter Tab. 73 Performing a test run.

Dispose of old drive belts in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.3.6 Servicing the exhaust gas after-treatment

Components in the exhaust gas after-treatment reach extremely high temperatures during machine operation. To protect against contact with extremely hot surfaces, a number of heat shields are fitted around the exhaust gas after-treatment.

⚠ CAUTION

Danger of burns from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► In particular, allow all components in the exhaust gas after-treatment system to cool down.
- ► Wear personal protective equipment.

NOTICE

Irreparable damage to the retainers

- ► Do not remove the fixing screws from the heat shield.

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

- ► Switch off the «Controller ON/OFF» switch.

11.3.6.1 Removing the heat shield

Each fixing screw is fitted with a clamping ring, which functions as a retainer.

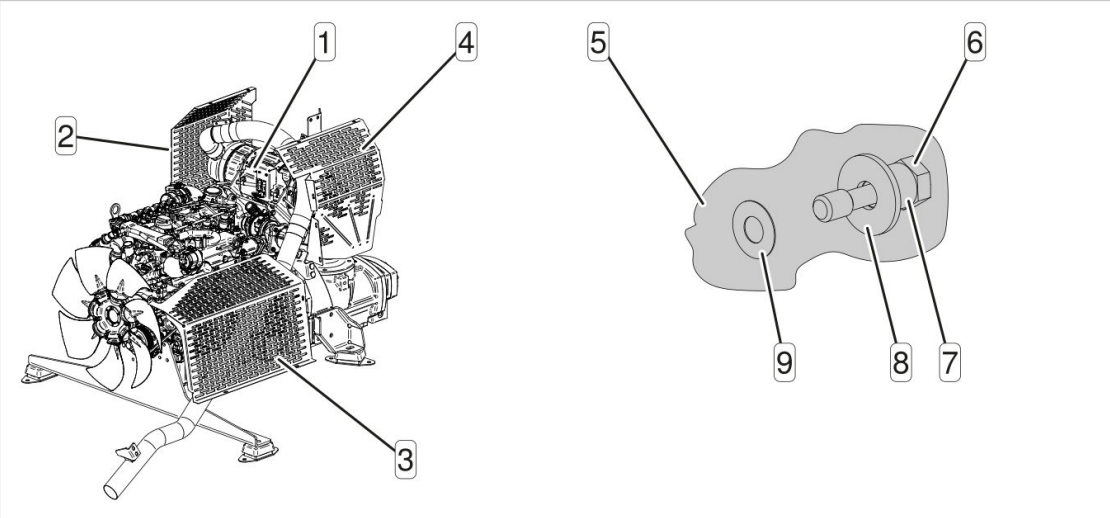


Fig. 62 Removing the heat shield

1. Exhaust gas after-treatment
2. Heat shield, diesel particulate filter exhaust manifold
3. Heat shield, exhaust gas pipe
4. Heat shield, diesel particulate filter
5. Screw with retainer
6. Screw
7. Distance sleeve
8. Washer
9. Clamping ring

- ► If necessary, remove all heat shields so as to be able to conduct the following checks correctly.

11.3.6.2 Checking the diesel particulate filter housing

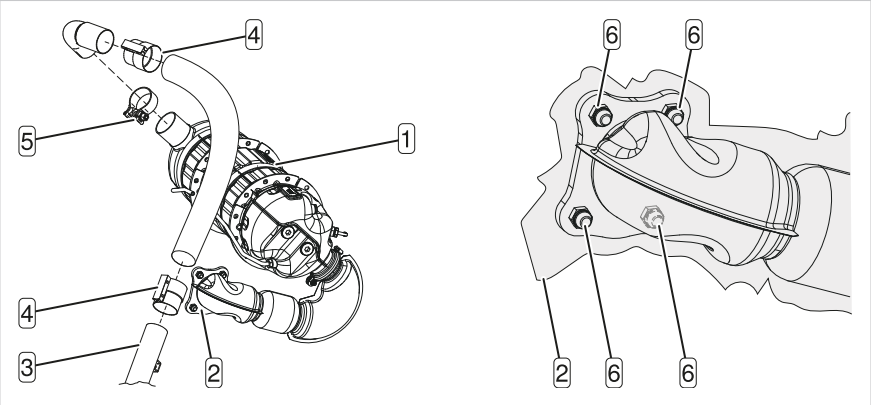


Fig. 63 Checking the diesel particulate filter housing

1 Diesel particulate filter housing
2 Flange connection
3 Exhaust gas pipe
4 Stepped band clamp
5 Pipe clamp
6 Screw connection

1. Check that the diesel particulate filter housing is securely seated and free from damage.
2. Check the flange connection:
   a) Check the flange connection between the exhaust manifold and the diesel particulate filter.
   b) Retighten the screw connection if required.
3. Checking the fixing elements:
   a) Check all pipe clamps are tightly fitted; tighten if necessary.
   b) Check that all stepped band clamps are securely seated; retighten if required.
4. Check that the exhaust manifold insulation is securely seated and free from damage.
5. Correctly install all heat shields.

11.3.7 Servicing the battery

⚠ WARNING

Danger of chemical burns from leaking electrolyte!

- ► Wear face and eye protection.
- ► Wear protective clothing, including acid-proof gloves.
- ► Do not tip the battery.

► Work with caution.

11.3.7.1 Observing the safety signs on the battery

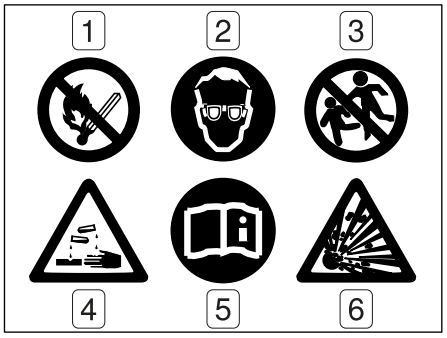


Fig. 64 Safety signs on the battery

No.	Meaning	Measure
1	Fire, sparks, open flame and smoking prohibited	Comply with the prohibition
2	Danger of chemical burns from electrolyte	Wear safety glasses and face protection
3	Remove children from the electricity and chemical danger area	Keep children away from batteries
4	Batteries contain caustic electrolyte	Wear protective gloves
5	Follow the instructions of the battery manufacturer	Comply with the instructions
6	Explosion hazard	Ensure sufficient ventilation before initiating the charging procedure.

Tab. 79 Safety signs and their meanings

► Follow the measures for handling batteries.

11.3.7.2 Properly ensuring the battery charge level

The battery may self-discharge if the machine has been out of operation for an extended period. There may be insufficient power to start the drive engine when required.

⚠ DANGER

Danger of explosion due to oxyhydrogen gas mixture

Hydrogen and oxygen gas are produced during charging.

- ► Clean all degassing openings.
- ► Ensure sufficient ventilation during charging.

Charge level [%]	Charge level [V]	Electrolyte density [kg/l]	Note
100	12.7 – 12.85	1,27	Battery properly charged
75	12,5	1,24	Recharge required
65	12,4	1,22	
50	12,3	1,21	Starting capacity limit
25	12.0	1,16	Charge limit exceeded
20	11,9	1,14	
0	11,6	1,09	Battery damaged due to deep discharge
Values valid for 25 °C			

Tab. 80 Battery charge levels

Check the electrolyte level before charging the battery. Only charge the battery with the correct electrolyte level.

1. Check the battery charge level.
   ✓ The charge level is 75 %.
   Battery charging required.
2. Check the battery electrolyte level.
   ✓ The battery electrolyte level is correct.
3. Properly charge the battery:
   a) Remove the battery.
   b) Clean all degassing openings in the screw plugs.
   c) Do not open the screw plugs.
   d) Charge the battery using a suitable charger, see manufacturer user manual.

11.3.7.3 Checking and maintaining standard batteries

Maintain the battery on your machine, even if the battery is designated as maintenance-free. Regular maintenance prevents leakage currents and minimises self-discharge.

Check the electrolyte level on the battery in accordance with the maintenance schedule. Replenish exclusively with distilled water if the electrolyte level falls below the minimum mark on the battery housing.

- Antistatic cloth

- Terminal grease
- Distilled water

Proceed as follows:

1. Remove both terminal protector caps.

2. Remove both terminal connections:
   a) First remove the terminal connection from the negative terminal.
   b) Then remove the terminal connection from the positive terminal.
   c) Clean both terminal connections.
   d) Clean the battery housing with an antistatic cloth.
   e) Clean both terminals.
   f) Lightly grease both terminals with terminal grease.
   g) Check that the battery is securely seated.
3. Check the electrolyte level:
   a) Check that the electrolyte level is between the minimum and maximum marks.
   b) Replenish with distilled water if required.
4. Attach both terminal connections:
   a) First attach the terminal connection to the positive terminal.
   b) Then attach the terminal connection to the negative terminal.
   c) Check that both terminal connections are securely seated.
5. Fit both terminals with terminal protector caps.

For replenishing with distilled water, see 11.3.7.4 Replenishing the distilled water in lead-acid batteries.

11.3.7.4 Replenishing the distilled water in lead-acid batteries

NOTICE

Danger of irreparable damage to the battery

Replenishing with pure acid will increase the electrolyte concentration.

► Only replenish the battery with distilled water.

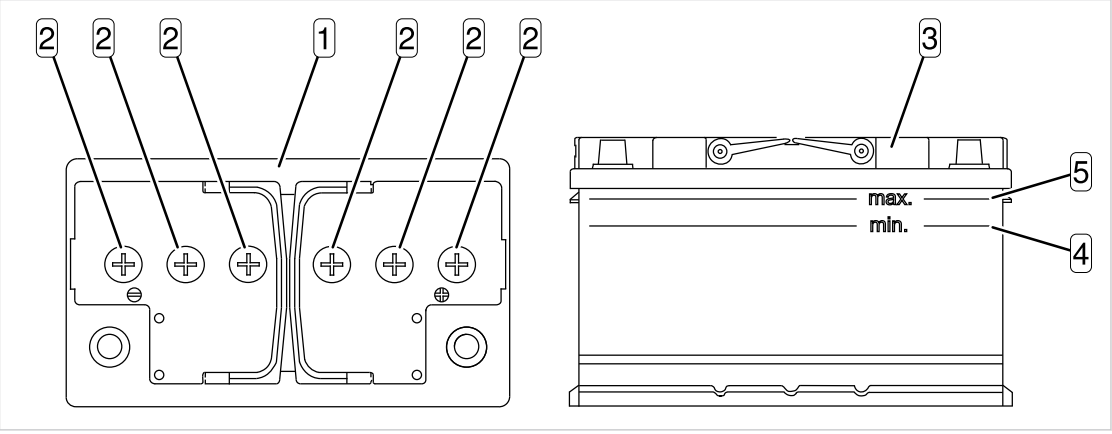


Fig. 65 Screw plug location on lead-acid batteries

1 Example: Battery top side
2 Battery cell screw plug
3 Example: Battery side view
4 Minimum mark
5 Maximum mark

- Distilled water

Proceed as follows:

1. Clean the top side of the lead-acid battery.
2. Loosen and remove the screw plug 2 from each of the individual battery cells.

3. Clean all screw plugs.
4. Replenish each battery cell with distilled water up to the minimum mark.
5. Refit all screw plugs and tighten correctly.

The liquid level in the lead-acid battery is in the correct range.

11.3.7.5 Checking and maintaining GEL batteries

The machine can be optionally specified with a maintenance-free GEL battery, which also contributes to weight optimisation.

To maintain the GEL battery, proceed as follows:

► Carry out steps 1, 2 and 4 from chapter 11.3.7.3 Checking and maintaining standard batteries.

11.3.7.6 Maintaining the battery at low ambient temperatures

The battery charge level drops at low ambient temperatures and during long periods of downtime.

NOTICE

Danger of battery freezing

A discharged battery is endangered by frost and can freeze at temperatures below 0 °C.

► Check the battery charge level using an acid density tester.
► Clean the terminal connections and apply terminal grease.
► Charge the battery.

1. Check the battery charge level on a weekly basis.
2. Charge the battery when the current charge level requires it.
3. Should you plan not to operate the machine for a number of weeks, proceed as follows:
   a) Remove the battery.
   b) Store the battery in a frost-free room.

For checking the battery charge level, see Tab. 80 Battery charge levels.

11.3.7.7 Installing and removing the battery

⚠ WARNING

Danger of battery exploding

A short-circuited battery heats up quickly and can burst.

► Do not short-circuit the battery.
► Wear face and eye protection and protective gloves.

1. Removing the battery:
   a) Remove the terminal protector cap from the negative terminal.
   b) Remove the terminal connection from the negative terminal.
   c) Remove the terminal protector cap from the positive terminal.
   d) Remove the terminal connection from the positive terminal.
   e) Remove the battery mounting.
   f) Remove the battery levelly from the machine.

2. Installing the battery:
   a) Position the battery levelly in the machine.
   b) Install the battery mounting.
   c) Check the battery for secure seating.
   d) Attach the terminal connection to the positive terminal.
   e) Fit the terminal protector cap to the positive terminal.
   f) Attach the terminal connection to the negative terminal.
   g) Fit the terminal protector cap to the negative terminal.

11.3.7.8 Replacing the battery

Proceed as follows:

1. Determine the technical data for the original battery:
   a) Note the voltage of the old battery.
   b) Note the capacity of the old battery.
   c) Note the cold discharge test current of the old battery.
2. Determine the type of the original battery.
3. Correctly replace the original battery with a new one.

For technical data of the original battery, see chapter 2.4 Drive engine.

11.4 Servicing the compressor

► Carry out maintenance in accordance with chapter 11.2 Following the maintenance schedule.

11.4.1 Servicing the compressor oil circuit

► Always carry out maintenance tasks in clean surroundings.

11.4.1.1 Checking the compressor oil level

The compressor oil level is correct when compressor oil is visible in the open oil filler port.

⚠ CAUTION

Danger of burning from hot surfaces

► Stop the machine and allow it to cool down.
► Wear personal protective equipment.

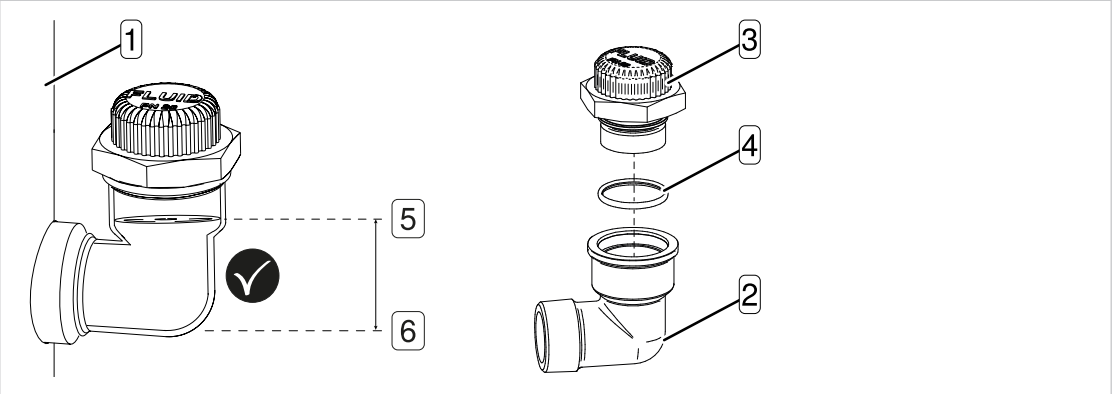


Fig. 66 Checking the compressor oil level correctly

1 Oil separator tank
2 Oil filler
3 Screw plug
4 Seal
5 Maximum compressor oil level
6 Minimum compressor oil level

- The machine is standing level
- The compressor has cooled down for approx. 5 Minutes

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Loosen and remove the screw plug.
3. Check the compressor oil level:
   a) Check whether compressor oil is visible in the filler port.
   b) Take appropriate measures, see chapter 11.4.1.2 Filling with or replenishing the compressor oil.
4. Check that the seal is in the correct condition.
5. Insert the screw plug and hand-tighten.

11.4.1.2 Filling with or replenishing the compressor oil

You can find a sticker on the oil separator tank specifying the type of compressor oil used.

NOTICE

Damage to the machine caused by incompatible compressor oils

- ► Never mix different types of compressor oil.
- ► Only replenish using the same type of compressor oil already used in the machine.

- Fresh compressor oil
- Cleaning cloth

1. Replenish with a suitable quantity of fresh compressor oil.
2. After approx. five minutes, correctly check the compressor oil level.
3. Check the O-ring for external damage.
4. Insert the screw plug.
5. Hand-tighten the screw plug.
6. Perform a test run, see chapter Tab. 73 Performing a test run.

11.4.1.3 Changing the compressor oil

Change the compressor oil after the following occurrences:

- A maintenance message with a specific message code is indicated on the SIGMA CONTROL SMART display
- The interval has expired in the maintenance schedule.

⚠ CAUTION

Danger of burns from hot components and escaping compressor oil

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

- Fresh compressor oil
- Cleaning cloth

- New seal for screw plug

- The machine is standing level
- The compressor is at operating temperature

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

- ► Switch off the «Controller ON/OFF» switch.

Draining the compressor oil

Fully drain the compressor oil from the following components:

- Oil separator tank
- Oil cooler

- Airend
- Oil lines

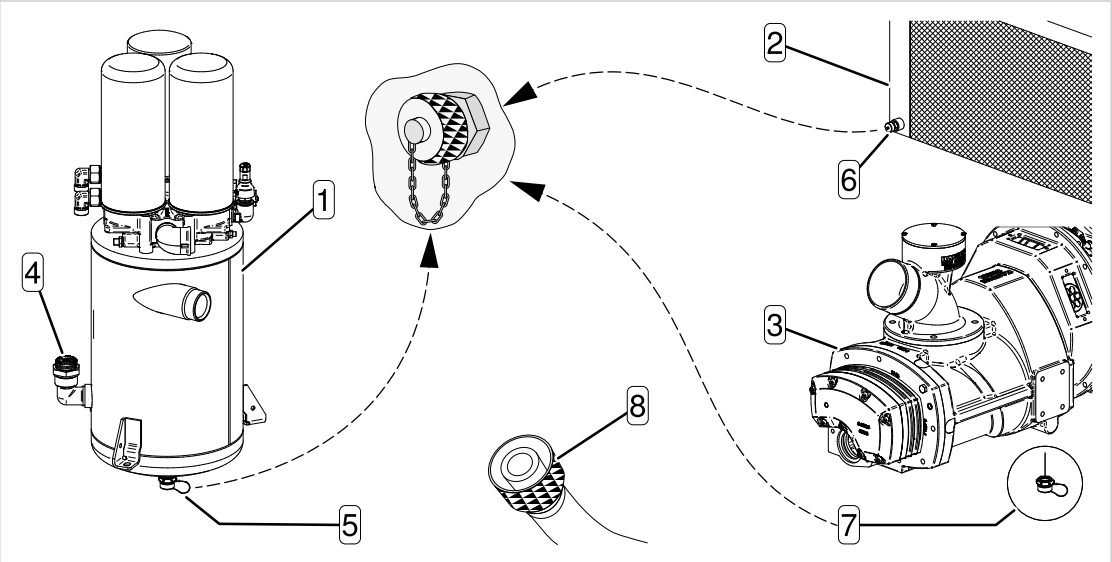


Fig. 67 Draining the compressor oil

1 Oil separator tank
2 Oil cooler
3 Airend
4 Oil filler port screw plug
5 Hose coupling on oil separator tank
6 Hose coupling on oil cooler
7 Hose coupling on airend
8 Male hose coupling

1. Remove the screw plug from the oil filler port on the oil separator tank.
2. Drain the compressor oil from the oil separator tank:
   a) Loosen and remove the protective cap from the hose coupling 5.
   b) Attach the male hose coupling to the hose coupling.
3. Drain the compressor oil from the oil cooler:
   a) Loosen and remove the protective cap from the hose coupling 6.
   b) Attach the male hose coupling to the hose coupling.
4. Drain the compressor oil from the airend:
   a) Loosen and remove the protective cap from the hose coupling 7.
   b) Attach the male hose coupling to the hose coupling.
5. For removing compressor oil filter components, see chapter 11.4.1.4 Replacing the compressor oil filter.
6. Close the hose couplings:
   a) Loosen and remove the male hose coupling from the oil separator tank.
   b) Secure the hose coupling with the protective cap.
   c) Loosen and remove the male hose coupling from the oil cooler.
   d) Secure the hose coupling with the protective cap.
   e) Loosen and remove the male hose coupling from the airend.
   f) Secure the hose coupling with the protective cap.
7. For installing compressor oil filter components, see chapter 11.4.1.4 Replacing the compressor oil filter.

11.4.1.4 Replacing the compressor oil filter

Loosen the old compressor oil filter with a filter key or strap.

Fit the new compressor oil filter using manual force. Use a filter key if you cannot bring sufficient manual force due to an unfavourable installation position.

Observe any additional installation information from the compressor oil filter manufacturer.

Replace the compressor oil filter after the following occurrences:

- A maintenance message with a specific message code is indicated on the SIGMA CONTROL SMART display
- The interval has expired in the maintenance schedule.

⚠ CAUTION

Danger of burns from hot components and escaping compressor oil

► Stop the machine and allow it to cool down.
► Wear personal protective equipment.

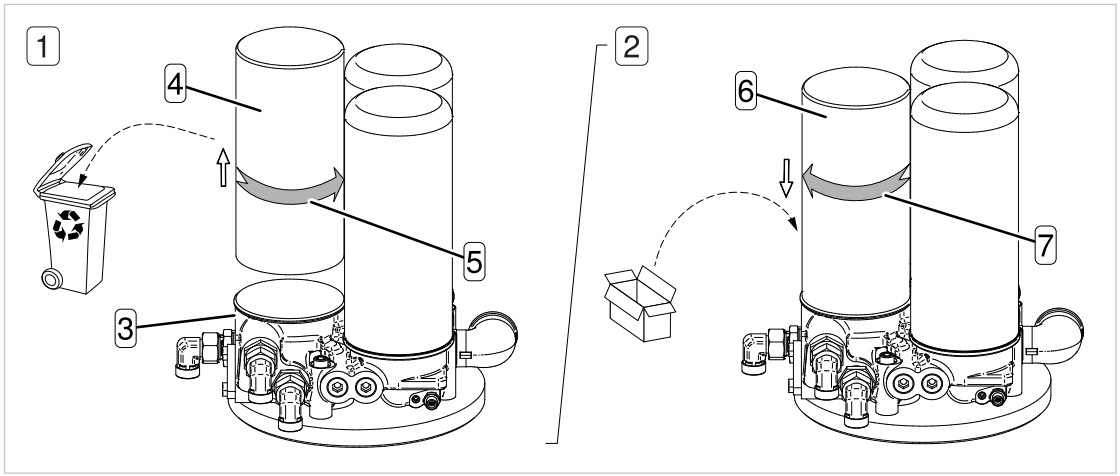


Fig. 68 Replacing the compressor oil filter

1 Removing the compressor oil filter
2 Fitting the compressor oil filter
3 Fluid distribution module, oil filter
4 Old compressor oil filter
5 Direction of arrow
6 New compressor oil filter
7 Direction of arrow

- Compressor oil filter

- The machine is standing level
- The compressor is at operating temperature
- The old compressor oil is past the expiry date, see chapter 11.4.1.3 Changing the compressor oil
- The hose couplings on the oil separator tank and oil cooler are closed
- The screw plug on the airend is closed

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the old compressor oil filter:
   a) Turn the old compressor oil filter in the direction of the arrow 5.
   b) Detach and remove the compressor oil filter.
   c) Clean the sealing surface.

3. Fit the new compressor oil filter:
   a) Lightly oil the seal on the new compressor oil filter.
   b) Position the compressor oil filter.
   c) Turn the compressor oil filter in the direction of the arrow 7 until the seal is touching the sealing surface.
   d) Hand-tighten the compressor oil filter.
4. Fill with fresh compressor oil.
5. Perform a test run, see Tab. 73 Performing a test run.

Dispose of collected compressor oil, old compressor oil filters, and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.4.2 Dirt trap maintenance on the fluid distribution module

The fluid distribution module is located on the oil separator tank cover.

The fluid distribution module is equipped with two dirt traps:

- Dirt trap, oil return line
- Dirt trap, proportional controller

Replace the nozzle and strainer on both dirt traps as soon as signs of wear are visible.

Take note of the specific tightening torque for the screw plug.

⚠ CAUTION

Danger of burning from hot surfaces

► Stop the machine and allow it to cool down.
► Wear personal protective equipment.

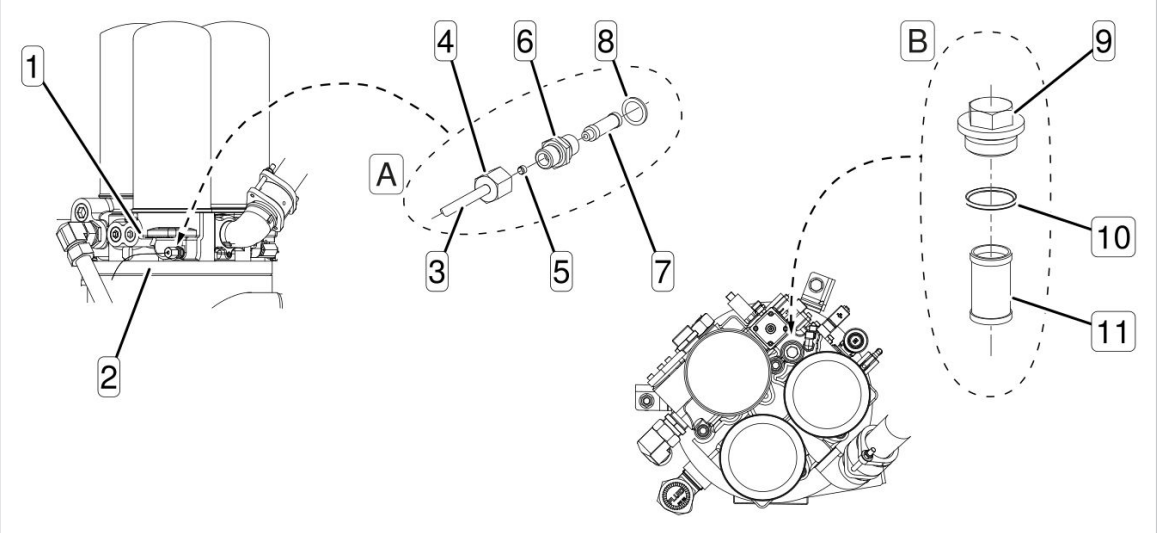


Fig. 69 Servicing the dirt traps on the fluid distribution module

A Dirt trap, oil return line
B Dirt trap, proportional controller

1 Fluid distribution module
2 Oil separator tank cover
3 Oil return line
4 Clamping nut
5 Nozzle
6 Screw-in connector
7 Strainer
8 Sealing ring
9 Screw plug
10 O-ring
11 Strainer

- Benzine
- Spirit

- KIT Oil return line dirt trap
- KIT Proportional controller dirt trap

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Service the dirt trap on the oil return line A:
   a) Remove the clamping nut 4 and nozzle 5.
   b) Remove the screw-in connector 6 and strainer 7.
   c) Clean all components with benzine or spirit.
   d) Check the nozzle and strainer for wear.
   e) Correctly position the nozzle and strainer.
   f) Install the screw-in connector, ensuring that the sealing ring 8 sits in the correct position.
   g) Fit the clamping nut on the oil return line 3.
3. Service the dirt trap on the proportional controller B:
   a) Remove the screw plug 9.
   b) Clean the screw plug, strainer 11 and O-ring 10 with benzine or spirit.
   c) Check the strainer and O-ring for wear.
   d) Position the O-Ring and strainer.
   e) Insert the screw plug.
   f) Tighten the screw plug with the specific tightening torque of 15–20 Nm.
4. Perform a test run, see Tab. 73 Performing a test run.

Dispose of wearing parts in the dirt trap in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.4.3 Replacing the oil separator cartridge

Loosen the old oil separator cartridge with a filter key or strap.

Insert the new oil separator cartridge using manual force.

Observe any additional installation information from the oil separator cartridge manufacturer.

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

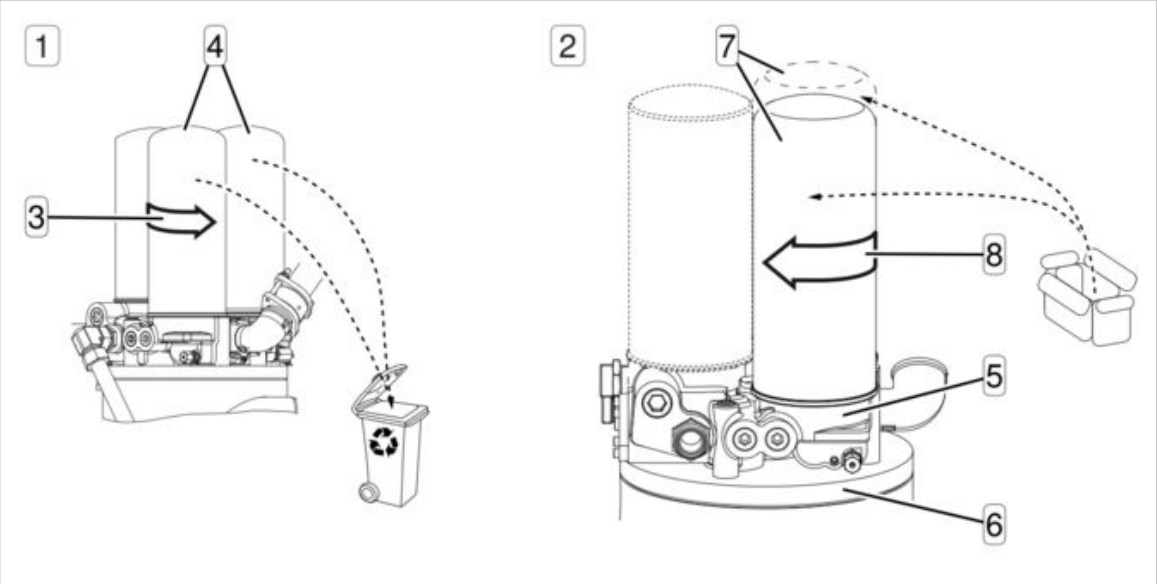


Fig. 70 Replacing the oil separator cartridge

1 Removing the oil separator cartridge
2 Inserting the oil separator cartridge
3 Direction of rotation
4 Old oil separator cartridge
5 Fluid distribution module
6 Oil separator tank
7 New oil separator cartridge
8 Direction of rotation

- Oil separator cartridge

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the old oil separator cartridge:
   a) Turn the oil separator cartridge in the direction of the arrow 4.
   b) Remove the oil separator cartridge when the filter thread has no further contact.
   c) Clean the thread and sealing surface.
3. Lightly oil the seal on the new oil separator cartridge.
4. Insert the new oil separator cartridge:
   a) Position the oil separator cartridge until the filter thread has contact.
   b) Turn the oil separator cartridge in the direction of the arrow 8 until the seal is touching the sealing surface.
   c) Hand-tighten the oil separator cartridge.
5. Check the compressor oil level.
6. Perform a test run, see Tab. 73 Performing a test run.

Dispose of collected compressor oil, old oil separator cartridges, and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.4.4 Servicing the compressor air filter

Operating the machine without filter element fitted is not permitted.

Replace the filter element after the following occurrences:

- The maintenance indicator is actuated.
- The maintenance interval has expired in the maintenance schedule.
- A maintenance message is indicated on the SIGMA CONTROL SMART display

NOTICE

Damage caused by destroyed filter element

Compressor wear from contaminated intake air.

► Do not try to clean the filter element by striking or tapping it.
► Do not wash the filter element.

1. The machine is stopped
2. Compressed air consumers are disconnected
3. Compressed air discharge valves on the compressed air outlet are open
4. The machine has been fully vented
5. Pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Set the «battery isolation switch» to position **0**.

11.4.4.1 Checking the compressor air filter maintenance indicator

Carry out maintenance on the compressor air filter as soon as the yellow maintenance indicator piston reaches the red zone of the indicator scale.

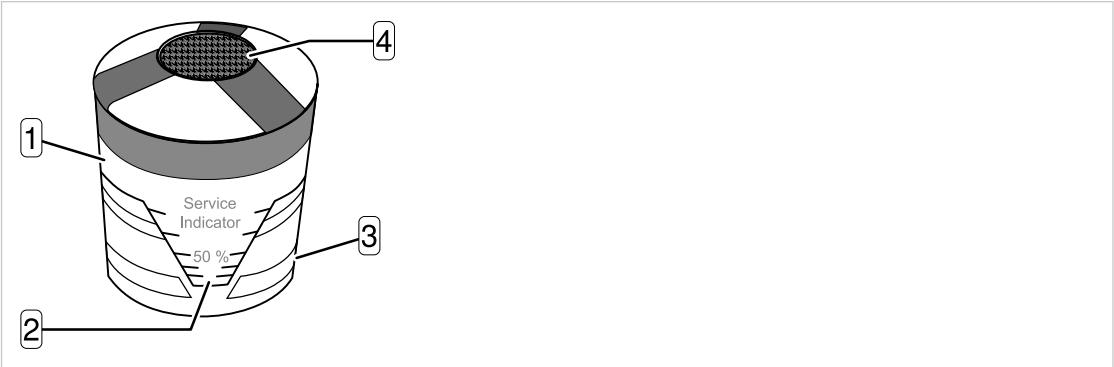


Fig. 71 Checking the maintenance indicator in the intake air line for the compressor air filter

1 Maintenance indicator
2 Yellow indicator piston
3 Red zone of indicator scale
4 Reset knob

► Check the position of the yellow indicator piston.

11.4.4.2 Cleaning the dust evacuator valve

Coarse dirt particles in the intake air fall to the base of the filter housing and are deposited in the area around the dust evacuator valve.

To clean the dust evacuator valve, proceed as follows:

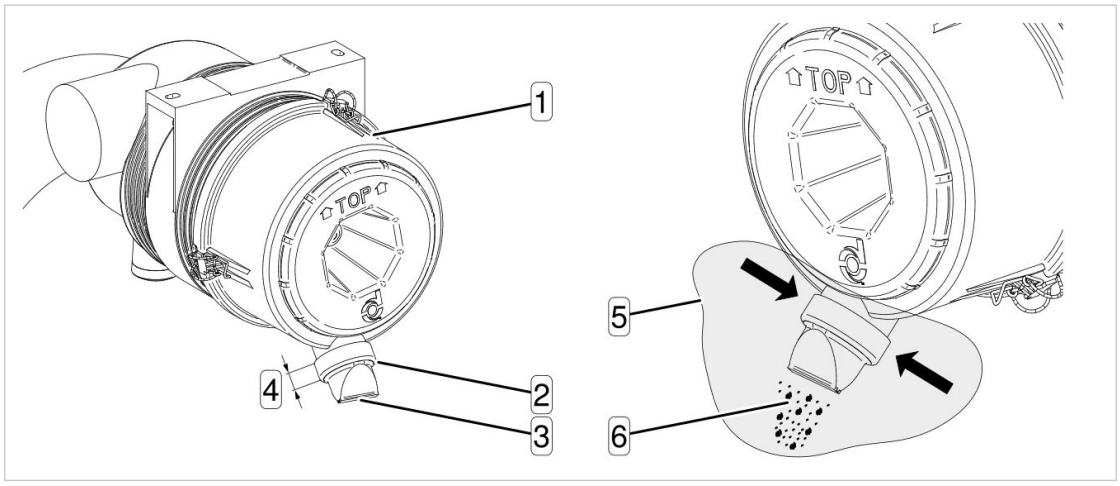


Fig. 72 Cleaning the dust evacuator valve

1 Filter cap
2 Dust evacuator valve
3 Sealing lips
4 Valve area
5 Cleaning procedure
6 Coarse dirt particles

1. Squeeze the valve area to remove coarse dirt particles.
2. Clean both sealing lips.
3. Check that the two sealing lips remain in contact.

11.4.4.3 Removing the filter cap

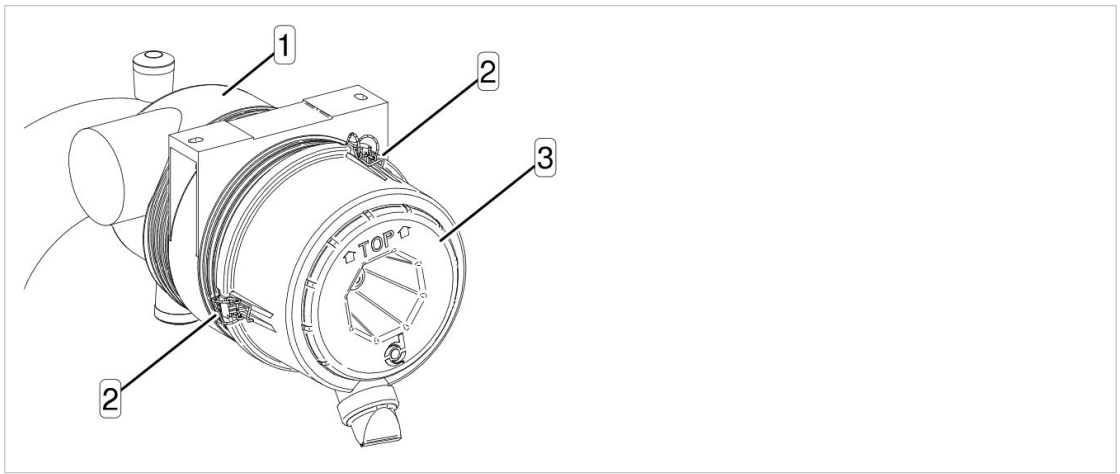


Fig. 73 Removing the filter cap

1 Filter housing
2 Retaining clamp
3 Filter cap

1. Unlock all three retaining clips 2.
2. Remove the filter cap 3.

11.4.4.4 Replacing the filter elements

The compressor air filter is fitted with a primary filter element and a secondary filter element.

Replace the secondary filter element at every third change of the primary filter element or after two years at the latest. The secondary filter element cannot be cleaned and reused.

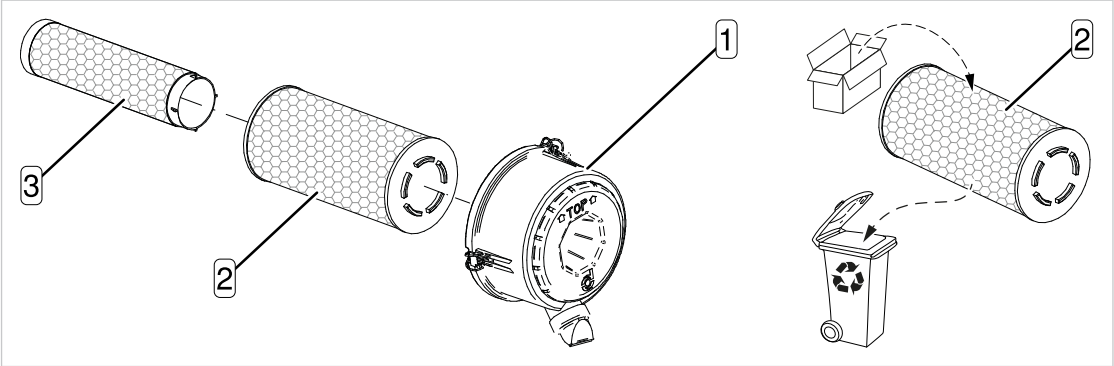


Fig. 74 Replacing the filter elements

1 Filter cap
2 Primary filter element
3 Secondary filter element

1. Remove both used filter elements.
2. Clean the filter housing, filter cap and sealing surfaces with a damp cloth.
3. Insert a new secondary filter element into the filter housing.
4. Insert a new primary filter element into the filter housing.

Dispose of used filter elements and filter dust in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.4.4.5 Fitting the compressor air filter cap

Align the filter cap so that the dust evacuator valve is pointing vertically downwards.

A deflection of ±30° to the vertical axis is permitted.

1. Align the filter cap and position in front of the filter housing.
2. Place the filter cap on the filter housing and press down lightly.
3. Secure the filter cap with all three retaining clamps.

11.4.4.6 Resetting the compressor air filter maintenance indicator

► Press the reset button for the maintenance indicator repeatedly.
✓ The maintenance indicator is ready for operation.

11.4.4.7 Cleaning the primary filter element in the compressor air filter

Always use new filter elements if possible.

Reuse cleaned primary filter elements only in exceptional cases.

To clean the primary filter element, proceed as follows:

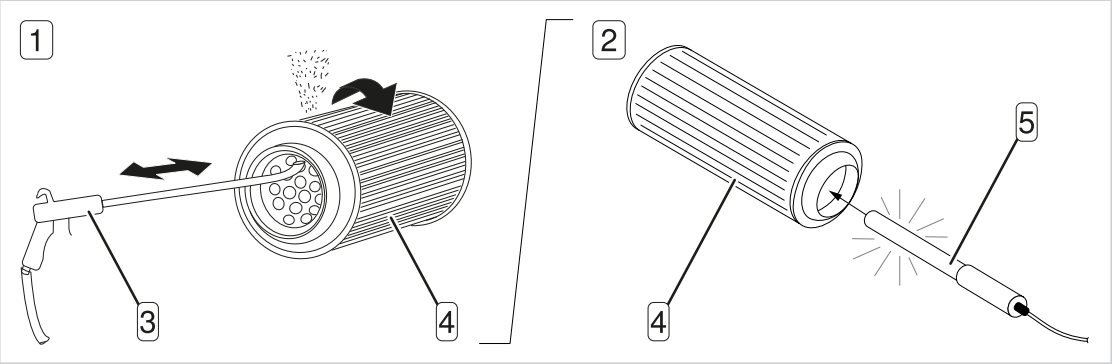


Fig. 75 Cleaning the primary filter element

1 Cleaning the primary filter element
2 Checking the primary filter element
3 Compressed air gun with blow-out pipe
4 Primary filter element
5 Torch

1. Use dry compressed air 5 bar to blow out dirt from the primary filter element at an angle, from the inside to the outside.
2. Blow out the primary filter element until no more dust appears.
3. In a darkened room, use a suitable torch to shine a light through the cleaned primary filter element.
   ✓ The cleaned primary filter element displays no cracks or holes.
   The cleaned primary filter element is in the correct condition.
4. Insert the cleaned and checked primary filter element into the filter housing.

11.5 Cleaning the coolers

The three coolers for the drive engine and compressor are arranged in a radiator core.

Heavy contamination of the three coolers causes the machine to overheat. The required cleaning frequency depends on local ambient conditions at the installation location.

Check the three coolers regularly for contamination.

Clean the cooler fins with compressed air, water or steam jet in the opposite direction to that of the cooling air flow. This means that you clean all of the coolers from the outside to the inside.

Always park your machine levelly so that accumulated water can flow away.

Arrange for heavy contamination to be removed by an authorised service partner.

⚠ CAUTION

Danger from swirling dust particles

- ► Use a breathing mask when cleaning with compressed air.

NOTICE

Damage caused by water or steam jets

- ► Cover sensitive electrical components.
- ► Do not direct high-pressure jets at sensitive components or display instruments.
- ► Adhere to the minimum distance and suitable angle of approach to the cooler surface.

NOTICE

Damage caused by incorrect cleaning

- ► Do not clean the cooler using hard objects.

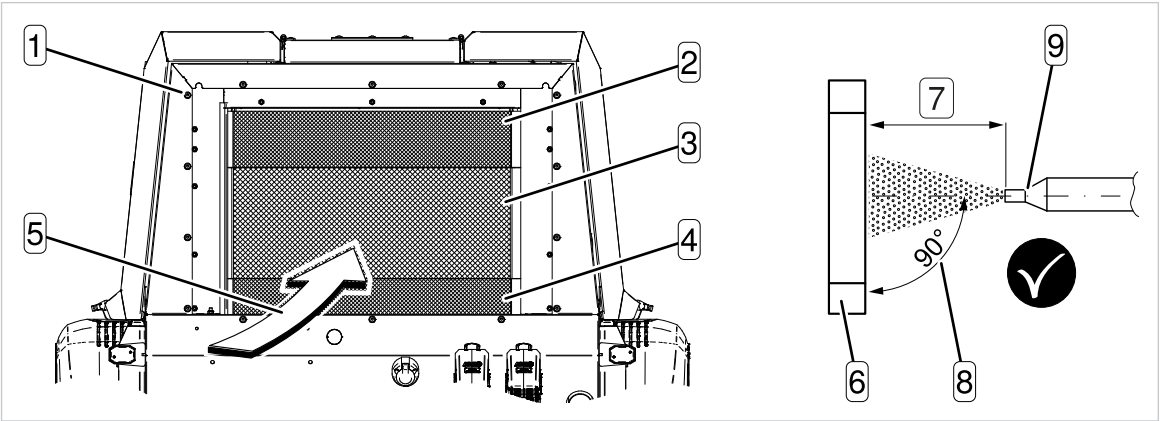


Fig. 76 Cleaning the charge air cooler, oil cooler and coolant cooler

1 Front end of machine
2 Charge air cooler
3 Coolant cooler
4 Oil cooler
5 Direction of cleaning
6 Radiator core
7 Minimum distance 50 cm
8 Attack angle
9 High-pressure washer lance

1. The machine is stopped
2. Compressed air consumers are disconnected
3. Compressed air discharge valves on the compressed air outlet are open
4. The machine has been fully vented
5. Pressure gauge reads 0 bar

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

2. Disconnect the negative cable from the battery.
3. Open all of the bung plugs in the closed floor pan.
4. Cover up the electric starter for the drive engine.
5. Cover up electrical components such as the generator and generator control box.
6. Cover up the intake openings for both the drive engine and compressor air filters.
7. Remove the exhaust air grating:
   a) Loosen and remove all of the screws on the exhaust air grating.
   b) Remove the exhaust air grating.
8. Cleaning the charge air cooler, oil cooler and coolant cooler:
   a) Adhere to the minimum distance [7] and attack angle [8] to the cooler surface.
   b) Clean the cooling fins with compressed air, water or steam jet from the outside to the inside.
9. Refit the exhaust air grating:
   a) Position the exhaust air grating.
   b) Position all screws and tighten.
10. Remove the covers from the intake openings for both the drive engine and compressor air filters.
11. Remove all other covers used inside the machine.
12. Seal the floor pan with all of the bung plugs.
13. Perform a test run, see Tab. 73 Performing a test run.

Only steam-clean dirty cooling fins at cleaning areas equipped with an oil separator.

11.6 Checking screw connections

Overview:

- Guideline values for tightening torques
  - General guideline values for tightening torques
  - Specific guideline values for tightening torques
- Sealed screw connections

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

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

11.6.1 General guideline values for tightening torques

Guideline values for the required tightening torques are dependent upon the size of the screw connection, the strength class of the screw material and the friction coefficient.

1. Determine the thread size for the screw connection.
2. For determining the defined torque, see 2.2.3 Tightening torque.
3. Tighten all screw connections with the defined torque.

11.6.2 Specific guideline values for tightening torques

Tighten screw connections for components that either relate to safety or are under particular stress load with the specific tightening torque.

- For specific tightening torque values, see chapter 2.2.3 Tightening torque.
  - E.g. Screw connections for the crane suspension
  - E.g. Cover screws on the oil separator tank
- Values for further specific tightening torques can be found directly with the information for the relevant maintenance task

⚠ CAUTION

Danger from broken or loose screw connections

Damage due to leakages is possible

► Screw connections for components that either relate to safety or are under particular stress load must be tightened exclusively with the specific tightening torque.

1. Determine the specific tightening torque.
2. Tighten the screw connections with the specific tightening torque.

11.6.3 Sealed screw connections

Do not adjust any screw connections that are sealed with coloured locking varnish.

Failure to comply will invalidate all warranty claims.

NOTICE

Damage to the machine caused by adjusting the settings

► Leave sealed screw connections in their original condition.

► Do not retighten or adjust sealed setting screws.

11.7 Check sound insulation material

Sound insulation material reduces machine noise emissions to a minimum. Check your machine's sound insulation material according to the maintenance schedule.

Dismantle the cooling air inlet and outlet grilles to properly inspect the sound insulation material. Have damaged sound insulation material replaced immediately.

Sound insulation material is installed, for example, in the following positions within the machine:

- Cooling air inlet and outlet
- Enclosure, gull-wing doors and swing doors
- Bulkheads

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Dismantle cooling air inlet and outlet grilles.
3. Check the sound insulation material in the cooling air inlet and outlet.

4. Check all sound insulation material inside the machine.
5. Check sound insulation material for condition, attachment and dirt.

The sound insulation material is porous, cracked, no longer exists or is severely contaminated with oil, fuel or cleaning agent.

- Have a KAESER SERVICE technician replace sound insulation material that can no longer be used.

11.8 Checking the wing doors

The closed wing doors on the machine fulfil the following functions: Contact protection, cooling air flow, sound insulation and weather protection.

Check that the wing doors and their connection elements are in perfect condition in accordance with the maintenance schedule.

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

Switch off the «Controller ON/OFF» switch.

11.8.1 Maintaining the rubber seals

The rubber seals fitted to the wing doors serve to protect against rainwater ingress and to reduce noise emission.

Maintain the rubber seals in particular before the onset of winter, in order to prevent them from becoming stuck or torn.

- Silicone oil
- Vaseline

1. Clean all rubber seals.
2. Check all rubber seals for tears, holes and other damage.
3. Oil or grease all rubber seals.

Rubber seals are damaged.

- Arrange for an authorised KAESER SERVICE agent to replace the damaged rubber seals.

11.8.2 Checking the closing function of the wing doors

1. Close all wing doors.
2. Lock all toggle latches.

One or more wing doors do not close perfectly or cannot be latched.

- Contact an authorised KAESER SERVICE agent.

11.8.3 Checking the connection elements on the wing doors

In order to ensure lubrication of the connecting rod, the connecting rod must be always aligned downwards.

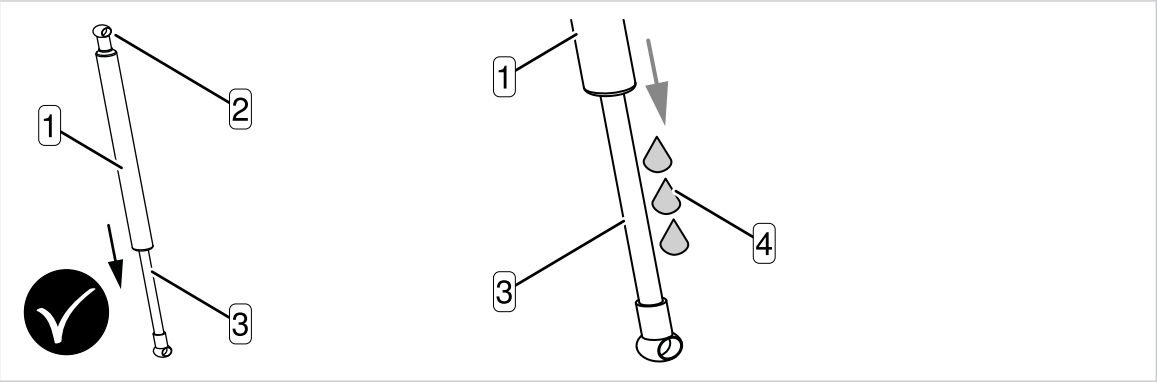


Fig. 77 Connecting rod alignment

1 Gas-pressure spring cylinder
2 Ball cup
3 Connecting rod
4 Lubrication

1. Check all connection elements for damage, wear and secure seating.
2. Lubricate all hinges.
3. Check all gas-pressure springs:
   a) Check that the gas-pressure springs open the unlocked wing doors properly.
   b) Check that the wing doors remain at the maximum opening angle when opened.

Wing doors do not open properly or do not remain open.

- Replace defective gas-pressure springs.

11.9 Checking or replacing hose lines

The hose lines are subject to natural ageing, regardless of proper storage or permissible load during 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.

Check your machine's hose lines in accordance with the maintenance schedule.

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

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

11.9.1 Replacing the drive engine fuel hoses

► Arrange for an authorised KAESER SERVICE agent to replace the fuel hoses on the drive engine.

11.9.2 Replacing the pressure hoses on the drive engine

Overview of all pressure hoses on the drive engine:

- Engine oil
- Coolant for the coolant cooler
- Charge air for the charge air cooler

► Arrange for a KAESER SERVICE agent to replace the pressure hoses on the drive engine.

11.9.3 Replace the pressure hoses of the compressor

Overview of all pressure hoses on the compressor:

- Compressor oil
- Compressed air
- Control air
- Condensate

► Have a KAESER SERVICE technician replace the pressure hoses of the compressor.

11.10 Testing the safety functions

► Carry out the test work steps in accordance with chapter 11.2.4 Machine maintenance schedule.

11.10.1 Checking the EMERGENCY STOP device

Check the mechanical function of the «EMERGENCY STOP» button on a daily basis with the machine switched off.

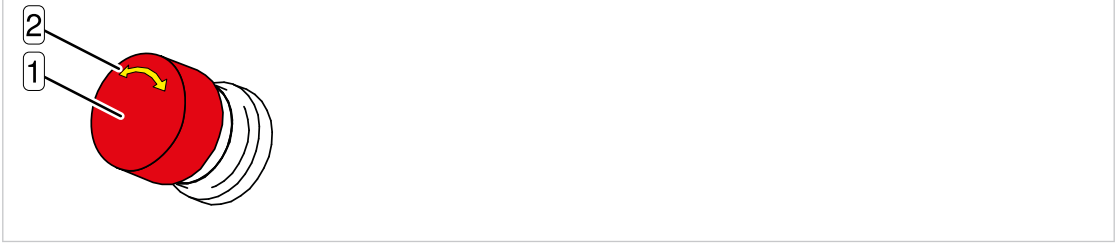


Fig. 78 Checking the EMERGENCY STOP device

1 «EMERGENCY STOP» button
2 Unlock the «EMERGENCY STOP» button in the direction of the arrow.

1. Actuate the «EMERGENCY STOP» button.
2. Check to ensure that the «EMERGENCY STOP» button locks properly and remains locked.
3. Turn the «EMERGENCY STOP» button in the direction of the arrow.
4. Check to ensure that the «EMERGENCY STOP» button unlocks properly.

The «EMERGENCY STOP» button does not lock or remain locked.

- Do not start the machine.
- Arrange for an authorised KAESER SERVICE agent to replace the «EMERGENCY STOP» button.

11.10.2 Testing the safety valve actuating pressure

Test the actuating pressure for the safety valve as per the separate SIGMA CONTROL SMART user manual. The machine must stop when the actuating pressure reaches P_{max}.

Value for the actuating pressure, see Tab. 14 Actuating pressure on the safety valve.

⚠ WARNING

Danger of hearing damage from noise when safety valve blows off

- ► Keep enclosures, doors and all cover panels closed.
- ► Wear ear protection.

► Check the actuating pressure for the safety valve.

11.10.3 Testing the excess temperature safety shutdown

Test the safety shutdown at excessive airend discharge temperatures as per the SIGMA CONTROL SMART user manual. The machine must stop when the airend discharge temperature reaches T_{max}.

Value for the maximum airend discharge temperature with automatic safety shutdown, see Tab. 16 Airend discharge temperature.

► Test the safety shutdown at excess airend discharge temperature.

11.11 Servicing the options

► Carry out maintenance in accordance with chapter 11.2.5 Options maintenance schedule.

11.11.1 da Servicing the compressed air aftercooler

The required cleaning frequency depends heavily on the local ambient conditions at the installation location.

Check the compressed air aftercooler regularly for contamination.

Always park your machine levelly so that accumulated water can flow away.

Arrange for heavy contamination to be removed by KAESER SERVICE.

⚠ CAUTION

Danger from swirling dust particles

► Use a breathing mask when cleaning with compressed air.

NOTICE

Damage caused by water or steam jets

► Cover sensitive electrical components.
► Do not direct high-pressure jets at sensitive components or display instruments.
► Adhere to the minimum distance and suitable angle of approach to the cooler surface.

NOTICE

Damage caused by incorrect cleaning

► Do not clean the cooler using hard objects.

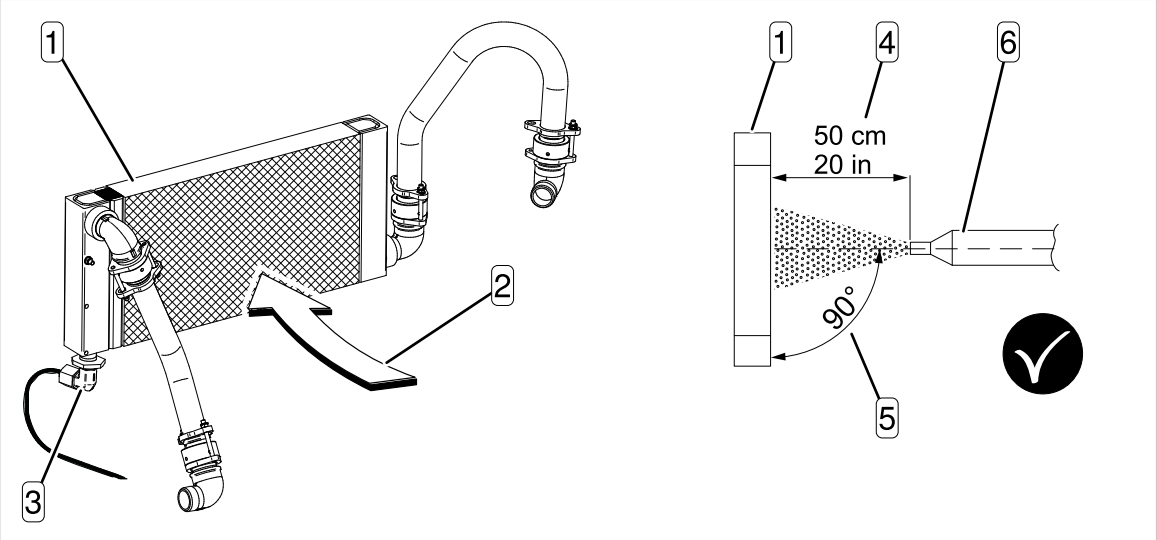


Fig. 79 Cleaning the compressed air aftercooler

1 Compressed air aftercooler
2 Direction of cleaning
3 Dirt trap
4 Minimum distance
5 Attack angle
6 High-pressure washer lance

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented

- The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Disconnect the negative cable from the battery.
3. Open all of the bung plugs in the closed floor pan.
4. Cover up electrical components such as the generator and generator control box.
5. Cover up the intake openings for both the drive engine and compressor air filters.
6. Clean the compressed air aftercooler:
   a) Adhere to the minimum distance [4] and attack angle [5] to the cooler surface.
   b) Clean the cooler fins with compressed air, water or steam jet in the opposite direction to that of the cooling air flow.
7. Remove the covers from the intake openings for both the drive engine and compressor air filters.
8. Remove all other covers used inside the machine.
9. Seal the floor pan with all of the bung plugs.
10. Perform a test run, see Tab. 73 Performing a test run.

Only steam-clean dirty cooling fins at cleaning areas equipped with an oil separator.

11.11.2 da Servicing the dirt trap on the water separator

Clean the dirt trap in accordance with the options maintenance schedule.

You can find the dirt trap underneath the water separator.

⚠ CAUTION

Danger of burning from hot surfaces

- ► Stop the machine and allow it to cool down.
- ► Wear personal protective equipment.

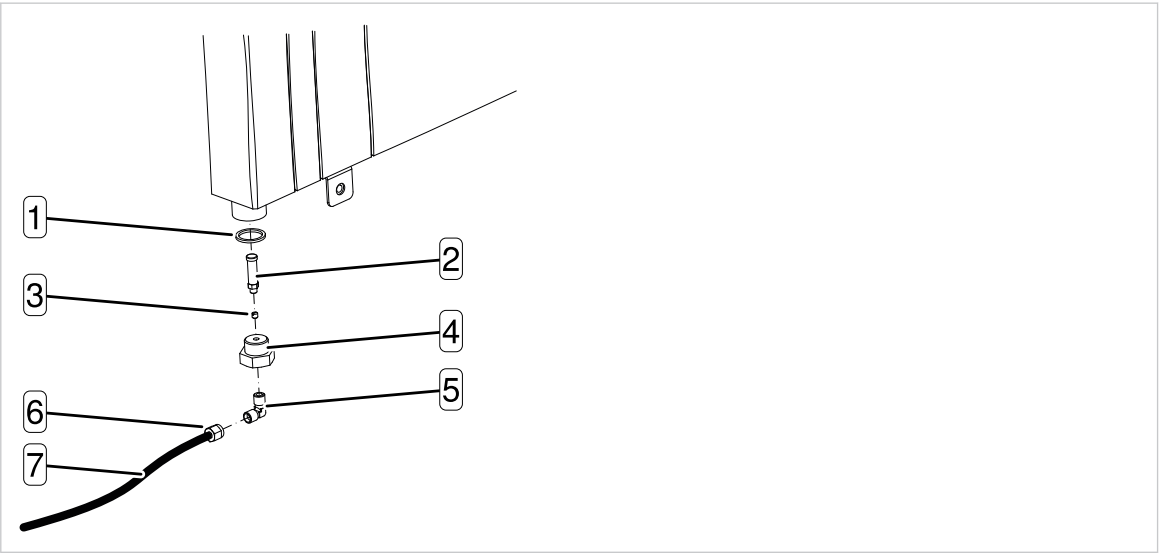


Fig. 80 Servicing the dirt trap

1 Dichtring
2 Strainer
3 Nozzle
4 Reducer
5 Angled screw-in connector
6 Clamping nut
7 Condensate drain line

- Benzine
- Spirit

- KIT Dirt trap

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the dirt trap:
   a) Remove the clamping nut and condensate drain line.
   b) Remove the angled screw-in connector.
   c) Unscrew the reducer.
   d) Unscrew the strainer.
   e) Loosen the nozzle with a screwdriver.
   f) Remove the nozzle from the reducer.
3. Clean and inspect the components:
   a) Clean the nozzle, strainer and male stud fitting.
   b) Check the nozzle and strainer for wear.
   c) Replace any damaged or worn components.
4. Reinstall the dirt trap:
   a) Position the strainer in the reducer and screw in place.
   b) Position the strainer in the reducer and screw in place.
   c) Fit the reducer with a sealing ring.
   d) Refit the angled screw-in connector.
   e) Fit the clamping nut to the condensate drain line and tighten.
5. Perform a test run, see Tab. 73 Performing a test run.

Dispose of wearing parts in the dirt trap and of condensate in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.11.3 dd Servicing the filter combination

Overview:

- Blowing out condensate
- Replacing the filter elements

► Only replace the filter elements for the filter combination in a clean environment.

11.11.3.1 Blowing out condensate

To guarantee perfect function of the filter combination, blow out the condensate from the prefilter and fine filter in accordance with the options maintenance schedule.

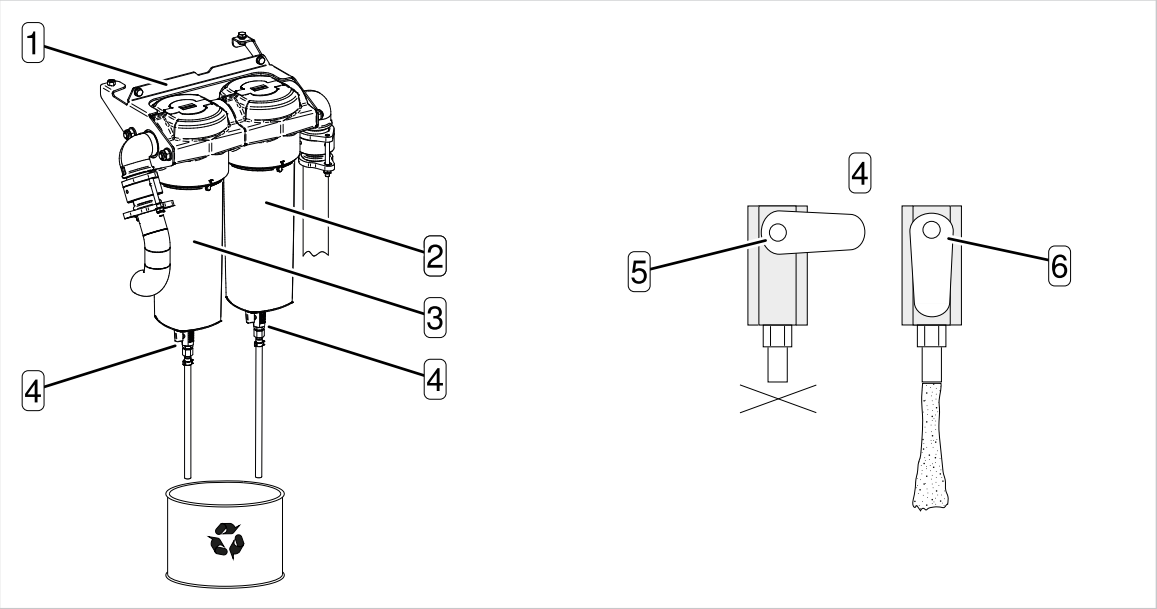


Fig. 81 Blowing out condensate

1 Filter combination
2 Prefilter
3 Fine filter
4 Shut-off valve
5 Example: Shut-off valve blocked
6 Example: Shut-off valve open

1. The machine is stopped
2. Compressed air consumers are disconnected
3. Compressed air discharge valves on the compressed air outlet are open
4. The machine has been fully vented
5. Pressure gauge reads 0 bar

1. Place a receptacle under the condensate drain.
2. Open both shut-off valves 4.
3. Switch on the «Controller ON/OFF» switch.
4. Start the machine and run it in the IDLE operating point.
   ✓ The condensate is blown out.
5. Wait until only compressed air is emitted.

6. Stop the machine.
   a) Wait until the machine has vented automatically.
   b) Open the compressed air discharge valves at the compressed air outlet.
7. Switch off the «Controller ON/OFF» switch.
8. Close both condensate drain shut-off valves.
9. Remove the receptacle from the machine.

Dispose of condensate in accordance with local disposal regulations and the applicable environmental protection regulations for the country of operation.

11.11.3.2 Replacing the filter elements

The prefilter and fine filter are equipped with different filter elements. Check the two filter elements for their specific usage. Always replace the filter elements for the prefilter and fine filter as a pair.

⚠ WARNING

Danger of injury due to residual pressure

► Vent the filter combination.
► Open both shut-off valves on the condensate drain.

NOTICE

Danger of contamination from skin contact with the filter surface

► Only handle new filter elements when wearing cloth gloves.

- Acid-free petroleum jelly

- Prefilter element with O-ring
- Fine filter element with O-ring

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

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

Removing the filter housing

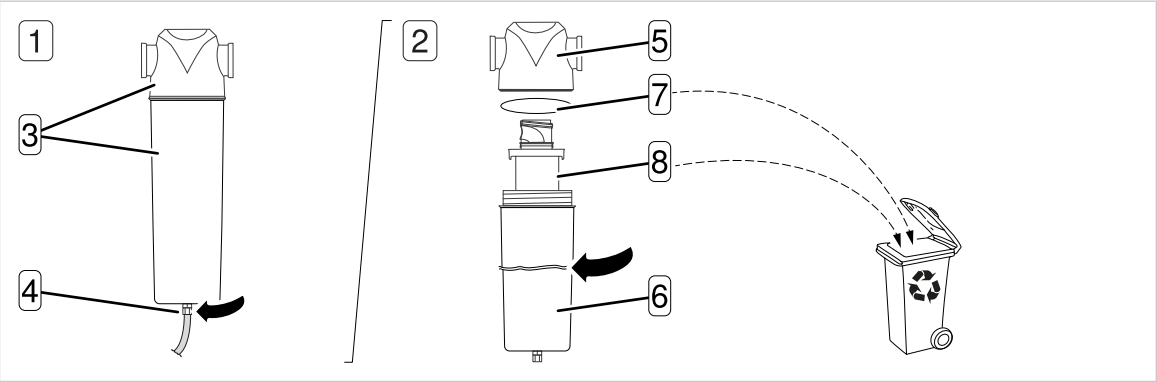


Fig. 82 Example: Removing the prefilter housing

1 Removing the clamping nut
2 Removing the filter housing
3 Filter housing
4 Hose line clamping nut
5 Filter head
6 Filter bowl
7 O-ring
8 Filter element

1. Open both shut-off valves on the condensate drain.
2. Loosen and remove the clamping nut on the hose line.
3. Remove the filter housing:
   a) Loosen and remove the filter bowl.
   b) Remove the filter element and the old O-ring.
4. Clean the filter head and filter bowl.
5. Remove and clean the filter housing for the fine filter in the same way.

Replacing the filter element on the prefilter

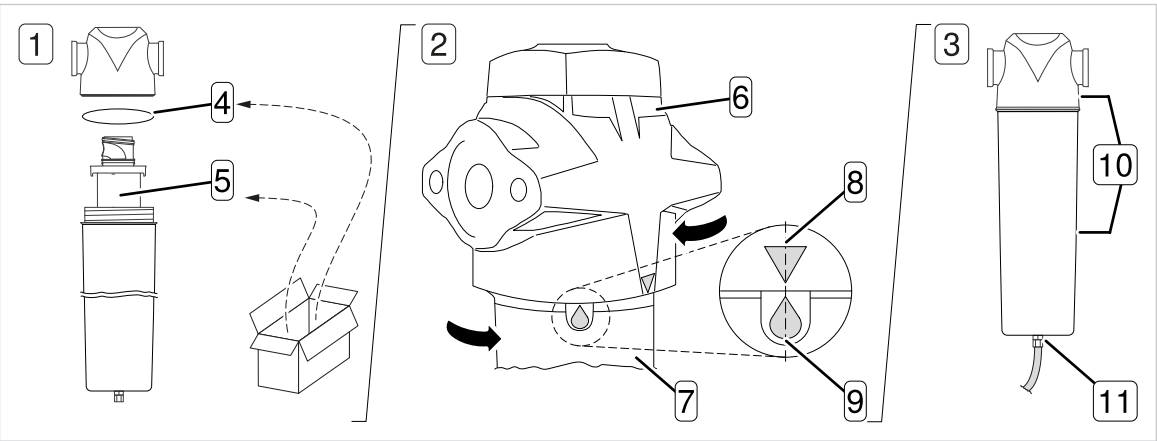


Fig. 83 Example: Replacing the filter element on the prefilter

1 Replacing the filter element and O-ring
2 Installing the filter bowl
3 Installing the clamping nut
4 O-ring
5 Filter element
6 Filter head
7 Filter bowl
8 Marking on filter head
9 Marking on filter bowl
10 Filter housing
11 Hose line clamping nut

1. Prepare the filter head:
   a) Lubricate the thread and the new O-ring with petroleum jelly.
   b) Insert the new O-ring into the filter head.
2. Put on cloth gloves.
3. Prepare the filter bowl:
   a) Handle the new filter element with the cloth gloves.
   b) Align the guides on the new filter element with the grooves in the filter bowl.
   c) Insert the new filter element into the filter bowl.
4. Mount the filter bowl on the filter head:
   a) Turn the thread on the filter bowl fully into the filter head.
   b) Continue turning the filter bowl until the pawl snaps into place.
   ✓ The marking on the filter bowl is positioned beneath the marking on the filter head.
5. Fit the clamping nut to the hose line and tighten correctly.
6. Replace the filter element for the fine filter in the same way.
7. Close both shut-off valves on the condensate drain.
8. Perform a test run, see Tab. 73 Performing a test run.

Dispose of used filter elements, condensate and contaminated working materials in accordance with local disposal regulations and the applicable environmental protection regulations for the country of operation.

11.11.4 ea ec Maintaining the tool lubricator

Check the maximum and recommended fill level for the supply vessel on a daily basis.

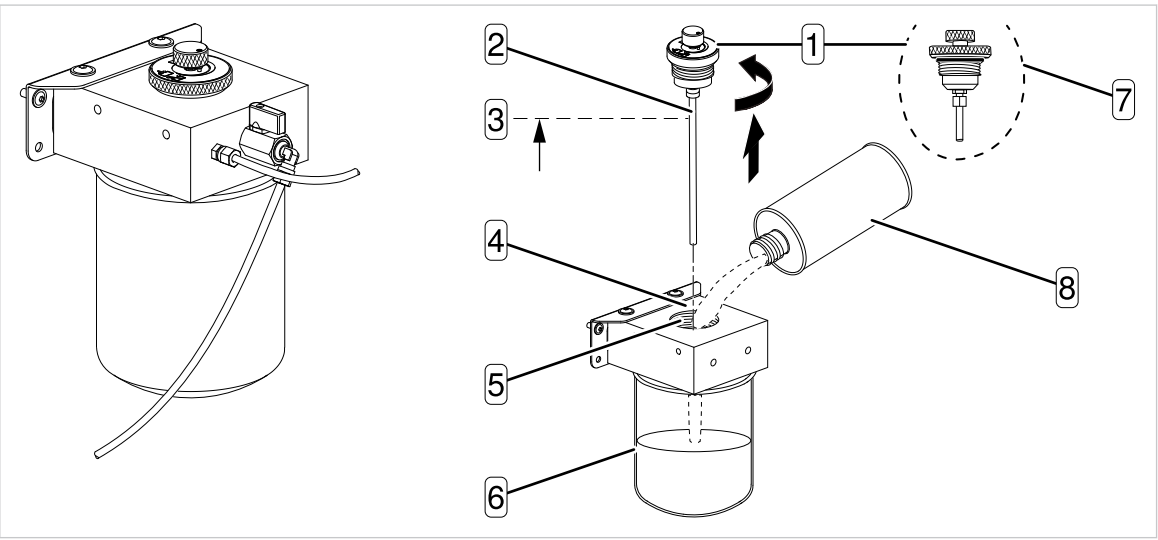


Fig. 84 Maintaining the tool lubricator

1 Screw plug
2 Dipstick
3 Maximum fill level
4 Tool lubricator upper part
5 Filler port
6 Supply vessel
7 O-ring
8 Lubricant

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Check the fill level:
   a) Loosen and remove the screw plug.
   b) Wipe the dipstick with a cleaning cloth.
   c) Insert the screw plug.
   d) Remove the screw plug again.
   e) Read off the fill level from the dipstick.
3. Replenish the lubricant:
   a) Replenish the lubricant to the maximum level.
   b) Check the fill level.
   c) Check that the O-ring is in the correct condition.
   d) Insert the screw plug.
4. Perform a test run, see Tab. 73 Performing a test run.

