



## Maintenance manual for JENSEN wood chippers



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**Contents**

1.1 ROUTINE MAINTENANCE..... 3

1.2 DAILY CHECKS ..... 4

1.3 WEEKLY MAINTENANCE ..... 6

1.4 ENGINE MAINTENANCE ..... 8

1.5 ROUTINE CLEANING..... 8

    1.5.1 HIGH PRESSURE CLEANING ..... 8

2.1 MAINTENANCE SCHEDULE ..... 9

    2.1.1 INITIAL MAINTENANCE STEPS ..... 9

    2.1.2 PERIODIC MAINTENANCE SCHEDULE ..... 10

3.1 HATZ - DIESEL ENGINE ..... 12

    3.1.1 SAFETY INSTRUCTIONS ..... 12

    3.1.2 CARRYING OUT MAINTENANCE WORK ..... 12

    3.1.3 MAINTENANCE SCHEDULE ..... 13

3.2 KUBOTA - DIESEL ENGINE ..... 14

    3.2.1 SAFETY INSTRUCTIONS ..... 14

    3.2.2 MAINTENANCE INTERVALS..... 15

3.3 YANMAR - DIESEL ENGINE ..... 18

    3.3.1 SAFETY INSTRUCTIONS ..... 18

    3.3.2 MAINTENANCE INTERVALS..... 19

3.4 B&S VANGUARD - PETROL ENGINE ..... 21

    3.4.1 SAFETY INSTRUCTIONS ..... 21

    3.4.2 MAINTENANCE INTERVALS..... 22

4.1 CRAWLER TRACKS..... 23

    4.1.1 SAFETY INSTRUCTIONS..... 23

    4.1.2 MAINTENANCE INTERVALS ..... 23

## 1.1 ROUTINE MAINTENANCE



### WARNING

Ensure that the key is removed from the ignition lock before starting maintenance on the machine.



### WARNING

Be extremely careful when searching for leaks. Hot hydraulic oil, engine oil or water can cause scalding.



### WARNING

Be extremely careful when removing and replacing blades and counter blades to avoid injury. The chopping disc can rotate and cause bruising and cuts in and around the chopping chamber.



### WARNING

Watch out for leaking hydraulic oil, which can cause serious injury when the engine is running and the system is pressurised. The consequences of a leak can lead to oil penetrating deep into the flesh and thus into the bloodstream and requires immediate medical attention. **Do not check the machine for leaks while the engine is running.** When hoses are replaced, all seals must be replaced at the same time.



### WARNING

Damaged hydraulic hoses can lead to fatal accidents. Check the hoses regularly. Do not use the machine if a hose or hose fitting is damaged.



### WARNING

Fluid under pressure.  
Fine jets of fluid under high pressure can penetrate the skin. Keep your face and hands away from the pressurised liquid and wear protective goggles and gloves. **Switch off the engine before checking for leaks.** If liquid gets into your skin  
If the product penetrates the skin, seek medical help immediately.

### NOTE

When the machine is new, the hydraulic oil level may drop when it is first used. Check the level regularly and top up the oil until it has levelled off. If topping up is necessary, clean the area around the filler cap thoroughly before removing it to prevent foreign bodies from falling into the oil tank.

## 1.2 DAILY CHECKS

Carry out the following checks before commissioning the appliance and before each day of operation.

