

SG 230

STIHL



2 - 17 Instruction Manual



Contents

1	Introduction.....	2
2	Guide to Using this Manual.....	2
3	Overview.....	3
4	Safety Precautions.....	4
5	Preparing Sprayer for Operation.....	9
6	Fitting the Hoses.....	9
7	Mixing Fuel and Refueling the Sprayer.....	10
8	Starting and Stopping the Engine.....	11
9	Checking the Sprayer.....	12
10	Using the Sprayer.....	12
11	After Finishing Work.....	13
12	Transporting.....	14
13	Storing.....	14
14	Cleaning.....	14
15	Maintenance.....	15
16	Repairing.....	15
17	Troubleshooting.....	15
18	Specifications.....	16
19	Spare Parts and Accessories.....	17
20	Disposal.....	17
21	Addresses.....	17

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 Documentation

Local safety regulations apply.

- ▶ Read, understand and save the following documents in addition to this instruction manual:
 - Instructions and packaging supplied with the hose you are using
 - Instructions and packaging supplied with the plant protection product you are using

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 Text



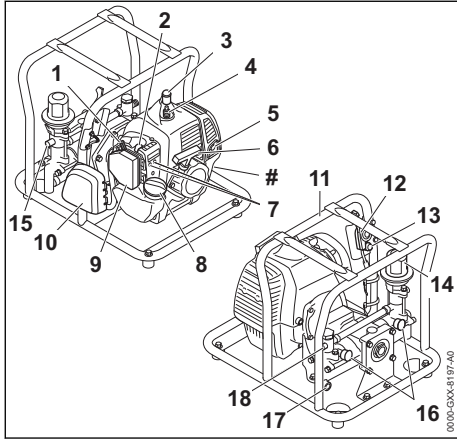
This symbol refers to a chapter in this instruction manual.



A video is available for this chapter

3 Overview

3.1 Sprayer



- 1 Choke lever**
Helps start the engine.
- 2 Manual fuel pump**
The manual fuel pump eases engine starts.
- 3 Spark plug boot**
Connects the ignition lead to the spark plug.
- 4 Spark plug**
Ignites the fuel-air mixture in the engine.
- 5 Muffler**
Reduces machine noise emissions.
- 6 Starter grip**
Serves to crank the engine.
- 7 Carburetor adjusting screws**
For tuning the carburetor.
- 8 Fuel tank cap**
Closes the fuel tank.
- 9 Air filter**
The air filter filters the air entering the engine.
- 10 Filter cover**
Covers the air filter.
- 11 Handles**
Serve to carry the sprayer.
- 12 Throttle trigger**
Controls the engine speed.
- 13 Stop switch**
Shuts off the engine.
- 14 Valve**
Used to adjust spraying pressure.

15 Connector

Connects hose for return flow of pesticide to tank.

16 Grease Cap

Grease in grease caps lubricates the pump pistons.

17 Connector

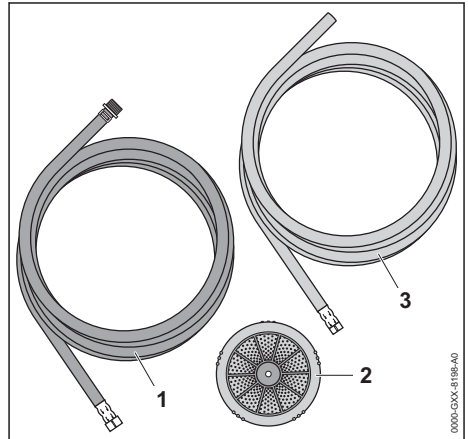
Serves to connect the suction hose.

18 Connector

Serves to connect the delivery hose.

Rating plate with machine number

3.2 Hoses and Strainer



1 Suction Hose

Plant protection chemical intake is via this hose.

2 Strainer

Filters the incoming plant protection chemical.

3 Hose

Plant protection chemical flows back to the tank via this hose when the sprayer is running but not spraying.

3.3 Symbols

Meanings of symbols that may be on the sprayer:




This symbol marks the fuel tank.



This symbol denotes the manual fuel pump.



Engine is started with the choke lever in this position.

 Engine is made ready for start with the choke lever in this position.

4 Safety Precautions

4.1 Warning Symbols

Meanings of warning signs on the sprayer:



Observe safety notices and take the necessary precautions.



Read, understand and save the instruction manual.



Wear safety glasses, hearing protection and a respirator.



Wear safety boots.



Wear protective suit.



Wear protective gloves.



Avoid inhaling exhaust gas.



Confine long hair so that it cannot be sucked into the sprayer.



Maintain safety distance and do not spray in direction of bystanders.

4.2 Intended Use

The STIHL SG 230 sprayer is designed for spreading products for protection against fungal and parasitic infestation, and for weed control in plantations, orchards, vegetable growing, agriculture and forestry.

The STIHL SG 230 sprayer is not designed for the following applications:

- Spraying plant protection products not approved for use in sprayers.
- Spraying other liquids which are not plant protection products.

⚠ WARNING

- Using the sprayer for purposes for which it is not designed may result in serious or fatal injuries and damage to property.
 - ▶ Use the sprayer as described in this instruction manual.

4.3 The Operator

⚠ WARNING

- Users who have had no instruction cannot recognize or assess the risks involved in using the sprayer. The user or other persons may sustain serious or fatal injuries.



▶ Read, understand and save the instruction manual.

- ▶ If you pass the sprayer on to another person: Always give them the instruction manual.
- ▶ Make sure the user meets the following requirements:
 - The user must be rested.
 - The user must be in good physical condition and mental health to operate and work with the sprayer. If the user's physical, sensory or mental ability is restricted, he or she may work only under the supervision of or as instructed by a responsible person.
 - The user is able to recognize and assess the risks involved in using the sprayer.
 - The user must be of legal age or is being trained in a trade under supervision in accordance with national rules and regulations.
 - The user has received instruction from a STIHL servicing dealer or other experienced user before working with the sprayer for the first time.
 - The user must not be under the influence of alcohol, medication or drugs.
 - The user has been trained in the safe use and handling of plant protection products and the necessary first aid procedures.
- ▶ If you have any queries: Contact a STIHL servicing dealer for assistance.
- The sprayer's ignition system produces an electromagnetic field. This field may interfere with some pacemakers. This can result in serious or fatal injuries.