For suitable lubricants and the maximum fill level, see chapter 2.5 Options.

11.11.5 ga Servicing the generator

A spring-supported tensioning frame automatically sets the correct belt tension.

Replace the generator drive belt if transverse tears, frays or stretching are visible.

⚠ WARNING

Danger of shearing and crushing from contact with rotating components

- ► Stop the machine.
- ► Secure the machine against being restarted.
- ► Only remove safety guards and cover panels after securing the machine against being restarted.

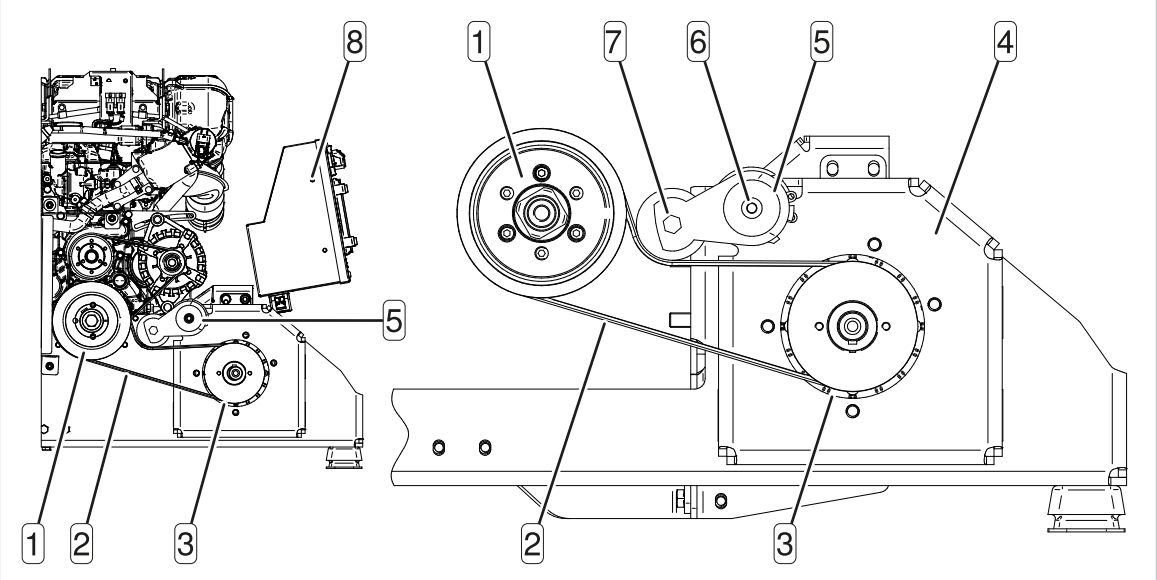


Fig. 85 Replacing the generator drive belt

1 Drive belt pulley
2 Drive belt
3 Generator drive pulley
4 Generator
5 Tensioning frame
6 Tensioning frame fulcrum
7 Hexagon head
8 Generator control box

1. Compressed air consumers are disconnected
2. Compressed air discharge valves on the compressed air outlet are open
3. The machine has been fully vented
4. The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Disconnect the negative cable from the battery.
3. Remove the heat shield
4. Remove the belt safety guard
5. Remove the old generator drive belt:
   a) Fit the hexagon wrench onto the tool holder on the tensioning frame.
   b) Pull the tensioning frame in the direction of the arrow and hold it.
   c) Pull the loosened drive belt from the generator belt pulley.
   d) Allow the tensioning frame to spring back slowly.
   e) Remove the drive belt from the drive engine belt pulley.
6. Check both belt pulleys for dirt and wear:
   a) Clean the pulleys if they are dirty.
   b) Arrange replacement of worn belt pulleys.
7. Install a new generator drive belt:
   a) Manually position the new drive belt over both belt pulleys without using force.
   b) Fit the hexagon wrench onto the tool holder on the tensioning frame.
   c) Pull the tensioning frame in the direction of the arrow and hold it.
   d) Push the drive belt downwards and guide it under the tension pulley on the tension frame.
   e) Allow the tensioning frame to spring back slowly.
   f) Check whether the drive belt is correctly fitted in the guidance grooves on both belt pulleys.
   g) Check whether the drive belt is correctly fitted in the guidance grooves on both tension pulleys.
8. Perform a test run, see Tab. 73 Performing a test run.

11.11.6 Ia Servicing the spark arrester

Remove the accumulated soot from the spark arrester around every two months.

This will prevent glowing combustion residue being emitted from the exhaust silencer.

The spark arrester is integrated into the exhaust silencer.

⚠ WARNING

Danger of poisoning from exhaust gases and soot

- ► Only blow out soot outdoors.
- ► Do not inhale exhaust gases and soot.

- Heat-resistant spiral hose

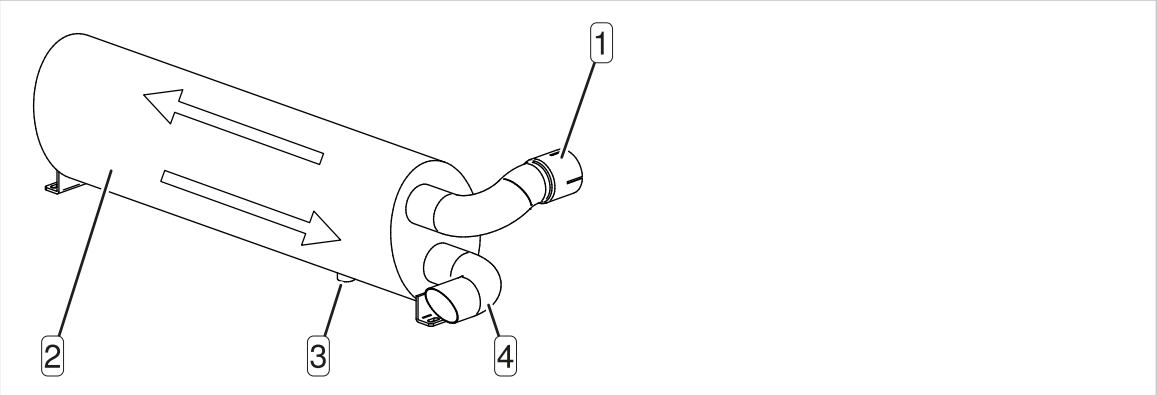


Fig. 86 Servicing the spark arrester

1 Exhaust inlet
2 Exhaust silencer
3 Sealing plug
4 Exhaust outlet

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

1. Carry out the following preliminary tasks:
   a) Remove the sealing plug from the soot trap.
   b) Feed the end of the hose through the opening in the floor panel.
   c) Attach the end of the hose to the discharge port.
   d) Place the open end of the hose in the soot receptacle.
2. Start the machine.
3. Blow out the soot:
   a) Partially cover the exhaust outlet with a fireproof object to increase the pressure in the exhaust system.
   b) Allow the machine to run until there are no more soot particles visible in the exhaust gas.
4. Switch the machine off:
   a) Press the «STOP» key on the control panel.
   b) Allow the machine to cool down.
5. Close the soot trap:
   a) Remove the end of the hose from the discharge port.
   b) Return the sealing plug to the discharge port.
   c) Remove the cover from the exhaust outlet.

Dispose of collected soot in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.11.7 lb Maintaining the engine air shut-off valve

NOTICE

Damage to the drive engine

- ► Do not adjust the set screw for the engine air shut-off valve.
- ► Arrange for the engine air shut-off valve to be adjusted by a specialist workshop or KAESER SERVICE technician.
- ► Do not grease the engine air shut-off valve.

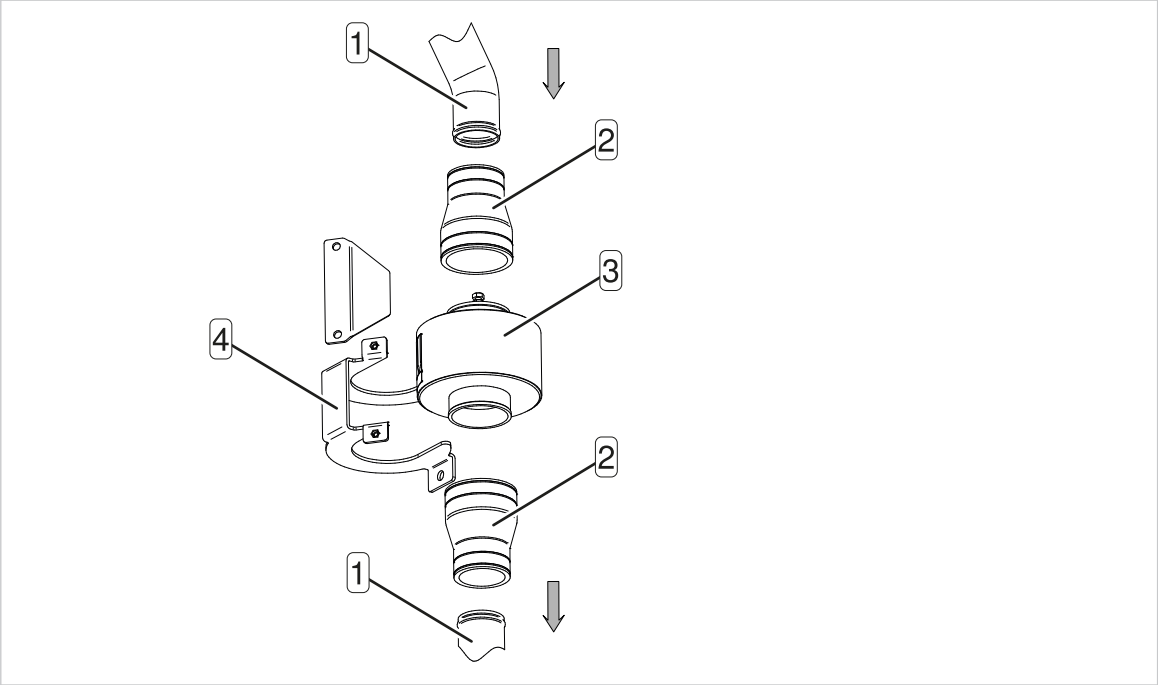


Fig. 87 Maintaining the engine air shut-off valve

[1] Hose length
[2] Adapter
[3] Engine air shut-off valve
[4] Bracket

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Remove the engine air shut-off valve from the air intake tract:
   a) Loosen and remove both hoses [1].
   b) Pull the adapter [2] out of the engine air shut-off valve [3].
   c) Remove the engine air shut-off valve from the bracket [4].
3. Check that the interior of the engine air shut-off valve is clean:
   a) Lightly blow out any dirt with compressed air.
   b) Remove persistent dirt with benzine or spirit.
4. Check the function and mobility of the engine air shut-off valve:
   a) Check the engine air shut-off valve for signs of excessive wear.
   b) Check that the closing flap in the engine air shut-off valve is functioning perfectly.
5. Reinstall the engine air shut-off valve in the air intake tract.
6. Perform a test run, see Tab. 73 Performing a test run.

The drive engine stops during LOAD operation.

- Arrange for the engine air shut-off valve to be adjusted by KAESER SERVICE or a specialist workshop.

11.11.8 oe Servicing the closed floor pan

NOTICE

Danger of corrosion and short circuit from accumulated liquids

- ► Check the interior of the machine on a daily basis.
- ► Remove accumulated liquids immediately.

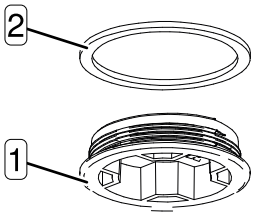


Fig. 88 Bung plug example

1 Bung plug
2 Seal

- The machine has stopped and cooled down
- Compressed air consumers are disconnected
- The compressed air discharge valves at the compressed air outlet are open
- The machine has been fully vented
- The pressure gauge reads 0 bar

1. Switch off the «Controller ON/OFF» switch.
2. Perform a visual inspection for accumulated liquids.
   a) Identify the leakage area inside the machine.
   b) Identify the leaking component.
   c) Correctly resolve the cause of the leak.
3. Identify the maintenance opening below the leakage area or leaking component.
   a) Position a receptacle.
   b) Loosen and remove the bung plug from the identified maintenance opening.
   c) Collect the accumulated liquid.
   d) If necessary, loosen and remove multiple bung plugs.
   e) Wait until all of the accumulated liquid has drained.
4. Remove any contamination inside the machine.
   a) Clean the maintenance openings.
   b) Clean the bung plugs.
   c) Check the seals for damage.
   d) If necessary, replace damaged seals.
5. Properly close all cleaned maintenance openings with seals and bung plugs.

Dispose of any accumulated liquids in the closed floor pan in accordance with local disposal regulations and the applicable environmental protection laws for the country of operation.

11.12 Cleaning the machine

For the machine to be in proper technical condition, it must be clean. In particular, the interior of the machine must not be heavily contaminated with oil.

Take suitable measures to effectively prevent the ingress of jet water into electrical components when cleaning the machine interior using a high-pressure washer.

Ensure the machine is cleaned by authorised and trained personnel only.

► Clean the machine carefully.

11.12.1 Cleaning the exterior of the machine

To prevent damage when cleaning with a high-pressure washer, take note of the information in the manufacturer operating manual.

1. oe Open the closed floor pan:
   a) Remove all bung plugs.
   b) Clean all bung plugs.
2. Check that the protective covers are closed over all of the sockets:

- tc Lighting socket
- te Lighting socket
- bb Coolant preheating socket
- od Battery trickle charging socket
- ga Electrical consumer socket

3. Close the control panel cover for the SIGMA CONTROL SMART.
4. Clean the machine from the outside:
   a) Do not use jet water to clean sockets.
   b) Do not use jet water to clean the «insulation monitoring» test key.
   c) Deploy the lance on the high-pressure washer to maintain a minimum distance from the object being cleaned.
   d) Keep the high-pressure washer lance in constant motion.
5. Clean all electrical components manually using a cleaning cloth.
6. Clean sensitive indicating instruments manually using a cleaning cloth.

11.12.2 Cleaning the interior of the machine

Set the high-pressure washer as per Tab. 81 High-pressure washer setting.

Characteristic	
Interior diameter of the jet nozzle [mm]	6.3
Flow rate [l/h]	750

Tab. 81 High-pressure washer setting

1. Cover the intake openings on both air filters:
   a) Cover the intake opening on the engine air filter.
   b) Cover the intake opening on the compressor air filter.
2. Cover sensitive components:
   a) Close the control panel cover.
   b) Cover the generator control box with a plastic sheet and close off with adhesive tape.

3. Do not direct jet water at sensitive components:
   - Starter, control box or display instruments
   - Solenoid valves and electrical plug-in connections
   - Battery
   - Generator and its connector box
   - Generator control box
4. Clean the interior of the machine:
   a) Clean non-sensitive components and surfaces inside the machine.
   b) Keep the extension pole of the high-pressure washer in constant motion.
5. Remove all covers:
   a) Remove the cover from the engine air filter intake opening.
   b) Remove the cover from the compressor air filter intake opening.
   c) Remove the cover from the generator control box.
   ✓ The plastic sheeting and adhesive tape are removed from the interior of the machine.
6. Clean sensitive components using a cleaning cloth:
   - Generator
   - Generator connector box
   - Generator control box
   - Solenoid valves
   - Electrical plug-in connections
7. Seal the floor pan.
   a) If required, remove any remaining contaminants with a cleaning cloth.
   b) Reinsert all bung plugs.

11.13 Maintenance log

Log the maintenance tasks performed in the following table and enter the vehicle identification number for the machine.

Vehicle identification number			
Date	**Task**	**Operating hours**	**Signature**

12 Disposal

12.1 Disposal

Proper disposal is required by law.

Separate harmful substances and components in to order ensure treatment or controlled disposal.

Deliver all collected operating fluids/materials and removed components to the designated disposal system in accordance with environmental regulations. Finally, hand the machine over to a certified disposal agent.

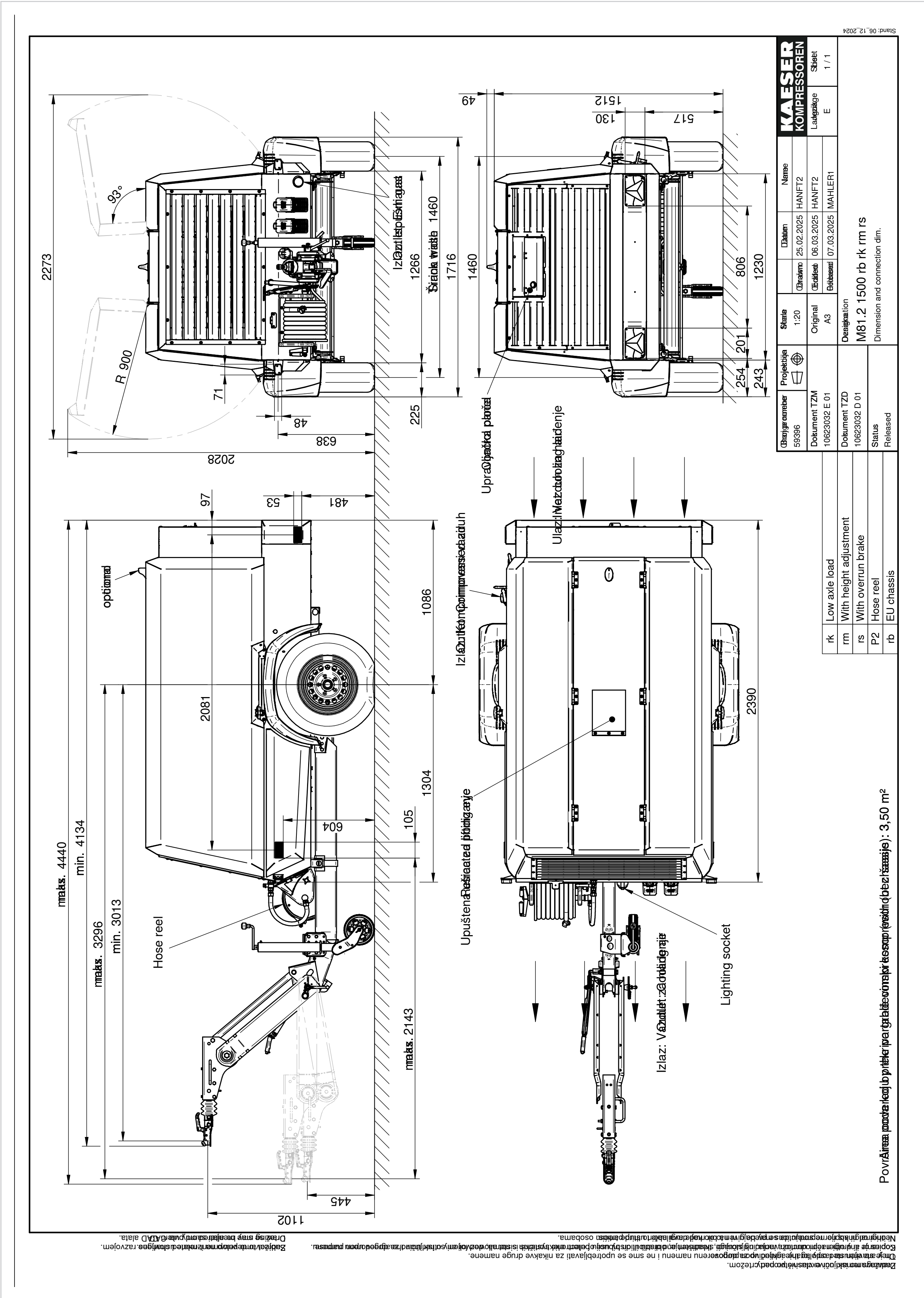
1. Starter batteries must be delivered to the national battery collection system.
2. Device batteries, if present, must be disposed of via the national battery collection system.
3. Deliver collected operating fluids/materials to the designated disposal system.
4. Dispose of components and cleaning cloths contaminated with oil, fuel or coolant in accordance with environmental regulations.
5. Deliver the machine to a certified disposal agent.

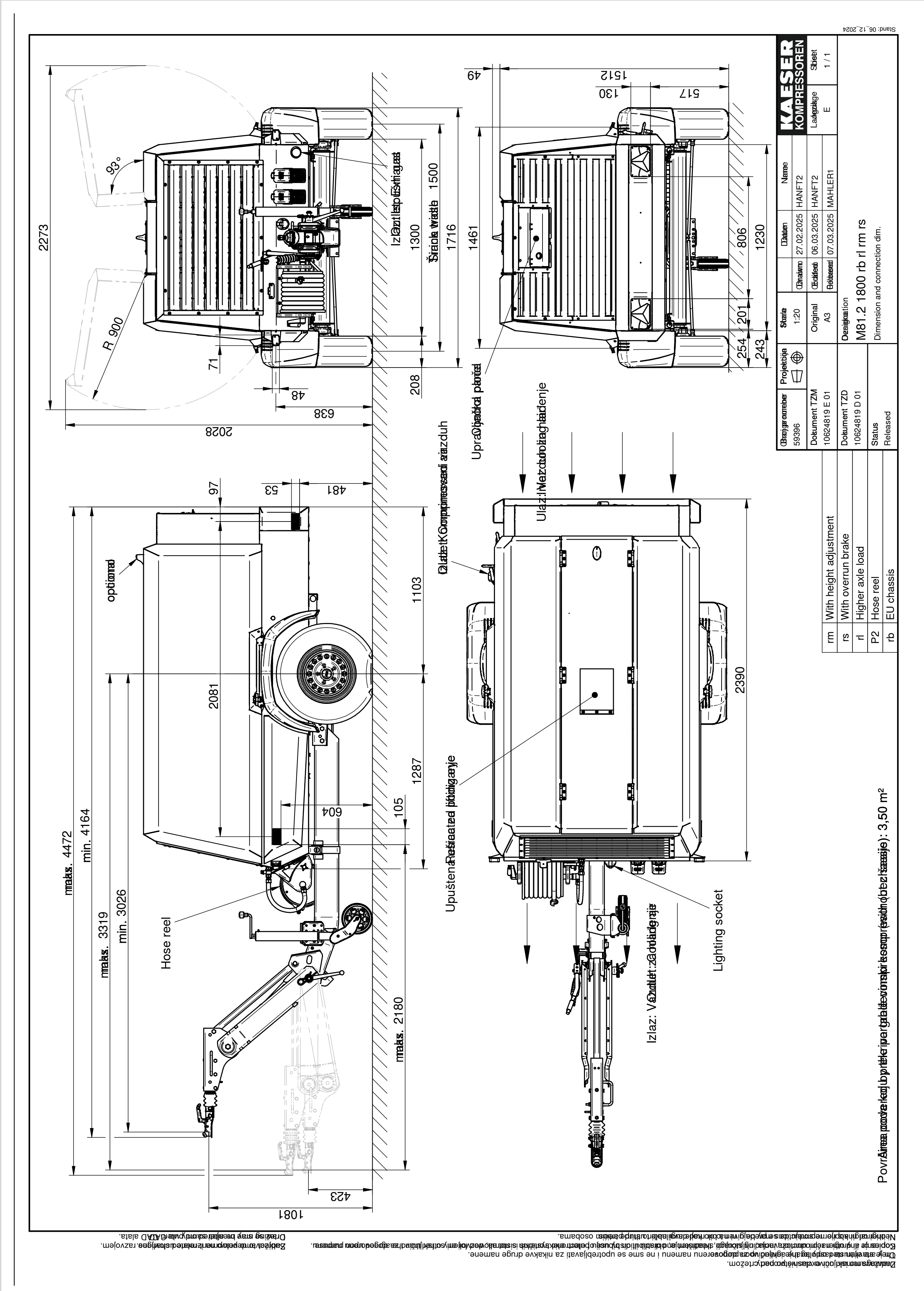
13 Documents and drawings

13.1 rb Dimensional drawing overview

Option	Description
rb rk rm rs	▪ Chassis – EC version ▪ Chassis with low axle load ▪ Chassis with height adjustment ▪ Chassis with service brake
rb rl rm rs	▪ Chassis – EC version ▪ Chassis with high axle load ▪ Chassis with height adjustment ▪ Chassis with service brake

Tab. 82 Dimensional drawing overview for EC versions

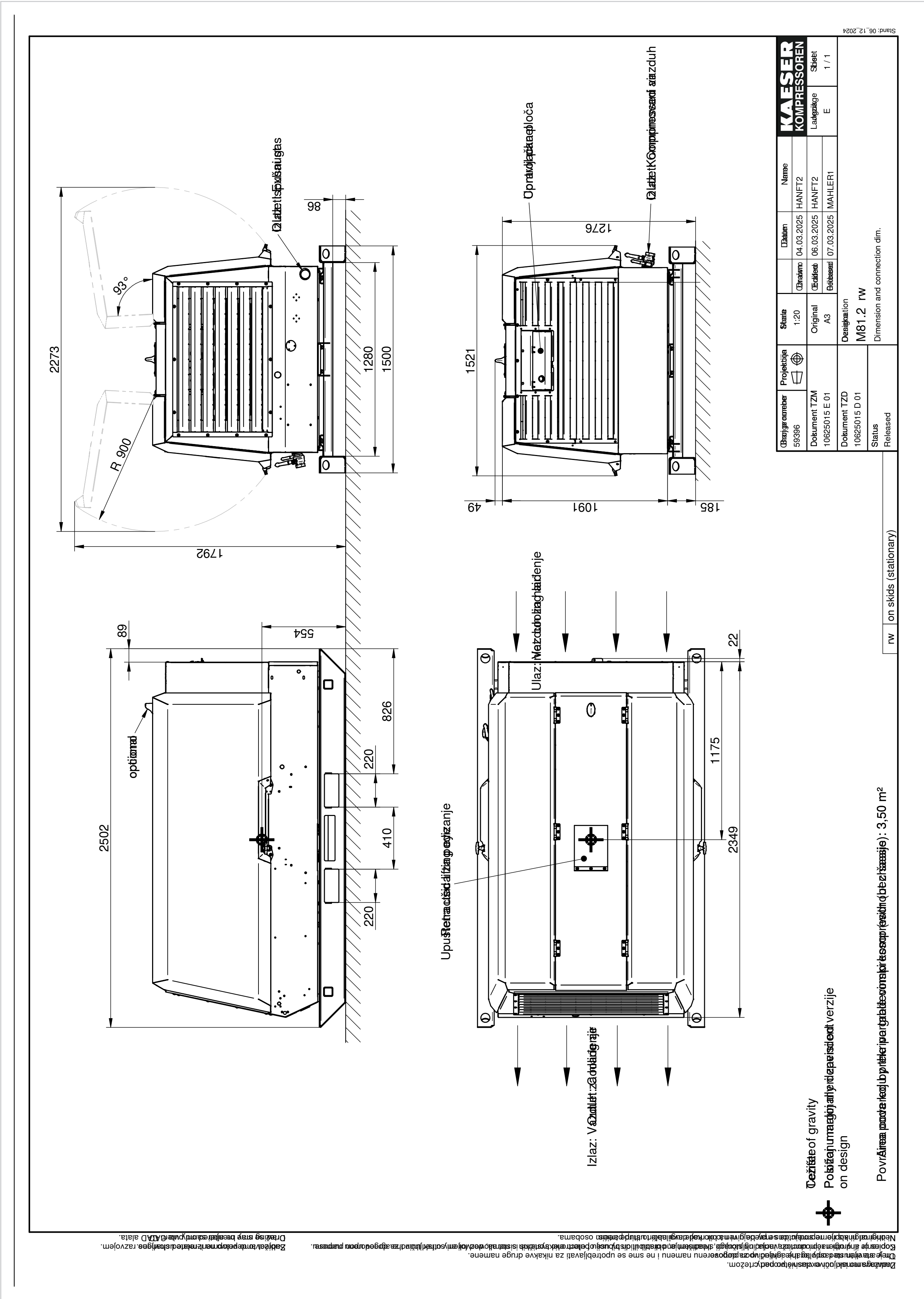

M81.2 1500 rb rk rm rs
Dimension and connection dim.
rk Low axle load
rm With height adjustment
rs With overrun brake
P2 Hose reel
rb EU chassis
Hose reel
Lighting socket
optional
Status
Released
Scale
1:20
Original
A3
Sheet
1 / 1
59396
10623032 E 01
10623032 D 01
25.02.2025 HANFT2
06.03.2025 HANFT2
07.03.2025 MAHLER1

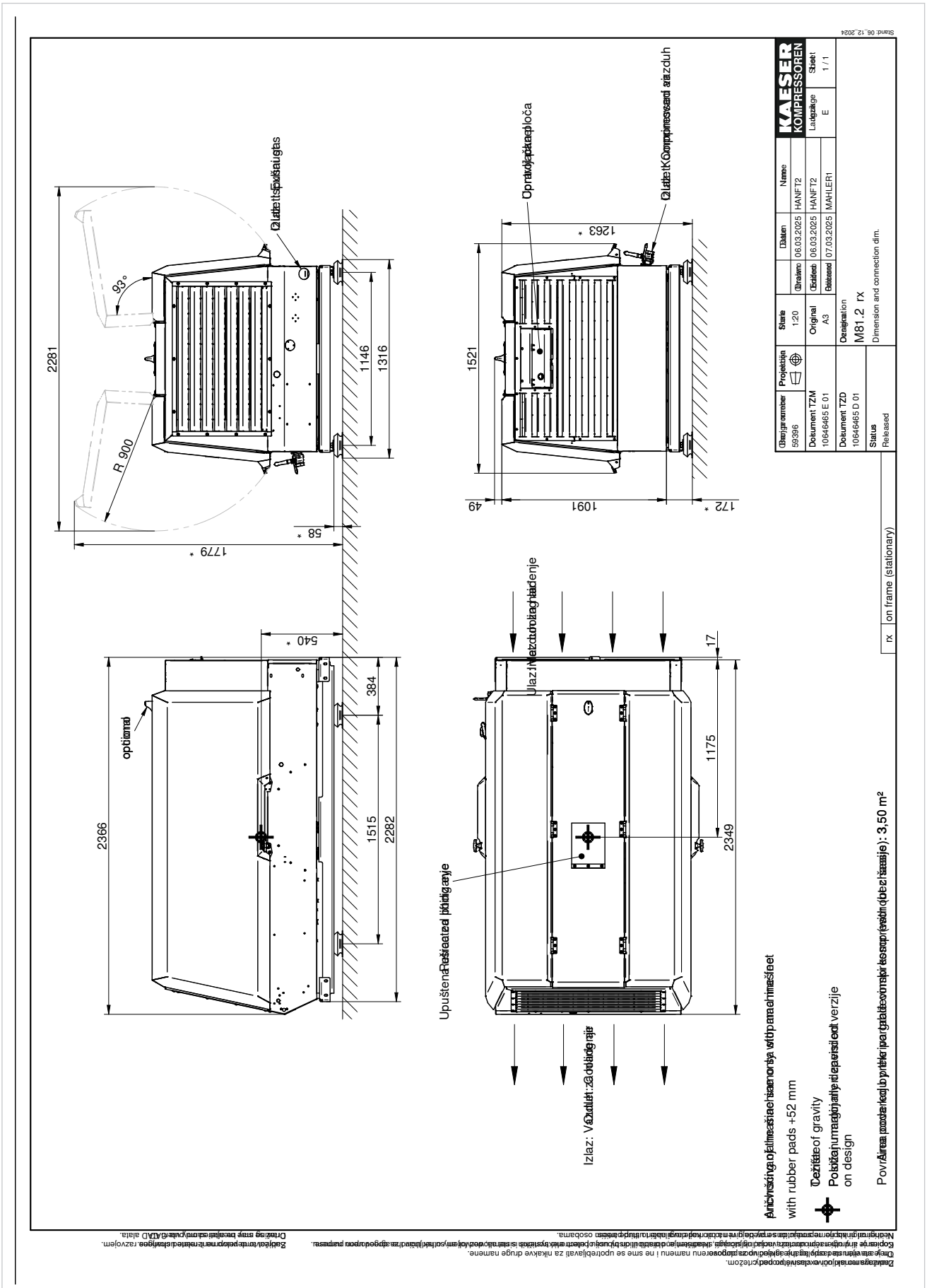

rm With height adjustment
rs With overrun brake
rl Higher axle load
P2 Hose reel
rb EU chassis
M81.2 1800 rb rl rm rs
Dimension and connection dim.
Hose reel
Lighting socket
optional
Status
Released
Dokument TZM
1062819 E 01
Dokument TZD
1062819 D 01
HANFT2
MAHLER1
27.02.2025
06.03.2025
07.03.2025
1:20
A3
E
1 / 1

13.2 rw rx Dimensional drawing overview

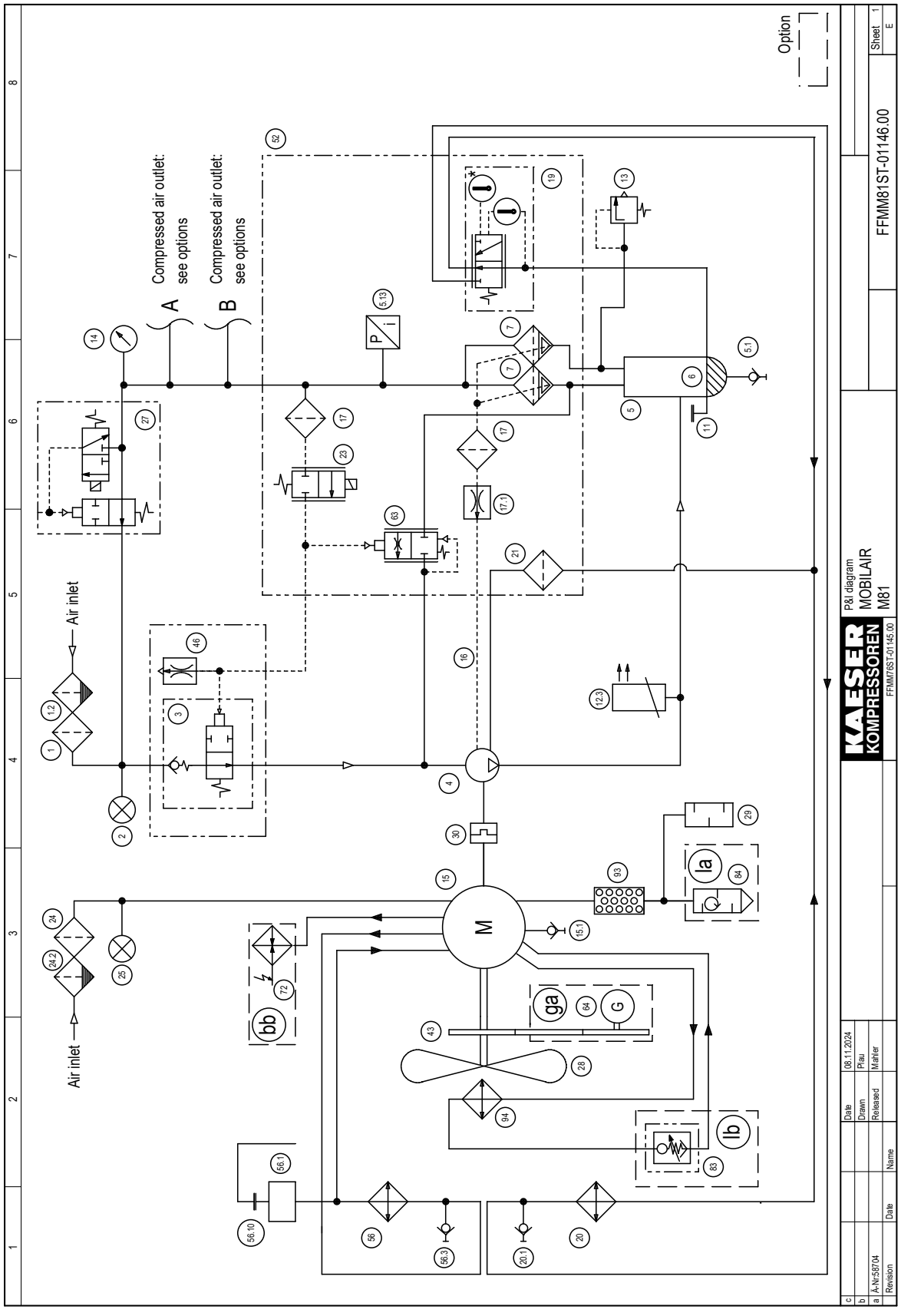
Option	Description
rw	Chassis frame on skids
rx	Chassis frame

Tab. 83 Dimensional drawing overview for stationary version


2273
1792
93°
R 900
1280
1500
98
1521
1276
49
1091
185
2502
89
554
826
220
410
220
22
1175
2349
M81.2 rw
Dimension and connection dim.
on skids (stationary)
Released
59396
10625015 E 01
10625015 D 01
1:20
A3
E
1 / 1
04.03.2025 HANFT2
06.03.2025 HANFT2
07.03.2025 MAHLER1


KAESER KOMPRESSOREN
Stand: 06.12.2024
Sheet 1 / 1
Language E
Name HANFT2 HANFT2 MAHLER1
Date 06.03.2025 06.03.2025 07.03.2025
Drawn Checked Released
Scale 1:20
Original A3
Designation M81.2 rx
Dimension and connection dim.
Status Released
Document TZM 10646465 E 01
Document TZD 10646465 D 01
Drawing number 59396
Projection
rx on frame (stationary)
with rubber pads +52 mm
Center of gravity
on design
2281
1779
58
1146
1316
R 900
93°
1263
1521
1091
49
172
2366
540
384
1515
2282
optional
1175
2349
17

13.3 Flow diagram


Option
Compressed air outlet: see options
A
Compressed air outlet: see options
B
Air inlet
Air inlet
M
FFMM/81ST-01146.00
Sheet 1
E
P&I diagram
MOBILAIR
M81
KAESER KOMPRESSOREN
FFMM/76ST-01145.00
Date
Drawn
Released
Name
06.11.2024
Piau
Mahler
Revision
Date
A-Nr:58704

1	2	3	4	5	6	7	8

1	Compressor - Air filter
1.2	Dust collector
2	Maintenance indicator, Compressor -Air filter
3	Inlet valve
4	Rotary screw airend
5	Oil separator tank
5.1	Hose coupling - Oil drain device
5.13	Pressure transducer - Internal pressure
6	Oil reserve
7	Oil separator cartridge
11	Oil filler with screw plug
12.3	Temperature sensor - Airend discharge temperature
13	Safety valve
14	Pressure gauge Compressed air - Control panel
15	Diesel engine
15.1	Hose coupling - Oil drain device
16	Oil return line
17	Dirt trap
17.1	Nozzle
19	Thermostatic valve
20	Oil cooler
20.1	Hose coupling - Oil drain device
21	Oil filter
23	Electric proportional controller
24	Motor - Air filter
24.2	Dust collector
25	Maintenance indicator, Motor - Air filter
27	Venting valve
28	Fan
29	Exhaust silencer
30	Coupling
46	Nozzle (Secondary side Proportional controller)
52	Control valve
56	Coolant cooler
56.1	Coolant expansion tank
56.3	Hose coupling - Water drain device
56.10	Coolant filler with screw plug and overpressure valve
63	Regulating valve (Recirculation valve)
64	Generator
72	Coolant pre-heating device
83	Engine air shut-off valve (automatic shut-off)
84	Spark arrestor
93	Particulate filter with integrated exhaust silencer
94	Charge air cooler

Option

bb	Coolant pre-heating
ga	Generator
la	Spark arrestor
lb	Spark arrestor + Engine air shut-off valve (automatic, closes via EMERGENCY STOP)

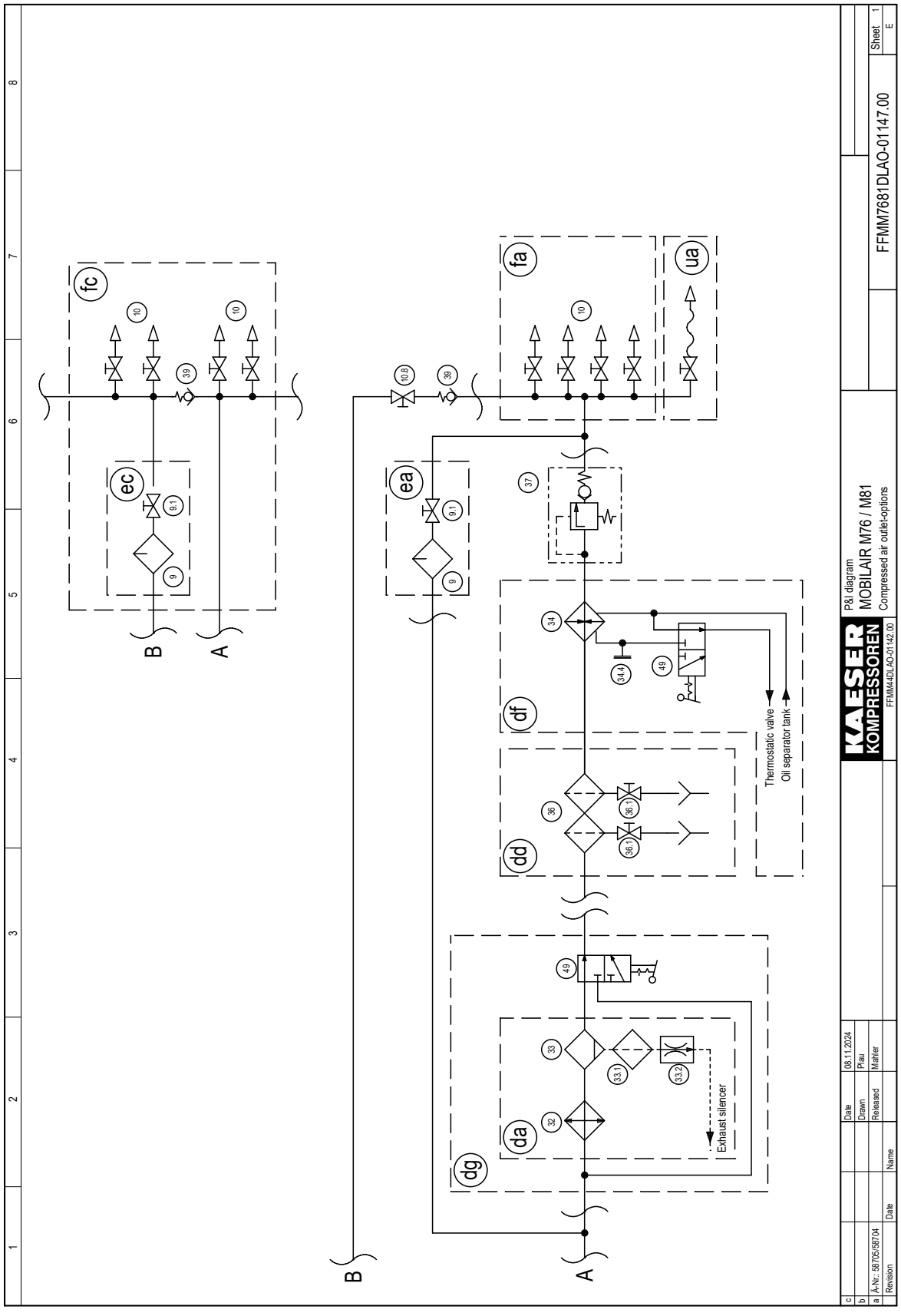
c				Date	08.11.2024				
b				Drawn	Plau				
a	Ä-Nr:58704			Released	Mahler				
	Revision	Date	Name						

KAESER KOMPRESSOREN FFMM76ST-01145.00

P&I diagram legend
MOBILAIR
M81

FFMM81ST-01146.00

Sheet 2
E


fc
ec
fa
ua
ea
df
dd
dg
da
Thermostatic valve
Oil separator tank
Exhaust silencer
B
A
P&I diagram
MOBILAIR M76 / M81
Compressed air outlet-options
FFMM7681DLAO-01147.00
FFMM44DLAO-01142.00
Sheet 1
E
Date
Drawn
Released
Name
08.11.2024
Plau
Mahler
Revision
Date
Ä-Nr.: 58705/58704

9	Tool lubricator	39	Check valve
9.1	Shut-off valve	49	3/2-Directional control valve
10	Air distributor		
10.8	Shut-off valve	Option	
32	Air cooler	da	Compressed air aftercooler + Centrifugal separator
33	Centrifugal separator	dd	Filter combination
33.1	Dirt trap	df	Heat exchanger with bypass
33.2	Nozzle	dg	Compressed air aftercooler with bypass
34	Heat exchanger	ea	Tool lubricator, with option fa
34.4	Screw plug - Oil drain device	ec	Tool lubricator, with option fc
36	Filter combination	fa	Direct air flow
36.1	Condensate drain shut-off valve	fc	Air flow split downstream of treatment options
37	Minimum pressure check valve	ua	Hose reel

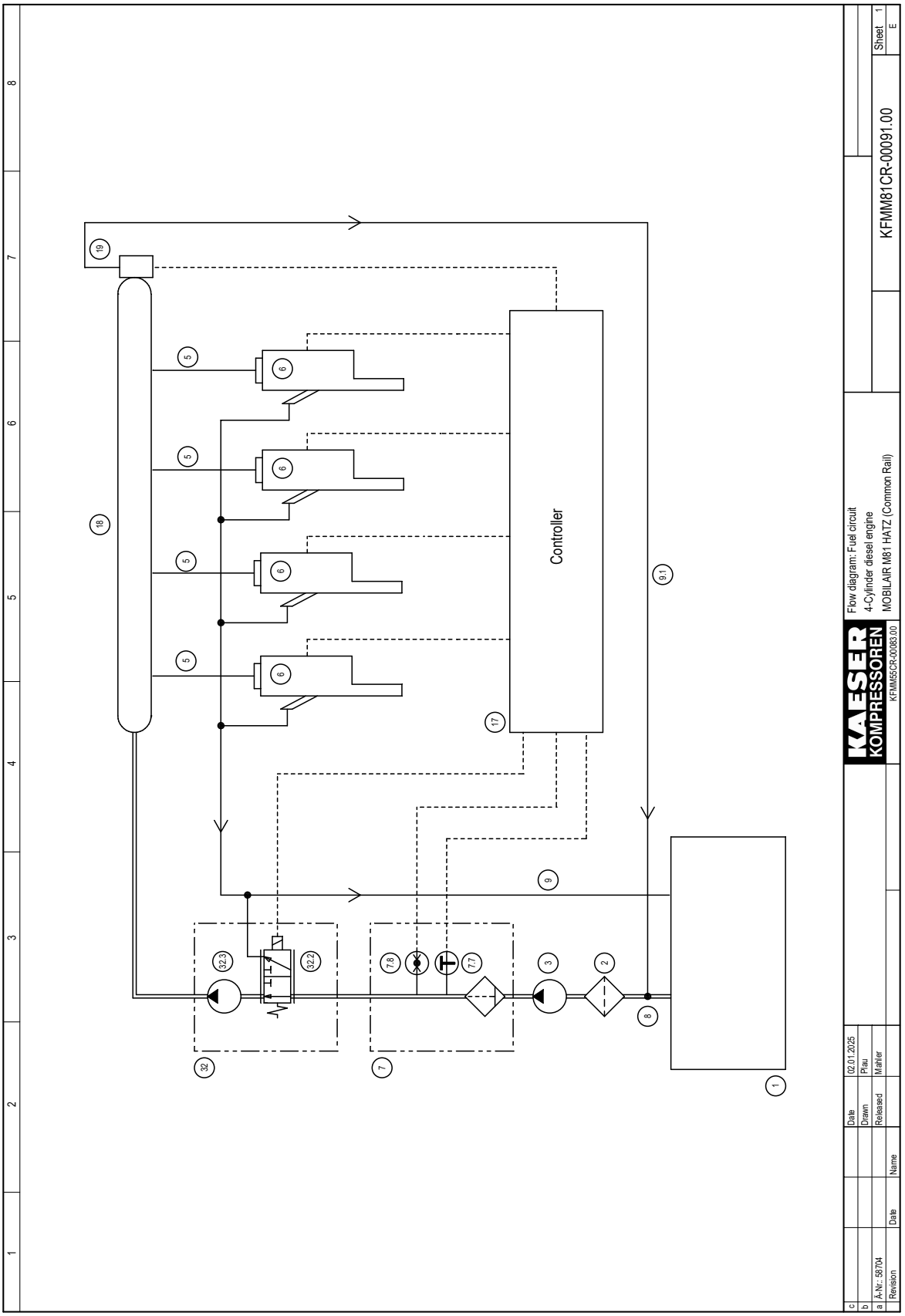
c				Date	08.11.2024
b				Drawn	Plau
a	Ä-Nr.: 58705/58704			Released	Mahler
	Revision	Date	Name		

KAESER KOMPRESSOREN
FFMM44DLAO-01142.00

P&I diagram legend
MOBILAIR M76 / M81
Compressed air outlet-options

FFMM7681DLAO-01147.00
Sheet 2
E

13.4 Fuel circuit diagram


Controller
Flow diagram: Fuel circuit
4-Cylinder diesel engine
MOBILAIR M81 HATZ (Common Rail)
KFMM81CR-00091.00
KFMM55CR-00083.00
Sheet 1
E
Date
Drawn
Released
Name
02.01.2025
Plau
Mahler
Änr.: 58704
Revision

1	Fuel tank
2	Fuel prefilter
3	Fuel feed pump
5	High pressure line
6	Injector nozzle
7	Fuel filter
7.7	Fuel temperature sensor
7.8	Fuel pressure transducer (Low pressure)
8	Fuel supply line
9	Fuel return line
9.1	Leakage return line
15	Temperature transducer
17	Engine control unit
18	Distributing pipe
19	Pressure limiting valve
32	High-pressure pump
32.2	Control valve (fuel feed pump)
32.3	Pump unit

c				Date	02.01.2025	KAESER KOMPRESSOREN	Flow diagram: Fuel circuit		
b				Drawn	Plau		4-Cylinder diesel engine		
a				Released	Mahler		MOBILAIR M81 HATZ (Common Rail)	KFMM81CR-00091.00	Sheet 2 E
	Revision	Date	Name			KFMM55CR-00083.00			

13.5 Electrical diagrams

13.5.1 Wiring diagram

Electrical diagrams

MOBILAIR M81.2 - SCS

HATZ Engine stage V

SIGMA CONTROL SMART

Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

c				Date	30.06.2025 E	KAESER KOMPRESSOREN	Cover page	=	
b				Drawn	Seubert		MOBILAIR M81.2	+	
a				Released	Schröder				
A	Change	Date	Name			M81.2	DFA81-03062.01	page 1	1 Sht.

Lfd. Nr. No.	Benennung Name		Zeichnungsnummer (Kunde) Drawing No. (customer)	Zeichnungsnummer (Hersteller) Drawing No. (manufacturer)	Blatt Page	Anlagenkennzeichen Unit designation
1	Cover page			DFA81-03062.01	1	
2	List of contents			ZFA81-03062.01	1	
3	Block diagram			UFA81-03062.01	1	
4	Block diagram			UFA81-03062.01	2	
5	Block diagram	cabling		UFA81-03062.01	3	
6	Circuit diagram			SFA81.BK-03062.01	1	=BK
7	Circuit diagram			SFA81.IKM-03062.01	1	=IKM
8	Circuit diagram			SFA81.IKM-03062.01	2	=IKM
9	Circuit diagram			SFA81.IKM-03062.01	3	=IKM
10	Circuit diagram	analogue input building group		SFA81.SK-03062.01	6	=SK
11	Circuit diagram	Control board EMR 4		SFA81.SK-03062.01	8	=SK
12	Circuit diagram			SFA81.SK-03062.01	1	=SK
13	Circuit diagram	analogue input building group		SFA81.SK-03062.01	2	=SK
14	Circuit diagram	analogue input building group		SFA81.SK-03062.01	3	=SK
15	Circuit diagram	analogue input building group		SFA81.SK-03062.01	4	=SK
16	Circuit diagram	Digital output assembly		SFA81.SK-03062.01	5	=SK
17	Circuit diagram			SFA81.SK-03062.01	7	=SK
18	Equipment parts list	Control cabinet		GFA81-03062.01	1	
19	Equipment parts list	Control cabinet/Control panel		GFA81-03062.01	2	
20	Equipment parts list	unit components/model-dependent components		GFA81-03062.01	3	
21	Terminal schedule	Terminal strip -X1		KFA81-03062.01	1	=SK
22	Terminal schedule	Plug connection -X21		KFA81-03062.01	10	=IKM
23	Terminal schedule	Plug connection -X24		KFA81-03062.01	11	=IKM
24	Terminal schedule	Plug connection -X25		KFA81-03062.01	12	=SK
25	Terminal schedule	Plug connection -X31		KFA81-03062.01	20	=SK
26	Component layout	Switchboard / Side panel		AFA81-03062.01	1	
27	Component layout	rear panel Switchboard		AFA81-03062.01	2	

c				Date	30.06.2025	KAESER KOMPRESSOREN	List of contents MOBILAIR M81.2		=
b				Drawn	Seubert				+
a				Released	Schröder			ZFA81-03062.01	page 1 1 Sht.
B	Change	Date	Name						

general instructions

Control voltage 12VDC
All non-designated conductors FLRY 0,75mm² white
All control lines marked a) are 1,5mm² FLRY white
All control lines marked b) are 2,5mm² FLRY white
All control lines marked c) are 0,75mm² FLRY brown
All control lines marked d) are 0,5mm² FLRY white

potentials:

15	switched plus + (unit ON)
19	Preheat with glowplug
30	+ terminal (Battery)
31	- terminal (Battery), earth
50	Starter-Control

wiring colors:

BU	= blue	OG	= orange
BN	= brown	PK	= pink
YE	= yellow	RD	= red
GN	= green	BK	= black
GNYE	= green-yellow	VT	= violet
GY	= grey	WH	= white

option ga = generator

option ob = Automatic-start-stop

option oc = GSM/GPS Modem

c				Date	30.06.2025	KAESER KOMPRESSOREN	Block diagram	=	
b				Drawn	Seubert		MOBILAIR M81.2	+	
a				Released	Schröder				
C	Change	Date	Name			M81.2	UFA81-03062.01	page 1	3 Sht.

1	2	3	4	5	6	7	8

components Control cabinet

-K20	Control board SCS
-K22	engine control unit
-F13,-F15,-F25,-F27 -F30,-F31,-F32, -F51	
-F37,-F39,-F100	Fuse
-K30	Relay Starter
-K32	Relay fuel pump
-K38	Relay ECU ON
-R2	Diode
-R3,-R10,-R11,-R12	Resistor
-S10	switch "Control ON"
-T20	Voltage transformer DC/DC
-X1	Terminal strip
-X23	Lead-through terminal
-X21,-X24,-X25,-X31	plug connection
-X100	Diagnostic socket KAESER

components unit

-B10	Pressure transducer Oil separator
-B11	Pressure transducer Inlet valve
-B21	sensor differential pressure Air filter Engine
-B31	Filter maintenance fuel
-B37	sensor fuel level
-B40	temperature sensor Airend discharge temperature
-B50	Air flow meter
-B57	differential pressure DPF
-B60	Exhaust temp. upstream from oxi. cat. convert.
-B62	Exhaust temperature upstream of the diesel particulate filter
-K1	Control valve Inlet valve
-K7	Valve Venting
-K31	preheat attachment
-K111	Pressure regulating valve
-K112	High-pressure pump
-M9	fuel pump
-X22	Diagnostic socket Hatz
-X201	plug connection

components Control panel

-S1	EMERGENCY STOP pushbutton
-K21	Operating unit SCS

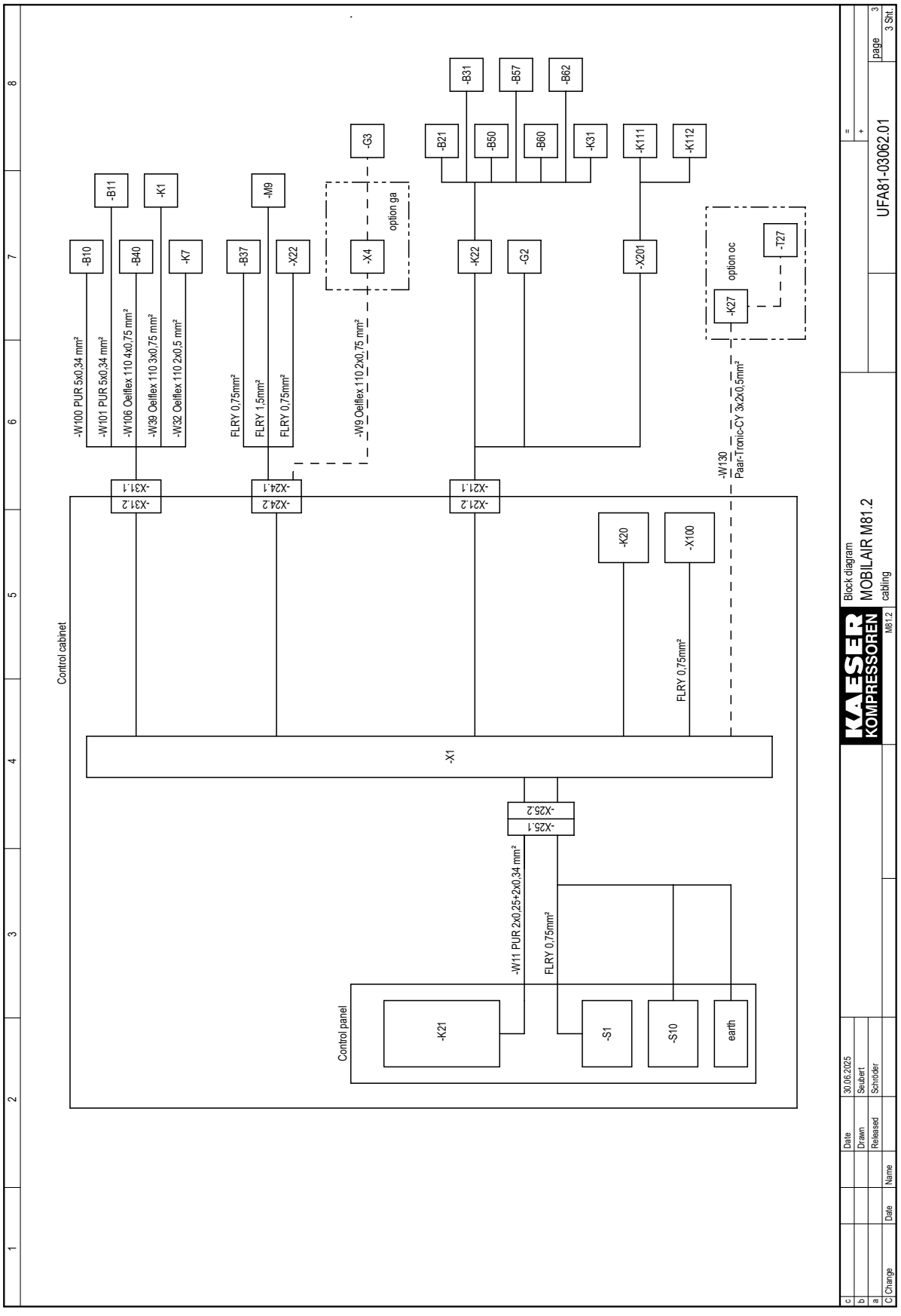
components Engine

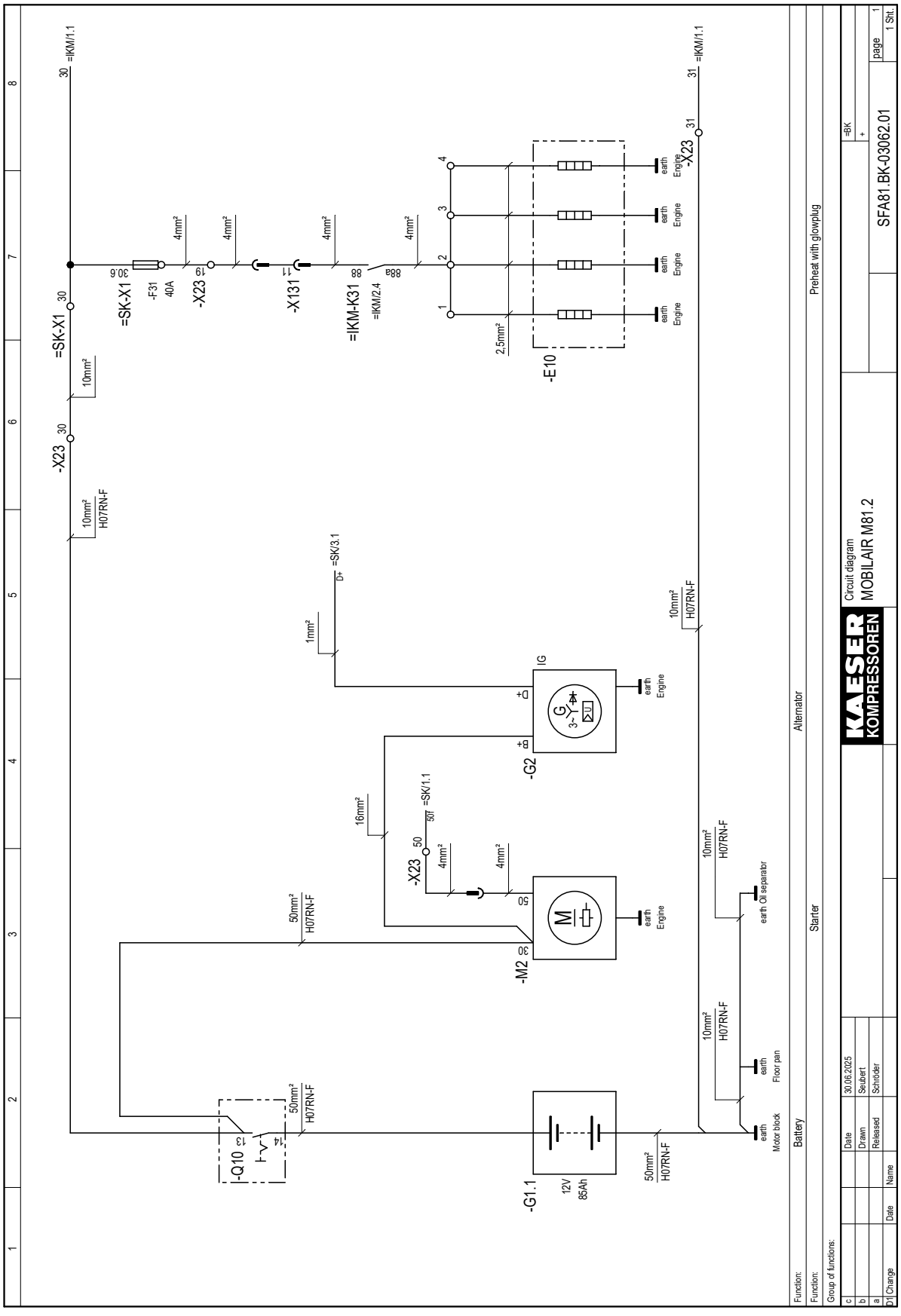
-G2	Alternator
-G1.1	Battery
-M2	Starter-Motor
-E10	heating flange

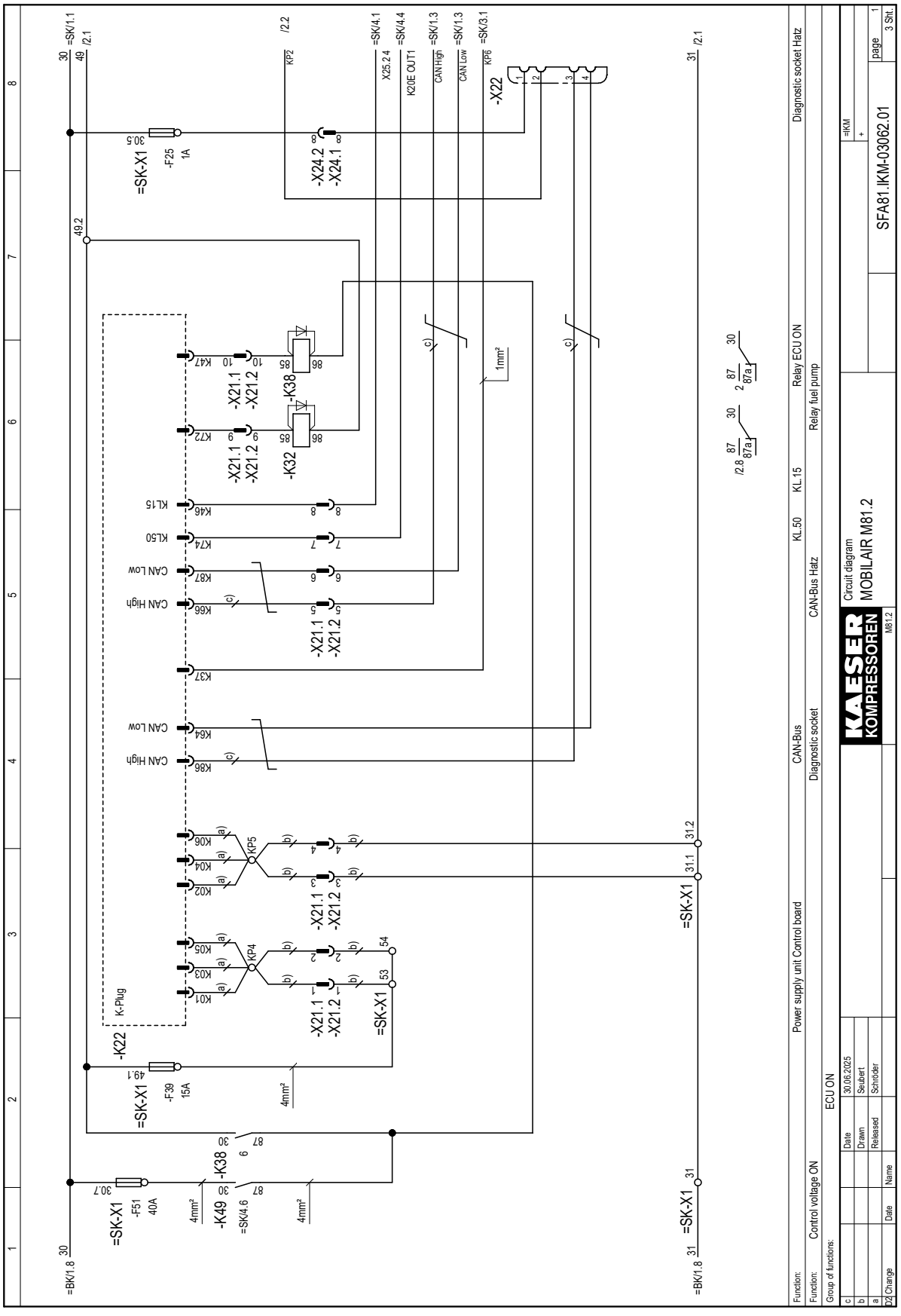
model-dependent components

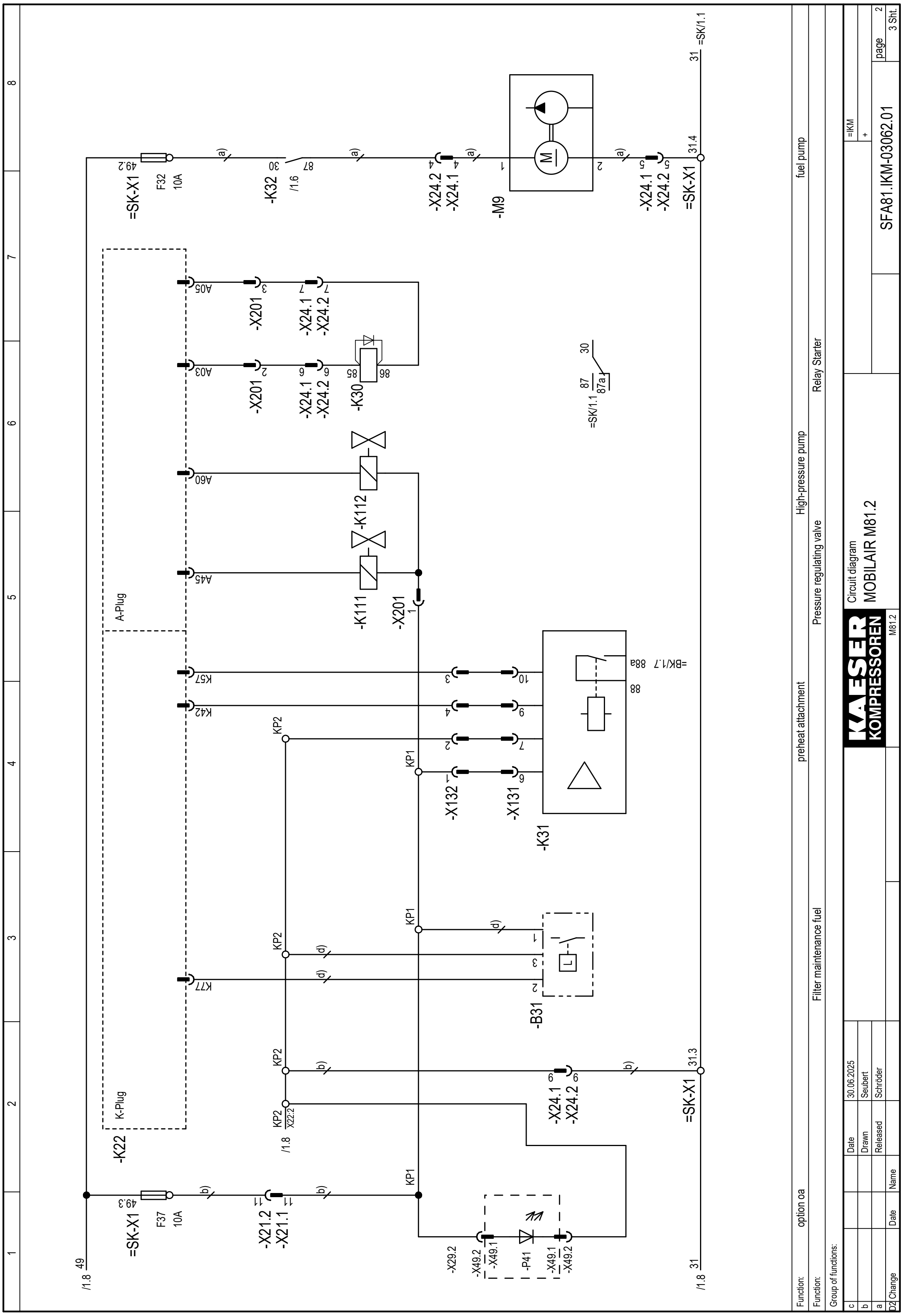
-G3	generator
-X4	interface generator
-K27	GSM/GPS Modem
-T27	GSM/GPS antenna
-X13	GSM/GPS Modem interface
-Q10	Battery isolating switch

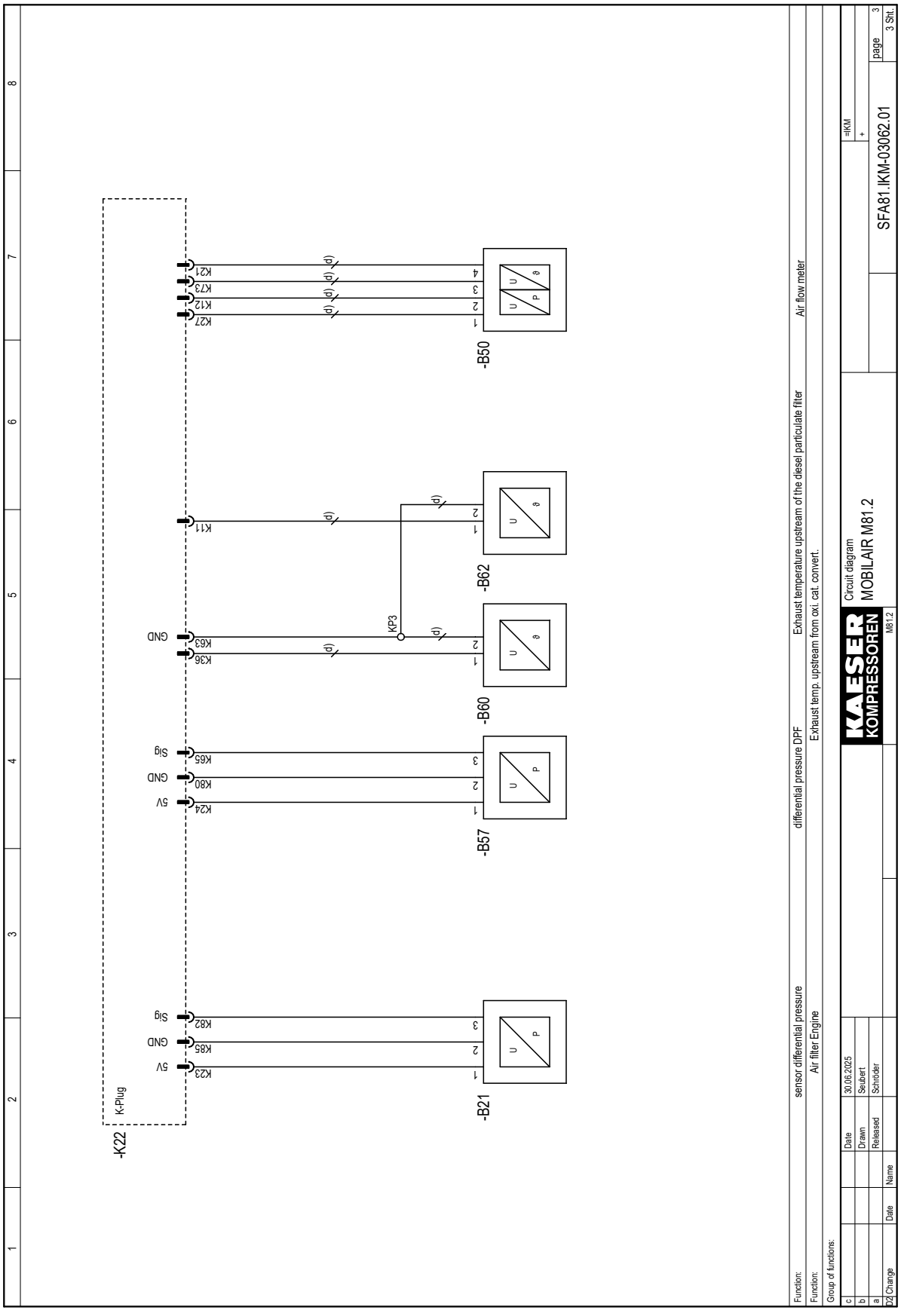
c				Date	30.06.2025	KAESER KOMPRESSOREN	Block diagram	=	
b				Drawn	Seubert		MOBILAIR M81.2	+	
a				Released	Schröder				
C	Change	Date	Name			M81.2		UFA81-03062.01	page 2 3 Sht.

