

## 5 Maintenance

### 5.1 Introduction

Operational readiness and the service life of machines are heavily dependent on maintenance.

It is therefore in the interest of the machine owner to perform the prescribed maintenance work.

Bear in mind the following points before performing service and maintenance work:

- Chapter 2 *Safety instructions* of this Operator's Manual.
- The Operator's Manuals of the attachments.

Perform the prescribed inspections and rectify any disorders immediately before putting the machine into operation, or have them rectified by an authorized service center.

Secure the open engine cover and other open covers appropriately. Do not open the engine cover and other covers on slopes or in strong wind.

When using compressed air, dirt and debris can be blown into your face. Therefore, wear protective goggles, masks and clothing when using compressed air.

### 5.2 Safety-relevant parts

Service and maintenance work must be performed by a specifically trained person.

All other maintenance work that is not indicated in this Operator's Manual must be performed only by the trained and qualified staff of a Wacker Neuson service center.

The following maintenance plans indicate the maintenance work to be performed.

This is necessary to ensure optimal functioning – see [chapter 5.22 Maintenance plan \(overview\)](#) on page 5-57.

Immediately repair or replace parts that are already damaged or not working properly before they are due for replacement.



#### **Important**

Safety-relevant parts may only be repaired or replaced by a Wacker Neuson dealer or a Wacker Neuson service center.

<b>Parts</b>	<b>Interval</b>
Hydraulic hoses	Replace hydraulic hoses every 6 years from the date of manufacture, even if they do not seem to be damaged.
Bladder type accumulator	Must be checked by a Wacker Neuson dealer every 2 years.
Seat belt	No replacement necessary. Replace the seat belt after an accident.

## 5.3 Fuel system



### DANGER

#### Fire hazard. All work involving fuel.

Risk of fatal personal injury or death.

- Never perform work on the fuel system in the vicinity of naked flames or sparks.
- Do not refuel in closed rooms.
- No smoking, no fire.
- Do not smoke when working on the fuel system or when refueling.
- Wipe away fuel spills immediately.
- Keep the machine clean to reduce the risk of fire.
- Before refueling, apply the parking brake, stop the engine and remove the starting key.



### CAUTION

#### Slipping/Tripping hazard. Bear in mind the following important points when refueling.

Risk of injury.

- When refueling the machine without a fuel-filling pump, use safety-oriented ladders and work platforms.
- Never use machine parts or attachments/superstructures as a climbing aid.

### NOTICE

Avoid refueling with cans in order to avoid dirt in the fuel.



#### Important

Don't allow the fuel tank and fuel lines to completely empty while operating the machine. Otherwise, air is drawn into the fuel system. This requires bleeding the fuel system – see *Bleeding the fuel system* on page 5-5.



#### Important

Add the tank with the correct fuel type at the end of each working day. This prevents condensation water from forming in the fuel tank over night. Do not add the tank completely but leave some space for the fuel to expand.



#### Environment

Use a suitable container to collect the fuel as it drains and dispose of it in an environmentally friendly manner.

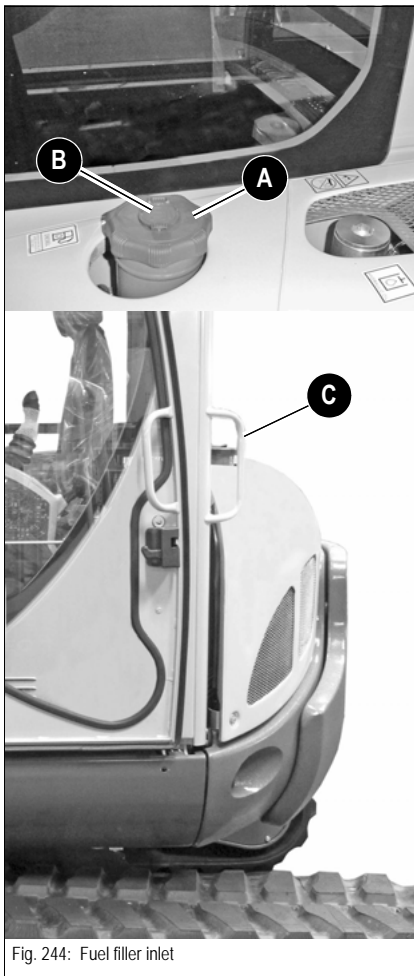
**Refuelling**


Fig. 244: Fuel filler inlet

Fuel filler inlet **A** for the fuel tank is located behind the cab, on the left in driving direction.

- ☞ Before refuelling, stop the engine and remove the starting key.
- ☞ Unlock lock **B** on fuel filler inlet **A** with the starting key.
- ☞ Use handle **C** to climb onto the track.
- ☞ Remove the filler cap.
- ☞ Refuel.
- ☞ Close and lock the filler cap.


**Environment**

Use a suitable container to collect the fuel as it drains and dispose of it in an environmentally friendly manner.

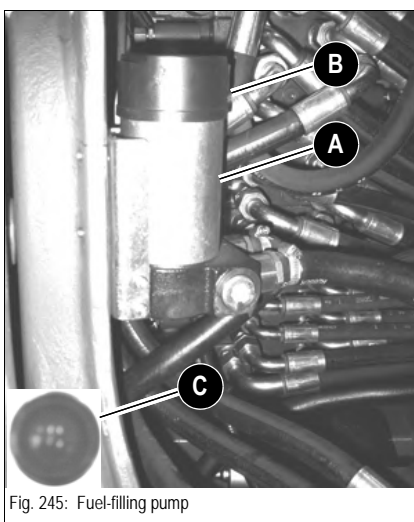
**Fuel-filling pump (option) (75Z3 up to serial no. AD07209; 8003 up to serial no. AD07187)**


Fig. 245: Fuel-filling pump

- ☞ Place the machine on level ground.
- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Open the engine cover.
- ☞ Insert the hose of fuel-filling pump **A** into the container with the fuel – see Stationary fuel pumps on page 5-4.
- ☞ Press button **B** to switch on fuel-filling pump **A**.
- ➡ The fuel tank is full as soon as indicator light **C** illuminates.
- ☞ Press button **B** to switch off fuel-filling pump **A**.


**Important**

Switch off the fuel-filling pump as soon as indicator light **C** illuminates, otherwise the fuel tank may overflow and can be damaged.

- Bear in mind the fuel tank's maximum capacity.

Fuel-filling pump (option) (75Z3 from serial no. AH00646; 8003 from serial no. AH00611)

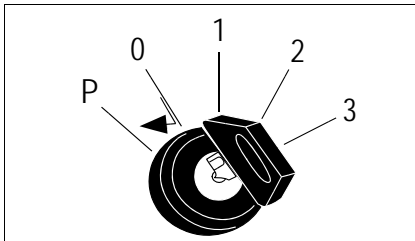


Fig. 246: Ignition lock

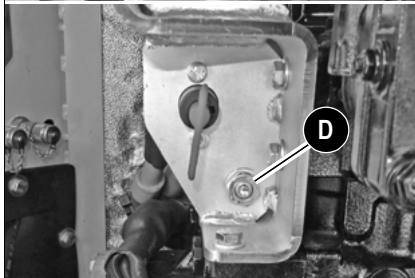
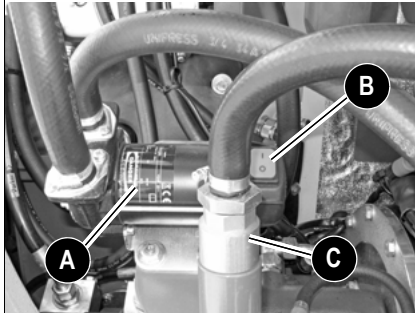


Fig. 246: Fuel-filling pump

- ☞ Park the machine on firm and level ground.
- ☞ Stop the engine.
- ☞ Turn the starting key fully to the left to park position **P**.
- ☞ Fold the control lever base up.
- ☞ Open the engine cover.
- ☞ Insert hose **C** of fuel-filling pump **A** into the container with the fuel – see Stationary fuel pumps on page 5-4.
- ☞ Press button **B** to switch on fuel-filling pump **A**.
- ☞ Press tip switch **D**.
  - ➔ The float switch screwed into the fuel tank automatically switches off the fuel-filling pump.
- ☞ Then switch off fuel-filling pump **A** with button **B**.
- ☞ Put hose **C** back in the bracket.

Stationary fuel pumps

General

Only refuel from stationary fuel pumps. Fuel from barrels or cans is usually contaminated. Even the smallest particles of dirt can cause:

- Increased engine wear.
- Malfunctions in the fuel system and
- Reduced effectiveness of the fuel filters.

Refuelling from barrels

If refuelling from barrels cannot be avoided, note the following points:

- Barrels must neither be rolled nor tilted before refuelling.
- Protect the suction pipe opening of the barrel pump with a fine-mesh screen.
- Immerse it down to a max. 15 cm (6 in) above the floor of the barrel.
- Only fill the tank using refuelling aids (funnels or filler pipes) with integral microfilter.
- Keep all refuelling containers clean at all times.

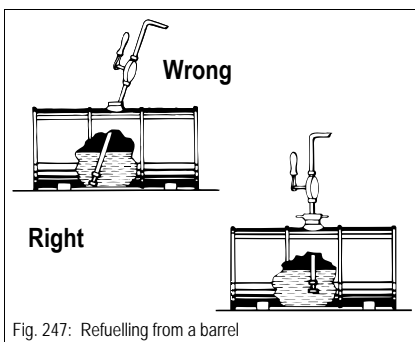


Fig. 247: Refuelling from a barrel



**Diesel fuel specification**

**Use only high-grade fuels.**

<b>Grade</b>	<b>Use</b>
• EN 590 : 96	EU
• BS 2869 – A2	England
• 2-D ASTM D975 – 94	USA
• 1-D ASTM D975 – 94	

- Sulphur content below 0.05 %
- Cetane number over 45

**Bleeding the fuel system**



**WARNING**

**Burn hazard. If the fuel comes into contact with hot engine parts.**

Risk of injury.

- Work on the fuel system may be performed only in an absolutely clean environment.
- Bleed the fuel system only if the engine is cold.
- Filter elements and drained fuel must be disposed of correctly.
- Always wear protective equipment and safety glasses when working with fuel.



**WARNING**

**Entanglement hazard. Rotating parts.**

Risk of injury.

- Before starting the engine, ensure that no-one is within danger zone of the engine/the machine.
- Start the engine only if the engine cover is closed.

**Bleed the fuel system in the following cases:**

- After removing and fitting the fuel filter, prefilter or the fuel lines back on again.
- After running the fuel tank empty.
- After running the engine again, after it has been out of service for a longer period of time.

**☞ Bleed the fuel system as follows:**

- Fold the control lever base up.
- Remove the starting key.
- Add the fuel tank.
- Turn the starting key to the first position.
- Wait about 5 minutes while the fuel system bleeds itself automatically.
- Start the engine.

➔ If the engine runs smoothly for a while and then stops, or if it does not run smoothly:

- Stop the engine.
- Fold the control lever base up.
- Remove the starting key.
- Bleed the fuel system again as described above.
- Check for leaks after starting the engine.
- Have this checked by a qualified technician if necessary.

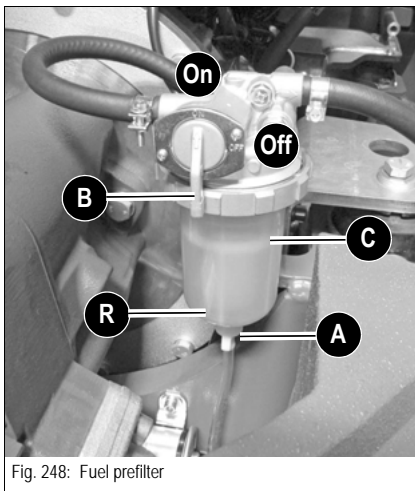
**Fuel prefilter with water separator**


Fig. 248: Fuel prefilter

**Draining the fuel/water mixture:**

- If the red indicator ring **R** rises to position **C**.
- ☞ *Stop the engine.*
- ☞ *Remove the starting key.*
- ☞ *Fold the control lever base up.*
- ☞ *Turn ball-type cock **B** to the **OFF** mark.*
  - ➔ Fuel supply is interrupted.
- ☞ *Place a suitable container under the fuel prefilter to collect the fuel/water mixture as it drains.*
- ☞ *Unscrew thread **A**.*
  - ➔ Fuel/water mixture drains.
  - ➔ Wait until the indicator ring returns to the bottom of the water separator.
- ☞ *Screw thread **A** back on again.*
- ☞ *Turn ball-type cock **B** to the **ON** mark.*
  - ➔ Fuel supply is open again.


**Environment**

Thread **A** is fitted with a hose. Collect the fuel/water mixture as it drains with a suitable container and dispose of it in an environmentally friendly manner.

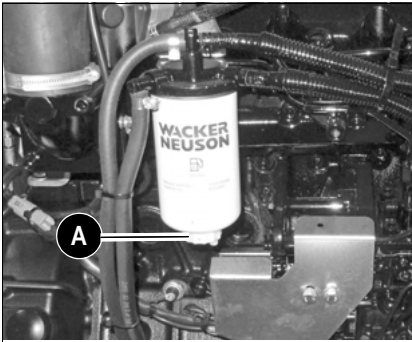


Fig. 249: Fuel filter

The fuel/water mixture must be drained directly on the fuel filter in addition. Perform this at regular intervals according to the maintenance plan.

- ☞ Stop the engine.
- ☞ Place a suitable container under the filter.
- ☞ Unscrew screw **A**.
  - ➔ The fuel/water mixture drains from the filter housing.
- ☞ Drain about 10 ml (0.3 US fl.oz) of the fuel/water mixture.



### Environment

Collect the fuel/water mixture as it drains with a suitable container and dispose of it in an environmentally friendly manner.

## 5.4 Engine lubrication system

### NOTICE

If the engine oil level is too high or too low, or if an oil change is overdue, this can cause loss of output and engine damage.

- Have the oil changed by an Wacker Neuson service center – see [chapter 5.22 Maintenance plan \(overview\)](#) on page 5-57.

### Checking the engine oil level

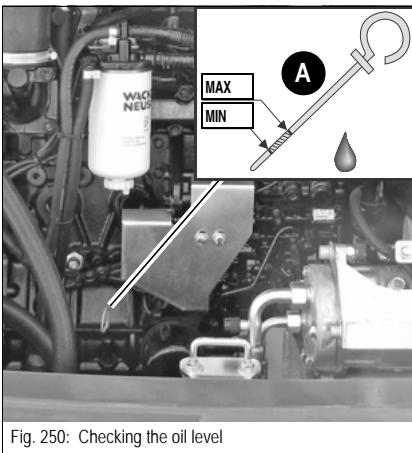


Fig. 250: Checking the oil level



### Important

Check the oil level once a day. We recommend checking it before starting the engine. After stopping a warm engine, wait at least 5 minutes before checking.

- Park the machine on level and horizontal ground.
- Stop the engine.
- Fold the control lever base up.
- Turn off the starter.
- Remove the starting key and carry it with you.
- Let the engine cool down.
- Open the engine cover.
- Clean the area around the oil dipstick with a lint-free cloth.
- Pull out oil dipstick **A**.
- Clean it with a lint-free cloth.
- Push it back in as far as possible.
- Withdraw it and read off the oil level.
- Close and lock the engine cover.



### Important

The oil level must be between the MAX and MIN marks. However if necessary, add oil at the latest when the oil reaches the MIN mark on the oil dipstick **A**.

## Adding engine oil

**NOTICE**

Too much, not enough or incorrect engine oil can result in engine damage.  
Loss of output and engine damage.

- Add engine oil above the MIN mark of oil dipstick **A**.
- Do not add engine oil above the MAX mark of oil dipstick **A**.
- Use only the specified engine oil (refill with the same engine oil).

**NOTICE**

Adding the engine oil too fast via the filler inlet in the valve cover can cause engine damage.

- Add the engine oil slowly so it can go down without entering the intake system.

**Environment**

Use a suitable container to collect the engine oil as it drains and dispose of it in an environmentally friendly manner.

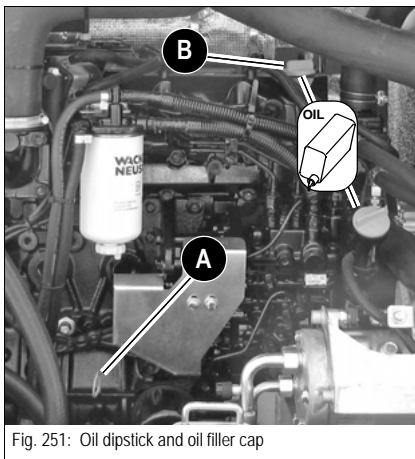


Fig. 251: Oil dipstick and oil filler cap

- Clean the area around oil filler cap **B** with a lint-free cloth.
- Open filler cap **B**.
- Raise oil dipstick **A** slightly to allow any trapped air to escape.
- Add engine oil.
- Wait about 3 minutes until all the oil has run into the oil sump.
- Check the oil level – see *Checking the engine oil level* on page 5-7.
- Add if necessary and check the oil level again.
- Close filler cap **B**.
- Push oil dipstick **A** back in as far as possible.
- Completely remove all oil spills.
- Close and lock the engine cover.