- ▶ If the user has a pacemaker: Make sure the pacemaker is not affected.

4.4 Clothing and equipment

⚠ WARNING

- Long hair can be sucked into the sprayer during operation. This may result in serious injury to the user.



- ▶ Tie up and confine long hair above your shoulders so that it cannot be pulled into the machine.

- Noise is generated during operation. Noise can damage your hearing.



- ▶ Wear ear protection.

- Inappropriate clothing can snag on the sprayer. Users not wearing suitable clothing are at risk of serious injury.

- ▶ Wear close-fitting clothing.
- ▶ Remove scarves and jewelry.

⚠ DANGER

- The user can come into contact with plant protection products during operation. This may result in serious or fatal injury to the user.

- ▶ Observe recommendations on clothing and equipment in the user instructions and on the packaging of the plant protection product.
- ▶ If your clothing becomes contaminated with any plant protection product: Change your clothing.
- ▶ If you work above shoulder height: Wear impermeable head protection resistant to plant protection products.



- ▶ Wear close-fitting safety glasses. Suitable safety glasses are tested in accordance with EN 166 or national regulations and available commercially with the corresponding marking.

- ▶ Wear a respirator.



- ▶ If the user instructions or packaging of the plant protection product specify the use of a protective overall: Wear a coverall impermeable to liquids and resistant to plant protection products.



- ▶ Wear impermeable gloves resistant to plant protection products.



- ▶ Wear impermeable safety boots with a non-slip sole which are resistant to plant protection products.

4.5 Work Area and Surroundings

⚠ WARNING

- Bystanders, children and animals cannot recognize or assess the dangers of the sprayer. Bystanders, children and animals may be seriously injured and damage to property may occur.



- ▶ Keep bystanders, children and animals away from the work area.
- ▶ Keep bystanders, children and animals away from the work area until the plant protection product has dried completely.

- ▶ Do not leave the sprayer unattended.
- ▶ Make sure that children cannot play with the sprayer.
- Hot exhaust gas is emitted through the muffler while the engine is running. Hot exhaust gas can ignite easily flammable materials and cause a fire.
 - ▶ Keep exhaust gas well away from easily flammable materials.

4.6 Safe condition

The sprayer is in a safe condition if the following points are observed:

- The sprayer is not damaged.
- There is no fuel or plant protection product leaking from the sprayer.
- The fuel tank cap is closed.
- The sprayer is clean.
- The controls function properly and have not been modified.
- Hoses suitable for use with sprayers are fitted.
- The hoses are properly fitted and not leaking.
- Original STIHL accessories for this sprayer model are fitted.
- The accessories are correctly attached.

⚠ WARNING

- If not in safe condition, components may no longer operate correctly, safety devices may be disabled and fuel leakage may occur. This may result in serious or fatal injury to people.
 - ▶ Work only with an undamaged sprayer.
 - ▶ If fuel or plant protection product leaks from the sprayer: Do not use the sprayer and contact a STIHL dealer for assistance.
 - ▶ Close the fuel tank cap.

- ▶ If the sprayer is dirty: Clean the sprayer.
 - ▶ Do not modify the sprayer.
 - ▶ If the controls do not function properly: Do not work with the sprayer.
 - ▶ Only fit hoses that are suitable for use with sprayers.
 - ▶ Fit original STIHL accessories designed for this sprayer model.
 - ▶ Mount hoses and accessories as described in this instruction manual or the instructions supplied with the accessory.
 - ▶ Never insert objects in the sprayer's openings.
 - ▶ Replace worn or damaged labels.
 - ▶ If you have any doubts, be sure to consult a STIHL dealer.
- ▶ If your clothing comes into contact with fuel or gasoline: Change your clothing.
 - Fuel mix, gasoline and two-stroke engine oil can harm the environment.
 - ▶ Do not spill fuel, gasoline or two-stroke engine oil.
 - ▶ Dispose of fuel mix, gasoline and two-stroke engine oil in accordance with local regulations and environmental requirements.
 - Fuel, gasoline or two-stroke engine oil can cause irritation if they come into direct contact with the skin or eyes.
 - ▶ Avoid contact with fuel, gasoline and two-stroke engine oil.
 - ▶ If skin contact occurs: Wash affected areas of skin with plenty of soap and water.
 - ▶ In the event of contact with eyes: Rinse your eyes with plenty of water for at least 15 minutes and consult a doctor.

4.7 Fuel and refueling


▲ WARNING

- This sprayer requires a fuel mixture of gasoline and two-stroke engine oil. Mixed fuel and gasoline are extremely flammable. If fuel mixture or gasoline make contact with open fire or hot objects, they can cause a fire or explosions. Persons may be seriously or fatally injured, and property may be damaged.
 - ▶ Protect fuel mixture and gasoline from heat and fire.
 - ▶ Do not spill fuel mixture and gasoline.
 - ▶ If fuel has been spilled: Wipe up the fuel with a cloth and do not attempt to start the engine until all parts of the sprayer pump and the area around it are dry.
 - ▶ Do not smoke.
 - ▶ Never refuel near a fire.
 - ▶ Shut off the engine and allow it to cool down before refueling.
- Inhaling fuel fumes and gasoline fumes can have toxic effects.
 - ▶ Avoid inhaling fuel fumes or gasoline fumes.
 - ▶ Refuel in a well-ventilated location.
- The sprayer becomes hot during operation. The fuel expands, and excess pressure can build up in the tank. Fuel can escape as a spray when the fuel tank cap is opened. The escaping fuel can ignite. This may result in serious injury to the user.
 - ▶ Allow the sprayer to cool down first and then open the fuel tank cap carefully.
- Clothing that has been in contact with fuel or gasoline will ignite more easily. Persons may be seriously or fatally injured, and property may be damaged.
- The sprayer's ignition system produces sparks. Unconfined sparks may cause a fire or an explosion in an easily combustible or explosive environment. Persons may be seriously or fatally injured, and property may be damaged.
 - ▶ Use the spark plugs described in this instruction manual.
 - ▶ Screw in and tighten the spark plug securely.
 - ▶ Press the spark plug boot firmly into place.
- The sprayer can be damaged if it is run on a fuel mixture consisting of unsuitable gasoline or an unsuitable two-stroke engine oil or if an incorrect mix ratio of gasoline and two-stroke engine oil is used.
 - ▶ Mix the fuel as described in this User Manual.
- The mixture of gasoline and two-stroke engine oil can separate or age if it is stored for a long period. The sprayer can be damaged if it is used with old fuel or a fuel mix that has separated.
 - ▶ Before refueling the machine: Thoroughly mix the fuel.
 - ▶ Use a mixture of gasoline and two-stroke engine oil that is not older than 30 days (STIHL MotoMix: 5 years).