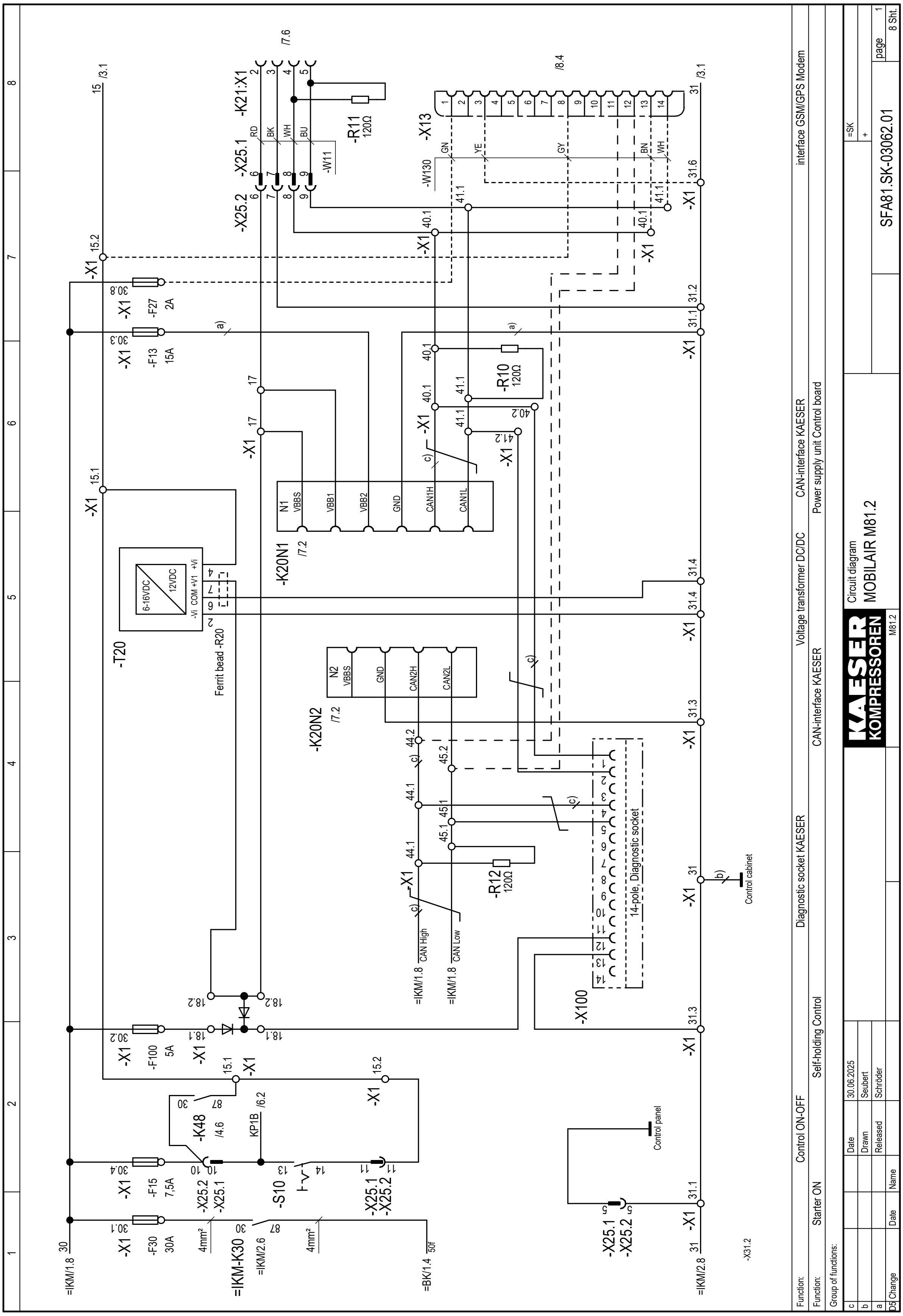

-B31
-B57
-B62
-G3
-B21
-B50
-B60
-K31
-K111
-K112
-B11
-K1
-M9
option ga
-B10
-B40
-K7
-B37
-X22
-X4
-K22
-G2
-X201
option oc
-T27
-K27
-W100 PUR 5x0,34 mm²
-W101 PUR 5x0,34 mm²
-W106 Oelflex 110 4x0,75 mm²
-W39 Oelflex 110 3x0,75 mm²
-W32 Oelflex 110 2x0,5 mm²
FLRY 0,75mm²
FLRY 1,5mm²
FLRY 0,75mm²
-W9 Oelflex 110 2x0,75 mm²
-W130
Paar-Tronic-CY 3x2x0,5mm²
-X31.1
-X31.2
-X24.1
-X24.2
-X21.1
-X21.2
Control cabinet
-K20
-X100
FLRY 0,75mm²
-X1
-X25.2
-X25.1
-W11 PUR 2x0,25+2x0,34 mm²
FLRY 0,75mm²
Control panel
-K21
-S1
-S10
earth
KAESER KOMPRESSOREN
Block diagram
MOBILAIR M81.2
cabling
M81.2
UFA81-03062.01
page 3
3 Sht.
Change
Date
Name
Date 30.06.2025
Drawn Seubert
Released Schröder

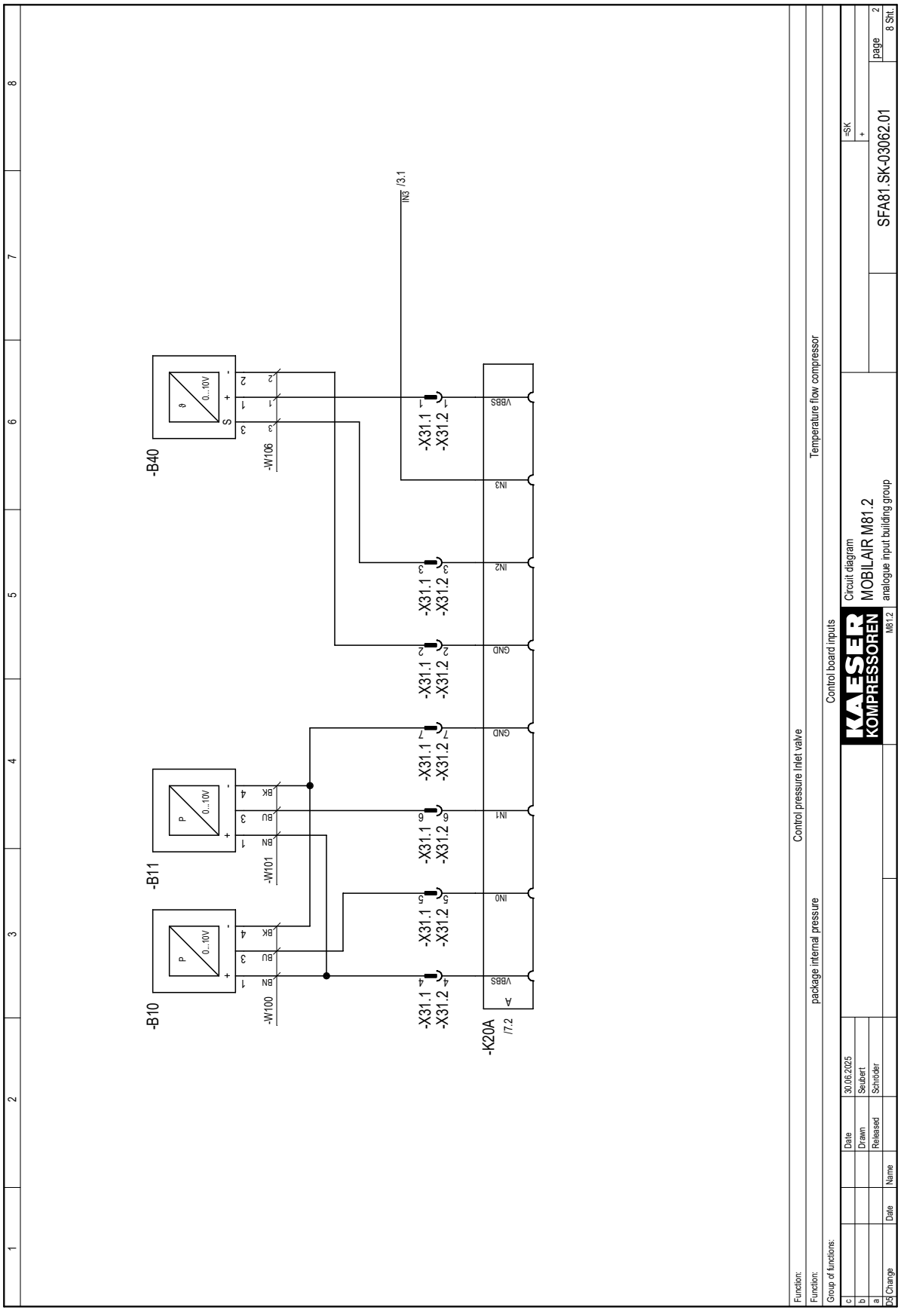

KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M81.2
SFA81.BK-03062.01
page 1
1 Sht.
=BK
Function: Battery
Function: Starter
Function: Alternator
Function: Preheat with glowplug
Group of functions:
Change Date Name
Date 30.06.2025
Drawn Seubert
Released Schröder
=SK-X1
=IKM/1.1
-F31 40A
-X23
-X131
=IKM-K31
=IKM/2.4
-E10
-G2
-M2
-G1.1 12V 85Ah
-Q10
=SK/3.1
=SK/1.1
earth Engine
earth Oil separator
earth Floor pan
earth Motor block
10mm² H07RN-F
50mm² H07RN-F
16mm²
4mm²
2,5mm²
1mm²

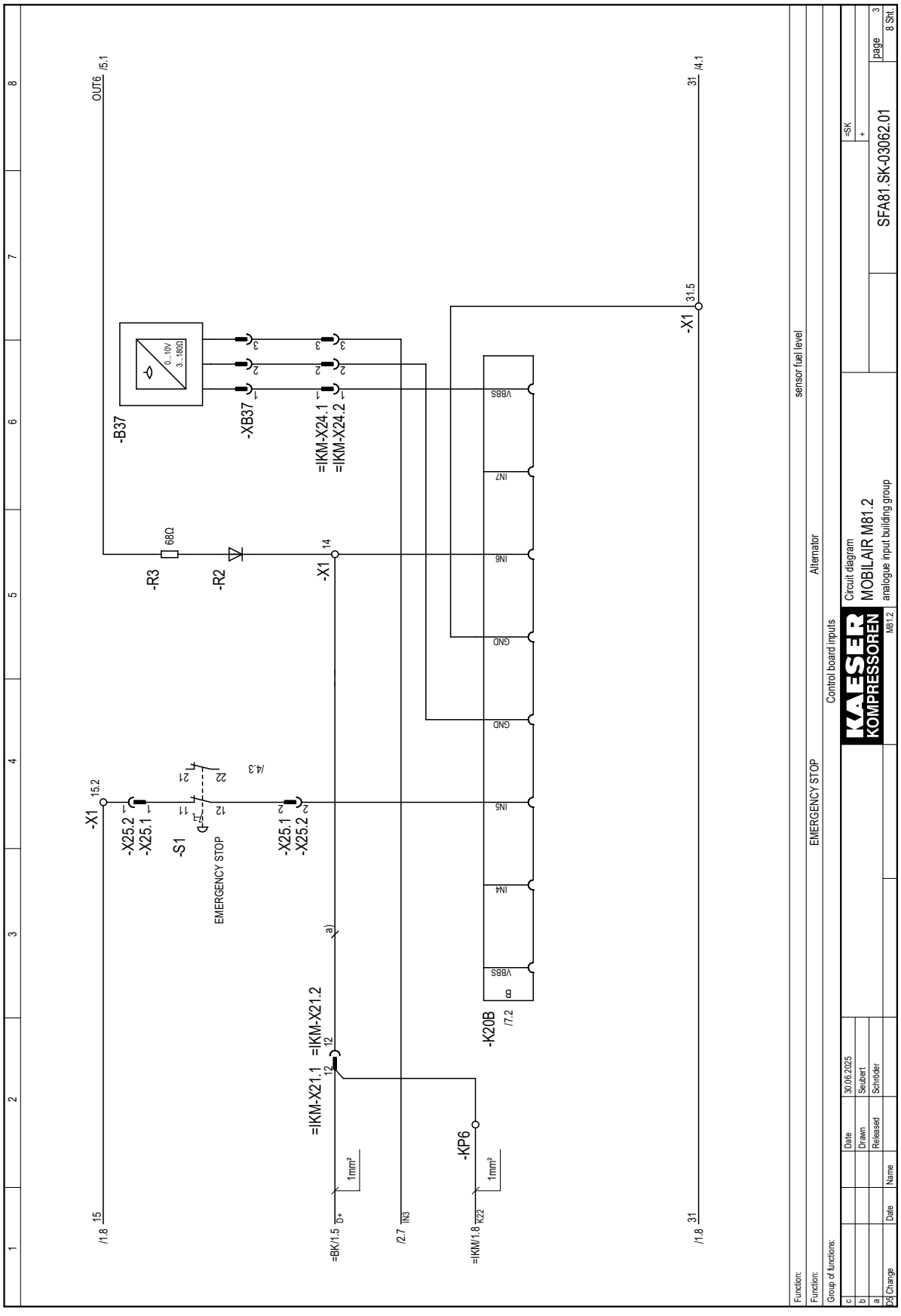

SFA81.IKM-03062.01
MOBILAIR M81.2
Circuit diagram
Power supply unit Control board
Control voltage ON
ECU ON
CAN-Bus
Diagnostic socket
CAN-Bus Hatz
KL.50
KL.15
Relay ECU ON
Relay fuel pump
Diagnostic socket Hatz
-K22
-K38
-K32
-K49
-X22
-X21.1
-X21.2
-X24.2
-X24.1
=SK-X1
=SK/1.1
=SK/4.1
=SK/4.4
=SK/1.3
=SK/3.1
=BK/1.8
K-Plug
CAN High
CAN Low
K20E OUT1
X25.2.4
-F25 1A
-F39 15A
-F51 40A
1mm²
4mm²

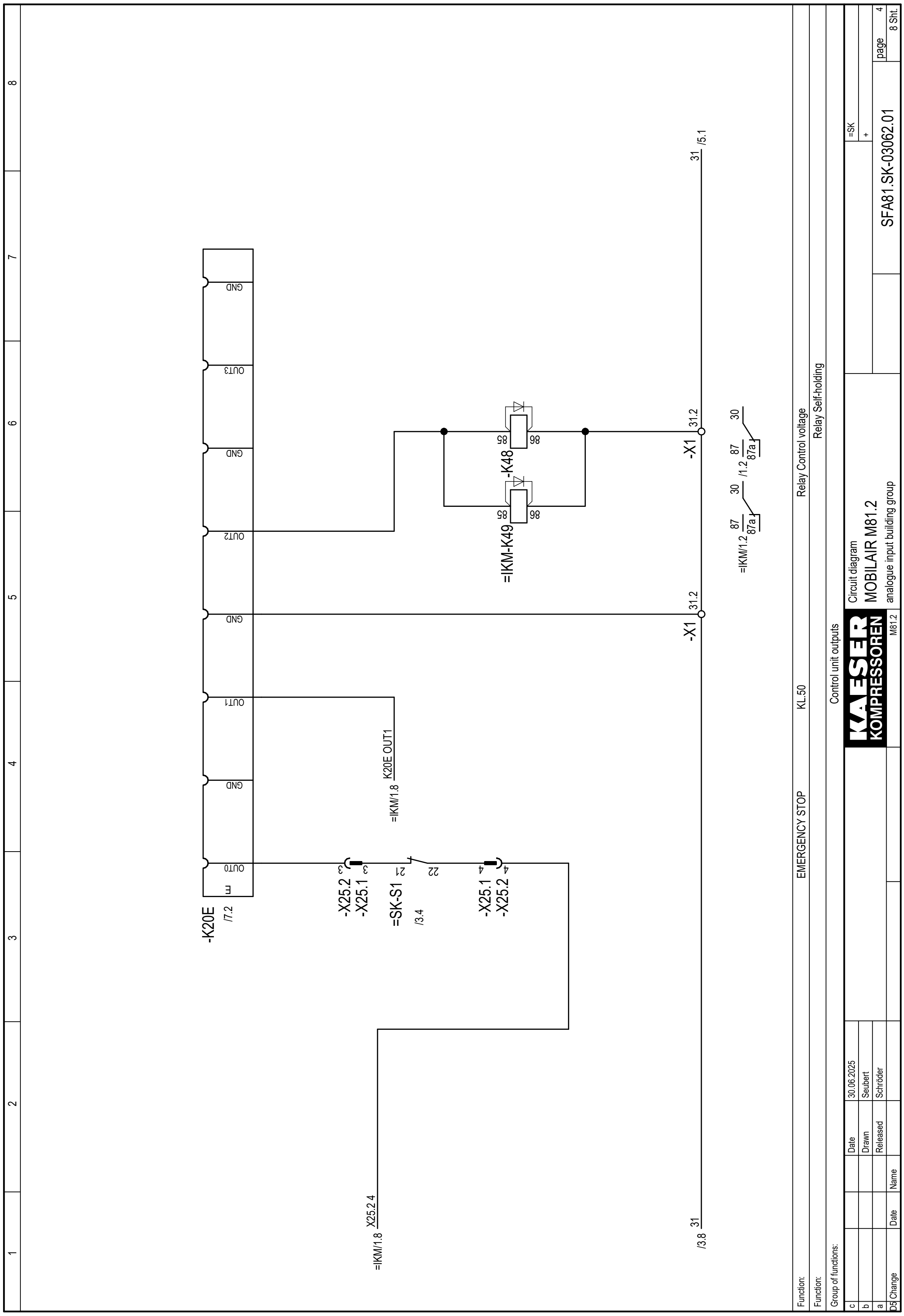

fuel pump
Relay Starter
High-pressure pump
Pressure regulating valve
preheat attachment
Filter maintenance fuel
option oa
Circuit diagram
MOBILAIR M81.2
SFA81.IKM-03062.01
=SK-X1
-K22
A-Plug
K-Plug
-K32
-M9
-K30
-K111
-K112
-X201
-K31
-B31
-P41
F32 10A
F37 10A
30.06.2025
Seubert
Schröder
page 2
3 Sht.

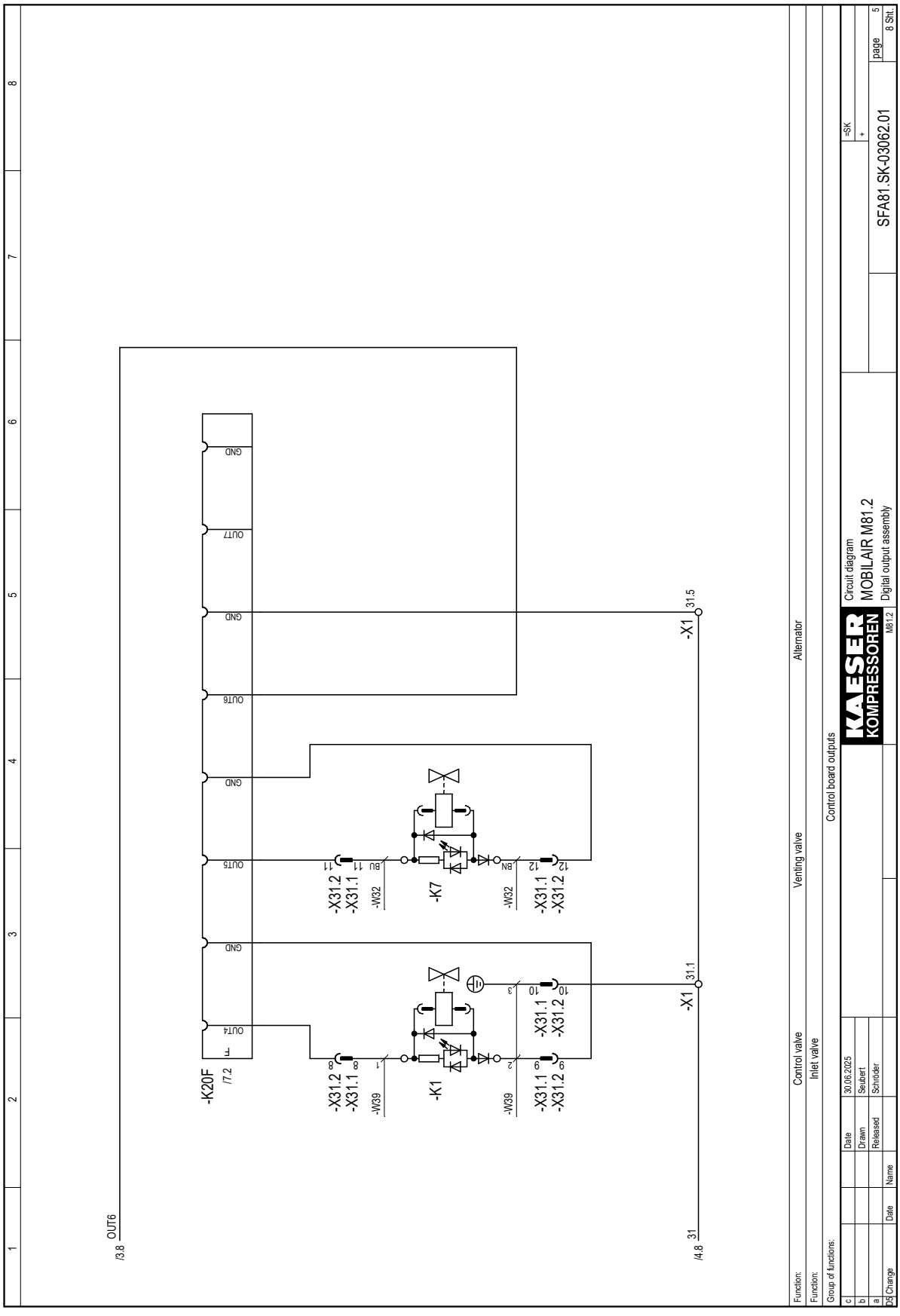

-K22
K-Plug
-B21
-B57
-B60
-B62
-B50
KP3
5V
GND
Sig
differential pressure DPF
sensor differential pressure
Air filter Engine
Exhaust temperature upstream of the diesel particulate filter
Air flow meter
E.xhaust temp. upstream from oxi. cat. convert.
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M81.2
SFA81.IKM-03062.01
=IKM
page 3
3 Sht.

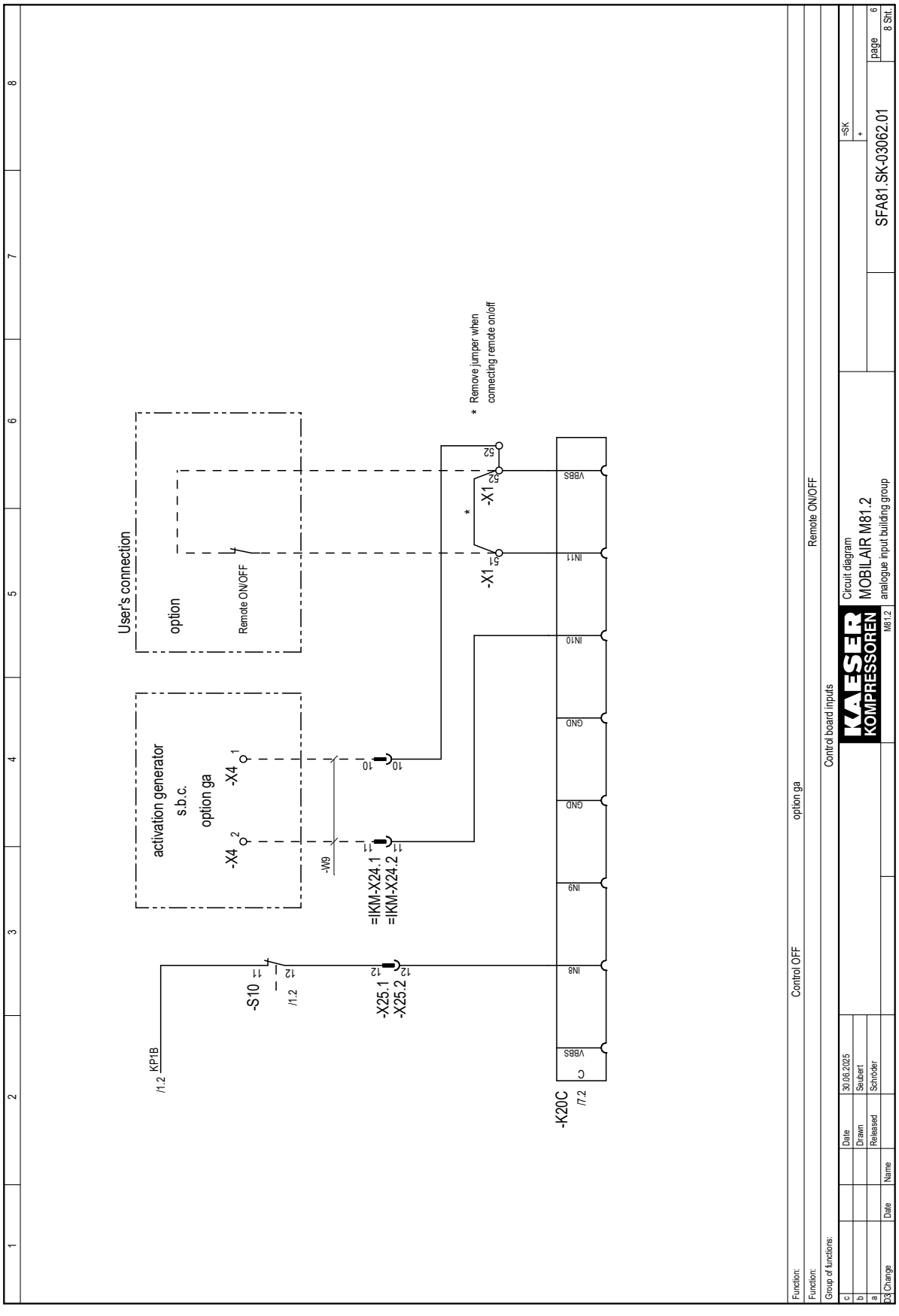

interface GSM/GPS Modem
CAN-interface KAESER
Power supply unit Control board
Voltage transformer DC/DC
CAN-interface KAESER
Diagnostic socket KAESER
Control ON-OFF
Self-holding Control
Starter ON
14-pole, Diagnostic socket
Control cabinet
Control panel
Ferrit bead -R20
Circuit diagram
MOBILAIR M81.2
SFA81.SK-03062.01
30.06.2025
Seubert
Schröder

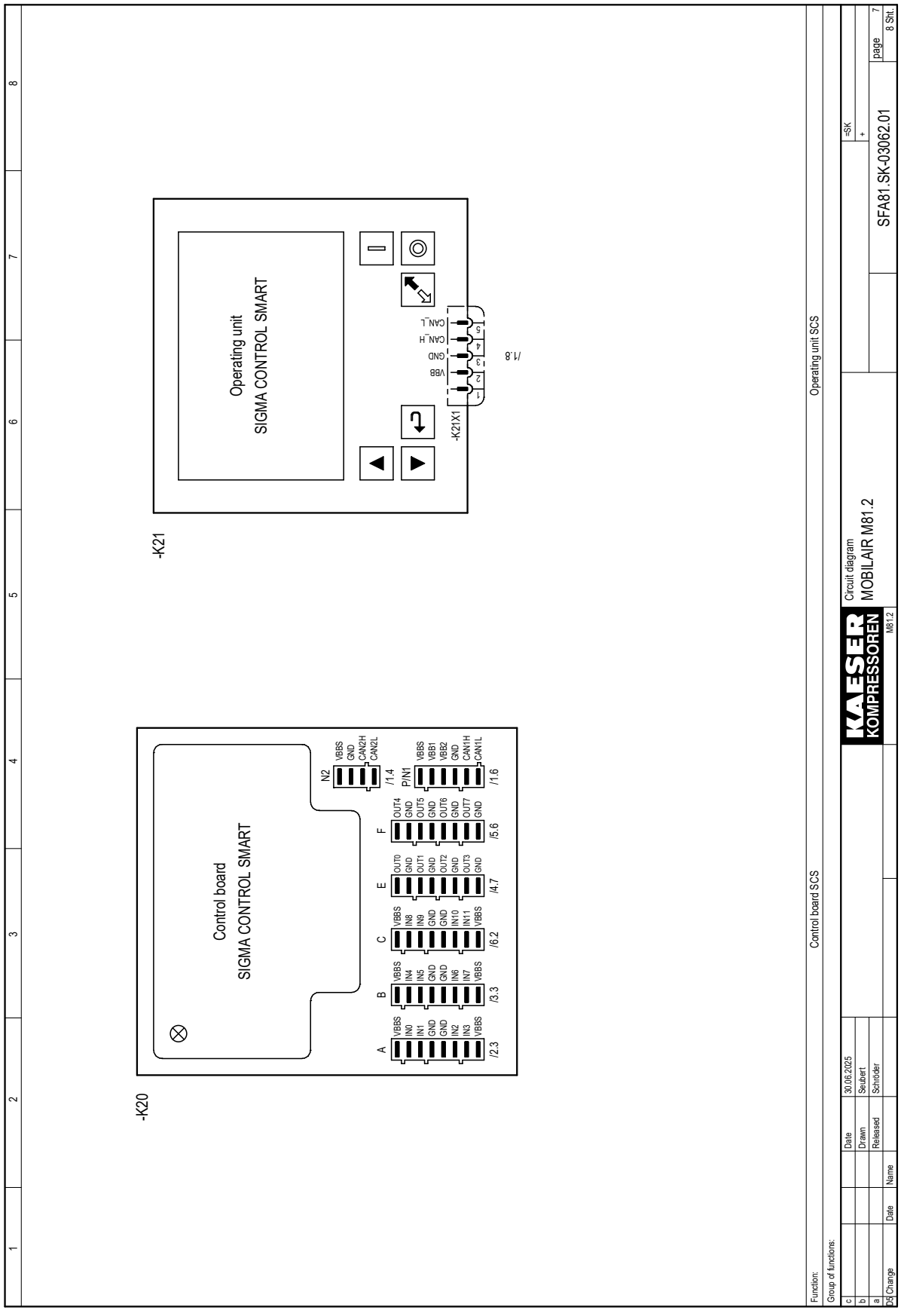

Function: Control pressure inlet valve
Function: Temperature flow compressor
Group of functions: package internal pressure
Control board inputs
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M81.2
analogue input building group
M81.2
SFA81.SK-03062.01
page 2
8 Sht.
=SK
+
Change
Date
Name
Drawn
Released
30.06.2025
Seubert
Schröder
-B40
-B11
-B10
-K20A
-W106
-W101
-W100
-X31.1
-X31.2
VBBS
IN3
IN2
GND
IN1
IN0
/3.1
/7.2
0...10V
BN
BU
BK

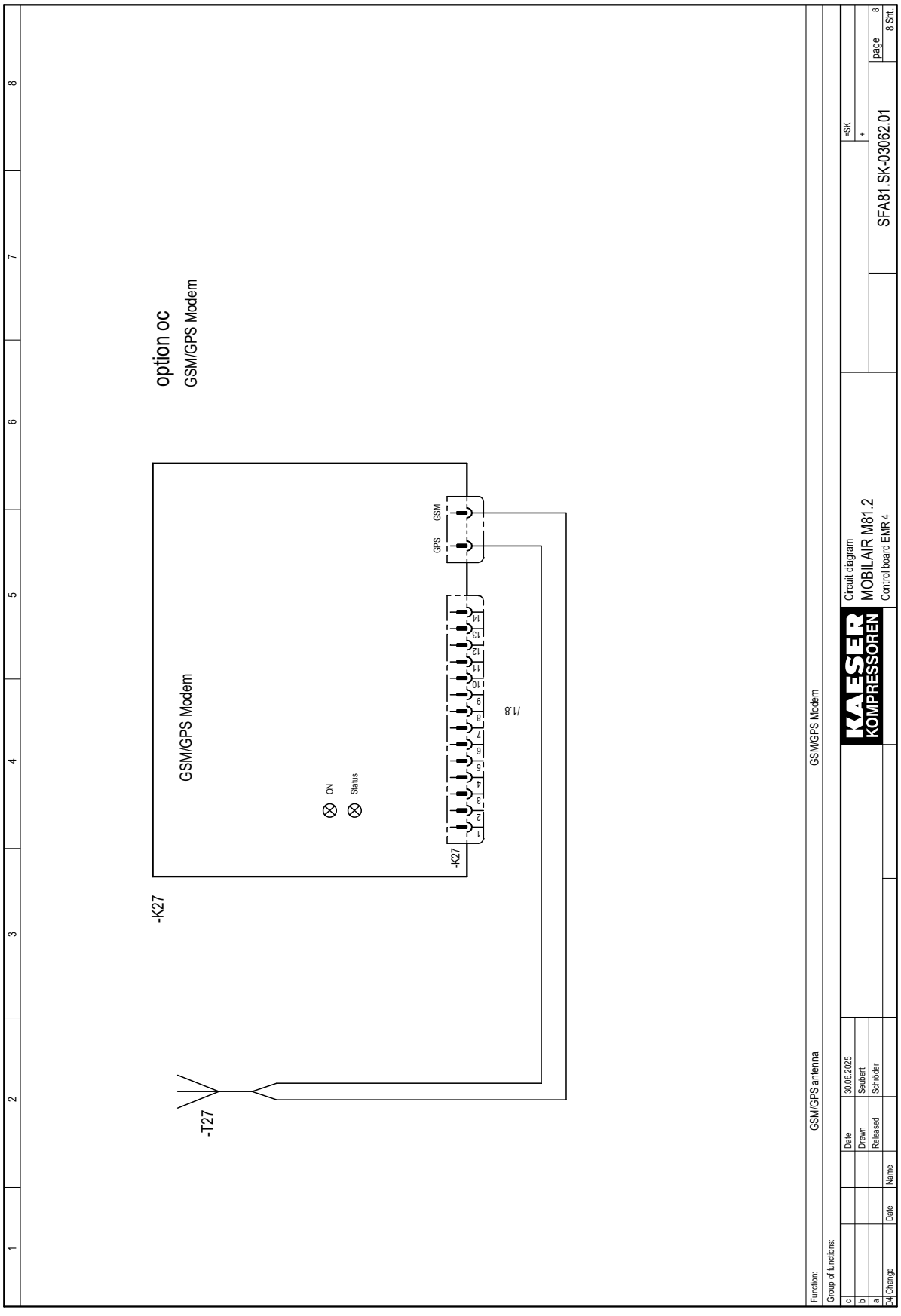

OUT6 /5.1
-B37
0...10V
3...180Ω
-XB37
=IKM-X24.1
=IKM-X24.2
68Ω
-R3
-R2
-X1 14
-X1 31.5
-X1 31 /4.1
-X1 15.2
-X25.2
-X25.1
-S1
EMERGENCY STOP
-X25.1
-X25.2
/4.3
=IKM-X21.1
=IKM-X21.2
-KP6
-K20B /7.2
VBBS
IN7
IN6
GND
GND
IN5
IN4
VBBS
B
1mm²
1mm²
=BK/1.5 D+
/2.7 IN3
=IKM/1.8 K22
/1.8 15
/1.8 31
Function: sensor fuel level
Function: EMERGENCY STOP Alternator
Group of functions: Control board inputs
KAESER KOMPRESSOREN M81.2
Circuit diagram
MOBILAIR M81.2
analogue input building group
SFA81.SK-03062.01
=SK
page 3
8 Sht.
Date Name
30.06.2025
Seubert
Schröder
Drawn
Released
Change


-K20E
/7.2
OUT0
GND
OUT1
OUT2
OUT3
-X25.2
-X25.1
=SK-S1
/3.4
=IKM/1.8
K20E OUT1
X25.2 4
=IKM-K49
-K48
-X1
31.2
=IKM/1.2
/3.8
/5.1
EMERGENCY STOP
KL.50
Relay Control voltage
Relay Self-holding
Control unit outputs
Circuit diagram
MOBILAIR M81.2
analogue input building group
SFA81.SK-03062.01
30.06.2025
Seubert
Schröder
8 Sht.


OUT6
/3.8
-K20F
/7.2
-X31.2
-X31.1
-W39
-K1
-X31.1
-X31.2
-X31.2
-X31.1
-W32
-K7
-W32
-X31.1
-X31.2
-X1
31.5
-X1
31.1
-X1
31
/4.8
GND
OUT7
GND
OUT6
GND
OUT5
GND
OUT4
Function: Control valve Venting valve Alternator
Function: Inlet valve
Group of functions: Control board outputs
KAESER KOMPRESSOREN
M81.2
Circuit diagram
MOBILAIR M81.2
Digital output assembly
SFA81.SK-03062.01
=SK
+
page 5
8 Sht.
Date Name
Change
Drawn Seubert
Released Schröder
30.06.2025


User's connection
option
Remote ON/OFF
activation generator
s.b.c.
option ga
-X4
-W9
=IKM-X24.1
=IKM-X24.2
-S10
-X25.1
-X25.2
KP1B
/1.2
-X1
* Remove jumper when connecting remote on/off
VBBS
IN11
IN10
GND
GND
IN9
IN8
VBBS
-K20C
/7.2
Control OFF
option ga
Remote ON/OFF
Control board inputs
Function:
Function:
Group of functions:
KAESER KOMPRESSOREN
M81.2
Circuit diagram
MOBILAIR M81.2
analogue input building group
SFA81.SK-03062.01
=SK
page 6
8 Sht.
Change
Date
Name
30.06.2025
Seubert
Schröder
Released
Drawn


-K20
Control board
SIGMA CONTROL SMART
-K21
Operating unit
SIGMA CONTROL SMART
-K21X1
Control board SCS
Operating unit SCS
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR M81.2
SFA81.SK-03062.01
=SK
page 7
8 Sht.


option oc
GSM/GPS Modem
GSM/GPS Modem
-K27
ON
Status
GPS
GSM
-K27
/1.8
-T27
GSM/GPS antenna
GSM/GPS Modem
Function:
Group of functions:
Circuit diagram
MOBILAIR M81.2
Control board EMR 4
SFA81.SK-03062.01
=SK
+
page 8
8 Sht.
Change
Date
Name
Drawn
Released
30.06.2025
Seubert
Schröder

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung (Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller) Identification data (Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer)			D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Control cabinet:											
1	Control cabinet		226799.0	Wagner								
1	Mounting plate		226834.1	Wagner								
1	Control board SCS	CR9052	7.9200.11000	ifm		-K20						
2	Relay	12V, 1W, 30/40A	8.6544.00050	FTM		K32; K38; K48; K49						
2	Relay socket		7.3411.00020	FTM		K32; K38; K48; K49						
1	Relay	12V, 1S, 70A	8.6544.00030	FTM		-K30						
1	Relay socket		7.3411.00010	FTM		-K30						
4	Lead-through terminal	HDFK-10 / 10mm²	7.9073.0	Phoenix		-X23:19,-X23:30,						
						-X23:31,-X23:50						
17	Terminal	WKFN 2,5D2/2/35	7.3149.02080	Wieland		-X1						
2	Terminal	WKF 16/35 PV/WKFN	7.3149.02170	Wieland		-X1						
1	Terminal	WKFN 2,5E/35/G2	7.3149.02680	Wieland		-X1						
2	Terminal	WKFN 4/35	7.3149.01810	Wieland		-X1						
10	Fuse terminal	WKFN 4FSI	7.3149.02160	Wieland		-X1						
1	Fuse UNIVAL	1 A	7.6411.00110	FTM		-F25						
1	Fuse UNIVAL	2 A	7.6411.00180	FTM		-F27						
1	Fuse UNIVAL	5 A	7.6411.00040	FTM		-F100						
1	Fuse UNIVAL	7,5 A	7.6411.00100	FTM		-F15						
2	Fuse UNIVAL	10 A	7.6411.00050	FTM		-F32,-F37						
2	Fuse UNIVAL	15 A	7.6411.00060	FTM		-F13,-F39						
1	Fuse UNIVAL	30 A	7.6411.00170	FTM		-F30						
1	Fuse UNIVAL	40 A	7.6411.00090	FTM		F31; -F51						
2	Resistor	120 Ω	7.5392.00030	Bürklin		-R10,-R12						
1	Resistor	68 Ω	7.5392.00020	Bürklin		-R3						
1	Diode	BY550-600	7.4780.00030	Bürklin		-R2						
1	Voltage transformer	6-16VDC/12VDC	7.9235.0	TDK-Lambda		-T20						
1	Diagnostic socket KAESER	14-pole	7.6589.02000	Boersig		-X100						
1	switch Control voltage ON/OFF	RKWA	7.9027.10050	Schlegel		-S10						
1	Switching element	BTL5 24VCD, 2A	7.9027.10030	Schlegel		-S10						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des

In Zweifelsfällen gilt die deutsche Fassung.

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*) Versandanschrift - Kennzeichen

c				Date	30.06.2025
b				Drawn	Seubert
a				Released	Schröder
F	Change	Date	Name		

KAESER KOMPRESSOREN M81.2

Equipment parts list
MOBILAIR M81.2
Control cabinet

GFA81-03062.01

page 1
3 Sht.

1	2	3	4	5	6	7	8

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller / Identification data Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer			D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 / Identifying symbol of device	F Stromlaufplan Planabschnitt / Circuit diagram sheet No.; section No.	G Einbauort / Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	Control cabinet											
1	Control board	Equipment supplied by the user Engine		Bosch		-K22						
1	plug connection 4-pole		7.9200.01300	Boersig		-K20N2						
1	plug connection 6-pole		7.9200.01310	Boersig		-K20N1						
3	plug connection 8-pole		7.9200.01320	Boersig		-K20A,-K20B,-K20C						
2	plug connection 8-pole		7.9200.01330	Boersig		-K20E,-K20F						
4	plug connection 12-pole	1604941-1	7.6589.00520	Boersig		-X21,-X24,-X25,-X31						
1	Solenoid valve	12VDC G1/8 3/2W	7.1370.00060	Bürkert		-K7						
	Control panel											
1	Operating unit SCS	CR9047	7.9200.11010	ifm		-K21						
1	EMERGENCY STOP	QRUV	7.3217.0	Schlegel		-S1						
1	Switching element	MHT00	7.3218.0	Schlegel		-S1						
1	plug connection 12-pole	350735-1	7.6589.00500	Boersig		-X25						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern, die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des

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B and C should be stated. In this list of equipment, insofar as also quote the serial No. of the

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c				Date	30.06.2025	
b				Drawn	Seubert	
a				Released	Schröder	
F	Change	Date	Name			

KAESER KOMPRESSOREN M81.2

Equipment parts list
MOBILAIR M81.2
Control cabinet/Control panel

GFA81-03062.01

page 2
3 Sht.

1	2	3	4	5	6	7	8

A Stück-zahl Qty.	B Benennung und Verwendung Description and function	C Fabrikatsbezeichnung (Typ; notwendige techn. Daten (z.B. Steuerspannung, Frequenz, Einstellbereich); Bestell-Nr.; Hersteller) Identification data (Type; basic technical data (e.g. control voltage, frequency, adjustable range); order No.; manufacturer)			D Lfd. Nr. Item	E Betriebsmittel-Kennz. nach DIN 40719, Teil 2 Identifying symbol of device	F Stromlaufplan Planabschnitt Circuit diagram sheet No.; section No.	G Einbauort Location	Concerns only the manufacturer Wst.-Nr. H Schabl. Nr.	I BZ-Pos.	J VA Kz. *)	K Eingangs-vermerk
	unit components											
1	Pressure transducer	0...16 bar	7.9204.0	Huba		-B10						
1	Pressure transducer	-1...5 bar	7.9203.0	Huba		-B11						
1	Differential pressure switch Engine	Equipment supplied by the user Engine				-B21						
1	Filter maintenance fuel	Equipment supplied by the user Engine				-B31						
1	sensor fuel level	ITS-60 l=520mm	7.9201.10100	Bedia		-B37						
1	Temperature probe	-30...130 °C	7.9202.40010	Bedia		-B40						
1	Air flow meter	Equipment supplied by the user Engine				-B50						
1	differential pressure DPF	Equipment supplied by the user Engine				-B57						
1	Temperature vor DOC	Equipment supplied by the user Engine				-B60						
1	Temperature vor DPF	Equipment supplied by the user Engine				-B62						
1	preheat attachment	Equipment supplied by the user Engine				-K31						
1	Pressure regulating valve	Equipment supplied by the user Engine				-K111						
1	High-pressure pump	Equipment supplied by the user Engine				-K112						
1	fuel pump		8.9164.0	KUBOTA		-M9						
1	Diagnostic socket	Cable set Engine				-X22						
	model-dependent components											
1	GSM/GPS Modem	Ifm CR3114	7.9208.*	Proemion		-K27						
1	GSM/GPS antenna		7.9208.*	Proemion		-T27						
1	Battery isolating switch		7.5788.00040	Bukh		-Q10						

Bei Nachbestellung von Geräten und Maschinen sind alle in den stark umrandeten aufzuführen. Die Daten in den Spalten D bis G sind zusätzlich unter Nennung anzugeben, soweit sie die Beantwortung technischer Rückfragen erleichtern. die Angabe der Serialnummer erforderlich, falls diese auf dem Typenschild des

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B and C should be stated. In this list of equipment, insofar as also quote the serial No. of the

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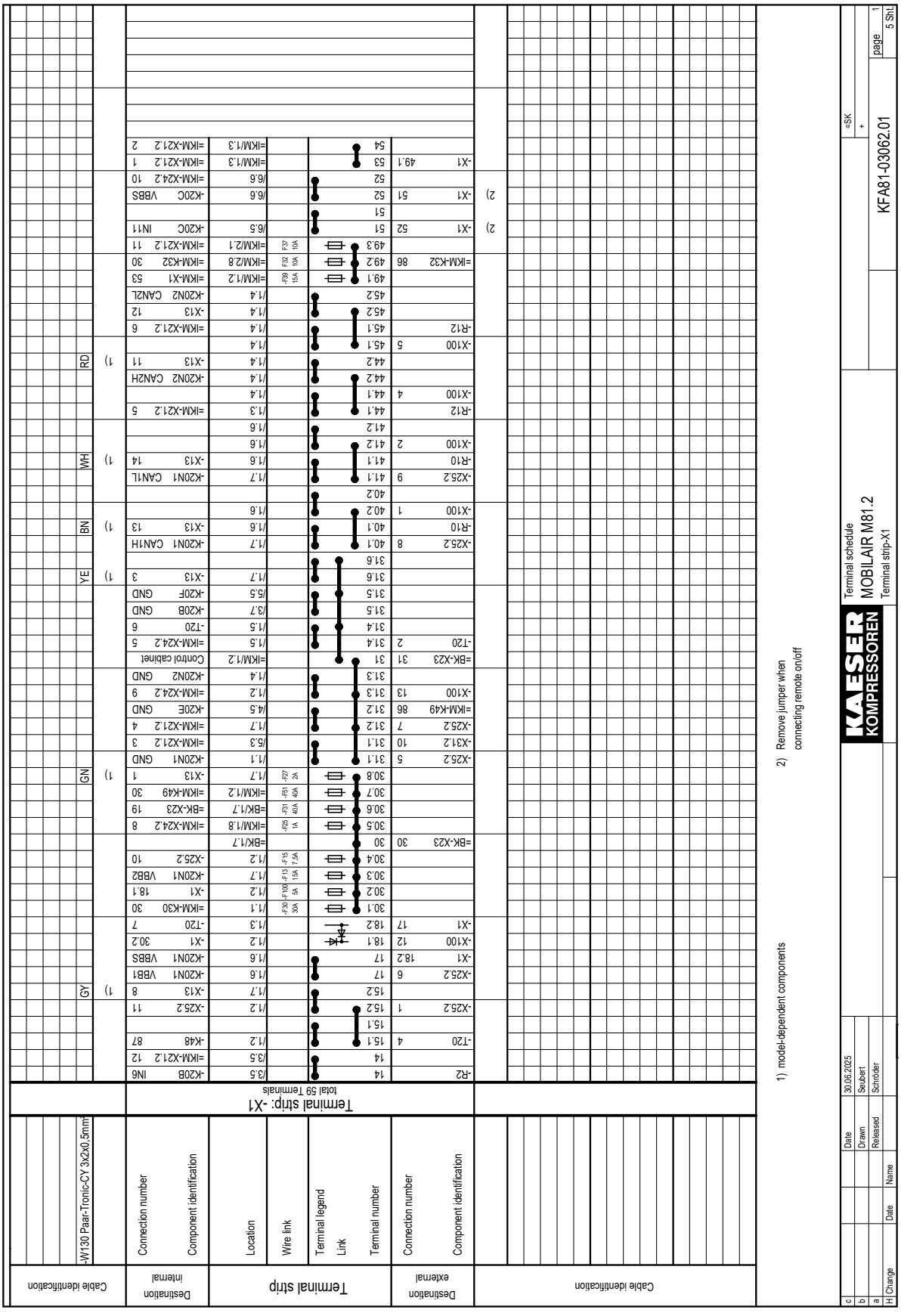
c				Date	30.06.2025
b				Drawn	Seubert
a				Released	Schröder
F	Change	Date	Name		

KAESER KOMPRESSOREN M81.2

Equipment parts list
MOBILAIR M81.2
unit components/model-dependent components

GFA81-03062.01

page 3
3 Sht.


Terminal schedule
MOBILAIR M81.2
Terminal strip-X1
KFA81-03062.01
Terminal strip: -X1
total 59 Terminals
1) model-dependent components
2) Remove jumper when connecting remote on/off

Terminal strip: -X21.1
total 12 Terminals

Destination internal: Component identification	Destination internal: Connection number	Location	Wire link	Terminal legend / Link	Terminal number	Destination external: Connection number	Destination external: Component identification
		/1.3			1	KP4	
		/1.3			2	KP4	
		/1.3			3	KP5	
		/1.4			4	KP5	
		/1.5			5	K66	-K22
		/1.5			6	K87	-K22
		/1.5			7	K74	-K22
		/1.6			8	K46	-K22
		/1.6			9	K72	-K22
		/1.6			10	K47	-K22
		/2.1			11		-X29.2
		=SK/3.2			12		=SK-KP6

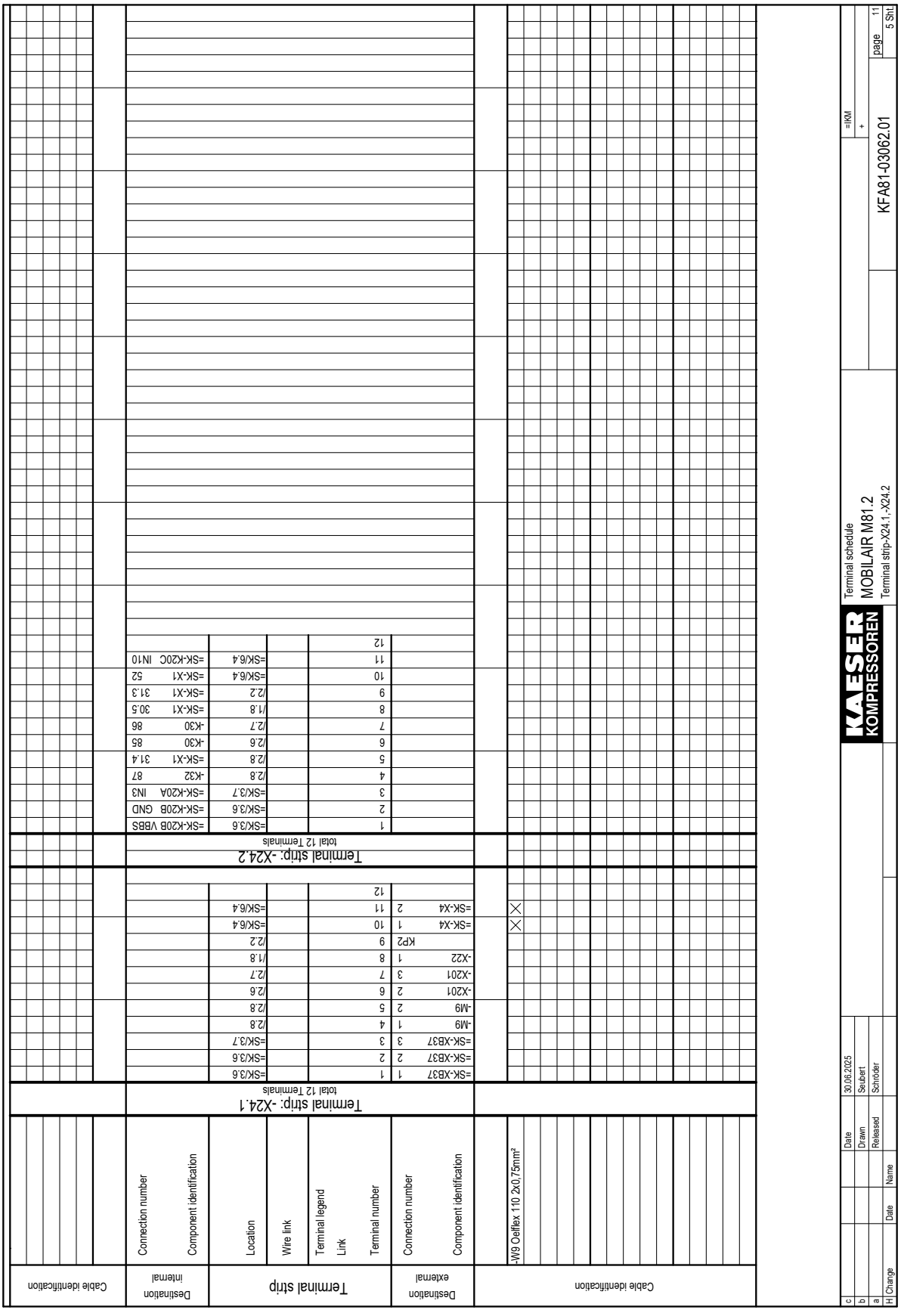
Terminal strip: -X21.2
total 12 Terminals

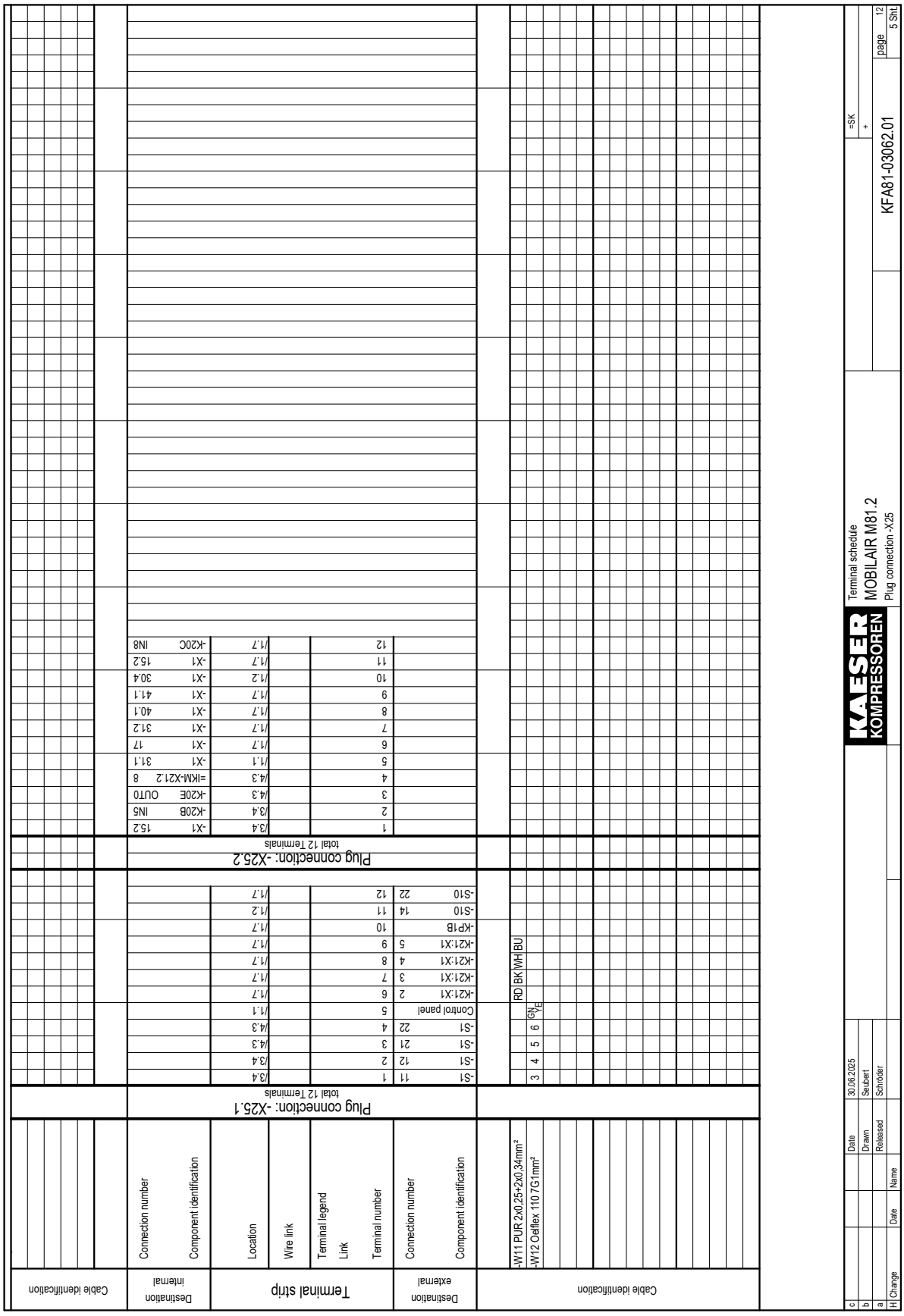
Destination internal: Component identification	Destination internal: Connection number	Location	Wire link	Terminal legend / Link	Terminal number	Destination external: Connection number	Destination external: Component identification
=SK-X1	53	/1.3			1		
=SK-X1	54	/1.3			2		
=SK-X1	31.1	/1.3			3		
=SK-X1	31.2	/1.4			4		
=SK-X1	44.1	/1.5			5		
=SK-X1	45.1	/1.5			6		
=SK-K20E	OUT1	/1.5			7		
=SK-X25.2	4	/1.6			8		
-K32	85	/1.6			9		
-K38	85	/1.6			10		
=SK-X1	49.3	/2.1			11		
=SK-X1	14				12		

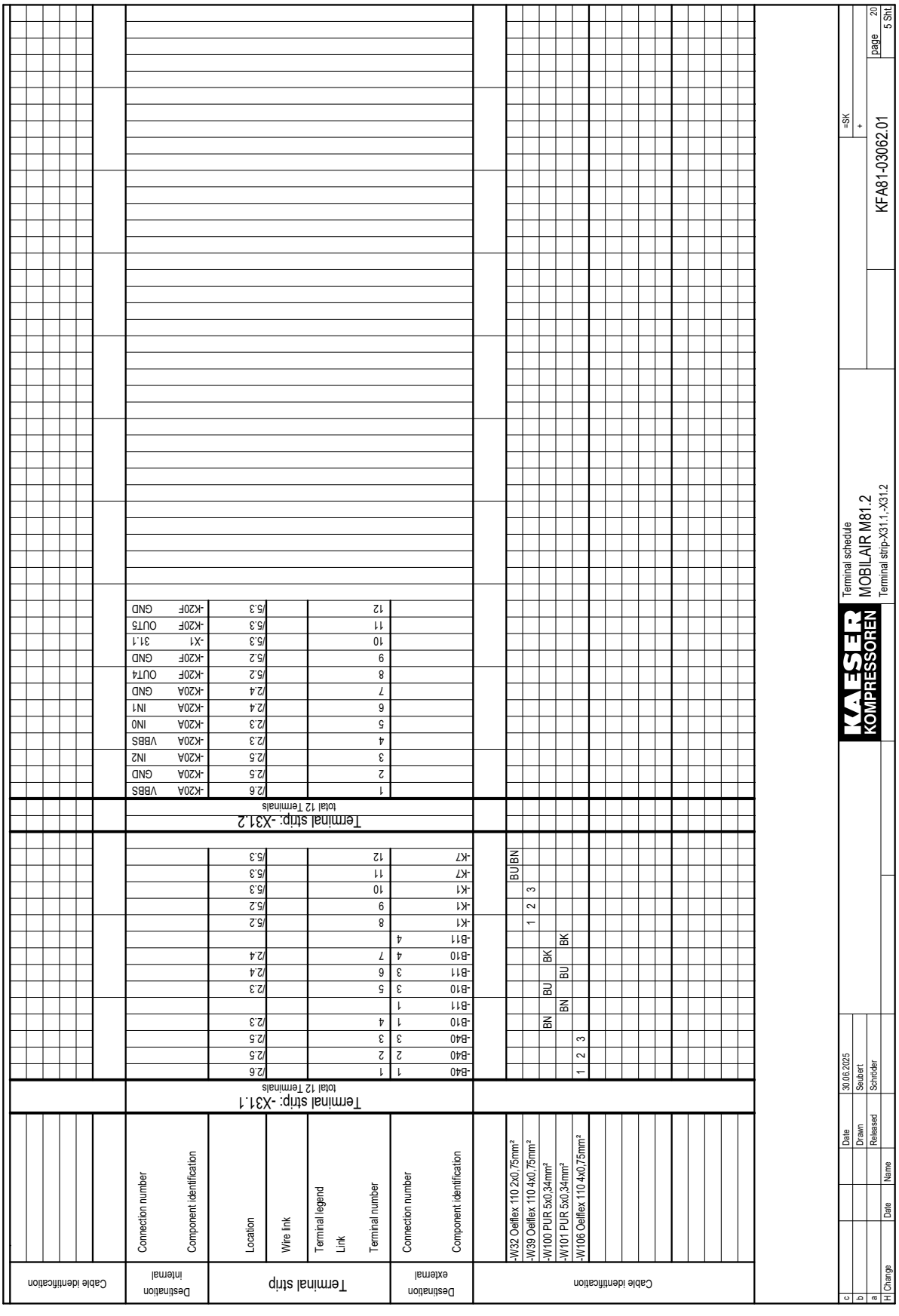
Cable identification

c				Date	30.06.2025
b				Drawn	Seubert
a				Released	Schröder
H	Change	Date	Name		

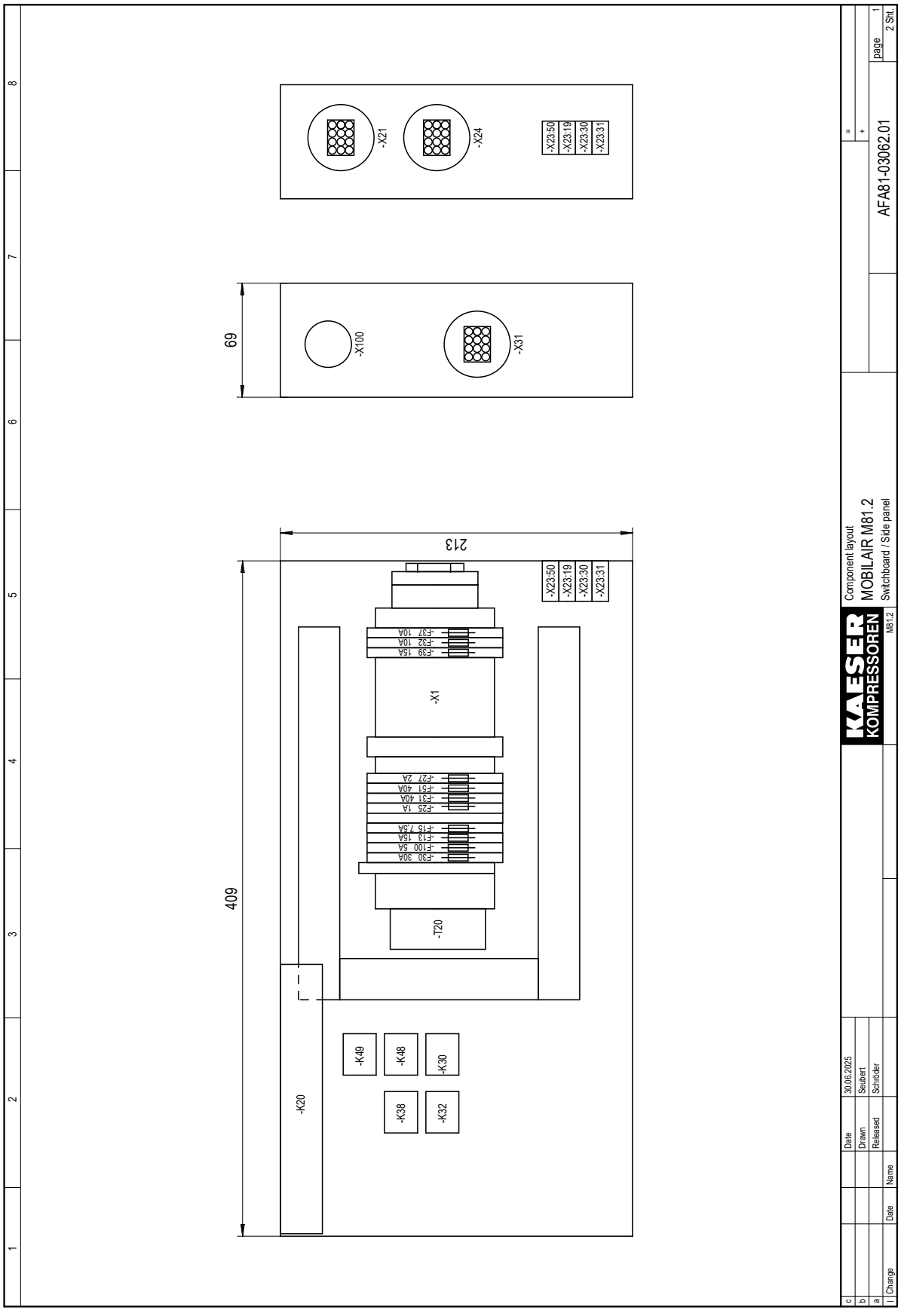
KAESER KOMPRESSOREN
Terminal schedule
MOBILAIR M81.2
Terminal strip-X21.1,-X21.2
=IKM
+
KFA81-03062.01
page 10
5 Sht.


