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STIHL

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1 Introduction


Dear Customer,

Thank you for choosing STIHL. We develop and manufacture our quality products to meet our customers' requirements. The products are designed for reliability even under extreme conditions.

STIHL also stands for premium service quality. Our dealers guarantee competent advice and instruction as well as comprehensive service support.

STIHL expressly commit themselves to a sustainable and responsible handling of natural resources. This user manual is intended to help you use your STIHL product safely and in an environmentally friendly manner over a long service life.

We thank you for your confidence in us and hope you will enjoy working with your STIHL product.



Dr. Nikolas Stihl

IMPORTANT! READ BEFORE USING AND KEEP IN A SAFE PLACE FOR REFERENCE.

2 Guide to Using this Manual

2.1 Applicable Documents

- ▶ In addition to this instruction manual, read, understand and keep the following documents:

- Instruction manual for the STIHL machine

Local safety regulations apply.

2.2 Warning Notices in Text

DANGER

This notice refers to risks which result in serious or fatal injury.

- ▶ Serious or fatal injuries can be avoided by taking the precautions mentioned.

WARNING

This notice refers to risks which **can** result in serious or fatal injury.

- ▶ Serious or fatal injuries can be avoided by taking the precautions mentioned.

NOTICE

This notice refers to risks which can result in damage to property.

- ▶ Damage to property can be avoided by taking the precautions mentioned.

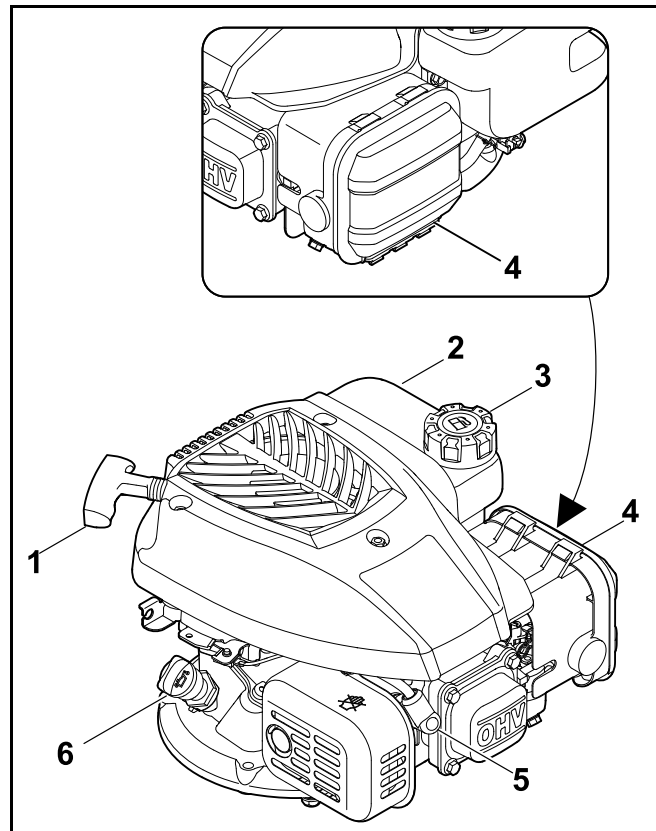
2.3 Symbols in the Text



This symbol indicates a chapter in this instruction manual.

3 Overview

3.1 Engine



1 Starter handle

The starter handle is used to start the engine.

2 Fuel tank

The fuel tank holds the fuel.

3 Fuel tank cap

The fuel tank cap seals the opening for adding petrol.

4 Air filter

The air filter filters the air taken in by the engine.

5 Spark plug socket

The spark plug socket connects the ignition lead to the spark plug.

6 Oil dipstick

The oil dipstick measures the engine oil level.

3.2 Symbols

The symbols can be on the engine and have the following meaning:



Read, understand and keep the instruction manual.

4 Safety Precautions**4.1 Warning Symbols**

The warning symbols on the engine or STIHL machine have the following meaning:



Follow the safety instructions and their measures.



Read, understand and keep the instruction manual.



Do not touch hot surfaces.



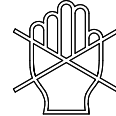
Do not refill the tank when the engine is running or heated to a high temperature.



Avoid inhaling exhaust gases.



The muffler and guard plate become extremely hot. Do not touch.