4.8 Operation

▲ WARNING

- If the engine is not started properly, the user may lose control of the sprayer. This can result in serious injuries.

- ▶ Start the engine as described in this instruction manual.
 - The user cannot concentrate on the work in certain situations. The user can lose control of the sprayer, stumble or fall and be seriously injured.
 - ▶ Work calmly and carefully.
 - ▶ If light and visibility are poor: Do not work with the sprayer.
 - ▶ Operate the sprayer without assistance.
 - ▶ Watch out for obstacles.
 - ▶ Stand on the ground while working and keep a good balance.
 - ▶ If you begin to feel tired: Take a break.
 - Exhaust gas is produced when the engine is running. Breathing in exhaust gas can have toxic effects.
 - ▶ Avoid inhaling exhaust gas.
- 
- ▶ Operate the sprayer in a well ventilated location.
 - ▶ In the event of nausea, headache, visual disturbances, problems with hearing or dizziness: Stop work and seek medical advice.
 - The user's ability to hear and assess noises is restricted when wearing hearing protection with the engine running.
 - ▶ Work calmly and carefully.
 - If the behavior of the sprayer changes during operation or feels unusual, it may no longer be in a safe condition. This can result in serious injuries and damage to property.
 - ▶ Stop work and contact your STIHL dealer for assistance.
 - Water can freeze on the ground and in sprayer components at temperatures below 0°C. The user may slip, fall and be seriously injured. Damage to property may occur.
 - ▶ Do not use your sprayer at temperatures below 0°C.
 - If you tug the hoses, the sprayer may move and turn over. Damage to property may occur.
 - ▶ Do not tug the hoses.
 - If the sprayer is standing on a sloping, rough or unpaved surface, it may move and turn over. Damage to property may occur.
 - ▶ Stand the sprayer on a level, paved surface.
 - ▶ Secure the sprayer so that it cannot move.
 - Easily combustible and explosive liquids that are sucked in can cause fires and explosions. This can result in serious or fatal injuries and damage to property.
 - ▶ Do not suck in or spread easily combustible or explosive liquids.
 - Sucking in viscous, sticky, caustic, acidic and hot liquids can be a health hazard and damage parts of the sprayer. This can result in serious or fatal injuries and damage to property.
 - ▶ Do not suck in or spread viscous, sticky, caustic or acidic liquids.
 - ▶ Do not suck in or spread hot liquids (more than 50°C).
 - The sprayer is neither germ-free nor food-safe. If liquid foodstuffs are sucked in, they are contaminated.
 - ▶ Do not suck in or spread liquid foodstuffs.
 - Objects can be sucked into the sprayer if the strainer is not fitted. The sprayer can be blocked or damaged.
 - ▶ Fit the strainer.
 - Carelessly laid hoses can be damaged and cause others to trip or fall. This can result in injuries and may damage the hoses.
 - ▶ Position and mark hoses so they do not represent a trip hazard.
 - ▶ Position the hoses so that they are not under tension or entangled.
 - ▶ Position the hoses so that they cannot be damaged, kinked, pinched or chafed.
 - ▶ Protect the hoses from heat, oil and chemicals.
 - The sprayer can be damaged if the pump's pistons are not lubricated.
 - ▶ Rotate the grease caps 3 full turns clockwise every 2 hours.
 - The sprayer can be damaged if the oil level in the pump is too high or too low.
 - ▶ Check the oil level daily and correct it if necessary.
 - The pump can run dry and damage the sprayer if the throttle lever is in the full throttle position but cannot pick up any plant protection product or fresh water.
 - ▶ Make sure sufficient plant protection product or fresh water is available.
 - ▶ Check that the strainer is fully immersed in the plant protective product or fresh water.
 - Unfavorable weather conditions may result in an incorrect concentration of the plant protection product. Plants and the environment may be harmed or the required effect of the treatment negated.
 - ▶ Avoid working with the sprayer at temperatures over 25°C in the shade.
 - ▶ Avoid working with the sprayer in direct sunlight.

- ▶ In windy conditions: Do not work with the sprayer.

▲ DANGER

- Plant protection products may contain substances that harm individuals, animals, plants and the environment. The user or other persons may be poisoned or sustain serious or fatal injuries.
 - ▶ Observe the user instructions and the packaging of the plant protection product.
 - ▶ Always keep the directions for use or the label of the plant protection product near at hand. In an emergency, inform the doctor about the product and follow the instructions in the directions for use or on the label of the plant protection product.
 - ▶ Observe legal requirements for handling plant protection products.
 - ▶ Never spray liquid plant protection products undiluted.
 - ▶ Mix plant protection products outdoors or in well-ventilated locations.
 - ▶ Only mix sufficient solution for the job in hand so that nothing is left over.
 - ▶ Do not mix different plant protection products unless such a mixture is approved by the manufacturer.
 - ▶ Always rinse the hoses with fresh water before changing to a different plant protection product.
 - ▶ Before starting work, perform a trial run with fresh water and check the sprayer and hoses for leaks.
 - ▶ Operate the sprayer in a well ventilated location.