## 5.5 Engine and hydraulics cooling system

The oil/water radiator is located in the engine compartment, on the right side of the engine. It cools the diesel engine, and the hydraulic oil of the drive and work hydraulics.

The expansion tank for the coolant is also located in the engine compartment, in front of and above the cooler.

### Specific safety instructions

- Dirt on the radiator fins reduces the radiator's heat dissipation capacity.  
To avoid this:
  - ☞ Clean the outside of the radiator at regular intervals. Use oil-free compressed air (2 bar/29 psi max.) to clean. Maintain a certain distance from the radiator to avoid damage to the radiator fins. Refer to the maintenance plans in the appendix for the cleaning intervals.
  - ☞ In dusty or dirty work conditions, clean more frequently than indicated in the maintenance plans.
- An insufficient coolant level reduces the heat dissipation capacity as well and can lead to engine damage.  
Therefore:
  - ☞ Check the coolant level at regular intervals. Refer to the maintenance plans in the appendix for the intervals.
  - ☞ If coolant must be added frequently, check the cooling system for leaks and/or contact an authorized service center.
  - ☞ Never add cold water/coolant if the engine is warm.
  - ☞ After adding the expansion tank, make a test run with the engine and check the coolant level again after stopping the engine.
- The use of the wrong coolant can destroy the engine and the radiator. Therefore:
  - ☞ Add enough antifreeze compound to the coolant – but never more than 50 %. If possible, use brand-name antifreeze compounds with anticorrosion additives.
  - ☞ Observe the coolant compound table – [see chapter 6.11 Coolant compound table](#) on page 6-6.
  - ☞ Do not use radiator cleaning compounds if an antifreeze compound has been added to the coolant – otherwise this causes sludge to form that can damage the engine.
- Once you have filled the expansion tank:
  - ☞ Test run the engine.
  - ☞ Stop the engine.
  - ☞ Let the engine cool down.
  - ☞ Check the coolant level again.



### Environment

Use a suitable container to collect the coolant as it drains and dispose of it in an environmentally friendly manner.

### Checking/adding coolant



#### **WARNING**

**Burn hazard. Never open the coolant tank and never drain coolant if the engine is warm since the cooling system is under high pressure**

Risk of severe injury.

- Wait at least 15 minutes after stopping the engine.
- Wear protective gloves and clothing.
- Open filler cap **B** to the first notch and release the pressure.
- Confirm that the coolant temperature is sufficiently low so you can touch the radiator plug with your hands.

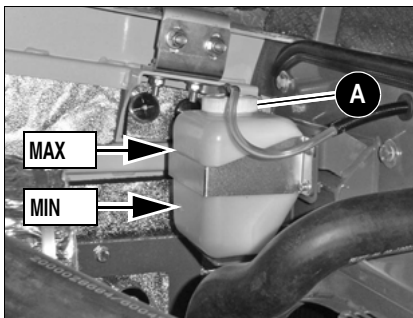


#### **WARNING**

**Hazardous material. Antifreeze is flammable and poisonous. Contact with skin and eyes should be avoided.**

Risk of injury.

- Keep away from flames.
- Wash skin immediately to remove coolant mixture from the skin to avoid irritation.
- Wash eyes immediately if coolant comes in contact with the eye. Seek medical attention immediately.
- Store coolant concentrate and mixtures in a secure space to prevent unauthorized contact.
- Do not store or use coolant or coolant mixtures near open flames including smoking materials.
- Dispose of used coolant through approved methods for recycling. Do not dispose of coolant or mixtures in sewers, toilets or dumping on the ground.



Expansion tank for coolant

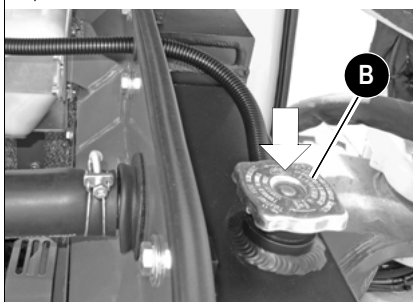


Fig. 252: Radiator

### Checking the coolant level

- Park the machine on level ground.
  - Stop the engine.
  - Fold the control lever base up.
  - Turn off the starter.
  - Remove the starting key and carry it with you.
  - Let the engine and the coolant cool down.
  - Open the engine cover.
  - Check the coolant level on the transparent coolant tank **A** and on the radiator **B**.
- ☞ If the coolant level is below the **MIN** mark or if there is no coolant at the radiator's filler inlet:
- ➔ Add coolant.



### Important

Check the coolant level once a day.  
We recommend checking it before starting the engine.

### Adding coolant

After the engine has cooled down:

- ☞ Release overpressure in the radiator.
  - ☞ Carefully open the cap to the first notch and fully release the pressure.
  - ☞ Open filler cap **B**.
  - ☞ Add coolant up to the lower edge of the filler inlet (radiator).
  - ☞ Close filler cap **B**.
  - ☞ Start the engine and let it warm up for about 5 – 10 minutes.
  - ☞ Stop the engine.
  - ☞ Remove the starting key and carry it with you.
  - ☞ Let the engine cool down.
  - ☞ Check the coolant level again.
- ➔ The coolant level must be between the **MIN (LOW)** and **MAX (FULL)** marks.
- ☞ If necessary, add coolant and repeat the procedure until the coolant level remains constant.

### NOTICE

Do not mix the coolant with other coolants.

- Only use the coolant recommended by Wacker Neuson – see [chapter 6.11 Coolant compound table](#) on page 6-6.



### Important

Check the antifreeze every year before the cold season sets in.

## 5.6 Air filter

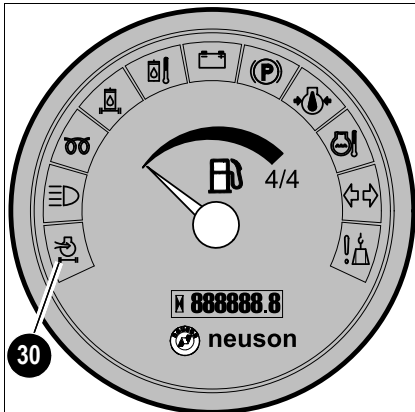


Fig. 253: Indicator for air filter contamination (up to serial no. AH00610)

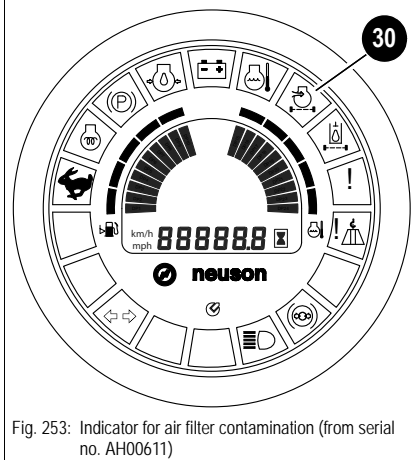


Fig. 253: Indicator for air filter contamination (from serial no. AH00611)

### NOTICE

The filter cartridge will be damaged if it is washed or brushed out.

Bear in mind the following to avoid premature engine wear:

- Do not clean the filter cartridge.
- Replace the filter cartridge according to the maintenance plan.
- Never reuse a damaged filter cartridge.
- Ensure cleanliness when replacing the filter cartridge.

Indicator light **30** in the round display element monitors the air filters.

Air filters **A** and **B** must be replaced:

- If indicator light **30** in the round display element illuminates.
- According to the maintenance plan.

### NOTICE

Filter cartridges degrade prematurely when in service in acidic air for longer periods of time. This risk is present for example in acid production facilities, steel and aluminium mills, chemical plants, other nonferrous-metal plants and in environments with increased dust development.

- Check the air filter element every 50 service hours at the latest, and replace it if necessary.

General instructions for air filter maintenance:

- Store filters in their original packaging and in a dry place.
- Do not knock the air filters against other objects as you install them.
- Check air filter attachments, air intake hoses and air filters for damage, and immediately repair or replace if necessary.
- Check the screws at the induction manifold and the clamps for tightness.
- Check the function of the discharge slot of the dust valve, clean it and replace it if necessary.
  - ☞ Squeeze the end of the dust valve.
- Close and lock the engine cover.

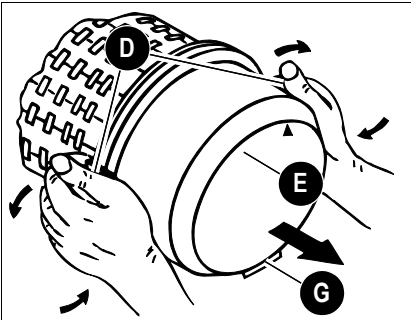
**Replacing the air filter**


Fig. 254: Removing the lower housing section

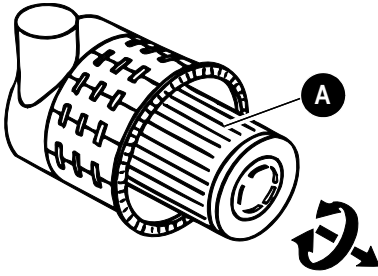


Fig. 255: Removing the primary air filter

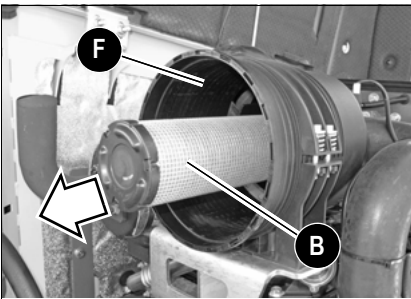


Fig. 256: Replacing the inside air filter

**Replacing the primary air filter**

- ☞ Stop the engine.
- ☞ Fold up the control lever base.
- ☞ Remove the starting key and carry it with you.
- ☞ Let the engine cool down.
- ☞ Open the engine cover.
- ☞ Remove dirt and dust from the filter housing and the area around the air filter.
- ☞ Fold bow clips **D** on lower housing section **E** to the outside.
- ☞ Remove lower housing section **E**.
- ☞ Carefully remove the primary air filter **A** with slightly turning movements.
- ☞ Ensure that all dirt (dust) inside the upper and lower housing sections (**F** and **E**), including dust valve **G**, has been removed.
  - ☞ Clean the parts with a clean lint-free cloth, do not use compressed air.
- ☞ Check the primary air filter for damage, only install intact air filters.
- ☞ Carefully insert the new primary air filter **A** in the upper housing section **F**.
- ☞ Position lower housing section **E** (ensure that it is properly seated).
- ☞ Close bow clips **D**.

**Replacing the secondary air filter**

- ☞ Remove primary air filter **A** as described above to access secondary air filter **B**.
- ☞ Carefully pull out secondary air filter **B**.
  - ☞ Cover the air supply at the end of the filter with a clean lint-free cloth to prevent dust from entering the engine.
- ☞ Ensure that all dirt (dust) secondary the upper and lower housing sections (**F** and **E**), including the dust valve **G**, has been removed.
  - ☞ Clean the parts with a clean lint-free cloth, do not use compressed air.
  - ☞ Remove the cloth from the air supply.
- ☞ Check the secondary air filter for damage, only install intact air filters.
- ☞ Carefully insert the new secondary air filter **B** in the upper housing section **F**.
- ☞ Carefully insert the primary air filter **A** in the upper housing section **F**.
- ☞ Position lower housing section **E** (ensure that it is properly seated).
- ☞ Close bow clips **D**.


**Important**

Ensure that dust valve **G** shows downward once it is installed.

Air intake

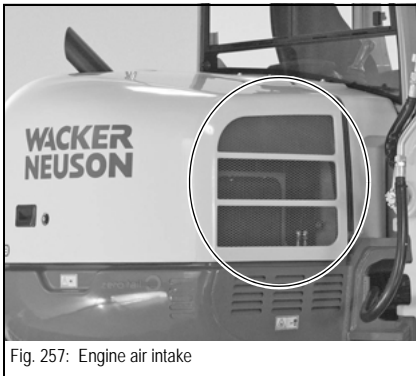


Fig. 257: Engine air intake

### 5.7 Change cab air filter

**NOTICE**

When crossing water fords or similar, ensure that the engine air intake openings are always above water level, otherwise the engine is damaged.

- Check once a day for cleanliness before putting the machine into operation.

**CAUTION**

**Injection hazard. Carefully clean the filter with compressed air.**

Risk of injury.

- Wear goggles and protective clothing.
- Carefully clean the filter with compressed air.
- Do not aim the compressed air at the skin or at other people.
- Do not use compressed air for cleaning your clothing.

**NOTICE**

The filter elements will be damaged if they are washed or brushed out.

- Never reuse damaged filter elements.
- Ensure cleanliness when replacing the filter elements.

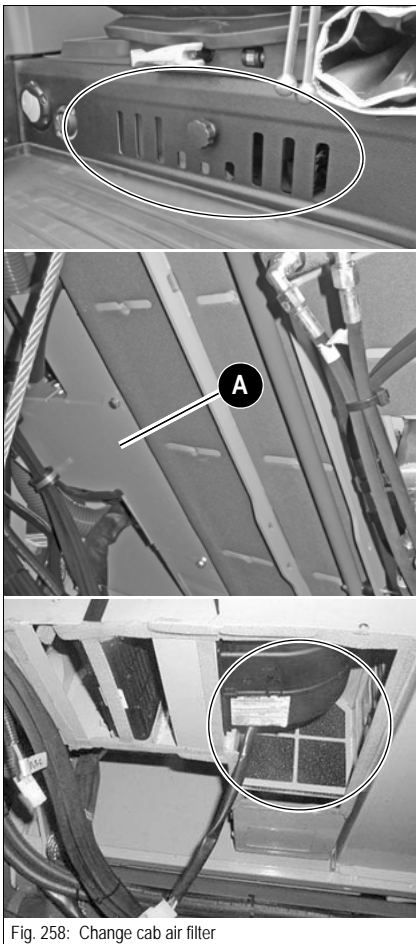


Fig. 258: Change cab air filter

The machine is equipped with a cab air filter located under the seat. The heater is located at the rear half of the cab.

Clean the cab air filter every 500 service hours, and replace it every 1000 service hours.



**Important**

Tilt the cab to replace the cab air filter.

– see [chapter 3.37 Tilting the cab on page 3-60](#)

- ☞ Stop the engine.
- ☞ Remove the starting key and carry it with you.
- ☞ Fold the control lever base up.
- ☞ Tilt the cab and secure it.
- ☞ Remove the screws and cover **A**.
- ☞ Remove the filter and clean or replace it.
- ☞ Install the filter.
- ☞ Mount the screws and cover **A** again.
- ☞ Tilt the cab back down again and secure it.

## 5.8 Replacing the filter element of the air conditioning system (option)



### CAUTION

**Injection hazard. Carefully clean the filter element with compressed air.**

Risk of injury.

- Wear goggles and protective clothing.
- Carefully clean the filter with compressed air.
- Do not aim the compressed air at the skin or at other people.
- Do not use compressed air for cleaning your clothing.

### NOTICE

The filter elements will be damaged if they are washed or brushed out.

- Never reuse damaged filter elements.
- Ensure cleanliness when replacing the filter elements.

If equipped with optional air conditioning, the machine is fitted with an air filter located under the seat.

Replace the air filter every 500 service hours by a new one.