Part	Examination	Further measures	☑ / ☒
1	Nuts, bolts and Secure washers	Visual inspection of all nuts, screws and bolts Washers for safety	<input type="checkbox"/>
2	Checking the reflectors	All reflectors attached and undamaged	<input type="checkbox"/>
3	Checking the ball coupling	<ul style="list-style-type: none"> <li>Wear indicator in order, in attached condition</li> <li>Condition of the breakaway cable</li> </ul>	<input type="checkbox"/>
4	Check the handbrake lever	Works correctly Holds the machine when tightening In the event of a defect, please contact JENSEN	<input type="checkbox"/>
5	Check the Support wheel	All right	<input type="checkbox"/>
6	Lighting cable and Check adapter	Undamaged	<input type="checkbox"/>
7	All fluid levels check	<ul style="list-style-type: none"> <li>Engine oil</li> <li>Hydraulic oil</li> </ul>	<input type="checkbox"/>
8	Proximity sensors are not damaged and function correctly	<ul style="list-style-type: none"> <li>Bonnet</li> <li>Draw-in table</li> <li>Safety bar</li> </ul>	<input type="checkbox"/>
9	Ejector	<ul style="list-style-type: none"> <li>Function and safety</li> <li>Clamping device - mounted and secured</li> </ul>	<input type="checkbox"/>
10	Throttle lever	Firm enough to hold the maximum speed	<input type="checkbox"/>
11	Fuel tank	Fuel level and free of impurities in the fuel tank Interior	<input type="checkbox"/>
12	Check the Safety bar	<ul style="list-style-type: none"> <li>Free to use</li> <li>Feed rollers stop when pressed</li> </ul>	<input type="checkbox"/>
13	Check the Emergency stop switch	<ul style="list-style-type: none"> <li>Free to use</li> <li>Feed rollers stop when pressed</li> </ul>	<input type="checkbox"/>
14	Check the Feed table sensor button.	<ul style="list-style-type: none"> <li>Free from damage</li> <li>Works correctly</li> </ul>	<input type="checkbox"/>

<b>Part</b>	<b>Examination</b>	<b>Further measures</b>	<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/>
15	Function of the feed rollers	The feed rollers work forwards and backwards at maximum speed	<input type="checkbox"/>
16	Checking the locking mechanism of the feed table	Secure the feed table	<input type="checkbox"/>
17	Check starter battery	<ul style="list-style-type: none"> <li>• Pole terminals in order</li> <li>• Battery cable in order</li> </ul>	<input type="checkbox"/>
18	Control of the Bonnet catches	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Function correctly</li> </ul>	<input type="checkbox"/>
19	For liquid leaks check	Visual inspection for liquid leaks	<input type="checkbox"/>
20	Lighting system check	All lights work perfectly and are in good condition	<input type="checkbox"/>
21	Check tyre pressure	Please refer to your machine documentation for the correct tyre pressure	<input type="checkbox"/>

Additional remarks:

Date of the check:

Person (name in block capitals):

Person (signature):

## 1.3 WEEKLY MAINTENANCE

Carry out the following checks weekly or after every 8 hours of operation .

Part	Examination	Further measures	<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/>
1	Check the oil level on the retractable gearbox	Refill if necessary	<input type="checkbox"/>
2	Lubricate the bearings: Up to six grease nipples in the lubrication distributor	2 pumps of grease per grease nipple. (If the ambient temperature is low, lubricate while the engine is running and Feed rollers that rotate)	<input type="checkbox"/>
3	Lubricate the Trailer coupling assembly: Two grease nipples in the trailer coupling assembly	2 pumps of grease per Grease nipples	<input type="checkbox"/>
4	Check whether there are any impurities around the exhaust system. have accumulated	Remove if present	<input type="checkbox"/>
5	Check the voltage of the Main belt.	Correct if necessary	<input type="checkbox"/>
6	Check the condition of the Cutting knife	Replace if necessary	<input type="checkbox"/>
7	Check counter cutting	Replace or rotate if necessary	<input type="checkbox"/>
8	Check the motor fan and the fan guard	Clean if necessary	<input type="checkbox"/>
9	Check the tightness of the throttle grip	Correct if necessary	<input type="checkbox"/>
10	Check the main bearing of the chopping disc	<ul style="list-style-type: none"> <li>• Good general condition</li> <li>• Free from damage</li> </ul>	<input type="checkbox"/>
11	pulleys and the taper lock on of the chopping disc	Undamaged	<input type="checkbox"/>
12	Check the spring tension of the upper feed roller	Correct if necessary	<input type="checkbox"/>
13	Check whether deposits have accumulated in the upper feed roller and around the assembly	Remove if present	<input type="checkbox"/>