- ▶ Do not spray in the direction of bystanders.

- ▶ In windy conditions: Do not work with the sprayer.
- ▶ Do not eat, drink or smoke while working with and handling plant protection products.
- ▶ Never blow out nozzles, hoses or other components with your mouth.
- ▶ Wash your hands, face and clothing after work.
- Working near live electric cables can result in accidental contact with the sprayer. This can result in serious or fatal injuries.
 - ▶ Do not work near live electric cables.

4.9 Transporting

▲ WARNING

- The sprayer can turn over or move while being transported. This may result in personal injuries and damage to property.
 - ▶ Shut off the engine.
 - ▶ Secure the sprayer with lashing straps, belts or a net to prevent it turning over and moving.
- The muffler and engine may be hot after a period of operation. There is a risk of burn injuries.
 - ▶ Carry the sprayer by the handles with the muffler away from your body.

▲ DANGER

- Plant protection products may contain substances that harm individuals, animals, plants and the environment. The user or other persons may be poisoned or sustain serious or fatal injuries.
 - ▶ Observe the user instructions and the packaging of the plant protection product.
 - ▶ Transport plant protection products in approved containers.

4.10 Storing

▲ WARNING

- Children are not aware of and cannot assess the dangers of the sprayer and can be seriously injured.
 - ▶ Shut off the engine.
 - ▶ Store the sprayer out of the reach of children.
- Dampness can corrode the electrical contacts on the sprayer and metal components. The sprayer may be damaged.
 - ▶ Store the sprayer in a clean and dry condition.
- Water can freeze in spayer components at temperatures below 0°C. The sprayer may be damaged.
 - ▶ Drain the sprayer.

▲ DANGER

- Plant protection products may contain substances that harm individuals, animals, plants and the environment. The user or other persons may be poisoned or sustain serious or fatal injuries.
 - ▶ Observe the user instructions and the packaging of the plant protection product.

- ▶ Store plant protection products out of the reach of children.
- ▶ Store plant protection products in approved containers.
- ▶ Do not store plant protection products with foods, drinks or animal feed.
- ▶ Store plant protection products in a dry and frost-free location.

4.11 Cleaning, maintenance and repair







▲ WARNING

- The sprayer may start operating unintentionally if the engine is running during cleaning, maintenance or repair operations. This may result in serious injury to people and damage to property.
 - ▶ Shut off the engine.
- The muffler and engine may be hot after the engine has been running. This can result in burn injuries.
 - ▶ Wait until the muffler and engine have cooled down.
- Harsh detergents, cleaning with a water jet or sharp objects can damage the sprayer or the hoses. If the sprayer or hoses are not cleaned correctly, components may no longer function properly or safety devices may be rendered inoperative. People may suffer serious injuries as a result.
 - ▶ Clean the sprayer as described in this instruction manual.
 - ▶ Clean the hoses as described in this instruction manual.
- The sprayer can be damaged if it and the hoses are not rinsed out with fresh water after finishing work.
 - ▶ Rinse out the sprayer and hoses with fresh water after finishing work.
- If the sprayer or hoses are not maintained or repaired as described in this User Manual, components may no longer operate correctly and safety devices may be disabled. Persons may be seriously injured or killed.
 - ▶ Service or repair the sprayer as described in this User Manual.
 - ▶ Maintain the hoses as described in the User Manual for the hoses used.

5 Preparing Sprayer for Operation

5.1 Preparing Sprayer for Operation

Perform the following steps before starting work:

- ▶ Make sure the sprayer is in a safe condition,  4.6.
- ▶ Clean the sprayer,  14.1.
- ▶ Fit the hoses,  6.
- ▶ Fuel the sprayer,  7.2.
- ▶ Check the controls,  9.1.
- ▶ Checking oil level,  9.2
- ▶ If you cannot carry out these steps: Do not use the sprayer and contact your STIHL dealer for assistance.

6 Fitting the Hoses

6.1 Fitting the Hoses



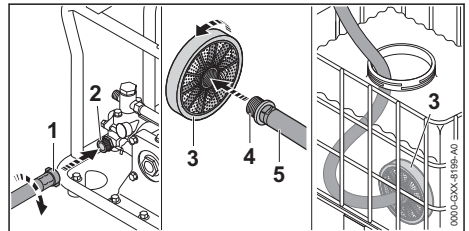
A video is available for this chapter



www.stihl.com/sxvV6Q

Fitting the suction hose

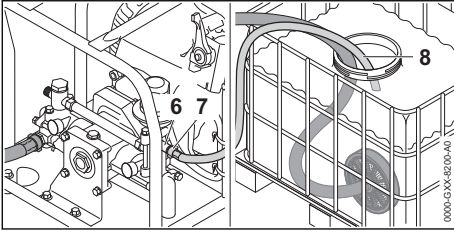
Plant protection product intake is via the suction hose.



- ▶ Screw the union nut (1) onto the thread (2) and tighten it down firmly.
- ▶ Fit the strainer (3) on the thread (4) at the other end of the suction hose (5) and tighten it down firmly.
- ▶ Immerse the strainer (3) in a tank filled with plant protection product.

Fitting the return hose

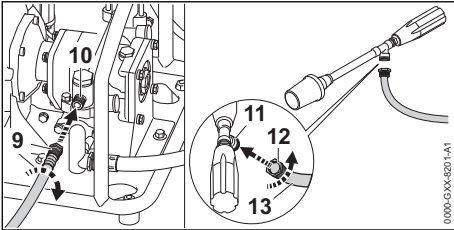
Plant protection product flows back to the tank via the return hose when the sprayer is running but not spraying.



- ▶ Screw the union nut (7) onto the thread (6) and tighten it down firmly.
- ▶ Hang the other end of the hose (8) in the tank with plant protection product.