**4.2 Fuel and Refuelling****▲ WARNING**

- The fuel used for this engine is petrol. Petrol is extremely inflammable. If petrol comes into contact with an open flame or hot objects, it may cause fires or explosions. This may result in serious or fatal injury to people and damage to property.



Protect petrol from heat and fire.

- ▶ Do not spill petrol.
- ▶ If petrol is spilled: wipe up the petrol with a cloth and wait until all parts of the machine are dry before starting the engine.
- ▶ Do not smoke.
- ▶ Do not refuel in the vicinity of flames.
- ▶ Before refilling the tank, stop the engine and allow it to cool.
- ▶ If the tank needs to be emptied: do this out of doors.
- ▶ Start the engine at least 3 m away from the refuelling site.

- ▶ Never store the engine with petrol in the tank inside a building.
- Breathing in petrol fumes may result in poisoning.

Do not breathe in petrol fumes.



- ▶ Refuel in a well-ventilated place.
- The engine warms up while working. The petrol expands and overpressure may occur in the fuel tank. Petrol may gush out when the fuel tank cap is opened. The gushing petrol may ignite. This may result in serious injury to the user.



Allow the engine to cool down before opening the fuel tank cap.

- Clothing that comes into contact with petrol is highly inflammable. This may result in serious or fatal injury to people and damage to property.
 - ▶ If clothing comes into contact with petrol: change clothing.
- Petrol poses a risk to the environment.
 - ▶ Do not spill fuel.
 - ▶ Dispose of petrol in accordance with regulations and in an environmentally acceptable way.
- If petrol comes into contact with the skin or eyes, this may cause irritation.
 - ▶ Avoid contact with petrol.
 - ▶ In the event of contact with the skin: wash the affected areas with plenty of soap and water.
 - ▶ In the event of contact with the eyes: rinse the eyes with plenty of water for at least 15 minutes and seek medical attention.

- Overflowed petrol may ignite. This may result in serious or fatal injury to people and damage to property.
 - ▶ Clean any surfaces contaminated with petrol.
 - ▶ Avoid attempts at starting until the petrol fumes have dispersed.
- The engine's ignition system generates sparks. Sparks may escape and cause fires and explosions in highly inflammable or explosive environments. This may result in serious or fatal injury to people and damage to property.



Start the engine only with the spark plug screwed in.

- ▶ Use the spark plugs described in this instruction manual.
- ▶ Screw in the spark plug and tighten firmly.
- ▶ Press on the spark plug socket firmly.
- The engine may be damaged if it is refuelled with petrol that is not suitable.
 - ▶ Use fresh, good-quality unleaded petrol.
 - ▶ Note the specifications in this instruction manual.

4.3 Working

WARNING

- Exhaust gases are produced when the engine is running.



Breathing in exhaust gases may result in poisoning.

- ▶ Do not breathe in exhaust gases.
- ▶ Work in a well-ventilated place.
- ▶ If nausea, headaches, vision problems, hearing problems or dizziness occur: stop working and consult a doctor.
- The engine may be hot after it has been running.



This may result in people burning themselves.

- ▶ Wait until the engine has cooled down before cleaning.
- If the user is wearing hearing protection and the engine is running, their perception and assessment of noise may be limited.
 - ▶ Work calmly and carefully.
- Misfires or late ignition may occur if the engine is switched off while it is running at high speed.
 - ▶ Allow the engine to run at minimum speed for 20 seconds before stopping it.

5 Preparing the Engine for Operation

5.1 Refuelling the Engine

The engine is approved for unleaded petrol. Unleaded petrol burns with fewer residues, reduces deposits on the spark plug and extends the service life of the exhaust system. The petrol must meet the following requirements:

- The petrol is fresh, clean and unleaded.
- The octane rating of the petrol is at least 85.
- The maximum ethanol content of the petrol is 10% (E10).

STIHL recommends STIHL MotoPlus. This fuel is virtually free of benzene, sulphur and toxic aromatics.

The tank capacity is 0.9 litres.

! CAUTION

- The engine may be damaged if the correct petrol is not used.

STIHL recommends always using fresh, good-quality fuel and never using a 2-stroke mixture (petrol with an oil additive).

