

Operating and Maintenance Manual



CR 9 WSA

0116832

Attached to the machine is a rating plate. Note down the information given on this plate so that you can recreate the rating plate should the plate be lost.



1 Description

.....

2 Type

.....

3 Serial no.

.....

4 Year of construction

.....

5 Weight

.....

6 Rated power kW

.....

Inhalt

1. Introduction.....	4
2. Description.....	5
3. Technical data.....	6
4. Safety.....	7
4.1. Information and safety stickers	12
5. Operation.....	13
5.1. Operating positions on the machine	14
5.2. Weber Smart Assist	16
5.3. User support	20
5.4. The COMPATROL compaction indicator.....	21
6. Transport.....	26
7. Storage	26
8. Maintenance.....	27
8.1. Maintenance overview	28
8.2. Description of the maintenance operations.....	29
8.2.1. Clean the air filter	29
8.2.2. Check V-belt.....	29
8.2.3. Check the engine oil level	30
8.2.4. Change the engine oil	30
8.2.5. Change the engine oil filter	31
8.2.6. Check the water separator	32
8.2.7. Change the fuel filter	32
8.2.8. Bleed the fuel system	33
8.2.9. Check the hydraulic oil level	33
8.2.10. Change the oil in the exciter	33
8.2.11. Change the fuses	34
8.2.12. Use a permanent charger	34
8.3. Operating fluids and fill levels	35

1. Introduction

This operating and maintenance manual is designed to help you become familiar with your soil compactor and enable you to maintain it and use it for its intended purpose.

The safety and maintenance instructions provided in this manual will help avoid hazards, reduce repair and downtime costs and will increase the reliability and operational readiness of your machine. Follow these instructions precisely.

This operating and maintenance manual must always be kept at the implementation site of the machine and be available to the machine operator.

Turn to your Weber MT dealer if you require any additional information.

Found on the last page of this manual is a QR code. Scan it to acquire the current contact addresses of all Weber MT branches.

You can obtain information on the assembled Hatz diesel engine and the associated operating and maintenance manual as well as the spare parts list by logging on to www.hatz-diesel.com.

For the latest spare parts list of the machine, visit the following link:

2. Description

The machine

The machine is a hand-guided, reversible soil compactor. The machine is composed of a bottom and a top section. The bottom section houses the exciter, while the top section contains the engine and the required controls.

An air-cooled Hatz diesel engine makes the exciter vibrate via a centrifugal clutch. The generated force is transmitted between top and bottom section via a V-belt. The engine is started electronically via a permanently installed start module.

The engine speed is adjusted between idle speed and full-throttle speed via a pushbutton. A handle is used to control forward and reverse travel via an infinitely variable hydraulic shifting mechanism.

3. Technical data

	CR 9 WSA
Weight	
Operating weight CECE [kg]	743
Dimensions	
Overall length [mm]	1867
Overall width/with attachment plates [mm]	650/750
Height with folded guide bar [mm]	1167
Base plate length [base in mm]	450
Pressure surface [mm]	450x750
Drive	
Engine manufacturer	Hatz
Type	1 D 90E
Performance at operating speed in accordance with ISO 3046-1 [kW]	10.3
Combustion process	4-stroke diesel
Operating speed full / red. [1/min]	2850 / 2500
Operating speed [soil-dependent, m/min]	0-30
Incline capacity [soil-dependent, %]	35
Vibration	
System	Two-shaft vibrator
Drive concept	mechanical
Frequency [Hz]	65
Centrifugal force [kN]	100
Noise emissions in accordance with 2000/14/EC	
Sound pressure level LPA ascertained in accordance with EN 500, [dB (A)]	94
Sound power level LWA ascertained in accordance with EN ISO 3744 and EN 500, [dB (A)]	109
Vibration values	
Root-mean-square acceleration value for hand-arm vibration ascertained in accordance with EN 500, [m/s ²] In accordance with directive 2006/24/EC, complying with the vibration values is the owner's responsibility	2.4

4. Safety

General

All safety instructions must be read and complied with, as non-compliance will result in

- Danger to life and limb of the user,
- Impairments to the machine or other property.

In addition to the operating manual, the accident-prevention regulations in the country where the appliance is used must be complied with.

Intended use

The machine should only be used in technically faultless condition, as intended, in a safety-conscious and hazard-conscious manner, and in compliance with the instructions in the operating manual.

Malfunctions that may impair safety require that you stop working with the machine immediately. These types of damage must be reported and corrected without delay.

The machine is designed exclusively for compacting:

- Sand,
- Gravel,
- Crushed rock,
- Low-cohesive mixed material,
- Paved surfaces.

The operator's work position is behind the machine.

The operator must guide the machine safely with both hands on the handle.

Non-intended use

Unless used as intended, the machine involves a risk of personal injury and property damage. The machine is expressly not suitable for:

- compacting frozen subsurfaces,
- compacting hard soils that cannot be compacted further,
- compacting non-bearing material,
- compacting highly cohesive soils,
- compacting (ramming) that exerts point loads on the base plate,
- crushing and compacting individual rocks.

The responsibility for any damage arising from non-intended use falls on the owner / operator.

Non-intended use or misuse will void all liability and warranty claims.

Residual risk

There is always an increased risk of accidents in the immediate danger area around the machine if the operator fails to notice persons in the vicinity of the machine.

Make anyone close to the machine aware of this risk. The operator must not put the machine into operation unless everyone in the vicinity of the machine is aware of this risk.

Requirements on the operator	This soil compactor may only be operated by suitable operators who are 18 years or older. They must be instructed on how to operate the machine by the owner or by the owner's assigned personnel. The operator must comply with traffic regulations. The machine must not be operated by children.
Personal protective equipment	Personal protective equipment consisting of - Hard hat, - Hearing protection, - Protective gloves, - Work shoes or boots with toe guard must be worn during operation and the execution of maintenance on the machine.
Danger areas	The immediate danger area is the direct perimeter around the machine. This area is off-limits to third parties.
Spare parts, changes and conversions	Changes and conversions are prohibited unless made with original Weber MT spare parts. If the machine is modified with other accessories without the approval of Weber MT, the manufacturer will not assume liability for any resulting personal injury or property damage. All maintenance and repairs must be carried out with original Weber MT spare parts. Untested spare parts may affect the reliability and safety of the machine.
Before starting the machine	There is danger of material damage if the machine is started before necessary maintenance or repairs have been completed. Make sure every time before starting the machine that all work on the machine has been completed. To avoid injuries, the machine must not be started unless the operator wears the required personal protective equipment. Objects placed on top of the machine may fall or be flung off during operation or when the machine is started. Therefore, remove all loose objects or tools before starting the machine. If the gas cap is open, fuel may escape and ignite on the engine when the machine is started or while it is operating. There is a risk of burns. Therefore, do not start the machine unless the gas cap is closed.

Start-up procedure

Do not disperse any sprays or other agents into the air intake while the machine is starting up. They may lead to overheating in the combustion chamber and result in damage to the engine.

There is danger of suffocation if the operator starts up the machine in closed rooms or in deep and tight trenches. Operating the machine in closed rooms is prohibited. Provide for an adequate supply of air before starting the machine.

To prevent damage to the engine, one start-up procedure must not take longer than 30 seconds. If the engine does not start after the maximum of 30 seconds, turn the ignition key back to position "0" and rectify the cause.

If the ignition key fails to spring back to position "1" automatically, the electric starter and the engine may sustain damage. Abort the start-up procedure and shut down the machine. Determine and correct the cause prior to the next start-up procedure.

During operation

Monitor the surroundings to avoid injury to third parties or material damage.

Suspend operation and shut down the machine if detecting damage on the machine during operation.

Suspend operation and shut down the machine if error messages are displayed by the Weber Smart Assist.

The home screen indicates the operating hours of the machine with the ignition turned on and the engine running at idle speed. The COMPATROL compaction indicator is shown during the compaction work.