Fitting delivery hose and spray wand

The delivery hose and spray wand are not included with the sprayer.



- ▶ Screw the union nut (9) onto the thread (10) and tighten it down firmly.
- ▶ Fit the connector (12) in the thread (11) at the other end of the delivery hose (13) and tighten it down firmly.

7 Mixing Fuel and Refueling the Sprayer

7.1 Mixing fuel



A video is available for this chapter.



www.stihl.com/sxpweh

The fuel required for this sprayer is a mixture of two-stroke engine oil and gasoline in a mixing ratio of 1:50.

STIHL recommends you use premixed STIHL MotoMix.

If you mix the fuel yourself, use only STIHL two-stroke engine oil or another high-performance engine oil classified as JASO FB, JASO FC, JASO FD, ISO-L-EGB, ISO-L-EGC or ISO-L-EGD.

STIHL specifies STIHL HP Ultra two-stroke engine oil or an equivalent high-performance engine oil in order to maintain emission limits over the machine's service life.

- ▶ Make sure that the octane number of the gasoline is at least 90 RON and the ethanol content is not more than 10% (for Brazil: 27%).
- ▶ Make sure the two-stroke engine oil you are using meets requirements.
- ▶ Depending on the desired amount of fuel, determine the correct amounts of two-stroke engine oil and gasoline in a mixing ratio of 1:50. Examples for fuel mixes:
 - 20 ml Two-stroke engine oil, 1 l gasoline
 - 60 ml Two-stroke engine oil, 3 l gasoline
 - 100 ml Two-stroke engine oil, 5 l gasoline
- ▶ Pour two-stroke engine oil into a clean approved fuel canister first and then add gasoline.
- ▶ Mix the fuel thoroughly.

7.2 Refueling the sprayer

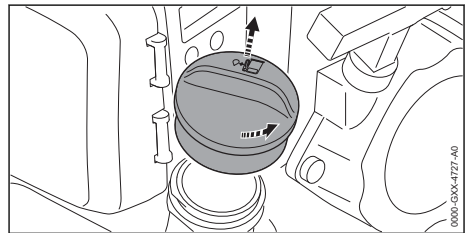


A video is available for this chapter.



www.stihl.com/sxQhV6

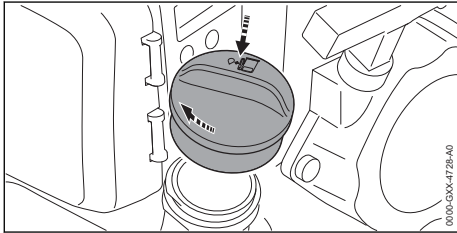
- ▶ Shut off the engine.
- ▶ Place the sprayer on a level surface so that the fuel tank cap faces up.
- ▶ Use a damp cloth to clean the area around the fuel tank cap.



- ▶ Turn the tank cap counterclockwise until it can be removed.
- ▶ Remove the fuel tank cap.

NOTICE

- Exposure to light, direct sunlight and extreme temperatures may accelerate fuel separation or aging. The sprayer can be damaged if it is used with old fuel or a fuel mix that has become separated.
 - ▶ Mix the fuel thoroughly.
 - ▶ Do not top up with fuel stored for more than 30 days (STIHL MotoMix: 5 years).
- ▶ When refilling the tank, ensure that no fuel is spilled and that the fuel level remains at least 15 mm below the edge of the fuel tank.



- ▶ Install the fuel tank cap on the tank.
- ▶ Turn the tank cap clockwise and tighten it down firmly by hand.
The fuel tank is now closed.

8 Starting and Stopping the Engine

8.1 Selecting the correct starting procedure

When must the engine be prepared for starting?

The engine must be prepared for starting if one of the following conditions apply:

- The engine is at ambient temperature.
- The engine stopped when accelerated for the first time.
- The engine stopped because the fuel tank was empty.
- ▶ Prepare engine for start, 8.2 and then start the engine, 8.3.

When can the engine be started without preparation?

The engine can be started without preparation if it has been running for at least 1 minute and only shut down for a short work break.

- ▶ Starting the engine, 8.3.

8.2 Preparing Engine for Start

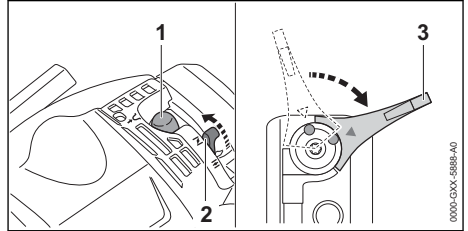


A video is available for this chapter

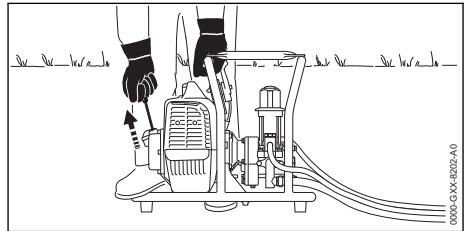


www.stihl.com/sx7fRu

- ▶ Select the correct starting procedure.
- ▶ Stand the sprayer on a level surface.



- ▶ Press the manual fuel pump bulb (1) at least five times.
- ▶ Move the choke lever (2) to position **H**.
- ▶ Turn the throttle lever (3) clockwise as far as stop.



- ▶ Press the sprayer down on the ground with your left hand on the handlebar and step on the carrying frame with your left foot.
- ▶ Pull the starter grip slowly with your right hand until you feel it engage.
- ▶ Pull the starter grip quickly and allow the starter rope to rewind several times until the engine fires and stops.
- ▶ If the engine does not stop: Move the choke lever (2) to position **III** so that the engine does not flood.
The engine stops.

