

STIHL KA 120, 250

**STIHL**



2 - 22      Instruction Manual



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Dear Customer,

Thank you for choosing a quality engineered STIHL product.

It has been built using modern production techniques and comprehensive quality assurance. Every effort has been made to ensure your satisfaction and trouble-free use of the product.

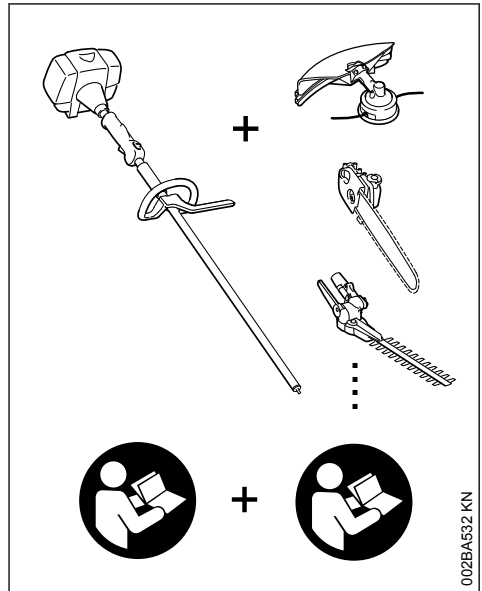
Please contact your dealer or our sales company if you have any queries concerning this product.

Your

*N. & S. Stihl*

Dr. Nikolas Stihl

## 1 KombiAttachmentSystem



002BA532 KN

In the STIHL KombiAttachmentSystem a number of different KombiAttachmentEngines and attachments can be combined to produce a power tool. In this instruction manual the functional unit formed by the KombiAttachmentEngine and attachment is referred to as the power tool.

Therefore, the separate instruction manuals for the KombiAttachmentEngine and attachment should be used together for the power tool.

Always read and make sure you understand both instruction manuals before using your power tool for the first time and keep them in a safe place for future reference.

In this instruction manual the KombiAttachmentEngine is also referred to as the basic power tool.

The approved power tool models are listed in the chapter on "Approved Basic Power Tools".

The approved power tool models are listed in the chapter on "Approved Attachments".

## 2 Guide to Using this Manual

### 2.1 Pictograms

All the pictograms attached to the machine are shown and explained in this manual.

### 2.2 Symbols in text



**WARNING**

Warning where there is a risk of an accident or personal injury or serious damage to property.

*NOTICE*

Caution where there is a risk of damaging the machine or its individual components.

### 2.3 Engineering improvements

STIHL's philosophy is to continually improve all of its products. For this reason we may modify the design, engineering and appearance of our products periodically.

Therefore, some changes, modifications and improvements may not be covered in this manual.

## 3 Safety Precautions and Working Techniques



Special safety precautions must be observed when working with a power tool.



Always read and and make sure you understand both instruction manuals (KombiAttachmentEngine and power tool attachment) before using your power tool for the first time and keep them in a safe place for future reference. Non-observance of the safety precautions may result in serious or even fatal injury.

Observe all applicable local safety regulations, standards and ordinances.

If you have not used this type of power tool before: Have your dealer or other experienced user show you how to operate your machine or attend a special course in its operation.

Minors should never be allowed to use this product.

Keep bystanders, especially children, and animals away from the work area.

When the power tool is not in use, shut it off so that it does not endanger others. Secure it against unauthorized use.

The user is responsible for avoiding injury to third parties or damage to their property.

Lend or rent your machine only to persons who are familiar with this model and its operation – do not lend or rent your machine without the instruction manuals of the KombiAttachmentEngine and power tool attachment.

The use of noise emitting power tools may be restricted to certain times by national or local regulations.

To operate the power tool you must be rested, in good physical condition and mental health.

If you have any condition that might be aggravated by strenuous work, check with your doctor before operating a power tool.

Persons with pacemakers only: The ignition system of your power tool produces an electromagnetic field of a very low intensity. This field may interfere with some pacemakers. STIHL recommends that persons with pacemakers consult their physician and the pacemaker manufacturer to reduce any health risk.

Do not operate the power tool if you are under the influence of any substance (drugs, alcohol) which might impair vision, dexterity or judgment.

Use your power tool only for the applications described in the instruction manual of the power tool attachment you are using.

It must not be used for any other purpose because of the increased risk of accidents and damage to the machine. Never attempt to modify your power tool in any way since this may result in accidents or damage to the machine.

Do not operate the KombiAttachmentEngine without a properly mounted power tool attachment since this may result in damage to the machine.

Only mount attachments and accessories that are explicitly approved for this power tool by STIHL or are technically identical. It is important that you read the chapter on "Approved Attachments". If you have any questions in this respect, consult a servicing dealer. Use only high quality tools and accessories in order to avoid the risk of accidents and damage to the machine.

STIHL recommends the use of genuine STIHL tools and accessories. They are specifically

designed to match the product and meet your performance requirements.

Never attempt to modify your machine in any way since this may increase the risk of personal injury. STIHL excludes all liability for personal injury and damage to property caused while using unauthorized attachments.

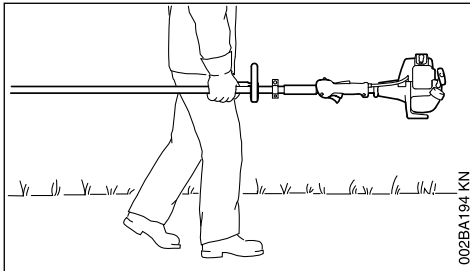
Do not use a pressure washer to clean the unit. The solid jet of water may damage parts of the unit.

### 3.1 Clothing and Equipment

Wear proper protective clothing and equipment.

See also notes on "Clothing and Equipment" in the instruction manual of the power tool attachment you are using.

### 3.2 Transporting the Power Tool



Always turn off the engine.

Transporting by vehicle: Properly secure your power tool to prevent turnover, fuel spillage and damage.

See also notes on "Transporting the Machine" in the instruction manual of the power tool attachment you are using.

### 3.3 Fueling



**Gasoline is an extremely flammable fuel.** Keep clear of naked flames. Do not spill any fuel – do not smoke.

Always shut off the engine before refueling.

Do not fuel a hot engine – fuel may spill and cause a fire.

Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly and avoid fuel spillage.

Fuel your power tool only in well-ventilated areas. If you spill fuel, wipe the machine immedi-

ately – if fuel gets on your clothing, change immediately.

Your power tool comes standard with either a screw-type or bayonet-type fuel cap.



After fueling, tighten down the screw-type fuel cap as securely as possible.



Insert the fuel cap with hinged grip (bayonet-type cap) correctly in the opening, turn it clockwise as far as stop and fold the grip down.

This reduces the risk of unit vibrations causing the fuel cap to loosen or come off and spill quantities of fuel.

**To reduce the risk of serious or fatal burn injuries,** check for fuel leakage. If fuel leakage is found, do not start or run the engine until leak is fixed.

### 3.4 Before Starting

Check that your power tool is properly assembled and in good condition – refer to appropriate chapters in the instruction manuals.

- Check the fuel system for leaks, paying special attention to visible parts such as the tank cap, hose connections and the manual fuel pump (on machines so equipped). If there are any leaks or damage, do not start the engine – **risk of fire**. Have your machine repaired by a servicing dealer before using it again.
- Use only an approved combination of cutting attachment, deflector, handle and harness. All parts must be assembled properly and securely.
- The power tool attachment must be approved for use with this KombiEngine.
- Slide control / stop switch must move easily to **STOP** or **0**.
- Smooth action of throttle trigger lockout and throttle trigger – the throttle trigger must return automatically to the idle position.
- Check that the spark plug boot is secure – a loose boot may cause arcing that could ignite combustible fumes **and cause a fire**.
- Never attempt to modify the controls or safety devices in any way.
- Keep the handles dry and clean – free from oil and dirt – for safe control of the power tool.
- Adjust the harness and handle(s) to suit your height and reach.

