Screw Compressor

M57

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<td>61</td>
</tr>
<tr>
<td>52</td>
<td>Fault: machine overheating</td>
<td>61</td>
</tr>
<tr>
<td>53</td>
<td>Fault: too much oil residue in the compressed air</td>
<td>62</td>
</tr>
<tr>
<td>54</td>
<td>Fault: oil flows from the compressor air filter after shutdown</td>
<td>62</td>
</tr>
</tbody>
</table>
List of Tables

<table>
<thead>
<tr>
<th>Tab.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Maintenance tasks after commissioning</td>
<td>64</td>
</tr>
<tr>
<td>56</td>
<td>Maintenance intervals and regular maintenance tasks</td>
<td>64</td>
</tr>
<tr>
<td>57</td>
<td>Regular maintenance tasks</td>
<td>65</td>
</tr>
<tr>
<td>58</td>
<td>Regular maintenance task options</td>
<td>68</td>
</tr>
<tr>
<td>59</td>
<td>Coolant frost protection</td>
<td>70</td>
</tr>
<tr>
<td>60</td>
<td>Logged maintenance tasks</td>
<td>116</td>
</tr>
<tr>
<td>61</td>
<td>Compressor consumables</td>
<td>117</td>
</tr>
<tr>
<td>62</td>
<td>Consumable engine parts</td>
<td>117</td>
</tr>
<tr>
<td>63</td>
<td>&quot;Temporarily decommissioned&quot; information notice</td>
<td>172</td>
</tr>
<tr>
<td>64</td>
<td>Long-term decommissioning checklist</td>
<td>173</td>
</tr>
<tr>
<td>65</td>
<td>Text for the long-term decommissioned information notice</td>
<td>174</td>
</tr>
<tr>
<td>66</td>
<td>Safety control display ball hitch</td>
<td>177</td>
</tr>
</tbody>
</table>
1 Regarding this Document

1.1 Using the Document

The service manual is part of the machine.

➤ Keep the service manual in a safe place throughout the life of the machine.
➤ Pass the manual on to the next owner/user of the machine.
➤ Ensure that all amendments received are entered in the manual.
➤ Enter details from the machine nameplate and individual items of equipment in the table in chapter 2.

1.2 Further documents

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

■ Certificate of acceptance / operating instructions for the pressure vessel
■ Manufacturer's declaration / declaration of conformity in accordance with applicable directives
■ Engine documentation (compressors driven by internal combustion engine)

Missing documents can be requested from KAESER.

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

1.3 Copyright

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

1.4 Symbols and labels

1.4.1 Warnings

Warning notices indicate three levels of danger signified by the signal word.

■ DANGER
■ WARNING
■ CAUTION

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

➤ The measures required to protect yourself from danger are shown here.
Always read and comply with warning instructions.

<table>
<thead>
<tr>
<th>Signal term</th>
<th>Meaning</th>
<th>Consequences of non-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Warns of an imminent threat of danger</td>
<td>Will result in death or severe injury</td>
</tr>
<tr>
<td>WARNING</td>
<td>Warns of possible danger</td>
<td>May result in death or severe injury</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Warns of a potentially dangerous situation</td>
<td>May result in moderate physical injury or damage to objects</td>
</tr>
</tbody>
</table>

Tab. 1 Danger levels and their definition

1.4.2 Other alerts and their symbols

This symbol indicates particular important information.

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

Precondition: Here you will find conditional requirements necessary to carry out the task. Here conditions relevant to safety are named that will help you to avoid dangerous situations.

Option ec: This symbol denotes operating instructions consisting of only a single operating step. Operating instructions with several steps are numbered in the sequence of the operating steps. Information relating to a single option is labelled with a symbol (e.g., “Option ec” means that this section applies only to machines with integrated "tool lubricator"). Option codes used in this service manual are explained in chapter 2.2.

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

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

Further information: Further subjects are introduced here.
2 Technical Data

2.1 Nameplate

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

Enter the data from the nameplate here as a reference.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle identity no.</td>
<td></td>
</tr>
<tr>
<td>Permissible total weight</td>
<td></td>
</tr>
<tr>
<td>Permissible axle load</td>
<td></td>
</tr>
<tr>
<td>Permissible coupling load</td>
<td></td>
</tr>
<tr>
<td>Compressor model</td>
<td></td>
</tr>
<tr>
<td>Material number</td>
<td></td>
</tr>
<tr>
<td>serial number</td>
<td></td>
</tr>
<tr>
<td>Year of manufacture</td>
<td></td>
</tr>
<tr>
<td>Total weight</td>
<td></td>
</tr>
<tr>
<td>Lifting point load capacity</td>
<td></td>
</tr>
<tr>
<td>Rated engine power</td>
<td></td>
</tr>
<tr>
<td>Engine speed</td>
<td></td>
</tr>
<tr>
<td>Maximum working pressure</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 2 Nameplate

2.2 List of options

A list of the options fitted to your machine helps to relate the information in this service manual. A list of options fitted is given as code letters on the right side of the coupling load / options label.

The label is to be found

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

The following table lists all possible options.

Only the codes for those options fitted appear on the label.
➤ Take a list of fitted options from the combined coupling load / options label.

<table>
<thead>
<tr>
<th>MATNo</th>
<th>SERNo</th>
<th>Options fitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>M57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here is given the specified coupling load.

<table>
<thead>
<tr>
<th>Option code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ec</td>
</tr>
<tr>
<td>fe</td>
</tr>
<tr>
<td>ba</td>
</tr>
<tr>
<td>bb</td>
</tr>
<tr>
<td>la</td>
</tr>
<tr>
<td>lb</td>
</tr>
<tr>
<td>oa</td>
</tr>
<tr>
<td>ne</td>
</tr>
<tr>
<td>sh</td>
</tr>
<tr>
<td>sa</td>
</tr>
<tr>
<td>sc</td>
</tr>
<tr>
<td>sd</td>
</tr>
<tr>
<td>ta</td>
</tr>
<tr>
<td>tb</td>
</tr>
<tr>
<td>lc</td>
</tr>
<tr>
<td>te</td>
</tr>
<tr>
<td>sf</td>
</tr>
<tr>
<td>sg</td>
</tr>
<tr>
<td>ua</td>
</tr>
<tr>
<td>pa</td>
</tr>
</tbody>
</table>

Tab. 3 Combined label for coupling load and options fitted

2.2.1 **Option ec**

**Tool lubricator**

➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool lubricator</td>
<td>ec</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 4 Tool lubricator

2.2.2 **Option fe**

**Compressed air distributor**

➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional air takeoff point</td>
<td>fe</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5 Compressed air distributor

2.2.3 **Option ba, bb**

**Low temperature equipment**

➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low temperature equipment</td>
<td>ba</td>
<td></td>
</tr>
<tr>
<td>Low temperature equipment + engine coolant pre-heating</td>
<td>bb</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 6 Low temperature equipment
2.2.4 Option la, lb
Equipment for fire hazard areas
➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark arrestor</td>
<td>la</td>
<td></td>
</tr>
<tr>
<td>Spark arrestor and engine air intake shut-off valve (automatic)</td>
<td>lb</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 7 Equipment for fire hazard areas

2.2.5 Option oa
Battery isolating switch
➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery isolating switch</td>
<td>oa</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 8 Battery isolating switch

2.2.6 Option ne
Fuel de-watering filter
➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel de-watering filter</td>
<td>ne</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 9 Fuel de-watering filter

2.2.7 Option sa, sc, sd, sh
Chassis
➤ Enter the fitted option as a reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Permissible axle load [lbs]</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height adjustable towbar</td>
<td>2976</td>
<td>sa</td>
<td></td>
</tr>
<tr>
<td>Fixed height towbar</td>
<td>2976</td>
<td>sd</td>
<td></td>
</tr>
<tr>
<td>Height-adjustable towbar, without parking brake</td>
<td>2976</td>
<td>sh</td>
<td></td>
</tr>
<tr>
<td>Stationary</td>
<td>–</td>
<td>sc</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 10 Chassis
2.2.8 Option ta, tb, tc, te
Lighting
➤ Enter the fitted option as reference.

| Option                                | Option code | Exists?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None (stationary)</td>
<td>ta</td>
<td></td>
</tr>
<tr>
<td>Reflective warning triangle</td>
<td>tb</td>
<td></td>
</tr>
<tr>
<td>EG - 12 V</td>
<td>tc</td>
<td></td>
</tr>
<tr>
<td>USA 12 V (DOT conformity)</td>
<td>te</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 11 Lighting

2.2.9 Option ua
Hose reel
➤ Enter the fitted option as reference.

| Option       | Option code | Exists?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose reel</td>
<td>ua</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 12 Hose reel

2.2.10 Option sf
Anti-theft device
➤ Enter the fitted option as reference.

| Option                  | Option code | Exists?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-theft device</td>
<td>sf</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 13 Anti-theft device

2.2.11 Option sg
Pedestrian protection
➤ Enter the fitted option as reference.

| Option                  | Option code | Exists?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian protection</td>
<td>sg</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 14 Pedestrian protection
2.2.12 Option pa
Instrument panel cover

➤ Enter the fitted option as reference.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option code</th>
<th>Exists?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument panel cover</td>
<td>pa</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 15 Instrument panel cover

2.3 Machine (without options)

2.3.1 Sound emission

2.3.1.1 Sound emission

<table>
<thead>
<tr>
<th>Model</th>
<th>M57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed sound power level* [dB(A)]</td>
<td>98</td>
</tr>
<tr>
<td>* To Directive 2000/14/EC</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 16 Guaranteed sound power level

<table>
<thead>
<tr>
<th>Model</th>
<th>M57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission sound pressure level* [dB(A)]</td>
<td>80.5</td>
</tr>
<tr>
<td>According to EN ISO 11203: 1995 number 6.2.3.d.</td>
<td></td>
</tr>
<tr>
<td>Measurement distance: d = 1 m</td>
<td></td>
</tr>
<tr>
<td>Logarithmic surface ratio: Q2 = 17.3dB(A)</td>
<td></td>
</tr>
<tr>
<td>* Calculated from the guaranteed sound power level (2000/14/EC Directive, Sound Emission Standard ISO 3744)</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 17 Emission sound pressure level

2.3.1.2 Sound pressure level

<table>
<thead>
<tr>
<th>Model</th>
<th>M57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound pressure level* [dB(A)]</td>
<td>76</td>
</tr>
<tr>
<td>Measurement distance: 23 ft</td>
<td></td>
</tr>
<tr>
<td>* Sound pressure levels comply with the American EPA Standard.</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 18 Guaranteed sound pressure level

2.3.2 Torques

Recommended values for hexagonal bolts of strength category 8.8

<table>
<thead>
<tr>
<th>Hex-head screws</th>
<th>Thread</th>
<th>M6</th>
<th>M8</th>
<th>M10</th>
<th>M12</th>
<th>M14</th>
<th>M16</th>
<th>M18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Torque [lbf in]</td>
<td>85</td>
<td>204</td>
<td>407</td>
<td>708</td>
<td>1124</td>
<td>1726</td>
<td>2478</td>
</tr>
</tbody>
</table>

Tab. 19 Torques for hex-head screws
2.3.3 Ambient conditions

<table>
<thead>
<tr>
<th>Installation</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum altitude AMSL* [ft.]</td>
<td>3280</td>
</tr>
<tr>
<td>Minimum ambient temperature °F</td>
<td>14</td>
</tr>
<tr>
<td>Maximum ambient temperature °F</td>
<td>122</td>
</tr>
</tbody>
</table>

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

Tab. 20 Ambient conditions

2.3.4 Additional specifications

For specifications according to the machine's operating license, such as:
- dimensions,
- track width,
- footprint,

see the dimensional drawings in chapter 13.3.

The dimensional drawing also shows the position of the following inlets and outlets:
- Cooling air inlet
- Cooling air outlet
- Compressed air outlet
- Exhaust

2.4 Chassis

2.4.1 Weights

Maximum weights are shown. Actual weights of individual machines are dependent on equipment fitted (see machine nameplate).

<table>
<thead>
<tr>
<th>Feature</th>
<th>Chassis</th>
<th>Stationary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overrun brake</td>
<td>with</td>
<td>without</td>
</tr>
<tr>
<td>Height adjustment</td>
<td>with</td>
<td>without</td>
</tr>
<tr>
<td>Actual total weight [lb]*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible axle load [lb]</td>
<td>2976</td>
<td>2976</td>
</tr>
</tbody>
</table>

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

Tab. 21 Machine weights

2.4.2 Tires

<table>
<thead>
<tr>
<th>Characteristic/marketing</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Europe</td>
</tr>
<tr>
<td>Tire size</td>
<td>185 R 14C</td>
</tr>
</tbody>
</table>
2.5 Compressor

2.5.1 Working pressure and FAD

| Maximum working pressure [psig] | 100 |
| SIGMA airend | 265 |
| Free air delivery [cfm] | 198 |

Tab. 25 Working pressure and FAD

2.5.2 Compressed air outlet

<table>
<thead>
<tr>
<th>Outlet valve [*]</th>
<th>Quantity I*</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 3/4 or NPT 3/4</td>
<td>2</td>
</tr>
</tbody>
</table>

* Quantity depending on country variant
Outlet valve ['"] | Quantity l*
---|---
G 1 or NPT 1 | 1

* Quantity depending on country variant

**Tab. 26** Compressed air distributor

### 2.5.3 Pressure relief valve

**Further information** Maximum working pressure: see nameplate

<table>
<thead>
<tr>
<th>Maximum working pressure [psig]</th>
<th>Relief valve activating pressure [psig]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>131</td>
</tr>
</tbody>
</table>

**Tab. 27** Pressure relief valve opening pressure

### 2.5.4 Temperature

**Temperature at the airend discharge port**

<table>
<thead>
<tr>
<th>Ambient temperature ['°F]</th>
<th>Combination valve (thermostatic) with ambient temperature acquisition ['°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>194</td>
</tr>
<tr>
<td>77</td>
<td>140</td>
</tr>
</tbody>
</table>

**Tab. 28** Airend discharge temperature

**Machine temperatures**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended airend discharge temperature for switching to load ['°F]</td>
<td>86</td>
</tr>
<tr>
<td>Typical airend discharge temperature during operation ['°F]</td>
<td>167 – 212</td>
</tr>
<tr>
<td>Maximum airend discharge temperature (automatic safety shut-down) ['°F]</td>
<td>239</td>
</tr>
</tbody>
</table>

**Tab. 29** Machine temperatures

### 2.5.5 Cooling oil recommendation

A sticker showing the type of oil used is located near the oil separator tank filler.

Information on ordering cooling oil is found in chapter 11.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>SIGMA FLUID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil grade</td>
<td>S–460 MOL</td>
</tr>
<tr>
<td>Classification</td>
<td>Silicone-free, synthetic oil</td>
</tr>
</tbody>
</table>
### 2 Technical Data

#### 2.6 Engine

#### 2.6.1 Engine specification

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make/Model</td>
<td>Kubota V 2403 M-iDi</td>
</tr>
<tr>
<td>Rated power [HP]</td>
<td>48.3</td>
</tr>
<tr>
<td>Speed under full load [rpm]</td>
<td>2600</td>
</tr>
<tr>
<td>Idling speed [rpm]</td>
<td>1800</td>
</tr>
<tr>
<td>Type of fuel</td>
<td>Diesel *</td>
</tr>
<tr>
<td>Fuel consumption under full load [gal/h]</td>
<td>2.67</td>
</tr>
<tr>
<td>Oil consumption related to fuel consumption [%]</td>
<td>approx. 0.2</td>
</tr>
</tbody>
</table>

* Use only diesel fuel to EN 590, or ASTM D975. Consult the engine manufacturer on the use of other fuels.

Tab. 32 Engine specification

---

#### Table 30 Cooling oil recommendation

<table>
<thead>
<tr>
<th>Fluid volume</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total charge [gal]</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Tab. 31 Cooling oil charge

#### Table 31 Cooling oil charge

<table>
<thead>
<tr>
<th>Fluid volume</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total charge [gal]</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Tab. 30 Cooling oil recommendation

#### Table 30 Cooling oil recommendation

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>SIGMA FLUID</th>
<th>MOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil grade</td>
<td>S–460</td>
<td>MOL</td>
</tr>
<tr>
<td>Application</td>
<td>Standard oil for all applications except in connection with foodstuffs. Particularly suitable for machines with a high duty cycle.</td>
<td>Standard oil for all applications except in connection with foodstuffs. Particularly suitable for machines with a low duty cycle.</td>
</tr>
<tr>
<td>Approval</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Viscosity at 104 °F</td>
<td>45 mm²/s (D 445; ASTM test)</td>
<td>44 mm²/s (DIN 51562–1)</td>
</tr>
<tr>
<td>Viscosity at 212 °F</td>
<td>7.2 mm²/s (D 445; ASTM test)</td>
<td>6.8 mm²/s (DIN 51562–1)</td>
</tr>
<tr>
<td>Flash point</td>
<td>460 °F (D 92; ASTM test)</td>
<td>428 °F (ISO 2592)</td>
</tr>
<tr>
<td>Density at 59 °F</td>
<td>864 kg/m³ (ISO 12185)</td>
<td>—</td>
</tr>
<tr>
<td>Pour point</td>
<td>-50.8 °F (D 97; ASTM test)</td>
<td>-27.4 °F (ISO 3016)</td>
</tr>
<tr>
<td>Demulsibility at 29 °F</td>
<td>40/40/0/10 min (D 1401; ASTM test)</td>
<td>—</td>
</tr>
</tbody>
</table>

---

**SERVICE MANUAL**  Screw Compressor

No.: 9_5897 03 USE

M57 11
2.6.2 Oil recommendation

The engine oil must meet the following classification:

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

The engine is filled initially with engine oil of viscosity class SAE 10W-40.

<table>
<thead>
<tr>
<th>Ambient temperature [°F]</th>
<th>Viscosity class</th>
</tr>
</thead>
<tbody>
<tr>
<td>68 ..... 122</td>
<td>SAE 40</td>
</tr>
<tr>
<td>32 ..... 68</td>
<td>SAE 20W</td>
</tr>
<tr>
<td>5 ..... 32</td>
<td>SAE 10W</td>
</tr>
<tr>
<td>14 ..... 122</td>
<td>SAE 15W-40</td>
</tr>
<tr>
<td>−4 ..... 86</td>
<td>SAE 5W-30</td>
</tr>
<tr>
<td>−4 ..... 122</td>
<td>SAE 10W-40</td>
</tr>
</tbody>
</table>

Tab. 33 Engine oil recommendation

2.6.3 Engine coolant recommendation

Engine coolant must meet the requirements of specification ASTM D4985.

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

The engine service manual gives further information on coolant application.

2.6.4 Fluid volumes

<table>
<thead>
<tr>
<th>Description</th>
<th>Fluid volume [gal]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine oil</td>
<td>2.5</td>
</tr>
<tr>
<td>Fuel</td>
<td>27.7</td>
</tr>
<tr>
<td>Engine coolant</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Tab. 34 Engine fluid volumes

2.6.5 Battery

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage [V]</td>
<td>12</td>
</tr>
<tr>
<td>Capacity [Ah]</td>
<td>80</td>
</tr>
<tr>
<td>PTC testing current [A] (according to EN 50342)</td>
<td>640</td>
</tr>
</tbody>
</table>

Tab. 35 Battery

Further information Depending on machine equipment, a higher capacity battery may be required. See chapter 2.7.2 for low temperature equipment.
2.7 Options

2.7.1 Option ec
Tool lubricator

<table>
<thead>
<tr>
<th>Name</th>
<th>Temperature range [°F]</th>
<th>Fluid volume [gal]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special road breaker lubricant</td>
<td>−13 ..... 122</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Tab. 36 Road breaker lubricant recommendation

2.7.2 Option ba
Low temperature equipment

2.7.2.1 Ambient conditions

<table>
<thead>
<tr>
<th>Positioning</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum altitude AMSL* [ft]</td>
<td>3280</td>
</tr>
<tr>
<td>Minimum ambient temperature [°F]</td>
<td>−13</td>
</tr>
<tr>
<td>Maximum ambient temperature [°F]</td>
<td>1220</td>
</tr>
<tr>
<td>* Higher altitudes are permissible only after consultation with the manufacturer.</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 37 Ambient conditions

2.7.2.2 Compressed air line frost protection

<table>
<thead>
<tr>
<th>Antifreeze</th>
<th>Fluid volume [gal]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wabcothyl</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Tab. 38 Recommended antifreeze

2.7.2.3 Battery

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage [V]</td>
<td>12</td>
</tr>
<tr>
<td>Capacity [Ah]</td>
<td>100</td>
</tr>
<tr>
<td>PTC testing current [A] (according to EN 50342)</td>
<td>850</td>
</tr>
</tbody>
</table>

Tab. 39 Battery

2.7.2.4 Option bb
Coolant pre-heating

<table>
<thead>
<tr>
<th>Coolant pre-heater</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>DEFA 102</td>
</tr>
<tr>
<td>Voltage [V]</td>
<td>230</td>
</tr>
<tr>
<td>Power [W]</td>
<td>550</td>
</tr>
</tbody>
</table>

Tab. 40 Coolant pre-heater
3 Safety and Responsibility

3.1 Basic Information

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

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

**DANGER**

Disregarding these instructions can result in serious injury.

- Read the service manual carefully and take note of the contents for safe machine operation.
- Use this machine only if it is in a technically perfect condition and only for the purpose for which it is intended; observe all safety measures and the instructions in the service manual.
- Immediately rectify (have rectified) any faults that could be detrimental to safety.

3.2 Specified use

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

- Keep to the specifications listed in this service manual.
- Operate the machine only within its performance limits and under the permitted ambient conditions.
- Do not use compressed air for breathing purposes unless it is specifically treated.
- Do not use compressed for any application that will bring it into direct contact with food products unless it is specifically treated.

3.3 Improper Use

- Never direct compressed air at persons or animals.
- Do not use untreated compressed air for breathing purposes.
- Do not allow the machine to breathe in toxic, acidic, flammable of explosive gases or vapors.
- Do not operate the machine in areas in which specific requirements with regard to explosion protection are in force.

3.4 User's Responsibilities

3.4.1 Observe statutory and universally accepted regulations.

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

Suitable personnel are experts who, by virtue of their training, knowledge and experience as well as their knowledge of relevant regulations can assess the work to be done and recognize the possible dangers involved.

Authorized operators possess the following qualifications:
- are of legal age,
- are conversant with and adhere to the safety instructions and sections of the service manual relevant to operation,
- have received adequate training and authorization to operate vehicles and electrical and compressed air devices.

Authorized maintenance personnel possess the following qualifications:
- are of legal age,
- have read, are conversant with and adhere to the safety instructions and sections of the service manual applicable to installation and maintenance,
- are fully conversant with the safety concepts and regulations of motor vehicle, electrical and compressed air engineering,
- are able to recognize the possible dangers of motor vehicle, electrical and compressed air devices and take appropriate measures to safeguard persons and property,
- have received adequate training in and authorization for the safe installation and maintenance of this machine.

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

**DANGER**
There is danger of fatal injury caused by contact with live components.

➤ Only qualified electricians may work on the installation, maintenance and repair of the machine's electrical assemblies. This includes work on current-carrying components.

➤ Ensure that personnel entrusted with operation, maintenance and transporting are qualified and authorized to carry out their tasks.

3.4.3 Adherence to inspection schedules and accident prevention regulations

The machine may be subject to local inspection schedules.
3.5 Dangers

Basic Information

Information concerning the various forms of danger that can arise during machine operation are found here.

Basic safety instructions are found in this service manual at the beginning of each chapter in the section entitled 'Safety'.

Warning instructions are found before a potentially dangerous task.