### Important

Tilt the cab to replace the filter element – [see chapter 3.37 Tilting the cab](#) on page 3-60

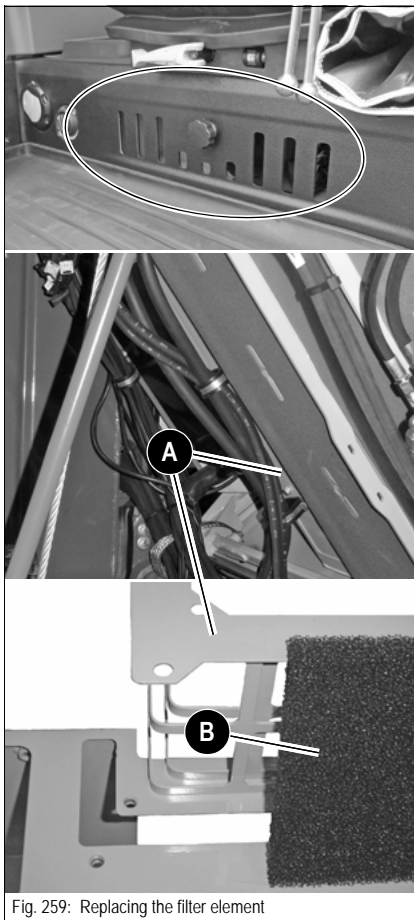
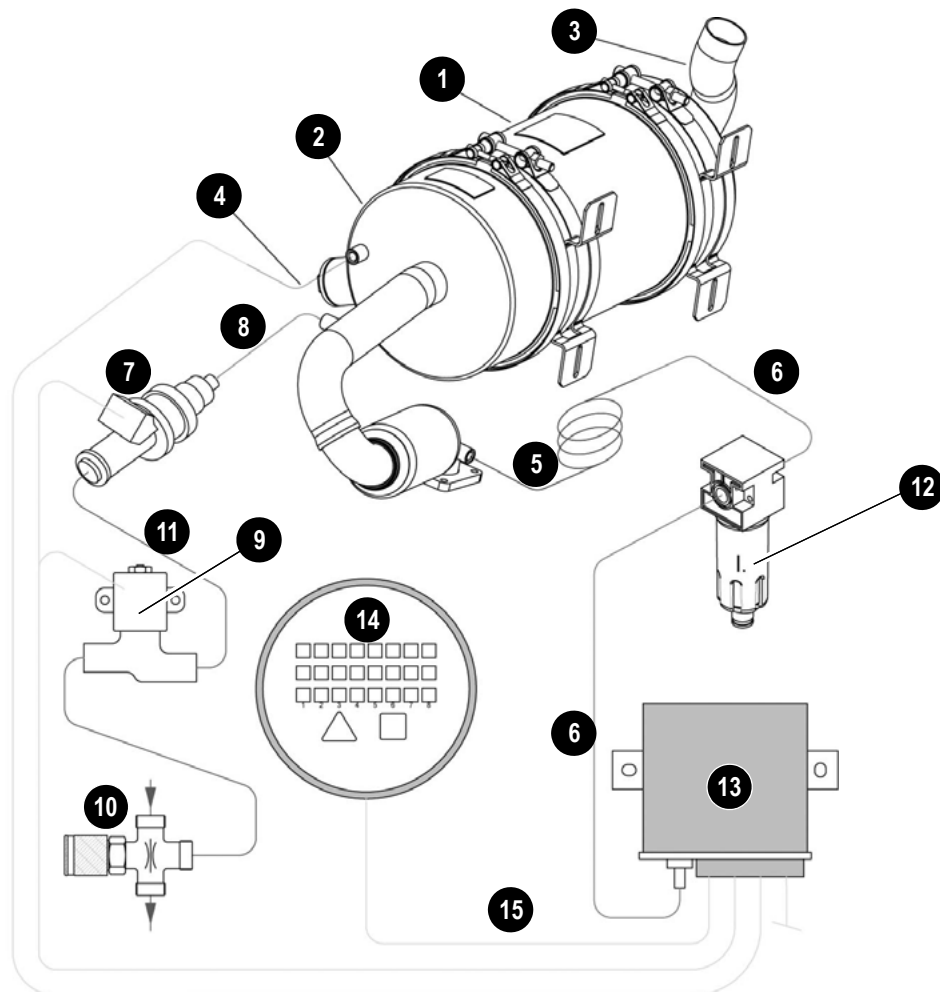


Fig. 259: Replacing the filter element

- ☞ Stop the engine.
- ☞ Remove the starting key and carry it with you.
- ☞ Fold the control lever base up.
- ☞ Tilt the cab and secure it.
- ☞ Loosen the screws and the L-shaped bracket **A** of filter element **B** and remove the bracket.
- ☞ Remove filter element **B**.
- ☞ Install the new filter element **B**.
- ☞ Mount the L-shaped bracket **A** of the filter element again with the screws.
- ☞ Tilt the cab back down again and secure it.

## 5.9 Diesel particulate filter (option)

Main components of diesel particulate filter system



Pos.	Designation	
1	Diesel particulate filter .....	5-17
2	Input cover with catalytic converter and input pipe (incl. flexible exhaust pipe).....	5-17
3	Output cover (incl. exhaust pipe)	
4	Temperature sensor	
5	Pressure line	
6	Pressure hose	
7	Injection nozzle.....	5-17
8	Injection line	
9	Stop cock	
10	Throttle screw connection	
11	Diesel lines	
12	Condensate trap .....	5-17
13	Control box .....	5-17
14	Display.....	5-19
15	Wiring	





## How the diesel particulate filter works

The machine is equipped with a closed diesel particulate filter with passive regeneration, active diesel fuel injection and a catalytic converter installed before the filter.

### Passive regeneration

The special coating of the diesel particulate filter lowers the ignition temperature of the diesel soot and ensures that the soot burns on its own including at low exhaust gas temperatures. Consequently, the soot particles retained by the diesel particulate filter are continuously burnt.

### Active diesel fuel injection

If output requirements are low, the exhaust gas temperatures of the diesel engine are too low to ensure passive regeneration. The soot particles cannot be burnt and form deposits in the filter. If a certain pressure threshold is crossed and the temperature is briefly higher, the controls activate diesel fuel injection for a short time. This causes the temperatures in the filter to rise and makes regeneration possible.

### Catalytic converter

In addition to sufficiently high temperature, soot regeneration also requires enough NOx. However, the exhaust gas of the new environment friendly diesel engines does not always contain enough NOx under all operating conditions. Therefore, a catalytic converter is installed before the filter to avoid any such shortcomings.

### Control box

The control box monitors and saves the temperature and the pressure in the particulate filter system, transmits the data to the display and controls diesel fuel injection.

### Condensate trap

The condensate trap protects the control box against damage caused by water by eliminating the condensation water in the pressure line.

### Injection nozzle

The injection nozzle is controlled by the control box and if required, injects diesel fuel into the exhaust pipe in front of the particulate filter.

## Machine operation with diesel particulate filter

The following points explain how machine operation with a diesel particulate filter differs from operation without such a filter:

### Dangers



## CAUTION

**Burn hazard. The particulate filter, its piping and the exhaust gas can reach very high temperatures.**

Risk of injury.

- Always keep a safe distance from these elements
- Let the machine cool down before performing inspection or maintenance work.

### Machine capacity

During normal machine operation, exhaust gas temperatures are sufficiently high to ensure continuous passive regeneration of the particulate filter. However, if the machine is operated at low capacity, the continuous passive regeneration stops and the exhaust gas back pressure in the diesel particulate filter rises. Diesel fuel injection is activated as soon as a certain pressure threshold is crossed and a higher exhaust gas temperature is reached for a short time.

#### **NOTICE**

The diesel particulate filter must be regenerated before the maximum authorized threshold value is reached. This can be achieved by running the machine at high capacity (high diesel engine output requirement)\*. If the pressure does not drop and the maximum authorized threshold value (– see *chapter Alarm messages* on page 5-20) is reached, stop the machine and regenerate the diesel particulate filter externally. Contact an authorized service center.

\* This can cause the exhaust gas back pressure to rise even more, however soot combustion should then cause this pressure to return to the authorized range. The engines of the 75Z3 and 8003 machines are equipped with an exhaust gas recirculation valve that closes if the engine is cold and under high load, and therefore significantly raises the exhaust gas back pressure. Avoid these operating conditions if the pressure is already near the limit.

### Cold starting

#### **NOTICE**

In order to avoid damage to the particulate filter system, warm up the engine at low idling engine speed without load for about 15 minutes\*\*. This warm-up phase is of crucial importance for the 75Z3 and 8003 machines: on these machines, the exhaust gas recirculation valve is closed when the engine is cold, which causes the exhaust gas back pressure to rise considerably. Work cannot start unless the engine has reached its operating temperature and there is a sudden and very significant drop in counterpressure.

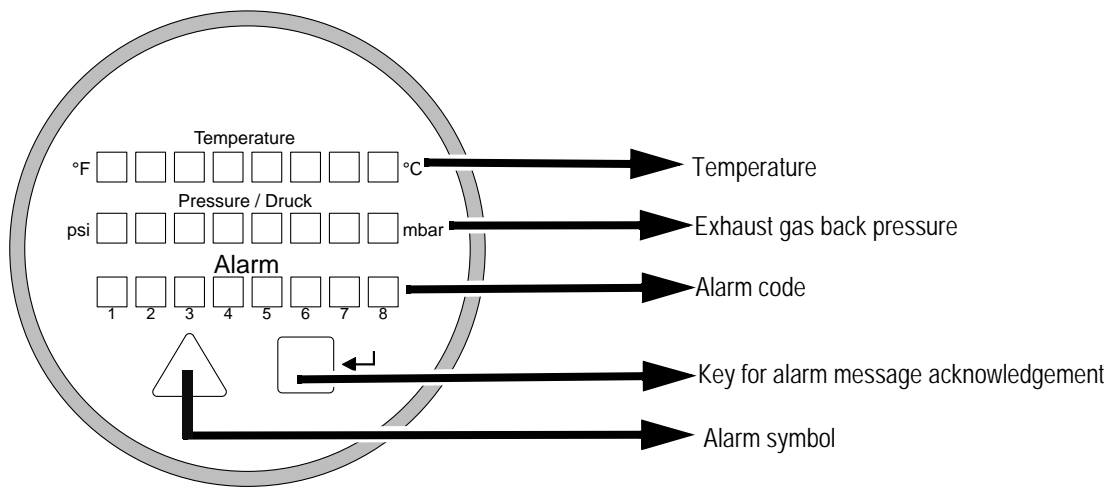
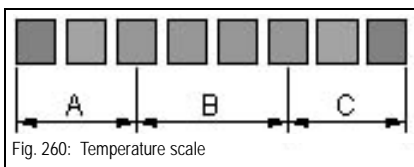
\*\* Approximate value; at lower temperatures, a longer warm-up phase may be necessary, which can be considerably reduced at high temperatures.

### Bleeding the diesel engine fuel system

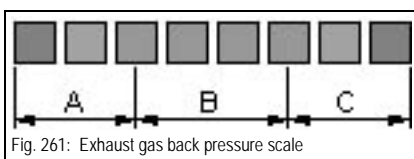
On machines equipped with diesel particulate filters, the throttle screw connection pre-tensions the system (– see *Throttle screw connection* on page 5-16) in order to create enough pressure for the diesel fuel injection nozzle of the particulate filter. In order to bleed the system, connect the minimesse hose onto the throttle screw connection and insert the other end into a container to collect the fuel as it drains. Remove the hose again as soon as there are no more bubbles in the fuel draining from the minimesse port. The machine can then be started.

**Display**

The display of the diesel fuel particulate system is located in the cab and displays the alarm messages, and the temperature and exhaust gas counterpressure ranges. Moreover, alarms can also be acknowledged by pressing a key.


**Temperature scale**


Pos.	Meaning
A	Idling speed, very low load
B	Low to average load
C	High load (optimal for regeneration)

**Exhaust gas back pressure scale**


Pos.	Meaning
A	Reached only under low load and at low engine speed
B	Range in which the machine should be operated
C	To be avoided, regeneration necessary under all circumstances

**Alarm code**

For more information – see [chapter Alarm messages](#) on page 5-20.

**Key for alarm message acknowledgement**

See chapter "Alarm messages" for description.

**Alarm symbol**

- This symbol flashes in case of an alarm.
- This symbol goes out as soon as an error is acknowledged.

Alarm messages

An alarm code is displayed as soon the diesel fuel particulate filter controls identify an error, or if the upper or lower temperature or exhaust gas back pressure thresholds have been crossed.

The following alarm codes can be displayed:

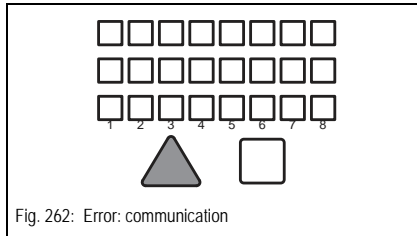


Fig. 262: Error: communication

**Display**

All LEDs off, the alarm symbol flashes.

**Error**

No communication between the display and the controls.

**Troubleshooting**

- Switch off ignition and switch it back on again.
- Check the wiring.

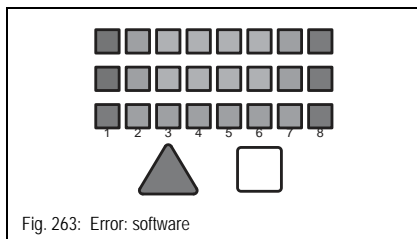


Fig. 263: Error: software

**Display**

All LEDs flash, the alarm symbol flashes.

**Error**

Software not identical for display and controls.

**Troubleshooting**

Contact an authorized service center.

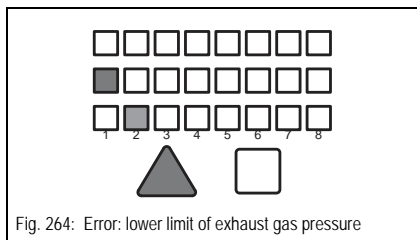


Fig. 264: Error: lower limit of exhaust gas pressure

**Display**

Pressure LED 1, alarm LED 2 and alarm symbol flash.

**Error**

Lower limit of exhaust gas counterpressure exceeded.

**Troubleshooting**

- Check pressure hose and line for leaks.
- Check particulate filter and input pipe for leaks.
- Contact an authorized service center.

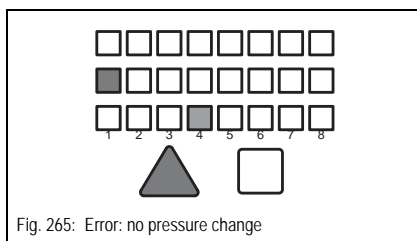


Fig. 265: Error: no pressure change

**Display**

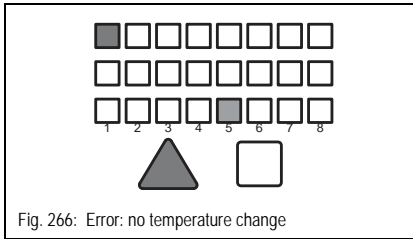
Pressure LED 1, alarm LED 4 and alarm symbol flash.

**Error**

No pressure change during the last 10 minutes.

**Troubleshooting**

- Engine does not start.
  - ☞ Start the engine.
- Absolutely constant engine load.
- Clogged pressure line.
  - ☞ Contact an authorized service center.


**Display**

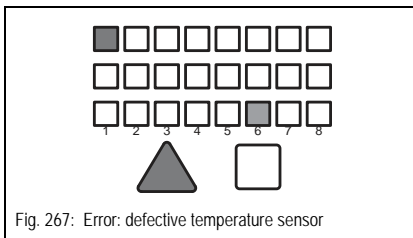
Temperature LED **1**, alarm LED **5** and alarm symbol flash.

**Error**

No temperature change during the last 10 minutes.

**Troubleshooting**

- Engine does not start.
  - ☞ Start the engine.
- Absolutely constant engine load.
- Replace the temperature sensor.
  - ☞ Contact an authorized service center.


**Display**

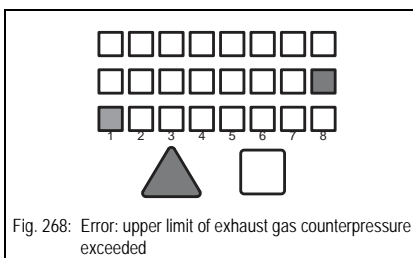
Temperature LED **1**, alarm LED **6** and alarm symbol flash.

**Error**

Malfunctioning temperature sensor.

**Troubleshooting**

- Replace the temperature sensor.
  - ☞ Contact an authorized service center.


**Display**

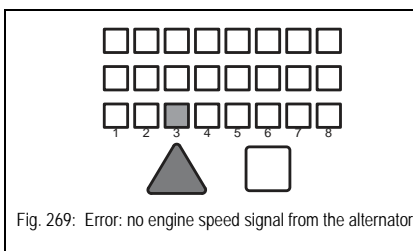
Pressure LED **8**, alarm LED **1** and alarm symbol flash.

**Error**

Upper limit of exhaust gas counterpressure exceeded.

**Troubleshooting**

- Immediately operate the machine in a way that puts a high load on the engine in order to regenerate the filter. If the pressure does not fall after 5 minutes, stop the engine and get in touch with an authorized service center.


**Display**

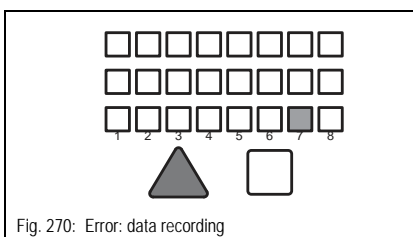
Alarm LED **3** and the alarm symbol flash.

**Error**

No engine speed signal from the alternator.

**Troubleshooting**

- Wiring from controls to alternator.
  - ☞ Check the wiring.
- Contact an authorized service center.


**Display**

Alarm LED **7** and the alarm symbol flash.

**Error**

Error during data recording.

**Troubleshooting**

- Contact an authorized service center.

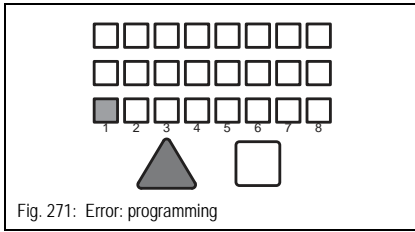


Fig. 271: Error: programming

**Display**

Alarm LED 1 and the alarm symbol flash.

**Error**

Error in controls program.