Terminal schedule
MOBILAIR M81.2
Terminal strip-X24.1:-X24.2
KAESER KOMPRESSOREN
KFA81-03062.01
page 11
5 Sht.
=KM
Date 30.06.2025
Drawn Seubert
Released Schröder
Name
Date
H Change
Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
-W9 Oelflex 110 2x0,75mm²
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Component identification
Connection number
Terminal strip: -X24.1
total 12 Terminals
=SK-XB37 1 1 =SK/3.6
=SK-XB37 2 2 =SK/3.6
=SK-XB37 3 3 =SK/3.7
-M9 1 4 /2.8
-M9 2 5 /2.8
-X201 2 6 /2.6
-X201 3 7 /2.7
-X22 1 8 /1.8
KP2 9 /2.2
=SK-X4 1 10 =SK/6.4
=SK-X4 2 11 =SK/6.4
12
Terminal strip: -X24.2
total 12 Terminals
1 =SK/3.6 =SK-K20B VBBS
2 =SK/3.6 =SK-K20B GND
3 =SK/3.7 =SK-K20A IN3
4 /2.8 -K32 87
5 /2.8 =SK-X1 31.4
6 /2.6 -K30 85
7 /2.7 -K30 86
8 /1.8 =SK-X1 30.5
9 /2.2 =SK-X1 31.3
10 =SK/6.4 =SK-X1 52
11 =SK/6.4 =SK-K20C IN10
12


Terminal schedule
MOBILAIR M81.2
Plug connection -X25
KFA81-03062.01
page 12
5 Sht.
Cable identification
Destination external
Terminal strip
Destination internal
Cable identification
Component identification
Connection number
Terminal number
Link
Terminal legend
Wire link
Location
Plug connection: -X25.1
total 12 Terminals
Plug connection: -X25.2
total 12 Terminals
-W11 PUR 2x0.25+2x0.34mm²
-W12 Oeflex 110 7G1mm²
Control panel
-S1
-K21:X1
-KP1B
-S10
-X1
-K20B
-K20E
-K20C
=IKM-X21.2
Date
Name
Change
Drawn
Released
Seubert
Schröder
30.06.2025
=SK
+



Cable identification	Component identification	Connection number	Location	Wire link	Terminal legend	Terminal number	Link	Component identification	Connection number	Destination external
-W32 Oeflex 110 2x0,75mm²								-B40	1	1
-W39 Oeflex 110 4x0,75mm²								-B40	2	2
-W100 PUR 5x0,34mm²								-B40	3	3
-W101 PUR 5x0,34mm²								-B10	1	4
-W106 Oeflex 110 4x0,75mm²								-B11	1	
								-B10	3	5
								-B11	3	6
								-B10	4	7
								-B11	4	
								-K1		8
								-K1		9
								-K1		10
								-K7		11
								-K7		12
			/2.6			1				
	-K20A VBBS		/2.5			2				
	-K20A GND		/2.5			3				
	-K20A IN2		/2.3			4				
	-K20A VBBS		/2.3			5				
	-K20A IN0		/2.4			6				
	-K20A IN1		/2.4			7				
	-K20A GND		/5.2			8				
	-K20F OUT4		/5.2			9				
	-K20F GND		/5.3			10				
	-X1 31.1		/5.3			11				
	-K20F OUT5		/5.3			12				
	-K20F GND		/5.3							


-X21
-X24
-X23:50
-X23:19
-X23:30
-X23:31
69
-X100
-X31
213
409
-F37 10A
-F32 10A
-F39 15A
-X1
-F27 2A
-F51 40A
-F31 40A
-F25 1A
-F13 7,5A
-F13 15A
-F100 5A
-F30 30A
-T20
-K49
-K48
-K30
-K38
-K32
-K20
KAESER KOMPRESSOREN
Component layout
MOBILAIR M81.2
Switchboard / Side panel
M81.2
AFA81-03062.01
page 1
2 Sht.
Date
Drawn
Released
Name
30.06.2025
Seubert
Schröder
Change


213
409
-K7
-K22
-X22
-K31
Component layout
MOBILAIR M81.2
rear panel Switchboard
AFA81-03062.01
page 2
2 Sht.
Date
Drawn
Released
Name
30.06.2025
Seubert
Schröder
Change

13.5.2 tc Connecting the lighting and signalling system

Electrical diagrams

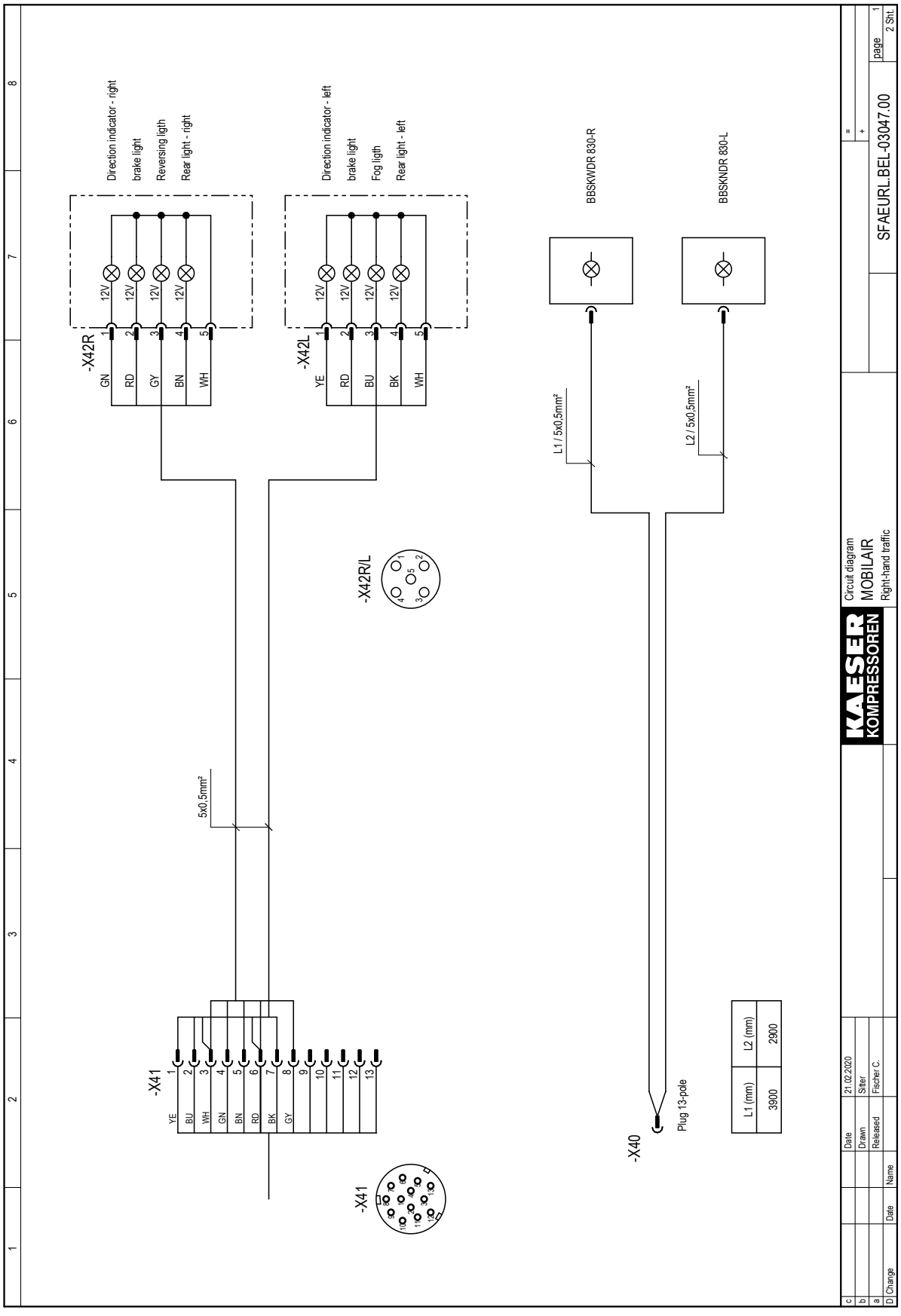
MOBILAIR

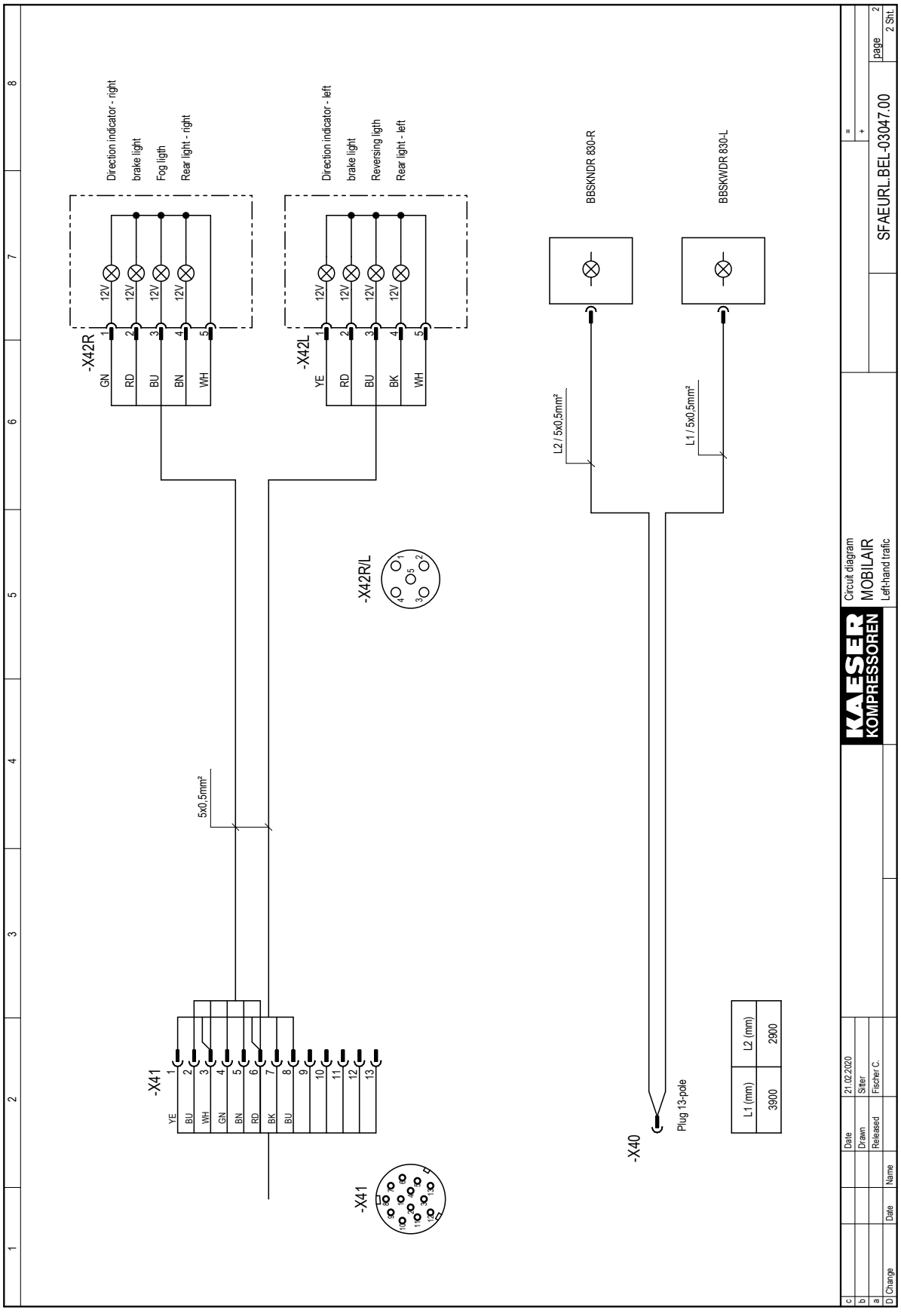
Lighting equipment

for EU-Right-hand traffic/Left-hand trafic

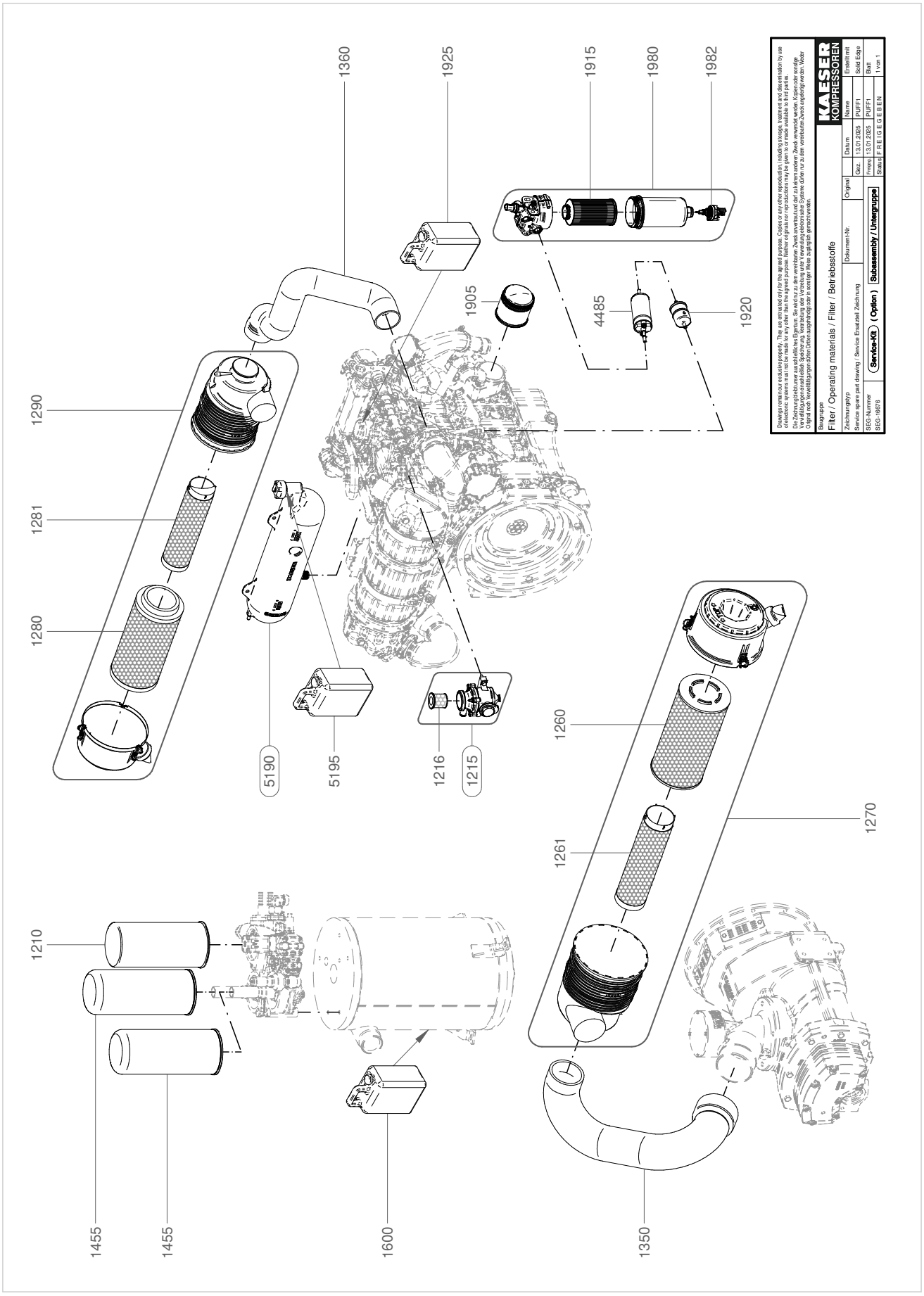
Manufacturer: KAESER KOMPRESSOREN SE
Postfach 2143
96410 Coburg

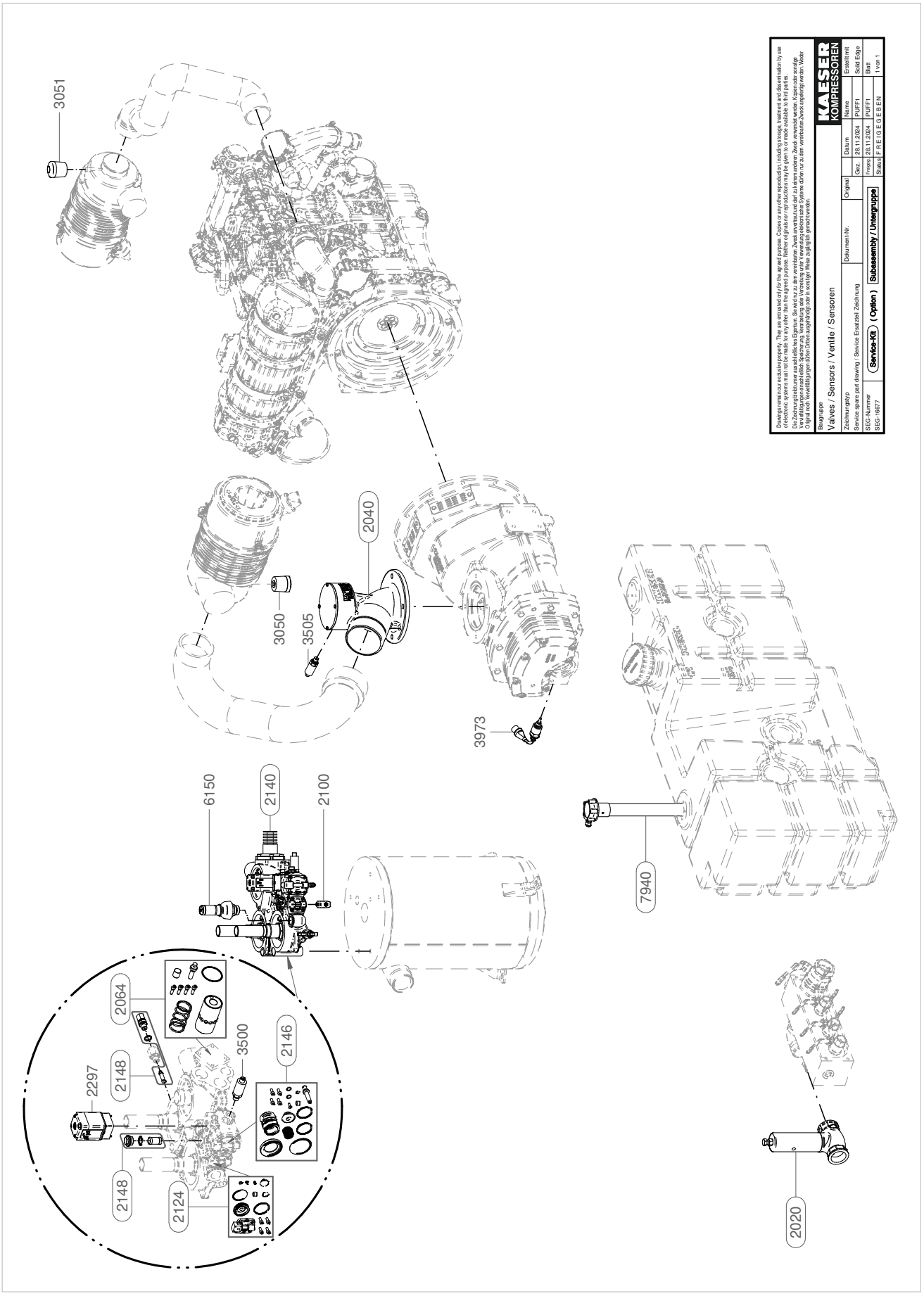
c				Date	21.02.2020 E	KAESER KOMPRESSOREN	Cover page MOBILAIR	=	
b				Drawn	Sitter			+	
a				Released	Fischer C.				
A	Change	Date	Name					DFAEURL.BEL-03047.00	page 1 / 1 Sht.


Direction indicator - right
brake light
Reversing lgth
Rear light - right
Direction indicator - left
brake light
Fog lgth
Rear light - left
12V
-X42R
GN
RD
GY
BN
WH
-X42L
YE
RD
BU
BK
WH
BBSKWDR 830-R
BBSKNDR 830-L
L1 / 5x0.5mm²
L2 / 5x0.5mm²
-X42R/L
5x0.5mm²
-X41
YE
BU
WH
GN
BN
RD
BK
GY
-X40
Plug 13-pole
L1 (mm) 3900
L2 (mm) 2900
KAESER KOMPRESSOREN
Circuit diagram
MOBILAIR
Right-hand traffic
SFAEURL.BEL-03047.00
page 1
2 Sht.
Date 21.02.2020
Drawn Sitter
Released Fischer C.
Name
Change


Direction indicator - right
brake light
Fog ligth
Rear light - right
Direction indicator - left
brake light
Reversing ligth
Rear light - left
BBSKNDR 830-R
BBSKWDR 830-L
-X42R
-X42L
-X42R/L
-X41
-X40
5x0,5mm²
L2 / 5x0,5mm²
L1 / 5x0,5mm²
Plug 13-pole
L1 (mm) 3900
L2 (mm) 2900
SFAEURL.BEL-03047.00
Circuit diagram
MOBILAIR
Left-hand trafic
page 2
2 Sht.

13.6 Assembly drawings


1360
1925
1915
1980
1982
1905
4485
1920
1290
1281
1280
5190
5195
1216
1215
1260
1270
1261
1210
1455
1455
1600
1350
Filter / Operating materials / Filter / Betriebsstoffe
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-16976
Service-Kit
Option
Subassembly / Untergruppe
KAESER KOMPRESSOREN


3051
2040
3050
3505
3973
6150
2140
2100
7940
2064
2297
2148
3500
2146
2148
2124
2020
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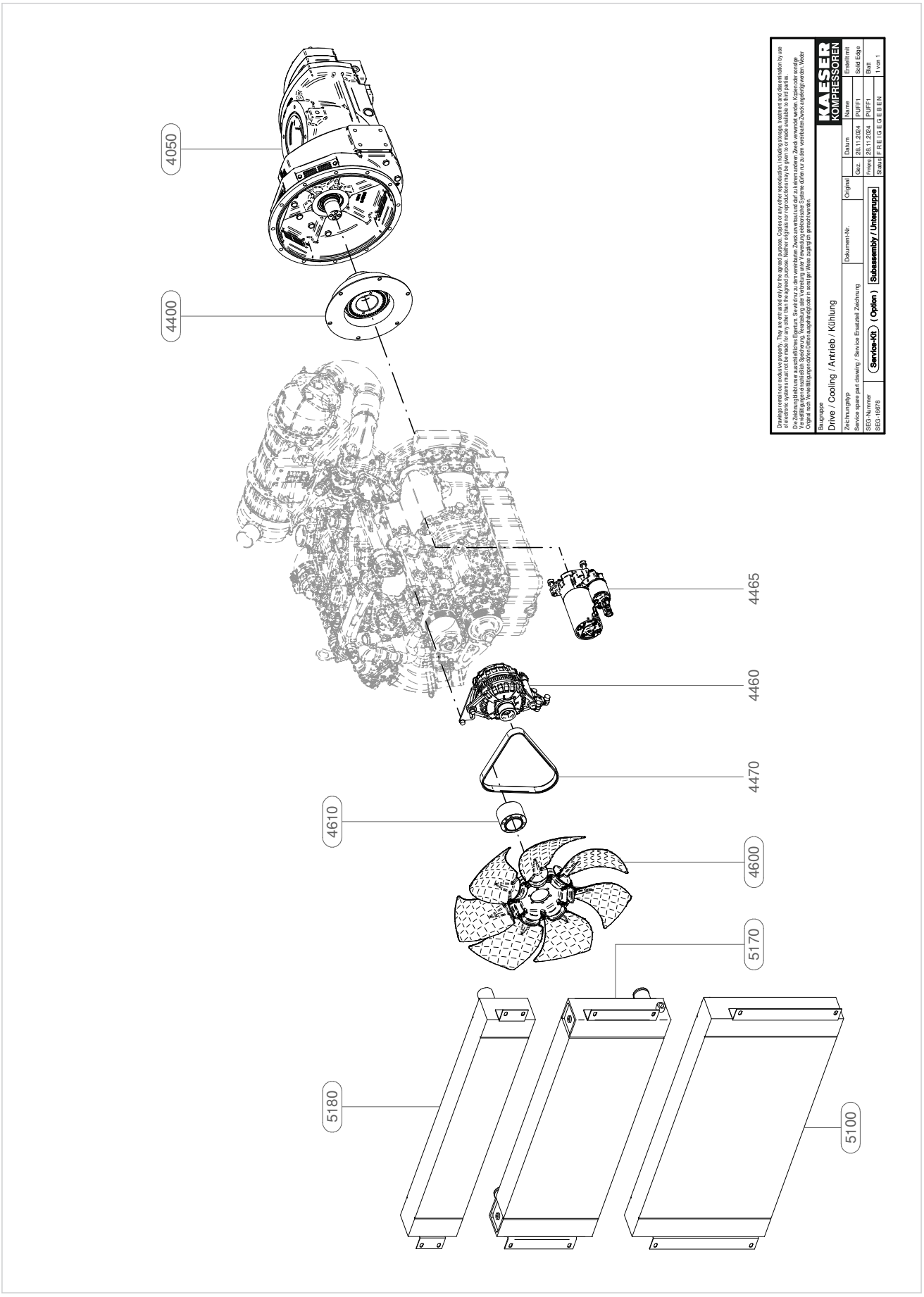
KAESER KOMPRESSOREN
Baugruppe
Valves / Sensors / Ventile / Sensoren
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
SEG-Nummer
SEG-16877
Service-Kit
(Option)
Subassembly / Untergruppe
Dokument-Nr.
Original
Name
Datum
Erstellt mit
Gez.: 28.11.2024 PUFF1 Solid Edge
Freigg.: 28.11.2024 PUFF1 Batt
Status: F R E I G E G E B E N 1 von 1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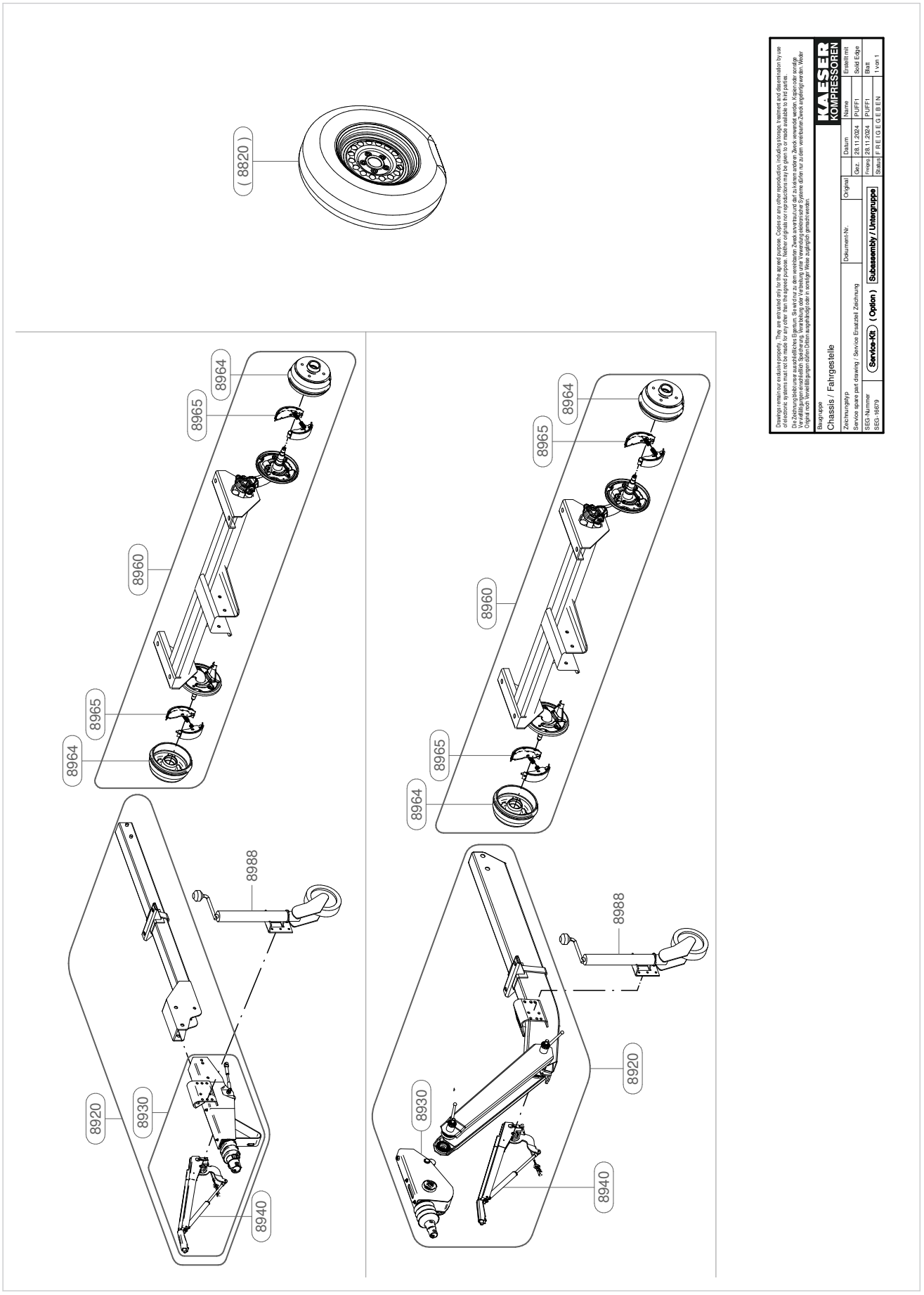
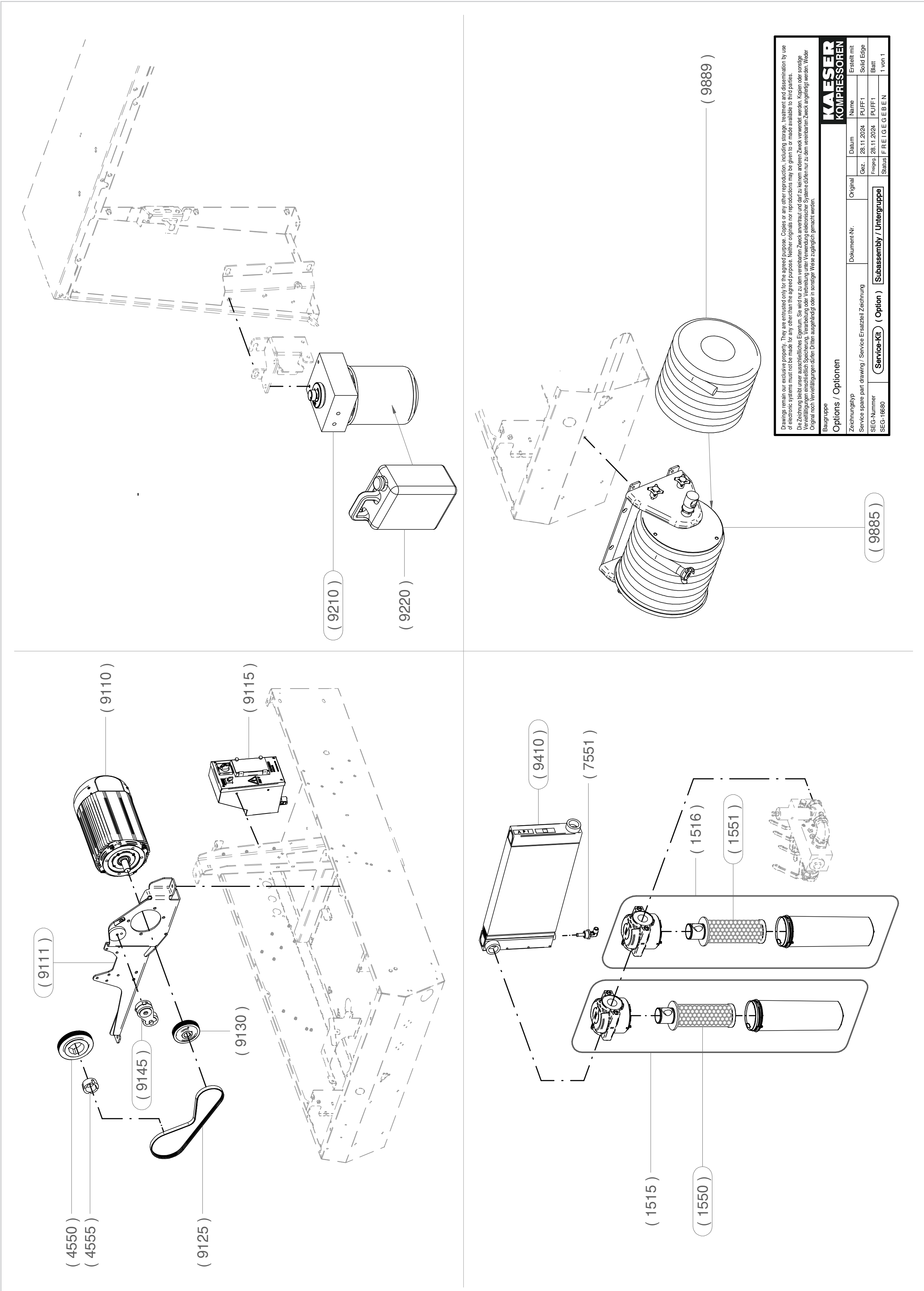
KAESER KOMPRESSOREN
Baugruppe
Drive / Cooling / Antrieb / Kühlung
Zeichnungstyp
Service spare part drawing / Service Ersatzteil Zeichnung
Dokument-Nr.
Original
Datum
Name
Erstellt mit
Gez.
28.11.2024
PJ/FF1
Solid Edge
Gepr.
28.11.2024
PJ/FF1
Blatt
Status
FREIGEGEBEN
1 von 1
SEG-Nummer
SEG-16978
Service-Kit
Option
Subassembly / Untergruppe



KAESER KOMPRESSOREN

Baugruppe
Chassis / Fahrgestelle

Zeichnungstyp	Dokument-Nr.	Original		Name	Erstellt mit
Service spare part drawing / Service Ersatzteil Zeichnung			Gez.:	28.11.2024 PUFF1	Solid Edge
SEG-Nummer			Freigg.:	28.11.2024 PUFF1	Blatt
SEG-16979	Service-Kit (Option) Subassembly / Untergruppe		Status:	F R E I G E G E B E N	1 von 1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Options / Optionen
Service-Kit
(Option)
Subassembly / Untergruppe
SEG-16680
28.11.2024
PUFF1
Solid Edge
1 von 1
F R E I G E G E B E N

14 Glossary

This chapter provides an alphabetical index of technical terms with explanations.

Airend discharge temperature – ADT

Gaseous fluids become heated during the compression process. The temperature achieved at the end of the compression process is referred to as the “airend discharge temperature”.

Diesel oxidation catalytic converter – DOC

The diesel oxidation catalytic converter reduces the hydrocarbon and carbon monoxide components in diesel engine exhaust gases.

Diesel particulate filter – DPF

The diesel particulate filter reduces the quantity of soot particles present in diesel engine exhaust gases.

Engine control unit – ECU

An electronic system (control unit) developed for a specific engine type that assumes the control, regulation and monitoring of engine functions.

Flow rate

Flow rate is the volume of a gaseous or liquid fluid moving through a cross-section within a certain unit of time under defined conditions.

In the case of compressed air generators, the continuously conveyed volume is commonly referred to as “delivery volume”. The specified value relates to the volume of a compressed fluid in its expanded state under atmospheric conditions.

SIGMA CONTROL SMART – SCS

SIGMA CONTROL SMART is a KAESER machine controller.

Vehicle identification number – VIN

International standardised 17-digit serial number with which a vehicle can be clearly identified.

Working pressure

Pressure value above atmospheric pressure within a pressure system during operation.

15 Annexe

15.1 Code

15.1.1 Labelling on the machine

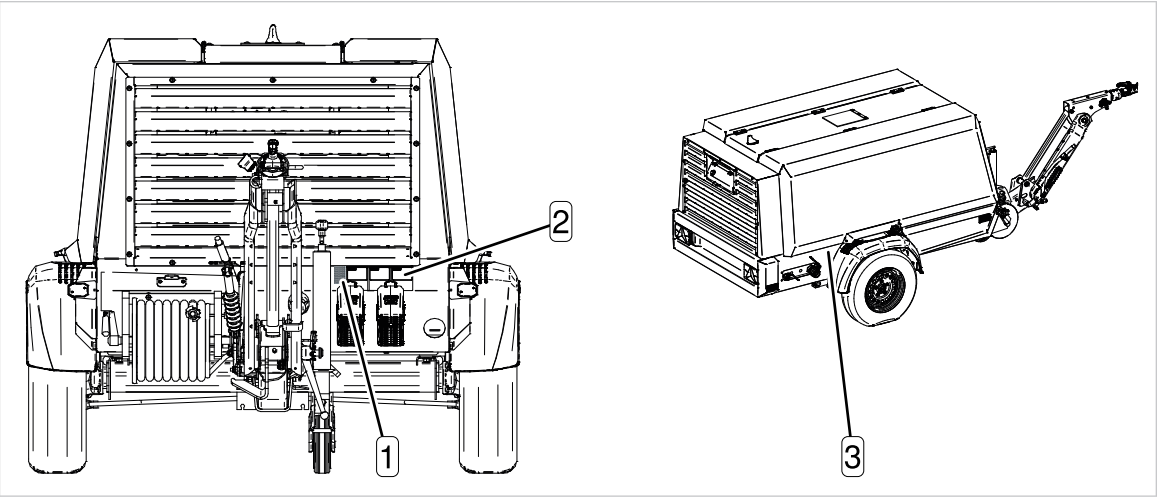

Fig. 89 Labelling on the machine

1 Options label
2 Machine nameplate
3 Vehicle identification number

15.1.2 Drive engine identification

The engine serial number is displayed on the nameplate.

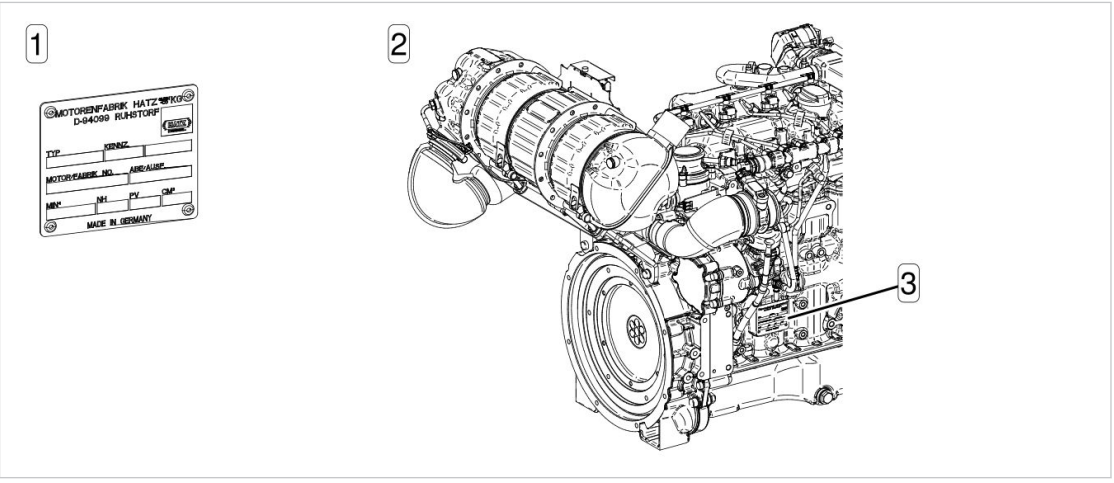

Fig. 90 Drive engine identification

1 Engine nameplate
2 Drive engine
3 Engine nameplate position

15.2 Coolant recommendation

Prepare the coolant for liquid-cooled engines and monitor it at regular intervals.

If the coolant or its components are of poor quality, damage to the drive engine is possible.

15.2.1 Water quality

The correct water quality is essential for preparing the coolant.

In general, clear, clean, and preferably soft fresh water should be used, in line with the following analysis values:

Characteristic	
pH value	6.5– 8.0
Chloride [mg/l]	max. 80
Chloride + Sulphate [mg/l]	max. 160
Alkaline earth ions [mmol/l]1)	2.7
Hardness [°dH]2)	15

1) 7.147 mg/l Ca^{2+} or 4.336 mg/l Mg^{2+}

2) 1 °dH = 0.1783 mmol/l

Tab. 84 Water quality

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

If no suitable water is available, distilled or fully demineralised water must be used to prepare the coolant.

Seawater, brackish water, brine and industrial wastewater are not suitable. Salts may promote corrosion or lead to build-up of problematic residues.

15.2.2 Coolant quality

During the course of ongoing technical development, a new anti-corrosion agent/antifreeze has been approved by the engine manufacturer.

Advantages of the new anti-corrosion agent/antifreeze:

- Less residue in the engine cooling system
- Improved heat flow
- Improved environmental compatibility

The coolant is treated by the mixing of antifreeze with ethylene glycol-based anti-corrosion additives and water.

The coolant used must be in accordance with the stipulations of the engine manufacturer HATZ.

- Do not use an anti-corrosion agent/antifreeze that has not been approved by the engine manufacturer.
- Avoid impermissible mixing ratios of anti-corrosion agent/antifreeze and water.

15.2.3 Initial fill of anti-corrosion agent/antifreeze

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

Components	Designation	Proportion [%]
Anti-corrosion agent/antifreeze	KAESER FLUID ENGINE ANTIFREEZE Glysantin® G40®	50
Water		50

Tab. 85 Initial fill of coolant cooler

15.2.4 Miscibility with other anti-corrosion agents/antifreezes

Mixing with other anti-corrosion agents/antifreezes is not recommended, even if from the same manufacturer.

This can result in significantly reduced corrosion/antifreeze protection, which may damage the.engine cooling system.

Mixtures of different anti-corrosion agents/antifreezes provide lower performance than the specially balanced active components of a single coolant type.

The use of other anti-corrosion agents/antifreezes is only permitted following consultation with and approval from the engine manufacturer.

15.3 dd Operating manual for the compressed air filter

Filters for Compressed Air

P010 - P055 (WS, AO, AA, ACS)

User Guide

EN Original Language

NL DE FR FI SV NO DA EL ES PT IT PL
SK CS ET HU LV LT RU SL TR MT RO BG

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker domnick hunter

ENGINEERING YOUR SUCCESS.

EN ONE YEAR AIR QUALITY GUARANTEE

Your air quality has been guaranteed for 1 year and will be renewed at every annual filter element change.
Annual filter element changes ensure:

- Optimal performance is maintained
- Air quality continues to meet international standards
- Protection of downstream equipment, personnel and processes
- Low operational costs
- increased productivity and profitability
- peace of mind

NL LUCHTKWALITEITSGARANTIE VAN ÉÉN JAAR

De luchtkwaliteit wordt 1 jaar lang gegarandeerd. De garantie wordt elk jaar verlengd wanneer het filterelement wordt vervangen.
Een jaarlijkse vervanging van het filterelement heeft de volgende voordelen:

- Een onverminderde optimale prestatie
- Luchtkwaliteit die blijft voldoen aan de internationale normen
- Bescherming van apparatuur, personeel en processen achter de compressor
- Lage bedrijfskosten
- Hogere productiviteit en rentabiliteit
- Gemoedsrust

DE EIN JAHR GARANTIE AUF DIE LUFTQUALITÄT

Wir gewähren Ihnen eine 1-jährige Garantie auf die Luftqualität, die bei jedem jährlichen Austausch des Filterelements erneuert wird.
Ein jährlicher Austausch des Filterelements stellt Folgendes sicher:

- Optimale Leistung wird gewährleistet
- Die Luftqualität erfüllt weiterhin internationale Standards
- Schutz der nachgeschalteten Geräte, der Arbeitskräfte und Produktionsabläufe
- Geringe Betriebskosten
- Höhere Produktivität und Wirtschaftlichkeit
- Sorgenfreiheit

FR QUALITÉ DE L'AIR GARANTIE PENDANT 1 AN

La qualité de l'air est garantie pendant 1 an, garantie renouvelable à chaque remplacement annuel la de cartouche filtrante.
Le remplacement annuel des cartouches filtrantes garantit :

- La préservation de performances optimales
- Une qualité de l'air conforme aux normes internationales
- Une protection de l'équipement, des processus et du personnel en aval
- Des coûts d'utilisation réduits
- Un niveau de productivité et de rentabilité accru
- Votre tranquillité d'esprit

ES GARANTÍA DE CALIDAD DEL AIRE PARA UN AÑO

La calidad del aire tiene una garantía de 1 año y se renovará con cada cambio anual del filtro
El cambio anual del filtro le asegura:

- Se mantiene un rendimiento óptimo.
- La calidad del aire sigue cumpliendo las normas internacionales
- Protección del equipo, personal y procesos aguas abajo.
- Bajos costes de funcionamiento.
- mayor productividad y rentabilidad.
- tranquilidad.

IT GARANZIA DI UN ANNO SULLA QUALITÀ DELL'ARIA

La qualità dell'aria è garantita per un anno e la garanzia sarà rinnovata dopo ogni sostituzione annuale dell'elemento filtrante.
La sostituzione annuale dell'elemento filtrante assicura:

- Prestazioni ottimali nel tempo
- Aria di qualità sempre conforme alle norme internazionali
- Protezione del personale, delle apparecchiature e dei processi a valle
- Bassi costi di esercizio
- Maggiore produttività e redditività
- Tranquillità

1

(EN) Model Coding example:

Model						
Element Grade	Premium Energy Efficient Element	Model Size	Port Size	Thread Type	Drain Option	DP Indicator
WS AO AA ACS	P	3 digit code as shown below	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Float M = Manual	X = None I = Incident Monitor
AA	P	030	A	G	F	I

(NL) Voorbeeld van model codering:

Model						
Elementklasse	Premium energie-efficiënt element	Afmetingen model	Poortafmeting	Schroefdraadtype	afvoer (optioneel)	DP-indicator
WS AO AA ACS	P	3-cijferige code zoals hieronder afgebeeld	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Vlotter M = Handmatig	X = Geen I = Incidentmonitor
AA	P	030	A	G	F	I

(DE) Beispiel für Modellschlüssel:

Modell						
Element-Klasse	Energieeffizientes Element der Premiumklasse	Baugröße	Anschlussgröße	Gewindetyp	Entleerung	DD-Anzeige
WS AO AA ACS	P	Dreistelliger Code wie unten dargestellt	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Schwimmer M = Hand-	X = Keine I = Verschmutzungsanzeige
AA	P	030	A	G	F	I

(FR) Exemple de code de modèle:

Modèle						
Grade d'élément	Élément de rendement énergétique de qualité supérieure	Dimensions du modèle	Taille de l'orifice	Type de filetage	Option de purge	Indicateur PD
WS AO AA ACS	P	Code à 3 chiffres (ex. ci-dessous)	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Flotteur M = Réactivation	X = Aucun I = Contrôle des incidents
AA	P	030	A	G	F	I

(ES) Ejemplo de códigos de modelos:

Modelo						
Grado del elemento WS AO AA ACS	Elemento eficiente energéticamente premium P	Tamaño del modelo Código de 3 dígitos, tal y como se muestra a continuación	Tamaño de puerto A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Tipo de rosca G = BSPP N = NPT	Opción de drenaje F = Flotador M = Manual	Indicador DP X = Ninguno I = Monitor de incidencias
AA	P	030	A	G	F	I

(IT) Esempio di codifica dei

Modello						
Tipo elemento WS AO AA ACS	Elemento ad efficienza energetica Premium P	Dimensioni modello Codice a 3 cifre come indicato di seguito	Dimensioni attacco A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Tipo di filettatura G = BSPP N = NPT	Opzione di scarico F = Galleggiante M = Ripristino	Indicatore DP X = Nessuno I = Monitor criticità
AA	P	030	A	G	F	I

(EN) Product Selection
Stated flows are for operation at 7 bar g (100 psi g) with reference to 20°C, 1 bar a, 0% relative water vapour pressure.
For flows at other pressures apply the correction factors shown.

(NL) Productselectie
De weergegeven stroomsnelheden zijn voor een werking bij 7 bar (g) (100 psi g) met betrekking tot 20°C, 1 bar (a), 0% relatieve waterdampdruk.
Voor stroomsnelheden bij andere drukverhoudingen dient u de vermelde correctiefactoren toe te passen.

(DE) Produktauswahl
Die angegebenen Durchflussraten beziehen sich auf den Betrieb bei 7 bar ü (100 psi g), 20 °C, 1 bar ü und einem relativen Wasserdampfdruck von 0 %.
Wenden Sie zur Bestimmung der Durchflussraten bei anderen Drücken die angegebenen Korrekturfaktoren an.

(FR) Choix du produit
Les débits indiqués correspondent à un fonctionnement à une pression de 7 bar eff (100 psi eff) et aux conditions de référence suivantes : 20 °C, 1 bar (a) et 0 % de pression de vapeur d'eau relative.
Pour les débits de pression différente, appliquez les facteurs de correction indiqués.

(ES) Selección de productos
Los caudales se indican para el funcionamiento a 7 bar g (100 psi g), referidos a 20 °C (1 bar) y presión relativa del vapor de agua del 0%.
Para caudales a otras presiones, aplique los factores de corrección que se muestran.

(IT) Scelta del prodotto
Le portate indicate si riferiscono al funzionamento con una pressione di 7 bar g (100 psi g) a 20°C, 1 bar a, pressione relativa del vapore acqueo 0%.
Per altri valori di pressione applicare i fattori di correzione indicati.

Water Separator Flow Rates

Stroomsnelheden waterafscheider, Durchflusswerte des Wasserabscheiders, Débit du séparateur d'eau, Caudales del separador de agua, Portate del separatore d'acqua

Model			Port Size	L/s	m3/min	m3/hr	cfm
WS	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21
WS	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21
WS	P010C	[ ] [ ] [ ]	½	10	0.6	36	21
WS	P015C	[ ] [ ] [ ]	½	40	2.4	144	85
WS	P020D	[ ] [ ] [ ]	¾	40	2.4	144	85
WS	P025D	[ ] [ ] [ ]	¾	110	6.6	396	233
WS	P025E	[ ] [ ] [ ]	1	110	6.6	396	233
WS	P030G	[ ] [ ] [ ]	1 ½	110	6.6	396	233
WS	P035G	[ ] [ ] [ ]	1 ½	350	21.0	1260	742
WS	P040H	[ ] [ ] [ ]	2	350	21.0	1260	742
WS	P045I	[ ] [ ] [ ]	2 ½	350	21.0	1260	742
WS	P050I	[ ] [ ] [ ]	2 ½	800	48.0	2880	1695
WS	P055J	[ ] [ ] [ ]	3	800	48.0	2880	1695

CFP - Correction Factor Minimum Inlet Pressure (Water Separators)

CFP - Correctiefactor minimale inlaatdruk (waterafscheiders), CFP – Korrekturfaktor minimaler Einlassdruck (Wasserabscheider), CFP – Facteur de correction de la pression d'admission minimale (Séparateurs d'eau), CFP: factor de corrección de presión mínima de entrada (separadores de agua), CFP - Fattore di correzione della pressione minima di ingresso (separatori d'acqua) ,

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		4.00	2.63	2.00	1.59	1.33	1.14	1.00	0.94	0.89	0.85	0.82	0.79	0.76	0.73	0.71	0.68

Filter Flow Rates

Stroomsnelheid filter, Filter-Durchflussraten, Débits du filtre, Caudales del filtro, Portate del filtro

Model			Port Size	L/s	m3/min	m3/hr	cfm	Replacement Element kit		No.
[grade]	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21	P010	[grade]	1
[grade]	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21	P010	[grade]	1
[grade]	P010C	[ ] [ ] [ ]	½	10	0.6	36	21	P010	[grade]	1
[grade]	P015C	[ ] [ ] [ ]	½	20	1.2	72	42	P015	[grade]	1
[grade]	P020C	[ ] [ ] [ ]	½	30	1.8	108	64	P020	[grade]	1
[grade]	P020D	[ ] [ ] [ ]	¾	30	1.8	108	64	P020	[grade]	1
[grade]	P025D	[ ] [ ] [ ]	¾	60	3.6	216	127	P025	[grade]	1
[grade]	P025E	[ ] [ ] [ ]	1	60	3.6	216	127	P025	[grade]	1
[grade]	P030G	[ ] [ ] [ ]	1 ½	110	6.6	396	233	P030	[grade]	1
[grade]	P035G	[ ] [ ] [ ]	1 ½	160	9.6	576	339	P035	[grade]	1
[grade]	P040H	[ ] [ ] [ ]	2	220	13.2	792	466	P040	[grade]	1
[grade]	P045I	[ ] [ ] [ ]	2 ½	330	19.8	1188	699	P045	[grade]	1
[grade]	P050I	[ ] [ ] [ ]	2 ½	430	25.8	1548	911	P050	[grade]	1
[grade]	P055I	[ ] [ ] [ ]	2 ½	620	37.3	2232	1314	P055	[grade]	1
[grade]	P055J	[ ] [ ] [ ]	3	620	37.3	2232	1314	P055	[grade]	1

[grade] = grade
[klasse] = klasse
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[grade] = grade
[grado] = grado
[grado] = grado

CFP - Correction Factor Minimum Inlet Pressure (Coalescing and Dry Particulate Filters)

CFP - Correctiefactor minimale inlaatdruk (coalescentiefilters en drogedeeltjesfilters), CFP – Korrekturfaktor minimaler Einlassdruck (Koaleszenz- und Trockenpartikelfilter), CFP – Facteur de correction de la pression d'admission minimale (Filtres coalescents et à particules sèches), CFP: factor de corrección de presión mínima de entrada (filtros de partículas secas y coalescentes), CFP - Fattore di correzione della pressione minima di ingresso (filtri anti-particolato a coalescenza e per particolato asciutto)

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232	248	263	277	290
Correction Factor		2.65	1.87	1.53	1.32	1.18	1.08	1.00	0.94	0.88	0.84	0.80	0.76	0.73	0.71	0.68	0.66	0.64	0.62	0.61	0.59

(EN) Product Selection and Correction Factors

To correctly select a Water Separator or Filter model, the flow rate of the filter must be adjusted for the minimum operating pressure of the system.

1. Obtain the minimum operating pressure and maximum compressed air flow rate at the inlet of the Water Separator or Filter.
2. Select the correction factor for minimum operating pressure from the CFP table (always round down e.g. for 5.3 bar, use 5 bar correction factor)
3. Calculate the minimum filtration capacity. Minimum Filtration Capacity = Compressed Air Flow Rate x CFP
4. Using the minimum filtration capacity, select a Water Separator or Filter model from the flow rate tables above (Water Separator or Filter selected must have a flow rate equal to or greater than the minimum filtration capacity).

(NL) Productselectie en correctiefactoren

Om het juiste waterafscheidings- of filtermodel te selecteren, dient u de stroomsnelheid van het filter aan te passen aan de minimale bedrijfsdruk van het systeem.

1. Bepaal de minimale bedrijfsdruk en de maximale stroomsnelheid van de perslucht bij de inlaat van de waterafscheider of het filter.
2. Kies de correctiefactor voor de minimale bedrijfsdruk uit de CFP-tabel (altijd naar beneden afronden, bijv. bij 5,3 bar gebruikt u 5 bar als correctiefactor).
3. Bereken de minimale filtratiecapaciteit. Minimale filtratiecapaciteit = persluchtstroming x CFP
4. Selecteer een filtermodel uit de bovenstaande tabel met stroomsnelheden aan de hand van de minimale filtercapaciteit (de stroomsnelheid van het geselecteerde filter moet gelijk zijn aan of hoger zijn dan de minimale filtercapaciteit).

(DE) Produktauswahl und Korrekturfaktoren

Zur richtigen Auswahl eines Wasserabscheiders oder Filtermodells muss die Durchflussrate des Filters entsprechend dem Mindestbetriebsdruck des Systems gewählt werden.

1. Bestimmen Sie den Mindestbetriebsdruck sowie die maximale Druckluftdurchflussrate am Einlass des Wasserabscheiders oder Filtereinlass.
2. Wählen Sie den Korrekturfaktor für den Mindestbetriebsdruck aus der CFP-Tabelle aus (immer abrunden, d. h. bei 5,3 bar einen Korrekturfaktor von 5 bar auswählen).
3. Berechnen Sie die Mindestfiltrationsleistung. Mindestfiltrationsleistung = Druckluftdurchflussrate x CFP (Korrekturfaktor)
4. Wählen Sie anhand der Mindestfiltrationsleistung einen Wasserabscheider oder Filter aus den obigen Tabellen mit der Durchflussrate (die Durchflussrate des ausgewählten Wasserabscheiders oder Filters muss gleich oder größer der Mindestfiltrationsleistung sein).

(FR) Sélection du produit et facteurs de correction

Pour sélectionner le bon modèle de filtre ou de séparateur d'eau, il convient de régler le débit du filtre en fonction de la pression de service minimale du système.

1. Déterminez la pression de service minimale et le débit d'air comprimé maximal au niveau de l'admission du séparateur d'eau ou du filtre.
2. Dans le tableau Facteurs de correction de pression (CFP), sélectionnez le facteur de correction correspondant à la pression de fonctionnement minimale (arrondissez toujours au chiffre inférieur. P. ex., pour 5,3 bar, utilisez un facteur de correction de 5 bar).
3. Calculez la capacité de filtration minimale. Capacité de filtration minimale = Débit d'air comprimé x CFP
4. À l'aide de la capacité de filtration minimale, sélectionnez un modèle de séparateur d'eau ou de filtre dans les tableaux de présentation des débits ci-dessus (le débit du séparateur d'eau ou du filtre sélectionné doit être égal ou supérieur à la capacité de filtration minimale).

(ES) Selección de productos y factores de corrección

Para seleccionar correctamente un modelo de filtro o separador de agua, el caudal del filtro se debe ajustar a la presión de trabajo mínima del sistema.

1. Determine la presión de trabajo mínima y el caudal máximo de aire comprimido en la entrada del filtro o del separador de agua.
2. Seleccione en la tabla de factores de corrección de presión (CFP) el factor de corrección para la presión de trabajo mínima (redondee siempre a la baja: por ejemplo, en el caso de 5,3 bar, utilice el factor de corrección correspondiente a 5 bar).
3. Calcule la capacidad mínima de filtración. Capacidad mínima de filtración = Caudal de aire comprimido x CFP
4. Use la capacidad mínima de filtración para seleccionar un modelo de separador de agua o filtro de las tablas de caudal anteriores (el separador de agua o el filtro seleccionados deben tener un caudal igual o superior a la capacidad mínima de filtración).

(IT) Selezione dei prodotti e fattori di correzione

Per selezionare il separatore d'acqua o modello di filtro corretto, regolare la portata del filtro per la pressione di esercizio minima dell'impianto.

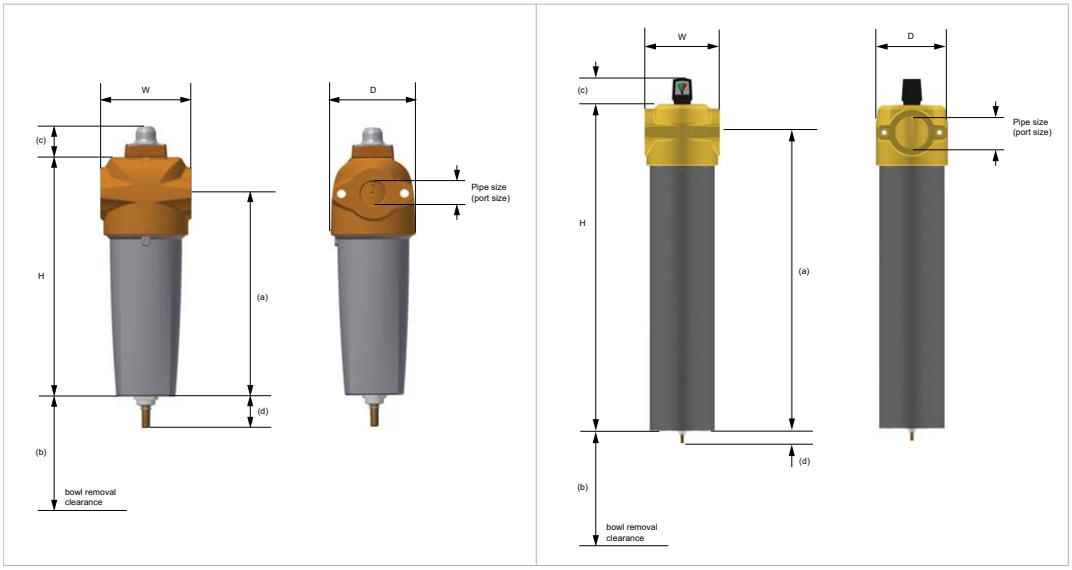
1. Ricavare la pressione di esercizio minima e la portata massima dell'aria compressa all'ingresso del separatore d'acqua o del filtro.
2. Selezionare il fattore di correzione per la pressione di esercizio minima indicato nella tabella CFP (arrotondare sempre per difetto: ad esempio, per 5,3 bar scegliere il fattore di correzione 5 bar)
3. Calcolare la capacità di filtrazione minima. Capacità di filtrazione minima = Portata aria compressa x CFP
4. Considerando la capacità di filtrazione minima ottenuta, selezionare un separatore d'acqua o un modello del filtro dalla tabella in alto relativa alle portate (la portata del separatore d'acqua o del filtro selezionato deve essere pari o superiore alla capacità di filtrazione minima)

Technical Data
Technische gegevens, Technische Daten, Données techniques, Datos técnicos, Dati tecnici

Model	Filter Models											Min Operating Pressure		Max Operating Pressure		Min Recommended Operating Temp		Max Recommended Operating Temp	
												bar g	psi g	bar g	psi g	°C	°F	°C	°F
WS	P010	[ ]	[ ]	F	[ ]	-	055	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AO	P010	[ ]	[ ]	F	[ ]	-	055	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AO	P010	[ ]	[ ]	M	[ ]	-	055	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	100	212
AA	P010	[ ]	[ ]	F	[ ]	-	055	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AA	P010	[ ]	[ ]	M	[ ]	-	055	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	100	212
ACS	P010	[ ]	[ ]	M	[ ]	-	055	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	50	122

Note: AO / AA / WS grade filters for use up to 16 bar g (232 psi g) are supplied with a float drain [F] as standard.
For pressures between 16 and 20 bar g (232 and 290 psi g) a manual drain [M] must be used.
ACS grade filters are supplied with a manual drain [M] as standard.

Weights and Dimensions
Gewichten en afmetingen, Gewichte und Abmessungen, Poids et dimensions, Pesos y dimensiones, Pesi e dimensioni



Model	Pipe Size	Height (H)		Width (W)		Depth (D)		(a)		(b)		(c)		(d)		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
WS / P010A	¼"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010B	⅜"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010C	½"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P015C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.16	2.55
P020C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P020D	¾"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P025D	¾"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P025E	1"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P030G	1 ½"	367	14.45	120	4.72	114.5	4.5	323	12.7	70	2.76	32	1.3	38	1.5	2.68	5.91
WS / P035G	1 ½"	531	20.9	164	6.46	156	6.10	384	15.1	100	3.94	68	2.68	38	1.5	6.90	15.20
WS / P040H	2	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.30	16.10
WS / P045I	2 ½	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.10	15.65
WS / P050I	2 ½	745	29.3	192	7.56	183	7.20	587	23.1	120	4.72	68	2.68	38	1.5	10.30	22.71
P055I	2 ½	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73
WS / P055J	3	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73

Note: Water Separators do not include a DP Indicator, use dimension H + d for the total height.

(EN) Installation recommendations

It is recommended that the compressed air is treated prior to entry into the distribution system and also at critical usage points / applications.

Installation of compressed air dryers to a previously wet system could result in additional dirt loading for point of use filters for a period whilst the distribution system dries out. Filter elements may need to be changed more frequently during this period.

For installations where oil-free compressors are used, water aerosol and particulate are still present, general purpose and high efficiency grades should still be used.

A general purpose filter must always be installed to protect the high efficiency filter from bulk liquid aerosols and solid particulate.

Install purification equipment at the lowest temperature above freezing point, preferably downstream of after coolers and air receivers.

Point of use purification equipment should be installed as close to the application as possible.

Purification equipment should not be installed downstream of quick opening valves and should be protected from possible reverse flow or other shock conditions.

Purge all piping leading to the purification equipment before installation and all piping after the purification equipment is installed and before connection to the final application.

If by-pass lines are fitted around purification equipment, ensure adequate filtration is fitted to the by-pass line to prevent contamination of the system downstream.

Fit drain lines from the coalescing filters directly to a condensate separator. If it is not possible to connect the drain lines directly to a separator, the lines should be vented in to a condensate manifold (vented at one end) and then in to a single inlet of a condensate separator.

Provide a facility to drain away collected liquids from the purification equipment. Collected liquids should be treated and disposed of in a responsible manner.

(NL) Aanbevelingen voor de installatie

Aanbevolen wordt de perslucht te zuiveren voordat de lucht in het distributiesysteem wordt toegelaten, en ook bij kritieke gebruikspunten of -toepassingen.

De aansluiting van persluchtdrogers op een systeem dat nat was, kan extra vuilophoping veroorzaken bij de gebruikspuntfilters terwijl het distributiesysteem uitdroogt. Het is mogelijk dat gedurende deze periode de filterelementen vaker vervangen moeten worden.

Voor installaties met olievrije compressoren, waarin water-aërosols en deeltjes nog steeds aanwezig zijn, moeten filters voor algemeen gebruik en filters met een hoge efficiencygraad worden gebruikt.

Een filter voor algemeen gebruik moet altijd geïnstalleerd worden om het filter met hoge efficiencygraad tegen bulkvloeistof-aërosols en vaste deeltjes te beschermen.

Installeer zuiveringsapparatuur op de laagste temperatuur boven het vriespunt, bij voorkeur op een punt in het systeem na de nakoelers en luchtontvangers.

De zuiveringsapparatuur bij gebruikspunten moet zo dicht mogelijk bij de applicatie geïnstalleerd worden.

Zuiveringsapparatuur dient niet op een punt in het systeem na snel-openende kleppen te worden geïnstalleerd en moet worden beschermd tegen mogelijke tegenstroom of andere schoksituaties.

Reinig alle leidingen naar de zuiveringsapparatuur voorafgaand aan de installatie en ook nadat de zuiveringsapparatuur is geïnstalleerd, voorafgaand aan de aansluiting op de definitieve applicatie.

Als er omloopleidingen rond de zuiveringsapparatuur zijn gemonteerd, zorg er dan voor dat er voldoende filtering bij deze leidingen bestaat om te voorkomen dat het systeem verderop vervuild raakt.

Bevestig de afvoerleidingen van de coalescentiefilters direct aan een condensaatafscheider. Als het niet mogelijk is om de afvoerleidingen direct op een afscheider aan te sluiten, moeten de leidingen worden ontlucht in een condensaatverdeelstuk (dat aan één zijde wordt ontlucht) en daarna in een enkele inlaat van een condensaatafscheider.

Zorg ervoor dat het mogelijk is om de verzamelde vloeistof uit het zuiveringssysteem af te voeren. Deze vloeistof moet eerst worden gezuiverd en dan op verantwoorde wijze van de hand worden gedaan..

(DE) Installationsempfehlungen

Es wird empfohlen, die Druckluft vor dem Eintritt in das Verteilungssystem bzw. in kritische Einsatzstellen/Anwendungspunkte aufzubereiten.

Der Anschluss von Druckluftrocknern an Systeme, die zuvor nass waren, könnte während der Trocknung des Verteilungssystems bei eingebauten Filtern zu einer zusätzlichen Verschmutzung führen. Die Filterelemente sind in dieser Phase ggf. häufiger auszutauschen.

Bei Einrichtungen, in denen ölfreie Kompressoren eingesetzt werden und noch Wassertropfen und Schmutzpartikel vorhanden sind, müssen universelle und Hochleistungsfilter verwendet werden.

Zum Schutz des Hochleistungsfilters vor großen Mengen an Flüssigkeitstropfen und festen Schmutzpartikeln muss immer ein universeller Filter vorgeschaltet werden.

Installieren Sie den Filter bei der niedrigsten Temperatur über dem Gefrierpunkt vorzugsweise hinter den Nachkühlern und Luftbehältern.

Der Einsatzort des Filters muss sich in unmittelbarer Nähe zur Anwendung befinden.

Der Filter darf sich schnell öffnenden Ventilen nicht nachgeschaltet werden. Außerdem muss ein Schutz gegen Rückfluss und andere Schockzustände gewährleistet sein.

Spülen Sie alle zum Filter führenden Rohrleitungen vor der Installation sowie nach der Installation des Filters und auch vor dem Anschluss an die endgültige Anwendung.

Sofern Bypass-Leitungen den Filter umgehen, muss zum Schutz des nachgeschalteten Systems gegen Verschmutzung für eine ausreichende Filterung dieser Leitungen gesorgt werden.

Führen Sie Ablassleitungen von den Koaleszenzfiltern direkt zu einem Kondensatabscheider. Wenn es nicht möglich ist, die Ablassleitungen direkt an einen Abscheider anzuschließen, müssen die Leitungen an ein Kondensatsammelrohr (mit Entlüftung an einem Ende) und dann an einen einzelnen Einlass eines Kondensatabscheiders angeschlossen werden.

Sorgen Sie für eine Einrichtung, die angesammelte Flüssigkeit von dem Filter entfernt. Die angesammelte Flüssigkeit muss sicher aufbereitet und entsorgt werden.

(FR) Consignes d'installation

Il est recommandé de traiter l'air comprimé avant l'entrée dans le système de distribution, ainsi qu'au niveau des applications/points d'utilisation stratégiques.

L'installation d'un sécheur à air comprimé sur un ancien système humide peut entraîner une teneur en poussière supplémentaire pour les points d'utilisation des filtres pendant la période durant laquelle le système de distribution sèche. Il sera peut-être nécessaire de changer les cartouches filtrantes plus souvent au cours de cette période.

Pour les installations équipées de compresseurs sans huile et où des particules et un aérosol d'eau sont toujours présents, il faut continuer d'utiliser des filtres polyvalents et des filtres haute efficacité.

Un filtre polyvalent doit toujours être installé pour protéger le filtre haute efficacité des aérosols de liquide en masse et des particules solides.

Installez l'équipement de purification à la température la plus basse avant le point de gel, de préférence en aval des réfrigérants et des collecteurs d'air.

L'équipement de purification au point d'utilisation doit être installé aussi près que possible de l'application.

L'équipement de purification ne doit pas être installé en aval de soupapes à ouverture rapide et doit être protégé d'un éventuel flux en sens inverse ou des chocs.

Purgez tous les conduits menant à l'équipement de purification avant l'installation, et recommencez une fois l'équipement installé et avant la connexion à l'application finale.

Si des conduites de dérivation sont en place autour de l'équipement de purification, assurez-vous qu'un élément filtrant approprié est monté sur la conduite de dérivation pour éviter la contamination du système en aval.

Installez directement les conduites d'évacuation des filtres coalescents sur un séparateur de condensation. S'il n'est pas possible de raccorder directement les conduites à un séparateur, elles doivent disposer d'une évacuation vers un collecteur de condensation (avec une extrémité d'évacuation), puis vers un séparateur de condensation à entrée unique.

Installez un dispositif permettant d'évacuer les liquides collectés dans l'équipement de purification. Ces liquides doivent être traités et éliminés comme il convient.

(ES) Recomendaciones de instalación

Se recomienda tratar el aire comprimido antes de que entre en el sistema de distribución y también en aplicaciones o puntos de utilización críticos.

La instalación de secadores de aire comprimido en un sistema húmedo existente puede producir una carga de suciedad adicional en los puntos de uso de los filtros durante un tiempo, hasta que el sistema de distribución se seque. Filter elements may need to be changed more frequently during this period.

En instalaciones que utilicen compresores sin aceite, sigue habiendo aerosoles de agua y partículas, por lo que deben utilizarse filtros de grados de alta eficiencia y carácter general.

Siempre debe instalarse un filtro de carácter general para proteger el filtro de alta eficiencia frente a altas cantidades de aerosoles líquidos y partículas sólidas.

Instale equipos de purificación en el punto de mínima temperatura sobre el punto de congelación, preferentemente aguas abajo de postenfriadores y depósitos de aire.

Los equipos de purificación en punto de utilización se deben instalar lo más cerca posible de la aplicación.

Los equipos de purificación no deben instalarse aguas abajo de válvulas de apertura rápida y deben protegerse del posible flujo inverso o de otras condiciones de cambio brusco.

Antes de instalar los equipos de purificación, purgue todas las tuberías aguas arriba de los mismos; y todas las tuberías entre la citada instalación y la conexión a la aplicación final.

Si se instalan líneas para derivar los equipos de purificación, asegúrese de montar unos filtros adecuados en la línea de derivación para evitar la contaminación del sistema aguas abajo.

Instale conductos de drenaje desde los filtros coalscentes hasta el separador de condensado. Si no es posible conectar los conductos de drenaje directamente a un separador, los conductos deberían derivarse a un colector de condensado (a un extremo) y luego a una entrada individual de un separador de condensado

Disponga los medios para drenar los líquidos recogidos en los equipos de purificación. Los líquidos recogidos se deben tratar y desechar de forma responsable.

(IT) Istruzioni di installazione

L'aria compressa deve essere trattata prima di entrare nel sistema di distribuzione e anche in corrispondenza dei punti di utilizzo / applicazione critici.

L'installazione di essiccatori per aria compressa su un impianto "umido" può provocare un ulteriore accumulo di impurità sui filtri del punto di utilizzo mentre il sistema di distribuzione si asciuga. In questo intervallo di tempo potrebbe essere necessario sostituire gli elementi filtranti con maggiore frequenza.

Gli impianti che utilizzano compressori senza olio richiedono comunque l'uso di filtri universali e ad alto grado di efficienza per la presenza di acqua sotto forma di aerosol e particelle.

Occorre sempre installare un filtro universale per proteggere il filtro ad alta efficienza dai liquidi misti in forma di aerosol e da particelle solide.

Installare depuratori a una temperatura immediatamente superiore al punto di congelamento, preferibilmente a valle di postrefrigeratori e serbatoi d'aria.

I depuratori destinati ai punti di utilizzo si devono installare il più vicino possibile alle applicazioni.

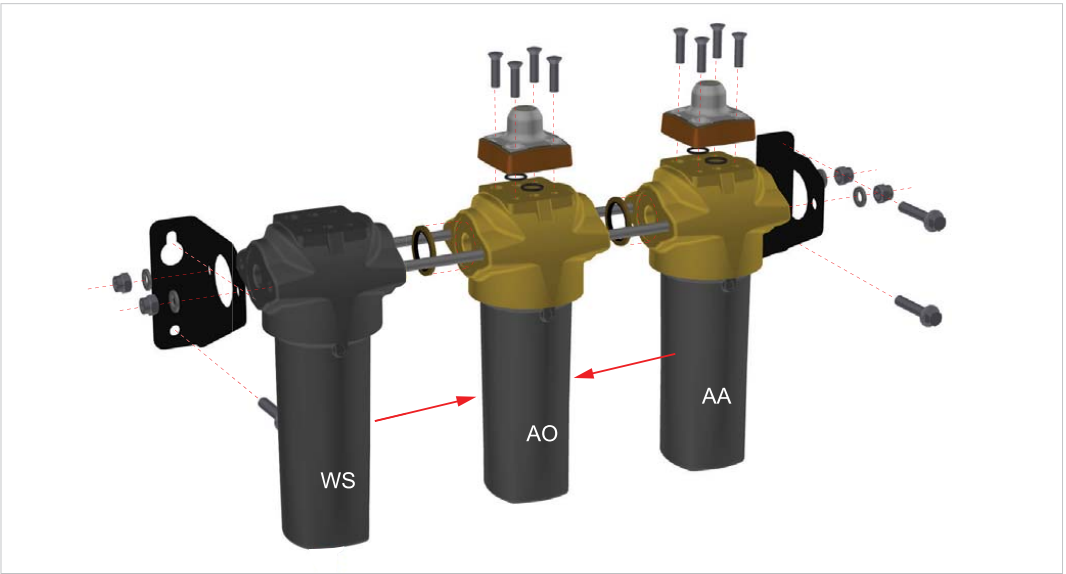
I depuratori non si devono installare a valle delle valvole ad apertura rapida e si devono proteggere dal riflusso o da altre condizioni d'urto.

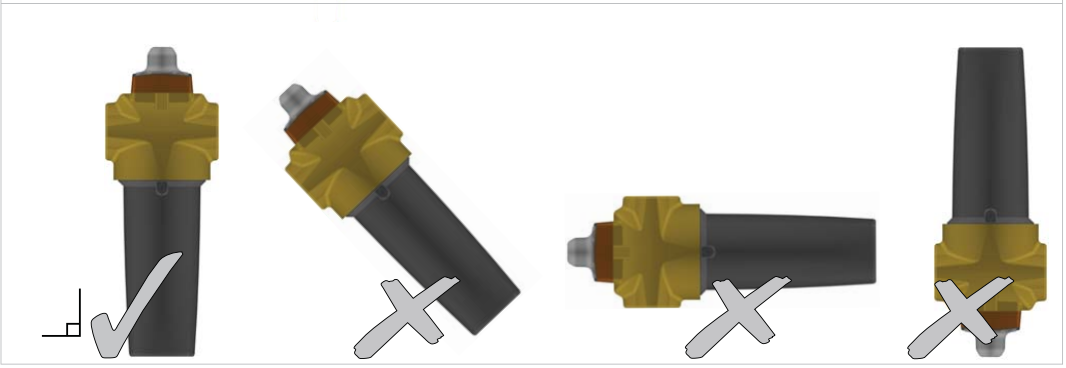
Spurgare tutti i tubi che portano al depuratore prima dell'installazione, dopo aver installato il depuratore e prima di collegarli all'applicazione finale.

Se il depuratore è provvisto di linee di derivazione controllare che siano adeguatamente filtrate per evitare di contaminare il sistema a valle.

Montare le linee di scarico dai filtri a coalescenza direttamente su un separatore di condensa. Qualora non sia possibile collegare le linee di scarico direttamente a un separatore, le linee devono essere scaricate in un collettore di condensa (con sfiato su un'estremità) e quindi in un'unica entrata di un separatore di condensa.

Prevedere un sistema di deflusso dei liquidi raccolti dal depuratore. Trattare e smaltire i liquidi raccolti in modo responsabile.





Models 050 and 055 only

EN The lower closure plate may move when the filter is not pressurised

Warning The lower closure plate is a non serviceable item and should never be removed.

NL De onderste sluitplaat kan verschuiven als het filter niet onder druk staat

Warning De onderste sluitplaat behoeft geen onderhoud en mag nooit verwijderd worden.

DE Die untere Verschlussplatte kann sich bewegen, wenn der Filter nicht mit Druck beaufschlagt ist.

Warning Die untere Verschlussplatte ist wartungsfrei und darf nicht entfernt werden.

FR La plaque de fermeture inférieure peut se déplacer si le filtre n'est pas pressurisé.

Warning La plaque de fermeture inférieure ne peut pas être remplacée et ne doit jamais être retirée.

ES El plato de cierre inferior se puede mover cuando el filtro no está presurizado

Warning El plato de cierre inferior no tiene piezas que requieran mantenimiento y no se debe desinstalar nunca.

IT Se il filtro non è pressurizzato la piastra di chiusura inferiore potrebbe spostarsi

Warning La piastra di chiusura inferiore non è soggetta a manutenzione e non deve mai essere rimossa.

(EN) Startup and Operation

Warning

Before pressurising the filter ensure that the head and bowl are correctly fitted and that the locking detail is properly aligned as shown in the maintenance section (maintenance procedure 6) of this manual.

1. Open inlet valve slowly to gradually pressurise the unit.
2. Open outlet valve slowly to re-pressurise the downstream piping.

Do not open inlet or outlet valves rapidly or subject unit to excessive pressure differential or damage may occur.

(NL) Starten en bediening

Warning

Voordat het filter onder druk wordt gezet, moet u ervoor zorgen dat de kop en de kom juist zijn gemonteerd en dat de vergrendeling goed is uitgelijnd, zoals aangegeven in de onderhoudsinformatie (onderhoudsprocedure 6) van deze handleiding.

1. Doe de inlaatklep langzaam open om de druk in het toestel geleidelijk op te voeren.
2. Doe de uitlaatklep langzaam open om de druk in de leidingen verderop in het systeem opnieuw op te voeren.

Doe de inlaat- en uitlaatkleppen niet snel open en stel het toestel niet aan een te groot drukdifferentieel bloot om schade te voorkomen.