3.5.1 Safely dealing with sources of danger

Information is found here concerning how to counter the various forms of danger that can arise during machine operation.

**Exhaust fumes**

Exhaust fumes from combustion engines contain carbon monoxide; this gas is odorless and can cause death.

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

➤ Use the machine only outdoors!
➤ Do not inhale exhaust fumes.
➤ Direct the exhaust fumes to the open air with a pipe of at least 100 mm dia.

**Fire and explosion**

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

➤ Allow no open flames or sparks at the place of use.
➤ Do not smoke while refuelling.
➤ Never refuel the machine when it is running.
➤ Do not allow fuel to overflow.
➤ Wipe up spilled fuel immediately.
➤ Keep fuel away from hot machine parts.
➤ Never top up antifreeze (option ba) unless the machine is stopped and cooled down.
➤ Make sure that the ambient temperature at the machine's place of use is within permissible limits.

**Hot coolant**

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

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

**Forces of compression**

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

➤ Wait until the machine has automatically vented (check that the pressure gauge indicates 0 psig).
➤ Then open an outlet valve carefully to ensure that the line between the minimum pressure / check valve and the compressed air outlet is vented.

➤ Do not carry out welding, heat treatment or mechanical modifications to pressurized components (e.g. pipes and vessels) as this influences the component's resistance to pressure. The safety of the machine is no longer ensured.

Spring force

Sudden release of spring force can cause serious energy.

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

➤ Do not open or dismantle any valves.

Compressed air quality

Compressed air from oil-injected compressors may not be used for breathing or processing food products without suitable treatment.

➤ Never directly inhale compressed air.

➤ Use appropriate systems for air treatment before using the compressed air from this machine as breathing air (fresh air reinforcement) and/or for the processing of food products.

➤ Use food-grade compatible cooling oil whenever compressed air is to come into contact with food products.

Rotating components

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

➤ Operate the machine only with closed safety guards, access doors and panels.

➤ Shut down the machine before opening a door or canopy.

➤ Wear close-fitting clothes and a hair net if necessary.

➤ Fit all safety devices and panels before starting the engine.

Electricity

➤ Allow only qualified and authorized electricians or trained personnel under the supervision of a qualified and authorized electrician to carry out work on electrical equipment according to electrical engineering regulations.

➤ Check regularly that all electrical connections are tight and in order.

Temperature

➤ Avoid contact with hot components. These include, for example, engine, compressor arend, oil and compressed air lines, coolers and oil separator tank. Any objects in or near the flow of exhaust gas or discharged cooling air will become very hot.

➤ Wear long-sleeved garments (not synthetics such as polyester) and protective gloves.

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

➤ Allow the machine to cool down before commencing any maintenance work.

➤ If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting fuel or oil vapors or parts of the machine.
3 Safety and Responsibility

3.5 Dangers

Noise
➤ Operate the machine only with intact soundproofing.
➤ Wear hearing protection if necessary. The pressure relief valve blowing off, for example, can be particularly loud.

Operating fluids/materials
➤ Strictly forbid fire, open flame and smoking.
➤ Follow safety regulations when dealing with fuel, lubricants, antifreeze and chemical substances.
➤ Avoid contact with skin and eyes.
➤ Do not inhale fumes or aerosols from fuel or oil.
➤ Do not eat or drink while handling fuel, cooling and lubricating fluids or antifreeze.
➤ Have suitable fire extinguishing materials to hand and make known the location and use of fire extinguishers.
➤ Use only KAESER approved operating materials.

Unsuitable spare parts
➤ Use only spare parts approved by the manufacturer for use in this machine. Unsuitable spare parts compromise the safety of the machine.
➤ Use only genuine KAESER pressure components.

Conversion or modification of the machine
➤ Do not permit conversion or modification of the machine as this can compromise function and safe operation.
  ■ Do not fit any non-approved additional components.
  ■ Do not make any changes to the machine that will increase its weight beyond the permissible limit and/or endanger its safe use or transportation.

Any such changes invalidate the approval to use the machine or tow it on the road.

3.5.2 Safe machine operation

Information on conduct that will help in handling the machine safely is given here.

WARNING
Danger of injury from hot, rotating and electrically live components!
Serious injury can be caused by touching such components.
➤ Operate the machine only with closed doors/canopy.
➤ Carry out maintenance and checks only with the machine shut down.

Transport
➤ Shut down and fully disconnect the machine before transporting it.
➤ Allow transportation only by personnel trained in safely dealing with motor vehicles and the transporting of goods.
➤ Ensure that no persons are on the machine when transporting.
If the machine is towed on public roads:

- Ensure all running gear, including chassis, wheels, brakes, signalling and lighting, is in safe condition.
- The local laws and regulations regarding the use of public roads must be observed.

Follow the ground rules for safe towing:

- The maximum permissible load for the towing vehicle coupling and the maximum coupling load given for the machine must not be exceeded.
- Avoid causing a shift in the center of gravity by an excessive or incorrectly distributed load.
- Do not tow in such a way as to impose excessive stress on the machine or chassis.
- Adjust towing speed to accommodate ground conditions. This applies particularly to unpaved roads and when taking curves.

The towbar must be parallel with the ground otherwise towing instability can develop, resulting in damage to the machine and/or towing vehicle.

Before moving the machine, make sure any security devices (e.g. anti-theft chain) are released.

When the machine is lifted by a crane, the safety regulations relating to the crane and lifting slings must be observed.

- Do not enter the danger zone while the machine is being lifted.
- Never lift the machine over people or occupied buildings.
- Secondary or attached loads may not:
  - cause excessive loading on the machine's lifting point (lifting eye).
  - adversely influence the machine's center of gravity so that it hangs out of square.
- Only the designated lifting point should be used to attach lifting gear and under no circumstances are handles, towbar or other components to be used.
- Use only lifting slings that are suitable for the loads to which they will be subjected.
- Use only hooks and shackles that comply with local safety regulations
- Do not attach cables, chains or ropes directly to the machine's lifting eye.
- Never tamper with the machine's lifting eye or its fixing.
- Avoid jerking when lifting, as this may damage components.
- Loads must be slowly lifted and carefully set down.
- Never allow the load to hang from the crane longer than necessary.

The following are forbidden:

- transporting by slinging beneath a helicopter,
- dropping by parachute.

Positioning

- Do not position the machine directly against a wall. A build up of heat from the exhaust can damage the machine.
- Do not operate in areas in which specific requirements regarding explosion protection are in force.
- Ensure adequate ventilation.
Ensure that required ambient conditions are maintained with regard to:
- Ambient temperature
- Clean inlet air with no damaging contaminants
- Inlet air free of explosive or chemically unstable gases or vapors
- Inlet air free of exhaust gases from internal combustion engines
- Inlet air free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulfide.

Do not position the machine in warm cooling outlet air from other machines.

Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

Chock the wheels to prevent unwanted movement.

Do not place additional loads on the machine (e.g. excavator bucket as anti-theft measure).

Operation

Use the machine only when all safety devices, emergency stop facilities and sound damping measures are in place and fully functioning.

Before starting the machine, make sure that this will not place anyone in danger.

Keep the access doors closed and panels in place for safety, quiet running and to ensure correct cooling air flow.

Stop and secure against restarting if any malfunctions occur. Have any malfunctions corrected immediately.

Carry out regular inspections:
- for visible damage and leakage,
- of safety devices,
- of components needing to be monitored.

Never operate machines without an air filter when drawing in air from the surroundings.

Outlet valves must be closed when no consumers are connected.

Use only suitable compressed air hoses:
- that are of the right type and size for the highest permissible machine working pressure,
- that are not damaged, worn or of reduced quality,
- that have couplings and connections of the right type and size.

Make sure compressed air hoses are depressurized before disconnecting from the machine.

Secure the open end of an air hose before applying air pressure. An unsecured hose may whip and cause injury.

At working pressures >101.5 psig, compressed air hoses should be secured by a cable to their respective outlet valves.

Maintenance

Before commencing any work on the machine, make sure it is shut down, cooled down, pressure-free and locked off against unwanted starting.

Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.

Do not leave any loose components, tools or cleaning rags on or in the machine.

Adhere to the planned intervals for maintenance and exchange of wear parts.

Pressure lines must be fitted correctly. Test run and check for leaks.
Components removed from the machine may still be a source of danger. Do not open or destroy components removed from the machine as some, inlet valves, for instance, are powerfully spring-loaded.

Never remove or change sound damping materials. Ensure that sound damping material is not damaged or dirty. Replace as necessary.

Decommissioning, storage, disposal

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

3.5.3 Organizational Measures

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

3.5.4 Danger areas

The table gives information on areas dangerous to personnel. Only authorized personnel may enter these areas.

<table>
<thead>
<tr>
<th>Task</th>
<th>Danger area</th>
<th>Authorized personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>Within a 10 ft radius of the machine.</td>
<td>Operating personnel to prepare for transport. No personnel during transport.</td>
</tr>
<tr>
<td></td>
<td>Beneath the lifted machine.</td>
<td>No personnel!</td>
</tr>
<tr>
<td>Commissioning</td>
<td>Within the machine.</td>
<td>Maintenance personnel</td>
</tr>
<tr>
<td></td>
<td>Within a 3 ft radius of the machine.</td>
<td></td>
</tr>
<tr>
<td>Operation</td>
<td>Within a 3 ft radius of the machine.</td>
<td>Operating personnel</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Within the machine.</td>
<td>Maintenance personnel</td>
</tr>
<tr>
<td></td>
<td>Within a 3 ft radius of the machine.</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 41 Danger areas

3.6 Safety Devices

Safety devices ensure safe working with the machine.

- Do not change, bypass or disable safety devices.
- Check safety devices for correct function regularly.
- Do not remove or obliterate labels and notices.
- Ensure that labels and notices are clearly legible.

Further information: More information on safety devices is contained in chapter 4, section 4.5.
3.7 Safety signs

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

![Diagram of safety signs](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| 190* | ! | Wrong cooling oil level.  
Risk of machine defects or rising oil consumption (oil content for pure air).  
➤ Check cooling-oil level.  
➤ Run the machine only with proper cooling-oil level. |
| 282* | ⚠️ | Explosive hydrogen gas.  
Severe injury or death could result from exploding gas.  
➤ Keep flames, sparks and other sources of ignition away. |
| 283* | ⚠️ | Battery contains acid.  
Severe injury result from contact with battery acid.  
➤ Do not allow battery acid to contact eyes, skin, clothing or painted surfaces.  
➤ Do not attempt to jump-start if battery fluid is frozen.  
➤ Bring temperature of battery up to at least 60°F before attempting to jump-start it may explode. |
| 303* | ⚠️ | Fire or explosion caused by refueling.  
Severe injury or death result from inflaming fuel.  
➤ Use diesel fuel only.  
➤ NEVER attempt to refuel the compressor while it is operating.  
➤ Always replace fuel filter cap after refueling.  
➤ Always wipe up fuel spills which may occur inside the compressor enclosure and allow the machine to ventilate. |

* Location within the machine  
** Only towable machines
<table>
<thead>
<tr>
<th>Item</th>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>![Exclamation]</td>
<td>Injury or damage from open machine.</td>
</tr>
<tr>
<td>311</td>
<td>![Exclamation]</td>
<td>Operate the machine only when closed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport the machine only when closed.</td>
</tr>
<tr>
<td>320*</td>
<td>![Exclamation]</td>
<td>Loud noise and oil mist when the safety relief valve opens. Ear damage and burns can result.</td>
</tr>
<tr>
<td></td>
<td>![Exclamation]</td>
<td>Wear ear protection and protective cloths.</td>
</tr>
<tr>
<td></td>
<td>![Exclamation]</td>
<td>Close all maintenance doors and cover panels.</td>
</tr>
<tr>
<td></td>
<td>![Exclamation]</td>
<td>Work carefully.</td>
</tr>
<tr>
<td>330</td>
<td>![Heat icon]</td>
<td>Hot surface can cause burns.</td>
</tr>
<tr>
<td>331</td>
<td>![Heat icon]</td>
<td>Let the machine cool down.</td>
</tr>
<tr>
<td></td>
<td>![Heat icon]</td>
<td>Wear protective cloths and gloves.</td>
</tr>
<tr>
<td>390*</td>
<td>![Fan icon]</td>
<td>Rotating fan blades and V-belt drive. Severe injury could result from touching the fan blades and v-belt drive while it is rotating.</td>
</tr>
<tr>
<td>391*</td>
<td>![Fan icon]</td>
<td>Never switch the machine on without guard in place over the fan blade.</td>
</tr>
<tr>
<td></td>
<td>![Fan icon]</td>
<td>Isolate completely from the power supply (all conductors) and ensure the supply cannot be switched on again (lock off).</td>
</tr>
<tr>
<td>420**</td>
<td>![Exclamation]</td>
<td>Injury or damage can result because tongue weight on this equipment may be heavy.</td>
</tr>
<tr>
<td></td>
<td>![Exclamation]</td>
<td>Do not lift drawbar by hand if weight is more than you can safely handle.</td>
</tr>
<tr>
<td></td>
<td>![Exclamation]</td>
<td>See safety section of service manual.</td>
</tr>
<tr>
<td>430</td>
<td>![Exclamation]</td>
<td>Connect air hoses only in full compliance with OSHA standard 29 CFR 1926,302 (bX7). The required safety devices should be tested in accordance with their manufacturer's recommendations to verify that they reduce pressure in case of hose failure and will not nuisance trip with the hose and tool combinations in use.</td>
</tr>
<tr>
<td>440</td>
<td>![Compressed air icon]</td>
<td>Compressed air quality. Injury and/or contamination can result from breathing compressed air. Contamination of food can result from using untreated compressed air for food processing.</td>
</tr>
<tr>
<td></td>
<td>![Compressed air icon]</td>
<td>Never breathe untreated compressed air!</td>
</tr>
<tr>
<td></td>
<td>![Compressed air icon]</td>
<td>Air from this compressor must meet OSHA 29 CFR1910.134 and FDA 21 CFR178.3570 standards, if used for breathing or food processing. Use proper compressed air treatment.</td>
</tr>
<tr>
<td></td>
<td>![Compressed air icon]</td>
<td>Food grade coolant must be used for food processing.</td>
</tr>
<tr>
<td>500**</td>
<td>![Drawbar icon]</td>
<td>Drawbar load and ground clearance. Danger of fishtailing, incorrect towing vehicle load, damage to the machine caused by rollover or contact with the ground.</td>
</tr>
<tr>
<td></td>
<td>![Drawbar icon]</td>
<td>Always line up the drawbar so that the machine is level with the ground.</td>
</tr>
</tbody>
</table>

* Location within the machine
** Only towable machines
### Item Sign Meaning

<table>
<thead>
<tr>
<th>Item</th>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| 510** | ![Warning Sign] | Malfunction due to lack of maintenance. Accidents and machine damage possible.  
➤ Maintain the chassis regularly.  
➤ Follow instructions in the service manual. |
| 740** | ![Machine Without Breaks Sign] | Machine without breaks. Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks.  
➤ Always use chocks before uncoupling and generally when the unit is not in motion.  
➤ Do not move unit manually. |
| 741** | ![Missing Chock Sign] | Missing chock. Serious injury or death may result from uncontrolled movement when the unit is not safeguarded by chocks.  
➤ Always fix chock for proper storage.  
➤ Always replace missing chock immediately. |
| 600* | ![Pressure and Spring Force Sign] | Pressure and spring force. Serious injury or death can result from loosening or opening component that is under pressure and heavily spring loaded.  
➤ Never open (dismantle) valve.  
➤ Contact authorized KAESER distributor. |

* Location within the machine  
** Only towable machines

---

### Tab. 42 Safety signs

#### 3.8 In emergency

#### 3.8.1 Correct fire fighting

Suitable extinguishing agents:
- Foam  
- Carbon dioxide  
- Sand or dirt

Unsuitable extinguishing agents:
- Strong jet of water

1. Keep calm.  
2. Give the alarm.  
3. Shut down the machine from the instrument panel if possible.  
4. To ensure safety:  
   - warn persons in danger,  
   - help incapacitated persons,  
   - leave the danger area as fast as possible.  
5. Try to extinguish the fire if you have the skill to do so.
3.8.2 Contact with operating fluids/materials

The following operating fluids/materials are in the machine:
- Fuel
- Lubricating oil
- Compressor cooling oil
- Engine coolant
- Battery electrolyte
- Tool lubricant (option e)
- Antifreeze (option ba)

If necessary, request a copy of the safety data sheet for KAESER SIGMA FLUID cooling oil.

➤ Eye contact:
Rinse eyes thoroughly with lukewarm water and seek medical assistance.

➤ Skin contact:
Wash off immediately.

3.9 Warranty

This service manual contains no independent warranty commitment. Our general terms and conditions of business apply with regard to warranty.

A condition of our warranty is that the machine is used for the purpose for which it is intended under the conditions specified.

Due to the multitude applications for which the machine is suitable the obligation lies with the user to determine its suitability for his specific application.

In addition, we accept no warranty obligation for:
- the use of unsuitable parts or operating materials,
- unauthorized modifications,
- incorrect maintenance,
- incorrect repair.

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

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

3.10 Environmental Protection

➤ Store and dispose of operating materials and replaced parts in accordance with local environmental protection regulations.

➤ Observe relevant national regulations.

This applies particularly to parts contaminated with fuel, oil, coolants and acids.

➤ Do not allow operating materials to escape to the environment or into the sewage system.
4 Design and Function

4.1 Bodywork

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

Fig. 2 Bodywork

1 Right-hand wing door
2 Handle
3 Snap fastener
4 Lower body
5 Sound damping louver
6 Left-hand wing door
7 Cover for lifting eye

The bodywork has several functions when it is closed:

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

The bodywork is not suitable for the following uses:

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

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

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

The doors are held open by gas struts.
4.2 Component identification

Fig. 3 Right-hand door opened

1 Instrument panel  
2 Minimum pressure/check valve  
3 Proportional controller  
4 Oil separator tank  
5 Oil filler port with plug  
6 Combination valve  
7 Fuel prefilter  
8 Fuel tank  
9 Fuel fine filter *  
10 Oil cooler

* According to country variant with integrated water separator.

Fig. 4 Left-hand door opened

11 Radiator  
12 Coolant expansion tank  
13 Fan  
14 Engine  
15 Lifting eye  
16 Engine air filter  
17 Compressor air filter  
18 Airend  
19 Battery  
20 Inlet valve  
21 Pressure relief valve  
22 Lifting eye cover

4.3 Machine function

Machine function (without options)
Item numbers correspond to the pipe and instrument flow diagram in chapter 13.2.
Ambient air is cleaned as it is drawn in through the filter [1].
The air is then compressed in the airend [4].
The airend is driven by an internal combustion engine.
Cooling oil is injected into the airend. It lubricates moving parts and forms a seal between the rotors themselves and between them and the airend casing. This direct cooling in the compression chamber ensures a very low airend discharge temperature.
Cooling oil recovered from the compressed air in the oil separator tank [5] gives up its heat in the oil cooler [20]. The oil then flows through the oil filter [21] and back to the point of injection. Pressure within the machine keeps the oil circulating. A separate pump is not necessary. A fully automatic combination valve [19] registers the ambient temperature and regulates the compressor temperature accordingly.
Compressed air, freed of cooling oil in the oil separator tank [5], flows through the minimum pressure / check valve [37] into the air distributor [10]. The minimum pressure / check valve ensures that there is always a minimum internal air pressure sufficient to maintain cooling oil circulation in the machine.
The cooling fan [28] ensures optimum cooling of all components within the enclosure.
4.4  Operating modes and control modes

4.4.1  Operating modes

The machine operates in the following modes:

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

■ **MODULATING**
  - With the help of a control valve (the proportional controller) the degree of opening of the inlet valve is steplessly varied in response to the air demand.
  - The load and fuel consumption of the engine rises and falls with the air demand.
  - The airend delivers compressed air.

■ **IDLE**
  - The inlet valve is closed.
  - The control valve opens, allowing pressure in the oil separator tank to be applied to the inlet valve.
  - Compressed air then flows in a closed circuit through the airend, the oil separator tank and the control valve.
  - The pressure in the oil separator tank remains constant.
  - The engine runs at minimum speed.

■ **STANDSTILL (shut down)**
  - The inlet valve closes.
  - The venting valve opens to depressurize the machine.
  - The engine stops.

4.4.2  MODULATING control

The control system regulates the volume of air generated to match the actual demand. The machine keeps the working pressure constant by varying the volume of compressed air delivered, thereby matching the air demand.

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

This stepless delivery regulation minimizes fuel consumption of the engine. The load and fuel consumption of the engine rises and falls with the air demand.
### 4.5 Safety devices

#### 4.5.1 Monitoring functions with shutdown

The following functions are monitored automatically.

- Engine oil pressure
- Coolant temperature
- Airend discharge temperature
- Engine alternator

The fuel stop device is activated when an alarm occurs. The engine comes to a stop and the venting valve releases pressure from the machine.
4.5.2 Further safety devices

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

- **Pressure relief valves**
  Pressure relief valves protect the system against unacceptable pressure rise. They are factory set.

- **Enclosures and covers over moving parts and electrical connections:**
  These protect against accidental contact.

4.6 Option ec

**Tool lubricator**

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

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

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

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

![Diagram of Tool lubricator](image)

**Fig. 7 Tool lubricator**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tool lubricator</td>
</tr>
<tr>
<td>2</td>
<td>Air line</td>
</tr>
<tr>
<td>3</td>
<td>Shut-off valve</td>
</tr>
<tr>
<td>4</td>
<td>Oil tank</td>
</tr>
<tr>
<td>5</td>
<td>Metering knob</td>
</tr>
</tbody>
</table>

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

**WARNING**

Lubrication with tool oil.

Air tools that must not be lubricated can be damaged.

- Blow any residual oil out of the line before connecting such an air tool.
4.7 Option ba, bb
Low temperature equipment option

Special equipment is provided for operation in extremely low temperatures. This equipment guarantees trouble-free operation in ambient temperatures from -13 °F to +122 °F. The electrical system starts the engine without problem at ambient temperatures down to -4 °F.

4.7.1 Option ba
Frost protection

Control air is mixed with an alcohol-based antifreeze to prevent control and regulating devices freezing. This greatly lowers the freezing point of any moisture in the air.

![Frost protector diagram](image)

Fig. 8 Frost protector

1. Control line (frost protection)
2. Frost protector
3. Ball valve
4. Control line (bypass line)

Operating at low temperatures

At ambient temperatures below 32 °F, run the machine with the frost protector switched on before shutting down. The compressed air carries antifreeze to coat and protect control air lines and valves. This prevents freezing up of control and regulating components.

The heat of the machine prevents individual control components freezing up during operation.

Summer operation

At outside temperatures above 32 °F it is no longer necessary to inject the control lines in the machine with antifreeze before shutting it down.

4.7.2 Option bb
Coolant pre-heating

The engine coolant can be pre-heated to improve starting under cold conditions. A separate mains power connection provides power to the coolant pre-heater. A flexible power cable joins the machine's power plug to the user's power socket.

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

4.8 Option oa
Optional battery isolating switch

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

**CAUTION**
Danger of short circuit
Damage to the machine's electrical components is possible.

- Use the «battery isolating switch» only when the machine is at standstill.
- Do not use the «battery isolating switch» as a main or emergency switch.
4.9 Option la, lb
Options for operating in fire hazard areas

4.9.1 Option la
Spark arrestor

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

4.9.2 Option lb
Engine air intake shut-off valve

Any flammable gas drawn into the diesel engine's air intake alters and enriches the controlled fuel/air mixture fed to the engine. This causes a sudden and uncontrolled increase in engine speed that can lead to serious mechanical damage. Without appropriate preventive measures, the engine and compressor can be destroyed. Explosion or fire are also possible.
When flammable gas is drawn into the engine, shutting off the fuel supply will not stop the engine right away. Only by shutting off the air intake can the engine be brought to an immediate stop.
The self-closing valve (Chalwyn valve) shuts off the engine air intake as soon as flammable gas is drawn in. This brings the engine to an immediate stop.