**To reduce the risk of accidents,** do not operate your power tool if it is damaged or not properly assembled.

If you use a shoulder strap or full harness: Practice removing and putting down the machine as you would in an emergency. To avoid damage, do not throw the machine to the ground when practicing.

See also notes on "Before Starting" in the instruction manual of the power tool attachment you are using.

### 3.5 Starting the Engine

Start the engine at least 3 meters from the fueling spot, outdoors only.

Place the power tool on firm ground in an open area. Make sure you have good balance and secure footing. Hold the power tool securely. The attachment must be clear of the ground and all other obstructions because it may begin to run when the engine starts.

**To reduce the risk of injury**, avoid contact with the attachment.

Do not drop start the power tool – start the engine as described in the instruction manual. Note that the attachment continues to run for a short period after you let go of the throttle trigger – flywheel effect.

**Check idle speed setting:** The attachment must be stationary when the engine is idling with the throttle trigger released.

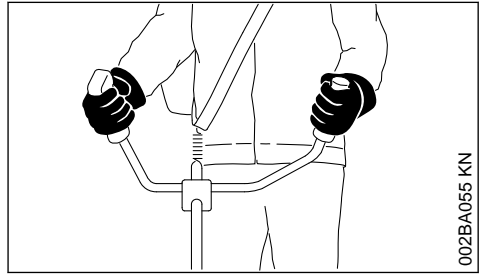
**To reduce the risk of fire**, keep hot exhaust gases and hot muffler away from easily combustible materials (e.g. wood chips, bark, dry grass, fuel).

See also notes on "Starting the Engine" in the instruction manual of the power tool attachment you are using.

### 3.6 Holding and Controlling the Power Tool

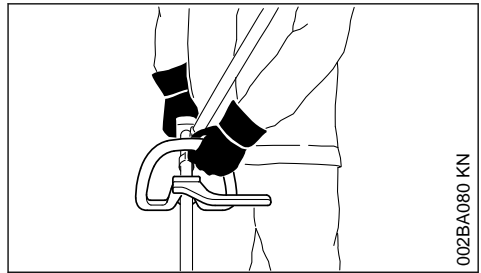
Always hold the power tool firmly with both hands on the handles. Make sure you always have good balance and secure footing.

#### 3.6.1 Models with bike handle



Right handle on control handle, left hand on left handle.

#### 3.6.2 Models with loop handle



Left hand on loop handle, right hand on control handle, even if you are left-handed.

### 3.7 During Operation

In the event of impending danger or in an emergency, switch off the engine immediately by moving the slide control / stop switch to **STOP** or **0**.

The correct engine idle speed is important to ensure that the attachment stops moving when you let go of the throttle trigger. If the attachment continues to run when the engine is idling, have your dealer check your machine and make proper adjustments or repairs. STIHL recommends an authorized STIHL servicing dealer. Check and correct the idle speed setting regularly.

Be particularly alert and cautious when wearing hearing protection because your ability to hear warnings (shouts, alarms, etc.) is restricted.

**To reduce the risk of accidents**, take a break in good time to avoid tiredness or exhaustion.

Work calmly and carefully – in daylight conditions and only when visibility is good. Stay alert so as not to endanger others.

Use your machine only in the areas specified in the instruction manual of the power tool attachment.



Your power tool produces toxic exhaust fumes as soon as the engine is running. These fumes may be colorless and odorless and contain unburned hydrocarbons and benzol. Never run the engine indoors or in poorly ventilated locations, even if your model is equipped with a catalytic converter.

**To reduce the risk of serious or fatal injury from breathing toxic fumes**, ensure proper ventilation when working in trenches, hollows or other confined locations.

**To reduce the risk of accidents**, stop work immediately in the event of nausea, headache, visual disturbances (e.g. reduced field of vision), problems with hearing, dizziness, deterioration in ability to concentrate. Apart from other possibilities, these symptoms may be caused by an excessively high concentration of exhaust gases in the work area.

Operate your power tool so that it produces a minimum of noise and emissions – do not run the engine unnecessarily, accelerate the engine only when working.

**To reduce the risk of fire**, do not smoke while operating or standing near your power tool. Note that combustible fuel vapor may escape from the fuel system.

The dusts, vapor and smoke produced during operation may be dangerous to health. If the work area is very dusty or smoky, wear a respirator.

If your power tool is subjected to unusually high loads for which it was not designed (e.g. heavy impact or a fall), always check that it is in good condition before continuing work – see also "Before Starting".

Check the fuel system in particular for leaks and make sure the safety devices are working properly. Do not continue operating your power tool if it is damaged. In case of doubt, consult your servicing dealer.

Do not operate your power tool in the starting throttle position – engine speed cannot be controlled in this position.

Before leaving the power tool unattended: Shut off the engine.

**To reduce the risk of unintentional engine start and injury**, always shut off the engine and remove the spark plug boot before changing the attachment.

### 3.8 Vibrations

Prolonged use of the power tool may result in vibration-induced circulation problems in the hands (whitefinger disease).

No general recommendation can be given for the length of usage because it depends on several factors.

The period of usage is prolonged by:

- Hand protection (wearing warm gloves)
- Work breaks

The period of usage is shortened by:

- Any personal tendency to suffer from poor circulation (symptoms: frequently cold fingers, tingling sensations).
- Low outside temperatures.
- The force with which the handles are held (a tight grip restricts circulation).

Continual and regular users should monitor closely the condition of their hands and fingers. If any of the above symptoms appear (e.g. tingling sensation in fingers), seek medical advice.

### 3.9 Maintenance and Repairs

Service the machine regularly. Do not attempt any maintenance or repair work not described in the instruction manual. Have all other work performed by a servicing dealer.

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

Only use high-quality replacement parts in order to avoid the risk of accidents and damage to the machine. If you have any questions in this respect, consult a servicing dealer.

STIHL recommends the use of genuine STIHL replacement parts. They are specifically designed to match your model and meet your performance requirements.

To reduce the risk of injury, **always shut off the engine** before carrying out any maintenance or repairs or cleaning the machine. – Exception: Carburetor and idle speed adjustments.

Do not turn the engine over on the starter with the spark plug boot or spark plug removed unless the slide control / stop switch is on **STOP** or **0** since there is otherwise a **risk of fire** from uncontained sparking.

To reduce the **risk of fire**, do not service or store your machine near open flames.

Check the fuel filler cap for leaks at regular intervals.

Use only a spark plug of the type approved by STIHL and make sure it is in good condition – see "Specifications".

Inspect the ignition lead (insulation in good condition, secure connection).

Check the condition of the muffler.

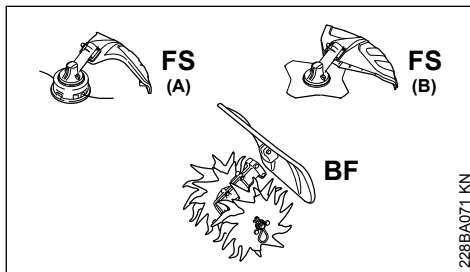
To reduce the **risk of fire and damage to hearing**, do not operate your machine if the muffler is damaged or missing.

Do not touch a hot muffler since **burn injury** will result.

Vibration behavior is influenced by the condition of the AV elements – check the AV elements at regular intervals.