If possible, avoid draining the tank completely as air may otherwise enter the fuel system. This can cause damage to the fuel injection system. If the tank is drained regardless, the fuel system needs to be bled.

Parking the machine

Always park the machine on a level subsurface with sufficient bearing capacity.

Parked machines presenting an obstacle must be secured in accordance with statutory regulations, particularly in the area of public traffic surfaces.

Engine and exhaust heat up during operation and can cause burns on contact. Therefore, do not touch these components during operation or shortly after the machine was switched off.

Fueling the machine

Spilled fuel may ignite and has a negative impact on the environment. Therefore, wipe up spilled fuel and make sure the gas cap is firmly tightened after fueling.

When coming into contact with fuels, the rubber-bonded metal buffers of the machine may become damaged or ineffective. Therefore, wipe spilled fuel carefully off the rubber-bonded metal buffers.

Fuel vapors are easily flammable. Do not smoke and keep away from open fire while refueling the machine. The machine must not be fueled unless the engine is switched off.

Cleaning work

Use clear water for cleaning. Do not use flammable solvents. The vapors of the solvents may ignite upon contact with hot components or other sparks.

Perform cleaning tasks only in rooms that are suitable and have been approved for that purpose. Residual oil and lubricants that may have been rinsed off have a negative impact on the environment and must be collected by suitable means (e.g. oil separator).

Safe handling of combustion engines

Combustion engines pose a particular risk during operation. Their exhaust emissions contain carbon monoxide, a colorless and odorless gas that is extremely hazardous, which, if inhaled even briefly, can cause unconsciousness and death. Therefore, never inhale the exhaust gas.

Inspection

The machine must be inspected in accordance with the corresponding implementation conditions and operating conditions to ensure its operationally safe status. This inspection should be performed as needed by an expert - however, no less than once a year. The findings of the inspection must be stored in writing until the time of the next inspection.

Safety instructions and warnings

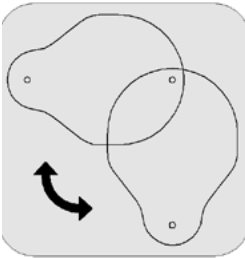
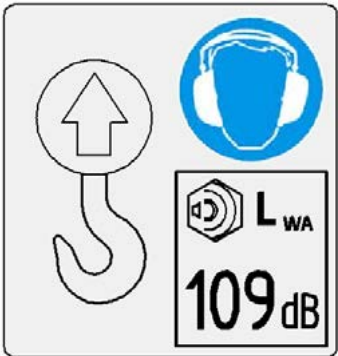
A variety of safety instructions and warnings are used throughout this operating manual.
The following explains the meaning of signal words and symbols.

 ATTENTION	ATTENTION warns of the danger of material damage.
 CAUTION	CAUTION warns of the danger of slight injury.
 WARNING	WARNING warns of a danger that may lead to death or serious injury.
 DANGER	DANGER warns of a danger that will lead to death or serious injury unless avoided.



The information symbol provides supplemental information on the operation of the machine and points to complementary technical information.

4.1. Information and safety stickers

	Sticker	Meaning
1		All threaded unions must be checked for firm seat on a regular basis and, particularly, after initial use.
2		The fuel tank may only be fueled with diesel.
3		Turn the gas cap to open and close it.
4		Use the designated lifting ring to lift the machine. Sound power level 109 dB (A), wear ear protection.
5		When disconnecting the engine bracket from the base plate, make sure not to damage the sensor cable. The sensor must be detached from the base plate.

5. Operation

Preparing the machine for initial use

- ▶ Remove all packaging material.
- ▶ Check all components for visible damage. Do not start the machine if detecting visible damage. Contact the responsible dealer.
- ▶ Check if the shipment of the machine and its components is complete.
- ▶ Check the fill level of the operating fluids and top off if necessary.
- ▶ Set up the machine at its place of use.

5.1. Operating positions on the machine

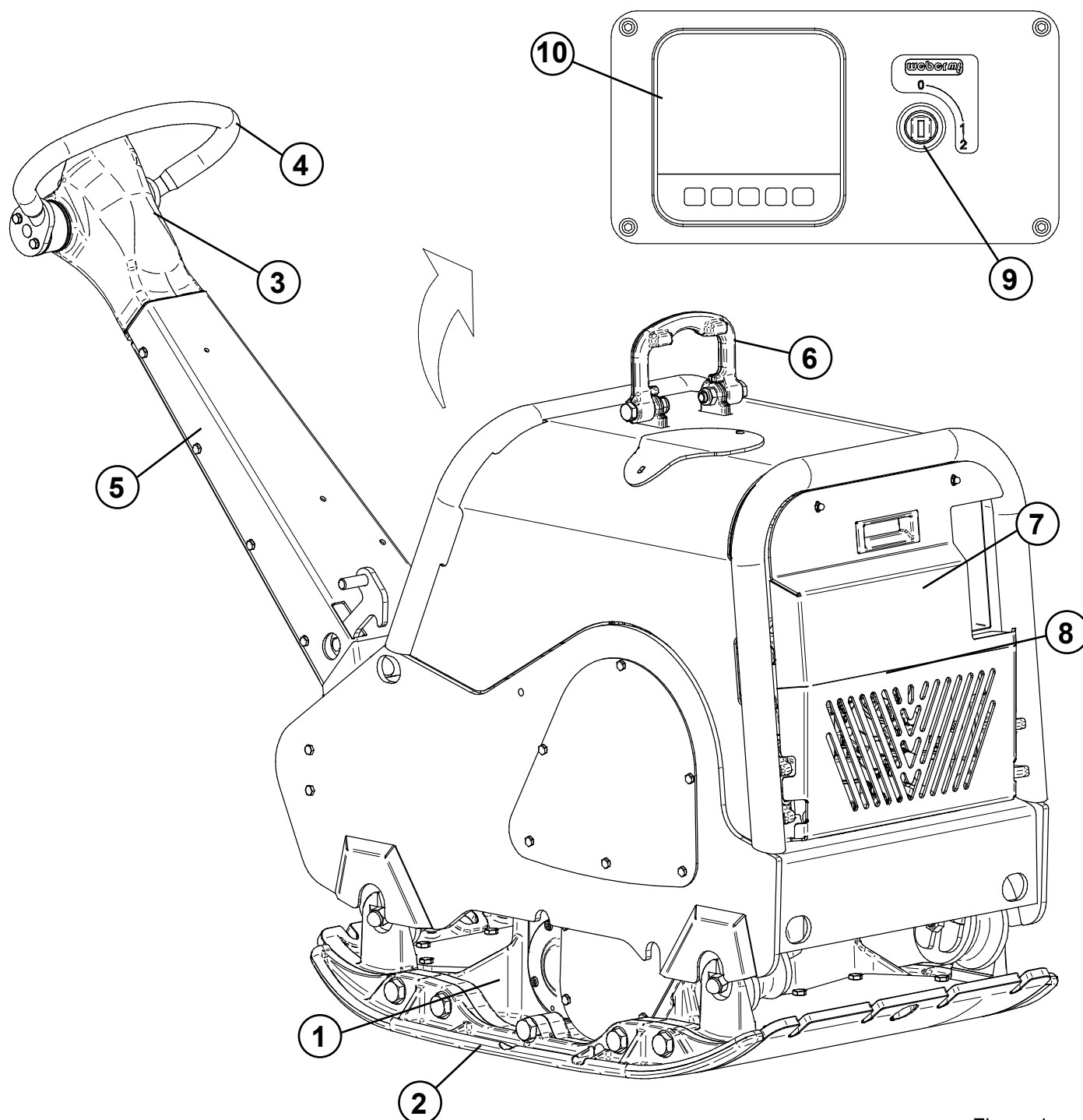


Figure 1

Overall view CR 9

- | | | | |
|---|-------------------------|----|--------------------|
| 1 | Base plate with exciter | 7 | Maintenance cover |
| 2 | Mounting bracket | 8 | Engine (no image) |
| 3 | Drawbar head | 9 | Key switch |
| 4 | Handle | 10 | Weber Smart Assist |
| 5 | Guide bar | | |
| 6 | Lifting ring | | |