**Troubleshooting**

Contact an authorized service center.

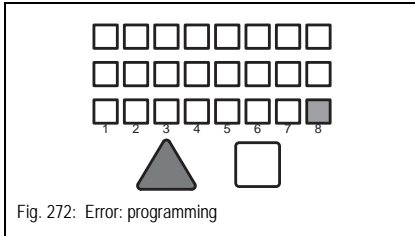


Fig. 272: Error: programming

**Display**

Alarm LED 8 and the alarm symbol flash.

**Error**

Error in controls program.

**Troubleshooting**

Contact an authorized service center.

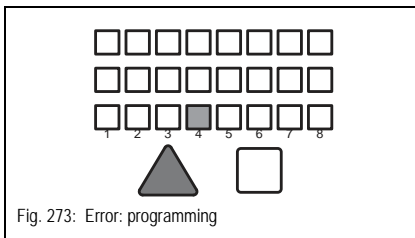


Fig. 273: Error: programming

**Display**

Alarm LED 4 and the alarm symbol flash.

**Error**

Error in controls program.

**Troubleshooting**

Contact an authorized service center.

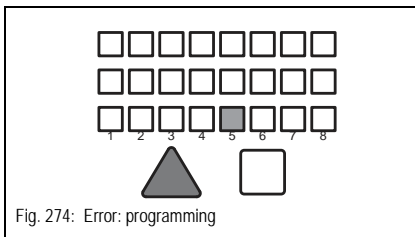


Fig. 274: Error: programming

**Display**

Alarm LED 5 and the alarm symbol flash.

**Error**

Error in controls program.

**Troubleshooting**

Contact an authorized service center.

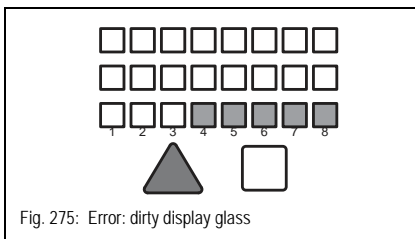


Fig. 275: Error: dirty display glass

**Display**

Alarm LEDs 4 to 8 and the alarm symbol flash.

**Error**

Dirty display glass.

**Troubleshooting**

Clean the display glass.

**Maintenance**

The maintenance work listed below must be performed in addition to the maintenance work stated in the Operator's Manual of the machine.

**Daily maintenance**

- Drain the water from the condensate trap by opening valve **A**.
- Ensure that there is no soot on the exhaust pipe \*.
- Check whether all indicator lights on the display come on when switching on ignition.
- Check the plausibility of the temperature values.
- Check the plausibility of the pressure values. To this effect, open the valve on the condensate trap after the machine is warm and read the pressure off the display, then close the valve and read off the pressure again. The pressure must be higher with a closed valve, otherwise there is an error in the system.

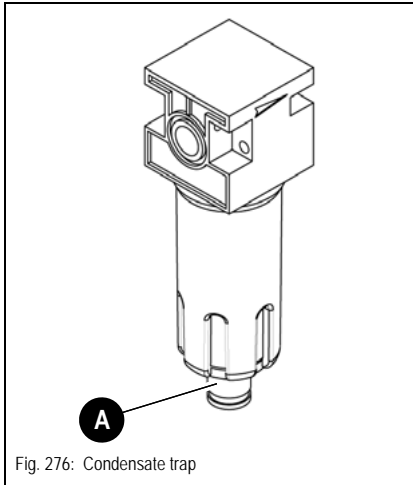


Fig. 276: Condensate trap


**Important**

Once maintenance is over, ensure that condensate trap valve **A** is closed.

**Every 50 h**

- Visual check of the particulate filter system (wiring, pressure line, particulate filter, insulating mat, diesel fuel lines etc.).
- Ensure that the clips on the diesel particulate filter are fastened firmly.
- Check the fastening screws of the input pipe on the exhaust manifold for tightness.
- Ensure that there is no soot on the end pipe of the particulate filter\*.

**Once a year/every 500 h**

- Have the system components checked for correct function by an authorized service.  
 Contact an authorized service center.

**Statutory maintenance work**

- Get in touch with an authorized service center for information on possible country-specific statutory maintenance work.

**As required**

- If the maximum authorized limit for the exhaust gas back pressure is exceeded, stop the machine and regenerate the diesel particulate filter externally. Contact an authorized service center.
- During fuel combustion in the diesel engine, part of the engine oil is burnt, too, and produces ashes that are deposited in the diesel particulate filter. These ashes contaminate the diesel particulate filter by and by and prevent the absorption of soot. This causes the machine to constantly work at the upper limit of the exhaust gas back pressure. As soon as this is the case\*\*, the diesel particulate filter must be cleaned externally. Contact an authorized service center.

\* Diesel fuel injection can create a slight black cloudiness at the end pipe, however, this does not affect the function of the system whatsoever.

\*\* The time this condition comes into being greatly depends on the application, the user, the machine, and the oil and fuel used.

## Oils and fuels

### Fuel

The machine can be operated with the authorized fuels stated in the Operator's Manual of the machine, with the following restrictions:

- Use only diesel fuel with a sulphur content of < 50 ppm
- No biodiesel allowed

### Engine oil

The machine can be operated with the authorized engine oils stated in the Operator's Manual of the machine. However, in order to minimise soot in the diesel particulate filter, we recommend using oils with a low share of soot (so-called Low-Sap oils). These oils must comply with the same technical specifications as the authorized engine oils stated in the Operator's Manual of the machine.

### Other material

See the Operator's Manual of the machine.

## Troubleshooting

### Blue exhaust gas

Blue exhaust gas is a sign of unburnt engine oil, and of a diesel engine malfunction. Switch off the diesel engine immediately to avoid damage to the diesel engine and the particulate filter.

Contact an authorized service center.

### White exhaust gas

White exhaust gas is caused by evaporating water or unburnt diesel fuel. When starting, a cold engine normally emits white smoke briefly when the condensation water in the particulate filter evaporates.

On a warm engine, white exhaust gas is caused by unburnt diesel fuel of the active diesel fuel injection during active regeneration and should disappear again after a short time. Get in touch with an authorized service center if the white exhaust gas persists or if it appears frequently.

### Black exhaust gas

Black exhaust gas is a sign of incomplete combustion and can have several causes (see the Operator's Manual of the machine for details). However, the particulate filter filters this contamination (soot) out of the exhaust gas if it works correctly. Therefore, black exhaust gas is a sign of a malfunction or of damage in the particulate filter system\*. Contact an authorized service center.

\* Diesel fuel injection can create a slight black cloudiness at the end pipe, however, this does not affect the function of the system whatsoever.

## Warranty

Bear in mind that warranty for components of the diesel particulate filter becomes invalid if the instructions of this Operator's Manual are not followed, or if the system has been tampered with or modified.



## 5.10 V-belt



### WARNING

**Entanglement hazard. Only check or retighten/replace the V-belts when the engine is stopped.**

Risk of personal injury.

- Stop the engine before performing inspection work in the engine compartment.
- Disconnect the battery or the battery master switch.
- Let the engine cool down.

### NOTICE

To avoid possible engine damage, replace cracked and/or stretched V-belts.

Check the V-belt once a day, and retighten if necessary.

Retighten new V-belts after about 15 minutes of running time.

### Checking V-belt tension

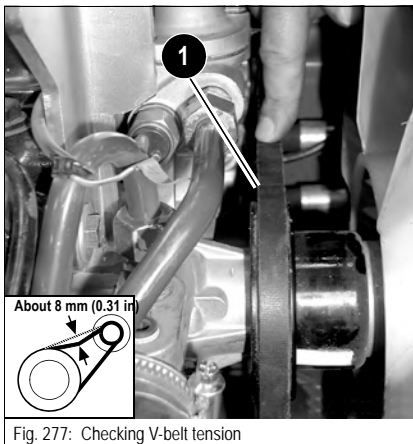


Fig. 277: Checking V-belt tension

- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Disconnect the battery or actuate the battery master switch.
- ☞ Let the engine cool down.
- ☞ Open the engine cover.
- ☞ Carefully check V-belt 1 for damage, cracks or cuts.
- ➔ If the V-belt is damaged:
  - ☞ Have the V-belt replaced by a qualified technician.
  - ➔ Replace the V-belt if it touches the base of the V-belt groove or if the pulleys are damaged.
- ☞ Press with your thumb about 100 N (22.5 lbf) to check the deflection of the V-belt between the crankshaft disc and the fan wheel.  
A new V-belt should have a deflection of 6 to 8 mm (0.24 to 0.31 in), a used V-belt (after about 5 minutes running time) should have a deflection of 7 to 9 mm (0.27 to 0.35 in).
- ☞ Retighten the V-belt if necessary.
- ☞ Close and lock the engine cover.

Retightening the V-belt

**NOTICE**

Overtightening the V-belts can damage the V-belts, the V-belt guide and the alternator, air conditioning compressor and water pump bearings.

- Check V-belt tension – see *Checking V-belt tension* on page 5-25
- Replace V-belts with damage, cracks, cuts etc.
- Avoid contact of oil, grease or similar substances with the V-belt.

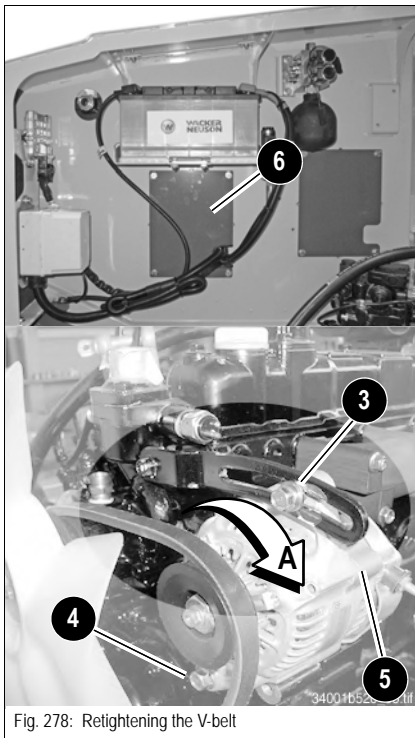


Fig. 278: Retightening the V-belt

- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Tilt the cab and secure it – see *chapter 3.37 Tilting the cab* on page 3-60.
- ☞ Disconnect the battery or actuate the battery master switch.
- ☞ Let the engine cool down.
- ☞ Open the engine cover.
- ☞ Unscrew cover **6**.
  - ➔ The alternator can now be accessed from either side.
- ☞ Slacken fastening screws **3** and **4** of alternator **5**.
- ☞ Use a suitable tool to push the alternator in the direction of arrow **A** until reaching the correct V-belt tension (see fig. 278).
- ☞ Keep the alternator in this position, and at the same time tighten fastening screws **3** and **4**.
- ☞ Check V-belt tension again and adjust it if necessary.
- ☞ Screw on cover **6**.
- ☞ Connect the battery or the battery master switch.
- ☞ Tilt the cab back down again and secure it.
- ☞ Close and lock the engine cover.

**Checking the V-belt of the air conditioning system (option)**
**NOTICE**

Excessive or insufficient tension of the V-belt can cause damage to the V-belt or to the compressor of the air conditioning system.

- Always ensure that the V-belt has the correct tension.
- Replace V-belts with damage, cracks, cuts etc.
- Avoid contact of oil, grease or similar substances with the V-belt.

Check the V-belt once a day, and retighten if necessary.

Retighten new V-belts after about 15 minutes of running time.

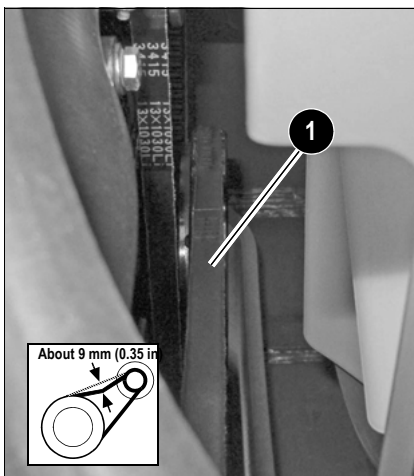


Fig. 279: Checking the V-belt tension of the air conditioning system

- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Disconnect the battery or actuate the battery master switch.
- ☞ Let the engine cool down.
- ☞ Open the engine cover.
- ☞ Carefully check V-belt **1** for damage, cracks or cuts.
- ☞ If the V-belt is damaged:
  - ☞ Have the V-belt replaced by a qualified technician.
  - ☞ Replace the V-belt if it touches the base of the V-belt groove or if the pulleys are damaged.
- ☞ Press with your thumb about 100 N (22.5 lbf) to check the deflection of the V-belt between the pulley and the crankshaft disc.  
The deflection of a new belt should be 7 to 9 mm (0.27 to 0.35 in).  
The deflection of a used belt (after about 5 minutes running time) should be 9 to 11 mm (0.35 to 0.43 in).
- ☞ Retighten the V-belt if necessary.
- ☞ Connect the battery or the battery master switch.
- ☞ Close and lock the engine cover.

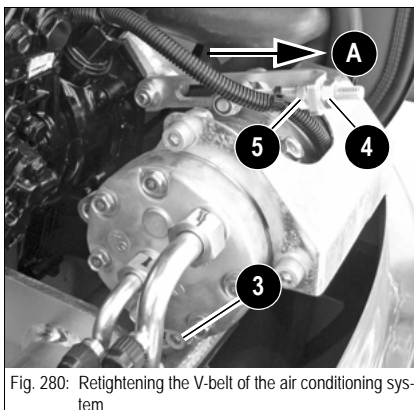
**Tightening the V-belt of the air conditioning system (option)**


Fig. 280: Retightening the V-belt of the air conditioning system

- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Disconnect the battery or actuate the battery master switch.
- ☞ Let the engine cool down.
- ☞ Open the engine cover.
- ☞ Slacken fastening screw **3** of the air conditioning compressor.
- ☞ Slacken locknut **4** of the belt tensioner.
- ☞ Screw nut **5** on the belt tensioner in the direction of arrow **A** until reaching the correct V-belt tension (see fig. 280).
- ☞ Tighten locknut **4**.
- ☞ Tighten fastening screw **3** of the air conditioning compressor.
- ☞ Check V-belt tension again and adjust it if necessary.
- ☞ Connect the battery or the battery master switch.
- ☞ Close and lock the engine cover.

## 5.11 Hydraulic system

### Specific safety instructions



- Release the pressure in all lines carrying hydraulic oil prior to any maintenance and repair work. To do this:
  - Lower the boom or the attachment to the ground.
  - Move all control levers of the hydraulic control valves several times.
- Fold the control lever base up.
- Hydraulic oil escaping under high pressure can penetrate the skin and cause serious injuries. Therefore always consult a doctor immediately, even in the case of minor wounds – otherwise serious infections could set in.
- If the hydraulic oil in the sight glass is cloudy, this indicates that water or air has penetrated the hydraulic system. This can cause damage to the hydraulic pump.
- Oil or fuel flowing out of high pressure lines can cause fire or malfunctions, and severe injuries or damage to property. Interrupt work immediately if slack nuts or damaged hoses and lines are detected.
  - ☞ Contact a Wacker Neuson dealer immediately.
- Have a line replaced if one of the following problems is detected:
  - ☞ Damaged or leaky hydraulic seals.
  - ☞ Worn or torn shells or uncovered reinforcement branches.
  - ☞ Expanded shells in several positions.
  - ☞ Entangled or crushed movable parts.
  - ☞ Foreign bodies jammed or stuck in protective layers.

### NOTICE

Dirty hydraulic oil, lack of oil or wrong hydraulic oil can cause severe damage to the hydraulic system.

- Take care to avoid dirt when working.
- Always use the filling screen when refilling hydraulic oil.
- Only use authorized oils of the same type  
– see [chapter 5.21 Fluids and lubricants](#) on page 5-54.
- Always add hydraulic oil before the level gets too low  
– see [Adding hydraulic oil](#) on page 5-30.
- If the hydraulic system is filled with biodegradable oil, then use only biodegradable oil of the same type for adding – observe the sticker on the hydraulic oil tank.
- Contact customer service if the hydraulic system filter is dirty and contains metal chippings. Otherwise, follow-on damage can result.



### Environment

Collect drained hydraulic oil and biodegradable oil in a suitable container. Dispose of drained oil and used filters by an ecologically safe method. Always contact the relevant authorities or commercial establishments in charge of oil disposal before disposing of biodegradable oil.

**Checking the hydraulic oil level**

**WARNING**

**High pressure hydraulic oil ejection hazard. Overfilling the hydraulic system with hydraulic oil can lead to high pressures and escaping hydraulic oil.**

Risk of severe injury.

- Do not overfill the hydraulic system.
- Check the hydraulic oil level each time the machine is put into operation or once a day.