## 4 Approved Power Tool Attachments

The following STIHL attachments may be mounted to the basic power tool:



### Interchangeable Attachment

FS (A) <sup>1)</sup>

FS (B) <sup>1) 2)</sup>

BF

### Application

Brushcutter with mowing head

Brushcutter with metal cutting attachment

Cultivator with pick tines

<sup>1)</sup> Use shoulder strap

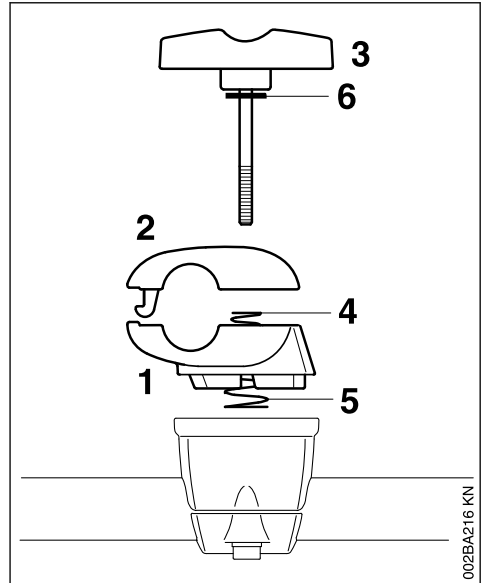
<sup>2)</sup> **Barrier bar** required on **loop handle**

## 5 Mounting the Bike Handle

### 5.1 Mounting Bike Handle with Swiveling Handle Support

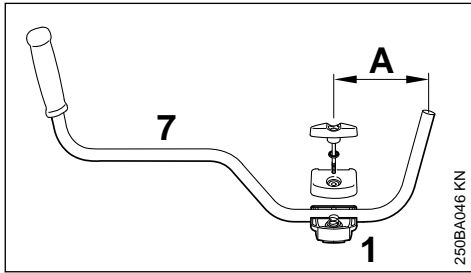
The machine is supplied with the swiveling handle support already mounted on the shaft. To mount the handlebar it is necessary to remove the clamp moldings.

#### 5.1.1 Removing the Clamp Moldings

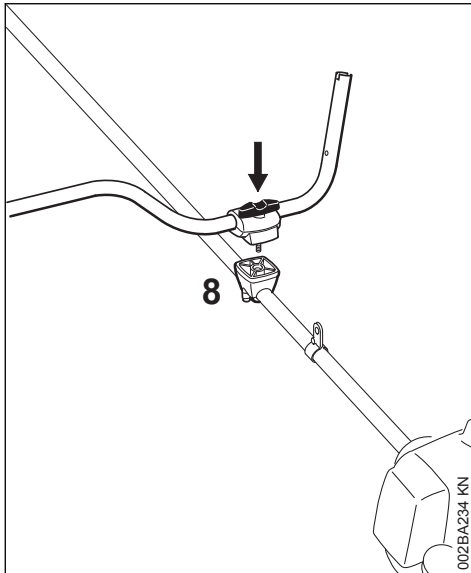


- ▶ Hold the lower clamp (1) and upper clamp (2) firmly together.
- ▶ Release the wing screw (3) – the clamps are loose once the wing screw has been released. They are pushed apart by the two springs (4 and 5).
- ▶ Pull out the wing screw – the washer (6) remains on the wing screw.
- ▶ Separate the clamp moldings – the springs (4 and 5) remain in the lower clamp.

## 5.1.2 Securing the Handlebar

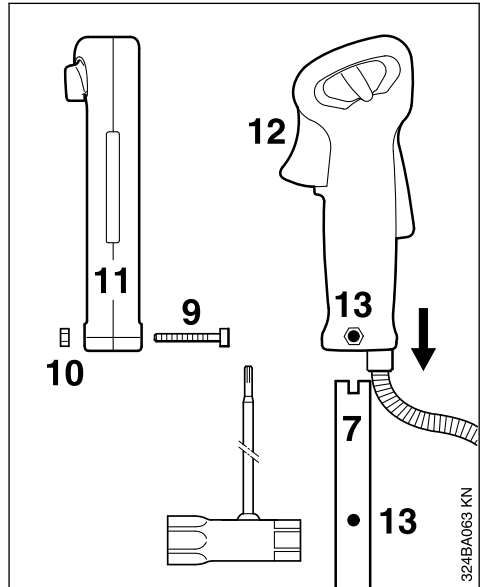


- ▶ Place the handlebar (7) in the lower clamp (1) so that distance A is no more than 15 cm (6 in).
- ▶ Place the upper clamp in position and hold both clamp moldings together.
- ▶ Push the wing screw through the two clamps as far as stop – hold all parts together and secure them.



- ▶ Place the secured assembly on the handle support (8) with the wing screw at the side nearest the engine.
- ▶ Push the wing screw into the handle support as far as stop and then screw it down – but do not finally tighten yet.
- ▶ Line up the handlebar at a right angle to the drive tube – check distance A again.
- ▶ Tighten down the wing screw firmly.

## 5.1.3 Mounting the Control Handle



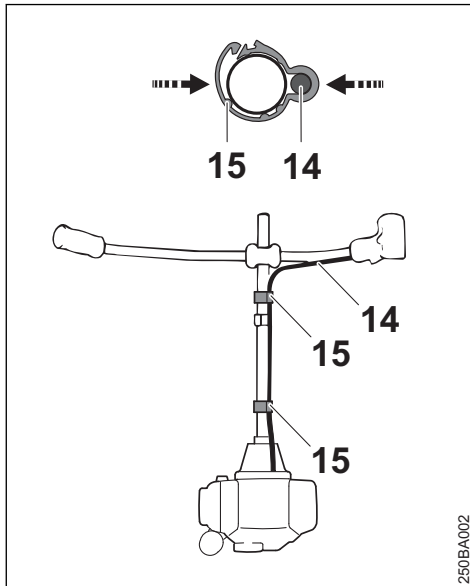
- ▶ Take out the screw (9) – the nut (10) remains in the control handle (11).
- ▶ Push the control handle onto the handlebar (7) until the holes (13) line up – the throttle trigger (12) must point towards the gearbox.
- ▶ Insert the screw (9) and tighten it down firmly.



### 5.1.4 Fitting the Throttle Cable

#### NOTICE

Do not kink the throttle cable or lay it in tight radii – make sure the throttle trigger moves freely.



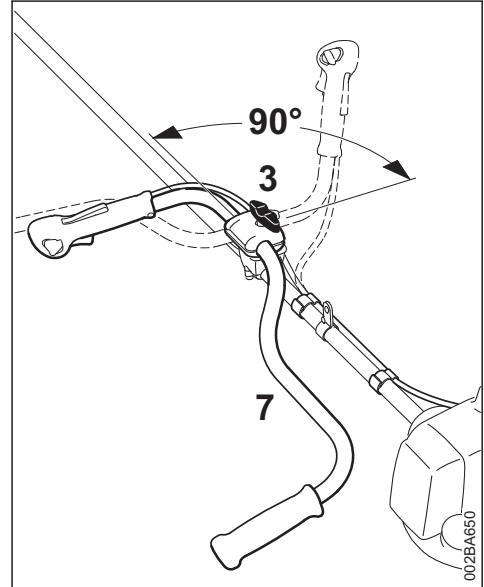
- ▶ Position the throttle cable retainer (15) and throttle cable (14) against the drive tube.
- ▶ Close the throttle cable retainer (15). The retainer (15) snaps into place.

### 5.1.5 Adjusting the Throttle Cable

- ▶ Check adjustment of throttle cable – see chapter on "Adjusting the Throttle Cable".

### 5.1.6 Swiveling the Handlebar

#### Transport position



- ▶ Loosen the wing screw (3) and unscrew it until the handlebar (7) can be rotated.
- ▶ Rotate the handlebar 90° counterclockwise and then swing the handles down.
- ▶ Tighten down the wing screw (3) firmly.