The drawbar head

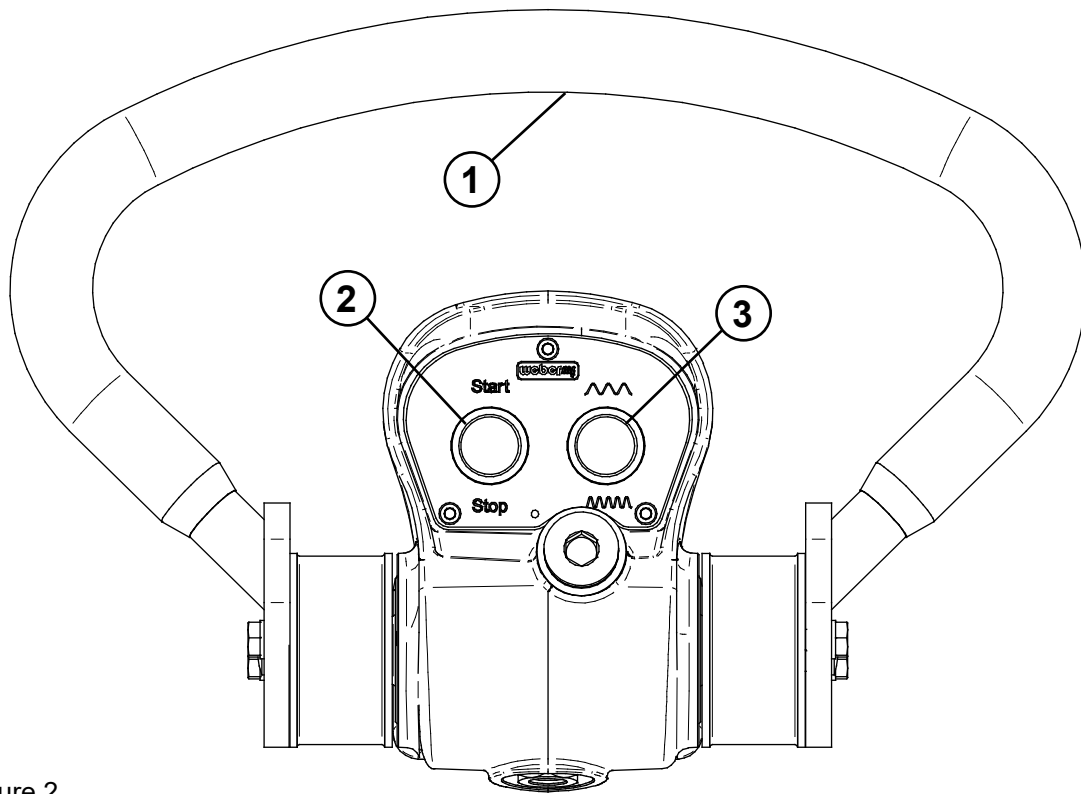


Figure 2

1 Handle

The handle controls the machine's forward and reverse travel. The speed of the machine is selected with the corresponding deflection of the handle.

2 Pushbutton “Start / Stop”

When the engine is switched on, a first press of the pushbutton Start / Stop will shift the engine to the speed selected at pushbutton 3. Another press will shift the engine to idle speed.

3 The pushbutton vibration force

The pushbutton vibration force sets the vibration force of the machine.

In the raised position, the machine operates with the high centrifugal force. The high centrifugal force is the default setting and corresponds to the performance characteristics specified for the machine.

In the pressed position, the engine speed and thus the power of the machine is slightly reduced. This may lead to improved operating conditions on certain types of soil.

5.2. Weber Smart Assist

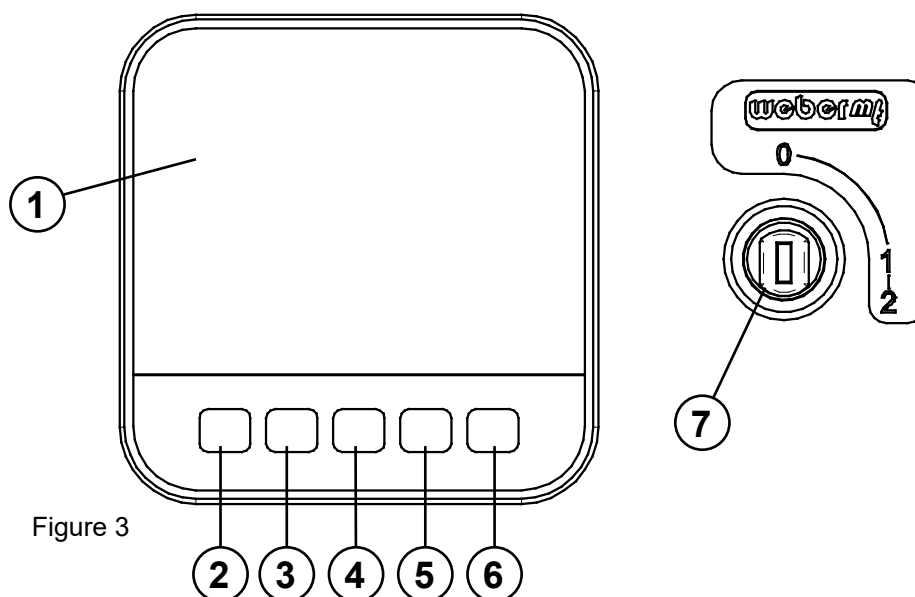


Figure 3

1 Screen

The screen shows all information relevant to the operation of the machine as well as any error messages.

2 - 6 buttons

The buttons control the functions of the Weber Smart Assist. The buttons can be used to select different functions that vary with the machine's various states of operation.

7 Key switch

The key switch is used to switch the power supply (ignition) to the machine on or off. It also actuates the electric starter of the engine.

► Switch in position “1”
✓ The ignition is switched on.

► Switch in position “0”
✓ The ignition is switched off.

► Switch in position “2”
✓ The electric starter is actuated.

ATTENTION

Danger of material damage from running electric starter. The ignition key must spring back from position “2” to position “1” automatically. Otherwise:

► Shut down the machine immediately.

Controls of the Weber Smart Assist



Info

Shows additional information:

- Machine type
- Operating hours
- Time to next service
- Engine speed
- Battery voltage
- Air filter contamination in %

In the event of an error message, “Info” launches user support to assist the user in correcting the error themselves.



Service

Opens the service menu with error memory



Browse

Toggles between the display pages of the selected menu.



Home button

Shows the home screen.



Acknowledge error

Closes an error message. The error can still be viewed in the error memory.

Indicator states of the Weber Smart Assist

Home screen idle speed

Is displayed with the ignition turned on and the engine running at idle speed.



Auto Stop

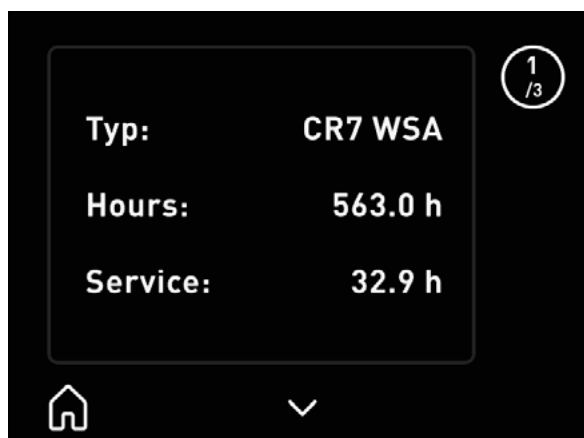
The machine is equipped with an Auto Stop function. If the engine runs at idle speed for longer than 3 minutes without interruption, the engine is switched off.