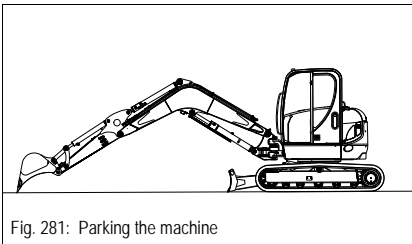


Fig. 281: Parking the machine

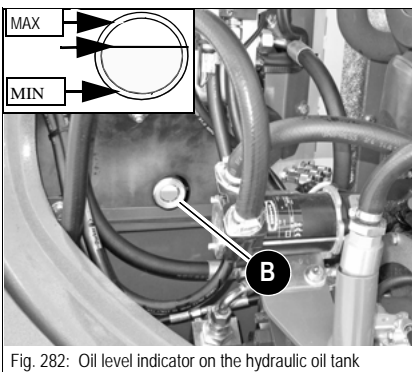


Fig. 282: Oil level indicator on the hydraulic oil tank

- Park the machine on level ground.
- Position the boom straight ahead.
- Retract the bucket and boom hydraulic cylinders, lower the boom and the bucket teeth to the ground.
- Lower the stabilizer blade to the ground.
- Stop the engine.
- Fold the control lever base up.
- Remove the starting key and carry it with you.
- Unlock and raise the engine cover.
- Sight glass **B** is located at the rear right corner of the machine on hydraulic oil tank.
- Check the oil level on sight glass **B**.
- The oil level must be about 1 cm (0.39 in) over the center, between positions **MIN** and **MAX**, as shown by the arrows in *Fig. 282*.
- ➔ The **MIN** level is marked by the lower joint.
- ➔ The **MAX** level is marked by the upper joint.

If the oil level is lower:

- Add hydraulic oil.
- Close and lock the engine cover.

The oil level varies according to the machine's operating temperature:

Machine condition	Temperature	Oil level
Before putting into operation	Between 10 and 30 °C (between 50 and 86 °F)	<b>MIN</b> mark
Normal operation	Between 50 and 90 °C (between 122 and 194 °F)	<b>MAX</b> mark


**Important**

Measure the oil level of the hydraulic system only after the machine reaches its operating temperature.

Adding hydraulic oil



**WARNING**

**High pressure hydraulic oil ejection hazard. Removing the filler plug can cause oil to escape.**

Risk of injury.

- Carefully open breather filter **A** under tank cover **V** to slowly release the pressure inside the tank.

**NOTICE**

Do not add hydraulic oil unless the engine is stopped. Otherwise, hydraulic oil will overflow at the filler opening on the hydraulic reservoir.

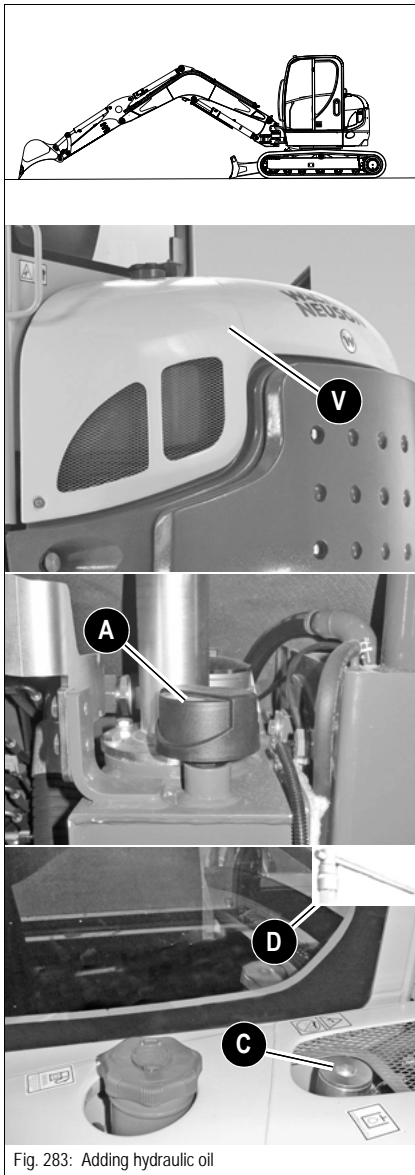


Fig. 283: Adding hydraulic oil

- Park the machine on level ground.
- Retract the bucket and boom hydraulic cylinders, lower the boom and the bucket teeth to the ground.
- Lower the stabilizer blade to the ground.
- Set the boom straight (offset hydraulic cylinder).
- Stop the engine.
- Fold the control lever base up.
- Let the engine cool down.
- Remove tank cover **V**.
- ➔ Open breather filter **A** carefully to release the pressure inside the tank.
- Slowly open plug **C** with tool **D** included in the tool kit.

With the filter insert in place:

- Add hydraulic oil.
- Check the hydraulic oil level on sight glass **B** – see *Checking the hydraulic oil level* on page 5-29.
- Add if necessary and check again.
- Tightly close plug **C** again with tool **D**.
- Retighten breather filter **A** hand-tight.
- Install tank cover **V**.



**Important**

The tool kit is in the engine compartment.



**Important information for the use of biodegradable oil**

- Use only the biodegradable hydraulic fluids which have been tested and approved by Wacker Neuson. Contact a Wacker Neuson dealer for the use of other products which have not been recommended. In addition, ask the oil supplier for a written declaration of guarantee. This guarantee is applicable to damage occurring on the hydraulic components, which can be proved to be due to the hydraulic fluid.
- Use only biodegradable oil of the same type for adding. In order to avoid misunderstandings, a label providing clear information is located on the hydraulic oil tank (next to the filler inlet) regarding the type of oil currently used. Replace missing labels. The joint use of two different biodegradable oils can affect the quality of one of the oil types. Therefore, ensure that the remaining amount of initial hydraulic fluid in the hydraulic system does not exceed 8 % when changing biodegradable oil (manufacturer indications).
- Do not add with mineral oil – the content of mineral oil should not exceed 2 % in order to avoid foaming problems and to ensure biological degradability.
- When running the machine with biodegradable oil, the same oil and filter replacement intervals are valid as for mineral oil – *see chapter 5.22 Maintenance plan (overview)* on page 5-57
- Always have the condensation water in the hydraulic oil tank drained by an authorized service center before the cold season. The water content may not exceed 0.1 % by weight.
- The instructions in this Operator's Manual concerning environmental protection are also valid for the use of biodegradable oil.
- If additional hydraulic attachments are mounted or operated, use the same type of biodegradable oil for these attachments to avoid mixtures in the hydraulic system.
- Subsequent change from mineral oil to biodegradable oil must be performed by an authorized service center.

## Checking hydraulic pressure lines

### Specific safety instructions



## DANGER

**High pressure hydraulic oil ejection hazard. Hydraulic oil escaping under high pressure can catch fire, damage property, penetrate the skin and cause severe burns.**

Risk of serious injuries.

- Do not operate the machine with leaking or damaged hydraulic system components.
- Use a piece of cardboard to diagnose the source of hydraulic leaks.
- Hydraulic oil can be hot and can cause serious burns if contact is made with skin. If contact occurs with hot oil, seek immediate medical attention and treatment for the burn.
- Wear safety glasses/goggles to avoid eye contact. If oil contacts the eye flush immediately with clean water and seek emergency medical treatment.
- Seek immediate medical attention if oil penetrates the skin. Oil can cause serious infections.
- Retighten leaking threaded fittings and hose connections only when the system is not under pressure; i.e. release the pressure before working on pressurized lines.
- Never weld or solder damaged or leaking pressure lines and threaded connections. Replace damaged parts with new ones.
- Do not check for leaks with an incandescent light or open flame due to explosive fire risk from vaporized oil mist.
- Never search for leaks with your bare hands, but wear protective gloves.

## NOTICE

Leaks and damaged pressure lines must be immediately repaired or replaced by a Wacker Neuson service center. This not only increases the operating safety of your machine but also helps to protect the environment.

- Replace hydraulic hoses every 6 years from the date of manufacture, even if they do not seem to be damaged.



## Environment

Ensure environmentally compatible disposal.

In this respect, we recommend that you observe all the relevant safety regulations for hydraulic lines, as well as the safety regulations regarding accident prevention and occupational health and safety in your country. Also observe DIN 20066, part 5.

The article number is marked on the clamping section, and the date of manufacture is indicated on the hose of each hose connection.

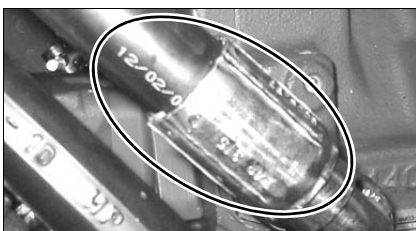


Fig. 284: Article number



## 5.12 Tracks

- Track wear can vary according to work and ground conditions.
  - ☞ We recommend checking track wear and tension once a day.
  - ☞ Park the machine on firm, level and horizontal ground to check and perform maintenance.

### Checking the track tension of the rubber tracks

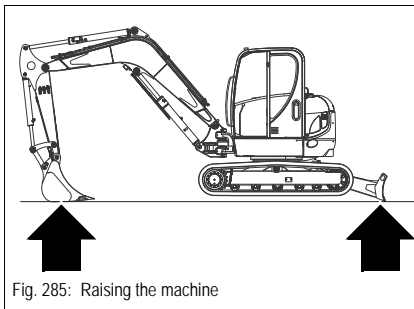


#### WARNING

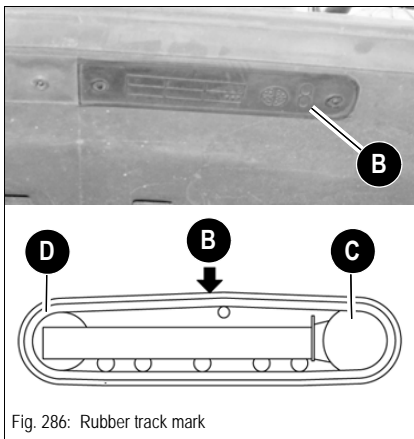
**Crushing hazard. Do not work under the machine unless it has been raised and supported properly.**

Risk of injury or death.

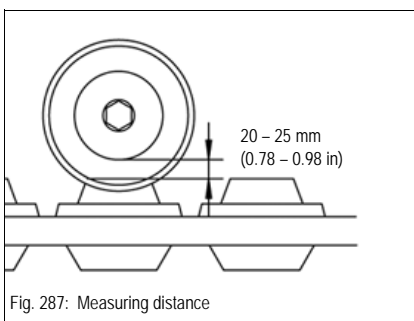
- Raising the machine with the stabilizer blade and the attachment does not provide adequate safety for work that has to be performed under a raised machine.
- Do not allow anyone to stay in the danger area.
- Firmly support the machine with chocks or suitable brackets. Do not damage any parts of the machine as you support it.



- ☞ Place the machine on firm, level and horizontal ground.
- ☞ Raise the machine evenly and horizontally by means of the boom and the stabilizer blade.
- ☞ Slowly and carefully actuate the control levers.

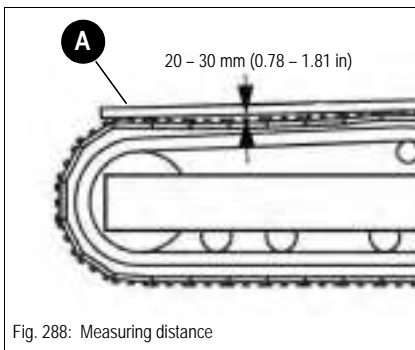


- ☞ The rubber track has a mark **B** as shown in Fig. 286.
- ☞ Place the machine so that mark **B** of the rubber track is between the drive pinion **C** and the track tension roller **D**.
- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Use suitable auxiliary means to support the machine.



- Standard play between the sliding block's shoulder and the contact area of the second support roller of the drive pinion is 20 – 25 mm (0.78 – 0.98 in).
- ☞ Set the tension as follows if it is not in accordance with the rated value – see *Adjusting track tension* on page 5-34.

### Checking the track tension of the steel tracks (option) and hybrid tracks (option)



- ☞ Place the machine on firm, level and horizontal ground.
- ☞ Stop the engine.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Use suitable auxiliary means to support the machine.
- ☞ Place a measuring staff **A** across the highest points of the track.
  - ➔ The track must sag 20 – 30 mm (0.78 – 1.81 in) in the middle.
- ☞ Set the tension as follows if it is not in accordance with the rated value – see *Adjusting track tension* on page 5-34.

### Adjusting track tension



#### CAUTION

**Projectile hazard. The grease fitting for track adjustment is subject to high pressure. The grease fitting can become a projectile if pressure caused by track tension is not properly relieved.**

Risk of injury.

- Do not remove the grease fitting.
- Wear safety goggles, gloves and protective clothing to reduce skin exposure to grease. Wipe grease from skin and seek immediate attention if grease contacts eyes.
- When relieving the pressure in the track tension system, do not turn the grease fitting farther than one counter-clockwise turn.
- Do not loosen any part of the track tension system until the pressure has been released from the track tension system.
- Keep your face away from the lubricating valve connection.
- Do not use auxiliary force on the track or idler in an effort to force grease from the loosened fitting. Contact an authorized Wacker Neuson service center.

#### NOTICE

Excessive tension of the tracks causes severe damage to the hydraulic cylinder and the track.

- Tighten the tracks only up to the prescribed measuring distance.

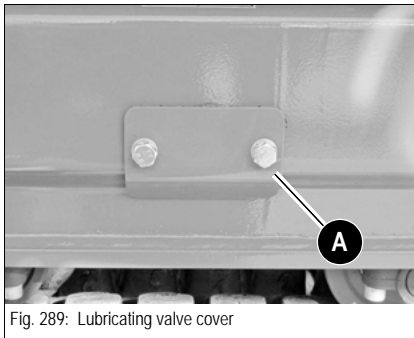


Fig. 289: Lubricating valve cover

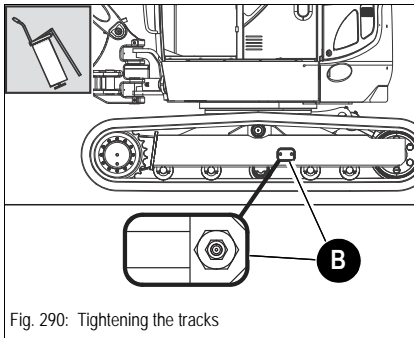


Fig. 290: Tightening the tracks

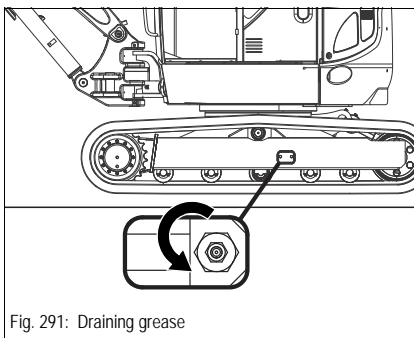


Fig. 291: Draining grease

### Tightening the tracks

➤ Remove cover **A** over the lubricating valve with a suitable tool.

➤ Inject grease with the pump through lubricating valve **B**.

➤ Check the tension is correct by lowering the machine to the ground, starting the engine, letting it run at idling speed without any load and slowly moving the machine forward and reverse and switching it off again.

➤ Lift the machine again.

➤ Check the tension of the tracks again.

➡ If the tension is not correct:

➤ Adjust again.

➤ Should the tracks still be slack after injecting more grease, replace the tracks or the seals in the hydraulic cylinders. Contact an authorized dealer in this case.

### Reducing tension

➤ Place a suitable container underneath to collect the grease.

➤ Slowly slacken lubricating valve **B** one revolution counterclockwise to release the grease.

➡ The grease flows out of the groove of the lubricating valve.

➤ Retighten the lubricating valve **B**.

➤ Check the tension is correct by lowering the machine to the ground, starting the engine, letting it run at idling speed without any load and slowly moving the machine forward and reverse and switching it off again.

➤ Lift the machine again.

➤ Check the tension of the tracks again.

➡ If the tension is not correct:

➤ Adjust again.

➤ Install cover **A** again.



### Environment

Use a suitable container to collect the grease as it flows out and dispose of it in an environmentally friendly manner.

## 5.13 Track propulsion final drive



### WARNING

**Burn hazard. The engine components and the oil are very hot immediately after switching off the machine. If the inside of the drive gear is under pressure, the oil or the plug can be squeezed out.**

Risk of injury and scalding.

- Wait until the engine has cooled down before taking up work.
- Slowly open the plug to release the pressure inside.

### Checking the oil level and adding oil

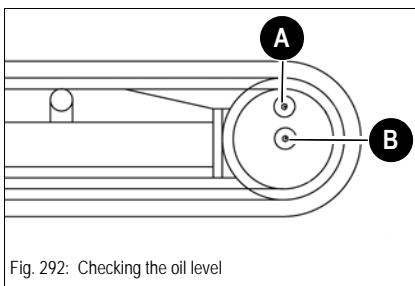


Fig. 292: Checking the oil level

- ☞ Place the machine on firm, level and horizontal ground.
- ☞ Place the machine so that filler plug **A** is at the top.
- ☞ Stop the engine.
- ☞ Let the engine cool down.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Unscrew screws **A** and **B** with a suitable tool.
- ☞ A small quantity of oil must flow out of opening **B**.
- ➔ If the oil does not flow out of opening **B**, add oil:
  - ☞ Add oil through opening **A**,
    - ➔ until a small quantity of oil flows out of opening **B**.
- ☞ Replace and tighten screws **A** and **B** back in again.
- ☞ Move the machine a few metres.
- ☞ Check the oil level again.
  - ➔ If the oil level is not correct:
    - ☞ Repeat the procedure.