Part	Examination	Further measures	☑ / ☒
14	Check the brackets of the Feed roller motors	Safe and undamaged Tighten if necessary	<input type="checkbox"/>
15	Check side panelling	Rear panelling is free of Dirt - remove the panelling for cleaning if necessary	<input type="checkbox"/>
16	Starter battery - check terminals	If loose, tighten	<input type="checkbox"/>
17	Carry out a visual inspection of all electrical cables through	Cable and line safe and undamaged	<input type="checkbox"/>
18	Carry out a visual inspection of all hydraulic components	<ul style="list-style-type: none"> <li>• Safe hoses</li> <li>• All components leak-free</li> </ul>	<input type="checkbox"/>
19	Check the safety stickers	Stickers are attached, legible and undamaged	<input type="checkbox"/>
20	Check the condition of the axle	<ul style="list-style-type: none"> <li>• Wheel alignment</li> <li>• Axle bearing condition, both sides</li> </ul>	<input type="checkbox"/>
21	Check wheels	<ul style="list-style-type: none"> <li>• Tyre tread depth</li> <li>• Side panel undamaged</li> <li>• Rim undamaged</li> </ul>	<input type="checkbox"/>
22	Check wheel nuts	Check that the wheel nuts are tightened with 100 Nm are tightened.	<input type="checkbox"/>
23	Check brakes	Check whether the brakes are working properly and adjust them if necessary	<input type="checkbox"/>
24	Ensure that the maintenance plan is up to date	Is the machine due for maintenance?	<input type="checkbox"/>

Additional remarks:

Date of the check:

Person (name in block capitals):

Person (signature):

**NOTE**

If any of these problems persist, contact JENSEN immediately.

## 1.4 ENGINE MAINTENANCE

### NOTE

The maintenance intervals for the motors and crawler tracks described in this maintenance manual are taken from the original operating instructions of the respective manufacturer. If the maintenance tables shown in this maintenance manual differ from the original operating instructions of the respective manufacturer, the maintenance table in the original operating instructions of the respective manufacturer must always be followed.

Please read the engine manual supplied with this machine for the following information:

- Check the engine oil.
- Change the engine oil and oil filter.
- Changing the fuel filter.

## 1.5 ROUTINE CLEANING

### 1.5.1 HIGH PRESSURE CLEANING



#### CAUTION

The motor and other components can be damaged by high-pressure washers. If the machine is to be washed with a high-pressure cleaner, special precautions must be taken.

#### NOTE

Ensure that the alternator, starter motor, ignition lock, electrical switch box and all other electrical components are shielded and cannot be cleaned directly by the high-pressure cleaning system. Do not point the water jet directly at bearings, oil seals or the engine's air intake and cooling system.

## 2.1 MAINTENANCE SCHEDULE

**NOTE**

Remember to carry out the standard JENSEN inspection every time you carry out maintenance.  
or an authorised specialist dealer.

### 2.1.1 INITIAL MAINTENANCE STEPS

Operating hours	Tasks	Requirements and part numbers	☑ / ☒
After the first <b>5 h</b> Operating hours	Tighten the screw connections of the hydraulic system		<input type="checkbox"/>
After the first <b>20 h</b> Operating hours	Remove and replace hydraulic filter element	Pressure filter: 19443 Suction filter: 961608	<input type="checkbox"/>
After the first <b>50 h</b> Operating hours	Roller gearbox Drain and replace oil filling	A530-A540-A550-A450-A425 1.6 litres (ISO VG 220)	<input type="checkbox"/>
	Hatz - Diesel engine	A328-A350-A231-A141 2 litres (ISO VG 320)	
	Change engine oil and oil filter Check screw connections	Oil filter: 96mm - 962743 143mm - 982005	
After the first <b>2000 h</b> Operating hours	Fluid coupling oil change	959606 - Avia Fluid RSL 32 ISO 11158 / DIN 51524-2 4,02l	<input type="checkbox"/>

2.1.2 PERIODIC MAINTENANCE SCHEDULE

**NOTE**

As our wood shredders contain components from different manufacturers (motors, chassis, tracks), which have different maintenance requirements, only the wood shredder is listed in this maintenance schedule. The engine manufacturer's maintenance instructions are included in this maintenance manual and must be followed separately if fitted.