A restart of the engine requires that you switch off the machine using the key switch (position "0") and then start the machine again.



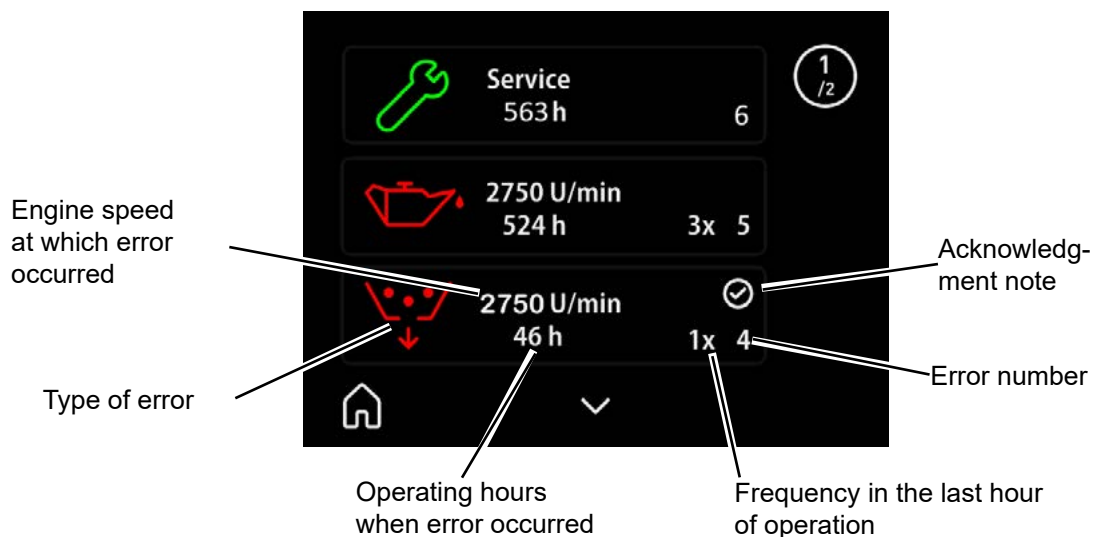
Info screen

Shows the following information: Machine type, operating hours, time to next service, engine speed, battery voltage, and air filter contamination in % (new = 100%)



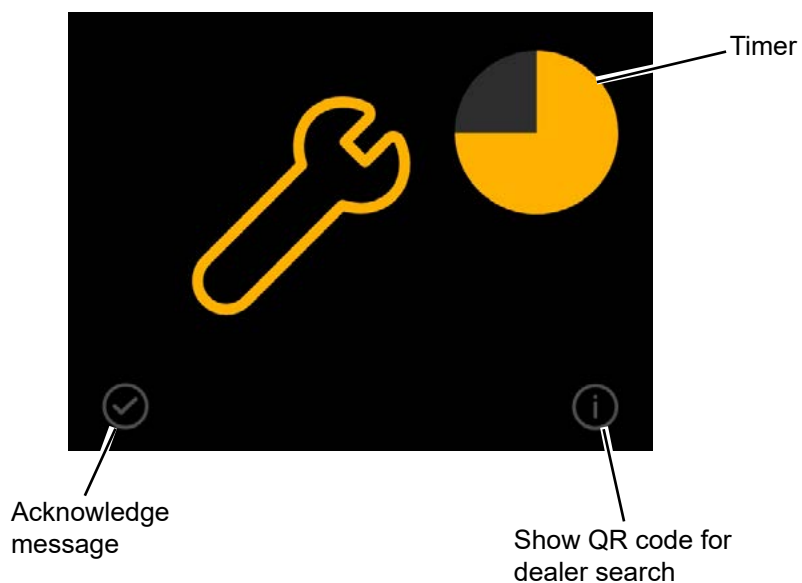
Service screen

Error memory with up to 30 error entries.



Service indicator

A notification of upcoming maintenance is displayed 10 hours before the machine is due for its next service interval. This notification remains shown until maintenance is complete and the service interval is reset after the ignition was switched on for 5 seconds. "Info" shows a QR code that links the user to Weber MT's dealer search.



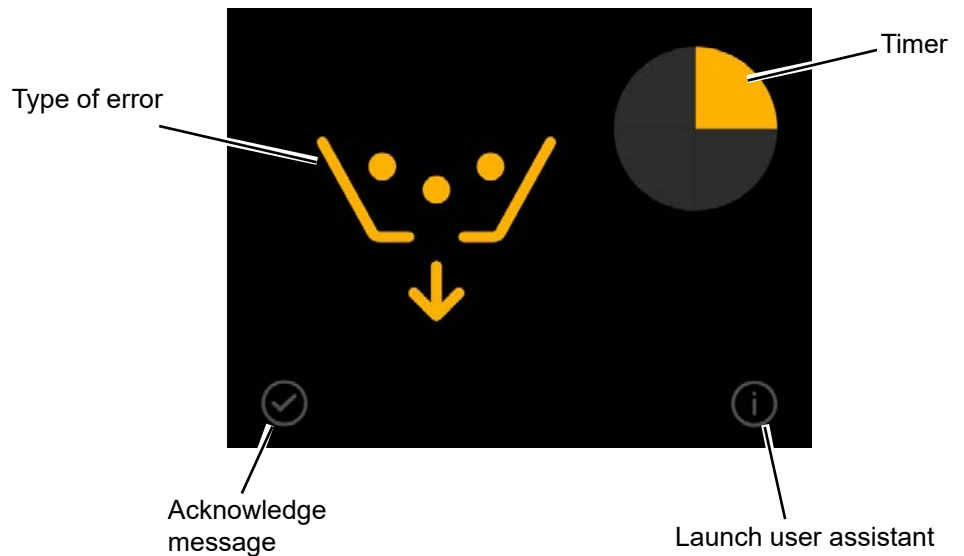
5.3. User support

The machine comes with a user assistant that guides the operator through the steps necessary to correct a variety of errors by means of graphical representations.

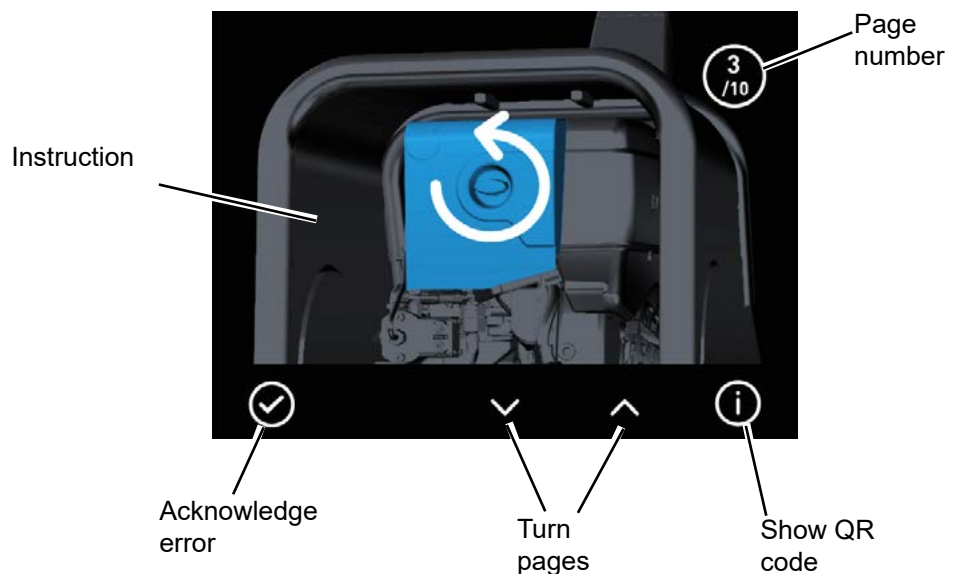
If the machine experiences a fault during operation, “Info” launches the user assistant.