### Draining oil

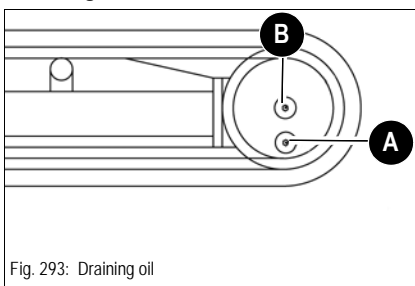


Fig. 293: Draining oil

- ☞ Place the machine on firm, level and horizontal ground.
- ☞ Place the machine so that filler plug **A** is at the bottom.
- ☞ Stop the engine.
- ☞ Let the engine cool down.
- ☞ Fold the control lever base up.
- ☞ Remove the starting key and carry it with you.
- ☞ Unscrew screws **A** and **B** with a suitable tool.
  - ➔ The oil now flows out of opening **B**.
- ☞ Use a suitable container to collect the oil as it drains.



### Environment

Collect the oil with a suitable container and dispose of it in an environmentally friendly manner.

## 5.14 Maintenance of attachments



### Important

Correct maintenance and service is absolutely necessary for smooth and continuous operation, and for an increased service life of the attachments. Observe the lubrication and maintenance instructions in the Operator's Manuals of the attachments.

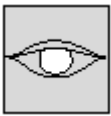
## 5.15 Electrical system

### Service and maintenance work at regular intervals



#### Checks before driving the machine or when changing users

- Is the light system OK?
- Do the lights and the signalling and warning system work?



#### Every week

- Electric fuses – *see chapter Fuse box on instrument panel (75Z3/8003 up to serial no. AD07209/AD07187)* on page 6-3.
- Cable and earth connections.
- Battery charge condition – *see Battery* on page 5-38.
- Condition of battery terminals.

### Instructions concerning specific components

#### Cables, lamps and fuses

##### Always observe the following instructions:

- Malfunctioning components of the electrical system must always be replaced by an authorized expert. Bulbs and fuses may be changed by the user.
- When performing maintenance work on the electrical system, pay particular attention to ensuring good contact in leads and fuses.
- Blown fuses indicate overloading or short circuits. The electrical system must therefore be checked before installing the new fuse.
- Only use fuses with the specified load capacity (amperage) – *see chapter Fuse box on instrument panel (75Z3/8003 up to serial no. AD07209/AD07187)* on page 6-3.

### Alternator

##### Always observe the following instructions:

- Start the engine only if the battery is connected.
- When connecting the battery, ensure that the poles (+/-) are not inverted.
- Always disconnect the battery before performing welding work or connecting a quick battery charger.
- Replace malfunctioning charge indicator lights immediately – *see chapter Alternator charge function indicator light (red)* on page 3-14.

## Battery

**WARNING**

**Hazardous substances. Batteries contain caustic sulphuric acid.**

Risk of severe injury.

- This acid must not be allowed to come into contact with the skin, the eyes, clothing or the machine.
- Always wear goggles and protective clothing with long sleeves.
- If acid is spilt:
- Thoroughly rinse all affected surfaces immediately with plenty of water.
- Thoroughly wash any part of the body touched by the acid immediately with plenty of water and seek medical attention at once.

**WARNING**

**Explosion hazard. A potentially combustible oxygen-hydrogen mixture forms in batteries during normal operation and especially when charging.**

Risk of severe injury.

- Always wear gloves and eye protection when working with batteries.
- Avoid naked flames and sparks and do not smoke in the vicinity of open battery cells.
- In case of a frozen battery or of an insufficient electrolyte level, do not try starting the machine with battery jumper cables. Dispose of the battery immediately.

- Use only 12 V power sources. Higher voltages will damage the electric components.
- When connecting the battery leads, ensure that the poles +/- are not inverted, otherwise sensitive electric components will be damaged.
- Do not interrupt voltage-carrying circuits at the battery terminals – danger of sparking.
- Never place tools or other conductive articles on the battery – danger of short circuit.
- Disconnect the negative (-) battery terminal from the battery before starting repair work on the electrical system.
- Dispose of used batteries properly.

**Important**

Do not disconnect the battery while the engine is running

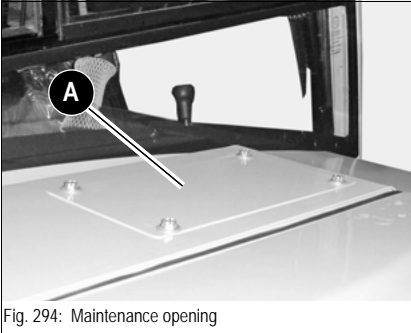


Fig. 294: Maintenance opening

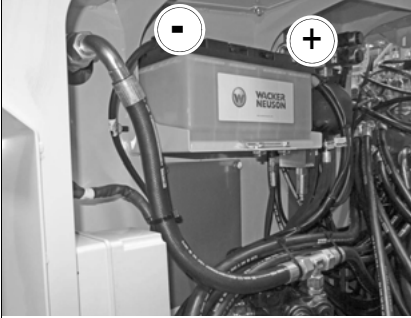


Fig. 295: Battery

**Important**

The battery is accessed via maintenance opening **A** outside the machine to the right of the cab.

The battery is "maintenance-free". However have the battery checked at regular intervals to ensure that the electrolyte level is between the MIN and MAX marks.

Checking the battery requires it to be removed and must be performed by an authorized service center.

Always follow the specific battery safety instructions.

## 5.16 General maintenance work

### Cleaning

Cleaning the machine is divided into 3 separate areas:

- Inside the cab.
- Exterior of the machine.
- Engine compartment.

The wrong choice of cleaning equipment and agents can impair the operating safety of the machine on the one hand, and on the other undermine the health of the persons in charge of cleaning the machine. It is therefore essential to observe the following instructions.

### General instructions for all areas of the machine

#### Cleaning with washing solvents

- Ensure adequate room ventilation.
- Wear suitable protective clothing.
- Do not use flammable liquids, such as petrol or diesel.

#### Cleaning with compressed air

- Work carefully.
- Wear goggles and protective clothing.
- Do not aim the compressed air at the skin or at other people.
- Do not use compressed air for cleaning your clothing.

#### Cleaning with a high-pressure cleaner or steam jet

- Cover electric parts.
- Do not directly expose electric components and damping material to the jet.
- Cover the vent filter on the hydraulic oil tank and the filler caps for fuel, hydraulic oil etc.
- Protect the following components from moisture:
  - Electric components such as the alternator etc.
  - Control devices and seals.
  - Air intake filters etc.

#### Cleaning with volatile and easily flammable anticorrosion agents and sprays:

- Ensure adequate room ventilation.
- Do not use unprotected lights or naked flames.
- Do not smoke.

### Inside the cab

#### **NOTICE**

Never use high-pressure cleaners, steam jets or high-pressure water to clean inside the cab. Water under high pressure can

- penetrate into the electrical system and cause short circuits and
- damage seals and disable the controls.

We recommend using the following aids to clean the cab:

- Broom
- Vacuum cleaner





- Damp cloth
- Brush
- Water with mild soap solution

**Cleaning the seat belt**

- Clean the seat belt (which remains fitted in the machine) only with a mild soap solution; do not use chemical agents as they can destroy the fabric.

**Exterior of the machine**

The following articles are generally suitable:

- High-pressure cleaner.
- Steam jet.

**Engine compartment**



**WARNING**

**Entanglement hazard. Clean the engine at engine standstill only.**

Risk of personal injury.

- Stop the engine before cleaning.



**WARNING**

**Burn hazard. Clean the engine at engine standstill only.**

Risk of personal injury.

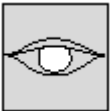
- Stop engine before cleaning.
- Let the engine cool down.

**NOTICE**

When cleaning the engine with a water or steam jet

- The engine must be cold and do not point the jet directly at electric sensors such as the oil pressure switch.
- The humidity penetrating any such sensors causes them to fail and leads to engine damage.

**Screw connections and attachments**



All screw connections must be checked regularly for tightness, even if they are not listed in the maintenance schedules.

☞ *Engine fastening screws.*

☞ *Fastening screws on the hydraulic system.*

☞ *Line, bucket teeth and pin fastenings on the attachment.*

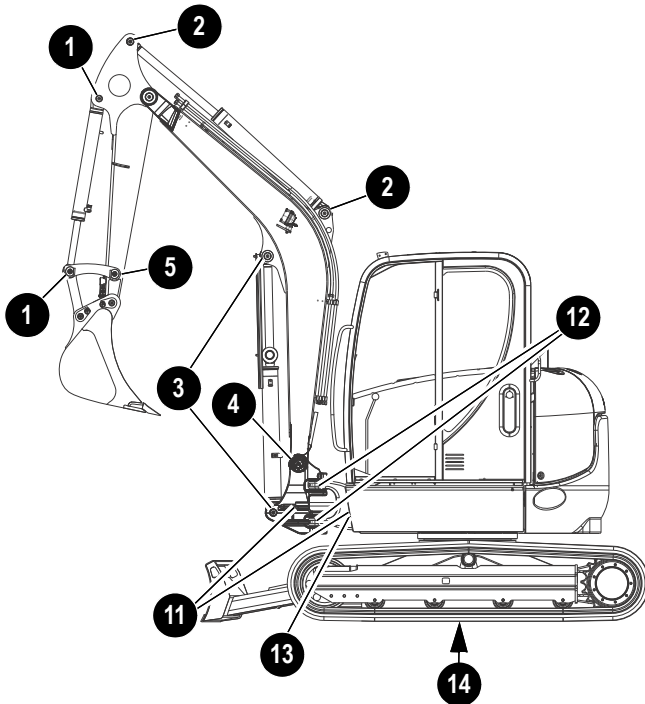
Retighten loose connections immediately. Contact an authorized service center if necessary.

**Pivots and hinges**

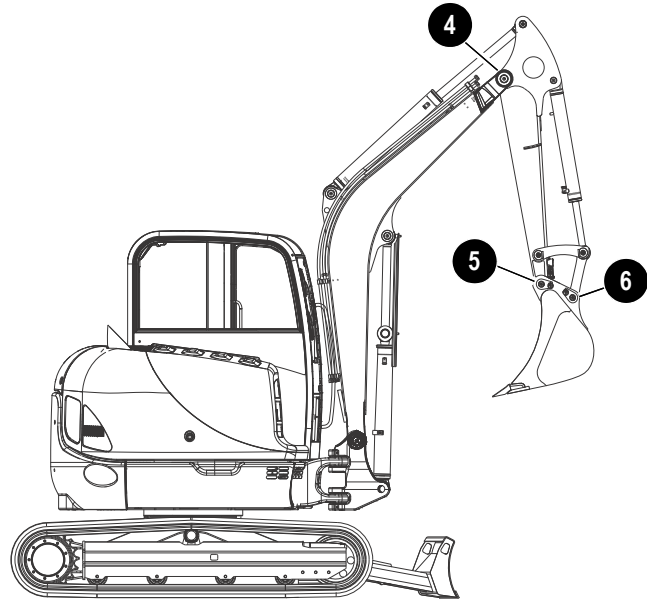


All mechanical pivot points on the machine (e.g. door hinges, joints) and fittings (e.g. door arresters) must be lubricated regularly, even if they are not listed in the lubrication plan.

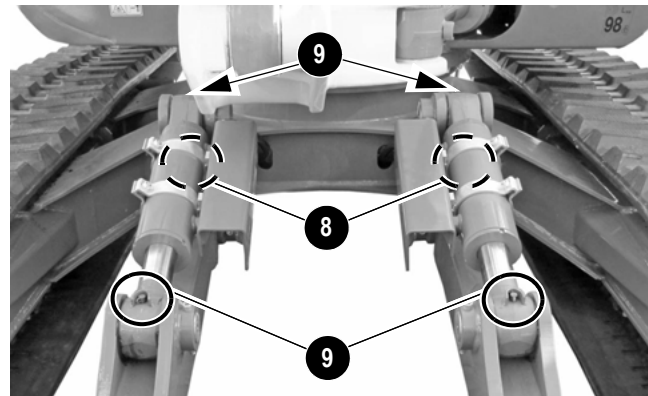
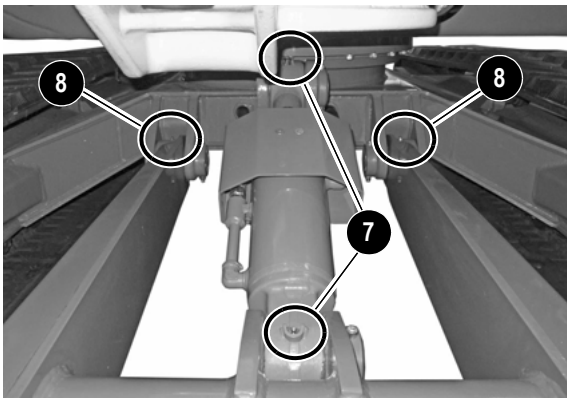
### 5.17 Overview of lubrication points



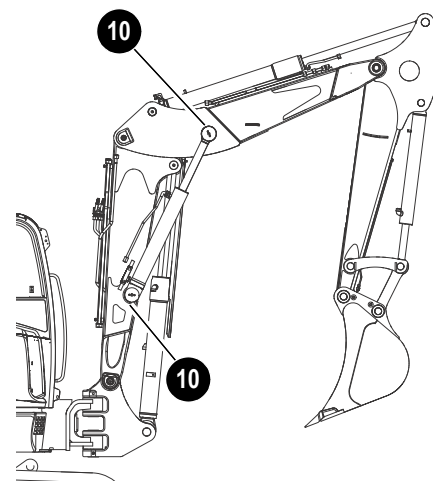
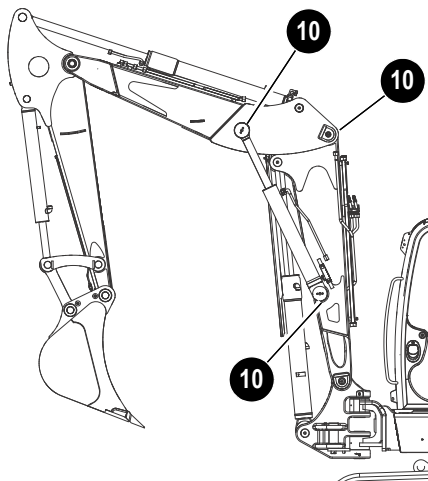
Stabilizer blade 75Z3



Stabilizer blade 8003



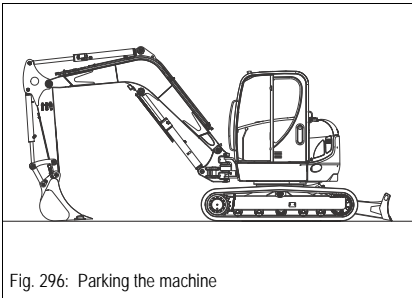
Triple articulation boom 8003 (option)





Pos.	Lubrication point	Interval	No
1	Bucket hydraulic cylinder	Daily	2
2	Stick hydraulic cylinder	Daily	2
3	Boom hydraulic cylinder	Daily	2
4	Boom	Daily	2
5	Stick	Daily	2
6	Joint rod	Daily	1
7	Stabilizer blade hydraulic cylinder 75Z3	Daily	2
8	Stabilizer blade	Daily	2
9	Stabilizer blade hydraulic cylinder 8003	Daily	4
10	Triple articulation boom 8003 (option)	Daily	5
11	Offset hydraulic cylinder	Daily	2
12	Swivelling console	Daily	2
13	Ball bearing race of live ring	Every week	1
14	Teeth of live ring	Every week	1
15	Powertilt (option)	Daily	4
16	Hydraulic quickhitch (option)	Daily	2

**Parking the machine**



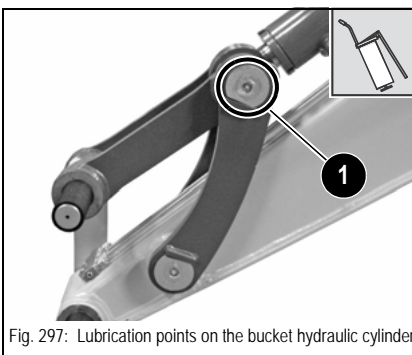
- Stop the machine on firm, level and horizontal ground.
- Position the boom straight ahead at the center of the machine.
- Lower the stabilizer blade to the ground.
- Stop the engine.
- Operate the joystick repeatedly to release the pressure in the hydraulic system.
- Remove the starting key and carry it with you.
- Move the control levers in all directions repeatedly.
- Fold the control lever base up.
- Close the windows and the door.
- Leave the cab.
- Close the door and the engine cover.
- Perform maintenance work.