4.10 Option ne
Fuel de-watering filter option

A combined water and particle filter element is installed in the fuel line between the tank and the pump to prevent impurities in lower quality fuel reaching the pump.

4.11 Option sa, sc, sd, sh
Transportation option

4.11.1 Option sa
Chassis

The chassis has the following features:
- Single-axle
- Rubber-sprung axle
- Height-adjustable towbar
- Overrun brake

4.11.2 Option sd
Chassis

The chassis has the following features:
- Single-axle
- Rubber-sprung axle
4.11.3 Option sh
Chassis

The chassis has the following features:
- Single-axle
- Rubber-sprung axle
- Height-adjustable towbar
- Without overrun brake
- Without parking brake

4.11.4 Option sc
Stationary frame

The frame has the following features:
- Skids
- Use as stationary machine
- Mounted on truck/trailer platform

4.12 Option sf
Optional anti-theft device

The machine is fitted with a security chain as theft protection.

4.13 Option ua
Hose reel option

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

4.14 Option sg
Pedestrian protection option

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

4.15 Option pa
Instrument panel cover option

To prevent unauthorized use and as protection during transport the machine is fitted with an instrument panel cover.
5 Installation and Operating Conditions

5.1 Safety

➤ Strictly forbid fire, open flame and smoking.
➤ If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting fuel or oil vapors or parts of the machine.
➤ The machine is not explosion-proof!
 Do not operate in areas in which specific requirements regarding explosion protection are in force.
➤ Ensure that required ambient conditions are maintained with regard to:
  ■ ambient temperature,
  ■ clean inlet air with no damaging contaminants,
  ■ inlet air free of explosive or chemically unstable gases or vapors,
  ■ inlet air free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulfide.
➤ Keep suitable fire extinguishing agents ready for use.

5.2 Positioning conditions

Precondition The ground must be level, firm and capable of bearing the weight of the machine.

Fig. 11 Minimum distance from excavations/slopes and walls

1. Keep sufficient distance (at least 5 ft) from the edges of excavations and slopes.
2. Ensure that the machine is as level as possible.
   The machine can be temporarily operated on a slope of not more than 15°.
3. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

CAUTION
Danger of burning from build up of heat and hot exhaust.
Insufficient distance from a wall may well cause heat build-up that could damage the machine.
➤ Do not position the machine directly against a wall.
➤ Ensure always sufficient ventilation space around the machine.

4. Position the machine as far as possible from any wall.
5. Ensure there is enough free space around and above the machine.
6. Keep air inlet and outlet openings free of obstructions so that the cooling air can flow freely through the machine.

7. Do not allow wind to blow into the cooling air outlet.

8. Do not allow exhaust gases and heated cooling air to be drawn into the compressor.

9. Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.

**CAUTION**

Ambient temperature too low. Frozen condensate and highly viscous engine or compressor oil can cause damage when starting the machine.

➤ Use winter grade engine oil.

➤ Use low viscosity compressor oil.

➤ Allow the machine to warm up in IDLE (low speed), see chapter 8.2.4.

10. At ambient temperatures below 32 °F, follow instructions in chapter 7.5.
6 Installation

6.1 Safety

Follow the instructions below for safe installation.
Warning instructions are located before a potentially dangerous task.

Basic safety instructions
1. Follow the instructions in chapter "Safety and Responsibility".
2. Installation work may only be carried out by authorized personnel.

Further information
Information on authorized personnel are found in chapter 3.4.2.
Information on dangers and their avoidance are found in chapter 3.5.

6.2 Reporting Transport Damage

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

6.3 Option sa

Fitting the towbar

If the machine is shipped on a transport frame, it is necessary to dismantle the towbar to save space.
The overrun braking mechanism with center piece is fixed to the wooden frame next to the towbar.
The locking lever is packed in the machine.
The towbar must be re-assembled before removing the transport frame.

Material
- Protective gloves
- Wrench
- Hard rubber hammer

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

CAUTION
Danger of pinching!
Severe injury to fingers is possible if they become trapped in the adjusting mechanism.
- Wear safety gloves.
- Work with caution.
### 6.4 Adjusting the chassis

**Material**
- Pliers
- Hard rubber hammer

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

---

1. Remove all transport securing devices from the towbar and center piece.
2. Take the locking lever out of the machine, remove the packing and unscrew the securing bolt.
3. Locate the teeth of the center piece in those of the towbar and insert the securing bolt from the back. Drive in with light hammer blows if necessary.
4. Make sure the teeth engage and screw on the locking lever.
5. Tighten the locking lever. Make sure the teeth in the adjustment joint mesh together.
6. Fully tighten the lever with a few hammer blows and insert the split pin.
6.4.1 Option sa

Adjusting the towbar height

---

**CAUTION**

Danger of pinching!
Severe injury to fingers is possible if they become trapped in the adjusting mechanism.

- Wear safety gloves.
- Work with caution.

1. Pull out the split pin and loosen the locking lever until the teeth in the height adjustment joints are no longer engaged.
2. The fixed part of the towbar must be parallel to the ground when the compressor is coupled to the towing vehicle.
   The center-piece can be moved up to 49° upwards and 10° downwards for height adjustment.
3. Tighten the locking lever again and secure by striking with a hard rubber hammer.
4. Insert the split pin.
5. Check if:
   - The teeth in the tow bar height adjusting joints are fully engaged,
   - the locking levers are tightened,
   - The split pins are correctly inserted to secure the locking lever (see item 6 in fig. 13).
6. Tighten the locking lever again after 31 miles.

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

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

---

**Fig. 13**

Towbar height adjustment

1. Overrun braking mechanism
2. Towbar center-piece
3. Towbar
4. Locking lever
5. Securing pin
6. Split pin (securing pin) properly inserted
6.4.2 Option sh

Adjusting the coupling height

The height of the towing coupling can be adjusted, to a degree, to suit the towing vehicle coupling height.

There are three height levels.

Fig. 14 Adjusting the coupling height

1. Position the compressor near the towing vehicle hitch and secure with chocks under the wheels.
2. Adjust the prop to bring the towbar horizontal.
3. Unscrew the nuts and withdraw the bolts.
4. Adjust the vertical position of the towing coupling/eye to match the height of the towing vehicle coupling. Line up the fixing holes in the coupling/eye with those in the towbar.

**WARNING**

Danger of the compressor breaking away from the towing vehicle.

An accident can occur if the coupling /eye is not securely fixed to the towbar when the compressor is being towed.

➤ The coupling must always be secured to the towbar with both fixing bolts and nuts.
➤ The nuts must be fully tightened.

5. Insert the fixing bolts and tighten the nuts.
6. Tighten the nuts.

6.4.3 Changing the ball hitch/towing eye

The towbar can be fitted with various towing eyes or couplings.
CAUTION
Danger of pinching!
Severe pinching injury to fingers is possible.
➤ Wear safety gloves.
➤ Work with caution.

6.4.3.1 Option sa, sd
Changing the ball hitch/towing eye (European chassis)

Option sa, sd

Fig. 15 Changing the towing eye

1. Protective cap
2. Hexagon nut
3. Washer
4. Hex-head bolt
5. Towbar tube
6. Protective sleeve
7. Ball hitch
8. Towing eye

1. Push back the protective sleeve 6.
2. Remove the protective caps 1, unscrew the nuts 2, remove the washers 3 and withdraw the bolts 4.
3. Remove the ball hitch 7 or eye 8 from the towbar tube 5.
4. Push the new towing eye 8 or ball hitch 7 in/on the towbar tube 5.
5. Adjust the position of the components till the holes in the coupling/eye line up with those in the towbar tube.
6. Insert the securing bolts 4, fit the washers 3 and nuts 2 and tighten.
7. Replace the protective caps 1 and slide the protective sleeve 6 forward.

6.4.3.2 Option sh
Changing the towing coupling/ball coupling (USA chassis)

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

6.4 Adjusting the chassis

Fig. 16 Changing the towing eye

1. Unscrew the nuts and withdraw the bolts.
2. Remove the unwanted ball coupling or eye from the towbar.
3. Place the new ball coupling or towing eye on/in the towbar and line up the fixing holes.

WARNING
Danger of the compressor breaking away from the towing vehicle.
An accident can occur if the coupling /eye is not securely fixed to the towbar when the compressor is being towed.
- The coupling must always be secured to the towbar with both fixing bolts and nuts.
- The nuts must be fully tightened.

4. Insert the fixing bolts and tighten the nuts.
5. Tighten the nuts.
7 Initial Start-up

7.1 Safety

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

Basic safety instructions

1. Follow the instructions in chapter "Safety and Responsibility".
2. Commissioning work may only be carried out by authorized operating and maintenance personnel.

Further information
Information on authorized personnel are found in chapter 3.4.2.
Information on dangers and their avoidance are found in chapter 3.5.

7.2 Instructions to be observed before commissioning or recommissioning

The initial start-up of every machine takes place at the factory. Every machine is also given a trial run and passes a careful check.

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

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

7.3 Checking installation and operating conditions

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

<table>
<thead>
<tr>
<th>Function</th>
<th>See chapter</th>
<th>Confirmed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Are the operators fully familiar with safety regulations?</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>➤ Have all the positioning conditions been fulfilled?</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>➤ Is there sufficient cooling oil in the separator tank?</td>
<td>10.4.1</td>
<td></td>
</tr>
<tr>
<td>➤ Is there sufficient oil in the engine?</td>
<td>10.3.4</td>
<td></td>
</tr>
<tr>
<td>➤ Is the maintenance indicator on the air intake filters (engine and compressor) OK?</td>
<td>10.3.2, 10.4.7</td>
<td></td>
</tr>
<tr>
<td>➤ Is there sufficient coolant in the coolant expansion tank?</td>
<td>10.3.1</td>
<td></td>
</tr>
<tr>
<td>➤ Is there sufficient fuel in the fuel tank?</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>➤ Is there sufficient tool oil in the tool lubricator? (option ea, ec)</td>
<td>10.8.1</td>
<td></td>
</tr>
<tr>
<td>➤ Is there enough antifreeze in the frost protector? (option ba)</td>
<td>10.8.2</td>
<td></td>
</tr>
<tr>
<td>➤ Are the access doors closed and all body panels in place?</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>
7 Initial Start-up

7.4 After storing the machine for a long period

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

<table>
<thead>
<tr>
<th>Storage period longer than</th>
<th>Action</th>
</tr>
</thead>
</table>
| 5 months                  | ➤ Remove the desiccant from the openings in the air intake filters of the engine and compressor.  
➤ Check the air and oil filters.  
➤ Drain the preserving oil from the separator tank.  
➤ Fill with compressor oil.  
➤ Drain the preserving oil from the engine.  
➤ Fill up with engine oil.  
➤ Check the engine coolant  
➤ Check the battery charge state.  
➤ Re-connect the battery.  
➤ Check all fuel lines, engine oil lines and compressor oil lines for leaks, loose connections, wear and damage.  
➤ Clean the bodywork with a grease and dirt cleansing agent.  
➤ Check the tire pressures. |
| 36 months                 | ➤ Have the overall technical condition checked by an authorized KAESER Service Technician. |

Tab. 44 Measures for re-commissioning the compressor after a long period of storage

7.5 Low-temperature operation (winter)

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

➤ At temperatures below 32 °F use:

- winter-grade engine oil
- low viscosity compressor oil
- Winter-grade diesel fuel
- stronger battery

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

**CAUTION**
Problems with pneumatic control at low temperatures. Damage to the machine may be caused by ice particles in the pneumatic control and feedback systems.

➤ Let the machine warm up in idle to ensure trouble-free regulation.

➤ Allow the machine to warm up in idle with open air outlet valves until an airend discharge temperature of 86 °F is reached. The airend discharge temperature is shown by the temperature gauge switch on the instrument panel.

### 7.5.1 Starting assistance

If the machine’s starter battery is discharged, it can be started with the battery of another vehicle or engine-driven machine.

<table>
<thead>
<tr>
<th>Material</th>
<th>Jumper cables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precondition</td>
<td>The machine is disconnected from the towing vehicle and safely parked.</td>
</tr>
</tbody>
</table>

**DANGER**
Fire and explosion hazard. High currents can flow if the battery is short-circuited. A damaged battery can catch fire or explode. Battery casing may crack and allow acidic fluid to spray out.

➤ Observe the instructions provided with the battery jumper cables.

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

➤ Work with caution.

➤ Follow the safety rules when dealing with batteries:
  - Connect batteries of the same voltage only.
  - The assisting vehicle and machine to be started must not touch.
  - Do not bend over the batteries when attaching jumper cables.
  - Only use battery jumper cables of sufficient cross-sectional area and with insulated terminal clamps.
  - Observe the instructions provided with the battery jumper cables.
  - Keep jumper cables away from rotating parts.
  - Do not attempt to start the machine if its battery is frozen. Allow the battery to thaw first.
  - Do not try to start the machine with a boost charger.

**Connecting the battery jumper cables**

1. Stop the engine of the assisting vehicle.
2. Switch off all power consumers.
3. Connect the positive pole of the discharged battery with the positive pole of the assisting battery.
DANGER
Explosion hazard.
A spark may ignite an explosive gas mixture.

➤ Do not, under any circumstances, connect the minus pole of the assisting machine to the negative pole of the battery in the machine to be started. This can cause sparks when connecting and disconnecting.

➤ Work with caution.

4. Connect the minus pole of the assisting battery to a bare metal point on the compressor engine to be started as far away from the battery as possible.

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

Let the two engines run for approximately 3 minutes.

Disconnecting the battery jumper cables
1. Stop the engine of the assisting vehicle.
2. Disconnect the jumper cables in the reverse order, first negative (--) then positive (+).

If the compressor engine stops as soon as the cables are disconnected, it can mean serious damage to the alternator or battery and it should be handed over to a specialized workshop.

7.5.2 Option ba, bb
Starting up low-temperature equipment

➤ Ascertain which low temperature equipment is fitted to the machine.

7.5.2.1 Option ba
Operating the frost protector

➤ Use the checklist when initially starting the frost protector.

<table>
<thead>
<tr>
<th>Function</th>
<th>See chapter</th>
<th>Confirmed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the level of antifreeze in the frost protector.</td>
<td>10.8.2</td>
<td></td>
</tr>
<tr>
<td>Close the tap on the frost protector.</td>
<td>8.5</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 45 Low-temperature equipment checklist

7.5.2.2 Option bb
Operating the coolant pre-heater
The engine coolant can be pre-heated to improve starting under cold conditions. The connection for the mains supply is located on the machine's instrument panel.
7 Initial Start-up

7.5 Low-temperature operation (winter)

Fig. 17 Coolant pre-heater

1 Instrument panel
2 Connection for the coolant pre-heater
3 Power cable
4 Coolant pre-heater
5 Engine block

DANGER
Danger of fatal injury from electric shock!
Serious injury or death can result from a short-circuit in the electric coolant pre-heater.

➤ The power cable for the coolant pre-heater may only be plugged into an electrical socket fitted with a protective earth.

➤ Connect the coolant pre-heater to the user's power socket with the power cable supplied.
8 Operation

8.1 Safety

Here are to be found instructions to ensure safe operation of the machine. Warning instructions are located before a potentially dangerous task.

Basic safety instructions

**WARNING**
There is danger of injury from hot, rotating and electrically live components! Serious injury can be caused by touching such components.

➤ Operate the machine only with closed doors/canopy.
➤ Shut down the machine before opening any doors/canopy.
➤ Do not carry out any checks or settings while the machine is running.

Follow the instructions in chapter 'Safety and Responsibility'. Details of authorized personnel are found in chapter 3.4.2. Details of dangers and their avoidance are found in chapter 3.5.

8.2 Starting and stopping

Precondition No personnel are working on the machine.

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

➤ Do not use cold start sprays.
Fig. 18 Starting instruments

1. «Controller on» switch
   - «Controller on» switch
   - «Starter switch»
   - «Controller on» switch
   - «Starter switch»
   - «Controller on» switch
   - «Starter switch»
   - «Controller on» switch
   - «Starter switch»

2. «Starter switch»
   - STOP/Aus
   - On
   - Pre-heat
   - START

3. «LOAD» key with integrated indicator lamp

4. Alternator indicator, group alarm lamp

5. Compressed air outlet pressure gauge

6. Temperature gauge switch

7. Operating hours counter

Notes concerning snow and ice

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

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

8.2.1 Commissioning the machine

1. Open the right-hand access door.
2. Switch on the «Controller».
3. Close the access door.
4. Turn the «starter switch» to the "On" position.

The charging indicator lamp must light.

8.2.2 Engine pre-heating

The preheating period should be between 5 and a maximum of 10 seconds depending on ambient temperature. Low ambient temperatures require a longer preheating period.

The electric fuel pump starts automatically during pre-heating. This vents the fuel line before each start.
### 8.2 Starting and stopping

#### CAUTION

**Destruction of the glow plug**

The glow plug could be destroyed if the preheating period is too long.

- Never allow the glow plugs to glow for longer than 10 seconds.

- Turn the «starter switch» to the “Pre-heat” position and hold for 8 to 10 seconds.

  The engine's glow plugs are energised and the engine pre-heated.

#### 8.2.3 Starting the machine

#### CAUTION

**Destruction of the starter.**

Improper operation could destroy the starter.

- The starter must not operate while the engine is running.
- Do not hold the start switch in the start position for longer than 30 seconds.
- Wait for a few minutes after each attempt to start the engine.
- The starter switch must be returned to the neutral position before each start attempt (restart protection).

- Turn the «starter switch» to "START" and release it as soon as the engine starts.

  The charging indicator lamp extinguishes as soon as the engine is running.

  If the Back pressure lamp lights, there is back pressure in the system and the start is prevented.

  Only when the back pressure lamp extinguishes has pressure in the system fallen enough to allow the machine to be restarted.

#### 8.2.4 Allow the machine to run up to operating temperature

To avoid unnecessary wear, the engine should be run in IDLE until the airend discharge temperature reaches +86 °F. The airend discharge temperature is shown by the temperature gauge switch on the instrument panel.

- **Option ba**

![Label referring to the warm-up period when ambient temperatures are below 14 °F](image)

  - Allow the machine to warm up in IDLE (low speed).

#### 8.2.5 Switching to LOAD

**Precondition**

- Airend discharge temperature must be at least +86 °F
**WARNING**
Compressed air can cause serious injuries.
➤ Never direct compressed air at persons or animals.
➤ No personnel may work on the machine.
➤ All bodywork must be secured in place.
➤ All access doors must be closed.

➤ Press the «Load on» button.

Result The $LOAD$ indicator lights and the engine picks up to maximum speed.

### 8.2.6 Shutting down the machine

1. Turn the «starter switch» to the "STOP/Aus" position.
   The engine turns off.
2. Open the right-hand access door.
3. Switch off the «Controller».
4. Close the access door.

Secure both doors with locks as necessary.

### 8.3 Option ua
#### Using the hose reel

The machine is fitted with an additional compressed air extension hose. A hose reel is provided for safe storage of this hose.
➤ Check which hose reel is fitted to your machine.

#### 8.3.1 Using the hose reel (EC version)

The hose reel is on the front of the machine.
8.3 Using the hose reel

8.3.1.1 Operating the machine with an extension air hose.

1. Loosen the transport securing pin 8 and the clamping screw 7.
2. Fold out the crank handle 1 and reel out the required length of hose 3.
3. Tighten the clamping screw 7.
   The reel is locked against unwanted reeling in or out.
4. Fold in the handle again 1.
5. Connect the air tool.
6. Put the machine into operation.
7. Open the compressed air shut-off valve.

8.3.1.2 Operating the machine without an extension air hose.

1. Close the compressed air shut-off valve.
2. Disconnect the air consumer.
3. Fold out the winding handle 1 and reel in the hose 3 firmly and evenly.
4. Tighten the clamping screw 7.
   The reel is locked against unwanted reeling in or out.
5. Fold in the handle again 1.

8.3.1.3 Securing the hose reel for transport

1. Check that the hose is firmly and evenly reeled in. Reel again, if necessary.
2. Locate the securing hole 5 in the reel's side plate 2 until it is aligned with the securing screw 8.
3. Engage the securing screw fully.
4. Tighten the clamping screw 7.
8.3.2 Using the hose reel (USA version)

The hose reel is mounted on the towbar.

![Hose reel diagram](image)

**Fig. 21 Hose reel (EC design)**

1. Winding handle
2. Hose reel
3. Hose
4. Clamping screw

8.3.2.1 Operating the machine with an extension air hose.

1. Loosen the clamping screw 4.
2. Reel out the required length of hose 3.
3. Tighten the clamping screw 4.
   - The reel is locked against unwanted reeling in or out.
4. Connect the air tool.
5. Put the machine into operation.
6. Open the compressed air shut-off valve.

8.3.2.2 Operating the machine without an extension air hose.

1. Close the compressed air shut-off valve.
2. Disconnect the air consumer.
3. Loosen the clamping screw 4.
4. Use the winding handle 1 to reel in the hose 3 firmly and evenly.
5. Tighten the clamping screw 4.
   - The reel is locked against unwanted reeling in or out.

8.3.2.3 Securing the hose reel for transport

1. Check that the hose is firmly and evenly reeled in. Reel again, if necessary.
2. Tighten the clamping screw 4.
   - The reel is locked against unwanted reeling in or out.
8.4 Option ec
Operating the tool lubricator

Precondition The machine is switched off.

Fig. 22 Setting the tool lubricator

1. Shut-off valve
   - I – open
   - 0 – closed

2. Metering knob
   ➤ Open the right-hand access door.

Adding lubricating oil

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

Setting the oil flow

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

The metering valve controls the flow of oil into the air.
- Clockwise adjustment reduces the oil flow.
- Counter-clockwise adjustment increases the oil flow.

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

Further information Fill the tool lubricator with suitable oil (see chapter 10.8.1)
Shutting off lubricating oil

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

### 8.5 Option ba, bb
Using the low-temperature equipment

➤ Heed the safety instructions in chapter 3.5.

#### 8.5.1 Option ba
Using with the frost protector switched on

**Precondition**  
Frost protector filled with antifreeze

![Diagram of frost protector](image)

**Fig. 23** Switching on the frost protector

1. Shut-off valve
   - I – open
   - 0 – closed

2. Frost protector tank

**Using with the frost protector switched on**  
Operating at temperatures below 32°F (winter operation).

**Precondition**  
The machine is switched off.

1. Open the right-hand access door.
2. Keep the frost protector shut-off valve permanently closed (position 0).
3. Close the access door.

**Result**  
The machine is ready for winter operation.

**Further information**  
See chapter 10.8.2 for filling the frost protector with antifreeze.

**Using with the frost protector switched off**  
Operating at temperatures above 32 °F (summer operation).
Precondition

The machine is switched off.

1. Open the right-hand access door.
2. Leave the frost protector shut-off valve open permanently (position I).
3. Close the access door.

8.5.2 Option bb
Coolant pre-heating

➤ Start the coolant pre-heating as described in chapter 7.5.2.

8.6 Option oa
Operating the battery isolating switch

Start the machine

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

Shutting down the machine

1. Open the left-hand door.
2. Switch the «battery isolating switch» to the 'off' position.
   The battery is disconnected from the machine's electrical system.
3. Close the access door.
9 Fault Recognition and Rectification

9.1 Basic instructions

The following tables are intended to assist in fault finding and rectification.

1. Do not attempt fault rectification measures other than those given in this manual.
2. Inform KAESER Service if the fault cannot be removed by the action suggested.