If an error cannot be corrected by the operator, a QR code points the user to Weber MT’s dealer search.

Creeping faults such as a clogged air filter are signaled by a timer 10 minutes before the machine shuts down.

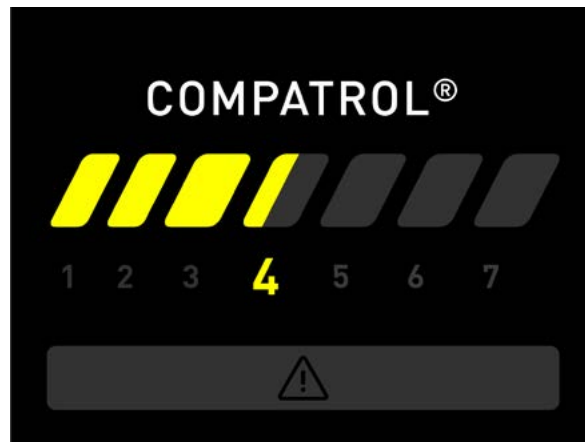


The user assistant provides an intuitive interface that guides the user through the work steps necessary to eliminate a fault. “Info” displays a QR code. The user can scan this code to access the spare parts list and the operating instructions of the machine.



5.4. The COMPATROL compaction indicator

As soon as the engine speed has been increased from idle speed to one of the two preset operating speeds, the Weber Smart Assist will display the Compatrol compaction indicator. The compaction indicator measures the bearing capacity of the soil and indicates it as a relative value on a scale from 1 to 7.



Compaction indicator (Yellow)

The display scale from 1-7 indicates the achieved bearing capacity of the ground.

The greater the bearing capacity, the higher the indicated value and the larger the number of bars.

If no additional bar comes on after another pass over the same spot, the maximum bearing capacity has been reached.

Warning light (Red)

The warning light warns of operation on soils that are too hard. If the warning light comes on together with a filled compaction indicator, the soil cannot be compacted any further with this type of machine.

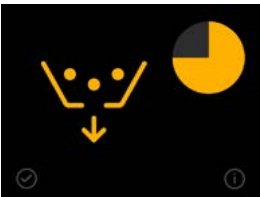
Stop operation immediately to avoid damage to the machine.



The attainable maximum may vary with the type and composition of the soil. On sand, the maximum is commonly reached at a low number of lit LEDs.

Following the compaction of a mix of gravel and crushed rock that is uniformly graded and contains the proper concentration of water, the indicator is likely to show six to seven lit LEDs.

It is important to closely monitor the indicator during the last pass. Places where the number of lit LEDs drops sharply are poorly compacted. In these places, the soil needs to be compacted again or may even have to be replaced.

Message	Cause	Response of the machine	Remedy
	Engine oil pressure too low	Engine is switched off	Check oil level
	Engine temperature too high	Engine is switched off	Allow the engine to cool down and check for dirt on the exterior. Clean if necessary
	Battery voltage faulty	The engine switches off if the battery voltage is too high	Check the battery voltage. If necessary, charge or replace the battery
	Error in engine control	Engine is switched off	Contact Weber MT's service organization.
	Sensor error	---	Contact Weber MT's service organization
	Air filter clogged	Warning for 10 minutes before engine is switched off	Tap the air filter to dislodge dirt as described in user support; replace if necessary
	Service due	Notification 10 operating hours prior to reaching the service interval	Perform service following the maintenance overview

Before starting work

Perform the following tasks before starting to work in order to prevent failures or excessive wear.

Visual inspections

- ▶ Hydraulic line for leaks
- ▶ Fuel system for leaks
- ▶ Rubber buffers for crack formation
- ▶ Other damage

Check and, if necessary, correct the fill levels

- ▶ Engine oil
- ▶ Hydraulic oil
- ▶ Fuel

Other inspections

- ▶ Check all threaded unions for firm seat
- ▶ Verify compliance with the maintenance schedule

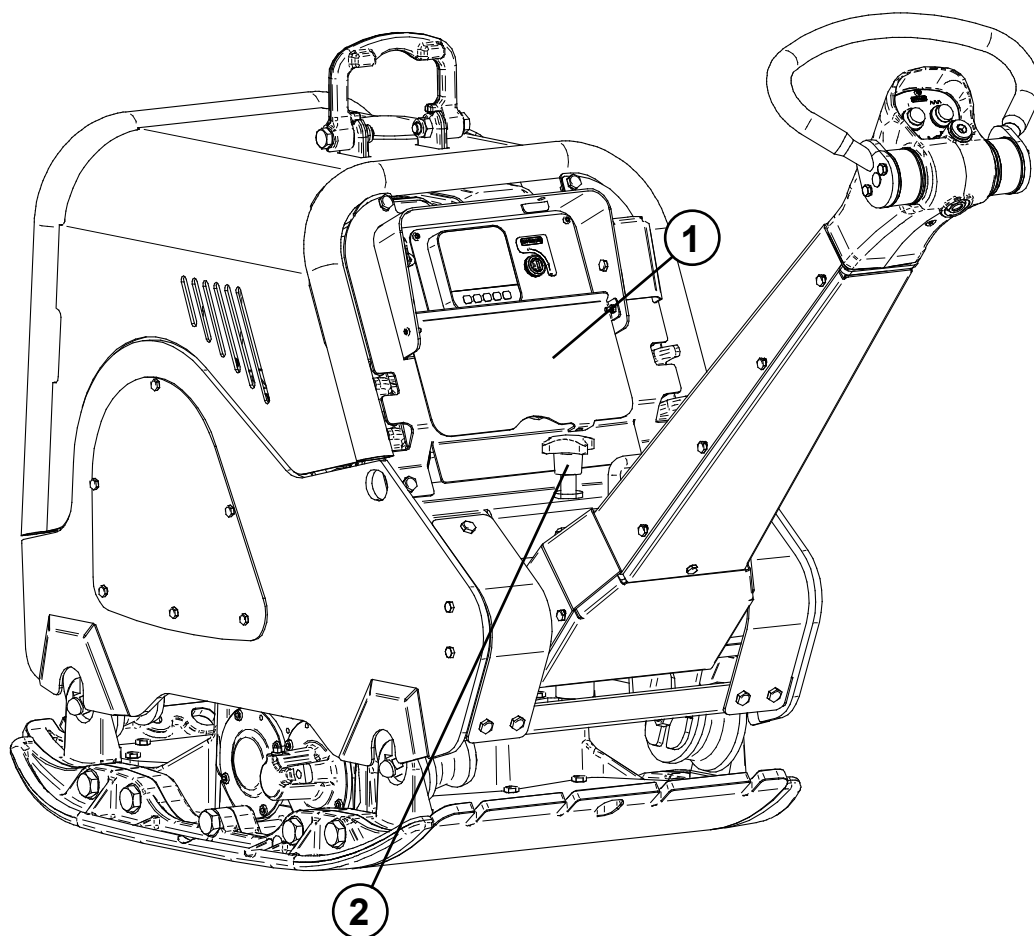


Figure 4

Working with the machine

Starting the engine

ATTENTION

Risk of engine damage if start-up procedures take too long. One start-up procedure must not be longer than 30 seconds. If the engine fails to turn over, the cause must be identified and rectified.

ATTENTION

Risk of engine damage. The use of starter spray may lead to overheating in the combustion chamber.

- ▶ Do not use any starter spray.

WARNING

Danger of suffocation from engine exhausts when starting the engine in closed rooms or poorly ventilated work areas.

- ▶ Start the engine only in well-ventilated environments.
- ▶ See section “Safety” for operating the machine in trenches.

- ▶ Adjust the desired work height of the guide bar with the set screw (position 2, figure 4).

- ▶ Open the vandalism flap (position 1, figure 4).

- ▶ Turn the ignition key to position “2” and hold it until the engine turns over.