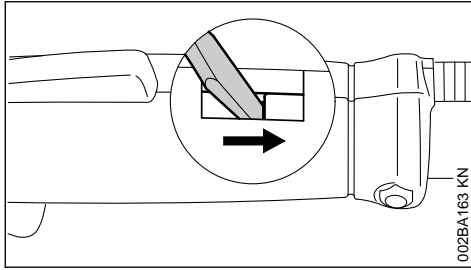
#### Working position

- ▶ Reverse the sequence described above to swing the handles up and turn the handlebar clockwise.

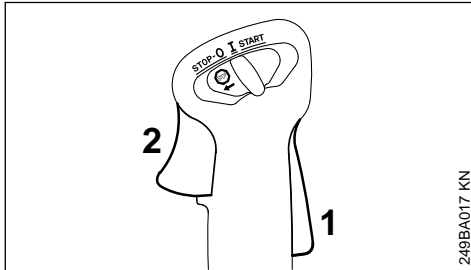
## 6 Adjusting the Throttle Cable

A properly adjusted throttle cable is the precondition for correct operation in the full throttle, starting throttle and idle positions.

Adjust the throttle cable only after the unit is fully assembled – the control handle must be in the normal operating position.



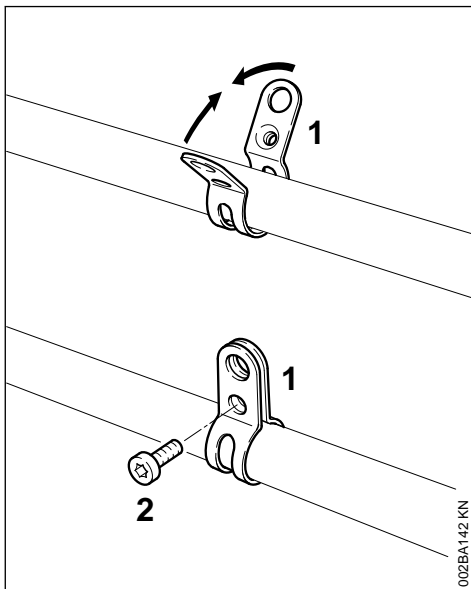
- ▶ Use a suitable tool to push the slide to the end of the slot (see illustration).



- ▶ Press down the throttle trigger lockout (1) and squeeze the throttle trigger (2) (full throttle) – this sets the throttle cable correctly.

## 7 Fitting the Carrying Ring

The carrying ring comes standard with the machine or is available as a special accessory.



For position of carrying ring see "Main Parts".

- ▶ Place the clamp (1) against the drive tube **with the tapped hole on the left** (viewed from engine).
- ▶ Squeeze the two ends of the clamp together and hold in that position.
- ▶ Insert the M6x14 screw (2).
- ▶ Line up the carrying ring.
- ▶ Tighten down the screw firmly.

## 8 Fuel

Your engine requires a mixture of gasoline and engine oil.

### WARNING

For health reasons, avoid direct skin contact with gasoline and avoid inhaling gasoline vapor.

### 8.1 STIHL MotoMix

STIHL recommends the use of STIHL MotoMix. This ready-to-use fuel mix contains no benzol or lead, has a high octane rating and ensures that you always use the right mix ratio.

STIHL MotoMix uses STIHL HP Ultra two-stroke engine oil for an extra long engine life.

MotoMix is not available in all markets.

### 8.2 Mixing Fuel

#### NOTICE

Unsuitable fuels or lubricants or mix ratios other than those specified may result in serious damage to the engine. Poor quality gasoline or engine oil may damage the engine, sealing rings, hoses and the fuel tank.

#### 8.2.1 Gasoline

Use only high-quality **brand-name** gasoline with a minimum octane rating of 90 – leaded or unleaded.

Gasoline with an ethanol content of more than 10% can cause running problems in engines with a manually adjustable carburetor and should not be used in such engines.

Engines equipped with M-Tronic deliver full power when run on gasoline with an ethanol content of up to 25% (E25).

#### 8.2.2 Engine Oil

If you mix the fuel yourself, use only STIHL two-stroke engine oil or another high-performance

engine oil in accordance with 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.

### 8.2.3 Mix Ratio

STIHL 50:1 two-stroke engine oil: 50 parts gasoline to 1 part oil

### 8.2.4 Examples

Gasoline Liters	STIHL engine oil 50:1	
	Liters	(ml)
1	0.02	(20)
5	0.10	(100)
10	0.20	(200)
15	0.30	(300)
20	0.40	(400)
25	0.50	(500)

- ▶ Use a canister approved for storing fuel. Pour oil into canister first, then add gasoline and mix thoroughly.

## 8.3 Storing Fuel

Store fuel only in approved safety-type fuel canisters in a dry, cool and safe location protected from light and the sun.

**Fuel mix ages** – only mix sufficient fuel for a few weeks work. Do not store fuel mix for longer than 30 days. Exposure to light, the sun, low or high temperatures can quickly make the fuel mix unusable.

STIHL MotoMix may be stored for up to 2 years without any problems.

- ▶ Thoroughly shake the mixture in the canister before fueling your machine.



### WARNING

Pressure may build up in the canister – open it carefully.

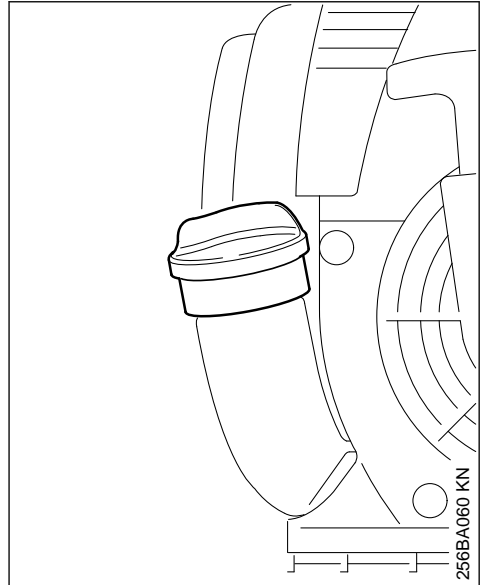
- ▶ Clean the fuel tank and canister from time to time.

Dispose of remaining fuel and cleaning fluid properly in accordance with local regulations and environmental requirements.

## 9 Fueling



## 9.1 Preparations



- ▶ Before fueling, clean the filler cap and the area around it to ensure that no dirt falls into the tank.
- ▶ Position the machine so that the filler cap is facing up.

## 9.2 Filling Up with Fuel

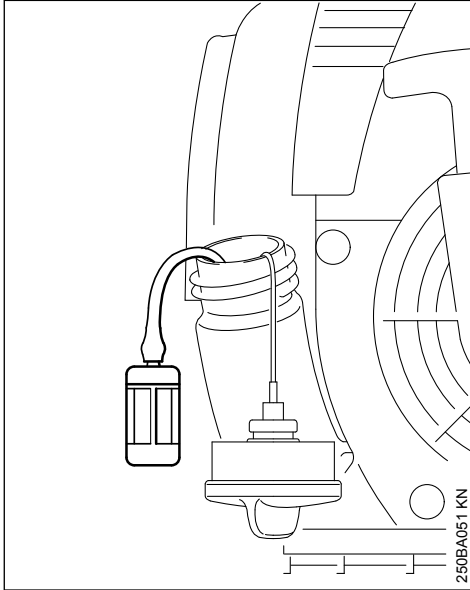
Take care not to spill fuel while fueling and do not overfill the tank. STIHL recommends you use the STIHL filler nozzle for fuel (special accessory).

- ▶ Open the filler cap.
- ▶ Fill up with fuel.
- ▶ Close the filler cap.

 **WARNING**

After fueling, tighten down the filler cap as securely as possible by hand.