Further information

Observe the instructions in chapter "Safety" and prevailing local safety regulations when rectifying faults and malfunctions.

9.2 Engine faults and alarms

Further information

See also the engine service manual.

9.2.1 Engine refuses to start or does not turn over

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized work-shop</td>
</tr>
<tr>
<td>Defective starter.</td>
<td>Have changed.</td>
<td>X</td>
</tr>
<tr>
<td>The fuel cut-off device has not opened.</td>
<td>Check the coil and electrical components and change if necessary.</td>
<td>X</td>
</tr>
<tr>
<td>Fuel tank empty.</td>
<td>Fill up the fuel tank</td>
<td>–</td>
</tr>
<tr>
<td>Airlock in the fuel line between fuel tank and injector pump.</td>
<td>Bleed the fuel line (see chapter 10.3.3).</td>
<td>–</td>
</tr>
<tr>
<td>Fuel filter clogged.</td>
<td>Clean or replace, see chapter 10.3.3.</td>
<td>–</td>
</tr>
<tr>
<td>Fuel line broken.</td>
<td>Have changed.</td>
<td>X</td>
</tr>
<tr>
<td>Defective control fuse or relay.</td>
<td>Have repaired or replaced if necessary.</td>
<td>X</td>
</tr>
<tr>
<td>Airend discharge temperature too high.</td>
<td>Have adjusted.</td>
<td>–</td>
</tr>
<tr>
<td>Defective temperature gauge switch giving no enable signal.</td>
<td>Have repaired or replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Starter switch defective.</td>
<td>Have repaired or replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Electrical connections and/or cables loose or broken.</td>
<td>Tighten the connection or have the cable replaced.</td>
<td>X</td>
</tr>
<tr>
<td>Defective battery or low charge.</td>
<td>Maintain battery, see chapter 10.6.</td>
<td>–</td>
</tr>
<tr>
<td>Defective alternator.</td>
<td>Have changed.</td>
<td>X</td>
</tr>
<tr>
<td>Defective alternator regulator.</td>
<td>Have changed.</td>
<td>X</td>
</tr>
</tbody>
</table>
### 9.2  Engine faults and alarms

#### 9.2.2  Engine does not reach full speed

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airlock in the fuel line between fuel tank and injector pump.</td>
<td>Bleed the fuel line (see chapter 10.3.3).</td>
<td>– – X</td>
</tr>
<tr>
<td>Fuel filter clogged.</td>
<td>Clean or replace, see chapter 10.3.3.</td>
<td>– – X</td>
</tr>
<tr>
<td>Fuel line broken.</td>
<td>Have changed.</td>
<td>X – –</td>
</tr>
<tr>
<td>Speed adjustment cylinder maladjusted or defective.</td>
<td>Repair or have replaced if necessary.</td>
<td>X X –</td>
</tr>
</tbody>
</table>

Tab. 47  Fault: engine does not reach full speed.

#### 9.2.3  Indicator lamp remains on

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical connections and/or cables loose or broken.</td>
<td>Tighten the connection or have the cable replaced.</td>
<td>X – –</td>
</tr>
<tr>
<td>Defective alternator</td>
<td>Have replaced if necessary.</td>
<td>X – –</td>
</tr>
<tr>
<td>Defective alternator regulator</td>
<td>Have replaced if necessary.</td>
<td>X – –</td>
</tr>
<tr>
<td>Engine oil pressure too low</td>
<td>Check the engine oil level.</td>
<td>– – X</td>
</tr>
<tr>
<td></td>
<td>Check the engine and have repaired if necessary.</td>
<td>X – –</td>
</tr>
</tbody>
</table>

Tab. 48  Indicator lamp remains on
9.3 Compressor faults and alarms

9.3.1 Working pressure too high

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized workshop</td>
</tr>
<tr>
<td>Proportional controller maladjusted</td>
<td>Check the diaphragm and clean the nozzle or replace the proportional</td>
<td>–</td>
</tr>
<tr>
<td>or defective.</td>
<td>controller if necessary.</td>
<td></td>
</tr>
<tr>
<td>Inlet valve not closing.</td>
<td>Check the controller, the control air line and the inlet valve and</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>replace if necessary.</td>
<td></td>
</tr>
<tr>
<td>Pressure gauge giving false reading.</td>
<td>Have repaired or replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Venting valve does not blow off.</td>
<td>Check the connections and function and have repaired or replaced as</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>necessary.</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 49 Fault: working pressure too high

9.3.2 Working pressure too low

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized workshop</td>
</tr>
<tr>
<td>Proportional controller maladjusted</td>
<td>Check the diaphragm and clean the nozzle or replace the proportional</td>
<td>–</td>
</tr>
<tr>
<td>or defective.</td>
<td>controller if necessary.</td>
<td></td>
</tr>
<tr>
<td>Inlet valve not opening or only</td>
<td>Repair or have replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>opening partially.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure gauge giving false reading.</td>
<td>Have repaired or replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Pressure relief valve maladjusted</td>
<td>Have replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>and/or leaking.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venting valve does not close.</td>
<td>Check the connections and function and have repaired or replaced as</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>necessary.</td>
<td></td>
</tr>
<tr>
<td>Engine not running at full speed.</td>
<td>See chapter 9.2.</td>
<td>–</td>
</tr>
<tr>
<td>Engine air filter and/or compressor</td>
<td>Clean or change, see chapters 10.3.2 and 10.4.7.</td>
<td>–</td>
</tr>
<tr>
<td>air filter clogged.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil separator cartridge heavily</td>
<td>Change, see chapter 10.4.6.</td>
<td>–</td>
</tr>
<tr>
<td>clogged.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tab. 50 Fault: working pressure too low
9.3.3 Pressure relief valve blowing off

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil separator cartridge heavily clogged.</td>
<td>Change, see chapter 10.4.6.</td>
<td>–</td>
</tr>
<tr>
<td>Inlet valve not closing.</td>
<td>Check the controller, the control line and the inlet valve and replace if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Pressure relief valve maladjusted and/or leaking.</td>
<td>Adjust or have replaced if necessary.</td>
<td>–</td>
</tr>
</tbody>
</table>

Tab. 51 Fault: pressure relief valve blowing off

9.3.4 Machine overheating

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defective cooling fan.</td>
<td>Have the blades or the complete fan wheel replaced.</td>
<td>–</td>
</tr>
<tr>
<td>Oil cooler clogged.</td>
<td>Clean surface, see chapter 10.5.</td>
<td>–</td>
</tr>
<tr>
<td>Defective working element in the combination valve.</td>
<td>Have repaired or replaced if necessary.</td>
<td>–</td>
</tr>
<tr>
<td>Working pressure too high (proportional controller maladjusted).</td>
<td>Reset to the permissible value or have replaced.</td>
<td>–</td>
</tr>
<tr>
<td>Oil separator cartridge heavily clogged.</td>
<td>Measure the pressure differential and change the cartridge if greater than 14.5 psi. Change, see chapter 10.4.6.</td>
<td>–</td>
</tr>
<tr>
<td>Compressor oil filter clogged.</td>
<td>Change, see chapter 10.4.4.</td>
<td>–</td>
</tr>
<tr>
<td>Compressor oil level too low.</td>
<td>Top up (see chapter 10.4.2).</td>
<td>–</td>
</tr>
<tr>
<td>Oil pipes leaking.</td>
<td>Seal leaks or have pipes changed.</td>
<td>X</td>
</tr>
<tr>
<td>Engine cooling system or cooling fan defective.</td>
<td>Have repaired.</td>
<td>X</td>
</tr>
<tr>
<td>Ambient temperature too high.</td>
<td>See installation conditions in chapter 5.2.</td>
<td>–</td>
</tr>
</tbody>
</table>

Tab. 52 Fault: machine overheating
### 9.3.5 Too much oil residue in the compressed air

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil separator cartridge scavengeline clogged.</td>
<td>Clean the strainer in the separator cartridge dirt trap (see chapter 10.4.5). Replace if necessary.</td>
<td>~ X</td>
</tr>
<tr>
<td>Fractured oil separator cartridge.</td>
<td>Change, see chapter 10.4.6.</td>
<td>~ ~</td>
</tr>
<tr>
<td>Oil level in the oil separator tank too high.</td>
<td>Reduce to maximum level, see chapter 10.4.1 and chapter 10.4.3.</td>
<td>~ ~</td>
</tr>
</tbody>
</table>

Tab. 53  Fault: too much oil residue in the compressed air

### 9.3.6 Oil flows from the compressor air filter after shutdown

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
<th>Where can I get help?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defective non-return function of the inlet valve.</td>
<td>Repair or have replaced if necessary.</td>
<td>~ X</td>
</tr>
</tbody>
</table>

Tab. 54  Fault: oil flows from the compressor air filter after shutdown
10 Maintenance

10.1 Safety

Follow the instructions below to ensure safe machine maintenance.
Warning instructions are located before a potentially dangerous task.

Basic safety instructions

**WARNING**
Danger of injury from hot, rotating and electrically live components!
Serious injury can be caused by touching such components.
➤ Shut down the machine before opening any doors/canopy.
➤ Do not carry out any checks or maintenance while the machine is running.

1. Follow the instructions in chapter ‘Safety and Responsibility’.
2. Maintenance work may only be carried out by authorized personnel.
3. Before restarting the machine, make sure that:
   ■ No personnel are working on the machine,
   ■ All protective devices and cover panels are in place and secured,
   ■ All tools have been removed from the machine.
The access doors are held up by gas struts.
➤ Check that the doors remain open.
   Change any gas strut that is not able to hold the door open.

Working on pressure system

1. Disconnect all air consumers.
2. Wait until the machine is automatically vented (check that the pressure gauge indicates 0 psig).
3. Open outlet valves carefully to ensure that the line between the minimum pressure/check valve and the compressed air outlet is vented.
4. Do not open or dismantle any valves.

Working on the drive system

1. The negative cable to the battery is disconnected.
2. The machine has cooled down.

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

10.2 Maintenance schedules

The maintenance schedules provide an overview of the maintenance instructions for the machine.
➤ Read the relative section before undertaking maintenance.
10.2.1 Logging maintenance work

The maintenance intervals given are those recommended for average applications and operating conditions. Maintenance schedules may be modified to take into account the application, the environment and the quality of maintenance.

**WARNING**

Wear and machine damage through unusual applications or operating conditions.

➤ Maintenance tasks must be carried out more frequently when operating conditions are unfavorable (e.g. dusty environment) or when the equipment is in constant use.

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

➤ Keep a log of all properly carried out maintenance and service work.

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

Further information A prepared list is provided in chapter 10.9.

10.2.2 Maintenance tasks after commissioning

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

➤ Carry out maintenance tasks according to the following schedule.

<table>
<thead>
<tr>
<th>Component</th>
<th>Task</th>
<th>After the first 50h</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>Oil changing</td>
<td>X</td>
<td>10.3.6</td>
<td>Engine SM</td>
</tr>
<tr>
<td></td>
<td>Change the oil filter.</td>
<td>X</td>
<td>10.3.7</td>
<td>Engine SM</td>
</tr>
<tr>
<td></td>
<td>Check the fuel lines and clamps.</td>
<td>X</td>
<td></td>
<td>Engine SM</td>
</tr>
<tr>
<td>Compressor unit</td>
<td>Change the oil filter.</td>
<td>X</td>
<td>10.4.4</td>
<td></td>
</tr>
<tr>
<td>Chassis</td>
<td>Retighten the wheel nuts/bolts.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tab. 55 Maintenance tasks after commissioning

h = operating hours; Engine SM = engine manufacturer's service manual

10.2.3 Regular maintenance tasks

The following table lists the various maintenance intervals.

<table>
<thead>
<tr>
<th>Maintenance interval</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>~</td>
</tr>
</tbody>
</table>
10 Maintenance

10.2 Maintenance schedules

Maintenance interval | Short description
--- | ---
Every 250 h, at least annually. | A250
Every 500 h, at least annually. | A500
Every 1000 h, at least annually. | A1000
Every 1500 h, at least annually. | A1500
Every 2000 h, at least every 2 years. | A2000
Every 3000 operating hours | A3000
Every 36000 h, at least every 6 years. | A36000

Tab. 56 Maintenance intervals and regular maintenance tasks

The table below lists regular maintenance tasks.

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

10.2.3.1 Maintenance schedule

➤ Carry out maintenance tasks according to the following schedule.

<table>
<thead>
<tr>
<th>Component Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check inlet air filter maintenance indicator</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.2</td>
<td></td>
</tr>
<tr>
<td>Check engine oil level.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.4</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Clean the engine air filter</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.2</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Change the engine oil</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.6</td>
<td></td>
</tr>
<tr>
<td>Change the engine oil filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.7</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Check/adjust the drive belt tension.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.8</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Replace the drive belt.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.8</td>
<td>SW Engine SM</td>
</tr>
<tr>
<td>Change engine air filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.2</td>
<td></td>
</tr>
<tr>
<td>Adjust the valve clearance.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW Engine SM</td>
<td></td>
</tr>
<tr>
<td>Check the engine coolant level.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.1</td>
<td>Engine SM</td>
</tr>
</tbody>
</table>

Engine SM = engine manufacturer's service manual; SW = specialized workshop.
## 10 Maintenance

### 10.2 Maintenance schedules

<table>
<thead>
<tr>
<th>Component Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean the cooler.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Check antifreeze concentration.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.1</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Check radiator hose and hose clips, have replaced if necessary.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW Engine SM</td>
<td></td>
</tr>
<tr>
<td>Change the coolant.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.1</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Fill up the fuel tank.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check fuel lines and hose clamping bands, have replaced if necessary.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td>Have fuel lines and clamps replaced.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td>Clean the fuel filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.3</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Change the fuel prefilter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.3</td>
<td></td>
</tr>
<tr>
<td>Replace the fuel filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.3</td>
<td>Engine SM</td>
</tr>
<tr>
<td>Clean the fuel tank.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean the tank fuel strainer.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the fuel injectors checked.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td>Have the fuel injector pump checked.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td>Check the battery electrolyte level and connections.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.3.9</td>
<td></td>
</tr>
</tbody>
</table>

**Compressor unit**

<table>
<thead>
<tr>
<th>Component Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check inlet air filter maintenance indicator.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.7</td>
<td></td>
</tr>
<tr>
<td>Check cooling oil level.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.1</td>
<td></td>
</tr>
<tr>
<td>Clean the compressor air filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.7</td>
<td></td>
</tr>
<tr>
<td>Clean the oil cooler.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>Have the pressure relief valve(s) checked.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.8</td>
<td></td>
</tr>
<tr>
<td>Check/clean the oil separator tank dirt trap.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.5</td>
<td></td>
</tr>
<tr>
<td>Change engine air filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.7</td>
<td></td>
</tr>
<tr>
<td>Change the compressor cooling oil.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.3</td>
<td></td>
</tr>
</tbody>
</table>

Engine SM = engine manufacturer's service manual; SW = specialized workshop.
## 10 Maintenance

### 10.2 Maintenance schedules

<table>
<thead>
<tr>
<th>Component Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change the compressor oil filter.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.4</td>
<td></td>
</tr>
<tr>
<td>Change the separator cartridge in the oil separator tank.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.4.6</td>
<td></td>
</tr>
</tbody>
</table>

**Chassis/bodywork**

<table>
<thead>
<tr>
<th>Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the tire pressures.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check wheel fixings are tight.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry out chassis maintenance.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.7</td>
</tr>
<tr>
<td>Grease the ball coupling, joints and towbar.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.7.2</td>
</tr>
<tr>
<td>Brake maintenance</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.7.3</td>
</tr>
<tr>
<td>Check wear on the brake linings.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.7.3.1</td>
</tr>
<tr>
<td>Have the wheel brakes adjusted.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
</tr>
<tr>
<td>Check all screw connections, hinges, locks, catches, handles and snap fasteners for wear and secure fixing.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grease the door hinges.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry out rubber sealing strip maintenance.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.6</td>
</tr>
<tr>
<td>Have the lifting point checked.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SW</td>
</tr>
</tbody>
</table>

**Other maintenance tasks**

<table>
<thead>
<tr>
<th>Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>A1000</th>
<th>A1500</th>
<th>A2000</th>
<th>A3000</th>
<th>A36000</th>
<th>See chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check all accessible fittings, pipes and clamps for wear and tightness.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check hoses for leaks and wear.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have hose lines replaced.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>SW</td>
</tr>
<tr>
<td>Check that all electrical connections are tight.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engine SM = engine manufacturer's service manual; SW = specialized workshop.

Tab. 57 Regular maintenance tasks
10.2.3.2 Maintenance schedule for options

➤ Carry out maintenance tasks according to the following schedule.

<table>
<thead>
<tr>
<th>Option Function</th>
<th>Daily</th>
<th>A250</th>
<th>A500</th>
<th>See chapter</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ec - tool lubricator</td>
<td>X</td>
<td></td>
<td></td>
<td>10.8.1</td>
<td></td>
</tr>
<tr>
<td>Check the oil level in the tool lubricator.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option ba – frost protector</td>
<td>X</td>
<td></td>
<td></td>
<td>10.8.2</td>
<td></td>
</tr>
<tr>
<td>Winter operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the level of antifreeze in the frost protector.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option la – spark arrestor</td>
<td></td>
<td></td>
<td></td>
<td>10.8.3</td>
<td></td>
</tr>
<tr>
<td>Clean the spark arrestor.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blow out the spark arrestor with compressed air.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option lb - engine air intake shut-off valve</td>
<td></td>
<td></td>
<td></td>
<td>10.8.4</td>
<td></td>
</tr>
<tr>
<td>Clean and check the engine air intake shut-off valve</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel water trap (option ne)</td>
<td></td>
<td></td>
<td></td>
<td>10.3.3.3</td>
<td></td>
</tr>
<tr>
<td>Check/empty the water trap.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing the filter element.</td>
<td></td>
<td>X</td>
<td></td>
<td>10.3.3.3</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 58 Regular maintenance task options

10.3 Engine

➤ Carry out maintenance according to the schedule in chapter 10.2.3.1.

10.3.1 Radiator maintenance

Material
- Coolant
- Coolant tester
- Receptacle
- Wrench
- Funnel
- Cleaning cloth

Precondition
- The machine is shut down.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
WARNING
Danger of scalding by hot coolant!
Serious injuries can be caused by hot coolant.
➤ Allow the machine to cool down before opening the coolant expansion tank cap.

CAUTION
There is danger of injury from coolant containing antifreeze!
➤ Avoid eye and skin contact with coolant. If the eyes are affected, rinse immediately with running water.
➤ Wear protective glasses and gloves.

CAUTION
Insufficient coolant can damage the engine.
Insufficient coolant will cause the engine to overheat. Overheating can cause serious damage to the engine.
➤ Check the coolant level daily.
➤ Top up the coolant as necessary.

10.3.1.1 Checking coolant level

Check the coolant level of the engine daily before starting.
The level is checked on the coolant expansion tank.

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

![Diagram of coolant level](image)

**Fig. 25 Checking coolant level**

1. Open the right-hand access door.
2. Check the level of coolant in the expansion tank.
   Top up when the coolant level falls below the minimum level B.
3. Close the access door.
Find out and rectify the reason for coolant loss.

10.3.1.2 Checking the antifreeze concentration in the engine coolant

The coolant is a mixture of clean, fresh water and antifreeze/corrosion inhibitor. For reasons of corrosion protection and the need to raise the boiling point, the coolant must remain in the cooling system throughout the year. Maximum frost protection is ensured with an antifreeze concentration of 55% volume as frost protection and heat transfer properties deteriorate beyond this point. The maximum permissible service life of the coolant is 2 years.

**CAUTION**
The engine can be damaged if the antifreeze concentration is insufficient.
Corrosion
Damage to the cooling system
Engine casing fracture
➤ Check coolant.
➤ Protect the coolant against frost.
➤ Top up as necessary.

1. Open the left-hand door.
2. Remove the expansion tank filler cap.
3. Use the coolant tester as instructed by the manufacturer to test the coolant.
   Change the coolant when the concentration of antifreeze is too low.
4. Screw on the filler cap.
5. Close the access door.

10.3.1.3 Mixing coolant

➤ Mix the concentration of antifreeze as shown in the table.

<table>
<thead>
<tr>
<th>Description</th>
<th>Antifreeze concentration [% vol.]</th>
<th>Water percentage [% vol.]</th>
<th>Freezing point [°F]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum required antifreeze concentration</td>
<td>40</td>
<td>60</td>
<td>−13</td>
</tr>
<tr>
<td>Minimum required antifreeze concentration for topping up</td>
<td>50</td>
<td>50</td>
<td>−35</td>
</tr>
<tr>
<td>Maximum permissible antifreeze concentration</td>
<td>55</td>
<td>45</td>
<td>−49</td>
</tr>
</tbody>
</table>

Tab. 59  Coolant frost protection

10.3.1.4 Topping up the coolant

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

1. Open the left-hand door.
2. Remove the expansion tank filler cap.
3. Mix a quantity of coolant according to the table and top up to the mark.
   Top up until the coolant level is just below the maximum mark \( A \)
4. Screw on the filler cap.
5. Start the engine and allow to idle for about 1 minute.
6. Stop the engine.
7. Check the coolant level.
   Top up if the coolant level in the expansion tank has fallen.
8. Close the access door.

10.3.1.5 Changing the coolant

Precondition  The negative cable to the battery is disconnected.

➤ Heed the safety instructions in chapter 3.5.

Draining the coolant

1. Position the receptacle below the radiator draining point.
2. Unscrew the drain plug on the radiator and allow coolant to drain into the receptacle.
3. Replace the plug in the radiator.

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

Refilling with coolant

1. Mix the coolant as shown in the table.
2. Open the left-hand door.
3. Remove the expansion tank filler cap.
4. Pour coolant into the expansion tank until the level is just below the maximum \( A \).
5. Screw on the filler cap.
6. Reconnect the battery.
7. Start the engine and allow to idle for 1-2 minutes.
8. Stop the engine.
9. Check the coolant level (see chapter 10.3.1.1).
   Top up if the level has fallen.
10. Close the access door.

   If the coolant has been changed, check the level of the new coolant frequently at first as it can
   fall due to the escape of air locks in the cooling circuit.

10.3.2 Air filter maintenance

Clean the filter according to the maintenance schedule or if the maintenance indicator shows this to
be necessary.
Renew the air filter element after 2 years or after it has been cleaned 5 times.

Using the engine without an air filter element is not permitted. Do not use an air filter element
with damaged folds or gasket.

Material  Compressed air for blowing out
Spare parts (as required)
Cleaning cloth

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

WARNING
Damaged air filter element.
Wear in the engine from intake of contaminated air.
➤ Do not try to clean the filter element by striking or knocking it.
➤ Do not wash the filter element.
Checking contamination of the air filter:

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

1. Open the right-hand access door.
2. Check the air filter maintenance indicator.
   - If the yellow piston reaches the red zone, clean or renew the filter element.
3. Close the access door.

Cleaning the air filter:

1. Open both doors.
2. Release the retaining clip. Lift off the cap and extract the element.
3. Clean the inside of the housing, the cover and sealing faces carefully with a damp cloth.
4. Cleaning the filter element:
   ▪ Use dry compressed air (≤ 72.5 psig) at an angle to blow dirt from the element from inside to outside.
   ▪ The blast pipe must be long enough to reach right into the element.
   ▪ The tip of the blast pipe should not be allowed to touch the element.
   ▪ Clean sealing faces.
5. Inspect the element carefully for any damage.
   Replace a damaged filter element.
6. Insert the cleaned or new filter element into the filter housing. Make sure it is properly in place and sealed by its gasket.
7. Replace the cap and secure with the clip.