8.3 Starting the Engine



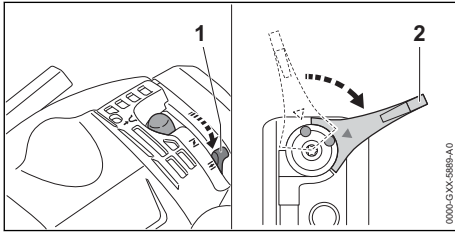
A video is available for this chapter




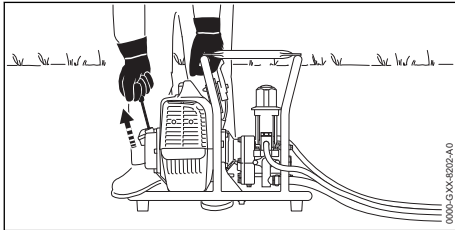
www.stihl.com/sx7fRu

- ▶ Select the correct starting procedure.

- ▶ Stand the sprayer on a level surface.

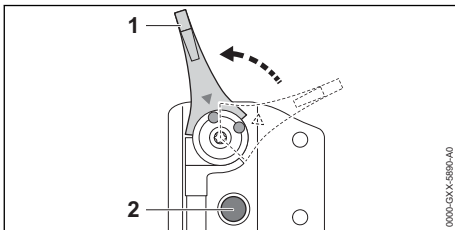



- ▶ Move the choke lever (1) to position .
- ▶ Turn the throttle lever (2) clockwise as far as stop.



- ▶ Press the sprayer down on the ground with your left hand on the handlebar and step on the carrying frame with your left foot.
- ▶ Pull the starter grip slowly with your right hand until you feel it engage.
- ▶ Pull the starter grip quickly and allow the starter rope to rewind several times until the engine runs.
- ▶ If the engine does not start: Prepare the engine for the start and then try again to start the engine.

8.4 Stopping the Engine




- ▶ Turn the throttle lever (1) counterclockwise as far as stop.
The engine runs at idling speed.
- ▶ Depress the stop switch (2).
The engine stops.
- ▶ If the engine does not stop:
 - ▶ Move the choke lever to position .

- ▶ Do not use the sprayer and contact your STIHL dealer for assistance.
The stop switch is defective.

9 Checking the Sprayer

9.1 Checking the Controls

- ▶ Start the engine.
- ▶ Depress the stop switch.
The engine stops.
- ▶ If the engine does not stop:
 - ▶ Move the choke lever to position .
 - ▶ The engine stops.
 - ▶ Do not use the sprayer and contact your STIHL dealer for assistance.
The stop switch is defective.

9.2 Checking Oil Level

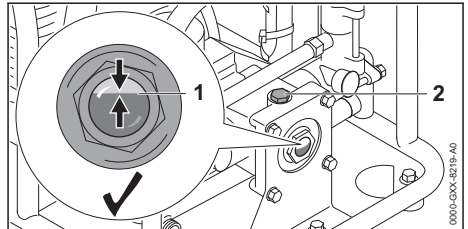


A video is available for this chapter



www.stihl.com/sxZBp5

- ▶ Place the sprayer on a level surface so that the fuel tank cap faces up.



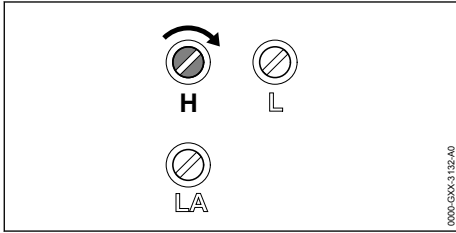
- ▶ Check the oil level in the inspection window (1).
- ▶ If the inspection window is less than two thirds full:
 - ▶ Take out the screw plug (2).
 - ▶ Fill up with HLP 46 hydraulic oil until until the inspection window (1) is two thirds full.
 - ▶ Insert and tighten down the screw plug (2) firmly.

10 Using the Sprayer

10.1 Adjusting Carburetor for Operation at High Altitude

- If you use the sprayer at high altitude, the engine will not deliver optimum power. The carburetor setting can be adjusted to obtain optimum engine power.
- ▶ Start the engine.

- ▶ Warm up the engine by opening and closing the throttle for about 1 minute.

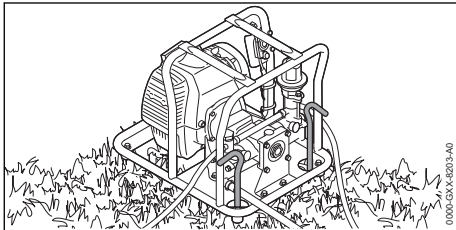


0000-GXX-3132-A0

NOTICE

- If the sprayer is again used at a low altitude, the engine may overheat.
 - ▶ Carry out the standard setting.
- ▶ Rotate the high speed screw H clockwise until the engine delivers optimum power.

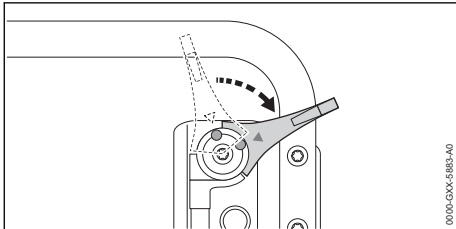
10.2 Securing the Sprayer in Position



0000-GXX-X-8203-A0

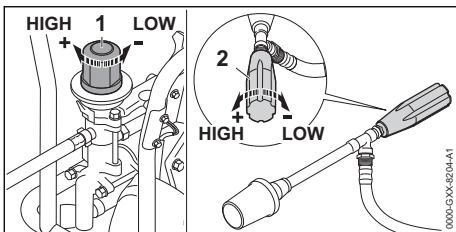
- ▶ Secure the sprayer so that it cannot move.

10.3 Spraying



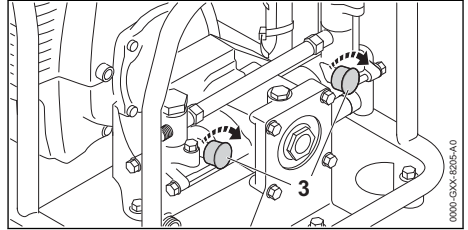
0010-GXX-5883-A0

- ▶ Set the throttle lever to full throttle.



0000-GXX-8204-A1

- ▶ Set required spray pressure on valve (1) and rotary knob (2).



