STIHL®

STIHL KM 85 R

Instruction Manual

Contents

Dear Customer,

Thank you for choosing a quality engineered STIHL product.

This machine has been built using modern production techniques and comprehensive quality assurance. Every effort has been made to ensure your satisfaction and troublefree use of the machine.

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

Your

Hans Peter Stihl

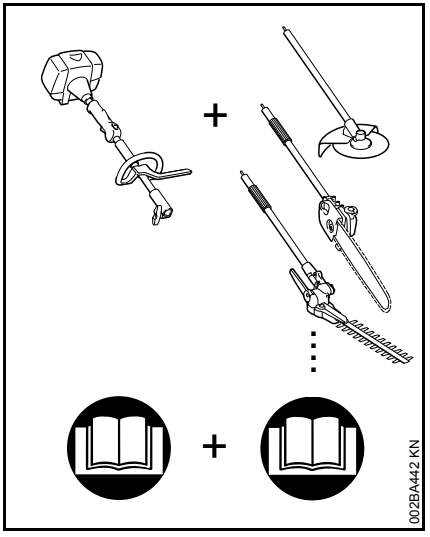
CE

Original Instruction Manual

Printed on chlorine-free paper
Printing inks contain vegetable oils, paper can be recycled.

STIHL®

KombiSystem



In the STIHL KombiSystem a number of different KombiEngines and KombiTools can be combined to produce a power tool. In this instruction manual the functional unit formed by the KombiEngine **and** KombiTools is referred to as the power tool.

Therefore, the separate instruction manuals for the KombiEngine and KombiTool should be used together for the power tool.

Always read and 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.

Guide to Using this Manual

Pictograms

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

Symbols in text

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

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

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.

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 (KombiEngine and KombiTool) 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 application 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 power tool or attend a special course in its operation.

Minors should never be allowed to use a power tool.

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 of rent your machine without the KombiEngine and KombiTool instruction manuals.

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 KombiTool you are using.

Do not use your power tool for any other purpose because of the **increased risk of accidents**.

Do not operate the KombiEngine without a properly mounted KombiTool since this may result in damage to the machine.

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

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

Never attempt to modify your power tool 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 your power tool. The solid jet of water may damage parts of the power tool.

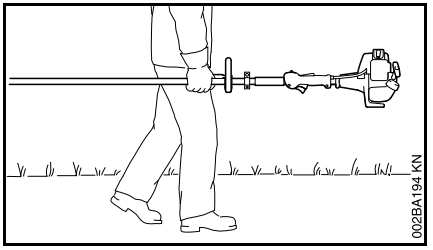
Clothing and Equipment

Wear proper protective clothing and equipment.

Avoid clothing that could get caught on branches or brush or moving parts of the machine. Do not wear a scarf, necktie or jewelry. Tie up and confine long hair (e.g. with a hair net, cap, hard hat, etc.).

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

Transporting the Power Tool



Always turn off the engine.

Transporting in a 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 KombiTool you are using.

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 immediately – 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.

Before Starting

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

- Use only an approved combination of cutting attachment, deflector, handle and harness. All parts must be assembled properly and securely.
- 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 harness and handle to suit your height and reach.

To reduce the risk of personal injury, 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 KombiTool you are using.

Starting the Engine

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

Place the unit on firm ground in an open area. Make sure you have good balance and secure footing. Hold the unit securely. The working tool 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.

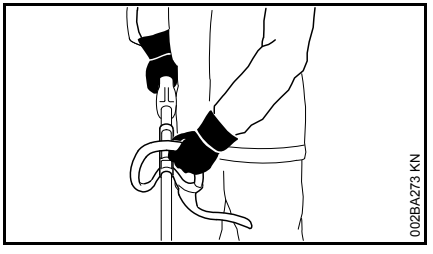
To reduce the risk of fire, keep hot exhaust gases and hot muffler away from easily combustible materials (e.g. wood chips, bark, dry grass, fuel).