**Resetting the maintenance indicator:**

➤ Press the reset knob on the maintenance indicator a number of times.
The yellow piston within the indicator is reset and the maintenance indicator is ready for use again.
➤ Close the doors.

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

**10.3.3 Fuel system maintenance**

**Material**
- Spares
- Wrench
- Receptacle
- Cleaning cloth

**Precondition**
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.

**DANGER**
Danger of fire from spontaneous ignition of fuel!
Serious injury or death could result from the ignition and combustion of fuel.
➤ Allow no open flames or sparks at the place of use.
➤ Stop the engine.
➤ Wipe up escaped fuel.
➤ Keep fuel away from hot machine parts.
➤ Ensure that the maximum ambient temperature is not exceeded at the place of use.
Fig. 29 Bleeding the fuel system

1. Fuel tank
2. Fuel prefilter
3. Fuel pump
4. Fuel fine filter
5. Bleed screw

➤ Open the right-hand access door.

10.3.3.1 Bleeding the fuel system

Air can enter the fuel system if the fuel tank is empty, after a fuel filter change or when carrying out work on the fuel lines.

Bleed the fuel system if the engine refuses to start despite the fact that the fuel tank is full.

1. Position the fuel receptacle beneath the fuel filter housing [4].
2. Loosen the filter bleed screw [5].
3. Close the access door.
4. Turn the «starter switch» to the "I" position.
   The fuel pump runs and air is bled out of the fuel system.
5. Turn the «starter switch» to the “STOP/off” position after 30 seconds.
6. Open the right-hand access door.
8. Remove the receptacle.
9. Close the access door.

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

10. Open the right-hand access door.
11. Check the fuel prefilter for leaks.
    If a leak is found, tighten the filter element and fittings.
12. Close the access door.

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

10.3.3.2 Fuel filter maintenance

Precondition The negative cable to the battery is disconnected.
Change the fuel prefilter:

1. Place a receptacle beneath the fuel prefilter.
2. Loosen the hose clamps and unscrew the fuel prefilter from between the fuel hoses. Catch any escaping fuel.
3. Install a new fuel prefilter between the hoses, taking care the flow is in the right direction, and secure using hose clamps.
4. Remove the receptacle.

Replace the fuel microfilter:

1. Place a receptacle beneath the fuel microfilter housing.
2. Use a filter wrench to loosen then unscrew the microfilter cartridge. Catch fuel in the receptacle.
3. Carefully clean the filter holder sealing face using lint-free cloth.
4. Lightly coat the filter holder rubber gasket with fuel.
5. Lightly coat the new microfilter cartridge with fuel and screw on clockwise tight by hand.
6. Remove the receptacle.

Further information

The engine service manual gives further information on changing the fuel microfilter.

Making operational

1. Re-connect the battery.
2. Close the access door.

The fuel system must be bled after the fuel filters have been changed.

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

Starting the machine and carrying out a trial run

1. Start the machine and allow it to idle for about 1 minute.
2. Shut down the machine.
3. Open the right-hand access door.
4. Visually check the fuel system for leaks.
5. Tighten all fittings.
6. Close the access door.

10.3.3 Option ne

Maintenance of the fuel prefilter with water trap

A combined water trap and filter element is used to clean the fuel.
10 Maintenance

10.3 Engine

Material
Spares
Wrench
Receptacle
Cleaning cloth

Precondition
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.

Fig. 30 Fuel filter with water trap

1. Filter head
2. Filter element
3. Separator tank
4. Drain plug

Open the right-hand access door.

Check the water trap:
The water trap is semi-transparent so the fuel level can be seen from outside.

- Water, being denser than diesel fuel, sinks to the bottom of the water trap.
- The presence of water can be verified by its different color to the fuel.

A check should be made daily as to whether water and dirt has accumulated.
1. Check the fuel in the water trap.
   The water trap should be emptied when dirty.
2. Close the access door.

Emptying the water trap

Precondition
The negative cable to the battery is disconnected.

1. Place a receptacle under the drain plug [4].
2. Unscrew the drain plug and allow water and dirt to drain out into the receptacle.
3. Catch the liquid mixture in the receptacle.
5. Reconnect the battery.
6. Close the access door.

Dispose of fuel and any materials contaminated with it in accordance with environmental protection regulations.
Changing the filter element

The fuel filter element should be changed

- According to the maintenance schedule.
- If the engine cannot draw in enough fuel and loses power.

The interval between filter element changes is dependent on fuel quality and cleanliness. The fuel tank should be nearly empty when the filter element is changed.

Precondition

The negative cable to the battery is disconnected.

1. Emptying the water trap.
2. Unscrew the filter element 2 from the filter head 1 anti-clockwise.
3. Unscrew the separator bowl 3 from the filter element and clean the bowl.
4. Check the separator bowl gasket 3 for damage and good seating.
   Change the gasket if defective.
5. Smear some clean fuel on the gasket.
7. Check the filter head gasket 1 for damage and good seating.
   Change the gasket if defective.
8. Smear some clean fuel on the gasket.
9. Check that the drain plug 4 under the separator bowl is tight.
   Screw in the plug if it is loose.
10. Fill the filter element 2 with clean fuel.
11. Screw the filter element 2 carefully into the filter head 1.
12. Re-connect the battery.
13. Close the access door.

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

Starting the machine and carrying out a trial run

1. Start the machine and allow it to idle for about 1 minute.
2. Shut down the machine.
3. Open the right-hand access door.
4. Visually check the fuel system for leaks.
5. Tighten all fittings.
6. Close the access door.

10.3.4 Checking the engine oil level

The engine oil is indicated by a dipstick in the oil sump. The oil level should ideally be between the two marks on the dipstick. The oil level should not be allowed to fall below the «minimum level».
Material Cleaning cloth
Precondition The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
Engine cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.

Fig. 31 Checking the engine oil level

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

10.3.5 Engine oil filling and topping up

Material Engine oil
Cleaning cloth
Funnel

Precondition The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
All compressed air consumers are disconnected and the air outlet valves are open.
The negative cable to the battery is disconnected.

Filling with engine oil

See chapter 2.6.4 for engine oil filling volume.
The oil dipstick is marked with the «maximum oil level».
1. Open the left-hand door.
2. Remove the filler cap and fill with fresh oil.
3. Wait 5 minutes then check the oil level.

- It takes a few minutes for oil to reach the sump.
- Top up if the level is too low.
4. Replace the filler cap.
5. Reconnect the battery negative terminal.
6. Close the access door.

**Starting the machine and carrying out a trial run**
1. Start the machine and allow it to idle for at least 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   - Pressure gauge reads 0 psig.
4. Open the left-hand door.
5. Check the oil level after about 5 minutes.
   - Top up if the level is too low.
6. Carry out a visual check for leaks.
7. Close the access door.

### 10.3.6 Changing the engine oil

The engine oil should be changed:
- according to the maintenance schedule,
- according to the degree of contamination of the intake air,
- at least once a year.

- See chapter 2.6.4 for engine oil filling volume.

**Material**
- Engine oil
- Receptacle
- Wrench
- Cleaning cloth

**Precondition**
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
Engine at operating temperature.
All compressed air consumers are disconnected and the air outlet valves are open.
The negative cable to the battery is disconnected.
CAUTION
Danger of burns from hot components and escaping engine oil!
➤ Wear long-sleeved clothing and gloves.

Draining the engine oil

1. Open the right-hand access door.
2. Unscrew the engine oil filler cap.
3. Place the oil receptacle below the drain hole in the floor pan.
4. Unscrew the drain plug.
   Engine oil flows into the receptacle.
5. Clean the drain plug and screw in with a new gasket.
6. Screw the engine oil filler cap back on.
7. Close the access door.

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

Further information
See chapter 10.3.5 for oil filling.
The engine service manual gives instructions on oil changing.
10.3.7 Changing the oil filter

Material Spares
Filter wrench
Cleaning cloth
Receptacle

Precondition
The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
Engine cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.
The negative cable to the battery is disconnected.

CAUTION
Danger of burns from hot components and escaping engine oil!
➤ Wear long-sleeved clothing and gloves.

Fig. 33 Changing the oil filter
1 Engine block
2 Oil filter
3 Direction of rotation to unscrew the filter

1. Open the right-hand access door.
2. Position a capture tray beneath the oil filter.
3. Loosen the filter by turning counter-clockwise and catch any escaping engine oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter's gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the engine oil level.
   Top up if the level is too low.
8. Reconnect the battery negative terminal.
9. Close the access door.

Further information
The engine service manual gives further information on oil filter changing.

Dispose of old oil filters, old oil and materials contaminated with oil according to environmental protection regulations.
10.3.8 Maintaining the drive belt

The life of the drive belts is influenced by belt tension.

- Slack belts can slip and become damaged.
- Over-tight belts stretch and wear quicker. Over-tight belts also place unnecessary stress on bearings and shorten their life.

**Material**

- Wrench
- suitable clamping lever (short, thin rod)

**Spares**

**Precondition**

- The machine is shut down.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
- The negative cable to the battery is disconnected.

**WARNING**

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

- Never check the drive belts unless the engine is at standstill.
- Never run the machine without a belt guard.

- Open both doors.

**Remove the belt guard:**

![Belt guard attachment](10-M0968)

**Fig. 34 Belt guard attachment**

- Engine block
- Hex. head screws
- Belt guard

- Unscrew the securing screws of the belt guard and remove the belt guard.
10.3.8.1 Visual check

Carry out a visual check for damage:

➤ Check the belts thoroughly for cracks, fraying or stretching.
Change the belt immediately if any damage or wear is found.

Check the belt seating:

Fig. 35 Checking the drive belt seating

1. Belt pulley
2. Drive belt
3. Pulley guidance groove

➤ Check the drive belt seating.
If the belt sits too deep in the guidance groove: immediately change the drive belt.
1. Replace the belt guard.
2. Close the doors.

10.3.8.2 Checking belt tension

Check belt tension when they are warm, not hot, to avoid length variations through temperature.
The belt tension can be checked by hand: To check the tension, press the belt inwards with the thumb at the mid-point between pulleys.

Fig. 36 Belt tension checking by hand

A Permissible deflection of the belt
Approximate pressure exerted: 22 kg
Permissible movement: 0.28 – 0.35 mm
1. Check belt tension by hand (see Fig. 36).
   Belt tension too low: Tension
2. Replace the belt guard.
3. Reconnect the battery negative terminal.
4. Close the doors.

10.3.8.3 Changing/tensioning the drive belt

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

Fig. 37 Changing/tensioning the drive belt

1. Loosen the alternator securing screw and clamping screw.
2. Place a suitable lever between the alternator and engine block.
3. Gently push the alternator outwards using the lever until the drive belt is tensioned.
4. Retighten the securing screw and clamping screw.
5. Remove the lever.
6. Check the belt tension (see Fig. 36).
   Belt tension too low: Tension again.

Changing the belts

1. Loosen the alternator securing screw and clamping nut until the drive belt can be taken off the pulleys.
2. Take off the belt.
3. Check the pulleys for dirt and wear.
   Dirty pulley: Clean the pulley.
   Worn pulley: have the pulley replaced.
4. Route the new drive belt over the pulleys without using force.
5. Tension the drive belt.
A belt that has been replaced may not be used again. After running for two to three hours, check the belt tension again.

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

1. Replace the belt guard.
2. Secure the radiator hose.
3. Reconnect the battery negative terminal.
4. Close the doors.

Further information
The operating manual of the engine manufacturer gives further information on removing, changing and tensioning drive belts.

10.3.9 Battery maintenance

➤ Check the charging system if the battery discharges without reason.

10.3.9.1 Safety

WARNING
Danger of acid burns from escaping electrolyte!
➤ Wear appropriate protective clothing including acid-proof rubber gloves.
➤ Always wear eye and face protection.
➤ Do not tip the battery. Electrolyte may run out of the vent holes.
➤ Work with caution.

Observe the following points when working on the battery.

![Safety signs - warning stickers on the battery.](image)

1. Fire, sparks, open flame and smoking are forbidden.
2. Wear eye and face protection. Danger of acid burn.
3. Keep children well away from batteries and electrolyte.
4. Batteries are filled with caustic electrolyte. Observe the battery manufacturer’s instructions.
5. Explosion hazard!
6. Take heed of any safety signs on the battery warning labels.

Further instructions on working with batteries

1. Do not remove battery terminal covers unnecessarily.
2. Do not lay tools on the battery. These can lead to short circuiting, overheating and battery bursting.
3. Take particular care when the battery has been in service for a long time or has just been charged as highly explosive gas is emitted. Ensure adequate ventilation.

10.3.9.2 Battery checking and care

Even so-called 'maintenance-free' batteries need a degree of care to obtain their maximum operational life.
The outside of the battery and the terminals should be cleaned regularly with a soft cloth. This avoids current leaks and minimizes the discharge rate.

<table>
<thead>
<tr>
<th>Material</th>
<th>Terminal grease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distilled water</td>
</tr>
<tr>
<td></td>
<td>Cleaning cloth</td>
</tr>
<tr>
<td></td>
<td>Protective gloves</td>
</tr>
</tbody>
</table>

Precondition

The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.

1. Open the left-hand door.
2. Clean the casing and terminals.
3. Lightly grease the terminals to prevent corrosion.
4. Check that connections are tight and tighten if necessary.
5. Close the access door.

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

If a battery casing leaks fluid, the battery must be replaced immediately.

**WARNING**
Battery destruction!
Topping up with pure acid will increase the electrolyte concentration and can destroy the battery.

➤ Top up only with distilled water.

1. Open the left-hand door.
2. Check the electrolyte level

If the level does not reach the mark -

➤ top up with distilled water.

➤ Close the access door.
Winter operation

The battery is especially stressed during the winter. Only a fraction of the normal starting energy is available at low temperatures.

**CAUTION**
Danger of batteries freezing!
A discharged battery is endangered by frost and could freeze at a temperature of 14 °F.
➤ Check battery charge with a specific gravity tester.
➤ Recharge the battery
➤ Clean the battery terminals and wipe with grease.

1. Check the battery charge weekly.
   Recharge as necessary.
2. If the machine is to be unused for a number of weeks, remove the battery and store in a frost-proof room.

In extreme cases, the use of a heavy-duty cold-start battery and/or an additional booster battery is recommended.

10.3.9.3 Battery removal and installation

**Material**
- Wrench
- Protective gloves

**Precondition**
The machine is shut down.
The machine is standing level.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.

**WARNING**
There is danger of batteries bursting!
A short circuited battery heats up quickly and can burst.
Battery electrolyte will be sprayed out in such an event.
➤ Never short-circuit a battery (e.g. with a hand tool).
➤ Wear safety gloves.

**CAUTION**
Excessive voltage produced by the alternator.
Voltage peaks can destroy the alternator regulator and diodes.
➤ The battery serves as a buffer and must not be disconnected while the engine is running.

1. Open the left-hand door.
2. Disconnect the negative cable first, then the positive cable.
3. Unscrew the battery fixing clamp.
4. Lift the battery carefully out.
5. Close the access door.

Replace in the reverse order.
Battery replacement

If the battery is to be replaced, the new battery should have the same capacity, current rating and shape as the original battery.

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

The old battery is special waste and must be disposed of correctly in accordance with local environment protection regulations.

10.4 Compressor

➤ Carry out maintenance according to the schedule in chapter 10.2.3.1.

10.4.1 Checking cooling oil level

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

Material
- Wrench
- Cleaning cloth

Precondition
- The machine is shut down.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 psig.
- All compressed air consumers are disconnected and the air outlet valves are open.

![Fig. 39 Checking cooling oil level](image)

1. Open the right-hand access door.
2. Slowly unscrew and withdraw the plug from the oil filler port.
3. Check that oil is visible. Top up if no oil is visible.
4. Replace the filler plug.
5. Close the access door.
10.4.2 Cooling oil filling and topping up

Material
- Cooling oil
- Funnel
- Cleaning cloth
- Wrench

Precondition
- The machine is shut down.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
- The negative cable to the battery is disconnected.

Filling with cooling oil

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

CAUTION
The machine could be damaged by unsuitable oil.
➤ Never mix incompatible types of oil.
➤ Never top up with a different type of oil to that already used in the machine.

1. Open the right-hand access door.
2. Slowly unscrew and withdraw the plug from the oil filler port.
3. Top up the cooling oil to the maximum level \[B\] with the help of a funnel.
4. Check the oil level.
5. Check the filler plug gasket for damage.
   Change a damaged gasket immediately.
6. Replace the plug in the filler port.
7. Reconnect the negative battery terminal.
8. Close the access door.

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valves.
6. Open the right-hand access door.
7. Check the oil level after about 5 minutes.
   Top up if necessary.
8. Carry out a visual check for leaks.
9. Close the access door.
10.4.3 Changing the cooling oil

Drain all cooling-oil from:
- Oil separator tank
- Oil cooler
- Oil pipes

Material
- Cooling oil
- Receptacle
- New gasket for the drain plug
- Funnel
- Cleaning cloth
- Wrench

Precondition
- The machine is shut down.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine is at operating temperature.
- All compressed air consumers are disconnected and the air outlet valves are open.
- The negative cable to the battery is disconnected.

**CAUTION**
There is risk of burns from hot components and escaping oil.
➤ Wear long-sleeved clothing and gloves.

Fig. 40 Changing the cooling oil

1 Oil separator tank 2 Oil separator tank drain plug 3 Oil filler plug 4 Oil cooler 5 Oil cooler drain plug

➤ Heed the safety instructions in chapter 3.5.
10.4.3.1 Draining the cooling oil

➤ Open the right-hand access door.

Draining the oil from the separator tank

The oil separator tank is drained by a separate oil drain plug located on the underside of the tank (accessible from underneath through the access hole in the floor pan).

1. Remove the plug 3 from the oil separator tank filling port.
2. Position the receptacle below the separator tank drain plug 2.
3. Unscrew the drain plug 2 and allow the cooling oil to drain into the receptacle.
4. Fit a new gasket on the drain plug and screw it back in again.

Draining the oil from the oil cooler:

Drain the oil cooler by unscrewing the separate drain plug located at the bottom of the oil collection box (accessible from underneath through the access hole in the floor panel).

1. Position the receptacle below the drain plug 5.
2. Unscrew the drain plug 5 and allow the cooling oil to drain into the receptacle.
3. Fit a new gasket on the drain plug and screw it back in again.

Finish off the work steps:

1. Replace the plug 3 in the oil separator tank filling port.
2. Close the access door.

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

Further information

See chapter 10.4.2 for oil filling.

10.4.4 Changing the oil filter

Material

Spares
Filter wrench
Receptacle
Cleaning cloth

Precondition

The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.
The negative cable to the battery is disconnected.

CAUTION
There is risk of burns from hot components and escaping oil.
➤ Wear long-sleeved clothing and gloves.
Changing the oil filter

1. Prepare a receptacle.
2. Open the right-hand access door.
3. Loosen the filter by turning counter-clockwise and catch any escaping oil.
4. Carefully clean sealing surfaces using lint-free cloth.
5. Lightly oil the new filter’s gasket.
6. Turn the oil filter clockwise by hand to tighten.
7. Check the oil level in the oil separator tank.
   Top up if necessary.
8. Reconnect the negative battery terminal.
9. Close the access door.

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

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.
2. Close the outlet valves.
3. Shut down the machine.
4. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
5. Open the outlet valves.
6. Open the right-hand access door.
7. Check the oil level after about 5 minutes.
   Top up if necessary.
8. Carry out a visual check for leaks.
9. Close the access door.
10.4.5 Oil separator tank dirt trap maintenance

**Material**
- Cleaning cloth
- Wrench
- Small screwdriver
- Dirt trap maintenance kit
- Cleaning fluid or spirit

**Precondition**
- The machine is shut down.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
- The negative cable to the battery is disconnected.

![Fig. 42 Oil separator tank dirt trap maintenance](image)

1. Open the right-hand access door.

**Dirt trap maintenance:**
1. Undo the union nut and bend the oil return line (1) to one side.
2. Unscrew the plug (4).
3. Pull off the strainer (7).
4. Use a screwdriver to unscrew the nozzle (6) from the housing.
5. Clean the housing, nozzle and O-ring (5) with cleaning solvent or spirit.
6. Check the nozzle, strainer and O-ring for wear.
7. Refit the nozzle in the housing.
8. Place the strainer on the screw plug.
9. Screw in the plug making sure the O-ring seats properly.
10. Refit the oil scavenge line.

**Making operational**
1. Reconnect the battery negative terminal.
2. Close the access door.
Dispose of old parts and contaminated materials according to environmental regulations.

Starting the machine and carrying out a trial run

1. Start the machine and run for approximately 5 minutes.
2. Shut down the machine.
3. Wait until the machine has automatically vented.
   Pressure gauge reads 0 psig.
4. Open the outlet valves.
5. Open the right-hand access door.
6. Carry out a visual check for leaks.
7. Close the access door.

10.4.6 Changing the oil separator cartridge

The oil separator cartridge cannot be cleaned.
The life of the oil separator cartridge is influenced by:

- Contamination in the air drawn into the compressor
- and adherence to the changing intervals for:
  - Cooling oil
  - Oil filter
  - Air filter

Material Spares
Cleaning cloth
Wrench

Precondition The machine is shut down.
The machine is fully vented, the pressure gauge reads 0 psig.
The machine has cooled down.
All compressed air consumers are disconnected and the air outlet valves are open.
The negative cable to the battery is disconnected.
Changing the oil separator cartridge

1. Unscrew the union nuts \(1\) and \(4\) and carefully put the parts to one side, then pull out the copper pipe \(3\) at item \(2\).

2. Pull out the plug to the solenoid valve \(15\) and withdraw the cable.

3. Unscrew the fitting \(7\) and turn the air pipe \(6\) to one side.

4. Remove the screws \(9\) securing the cover \(8\) to the tank.

5. Carefully lift the cover and put to one side.

6. Take out the old cartridge \(14\) and gaskets \(12\).

7. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.

8. Insert the new oil separator cartridge with gaskets and screw down the cover.

9. Renew the strainer and sealing ring in the dirt trap.
11. Replace and tighten all fittings.
12. Reconnect cables.
13. Check the oil level in the oil separator tank.
   Top up if necessary.

Maintenance of the control valve dirt trap must be carried out whenever the oil separator cartridge is changed.

Further information Information on dirt trap maintenance is given in chapter 10.4.5.

Option ba  Changing the oil separator cartridge

Fig. 44  Changing the oil separator cartridge (option ba)

1. Control air line union nut
2. Dirt trap
3. Oil scavenge pipe
4. Oil scavenge pipe union nut
5. Minimum pressure/check valve
6. Air pipe
7. Pipe fitting
8. Cover
9. Fixing screw
10. O-ring
11. Strainer
12. Gasket
13. Metal clip
14. Oil separator cartridge
15. Solenoid valve
16. Frost protector

1. Unscrew the union nuts 1 and 4 and carefully put the parts to one side, then pull out the copper pipe 3 at item 2.
2. Pull out the plug to the solenoid valve 15 and withdraw the cable.
3. Unscrew the fitting 7 and turn the air pipe 6 to one side.
4. Loosen the frost protector clamp ring 16 and empty the bowl. See chapter 10.8.2 on frost protector maintenance.
5. Remove the screws 9 securing the cover 8 to the tank.
6. Carefully lift the cover and put to one side.

Take particular care with the following components:

- The frost protector 16 connected to the control line,
- The oil scavenge line 3 screwed to the underside of the cover.

7. Take out the old cartridge 14 and gaskets 12.

8. Clean all sealing surfaces, taking care that no foreign bodies (dirt particles) fall into the oil separator tank.

Do not remove the metal clips!

The metal parts of the oil separator tank are electrically coupled. The gaskets 12 have metal clips 13 to make contact with the oil separator tank and the machine frame.