(DE) Starten und Betrieb

Warning

Bevor Sie den Filter mit Druck beaufschlagen, stellen Sie sicher, dass der Filterkopf und die Filterschale ordnungsgemäß montiert sind und dass die Sperrklinke wie im Abschnitt „Wartung“ dieser Anleitung (Wartungsverfahren 6) dieser Anleitung beschrieben ordnungsgemäß ausgerichtet ist.

1. Einlassventil langsam öffnen, damit die Einheit allmählich mit Druck beaufschlagt wird.
2. Auslassventil langsam öffnen, damit nachgeschaltete Rohrleitungen erneut mit Druck beaufschlagt werden.

Einlass- und Auslassventil nicht schnell öffnen. Einheit nicht extremen Druckunterschieden aussetzen. Gefahr von Schäden.

(FR) Démarrage et exploitation

Warning

Avant de mettre le filtre sous pression, vérifiez que la tête et la cuve sont montées correctement et que l'indicateur de verrouillage est bien aligné, comme indiqué dans la section de maintenance (procédure de maintenance 6) du présent manuel.

1. Ouvrez lentement la soupape d'admission pour mettre progressivement l'unité sous pression.
2. Ouvrez lentement la soupape de refoulement pour faire remonter la pression des conduits en aval.

Ne pas ouvrir la soupape d'admission ou la soupape de refoulement trop rapidement, ne pas soumettre l'unité à une pression différentielle trop importante. Vous risqueriez d'endommager l'équipement.

(ES) Puesta en marcha y funcionamiento

Warning

Antes de presurizar el filtro, asegúrese de que la cabeza y el cilindro están correctamente ajustados y que el detalles de bloqueo está alineado de la forma apropiada, como se muestra en la sección de mantenimiento (procedimiento de mantenimiento 6) de este manual.

1. Abra lentamente la válvula de admisión para presurizar gradualmente la unidad.
2. Abra lentamente la válvula de descarga para volver a presurizar las tuberías aguas abajo.

Para evitar daños, no abra bruscamente las válvulas de admisión o de descarga ni someta la unidad a una diferencia de presiones excesiva.

(IT) Avvio e funzionamento

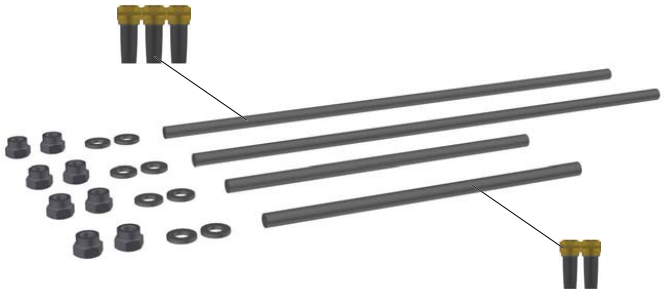
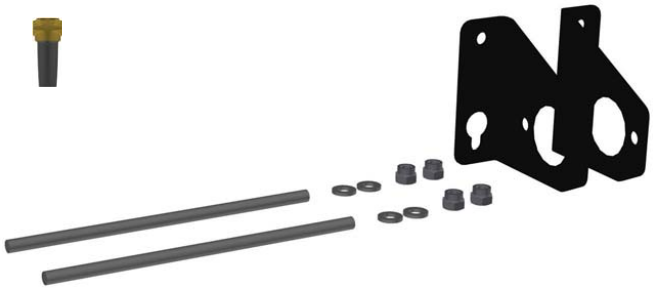
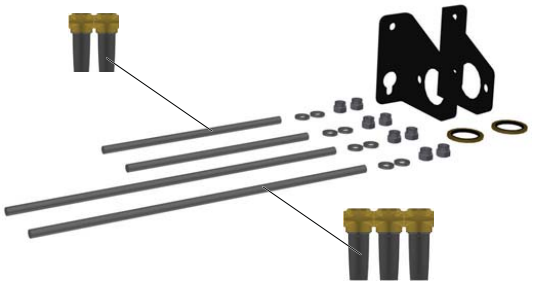
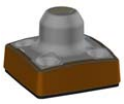
Warning

Prima di pressurizzare il filtro assicurarsi che la testa e il bicchiere siano montati correttamente e che l'elemento di bloccaggio sia allineato in maniera adeguata, come indicato nella sezione relativa alla manutenzione (procedura di manutenzione 6) del presente manuale.

1. Aprire lentamente la valvola di mandata per aumentare gradualmente la pressione nell'unità.
2. Aprire lentamente la valvola di scarico per pressurizzare nuovamente i tubi a valle.

Non aprire rapidamente le valvole di mandata o scarico né sottoporre l'unità a una differenza di pressione eccessiva; rischio di danni.

Accessories / Spare Parts (Service Kits)
Toebehoren / reserveonderdelen (onderhoudskits), Zubehör / Ersatzteile (Wartungssätze), Accessoires / Pièces de rechange (kits d'entretien), Accesorios / Piezas de repuesto (kits de mantenimiento), Accessori / Parti di ricambio (kit di manutenzione)

Filter Models	Catalogue Number	Contents
010	TRK1-2	
015 - 020	TRK2-2	
025 - 030	TRK3-2	
035- 045	TRK4-2	
050- 055	TRK5-2	
010	MBK1-1	
015 - 020	MBK2-1	
025 - 030	MBK3-1	
035 - 045	MBK4-1	
050 - 055	MBK5-1	
010	MBK1-2	
015 - 020	MBK2-2	
025 - 030	MBK3-2	
035 - 045	MBK4-2	
050 - 055	MBK5-2	
010 - 055	EM1	
010 - 055	PD15NO	
010 - 030	DPI-K	
035 - 055	ZD90GL	

Maintenance
Onderhoud, Wartung, Maintenance, Mantenimiento, Manutenzione

(EN) **Maintenance Intervals**
To ensure optimal filter performance the AO, AA, grade elements require changing every 12 months along with the automatic drain.

The performance of the ACS element is based upon a maximum oil vapour inlet concentration of 0.018mg/m^3. Replace the carbon filter element upon detection of vapour, odour or taste.

Unlike oil aerosol removal filters which are changed annually to guarantee compressed air quality, the lifetime of an oil vapour removal filter can be attributed to various factors and require more frequent changes (unless OVR is used which is sized for 6000hrs life):

Factors affecting the lifetime of adsorption filters

Oil vapour concentration

The higher the inlet concentration of oil vapour, the faster the activated carbon capacity will expire.

Bulk oil

Adsorption filters are designed to remove oil vapour and odours, not liquid oil or aerosols. Poorly maintained or non-existent pre-filtration will cause the OVR filter capacity to quickly expire.

Temperature

Oil vapour content increases exponentially to inlet temperature, reducing element life. Additionally, as temperature increases, the adsorption capacity decreases, again reducing element life.

Relative Humidity or Dewpoint

Wet air reduces the adsorptive capacity of the carbon.

Compressor oil changes

When compressor oil is changed, the new lubricant burns off “light ends” which increases the oil vapour content for hours or even weeks afterwards. This increase in oil vapour content is adsorbed by the OVR filter, significantly reducing its adsorptive life.

(NL) Onderhoudsintervallen
Voor een optimale filterprestatie moeten de elementen van graad AO, AA, om de 12 maanden worden vervangen, samen met de automatische afvoer.

The performance of the ACS element is based upon a maximum oil vapour inlet concentration of 0.018mg/m^3. Replace the carbon filter element upon detection of vapour, odour or taste.

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(DE) **Wartungsintervalle**
Um eine optimale Filterleistung zu gewährleisten, müssen die Elemente der Klassen AO, AA alle 12 Monate zusammen mit dem automatischen Ablass ausgetauscht werden.

Im Gegensatz zu Filtern für die Abscheidung von Ölaerosolen, die zur Gewährleistung der Druckluftqualität jährlich ausgetauscht werden, kann die Lebensdauer eines Ölnebel-Abscheidefilters von zahlreichen verschiedenen Faktoren abhängen, die einen häufigeren Austausch erfordern. Negative Faktoren für die Lebensdauer von Adsorptionsfiltern sind:

Ölnebel-Konzentration: Je höher die Ölnebel-Einlasskonzentration ist, desto schneller ist die Kapazität der Aktivkohle erschöpft.

Öl: Adsorptionsfilter sind entwickelt worden, um Ölnebel und Gerüche abzuscheiden, sie dienen nicht der Entfernung von flüssigem Öl oder Aerosolen. Schlecht gewartete oder nicht vorhandene Vorfiltration führt dazu, dass die OVR-Filterkapazität für die Ölnebelabscheidung schnell erschöpft ist.

Temperatur: Der Ölnebelgehalt steigt exponentiell zur Einlasstemperatur an und verringert so die Lebensdauer des Filterelements. Zudem verringert sich mit steigender Temperatur auch die Adsorptionskapazität, was ebenfalls die Lebensdauer des Filterelements verkürzt.

Relative Feuchtigkeit oder Taupunkt: Feuchte Luft verringert die Adsorptionsfähigkeit der Aktivkohle.

Austausch des Kompressoröls: Bei einem Austausch des Kompressoröls werden durch den neuen Schmierstoff „lose Enden“ abgebrannt, was zu einem Anstieg des Ölnebelgehalts für Stunden oder sogar Wochen führt. Dieser erhöhte Ölnebelgehalt wird vom OVR-Filter für die Ölabscheidung adsorbiert, wodurch sich die Lebensdauer des Filters erheblich reduziert.

Die Filterelementleistung nach ACS/AC basiert auf einer maximalen Ölnebel-Einlasskonzentration von 0,018 mg/m^3, mit einer Drucklufttemperatur von 21 °C und einem Drucktaupunkt von -40 °C.
Diese Elemente sollten ausgetauscht werden, wenn Ölnebel, Gerüche oder Geschmack festgestellt werden.

(FR) **Intervalles de maintenance**
Pour assurer des performances de filtrage optimales, les cartouches de grade AO, AA, doivent être changées tous les 12 mois, en même temps que le purgeur automatique.

Contrairement aux filtres de suppression des aérosols d'huile remplacés chaque année pour garantir la qualité de l'air comprimé, la durée de vie d'un filtre d'élimination des vapeurs d'huile dépend de différents facteurs et nécessite des remplacements plus fréquents. Facteurs influant sur la durée de vie des filtres d'adsorption :

concentration de vapeur d'huile - Plus la concentration d'entrée des vapeurs d'huile est élevée, plus vite la capacité d'absorption du charbon actif est épuisée.

présence massive d'huile - les filtres à adsorption sont conçus pour éliminer les vapeurs et les odeurs d'huile, et non pas l'huile ou les aérosols. Si la pré-filtration est mal entretenue, voire inexistante, le filtre OVR devient rapidement inefficace.

Température - la teneur en vapeurs d'huile augmente de façon exponentielle selon la température d'admission, réduisant ainsi la durée de vie de l'élément. En outre, plus la température augmente, plus la capacité d'adsorption diminue, ce qui réduit encore la durée de vie de l'élément.

Humidité relative ou point de rosée - l'air humide réduit la capacité d'adsorption du carbone.

Vidanges d'huile de compresseur - lorsque l'huile de compresseur est changée, le nouveau lubrifiant brûle « des extrémités légères » ce qui augmente la teneur en vapeur d'huile pendant des heures, voire des semaines après. Cette augmentation de la teneur en vapeur d'huile est adsorbée par le filtre OVR, réduisant de manière significative la durée de vie d'adsorption.

Les performances des filtres ACS/AC sont basées sur une concentration maximale des vapeurs d'huile d'entrée de 0,018 mg/m^3, avec de l'air comprimé à 21°c et un point de rosée sous pression de -40°c PDP.
Ces éléments doivent être remplacés en cas de détection de vapeur, d'odeur ou de goût.

(ES) **Intervalos de mantenimiento**
Para asegurar un óptimo rendimiento del filtro, es necesario cambiar los elementos de grado AO, AA cada 12 meses junto con el drenaje automático.

A diferencia de los filtros de eliminación de aerosoles de aceite que se cambian anualmente con el fin de garantizar la calidad del aire comprimido, la vida útil de un filtro de eliminación de vapores de aceite puede atribuirse a diversos factores y requiere cambios más frecuentes. Los factores que afectan a la vida útil de los filtros de adsorción son:

Concentración de vapores de aceite - Cuanto mayor sea la concentración de vapores de aceite en la entrada, más rápidamente se agotará la capacidad del carbón activado.

Aceite - Los filtros de adsorción se han diseñado para eliminar los vapores y los olores de aceite, pero no los aerosoles ni el aceite líquidos. Si no existe prefiltrado o su mantenimiento es inadecuado, se agotará rápidamente la capacidad del filtro OVR.

Temperatura - El contenido de vapores de aceite aumenta de forma exponencial a la temperatura de admisión, lo que reduce la vida útil del elemento. Asimismo, a medida que aumenta la temperatura disminuye la capacidad de adsorción, lo que una vez más reduce la vida útil del elemento.

Humedad relativa o punto de condensación - El aire húmedo reduce la capacidad de adsorción del carbón.

Cambios del aceite del compresor - Cuando se cambia el aceite del compresor, se evaporan las fracciones más ligeras del aceite nuevo, lo cual aumenta el contenido de vapores de aceite durante las horas o incluso las semanas posteriores. El filtro OVR adsorbe este aumento del contenido de vapores de aceite, lo que reduce considerablemente la vida útil de adsorción.

El rendimiento de los elementos ACS/AC se calcula tomando como base una concentración de entrada de vapores de aceite máxima de 0,018 mg/m^3, con aire comprimido a 21 °C y un punto de condensación de presión a -40 °C PDP.
Estos elementos deberán sustituirse si se detecta vapor, olor y gusto.

(IT) **Intervalli di manutenzione**
Per garantire prestazioni ottimali del filtro è necessario sostituire gli elementi filtranti di grado AO, AA ogni 12 mesi, insieme allo scarico automatico.

A differenza dei filtri per l'eliminazione di aerosol, che vengono cambiati una volta all'anno per garantire la qualità dell'aria compressa, i filtri per la rimozione dei vapori d'olio hanno una durata variabile e devono essere sostituiti più frequentemente. Fattori che influenzano la durata dei filtri ad adsorbimento:

Concentrazione di vapori d'olio - La capacità del carbone attivo si esaurisce tanto più rapidamente quanto maggiore è la concentrazione di vapori d'olio in ingresso.

Oli misti - I filtri ad adsorbimento sono studiati per eliminare vapori d'olio e odori, ma non oli liquidi e aerosol. La scarsa manutenzione o la mancanza di prefiltrazione causano il rapido esaurimento della capacità dei filtri OVR.

Temperatura - Il contenuto di vapori d'olio aumenta proporzionalmente con la temperatura di mandata, riducendo la durata del filtro. Inoltre, all'aumentare della temperatura, diminuisce la capacità di adsorbimento e ancora una volta si riduce la durata del filtro.

Umidità relativa o punto di rugiada - L'aria umida riduce la capacità di adsorbimento del carbone.

Cambio olio del compressore - Quando si cambia l'olio del compressore, il nuovo lubrificante brucia completamente gli idrocarburi leggeri provocando l'aumento del contenuto di vapori d'olio per alcune ore o addirittura per settimane. Il maggiore contenuto di vapori d'olio viene assorbito dal filtro OVR e provoca una riduzione significativa della durata di adsorbimento.

Le prestazioni degli elementi ACS / AC si basano su una concentrazione massima dei vapori d'olio in ingresso pari a 0,018 mg/m^3 con aria compressa a 21°C e un punto di rugiada in pressione di -40°C PDP.
Questi elementi devono essere sostituiti non appena vengono percepiti vapori, odori o sapori.

(EN) **Maintenance Procedure 1**

Slowly close the inlet (1) and outlet (2) valves and depressurise the filter (3) using the drain.

(NL) **Onderhoudsprocedure 1**

Sluit de inlaat- (1) en uitlaatkleppen (2) langzaam en haal de druk van het filter (3) af met de afvoer.

(DE) **Wartungsverfahren 1**

Einlass- (1) und Auslassventile (2) langsam schließen und den Druck vom Filter (3) mit dem Ablass ablassen.

(FR) **Procédure de maintenance 1**

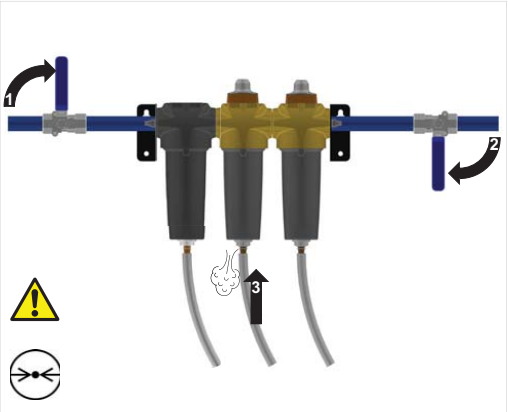
Fermez lentement la soupape d'admission (1) et la soupape de refoulement (2), puis dépressurisez le filtre (3) à l'aide du purgeur.

(ES) **Procedimiento de mantenimiento 1**

Cierre lentamente las válvulas de admisión (1) y de descarga (2) y despresurize el filtro (3) utilizando el drenaje.

(IT) **Procedura di manutenzione 1**

Chiudere lentamente le valvole di mandata (1) e di scarico (2) e depressurizzare il filtro (3) tramite lo scarico.



(EN) **Maintenance Procedure 2**

Unscrew the filter bowl (1 & 2) and remove the used element (3)

(NL) **Onderhoudsprocedure 2**

Schroef de filterkom (1 & 2) los en verwijder het gebruikte element (3)

(DE) **Wartungsverfahren 2**

Filterschale lösen (1 & 2) und das verbrauchte Element entfernen (3)

(FR) **Procédure de maintenance 2**

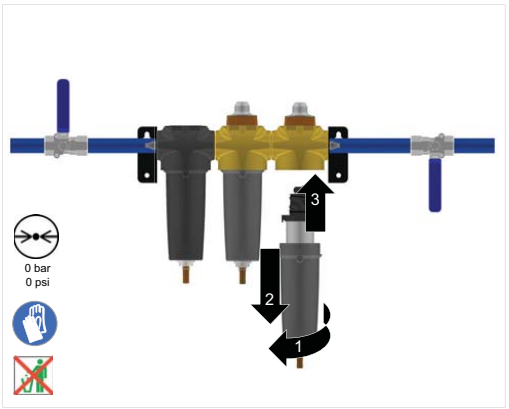
Dévissez la cuve du filtre (1 et 2) et retirez la cartouche usagée (3)

(ES) **Procedimiento de mantenimiento 2**

Desenrosque el cilindro del filtro (1 y 2) y retire el elemento utilizado (3)

(IT) **Procedura di manutenzione 2**

Svitare il bicchiere del filtro (1 e 2) e rimuovere l'elemento filtrante usato (3)



(EN) **Maintenance Procedure 3**

Unscrew the automatic drain (1) and discard (2). Fit the new drain (3) and tighten (4).

(NL) **Onderhoudsprocedure 3**

Schroef de automatische afvoer (1) los en verwijder hem (2). Plaats de nieuwe afvoer (3) en draai hem vast (4).

(DE) **Wartungsverfahren 3**

Den automatischen Ablass abschrauben (1) und entsorgen (2). Den neuen Ablass anbringen (3) und festziehen (4).

(FR) **Procédure de maintenance 3**

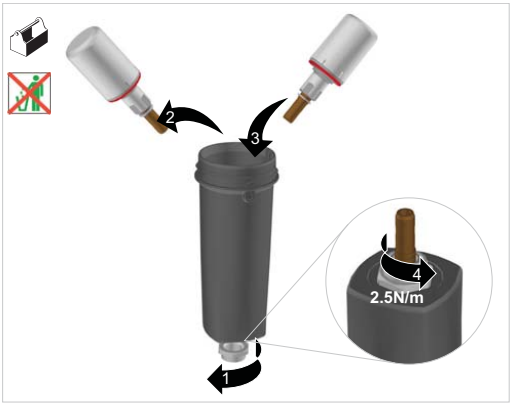
Dévissez le purgeur automatique (1) puis mettez-le au rebut (2). Montez le nouveau purgeur (3) puis serrez (4).

(ES) **Procedimiento de mantenimiento 3**

Desenrosque el drenaje automático (1) y deséchelo (2). Instale el nuevo drenaje (3) y apriételo (4).

(IT) **Procedura di manutenzione 3**

Svitare lo scarico automatico (1) ed eliminarlo (2). Montare lo scarico nuovo (3) e serrare (4).



(EN) **Maintenance Procedure 4**

Insert the new element into the filter bowl ensuring that the lugs are seated correctly in the grooves.

(NL) **Onderhoudsprocedure 4**

Steek het nieuwe element in de filterkom, waarbij de lipjes goed in de groeven steken.

(DE) **Wartungsverfahren 4**

Das neue Filterelement in die Filterschale einsetzen und sicherstellen, dass die Führungen richtig in den Nuten sitzen.

(FR) **Procédure de maintenance 4**

Insérez la nouvelle cartouche dans la cuve en vérifiant que les languettes sont bien enfoncées dans les encoches.

(ES) **Procedimiento de mantenimiento 4**

Inserte el nuevo elemento en el cilindro del filtro, asegurándose de que los anillos están correctamente asentados en las ranuras.

(IT) **Procedura di manutenzione 4**

Inserire il nuovo elemento filtrante nel bicchiere del filtro assicurandosi che le alette siano inserite correttamente nelle scanalature.

(EN) **Maintenance Procedure 5**

Replace the O-ring located in the filter head with the new O-ring provided.

Caution **Ensure to lubricate the O-ring and threads with a suitable acid free petroleum jelly.**

(NL) **Onderhoudsprocedure 5**

Vervang de O-ring in de filterkop door de nieuwe meegeleverde O-ring.

Caution **Zorg ervoor dat de O-ring en de draden worden gesmeerd met een geschikt soort zuurloze vaseline.**

(DE) **Wartungsverfahren 5**

Den O-Ring im Filterkopf durch den mitgelieferten neuen O-Ring ersetzen..

Caution **Sicherstellen, den O-Ring und das Gewinde mit geeigneter säurefreier Vaseline zu schmieren.**

(FR) **Procédure de maintenance 5**

Remplacez le joint torique qui se trouve dans la tête du filtre par le nouveau joint fourni..

Caution **Lubrifiez le joint torique et le filetage à l'aide d'une gelée de pétrole sans acide.**

(ES) **Procedimiento de mantenimiento 5**

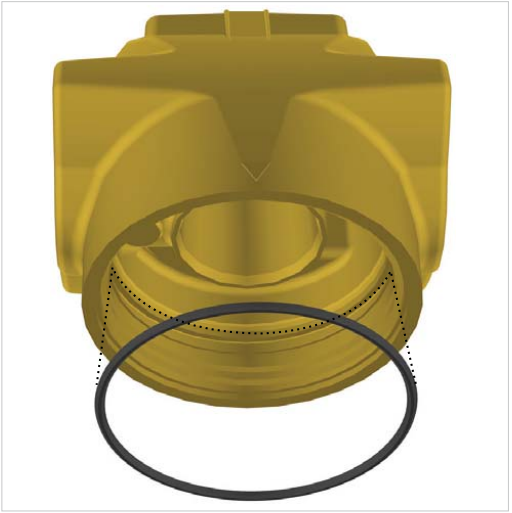
Sustituya la junta tórica localizada en la cabeza del filtro por la nueva junta tórica proporcionada.

Caution **Asegúrese de lubricar la junta tórica y las roscas con un gel ácido sin petróleo apropiado.**

(IT) **Procedura di manutenzione 5**

Sostituire l'O-ring situato nella testa del filtro con il nuovo O-ring fornito in dotazione.

Caution **Assicurarsi che l'O-ring e le filettature siano lubrificati con vaselina senza acido idonea.**



(EN) **Maintenance Procedure 6 (a)**

Refit the filter bowl and head ensuring that the threads are fully engaged and the locking details are aligned.

Note: To ensure that the bowl is fully engaged into the head, the 010-030 bowl requires 360°of rotation until the thread stop and 720° for the 035-045 bowl

(NL) **Onderhoudsprocedure 6 (a)**

Zet de filterkom en de kop terug op hun plaats en zorg ervoor dat de draden volledig gegrepen zijn en de vergrendeling uitgelijnd is.

Opmerking: Zorg ervoor dat de kom volledig in de kop steekt. De 010-030 kom moet 360° gedraaid worden, tot aan de draadstop en 720° voor de 035-045 kom

(DE) **Wartungsverfahren 6 (a)**

Die Filterschale und den Filterkopf wieder anbringen und dabei sicherstellen, dass die Gewinde vollständig fassen und die Sperrklinken richtig ausgerichtet sind.

Hinweis: Um sicherzustellen, dass die Filterschale vollständig im Filterkopf sitzt, müssen die Schalen 005 bis 030 um 360° und die Schalen 035 bis 045 um 720° gedreht werden, bis das Gewinde stoppt.

(FR) **Procédure de maintenance 6 (a)**

Remontez la cuve et la tête du filtre en vérifiant que le filetage est vissé à fond et que les indicateurs de verrouillage sont alignés.

Remarque: pour vérifier que la cuve est bien enfoncée dans la tête, le modèle de cuve 005-030 doit opérer une rotation de 360°jusqu'à la fin du filetage et le modèle de cuve 035-045 doit opérer une rotation de 720°.

(ES) **Procedimiento de mantenimiento 6 (a)**

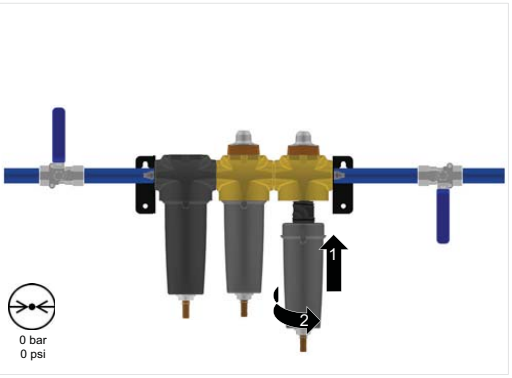
Reinstale el cilindro y la cabeza del filtro, asegurándose de que las roscas están completamente acopladas y que los detalles de bloqueo están alineados.

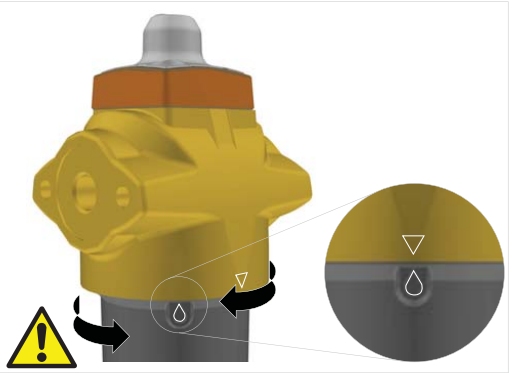
Nota: Para asegurarse de que el filtro está completamente acoplado a la cabeza, el cilindro de 010-030 necesita 360°de rotación, hasta que la rosca se detenga y 720° para el el cilindro de 035-045.

(IT) **Procedura di manutenzione 6 (a)**

Rimontare il bicchiere e la testa del filtro assicurandosi che le filettature siano completamente inserite e gli elementi di bloccaggio siano allineati.

Nota: per assicurarsi che il bicchiere sia completamente inserito nella testa, è necessaria una rotazione di 360° fino al termine della filettatura per il bicchiere 010-030 e una rotazione di 720° per il bicchiere 035-045.





(EN) **Maintenance Procedure 7**

Attach the element change date label to the filter bowl and write on the date the element is to be replaced. i.e 12 months after element change.

Caution **Do not use solvents or alcohol to clean the labels as this could cause damage.**

(NL) **Onderhoudsprocedure 7**

Plak het etiket met de vervangingsdatum aan de kom en schrijf de datum erop waarop het element weer vervangen moet worden, ofwel 12 maanden later..

Caution **Gebruik geen oplosmiddelen of alcohol om de etiketten te reinigen, omdat dit schade kan veroorzaken.**

(DE) **Wartungsverfahren 7**

Den Austauschdatum-Aufkleber des Filterelements an der Filterschale anbringen und darauf das Datum notieren, zu dem das Filterelement ausgetauscht werden muss (d.h. 12 Monate nach dem Austausch des Elements).

Caution **Zur Reinigung der Aufkleber keine Lösungsmittel oder Alkohol verwenden. Gefahr von Schäden.**

(FR) **Procédure de maintenance 7**

Attachez l'étiquette de date de remplacement de la cartouche à la cuve de filtre et notez la date du prochain remplacement, dans 12 mois.

Caution **Ne pas utiliser de solvants ou d'alcool pour nettoyer les étiquettes car cela peut endommager l'équipement.**

(ES) **Procedimiento de mantenimiento 7**

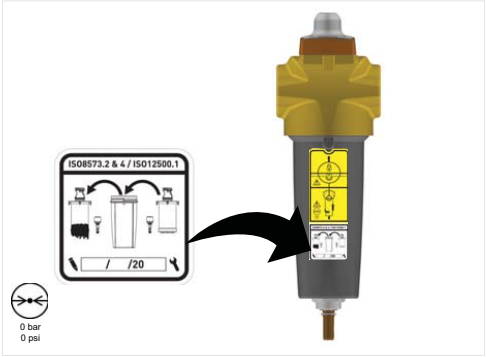
Ponga la etiqueta de cambio de fecha en el cilindro del filtro y escriba en ella la fecha en la que hay que sustituir el elemento; i.e. 12 meses después del cambio de elemento.

Caution **No utilice disolventes o alcohol para limpiar las etiquetas, puesto que podría dañarlas.**

(IT) **Procedura di manutenzione 7**

Attaccare l'etichetta della data di sostituzione dell'elemento filtrante al bicchiere del filtro riportando la data in cui l'elemento deve essere sostituito, ovvero 12 mesi dopo la sostituzione dell'elemento.

Caution **Non usare solventi o alcol per pulire le etichette poiché potrebbero provocare danni.**



(EN) -*Maintenance Procedure 8

Open the inlet valve (1) slowly to gradually pressurise the unit, slowly open outlet valve (2) to re-pressurise the downstream piping.

Warning

Do not open inlet or outlet valves rapidly or subject unit to excessive pressure differential as damage may occur.

(NL) **Onderhoudsprocedure 8**

Open de inlaatklep (1) langzaam om de druk in het toestel geleidelijk op te voeren. Zet de uitlaatklep (2) langzaam open om de druk in de uitgaande leidingen opnieuw op te voeren.

Warning

Doe de inlaat- en uitlaatkleppen niet snel open en stel het toestel niet aan een te groot drukdifferentieel bloot om schade te voorkomen.

(DE) **Wartungsverfahren 8**

Einlassventil langsam öffnen (1), damit die Einheit allmählich mit Druck beaufschlagt wird. Auslassventil langsam öffnen (2), damit nachgeschaltete Rohrleitungen erneut mit Druck beaufschlagt werden.

Warning

Einlass- und Auslassventil nicht schnell öffnen. Einheit nicht extremen Druckunterschieden aussetzen. Gefahr von Schäden.

(FR) **Procédure de maintenance 8**

Ouvrez la soupape d'admission (1) pour mettre progressivement l'unité sous pression, puis ouvrez lentement la soupape de refoulement (2) pour repressuriser les conduits en aval..

Warning

Ne pas ouvrir la soupape d'admission ou la soupape de refoulement trop rapidement. Ne pas soumettre l'unité à une pression différentielle trop importante. Vous risqueriez d'endommager l'équipement.

(ES) **Procedimiento de mantenimiento 8**

Abra lentamente la válvula de admisión (1) para presurizar gradualmente la unidad. Abra lentamente la válvula de descarga (2) para represurizar las tuberías aguas abajo..

Warning

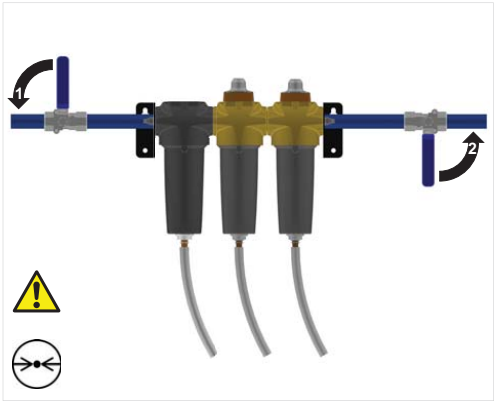
No abra bruscamente las válvulas de admisión o de descarga ni someta la unidad a una diferencia de presiones excesiva, ya que podría ocasionar daños.

(IT) **Procedura di manutenzione 8**

Aprire lentamente la valvola di mandata (1) per aumentare gradualmente la pressione nell'unità, aprire lentamente la valvola di scarico (2) per pressurizzare nuovamente i tubi a valle.

Warning

Non aprire rapidamente le valvole di mandata o scarico né sottoporre l'unità a una differenza di pressione eccessiva; rischio di danni.



FI YHDEN VUODEN ILMANLAATUTAKUU

Ilmanlaatusi taataan 1 vuodeksi ja takuu uusitaan aina vuosittaisen suodatinelementin vaihdon yhteydessä.
Vuosittainen suodatinelementin vaihtaminen varmistaa

- ihanteellisen suorituskyvyn
- kansainvälisten standardien vaatimukset täyttävän ilmanlaadun
- tuotantovälineiden, henkilökunnan ja menetelmien suojaamisen
- alhaiset käyttökustannukset
- lisääntyneen tuottavuuden ja tuoton
- mielenrauhan

SV ETT ÅRS LUFTKVALITETSGARANTI

Din luftkvalitet garanteras under ett år och garantin förnyas vid varje årligt filterelementbyte.
Årliga filterelementbyten säkerställer att:

- Optimala prestanda upprätthålls
- Luftkvaliteten fortsätter uppfylla internationella standarder
- Skydd för nedströms utrustning, personal och processer
- Låga driftkostnader
- Ökad produktivitet och lönsamhet
- Du själv får sinnesfrid

NO ETT ÅRS LUFTKVALITETSGARANTI

Din luftkvalitet er garantert for 1 år og garantien vil bli fornyet ved hver årlige utskiftning av filterelement.
Årlig utskiftning av filterelement sikrer:

- Optimal ytelse opprettholdes
- Luftkvalitet som til enhver tid møter internasjonale standarder
- Beskyttelse av nedstrøms utstyr, personell og prosesser
- Lave driftskostnader
- Økt produktivitet og lønnsomhet
- Sinnsro

DA ET ÅRS GARANTI PÅ LUFTKVALITET

Der gives 1 års luftkvalitetsgaranti, og den bliver fornyet ved hver årlig udskiftning af filterelementet.
Årlig udskiftning af filterelementet sikrer:

- At optimal ydelse bevares
- At luftkvaliteten fortsat opfylder de internationale standarder
- Beskyttelse af udstyr, personer og processer længere fremme
- Lave driftsomkostninger
- Øget produktivitet og rentabilitet
- Ro i sinde

EL ΕΓΓΥΗΣΗ ΠΟΙΟΤΗΤΑΣ ΑΕΡΑ ΕΝΟΣ ΕΤΟΥΣ

Παρέχεται εγγύηση για την ποιότητα του αέρα σας για 1 έτος, η οποία ανανεώνεται με κάθε ετήσια αλλαγή στοιχείου φίλτρου.
Με τις ετήσιες αλλαγές στοιχείου φίλτρου διασφαλίζονται τα εξής:

- Ότι θα διατηρείται η βέλτιστη απόδοση
- Ότι η ποιότητα του αέρα συνεχίζει να ικανοποιεί τα διεθνή πρότυπα
- Προστασία του κατάντι εξοπλισμού, του προσωπικού και των διαδικασιών
- Χαμηλές δαπάνες λειτουργίας
- Αυξημένη παραγωγικότητα και κερδοφορία
- Ξενοιασιά

PT GARANTIA DE QUALIDADE DO AR DE UM ANO

A qualidade do seu ar tem garantia de um ano, a qual será renovada a cada substituição anual do elemento do filtro.
As substituições anuais do elemento do filtro asseguram que:

- É mantido o desempenho ideal
- A qualidade do ar continua a respeitar as normas internacionais
- Protecção dos processos, do pessoal e do equipamento a jusante
- Baixos custos operacionais
- maior produtividade e rentabilidade
- paz de espírito

(FI) Mallikoodiesimerkki:

Malli						
Elementin laatu WS AO AA ACS	Erittäin energiatehokas elementti P	Mallin koko 3-numeroinen koodi (kuten alla)	Liitäntäaukon koko A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Kierretyyppi G = BSPP N = NPT	Vedenpoisto F = Uimuri M = Manuaalinen	Paine-eroilmaisin X = Ei mitään I = Ongelmanvalvonta
AA	P	030	A	G	F	I

(SV) Exempel på modellkodning:

Modell						
Elementklass WS AO AA ACS	Energisnålt premiumelement P	Modellstorlek Tresiffrig kod enligt nedan	Portstorlek A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Gängtyp G = BSPP N = NPT	Dräneringsalternativ F = Flyt M = Handbok	DP-indikator X = Ingen I = Incidentövervakning
AA	P	030	A	G	F	I

(NO) Eksempel på modellkoding:

Modell						
Elementgradering WS AO AA ACS	Premium energieffektivt element P	Modellstørrelse Tresifret kode som vist nedenfor	Portstørrelse A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Gjengetype G = BSPP N = NPT	Dreneringsmulighet F = Flyt M = Manuell	DP-indikator X = Ingen I = Hendelsesmonitor
AA	P	030	A	G	F	I

(DA) Eksempel på kodning af model:

Model						
Elementkvalitet WS AO AA ACS	Energieffektivt element i premiumkvalitet P	Modelstørrelse 3-cifret kode som vist nedenfor	Portstørrelse A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Gevindtype G = BSPP N = NPT	Afløbsmulighed F = Flyde M = Manuel	DP indikator X = Ingen I = Blokeringsindikator
AA	P	030	A	G	F	I

(EL) Παράδειγμα κωδικοποίησης μοντέλου:

Μοντέλο						
Βαθμίδα στοιχείου	Premium ενεργειακά αποδοτικό στοιχείο	Μέγεθος μοντέλου	Μέγεθος θύρας	Τύπος σπειρώματος	Επιλογή αποστράγγισης	Δείκτης DP
WS AO AA ACS	P	3ψήφιος κωδικός όπως φαίνεται παρακάτω	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Φλοτέρ M = Μη αυτόματο	X = Κανένα I = Δείκτης συμβάντων
AA	P	030	A	G	F	I

(PT) Exemplo da codificação do modelo:

Modelo						
Grau do elemento	Elemento de eficiência energética de excelência	Dimensão do modelo	Dimensão da entrada	Tipo de rosca	Opção de drenagem	Indicador de pressão diferencial
WS AO AA ACS	P	Código de 3 dígitos como indicado abaixo	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Boia M = Manual	X = Nenhum I = Monitor de incidentes
AA	P	030	A	G	F	I

(FI) Tuotevalinta

Virtaamat on tarkoitettu käytettäväksi paineessa 7 bar g (100 psi g), olosuhteiden ollessa 20 °C, 1 bar/a, 0 % suhteellinen vesihöyryn paine.
Muiden paineiden virtausarvoja varten noudata annettuja kertoimia.

(SV) Val av produkt

Uppgivna flöden är för drift vid 7 bar g (100 psi g) med referens till 20°C, 1 bar a, 0 % relativt vattenångtryck.
Använd angivna korrektionsfaktorer till flöden vid andra tryck.

(NO) Produktvalg

Oppgitte strømningshastigheter er for drift ved 7 bar (g) (100 psi g) med referanse til 20 °C, 1 bar (a), 0 % relativt vanndamptrykk.
Benytt korrigeringsfaktorene under for å finne strømningshastigheter ved andre trykk.

(DA) Produktudvalg

De anførte flow gælder for drift ved 7 bar g (100 psi g) med referenceværdierne 20°C, 1 bar a, 0 % relativt vanddamptryk.
Ved flow med andre tryk skal de viste korrektionsfaktorer anvendes.

(EL) Επιλογή προϊόντος

Οι αναφερθείσες παροχές είναι για λειτουργία σε 7 bar g (100 psi g) με αναφορά στους 20°C, 1 bar a, σχετική πίεση υδρατμών 0%.
Για ροές σε άλλες τιμές πίεσης, εφαρμόστε τους εμφανιζόμενους συντελεστές διόρθωσης.

(PT) Selecção de Produtos

Os débitos referidos são para um funcionamento a 7 bar g (100 psi g) com referência a 20°C, 1 bar a, 0% de pressão relativa do vapor de água.
Para débitos a pressões diferentes, aplique os factores de correcção apresentados.

Vedenerottimen virtausnopeudet

Flödeshastigheter för vattenavskiljare, Flytrater for vannseparator, Vandudskillers gennemløbshastigheder, Παροχές διαχωριστή νερού, Taxas de fluxo do separador de água

Model					Port Size	L/s	m3/min	m3/hr	cfm
WS	P010A	[ ]	[ ]	[ ]	¼	10	0.6	36	21
WS	P010B	[ ]	[ ]	[ ]	⅜	10	0.6	36	21
WS	P010C	[ ]	[ ]	[ ]	½	10	0.6	36	21
WS	P015C	[ ]	[ ]	[ ]	½	40	2.4	144	85
WS	P020D	[ ]	[ ]	[ ]	¾	40	2.4	144	85
WS	P025D	[ ]	[ ]	[ ]	¾	110	6.6	396	233
WS	P025E	[ ]	[ ]	[ ]	1	110	6.6	396	233
WS	P030G	[ ]	[ ]	[ ]	1 ½	110	6.6	396	233
WS	P035G	[ ]	[ ]	[ ]	1 ½	350	21.0	1260	742
WS	P040H	[ ]	[ ]	[ ]	2	350	21.0	1260	742
WS	P045I	[ ]	[ ]	[ ]	2 ½	350	21.0	1260	742
WS	P050I	[ ]	[ ]	[ ]	2 ½	800	48.0	2880	1695
WS	P055I	[ ]	[ ]	[ ]	2 ½	800	48.0	2880	1695
WS	P055J	[ ]	[ ]	[ ]	3	800	48.0	2880	1695

Korjauskerroinpaine (CFP) – korjauskerroin, pienin tulopaine (vedenerottimet)

CFP – korrigeringsfaktor för minsta inloppstryck (vattenavskiljare), CFP – korreksjonsfaktor for minimums inntakstrykk (vannseparatorer), CFP – Korrektionsfaktor for minimalt indgangstryk (vandudskillere), CFP - Συντελεστής διόρθωσης ελάχιστης πίεσης εισαγωγής (διαχωριστές νερού), CFP – Pressão de admissão mínima do fator de correção (separadores de água) ,

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		4.00	2.63	2.00	1.59	1.33	1.14	1.00	0.94	0.89	0.85	0.82	0.79	0.76	0.73	0.71	0.68

Suodattimen virtausnopeudet

Flödeshastigheter för filter, Flytrater for filter, Filters gennemløbshastigheder, Παροχές φίλτρου, Taxas de fluxo do filtro

Model					Port Size	L/s	m3/min	m3/hr	cfm	Replacement Element kit		No.
[grade]	P010A	[ ]	[ ]	[ ]	¼	10	0.6	36	21	P010	[grade]	1
[grade]	P010B	[ ]	[ ]	[ ]	⅜	10	0.6	36	21	P010	[grade]	1
[grade]	P010C	[ ]	[ ]	[ ]	½	10	0.6	36	21	P010	[grade]	1
[grade]	P015C	[ ]	[ ]	[ ]	½	20	1.2	72	42	P015	[grade]	1
[grade]	P020C	[ ]	[ ]	[ ]	½	30	1.8	108	64	P020	[grade]	1
[grade]	P020D	[ ]	[ ]	[ ]	¾	30	1.8	108	64	P020	[grade]	1
[grade]	P025D	[ ]	[ ]	[ ]	¾	60	3.6	216	127	P025	[grade]	1
[grade]	P025E	[ ]	[ ]	[ ]	1	60	3.6	216	127	P025	[grade]	1
[grade]	P030G	[ ]	[ ]	[ ]	1 ½	110	6.6	396	233	P030	[grade]	1
[grade]	P035G	[ ]	[ ]	[ ]	1 ½	160	9.6	576	339	P035	[grade]	1
[grade]	P040H	[ ]	[ ]	[ ]	2	220	13.2	792	466	P040	[grade]	1
[grade]	P045I	[ ]	[ ]	[ ]	2 ½	330	19.8	1188	699	P045	[grade]	1
[grade]	P050I	[ ]	[ ]	[ ]	2 ½	430	25.8	1548	911	P050	[grade]	1
[grade]	P055I	[ ]	[ ]	[ ]	2 ½	620	37.3	2232	1314	P055	[grade]	1
[grade]	P055J	[ ]	[ ]	[ ]	3	620	37.3	2232	1314	P055	[grade]	1

[luokka] = luokka
[klass] = klass
[type] = type
[kvalitet] = kvalitet
[βαθμίδα] = βαθμίδα
[grau] = grau

Korjauskerroinpaine (CFP) – korjauskerroin, pienin tulopaine (saostus- ja kuivat hiukkassuodattimet)

CFP – korrigeringsfaktor för minsta inloppstryck (avskiljnings- och partikelfilter), CFP – korreksjonsfaktor for minimums inntakstrykk (koagulerings- og tørrpartikkelfiltre), CFP – Korrektionsfaktor for minimalt indgangstryk (koalescens- og tørpartikelfiltre), CFP - Συντελεστής διόρθωσης ελάχιστης πίεσης εισαγωγής (φίλτρα σωματιδίων προσκόλλησης και ξηρών), CFP – Pressão de admissão mínima do fator de correção (filtros coalescentes e de partículas secas)

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232	248	263	277	290
Correction Factor		2.65	1.87	1.53	1.32	1.18	1.08	1.00	0.94	0.88	0.84	0.80	0.76	0.73	0.71	0.68	0.66	0.64	0.62	0.61	0.59

(FI) Tuotteen valinta ja korjauskertoimet

Jotta osaat valita oikean vedenerottimen tai suodattimen mallin, suodattimen virtausnopeus pitää säätää järjestelmän pienimpään käyttöpaineeseen.

1 Selvitä pienin käyttöpaine ja suurin paineilman virtausnopeus vedenerottimen tai suodattimen tulossa.

2 Valitse korjauskerroinpaineiden taulukosta pienimmän käyttöpaineen korjauskerroin (pyöristä aina alaspäin; esim. 5,3 baarin tapauksessa on käytettävä 5 baarin korjauskerrointa).

3 Laske vähimmäissuodatuskapasiteetti. Vähimmäissuodatuskapasiteetti = paineilman virtausnopeus x CFP

4 Valitse pienintä suodatuskapasiteettia käyttäen vedenerottimen tai suodattimen malli yllä olevasta virtausnopeustaulukosta (valitun vedenerottimen tai suodattimen virtausnopeus pitää olla vähintään yhtä suuri kuin vähimmäissuodatuskapasiteetti).

(SV) Produkturval och korrigeringsfaktorer

För att du ska kunna välja rätt modell på vattenavskiljare eller filter måste flödeshastigheten för filtret justeras efter minsta driftstryck i systemet.

1 Mät minsta driftstryck och maximal flödeshastighet för tryckluft vid inloppet för vattenavskiljaren eller filtret.

2 Välj korrigeringsfaktor för minsta driftstryck från CFP-tabellen (runda alltid av nedåt – för 5,3 bar använder du till exempel korrigeringsfaktor 5 bar).

3 Beräkna minsta filtreringskapacitet. Minsta filtreringskapacitet = flödeshastighet för tryckluft x CFP

4 Använd den minsta filtreringskapaciteten för att välja en modell på vattenavskiljare eller filter från de ovanstående tabellerna med flödeshastighet (den vattenavskiljare eller det filter du väljer måste ha en flödeshastighet som motsvarar eller är högre än den minsta filtreringskapaciteten).

(NO) Produktutvalg og korreksjonsfaktorer

Flytraten for filteret må være justert til minimum driftstrykk for systemet for å korrekt kunne velge vannseparator eller filtermodell.

1 Oppnå minimum driftstrykk og maksimum flytrate for komprimert luft ved inntaket til vannseparatoren eller filteret.

2 Velg korreksjonsfaktoren for minimum driftstrykk fra CFP-tabellen (rund alltid ned: f.eks. for 5,3 bar bør du bruke korreksjonsfaktoren for 5 bar)

3 Beregn minimum filtreringskapasitet. Minimum filtreringskapasitet = flytrate for komprimert luft x CFP

4 Bruk minimum filtreringskapasitet når du velger en vannseparator eller filtermodell fra flytratetabellene ovenfor (valgt vannseparator eller filter må ha en flytrate lik eller høyere enn minimum filtreringskapasitet).

(DA) Produktvalg og korrektionsfaktorer

For at vælge den rigtige vandudskiller og filtermodel skal filterets gennemløbshastighed justeres i forhold til systemets mindste driftstryk.

1 Det mindste driftstryk og den maksimale luftgennemløbshastighed kan aflæses ved vandudskillerens eller filterets indløb.

2 Vælg korrektionsfaktoren for det mindste driftstryk på CFP-tabellen (rund altid ned – ved f.eks. 5,3 bar, bruges korrektionsfaktor på 5 bar)

3 Beregn den minimale filtreringskapacitet. Minimal filtreringskapacitet = trykluftstrømning x CFP

4 Brug den minimale filtreringskapacitet til at vælge en vandudskiller eller filtermodel på tabellen over gennemløbshastigheder ovenfor (valgt vandudskiller eller filter skal have en gennemløbshastighed, der er lig med eller større end den minimale filtreringskapacitet).

(EL) Επιλογή προϊόντος και συντελεστές διόρθωσης

Για να επιλέξετε σωστά ένα μοντέλο διαχωριστή νερού ή φίλτρου, η παροχή του φίλτρου πρέπει να ρυθμιστεί ανάλογα με την ελάχιστη πίεση λειτουργίας του συστήματος.

1 Μάθετε ποιες είναι οι τιμές της ελάχιστης πίεσης λειτουργίας και της μέγιστης παροχής πεπιεσμένου αέρα του διαχωριστή νερού ή του φίλτρου.

2 Επιλέξτε τον συντελεστή διόρθωσης για την ελάχιστη πίεση λειτουργίας από τον πίνακα CFP (στρογγυλοποιώντας πάντα προς τα κάτω, π.χ. για 5,3 bar, χρησιμοποιήστε συντελεστή διόρθωσης 5 bar)

3 Υπολογίστε την ελάχιστη ικανότητα φιλτραρίσματος. Ελάχιστη ικανότητα φιλτραρίσματος = Παροχή πεπιεσμένου αέρα x CFP

4 Χρησιμοποιήστε την ελάχιστη ικανότητα φιλτραρίσματος για να επιλέξετε ένα μοντέλο διαχωριστή νερού ή φίλτρου από τους παραπάνω πίνακες παροχών (ο διαχωριστής νερού ή το φίλτρο που θα επιλέξετε πρέπει να έχουν παροχή μεγαλύτερη από ή ίση με την ελάχιστη ικανότητα φιλτραρίσματος).

(PT) Seleção de produto e fatores de correção

Para selecionar corretamente um separador de água ou modelo de filtro, a taxa de fluxo do filtro deve ser ajustado para a pressão mínima de funcionamento do sistema.

1 Obtenha a pressão mínima de funcionamento e a taxa máxima de fluxo de ar comprimido na entrada do separador de água ou filtro.

2 Selecione o fator de correção da pressão mínima de funcionamento a partir da tabela CFP (arredondar sempre por defeito, por ex. para 5,3 bar, utilize um fator de correção de 5 bar)

3 Calcule a capacidade mínima de filtração. Capacidade mínima de filtração = taxa de fluxo de ar comprimido x CFP

4 Ao usar a capacidade mínima de filtração, selecione um separador de água ou modelo de filtro a partir das tabelas de taxa de fluxo acima (separador de água ou filtro selecionado deve ter uma taxa de fluxo igual ou superior à capacidade mínima de filtração).

Tekniset tiedot

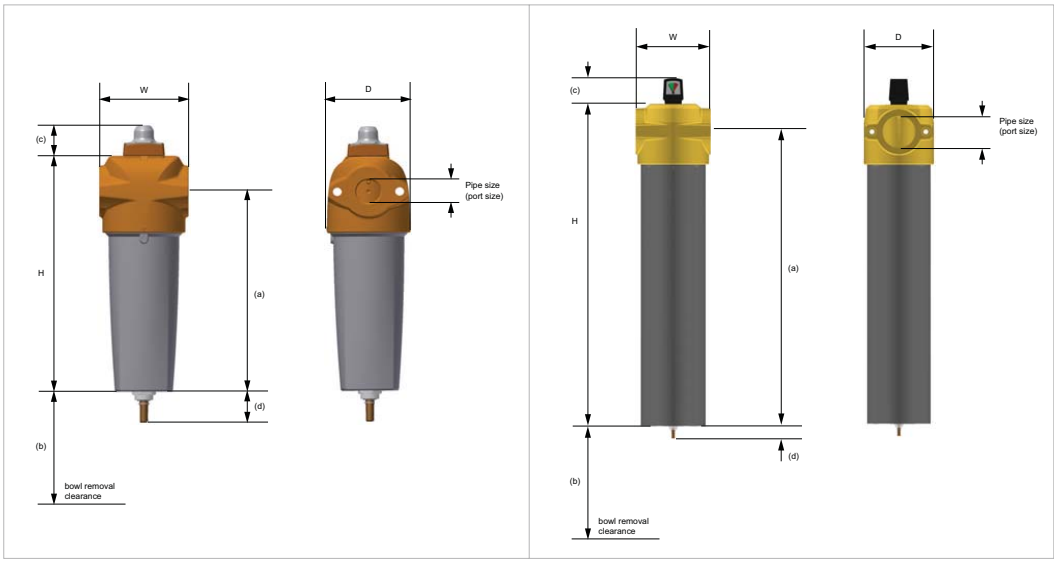
Tekniska data, Tekniske data, Tekniske specifikationer, Τεχνικά δεδομένα, Dados Técnicos

Model	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Recommended Operating Temp		Max Recommended Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
WS	P010 [ ] [ ] F [ ] - 055 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AO	P010 [ ] [ ] F [ ] - 055 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AO	P010 [ ] [ ] M [ ] - 055 [ ] [ ] M [ ]	1	15	20	290	2	35	100	212
AA	P010 [ ] [ ] F [ ] - 055 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AA	P010 [ ] [ ] M [ ] - 055 [ ] [ ] M [ ]	1	15	20	290	2	35	100	212
ACS	P010 [ ] [ ] M [ ] - 055 [ ] [ ] M [ ]	1	15	20	290	2	35	50	122

Note: *AO / AA / WS grade filters for use up to 16 bar g (232 psi g) are supplied with a float drain [F] as standard.*
For pressures between 16 and 20 bar g (232 and 290 psi g) a manual drain [M] must be used.
ACS grade filters are supplied with a manual drain [M] as standard.

Painot ja mitat

Vikter och dimensioner, Vekt og dimensjoner, Vægt og mål, Βάρη και διαστάσεις, Pesos e Dimensões



Model	Pipe Size	Height (H)		Width (W)		Depth (D)		(a)		(b)		(c)		(d)		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
WS / P010A	¼"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010B	⅜"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010C	½"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P015C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.16	2.55
P020C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P020D	¾"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P025D	¾"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P025E	1"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P030G	1 ½"	367	14.45	120	4.72	114.5	4.5	323	12.7	70	2.76	32	1.3	38	1.5	2.68	5.91
WS / P035G	1 ½"	531	20.9	164	6.46	156	6.10	384	15.1	100	3.94	68	2.68	38	1.5	6.90	15.20
WS / P040H	2	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.30	16.10
WS / P045I	2 ½	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.10	15.65
WS / P050I	2 ½	745	29.3	192	7.56	183	7.20	587	23.1	120	4.72	68	2.68	38	1.5	10.30	22.71
P055I	2 ½	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73
WS / P055J	3	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73

Note: Water Separators do not include a DP Indicator, use dimension H + d for the total height.

(FI) Asennussuositukset

On suositeltavaa, että paineilma käsitellään ennen jakelujärjestelmään syöttämistä ja kriittisissä käyttöpisteissä/käyttökohteissa.

Paineilmakuivaimien asennus aiemmin märkään järjestelmään saattaa kasvattaa käyttöpisteen suodattimen likakuormitusta jakelujärjestelmän kuivumisen aikana. Suodatinelementit on ehkä vaihdettava tavallista useammin tänä ajanjaksona.

Asennuksissa, joissa käytetään öljyttömiä kompressoreja, on yhä vesiaerosoleja ja hiukkasia. Tällöin on käytettävä edelleen yleiskäyttö- ja suurtehotyyppejä.

Yleiskäyttöinen suodatin on aina asennettava suojaamaan suurtehosuodatinta nestemäisiltä aerosoleilta ja kiinteiltä hiukkasilta.

Puhdistuslaitteisto on asennettava kohtaan, jossa on alhaisin jäätymispisteen yläpuolinen lämpötila, mieluiten jälkijäähdyttimistä ja ilmanvastaanottolaitteista alavirtauksen suuntaan.

Käyttöpisteiden puhdistuslaitteisto on asennettava mahdollisimman lähelle käyttökohdetta.

Puhdistuslaitteistoa ei saa asentaa pikaventtiileistä alavirtauksen suuntaan, ja se on suojattava mahdollisilta vastavirtauksilta ja muilta hätäolosuhteilta.

Kaikista puhdistuslaitteistoon vievistä putkista on poistettava ilma ennen asennusta ja kaikista putkista on poistettava ilma puhdistuslaitteiston asennuksen jälkeen ja ennen liittämistä lopulliseen käyttökohteeseen.

Jos puhdistuslaitteiston ympärille asennetaan ohitusputket, ohitusputkeen on asennettava riittävät suodattimet, jotta alavirtauksen suunnassa oleva järjestelmä ei saastu.

Sovita poistoputket hiilisuodattimista suoraan kondenssierottimeen. Jos poistoputkien liittäminen suoraan erottimeen ei ole mahdollista, putket on ilmattava jakoputkistoon (ilmattava toisesta päästä) ja sen jälkeen yksittäissisääntuloon kondenssierottimeen.

Puhdistuslaitteistoon keräytyvälle nesteelle on oltava poistomenetelmä. Keräytyneet nesteet on hävitettävä ja käsiteltävä vastuuntuntoisesti.

(SV) Rekommendationer för installation

Vi rekommenderar att tryckluften behandlas innan den leds in i distributionssystemet och även vid viktiga luftförbrukningspunkter/applikationer.

Installation av tryckluftstorkar i system som tidigare varit våta kan orsaka ytterligare belastning p.g.a. smuts i filtren vid förbrukningspunkterna medan distributionssystemet torkar. Under denna period kan filterelementen behöva bytas ut oftare.

För installationer där oljefria kompressorer används och där vattenaerosol och partiklar fortfarande förekommer, ska universalvarianter och högeffektiva modeller fortfarande användas.

Ett universalfilter måste alltid monteras för att skydda högeffektivitetsfiltret från vätskeaerosoler i stora mängder samt fasta partiklar.

Installera reningsutrustningen vid lägsta temperatur över fryspunkten, helst nedströms från efterkylare och tryckluftsbehållare.

Reningsutrustning vid förbrukningspunkterna ska installeras så nära applikationen som möjligt.

Reningsutrustningen bör inte installeras nedströms från snabböppnande ventiler, och den bör skyddas från eventuella backflöden och andra slagrörelser.

Töm alla rör som leder till reningsutrustningen före installationen, och töm även alla rör efter att reningsutrustningen har installerats samt före anslutning till den slutliga applikationen.

Om shuntledningar monteras runt reningsutrustningen ska tillräcklig filtrering monteras på shuntledningarna för att förhindra att systemet förorenas nedströms.

Dra dräneringsledningar direkt från koalescensfilter till kondensseparator. Om inte ledningarna kan dras direkt till en separator bör ledningarna dras till ett kondensgrenrör (med utsläpp i ena änden) och sedan till en enda ingång på en kondensseparator.

Ombesörj en anordning för att tömma ut uppsamlade vätskor från reningsutrustningen. Uppsamlade vätskor ska behandlas och bortskaffas på ett ansvarsfullt sätt.

(NO) Anbefalinger for installering

Det anbefales at den komprimerte luften behandles før den føres inn i distribusjonssystemet og også ved kritiske brukspunkter eller enheter.

Installering av lufttørkere for komprimert luft til et tidligere fuktig system kan føre til midlertidig smussbelastning for filtre ved brukspunkt i en periode mens distribusjonssystemet tørker ut. Filterelementene må kanskje skiftes oftere i denne perioden.

For installeringer der det brukes oljefrie kompressorer og det fortsatt finnes vannaerosoler og partikler, bør det fortsatt brukes universal- og mikrofilterkvalitet.

Et universalfilter må alltid installeres for å beskytte mikrofilteret fra store volumer av væskeaerosoler og faste partikler.

Installer renseutstyr ved laveste temperatur over frysepunktet, fortrinnsvis nedstrøms for etterkjølere og luftmottakere.

Renseutstyr ved brukspunkt skal installeres så nær enheten som mulig.

Renseutstyr skal ikke installeres nedstrøms for hurtigåpningsventiler og skal beskyttes mot mulig motstrøm eller andre støtsituasjoner.

Spyl alle rør som fører til renseutstyret før installering, og alle rør etter installering av renseutstyret og før tilkobling til sluttenheten.

Hvis det kobles til stikkrør rundt renseutstyret, skal man sørge for at det kobles tilstrekkelig filtrering til stikkrøret for å hindre kontaminering av systemet nedstrøms.

Fest avløpsrør fra vannutskillerfiltrene direkte til en kondensatutskiller. Dersom det ikke er mulig å koble avløpsrør direkte til en separator, skal linjene være ventilert inn i en kondensatmanifold (luftet i den ene enden) og deretter inn i et enkelt inntak på en kondensatseparator.

Sørg for at det finnes mulighet for å drenere bort oppsamlede væsker fra renseutstyret. Oppsamlede væsker bør behandles og avhendes på en ansvarlig måte.

(DA) Installationsanbefalinger

Det anbefales at behandle trykluft, før den sendes ind i fordelingssystemet, samt på kritiske brugssteder/apparater.

Installation af trykluftørreanlæg i et tidligere vådanlæg kan i en periode medføre ekstra belastning pga. snavs for filtre på brugsstedet, mens fordelingssystemet udtørres. Filterelementerne skal muligvis udskiftes oftere i denne periode.

I installationer med oliefrie kompressorer vil der stadig være vanddråber og -partikler, og der bør fortsat bruges universalfiltre samt filtre med høj effektivitetsklassificering.

Der skal altid installeres et universalfilter for at beskytte det højeffektive filter mod store mængder væskedråber og faste partikler.

Installer rensningsudstyr ved den lavest mulige temperatur over frysepunktet og helst efter efterkølere og luftudskillere.

Rensningsudstyr på brugsstedet bør installeres så tæt på apparaturet som muligt.

Rensningsudstyr bør ikke installeres efter lynåbneventiler og bør beskyttes mod eventuel modstrøm eller andre stødrisici.

Udluft alle rør, der fører til rensningsudstyret, før det installeres, og samtlige rør efter at rensningsudstyret er installeret, og før det tilsluttes det endelige apparatur.

Hvis der er monteret omløbsrør rundt om rensningsudstyret, skal der altid monteres passende filtreringsudstyr på disse omløbsrør for at forhindre forurening af systemet længere fremme.

Montér afløbsrør fra koalescensfiltrene direkte på en kondensseparator. Hvis det ikke er muligt at tilslutte afløbsrørene direkte på en separator, skal rørene udluftes ind i et kondensatorgrenrør (udluftet i den ene ende) og derefter ind i et enkelt indløb på en kondensseparator.

Sørg for, at der er et anlæg til at fjerne den opsamlede væske fra rensningsudstyret. Opsamlet væske skal behandles og bortskaffes på ansvarlig vis.

(EL) Συστάσεις εγκατάστασης

Ο χειρισμός του πεπιεσμένου αέρα συνιστάται να πραγματοποιείται πριν την εισαγωγή στο σύστημα διανομής, καθώς επίσης και σε κρίσιμα σημεία/εφαρμογές χρήσης.

Η εγκατάσταση ξηραντήρων πεπιεσμένου αέρα σε προηγουμένως υγρό σύστημα μπορεί να έχει ως αποτέλεσμα πρόσθετη βρομιά στο σημείο χρήσης των φίλτρων για ένα χρονικό διάστημα, έως ότου στεγνώσει το σύστημα διανομής. Τα φίλτρα ενδέχεται να πρέπει να αλλάζονται πιο συχνά κατά το χρονικό αυτό διάστημα.

Για τις εγκαταστάσεις όπου χρησιμοποιούνται συμπιεστές χωρίς λάδι, εξακολουθεί να υπάρχει νερό με μορφή αερολύματος και αιωρούμενων σωματιδίων, για αυτό και θα πρέπει να συνεχίσουν να χρησιμοποιούνται φίλτρα γενικής χρήσης υψηλής απόδοσης.

Το φίλτρο γενικής χρήσης πρέπει πάντα να τοποθετείται έτσι ώστε να προστατεύει το φίλτρο υψηλής απόδοσης από μεγάλους όγκους υγρών με μορφή αερολύματος και στερεών σωματιδίων.

Τοποθετήστε τον εξοπλισμό καθαρισμού στη χαμηλότερη θερμοκρασία πάνω από το σημείο πήξης, κατά προτίμηση κατάντι των μεταψυκτών και των καταναλωτών αέρα.

Το σημείο χρήσης του εξοπλισμού καθαρισμού πρέπει να είναι τοποθετημένο όσο το δυνατό πιο κοντά στην εφαρμογή.

Ο εξοπλισμός καθαρισμού δεν πρέπει να τοποθετείται κατάντι των ταχυβαλβίδων και θα πρέπει να είναι προστατευμένος από πιθανή αντίστροφη ροή ή άλλες πιθανές αιτίες πρόκλησης κραδασμών.

Πριν την εγκατάσταση, κάντε εξαέρωση όλων των σωληνώσεων που οδηγούν στον εξοπλισμό καθαρισμού. Επίσης, κάντε εξαέρωση όλων των σωληνώσεων μετά την εγκατάσταση του εξοπλισμού καθαρισμού και πριν τη σύνδεση στην τελική εφαρμογή.

Εάν πριν και μετά τον εξοπλισμό καθαρισμού είναι τοποθετημένοι αγωγοί παράκαμψης, βεβαιωθείτε ότι εφαρμόζεται επαρκές φιλτράρισμα στον αγωγό παράκαμψης, για να αποφευχθεί η μόλυνση του συστήματος κατάντι.

Προσαρμόστε τους αγωγούς αποστράγγισης από τα φίλτρα προσκόλλησης απευθείας σε έναν διαχωριστή υγροποιημένων καταλοίπων. Αν δεν είναι δυνατό να συνδεθούν οι αγωγοί αποστράγγισης απευθείας σε έναν διαχωριστή, οι αγωγοί θα πρέπει να εκτονώνονται σε μια πολλαπλή υγροποιημένων καταλοίπων (με εξαέρωση στο ένα άκρο) και στη συνέχεια σε μια ενιαία εισαγωγή ενός διαχωριστή υγροποιημένων καταλοίπων.

Παρέχετε δυνατότητα αποστράγγισης των συσσωρευμένων υγρών από τον εξοπλισμό καθαρισμού. Ο χειρισμός και η απόρριψη των συσσωρευμένων υγρών πρέπει να πραγματοποιείται με υπεύθυνο τρόπο.

(PT) Recomendações sobre a instalação

Recomenda-se que o ar comprimido seja tratado antes da entrada no sistema de distribuição e também em aplicações/pontos de utilização críticos.

A instalação dos secadores de ar comprimido num sistema previamente húmido pode resultar numa acumulação adicional de sujidade nos pontos de utilização dos filtros durante o período em que o sistema de distribuição seca. Os elementos do filtro podem necessitar de ser substituídos com mais frequência durante este período.

Para instalações em que são utilizados compressores sem óleo, estão ainda presentes os aerossóis e partículas de água e ainda devem ser utilizados graus gerais e de elevado rendimento.

Um filtro geral deve ser sempre instalado para proteger o filtro de elevado rendimento dos aerossóis líquidos em bruto e das partículas sólidas.

Instale o equipamento de purificação na temperatura mais baixa acima do ponto de congelamento, preferencialmente a jusante dos refrigeradores posteriores e dos receptores de ar.

O ponto de utilização do equipamento de purificação deve ser instalado o mais próximo possível da aplicação.

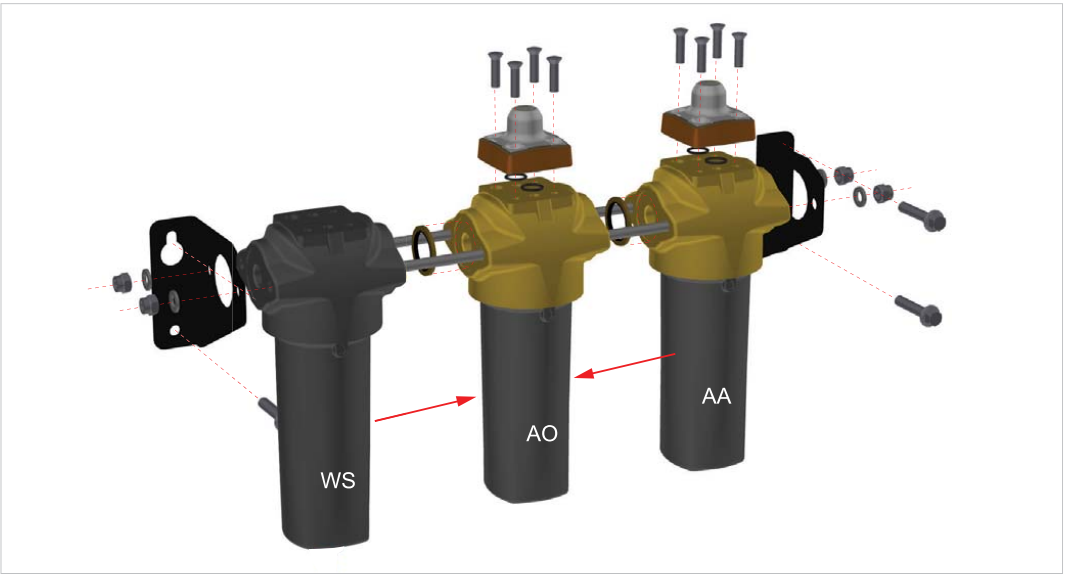
O equipamento de purificação não deve ser instalado a jusante das válvulas de abertura rápida e deve ser protegido de um possível fluxo inverso ou de outras condições de choque.

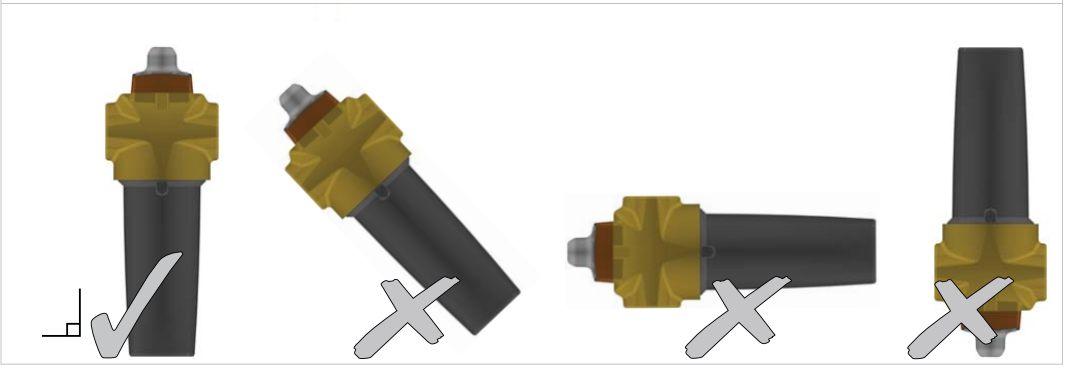
Purgue todos os tubos que levam ao equipamento de purificação antes da instalação e todos os tubos após a instalação do equipamento de purificação e antes da ligação para a aplicação final.

Se as linhas de by-pass forem instaladas em volta do equipamento de purificação, certifique-se de que a filtragem adequada é instalada na linha de by-pass para evitar a contaminação do sistema a jusante.

Instale os tubos de drenagem a partir dos filtros coalescentes directamente para um separador de condensado. Se não for possível ligar directamente os tubos de drenagem a um separador, os tubos devem ser ventilados para um colector de condensado (ventilado numa extremidade) e, em seguida, para uma entrada única de um separador de condensado.

Forneça um instrumento para drenar os líquidos recolhidos do equipamento de purificação. Os líquidos recolhidos devem ser tratados e eliminados de uma forma responsável.





(FI) **Alempi sulkulevy voi liikkua, kun suodatinta ei ole paineistettu**

Warning **Alempi sulkulevy ei vaadi huoltoa eikä sitä saa koskaan irrottaa.**

(SV) **Den nedre stängningsplattan kan röra sig om filtret inte trycksätts**

Warning **Den nedre stängningsplattan går inte att utföra service på och ska aldrig tas bort.**

(NO) **Den nedre lukkeplaten vil kunne bevege seg når filteret ikke er trykksatt**

Warning **Den nedre lukkeplaten skal ikke vedlikeholdes og bør aldri fjernes.**

(DA) **Den nederste lukkeplade kan flytte sig, når filteret ikke er under tryk**

Warning **Den nederste lukkeplade kan ikke serviceres, og den må ikke afmonteres.**

(EL) **Η κάτω πλάκα κλεισίματος μπορεί να μετακινηθεί εάν το φίλτρο δεν βρίσκεται υπό πίεση**

Warning **Η κάτω πλάκα κλεισίματος δεν επιδέχεται σέρβις και δεν πρέπει να αφαιρείται ποτέ.**

(PT) **A placa de isolamento inferior pode deslocar-se se o filtro não estiver pressurizado**

Warning **A placa de isolamento inferior não necessita de manutenção e nunca deve ser retirada.**

(FI) Käynnistys ja käyttö

Warning

Varmista ennen suodattimen paineistusta, että pää ja pesä on asetettu oikein ja että lukitusmekanismi on tässä oppaassa olevan kuvan osoittamalla tavalla huoltotilassa (huoltotoimenpide 5).