See also notes on "Starting / Stopping the Engine" in the instruction manual of the KombiTool you are using.

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.



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

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 working tool continues to move when the engine is idling, have your dealer check the machine and make proper adjustments or repairs. Check and correct the idle speed setting at regular intervals. STIHL recommends you have this work done by a STIHL servicing dealer.

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 power tool only for those applications described in the KombiTool instruction manual.

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. Wear a suitable respirator in very dusty or smoky conditions.

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, have the unit checked by 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 injury, always shut off the engine before changing the KombiTool or working tool.

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.

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 original 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).

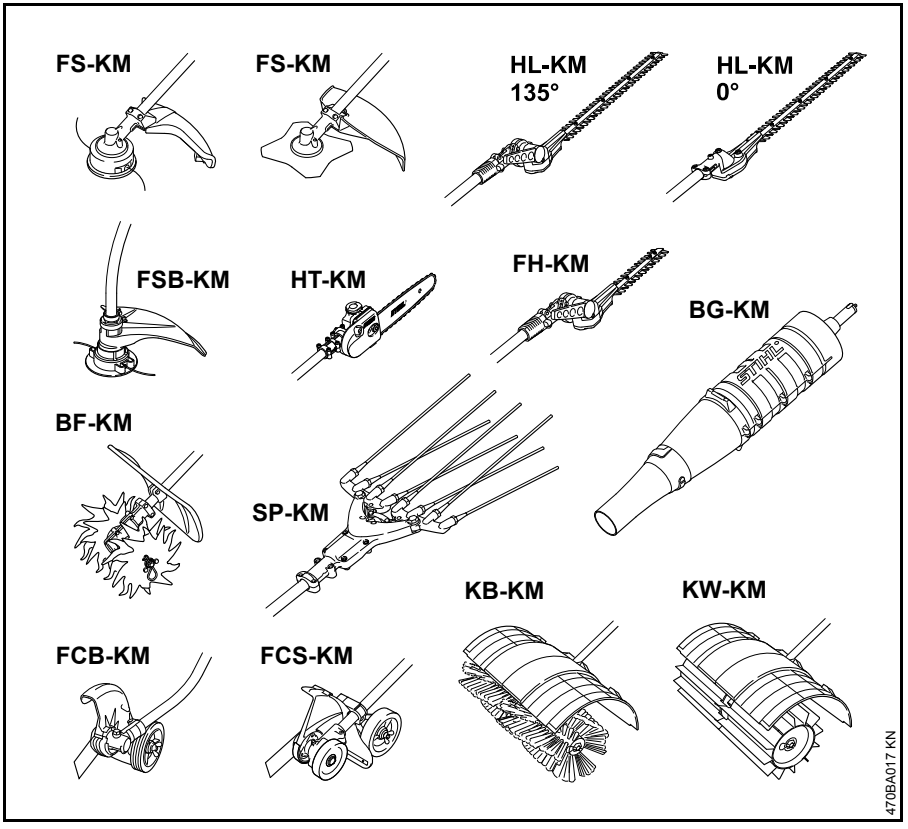
Check the condition of the muffler.

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.

Approved KombiTools



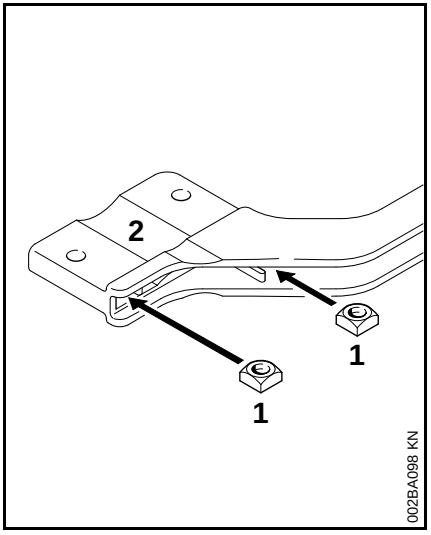
The following STIHL KombiTools may be mounted on the KombiEngine:

KombiTool	Purpose
FS-KM	Brushcutter with mowing head
FS-KM	Brushcutter with grass cutting blade
FSB-KM	Brushcutter with mowing head
HL-KM 135°	Hedge trimmer, adjustable
HL-KM 0°	Hedge trimmer
FH-KM 135°	Power scythe
BG-KM	Blower
HT-KM	Pole pruner
BF-KM	Cultivator
FCB-KM	Power edger
FCS-KM	Power edger
SP-KM	Special harvester
KB-KM	Bristle brush
KW-KM	PowerSweep

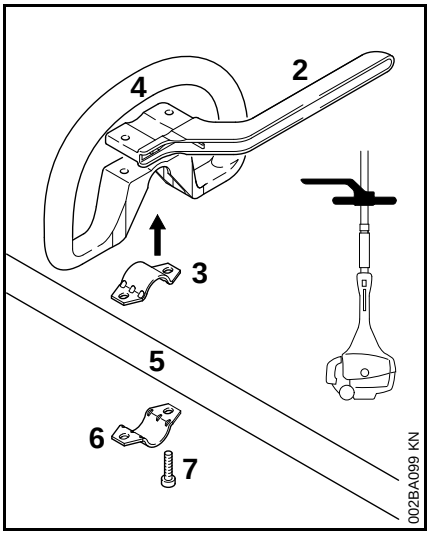
The barrier bar supplied with the machine must be mounted to the loop handle – see also "Mounting the Loop Handle".

Mounting the Loop Handle

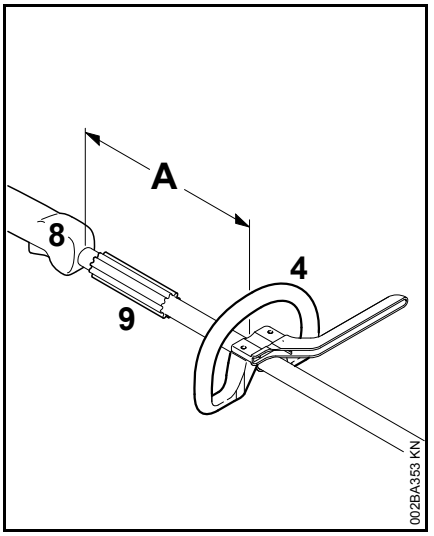
A barrier bar is supplied with the machine. Attach the barrier bar to the loop handle.



- Insert square nuts (1) in the barrier bar (2) – the holes must line up



- Insert the clamp (3) in the loop handle (4) and position them together on the shaft (5)
- Position clamp (6)
- Position barrier bar (2) – note position!
- Line up the holes
- Insert bolts (7) in the holes – and screw them into the barrier bar as far as possible



- Fit the loop handle (4) at a distance of (A) approx. 20 cm (8 in) forward of the control handle (8)
- Orient the loop handle
- Tighten the bolts – lock the nuts if necessary

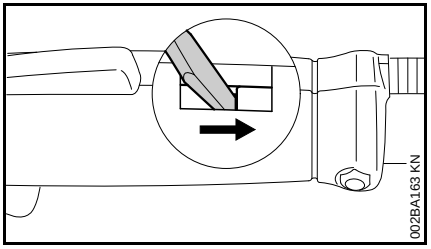
The sleeve (9) is present depending on the country and must be located between the loop handle and control handle.

Always leave the barrier bar attached.

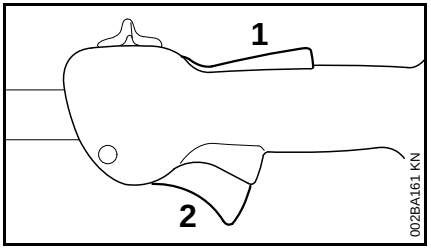
Adjusting the Throttle Cable

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 when the unit is completely and properly assembled.



- 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.

Fuel

The engine requires a mixture of gasoline and engine oil.

⚠

Avoid direct skin contact with and breathing in of gasoline fumes.