### 9.3 Changing the Fuel Pickup Body

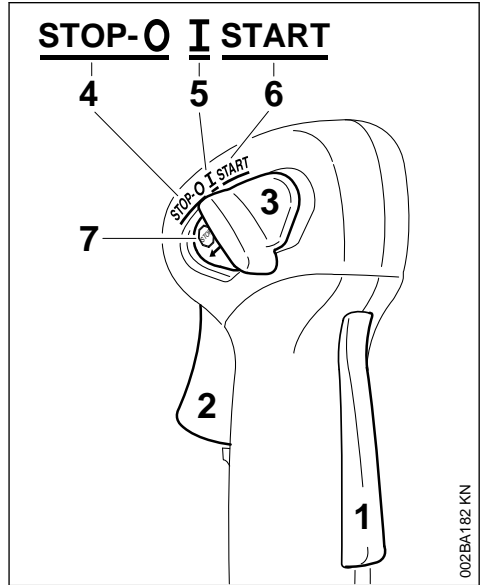


Change the fuel pickup body every year:

- ▶ Drain the fuel tank.
- ▶ Use a hook to pull the fuel pickup body out of the tank and take it off the hose.
- ▶ Push the new pickup body into the hose.
- ▶ Place the pickup body in the tank.

## 10 Starting / Stopping the Engine

### 10.1 Controls



1 Throttle trigger lockout



2 Throttle trigger

3 Slide control

#### 10.1.1 Positions of slide control

- 4 **STOP-0** – engine off – ignition is switched off
- 5 **I** – normal run position – the engine is running or can start
- 6 **START** – ignition is switched on – the engine can start

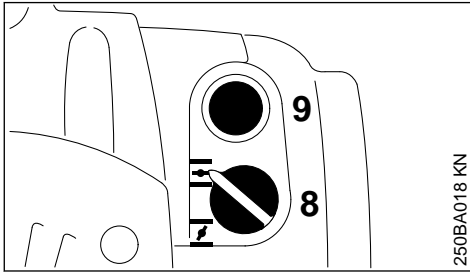
#### 10.1.2 Symbol on slide control

- 7  – stop symbol and arrow. To stop the engine, push the slide control in the direction of the arrow on the stop symbol () to **STOP-0**.

### 10.2 Starting

- ▶ Press down the trigger lockout lever and squeeze the throttle trigger
- ▶ and hold them in that position.
- ▶ Move the slide control to **START** and hold it there.

- ▶ Now release the throttle trigger, slide control and trigger lockout in that order. This is the **starting throttle position**.



250BA018 KN

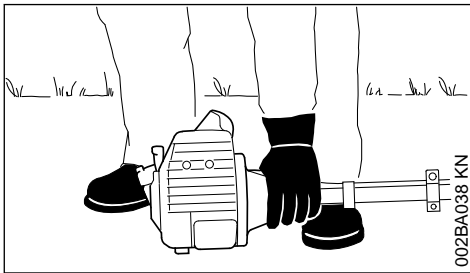
- ▶ Set the choke knob (8) to:



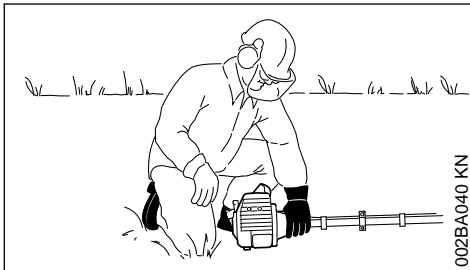
if the engine is cold  
 for warm start – also use this position if the engine has been running but is still cold.

- ▶ Press the manual fuel pump bulb (9) at least five times – even if the bulb is filled with fuel.

### 10.2.1 Cranking



002BA038 KN



002BA040 KN

- ▶ Place the power tool on the ground so that it rests on the machine support:

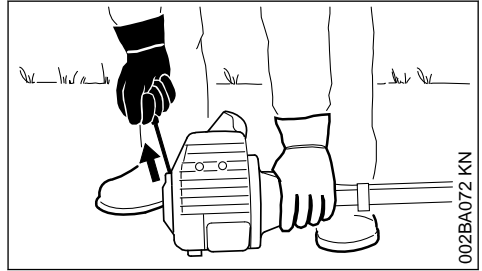
**To reduce the risk of injury**, check that the attachment is not touching the ground or any other obstacles – see also "Starting / Stopping the Engine" in the instruction manual of the attachment you are using.

- ▶ Make sure you have a firm footing, either standing, stooping or kneeling.

- ▶ Hold the unit **firmly** on the ground with your left hand and press down – do not touch the throttle trigger, lockout lever or slide control.

#### NOTICE

Do not stand or kneel on the drive tube.



002BA072 KN

- ▶ Hold the starter grip with your right hand.
- ▶ Pull the starter grip slowly until you feel it engage and then give it a brisk strong pull.

#### NOTICE

Do not pull out the starter rope all the way – it **might otherwise break**.

- ▶ Do not let the starter grip snap back. Guide it slowly back into the housing so that the starter rope can rewind properly.
- ▶ Continue cranking.

### 10.2.2 When engine begins to fire

- ▶ Turn the choke knob to .
- ▶ Continue cranking until the engine runs.

### 10.2.3 As soon as the engine runs

- ▶ Blip the throttle trigger **immediately**. The slide control moves to the normal run position – and the engine settles down to idle speed.

#### ! WARNING

Make sure the carburetor is correctly adjusted. The working tool must not rotate when the engine is idling.

Your machine is now ready for operation.

### 10.3 Stopping the Engine

- ▶ Push the slide control in the direction of the arrow on the stop symbol to **STOP-O**.

### 10.4 At very low outside temperatures

As soon as the engine runs:

- ▶ Blip the throttle trigger to **disengage the starting throttle position**. The slide control moves to the normal run position **I** – and the engine settles down to idle speed.
- ▶ Open the throttle slightly.
- ▶ Warm up the engine for a short period.

## 10.5 If engine does not start

### 10.5.1 Choke knob

If you did not turn the choke knob to **I** quickly enough after the engine began to fire, the combustion chamber is flooded.

- ▶ Turn the choke knob to **I**.
- ▶ Select the **starting throttle position**.
- ▶ Start the engine by pulling the starter rope briskly – 10 to 20 pulls may be necessary.

### If the engine still does not start

- ▶ Push the slide control in the direction of the arrow on the stop symbol (☹) to **STOP-0**.
- ▶ Remove the spark plug – see "Spark Plug".
- ▶ Dry the spark plug.
- ▶ Open the throttle wide.
- ▶ Crank the engine several times with the starter to clear the combustion chamber.
- ▶ Refit the spark plug – see "Spark Plug".
- ▶ Move the slide control to **START**.
- ▶ Set the choke knob to **I** – even if the engine is cold.
- ▶ Start the engine.

### 10.5.2 Throttle cable adjustment

- ▶ Check adjustment of throttle cable – see chapter on "Adjusting the Throttle Cable".

### 10.5.3 Fuel tank run until completely dry

Recommendation: Carry out the following steps irrespective of the engine's operating condition before the tank was run dry.

- ▶ Turn the choke knob to **I**.
- ▶ Go to section on "Starting" and re-start the engine as described for a cold engine.

## 11 Operating Instructions

### 11.1 During break-in period

A factory-new machine should not be run at high revs (full throttle off load) for the first three tank fillings. This avoids unnecessary high loads during the break-in period. As all moving parts have to bed in during the break-in period, the frictional resistances in the engine are greater during this period. The engine develops its maximum power after about 5 to 15 tank fillings.