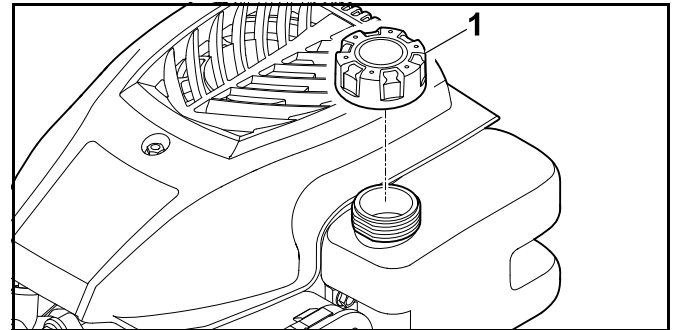
Do not use stale or contaminated petrol.

Avoid contaminating the tank contents with dirt and water. Only use approved petrol (not E85).

Change the petrol brand if you hear knocking or ringing.

- ▶ If necessary, contact your specialist dealer; STIHL recommends STIHL specialist dealers.

- ▶ Stop the engine.
- ▶ Place the STIHL machine on a level surface.
- ▶ Clean the area around the fuel tank cap with a damp cloth.



- ▶ Turn fuel tank cap (1) anti-clockwise until it can be removed.
- ▶ Remove the fuel tank cap.
- ▶ Check the seating of the fuel filter.
- ▶ Add the petrol using a suitable funnel so that none is spilled. Add petrol, stopping at least 15 mm short of the fuel tank brim.
- ▶ Place the fuel tank cap on the fuel tank.
- ▶ Turn the fuel tank cap clockwise and hand tighten. The fuel tank is sealed.

5.2 Adding Engine Oil

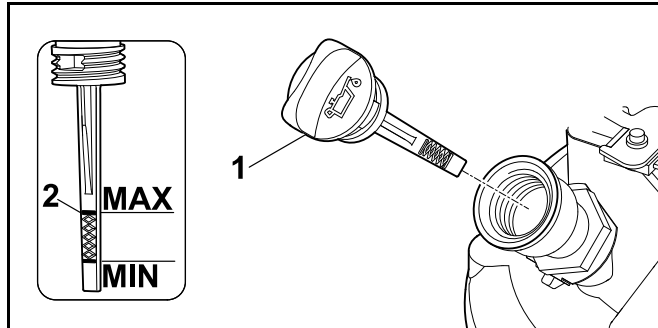
The engine oil lubricates and cools the engine.

! CAUTION

- The engine is delivered without engine oil.

Exceeding or falling below the permissible oil filling level can result in damage to the engine.

- ▶ The engine must be filled with engine oil before being used for the first time.
- ▶ Place the STIHL machine on a level surface.
- ▶ Stop the engine.



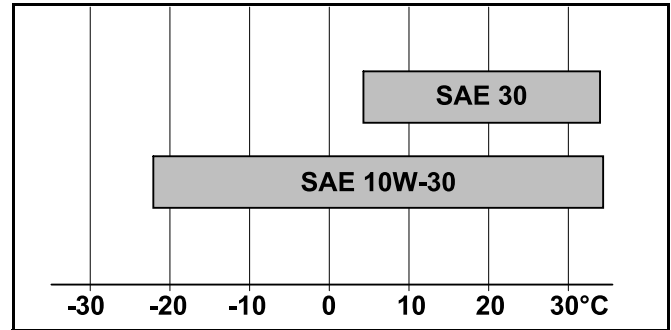
- ▶ Unscrew oil dipstick (1).
- ▶ Add engine oil using a suitable funnel until it reaches the maximum filling level (2).

The oil capacity is 0.5 litres.

- ▶ Screw in oil dipstick (1).
- ▶ Check the engine oil level before each starting procedure. 7.2. If necessary, top up the engine oil.

The engine is designed for commercially available 4-stroke engine oils.

- ▶ Use category SF, SG, SH, SJ engine oils and higher.
- ▶ STIHL recommends the use of the following engine oils:
 - SAE 30
 - SAE 10W-30
- ▶ Match the oil grade to the ambient temperature where the STIHL machine will be used:



Operation at temperatures above 4°C: SAE 30

Operation at temperatures below 4°C: SAE 10W-30

6 Cleaning

6.1 Cleaning the Engine

- ▶ Stop the engine.
- ▶ Allow the engine to cool down.
- ▶ Clean the engine with a damp cloth.
- ▶ Clean the ventilation slots with a paintbrush.

7 Maintenance

7.1 Maintenance Intervals

Maintenance intervals are dependent on the ambient conditions and the working conditions. STIHL recommends the following maintenance intervals:


Before each use:

- ▶ Check the oil level, 7.2.
- ▶ Check the air filter, 7.3.