Operating hours	Tasks	Requirements and part numbers
All <b>8 h</b> (daily)	Check bolts, nuts and hydraulic screw connections and retighten if necessary.	
	Inspection for leaks	Watch out for drips under the machine
	Check V-belt for damage	Replace if necessary
	Lubricate roller feed (bearings, guides, joints)	
All <b>20 h</b>	Check main bearing	<i>Retighten if necessary</i>
	Check cutting tools for wear	<i>Replace / turn if worn</i>
All <b>50 h</b>	Check the tension springs of the roller feeder	<i>If loose, retighten and replace if necessary</i>
	Check starter battery	<i>If starting difficulties occur, charge the starter battery and replace if necessary.</i>
	Visual inspection of the fuel lines and the clamping band	

Operating hours	Tasks	Requirements and part numbers	
All <b>200 h</b>	Lubricating hinges (bonnets, panelling)	Lubricant: e.g. Retinax A, KI 2 K	
All <b>500 h</b>	Change hydraulic filter element	<i>Retighten if necessary</i>	
	Oil change roller gearbox	A530-A540-A550-A450-A425 1.6 litres (ISO VG 220) A338-A350-A231-A141 2 litres (ISO VG 320)	
All <b>1000 h</b>  (Annual)	Change hydraulic oil	959609 - Avia Fluid HVI ISO VG46 ISO 11158 / DIN 51524-3 <b>Organic oil:</b> 960777 - Petro-Canada Environ MV32 ISO 11158 / DIN 51524-3	
	Inspection of the wood shredder by an expert	<i>Visit a specialist workshop authorised by JENSEN</i>	
	Freewheel oil change	<i>Engine oil 15W40 = 42ml</i>	
All <b>5 years</b>	Replace hydraulic hoses	<i>The appropriate hose sets can be found in the corresponding spare parts list</i>	
All <b>4000 h</b>	Fluid coupling oil change	959606 - Avia Fluid RSL 32 ISO 11158 / DIN 51524-2  4,02l	
Hydraulic oil type		Item number	Designation
Normal hydraulic oil		959609	Hydraulic oil HVI 46
		9538	Oil sight glass UCC
Organic mineral oil		960777	Petro Canada
		9538	Oil sight glass UCC
Esther-based organic oil (synthetic)		16369	Syntofluid F
		959588	Panolin HLP Synth
		19006	Oil sight glass

## 3.1 HATZ - DIESEL ENGINE

### 3.1.1 SAFETY INSTRUCTIONS



#### WARNING

Risk of injury due to failure to follow the instructions and by unauthorised actions on the device.

- Follow all instructions given.
- Do not perform any activities for which you are not qualified. is present. If necessary, contact appropriately trained personnel.

- Maintenance tasks may only be carried out by trained personnel.
- The accident prevention measures are based on the local accident prevention regulations.
- Carry out the prescribed adjustment and maintenance work on time.
- Replace defective appliance parts as quickly as possible.
- Always use personal protective equipment.
- Only use tools that are in perfect condition!
- The installation of unsuitable spare parts can lead to problems. We cannot accept any liability for damage or consequential damage resulting from this. liability. We therefore recommend the use of **original HATZ spare parts**.
- Follow the maintenance conditions specified in this manual exactly.
- Only make changes to the appliance in consultation with the manufacturer.
- Only carry out maintenance work when the engine is switched off.
- Protect the start key from unauthorised access.
- Disconnect the negative terminal of the battery before carrying out maintenance work.
- For the handling and disposal of waste oil, filters, coolants and the regulations of the legislator must be observed when using cleaning agents.
- After completing the maintenance work, check that all tools, screws, tools or objects have been removed from the device and all protective devices are reinstalled.
- Before starting, ensure that nobody is in the danger zone of the motor or appliance.