### 11.2 During Operation

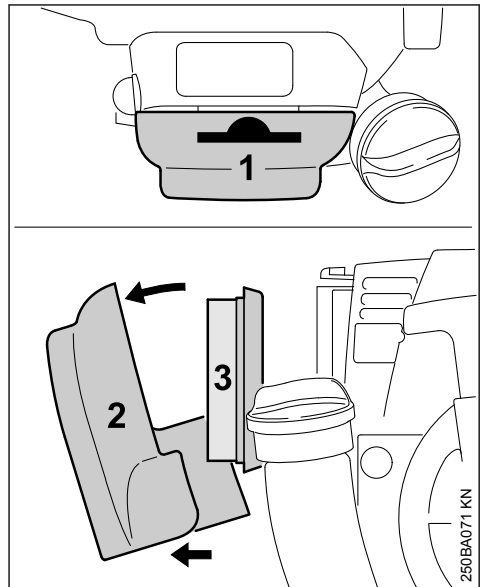
After a long period of full throttle operation, allow the engine to run for a short while at idle speed so that engine heat can be dissipated by the flow of cooling air. This protects engine-mounted components (ignition, carburetor) from thermal overload.

### 11.3 After Finishing Work

Storing for a short period: Wait for the engine to cool down. Empty the fuel tank and keep the machine in a dry place, well away from sources of ignition, until you need it again. For longer out-of-service periods – see "Storing the Machine".

## 12 Cleaning the Air Filter

### 12.1 If there is a noticeable loss of engine power



- ▶ Turn the choke knob to **I**.
- ▶ Press in the tab (1) and remove the filter cover (2).
- ▶ Clean away loose dirt from around the filter (3) and inside the filter cover.
- ▶ Remove and check the filter element – replace it if is dirty or damaged.
- ▶ Install the filter element in the filter cover.
- ▶ Refit the filter cover.

## 13 Adjusting the Carburetor

### 13.1 General Information

The carburetor comes from the factory with a standard setting.

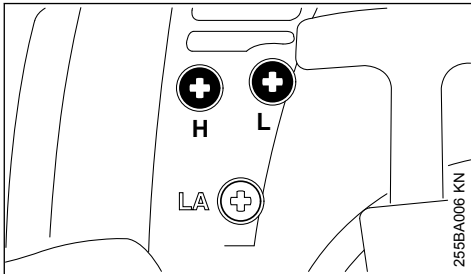
This setting provides an optimum fuel-air mixture under most operating conditions.

### 13.2 Preparations

- ▶ Shut off the engine.
- ▶ Mount the attachment.
- ▶ Check the air filter and replace if necessary.
- ▶ Check that the throttle cable is properly adjusted – readjust if necessary – see chapter on "Adjusting the Throttle Cable".

### 13.3 Carry out the standard setting.

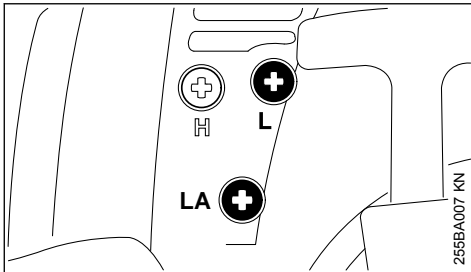
- High speed screw (H) = 3/4
- Low speed screw (L) = 3/4



- ▶ Turn high speed screw (H) counterclockwise as far as stop (no more than 3/4 turn).
- ▶ Turn the low speed screw (L) carefully clockwise as far as stop, then turn it back 3/4 turn.

### 13.4 Adjust idle speed

- ▶ Carry out the standard setting.
- ▶ Start and warm up the engine.



#### 13.4.1 Engine stops while idling

- ▶ Turn the idle speed screw (LA) clockwise until the engine runs smoothly – the attachment must not run.

#### 13.4.2 Attachment runs when engine is idling

- ▶ Turn the idle speed screw (LA) counterclockwise until the attachment stops moving and then turn the screw another 1/2 to 1 full turn in the same direction.



#### WARNING

If the attachment continues to run when the engine is idling, have your machine checked and repaired by your servicing dealer.

#### 13.4.3 Erratic idling behavior, poor acceleration (despite correction to setting of LA screw).

Idle setting is too lean

- ▶ Turn the low speed screw (L) counterclockwise, no further than stop, until the engine runs and accelerates smoothly.

#### 13.4.4 Erratic idling behavior

Idle setting is too rich

- ▶ Turn the low speed screw (L) clockwise, no further than stop, until the engine runs and accelerates smoothly.

It is usually necessary to change the setting of the idle speed screw (LA) after every correction to the low speed screw (L).

### 13.5 Fine Tuning for Operation at High Altitude

A slight correction of the setting may be necessary if engine does not run satisfactorily:

- ▶ Carry out the standard setting.
- ▶ Warm up the engine.
- ▶ Turn high speed screw (H) slightly clockwise (leaner) – no further than stop.

#### NOTICE

After returning from high altitude, reset the carburetor to the standard setting.

If the setting is too lean there is a risk of engine damage due to insufficient lubrication and overheating.

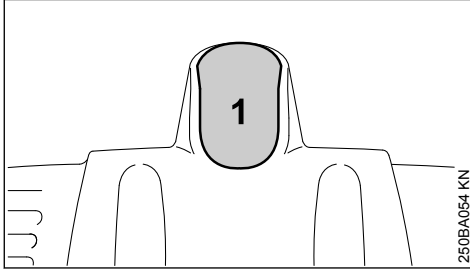
## 14 Spark Plug

- ▶ If the engine is down on power, difficult to start or runs poorly at idle speed, first check the spark plug.

- ▶ Fit a new spark plug after about 100 operating hours – or sooner if the electrodes are badly eroded. Install only suppressed spark plugs of the type approved by STIHL – see "Specifications".

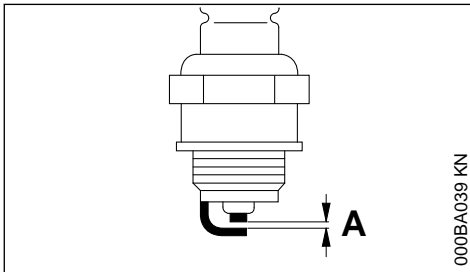
### 14.1 Removing the Spark Plug

- ▶ Turn off the engine.



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

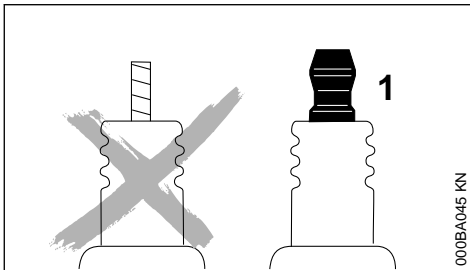
### 14.2 Checking the Spark Plug



- ▶ Clean dirty spark plug.
- ▶ Check electrode gap (A) and readjust if necessary – see "Specifications".
- ▶ Rectify the problems which have caused fouling of the spark plug.

Possible causes are:

- Too much oil in fuel mix.
- Dirty air filter.
- Unfavorable running conditions.

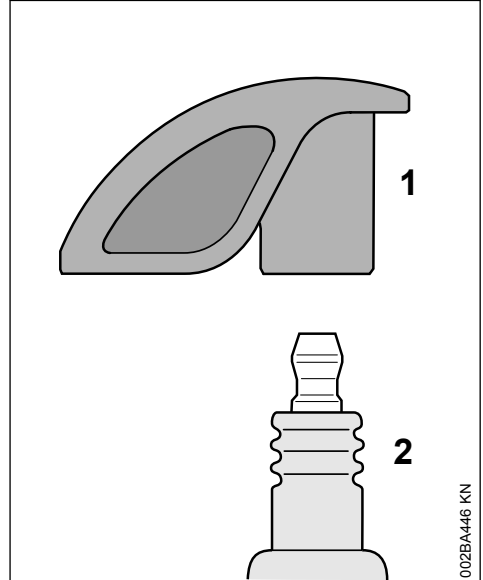


### WARNING

Arcing may occur if the adapter nut (1) is loose or missing. Working in an easily combustible or explosive atmosphere may cause a fire or an explosion. This can result in serious injuries or damage to property.