1. Paineista yksikkö asteittain avaamalla tuloventtiili.
2. Paineista laskuputkisto uudelleen avaamalla lähtöventtiili hitaasti.

Älä avaa tulo- tai lähtöventtiiliä nopeasti tai altista yksikköä liialliselle paine-erolle, sillä yksikkö voi vaurioitua.

(SV) Start och drif

Warning

Före trycksättning ska du kontrollera att huvudet och filterskålen är ordentligt monterade och att låsanordningen är korrekt inriktad så som visas i underhållsavsnittet (underhållsprocedur 6) i den här manualen.

1. Öppna inloppsventilen långsamt så att enheten trycksätts gradvis.
2. Öppna utloppsventilen långsamt för att trycksätta rörsystemet nedströms igen.

Öppna inte inlopps- eller utloppsventilerna snabbt och utsätt inte enheten för överdrivet differentialtryck, eftersom det kan orsaka skador.

(NO) Oppstart og drift

Warning

Før trykksetting av filteret, påse at filterhodet og filterskålen er korrekt montert og at låsmekanismen er riktig justert, som vist i vedlikeholdsavsnittet (vedlikeholdsprosedyre 6) i denne håndboken.

1. Åpne inntaksventilen langsomt for å sette enheten gradvis under trykk.
2. Åpne uttaksventilen langsomt for å sette nedstrømsrørene under trykk igjen.

Ikke åpne inntaks- eller uttaksventilene raskt, eller utsett enheten for høyt differensialtrykk, da dette kan føre til skade.

(DA) Start og drif

Warning

Inden filteret sættes under tryk, skal det sikres, at hovedet og beholderen er korrekt monteret, og at låsemærkerne står ud for hinanden som vist i afsnittet om vedligeholdelse (vedligeholdelsesprocedure 6) i denne manual.

1. Åbn indgangsventilen langsomt for gradvist at sætte enheden under tryk.
2. Åbn udløbsventilen langsomt for at sætte rørene længere fremme under tryk igen.

Åbn ikke indgangs- eller udgangsventiler hurtigt, og udsæt ikke enheden for store trykforskelle, da det kan medføre skader.

(EL) Έναρξη λειτουργίας και χειρισμός

Warning

Πριν θέσετε το φίλτρο υπό πίεση, βεβαιωθείτε ότι η κεφαλή και το ποτήρι του φίλτρου είναι σωστά προσαρμοσμένα και ότι τα σημάδια ασφάλισης είναι σωστά ευθυγραμμισμένα, όπως απεικονίζεται στην ενότητα συντήρησης (διαδικασία συντήρησης 6) αυτού του εγχειριδίου.

1. Ανοίξτε αργά τη βαλβίδα εισαγωγής για να ανέβει σταδιακά η πίεση της μονάδας.
2. Ανοίξτε αργά τη βαλβίδα εξαγωγής για να ανέβει η πίεση της σωλήνωσης κατάντι.

Μην ανοίγετε γρήγορα τις βαλβίδες εισαγωγής ή εξαγωγής και μην υποβάλλετε τη μονάδα σε υπερβολική διαφορική πίεση, διότι μπορεί να προκύψει βλάβη.

(PT) Arranque e Funcionamento

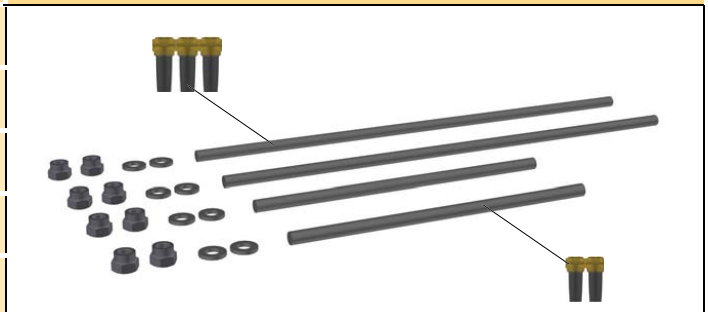
Warning

Antes de pressurizar o filtro, certifique-se de que a cabeça e o copo estão instalados correctamente e de que o detalhe de bloqueio está correctamente alinhado, conforme ilustrado na secção de manutenção (procedimento de manutenção 6) deste manual.

1. Abra lentamente a válvula de entrada para pressurizar gradualmente a unidade.
2. Abra lentamente a válvula de saída para voltar a pressurizar a tubagem a jusante.

Não abra rapidamente as válvulas de entrada ou de saída nem sujeite a unidade a uma pressão diferencial excessiva, caso contrário poderão ocorrer danos.

Lisävarusteet / varaosat (Huoltopakkaukset)
Tillbehör / Reservdelar (servicepaket), Tilbehør / Reservedeler (Service Kits), Tilbehør / Reservedele (Servicesæt),
Εξαρτήματα / Ανταλλακτικά (Κιτ σέρβις), Acessórios / Peças Sobressalentes (Kits de Manutenção)

Filter Models	Catalogue Number	Contents
010	TRK1-2	
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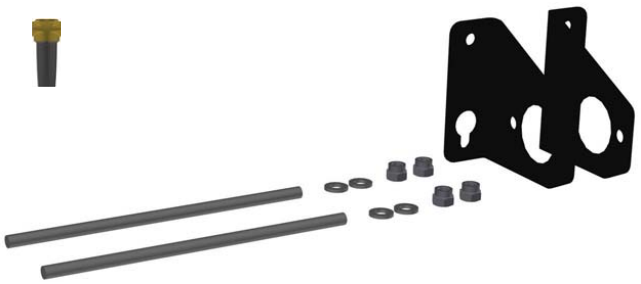
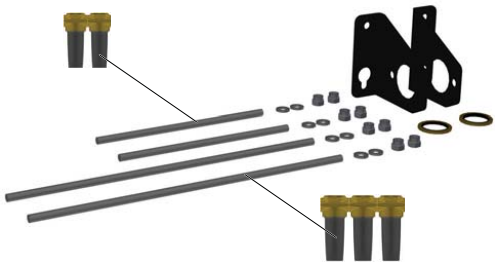
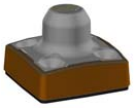
025 - 030	TRK3-2	
035- 045	TRK4-2	
050- 055	TRK5-2	
010	MBK1-1	
015 - 020	MBK2-1	
025 - 030	MBK3-1	
035 - 045	MBK4-1	
050 - 055	MBK5-1	
010	MBK1-2	
015 - 020	MBK2-2	
025 - 030	MBK3-2	
035 - 045	MBK4-2	
050 - 055	MBK5-2	
010 - 055	EM1	
010 - 055	PD15NO	
010 - 030	DPI-K	
035 - 055	ZD90GL	

Huolto
Underhåll, Vedlikehold, Vedligeholdelse, Συντήρηση, Manutenção

(FI) **Huoltovälit**

Jotta voitaisiin varmistaa suodattimen ihanteellinen suorituskyky, vaaditaan AO, AA, ja -luokituksen elementtien vaihto 12 kuukauden välein yhdessä automaattipoistoputken kanssa.

ACS-elementin suoritus perustuu tulevan öljyhöyryn enimmäispitoisuuteen, joka on 0,018 mg/m^3. Korvaa hiilisuodatinelementti, kun huomaat höyryä, hajua tai makua.

Toisin kuin öljyaerosolien poistosuodattimet, jotka vaihdetaan vuosittain paineistetun ilman laadun takaamisen takia, öljyhöyryn poistosuodattimen käyttöikä riippuu monista asioista, ja se on ehkä vaihdettava useammin (paitsi jos käytetään poistosuodatinta, joka on mitoitettu 6 000:lle tunnille):

Adsorbointisuodattimien käyttöikään vaikuttavat tekijät

Öljyhöyrypitoisuus

Mitä korkeampi öljyhöyryn tulopitoisuus on, sitä nopeammin aktiivihiilikapasiteetti vanhenee.

Irtoöljy

Adsorbointisuodattimet on tarkoitettu poistamaan öljyhöyryjä ja -hajuja, mutta ei nestemäistä öljyä tai aerosoleja. Huonosti hoidettu tai olematon esisuodatus vähentää öljyhöyryn poistosuodattimen kapasiteettia nopeasti.

Lämpötila

Öljyhöyrysisältö lisääntyy eksponentiaalisesti tulolämpötilassa ja vähentää näin ollen elementin käyttöikää. Lisäksi lämpötilan noustessa adsorptiokyky vähenee, mikä myös vähentää elementin käyttöikää.

Suhteellinen kosteus tai kastepiste

Märkä ilma vähentää hiilen adsorptiokykyä.

Kompressoriöljyn vaihdot

Kun kompressoriöljyt vaihdetaan, uusi voiteluaine polttaa "kevyet loppujakeet" pois, mikä lisää öljyhöyrypitoisuutta tunneiksi tai jopa viikoiksi sen jälkeen. Öljyhöyryn poistosuodatin imee lisääntyneen öljyhöyryn ja näin ollen vähentää huomattavasti sen adsorptiokäyttöikää.

(SV) **Underhållsintervall**

För att säkerställa optimal funktion ska elementen klassade AO, AA, bytas ut var 12:e månad tillsammans med den automatiska tömningen.

Prestandan hos ACS -elementet baseras på en maximal inloppskoncentration av oljedimma på 0,018 mg/m^3. Byt ut kolfilterelementet vid detektering av dimma, odör eller smak.

Till skillnad från filter för borttagning av oljeaerosol som byts ut årligen för att säkerställa tryckluftskvaliteten, kan livslängden på ett oljedimmeborttagningsfilter påverkas av olika faktorer och kräva mer frekventa byten (om inte OVR används som är utformat för en livslängd på 6 000 timmar):

Faktorer som påverkar adsorptionsfilters livslängd

Oljedimmans koncentration

Ju högre inloppskoncentration av oljedimma desto snabbare försämras det aktiva kolets kapacitet.

Bulkolja

Adsorptionsfilter är utformade för att avlägsna oljedimma och odörer, inte flytande olja eller aerosoler. Dåligt underhåll eller obefintlig förfiltrering gör att OVR-filtrets kapacitet snabbt försämras.

Temperatur

Oljedimmenivån ökar exponentiellt mot inloppstemperaturen och minskar elementlivslängden. Dessutom försämras adsorptionskapaciteten när temperaturen stiger, vilket även detta minskar elementlivslängden.

Relativ fuktighet eller daggpunkt

Fuktig luft minskar kolets adsorptionskapacitet.

Byte av kompressorolja

Vid byte av kompressorolja bränner det nya smörjmedlet av "lätta produkter" vilket ökar mängden oljedimma i timmar eller till och med veckor efteråt. Denna ökning av mängden oljedimma adsorberas av OVR-filtret, vilket minskar dess livslängd avsevärt.

(NO) **Vedlikeholdsintervaller**

For å sikre optimal filterytelse, krever klasse AO, AA, -elementene utskiftning hver 12. måned sammen med det automatiske avløpet.

Ytelsen til ACS-elementet er basert på maksimal oljedampinntakskonsentrasjon på 0,018 mg/m^3. Skift ut karbonfilterelementet hvis du oppdager damp, lukt eller smak.

Til forskjell fra filtre for fjerning av oljespray, som skiftes ut hvert år for å garantere kvaliteten på den komprimerte luften, kan levetiden til et filter for fjerning av oljespray tilskrives forskjellige faktorer og kreve hyppigere skift (bortsett fra hvis OVR brukes, da det har en levetid på 6000 timer):

Faktorer som påvirker levetiden til adsorpsjonsfiltre

Oljedampkonsentrasjonen

Jo høyere inntakskonsentrasjon av oljedamp, jo raskere ekspirerer den aktiverte karbonkapasiteten.

Bulkolje

Adsorpsjonsfiltre er utformet for å fjerne oljedamp og lukt, ikke flytende olje eller aerosoler. Hvis det ikke finnes forfiltrering, eller den er dårlig vedlikeholdt, kan det føre til at OVR-filterkapasiteten utløper raskere.

Temperatur

Oljedampinnholdet øker eksponentielt i forhold til inntakstemperaturen, og reduserer elementets levetid. I tillegg reduseres adsorpsjonskapasiteten etter hvert som temperaturen øker, og reduserer elementets levetid.

Relativ fuktighet eller duggpunkt

Våt luft reduserer karbonets adsorberende kapasitet.

Kompressoroljeskift

Når kompressoroljen skiftes, brenner det nye smøremiddelet av lettkomponenter som øker oljedampinnholdet i mange timer eller til og med uker etterpå. Denne økningen i oljedampinnhold adsorberes av OVR-filteret, noe som reduserer levetiden betraktelig.

(DA) **Vedligeholdelsesintervaller**

For at sikre optimal filterydelse, skal elementer i kvalitet AO, AA, udskiftes hver 12. måned sammen med det automatiske afløb.

ACS-elementets ydelse er baseret på en maksimal indgangskoncentration i oliedamp på 0,018 mg/m^3. Udskift kulfilterelementet ved registrering af damp, lugt eller smag.

Modsat filtre til fjernelse af oliedråber, der udskiftes årligt for at sikre trykluftkvaliteten, kan levetiden for filtret til fjernelse af oliedamp tilskrives forskellige faktorer og kræve hyppigere udskiftninger (medmindre der bruges OVR, som er beregnet til en levetid på 6.000 timer):

Faktorer, der påvirker adsorptionsfiltre

Oliedampkoncentration

Jo højere oliedampindgangens koncentration er, jo hurtigere ophører det aktive kuls kapacitet.

Olie

Adsorptionsfiltre er udviklet til at fjerne oliedamp og -lugt, ikke flydende olie eller dråber. Dårligt vedligeholdt eller ikke-eksisterende forfiltrering vil få OVR-filterkapaciteten til at ophøre hurtigt.

Temperatur

Oliedampindholdet øges eksponentielt ift. indgangstemperaturen, hvilket reducerer elementets levetid. Derudover mindskes adsorptionskapaciteten også i takt med, at temperaturen stiger, hvilket også medfører reduceret levetid.

Relativ luftfugtighed eller dugpunkt

Våd luft reducerer kullets adsorptionskapacitet.

Udskiftning af kompressorolie

Når kompressorolien udskiftes, brænder det nye smøremiddel "lette ender" af, hvilket øger oliedampindholdet i flere timer eller endda uger efterfølgende. Forøgelsen af oliedampindholdet adsorberes af OVR-filtret, hvilket nedsætter dets adsorptionsmæssige levetid.

(EL) **Διαστήματα συντήρησης**

Για να εξασφαλίσετε τη βέλτιστη απόδοση του φίλτρου, τα στοιχεία βαθμίδας AO, AA, χρειάζεται να αλλάζονται κάθε 12 μήνες, μαζί με την αυτόματη αποστράγγιση.

Η απόδοση του στοιχείου ACS έχει υπολογιστεί για μέγιστη συγκέντρωση ατμών λαδιού στην εισαγωγή 0,018 mg/m^3. Αντικαθιστάτε το στοιχείο φίλτρου άνθρακα όταν ανιχνεύετε ατμούς, οσμές ή γεύσεις.

Αντίθετα με τα φίλτρα αφαίρεσης αερολυμάτων λαδιού, τα οποία αντικαθίστανται μία φορά το χρόνο για να εξασφαλίζουν την ποιότητα του πεπιεσμένου αέρα, η διάρκεια ζωής ενός φίλτρου αφαίρεσης ατμών λαδιού μπορεί να επηρεάζεται από διάφορους παράγοντας και να απαιτούνται πιο τακτικές αλλαγές (εκτός αν χρησιμοποιείται φίλτρο OVR, το οποίο είναι κατάλληλο για διάρκεια ζωής 6000 ωρών):

Παράγοντες που επηρεάζουν τη διάρκεια ζωής των φίλτρων προσρόφησης

Συγκέντρωση ατμών λαδιού

Όσο μεγαλύτερη είναι η συγκέντρωση των ατμών λαδιού στην εισαγωγή, τόσο πιο γρήγορα θα λήξει η ικανότητα φιλτραρίσματος του ενεργού άνθρακα.

Μεγάλος όγκος λαδιού

Τα φίλτρα προσρόφησης είναι σχεδιασμένα για να αφαιρούν ατμούς λαδιού και οσμές, όχι υγρό λάδι ή αερολύματα. Η κακή συντήρηση ή η ανυπαρξία προφιλτραρίσματος προκαλεί ταχεία λήξη της ικανότητας φιλτραρίσματος ενός φίλτρου OVR.

Θερμοκρασία

Η περιεκτικότητα σε ατμούς λαδιού αυξάνει εκθετικά σε σχέση με τη θερμοκρασία της εισαγωγής, μειώνοντας τη διάρκεια ζωής του φίλτρου. Επιπλέον, καθώς αυξάνεται η θερμοκρασία, η ικανότητα προσρόφησης ελαττώνεται, μειώνοντας και πάλι τη διάρκεια ζωής του φίλτρου.

Σχετική υγρασία ή σημείο δρόσου

Η μεγάλη υγρασία στον αέρα μειώνει την ικανότητα προσρόφησης του άνθρακα.

Αλλαγές λαδιών του συμπιεστή

Όταν αλλάζει το λάδι στον συμπιεστή, καίγονται τα "ελαφρά συστατικά" του λιπαντικού, αυξάνοντας έτσι την περιεκτικότητα σε ατμούς λαδιού για μερικές ώρες ή ακόμα και εβδομάδες μετά την αλλαγή. Η αυξημένη περιεκτικότητα σε ατμούς λαδιού προσροφάται από το φίλτρο OVR, μειώνοντας σημαντικά την προσροφητική διάρκεια ζωής του.

(PT) **Intervalos de Manutenção**

Para garantir um desempenho ideal do filtro, os elementos de grau AO, AA, necessitam de ser substituídos a cada 12 meses juntamente com o dreno automático.

O desempenho do elemento ACS é baseado numa concentração máxima da entrada de vapor do óleo de 0,018 mg/m^3. Substitua o elemento do filtro de carvão mediante a detecção de vapor, odor ou sabor.

Ao contrário dos filtros de remoção dos aerossóis do óleo que são anualmente substituídos para garantir a qualidade do ar comprimido, a duração de um filtro de remoção do vapor do óleo pode ser atribuída a diversos factores e requer substituições mais frequentes (excepto se o OVR for utilizado, aumentando assim para uma duração de 6000 hrs):

Factores que afectam a duração dos filtros de adsorção

Concentração do vapor do óleo

Quanto maior for a concentração de entrada do vapor de óleo, mais rapidamente irá expirar a capacidade do carvão activado.

Óleo em bruto

Os filtros de adsorção foram concebidos para remover os vapores e odores do óleo e não o óleo líquido ou os aerossóis. A pré-filtragem não existente ou com uma fraca manutenção irá fazer com que a capacidade do filtro OVR se extinga rapidamente.

Temperatura

O conteúdo do vapor do óleo aumenta exponencialmente para a temperatura de entrada, reduzindo o tempo de vida útil do elemento. Para além disso, à medida que a temperatura aumenta, a capacidade de adsorção diminui, reduzindo novamente o tempo de vida útil do elemento.

Humidade Relativa ou Ponto de Condensação

O ar húmido reduz a capacidade de adsorção do carvão.

Substituição do óleo do compressor

Quando o óleo do compressor for substituído, o novo lubrificante queima as "extremidades leves" aumentando o conteúdo do vapor do óleo durante horas ou até mesmo durante algumas semanas. Este aumento do conteúdo do vapor do óleo é adsorvido pelo filtro OVR, reduzindo significativamente a respectiva duração da adsorção.

(FI) **Huoltotoimenpiteet 1**

Sulje sisäänmenoputki (1) ja poistoventtiilit (2) rauhallisesti ja poista paineistus venttiilistä (3) poistoputkea käyttäen.

(SV) **Underhållsprocedur 1**

Stäng långsamt inlopps- (1) och utloppsventilerna (2) och sänk trycket i filtret (3) med tömningen.

(NO) **Vedlikeholdsprosedyre 1**

Steng ventilene i innløp (1) og uttak (2) langsomt og reduser trykket i filteret (3) ved hjelp av avløpet.

(DA) **Vedligeholdelsesprocedure 1**

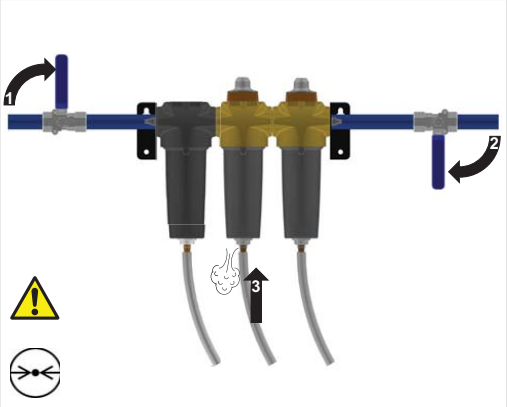
Luk indgangs- (1) og udgangsventilerne (2) langsomt, og tag trykket af filteret (3) ved hjælp af afløbet.

(EL) **Διαδικασία συντήρησης 1**

Κλείστε αργά τις βαλβίδες εισαγωγής (1) και εξαγωγής (2) και αποσυμπιέστε το φίλτρο (3) με τη βοήθεια της αποστράγγισης.

(PT) **Procedimento de Manutenção 1**

Feche lentamente as válvulas de entrada (1) e de saída (2) e despressurize o filtro (3) utilizando o dreno.



(FI) **Huoltotoimenpiteet 2**

Avaa suodatinastiat (1 ja 2) ja poista käytetty elementti (3)

(SV) **Underhållsprocedur 2**

Skruva loss filterskålen (1 och 2) och ta bort det förbrukade elementet (3).

(NO) **Vedlikeholdsprosedyre 2**

Skru løs filterskålene (1 & 2) og fjern de brukte elementene (3)

(DA) **Vedligeholdelsesprocedure 2**

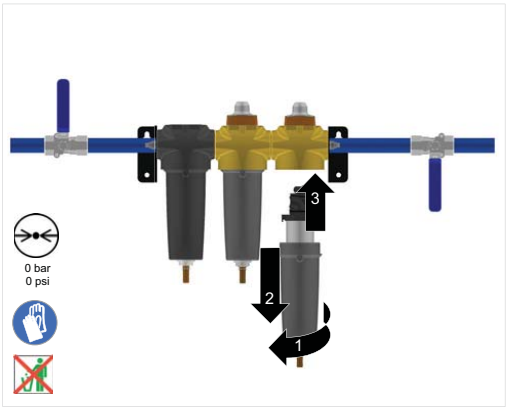
Skru filterbeholderen af (1 og 2), og fjern det brugte element (3)

(EL) **Διαδικασία συντήρησης 2**

Ξεβιδώστε το ποτήρι του φίλτρου (1 & 2) και αφαιρέστε το μεταχειρισμένο στοιχείο (3)

(PT) **Procedimento de Manutenção 2**

Desaperte o copo (1 e 2) do filtro e retire o elemento utilizado (3)



(FI) **Huoltotoimenpiteet 3**

Ruuvaa auki automaattinen poistoputki (1) ja hävitä se (2). Sovita paikoilleen uusi putki (3) ja kiristä (4).

(SV) **Underhållsprocedur 3**

Skruva loss den automatiska tömningen (1) och avyttra den (2). Sätt den nya tömningen på plats (3) och dra åt (4).

(NO) **Vedlikeholdsprosedyre 3**

Skru løs det automatiske avløpet (1) og kast det (2). Monter det nye avløpet (3) og stram til (4).

(DA) **Vedligeholdelsesprocedure 3**

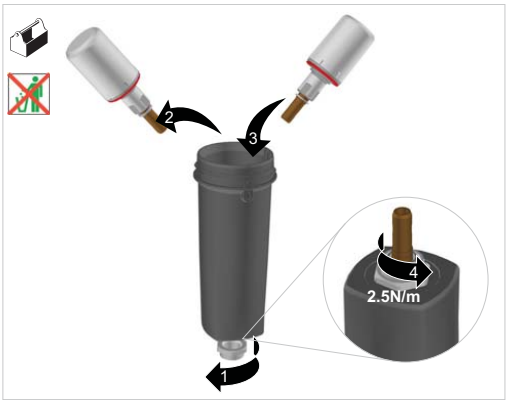
Skru det automatiske afløb af (1), og bortskaf det (2). Montér det nye afløb (3), og spænd (4).

(EL) **Διαδικασία συντήρησης 3**

Ξεβιδώστε την αυτόματη αποστράγγιση (1) και πετάξτε την (2). Τοποθετήστε τη νέα αποστράγγιση (3) και σφίξτε την (4).

(PT) **Procedimento de Manutenção 3**

Desaperte o dreno automático (1) e elimine-o (2). Instale o novo dreno (3) e aperte (4).



FI **Huoltotoimenpiteet 4**

Sijoita uusi elementti suodatinastiaan varmistuen, että nokat ovat asianmukaisesti koloissaan.

SV **Underhållsprocedur 4**

Sätt i det nya elementet i filterskålen och se till att stiften passar i spåren.

NO **Vedlikeholdsprosedyre 4**

Sett det nye elementet inn i filterskålen og sikre at hakene sitter riktig i sporene.

DA **Vedligeholdelsesprocedure 4**

Sæt det nye element i filterbeholderen, og sørg for, at tapperne sidder korrekt i rillerne.

EL **Διαδικασία συντήρησης 4**

Τοποθετήστε το νέο στοιχείο μέσα στο ποτήρι του φίλτρου, προσέχοντας οι προεξοχές να καθίσουν καλά μέσα στις εγκοπές.

PT **Procedimento de Manutenção 4**

Introduza o novo elemento no copo do filtro certificando-se de que as patilhas estão correctamente assentes nas ranhuras.

FI **Huoltotoimenpiteet 5**

Vaihda suodatinpään kummallakin puolella olevat O-renkaat uusiin..

Caution **Varmista, että voitelet O-renkaan ja säikeet sopivalla hapottomalla vaseliinilla.**

SV **Underhållsprocedur 5**

Byt ut O-ringen som sitter i filterhuvudet mot den nya, medföljande O-ringen..

Caution **Se till att smörja O-ringen och gängorna med någon passande syrafri oljegel.**

NO **Vedlikeholdsprosedyre 5**

Bytt ut O-ringen som ligger i filterskålen med den nye O-ringen som følger med.

Caution **Sørg for å smøre O-ringen og gjengene med en passende syrefri vaselin.**

DA **Vedligeholdelsesprocedure 5**

Udskift O-ringen i filterhovedet med den nye medfølgende O-ring.

Caution **Smør O-ringen og gevindet med en egnet syrefri vaseline.**

EL **Διαδικασία συντήρησης 5**

Αντικαταστήστε τον δακτύλιο Ο που βρίσκεται μέσα στην κεφαλή του φίλτρου με τον νέο παρεχόμενο δακτύλιο Ο.

Caution **Μην παραλείψετε να λιπάνετε τον δακτύλιο Ο και τα σπειρώματα με κατάλληλη γέλη πετρελαίου χωρίς οξέα.**

PT **Procedimento de Manutenção 5**

Substitua o O-ring situado na cabeça do filtro pelo novo O-ring fornecido.

Caution **Certifique-se de que lubrifica o O-ring e as roscas com vaselina adequada e sem ácido.**

(FI) **Huoltotoimenpiteet 6 (a)**

Sijoita suodatinastia ja -pää paikoilleen varmistuen siitä, että se sopii paikoilleen ja lukitusmekanismit ovat kohdakkain.

Huomautus: Jotta voidaan varmistaa astian kiinnittyminen päähän, 010-030-astia vaatii 360 °:n käännöksen ja 035-045-astia 720°:n käännöksen siihen asti, että kierre pysähtyy.

(SV) **Underhållsprocedur 6 (a)**

Sätt tillbaka filterskålen och huvudet och se till att de är ordentligt åtdragna och att låsanordningarna är korrekt inriktade.

OBS! För att säkerställa att skålen är ordentligt fastsatt i huvudet kräver skålen 010-030 360° vridning tills gängorna tar emot och skålen 035-045 kräver 720°.

(NO) **Vedlikeholdsprosedyre 6 (a)**

Monter filterskålen og hodet og sikre at gjengene griper riktig og låsmekanismene er justert.

Obs! For å sikre at skålen er sitter helt inn i hodet, krever skål 005-030 360°rotasjon før gjengen stopper, og 720° for skål 035-045.

(DA) **Vedligeholdelsesprocedure 6 (a)**

Genmontér filterbeholderen og filterhovedet. Gevindet skal være skruet helt i bund, og låsemærkerne skal stå ud for hinanden.

Bemærk: For at sikre, at beholderen sidder korrekt i hovedet, skal 005-030-beholderen drejes 360° indtil gevindstoppet og 720° for 035-045-beholderen

(EL) **Διαδικασία συντήρησης 6 (a)**

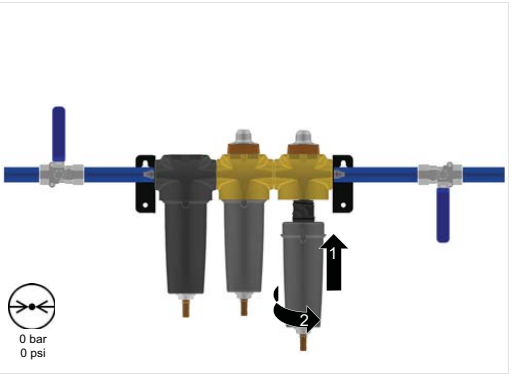
Επανατοποθετήστε το ποτήρι του φίλτρου και την κεφαλή, προσέχοντας τα σπειρώματα να βιδώσουν καλά μεταξύ τους και να ευθυγραμμιστούν τα σημάδια ασφάλισης.

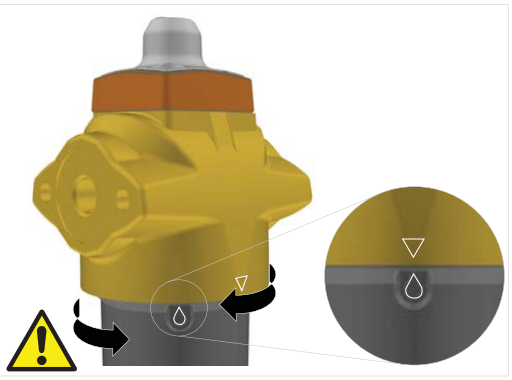
Σημείωση: Για να βεβαιωθείτε ότι το ποτήρι έχει τοποθετηθεί καλά μέσα στην κεφαλή, να έχετε υπόψη σας ότι το ποτήρι 010-030 απαιτεί περιστροφή 360° μέχρι να βιδώσει εντελώς και 720° για το ποτήρι 035-045.

(PT) **Procedimento de Manutenção 6 (a)**

Volte a instalar a cabeça e o copo do filtro certificando-se de que as roscas estão totalmente encaixadas e de que os detalhes de bloqueio estão alinhados.

Nota: Para se certificar de que o copo está totalmente encaixado na cabeça, o copo 010-030 necessita de uma rotação de 360° até atingir o batente da roscae o copo 035-045 necessita de uma rotação de 720°.





(FI) **Huoltotoimenpiteet 7**

Kiinnitä suodatinastiaan vaihtopäivätarra ja kirjoita siihen päivämäärä, jolloin elementti on jälleen vaihdettava, esim.12 kk kuluttua tämänkertaisesta vaihdosta.

Caution **Älä käytä liuottimia tai alkoholia tarrojen puhdistukseen, sillä ne voivat aiheuttaa vaurioita.**

(SV) **Underhållsprocedur 7**

Fäst elementets etikett för bytesdatum på filterskålen och skriv dit datumet som elementet ska bytas ut, d.v.s. 12 månader efter bytet av elementet.

Caution **Använd inga lösningsmedel eller alkohol för att rengöra etiketterna eftersom det kan orsaka skador.**

(NO) **Vedlikeholdsprosedyre 7**

Fest element endre dato etiketten til filteret bolle og skrive på datoen elementet skal erstattes. i.e 12 måneder etter element endring.

Caution **Ikke bruk løsemidler eller alkohol for å rengjøre etikettene, da dette kan forårsake skade.**

(DA) **Vedligeholdelsesprocedure 7**

Fastgør mærkaten med dato for elementudskiftning på filterbeholderen, og skriv datoen for, hvornår elementet skal udskiftes - d.v.s. 12 måneder efter elementudskiftningen.

Caution **Brug ikke opløsningsmidler eller alkohol til rengøring af mærkaterne, da det kan medføre beskadigelse.**

(EL) **Διαδικασία συντήρησης 7**

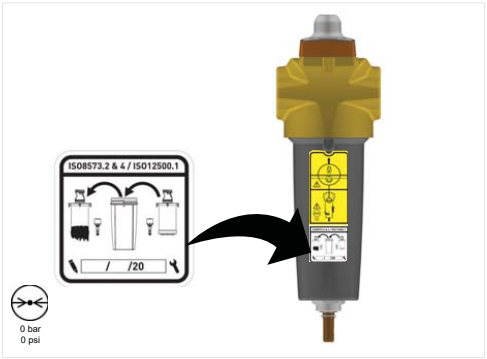
Κολλήστε την ετικέτα ημερομηνίας αλλαγής του στοιχείου στο ποτήρι του φίλτρου και σημειώστε την ημερομηνία που πρέπει να αλλαχτεί το στοιχείο, δηλ. 12 μήνες μετά την αλλαγή του στοιχείου..

Caution **Μην χρησιμοποιείτε διαλύτες ή αλκοόλες για να καθαρίσετε τις ετικέτες, γιατί έτσι μπορεί να προκληθεί ζημιά.**

(PT) **Procedimento de Manutenção 7**

Prenda a etiqueta com a data de substituição do elemento no copo do filtro e anote a data em que o elemento deve ser substituído. Por ex.: 12 meses após a substituição do elemento.

Caution **Não utilize solventes nem álcool para limpar as etiquetas, pois tal poderá provocar danos.**



(FI) **Huoltotoimenpiteet 8**

Avaa sisääntuloventtiili (1) hitaasti paineistaaksesi yksikön, avaa hitaasti ulostuloventtiili (2) paineistaaksesi laskuputkiston

Warning **Älä avaa tulo- tai lähtöventtiiliä nopeasti tai altista yksikköä liialliselle paine-erolle, sillä yksikkö voi vaurioitua.**

(SV) **Underhållsprocedur 8**

Öppna långsamt inloppsventilen (1) för att gradvis släppa ut trycket och öppna långsamt utloppsventilen (2) för att släppa ut trycket ur rörledningarna nedströms.

Warning **Öppna inte inlopps- eller utloppsventilerna snabbt och utsätt inte enheten för överdrivet differentialtryck, eftersom det kan orsaka skador.**

(NO) **Vedlikeholdsprosedyre 8**

Åpne inntaksventilen (1) sakte for gradvis å trykksette enheten, og åpne utløpsventilen (2) sakte for å trykksette nedstrømsrørene igjen

Warning **Du må ikke åpne inntaks- eller utløpsventilene raskt, eller utsette enheten for høyt differensialtrykk, da dette kan føre til skade.**

(DA) **Vedligeholdelsesprocedure 8**

Åbn indgangsventilen (1) langsomt for gradvist at sætte enheden under tryk, og åbn udgangsventilen (2) langsomt for at sætte rørene længere fremme under tryk igen..

Warning **Åbn ikke indgangs- eller udgangsventiler hurtigt, og udsæt ikke enheden for store trykforskelle, da det kan medføre skader.**

(EL) **Διαδικασία συντήρησης 8**

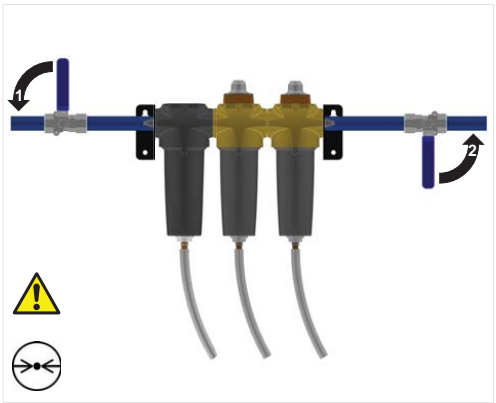
Ανοίξτε τη βαλβίδα εισαγωγής (1) αργά, για να ανέβει σταδιακά η πίεση της μονάδας, ανοίξτε αργά τη βαλβίδα εξαγωγής (2) για να ανέβει η πίεση της σωλήνωσης κατάντι.

Warning **Μην ανοίγετε γρήγορα τις βαλβίδες εισαγωγής ή εξαγωγής και μην υποβάλλετε τη μονάδα σε υπερβολική διαφορική πίεση, διότι μπορεί να προκύψει βλάβη.**

(PT) **Procedimento de Manutenção 8**

Abra lentamente a válvula de entrada (1) para pressurizar gradualmente a unidade, abra lentamente a válvula de saída (2) para voltar a pressurizar a tubagem a jusante.

Warning **Não abra rapidamente as válvulas de entrada ou de saída nem sujeite a unidade a uma pressão diferencial excessiva, caso contrário poderão ocorrer danos.**



(PL) ROCZNA GWARANCJA JAKOŚCI POWIETRZA

Jakość powietrza jest gwarantowana przez okres 1 roku, a gwarancja jest odnawiana po każdej corocznej wymianie wkładu.
Coroczna wymiana wkładu filtra zapewnia:

- Utrzymanie optymalnej wydajności
- Jakość powietrza spełniającą normy międzynarodowe
- Ochronę urządzeń podłączonych za filtrem, osób oraz procesów
- Niski koszt obsługi
- Większą produktywność i zyski
- Brak problemów

(SK) JEDNOROČNÁ ZÁRUKA KVALITY VZDUCHU

Kvalita vzduchu je zaručená na jeden rok a bude obnovená po každoročnej výmene filtračnej vložky.
Každoročné výmeny filtračných vložiek zabezpečujú:

- zachovanie optimálnej výkonnosti,
- plnenie medzinárodných noriem kvality vzduchu,
- ochranu zariadení v smere prúdenia, personálu a procesov,
- nízke prevádzkové náklady,
- zvýšenú produktivitu a ziskovosť,
- pokoj v duši.

(CS) ROČNÍ ZÁRUKA KVALITY VZDUCHU

Na kvalitu vzduchu je poskytována záruka 1 rok, která se obnovuje při každoroční výměně filtračního prvku.
Každoroční výměny filtračního prvku zajišťují:

- Zachování optimálního výkonu
- Trvalé dodržování mezinárodních norem týkajících se kvality vzduchu
- Ochranu zařízení, pracovníků a procesů za filtrem
- Nízké provozní náklady
- vyšší produktivitu a ziskovost
- klid na duši

(ET) AASTANE GARANTII ÕHU KVALITEEDILE

Teie õhu kvaliteet on garanteeritud aastaks ja pärast iga-aastast filtrielemendi vahetamist algab garantiiperiood uuesti.
Iga-aastane filtrielemendi vahetamine tagab:

- optimaalse jõudluse säilimise;
- õhukvaliteedi jätkuva vastavuse rahvusvahelistele nõuetele;
- allavoolu paiknevate seadmete, töötajate ja protsesside kaitse;
- madalad käituskulud;
- suurema tootlikkuse ja kasumlikkuse;
- meelerahu.

(HU) EGY ÉV LEVEGŐMINŐSÉG GARANCIA

A levegőminőséget 1 évre garantáljuk, azt a szűrőbetét éves cseréjekor egy évvel meghosszabítjuk.
Az éves szűrőbetét-csere a következő előnyöket biztosítja:

- Optimális teljesítmény fenntartása
- Nemzetközi szabványoknak megfelelő levegőminőség
- A folyamat későbbi pontján elhelyezett eszközök, a dolgozók és a folyamatok védelme
- Alacsony üzemeltetési költségek
- Jobb termelékenység és magasabb profit
- Lelki nyugalom

(LV) GAISA KVALITĀTES VIENA GADA GARANTIJA

Gaisa kvalitātes garantija ir spēkā 1 gadu, turklāt tiks atjaunota pēc katras ikgadējās filtra elementa maiņas.
Mainot filtra elementu reizi gadā, tiek nodrošināta:

- optimālas veiktspējas uzturēšana,
- gaisa kvalitātes pastāvīga atbilstība starptautiskajiem standartiem,
- aiz filtra pievienotā aprīkojuma, personāla un procesu aizsardzība,
- nelielas ekspluatācijas izmaksas,
- palielināts ražīgums un ienesīgums,
- nav iemesla satraukumam

(PL) Przykład kodowania modeli:

Model						
Klasa wkładu filtra	Wkład o wysokiej efektywności energetycznej	Rozmiar modelu	Rozmiar przyłącza	Typ gwintu	Opcja drenażu	Wskaźnik różnicy ciśnienia
WS AO AA ACS	P	3-cyfrowy kod jak poniżej	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Pływak M = Instrukcja	X = Brak I = Wskaźnik kontrolny zdarzeń
AA	P	030	A	G	F	I

(SK) Príklad kódovania modelu:

Model						
Trieda vložky	Prémiová energeticky výkonná vložka	Veľkosť modelu	Veľkosť otvoru	Typ závitu	Možnosť odtoku	Indikátor DP
WS AO AA ACS	P	3-číselný kód (zobrazený nižšie)	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Plávajúci M = Manuálny	X = Žiadny I = Monitorovanie udalostí
AA	P	030	A	G	F	I

(CS) Příklad kódu modelu:

Model						
Stupeň prvku	Prvotřídní energeticky úsporný prvek	Velikost modelu	Velikost hrdla	Typ závitu	Možnost vypouštění	Indikátor diferenčního tlaku
WS AO AA ACS	P	3číselný kód znázorněný níže	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Plovák M = Ruční	X = Žádný I = Monitor nehody
AA	P	030	A	G	F	I

(ET) Mudeli koodi näide:

Mudel						
Elemendi klass	Premium-tüüpi energiatõhus element	Mudeli suurus	Pordi suurus	Keerme tüüp	Äravoolu variant	DP-indikaator
WS AO AA ACS	P	3-numbriline kood, nagu allpool on näidatud	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Ujuk M = Manuaalne	X = Puudub I = Sündmuse monitor
AA	P	030	A	G	F	I

(HU) Példa az egyes modellek kódjelölésére:

Típus						
Betét minőségi osztálya WS AO AA ACS	Prémium energiahatékonyságú elem P	Típus mérete Az alább látható 3-jegyű kód	Csatlakozófurat mérete A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Menet típusa G = BSPP N = NPT	Leeresztés módja F = Úszó M = Kézi	Nyomáskülönbség-jelző X = Nincs I = Problémafigyelő
AA	P	030	A	G	F	I

(LV) Modeļa kodu piešķiršanas piemērs

Modelis						
Elementa kategorija WS AO AA ACS	Augstākās klases enerģiju taupošs elements P	Modeļa izmērs Trīsciparu kods, kā redzams tālāk	Pieslēgvietas izmērs A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Vītnes veids G = BSPP N = NPT	Notecināšanas iespēja F = Pludiņš M = Manuāls	DP indikators X = Neviens I = Incidentu uzraudzības ierīce
AA	P	030	A	G	F	I

(PL) Dobór produktów

Wymienione przepływy dotyczą pracy przy ciśnieniu 7 bar g (100 psi g) w odniesieniu do temp. 20°C, ciśnienia 1 bar (a) i ciśnienia względnego pary wodnej 0%.

W przypadku przepływów w innych ciśnieniach należy zastosować przedstawione współczynniki korekcji.

(SK) Výber produktu

Uvedené prietoky sú pre prevádzku pri tlaku 7 bar g (100 psi g) s referenciou 20°C, 1 bar (a), 0 % relatívny tlak vodnej pary.

V prípade prietokov pri iných tlakoch sa musia uplatňovať uvedené korekčné koeficienty.

(CS) Výběr produktu

Uvedené průtoky platí při provozu na 7 bar g (100 psi g) při teplotě 20 °C, 1 bar a, 0 % relativního tlaku vodní páry.

Pro průtoky při jiném tlaku použijte uvedené korekční faktory.

(ET) Toote valimine

Toodud voolukiirused on mõeldud töötamiseks võimsusel 7 baari g (100 psi g), kusjuures referentsväärtuseks on 20°C, 1 baari a, 0% suhteline veeauru surve.

Muude survete puhul rakendage näidatud korrektsioonifaktoreid.

(HU) Termékkiválasztás

A megadott átfolyási értékek 7 bar g (100 psi g) nyomáson való üzemeltetés esetén, 20°C hőmérsékletnél, 1 bar a és 0% relatív vízpáranyomás referenciaértékeken érvényesek.

Más nyomásértékek mellett az átfolyásra alkalmazza a bemutatott korrekciós tényezőket.

(LV) Produktu atlase

Noteiktās plūsmas darbībai ar 7 stieņiem g (100 psi g) ar norādi 20 °C, 1 stienis (a), 0% relatīvais ūdens tvaika spiediens.

Plūsmām pie citām spiediena vērtībām lietojiet norādītos labošanas faktorus.

Natężenia przepływu przez separator wody

Prietokové rýchlosti odlučovača vody, Průtokové rychlosti odlučovače vody, Veeseparaatori vooluhulgad, Vízleválasztó átfolyási sebességei, Ūdens separatora plūsmas ātruma vērtības

Model			Port Size	L/s	m3/min	m3/hr	cfm
WS	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21
WS	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21
WS	P010C	[ ] [ ] [ ]	½	10	0.6	36	21
WS	P015C	[ ] [ ] [ ]	½	40	2.4	144	85
WS	P020D	[ ] [ ] [ ]	¾	40	2.4	144	85
WS	P025D	[ ] [ ] [ ]	¾	110	6.6	396	233
WS	P025E	[ ] [ ] [ ]	1	110	6.6	396	233
WS	P030G	[ ] [ ] [ ]	1 ½	110	6.6	396	233
WS	P035G	[ ] [ ] [ ]	1 ½	350	21.0	1260	742
WS	P040H	[ ] [ ] [ ]	2	350	21.0	1260	742
WS	P045I	[ ] [ ] [ ]	2 ½	350	21.0	1260	742
WS	P050I	[ ] [ ] [ ]	2 ½	800	48.0	2880	1695
WS	P055J	[ ] [ ] [ ]	3	800	48.0	2880	1695

CFP — współczynnik korekcji dla minimalnego ciśnienia wlotowego (separatory wody)
CFP – korekčný faktor minimálneho tlaku na prívode (odlučovače vody), CFP – korekční faktor, minimální vstupní tlak (odlučovače vody), CFP – minimaalse sisselaskerõhu parandustegur (veeseparaatorid), CFP - Minimális bemeneti nyomás korrekciós tényezője (vízleválasztók), CFP — korekcijas faktora minimālais ieplūdes spiediens (ūdens separators) ,

Minimum Inlet Pressure																
	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		4.00	2.63	2.00	1.59	1.33	1.14	1.00	0.94	0.89	0.85	0.82	0.79	0.76	0.73	0.71	0.68

Natężenia przepływu przez filtr

Prietokové rýchlosti filtra, Průtokové rychlosti filtru, Filtri vooluhulgad, Szűrő átfolyási sebességei, Filtra plūsmas ātruma vērtības

Model			Port Size	L/s	m3/min	m3/hr	cfm	Replacement Element kit		No.
[grade]	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21	P010	[grade]	1
[grade]	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21	P010	[grade]	1
[grade]	P010C	[ ] [ ] [ ]	½	10	0.6	36	21	P010	[grade]	1
[grade]	P015C	[ ] [ ] [ ]	½	20	1.2	72	42	P015	[grade]	1
[grade]	P020C	[ ] [ ] [ ]	½	30	1.8	108	64	P020	[grade]	1
[grade]	P020D	[ ] [ ] [ ]	¾	30	1.8	108	64	P020	[grade]	1
[grade]	P025D	[ ] [ ] [ ]	¾	60	3.6	216	127	P025	[grade]	1
[grade]	P025E	[ ] [ ] [ ]	1	60	3.6	216	127	P025	[grade]	1
[grade]	P030G	[ ] [ ] [ ]	1 ½	110	6.6	396	233	P030	[grade]	1
[grade]	P035G	[ ] [ ] [ ]	1 ½	160	9.6	576	339	P035	[grade]	1
[grade]	P040H	[ ] [ ] [ ]	2	220	13.2	792	466	P040	[grade]	1
[grade]	P045I	[ ] [ ] [ ]	2 ½	330	19.8	1188	699	P045	[grade]	1
[grade]	P050I	[ ] [ ] [ ]	2 ½	430	25.8	1548	911	P050	[grade]	1
[grade]	P055I	[ ] [ ] [ ]	2 ½	620	37.3	2232	1314	P055	[grade]	1
[grade]	P055J	[ ] [ ] [ ]	3	620	37.3	2232	1314	P055	[grade]	1

[klasa] = klasa
[stupeň] = stupeň
[Třída] = třída
[puhastusaste] = puhastusaste
[osztály] = osztály
[Kategorija] = Kategorija

CFP — współczynnik korekcji dla minimalnego ciśnienia wlotowego (filtry koalescencyjne i suchych cząstek stałych)

CFP – korekčný faktor minimálneho tlaku na prívode (zlučovače a suché časticové filtre), CFP – korekční faktor, minimální vstupní tlak (slučovací filtry a filtry suchých částic), CFP – minimaalse sisselaskerõhu parandustegur (koalestsents- ja kuivade osakeste filtrid), CFP - Minimális bemeneti nyomás korrekciós tényezője (Koaleszcens és száraz részecskeszűrők), CFP — korekcijas faktora minimālais ieplūdes spiediens (koalescences filtrs un sauso daļiņu filtrs)

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232	248	263	277	290
Correction Factor		2.65	1.87	1.53	1.32	1.18	1.08	1.00	0.94	0.88	0.84	0.80	0.76	0.73	0.71	0.68	0.66	0.64	0.62	0.61	0.59

(PL) Dobór produktów i współczynniki korekcji

W celu doboru właściwego modelu filtra lub separatora wody należy skorygować natężenie przepływu przez filtr ze względu na minimalne ciśnienie robocze systemu.

1 Uzyskaj informacje na temat minimalnego ciśnienia roboczego i maksymalnego natężenia przepływu sprężonego powietrza na wlocie filtra lub separatora wody.

2 Z tabeli CFP wybierz współczynnik korekcji dla minimalnego ciśnienia roboczego (zawsze zaokrąglając w dół — np. dla ciśnienia 5,3 bara użyj współczynnika korekcji dla 5 barów).

3 Oblicz minimalną wydajność filtracji. Minimalna wydajność filtracji = natężenie przepływu powietrza sprężonego x CFP

4 Na podstawie minimalnej wydajności filtracji wybierz model filtra lub separatora wody z tabeli natężenia przepływu powyżej (wybrany filtr lub separator wody musi charakteryzować się natężeniem przepływu większym lub równym minimalnej wydajności filtracji).

(SK) Výber produktov a korekčné faktory

Pre výber správneho modelu odlučovača vody alebo filtra je potrebné prietokovú rýchlosť filtra prispôsobiť minimálnemu prevádzkovému tlaku systému.

1 Na prívode odlučovača vody alebo filtra dosiahnite minimálny prevádzkový tlak a maximálnu prietokovú rýchlosť stlačeného vzduchu.

2 Z tabuľky CFP vyberte korekčný faktor pre minimálny prevádzkový tlak (vždy zaokrúhlite nadol, napr. v prípade 5,3 bar použite korekčný faktor 5 bar).

3 Vypočítajte minimálnu filtračnú kapacitu. Minimálna filtračná kapacita = prietoková rýchlosť stlačeného vzduchu x CFP

4 Na základe minimálnej filtračnej kapacity vyberte z hore uvedených tabuliek prietokových rýchlostí vhodný model odlučovača vody alebo filtra (vybratý odlučovač vody alebo filter musí mať prietokovú rýchlosť rovnakú alebo vyššiu ako je minimálna filtračná kapacita).

(CS) Výběr produktu a korekční faktory

Ke správnému výběru modelu odlučovače vody nebo filtru je třeba přizpůsobit průtokovou rychlost filtru minimálnímu provoznímu tlaku systému.

1 Na vstupu odlučovače vody nebo filtru dosáhněte minimálního provozního tlaku a maximálního průtoku stlačeného vzduchu.

2 Podle tabulky faktorů CFP zvolte korekční faktor odpovídající minimálnímu provoznímu tlaku (zaokrouhlujte vždy dolů, např. při tlaku 5,3 bar použijte korekční faktor pro tlak 5 bar).

3 Vypočítejte minimální filtrační kapacitu. Minimální filtrační kapacita = průtoková rychlost stlačeného vzduchu × CFP

4 Na základě minimální filtrační kapacity zvolte model odlučovače vody nebo filtru podle výše uvedených tabulek průtokové rychlosti (vybraný odlučovač vody nebo filtr musí mít průtokovou rychlost stejnou nebo vyšší než minimální filtrační kapacita).

(ET) Toote valimine ja parandustegurid

Veeseparaatori või filtri mudeli õigesti valimiseks tuleb filtri vooluhulka reguleerida vastavalt süsteemi minimaalsele töörõhule.

1 Minimaalse töörõhu ja maksimaalse suruõhu vooluhulga saate veeseparaatori või filtri sisselaskeavalt.

2 Valige minimaalse töörõhu parandustegur CFP-tabelist (alati ümardage allapoole, nt töörõhu 5,3 bar puhul kasutage töörõhu 5 bar parandustegurit)

3 Arvutage minimaalne filtreerimisvõimsus. Minimaalne filtreerimisvõimsus = suruõhu vooluhulk x CFP

4 Kasutades minimaalset filtreerimisvõimsust, valige veeseparaatori või filtri mudel eespool olevatest vooluhulga tabelitest (valitud veeseparaatoril või filtril peab olema vooluhulk, mis on võrdne minimaalse filtreerimisvõimsusega või mis on sellest suurem).

(HU) Termékválasztás és korrekciós tényezők

A vízleválasztó- vagy szűrőtípus megfelelő kiválasztásához a szűrő átfolyási sebességét a rendszer minimális üzemi nyomásához kell állítani.

1 Határozza meg a vízleválasztó vagy a szűrő bemeneténél érvényes minimális üzemi nyomást és maximális sűrítettlevegő-átfolyási sebességet.

2 A CFP táblázatból válassza ki a minimális üzemi nyomáshoz tartozó korrekciós tényezőt (mindig lefelé kerekítsen, pl.: 5,3 bar esetén 5 bar korrekciós tényezőt használjon)

3 Számítsa ki a minimális szűrőképességet. Minimális szűrőképesség = Sűrített levegő átfolyási sebessége x CFP

4 A minimális szűrőképesség alapján válasszon egy vízleválasztó- vagy szűrőtípust az átfolyási sebességekkel kapcsolatos fenti táblázatokból (a kiválasztott vízleválasztó vagy szűrő átfolyási sebességének legalább akkorának kell lennie, mint a minimális szűrőképesség).

(LV) Izstrādājumu atlase un korekcijas faktori

Lai pareizi atlasītu ūdens separatoru vai filtra modeli, filtra plūsmas ātrums ir jāpielāgo sistēmas minimālajam darba spiedienam.

1 Iegūstiet minimālo darba spiedienu un maksimālo saspiesta gaisa plūsmas ātrumu pie ūdens separatora vai filtra ieplūdes.

2 Atlasiet korekcijas faktoru minimālajam darba spiedienam no CFP tabulas (vienmēr noapaļojiet uz leju, piemēram, 5,3 bāriem izmantojiet 5 bāru korekcijas faktoru)

3 Aprēķiniet minimālo filtrācijas kapacitāti. Minimālā filtrācijas kapacitāte = saspiesta gaisa plūsmas ātrums x CFP

4 Izmantojot minimālo filtrācijas kapacitāti, atlasiet ūdens separatora vai filtra modeli no iepriekš dotajām plūsmas ātruma tabulām (atlasītajam ūdens separatoram vai filtram ir jābūt tādam plūsmas ātrumam, kas vienāds ar minimālo filtrācijas ātrumu vai lielāks par to).

Parametry techniczne

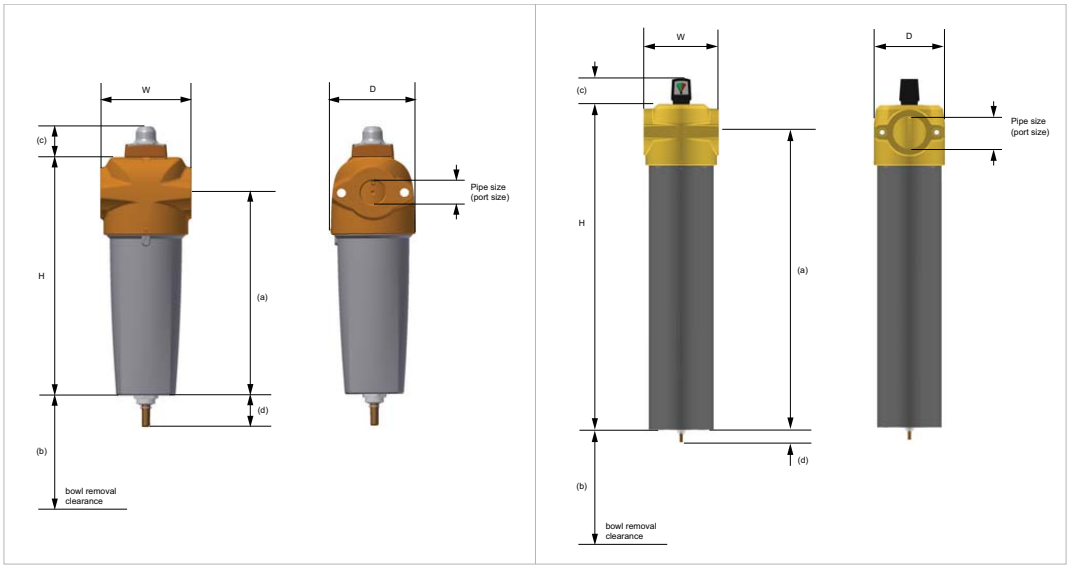
Technické údaje, Technické údaje, Tehniline teave, Műszaki adatok, Tehniskie dati

Model	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Recommended Operating Temp		Max Recommended Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
WS	P010 [ ] [ ] F [ ] - 035 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AO	P010 [ ] [ ] F [ ] - 035 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AO	P010 [ ] [ ] M [ ] - 035 [ ] [ ] M [ ]	1	15	20	290	2	35	100	212
AA	P010 [ ] [ ] F [ ] - 035 [ ] [ ] F [ ]	1	15	16	232	2	35	80	176
AA	P010 [ ] [ ] M [ ] - 035 [ ] [ ] M [ ]	1	15	20	290	2	35	100	212
ACS	P010 [ ] [ ] M [ ] - 035 [ ] [ ] M [ ]	1	15	20	290	2	35	50	122

Note: AO / AA / WS grade filters for use up to 16 bar g (232 psi g) are supplied with a float drain [F] as standard.
For pressures between 16 and 20 bar g (232 and 290 psi g) a manual drain [M] must be used.
ACS grade filters are supplied with a manual drain [M] as standard.

Masy i wymiary

Hmotnosti a rozmery, Hmotnosti a rozměry, Massid ja mõõtmed, Tömeg- és méretadatok, Svars un izmēri



Model	Pipe Size	Height (H)		Width (W)		Depth (D)		(a)		(b)		(c)		(d)		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
WS / P010A	¼"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010B	⅜"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010C	½"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P015C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.16	2.55
P020C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P020D	¾"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P025D	¾"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P025E	1"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P030G	1 ½"	367	14.45	120	4.72	114.5	4.5	323	12.7	70	2.76	32	1.3	38	1.5	2.68	5.91
WS / P035G	1 ½"	531	20.9	164	6.46	156	6.10	384	15.1	100	3.94	68	2.68	38	1.5	6.90	15.20
WS / P040H	2	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.30	16.10
WS / P045I	2 ½	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.10	15.65
WS / P050I	2 ½	745	29.3	192	7.56	183	7.20	587	23.1	120	4.72	68	2.68	38	1.5	10.30	22.71
P055I	2 ½	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73
WS / P055J	3	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73

Note: Water Separators do not include a DP Indicator, use dimension H + d for the total height.

(PL) Zalecenia dotyczące instalacji

Zalecane jest oczyszczenie sprężonego powietrza przed punktami wlotowymi systemu rozprowadzania, jak też w głównych punktach stosowania.

Instalowanie osuszaczy sprężonego powietrza w wilgotnym układzie może prowadzić do gromadzenia się dodatkowych zanieczyszczeń w punktach stosowania filtrów do czasu osuszenia układu rozprowadzającego. W tym czasie może być konieczna częstsza wymiana wkładów filtrów.

W instalacjach, w których stosuje się sprężarki bezolejowe, aerozol wodny i cząsteczki zanieczyszczeń nadal będą występować; należy wtedy nadal używać filtrów uniwersalnych i wysokowydajnych.

Filtr uniwersalny powinien być zawsze instalowany w celu ochrony filtra wysokowydajnego przed większymi ilościami aerozoli cieczy i cząstkami stałymi.

Sprzęt oczyszczający należy zainstalować w najniższej temperaturze powyżej temperatury krzepnięcia, najlepiej za chłodnicą końcową i odbiornikami powietrza.

Punkt stosowania sprzętu oczyszczającego powinien znajdować się jak najbliżej miejsca stosowania powietrza.

Sprzęt oczyszczający nie może być instalowany za zaworami szybko otwierającymi i powinien być zabezpieczony przed ewentualnym przepływem wstecznym i innymi warunkami uderzeniowymi.

Przed instalacją należy oczyścić wszystkie przewody rurowe prowadzące do sprzętu oczyszczającego; należy również oczyścić wszystkie przewody rurowe po instalacji sprzętu oczyszczającego i przed podłączeniem do odbiorników końcowych.

Jeżeli do sprzętu oczyszczającego są zamontowane boczniki, należy sprawdzić, czy są do nich zamontowane odpowiednie filtry chroniące przed zanieczyszczeniem systemu w dół kierunku przepływu.

Przewody drenażowe z filtrów koalescencyjnych należy przymocować do separatora skroplin. Jeśli podłączenie przewodów drenażowych bezpośrednio do separatora nie jest możliwe, przewody należy doprowadzić do kolektora skroplin (odpowietrzonego na jednym końcu), a następnie do pojedynczego wlotu separatora skroplin.

Należy zapewnić system drenażu cieczy ze sprzętu oczyszczającego. Zebrana ciecz powinna zostać oczyszczona i usunięta w odpowiedni sposób.

(SK) Odporúčania týkajúce sa inštalácie

Stlačený vzduch sa odporúča spracúvať pred vstupom do distribučného systému a tiež v kritických používateľských bodoch alebo aplikáciách.

Inštalácia tlakových vzduchových sušičov do predtým mokrého systému by mohla zapríčiniť ďalšie ukladanie nečistoty pri používaní filtrov počas obdobia, kým distribučný systém vyschne. Filtračné vložky bude potrebné počas tohto obdobia vymieňať častejšie.

Pri inštaláciách, kde sa používajú bezolejnaté kompresory, je stále prítomný vodný aerosól a častice, a preto by sa stále mali používať univerzálne a vysokoúčinné stupne.

Vždy musí byť nainštalovaný univerzálny filter, ktorý má chrániť vysokoúčinný filter pred voľne loženými aerosólmi a pevnými časticami.

Čistiace zariadenie inštalujte pri čo najnižšej teplote nad bodom mrazu, najlepšie v smere prúdenia chladičov vzduchu a prijímačov vzduchu.

Bod použitia čistiaceho zariadenia by mal byť nainštalovaný čo najbližšie k aplikácii.

Čistiace zariadenie by sa nemalo inštalovať v smere prúdenia rýchlootváracích ventilov a malo by byť chránené pred možným opačným prúdením alebo pred inými nepriaznivými podmienkami.

Pred inštaláciou vyčistite všetky potrubia vedúce k čistiacemu zariadeniu a po nainštalovaní čistiaceho zariadenia a pred pripojením ku koncovej aplikácii vyčistite všetky potrubia.

Ak sú okolo čistiaceho zariadenia nainštalované obtokové trubice, zabezpečte, aby bola do obtokových trubíc nainštalovaná primeraná filtrácia, aby sa zabránilo znečisteniu systému v smere prúdenia.

Odtokové trubice z koalescenčných filtrov nasaďte priamo na separátor kondenzátu. Ak nie je možné pripojiť odtokové trubice priamo na separátor, mali by sa odventilovať do zberného potrubia kondenzátu (na jednom konci) a potom do jedného ventilu separátora kondenzátu.

Zabezpečte príslušenstvo na odvádzanie nahromadenej kvapaliny z čistiaceho zariadenia. Pri zaobchádzaní s nahromadenou kvapalinou a jej likvidácii je potrebné postupovať zodpovedným spôsobom.

(CS) Doporučení k instalaci

Před připojením do rozvodného systému a v kritických místech použití / v přívodech doporučujeme stlačený vzduch upravit.

Instalace vysoušečů stlačeného vzduchu do vlhkého systému může vést k nanesení dalších nečistot do filtrů po dobu vysoušení rozvodného systému. Během této doby může být potřeba častější výměna filtračních prvků.

V instalacích, kde se využívají bezolejové kompresory, je vodní aerosol a jeho částice stále přítomen. Přesto je stále třeba použít všeobecně využitelné filtry s vysokým stupněm účinnosti.

Všeobecně využitelný filtr musí být vždy instalován tak, aby chránil vysoce účinný filtr před velkým objemem kapalinových aerosolů a pevnými částicemi.

Čisticí zařízení instalujte při nejnižší teplotě nad bodem mrazu, nejlépe ve směru dochlazovače a zásobníků vzduchu.

Čisticí zařízení v místě použití by mělo být instalováno co nejblíže k přívodu.

Čisticí zařízení by nemělo být instalováno ve směru rychlootvíracích ventilů a mělo by být chráněno před případným zpětným průtokem či jinými podobnými situacemi.

Před instalací vyčistěte veškeré potrubí vedoucí k čisticímu zařízení. Čištění veškerého potrubí opakujte po instalaci a před připojením zařízení k poslednímu přívodu.

Pokud jsou kolem čisticího zařízení umístěna obtoková potrubí, zkontrolujte, zda je filtrace upevněna k obtokovému potrubí, aby nedošlo ke kontaminaci ve směru systému.

Odtoková potrubí upevněte od koalescenčních filtrů přímo k oddělovači kondenzátu. Pokud není možné připojit odtoková potrubí přímo k oddělovači, měli byste potrubí odvětrat do potrubí kondenzátu (odvětrávaného na jednom konci) a pak do jediného vstupu oddělovače kondenzátu.

Opatřete si vybavení pro odvod nahromaděné kapaliny z čisticího zařízení. S nahromaděnou kapalinou je nutné zacházet odpovědným způsobem a stejným způsobem ji také likvidovat.

(ET) Paigaldussoovitused

Suruõhku on soovitatav töödelda enne jaotussüsteemi sisenemist, samuti enne kriitilisi kasutuspunkte/rakendusi.

Suruõhukuivatite paigaldamine eelnevalt märga süsteemi võib põhjustada saasta täiendava kogunemise kasutuspunktide filtrites ajavahemikul, mil jaotussüsteem kuivab. Sel ajal võib osutuda vajalikuks filterelementide sagedasem vahetamine.

Seadmetes, kus kasutatakse õlivabu kompressoreid, on vesiaerosool ja mikroosakesed siiski olemas, mis nõuavad ikkagi üldotstarbeliste ja kõrgtootlike klasside kasutamist.

Üldotstarbeline filter peab olema alati paigaldatud, et kaitsta kõrgtootlikku filtrit vedelaine aerosoolide ja tahkete osakeste eest.

Puhastusseadmed paigaldage kõige madalama temperatuuriga kohtadesse, enne hangumispunkti, eelistatavalt väljavoolule järeljahutitest ja õhuressiiveritest.

Puhastusseadme kasutuspunkt peaks asuma rakenduskohale võimalikult lähedal.

Puhastusseadet ei tohiks paigaldada kiiresti avanevatest ventiilidest allavoolu ning seade peaks olema kaitstud võimaliku tagasivoolu või muude löökkoormuste eest.

Kogu puhastusseadmeni viiv torustik tuleb enne puhastusseadme paigaldamist läbi puhuda, samuti pärast seadme paigaldamist ning enne selle ühendamist lõpliku rakenduskohaga.

Kui puhastusseade varustatakse möödavooluliiniga, tuleb tagada selle vastav filtreerimine, hoidmaks ära väljavoolusüsteemi saastumist.

Ühendage kogumisfiltrite äravooluliinid otse kondensaadi separaatoriga. Kui äravooluliine ei ole võimalik otse separaatoriga ühendada, tuleks liinid ventileerida kondensaadikollektorisse (ühest otsast ventileeritud) ja seejärel kondensaadi separaatori ühisesse sisselaskeavasse.

Puhastusseadmest sinna kogunenud vedeliku välja laskmiseks varustage see kraaniga. Kogunenud vedelikke tuleb käidelda ja utiliseerida ettenähtud viisil.

(HU) Üzembe helyezési javaslatok

Javasoljuk, hogy az elosztórendszerbe, valamint a kritikus felhasználási pontokhoz/alkalmazásokhoz is kezelt sűrítettlevegőt biztosítson.

A sűrítettlevegős szárítók korábban nedves rendszerre telepítése járulékos szennyezési terhelést jelenthet a szűrő használatának kezdetétől számítva a szállítórendszer kiszáradásáig terjedő időtartamig. Ezen időszak alatt esetleg gyakrabban kell cserélni a szűrőbetéteket.

Olajmentes kompresszorokat tartalmazó összeállítások esetén vízpermet és (szilárd) részecskék jelenléte mellett általános rendeltetésű és nagy hatékonyságú fokozatokat is kell használni.

Az általános rendeltetésű szűrőt a nagy hatékonyságú szűrő nagy mennyiségű folyadék-aerosoltól és szilárd részecskéktől való védelme érdekében mindig használni kell.

A tisztítóberendezést telepítse a fagypont feletti legalacsonyabb hőmérsékletű helyre, lehetőleg az utóhűtők és levegő beömlők utáni vezetékszakaszra.

A használat helyéhez tervezett tisztítóberendezést helyezze el a lehető legközelebb az alkalmazáshoz.

A tisztítóberendezések nem telepíthetők a gyorsnyitású szelepek elmenő oldalára, azokat meg kell védeni az esetleges ellenáramlástól és más hirtelen behatásoktól.

A telepítés előtt fúvasson át minden, a tisztítóberendezéshez vezető csővezetéket, a telepítés után és az alkalmazás végső bekötése előtt pedig még egyszer fúvassa át az összes csővezetéket.

Ha a tisztítóberendezés körül megkerülő csővezetékek találhatók, a rendszer elmenő oldal elszennyeződésének megelőzése érdekében gondoskodjon a kerülővezetékeken megfelelő szűrésről.

Illessze a koaleszcenciás szűrő leeresztő vezetékeit közvetlenül a kondenzát-leválasztóra. Ha a leeresztő vezetékeket nem lehet közvetlenül a leválasztóra csatlakoztatni, akkor a vezetékeket a kondenzát elosztócsőnél kell levegővel szellőztetni (az egyik végről), majd azt a kondenzát-leválasztó önálló bemenetéhez kell csatlakoztatni.

A tisztítóberendezés leürítésénél gondoskodjon az összegyűlt folyadék megfelelő elszállításáról. Az összegyűjtött folyadékot kezelje és selejtezze le környezetbarát módon.

(LV) Ieteikumi uzstādīšanai

Ieteicams saspiesto gaisu apstrādāt pirms ievadīšanas sadales sistēmā un arī izšķirošajos lietošanas punktos / lietojumos.

Uzstādot saspiestā gaisa žāvētājus uz sistēmas, kas pirms tam bijusi mitra, filtros, kas uzstādīti lietošanas vietā, laikā, kamēr sadalīšanas sistēma izžūst, attiecīgi var sakrāties netīrumi. Filtra elementi, iespējams, šajā laikā jāmaina daudz biežāk.

Ja uzstādījumos, kur izmantoti saspiedēji bez eļļas, joprojām atrodas ūdens aerosols un daļiņas, joprojām jāpiemēro vispārējā nolūka un augstas produktivitātes kritēriji.

Vienmēr jābūt uzstādītam vispārēja nolūka filtram, lai augstas produktivitātes filtrs būtu pasargāts no šķidruma balonu aerosoliem un cietām daļiņām.

Uzstādiet attīrīšanas iekārtu viszemākajā temperatūrā virs sasalšanas punkta, vislabāk aiz pēcdzesētājiem un gaisa uztvērējiem.

Attīrīšanas iekārtas lietošanas punktam jābūt uzstādītam pēc iespējas tuvu lietojumam.