9. Insert the new cartridge and gaskets.

10. Carefully replace the cover on the tank and the frost protector on the cover.

11. Screw down the cover.

12. Re-position the air pipe 5.

13. Replace and tighten all fittings.


15. Check the oil level in the oil separator tank.

   Top up if necessary.

Maintenance of the control valve dirt trap must be carried out whenever the oil separator cartridge is changed.

Further information Information on dirt trap maintenance is given in chapter 10.4.5.

Making operational

1. Reconnect the negative battery terminal.

2. Close the access door.

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

Starting the machine and carrying out a trial run

1. Start the machine and run in idle up to operating temperature.

2. Close the outlet valves.

3. Shut down the machine.

4. Wait until the machine has automatically vented.

   Pressure gauge reads 0 psig.

5. Open the outlet valves.

6. Open the right-hand access door.

7. Check the oil level after about 5 minutes.

   Top up if necessary.

8. Carry out a visual check for leaks.

9. Close the access door.
10.4.7 Air filter maintenance

The air filter must be cleaned at the latest when the corresponding maintenance indicator demands. Replace the air filter after it has been cleaned 5 times according to the maintenance table.

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

Material
- Compressed air for blowing out
- Spare parts (as required)
- Wrench
- Cleaning cloth

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

**WARNING**
Damaged air filter element.
Wear in the engine from intake of contaminated air.
- Do not try to clean the filter element by striking or knocking it.
- Do not wash the filter element.

**Fig. 45 Compressor air filter maintenance**

1. Filter cap
2. Air filter
3. Maintenance indicator
4. Red zone indicator scale
5. Indicator piston
6. Reset knob for the maintenance indicator
7. Screw fitting
Fig. 46 Cleaning the filter element

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

➤ Open the left-hand door.

Check the degree of contamination of the filter element:

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

➤ Check the air filter maintenance indicator.

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

Cleaning the air filter:

1. Unscrew the hex-head screw in the filter cap.
2. Lift up the cap and remove the air filter element with a slight twisting action.
3. Clean the inside of the cap, the element holder and the sealing surfaces with a damp cloth.
4. Cleaning the filter element:
   - Use dry compressed air (≤ 72.5 psig) at an angle to blow dirt from the element from inside to outside.
   - The blast pipe must be long enough to reach right into the element.
   - The tip of the blast pipe should not be allowed to touch the element.
   - Clean sealing faces.
5. Inspect the element carefully for any damage.
   Replace a damaged filter element.
6. Insert the new or cleaned air filter element in the holder. Make sure it is properly in place and sealed by its gasket.
7. Replace the cap and secure with the hex-head screw.

Resetting the maintenance indicator:

➤ Press the reset knob on the maintenance indicator a number of times.

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

➤ Close the access door.

Dispose of old parts and contaminated materials according to environmental regulations.
10.4.8 Checking safety relief valves

➤ Have safety relief valves checked by KAESER Service in accordance with the maintenance schedule.

10.5 Cleaning the cooler and radiator

The compressor oil cooler and engine coolant radiator are combined in a single cooler block. The frequency of cleaning is mainly dependent on local operating conditions. Heavy clogging of the cooler/radiator can cause oil overheating and overheating of the engine. Check the cooler/radiator regularly for clogging. Avoid creating dust eddies. Wear breathing protection if necessary. Do not clean the cooler/radiator with a sharp instrument, otherwise they could be damaged. A severely contaminated cooler/radiator should be cleaned by KAESER Service.

Material

| Compressed air
| Water or steam jet blaster

Precondition

| Machine placed over a washing point equipped with an oil separator.
| The machine is shut down.
| The machine has cooled down.
| The machine is fully vented, the pressure gauge reads 0 psig.
| All compressed air consumers are disconnected and the air outlet valves are open.
| The negative cable to the battery is disconnected.

CAUTION

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

➤ Cover up electrical components such as the control cubicle, alternator, starter and instruments.

➤ Do not direct water or steam jets at sensitive components such as alternator, starter or indicating instruments.
10.6 Maintain rubber sealing strips

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

Care of the rubber sealing strips is especially necessary in winter to prevent the strips from sticking and tearing when the access panels are opened.

Material
- Cleaning cloth
- Silicone or Vaseline

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

1. Open all the doors.
2. Clean the rubber sealing strips with a lint-free cloth and check for cracks, holes and other damage. Have damaged strips changed immediately.
3. Grease the rubber strips.
4. Close the doors.

10.7 Chassis

➤ Carry out maintenance according to the schedule in chapter 10.2.3.1.

10.7.1 Wheel checks

Check the wheels and tires after the first 31 miles and after every wheel change, but at least every six months for tightness, visible damage and tire pressures.

Material
- Torque wrench
- Tire pressure gauge

Precondition
- Machine shut down and secured against restarting.

1. Check that the wheel fixings are tight.
2. Check the tires and wheels for any defect.
   - Replace any damaged or worn tires.
3. Check the tire treads for sufficient depth according to local roadworthy regulations (at least 1.6 mm in most countries).
4. Check tire pressures.

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

10.7.2 Towbar maintenance

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

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

Precondition
- The machine is shut down.
- The machine is disconnected from the towing vehicle and safely parked.
10.7.2.1 Check the towbar

1. Check the towbar for correct function and movement.
2. Clean and oil all sliding and rotating bearings.

Option sa

Check the height setting of the towbar

➢ Check the towbar height adjustment function.

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

➢ If necessary, free the teeth by jerking the towbar horizontally and vertically.

➢ Clean the toothed coupling and smear with water-repellent grease.

Further information

See chapter 6.4.1 for towbar height adjustment.

10.7.2.2 Option sa, sd

Maintaining the parking brake

➢ Lightly lubricate the pins and adjustment joints.
10.7.2.3 Option sa, sd
Overrun device maintenance

Greasing the overrun mechanism:

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

Further information
Lubricating points of the height-adjustable tow mechanism (Option sa) see illustration 48.
Lubricating points of a tow mechanism non-adjustable in height (Option sd) see illustration 49.

Checking the shock absorber:

➤ Strongly press in the towbar against its damping force.
   The towbar must return automatically when pressure is released.
   Have the shock absorber replaced by a specialist workshop if:
   ■ Return of the towbar takes more than 30 seconds
   ■ There is little resistance to pushing in,
   ■ Air has entered the device,
   ■ There is little resistance to pulling out the shock absorber.

10.7.2.4 Ball coupling maintenance

Option sa, sd

Fig. 50 Ball coupling maintenance

1 Lubricating points
2 Greasing points
1. Check the ball coupling for correct function and movement.
2. Clean the ball coupling. Grease or oil the ball socket, pins and moving parts.

10.7.3 Brake maintenance

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

The following points must be observed:
- Carry out the adjustment procedure on all wheel brakes, one after the other.
- During adjustment, turn the wheel in the 'forward' direction only.

Material
- Screwdriver
- Wrench
- Torch
- Lithium enriched multi-purpose grease

Precondition
- The machine is switched off.
- 1. Jack up the machine and lower it onto supports.
- 2. Release the parking brake and pull out the overrun braking mechanism fully.
  The brake cables are not tensioned.
10.7.3.1 Checking wheel brake lining wear

Fig. 52 Checking the brake lining thickness

1. Inspection hole
2. Brake linings

1. Remove the plug from the inspection hole.
2. With the aid of a torch, check the brake lining thickness.
   Have the brake linings replaced by a specialist workshop if they are less than 0.08 in thick.
3. Replace the plug in the inspection hole.

10.7.3.2 Checking brake system settings

1. Checking the free running of the wheels with released brake.
   Adjust the brake if the wheels do not turn freely.
2. Slightly pull the parking brake lever.
3. Turn the wheels in the forward direction.
4. Check that there is the same braking resistance on both wheels.
   Adjust the braking system if the resistance is not the same.
5. Release the parking brake.

10.7.3.3 Brake system adjustment

Carry out the adjustment procedure on all wheel brakes, one after the other.

Never adjust the brakes at the brake rods!

Precondition Wheel and brake drum taken down
Fig. 53 Adjusting the wheel brake
1. Turn the adjusting screw
2. Cable entry
3. Brake shoe
4. Expander lock
5. Brake shoe, complete (brake shoe holder with brake pad)

1. Check the smooth running of expander lock 4 and actuating cable 14.
   When stiff, loosen brake rods 12 at the equalizer 13 (brake equalization).
2. Turn the adjusting screw 1 outside on the brake anchor plate clockwise, until the wheel can be turned only with difficulty or not at all.
3. Loosen the adjustment screw clockwise (approximately ½ turn) until the wheel is running freely.
   A light rubbing sound when the wheels turn is permissible if it does not affect free turning.
   When the brake is adjusted accurately, the pedal travel is 0.16 – 0.24 in approximately.

Controlling the brake equalization:
1. Preset the brake rod 12 in its length (some play at the relay lever 10).
2. Center the brake shoes by repeatedly pulling the parking brake lever 11.
3. Check the position of the equalizer 13 on the brake rod 12.
   The equalizer is in perpendicular position to the brake rods: identical play of the wheel brakes.
   If the equalizer is oblique to the brake rods, correct the position of the equalizer.

**Checking the parking brake:**

➤ Pull parking brake lever strongly upwards and beyond the noticeable "dead point zone".
   The brake is adjusted correctly, if resistance is felt approximately 0.4 – 0.6 in beyond the "dead point".

Adjust the brake if major deviations are noticed.

**Brake rod adjustment:**

1. To loosen the braking rod 12 undo the nut at the equalizer 13.
2. Grease the brake rod threads.
3. Adjust the rod so there is no play or tension.
   Equalizer is perpendicular to the brake rods.
4. Tighten the nut.
5. Tighten all counter nuts.

**Performing a test drive:**

1. Reinstall brake drums and wheels.
2. Remove the jacks from the machine and couple it with the towing vehicle.
3. Test by applying the brake a number of times.
   If necessary, re-adjust brakes.

**10.7.3.4 Option sa, sd**

**Greasing the brake rods**

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

**Material**

- Lithium enriched multi-purpose grease
- Cleaning cloths

**Precondition**

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

➤ Greasing the brake rods

**10.8 Options**

➤ Carry out maintenance according to the schedule in chapter 10.2.3.2.
10.8.1 Option ec
Tool lubricator maintenance

Material
- Tool oil (special lubricant for road breakers),
- Funnel
- Cleaning cloth

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

Fig. 55 Tool lubricator maintenance

- 1 Compressed air inlet
- 2 Oil tank
- 3 Oil volume
- 4 Oil surface
- 5 Tool oil outlet
- 6 Tool lubricator upper part with oil filling port
- 7 Filler plug with dipstick and integrated riser tube
- 8 Metering knob
- 9 O-ring

➤ Open the right-hand access door.

Checking the tool lubricator oil level

Check the oil level daily.
A dip stick is attached to the underside of the oil filler plug with which to measure the oil level.
The oil level should be in the upper third of the dipstick.
1. Slowly unscrew and withdraw the oil filler plug.
2. Wipe off the dipstick with a lint-free cloth or rag and screw the plug fully in again.
3. Unscrew and withdraw the plug once more and read off the oil level on the dipstick.
   Oil level at the upper third of the dip stick: OK.
   Top up if the oil does not reach this level.
4. Close the access door.

**Filling and topping up with tool lubricator oil**
1. Slowly unscrew and withdraw the oil filler plug.
2. Use a funnel to pour in the oil to the maximum level (0.4 – 0.6 in below the top of the tank).
3. Check the oil level again.
4. Check the filler plug O-ring for damage.
   Changing a damaged O-ring.
5. Replace the plug in the filler port.
6. Close the access door.

Further information: See chapter 2.7.1 for suitable oil grade and volume.

### 10.8.2 Option ba

**Frost protector maintenance**

At temperatures under 41°F, the level of antifreeze in the protector must be checked daily before starting the compressor.

**Material**
- Antifreeze (Wabcothyl)
- Cleaning cloth

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

**DANGER**
Danger of fire or explosion caused by the spontaneous ignition of antifreeze.
➤ Never top up antifreeze unless the machine is stopped and cooled down.

**WARNING**
Danger of injury from compressed air!
The frost protector is under pressure when operating; serious injury can result from loosening or opening components under pressure.
➤ Decompress the frost protector
10.8 Options

Option ba

Fig. 56 Filling the frost protector

1. Open the right-hand access door.
2. Open the shut-off valve (position I) and wait about 30 seconds until the frost protector is fully depressurized.
3. Unscrew the clamp ring and remove the bowl.
4. Fill the bowl \( \frac{3}{4} \) full with antifreeze.
5. Screw the bowl carefully back into place.
6. Close the shut-off valve (position 0).
7. Close the access door.

10.8.3 Option la

Spark arrestor cleaning

The spark arrestor must be cleaned of any soot residue every two months to prevent the emission of glowing particles from the exhaust silencer.

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

Precondition
- The machine is shut down.
- The machine is standing level.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All compressed air consumers are disconnected and the air outlet valves are open.
DANGER
Danger of suffocation from toxic exhaust fumes. Exhaust fumes from internal combustion engines contain carbon monoxide, which is odorless and deadly.
➤ Use the machine only outdoors!
➤ Do not inhale exhaust fumes.

CAUTION
Danger of burns from hot components and sparks.
➤ Wear long-sleeved clothing and gloves.
➤ Wear eye protection.

Fig. 57 Spark arrestor cleaning

1. Unscrew the soot drain plug.
2. Push one end of the hose over the drain port and place the other end in the receptacle.
3. Start the compressor engine.
4. Partially cover the silencer end pipe to increase pressure in the exhaust system.

Result Soot will drain through the hose into the receptacle.
1. Shut down the engine.
2. Remove the hose and replace the plug.

It is recommended to blow out the spark arrestor with compressed air once a year.

Dispose of soot according to environmental protection regulations.
10.8.4 Option lb  
Engine air intake shut-off valve maintenance

Material  
- Compressed air for blowing out  
- Cleaning fluid or spirit  
- Cleaning cloth  
- Screwdriver

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

WARNING  
If the engine air intake shut-off valve does not close when flammable gas is drawn into the engine:  
Destruction of the engine and explosion or fire are possible.  
➤ Do not move the valve adjusting screw.  
➤ Have the valve set by a specialist workshop or KAESER Service.

![Diagram of engine air intake shut-off valve maintenance](image)

**Fig. 58** Engine air intake shut-off valve maintenance  
1. Engine air intake  
2. Engine air filter  
3. Air intake hose (engine side)  
4. Air intake hose (filter side)  
5. Engine air intake shut-off valve  
6. Hose clamp

➤ Open both doors.

**Engine air intake shut-off valve cleaning**

WARNING  
The engine air intake shut-off valve does not function.  
Destruction of the engine and explosion or fire are possible.  
➤ Do not grease the valve, as this may cause a build up of dust and valve sticking.

1. Loosen the hose clamp on the filter side of the valve and turn the air intake hose to one side.  
2. Check if the interior of the shut-off valve is clean.  
   Blow out any dirt with compressed air.
If necessary, clean the valve with cleaning fluid or spirit and allow to dry. Refer to a specialized workshop or KAESER Service if dirt cannot be removed.

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

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

Result Have the valve changed if it is heavily worn or malfunctions in any way.

1. Reposition the air intake hose and tighten the clamp.
2. Close the doors.
3. Start the machine and switch to LOAD.
   If the engine stops on switching to LOAD, have the valve adjusted by a specialist workshop or KAESER Service.
## 10.9 Document maintenance and service work.

Machine number:

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

<table>
<thead>
<tr>
<th>Date</th>
<th>Maintenance task carried out</th>
<th>Operating hours</th>
<th>Signature</th>
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</tbody>
</table>

Tab. 60 Logged maintenance tasks
11 Spares, Operating Materials, Service

11.1 Note the nameplate

The nameplate contains all information to identify your machine. This information is essential to us in order to provide you with optimal service.

➤ Please give the information from the nameplate with every inquiry and order for spares.

11.2 Ordering consumable parts and operating fluids/materials

KAESER consumable parts and operating fluids/materials are all genuine KAESER parts. They are selected for use in KAESER machines.

WARNING

There is risk of personal injury or damage to the machine resulting from the use of unsuitable spare parts or operating materials.

Unsuitable or poor quality consumable parts and operating fluids/materials may damage the machine or impair its proper function.

In the event of damage, personal injury may result.

➤ Use only genuine KAESER parts and operating fluids/materials.

➤ Have an authorized KAESER Service Technician carry out regular maintenance.

### Compressor

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<th>Number</th>
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<td>1260</td>
</tr>
<tr>
<td>Oil filter</td>
<td>1</td>
<td>1210</td>
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<tr>
<td>Oil separator cartridge set</td>
<td>1</td>
<td>1450</td>
</tr>
<tr>
<td>Cooling oil</td>
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</table>

Tab. 61 Compressor consumables

### Kubota engine parts

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<thead>
<tr>
<th>Name</th>
<th>Quantity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air filter element</td>
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<td>1280</td>
</tr>
<tr>
<td>Fuel prefilter</td>
<td>1</td>
<td>1910</td>
</tr>
<tr>
<td>Fuel filter cartridge</td>
<td>1</td>
<td>1920</td>
</tr>
<tr>
<td>Fuel filter element with water trap (option ne)</td>
<td>1</td>
<td>1980</td>
</tr>
<tr>
<td>Oil filter</td>
<td>1</td>
<td>1905</td>
</tr>
<tr>
<td>Oil drain plug sealing ring</td>
<td>1</td>
<td>4496</td>
</tr>
<tr>
<td>Injector nozzle</td>
<td>1</td>
<td>4475</td>
</tr>
<tr>
<td>Injector nozzle gasket</td>
<td>1</td>
<td>4476</td>
</tr>
<tr>
<td>V-belts</td>
<td>1</td>
<td>4470</td>
</tr>
<tr>
<td>Glow plug</td>
<td>1</td>
<td>4466</td>
</tr>
</tbody>
</table>
### 11.3 KAESER AIR SERVICE

KAESER AIR SERVICE offers:
- Authorized service technicians with KAESER factory training.
- Increased operational reliability ensured by preventive maintenance.
- Energy savings achieved by avoidance of pressure losses.
- The security of genuine KAESER spare parts.
- Increased legal certainty as all regulations are kept to.

➤ Why not sign a KAESER AIR SERVICE maintenance agreement.
  The advantages:
  Lower costs and higher compressed air availability.

### 11.4 Service Addresses

Addresses of KAESER representatives are given at the end of this manual.

### 11.5 Spares for service and repair

With the help of this parts list you can plan your material requirement according to operating conditions and order the spare parts you need.

**WARNING**

Personal injury or machine damage due to incorrect working on the machine!

Incorrect inspection, service or repair can damage the machine or severely impair its function. Personal injury may result from machine damage.

➤ Inspections, preventive maintenance or repair tasks not described in this manual must not be carried out by unqualified personnel.

➤ Have further tasks, not described in this service manual, carried out by specialist workshops or KAESER Service.
**Legend**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1255</td>
<td>Compressor air filter housing</td>
<td></td>
</tr>
<tr>
<td>1260</td>
<td>Compressor air filter element</td>
<td></td>
</tr>
<tr>
<td>1280</td>
<td>Engine air filter element</td>
<td></td>
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<tr>
<td>1290</td>
<td>Engine air filter, complete</td>
<td></td>
</tr>
<tr>
<td>1310</td>
<td>Compressor air filter holder</td>
<td></td>
</tr>
<tr>
<td>1320</td>
<td>Engine air filter holder</td>
<td></td>
</tr>
<tr>
<td>1360</td>
<td>Engine air intake hose</td>
<td></td>
</tr>
<tr>
<td>1385</td>
<td>Engine stop valve</td>
<td></td>
</tr>
<tr>
<td>1395</td>
<td>Hose clamp</td>
<td></td>
</tr>
<tr>
<td>3050</td>
<td>Air filter maint. indicator</td>
<td></td>
</tr>
<tr>
<td>3051</td>
<td>Maintenance indicator fpr engine air filter</td>
<td></td>
</tr>
<tr>
<td>4600</td>
<td>Engine fan</td>
<td></td>
</tr>
<tr>
<td>4610</td>
<td>Fan coupling</td>
<td></td>
</tr>
<tr>
<td>4660</td>
<td>Fan guard</td>
<td></td>
</tr>
<tr>
<td>9800</td>
<td>Exhaust silencer</td>
<td></td>
</tr>
<tr>
<td>9810</td>
<td>Engine exhaust pipe</td>
<td></td>
</tr>
<tr>
<td>9840</td>
<td>Exhaust pipe clamp</td>
<td></td>
</tr>
<tr>
<td>9845</td>
<td>Safety guard</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
### Legend

**Oil circuit/Comprsd. air outlet**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>0321</td>
<td>Gasket set oil/air</td>
<td></td>
</tr>
<tr>
<td>1210</td>
<td>Compressor oil filter element</td>
<td></td>
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<tr>
<td>2020</td>
<td>Minimum pressure/check valve</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>Maintenance kit, MP/CV</td>
<td></td>
</tr>
<tr>
<td>2024</td>
<td>Overhaul kit, MP/CV</td>
<td></td>
</tr>
<tr>
<td>2060</td>
<td>Combination valve</td>
<td></td>
</tr>
<tr>
<td>2062</td>
<td>Maintenance kit, combi. valve</td>
<td></td>
</tr>
<tr>
<td>2064</td>
<td>Overhaul kit, combination valve</td>
<td></td>
</tr>
<tr>
<td>5050</td>
<td>Cooler</td>
<td></td>
</tr>
<tr>
<td>5162</td>
<td>Compressor oil cooler drain</td>
<td></td>
</tr>
<tr>
<td>6610</td>
<td>Oil scavenge line</td>
<td></td>
</tr>
<tr>
<td>6620</td>
<td>Dirt trap for oil scavenge tube</td>
<td></td>
</tr>
<tr>
<td>9416</td>
<td>Dirt trap maintenance kit</td>
<td></td>
</tr>
<tr>
<td>7140</td>
<td>Hose</td>
<td></td>
</tr>
<tr>
<td>9250</td>
<td>Pipe clamp element</td>
<td></td>
</tr>
<tr>
<td>9251</td>
<td>Pipe connection seal</td>
<td></td>
</tr>
<tr>
<td>9252</td>
<td>Pipe adapter</td>
<td></td>
</tr>
<tr>
<td>9259</td>
<td>Pipe clamp element</td>
<td></td>
</tr>
<tr>
<td>9260</td>
<td>Pipe connection seal</td>
<td></td>
</tr>
<tr>
<td>9860</td>
<td>Compressed air distributor</td>
<td></td>
</tr>
<tr>
<td>9872</td>
<td>Claw coupling</td>
<td></td>
</tr>
<tr>
<td>9880</td>
<td>Large outlet valve</td>
<td>x</td>
</tr>
<tr>
<td>9885</td>
<td>Hose reel</td>
<td>x</td>
</tr>
<tr>
<td>9886</td>
<td>Consumer feed lines</td>
<td>x</td>
</tr>
<tr>
<td>9887</td>
<td>Hose reel ball valve</td>
<td>x</td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
11 Spares, Operating Materials, Service
11.5 Spares for service and repair
### Legend
| KAESER |  
|--------|---
| SEL-1673_01E |  

### Electric/Instrument

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>3220</td>
<td>Battery</td>
<td></td>
</tr>
<tr>
<td>3225</td>
<td>Battery cable</td>
<td></td>
</tr>
<tr>
<td>3230</td>
<td>Battery bracket</td>
<td></td>
</tr>
<tr>
<td>3240</td>
<td>Battery isolating switch</td>
<td>X</td>
</tr>
<tr>
<td>3250</td>
<td>Mains supply cable set</td>
<td></td>
</tr>
<tr>
<td>3910</td>
<td>Instrument panel</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
### Legend