- ▶ Release the ignition key as soon as the engine is running.

ATTENTION! Danger of material damage from running electric starter.

- ▶ The ignition key must spring back to position “1” automatically. Otherwise, shut down the machine immediately.

- ✓ The Weber Smart Assist shows the home screen in idle speed mode.



If possible, avoid draining the fuel tank completely as air may otherwise enter the fuel system. This can cause damage to the fuel injection system. If the tank is drained regardless, the machine needs to be fueled and the fuel system needs to be bled (see section 8.2.8.).

Compacting

CAUTION

There is a crushing hazard between the machine and the wall during work in close proximity to walls.

- ▶ Use extra caution when working close to obstacles

CAUTION

Risk of injury if the machine is guided improperly.

- ▶ Guide the machine safely with both hands on the handle.

ATTENTION

Risk of damage to the machine. Never work on soils that cannot be compacted further. The COMPATROL compaction control system warns of hard soils.

If all bars of the compaction indicator light up together with the warning light, stop operation immediately.

- ▶ Start the engine.
- ▶ Allow the engine to warm up at idle speed for a few moments

Press the pushbutton "Start / Stop".

- ▶ The machine runs at full throttle speed.
- ✓ The Weber Smart Assist shows the Compatrol compaction control system.

Select the desired vibration force using the pushbutton

- ▶ "vibration force".

Switch between forward and reverse travel by setting the

- ▶ handle to the corresponding direction.



The forward and reverse travel of the machine is infinitely variable.
The speed of the machine is selected with the corresponding deflection of the handle



The Compatrol compaction control system indicates the achieved bearing capacity.
The maximum possible compaction has been reached when no additional bars come on after the completion of another pass.

Switching off the engine

- ▶ Press the pushbutton "Start / Stop".
- ✓ The engine runs at idle speed.
- ▶ Turn the ignition key to position "0".
- ▶ If necessary, pull out the ignition key and close the vandalism flap.

6. Transport

Lifting the machine

The machine can be lifted for loading onto a vehicle.

CAUTION

Risk of material damage and injuries. The use of defective or unsuitable lifting gear may cause the machine to fall down.

- ▶ Use slings that possess the appropriate carrying capacity.
- ▶ Lock the guide bar in place in the folded position.
- ▶ Fit the crane hook into the lifting ring and lift the machine up straight.

7. Storage

Storage at the construction site

If stored at the construction site, e.g. over night, the machine must be secured against theft and unauthorized use.

Parked machines presenting an obstacle must be secured in accordance with statutory regulations, particularly in the area of public traffic surfaces.

Storage for an extended period

If the machine will not be used for a period longer than one month, the following measures must be taken:

- ▶ Clean the entire machine thoroughly.
- ▶ Check the entire machine for leaks. Correct any detected defects.
- ▶ Drain the fuel tank and fill with FAME*-free fuel. Allow the engine to run for a few minutes to ensure the system only contains FAME*-free fuel.
- ▶ Check and, if necessary, correct the engine oil level.
- ▶ Check and clean air and fuel filter. Replace if damaged.
- ▶ Lightly oil all bare parts and levers.
- ▶ Check the charging status of the battery, recharge if necessary.
- ▶ Check the charging status of the battery on a regular basis, but not less than every 3 months. Another option is to use a permanent charger / battery maintainer.



If the machine is to be stored for longer than six months, contact the Weber MT's service organization to discuss additional measures.

FAME = fatty acid methyl esters

8. Maintenance

General information

The section below contains instructions that need to be observed for regular maintenance. Read these instructions carefully and follow them in order to prevent downtimes of the machine caused by excessive wear or damage to the machine. Also read the safety instructions relevant to machine maintenance before you begin with the maintenance work. They help minimize the risk to maintenance personnel.

Maintenance personnel

Maintenance and repairs require specific qualifications. These operations may only be carried out by trained professionals. Maintenance personnel must be instructed on how to operate the machine by the owner or by the owner's assigned personnel.

Maintenance personnel are required to wear the personal protective equipment during work (see section "Safety").

Safety

There is an increased risk of injury during maintenance and repairs, e.g. crushing at moving parts.

Following the conclusion of all maintenance and repairs, all protective fixtures must be refitted and placed back into operation.

Discharged operating fluids have a negative impact on the environment. They must be collected and stored in suitable containers. Disposal in accordance with environmental protection regulations.

All maintenance work may only be carried out when the engine is switched off. Safeguard the engine against unauthorized start attempts.

Before working on the electrical system, disconnect the starter battery and cover the battery terminals with insulating material. It is also recommended to disconnect the battery as a means to safeguard the machine against unauthorized start attempts during maintenance work.

Before starting the machine after maintenance operations, make sure that all loose parts (screws, tool, etc.) have been removed from the machine. They can be drawn in or flung off by moving parts.

Keep the entire machine clean. The stickers must always be clearly legible. Damaged stickers must be replaced.

8.1. Maintenance overview

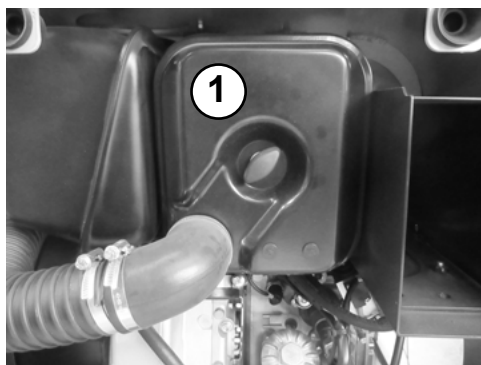
Activity	Frequency			See section
	Initial maintenance / after 25 operating hours	Every 8 operating hours / daily	Every 150 operating hours / every year	
Change the engine oil	X		X	8.2.4
Check the valve play of the engine, adjust if necessary	X		X	Hatz instructions
Re-tighten all accessible threaded connections	X		X	
Clean the air filter		X		8.2.1
Change the fuel filter			X	8.2.7
Change the engine oil filter			X	8.2.5
Check the oil level of the transmission		X		8.2.8
Change the oil in the exciter			X	8.2.9



The regulations and the operating and maintenance manuals of the engine manufacturer must be complied with in addition to the activities specified in the above maintenance overview.

8.2. Description of the maintenance operations

8.2.1. Clean the air filter



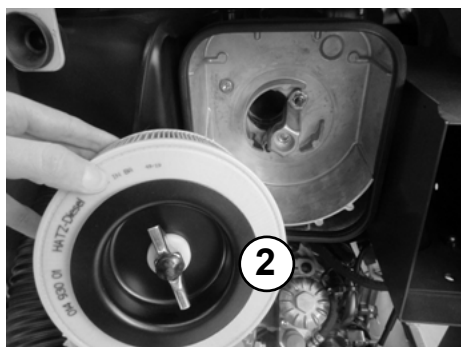
► Open the maintenance cover.

► Check the intake area for the combustion air.

► Remove larger objects that may clog the filter such as leaves or rocks.

► Unscrew the air filter cover (1).

► Remove the wing nut on the air filter.



► Remove the air filter insert (2).

ATTENTION! Danger of material damage from dirt particles.

► Keep dirt or foreign objects from entering the intake opening.

► Blow out the air filter insert from inside to outside with compressed air.

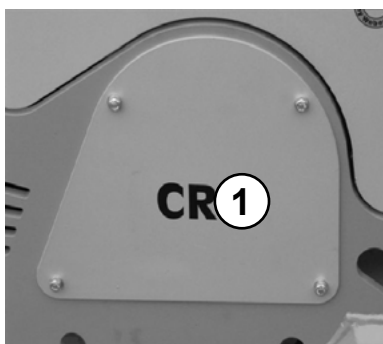
► Check and, if necessary, replace the air filter insert. See also Hatz instructions.

► Tighten the air filter insert using the corresponding wing nut.

► Screw on the air filter cover.