After the first month or after 5 operating hours:

- ▶ Change the engine oil, 7.6.

Every 3 months or after 25 operating hours:

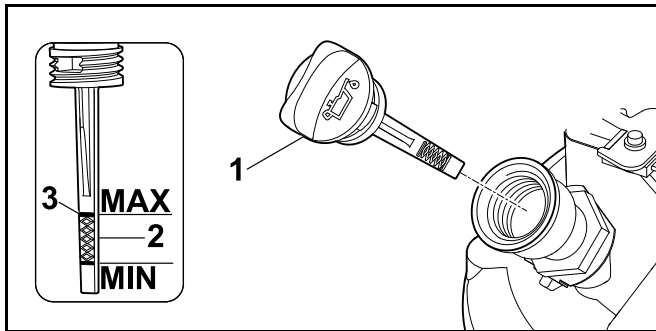
- ▶ Clean the air filter,  7.4.

Every 6 months or after 50 operating hours:

- ▶ Change the engine oil,  7.6.
- ▶ Check the spark plugs,  7.5.

Every 12 months or after 100 operating hours:

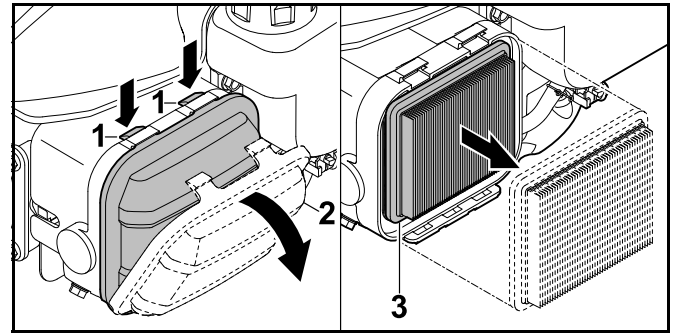
- ▶ Have an inspection carried out by a specialist dealer. STIHL recommends STIHL specialist dealers.

7.2 Checking the Oil Level

- ▶ Place the STIHL machine on a level surface.
- ▶ Stop the engine.
- ▶ Unscrew oil dipstick (1) and wipe with a cloth.
- ▶ Insert oil dipstick (1) in the filler neck, do not screw in.
- ▶ Remove the oil dipstick and read off the oil filling level on measuring scale (2). If necessary, top up the engine oil using a suitable funnel until it reaches the maximum filling level (3).
- ▶ Screw in oil dipstick (1).


7.3 Replacing the Air Filter


- ▶ Stop the engine.
- ▶ Place the STIHL machine on a level surface.
- ▶ Clean the cover and housing of the air filter with a cloth.

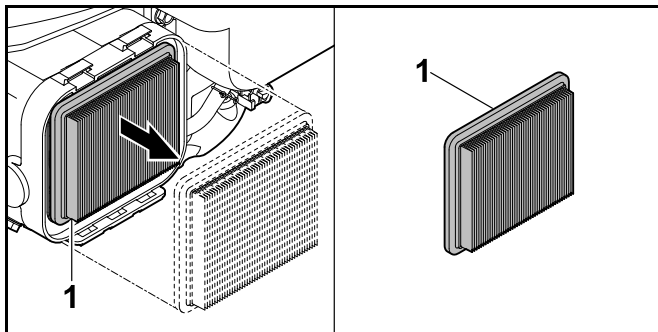


- ▶ Press tabs (1).
- ▶ Remove cover (2).
- ▶ Remove paper filter (3).
- ▶ Check paper filter (3). Replace the paper filter if it exhibits damage or heavy soiling.
- ▶ Insert paper filter (3).
- ▶ Fit cover (2) and press until tabs (1) latch into place.

7.4 Cleaning the Air Filter

Clean the air filter at the specified maintenance intervals,  7.1. Clean the filter more frequently if using the STIHL machine in dusty conditions.

- ▶ Stop the engine.
- ▶ Place the STIHL machine on a level surface.
- ▶ Clean the cover and housing of the air filter with a cloth.
- ▶ Remove the paper filter,  7.3.



- ▶ Tap paper filter (1).