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3170</td>
<td>Starting relay</td>
</tr>
<tr>
<td>3180</td>
<td>Shutdown relay</td>
</tr>
<tr>
<td>3190</td>
<td>Power relay socket</td>
</tr>
<tr>
<td>3610</td>
<td>Control fuse set</td>
</tr>
<tr>
<td>3615</td>
<td>Fuse socket (set)</td>
</tr>
<tr>
<td>3620</td>
<td>Control relay</td>
</tr>
<tr>
<td>3621</td>
<td>Glow plug relay</td>
</tr>
<tr>
<td>3625</td>
<td>Control relay socket</td>
</tr>
<tr>
<td>3626</td>
<td>Socket for glow plug relay</td>
</tr>
<tr>
<td>3940</td>
<td>Charging/fault indicator lamp</td>
</tr>
<tr>
<td>3950</td>
<td>Main switch</td>
</tr>
<tr>
<td>3955</td>
<td>Starter switch</td>
</tr>
<tr>
<td>3960</td>
<td>Changeover switch full load mode</td>
</tr>
<tr>
<td>3965</td>
<td>Temperature gauge</td>
</tr>
<tr>
<td>3980</td>
<td>Pressure gauge, instrument panel</td>
</tr>
<tr>
<td>3985</td>
<td>Operating hours counter</td>
</tr>
<tr>
<td>3996</td>
<td>Instrument lamp set</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>Engine oil filter element</td>
<td></td>
</tr>
<tr>
<td>4460</td>
<td>Alternator</td>
<td></td>
</tr>
<tr>
<td>4461</td>
<td>Alternator regulator</td>
<td></td>
</tr>
<tr>
<td>4465</td>
<td>Starter</td>
<td></td>
</tr>
<tr>
<td>4466</td>
<td>Glow plug</td>
<td></td>
</tr>
<tr>
<td>4470</td>
<td>Engine V-belt</td>
<td></td>
</tr>
<tr>
<td>4475</td>
<td>Injector nozzle</td>
<td></td>
</tr>
<tr>
<td>4476</td>
<td>Injector nozzle seal</td>
<td></td>
</tr>
<tr>
<td>4481</td>
<td>Oil pressure switch</td>
<td></td>
</tr>
<tr>
<td>4482</td>
<td>Coolant thermostat</td>
<td></td>
</tr>
<tr>
<td>4483</td>
<td>Temperature switch</td>
<td></td>
</tr>
<tr>
<td>4486</td>
<td>Fuel cut-off</td>
<td></td>
</tr>
<tr>
<td>4495</td>
<td>Engine oil drain</td>
<td></td>
</tr>
<tr>
<td>4496</td>
<td>Oil drain seal</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>1600</td>
<td>Sigma Fluid *)</td>
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<tr>
<td>1925</td>
<td>Engine oil *</td>
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<tr>
<td>2040</td>
<td>Inlet valve</td>
<td></td>
</tr>
<tr>
<td>2042</td>
<td>Maintenance kit, inlet valve</td>
<td></td>
</tr>
<tr>
<td>2044</td>
<td>Overhaul kit, inlet valve</td>
<td></td>
</tr>
<tr>
<td>4050</td>
<td>SIGMA exchange airend</td>
<td></td>
</tr>
<tr>
<td>4400</td>
<td>Drive coupling</td>
<td></td>
</tr>
<tr>
<td>4420</td>
<td>Belt guard</td>
<td></td>
</tr>
<tr>
<td>4430</td>
<td>Mounting bracket for airend base</td>
<td></td>
</tr>
<tr>
<td>4450</td>
<td>Engine</td>
<td></td>
</tr>
<tr>
<td>4760</td>
<td>Engine preheater</td>
<td>X</td>
</tr>
<tr>
<td>4950</td>
<td>Speed adjusting cylinder</td>
<td></td>
</tr>
<tr>
<td>4951</td>
<td>Swivel joint</td>
<td></td>
</tr>
<tr>
<td>4990</td>
<td>Compressor mountings</td>
<td></td>
</tr>
<tr>
<td>4991</td>
<td>Engine mountings</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

*) see cooling oil/engine oil recommendations
### Legend

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>5190</td>
<td>Expansion tank</td>
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<tr>
<td>5193</td>
<td>Expansion tank pipes</td>
<td></td>
</tr>
<tr>
<td>5195</td>
<td>Engine antifreeze *)</td>
<td></td>
</tr>
<tr>
<td>5620</td>
<td>Coolant hose</td>
<td></td>
</tr>
<tr>
<td>5621</td>
<td>Coolant hose</td>
<td></td>
</tr>
<tr>
<td>5630</td>
<td>Hose clamp</td>
<td></td>
</tr>
</tbody>
</table>

### KAESER

- Engine cooling
- SEL-1677_01E

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Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

*) see antifreeze recommendations
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1450</td>
<td>Oil separator cartridge</td>
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</tr>
<tr>
<td>2100</td>
<td>Venting and control valve</td>
<td></td>
</tr>
<tr>
<td>2102</td>
<td>Maintenance kit, VC valve</td>
<td></td>
</tr>
<tr>
<td>2104</td>
<td>Overhaul kit, VC valve</td>
<td></td>
</tr>
<tr>
<td>2120</td>
<td>Venting valve</td>
<td></td>
</tr>
<tr>
<td>2122</td>
<td>Maintenance kit, venting valve</td>
<td></td>
</tr>
<tr>
<td>2280</td>
<td>Proportional controller</td>
<td></td>
</tr>
<tr>
<td>2290</td>
<td>Directional control valve</td>
<td></td>
</tr>
<tr>
<td>2292</td>
<td>Directional valve maint. kit</td>
<td></td>
</tr>
<tr>
<td>6050</td>
<td>Oil separator tank</td>
<td></td>
</tr>
<tr>
<td>6150</td>
<td>Pressure relief valve for oil separator tank</td>
<td></td>
</tr>
<tr>
<td>6710</td>
<td>Venting silencer</td>
<td></td>
</tr>
<tr>
<td>6721</td>
<td>Oil filler seal</td>
<td></td>
</tr>
<tr>
<td>7195</td>
<td>Hose</td>
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<tr>
<td>7350</td>
<td>Control line kit</td>
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</tbody>
</table>

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Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
11 Spares, Operating Materials, Service

11.5 Spares for service and repair

SERVICE MANUAL Screw Compressor

M57 No.: 9 5897 03 USE

SEG-1725_01
## Legend

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
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<tbody>
<tr>
<td>1910</td>
<td>Fuel prefilter</td>
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</tr>
<tr>
<td>1920</td>
<td>Fuel fine filter element</td>
<td></td>
</tr>
<tr>
<td>4485</td>
<td>Fuel pump</td>
<td></td>
</tr>
<tr>
<td>7900</td>
<td>Fuel tank</td>
<td></td>
</tr>
<tr>
<td>7915</td>
<td>Fuel tank cap</td>
<td></td>
</tr>
<tr>
<td>7920</td>
<td>Fuel strainer</td>
<td></td>
</tr>
<tr>
<td>7925</td>
<td>Tank support</td>
<td></td>
</tr>
<tr>
<td>7930</td>
<td>Tank fixing</td>
<td></td>
</tr>
<tr>
<td>7950</td>
<td>Fuel suction pipe</td>
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</tr>
<tr>
<td>7951</td>
<td>Connection gasket</td>
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<tr>
<td>7960</td>
<td>Fuel lines</td>
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<tr>
<td>7975</td>
<td>Fuel return line</td>
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</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
### Legend

<table>
<thead>
<tr>
<th>Item</th>
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<th>Option</th>
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</thead>
<tbody>
<tr>
<td>8400</td>
<td>Lower bodywork</td>
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</tr>
<tr>
<td>8425</td>
<td>Canopy front</td>
<td></td>
</tr>
<tr>
<td>8430</td>
<td>Canopy rear</td>
<td></td>
</tr>
<tr>
<td>8440</td>
<td>Canopy, upper-centre</td>
<td></td>
</tr>
<tr>
<td>8450</td>
<td>Left-hand wing door</td>
<td></td>
</tr>
<tr>
<td>8460</td>
<td>Right-hand wing door</td>
<td></td>
</tr>
<tr>
<td>8466</td>
<td>Left door handle</td>
<td></td>
</tr>
<tr>
<td>8467</td>
<td>Right door handle</td>
<td></td>
</tr>
<tr>
<td>8470</td>
<td>Exhaust air grill</td>
<td></td>
</tr>
<tr>
<td>8505</td>
<td>Hinge/closure set</td>
<td></td>
</tr>
<tr>
<td>8555</td>
<td>Sound damping louver kit</td>
<td></td>
</tr>
<tr>
<td>8600</td>
<td>Sealing profile</td>
<td></td>
</tr>
<tr>
<td>8610</td>
<td>Edge protecting strip</td>
<td></td>
</tr>
<tr>
<td>8620</td>
<td>Gas strut</td>
<td></td>
</tr>
<tr>
<td>8621</td>
<td>Rubber pad</td>
<td></td>
</tr>
<tr>
<td>8630</td>
<td>Cover for lifting eye</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
11 Spares, Operating Materials, Service

11.5 Spares for service and repair
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>8815</td>
<td>Lifting eye</td>
<td></td>
</tr>
<tr>
<td>8820</td>
<td>Wheel</td>
<td></td>
</tr>
<tr>
<td>8821</td>
<td>Chock</td>
<td></td>
</tr>
<tr>
<td>8830</td>
<td>Left mudguard</td>
<td></td>
</tr>
<tr>
<td>8831</td>
<td>Right mudguard</td>
<td></td>
</tr>
<tr>
<td>8843</td>
<td>Pedestrian protection, left</td>
<td>X</td>
</tr>
<tr>
<td>8844</td>
<td>Pedestrian protection, right</td>
<td>X</td>
</tr>
<tr>
<td>8851</td>
<td>Left light cluster holder</td>
<td></td>
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<tr>
<td>8852</td>
<td>Right light cluster holder</td>
<td></td>
</tr>
<tr>
<td>8860</td>
<td>Lighting set</td>
<td></td>
</tr>
<tr>
<td>8881</td>
<td>Reflectors (set)</td>
<td></td>
</tr>
<tr>
<td>8890</td>
<td>Connector cable</td>
<td></td>
</tr>
<tr>
<td>8891</td>
<td>Bracket for 12V male pin socket</td>
<td></td>
</tr>
</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine’s service manual.
11 Spares, Operating Materials, Service
11.5 Spares for service and repair
# 11 Spares, Operating Materials, Service

## 11.5 Spares for service and repair

### Legend

<table>
<thead>
<tr>
<th>Chassis</th>
<th>KAESER</th>
</tr>
</thead>
<tbody>
<tr>
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### Item | Description | Option |
<table>
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<tbody>
<tr>
<td>8815</td>
<td>Lifting eye</td>
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<tr>
<td>8820</td>
<td>Wheel</td>
<td></td>
</tr>
<tr>
<td>8821</td>
<td>Chock</td>
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</tr>
<tr>
<td>8830</td>
<td>Left mudguard</td>
<td></td>
</tr>
<tr>
<td>8831</td>
<td>Right mudguard</td>
<td></td>
</tr>
<tr>
<td>8843</td>
<td>Pedestrian protection, left</td>
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</tr>
<tr>
<td>8844</td>
<td>Pedestrian protection, right</td>
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<tr>
<td>8851</td>
<td>Left light cluster holder</td>
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</tr>
<tr>
<td>8852</td>
<td>Right light cluster holder</td>
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<tr>
<td>8860</td>
<td>Lighting set</td>
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<tr>
<td>8881</td>
<td>Reflectors (set)</td>
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</tbody>
</table>

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

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11 Spares, Operating Materials, Service

11.5 Spares for service and repair
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<td>8852</td>
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<td>8880</td>
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11 Spares, Operating Materials, Service

11.5 Spares for service and repair
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Chassis (stationary base-frame versions)

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<thead>
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<tr>
<td>8815</td>
<td>Lifting eye</td>
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11.5 Spares for service and repair

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<thead>
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<td>Machine mounts for the skid</td>
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</tr>
<tr>
<td>8815</td>
<td>Lifting eye</td>
<td></td>
</tr>
</tbody>
</table>

Legend

| Chassis (stationary skid versions) | SEL-1691_01E |

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11 Spares, Operating Materials, Service
11.5 Spares for service and repair

SERVICE MANUAL Screw Compressor

No. 95897 03 USE

SEG-1678_01
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>8910</td>
<td>Chassis, complete</td>
<td></td>
</tr>
<tr>
<td>8920</td>
<td>Drawbar, complete</td>
<td></td>
</tr>
<tr>
<td>8960</td>
<td>Complete axle</td>
<td></td>
</tr>
<tr>
<td>8988</td>
<td>Jockey wheel, complete</td>
<td></td>
</tr>
<tr>
<td>8990</td>
<td>Jockey wheel</td>
<td></td>
</tr>
<tr>
<td>8992</td>
<td>Ball coupling for car, ø 50 (DIN)</td>
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<tr>
<td>8994</td>
<td>Towing eye for HGV, ø 40 (DIN)</td>
<td></td>
</tr>
<tr>
<td>8995</td>
<td>Towing eye for HGV, ø 45</td>
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<tr>
<td>8996</td>
<td>Towing eye for HGV, ø 68 x 25</td>
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</tr>
<tr>
<td>8997</td>
<td>Towing eye for HGV, ø 76</td>
<td></td>
</tr>
<tr>
<td>8998</td>
<td>Towing eye for HGV, ø 68 x 42</td>
<td></td>
</tr>
</tbody>
</table>

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11 Spares, Operating Materials, Service

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<td>Towbar</td>
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</tr>
<tr>
<td>8922</td>
<td>Chassis mounting block</td>
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<tr>
<td>8923</td>
<td>Height-adjustment bar</td>
<td></td>
</tr>
<tr>
<td>8930</td>
<td>Overrun braking mechanism</td>
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</tr>
<tr>
<td>8939</td>
<td>Brake transmission lever</td>
<td></td>
</tr>
<tr>
<td>8940</td>
<td>Parking brake lever</td>
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</tr>
<tr>
<td>8941</td>
<td>Parking brake gas spring</td>
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<td>Parking brake cable</td>
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<td>8947</td>
<td>Locking toggle, upper</td>
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<td>8949</td>
<td>Locking toggle, lower</td>
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<tr>
<td>8950</td>
<td>Brake transfer cable</td>
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</tr>
<tr>
<td>8955</td>
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<td></td>
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<tr>
<td>8957</td>
<td>Breakaway cable</td>
<td></td>
</tr>
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<tr>
<th>Item</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>8931</td>
<td>Grease nipple for overrun head</td>
<td></td>
</tr>
<tr>
<td>8932</td>
<td>Overrun head cover</td>
<td></td>
</tr>
<tr>
<td>8935</td>
<td>Towbar</td>
<td></td>
</tr>
<tr>
<td>8936</td>
<td>Towbar guide bush</td>
<td></td>
</tr>
<tr>
<td>8937</td>
<td>Towbar shock absorber</td>
<td></td>
</tr>
<tr>
<td>8938</td>
<td>Towbar protective sleeve</td>
<td></td>
</tr>
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11 Spares, Operating Materials, Service

11.5 Spares for service and repair
### Legend

<table>
<thead>
<tr>
<th>KAESER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle, complete, braked</td>
</tr>
<tr>
<td>SEL-1615_01E</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</tr>
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<tbody>
<tr>
<td>8963</td>
<td>Wheel hub</td>
<td></td>
</tr>
<tr>
<td>8965</td>
<td>Brake shoe set</td>
<td></td>
</tr>
<tr>
<td>8966</td>
<td>Brake shoe spring set</td>
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<tr>
<td>8967</td>
<td>Wheel brake cable</td>
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</tr>
<tr>
<td>8968</td>
<td>Brake cable hook-in pin</td>
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</tr>
<tr>
<td>8971</td>
<td>Brake adjusting set</td>
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</tr>
<tr>
<td>8972</td>
<td>Sealing cap for the brake backplate</td>
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</tr>
<tr>
<td>8973</td>
<td>Grease cap for the brake drum</td>
<td></td>
</tr>
<tr>
<td>8974</td>
<td>Flanged locknut for the axle bearing</td>
<td></td>
</tr>
<tr>
<td>8975</td>
<td>Brake actuating kit</td>
<td></td>
</tr>
<tr>
<td>8976</td>
<td>Protective shell for brake cable</td>
<td></td>
</tr>
<tr>
<td>8980</td>
<td>Wheel bolt</td>
<td></td>
</tr>
<tr>
<td>8982</td>
<td>Wheel bearing set</td>
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11 Spares, Operating Materials, Service

11.5 Spares for service and repair

SERVICE MANUAL    Screw Compressor
M57

No.: 9_5897 03 USE
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# Spares, Operating Materials, Service

## 11.5 Spares for service and repair

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<tr>
<td>8989</td>
<td>Prop</td>
<td></td>
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<tr>
<td>8993</td>
<td>Ball coupling for car, ø 2&quot;</td>
<td></td>
</tr>
</tbody>
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11 Spares, Operating Materials, Service

11.5 Spares for service and repair
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<table>
<thead>
<tr>
<th>Legend</th>
<th>KAESER</th>
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<tr>
<td>Drawbar cpl. US</td>
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<td></td>
</tr>
<tr>
<td>8979</td>
<td>Wheelbolts</td>
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</tr>
<tr>
<td>8981</td>
<td>Wheel nut</td>
<td></td>
</tr>
<tr>
<td>8982</td>
<td>Wheel bearing set</td>
<td></td>
</tr>
</tbody>
</table>

Legend

Axle, complete, non-braked

SEL-1609_01E

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<th>Item</th>
<th>Description</th>
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<tr>
<td>9210</td>
<td>Tool lubricator</td>
<td></td>
</tr>
<tr>
<td>9212</td>
<td>Tool lubricator shut-off valve</td>
<td></td>
</tr>
<tr>
<td>9220</td>
<td>Tool oil *)</td>
<td></td>
</tr>
<tr>
<td>9240</td>
<td>Control line kit for tool lubricator</td>
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</tr>
</tbody>
</table>

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*) see lubricating recommendations for road breakers
### 11.5 Spares for service and repair

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<tr>
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</thead>
<tbody>
<tr>
<td>9310</td>
<td>Frost protector</td>
</tr>
<tr>
<td>9312</td>
<td>Shut-off valve</td>
</tr>
<tr>
<td>9320</td>
<td>Frost protector antifreeze *)</td>
</tr>
<tr>
<td>9330</td>
<td>Frost protector check valve</td>
</tr>
<tr>
<td>2412</td>
<td>Check valve overhaul kit</td>
</tr>
<tr>
<td>9340</td>
<td>Frost protector control lines</td>
</tr>
<tr>
<td>9350</td>
<td>Antifreeze drain set</td>
</tr>
</tbody>
</table>

**Option**

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual.

*) see antifreeze recomendations
12 Decommissioning, Storage and Transport

12.1 De-commissioning

De-commissioning is necessary, for example, under the following circumstances:
- The machine is temporarily not needed
- The machine will not be needed for a considerable time.
- The machine is to be scrapped.

Precondition
The machine is shut down.
Machine dry and cool.

1. Carry out the following de-commissioning procedures.
2. Place a notice on the instrument panel describing the de-commissioning procedures carried out.

12.1.1 Temporary decommissioning

Decommissioning for about 4 months.

Material
- Plastic foil
- Moisture-resistant adhesive tape

1. Disconnect the battery (the minus terminal first and then the plus terminal).
2. Close off the following openings with plastic foil and moisture-resistant adhesive tape.
   - Engine air inlet
   - Compressor air inlet
   - Exhaust
3. Hang the following notice on the instrument panel informing of the decommissioning measures taken.

Attention!
1. The machine is temporarily decommissioned.
2. The following machine openings have been covered:
   - Engine air inlet
   - Compressor air inlet
   - Exhaust
3. Recommission according to service manual.

Date / signature

Tab. 63 "Temporarily decommissioned" information notice

Decommissioning of the compressor for several weeks during severe frost

CAUTION
Danger of batteries freezing.
Discharged batteries are subject to frost damage and can freeze at 14 °F.
- Store batteries in a frost-free place.
- Store batteries preferably fully charged.
1. Remove the battery (batteries) and store in a frost-free room.
2. Make sure batteries are fully charged.

12.1.2 Long-term decommissioning

Decommissioning the machine for 5 months or longer.

Material
Receptacle
Preserving oil
Preservative
Desiccant
Plastic sheeting
Moisture-resistant adhesive tape

➤ The following measures must be taken for long-term decommissioning.

<table>
<thead>
<tr>
<th>Long-term decommissioning tasks</th>
<th>See chapter</th>
<th>Confirmed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Check engine coolant.</td>
<td>10.3.1</td>
<td>–</td>
</tr>
<tr>
<td>➤ Drain the engine oil.</td>
<td>10.3.6</td>
<td>–</td>
</tr>
<tr>
<td>➤ Drain the oil from the oil separator tank and the oil cooler.</td>
<td>10.4.3</td>
<td>–</td>
</tr>
<tr>
<td>➤ Fill the separator tank and engine with preserving oil.</td>
<td>10.4.2 10.3.5</td>
<td>–</td>
</tr>
<tr>
<td>➤ Run the machine for about 10 minutes to coat all parts with a protective oil film.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Disconnect the battery, the minus terminal first and then the plus terminal, and store in a frost-free room.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Check the battery fluid level.</td>
<td>10.6</td>
<td>–</td>
</tr>
<tr>
<td>➤ Check the battery charge monthly and recharge if necessary to prevent the battery fluid freezing.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Clean the battery terminals and coat with acid-resistant grease.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Close the compressed air outlet valves.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Use plastic sheeting and moisture-resistant adhesive tape to seal off the following openings: Engine air intake Compressor air intake Exhaust outlet</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Clean the bodywork and treat with preservative.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>➤ Hang a notice on the instrument panel informing of the decommissioning measurements taken.</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Tab. 64 Long-term decommissioning checklist
Hang the following notice on the instrument panel informing of the decommissioning measurements taken.

**Attention!**
1. The machine is decommissioned.
2. It is filled with preserving oil.
3. For recommissioning:
   - Take measures for recommissioning after a long period of storage.
   - Recommission according to service manual.

**Date / signature**

Tab. 65  Text for the long-term decommissioned information notice

> Store in a dry place with even temperature.

### 12.2 Transporting

**Precondition**
- Machine switched off and locked off.
- The machine is fully vented, the pressure gauge reads 0 psig.
- The machine has cooled down.
- All consumer hoses disconnected, all other lines and hoses disconnected and removed.
- Any loose or movable parts that may fall when transporting, removed or secured.
- Allow transportation only by personnel trained in safely dealing with motor vehicles and the transporting of goods.

**WARNING**
- There is danger of being run over or crushed by an overturning vehicle.
- Death or serious injury can result from being crushed or run-over by a machine under tow.

> Riding on the machine while it is under tow is strictly forbidden.

> Make sure the danger area is clear.

#### 12.2.1 Road transport of the machine as a trailer

Machines with appropriate chassis versions and running gear are approved for towing on public roads. The machine is designed for a maximum towing speed of 62 mph. National and local regulations must be observed when towing the machine on public highways.

**Payload:**
- Do not exceed the permissible loading (overall weight, coupling load, axle load).
- Observe national traffic laws. If additional loading is not permitted, the load must go to the towing vehicle.
1. Check that loading the machine with tools or accessories during transport is permissible.
2. Place additional loads only in the spaces provided and secure carefully.
Additional requirements for a severely soiled machine:

The machine can become very dirty after prolonged use on a construction site. A machine in such condition is not suitable for towing on public roads.
1. The machine, in particular in the area of the undercarriage, must be cleaned.
2. Check the function of wheels, brakes, lights and signalling equipment.
   Functional defects must be repaired prior to transport.