0000-GXX-8205-A0

- ▶ Rotate the grease caps (3) three full turns clockwise every 2 hours. Grease in grease caps lubricates the pump pistons.
- ▶ If the grease caps (3) can no longer be turned clockwise:
 - ▶ Shut off the engine.
 - ▶ Loosen the grease caps (3) counterclockwise until they can be removed.
 - ▶ Pack the grease caps with STIHL multipurpose grease.
 - ▶ Engage the grease caps (3) on the threads and rotate them three full turns clockwise.

11 After Finishing Work

11.1 After Finishing Work

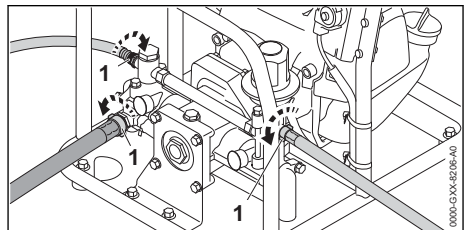


A video is available for this chapter



www.stihl.com/sxxJPP

- ▶ Immerse strainer on end of suction hose in a container filled with fresh water.
- ▶ Start the engine.
- ▶ Continue spraying until the plant protection product has been completely flushed out of the hoses and sprayer.
- ▶ Shut off the engine.
- ▶ Allow sprayer to cool down.



0000-GXX-8206-A0

- ▶ Unscrew the union nuts (1). Remove the hoses.
- ▶ If the sprayer is wet: Allow sprayer to dry.

- ▶ Clean the sprayer.
- ▶ Clean the air filter.

12 Transporting

12.1 Transporting the Sprayer

- ▶ Shut off the engine.

Carrying the sprayer

- ▶ Carry the sprayer by the handles with the muffler away from your body.

Transporting the sprayer in a vehicle

- ▶ While standing, secure the sprayer to prevent turnover and movement.

13 Storing

13.1 Storing the sprayer

- ▶ Shut off the engine.
- ▶ Check the following points when storing the sprayer:
 - The sprayer cannot topple over and cannot move.
 - The sprayer is out of the reach of children.
 - The sprayer and hoses have been rinsed with fresh water.
 - The sprayer is clean and dry.
- ▶ If you store the sprayer for more than 30 days:
 - ▶ Open the fuel tank cap.
 - ▶ Drain the fuel tank.
 - ▶ Close the fuel tank.
 - ▶ If a manual fuel pump is fitted: Press the manual fuel pump at least 5 times.
 - ▶ Start the engine and let it run at idling speed until it stops.

14 Cleaning

14.1 Cleaning the Sprayer

- ▶ Shut off the engine.
- ▶ Allow sprayer to cool down.
- ▶ Clean the sprayer with a damp cloth or STIHL resin solvent.
- ▶ Clean cooling air slots with a soft brush.

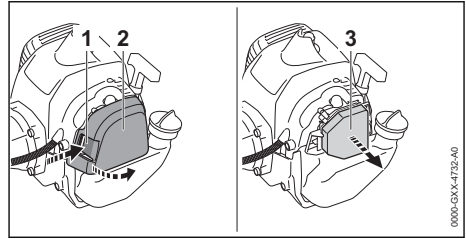
14.2 Cleaning the Air Filter

A video is available for this chapter

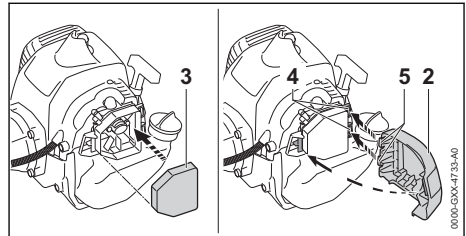


www.stihl.com/sxK0CD

- ▶ Shut off the engine.



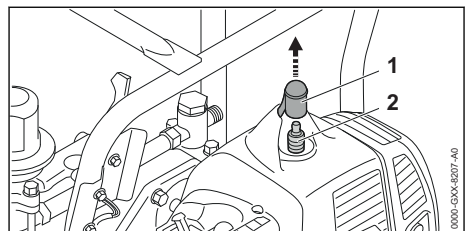
- ▶ Depress the locking tab (1) and remove the cover (2).
- ▶ Clean the area around the air filter (3) with a damp cloth or a soft brush.
- ▶ Take out the air filter (3)..
- ▶ Knock out the filter (3).
- ▶ If the air filter (3) is damaged. Install a new air filter (3).
- ▶ Wash the air filter (3) in warm soapy water.
- ▶ Rinse the air filter (3) under running water.
- ▶ Allow air filter (3) to dry in the air.
- ▶ Impregnate the air filter evenly with 5 ml of two-stroke engine oil.



- ▶ Install the air filter (3).
- ▶ Fit the filter cover (2) so that the tabs (5) engage the recesses (4).
- ▶ Close the filter cover (2).
The filter cover (2) snaps into place.

14.3 Cleaning the Spark Plug

- ▶ Shut off the engine.
- ▶ Allow sprayer to cool down.



- ▶ Pull off the spark plug boot (1).
- ▶ If the area around the spark plug (2) is soiled: Clean the spark plug (2) with a cloth.
- ▶ Unscrew the spark plug (2).

- ▶ Clean the spark plug (2) with a cloth.
- ▶ If the spark plug (2) is corroded: Install a new spark plug (2).
- ▶ Insert and tighten down the spark plug (2) firmly.
- ▶ Press the spark plug boot (1) firmly home.

- ▶ Check oil level

After every 100 hours of operation

- ▶ Install a new spark plug.

Monthly

- ▶ Have fuel tank cleaned by a STIHL servicing dealer.
- ▶ Have pickup body (filter) in fuel tank cleaned by a STIHL servicing dealer.

Every 12 months

- ▶ Have pickup body (filter) in fuel tank replaced by a STIHL servicing dealer.

15 Maintenance

15.1 Maintenance Intervals

The maintenance intervals are dependent on the environmental and operating conditions. STIHL recommends the following maintenance intervals:

Oil change

- ▶ Have the oil in the pump changed by a STIHL servicing dealer at the following intervals:
 - After the first 30 hours of operation.
 - Every 70 hours of operation after the first oil change.