**Important**

Keep the lubrication points clean and remove ejected grease.

**Lubrication points on the boom, bucket and stick hydraulic cylinders**



Apply grease to lubrication points 1 on the bucket hydraulic cylinder.

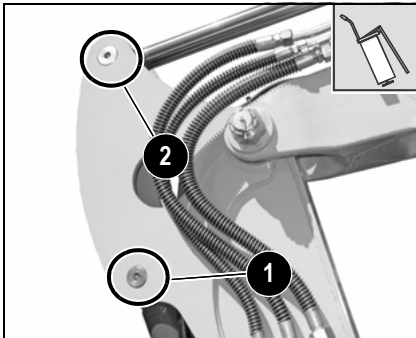


Fig. 298: Lubrication points on bucket and stick hydraulic cylinders

- ▣ Apply grease to lubrication points **1** on the bucket hydraulic cylinder.
- ▣ Apply grease to lubrication points **2** on the stick hydraulic cylinder.

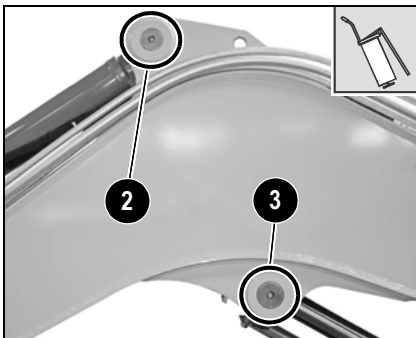


Fig. 299: Lubrication points on boom and stick hydraulic cylinders

- ▣ Apply grease to lubrication points **2** on the stick hydraulic cylinder.
- ▣ Apply grease to lubrication points **3** on the boom hydraulic cylinder.

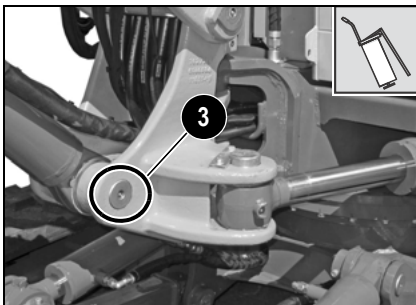


Fig. 300: Lubrication points on the boom hydraulic cylinder

- ▣ Apply grease to lubrication points **3** on the boom hydraulic cylinder.

**Lubrication points on the boom and stick**

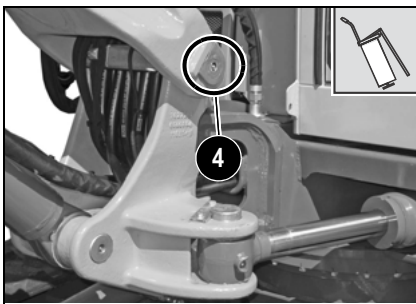
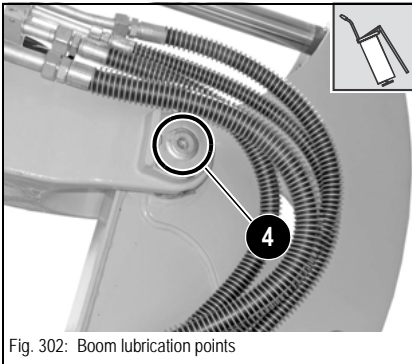
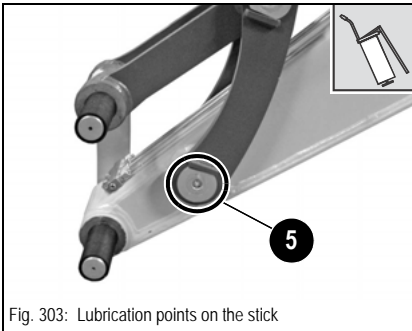


Fig. 301: Boom lubrication points

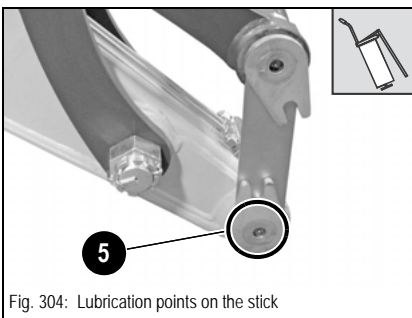
- ▣ Apply grease to lubrication points **4** on the boom



☛ Apply grease to lubrication points 4 on the boom

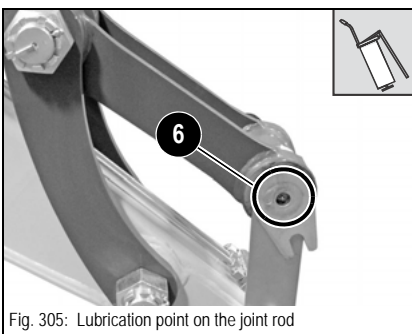


☛ Apply grease to lubrication points 5 on the stick.



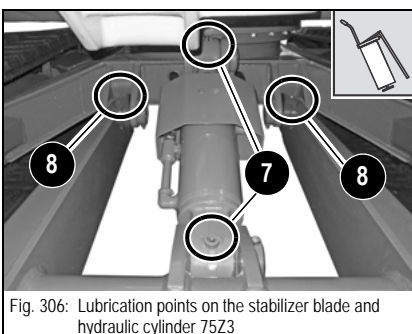
☛ Apply grease to lubrication points 5 on the stick.

#### Joint rod lubrication point



☛ Apply grease to lubrication point 6 on the joint rod.

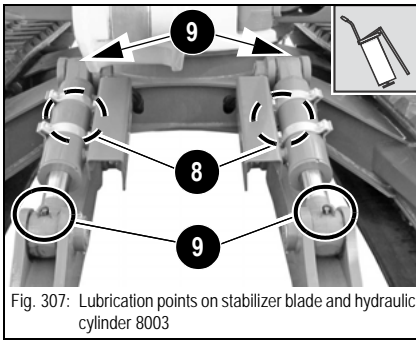
#### Lubrication points on the stabilizer blade and stabilizer blade hydraulic cylinder 75Z3



☛ Apply grease to lubrication points 7 on the stabilizer blade hydraulic cylinder.

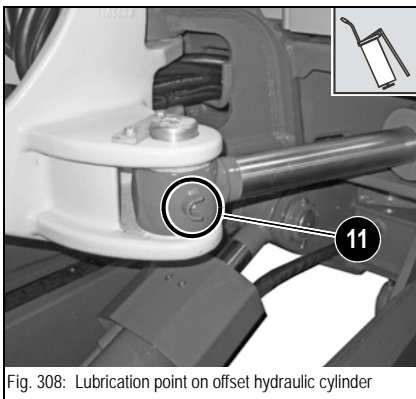
☛ Apply grease to lubrication points 8 (on either side) on the stabilizer blade.

**Lubrication points of stabilizer blade hydraulic cylinder 8003**

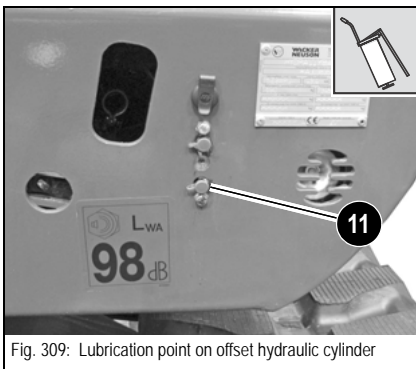


- ☞ Apply grease to lubrication points **9** on the stabilizer blade hydraulic cylinder.
- ☞ Apply grease to lubrication points **8** (on either side) on the stabilizer blade.

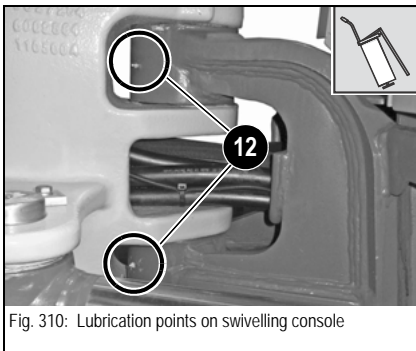
**Lubrication points on the slewing hydraulic cylinder and swivelling console**



- ☞ Apply grease to lubrication points **11** on the offset hydraulic cylinder.



- ☞ Apply grease to lubrication point **11** of the offset hydraulic cylinder.



- ☞ Apply grease to lubrication points **12** of the swivelling console.

**Lubrication points of ball bearing race of live ring****DANGER**

**Crushing hazard. Do not rotate the machine during lubrication.**

Risk of severe injury or death.

- Stop and park the machine – see *Parking the machine* on page 5-43

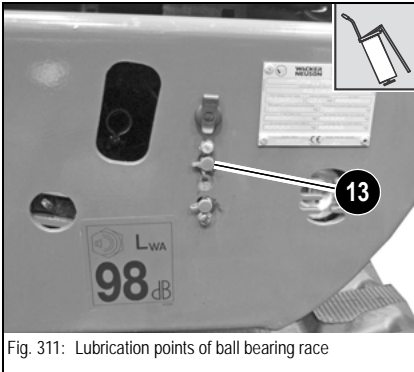


Fig. 311: Lubrication points of ball bearing race

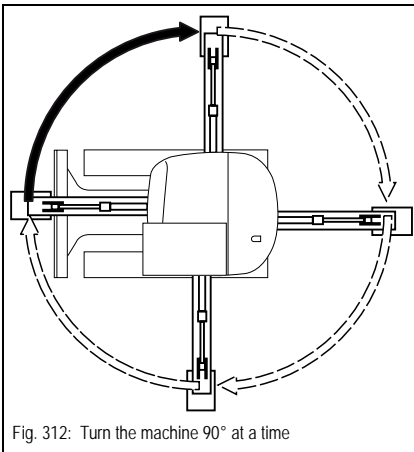


Fig. 312: Turn the machine 90° at a time

- ☞ Stop and park the machine.
  - ☞ Apply grease to lubrication points **13** with one stroke of the grease gun.
  - ☞ Remove ejected grease.
- 
- ☞ Turn the machine 90° at a time.
  - ☞ Stop and park the machine.
  - ☞ Apply grease to each of lubrication points **13** with one stroke of the grease gun.
  - ☞ Remove ejected grease.
  - ☞ Turn the machine 360° a few times.

Lubrication points of live ring teeth



**DANGER**

**Crushing hazard. Do not rotate the machine during lubrication.**

Risk of severe injury or death.

- Stop and park the machine— see *Parking the machine* on page 5-43.
- Lubricate only over a pit.

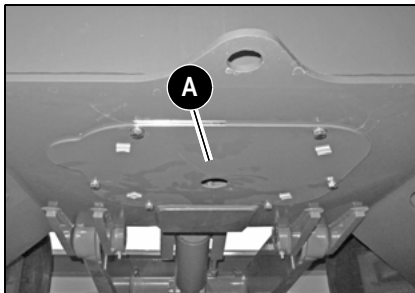


Fig. 313: Remove the cover

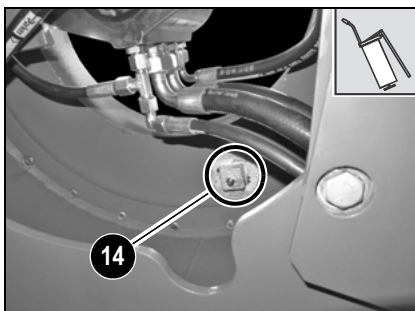


Fig. 314: Teeth lubrication point

- Drive and stop the machine over a pit.
- The lubrication point is located on the lower side of the undercarriage.
- Remove cover **A** on the lower side with a suitable tool.

- Apply grease to lubrication point **14** with five strokes of the grease gun.
- Remove ejected grease.
- Install the cover.



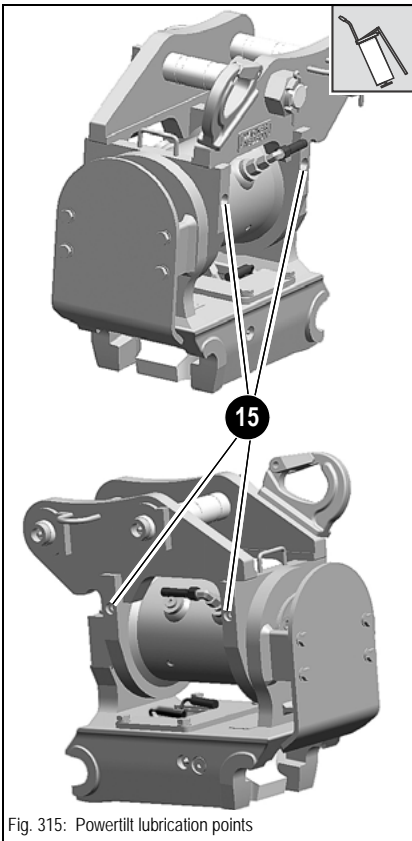
**Powertilt lubrication points (option)**

Fig. 315: Powertilt lubrication points

Perform maintenance of the Powertilt unit once a day with the other maintenance work for the machine.

Perform visual checks for possible defects, damage or cracks.

Remove all dirt on and around moving parts.

Apply grease via grease nipples **15**.

– see [chapter 3.58 Powertilt \(option\)](#) on page 3-98

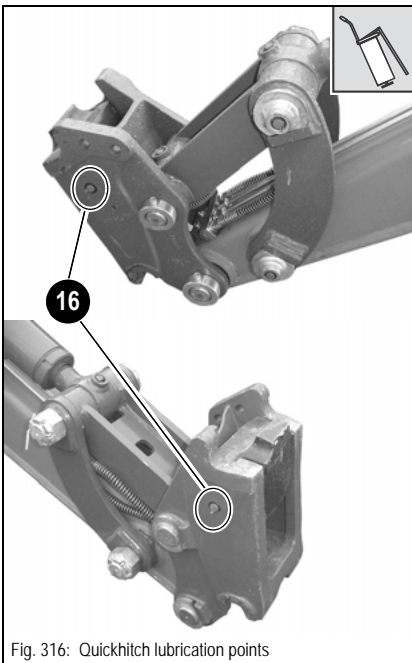
**Lubrication points of hydraulic quickhitch (option)**

Fig. 316: Quickhitch lubrication points

**Important**

Before picking up an attachment, the driver must ensure that it can be hitched correctly by removing all dirt on either claw of the quickhitch.

Perform maintenance on the quickhitch once a day with the other maintenance work for the machine.

Perform visual checks for possible defects, damage or cracks.

Remove all dirt on and around moving parts.

The claws must be clean and slightly greased.

Apply grease to the friction surfaces of the lock mechanism via 2 grease nipples **16** on either side of the quickhitch (see [Fig. 316](#)).

Before starting work, check the acoustic signal. You must be able to hear the acoustic signal as you actuate the switch.

Lubrication points of control lever base (from serial no. AJ02793)



**CAUTION**

**Crushing hazard. In the area of the moving parts of the control lever base.**

Risk of injury.

- Stay clear (extremities, clothing) of the moving parts.

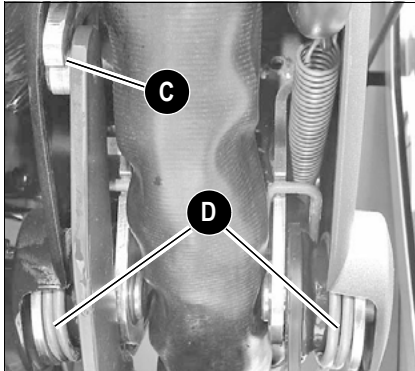


Fig. 317: Guide lever and double spring

- ☞ Fold the control lever base up.
- ☞ Spray fluid grease onto guide lever **C**.
- ☞ Spray fluid grease on both sides of double spring **D**.



**Important**

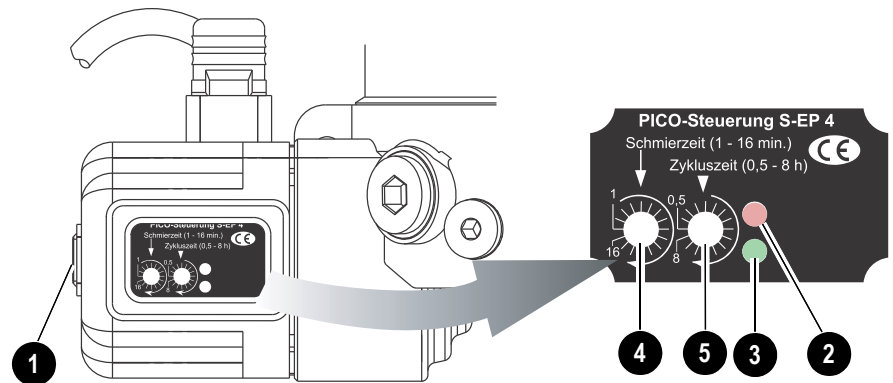
Spray fluid grease onto the lubrication points once a month (every 250 s/h).

## 5.18 Central lubrication system (option)

Grease-based central lubrication system with 12 lubrication points.

Not in connection with triple articulation boom (option).