- ▶ Use resistor type spark plugs with a properly tightened adapter nut.

### 14.3 Installing the Spark Plug



- ▶ Screw the spark plug (2) into the cylinder and fit the boot (1) (press it down firmly).

## 15 Engine Running Behavior

If engine running behavior is unsatisfactory even though the air filter is clean and the carburetor and throttle cable are properly adjusted, the cause may be the muffler.

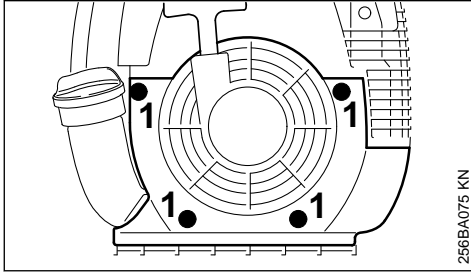
Have the muffler checked by a servicing dealer for contamination (carbonization).

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer.



## 16 Replacing the Starter Rope and Rewind Spring

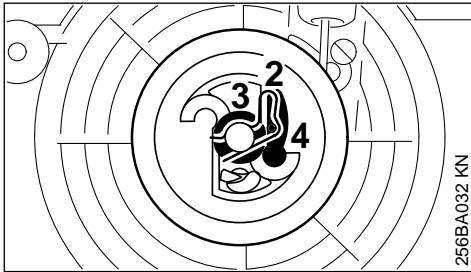
### 16.1 Removing the Fan Housing



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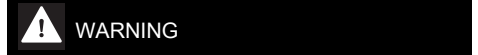
- ▶ Take out the screws (1).
- ▶ Remove the fan housing.

### 16.2 Replacing the Starter Rope

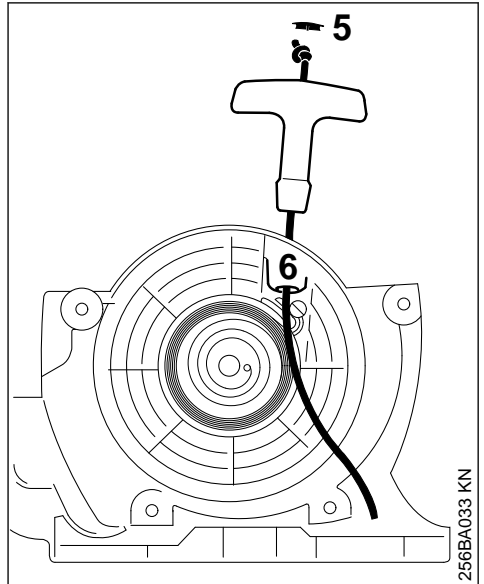


256BA032 KN

- ▶ Remove the spring clip (2).
- ▶ Carefully remove the rope rotor with washer (3) and pawl (4).

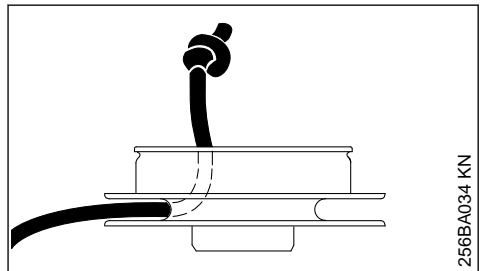


The rewind spring may pop out and uncoil during this operation – **take care to avoid the risk of injury.**



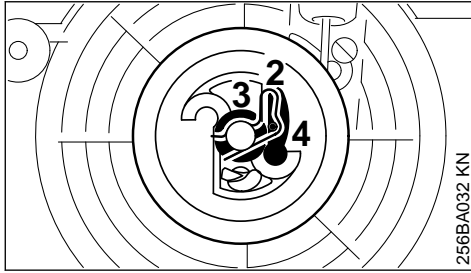
256BA033 KN

- ▶ Pry the cap (5) out of the grip.
- ▶ Remove the remaining rope from the rotor and starter grip.
- ▶ Tie a simple overhand knot in the new rope and then thread it through the top of the grip and the rope bushing (6).
- ▶ Refit the cap in the grip.



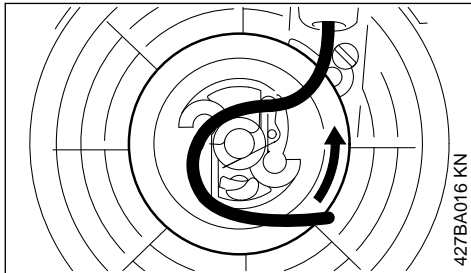
256BA034 KN

- ▶ Thread the rope through the rotor and secure it with a simple overhand knot.
- ▶ Coat the rope rotor bearing bore with non-resinous oil.
- ▶ Slip the rotor over the starter post – turn it back and forth to engage the anchor loop of the rewind spring.



- ▶ Fit the pawl (4).
- ▶ Fit the washer (3).
- ▶ Push the spring clip (2) into position – it must point counterclockwise as shown and engage the pawl's peg.

### 16.3 Tension the rewind spring.



- ▶ Make a loop in the unwound starter rope and use it to turn the rope rotor six full revolutions counterclockwise.
- ▶ Hold the rope rotor steady.
- ▶ Pull out and straighten the twisted rope.
- ▶ Release the rope rotor.
- ▶ Slowly release the starter rope so that it winds onto the rotor.

The starter grip must sit firmly in the rope bushing. If the grip droops to one side: Add one more turn on the rope rotor to increase spring tension.

#### NOTICE

When the starter rope is fully extended it must still be possible to rotate the rotor another one and a half turns. If this is not the case, the spring is **overtensioned and could break**.

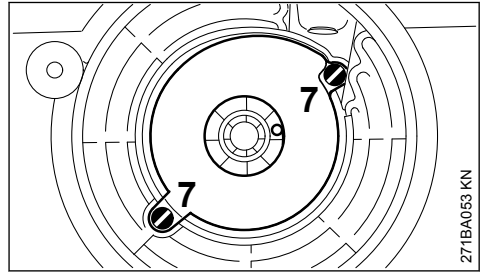
- ▶ Take one turn of the rope off the rotor.
- ▶ Install the fan housing.

### 16.4 Replacing a Broken Rewind Spring

- ▶ Remove the rope rotor as described in "Replacing the Starter Rope".

#### ! WARNING

The bits of the spring may still be under tension and could fly apart when you remove the rope rotor and spring housing. **To reduce the risk of injury**, Wear a face shield and work gloves.



- ▶ Take out the screws (7).
- ▶ Remove the spring housing and pieces of spring.
- ▶ Lubricate the new, ready-to-fit replacement spring in the new spring housing with a few drops of resin-free oil.
- ▶ Place the replacement spring with spring housing in position – bottom plate facing up.

If the spring pops out and uncoils, refit it in the clockwise direction, starting outside and working inwards.

- ▶ Fit the screws.
- ▶ Refit the rope rotor as described in "Replacing the Starter Rope".
- ▶ Tension the rewind spring.
- ▶ Install the fan housing.

## 17 Storing the Machine

For periods of about 3 months or longer

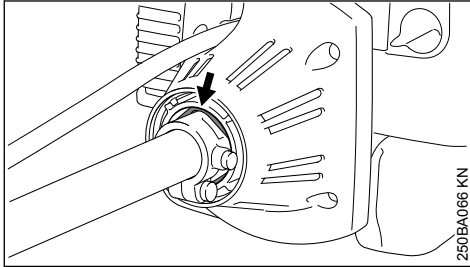
- ▶ Drain and clean the fuel tank in a well ventilated area.
- ▶ Dispose of fuel properly in accordance with local environmental requirements.
- ▶ Run the engine until the carburetor is dry – this helps prevent the carburetor diaphragms sticking together.
- ▶ Thoroughly clean the machine.
- ▶ Check the air filter and replace the element if necessary.
- ▶ Remove, clean and inspect the attachment. Coat metal parts of interchangeable attachment with corrosion inhibiting oil.
- ▶ Store the machine in a dry and secure location – out of the reach of children and other unauthorized persons.