### 3.1.2 CARRYING OUT MAINTENANCE WORK

- The entire appliance is designed to be easy to maintain. Maintenance-relevant Parts are easily accessible.
- Maintenance work carried out conscientiously at the prescribed intervals to avoid premature wear of the appliance.
- Observe the information and warning signs attached to the appliance.
- Always retighten screw connections that have been loosened during maintenance work.
- A function test after maintenance and repair work has been carried out (test run).
- For maintenance work that is not listed in the maintenance documents and described above, please contact your nearest HATZ service station.

3.1.3 MAINTENANCE SCHEDULE



**Caution**

- Risk of injury due to non-observance of maintenance instructions.
- Only carry out maintenance work when the engine is switched off.
  - Protect the start key from unauthorised access.
  - Disconnect the negative terminal of the battery.
  - After completing the maintenance work, check whether all tools are removed from the appliance.

**For new or reconditioned motors, we recommend after 50 operating hours:**

- Change the engine oil and oil filter. *(See Initial maintenance steps)*
- Check screw connections (screws for cylinder head fastening do not follow suit!).

Symbol	Maintenance interval	Maintenance activity
	Every 8-15 operating hours or before the daily Start	Check oil level
		Combustion air intake area control
		Check radiator fins for dirt control
		Check cooling system
	Every 500 operating hours or every 2 years	<i>Change engine oil and oil filter 1)</i>
		<i>Change fuel pre-filter 1)</i>
		<i>Change main fuel filter 1)</i>
		<i>Check poly V-belt 1)</i>
		<i>Change the oil separator of the crankcase ventilation 1)</i>
		<i>Check screw connections 1)</i>
	Every 500 operating hours or after display, every 2 years at the latest	<i>Air filter cartridge (primary filter) change<sup>2)</sup></i>
		<i>Empty water separator 1)</i>
	Every 4 years	<i>Changing the coolant</i>
	If necessary, every 3000 operating hours at the latest	<i>Changing the poly-V-belt</i>
	Every 4000 operating hours	<i>Clean exhaust gas recirculation (EGR) (By trained specialist personnel carry out)</i>

<sup>1)</sup> Maintenance after maintenance interval or after 2 years, depending on which criterion occurs first.

<sup>2)</sup> The secondary filter must be replaced every fifth time the primary filter is replaced, at the latest every two years.

## 3.2 KUBOTA - DIESEL ENGINE

### 3.2.1 SAFETY INSTRUCTIONS

**WARNING**

Risk of injury due to failure to follow the instructions and by unauthorised actions on the device.

- Follow all instructions given.
- Do not perform any activities for which you are not qualified. is present. If necessary, contact appropriately trained personnel.

To avoid accidents:

- Always switch off the engine and remove the ignition key when carrying out daily or periodic maintenance, refuelling, servicing and cleaning.
- Before allowing other persons to operate the system, the correct way to operate the appliance must be explained and the motor manufacturer's manual must be read before commissioning.
- When cleaning any components, do not use petrol but a normal cleaning agent.
- Always use tools that are in good condition. Ensure that you know how to use these tools before starting maintenance work.
- Tighten all screws well during installation. Tighten the screws to the specified tightening torque.
- Do not place any tools on the battery as this may cause a short circuit. This can result in severe skin burns or a fire. The battery must be removed from the vehicle before maintenance.
- Allow the exhaust and exhaust pipe to cool down before touching them. They can cause serious burns.