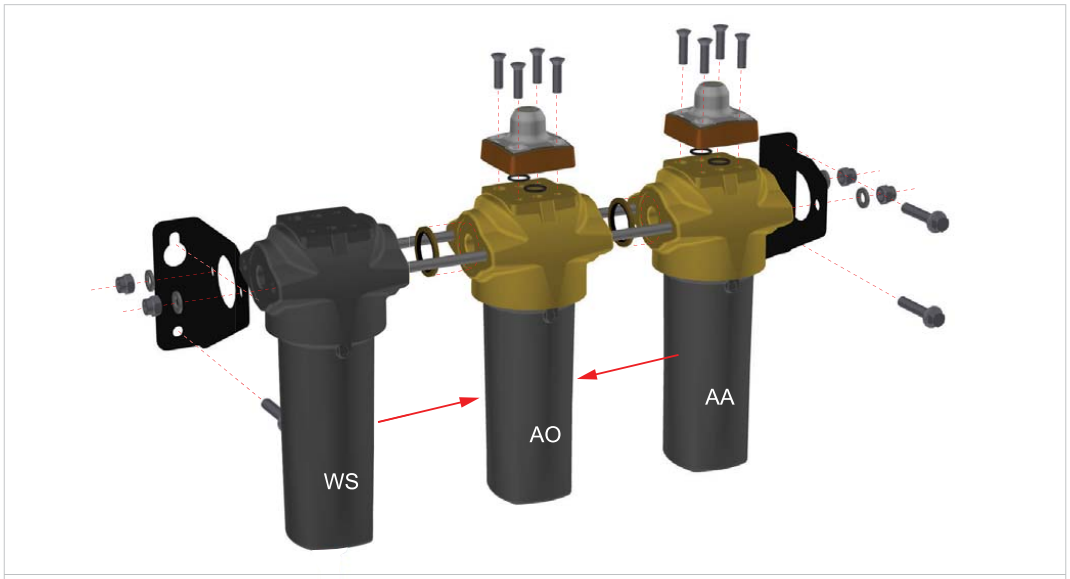
Attīrīšanas iekārtu nedrīkst uzstādīt aiz ātrās atveres vārstiem, un tā ir jāsargā no iespējamas pretplūsmas vai citiem trieciena apstākļiem.

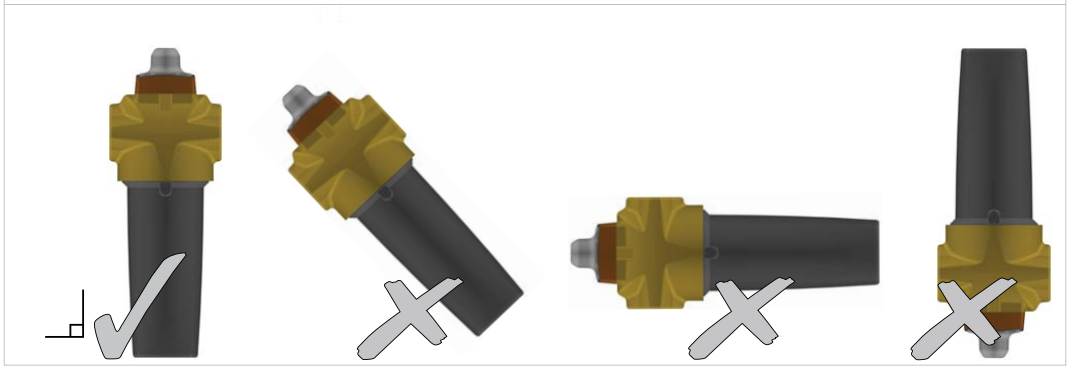
Pirms uzstādīšanas iztīriet visas caurules, kas virzītas uz attīrīšanas iekārtu; iztīriet tās vēlreiz pēc attīrīšanas iekārtas uzstādīšanas, kā arī pirms pievienošanas pēdējam lietojumam.

Ja ap attīrīšanas iekārtu ir uzstādītas apvadlīnijas, nodrošiniet, ka apvadlīnijas ir aprīkotas ar piemērotu filtru, lai nepiesārņotu tālāk esošo sistēmu.

Uzstādiet novadcaurules, kas ved no koalescējošajiem filtriem tieši līdz kondensāta atdalītājam. Ja novadcaurules nav iespējams savienot tieši ar separatoru, tās jāizvada kondensāta kolektorā (ar izeju vienā galā) un pēc tam vienā kondensāta separatora ieplūdes vietā.

Apgādājiet attīrīšanas iekārtu ar ierīci, ar ko no tās iztecina uzkrāto šķidrumu. Savāktais šķidrums jāapstrādā un no tā jāatbrīvojas atbilstošā veidā.





(PL) Dolna płyta zamykająca może poruszać się, gdy filtr nie jest pod ciśnieniem.

Warning Dolna płyta zamykająca nie jest elementem przeznaczonym do serwisowania, dlatego nigdy nie należy jej demontować.

(SK) Spodný doskový uzáver sa môže hýbať, keď filter nie je pod tlakom.

Warning Spodný doskový uzáver nie je opraviteľnou časťou a nikdy sa nesmie odmontovať.

(CS) Dolní uzavírací deska se může dát do pohybu, pokud filtr není natlakován

Warning Dolní uzavírací deska je neopravitelná položka a nikdy by se neměla demontovat.

(ET) Alumine sulgurplaat võib liikuda, kui filter on survestamata.

Warning Alumist sulgurplaati ei saa hooldada ja seda ei tohi kunagi eemaldada.

(HU) Az alsó zárólemez elmozdulhat, ha a szűrőt nem helyezi nyomás alá.

Warning Az első zárólemez nem javítható, azt tilos elmozdítani.

(LV) Ja filtrā nav paaugstināta spiediena, apakšējā noslēgplāksne var kustēties

Warning Apakšējā noslēgplāksne ir detaļa, kam nav nepieciešama apkope, un to nedrīkst noņemt.

(PL) Uruchomienie i eksploatacja

Warning

Przed zwiększeniem ciśnienia w filtrze należy się upewnić, że głowica oraz obudowa są prawidłowo zamontowane, a elementy blokujące są prawidłowo ustawione, jak pokazano w sekcji dotyczącej konserwacji (procedura konserwacji 6) w niniejszym podręczniku.

1. Powoli otwórz zawór wlotowy, aby stopniowo zwiększyć ciśnienie w urządzeniu.
2. Powoli otwórz zawór wylotowy, aby zwiększyć ciśnienie w dalszej części instalacji.

Nie wolno szybko otwierać zaworów wlotowych ani wylotowych, ponieważ może to doprowadzić do zbyt dużej różnicy ciśnień w urządzeniu i do jego uszkodzenia.

(SK) Spustenie a prevádzka

Warning

Pred natlakovaním filtra sa uistite, že hlavica a teleso sú nasadené správne a zaisťovacia súčiastka je správne zarovnaná, ako je zobrazené v časti o údržbe (postup údržby 6) tejto príručky.

1. Pomalým otvorením prívodného ventilu postupne natlakujte jednotku.
2. Pomalým otvorením vývodného ventilu opätovne natlakujte potrubie v smere prúdenia.

Prívodný ani vývodný ventil neotvárajte rýchlo ani nevystavujte jednotku nadmernému rozdielu tlaku, inak môže dôjsť k poškodeniu.

(CS) Spuštění a provoz

Warning

Než natlakujete filtr, zkontrolujte, zda je hlavice a baňka řádně nasazena a že pojistný detail je správně zarovnán v souladu s ustanoveními oddílu údržby (postup údržby č. 6) v tomto návodu.

1. Pomalým otevřením přívodního ventilu jednotku pozvolna natlakujte.
2. Pomalým otevřením výstupního ventilu znovu natlakujte potrubí ve směru rozvodu.

Přívodní ani výstupní ventily neotvírejte rychle, ani jednotku nevystavujte nadměrným rozdílům tlaku, v opačném případě může dojít k poškození.

(ET) Käikulaskmine ja käitamine

Warning

Enne filtri survestamist veenduge, et kate ja nõu on õigesti paigaldatud ning lukustusdetail õigesti joondatud, nagu on näidatud käesoleva juhendi hooldusjaotises (hooldustoiming nr 6).

1. Üksuse järkjärguliseks survestamiseks avage sisselaskeventiil aeglaselt.
2. Avage väljalaskeventiil aeglaselt surve taastamiseks väljavoolutorustikus.

Sisselaske- ja väljalaskeventiile ei tohi avada kiiresti ega põhjustada üksuses liiga suurt survelangu, mis võib seda kahjustada.

(HU) Beindítás és üzemeltetés

Warning

A szűrő nyomás alá helyezése előtt győződjön meg arról, hogy a szűrőedény és a szűrőfej megfelelően van felszerelve, és a zárószerkezet megfelelően igazodik - a kézikönyv karbantartási fejezetében látható módon (6-os karbantartási eljárás).

1. Az egység fokozatosan történő nyomás alá helyezéséhez a bemenő szelepet lassan nyissa meg.
2. Az elvezető csővezeték nyomásának visszaállításához lassan nyissa meg az elvezető szelepet.

A berendezés károsodásának elkerülése érdekében ne nyissa meg túl gyorsan a bemenő vagy az elvezető szelepet, és ne tegye ki az egységet nagy nyomáskülönbségnek.

(LV) Darbības uzsākšana un darbība

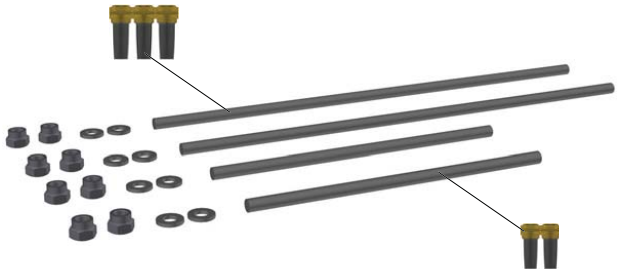
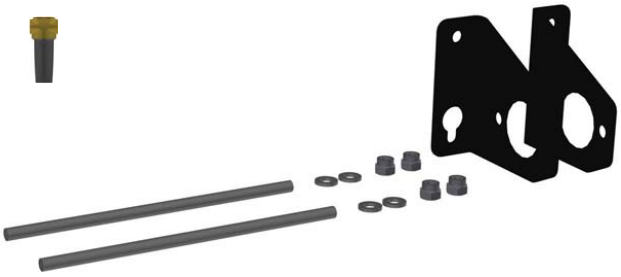
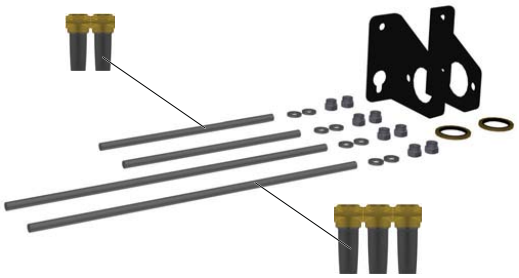
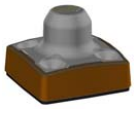
Warning

Pirms spiediena paaugstināšanas filtrā pārliecinieties, vai filtra galva un korpuss ir uzstādīts pareizi un vai fiksēšanas atzīmes atrodas viena pret otru, kā parādīts šīs rokasgrāmatas apkopes sadaļā (6. apkopes procedūra).

1. Lēni atveriet ieplūdes vārstu, lai iekārtā pakāpeniski paaugstinātu spiedienu.
2. Lēni atveriet izplūdes vārstu, lai atkal paaugstinātu spiedienu aiz iekārtas esošajās caurulēs.

Neatveriet ieplūdes vai izplūdes vārstus strauji un nepakļaujiet iekārtu pārmērīgai spiedienu starpībai, citādi var radīt bojājumus.

Akcesoria / części zamienne (zestawy serwisowe)
Príslušenstvo / náhradné diely (servisné súpravy), Příslušenství / Náhradní díly (Servisní sady), Tarvikud / varuosad (teeninduskomplektid),
Tartozékok / cserealkatrész lista (szervizkészletek), Piederumi / rezerves daļas (apkopes komplekti)

Filter Models	Catalogue Number	Contents
010	TRK1-2	
015 - 020	TRK2-2	
025 - 030	TRK3-2	
035- 045	TRK4-2	
050- 055	TRK5-2	
010	MBK1-1	
015 - 020	MBK2-1	
025 - 030	MBK3-1	
035 - 045	MBK4-1	
050 - 055	MBK5-1	
010	MBK1-2	
015 - 020	MBK2-2	
025 - 030	MBK3-2	
035 - 045	MBK4-2	
050 - 055	MBK5-2	
010 - 055	EM1	
010 - 055	PD15NO	
010 - 030	DPI-K	
035 - 055	ZD90GL	

Konserwacja
Údržba, Údržba, Hooldamine, Karbantartás, Tehniskā apkope

(PL) **Częstotliwość konserwacji**
W celu zapewnienia optymalnego działania filtra należy co 12 miesięcy wymieniać wkłady filtra klasy AO, AA, oraz dren automatyczny.

Skuteczność działania wkładu ACS jest oparta na maksymalnym stężeniu oparów oleju wynoszącym 0,018mg/m^3. W przypadku wykrycia oparów, zapachu lub smaku wymienić wkład węglowy filtra.

W przeciwieństwie do filtrów usuwających aerozol olejowy, które są wymieniane co roku w celu zagwarantowania odpowiedniej jakości sprężonego powietrza, trwałość filtra usuwającego opary oleju zależy od różnych czynników; filtr wymaga częstszej wymiany (chyba że stosowany jest filtr OVR o trwałości 6000 godzin).

Czynniki wpływające na trwałość filtrów adsorpcyjnych

Stężenie oparów oleju

Im większe stężenie oparów oleju na wlocie, tym mniejsza trwałość węgla aktywowanego.

Ciekły olej

Filtry adsorpcyjne są przeznaczone do usuwania oparów oleju i zapachów, a nie ciekłego oleju i aerozoli. Nieprawidłowo konserwowany układ filtracji wstępnej lub jego brak powoduje znaczne zmniejszenie trwałości filtra OVR.

Temperatura

Zawartość oparów oleju rośnie wykładniczo ze wzrostem temperatury na wlocie, co powoduje spadek trwałości wkładu. Ponadto ze wzrostem temperatury spada skuteczność adsorpcji, co powoduje dodatkowe zmniejszenie trwałości wkładu.

Wilgotność względna lub punkt rosy

Wilgotne powietrze zmniejsza zdolność adsorpcyjną węgla.

Wymiany oleju w sprężarce

Po wymianie oleju w sprężarce nowy środek smarny wypala związki organiczne o niskiej masie cząsteczkowej, co powoduje wzrost zawartości oparów oleju na wiele godzin, a nawet tygodni. Ta zwiększona ilość oparów oleju jest pochłaniana przez filtr OVR, co powoduje znaczne zmniejszenie jego trwałości adsorpcyjnej.

(SK) **Intervaly údržby**
Na zabezpečenie optimálnej výkonnosti filtra sa výmena vložiek stupňa AO, AA spolu s automatickým výpustom vyžaduje každých 12 mesiacov.

Výkon prvkuACS je založený na maximálnej vstupnej koncentrácii olejových výparov 0,018 mg/m^3. Vymeňte vložku uhlíkového filtra po zaznamenaní výparov, zápachu alebo chuti.

Na rozdiel od filtrov odstraňujúcich olejový aerosól, ktoré sa vymieňajú každý rok z dôvodu zaručenia kvality stlačeného vzduchu, môže byť životnosť filtra odstraňujúceho olejové výpary ovplyvnená rôznymi faktormi, a preto si tento filter vyžaduje častejšiu výmenu (ak sa nepoužíva OVR, ktoré je dimenzované na životnosť 6000 hodín):

Faktory ovplyvňujúce životnosť adsorpčných filtrov

Koncentrácia olejových výparov

Čím vyššia je vstupná koncentrácia olejových výparov, tým rýchlejšie sa kapacita aktivovaného uhlíka spotrebuje.

Objemový olej

Adsorpčné filtre sú navrhnuté na odstraňovanie olejových výparov a zápachov, nie kvapalného oleja alebo aerosólov. Slabá údržba alebo neexistencia predfiltrácie spôsobí, že sa kapacita OVR filtra rýchlo spotrebuje.

Teplota

Obsah olejových výparov sa exponenciálne zvyšuje so vstupnou teplotou, čo znižuje životnosť vložky. Okrem toho pri zvyšovaní teploty sa adsorpčná kapacita znižuje, čo ešte viac znižuje životnosť vložky.

Relatívna vlhkosť alebo rosný bod

Vlhký vzduch znižuje adsorpčnú kapacitu uhlíka.

Výmeny kompresorového oleja

Po výmene kompresorového oleja nové mazivo spáli „ľahké častice“, čo zvyšuje obsah olejových výparov na celé nasledujúce hodiny, alebo dokonca týždne. Takýto zvýšený obsah olejových výparov adsorbuje OVR filter, čo však výrazne zníži jeho adsorpčnú životnosť.

(CS) **Intervaly údržby**
Chcete-li zaručit optimální výkonnost filtru, je nutné vyměňovat vložky třídy AO, AA společně s automatickým vypouštěním každých 12 měsíců.

Funkčnost vložky ACS je založena na maximální koncentraci vstupujících olejových par 0,018 mg/m^3. Při zjištění výparů, zápachu nebo pachuti vyměňte uhlíkovou filtrační vložku.

Na rozdíl od filtrů určených pro odstranění aerosolu, které se pro zajištění kvality stlačeného vzduchu mění každý rok, je životnost filtru pro odstranění olejových par závislá na různých faktorech a vyžaduje častější výměny (pokud se nepoužije OVR s životností 6000 provozních hodin):

Faktory ovlivňující životnost absorpčních filtrů

Koncentrace olejových par

Čím vyšší je koncentrace olejových par na vstupu, tím rychleji bude vyčerpána kapacita aktivního uhlí.

Olej

Absorpční filtry jsou navrženy tak, aby odstraňovaly olejové páry a zápach, nikoli kapalný olej nebo aerosoly. Špatně udržovaná nebo neexistující předfiltrace způsobí rychlé vyčerpání kapacity filtru OVR.

Teplota

Obsah olejových par se zvyšuje exponenciálně podle teploty vstupu a snižuje životnost vložky. Kromě toho se se zvyšující teplotou snižuje absorpční kapacita, což rovněž snižuje životnost vložky.

Relativní vlhkost nebo rosný bod

Mokrý vzduch snižuje absorpční kapacitu uhlí.

Výměna oleje kompresoru

Když vyměníte olej kompresoru, nové mazivo spaluje „lehké konce“, což zvyšuje obsah olejových par po dobu následujících hodin nebo týdnů. Toto zvýšení obsahu olejových par je absorbováno filtrem OVR, což významně snižuje absorpční životnost.

(ET) **Hooldusintervallid**
Filtri optimaalse jõudluse tagamiseks tuleb AO, AA klassi elemente vahetada iga 12 kuu tagant koos automaatse väljalaskeseadmega.

ACS elemendi jõudlus põhineb maksimaalsel õliaurude kontsentratsioonil 0,018mg/m^3. Auru, lõhna või maitse tuvastamise korral vahetage välja söefiltri element.

Erinevalt õliaerosooli eemaldusfiltritest, mida tuleb suruõhu kvaliteedi tagamiseks vahetada kord aastas, sõltub õliauru eemaldusfiltri tööiga erinevatest teguritest ja seda tuleb vahetada sagedamini (kui ei kasutata OVR-i, mille tööiga on 6000 tundi).

Adsorptsioonifiltrite tööiga mõjutavad tegurid

Õliaurude kontsentratsioon

Mida suurem on sisselastava õliauru kontsentratsioon, seda kiiremini saab täis aktiivsõe maht.

Jääkõli

Adsorptsioonfiltrid on mõeldud õliaurude ja lõhnade eemaldamiseks, mitte vedela õli või aerosooli eemaldamiseks. Halvasti hooldatud või puuduv eelfiltratsioon põhjustab OVR-filtri mahu kiiret vähenemist.

Temperatuur

Õliaurude maht suureneb eksponentsiaalselt sisend-temperatuuri suhtes, vähendades elemendi tööiga. Lisaks väheneb temperatuuri suurenedes adsorptsioonivõime, vähendades omakorda elemendi tööiga.

Suhteline niiskus või kastepunkt

Niiske õhk vähendab sõe adsorptsioonivõimet.

Kompressori õlivahetus

Kompressoriõli vahetamisel põleb ära uue määrdeaine ülejääk, mis suurendab õliaurude mahtu veel tunde või koguni nädalaid hiljem. See õliaurude suurenenud maht adsorbeeritakse OVR-filtri poolt, mis vähendab oluliselt selle adsorbeerimisvõimet.

(HU) **Karbantartási gyakoriság**
Az optimális szűrési teljesítményhez az AO, AA, osztályú szűrőbetéteket 12 havonta kell cserélni az automatikus leeresztéssel együtt.

Az ACS szűrőbetét megfelelő működésének feltétele a maximum 0,018mg/m^3 bemeneti olajgőz-koncentráció. Göz, szag vagy íz észlelése esetén cserélje ki a szén szűrőbetétet.

A sűrített levegő minőségének garantálására évente cserélt olajpermet-eltávolító szűrőkkel ellentétben az olajgőz-eltávolító szűrők élettartamát különböző tényezők befolyásolhatják és gyakoribb cserére lehet szükség (kivéve a 6000 üzemóra élettartamra méretezett olajgőz-eltávolító szűrőket).

Az elnyelő szűrők élettartamát befolyásoló tényezők

Az olajgőz koncentrációja

Minél magasabb az olajgőz bemeneti koncentrációja, annál gyorsabban merül ki az aktív szén kapacitása.

Nagy sűrűségű olaj

Az elnyelő szűrők olajgőzök és szagok, nem pedig folyadék halmazállapotú olaj vagy permet eltávolítására szolgálnak. A nem megfelelően karbantartott vagy hiányzó előszűrés az olajgőz-eltávolító szűrők kapacitásának túl gyors kimerüléséhez vezet.

Hőmérséklet

Az olajgőztartalom a bemeneti hőmérséklet növekedésével exponenciálisan nő, csökkentve a szűrőbetétek élettartamát. Ezen kívül a hőmérséklet növekedésével csökken az elnyelőképesség, ami ugyancsak csökkenti a szűrőbetétek élettartamát.

Relatív nedvességtartalom vagy harmatpont

A nedves levegő csökkenti a szén elnyelőképességét.

Olajcserék a kompresszorban

A kompresszor olajának cseréjekor az új kenőanyag mint „előpárlat” kiég, ami órákra, esetleg hetekre is megnöveli az olajgőz-tartalmat. Az olajgőz-tartalom ezen növekményét az olajgőz-eltávolító szűrő nyeli el, amelynek elnyelési élettartama így jelentősen csökken.

(LV) **Apkopes intervāli**
Lai nodrošinātu optimālu filtra veiktspēju, ik pēc 12 mēnešiem jānomaina AO, AA, klases elementi un automātiskā novadcaurulīte.

ACS klases elementa veiktspēja ir atkarīga no maksimālās eļļas tvaiku ieplūdes koncentrācijas 0,018 mg/m^3. Ja tiek konstatēti tvaiki, aromāts vai garša, nomainiet oglekļa filtra elementu.

Pretēji eļļas aerosolu atdalīšanas filtriem, kas tiek mainīti katru gadu, lai nodrošinātu saspiesta gaisa kvalitāti, eļļas tvaiku atdalīšanas filtra kalpošanas laiku var saistīt ar dažādiem faktoriem, un tas ir jānomaina daudz biežāk (ja vien netiek izmantots OVR, kura kalpošanas laiks ir noteikts 6000 stundām).

Faktori, kas ietekmē adsorbcijas filtru kalpošanas laiku

Eļļas tvaiku koncentrācija

Jo augstāka ieplūdes koncentrācija, jo ātrāk beidzas aktivētā oglekļa kapacitāte.

Eļļa lielā apjomā

Adsorbcijas filtri ir paredzēti eļļas tvaiku un aromāta likvidēšanai, nevis šķidrās eļļas vai aerosolu likvidēšanai. Ja priekšfiltrācija ir vāji uzturēta vai tās nav vispār, OVR filtra kapacitāte ātri beidzas.

Temperatūra

Eļļas tvaiku saturs palielinās atbilstoši ieplūdes temperatūrai, samazinot elementa kalpošanas laiku. Turklāt, palielinoties temperatūrai, samazinās adsorbcijas kapacitāte, kas arī samazina elementa kalpošanas laiku.

Relatīvais mitrums vai kondensācijas temperatūra

Mitrs gaiss samazina oglekļa adsorbcijas kapacitāti.

Kompresora eļļas maiņa

Kad tiek mainīta kompresora eļļa, jaunais eļļošanas materiāls sadedzina vieglās frakcijas, kas palielina eļļas tvaiku saturu uz vairākām stundām vai pat nedēļām. Ar to tiek palielināts eļļas tvaiku saturs, ko adsorbē OVR filtrs, ievērojami samazinot tā adsorbēšanas kapacitāti.

(PL) **Procedura konserwacji 1**

Powoli zamknąć zawór wlotowy (1) i wylotowy (2) i obniżyć ciśnienie w filtrze (3) przy użyciu drenu.

(SK) **Postup údržby 1**

Pomaly zatvorte prívodný (1) a vývodný (2) ventil a vypustite tlak z filtra (3) použitím výpustu.

(CS) **Postup údržby č. 1**

Pomalu uzavřete vstupní (1) a výstupní (2) ventily a odtlakujte filtr (3) pomocí vypouštění.

(ET) **Hooldustoiming nr 1**

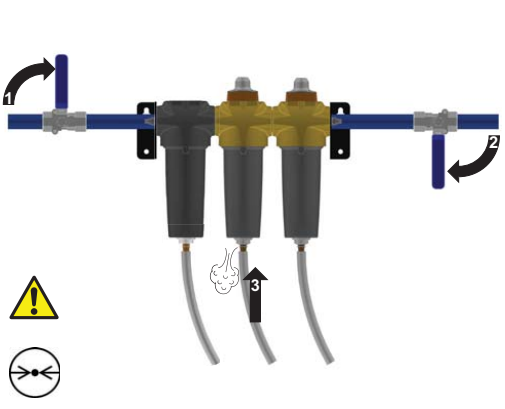
Sulgege aeglaselt sisselaske- (1) ja väljalaskeventiilid (2) ning rõhutustage filter (3) äravoolu abil.

(HU) **1-es karbantartási eljárás**

Lassan zárja el a bemenő (1) és a kimenő (2) szelepeket és nyomásmentesítse a szűrőt (3) a leeresztő segítségével.

(LV) **1. apkopes procedūra**

Lēni aizveriet ieplūdes (1) un izplūdes (2) vārstu un samaziniet spiedienu filtrā (3), izmantojot novadcaurulīti.



(PL) **Procedura konserwacji 2**

Odkręcić obudowę filtra (1 i 2) i wyjąć zużyty wkład (3).

(SK) **Postup údržby 2**

Odskrutkujte teleso filtra (1 a 2) a vyberte použitú vložku (3).

(CS) **Postup údržby č. 2**

Odšroubujte baňku filtru (1 a 2) a sejměte použitý prvek (3)

(ET) **Hooldustoiming nr 2**

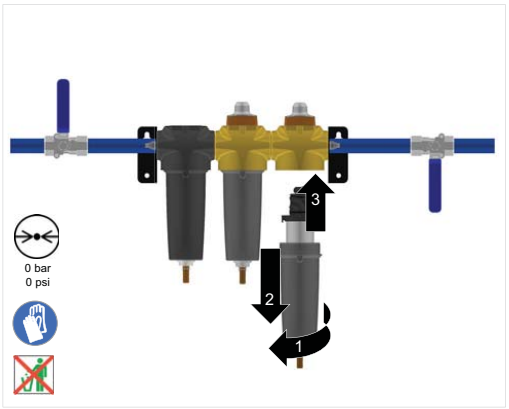
Keerake filtrinõu (1 ja 2) lahti ja eemaldage kasutatud element (3)

(HU) **2-es karbantartási eljárás**

Csavarja le a szűrőedényt (1 és 2) és vegye ki belőle a használt szűrőbetétet (3).

(LV) **2. apkopes procedūra**

Atskrūvējiet filtra korpusu (1 un 2) un izņemiet izlietoto elementu (3).



(PL) **Procedura konserwacji 3**

Odkręcić dren automatyczny (1) i wyrzucić go (2). Zamontować nowy dren (3) i dokręcić go (4).

(SK) **Postup údržby 3**

Odskrutkuje automatický výpust (1) a zlikvidujte ho (2). Nasaďte nový výpust (3) a utiahnite (4).

(CS) **Postup údržby č. 3**

Odšroubujte automatické vypouštění (1) a zlikvidujte je (2). Nasaďte nové vypouštění (3) a utáhněte (4).

(ET) **Hooldustoiming nr 3**

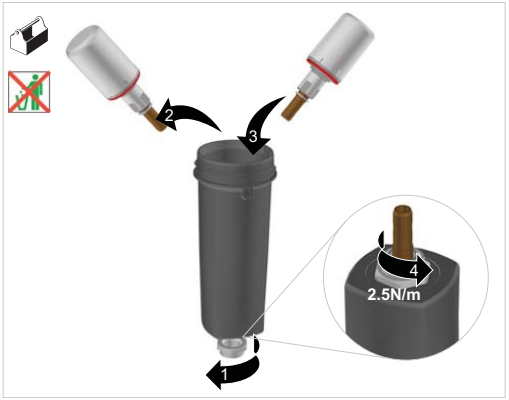
Keerake automaatne väljalaskeseade (1) lahti ja visake ära (2). Paigaldage uus väljalaskeseade (3) ja kinnitage (4).

(HU) **3-as karbantartási eljárás**

Csavarja le azt automatikus leeresztést (1) és selejtezze azt le (2). Helyezze el az új leeresztést (3) és húzza azt meg (4).

(LV) **3. apkopes procedūra**

Noskrūvējiet automātisko novadcaurulīti (1) un izmetiet to (2). Uzstādiet jauno novadcaurulīti (3) un pievelciet to (4).



(PL) **Procedura konserwacji 4**

Włożyć nowy wkład do obudowy filtra i upewnić się, że występy są prawidłowo ustawione w rowkach.

(SK) **Postup údržby 4**

Do telesa filtra vložte novú vložku a uistite sa, že výstupky sú správne nasadené do drážok.

(CS) **Postup údržby č. 4**

Zasuňte nový prvek do baňky filtru a zkontrolujte, zda jsou čepy řádně usazeny v drážkách.

(ET) **Hooldustoiming nr 4**

Sisestage uus element filtrinõusse, veendudes, et tugikäpad on õigesti soontes.

(HU) **4-es karbantartási eljárás**

Helyezze az új szűrőbetétet a szűrőedénybe úgy, hogy a fülek jól illeszkedjen a kiképzett hornyokba.

(LV) **4. apkopes procedūra**

Ievietojiet jauno elementu filtra korpusā, nodrošinot, lai izciļņi pareizi iegultu rievās.

(PL) **Procedura konserwacji 5**

Wymienić pierścień typu o-ring na głowicy filtra na dostarczony nowy pierścień.

Caution **Nasmarować pierścień typu o-ring oraz gwinty odpowiednią wazeliną nie zawierającą kwasów.**

(SK) **Postup údržby 5**

Tesniaci krúžok umiestnený v hlavici filtra nahraďte novým dodaným tesniacim krúžkom.

Caution **Tesniaci krúžok a závity namažte vhodnou vazelínou neobsahujúcou kyselinu.**

(CS) **Postup údržby č. 5**

Vyměňte těsnicí kroužek umístěný v hlavici filtru za nový dodaný těsnicí kroužek..

Caution **Nezapomeňte těsnicí kroužek a závity namazat vhodnou vazelínou bez kyseliny.**

(ET) **Hooldustoiming nr 5**

Asendage filtri kattes olev rõngastihend uue kaasasoleva rõngastihendiga.

Caution **Määrige kindlasti rõngastihendit ja keermeid sobiva happevaba vaseliiniga.**

(HU) **5-ös karbantartási eljárás**

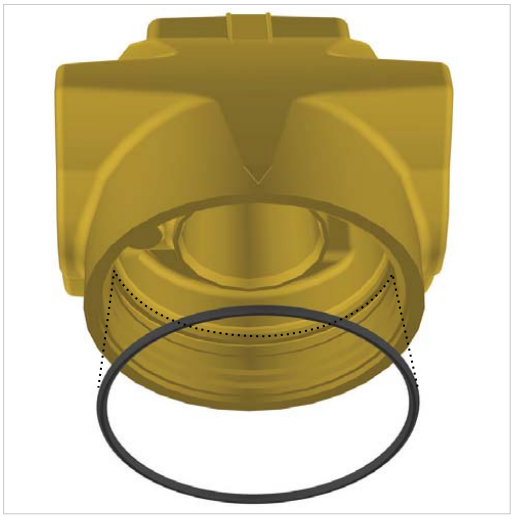
Cserélje le a szűrőfejben található O-gyűrűt a mellékelt O-gyűrűre.

Caution **Ne feledje megkenni az O-gyűrűt és a meneteket arra alkalmas savmentes ásványi olaj zselével.**

(LV) **5. apkopes procedūra**

Nomainiet filtra galvā esošo blīvgredzenu ar komplektā iekļauto jauno blīvgredzenu.

Caution **Noteikti ieeļļojiet blīvgredzenu un vītnes ar piemērotu vazelīnu, kas nesatur skābi.**



(PL) **Procedura konserwacji 6 (a)**

Zamontować obudowę filtra oraz głowicę i upewnić się, że gwinty są całkowicie dokręcone, a elementy blokujące są prawidłowo ustawione.

Uwaga: Upewnić się, że obudowa jest pewnie przymocowana do głowicy — obudowa 0010-030 wymaga obrócenia o 360° do ogranicznika gwintu, a obudowa 035-045 wymaga obrócenia o 720°

(SK) **Postup údržby 6 (a)**

Znovu nasaďte teleso a hlavicu filtra a uistite sa, že závity úplne zapadli a zaistťovacie súčiastky sú zarovnané.

Poznámka: S cieľom uistiť sa, či teleso úplne zapadlo do hlavice, sa pri telese 010-030 vyžaduje 360° rotácia, kým sa závit nezastaví, a 720° sa vyžaduje pri telese 035-045.

(CS) **Postup údržby č. 6 (a)**

Nasaďte zpět baňku a hlavici filtru a zkontrolujte, zda jsou závity řádně zapojeny a pojistné detaily jsou v rovině.

Poznámka: Abyste měli jistotu, že baňka je plně zapojena do hlavice, baňka 010-030 vyžaduje otáčení o 360°, dokud se závit nedotočí, a 720° u baňky 035-045.

(ET) **Hooldustoiming nr 6 (a)**

Paigaldage tagasi filtrinõu ja kate neid korralikult lõpuni keerates, nii et lukustusdetailid on kohakuti.

Märkus. Nõu lõpuni katte külge kinnitamiseks on vaja nõu 010-030 pöörata 360° kuni keermete lõpuni ja 720° nõu 035-045 korral.

(HU) **6-os karbantartási eljárás (a)**

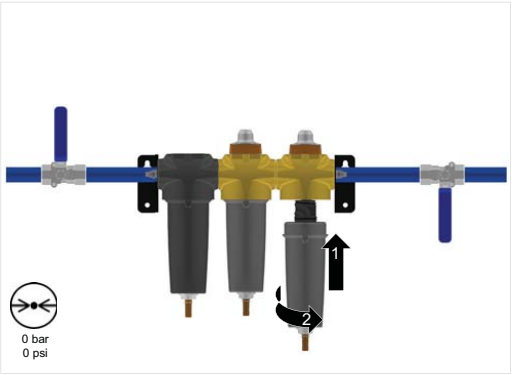
Szerelje vissza a szűrőedényt és a fejet. Győződjön meg a menetek és a záróelemek megfelelő illeszkedéséről.

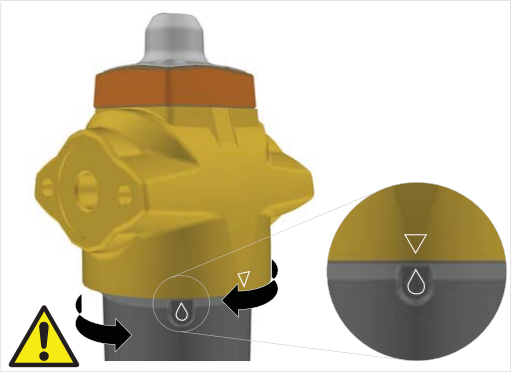
Megjegyzés: Annak biztosításához, hogy az edény teljesen a fejbe illeszkedjen a 010-030 edényt 360°-ban el kell forgatni, míg a menet el nem fogy, ill. a 035-045 edényt 720°-ban.

(LV) **6. apkopes procedūra (a)**

Atkal samontējiet filtra korpusu un galvu, nodrošinot, lai vītnes būtu pilnībā savienotas un fiksēšanas atzīmes atrastos viena pret otru.

Piezīme. Lai nodrošinātu, ka korpuss ir pilnībā ieskrūvēts galvā, korpuss 010-030 jāpagriež par 360°, līdz vītne ir pilnībā izmantota (korpuss 035-045 jāpagriež par 720°).





(PL) **Procedura konserwacji 7**

Przymocować etykietę z datą wymiany wkładu do obudowy filtra i zapisać na niej datę kolejnej wymiany wkładu przypadającą 12 miesięcy po ostatniej wymianie

Caution **Do czyszczenia etykiet nie należy używać rozpuszczalników ani alkoholu, ponieważ może to spowodować ich uszkodzenie.**

(SK) **Postup údržby 7**

Na teleso filtra pripojte štítok s dátumom výmeny vložky a napíšte dátum, kedy sa má vložka vymeniť, t. j. 12 mesiacov po výmene vložky..

Caution **Na čistenie štítkov nepoužívajte rozpúšťadlá ani alkohol, pretože môže dôjsť k poškodeniu.**

(CS) **Postup údržby č. 7**

Připevněte štítek s datem výměny prvku k baňce filtru a zapište datum příští výměny prvku, tj. 12 měsíců po výměně prvku

Caution **Nečistěte štítky rozpouštědly ani alkoholem, mohlo by dojít k poškození.**

(ET) **Hooldustoiming nr 7**

Kinnitage elemendi vahetamise kuupäeva silt filtrinõu külge ja kirjutage sellele elemendi asendamise kuupäev (12 kuud pärast elemendi vahetamist).

Caution **Ärge puhastage silte piirituse või lahustitega, kuna need võivad silte rikkuda.**

(HU) **7-es karbantartási eljárás**

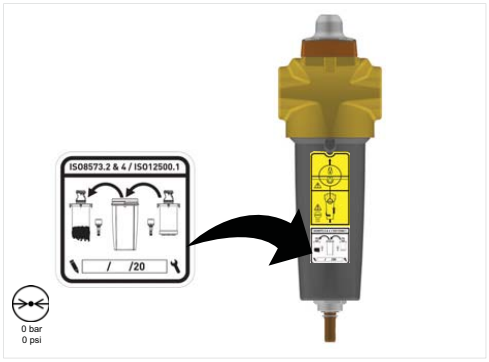
Helyezze el a szűrőbetét-csere dátumát megadó címkét a szűrőedényre, és jegyezze fel a következő csere időponját; értsd: 12 hónappal a mostani szűrőbetét-csere utáni időpontot..

Caution **Ne használjon oldószert vagy alkoholt a címkék tisztításához, mert az sérüléseket okozhat.**

(LV) **7. apkopes procedūra**

Pie filtra piestipriniet elementa maiņas datuma etiķeti un norādiet tajā nākamās elementa maiņas datumu, t. i., pēc 12 mēnešiem pēc elementa maiņas.

Caution **Etiķešu tīrīšanā neizmantojiet šķīdinātājus vai spirtu, jo tā var radīt bojājumus.**



(PL) **Procedura konserwacji 8**

Powoli otworzyć zawór wlotowy (1), aby stopniowo zwiększyć ciśnienie w urządzeniu, a następnie powoli otworzyć zawór wylotowy (2), aby zwiększyć ciśnienie w dalszej części instalacji

Warning **Nie wolno szybko otwierać zaworów wlotowych ani wylotowych, ponieważ może to doprowadzić do zbyt dużej różnicy ciśnień w urządzeniu i do jego uszkodzenia.**

(SK) **Postup údržby 8**

Pomalým otvorením prívodného ventilu (1) postupne natlakujte jednotku, pomalým otvorením vývodného ventilu (2) opätovne natlakujte potrubie v smere prúdenia.

Warning **Prívodný ani vývodný ventil neotvárajte rýchlo ani nevystavujte jednotku nadmernému rozdielu tlaku, pretože môže dôjsť k poškodeniu.**

(CS) **Postup údržby č. 8**

Pomalým otevíráním vstupního ventilu (1) jednotku postupně natlakujte, pomalým otevíráním výstupního ventilu (2) znovu natlakujte potrubí ve směru rozvodu.

Warning **Přívodní ani výstupní ventily neotvírejte rychle, ani jednotku nevystavujte nadměrným rozdílům tlaku, v opačném případě může dojít k poškození.**

(ET) **Hooldustoiming nr 8**

Avage aeglaselt sisselaskeventiil (1), et üksus järk-järgult survestada, ning avage aeglaselt väljalaskeventiil (2) surve taastamiseks väljavoolutorustikus..

Warning **Sisselaske- ja väljalaskeventiile ei tohi avada kiiresti ega põhjustada üksuses liiga suurt survelangu, mis võib tekitada sellele kahjustusi.**

(HU) **8-as karbantartási eljárás**

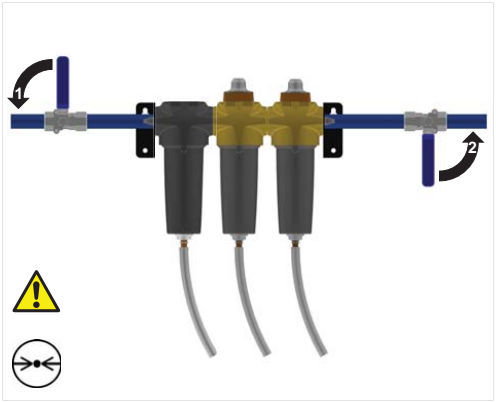
Az egység fokozatos nyomás alá helyezéséhez a bemenő szelepet (1) nyissa meg lassan; az elvezető csővezeték nyomásának visszaállításához lassan nyissa meg az elvezető szelepet (2)..

Warning **A berendezés károsodásának elkerülése érdekében ne nyissa meg túl gyorsan a bemenő vagy az elmenő szelepet, és ne tegye ki az egységet nagy nyomáskülönbségnek.**

(LV) **8. apkopes procedūra**

Lēni atveriet ieplūdes vārstu (1), lai pakāpeniski palielinātu spiedienu iekārtā, lēni atveriet izplūdes vārstu (2), lai atkal paaugstinātu spiedienu aiz iekārtas esošajās caurulēs.

Warning **Neatveriet ieplūdes vai izplūdes vārstus strauji un nepakļaujiet iekārtu pārmērīgai spiedienu starpībai, citādi var radīt bojājumus.**



(LT) VIENERIŲ METŲ KOKYBĖS GARANTIJA

Jūsų oro kokybė garantuojama 1 metų laikotarpiu ir bus atnaujinta kasmet pakeitus filtro elementą.
Kasmetiniai filtro elemento keitimai užtikrina, kad:

- bus išlaikomos optimalios charakteristikos
- oro kokybė ir toliau atitiks tarptautinius standartus
- bus apsaugoti filtruotoje aplinkoje esantys įrenginiai, darbuotojai ir procesai
- išliks mažos eksploatavimo išlaidos
- padidės produktyvumas ir pelningumas
- sumažės rūpesčių

(RU) ГОДОВАЯ ГАРАНТИЯ КАЧЕСТВА ВОЗДУХА

Качество воздуха гарантируется в течение одного года. Эту гарантию можно продлевать ежегодно за счет замены фильтрующего элемента.
Ежегодная замена фильтрующего элемента обеспечивает следующие преимущества.

- Поддержание оптимальных рабочих характеристик.
- Соответствие качества воздуха международным стандартам.
- Защита оборудования, расположенного ниже по потоку, персонала и процессов.
- Снижение эксплуатационных расходов.
- Повышение продуктивности и доходности.
- Уверенность в исправной работе.

(SL) ENOLETNA GARANCIJA ZA KAKOVOST ZRAKA

Garancija za kakovost zraka velja eno leto in se obnovi pri vsakoletni zamenjavi filtrirnega elementa.
Vsakoletna zamenjava filtrirnega elementa zagotavlja:

- vzdrževanje optimalne učinkovitosti,
- nadaljnjo skladnost kakovosti zraka z mednarodnimi standardi,
- zaščito priključene opreme, osebja in procesov,
- nizke obratovalne stroške,
- zvišano produktivnost in donosnost ter
- brezskrbnost.

(TR) BİR YIL HAVA KALİTESİ GARANTİSİ

Havanızın kalitesi 1 yıllığına garanti edilmiştir ve garanti, her yıllık filtre öğesi değişikliğinde yenilenecektir.
Yıllık filtre öğesi değişikliği şunları sağlar:

- En iyi performansın devam etmesi sağlanır
- Hava kalitesi uluslararası standartları karşılamaya devam eder
- Aşağı akım ekipmanının, personelin ve süreçlerinin korunması
- Düşük işletim masrafları
- artan verimlilik ve kârlılık
- gönül rahatlığı

(MT) GARANZIJA TA' SENA FUQ IL-KWALITÀ TAL-ARJA

Il-kwalità tal-arja tiegħek ġiet iggarantita għal sena u sejra tiġġedded ma' kull tibdil tal-element tal-filtru kull sena.
Tibdiliet tal-element tal-filtru kull sena jiżguraw:

- Żamma tal-aqwa prestazzjoni
- Il-kwalità tal-arja tibqa' tissodisfa l-istandards internazzjonali
- Il-protezzjoni ta' apparat, persunal u proċessi 'l isfel
- Spejjeż operattivi baxxi
- żieda fil-produttività u fil-profitabilità
- serħan il-moħħ

(RO) UN AN GARANŢIE A CALITĂŢII AERULUI

Calitatea aerului a fost garantată pentru 1 an şi va fi reînnoită la fiecare înlocuire anuală a elementului filtrului.
Înlocuirile anuale ale elementului filtrului asigură:

- menţinerea unor performanţe optime
- respectarea continuă a standardelor internaţionale referitoare la calitatea aerului
- protecţia echipamentului din aval, a personalului şi a proceselor
- costuri operaţionale scăzute
- productivitate şi profitabilitate crescută
- linişte sufletească

(BG) ЕДНА ГОДИНА ГАРАНЦИЯ ЗА КАЧЕСТВО НА ВЪЗДУХА

Качеството на Вашия въздух е гарантирано за 1 година и ще бъде подновявано с всяка годишна смяна на филтърен елемент.
Годишните смени на филтърен елемент осигуряват:

- Поддържане на оптимална ефективност
- Качеството на въздуха продължава да отговаря на международните стандарти
- Защита на изходните елементи на оборудването, персонала и процесите
- Ниски оперативни разходи
- Увеличена продуктивност и рентабилност
- Душевно спокойствие

(LT) Modelio kodavimo pavyzdys:

Modelis						
Elemento klasė	Aukštesniosios klasės energiją taupantis elementas	Modelio dydis	Prievado dydis	Gijų tipas	Išleidimo parinktis	DP indikatorius
WS AO AA ACS	P	3 skaitmenų kodas, kaip parodyta toliau	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Plūdė M = Rankinis	X = Nėra I = Įvykių monitorius
AA	P	030	A	G	F	I

(RU) Пример кодировки модели:

Модель						
Марка фильтрующего элемента	Высококачественный энергоэффективный фильтрующий элемент	Размер модели	Размер отверстия	Тип резьбы	Вариант сливного устройства	Индикатор перепада давления
WS AO AA ACS	P	Трехзначный код, как указано ниже	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Поплавок M = Руководство	X = Нет I = Монитор аварийных сообщений
AA	P	030	A	G	F	I

(SL) Primer kodiranja modela:

Model						
Razred elementa	Element energetske učinkovitosti »Premium«	Velikost modela	Velikost odprtine	Tip navoja	Možnost praznjenja	Indikator diferencialnega tlaka
WS AO AA ACS	P	Koda s 3 številkami, kot je prikazano spodaj	A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	G = BSPP N = NPT	F = Plavajoče M = Ročno	X = Brez I = Monitor pojavitev
AA	P	030	A	G	F	I

(TR) Model Kodlama örneği:

Model						
Eleman Sınıfı WS AO AA ACS	Premium Enerji Verimli Eleman P	Model Boyutu Aşağıdaki gibi 3 basamaklı bir kod	Port Boyutu A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Diş Tipi G = BSPP N = NPT	Tahliye Seçeneği F = Şamandıra M = Manuel	DP Göstergesi X = Yok I = Olay Monitörü
AA	P	030	A	G	F	I

(MT) Eżempju ta' Kodifikazzjoni tal-Mudell:

Mudell						
Grad ta’ Element WS AO AA ACS	Element ta’ Effiċjenza ta’ Enerġija Primjum P	Daqs tal-Mudell kodiċi bi 3 ċifri kif muri taħt	Daqs tal-Port A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Tip ta’ Kamin G = BSPP N = NPT	Opzjoni ta’ Drejn F = Flowt M = Manwali	Indikatur DP X = Xejn I = Moniter tal-Inċidenti
AA	P	030	A	G	F	I

(RO) Exemplu codificare model:

Model						
Calitate element WS AO AA ACS	Element cu eficien ă energetică premium P	Dimensiunea modelului Cod din 3 cifre, după cum se arată mai jos	Dimensiunea orificiului A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Tip de filet G = BSPP N = NPT	Op iune de golire F = Flotant M = Manual	Indicator de presiune diferen ială X = Niciunul I = Monitor incident
AA	P	030	A	G	F	I

(BG) Пример за кодиране на модел:

Модел						
Клас на елемента WS AO AA ACS	Надежден енергоефективен елемент P	Размер на модела 3-цифрен код, както е показано по-долу	Размер на порта A = 1/4” B = 3/8” C = 1/2” D = 3/4” E = 1” G = 1 1/2” H = 2” I = 2 1/2” J = 3”	Тип с резба G = BSPP N = NPT	Опция за дрениране F = С поплавък M = Ръчно	Индикатор за диференциално налягане X = Няма I = Монитор за инциденти
AA	P	030	A	G	F	I

(LT) Gaminio pasirinkimas

Nurodyti srautai skirti veikimui esant 7 barams (100 psi g), kai atskaita 20°C, 1 baras ir 0 % santykinis vandens garų slėgis.

Kito slėgio srautams taikykite nurodytus korekcijos veiksnius.

(RU) Выбор продуктов

Значения расхода определены для работы под давлением 7 бар (100 фунтов на кв. дюйм) при температуре 20 °C, атмосферном давлении 1 бар и относительном давлении водяного пара 0 %.

Для определения расхода при других значениях давления используйте указанные поправочные коэффициенты.

(SL) Izbira izdelka

Navedeni pretoki so za delovanje pri 7 barg (100 psig) pri 20° C, 1 bar (a), 0% relativni tlak vodne pare.

Za pretoke z drugačnimi tlaki uporabite prikazane korekcijske faktorje.

(TR) Ürün Seçimi

Belirtilen akışlar, 20°C, 1 bar a, %0 nispi su buharı basıncına referansla 7 bar g'de (100 psi g) işletme içindir.

Diğer basınçlarda akış miktarı için aşağıda verilen düzeltme faktörleri kullanılır.

(MT) Għażla tal-Prodott

Il-flussi indikati huma għal tħaddim ta' 7 bar g (100 psi g) b'referenza ta' 20°C, 1 bar a, 0% pressjoni relattiva tal-fwar ta' ilma.

Għal flussi f'kundizzjonijiet oħrajn, applika l-fatturi ta' korrezzjoni murija.

(RO) Selecie produs

Valorile indicate ale debitelor sunt destinate operației la 7 bar g (100 psi g) cu referință la 20°C, 1 bar a, 0% presiune relativă a vaporilor de apă.

Pentru debitele aflate la alte presiuni, se aplică factorii de corec?ie prezenta?i anterior.

(BG) Избор на продукт

Посочените потоци са за работа при налягане 7 бара (изм.) (100 фунта на кв. инч (изм.)) при референтна температура от 20°C, 1 бар (атм.), 0% относително налягане на водни пари.

За потоци при други налягания прилагайте показаните коефициенти на корекция.

Vandens separatoriaus debitai

Расход на водяном сепараторе, Hitrosti pretoka izločevalnikov vode, Su Ayrıştırıcısı Akış Hızları, Rati tal-Fluss tas-Separatur tal-Ilma, Debite separator de apă, Дебити на водните сепаратори

Model			Port Size	L/s	m3/min	m3/hr	cfm
WS	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21
WS	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21
WS	P010C	[ ] [ ] [ ]	½	10	0.6	36	21
WS	P015C	[ ] [ ] [ ]	½	40	2.4	144	85
WS	P020D	[ ] [ ] [ ]	¾	40	2.4	144	85
WS	P025D	[ ] [ ] [ ]	¾	110	6.6	396	233
WS	P025E	[ ] [ ] [ ]	1	110	6.6	396	233
WS	P030G	[ ] [ ] [ ]	1 ½	110	6.6	396	233
WS	P035G	[ ] [ ] [ ]	1 ½	350	21.0	1260	742
WS	P040H	[ ] [ ] [ ]	2	350	21.0	1260	742
WS	P045I	[ ] [ ] [ ]	2 ½	350	21.0	1260	742
WS	P050I	[ ] [ ] [ ]	2 ½	800	48.0	2880	1695
WS	P055J	[ ] [ ] [ ]	3	800	48.0	2880	1695

CFP – mažiausias pataisos koeficientas (angl. Correction Factor Minimum) įleidimo angos slėgiui (vandens separatoriai)

CFP — поправочный коэффициент при минимальном входном давлении (водяные сепараторы), CFP – korekcijski faktor pri minimalnem dovodnem tlaku (izločevalniki vode), CFP – Düzeltme Faktörü Minimum Giriş Basıncı (Su Ayrıştırıcıları), CFP – Pressjoni Minima tal-Iżbokk tad-Dħul tal-Fattur ta' Korrezzjoni (Separaturi tal-Ilma), CFP - Factor de corec ie presiune de intrare minimă (Separatoare de apă), CFP - коригиращ коефициент, минимално входно налягане (водни сепаратори) ,

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor		4.00	2.63	2.00	1.59	1.33	1.14	1.00	0.94	0.89	0.85	0.82	0.79	0.76	0.73	0.71	0.68

Filtro debitai

Расход на фильтре, Hitrosti pretoka filtrov, Filtre Akış Hızları, Rati tal-Fluss tal-Filtru, Debite filtru, Дебити на филтрите

Model			Port Size	L/s	m3/min	m3/hr	cfm	Replacement Element kit		No.
[grade]	P010A	[ ] [ ] [ ]	¼	10	0.6	36	21	P010	[grade]	1
[grade]	P010B	[ ] [ ] [ ]	⅜	10	0.6	36	21	P010	[grade]	1
[grade]	P010C	[ ] [ ] [ ]	½	10	0.6	36	21	P010	[grade]	1

[grade]	P015C	[ ]	[ ]	[ ]	½	20	1.2	72	42	P015	[grade]	1
[grade]	P020C	[ ]	[ ]	[ ]	½	30	1.8	108	64	P020	[grade]	1
[grade]	P020D	[ ]	[ ]	[ ]	¾	30	1.8	108	64	P020	[grade]	1
[grade]	P025D	[ ]	[ ]	[ ]	¾	60	3.6	216	127	P025	[grade]	1
[grade]	P025E	[ ]	[ ]	[ ]	1	60	3.6	216	127	P025	[grade]	1
[grade]	P030G	[ ]	[ ]	[ ]	1 ½	110	6.6	396	233	P030	[grade]	1
[grade]	P035G	[ ]	[ ]	[ ]	1 ½	160	9.6	576	339	P035	[grade]	1
[grade]	P040H	[ ]	[ ]	[ ]	2	220	13.2	792	466	P040	[grade]	1
[grade]	P045I	[ ]	[ ]	[ ]	2 ½	330	19.8	1188	699	P045	[grade]	1
[grade]	P050I	[ ]	[ ]	[ ]	2 ½	430	25.8	1548	911	P050	[grade]	1
[grade]	P055I	[ ]	[ ]	[ ]	2 ½	620	37.3	2232	1314	P055	[grade]	1
[grade]	P055J	[ ]	[ ]	[ ]	3	620	37.3	2232	1314	P055	[grade]	1

[klasė] = klasė
[класс] = класс
[razred] = razred
[derece] = derece
[grad] = grad
[grad] = grad
[разредка] = разредка

CFP – mažiausias pataisos koeficientas (angl. Correction Factor Minimum) įleidimo angos slėgiui (koalescenciniai ir sausų kietųjų dalelių filtrai)
CFP — поправочный коэффициент при минимальном входном давлении (коалесцирующий фильтр и сухой фильтр для улавливания твердых частиц), CFP – korekcijski faktor pri minimalnem dovodnem tlaku (koalescentni filtri in filtri suhih delcev), CFP - Düzeltme Faktörü Minimum Giriş Basıncı (Birleştirme ve Kuru Partikül Filtreleri), CFP – Pressjoni Minima taż-Żbokk tad-Dħul ta' Fattur ta' Korrezzjoni (Filtri Koalexxenti u ta' Frak Xott), CFP - Factor de corec ie presiune de intrare minimă (Filtru de coalescen ă i de particule uscate), CFP - коригиращ коефициент, минимално входно налягане (коалесциращи филтри и сухи филтри за улавяне на частици)

Minimum Inlet Pressure	bar g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	psi g	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232	248	263	277	290
Correction Factor		2.65	1.87	1.53	1.32	1.18	1.08	1.00	0.94	0.88	0.84	0.80	0.76	0.73	0.71	0.68	0.66	0.64	0.62	0.61	0.59

(LT) Gaminio atrankos ir korekcijos koeficientai

Norint teisingai pasirinkti vandens separatoriaus arba filtro modelį, filtro debitas turi būti suderintas pagal mažiausią darbinį sistemos slėgį.

1 Gaukite mažiausią darbinį slėgį ir didžiausią suspausto oro debitą ties vandens separatoriaus arba filtro įleidimo anga.

2 Iš CFP lentelės pasirinkite pataisos koeficientą mažiausiam darbiniam slėgiui (jį visada suapvalinkite, pvz., esant 5,3 barų naudokite 5 barų pataisos koeficientą).

3 Apskaičiuokite mažiausią filtravimo talpą. Mažiausia filtravimo talpa = suspausto oro debitas x CFP

4 Naudodami mažiausią filtravimo talpą, pasirinkite vandens separatoriaus arba filtro modelį iš anksčiau pateiktų debito lentelių (pasirinkto vandens separatoriaus arba filtro debitas turi būti lygus arba didesnis nei mažiausia filtravimo talpa).

(RU) Выбор изделия и поправочные коэффициенты

Для правильного выбора модели водяного сепаратора или фильтра необходимо отрегулировать расход на фильтре при минимальном рабочем давлении в системе.

1 Определите минимальное рабочее давление и максимальный расход сжатого воздуха на входе водяного сепаратора или фильтра.

2 Выберите поправочный коэффициент для минимального входного давления из таблицы коэффициентов CFP (всегда округляйте значения, например для 5,3 бар используйте поправочный коэффициент для 5 бар).

3 Рассчитайте минимальную фильтрующую способность. Минимальная фильтрующая способность = расход сжатого воздуха x CFP

4 Используя минимальную фильтрующую способность, выберите модель водяного сепаратора или фильтра из представленных выше таблиц расхода (выбранный водяной сепаратор или фильтр должен иметь расход, равный или больший минимальной фильтрующей способности).

(SL) Dejavniki za izbiro izdelka in korekcijo

Da bi pravilno izbrali model izločevalnika vode ali filtra, morate hitrost pretoka filtra nastaviti na minimalni delovni tlak sistema.

1 Ugotovite minimalni delovni tlak in maksimalno hitrost pretoka stisnjenega zraka pri vstopu izločevalnika vode ali filtra.

2 Izberite korekcijski faktor za minimalni delovni tlak iz tabele CFP (vedno zaokrožite navzdol, npr. pri 5,3 bara uporabite korekcijski faktor 5 barov)

3 Izračunajte minimalno kapaciteto filtriranja. Minimalna kapaciteta filtriranja = hitrost pretoka stisnjenega zraka x CFP

4 S pomočjo minimalne kapacitete filtriranja v zgornjih tabelah hitrosti pretokov izberite model izločevalnika vode ali filtra (izbrani izločevalnik vode ali filter mora imeti hitrost pretoka enako ali večjo kot minimalno kapaciteto filtriranja).

(TR) Ürün Seçimi ve Düzeltme Faktörleri

Su Ayrıştırıcısı ve Filtre modelinin doğru seçilebilmesi için filtrenin akış hızının, sistemin minimum çalışma basıncına göre ayarlanması gerekir.

1 Su Ayrıştırıcısı veya Filtre'nin girişindeki minimum çalışma basıncı ve maksimum sıkıştırılmış hava akış hız değerlerini öğrenin.

2 CFP tablosundan minimum çalışma basıncı için düzeltme faktörünü seçin (her zaman aşağıya yuvarlayın, 5,3 bar için 5 bar düzeltme faktörü gibi)

3 Minimum filtrasyon kapasitesini hesaplayın. Minimum Filtrasyon Kapasitesi = Sıkıştırılmış Hava Akış Hızı x CFP

4 Minimum filtrasyon kapasitesini kullanarak yukarıdaki akış hızı tablolarından bir Su Ayrıştırıcısı ve Filtre modeli seçin (Seçilen Su Ayrıştırıcısı veya Filtre'nin akış hızı, minimum filtrasyon kapasitesine eşit veya ondan daha fazla olmalıdır).

(MT) Għażla tal-Prodott u Fatturi ta' Korrezzjoni

Biex tagħżel b'mod korrett Separatur tal-Ilma jew mudell ta' Filtru, ir-rata tal-fluss għandha tiġi aġġustata għall-pressjoni ta' tħaddim minima tas-sistema.

1 Ikseb il-pressjoni ta' tħaddim minima u r-rata tal-fluss tal-arja kkumpressata massima fl-iżbokk tad-dħul tas-Separatur tal-Ilma jew Filtru.

2 Agħżel il-fattur ta' korrezzjoni għal pressjoni tat-tħaddim minima mit-tabella CFP (dejjem qarreb għal numru sħiħ iżgħar eż. għal 5.3 bar, uża fattur ta' korrezzjoni ta' 5 bar)

3 Ikkalkula l-kapaċità tal-filtrazzjoni minima. Kapaċità tal-Filtrazzjoni Minima = Rata tal-Fluss tal-Arja Kkumpressata x CFP

4 Billi tuża l-kapaċità tal-filtrazzjoni minima, agħżel Separatur tal-Ilma jew mudell ta' Filtru mit-tabelli tar-rata tal-fluss ta' hawn fuq (Separatur tal-Ilma jew Filtru magħżul għandu jkollu rata ta' fluss ugwali jew ikbar mill-kapaċità ta' filtrazzjoni minima).

(RO) **Selectarea produsului i factori de corec ie**

Pentru a selecta corect un model de separator sau filtru de apă, debitul filtrului trebuie reglat la presiunea minimă de func ionare a sistemului.

1 Ob ine i presiunea minimă de func ionare i debitul maxim de aer comprimat la intrarea separatorului sau filtrului de apă.

2 Selecta i factorul de corec ie pentru presiunea minimă de func ionare din tabelul CFP (rotunji i întotdeauna, de ex., pentru 5,3 bari, utiliza i factorul de corec ie 5 bari)

3 Calcula i capacitatea minimă de filtrare. Capacitatea minimă de filtrare = Debitul de aer comprimat x CFP

4 Utilizând capacitatea minimă de filtrare, selecta i un model de separator sau filtru de apă din tabelele pentru debit de mai sus (Separatorul sau filtrul de apă selectat trebuie să aibă un debit egal cu sau mai mare decât capacitatea minimă de filtrare).

(BG) **Избор на продукт и коригиращи коефициенти**

За да се направи правилен избор на модел на воден сепаратор или филтър, дебитът на филтъра трябва да бъде съгласуван с минималното работно налягане на системата.

1 Проверете минималното работно налягане и максималния дебит на компресиран въздух на входа на водния сепаратор или филтъра.

2 Изберете коригиращ коефициент за минималното работно налягане от таблицата с CFP (винаги закръгляйте надолу, напр. за 5,3 bar използвайте коригиращ коефициент за 5 bar)

3 Изчислете минималния капацитет на филтрация. Минимален капацитет на филтрация = Дебит на компресиран въздух x CFP

4 Като използвате минималния капацитет на филтрация, изберете модел на воден сепаратор или филтър от таблиците за дебити по-горе (избраният воден сепаратор или филтър трябва да има дебит, равен на или по-голям от минималния капацитет на филтрация).

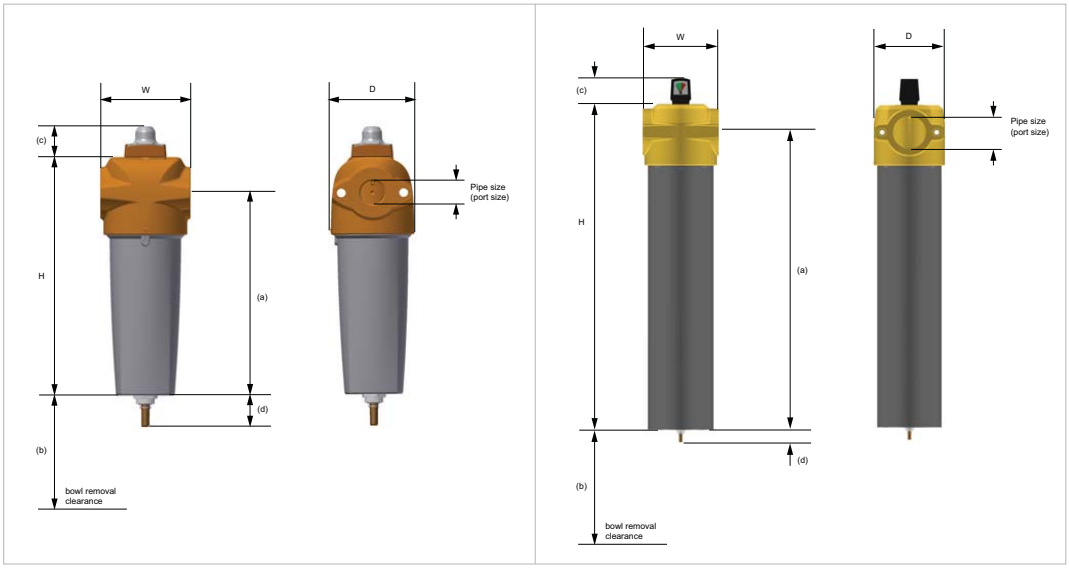
Techniniai duomenys

Технические данные, Tehnični podatki, Teknik Veriler, Dejta Teknika, Date tehnice, Технически данни

Model	Filter Models											Min Operating Pressure		Max Operating Pressure		Min Recommended Operating Temp		Max Recommended Operating Temp	
												bar g	psi g	bar g	psi g	°C	°F	°C	°F
WS	P010	[ ]	[ ]	F	[ ]	-	035	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AO	P010	[ ]	[ ]	F	[ ]	-	035	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AO	P010	[ ]	[ ]	M	[ ]	-	035	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	100	212
AA	P010	[ ]	[ ]	F	[ ]	-	035	[ ]	[ ]	F	[ ]	1	15	16	232	2	35	80	176
AA	P010	[ ]	[ ]	M	[ ]	-	035	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	100	212
ACS	P010	[ ]	[ ]	M	[ ]	-	035	[ ]	[ ]	M	[ ]	1	15	20	290	2	35	50	122

Svoris ir matmenys

Вес и габаритные размеры, Teža in mere, Ağırlıklar ve Boyutlar, Pižijiet u Dimensjonijiet, Greutăţi şi dimensiuni, Тегло и размери



Model	Pipe Size	Height (H)		Width (W)		Depth (D)		(a)		(b)		(c)		(d)		Weight	
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs
WS / P010A	¼"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010B	⅜"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P010C	½"	180	7.09	76	2.99	66	2.60	154	6.1	50	1.97	32	1.3	38	1.5	0.61	1.34
WS / P015C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.16	2.55
P020C	½"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P020D	¾"	238.5	9.36	89	3.5	83.5	3.29	202	8.0	50	1.97	32	1.3	38	1.5	1.12	2.58
WS / P025D	¾"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P025E	1"	227	10.9	120	4.72	114.5	4.5	232	9.1	70	2.76	32	1.3	38	1.5	2.21	4.86
WS / P030G	1 ½"	367	14.45	120	4.72	114.5	4.5	323	12.7	70	2.76	32	1.3	38	1.5	2.68	5.91
WS / P035G	1 ½"	531	20.9	164	6.46	156	6.10	384	15.1	100	3.94	68	2.68	38	1.5	6.90	15.20
WS / P040H	2	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.30	16.10
WS / P045I	2 ½	623	24.5	164	6.46	156	6.10	476	18.7	100	3.94	68	2.68	38	1.5	7.10	15.65
WS / P050I	2 ½	745	29.3	192	7.56	183	7.20	587	23.1	120	4.72	68	2.68	38	1.5	10.30	22.71
P055I	2 ½	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73
WS / P055J	3	935	36.8	192	7.56	183	7.20	772	30.4	120	4.72	68	2.68	38	1.5	15.30	33.73

Note: Water Separators do not include a DP Indicator, use dimension H + d for the total height.

(LT) Montavimo rekomendacijos

Rekomenduojama suspaustą orą apdoroti prieš jam patenkant į skirstymo sistemą ir kritiniuose naudojimo taškuose / įrenginiuose.

Suspausto oro džiovintuvus sumontavus drėgnose sistemose, džiūstant paskirstymo sistemai daugiau nešvarumų kaupiasi taškuose, kuriuose naudojami filtrai. Šiuo laikotarpiu gali reikėti dažniau keisti filtravimo elementus.

Įrangoje, kurioje naudojami kompresoriai be alyvos, vis tiek yra vandens aerozolių ir dalelių, todėl joje reikia naudoti bendrosios paskirties didelio efektyvumo klasių filtrus.

Bendrosios paskirties filtrai visada turi būti įrengti siekiant apsaugoti didelio efektyvumo filtrus nuo skystų aerozolių ir kietųjų dalelių pagrindinio kiekio poveikio.

Gryninimo įrangą sumontuokite ten, kur yra žemiausia teigiama temperatūra, geriausia – už galinių aušintuvų ir oro surinkimo rezervuarų.

Naudojimo gryninimo įrangos tašką reikia sumontuoti kuo arčiau įrenginio.

Gryninimo įrangos nereikėtų montuoti už greito atidarymo vožtuvų, ją reikia apsaugoti, kad nesusidarytų galima atbulinė srovė ar kiti hidrauliniai smūgiai.

Prieš montuodami išvalykite visus į grynimo įrangą einančius vamzdžius, taip pat išvalykite visus vamzdžius, kai sumontuosite valymo įrangą, prieš prijungdami ją prie galutinio įrenginio.

Jei aplink gryninimo liniją įtaisytos apėjimo linijos, įsitikinkite, jog atitinkami filtrai įtaisyti apėjimo linijoje tam, kad neužsiterštų už jų esanti sistemos dalis.

Prijunkite išleidimo linijas nuo sujungiamųjų filtrų tiesiai prie kondensato skyriklio. Jeigu neįmanoma prijungti išleidimo linijų tiesiai prie skyriklio, linijos turi būti nukreiptos į kondensato kolektorių (atviros viename gale), tada į vieną kondensato skyriklio įvadą.

Pasirūpinkite įranga, kuri išleistų surinktus skysčius iš gryninimo įrangos. Surinktus skysčius reikia tinkamai apdoroti ir išmesti.

(RU) Рекомендации по установке

Перед входом в распределительную систему, а также в критических точках использования / подвода рекомендуется использовать сжатый воздух.

Установка осушителей сжатого воздуха во влажную систему может привести к дополнительному загрязнению фильтрующего элемента, которое накапливается в период высыхания системы. В этот период может потребоваться чаще менять фильтрующие элементы.

В установках, в которых используются безмасляные компрессоры, присутствуют водные аэрозоли и твердые частицы, следует использовать универсальные и высокоэффективные фильтры.

Для защиты высокоэффективного фильтра от масляных аэрозолей и твердых частиц следует обязательно установить универсальный фильтр.

Устанавливайте очистительное оборудование при низкой температуре, максимально приближенной, но не достигающей температуры замерзания, предпочтительно после добавочных охладителей и воздухоприемников.

Место установки очистительного оборудования должно находиться как можно ближе к подводу.

Очистительное оборудование не должно устанавливаться после быстро открывающихся клапанов, а также должно быть защищено от возможного обратного потока или других условий, создающих ударную нагрузку.

Перед установкой очистите все трубопроводы, ведущие к очистительному оборудованию, а также все трубопроводы, отходящие от очистительного оборудования, до подключения последнего подвода.

Если вокруг очистительного оборудования проложен обводной трубопровод, убедитесь, что к обводному трубопроводу подключена соответствующая фильтрующая система, чтобы предотвратить загрязнение основного потока системы.

Подсоединяйте дренажные трубопроводы из коалесцентных фильтров непосредственно к сепаратору конденсата. Если невозможно подсоединить дренажные трубопроводы непосредственно к сепаратору, необходимо вывести эти трубопроводы в коллектор конденсата (вентилируемый с одной стороны), а затем в один вход сепаратора конденсата.

Установите средства для дренажа жидкостей из очистительного оборудования. Собранные жидкости должны быть утилизированы в соответствии с указанными требованиями.

(SL) Priporočila za namestitev

Stisnjeni zrak je priporočljivo obdelati še pred vstopom v distribucijski sistem in ob odločilnih točkah uporabe.

Namestitev sušilnikov stisnjenega zraka na moker sistem lahko povzroči dodatno nalaganje umazanije v filtrih med obdobjem sušenja distribucijskega sistema. Med tem obdobjem bo morda potrebna pogostejša menjava filtrirnih elementov.

Pri namestitvah, kjer so v uporabi kompresorji brez olja in kjer so še vedno prisotni vodni in trdni delci, je treba uporabljati običajne in visokoučinkovite enote.

Za zaščito visokoučinkovitega filtra pred veliko količino vodnih in trdnih delcev mora biti vedno nameščen običajni filter.

Namestite čistilno opremo pri najnižji temperaturi nad zmrziščem, po možnosti za hladilniki polnilnega zraka in sprejemniki zraka.

Čistilna oprema naj bo nameščena kolikor je mogoče blizu mesta uporabe.