### Function



Pos.	Designation
1	Push button on motor housing
2	Red LED
3	Green LED
4	Lubrication time potentiometer
5	Cycle interval potentiometer

The green LED illuminates for about 1.5 sec once starter is turned on to indicate readiness.

Pressing the push button on the pump's motor housing starts the pump and starts the lubrication cycle. The pump drive motor stops and cycle interval begins once lubrication time is over.

All further lubrications start automatically according to the cycle interval set.

Lubrication time is stopped and saved if starter or lubrication is turned off during cycle interval. The data is read from the memory upon turning starter on again, and lubrication is resumed where it was interrupted.

Pressing the push button on the motor housing or on the instrument panel starts intermediate lubrication if starter is turned on.

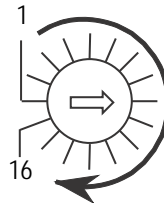
### Status LEDs

Display	Meaning
Green LED 1.5 sec	Starter on (operational readiness)
Steady green light	Illuminates during lubrication
Steady red light	Grease level error Remains lit until grease tank is refilled
Blinking red light	Overpressure error

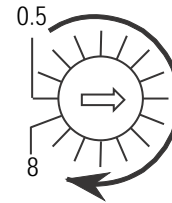
## Adjusting cycle time and lubrication time

Adjust the cycle time and the lubrication time with the potentiometers.

Lubrication time  
1 min to 16 min



Cycle interval  
0.5 h to 8 h



## Repair in case of clogging

### Clogging indication

Overpressure beyond operating pressure means the system is clogged and is indicated as follows:

- Grease escapes by the pressure limiting valve.
- Blinking red LED **2** on the pump housing.

### Causes for clogging in the system

- Crushed or clogged lubrication line.
- Bearing overfilled or clogged with lubricant.
- Inadequate lubricant for central lubrication systems.
- Clogged distributor.

### Detecting clogging

- ☞ Remove the main line of the main distributor.
- ☞ Actuate the pump with the push button and check whether the lubricant is delivered correctly.
- ☞ Reattach the main line onto the main distributor.
- ☞ Remove the lines one after another and actuate the pump every time.

### Repairing a clogged distributor

- ☞ Remove the distributor from the system.
- ☞ Remove the plug of the piston bore.
- ☞ Move the piston back and forth (do not remove).
- ☞ Screw the plugs back in again.

You can remove the piston of the malfunctioning distributor and check it for scratches or damage.

If there are traces of hardened grease on the piston or the bores, remove the grease with compressed air or by washing the piston.



### Important

Traces of hardened grease are a sign that the grease is not suitable for central lubrication systems.



## 5.19 Preparatory work before taking the machine out of service

The measures indicated below refer to putting the machine out of operation for 30 days or longer.

- Park the machine – *see Parking the machine* on page 3-33.
- Check whether oil or other fluids leak from the machine.
- Clean the engine with a high-pressure cleaner in a suitable place – *see General maintenance work* on page 5-40.
- Carefully clean and dry the entire machine.
- Spray an anticorrosion agent onto bare metal parts of the machine (e.g. piston rods of hydraulic cylinders).
- Apply grease to all lubrication points.
- Change engine oil.
- Check and if necessary add hydraulic oil and coolant.
- Store the machine indoors if possible.
- If the machine is stored outdoors, place it on a wooden base and cover it with a watertight tarpaulin to protect it against humidity.
- Add the fuel tank to the maximum level.
- Remove the earthing strap from the battery, or remove the battery and store it in a safe place. Charge the battery and perform battery maintenance at regular intervals.
- Switch off the fuel filter on the upper carriage and the fuel filter on the engine (turn to OFF).
- Close the exhaust pipe and the air intake opening of the air filter system.

## 5.20 Maintenance if the machine is out of service for a longer period of time

Following measures must be taken if the machine is out of service for more than 30 days.

### Putting into operation again

- Remove anticorrosion agent from the piston rods.
- Charge, install and connect the battery.
- Remove the seals from the exhaust pipe and the air filter intake.
- Check the condition of the air filter element and replace the element if necessary.
- Check the dust valve.
- Switch on the fuel filters on the upper carriage and the engine (turn to ON).
- Turn the ignition to position 1 for 2 minutes (to supply the engine with fuel).
- Check whether oil or other fluids leak from the machine.
- Lubricate the machine according to the lubrication plan.
- Check and if necessary add engine oil, hydraulic oil, coolant and fuel in the units and tanks.
- If the machine was out of service for over 6 months, change the oil in the gearbox, engine, etc. and the hydraulic oil reservoir.
- Also replace hydraulic oil filters (return and breather filters) if the machine has been out of service for over 6 months.
- Remove the starting key, remove fuse F2 on the right-hand cover.
- Let the engine run 15 seconds.
- Wait 15 seconds.
- Let the engine run 15 seconds again.
- Remove the starting key, put fuse F2 back in.
- Start the diesel engine.
- Let the engine run at idling speed at least 15 minutes without load.
- Check the oil levels in all units and add oil if necessary.
- Start the machine and ensure that each function and all warnings work correctly before putting the machine back into operation.



## 5.21 Fluids and lubricants

Component/application	Engine/machine fluid	Specification	Season/temperature	Capacities <sup>1</sup>
Diesel engine	Engine oil <sup>2</sup>	SAE10W-40	-20 °C (-4 °F) +40 °C (+104 °F)	10.2 l (2.69 gal)
Travelling drive	Gearbox oil <sup>3</sup>	SAE80W-90 <sup>4</sup>	Year-round	About 1.3 l each (0.34 gal)
Hydraulic oil tank	Hydraulic oil	HVLP 46 <sup>5</sup>	Year-round <sup>6</sup>	99 l (26.2 gal)
		HV 46 <sup>7</sup>		
	Biodegradable oil <sup>8</sup>	HLP Synth 46		
		BIOHYD SE-S 46		
Grease	Roller and friction bearings	KPF 2 K-20 <sup>9</sup> , ISO-L-X-BCEB 2 <sup>10</sup>	Year-round	As required
	Open transmissions live ring: ball bearing			
	Live ring gears			
	Grease nipples			
Grease nipples	Multipurpose grease	KPF 2 K-20 <sup>11</sup>	Year-round	As required
Battery terminals	Acid-proof grease <sup>12</sup>	FINA Marson L2	Year-round	As required
Fuel tank	Diesel fuel	ASTM D975-94: 1D, 2D (USA)	Summer or winter diesel depending on outside temperatures	93 l (24.6 gal)
		EN 590 : 96 (EU)		
		ISO 8217 DMX		
		BS 2869-A1, A2 (GB)		
		JIS K2204		
		KSM-2610		
	GB252			
	Biodegradable diesel fuel	EN 14214		
ASTM D-6751				
Engine cooling system	Coolant	Soft water + antifreeze SF D12 Plus	Year-round	About 12 l (3.2 gal)
Air conditioning	Refrigerant	R134a <sup>13</sup>	Year-round	1000 g (2.2 lbs)
	Compressor oil	Sanden SP10	Year-round	122 cm <sup>3</sup> (7.44 in <sup>3</sup> )
Washer system	Cleaning agent	Water + antifreeze	Year-round	1.2 l (0.31 gal)
Control lever base	Adhesive fluid grease	Förch S401	Year-round	As required

- The capacities indicated are approximate values; the oil level check alone is relevant for the correct oil level. Capacities indicated are no system fills.
- According to DIN 51511 (API CF, CF-4, CI-4; ACEA E3, E4, E5; JASO DH-1).
- Hypoid gearbox oil based on basic mineral oil (SAE80W-90 according to DIN 51502), (API GL-4, GL5).
- According to DIN 51502 on a mineral oil basis. Do not mix gearbox oils.
- According to DIN 51524 section 3, ISO-VG 46.
- Depending on local conditions – see *Hydraulics oil grade* on page 5-56.
- According to ISO 6743/4.
- Biodegradable hydraulic oil based on saturated synthetic esters with an iodine value of < 10, according to DIN 51524, section 3, HVLP, HEES.
- KPF 2 K-20 according to DIN 51502 multipurpose lithium grease.
- ISO-L-X-BCEB 2 according to DIN ISO 6743-9.
- KPF 2 K-20 according to DIN 51502 multipurpose lithium grease.
- Standard acid-proof grease NGLI category 2.
- According to DIN 8960.



**Oil grades for the diesel engine, depending on temperature**

Engine oil grade	Ambient temperature (C°)													
	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40
API CF, CF-4, CI-4; ACEA E3, E4, E5; JASO DH-1	SAE 10W													
				SAE 20W										
	SAE 10W-40													
			SAE 15W-40											
						SAE 20								
									SAE 30					
										SAE 40				
	°F	-4	5	14	23	32	41	50	59	68	77	86	95	104

**Additional oil change and filter replacement (hydraulic system)**

**NOTICE**

An additional oil change and filter replacement can be required depending on how the machine is used. Failure to observe these replacement intervals can cause damage to hydraulic components.

- Observe the following intervals.

Application	Hydraulic oil	Hydraulic oil filter insert
Normal work (excavation work)	Every 1000 s/h	Replace the first time after 50 s/h, then every 500 s/h
Percentage of hammer work	20 %	300 s/h
	40 %	
	60 %	100 s/h
	Over 80 %	



**Important**

Please refer to the maintenance plan on page [5-57](#) for additional maintenance work.



Oil grades for the hydraulic system, depending on temperature

Hydraulic oil grade	Ambient temperature														
	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	50
	°F	-4	5	14	23	32	41	50	59	68	77	86	95	104	122
HVLP 46 <sup>1</sup>	ISO VG32														
												ISO VG46			
HV 46 <sup>2</sup>												ISO VG68			

1. According to DIN 51524 section 3, ISO-VG 46.  
 2. According to ISO 6743/4.
















5.2.2 Maintenance plan (overview) Work description	Maintenance plan/service hours (s/h)								
	Service work (daily)	Every 50 s/h	Every 250 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Every 2000 s/h	Customer	Authorized service center
For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.									
Check cooling systems, heating and hoses for leaks and pressure (visual check)	●				●			●	●
Check the pilot control filter for dirt, clean it if necessary								●	
Clean the cab air filter of the heating system				●				●	
Replace the cab air filter of the heating system					●			●	
Check the air filter for damage	●								
Check the air filter elements for dirt, replace them if necessary			●					●	
Check correct function of air filter contamination gauge				●				●	
Remove dust from dust valve	●							●	
Prefilter with water separator: drain water	●							●	
• Clean									●
Diesel particulate filter (option) – see chapter 5.9 Diesel particulate filter (option) on page 5-16	●	●						●	●
Check the exhaust gas recirculation valve, clean it if necessary					●			●	
Check V-belt condition and tension	●							●	
Check exhaust system for damage and condition	●							●	
Check valve clearance. Adjust if necessary					●			●	
Lapping the intake and exhaust valves								●	●
Check and adjust the injection pressure of the injection nozzles, clean the injection needles/nozzles							●	●	●
Empty the fuel tank and check for dirt								●	
Check battery electrolyte. Add with distilled water if necessary		●						●	
Check alternator, starter and electric connections, bearing play and function				●				●	
Check preheating system and electric connections				●				●	
Pressure check of primary pressure limiting valves <sup>7</sup>				●				●	●
Check tracks for cracks and cuts	●							●	



Work description	Maintenance plan/service hours (s/h)								
	Service work (daily)	Every 50 s/h	Every 250 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Every 2000 s/h	Customer	Authorized service center
Check track tension. Retighten if necessary	●			●				●	●
Check bearing play of tread rollers, track carrier rollers, front idlers	●							●	
Check piston rods for damage	●			●					●
Check the screw connections of the safety devices (e.g. cab, etc.) for tightness	●			●					●
Check screws for tightness				●					●
Check pin lock	●								
Check line fixtures	●								
Check indicator lights for correct function	●								
Check cab tilt lock, cables and cable holders for damage and correct function		●		●					●
Couplings, dirt pile-up on hydraulic system dust caps	●								
Check insulating mats in the engine compartment for damage/condition		●							
Ensure grease supply of central lubrication system (option)	●								
Check labels and Operator's Manual for completeness and condition		●							
Adjust the mirrors (option) correctly, clean them and check them for damage and correct function	●								
Check all fastening screws on the mirrors (option) and tighten them if necessary		●							
Check function of engine cover gas strut	●								
Check hydraulic quickhitch for damage	●								
Lights and acoustic warning system <sup>8</sup>	●								
Check gearing of swivel unit pinion					●				●
Check Powerlift (option) for damage	●								
Check the axial play of the Powerlift (option). (must not be over 0.38 mm/0.015 in)			●						●
Actuate the Powerlift (option) swivel device in the final position for 1 minute <sup>9</sup>	●								
Check protective structures (cab, Front Guard, FOPS)									

5.2.2 Maintenance plan (overview)	Maintenance plan/service hours (s/h)								
	Service work (daily)	Every 50 s/h	Every 250 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Every 2000 s/h	Customer	Authorized service center
<b>Work description</b> For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.									
<b>Lubrication service (  ):</b> Lubricate the following assemblies/components – see <a href="#">chapter 5.23 Maintenance label</a> on page 5-62: When used in water – see <a href="#">chapter Using the quickhitches in water</a> on page 2-16									
• Stabilizer blade	●							●	
• Swivelling console	●							●	
• Boom	●							●	
• Stick	●							●	
• Attachment	●							●	
• Hydraulic quickhitch system (option) – see <a href="#">Hydraulic quickhitch – Easy Lock (option)</a> on page 3-95	● <sup>10</sup>							●	
• Powertilt (option) with Easy Lock (option)	● <sup>10</sup>							●	
• Grease strip on chassis – see <a href="#">chapter 5.23 Maintenance label</a> on page 5-62	●							●	
• Ball bearing race and teeth of live ring		●						●	
• Control lever base		●						●	
<b>Air conditioning (  ):</b> Perform the following maintenance and inspection work:									
• Air conditioning function <sup>11</sup>		●						●	
Change cab air filter				●				●	
Check dehumidifier for corrosion, condensation and air bubbles		●						●	
Replace dehumidifier						●		●	
Compressor oil <sup>12</sup>						●		●	
<b>Functional check (  ):</b> Check the function of the following assemblies/components. Rectify if necessary:									
• Lights, signalling system, acoustic warning system	●							●	

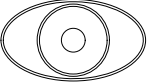












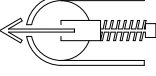





Work description	Maintenance plan/service hours (s/h)								Authorized service center
	Service work (daily)	Every 50 s/h	Every 250 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Every 2000 s/h	Customer	
<b>5.22 Maintenance plan (overview)</b> <b>Work description</b> For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.									
• Heating function	●								●
• Hydraulic quickhitch system (option) (lock)	●								●
• Check pedal function	●								●
• Check the Powertilt (option)	●								●
<b>Leakage check (  ):</b> Check for tightness, leaks and chafing: pipes, flexible lines and screw connections of the following assemblies and components. Rectify if necessary:									
• Visual check	●								●
 Engine, hydraulic system and components	●								●
 Cooling and heating circuit	●								●
 Travelling drive	●								●
 Air conditioning	●								●
 Hydraulic quickhitch system (option) (hoses, valves)	●								●

1. Drain engine oil the first time after 50 s/h, then every 500 s/h.
2. Replace the engine oil filter the first time after 50 s/h, then every 500 s/h.
3. Replace the fuel filter the first time after 50 s/h, then every 500 s/h.
4. According to the fouling indicator, replace every 500 s/h at the latest. (Replace after 50 s/h when in extensive use in environments with acidic air, such as acid production facilities, steel and aluminium mills, chemical plants and other nonferrous-metal plants)
5. Replace the hydraulic oil filter insert the first time after 50 s/h, then every 500 s/h.
6. Drain the gearbox oil the first time after 50 s/h, then every 1000 s/h.
7. Check the first time after 50 s/h, then every 500 s/h.
8. Check once a week.
9. Check once a week. Rinse the system to remove dirt. Repeat the procedure in the opposite flow direction.
10. Twice a day when using in water.
11. Switch on once every week.
12. Replace the compressor oil every other 1500 s/h servicing.

## 5.23 Maintenance label

### Explanation of symbols on the maintenance label

Symbol	Assembly	Explanation
	General	Visual check
	General	Grease instructions
	Fuel system	Drain condensation water
	Fuel system	Replace the fuel filter, clean the fuel prefilter
	Radiator	Check the coolant level
	Radiator	Drain and add new coolant
	Engine	Check valve clearance. Adjust if necessary
	Engine	Check the engine oil level
	Engine	Change engine oil
	Engine	Replace the oil filter
	Engine	Check V-belt tension
	Travelling drive	Change oil
	Travelling drive	Check oil
	Undercarriage	Check track tension
	Hydraulic system	Check oil level
	Hydraulic system	Change hydraulic oil
	Hydraulic system	Replace the hydraulic oil filter, replace the breather filter



Symbol	Assembly	Explanation
	Radiator fins	Clean
	Heating, air conditioning	Clean the cab filter