STIHL MotoMix

STIHL recommends using STIHL MotoMix. This pre-blended fuel is free of benzene and lead, stands out because of a high octane rating, and always provides the proper mixing ratio.

STIHL MotoMix is blended with STIHL HP Ultra two-stroke engine oil for maximum engine life.

MotoMix is not available in all markets.

Mixing fuel

⚙

Unsuitable fuels or a mixing ratio that deviates from the specification can lead to severe engine damage. The engine, seals, fuel lines and fuel tank may be damaged if poor quality gasoline or engine oil is used.

Gasoline

Use only **high-quality gasoline** with an octane rating of at least 90 ROC – leaded or unleaded.

Unleaded gasoline must be used in machines equipped with a catalytic converter.

⚙

Using multiple tankfuls of leaded gasoline can substantially reduce the effectiveness of the catalytic converter.

Gasoline with an alcohol component exceeding 10% can cause impaired engine performance in engines with manually adjustable carburetors and thus should not be used in these engines.

Engines with M-Tronic deliver full engine performance using gasoline with an alcohol component of up to 25% (E25).

Engine oil

Use only high-quality two-stroke engine oil – ideally **STIHL HP, HP Super or HP Ultra two-stroke engine oil, as they are specially engineered for STIHL engines. HP Ultra ensures maximum performance and engine life.**

The engine oils are not available in all markets.

Only **STIHL two-cycle engine oil 1:50** may be used to produce the fuel mixture for machines with a catalytic converter.

Mixing ratio

for STIHL two-cycle engine oil 1:50; 1:50 = 1 part oil + 50 parts gasoline

Examples

Quantity of gasoline	STIHL two-cycle engine oil 1:50	
Liters	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)

- Pour oil into an approved safety fuel canister first, then add gasoline and mix thoroughly

Storing fuel mixture

Store in approved safety fuel canisters only in a dry, cool and secure place protected against light and sunlight.

Fuel mixture ages – mix only as much as needed for a few weeks. Do not store fuel mixture for longer than three months. The fuel mixture can become unusable faster if exposed to light, sunlight or low or high temperatures.

- Shake the canister containing the fuel mixture thoroughly before refueling

⚠

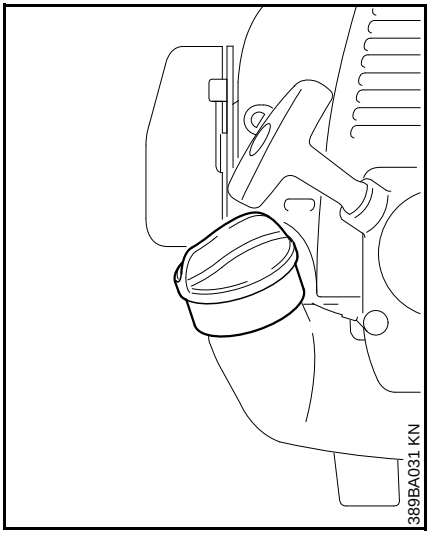
Pressure can build up inside the canister – open carefully.

- The fuel tank and the canister in which fuel mixture is stored should be cleaned thoroughly from time to time

Residual fuel and the liquid used for cleaning must be disposed of in accordance with regulations and without harming the environment!

Fueling

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.

Filling up with fuel

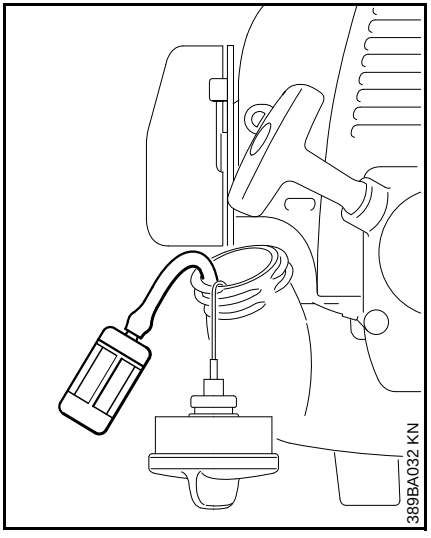
Take care not to spill fuel while fueling and do not overfill the tank. STIHL recommends you use the STIHL filler nozzle for fuel (special accessory).