## 18 Inspections and Maintenance by Dealer

### 18.1 Maintenance Work

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer.

### 18.2 Antivibration Element



A vibration-absorbing rubber element is installed between the powerhead and the drive tube. Have it checked if there are signs of wear or a noticeable increase in vibration levels.

## 19 Maintenance and Care

The following intervals apply for normal operating conditions. The specified intervals must be shortened accordingly when working for longer than normal or under difficult cutting conditions (extensive dust, etc.).		Before starting work	At the end of work and/or daily	Whenever tank is refilled	Weekly	Monthly	Annually	if faulty	if damaged	As required
Complete machine	Visual inspection (condition, leaks)	X		X						
	Clean		X							
Control handle	Function test	X		X						
Air filter	Clean							X		X
	replace								X	
Manual fuel pump	check	X								
	Have repaired by a specialist dealer <sup>1)</sup>								X	
Fuel pickup body in fuel tank	check							X		
	replace						X		X	X
Fuel tank	Clean							X		X
Carburetor	Check idle adjustment – the attachment must not move	X		X						
	Set idle speed									X
Spark plug	Adjust electrode gap							X		

The following intervals apply for normal operating conditions. The specified intervals must be shortened accordingly when working for longer than normal or under difficult cutting conditions (extensive dust, etc.).		Before starting work	At the end of work and/or daily	Whenever tank is refilled	Weekly	Monthly	Annually	If faulty	If damaged	As required
	Replace after every 100 hours of operation									
Cooling air intakes	Visual inspection		X							
	Clean									X
All accessible screws, nuts and bolts (not adjusting screws)	Tighten									X
Anti-vibration elements	check	X						X		X
	Have replaced by servicing dealer <sup>1)</sup>								X	
Safety information label	replace								X	
1)STIHL recommends STIHL dealers										

## 20 Minimize Wear and Avoid Damage

Observing the instructions in this manual helps reduce the risk of unnecessary wear and damage to the power tool.

The power tool must be operated, maintained and stored with the due care and attention described in this owner's manual.

The user is responsible for all damage caused by non-observance of the safety precautions, operating and maintenance instructions in this manual. This includes in particular:

- Alterations or modifications to the product not approved by STIHL.
- Using tools or accessories which are neither approved or suitable for the product or are of a poor quality.
- Using the product for purposes for which it was not designed.
- Using the product for sports or competitive events.
- Consequential damage caused by continuing to use the product with defective components.

### 20.1 Maintenance Work

All the operations described in the "Maintenance Chart" must be performed on a regular basis. If

these maintenance operations cannot be performed by the owner, they should be performed by a servicing dealer.

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

If these maintenance operations are not carried out as specified, the user assumes responsibility for any damage that may occur. Among other parts, this includes:

- Damage to the engine due to neglect or deficient maintenance (e.g. air and fuel filters), incorrect carburetor adjustment or inadequate cleaning of cooling air inlets (intake ports, cylinder fins).
- Corrosion and other consequential damage resulting from improper storage.
- Damage to the machine resulting from the use of poor quality replacement parts.

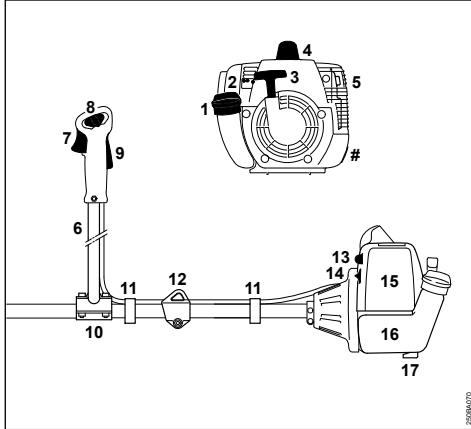
### 20.2 Parts Subject to Wear and Tear

Some parts of the power tool are subject to normal wear and tear even during regular operation in accordance with instructions and, depending on the type and duration of use, have to be

replaced in good time. Among other parts, this includes:

- Clutch
- Filters (air, fuel)
- Rewind starter
- Spark plug

## 21 Main Parts



- 1 Tank cap
- 2 Carburetor adjusting screws
- 3 Starter grip
- 4 Spark plug boot
- 5 Muffler
- 6 Bike handle (handlebar)
- 7 Throttle trigger
- 8 Slide control
- 9 Throttle trigger lockout
- 10 Handle support
- 11 Throttle cable retainers
- 12 Carrying ring
- 13 Manual fuel pump
- 14 Choke knob
- 15 Air filter cover
- 16 Fuel tank
- 17 Machine support
- # Serial number

## 22 Specifications

### 22.1 Engine

Single cylinder two-stroke engine

#### 22.1.1 KA 120

Displacement:	30.8 cc
Bore:	35 mm
Stroke:	32 mm
Engine power to ISO 8893:	1.3 kW (1.8 bhp) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,300 rpm

#### 22.1.2 KA 250

Displacement:	40.2 cc
Bore:	40 mm
Stroke:	32 mm
Engine power to ISO 8893:	1.6 kW (2.2 bhp) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,300 rpm

### 22.2 Ignition System

Electronic magneto ignition

Spark plug (resistor type): Bosch WSR 6 F,  
NGK BPMR 7 A

Electrode gap: 0.5 mm

### 22.3 Fuel System

All position diaphragm carburetor with integral fuel pump

Fuel tank capacity: 640 cc (0.64 l)

### 22.4 Weight

**dry, without attachment**

KA 120:	5.7 kg
KA 250:	5.7 kg

### 22.5 Overall length

**without attachment**

KA 120:	1700 mm
KA 250:	1700 mm

### 22.6 Exhaust Emissions

The CO<sub>2</sub> value measured in the EU type approval procedure is specified at [www.stihl.com/co2](http://www.stihl.com/co2).

The measured CO<sub>2</sub> 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.


## 23 Maintenance and Repairs

Users of this machine may only carry out the maintenance and service work described in this user manual. All other repairs must be carried out by a servicing dealer.

STIHL recommends that you have servicing and repair work carried out exclusively by an authorized STIHL servicing dealer. STIHL dealers are regularly given the opportunity to attend training courses and are supplied with the necessary technical information.

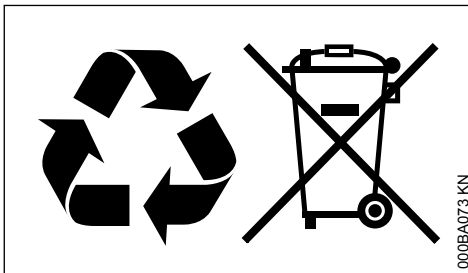
When repairing the machine, only use replacement parts which have been approved by STIHL for this power tool or are technically identical. Only use high-quality replacement parts in order to avoid the risk of accidents and damage to the machine.

STIHL recommends the use of original STIHL replacement parts.

Original STIHL parts can be identified by the STIHL part number, the **STIHL** logo and the STIHL parts symbol  (the symbol may appear alone on small parts).

## 24 Disposal

Observe all country-specific waste disposal rules and regulations.



STIHL products must not be thrown in the garbage can. Take the product, accessories and packaging to an approved disposal site for environment-friendly recycling.

Contact your STIHL servicing dealer for the latest information on waste disposal.



[www.stihl.com](http://www.stihl.com)



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