Additional requirements during snowfall and freezing:

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

⚠️ CAUTION
There is danger of accidents caused by snow or ice falling off the machine. Snow or ice falling from the towed machine can endanger following vehicles. Problems with driving dynamics and damage to the machine could occur. The maximum permissible axle load could be exceeded.
- Do not transport the machine burdened with snow and/or ice.

- Remove any snow or ice before towing.

Ensure and/or execute the following prior to towing the machine with a towing vehicle:

1. Make sure the towing hitch is compatible with the ball or eye coupling on the towed machine.
2. Check that the machine is shut down and secured against accidental restarting.
3. Detach all connecting lines and hoses.
4. Make sure there are no unsecured tools lying on or in the machine.
5. Close and lock doors.

Option sa  Adjusting the towbar to the towing mechanism of the towing vehicle:

When the machine is coupled up, the towbar must be parallel with the ground.

⚠️ WARNING
Accident risk from problematic driving dynamics!
The permissible loading range may be exceeded or undercut.
Personal injury due to an accident during the transport is possible.
Damages to the machine and/or towing vehicle are possible.
- Do not hitch the machine in an oblique angle to the towing vehicle.
- Ensure that the towbar is horizontal when coupled to the towing vehicle.
Adjust the towbar height to suit the height of the hitch on the towing vehicle.

Further information
See chapter 6.4.1 for towbar height adjustment.

**Option sa, sd** Hitching the machine:

To hitch up the machine, lower the open coupling onto the ball of the towing vehicle so that it clicks into place. The indicator of the safety control display will jump to the green zone of the marking identified with a "+", if the ball hitch has engaged correctly.

**CAUTION**
High risk of injury by trapped fingers!
They can be trapped in the spring-loaded closing mechanism.
➤ Do not insert fingers into the opened ball hitch.
➤ Wear safety gloves.

1. Pull up the coupling release lever ①.
   The ball hitch opens and the indicator ④ of the safety control display ③ is in the red zone "X".

**WARNING**
Incorrectly coupled ball hitch!
If the machine is not correctly coupled and locked it may break away from the towing vehicle and cause an accident.
➤ The proper seating of the trailer coupling must be verified.

2. Place the open coupling ② over the towing vehicle ball hitch.
   The bearing load forces the ball hitch to audibly latch. The coupling locks automatically.
3. Push the release lever ① down to be certain of locking.
   The coupling is fully locked when the handle is fully down and can be pushed no further. The indicator of the safety control display is in the green zone "+".
The indicator of the safety control display is in the red zone ("X" or "-" position). The ball hitch is closed incorrectly or not at all.

➤ Pull up the release lever 1, lift the coupling 2 slightly and press it down on the ball hitch until it audibly locks into position.

Option sa, sd Checking the safety control display on the ball hitch:

The ball hitch is equipped with a safety control display.

The safety control display indicates:

■ The wear limit of the coupling ball on the towing vehicle
■ The wear limit of the ball hitch
■ Open ball hitch.

Fig. 61 Safety control display ball hitch

1. Hitch the machine to the towing vehicle.
2. Read and interpret the safety control display as follows:

<table>
<thead>
<tr>
<th>Safety control display</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green zone (+) showing</td>
<td>▪ Ball hitch is in new condition.</td>
</tr>
<tr>
<td></td>
<td>▪ Towing vehicle ball hitch wear within acceptable limits.</td>
</tr>
<tr>
<td></td>
<td>➤ No action required.</td>
</tr>
</tbody>
</table>

WARNING
Accident risk due to worn ball hitch!
The machine may separate from the towing vehicle.
➤ The machine must not be hitched and transported.
➤ Ball hitch and coupling ball must be inspected.
➤ Worn parts must be replaced.

12 Decommissioning, Storage and Transport
12.2 Transporting
### Safety control display

<table>
<thead>
<tr>
<th>Red zone (−) showing</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Ball hitch wear at acceptable limit, ball coupling unworn.</td>
<td></td>
</tr>
<tr>
<td>▪ Ball hitch in new condition; ball coupling showing increased wear.</td>
<td></td>
</tr>
<tr>
<td>▪ Both ball and coupling showing increased wear.</td>
<td></td>
</tr>
<tr>
<td>▪ Ball coupling is damaged.</td>
<td></td>
</tr>
<tr>
<td>➤ Have the ball coupling and ball hitch checked by a specialist workshop.</td>
<td></td>
</tr>
<tr>
<td>➤ Worn parts must be replaced.</td>
<td></td>
</tr>
<tr>
<td>▪ Ball hitch not properly latched on coupling ball.</td>
<td></td>
</tr>
<tr>
<td>➤ Reposition ball hitch on coupling ball until it audibly latches.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Red zone showing (X)</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Ball hitch not closed, coupling rests only loosely on the coupling ball.</td>
<td></td>
</tr>
<tr>
<td>➤ Reposition ball hitch on coupling ball until it audibly latches.</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 66 Safety control display ball hitch

### Hitching the machine:

To couple up the compressor, lower the open coupling onto the ball hitch of the towing vehicle so that it clicks into place.

---

**Option sh**

**Fig. 62 Ball hitch (US type)**

1. Spreader sleeve
2. Plug the safety pin
3. Loosen cramp
4. Mounting opening for safety pin
5. Coupling head
6. Ball hitch properly secured

---

**CAUTION**

High risk of injury by trapped fingers!
They can be trapped in the spring-loaded closing mechanism.
➤ Do not insert fingers into the opened ball hitch.
➤ Wear safety gloves.

---

**WARNING**

Incorrectly coupled ball hitch!
If the machine is not correctly coupled and locked it may break away from the towing vehicle and cause an accident.
➤ The proper seating of the trailer coupling must be verified.
1. Release the clip 3, swivel to one side and pull out the safety pin 2.

2. Lower the ball coupling onto the ball hitch of the towing vehicle and pull back the spreader sleeve 1 back to the end stop.
   The ball coupling opens and the coupling head 5 encloses the ball hitch.

3. Lift the ball coupling off the ball hitch and carefully allow the spreader sleeve 1 to snap back to its initial position.

4. Replace the safety pin 2 in the fixing holes in the ball coupling and secure with the clip 3.

**Option sa** Carry out the following before starting to tow

1. Check the height adjustment. See also chapter 6.4.1.
   Check that:
   - The teeth in the tow bar height adjusting joints are fully engaged.
   - the immobilizing handles are properly tightened
   - The security pin is fully inserted.

2. Screw the jockey wheel upwards (to the stop).

3. Check that the wheels are securely fitted and the tires are in good condition.

4. Check tire pressures.

5. Connect the cable for the lighting and indicator systems and carry out a function check.

6. Loosen the parking brake and remove the chocks.

**Option sd** Carry out the following before starting to tow

1. Screw the jockey wheel upwards (to the stop).

2. Check that the wheels are securely fitted and the tires are in good condition.

3. Check tire pressures.

4. Connect the cable for the lighting and indicator systems and carry out a function check.

5. Loosen the parking brake and remove the chocks.

**Option sh** Carry out the following before starting to tow

1. Push the support up and fix in top position.

2. Attach safety chain on the towing vehicle.

---

**Fig. 63 Safety signs: secure chocks**

**WARNING**

Missing chocks!

Serious injury or death can result from an unchocked machine rolling away.

➤ Secure the chocks in the transport securing device before transporting the machine.

➤ Immediately replace missing chocks.

---

1. Push the support up and fix in top position.

2. Attach safety chain on the towing vehicle.
3. Check that the wheels are securely fitted and the tires are in good condition.
4. Check tire pressures.
5. Attach the lighting and indicator systems and carry out a function check.
6. Remove the chocks and secure them in the transport securing device.

Replacement chocks can be obtained from KAESER. A list is given at the end of this manual. The part number of the chock is 5.1325.0.

**Option sa, sd**

**Emergency braking in the case of breakaway from the towing vehicle**

If the compressor breaks away from the towing vehicle, the cable tightens and pulls on the emergency brake (parking brake).

**Fig. 64** Contact braking cable attachment

1. Contact braking cable
2. Connection (karabiner)

**CAUTION**

Inadvertent braking!
If the breakaway cable is too short it can apply the brakes when rounding a curve. This imposes high wear on the braking system.

- Use a contact braking cable of sufficient length.
- Loop the end of the cable round the towing vehicle hitch and secure with the karabiner.

**12.2.2 Parking the compressor**

**CAUTION**

Injury can occur if the towbar is unsupported and allowed to fall. A falling towbar can cause injury, especially by crushing the feet.
If the jockey wheel is would completely out, the spindle can disengage and allow the towbar to fall to the ground.

- Do not wind the jockey wheel completely out when the machine is uncoupled from the towing vehicle.
Carry out the following when parking the compressor

Option sa, sd

When parking on a slope, securely chock the machine before uncoupling.

1. Disconnect the lighting and signalling cable.
2. Pull on the parking brake.
3. Detach the breakaway cable.
4. Wind down the jockey wheel.
5. Place chocks under the wheels.
6. Pull up the parking brake to the stop.

7. Uncouple the compressor from the towing vehicle:
   - Pull up the coupling handle.
   - Lift the coupling off the towing hitch ball.

The gas spring automatically increases parking brake force if the machine rolls backwards or when parked on a slope.

Option sh

When parking on a slope, securely chock the machine before uncoupling.

---

Fig. 65 Injury can occur if the towbar is unsupported and allowed to fall.

Fig. 66 Safety sign - secure the chocks

WARNING
Machine without parking brake.
Serious injury or death can result from an unchocked machine rolling away.

- Securely chock the machine before uncoupling.
- As a general rule, the machine should always be chocked when it is not being moved.
- The machine should not be manoeuvred by hand.

1. Lower and lock the prop stand.
2. Place chocks under the wheels.
3. Remove the safety chain from the towing vehicle.
4. Dismantle the lighting and signalling system.
5. Uncouple the compressor from the towing vehicle (see Fig 62).
   - Release the clip 2, swivel to one side and pull out the safety pin 1.
   - Pull back the spreader sleeve 4.
   - Lift the ball coupling off the towing vehicle ball hitch and carefully allow the spreader sleeve 4 to snap back to its original position.
   - Replace the safety pin 1 in the fixing holes 3 in the ball coupling and secure with the clip 2.

12.2.3 Transporting with a crane

Additional precautions for conditions of snow and ice

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

➤ Additional measures should be taken under conditions of snow or ice.
   - Remove any snow and ice from the machine before lifting by a crane.
   - Make sure the lifting eye cover plate is freely accessible and can be opened.

Carry out the following tasks before transporting the machine

A lifting eye is provided for transporting with a crane. The lifting eye is located beneath a lift-up cover in the center of the canopy.
1. Close the rubber cover over the lifting eye on top of the enclosure.
2. Position the crane hook vertically over the lifting eye.
3. Hook the crane hook into the lifting eye.
4. Close and lock the access doors.
5. Lift the machine carefully.

Take care when setting down the machine

CAUTION
Incorrect setting down can damage the machine. Machine components, particularly the chassis, can be damaged by incorrectly setting down.

➤ Set the machine down carefully.
➤ Do not set down unevenly.

➤ Set the machine down slowly and carefully.

12.2.4 Option sc
Transporting with a forklift truck

Precondition
The machine is shut down.
All connecting lines and hoses disconnected and removed.
12 Decommissioning, Storage and Transport

12.2 Transporting

CAUTION
Damage to the machine by incorrect lifting with a fork truck.
The machine may fall or be damaged by the forks.
➤ Do not use a fork truck to lift towable machines.
➤ Only stationary machines with skids may be transported with a fork truck.
➤ Pick up the machine only from the side with the forks through the lifting lugs.

Option sc

Fig. 67 Transport using a forklift truck
1 Skids
2 Lifting lugs

1. Close and lock the access doors or canopy.
2. Position the fork truck to the side of the machine with the forks lined up with the lifting lugs.
3. Drive the forks fully through the lifting lugs as far as possible.
   The forks are fully under the machine.
4. Lift the machine carefully.

12.2.5 Transported as freight

The means of transporting will determine the type of packing and load securing.
Packing and securing methods must be such that, assuming proper handling, the goods arrive in perfect condition at the destination.
Consult KAESER Service for advice concerning sea or air transport.

Material
Chocks
Drag shoes or squared timber
Guys (tension belts)

Freight securing:
National directives and regulations for securing loads should be followed.
Load securing is taken to mean that by full braking or sudden turning the load will not slide, fall, roll or cause unnecessary noise. Accepted technical regulations should be observed.
Responsibility for properly secured loads falls on the driver, the vehicle keeper and the carrier.
Use chocks, restrainers or timber balks for securing the load.
If necessary, use straps across the chassis and the towbar.
CAUTION
Straps can damage the bodywork. Movement during transportation can damage the bodywork.
➤ Do not use guys across vehicle body parts.
➤ Use guys only across running gear.

1. Always observe valid accident and safety regulations when transporting.
2. The loads must be secured against rolling, tipping, slipping and falling.

For more information about transportation and freight securing, please contact the KAESER Service.
Damages arising from improper transportation and/or insufficient or incorrect securing of the freight are explicitly excluded by KAESER from any liability and guarantee.
For rental, lease and trade fair systems, any transport securing means used for the delivery must be also used for the return shipment.

To be noted prior to shipment as airfreight:
The machine is designated as dangerous goods for air freight purposes; any disregard can result in a heavy fine.

DANGER
Danger of fire or explosion from operating fluids/materials.
The machine is equipped with a combustion engine.
➤ Any dangerous fluids/materials contained within the machine must be removed before transport.

➤ Remove all dangerous fluids/materials.
  These include:
  ■ Residual quantities of fuel and fuel gases.
  ■ Lubricants in engine and compressor.
  ■ Electrolyte charges in rechargeable batteries.
  ■ Residual quantities of tool oil in the lubricator (Option ec).
  ■ Residual quantities of antifreeze in the frost protector (option ba)
12.3 Storage

Moisture can lead to corrosion, particularly in the engine, airend and oil separator tank.
Frozen moisture can damage components, valve diaphragms and gaskets.

Advice can be obtained from KAESER on storage and commissioning.

CAUTION

Moisture and frost can damage the machine.
➤ Prevent ingress of moisture and formation of condensation.
➤ Maintain a storage temperature of >32 °F.

➤ Store the machine in a dry place, free from frost if possible.

12.4 Disposal

When disposing of a machine, drain out all liquids and remove old filters.

Precondition

The machine is decommissioned.

1. Completely drain the fuel from the machine.
2. Completely drain the cooling oil and engine oil from the machine.
3. Remove used filters and the oil separator cartridge.
4. Drain the coolant from water-cooled engines and systems.
5. Hand the machine over to an authorized disposal expert.

➤ Parts contaminated with cooling oil or engine oil must be disposed of in accordance with local environment protection regulations.
13 Annex

13.1 Marking

Fig. 69 Marking

1. VIN *) (stamped) *Vehicle identity number
2. Machine nameplate with serial number
3. Combined label for coupling loading and built-in options
4. Engine nameplate with serial number

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compressor - Air filter</td>
<td>28</td>
<td>Fan</td>
</tr>
<tr>
<td>2</td>
<td>Filter maintenance indicator, Compressor - Air filter</td>
<td>29</td>
<td>Exhaust silencer</td>
</tr>
<tr>
<td>3</td>
<td>Inlet valve</td>
<td>30</td>
<td>Coupling</td>
</tr>
<tr>
<td>4</td>
<td>Airend</td>
<td>37</td>
<td>Minimum pressure / check valve (without air treatment)</td>
</tr>
<tr>
<td>5</td>
<td>Oil separator tank</td>
<td>39</td>
<td>Check valve</td>
</tr>
<tr>
<td>5.2</td>
<td>Screw plug</td>
<td>44</td>
<td>Defroster</td>
</tr>
<tr>
<td>6</td>
<td>Oil reserve</td>
<td>44.1</td>
<td>Shut-off valve</td>
</tr>
<tr>
<td>7</td>
<td>Oil separator cartridge</td>
<td>46</td>
<td>Nozzle (Secondary and Proportional controller)</td>
</tr>
<tr>
<td>11</td>
<td>Oil filter with screw plug</td>
<td>50</td>
<td>Silencer</td>
</tr>
<tr>
<td>12</td>
<td>Temperature gauge switch + Indication</td>
<td>56</td>
<td>Water cooler</td>
</tr>
<tr>
<td>13</td>
<td>Pressure gauge - Control panel</td>
<td>56.1</td>
<td>Cooling water expansion tank</td>
</tr>
<tr>
<td>14</td>
<td>Pressure relief valve</td>
<td>56.7</td>
<td>Screw plug - Water drain</td>
</tr>
<tr>
<td>15</td>
<td>Diesel engine</td>
<td>56.10</td>
<td>Water filling port with plug and pressure relief valve</td>
</tr>
<tr>
<td>16</td>
<td>Oil return line</td>
<td>57</td>
<td>Shut-off valve - Venting line</td>
</tr>
<tr>
<td>17</td>
<td>Dirt trap</td>
<td>62</td>
<td>Combined control valve</td>
</tr>
<tr>
<td>17.1</td>
<td>Nozzle</td>
<td>63</td>
<td>Control valve (Air circulation valve)</td>
</tr>
<tr>
<td>18</td>
<td>Strainer</td>
<td>72</td>
<td>Fail-safe heat exchanger</td>
</tr>
<tr>
<td>19</td>
<td>Combination valve - Oil temperature controller</td>
<td>83.1</td>
<td>Engine air intake shut-off valve (automatic shutoff)</td>
</tr>
<tr>
<td>20</td>
<td>Oil cooler</td>
<td>84</td>
<td>Spark arrestor</td>
</tr>
<tr>
<td>20.5</td>
<td>Screw plug - Oil drain</td>
<td>Option</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Oil filter</td>
<td>ba</td>
<td>Low temperature equipment</td>
</tr>
<tr>
<td>23</td>
<td>Proportional controller</td>
<td>bb</td>
<td>Cooling water pre-heating</td>
</tr>
<tr>
<td>24</td>
<td>Motor - Air filter</td>
<td>la</td>
<td>Spark arrestor</td>
</tr>
<tr>
<td>25</td>
<td>Filter maintenance indicator, Motor - Air filter</td>
<td>lb</td>
<td>Engine air intake shut-off valve (automatic shutoff)</td>
</tr>
<tr>
<td>26</td>
<td>Engine speed adjusting piston</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Venting valve</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9 Tool lubricator
9.1 Shut-off valve
10 Compressed air distributor
10.7 Hose line
14 Pressure gauge - Control panel
37 Minimum pressure / check valve (with air treatment)

Option
ea Tool lubricator
fe Additional compressed air outlet
ua Hose reel
13.3 Dimensional drawings

13.3.1 Option sa
Dimensional drawing, chassis with height-adjustable tow bar
13.3 Dimensional drawings

* towing eye allowance

DIN 0
Nato +0.35
France -0.19
BNA -0.78
ball coupling -0.04

Compressed air outlet

Option hose reel, not USA

Engine exhaust

Cooling air outlet

Cooling air inlet

Control panel

Area covered by the vehicle, without towing: 3.1m²

All dimensions are in inches

Portoable compressor M 57

<table>
<thead>
<tr>
<th>Year</th>
<th>Tag</th>
<th>None</th>
</tr>
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<tbody>
<tr>
<td>2007</td>
<td>3001</td>
<td>Fasel Gisela</td>
</tr>
</tbody>
</table>

Notes:
- Fasel Gisela
- Porteck A 3
- Erstz.f.
13.3.2 Option sd
Dimensional drawing, chassis with fixed height tow-bar
13 Annex

13.3 Dimensional drawings

View X

All dimensions are in inches.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tbody>
<tr>
<td>Height</td>
<td>75.12</td>
</tr>
<tr>
<td>Width</td>
<td>64.14</td>
</tr>
<tr>
<td>Depth</td>
<td>66.14</td>
</tr>
</tbody>
</table>

Compressed air outlet

Control panel

Option hose reel, not USA

Cooling air inlet

Engine exhaust

210cm

Portable compressor M 57
with UK chassis

SERVICE MANUAL  Screw Compressor

No.: 9_5897 03 USE

M57

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13.3.3 Option sh
Dimensional drawing, chassis without parking brake
13.3.4 Option sc  
Dimensional drawing, stationary version
13 Annex

13.4 Wiring diagrams

13.4.1 Electrical Diagram
### Electrical diagrams

**MOBILAIR**

M57, M52/M64/M70

KUBOTA-Motor

Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

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<td>3</td>
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general instructions

Control voltage 12VDC
All non-designated conductors H07V-K 1,5mm² black

potentials:
15 switched plus + (unit ON)
19 Preheat with glowplug
30 + terminal (Battery)
31 - terminal (Battery), earth
50 Starter-Control

components unit

-G1 Battery
-M1 Starter-Motor
-B0 Oil pressure switch Motor
-B7 Cooling water-Thermostat
-G2 Alternator
-M2 fuel pump
-R10 heating flange
-Y1 Fuel shut-off valve
-Y3 Valve Full load operation, Venting

components Control panel

-B6 Distance temperature gauge Compressor airend
-F1 Control fuse
-F3 Fuse Glowplug
-F4 Fuse Starter
-H0 Charging control lamp
-H8 Indicator light Back pressure
-K3 Starter – Relay
-K4 Relay Safety chain
-K9 Relay Full load operation
-K26 Glow relay
-K29 Relay fuel pump
-P8 Hour meter
-S01 switch "Control ON"
-S1 Ignition switch
 0 = STOP
 1 = ON
 2 = Preheat with glowplug
 3 = START

model-dependent components

-S0 Battery isolating switch (option on)
-Y5 option generator: Valve FAD limitation
-Y6 option generator:
  Valve for the motor speed
  full load control
-Y10 option: Valve defroster
-X42 Plug connection, Generator control box

-X21,-X24, Preselection Full load operation
-X25,-X27 Plug connection, Control panel
-X23 Terminal strip, Control panel
## general instructions

This document includes a common electrical diagram, consisting of documents:

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</table>
Control voltage: 12 VDC
All non-designated conductors H07V-K 1,5 mm²
13.4.2 Option tc
Lighting and signaling system connection
Electrical diagrams

MOBILAIR

Lighting equipment

connection 12V / 13-pole

Manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg
13.4 Wiring diagrams
13.4.3 Option te
Lighting and signaling system connection
Wiring Diagram

Mobilair
US trailer light kit

manufacturer: Kaeser Kompressoren GmbH
Postfach 2143
96410 Coburg

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13.5 Fuel circulation diagram
13.5 Fuel circulation diagram
### Fuel circulation diagram

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<th>Description</th>
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<td>Fuel tank</td>
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<td>2</td>
<td>Fuel prefilter</td>
</tr>
<tr>
<td>3</td>
<td>Fuel feed pump</td>
</tr>
<tr>
<td>4</td>
<td>Injection pump</td>
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<td>5</td>
<td>Injection pipe</td>
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<tr>
<td>6</td>
<td>Injection nozzle</td>
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<tr>
<td>7.1</td>
<td>Fuel filter (with optional water separator)</td>
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<tr>
<td>8</td>
<td>Fuel supply line</td>
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<tr>
<td>9</td>
<td>Fuel return line</td>
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**Diagram legend:**
- 4-Cylinder-diesel engine
- Mobilair M 57 (Kubota)
- KFMM57K-00034.00

**Symbols:**
- KAESER KOMPRESSOREN
- Screw Compressor
- USE

**Service Manual:**
- M57

**Notes:**
- No.: 9_5897 03 USE
- Annex 13.5