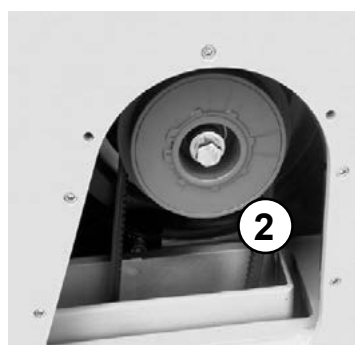
► Close the maintenance cover.

8.2.2. Check V-belt



► Shut down the machine.

► Remove the V-belt guard (1).

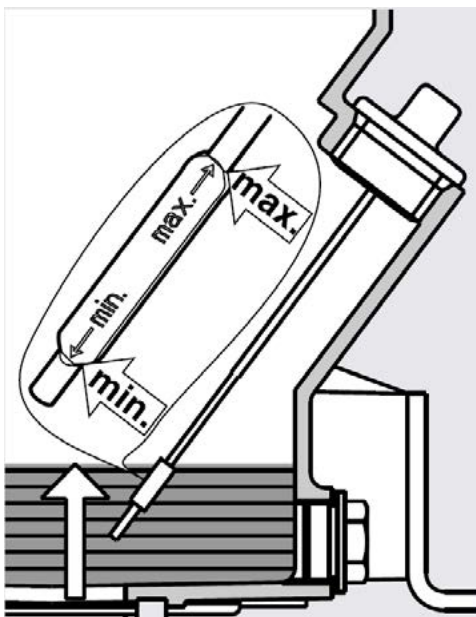
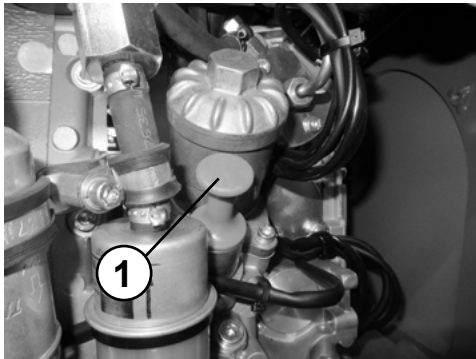


► Check the V-belt (2) for cracks and wear.

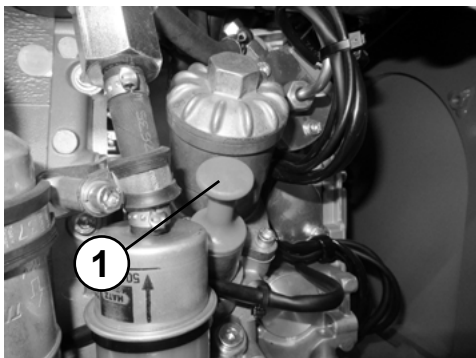
► Replace the V-belt if it shows signs of extensive wear or other damage.

► Fit the V-belt guard.

8.2.3. Check the engine oil level



8.2.4. Change the engine oil



⚠ WARNING

If lubricating oils and fuel come into contact with skin, they can cause skin irritations.

- ▶ Wear protective gloves.
- ▶ If skin contact has occurred, wash the affected areas thoroughly.

- ▶ Park the machine on a horizontal subsurface.
- ▶ Switch off the engine and wait for several minutes until the oil has collected in the crankcase.
- ▶ Open the maintenance cover.

CAUTION! Danger of burn injuries at the hot engine and its attachments.

- ▶ Allow the combustion engine to cool down sufficiently before starting work.

- ▶ Pull the oil dip stick (1) out of the crankcase.

- ▶ Wipe off the oil dip stick with a clean cloth.

- ▶ Slide the oil dip stick back into the crankcase.

- ▶ Pull the oil dip stick out of the crankcase.

- ▶ The correct oil level is between the “min.” and the “max.” marks.

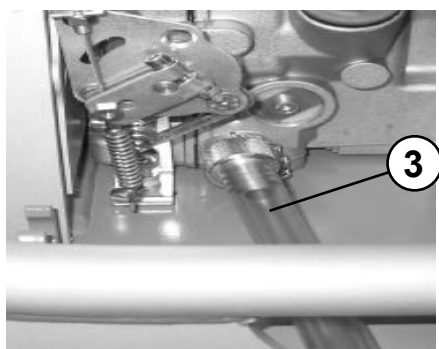
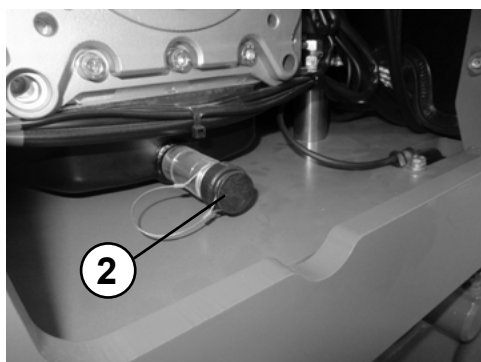
- ▶ When the oil level reaches the “min.” mark, fill in fresh oil in accordance with the specification.

- ▶ Close the maintenance cover.

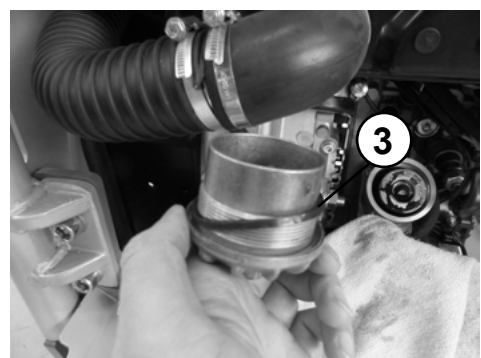
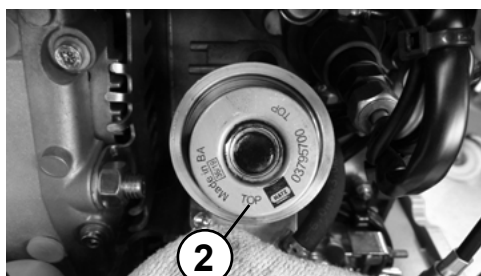
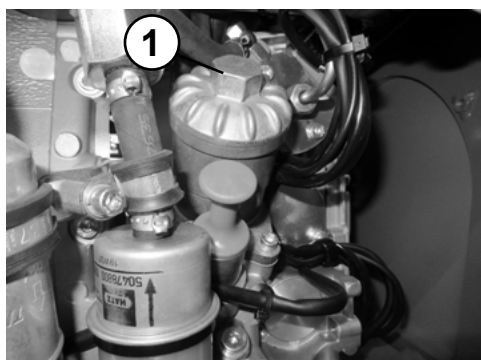
⚠ CAUTION

Danger of burn injuries at the hot engine and its attachments.

- ▶ Allow the combustion engine to cool down sufficiently before starting work.
- ▶ Use extra caution during work on the engine when it is at operating temperature.
- ▶ Start the engine and allow the engine to warm up for a few minutes.
- ▶ Switch off the engine.
- ▶ Open the maintenance cover.
- ▶ Unscrew the oil dip stick (1). It also serves as the seal for the oil filler neck.
- ▶ Open the side cover of the engine bracket.
- ▶ Place a suitable collection vessel under the oil drain.



8.2.5. Change the engine oil filter



- ▶ Remove the cover cap (2) from the oil drain valve
- ▶ Screw the oil drain hose (3) onto the oil drain valve.

⚠ CAUTION! Danger of scalding due to hot oil.

- ▶ Wear protective gloves.
- ▶ Use extra caution.
- ▶ Allow the oil to drain into the collection vessel.
- ▶ Unscrew the oil drain pipe.
- ▶ Attach the cover cap to the oil drain valve.
- ▶ Fill fresh oil into the engine in accordance with the specification.
- ▶ Check the oil level and top off to the “max.” mark.
- ▶ Insert the oil dip stick.
- ▶ Close the maintenance cover along with the side cover.