3.2.2 MAINTENANCE INTERVALS

Time interval	Description of the	D1005	D1703	D1803
Daily	Checking the engine oil level			✓
	Checking the fuel level and refuelling			✓
	Checking the coolant level			✓
	Checking the V-belt			✓
For the first time after 50 operating hours	Engine oil change			✓
	Replacing the oil filter cartridge			✓
every 50 hours	Checking the fuel pipe and hose clamps	@ ✓	@ ✓	✓
	Draining the water separator			✓
every 100 hours	Cleaning the air filter element	*1; @ ✓	*1; @ ✓	
	Cleaning the fuel filter	✓	✓	
	Checking the fan belt tension	✓	✓	
	Emptying the water separator	✓	✓	
every 200 operating hours or 6 months	Checking the radiator hose and the clamping band	✓	✓	
	Checking the intake air line	@ ✓	@ ✓	
	Replacing the oil filter insert (oil pan 90mm)	@ ✓		
every 250 operating hours or 6 months	Cleaning the air filter element			*1 ✓
	Adjusting the fan belt tension			✓
	Checking the intake air line			✓
	Checking the radiator hose and hose clamps			✓
every 400 hours	Engine oil change			*3 ✓
	Replacing the oil filter cartridge		✓	*3 ✓
	Replacing the fuel filter		@ ✓	
	Cleaning the water separator	✓	✓	
	Replacing the oil filter insert (oil pan 124mm)	@ ✓		

Time interval	Description of the	D1005	D1703	D1803
Every 500 hours or 1 year	Replacing the fuel filter cartridge			*5 ✓
	Replacing the fan belt	✓	✓	*3 ✓
	Cleaning the water separator (type 1)			✓
	Removing deposits in the fuel tank	✓	✓	*3 ✓
	Cleaning the water jacket (inside of the radiator)	✓	✓	*3 ✓
	Replacing the water separator filter (type 2)			*3 ✓
Every year	Replacing the air filter element	*2; @ ✓	*2; @ ✓	✓
	Check the cabling for loose connections	✓	✓	
	Checking the EGR lines			✓
	Checking the intake air line			✓
	Checking the exhaust manifold for cracks or leaks, as well as loosening and damage			✓
every 800 hours	Checking the valve clearance	✓	*3 ✓	
every 1000 hours	Checking the valve clearance			*3 ✓
every 1500 hours	Checking the injection valve tip			*3; @ ✓
	Checking the EGR cooler			*3; @ ✓
	Replacing the oil separator element			*4; @ ✓
	Checking the PCV valve			*3; *4; @ ✓
	Checking the injection pressure at the fuel injection nozzle	*3; @ ✓	*3; @ ✓	
every 3000 hours	Checking the turbocharger	*3; @ ✓	*3; @ ✓	*3; @ ✓
	Checking the EGR system			*3; @ ✓
	Checking the fuel injection pump	*3; @ ✓	*3; @ ✓	

Time interval	Description of the	D1005	D1703	D1803
Every second year	Replacing the rubber pipe belonging to the oil separator			✓ *3; *4
	Replacing the intake air line and the rubber line for the intake air pressure tapping			✓ *3
	Replacing the rubber pipe of the EGR cooler			✓ *3
	Replacing the rubber water pipe			✓ *3
	Replacing the lubricant rubber line			✓ *3
	Changing the coolant (long-term coolant)	✓	✓	✓ *3
	Replacing the radiator hoses and clamp straps	✓	✓	✓ *3
	Replacing the fuel lines and clamp bands			✓ *3; *5
	Replacing the intake air pipe	✓ *4; @	✓ *4; @	✓ *3
	Changing the firing tube and the clamping band	✓ *3; @	✓ *3; @	✓

**IMPORTANT**

- \*1 The air filter must be cleaned more often in dusty environments than under normal conditions.
- \*2 After cleaning six times.
- \*3 Please contact your local KUBOTA dealer regarding this work.
- \*4 If equipped with oil separator (D1803). Replace only if necessary. (D1005, D1703)
- \*5 When using biodiesel fuel, the fuel filter cartridge, the fuel hoses and the clamp bands must be replaced with new ones at half intervals.
  - The parts listed above (marked @) are registered by KUBOTA as emission-related critical parts in the U.S. EPA Non-Road Emission Regulations. As the owner of the engine, you are responsible for performing the required maintenance on the engine in accordance with the above instructions. Please read the warranty statement in detail.
  - The items listed above, except those marked with @, are not required to keep the emissions-related warranty valid.
  - Failure to carry out maintenance work will cause problems which will significantly impair the performance of the engine.