Daily

17 Troubleshooting

17.1 Troubleshooting the Sprayer

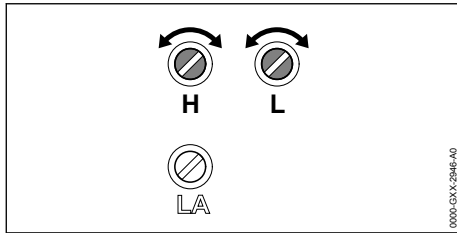
Most malfunctions have the same causes.

- ▶ Perform the following operations:
 - ▶ Clean the air filter.
 - ▶ Clean or replace the spark plug.
 - ▶ Carry out the standard setting.
 - ▶ Adjust idle speed.
 - ▶ Adjust carburetor for operation at high altitude.
- ▶ If the malfunction still exists: Take the action described in the following table.

Condition	Cause	Remedy
Engine does not start.	Insufficient fuel in the tank.	▶ Mix fuel and refuel the sprayer.
	Carburetor is too hot.	▶ Allow sprayer to cool down. ▶ Before starting the engine: Depress the manual fuel pump bulb at least ten times.
	Carburetor is iced up.	▶ Allow sprayer to warm up to +10°C.
	Engine is flooded.	▶ Clear the combustion chamber.
Engine idles erratically.	Carburetor is iced up.	▶ Allow sprayer to warm up to +10°C.
Engine stops while idling	Carburetor is iced up.	▶ Allow sprayer to warm up to +10°C.
Sprayer does not pick up plant protection product.	Strainer or hoses are blocked.	▶ Clean the strainer and hoses.
	Suction hose has collapsed.	▶ Use a dimensionally stable suction hose of suitable pressure rating.

17.2 Standard Setting

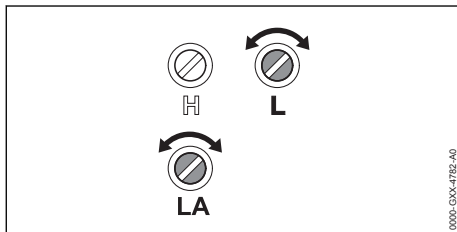
- ▶ Shut off the engine.



- ▶ Turn the high speed screw (H) counterclockwise as far as stop.
- ▶ Turn the low speed screw (L) clockwise as far as stop.
- ▶ Turn the low speed screw (L) 3/4 of a turn counterclockwise.

17.3 Adjusting Idle Speed

- ▶ Carry out the standard setting.
- ▶ Fit the hoses.
- ▶ Immerse strainer on suction hose and return hose in a container filled with water.
- ▶ Start the engine.
- ▶ Warm up the engine by opening and closing the throttle for about 1 minute.



Engine stops while idling

- ▶ Turn the idle speed screw (LA) clockwise until the sprayer begins to spray water.
- ▶ Turn the idle speed screw (LA) one full turn counterclockwise.

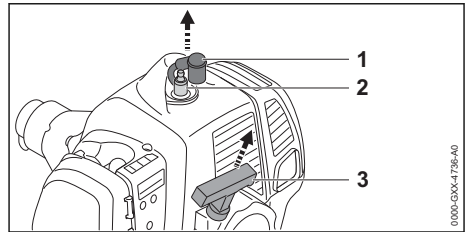
Erratic idling behavior or poor acceleration

- ▶ Turn the low speed screw (L) clockwise or counterclockwise until the engine runs and accelerates smoothly.

Sprayer sprays while engine is idling

- ▶ Turn the idle speed screw (LA) counterclockwise until no more water is sprayed.
- ▶ Turn the idle speed screw (LA) one full turn counterclockwise.

17.4 Clearing the Combustion Chamber



- ▶ Pull off the spark plug boot (1).
- ▶ Unscrew the spark plug (2).
- ▶ Dry the spark plug (2).

! WARNING

- ▶ Unconfined sparks may occur if the starter grip is pulled after the spark plug boot has been removed. Sparks may cause a fire or an explosion in an easily combustible or explosive environment. This can result in serious or fatal injuries and damage to property.
 - ▶ Depress the stop switch and keep it depressed before pulling the starter grip.

- ▶ Depress the stop switch and hold it in that position.
- ▶ Pull the starter grip (3) several times and guide it back slowly. The combustion chamber is cleared.
- ▶ Insert and tighten down the spark plug (2) firmly.
- ▶ Press the spark plug boot (1) firmly home.

18 Specifications

18.1 STIHL SG 230 Sprayer

- Displacement: 36.3 cm³
- Engine power: 1.5 kW (2.0 hp) at 9000 rpm
- Idle speed : 2800 rpm
- Approved spark plug: Bosch WSR 6 F from STIHL
- Electrode gap of the spark plug: 0.5 mm
- Dry weight: 13.3 kg
- Max. fuel tank capacity: 810 cm³ (0.81 l)

18.2 Sound Values and Vibration Values

The K-value for sound pressure levels is 2 dB(A).
K-value for sound power level is 2 dB(A).


- Sound pressure level L_p measured according to ISO 11203: 97 dB(A)
- Sound power level L_w measured according to ISO 3744: 110 dB(A)

- Vibration measurement $a_{hv, eq}$ measured according to ISO 20643, spray lance: 0.4 m/s^2

For further details on compliance with Vibration Directive 2002/44/EC visit www.stihl.com/vib.

19 Spare Parts and Accessories

19.1 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.

20 Disposal

20.1 Disposing of the sprayer

Contact local authorities or a STIHL authorized dealer for information about disposal.

Improper disposal can be harmful to health and pollute the environment.

- ▶ Take STIHL products including packaging to a suitable collection point for recycling in accordance with local regulations.
- ▶ Do not dispose with domestic waste.

21 Addresses

www.stihl.com

www.stihl.com



0458-492-0121-B



0458-492-0121-B