Čistilna oprema naj ne bo nameščena za zapornimi ventili in naj bo zaščitena pred morebitnim nasprotnim tokom ali ostalimi neobičajnimi situacijami.

Pred namestitvijo očistite vse cevi, ki vodijo do čistilne opreme, po namestitvi čistilne opreme in pred priklopom na zaključeni sistem pa očistite vse cevi.

Če so blizu čistilne opreme predvideni obvodi, zagotovite ustrezno filtriranje teh cevi, da ne pride do kontaminacije priključenega sistema.

Odtočne vode iz razvlažilnih filtrov priključite neposredno na ločevalnik kondenzata. Če odtočnih vodov ni možno napeljati neposredno v ločevalnik, je treba te vode napeljati v razdelilnik kondenzata (izliv na enem koncu voda) in zatem na posamezni dotok na ločevalniku kondenzata.

Zagotovite način za odvajanje zbrane tekočine iz čistilne opreme. Z zbrano tekočino je treba ravnati in jo odstraniti preudarno in odgovorno.

(TR) Kurulum tavsiyeleri

Sıkıştırılmış havanın dağıtım sistemine girmeden önce ve kritik kullanım noktalarında / uygulamalarda işlemden geçirilmesi tavsiye edilir.

Önceden yaş olan bir sisteme sıkıştırılmış hava kurutucularının kurulması, dağıtım sistemi kururken kullanım noktası filtrelerine fazladan kir yüklenmesine yol açabilir. Bu süre içinde filtre öğelerinin daha sık değiştirilmesi gerekebilir.

Yağsız kompresörlerin kullanıldığı kurulumlarda, su spreyi ve zerrecikler yine mevcuttur, bu durumlarda da genel amaçlı ve yüksek etkinlik düzeylerini kullanılmalıdır.

Yüksek etkinlikli filtreyi hacimli sıvı spreylerden ve katı zerreciklerden korumak için her zaman genel amaçlı bir filtre takılmalıdır.

Arındırma ekipmanını donma noktasının üstündeki en düşük ısıda ve tercihen son soğutucuların ve hava depolarının aşağı akım tarafına kurun.

Kullanma noktası arındırma ekipmanı, uygulamanın mümkün olduğu kadar yakınına kurulmalıdır.

Arındırma ekipmanı, çabuk açma valflerinin aşağı akım tarafına kurulmamalı ve ters akım olasılığına ve başka şok koşullarına karşı korunmalıdır.

Arındırma ekipmanına giden tüm boruları kurulumdan önce, bütün boruları da arındırma ekipmanı kurulduktan sonra ve son uygulamaya bağlamadan önce arındırın.

Arındırma ekipmanının çevresine by-pass hatları takılmışsa, sistemin aşağı akımında kirlenmeyi önlemek için by-pass hattına yeterli filtre donanımının takılmasını sağlayın.

Birleştirme filtrelerinden gelen süzdürme hatlarını doğrudan yoğunlaşma separatörüne takın. Süzdürme hatlarını doğrudan separatöre bağlamak mümkün değilse, hatlar yoğunlaşma manifolduna salınmalı (bir uçtan salınır), ardından da yoğunlaşma separatörünün tek bir girişine salınmalıdır.

Biriken sıvıları arındırma ekipmanından süzdürecek bir tertibat olmasını sağlayın. Biriken sıvılar sorumlu bir şekilde işlenmeli ve atılmalıdır.

(MT) Rakkomandazzjonijiet għall-Installazzjoni

Nirrakkomandaw li l-arja kompressata tiġi trattata qabel ma tidħol fis-sistema ta' distribuzzjoni kif ukoll fil-punti / l-applikazzjonijiet kritiċi ta' l-użu.

L-installazzjoni ta' tagħmir li jnixxef l-arja kumpressata fuq sistema li kienet imxarrba jista' jirriżulta f'aktar tagħbija ta' ħmieġ għall-filtri li jintużaw f'punt wieħed, għall-perjodu sakemm is-sistema ta' distribuzzjoni tinxef. L-elementi tal-filtri jista' jkollhom bżonn li jinbidlu aktar spiss matul dan il-perjodu.

Għal installazzjonijiet fejn jintużaw kumpressuri mingħajr żejt, xorta jkun hemm preżenti ajrusols u partijiet ta' l-ilma, għalhekk xorta għandhom jintużaw gradi bi skop ġenerali u b'effiċjenza kbira.

Filtru għal skopijiet ġenerali għandu dejjem jiġi installat biex jipproteġi l-filtru ta' effiċjenza kbira mill-volum kbir ta' ajrusols likwidi u partijiet solidi.

Installa tagħmir ta' purifikazzjoni fl-aktar temperatura baxxa possibbli imma b'mod li ma jkunx hemm iffriżar, preferibbilment aktar 'l isfel mill-aftercoolers u mir-riċevituri ta' l-arja.

Tagħmir tal-purifikazzjoni fil-punt ta' l-użu għandu jiġi installat kemm jista' jkun qrib tal-post fejn għandu japplika.

It-tagħmir ta' purifikazzjoni m'għandux jiġi installat aktar 'l isfel mill-valvs li jiftħu malajr u għandu jkun protett minn possibilità ta' fluss b'lura jew kundizzjonijiet oħra stressanti.

Naddaf il-pajps kollha li jwasslu għat-tagħmir ta' purifikazzjoni qabel tinstalla u l-pajps kollha wara li tinstalla t-tagħmir ta' purifikazzjoni u qabel ma tqabbad ma' l-applikazzjoni finali.

Jekk tiffittja linji ta' by-pass madwar it-tagħmir ta' purifikazzjoni, kun żgur li hemm biżżejjed filtrazzjoni ffittjata mal-linja tal-by-pass biex ma tħallix li jkun hemm kontaminazzjoni tas-sistema aktar 'l isfel.

Waħħal il-linji tad-drejn mill-filtri koalexxenti direttament mas-separatur tal-kondensat. Mhuwiex possibbli li tqabbad il-linji tad-drejnijiet direttament ma' separatur, il-linji għandu jkollhom vent għall-manifold tal-kondensat (b'vent minn naħa waħda) u mbagħad għal ġewwa żbokk waħdieni ta' separatur tal-kondensat.

Ipprovdi faċilità biex tiddrejnja l-likwidi li jinġabru mit-tagħmir tal-purifikazzjoni. Il-likwidi li jinġabru għandhom jiġu trattati u mormija b'mod risponsabbli.

(RO) Recomandări de instalare

Se recomandă ca aerul comprimat să fie tratat anterior pătrunderii în sistemul de distribuție și, de asemenea, în punctele de utilizare/aplicațiile critice.

Instalarea uscătoarelor cu aer comprimat pe un sistem de tip umed anterior poate avea ca rezultat acumularea suplimentară, pentru o perioadă, de impurități în filtrele de la punctele de utilizare, în timpul uscării sistemului de distribuție. Este posibil ca, pe durata acestei perioade, să fie necesară înlocuirea mai frecventă a elementelor filtrului.

La instalații unde se utilizează compresoare fără ulei, aerosolii de apă și macroparticulele sunt în continuare prezente, deci este necesară utilizarea în continuare a filtrelor de uz general și a celor cu grade de eficiență ridicată.

Un filtru de uz general trebuie instalat întotdeauna, pentru a proteja filtrul de eficiență ridicată de aerosolii lichizi în cantități mari și de macroparticulele solide.

Instalați echipamentul de purificare la cea mai redusă temperatură deasupra punctului de îngheț, preferabil în aval de răcitoarele secundare și de recipientele de aer.

Echipamentul de purificare de la punctul de utilizare trebuie instalat cât mai aproape de aplicația propriu-zisă.

Echipamentul de purificare nu trebuie instalat în aval de supapele cu deschidere rapidă și trebuie protejat de posibili contracurenți sau de alți factori de șoc.

Purjați toate conductele care duc spre echipamentul de purificare înainte de instalare și toate conductele după instalarea echipamentului de purificare și înainte de conectarea la aplicația finală.

Dacă sunt montate conducte de trecere în jurul echipamentului de purificare, verificați să fie montate sisteme adecvate de filtrare la conducta de trecere, pentru a preveni contaminarea sistemului în aval.

Montați conducte de recuperare de la filtrele de coalescență direct la un separator de condens. Dacă nu este posibilă cuplarea directă a conductelor de recuperare la un separator, conductele trebuie ventilate la un colector de condens (ventilat la un capăt), apoi la o singură intrare a unui separator de condens.

Furnizați o instalație care să elimine, prin drenare, lichidele colectate din echipamentul de purificare. Lichidele colectate trebuie tratate și evacuate într-o manieră responsabilă.

(BG) Препоръки за инсталацията

Препоръчително е компресираният въздух да се обработва преди влизането в системата за разпределение, а също така в точки/приложения с изключително значение.

Инсталирането на сушилни за компресиран въздух към намокрена система може да доведе до натрупване на допълнително замърсяване при използването на филтрите за определен период, докато системата за разпределение изсъхва. Елементите на филтъра може да се нуждаят от смяна по-често по време на този период.

За инсталации, където се използва безмаслени компресори, а водни аерозоли и частици все още са налични, все още трябва да се използват високоефективни разредки, както и разредки с общо предназначение.

Филтърът с общо предназначение трябва винаги да е се инсталира, за да предпази високоефективния филтър от обемни аерозоли и твърди частици.

Инсталирайте пречистващо оборудване при най-ниската температура над точката на замръзване, за предпочитане крайните допълнителни охладители и въздухоприемници.

Точката на използване на пречистващо оборудване трябва да се инсталира възможно най-близо до уреда.

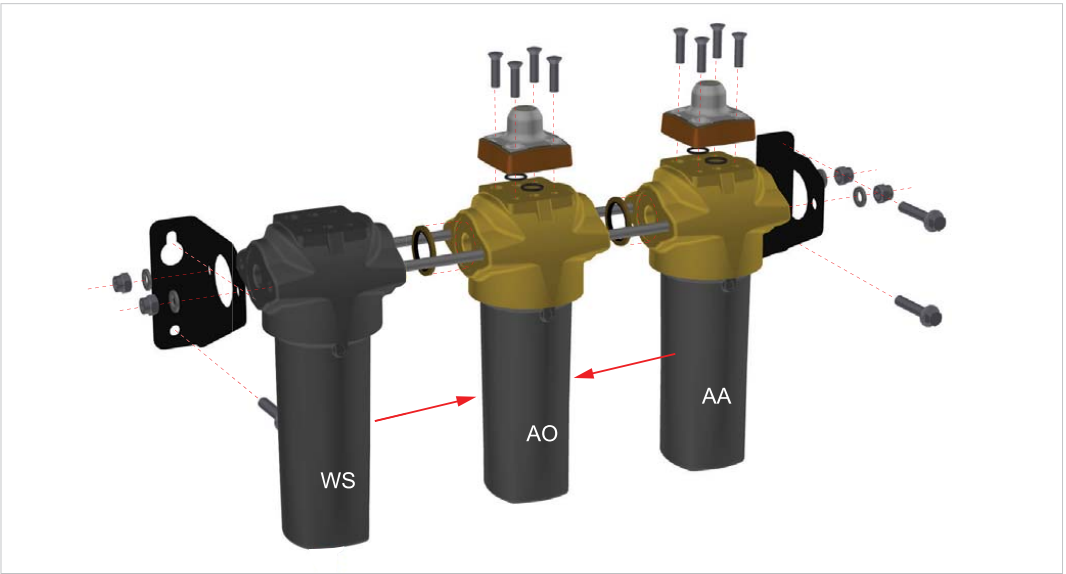
Пречистващото оборудване не трябва да се инсталира в края на бързо отварящи се клапани и трябва да се предпази от възможен обратен поток или други ударни условия.

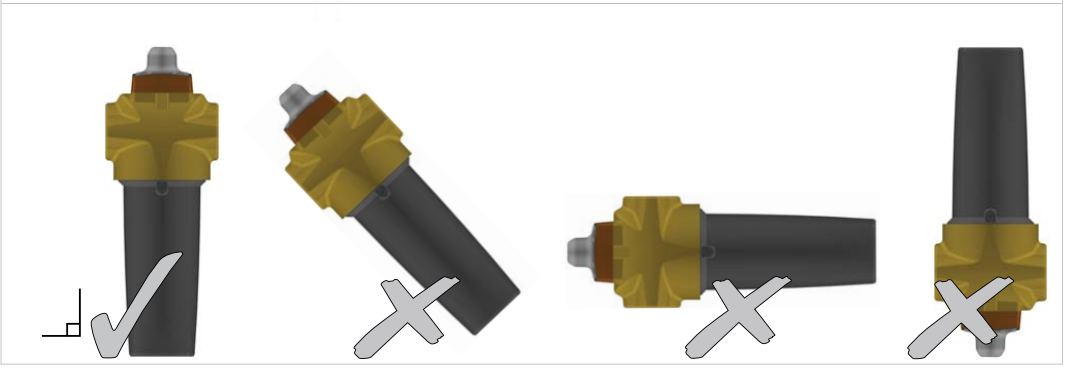
Продухайте всички тръби, водещи към пречистващото оборудване, преди инсталацията, както и всички тръби след инсталацията на пречистващото оборудване и преди свързването на крайния уред.

Ако байпасни тръби са поставени около пречистващото оборудване, се уверете, че към байпасната тръба е нагласено подходящо филтриране, което да предотврати замърсяване нататък по системата.

Поставете отточни тръби от съединителните филтри директно към сепаратор на кондензат. Ако не е възможно директно свързване на отточни тръби към сепаратор, тръбите трябва да се оттичат към един колектор на кондензат (отворен от единия край) и след това в един вход на сепаратор на кондензат.

Осигурете условия за отичане на натрупаните флуиди от пречистващото оборудване. Натрупаните флуиди трябва да се обработват и изхвърлят по подходящия начин.





(LT) Apatinė uždarymo plokštė gali judėti, kai filtre nėra slėgio

Warning Apatinei uždarymo plokštei nereikia techninės priežiūros ir jos niekada nereikia nuimti.

(RU) Если в фильтре отсутствует давление, нижняя пластина корпуса может перемещаться.

Warning Нижняя пластина корпуса не подлежит обслуживанию и ее демонтаж не предусмотрен.

(SL) Če filter ni pod tlakom, se lahko spodnja zapiralna plošča premika.

Warning Spodnje zapiralne plošče ni možno popravljati in je nikoli ne odstranjujte.

(TR) Alttaki kapatma plakası, filtreye basınç uygulanmadığında hareket edebilir

Warning Alttaki kapatma plakası servis hizmeti verilen öğelerden değildir ve asla çıkarılmamalıdır.

(MT) Il-plakka tal-għeluq t'isfel tista' timxi meta l-filtru ma jkunx taħt pressjoni

Warning Il-plakka tal-għeluq t'isfel hija oġġett li ma jistax isirlu servis u qatt ma għandu jitneħħa.

(RO) Placa inferioară de acoperire se poate deplasa atunci când filtrul nu este presurizat

Warning Placa inferioară de acoperire este un element care nu poate fi remediat în service şi care nu trebuie demontat.

(BG) Долната затваряща пластина може да помръдне, когато филтърът не е под налягане.

Warning Долната затваряща пластина не може да се обслужва и не трябва никога да се сваля.

(LT) Paleidimas ir naudojimas

Warning

Prieš nukreipdami slėgį į filtrą įsitikinkite, kad galvutė ir indas yra gerai pritvirtinti, o fiksavimo detalės tinkamai sulygiuotos, kaip parodyta techninės priežiūros skyriuje (6 techninės priežiūros procedūra) šiame vadove.

1. Lėtai atidarydami įleidimo vožtuvą palaipsniui didinkite slėgį įrenginyje.
2. Lėtai atidarydami išleidimo vožtuvą, iš naujo sudarykite slėgį už jo esančiame vamzdyne.

Negalima staigiai atidaryti įleidimo ar išleidimo vožtuvų, paveikti įrenginio pernelyg dideliu diferencialiniu slėgiu, nes galima sugadinti įrangą..

(RU) Запуск и эксплуатация

Warning

Перед созданием давления в фильтре убедитесь, что стакан и головка фильтра правильно установлены и фиксатор правильно выровнен, как показано в разделе технического обслуживания данного руководства (процедура технического обслуживания 6).

1. Впускной клапан следует открывать плавно, чтобы постепенно создать давление в устройстве.
2. Плавно откройте выпускной клапан, чтобы создать давление в системе трубопровода.

Запрещено резко открывать впускной или выпускной клапаны, а также используемое устройство, так как это может привести к перепаду давления и повреждениям.

(SL) Zagon in uporaba

Warning

Pred obremenitvijo filtra s tlakom zagotovite, da sta glava in posoda filtra pravilno nameščeni in da sta označbi na glavi in posodi filtra ustrezno poravnani druga z drugo, kot je prikazano v poglavju o vzdrževanju v tem priročniku (postopek vzdrževanja – korak 6).

1. Počasi odprite dovodni ventil, da enoto postopoma obremenite s tlakom.
2. Počasi odprite odvodni ventil za ponovno tlačno obremenitev cevovoda za tem ventilom.

Dovodnih ali odvodnih ventilov nikoli ne odpirajte naglo in enote ne izpostavljajte prekomernim nihanjem tlaka, saj lahko to povzroči škodo.

(TR) Çalıştırma ve İşletme

Warning

Filtreye basınç uygulamadan önce, başın ve haznenin düzgün bir şekilde takıldığından ve kilitleme tertibatının, bu kılavuzun bakım bölümünde (bakım prosedürü 6) gösterildiği gibi, düzgün bir şekilde hizalandığından emin olun.

1. Giriş valfini yavaşça açıp üniteye yavaş yavaş basınç uygulayın.
2. Aşağı akım borularına yeniden basınç uygulamak için çıkış valfini yavaşça açın.

Giriş ve çıkış valflerini hızla açmayın veya üniteyi aşırı basınç farklarına maruz bırakmayın; aksi halde hasar oluşabilir.

(MT) Kif Tixgħel u Kif Tħaddem

Warning

Qabel titfa' pressjoni fuq il-filtru, agħmel żgur li r-ras u l-bowl huma mwaħħlin b'mod korrett u li d-dettall tas-sokor huwa allinjat kif jixraq kif muri fis-sezzjoni tal-manutenzjoni (proċedura ta' manutenzjoni 6) ta' dan il-manwal.

1. Iftaħ il-valv tad-dħul bil-mod, biex iżżid gradwalment il-pressjoni fl-unità.
2. Iftaħ il-valv tal-ħruġ bil-mod biex terġa' tibni l-pressjoni fil-pajps li jwasslu 'l isfel.

Ara li ma tiftaħx il-valvs tad-dħul jew tal-ħruġ f'daqqa jew b'xi mod tikkawża differenza eċċessiva fil-pressjoni tat-tagħmir għax tista' tagħmel il-ħsara.

(RO) Pornire şi operare

Warning

Înainte de presurizarea filtrului, asiguraţi-vă că paharul şi capul filtrului sunt corect montate şi că detaliul de fixare este corect aliniat, aşa cum se arată în secţiunea de întreţinere (procedura de întreţinere 6) a acestui manual.

1. Deschideţi încet supapa de admisie, pentru a presuriza gradat aparatul.
2. Deschideţi încet supapa de evacuare pentru a represuriza sistemul de conducte din aval.

Nu deschideţi rapid supapele de admisie sau de evacuare şi nu supuneţi aparatul la o diferenţă excesivă de presiune; în caz contrar, aparatul poate suferi deteriorări.

(BG) Начало и работа

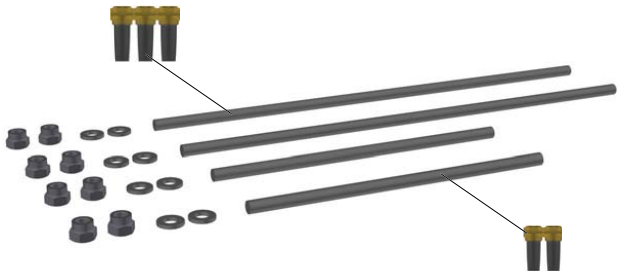
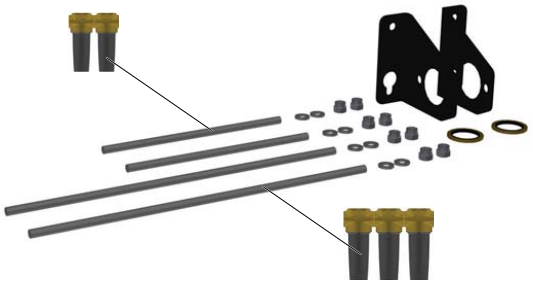
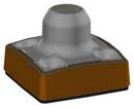
Warning

Преди херметизиране на филтъра се уверете, че главата и чашката са монтирани правилно и заключващият детайл е подходящо подравнен, както е показано в раздела за поддръжка (процедура по поддръжка 6) на това ръководство.

1. Отворете бавно входния вентил, за да пуснете постепенно налягане на уреда.
2. Отворете бавно изходния вентил, за да премахнете налягането по протежението на тръбите.

Не отваряйте входния или изходния вентил бързо и не подлагайте уреда на голяма разлика в налягането, тъй като това може да доведе до повреда.

Priedai / atsarginės dalys (techninės priežiūros komplektai)
Принадлежности / запасные части (ремонтные комплекты), Dodatna oprema / nadomestni deli (servisni kompleti), Aksesuarlar / Yedek Parçalar (Servis Kitleri), Aċċessorji / Lista tal-Parts (Settijiet tas-Servis), Accesorii / Piese de schimb (Truse de service), Принадлежности / резервни части (сервизни комплекти)

Filter Models	Catalogue Number	Contents
010	TRK1-2	
015 - 020	TRK2-2	
025 - 030	TRK3-2	
035- 045	TRK4-2	
050- 055	TRK5-2	
010	MBK1-1	
015 - 020	MBK2-1	
025 - 030	MBK3-1	
035 - 045	MBK4-1	
050 - 055	MBK5-1	
010	MBK1-2	
015 - 020	MBK2-2	
025 - 030	MBK3-2	
035 - 045	MBK4-2	
050 - 055	MBK5-2	
010 - 055	EM1	
010 - 055	PD15NO	
010 - 030	DPI-K	
035 - 055	ZD90GL	

Techninė priežiūra
Техническое обслуживание, Vzdrževanje, Bakım, Manutenzjoni, Întreţinere,Поддръжка

(LT) **Techninės priežiūros intervalai**

Norint užtikrinti optimalias filtro charakteristikas AO, AA tipo elementus reikia keisti kas 12 mėnesių kartu su automatinio išleidimo čiaupu.

Elemento ACS veikimas paremtas didžiausia alyvos garų įleidimo koncentracija 0,018 mg/m^3. Pakeiskite anglies filtro elementą aptikę garų, keistą kvapą arba skonį.

Kitaip nei alyvos aerozolių šalinimo filtrai, kurie keičiami kasmet siekiant užtikrinti suspausto oro kokybę, alyvos garų šalinimo filtro tarnavimo laikas priklauso nuo įvairių veiksnių ir jį reikia daug dažniau keisti (nebent naudojamas OVR, kurio tarnavimo laikas apskaičiuotas 6000 valandų).

Veiksniai, darantys poveikį adsorbcijos filtrų tarnavimo laikui

Alyvos garų koncentracija

Kuo didesnė alyvos garų įleidimo koncentracija, tuo greičiau baigsis aktyvuotosios anglies talpa.

Karterio alyva

Adsorbcijos filtrai skirti pašalinti alyvos garus ir kvapus, o ne suskystintą alyvą ar aerozolius. Dėl blogai prižiūrimų filtrų arba apskritai neuždėtų išankstinių filtrų OVR filtro talpa greitai pasibaigia.

Temperatūra

Alyvos garų kiekis didėja eksponentiškai pagal įleidimo temperatūrą, taip sutrumpindamas elemento tarnavimo laiką. Be to, didėjant temperatūrai, mažėja adsorbcijos galia, ir elemento tarnavimo laikas taip pat trumpėja.

Santykinis drėgnumas arba rasos taškas

Drėgnas oras sumažina adsorbcines anglies savybes.

Kompresoriaus alyvos pokyčiai

Pakeitus kompresoriaus alyvą, naujas tepalas išdegina „lengvąją frakciją", todėl po to alyvos garų kiekis padidėja valandoms ar net savaitėms. Šį padidėjusį alyvos garų kiekį adsorbuoja OVR filtras, žymiai sumažinantis adsorbcinį tarnavimo laiką.

(RU) **Интервалы технического обслуживания**

Для обеспечения оптимальной эффективности фильтра требуется менять элементы классов AO, AA каждые 12 месяцев вместе с автоматическим дренажным устройством.

Эффективность элемента ACS рассчитана на максимальную концентрацию входящих паров масла, не превышающую 0,018 мг/м^3. При обнаружении испарений или запаха замените угольный элемент фильтра.

В отличие от масляных аэрозольных фильтров, которые подлежат ежегодной замене в целях обеспечения сжатым воздухом надлежащего качества, срок службы фильтров масляных паров зависит от различных факторов, и требует более частой замены (если только не используется OVR, срок службы которого 6 000 часов):

Факторы, влияющие на продолжительность срока службы адсорбционных фильтров:

Концентрация паров масла

Чем выше концентрация паров масла на входе, тем быстрее произойдет насыщение парами активированного угля.

Масло в емкостях.

Адсорбционные фильтры предназначены для поглощения паров масла и запахов, а не жидкой нефти или аэрозолей. Плохо выполняющаяся предварительная фильтрация или ее отсутствие приводит к быстрому ухудшению свойств фильтра OVR.

Температура

Содержание паров масла увеличивается в экспоненциальной зависимости от температуры на входе, что сокращает срок службы элемента. Кроме того, при увеличении температуры способность элемента к адсорбции уменьшается, что также сокращает срок службы элемента.

Относительная влажность или точка росы

Влажный воздух ухудшает способность углерода к адсорбции.

Замена масла в компрессоре

При замене компрессорного масла, в новом масле происходит сжигание легких углеводородов, что приводит к увеличению содержания паров масла на несколько часов или даже недель. Эти пары поглощаются фильтром OVR, что значительно сокращает его срок службы.

(SL) **Intervali vzdrževanja**

Da bi zagotovili optimalno delovanje filtra, je treba elemente razredov AO, AA zamenjati vsakih 12 mesecev, skupaj z avtomatskim izpustom.

Zmogljivost elementa ACS temelji na največji koncentraciji naftnih hlapov na dovodu 0.018mg/m^3. Ko zaznate hlape, vonj ali okus, zamenjajte filtrirni element z ogljem.

Za razliko od filtrov za odstranjevanje naftnih aerosolov, ki se jih za zagotavljanje kakovost stisnjenega zamenjuje enkrat letno, je življenjska doba filtra za odstranjevanje hlapov odvisna od različnih dejavnikov in zahtevajo bolj pogoste zamenjave (razen, če se uporablja OVR, z zasnovano trajnostjo 6000 ur):

Dejavniki, ki vplivajo na življenjsko dobo adsorpcijskih filtrov

Koncentracija oljnih hlapov

Večja kot je koncentracija oljnih hlapov na vstopu, hitreje bo sposobnost aktivnega oglja zasičena.

Tekoče olje

Adsorpcijski filtri so namenjeni odstranjevanju oljnih hlapov in vonjav, ne tekočega olja ali aerosolov. Slabo vzdrževano predhodno filtriranje ali brez le-tega bo povzročilo hitro iztrošenje zmogljivosti OVR filtra.

Temperatura

Vsebnost oljnih hlapov narašča eksponentno glede na vstopno temperaturo, s tem se življenjska doba elementa skrajša. Poleg tega se z naraščanjem temperature zmanjšuje sposobnost adsorpcije, ravno tako tudi življenjska doba elementa.

Relativna vlažnost ali rosišče

Vlažnost zraka zmanjšuje adsorpcijsko sposobnost oglja.

Menjave kompresorskega olja

Ko se kompresorsko olje zamenja, novo mazivo izloči "lahke frakcije", kar za več ur ali celo tednov poveča vsebnost oljnih hlapov. To večjo količino oljnih hlapov adsorbira OVR filter, s tem pa se bistveno skrajša njegova življenjska doba.

(TR) **Bakım Aralıkları**

En iyi performansı sağlamak için AO, AA, düzey öğelerin otomatik süzdürme tertibatı ile birlikte her 12 ayda bir değiştirilmesi gerekir.

ACS öğesinin performansı, 0,018mg/m^3 maksimum yağ buharı giriş konsantrasyonuna dayanır. Buhar, koku veya tat saptandığında karbon filtre öğesini değiştirin.

Yağ buharı giderme filtresinin kullanım süresi, basınçlı hava kalitesini garanti etmek için her yıl değiştirilen yağ aerosolü giderme filtrelerinden farklı olarak, çeşitli faktörlere bağlanabilir ve daha sık değiştirilmeleri gerekebilir (6000 saatlik ömür için boyutlandırılmış OVR kullanılmadığı sürece):

Emiş filtrelerinin kullanım süresini etkileyen faktörler

Yağ buharı konsantrasyonu

Yağ buharının giriş konsantrasyonu arttıkça, aktif karbon kapasitesi daha hızlı biçimde tükenir.

Yağ kütlesi

Emiş filtreleri, sıvı yağ veya aerosolleri değil, yağ buharını ve kokuları gidermek için tasarlanmıştır. Yeterli bakım yapılmayan veya mevcut olmayan ön filtrasyon, OVR filtre kapasitesinin hızlı biçimde tükenmesine neden olur.

Sıcaklık

Yağ buharı içeriği, giriş sıcaklığına göre katlanarak artar ve öğenin ömrünü kısaltır. Ayrıca, sıcaklık arttıkça emilim kapasitesi düşer ve yine öğenin ömrünü kısaltır.

Nispi Nem veya Çiylenme Noktası

Yaş hava, karbonun emilim kapasitesini düşürür.

Kompresör yağı değişimleri

Kompresör yağı değiştirildiğinde, yeni yağlayıcı "hafif uçları" yakar; bu da sonraki saatler, hatta haftalar boyunca yağ buharı içeriğini artırır. Yağ buharı içeriğindeki bu artış, OVR filtresi tarafından emilerek, emiş ömrünü önemli ölçüde kısaltır.

(MT) **Intervalli tal-Manutenzjoni**

Biex tiżgura l-aqwa prestazzjoni tal-filtru, l-elementi ta' grad AO, AA jeħtieġu tibdil kull 12-il xahar flimkien mad-drejn awtomatiku.

Il-prestazzjoni tal-element ACS hija bbażata fuq konċentrazzjoni massima tal-iżbokk tal-fwar taż-żejt ta' 0.018mg/m^3. Ibdel l-element tal-filtru tal-faħam wara l-kxif ta' fwar, riħa jew togħma.

B'differenza mill-filtri ta' tneħħija tal-aerosol taż-żejt li jinbidlu kull sena biex tiġi ggarantita l-kwalità tal-arja kkompressata, il-ħajja ta' filtru ta' tneħħija taż-żejt tista' tiġi attribwita għal diversi fatturi u jista' jkun hemm bżonn li l-filtri jinbidlu aktar ta' spiss (sakemm ma jintużax OVR li huwa maħsub għal ħajja ta' 6000 siegħa):

Fatturi li jaffettwaw l-għomor tal-filtri ta' assorbiment

Konċentrazzjoni ta' fwar taż-żejt

Aktar ma l-konċentrazzjoni tal-iżbokk tal-fwar taż-żejt tkun ogħla, aktar il-kapaċità ta' karbonju attivat tiskadi malajr.

Żejt tal-bulk

Filtri ta' assorbiment ħuma maħsubin biex ineħħu fwar taż-żejt u l-irwejjaħ, żejt mhux likwidu jew aerosols. Filtrazzjoni minn qabel miżmuma ħażin jew ineżistenti tikkawża l-kapaċità tal-filtru tal-OVR biex tiskadi malajr.

Temperatura

Il-kontenut tal-fwar taż-żejt jiżdied b'mod esponenzjali skont temperatura tal-iżbokk tad-dħul, u jnaqqas il-ħajja tal-element. Barra minn hekk, hekk kif tiżdied it-temperatura, il-kapaċità ta' assorbiment tonqos, u għal darb'oħra tnaqqas il-ħajja tal-element.

Umdità jew Punt tan-nida

L-arja niedja tnaqqas il-kapaċità adsorbitva tal-faħam.

Tibdil taż-żejt tal-kompressur

Meta jinbidel iż-żejt tal-kompressur, il-lubrikant il-ġdid jaħraq it-truf irqaq li jżidu l-kontenut tal-fwar taż-żejt għal siegħat jew saħansitra għal ġimgħat wara. Din iż-żieda fil-kontenut tal-fwar taż-żejt ħija adsorbita mill-filtru OVR, u tnaqqas b'mod sinifikanti l-ħajja adsorbiva tiegħu.

(RO) **Intervale de întreţinere**

Pentru a asigura performanţe optime ale filtrului, elementele de grad AO, AA necesită înlocuire la fiecare 12 luni, alături de evacuarea automată.

Performan?a elementului ACS se bazează pe o concentra?ie maximă a vaporilor de ulei care intră de 0,018mg/m^3. Înlocui?i elementul filtrului de carbon la detectarea de vapori, miros sau gust.

Spre deosebire de filtrele de îndepărtare a vaporilor de ulei, care sunt modificate anual pentru a garanta calitatea aerului comprimat, durata de via?ă a unui filtru de îndepărtare a vaporilor de ulei poate fi atribuită mai multor factori ?i necesită schimbări mai frecvente (cu excep?ia cazului în care OVR este folosit, acesta fiind dimensionat pentru 6000 ore de func?ionare):

Factori care influenţează durata de viaţă a filtrelor de adsorbţie

Concentraţia vaporilor de ulei

Cu cât concentra?ia de intrare a vaporilor de ulei este mai mare, cu atât mai repede va expira capacitatea cărbunelui activ.

Ulei la vrac

Filtrele de adsorb?ie sunt concepute pentru a îndepărta vaporii de ulei ?i mirosurile, nu uleiul lichid sau vaporii. Un filtru rău între?inut sau absen?a unei prefiltrări va determina expirarea rapidă a capacită?ii filtrului OVR.

Temperatură

Con?inutul de vapori de ulei cre?te exponen?ial la temperatura de intrare, reducând durata de via?ă a elementului. În plus, odată cu cre?terea temperaturii, capacitate de adsorb?ie scade, reducând din nou durată de via?ă a elementului.

Umiditatea relativă sau punctul de rouă

Aerul umed reduce capacitatea de adsorb?ie a carbonului.

Schimbări ale uleiului de compresor

La schimbarea uleiului de compresor, noul lubrifiant arde "capetele u?oare", care măresc con?inutul de vapori de ulei timp de câteva ore sau chiar săptămâni după aceea. Această cre?tere a con?inutului de vapori de ulei este adsorbită prin filtrul OVR, reducând în mod semnificativ durata adsorb?iei.

(LT) **1 techninės priežiūros procedūra**

Lėtai uždarykite įleidimo (1) ir išleidimo (2) vožtuvus ir išleiskite slėgį iš filtro (3) per išleidimo angą.

(RU) **Процедура технического обслуживания 1**

Медленно закройте впускной (1) и выпускной (2) клапаны и сбросьте давление в фильтре (3) с помощью дренажа.

(SL) **Postopek vzdrževanja – korak 1**

Počasi zaprite dotočni (1) in odtočni (2) ventil in iz filtra (3) prek odtoka izpustite ves tlak.

(TR) **Bakım Prosedürü 1**

Giriş (1) ve çıkış (2) valflerini yavaşça kapatın ve süzdürme tertibatını kullanarak filtredeki (3) basıncı boşaltın.

(MT) **Proċedura ta' Manutenzjoni 1**

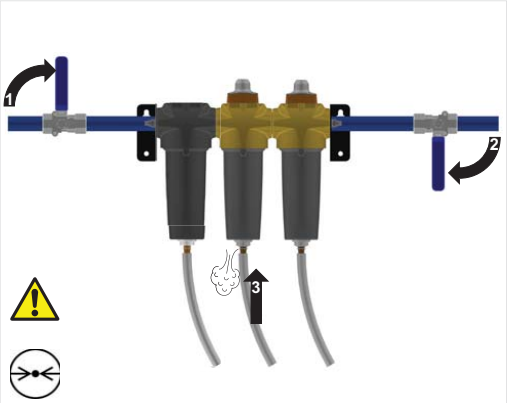
Agħlaq bil-mod il-valvi tal-iżbokk tad-dħul (1) u tal-ħruġ (2) u neħħi l-pressjoni tal-filtru (3) billi tuża d-drejn.

(RO) **Procedură de întreţinere 1**

Închideţi încet supapa de admisie (1) şi de evacuare (2) şi depresurizaţi filtrul (3) utilizând evacuarea.

(BG) **Процедура по поддръжка 1**

Бавно затворете входния (1) и изходния (2) вентил и изпуснете налягането от филтъра (3) с помощта на дренажа.



(LT) **2 techninės priežiūros procedūra**

Atsukite filtro indą (1 ir 2) ir išimkite panaudotą elementą (3)

(RU) **Процедура технического обслуживания 2**

Открутите стакан фильтра (1 и 2) и снимите использованный элемент (3)

(SL) **Postopek vzdrževanja – korak 2**

Odvijte posodo filtra (1 in 2) in odstranite uporabljeni element (3).

(TR) **Bakım Prosedürü 2**

Filtre haznesini (1 ve 2) gevşetin ve kullanılan öğeyi (3) çıkarın

(MT) **Proċedura ta' Manutenzjoni 2**

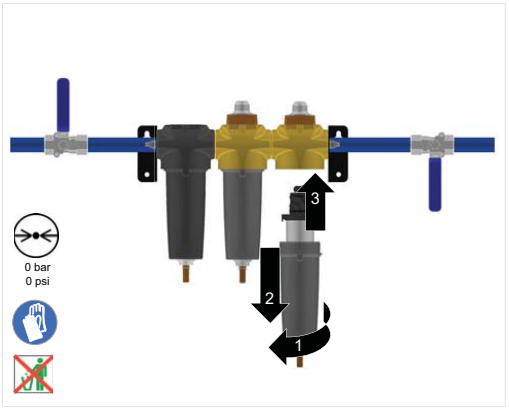
Ħoll il-bowl tal-filtru (1 u 2) u neħħi l-element użat (3)

(RO) **Procedură de întreţinere 2**

Deşurubaţi paharul filtrului (1 şi 2) şi demontaţi elementul uzat (3)

(BG) **Процедура по поддръжка 2**

Развийте филтърната чашка (1 и 2) и свалете използвания елемент (3)



(LT) **3 techninės priežiūros procedūra**

Atsukite automatinio išleidimo čiaupą (1) ir išmeskite (2). Įstatykite naują išleidimo čiaupą (3) ir priveržkite (4).

(RU) **Процедура технического обслуживания 3**

Открутите автоматический дренаж (1) и утилизируйте его (2). Установите новый дренаж (3) и затяните его (4).

(SL) **Postopek vzdrževanja – korak 3**

Odvijte samodejni odtok (1) in ga zavrzite (2). Namestite nov samodejni odtok (3) in ga privijte (4).

(TR) **Bakım Prosedürü 3**

Otomatik süzme tertibatını gevşetin (1) ve atın (2). Yeni süzdürme tertibatını takın (3) ve sıkın (4).

(MT) **Proċedura ta' Manutenzjoni 3**

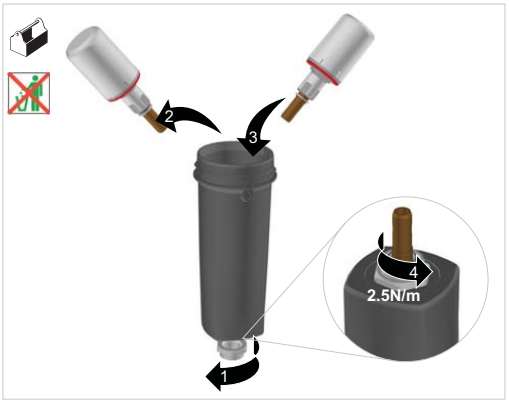
Ħoll id-drejn awtomatiku (1) u armi (2). Waħħal id-drejn il-ġdid (3) u ssikka (4).

(RO) **Procedură de întreţinere 3**

Deşurubaţi evacuarea automată (1) şi aruncaţi (2). Montaţi noua evacuare (3) şi strângeţi (4).

(BG) **Процедура по поддръжка 3**

Отвийте автоматичния дренаж (1) и го изхвърлете (2). Поставете новия дренаж (3) и затегнете (4).



(LT) **4 techninės priežiūros procedūra**

Įstatykite naują elementą į filtro indą, įsitikindami, kad ąselės tinkamai įstatytos į išpjovas.

(RU) **Процедура технического обслуживания 4**

Вставьте новый элемент в стакан фильтра, проверив, что ушки правильно сели в пазы.

(SL) **Postopek vzdrževanja – korak 4**

V posodo filtra vstavite nov filtrirni element in zagotovite, da so nastavki elementa pravilno nameščeni v utorih.

(TR) **Bakım Prosedürü 4**

Yeni öğeyi filtre haznesine yerleştirerek tırnakların oluklara düzgün bir şekilde oturmasını sağlayın.

(MT) **Proċedura ta' Manutenzjoni 4**

Daħħal l-element il-ġdid fil-bowl tal-filtru u agħmel żgur li l-lugs ikunu mpoġġja tajjeb fil-gruvs.

(RO) **Procedură de întreţinere 4**

Introduceţi noul element în paharul filtrului, asigurându-vă că inelele sunt corect amplasate în canale.

(BG) **Процедура по поддръжка 4**

Поставете новия елемент в чашката на филтъра, като се уверите, че издадените части влизат правилно в каналите.

(LT) **5 techninės priežiūros procedūra**

Pakeiskite sandarinimo žiedą filtro galvutėje pateikiamais naujais sandarinimo žiedais.

Caution **Būtinai patepkite sandarinimo žiedą ir sriegius tinkamu techniniu vazelinu be rūgščių.**

(RU) **Процедура технического обслуживания 5**

Замените кольцевое уплотнение в головке фильтра новый кольцевым уплотнением.

Caution **Смажьте кольцевое уплотнение и резьбу вазелином, не содержащим кислоты.**

(SL) **Postopek vzdrževanja – korak 5**

Stari tesnilni O-obroč v glavi filtra zamenjajte z novim.

Caution **O-obroč in navoje namažite z ustreznim brezkislinskim petrolejevim gelom.**

(TR) **Bakım Prosedürü 5**

Filtrenin başında yer alan O-halkasını, verilen yeni O-halkasıyla değiştirin.

Caution **O-halkasının ve yivlerin uygun bir asitsiz vazelin ile yağlanmasını sağlayın.**

(MT) **Proċedura ta' Manutenzjoni 5**

Ibdel l-O-ring li jinsab fir-ras tal-filtru bl-O-ring il-ġdid ipprovdut.

Caution **Agħmel żgur li tillubrifika l-O-rings u l-kamini b'jelly tal-petroleum ħieles minn aċidi xieraq.**

(RO) **Procedură de întreţinere 5**

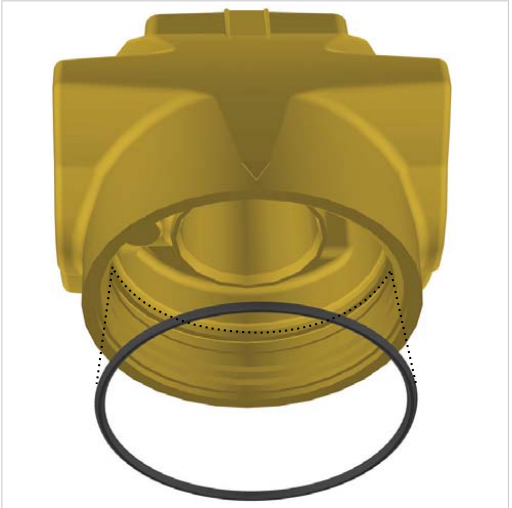
Înlocuiţi garnitura inelară situată în capul filtrului cu noua garnitură inelară furnizată.

Caution **Asiguraţi-vă că lubrifiaţi garnitura inelară şi filetele cu vaselină rectificată adecvată, fără acid.**

(BG) **Процедура по поддръжка 5**

Заменете О-пръстена, разположен във филтърната глава с предоставения нов О-пръстен.

Caution **Осигурете смазване на О-пръстена и резбите с подходящ безкиселинен вазелин.**



(LT) **6 techninės priežiūros procedūra (a)**

Vėl uždėkite filtro indą ir galvutę, įsitikindami, kad sriegiai iki galo priveržti, o fiksavimo detalės sulygiuotos.

Pastaba. Kad įsitikintumėte, jog indas yra gerai pritvirtintas prie galvutės, 010-030 indą sukite 360°, kol sriegis nebesisuks, o 035-045 indą 720°.

(RU) **Процедура технического обслуживания 6 (a)**

Установите на место стакан и головку фильтра, проверив, что резьбы полностью закручены и фиксаторы выровнены.

Примечание. Для полной установки стакана в головку необходимо повернуть стакан на 360° до полной остановки хода резьбы (стакан 005-030) или на 720° (стакан 035-045.

(SL) **Postopek vzdrževanja – korak 6 (a)**

Ponovno namestite posodo filtra in filtrsko glavo ter pazite, da so navoji priviti do konca in da sta označbi na glavi in posodi filtra ustrezno poravnani druga z drugo.

Opomba: posoda filtra je popolnoma privita na glavo, če posodo 010-030 zavrtite za 360° do konca navoja. Posodo 035-045 je treba zavrteti za 720°.

(TR) **Bakım Prosedürü 6 (a)**

Filtre haznesini ve başını, yivler tamamen yerine oturacak ve kilitleme tertibatı aynı hizaya gelecek şekilde yeniden takın.

Not: Haznenin başa tamamen yerleşmesini sağlamak için, 010-030 hazne için yiv durana kadar 360° dönüş, 035-045 hazne için ise 720° dönüş için gerekir.

(MT) **Proċedura ta' Manutenzjoni 6 (a)**

Erġa' waħħda il-bowl tal-filtru u r-ras filwaqt li tiżgura li l-kamini jkunu mqabbdin sew u d-dettalji tas-sokor ikunu allinjati.

Nota: Biex ikun żgurat li l-bowl tkun imqabbda għal kollox fir-ras, il-bowl 010-030 teħtieġ rotazzjoni ta' 360°sakemm jieqaf il-kamin u 720° għall-bowl 035-045.

(RO) **Procedură de întreţinere 6 (a)**

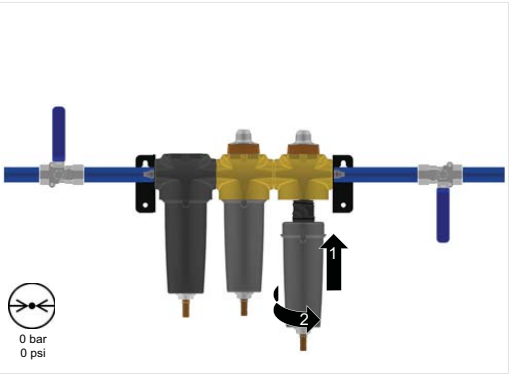
Montaţi la loc paharul şi capul filtrului, asigurându-vă că filetele sunt complet cuplate şi că detaliile de blocare sunt aliniate.

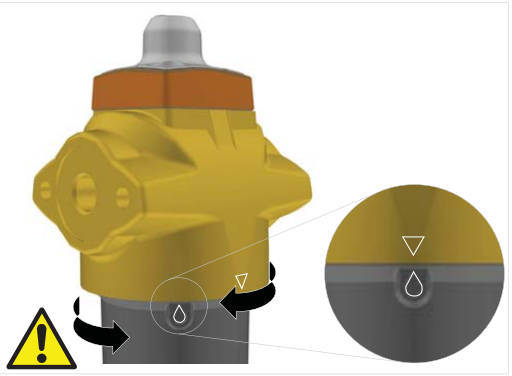
Notă: Pentru a vă asigura că paharul este complet cuplat în capul filetului, paharul 010-030 necesită o rotaţie de 360° până la oprirea filetului, respectiv de 720° pentru paharul 035-045.

(BG) **Процедура по поддръжка 6 (a)**

Поставете обратно филтърните чашка и глава, като се уверите, че резбите са напълно навити и заключващите детайли са подравнени.

Забележка: За да е сигурно, че чашката е добре закрепена в главата, 010-030 чашката изисква завъртане на 360° до застопоряване на резбата и на 720° за 035-045 чашката.





(LT) **7 techninės priežiūros procedūra**

Priklijuokite elemento keitimo datos etiketę prie filtro indo ir užrašykite datą, kada elementas turės būti pakeistas, t. y. 12 mėnesių po elemento keitimo.

Caution **Nevalykite etikečių tirpikliais arba spiritu, nes galite jas sugadinti.**

(RU) **Процедура технического обслуживания 7**

Прикрепите к стакану фильтра табличку с датой замены элемента и впишите в нее дату следующей замены (то есть через 12 месяцев после текущей замены)..

Caution **Не используйте растворители или спиртосодержащие растворы для очистки табличек, так как это может привести к повреждению.**

(SL) **Postopek vzdrževanja – korak 7**

Na posodo filtra prilepite novo nalepko z datumom, ko je treba ponovno zamenjati filtrirni element (čez 12 mesecev).

Caution **Za odstranjevanje nalepk ne uporabljajte alkohola ali čistil, ker lahko poškodujejo posodo filtra.**

(TR) **Bakım Prosedürü 7**

Öğe değiştirme tarihi etiketini filtre haznesine yapıştırın ve öğenin yenisiyle değiştirileceği tarihi yazın, örneğin öğe değişikliğinden 12 ay sonra..

Caution **Zarar verebileceği için, etiketleri temizlemek için çözücü veya alkol kullanmayın.**

(MT) **Proċedura ta' Manutenzjoni 7**

Waħħal it-tikketta tad-data tat-tibdil tal-element mal-bowl tal-filtru u ikteb id-data li fiha għandu jinbidel l-element, jiġifieri 12-il xahar wara li jinbidel l-element.

Caution **Tużax solventi jew alkoħol biex tnaddaf it-tikketti għaliex dan jista' jikkawża ħsara.**

(RO) **Procedură de întreţinere 7**

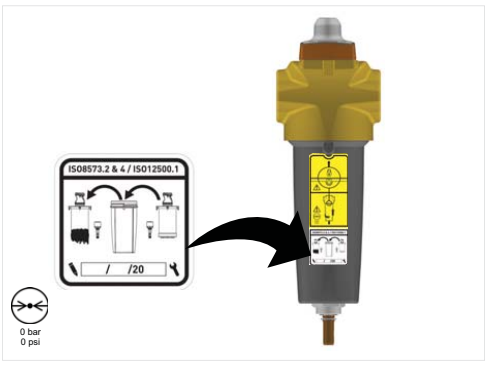
Ataşaţi eticheta cu data de înlocuire a elementului la paharul filtrului şi notaţi pe aceasta data la care elementul trebuie înlocuit, adică după 12 luni de la înlocuirea elementului..

Caution **Nu utilizaţi solvenţi sau alcool pentru curăţarea etichetelor, deoarece puteţi provoca deteriorări.**

(BG) **Процедура по поддръжка 7**

Залепете етикет с датата на смяна на елемента върху филтърната чашка и запишете на него датата, на която трябва да се смени елемента, т.е. 12 месеца след смяната на елемента..

Caution **Не използвайте разтворители или алкохол за почистване на етикетите, тъй като това може да доведе до повреда.**



(LT) **8 techninės priežiūros procedūra**

Lėtai atidarykite įleidimo vožtuvą (1) palaipsniui didindami slėgį įrenginyje, lėtai atidarykite išleidimo vožtuvą (2) paleisdami slėgį į už jo esančius vamzdžius.

Warning

Negalima staigiai atidaryti įleidimo ar išleidimo vožtuvų, paveikti įrenginio pernelyg dideliu diferencialiniu slėgiu, nes gali būti sugadinta įranga.

(RU) **Процедура технического обслуживания 8**

Медленно откройте впускной клапан (1), чтобы постепенно создать давление в приборе, медленно откройте выпускной клапан (2) для сброса давления в трубопроводе ниже по потоку.

Warning

Запрещено резко открывать впускной или выпускной клапаны, а также используемое устройство, так как это может привести к перепаду давления и повреждениям.

(SL) **Postopek vzdrževanja – korak 8**

Počasi odprite dovodni ventil (1), da enoto postopoma obremenite s tlakom, zatem pa počasi odprite še odvodni ventil (2) za ponovno tlačno obremenitev cevovoda za tem ventilom..

Warning

Dovodnih ali odvodnih ventilov nikoli ne odpirajte naglo in enote ne izpostavljajte prekomernim nihanjem tlaka, saj lahko to povzroči škodo.

(TR) **Bakım Prosedürü 8**

Üniteye aşamalı olarak basınç uygulamak için giriş valfini (1) yavaşça açın ve aşağı akım borularına yeniden basınç uygulamak için çıkış valfini (2) yavaşça açın..

Warning

Giriş ve çıkış valflerini hızla açmayın veya üniteyi aşırı basınç farklarına maruz bırakmayın; aksi halde hasar oluşabilir.

(MT) **Proċedura ta' Manutenzjoni 8**

Iftaħ il-valv tad-dħul (1) bil-mod biex terġa' tibni l-pressjoni fl-unità, iftaħ il-valv tal-ħruġ (2) biex terġa' tibni l-pressjoni fil-pajpijiet li jwasslu 'l isfel.

Warning

Ara li ma tiftaħx il-valvs tad-dħul jew tal-ħruġ f'daqqa jew b'xi mod tikkawża differenza eċċessiva fil-pressjoni tat-tagħmir għax tista' tagħmel il-ħsara.

(RO) **Procedură de întreţinere 8**

Deschideţi încet supapa de admisie (1) pentru a presuriza gradat aparatul, deschideţi încet supapa de evacuare (2) pentru a represuriza sistemul de conducte din aval.

Warning

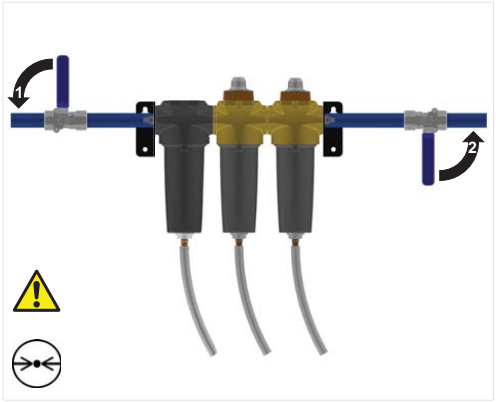
Nu deschideţi rapid supapele de admisie sau de evacuare şi nu supuneţi aparatul la o diferenţă excesivă de presiune; în caz contrar, aparatul poate suferi deteriorări.

(BG) **Процедура по поддръжка 8**

Отворете бавно входния вентил (1), за да пуснете постепенно налягане на уреда, отворете бавно изходния вентил (2), за да премахнете налягането по протежението на тръбите.

Warning

Не отваряйте входния или изходния вентил бързо и не подлагайте уреда на голяма разлика в налягането, тъй като това може да доведе до повреда.



Declaration of Conformity **EN**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters
Oil-X AO/AA/ACS/WS (Size 1-5)

Directives	2014/68/EU
Standards used	Generally in accordance with ASMEVIII Div 1 : 2015 & AS1210
PED Assessment Route :	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D Size 5 Category II according to module B & D
EU Certificate of Conformity	COV0912556/1
Notified body for PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Authorised Representative	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Declaration

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the standards and other related documents following the provisions of the above Directives.

Signature:  **Date**: 21/10/2016

Declaration Number: 00298/211016

Verklaring van Conformiteit — NL

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Richtlijnen 2014/68/EU

Gehanteerde normen Gewoonlijk volgens ASMEVIII Div 1 : 2015 & AS1210.

PED-beoordelingstraject: Size 1-3 Article 4, Paragraph 3 (SEP)
Size 4 Category I according to module B & D
Size 5 Category II according to module B & D

EC Type onderzoekscertificaat: COV0912556/1

Aangemelde instantie voor PED: Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Bevoegde vertegenwoordiger Damian Cook
Divisional Engineering Manager
Parker Hannifin Manufacturing Limited, GSFE

Verklaring

Als bevoegde vertegenwoordiger verklaar ik dat bovenstaande informatie met betrekking tot de levering / vervaardiging van dit product overeenstemt met de normen en andere bijbehorende documentatie volgens de bepalingen van bovengenoemde richtlijnen.

Handtekening: **Datum**: 21/10/2016

Verklaringnummer: 00298/211016

Konformitätserklärung — DE

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Richtlinien 2014/68/EU

Angewandte Normen Allgemein in Übereinstimmung mit ASMEVIII Div 1 : 2015 & AS1210.

Beurteilungsroute der Druckgeräterichtlinie: Size 1-3 Article 4, Paragraph 3 (SEP)
Size 4 Category I according to module B & D

EG-Baumusterprüfbescheinigung: COV0912556/1

Benannte Stelle für die Druckgeräterichtlinie: Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Bevollmächtigter Vertreter Damian Cook
Divisional Engineering Manager
Parker Hannifin Manufacturing Limited, GSFE

Erklärung

Hiermit erkläre ich als bevollmächtigter Vertreter die Konformität der oben aufgeführten Informationen in Bezug auf die Lieferung/Herstellung dieses Produkts mit den Normen und anderen zugehörigen Dokumenten gemäß den Bestimmungen der oben genannten Richtlinien.

Unterschrift: **Datum**: 21/10/2016

Nummer der Erklärung: 00298/211016

Déclaration de conformité — FR

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Directives 2014/68/EU

Normes utilisées Généralement conforme à ASMEVIII div. 1 : 2015 & AS1210.

Méthode d'évaluation de la directive d'équipements de pression : Size 1-3 Article 4, Paragraph 3 (SEP)
Size 4 Category I according to module B & D

Certificat d'examen de type CE : COV0912556/1

Organisme de notification pour la directive d'équipement sous pression : Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Représentant agréé Damian Cook
Divisional Engineering Manager
Parker Hannifin Manufacturing Limited, GSFE

Déclaration

Je déclare à titre de représentant agréé que les informations ci-dessus liées à la fourniture/fabrication de ce produit sont en conformité avec les normes et autres documents liés déclarés selon les dispositions des directives susmentionnées.

Signature : **Date** : 21/10/2016

N° de déclaration : 00298/211016

Vaatimustenmukaisuusvakuutus — FI

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktiivit 2014/68/EU

Käytetyt standardit Yleensä seuraavan standardin mukaisesti: ASMEVIII Div 1: 2015 & AS1210.

PED-arviointimenettely: Size 1-3 Article 4, Paragraph 3 (SEP)
Size 4 Category I according to module B & D

EY-tyyppihyväksynnän sertifikaatti: COV0912556/1

PED-säännösten ilmoitettu laitos: Lloyds Register Verification
71 Fenchurch St. London
EC3M 4BS

Valtuutettu edustaja Damian Cook
Divisional Engineering Manager
Parker Hannifin Manufacturing Limited, GSFE

Vakuutus

Valtuutettuna edustajana vakuutan, että yllä olevat tiedot, jotka liittyvät tämän tuotteen toimittamiseen tai valmistamiseen, ovat standardien ja muiden asiaan liittyvien asiakirjojen mukaisia ja noudattavat yllä mainittuja direktiivejä.

Allekirjoitus: **Päiväys**: 21/10/2016

Vakuutuksen numero: 00298/211016

Försäkran om överensstämmelse **SV**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktiv	2014/68/EU
Använda standarder	Generellt i enlighet med ASMEVIII Div 1: 2015 & AS1210.
Fastställningsväg för PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EG-intyg om typprovning:	COV0912556/1
Anmält organ för PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Auktoriserad representant	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Försäkran

Jag försäkrar, i egenskap av auktoriserad representant, att ovannämnda information avseende leverans/tillverkning av denna produkt överensstämmer med standarder och övriga relaterade dokument enligt villkoren i ovanstående direktiv.

Underskrift: **Datum**: 21/10/2016

Försäkran nummer: 00298/211016

Konformitetserklæring **NO**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktiver	2014/68/EU
Benyttede standarder	Hovedsakelig i samsvar med ASMEVIII div 1 : 2015 & AS1210.
Rute for vurdering av PED (direktivet for trykkpålagt utstyr):	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EC-typegodkjenningssertifikat:	COV0912556/1
Underrettet organ for PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Autorisert representant	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Erklæring

Jeg erklærer som autorisert representant at informasjonen ovenfor med hensyn til levering/produksjon av dette produktet, er i overensstemmelse med standardene og andre relaterte dokumenter ifølge bestemmelsene i direktivene ovenfor.

Signatur: **Dato**: 21/10/2016

Erklæring nr: 00298/211016

Overensstemmelseserklæring **DA**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktiver	2014/68/EU
Anvendte standarder	Generelt i overensstemmelse med ASMEVIII div. 1: 2015 & AS1210.
Forløb for PED-bedømmelse:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EF-typeafprøvningsattest:	COV0912556/1
Notificeret organ for PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Autoriseret repræsentant	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Erklæring

Jeg erklærer hermed som autoriseret repræsentant, at ovennævnte oplysninger vedrørende levering/produktion af dette produkt er i overensstemmelse med de anførte standarder og øvrige tilknyttede dokumenter i henhold til bestemmelserne i ovenstående direktiver.

Underskrift: **Dato**: 21/10/2016

Erklæringsnummer: 00298/211016

Δήλωση συμμόρφωσης **EL**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Οδηγίες	2014/68/EU
Πρότυπα που χρησιμοποιήθηκαν	Γενικά σε συμφωνία με το ASMEVIII Div 1: 2015 & AS1210.
Διαδρομή αξιολόγησης για κανονισμούς PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Πιστοποιητικό εξέτασης τύπου ΕΚ:	COV0912556/1
Ενήμερος οργανισμός για κανονισμούς PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Εξουσιοδοτημένος αντιπρόσωπος	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Δήλωση

Δηλώνω ως ο εξουσιοδοτημένος αντιπρόσωπος ότι οι παραπάνω πληροφορίες σε σχέση με τη διάθεση / κατασκευή αυτού του προϊόντος, συμμορφώνονται ως προς τα πρότυπα και ως προς τα άλλα σχετικά έγγραφα που συνοδεύουν τις διατάξεις των πιο πάνω οδηγιών.

Υπογραφή: **Ημερομηνία**: 21/10/2016

Αριθμός δήλωσης: 00298/211016

Declaración de conformidad **ES**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Directivas	2014/68/EU
Normas utilizadas	Generalmente de conformidad con ASMEVIII Div 1: 2015 & AS1210.
Ruta de evaluación de la normativa PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Certificado de examen CE de tipo:	COV0912556/1
Organismo notificado para la normativa PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Representante autorizado	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Declaración

Como representante autorizado, declaro que la información anteriormente expuesta en relación con el suministro y/o fabricación de este producto cumple las normativas indicadas y otros documentos afines según las disposiciones de las Directivas citadas anteriormente.

Firma: **Fecha**: 21/10/2016

Número de declaración: 00298/211016

Declaração de Conformidade **PT**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Directivas	2014/68/EU
Padrões utilizados	De forma geral em concordância com ASMEVIII Div 1 : 2015 & AS1210.
Percurso de Avaliação do PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Certificado de Inspecção Tipo CE:	COV0912556/1
Notificado para o PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Revendedor Autorizado	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Declaração

Declaro, na qualidade de representante autorizado, que as informações acima contidas referentes ao fornecimento / fabrico deste produto estão em conformidade com as normas e outros documentos relacionados, de acordo com as disposições das Directivas anteriores.

Assinatura: **Data**: 21/10/2016

Número da Declaração: 00298/211016

Dichiarazione di conformità **IT**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direttive	2014/68/EU
Norme utilizzate	Generalmente conforme a ASMEVIII Div 1: 2015 & AS1210.
Procedura di valutazione PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Attestato di certificazione tipo CE:	COV0912556/1
Organismo accreditato per PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Rappresentante autorizzato	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Dichiarazione

In qualità di rappresentante autorizzato dichiaro che le informazioni di cui sopra, in merito alla fornitura/fabbricazione del prodotto in oggetto, sono conformi alle norme indicate e a qualsiasi altro documento correlati alla fornitura basato su quanto prescritto dalle direttive menzionate.

Firma: **Data**: 21/10/2016

Dichiarazione numero: 00298/211016

Deklaracja zgodności **PL**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Dyrektywy	2014/68/EU
Stosowane standardy	Ogólnie zgodny z ASMEVIII dział 1: 2015 & AS1210.
Ścieżka potwierdzania zgodności z PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Certyfikat badania typu WE:	COV0912556/1
Organ/instytucja powiadamiana na mocy PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Autoryzowany przedstawiciel	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Deklaracja

Oświadczam, jako autoryzowany przedstawiciel, że powyższe informacje dotyczące dostawy / wytworzenia niniejszego produktu są zgodne ze standardami i innymi dokumentami powiązanymi zgodnie z postanowieniami powyższych dyrektyw.

Podpis: **Data**: 21/10/2016

Numer deklaracji: 00298/211016

Vyhlásenie o zhode **SK**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Smernice	2014/68/EU
Použité normy	Vo všeobecnosti v zhode s ASMEVIII oddiel 1 : 2015 & AS1210
Spôsob posudzovania podľa smernice PED	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Osvedčenie typovej skúšky ES	COV0912556/1
Oboznámený orgán podľa smernice PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Splnomocnený zástupca	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Vyhlásenie

Ako splnomocnený zástupca vyhlasujem, že informácie uvedené vyššie, sú v súvislosti s dodávkou / výrobou tohto výrobku v zhode s normami a inými súvisiacimi dokumentmi podľa ustanovení uvedených smernic.

Podpis: **Dátum** 21/10/2016

Číslo vyhlásenia: 00298/211016

Prohlášení o shodě **CS**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Směrnice	2014/68/EU
Použité normy	Obecně v souladu ASMEVIII Div 1 : 2015 & AS1210.
Metoda stanovení shody pro tlaková zařízení (PED):	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Osvědčení o zkoušce typu ES:	COV0912556/1
Notifikovaný orgán pro PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Oprávněný zástupce	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Prohlášení

Jako oprávněný zástupce prohlašuji, že výše uvedené informace týkající se dodávky /výroby tohoto produktu jsou v souladu s normami a jinými souvisejícími dokumenty vyplývajícími z ustanovení výše uvedených směrnic.

Podpis: **Datum**: 21/10/2016

Číslo prohlášení: 00298/211016

Vastavusdeklaratsioon **ET**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktiivid	2014/68/EU
Kasutatud standardid	Üldiselt vastavuses standardiga ASMEVIII Div 1: 2015 & AS1210.
PED-vastavushinnangu jaotus:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EÜ tüübihindamistõend:	COV0912556/1
PEDist (surveseadmete direktiivist) teavitatud asutus:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Volitatud esindaja	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Deklaratsioon

Volitatud esindajana kinnitan, et ülaltoodud teave seoses antud toote tarnimise/tootmisega on vastavuses standardite ja muude seotud dokumentidega vastavalt ülaltoodud direktiivide sätetele.

Allkiri: **Kuupäev**: 21/10/2016

Deklaratsiooni number: 00298/211016

Megfelelőségi nyilatkozat **HU**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktívák	2014/68/EU
Alkalmazott szabványok:	Általánosan a következő alapján: ASMEVIII Div 1 : 2015 & AS1210.
PED értékelési irányvonal	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EC típusvizsgálati bizonyítvány:	COV0912556/1
PED-del kapcsolatban értesített testület:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Hivatalos képviselő	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Nyilatkozat

Hivatalos képviselőként kijelentem, hogy a termék szállításával / gyártásával kapcsolatos fent olvasható információk megfelelnek a fenti Direktívák előírásai szerinti szabványoknak és egyéb kapcsolódó dokumentumoknak.

Aláírás: **Dátum**: 21/10/2016

Nyilatkozat száma: 00298/211016

Atbilstības deklarācija **LV**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktīvas	2014/68/EU
Izmantotie standarti	Parasti saskaņa ar ASMEVIII Div 1 : 2015 & AS1210.
PED novērtējums :	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EK sastādīts Eksaminācijas sertifikāts:	COV0912556/1
Par PED informētā organizācija	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Pilnvarotais pārstāvis	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Deklarācija

Es kā pilnvarots pārstāvis ar šo paziņoju, ka iepriekšminētā informācija, kas attiecas uz šī produkta piegādi / ražošanu, atbilst standartiem un citiem atbilstošiem dokumentiem saskaņā ar iepriekšminētajām Direktīvām.

Paraksts: **Datums**: 21/10/2016

Deklarācijas numurs: 00298/211016

Atitikties deklaracija **LT**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktyvos	2014/68/EU
Naudoti standartai	Atitinka bendrąsias ASMEVIII Div 1 : 2015 & AS1210 nuostatas
PED įvertinimo pakopa:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
EB tipo testavimo sertifikatas:	COV0912556/1
PED notifikuotoji institucija:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Įgaliotasis atstovas	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Deklaracija

Aš, įgaliotasis atstovas, patvirtinu, kad aukščiau pateikta gaminio tiekimo/pagaminimo informacija atitinka aukščiau nurodytus standartus ir kitą su nurodytų direktyvų nuostatomis susijusią dokumentaciją.

Parašas: **Data**: 21/10/2016

Deklaracijos numeris: 00298/211016

Декларация соответствия **RU**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Требования	2014/68/EU
Применяемые стандарты	В большинстве случаев обеспечивается соответствие стандарту ASMEVIII, Раздел 1: 2015 & AS1210.
Система обеспечения качества PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Сертификат ЕС на проведение типовых испытаний:	COV0912556/1
Уполномоченный орган для PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Уполномоченный представитель	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Декларация

Как уполномоченный представитель, я заявляю, что приведенная выше информация относительно поставки/производства данного продукта соответствует стандартам, другим связанным документам и положениям указанных выше требований.

Подпись: **Дата**: 21/10/2016

Номер декларации: 00298/211016

Izjava o skladnosti **SL**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direktive	2014/68/EU
Uporabljeni standardi	Splošno skladno z ASMEVIII Div 1: 2015 & AS1210.
Ocenjevalna pot PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Certifikat o tipskem pregledu ES	COV0912556/1
Priglašeni organ za PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Pooblaščeni zastopnik	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Izjava

Kot pooblaščeni zastopnik izjavljam, da so zgornji podatki glede dobave/proizvodnje tega izdelka skladni s standardi in ostalimi sorodnimi dokumenti, ki sledijo določbam zgornjih direktiv.

Podpis: **Datum**: 21/10/2016

Številka izjave: 00298/211016

Uyum Beyanı **TR**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-3)

Direktifler	2014/68/EU
Kullanılan standartlar	Genelde ASMEVIII Div 1 : 2015 & AS1210'e uygun.
PED (Basınçlı Ekipman Direktifi) Değerlendirmesi Yolu: AT Tip İncelemesi Sertifikası:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D COV0912556/1
PED için bildirimde bulunulan kuruluş:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Yetkili Temsilci	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Beyan

Yetkili temsilci olarak beyan ederim ki bu ürünün teminine / üretimine ilişkin olarak yukarıda verilen bilgiler yukarıda anılan Direktiflerin hükümlerine uyan standartlara ve ilgili başka belgelere uygundur.

İmza: **Tarih**: 21/10/2016

Beyan No: 00298/211016

Dikjarazzjoni tal-Konformità **MT**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Direttivi	2014/68/EU
Standards użati	Ġeneralment f'konformità ma' ASMEVIII Div 1 : 2015 & AS1210.
Rotta ta' l-Assessjar tal-PED: Ċertifikat tal-KE ta' l-eżaminazzjoni tat-Tip:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D COV0912556/1
Korp notifikat għall-PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Rappreżentant Awtorizzat	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Dikjarazzjoni

Niddikjara li bħala r-rappreżentant awtorizzat, l-informazzjoni ta' hawn fuq, f'dak li għandu x'jaqsam mal-forniment/manifattura ta' dan il-prodott, hija f'konformità ma' l-istandards u d-dokumenti l-oħra relatati li jsegwu d-dispożizzjonijiet tad-Direttivi msemmija hawn fuq.

Firma: **Data**: 21/10/2016

Numru tad-Dikjarazzjoni: 00298/211016

Декларация за съответствие **BU**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Директиви	2014/68/EU
Използвани стандарти	Ġeneralment f'konformità ma' ASMEVIII Div 1 : 2015 & AS1210.
Начин на оценка от PED :	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Сертификат за ЕС типово изпитване:	COV0912556/1
Нотифициращ орган за PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Упълномощен представител	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Декларация

Декларирам като упълномощен представител, че горната информация относно доставката / производството на този продукт е в съответствие със стандартите и други свързани документи следващи разпоредбите на горепосочените директиви.

Подпис: **Дата:** 21/10/2016

Номер на декларацията: 00298/211016

Declarație de conformitate **RO**

Parker Hannifin Manufacturing Limited
Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ. UK

Compressed Air Filters

Oil-X AO/AA/ACS/WS (Size 1-5)

Directive	2014/68/EU
Standardele folosite	Ġeneralment f'konformità ma' ASMEVIII Div 1 : 2015 & AS1210.
Cale de evaluare PED:	Size 1-3 Article 4, Paragraph 3 (SEP) Size 4 Category I according to module B & D
Certificat de examinare EC de tip:	COV0912556/1
Agenţia notificată pentru PED:	Lloyds Register Verification 71 Fenchurch St. London EC3M 4BS
Reprezentant autorizat	Damian Cook Divisional Engineering Manager Parker Hannifin Manufacturing Limited, GSFE

Declaraţie

Declar, în calitate de reprezentant autorizat, faptul că informaţia de mai sus referitoare la livrarea / fabricarea acestui produs este în conformitate cu standardele şi alte documente asociate care urmăresc prevederile directivelor de mai sus.

Semnătura: **Data:** 21/10/2016

Numărul declaraţiei:00298/211016

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