⚠ CAUTION

Danger of burn injuries at the hot engine and its attachments.

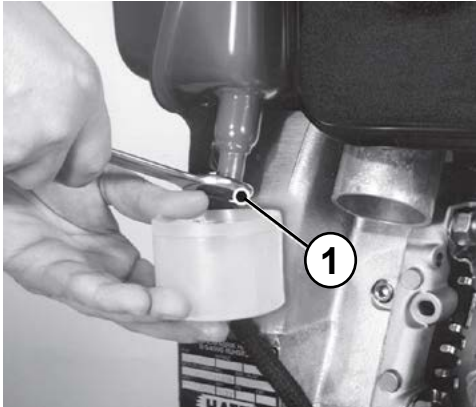
- ▶ Allow the combustion engine to cool down sufficiently before starting work.
- ▶ Use extra caution during work on the engine when it is at operating temperature.
- ▶ Drain the engine oil.
- ▶ Unscrew the screw plug (1).
- ▶ Carefully clean the sieve insert of the screw plug
- ▶ Remove the old oil filter. Dispose of it in accordance with local environmental protection regulations.
- ▶ Insert the new oil filter. When doing so, pay attention to the “TOP” (2) mark.
- ▶ Replace the sealing ring (3) in the screw plug.
- ▶ Apply a small amount of fresh oil to the sealing ring.
- ▶ Screw in the screw plug.
- ▶ Fill fresh engine oil into the filler neck.

⚠ CAUTION

Risk of environmental pollution from spilled fuel. During the draining of the water held in the water separator, a small amount of fuel is drained along with the water.

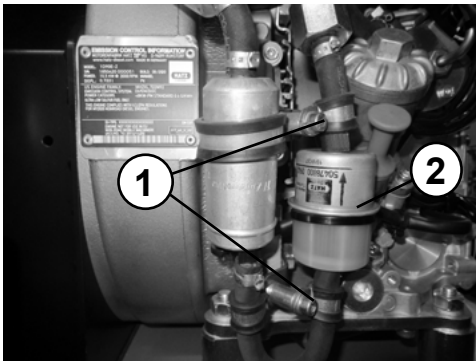
- ▶ Collect the fuel-water mix and dispose of it in accordance with local environmental protection regulations.

8.2.6. Check the water separator



- ▶ Open the maintenance cover.
- ▶ Place a transparent vessel under the drain plug (1).
- ▶ Unscrew the drain plug to one thread.
- ▶ Allow the fuel-water mix to drain into the transparent vessel until only pure fuel flows from the plug.
- ▶ Seal the plug tightly again.

8.2.7. Change the fuel filter



- ▶ Open the maintenance cover.
- ▶ Drain the fuel tank into a suitable clean vessel.
- ▶ Release the clips (1).
- ▶ Pull the fuel line off the fuel filter (2) on both sides.
- ▶ Insert a new fuel filter. Observe the installation orientation.
- ▶ Slide the fuel line onto the fuel filter and fix it place using the clips (1).
- ▶ Fill the fuel tank.
- ▶ Close the maintenance cover.

8.2.8. Bleed the fuel system

Bleeding the fuel system is necessary in the following situations:

- after the first filling of the fuel tank
- after changing the fuel filter
- engine shuts off after the fuel tank has been run empty



After bleeding has been completed, it will take several tries with the electric starter to start the engine back up again.

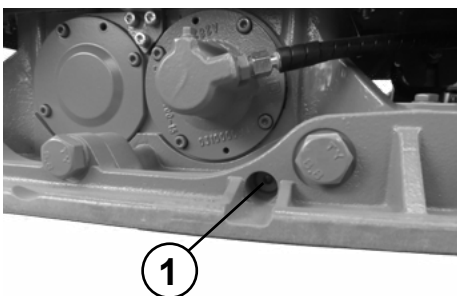
- ▶ Insert the start key and turn it to position “I”.
- ▶ Leave the start key in position “I” until the electric fuel pump shuts off audibly (after approx. 10 seconds).
- ▶ Turn the start key back to position “0”
- ▶ Repeat this process multiple times to push any trapped air out of the fuel system.

8.2.9. Check the hydraulic oil level



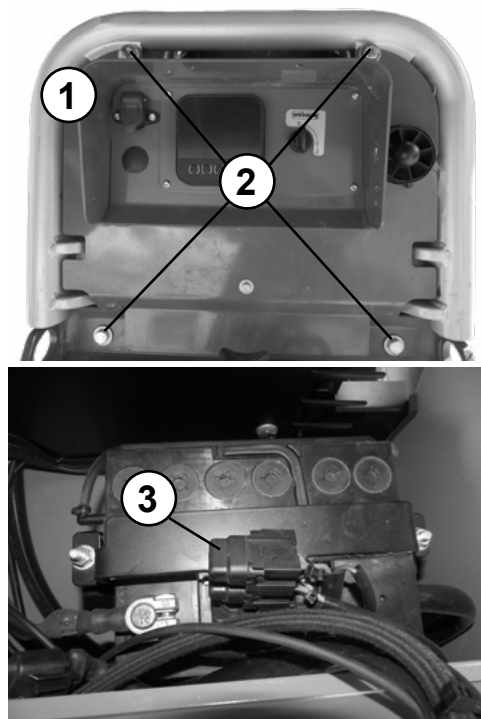
- ▶ Lock the guide bar in place in the transport position.
- ▶ Check the hydraulic oil level.
The oil level is correct when the oil is in the middle of the view glass.

8.2.10. Change the oil in the exciter



- ▶ Start the engine and allow the engine to warm up for a few minutes.
- ▶ Switch off the engine.
- ▶ Tilt the machine slightly.
- ▶ Place a suitable collection vessel under the machine.
- ▶ Loosen the oil drain plug (1).
- ▶ Allow the oil to drain.
- ▶ Tilt the machine in the other direction.
- ▶ Fill fresh oil into the exciter in accordance with the specification.
- ▶ Close the oil drain plug.

8.2.11. Change the fuses

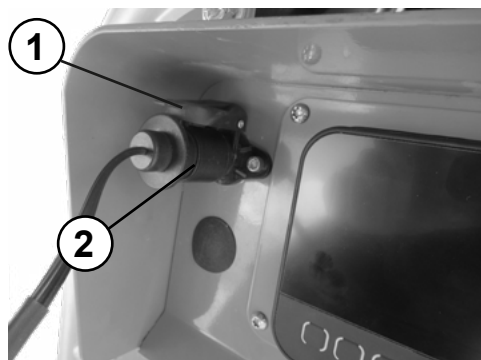


- Take off the dashboard (1). To do so, remove the 4 screws (2).

ATTENTION! The instruments are connected to the machine via cables.

- Remove the dashboard towards the rear carefully so as not to damage the cables.
- Remove the protective caps (3) of the fuse holder.
- Replace defective fuses.
- Attach the protective caps to the fuse holder.
- Install the dashboard.

8.2.12. Use a permanent charger



- Open the protective cover (1) of the charging socket.
- Connect the permanent charger to the charging socket.
- Connect the permanent charger to the appropriate mains supply.



Comply with the manufacturer's operating manual when using the permanent charger! The operating manual is included with every permanent charger.

8.3. Operating fluids and fill levels

Assembly	Operating material	Quantity
Engine Engine oil	SAE 10 W 40 (-10 ~ + 50 °C) API CJ-4 ACEA E6 / E9 / C3 / C4	1.9 l
Fuel tank	Diesel EN 590 BS 2869 A1 / A2 ASTM D 975-09a 1-D S15 / 2-D S15	10.0 l
Vibrator	Fully-synthetic transmission fluid API GL-5/GL-4 First filling Fuchs Titan SINTOPOID LS SAE 75W-90	1.0 l
Gearshift	Transmission fluid DEXRON III (H) First filling Fuchs Titan ATF 4000 or equivalent	As necessary