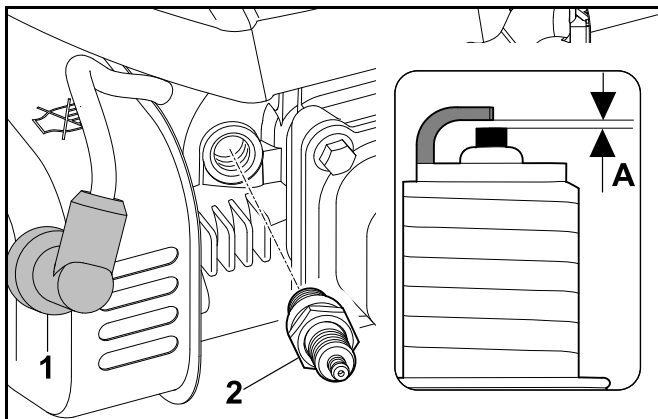
NOTICE

Using compressed air for cleaning can damage the paper filter.

- ▶ Do not use compressed air to clean the paper filter.
- ▶ Assemble the air filter, 7.3.

7.5 Checking the Spark Plug

- ▶ Place the STIHL machine on a level surface.
- ▶ Stop the engine and allow it to cool down.



- ▶ Detach spark plug socket (1).

- ▶ If the area around spark plug (2) is dirty: clean the area around spark plug (2) with a cloth.
- ▶ Unscrew spark plug (2).
- ▶ Clean spark plug (2) with a cloth.
- ▶ Measure electrode gap (A) using a feeler gauge. Adjust if necessary: A = 0.8 mm.
- ▶ If spark plug (2) is corroded: replace spark plug (2), 9.2.
- ▶ Screw in spark plug (2) firmly by hand.
- ▶ Tighten spark plug (2) using a spark plug wrench.
 - Used spark plug: 1/8 to 1/4 turn
 - New spark plug: 1/2 turn
- ▶ Press on spark plug socket (1) firmly.

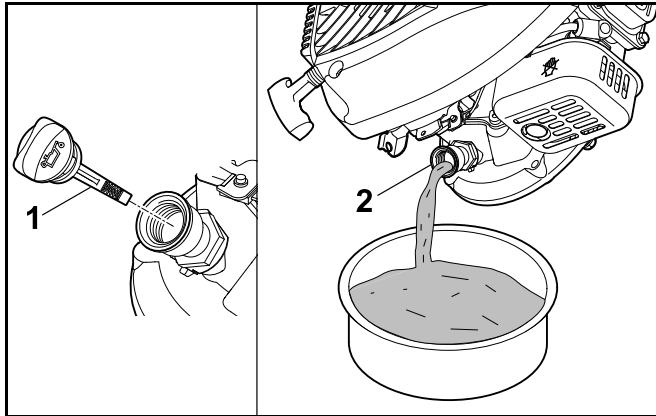
7.6 Changing the Engine Oil

Warm engine oil drains quickly and completely.

- ▶ Allow the engine to warm up.
- ▶ Run the tank empty.
- ▶ Stop the engine.
- ▶ Place the STIHL machine on a level surface.

⚠ CAUTION

- Danger of burns
 - ▶ Do not touch hot engine parts.



- ▶ Unscrew oil dipstick (1), 7.2.
- ▶ Tilt the STIHL machine slightly.
- ▶ Allow all the engine oil to drain from oil filler neck (2) into a suitable container.
- ▶ Add fresh engine oil, 5.2.
- ▶ Screw in oil dipstick (1), 7.2.

8 Specifications

8.1 Exhaust Emissions

The CO₂ value measured in the EU type approval procedure is specified at www.stihl.com/co2.

The measured CO₂ value was determined on a representative engine in accordance with a standardized test procedure under laboratory conditions and does not represent either an explicit or implied guarantee of the performance of a specific engine.

The applicable exhaust emission requirements are fulfilled by the intended usage and maintenance described in this instruction manual. The type approval expires if the engine is modified in any way.

9 Spare Parts and Accessories

9.1 Spare parts and accessories

STIHL These symbols indicate original STIHL spare parts and original STIHL accessories.

STIHL recommends the use of original STIHL spare parts and accessories.

Despite ongoing market observation, STIHL is unable to judge the reliability, safety and suitability of other manufacturers' spare parts and accessories; accordingly, STIHL cannot warrant for the use of those parts.

Original STIHL spare parts and original STIHL accessories are available from STIHL dealers.

9.2 Essential Spare Parts

- Air filter: 0004 124 2802
- Spark plug: 0004 400 7000