## 3.3 YANMAR - DIESEL ENGINE

### 3.3.1 SAFETY INSTRUCTIONS

**WARNING**

Risk of injury due to failure to follow the instructions and by unauthorised actions on the device.

- Follow all instructions given.
- Do not perform any activities for which you are not qualified. is present. If necessary, contact appropriately trained personnel.

To avoid accidents:

- Always switch off the engine and remove the ignition key when carrying out daily or periodic maintenance, refuelling, servicing and cleaning.
- Before allowing other persons to operate the system, the correct way to operate the appliance must be explained; in addition, the motor manufacturer's manual must be read before commissioning.
- When cleaning any components do not use petrol, but an ordinary cleaning agent.
- Always use tools that are in good condition. Ensure that you know how to use these tools before starting maintenance work.
- Tighten all screws well during installation. Tighten the screws to the specified tightening torque.
- Do not place any tools on the battery as this may cause a short circuit. This can result in severe skin burns or a fire. The battery must be removed from the vehicle before maintenance.
- Allow the exhaust and exhaust pipe to cool down before touching them. They can cause serious burns.

3.3.2 MAINTENANCE INTERVALS

System	Test object	Daily	Interval for regular maintenance						
			All 50 h	Every 250 h	Every 500 h	Every 1000 h	Every 1500 h	Every 2000 h	Every 3000 h
Cooling system	Check and top up engine coolant	○							
	Check and clean radiator fins			○					
	Check and adjust radiator fan belts		○ 1st time	○ 2nd time and afterwards					
	Changing the coolant							◇ or every 2 years *1	
Cylinder head	Check and adjust intake / exhaust valve clearance					●			
Electrical equipment	Check adverts	○							
	Check ECU and connected sensors and actuators								●
	Check battery		○						
Engine oil	Check engine oil level	○							
	Drain and fill engine oil					◇ or every 1 year			
	Replace engine oil filter								
Exhaust gas purification system guarantee	Check turbocharger (fan wash if required)								●
	Check, clean and test EGR valve (except engines with turbochargers)								●
	Clean EGR cooler (clear water/air ducts)								●
	Check crankcase ventilation						●		
	Check DPF DOK								●
	Check and clean DPF soot filter *3								
	Check and test inlet throttle valve								●
Check and test exhaust throttle valve *4								●	
Fuel	Check fuel tank level and top up	○							
	Empty fuel			○					
	Empty water separator		○						
	Check fuel filter, water separator	○							
	Replace fuel filter/water separator element					◇			
	Check and clean injector								○
Hoses	Check and replace fuel lines, coolant lines, lubricating oil lines and breather hose							◇ or every 2 years *1	

System	Test object	Daily	Interval for regular maintenance						
			All 50 h	Every 250 h	Every 500 h	Every 1000 h	Every 1500 h	Every 2000 h	Every 3000 h
Inlet and outlet	Clean or replace air filter element			○	◇				
Complete motor	Daily general visual inspection	○							

- \*1: The earlier date is decisive.
- \*2: Depending on the application or engine oil quantity. If the engine is equipped with a flat oil pan, maintenance must be carried out every 250 operating hours, regardless of the device.
- \*3: If the engine is equipped with a DPF cleaning warning, clean the DPF when the warning light switches on. For an engine without a DPF cleaning light, clean the DPF after 6000 operating hours.
- \*4: If the engine has an exhaust throttle valve.

**Note:**

These procedures are considered normal maintenance work and are carried out at the owner's expense.

## 3.4 B&S VANGUARD - PETROL ENGINE

### 3.4.1 SAFETY INSTRUCTIONS

**WARNING**

Risk of injury due to failure to follow the instructions and by unauthorised actions on the device.

- Follow all instructions given.
- Do not carry out any activities for which you are not qualified. is present. If necessary, contact appropriately trained personnel.

To avoid accidents:

- Always switch off the engine and remove the ignition key when carrying out daily or periodic maintenance, refuelling, servicing and cleaning.
- Before allowing other persons to operate the system, the correct way to operate the appliance must be explained and the motor manufacturer's manual must be read before commissioning.
- When cleaning any components, do not use petrol but a normal cleaning agent.
- Always use tools that are in good condition. Ensure that you know how to use these tools before starting maintenance work.
- Tighten all screws well during installation. Tighten the screws to the specified tightening torque.
- Do not place any tools on the battery as this may cause a short circuit. This can result in severe skin burns or a fire. The battery must be removed from the vehicle before maintenance.
- Allow the exhaust and exhaust pipe to cool down before touching them. They can cause serious burns.

3.4.2 MAINTENANCE INTERVALS

Maintenance interval	Maintenance activity
<b>8-hour interval or daily</b>	Check the oil level.
	Clean the area around the silencer and the controls.
<b>100-hour interval or annually</b>	Clean or replace the air filter *1; *2
	Change the engine oil and air filter.
	Change the oil filter. (if available)
	Replace spark plugs.
	Check the silencer and spark arrester.
	Service the exhaust system.
<b>250-hour interval or annually</b>	Check valve clearance. Readjust if necessary.
<b>400-hour interval or annually</b>	Change air filter. *2
	Change the fuel filter.
	Maintain air cooling system. *1
	Clean the oil cooler fins. *1
<b>600-hour interval</b>	Replace the safety filter. (If available)

\*1Clean more frequently if there is a lot of dust or foreign objects in the air.  
 \*2Replace the internal safety filter (if fitted) every third time the air filter is changed.

## 4.1 CRAWLER TRACKS

### 4.1.1 SAFETY INSTRUCTIONS

**NOTE**

All maintenance work on the machine is limited to the following operations, namely always in compliance with the relevant safety regulations (chapter two in the original operating instructions)

### 4.1.2 MAINTENANCE INTERVALS

Maintenance interval	Maintenance activity
<b>Daily</b>	Check the tension of the caterpillar tracks
	Check that the geared motors or motors are operating correctly.
	Check the wear and condition of the caterpillar track: replace when 10 mm of tread remains when 10 mm of tread remains, or even before if there are cuts.
	Carry out a general and global check of the machine.
	Ensure that there are no foreign objects between the rollers and the crawler tracks, between the idler wheel and the crawler tracks, between the drive wheels and the crawler tracks, drive wheels and the caterpillar tracks.
<b>Monthly</b>	If the running gear is equipped with a gearbox, check the oil level in the gearbox (see technical data sheet).
	Visually check the fastening of the rollers.
	Check any play in the bearings.
<b>Half-yearly</b>	Check the wear and condition of the connections, pinions and bottom rollers (they must be replaced if the wear reaches the values listed in the table in chapter 5.3 of the original operating instructions).
	Check that the brakes are working properly.
	Check the tension of the screws in accordance with the provisions of section 5.4 of the original operating instructions.
<b>Periodic maintenance</b>	Before or immediately after starting up the machine, check the condition of all mechanical safety devices (parking brake, etc.) and the warning labels.
	Check the cleaning status of the entire machine
	Check the condition of anchorages, beams, steel structures, welds, pins, etc. and in particular the condition of the upper crawler track carriage.
	Check the paintwork and keep it in good condition.
	Lubricate the crawler undercarriage according to the specified lubrication instructions (§ 5.2 in the original operating instructions).