- Open the filler cap.
- Filling up with fuel

⚠

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

Changing the Fuel Pickup Body

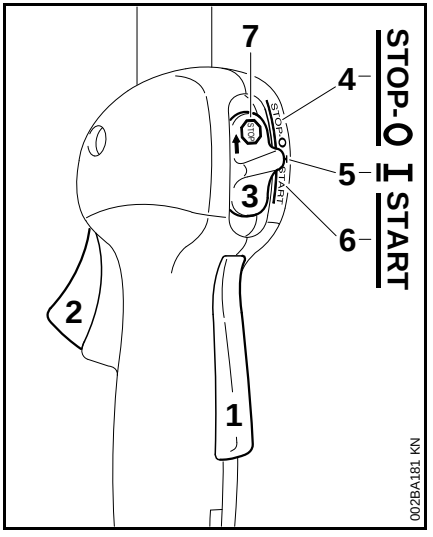


Change the fuel pickup body every year:

- 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.

Starting / Stopping the Engine

Controls



1 Throttle trigger lockout
2 Throttle trigger
3 Slide control

Positions of slide control

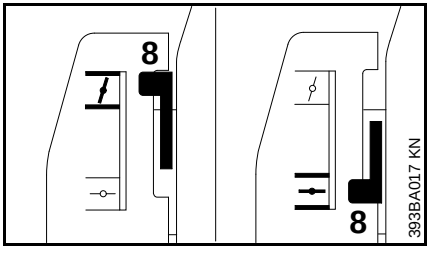
4 **STOP-0** – engine off – the ignition is switched off
5 **I** – normal run position – the engine is running or can start
6 **START** – the ignition is switched on – the engine can start

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**.

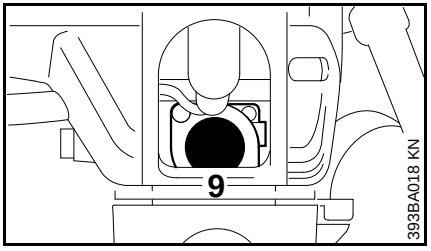
Starting

- Press down the trigger lockout lever and squeeze the throttle trigger.
- Hold both levers in this 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**.



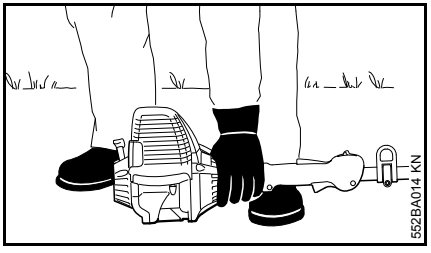
- Set the choke lever (8):

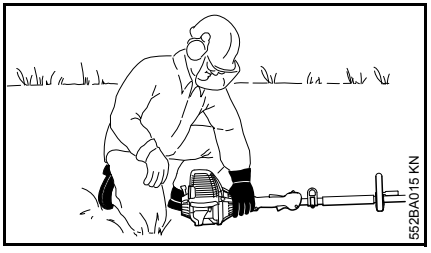
If the engine is cold
for warm start – also use this position if the engine has been running but is still cold.



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

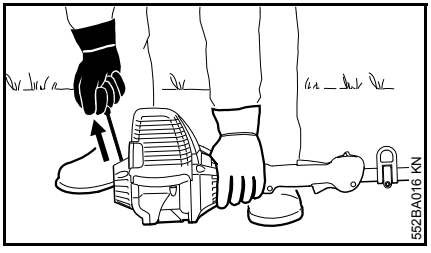
Cranking





- Place the power tool on the ground so that it rests on the machine support: Check that the working tool is not touching the ground or any other obstacles – see also "Starting / Stopping the Engine" in the KombiTool instruction manual.
- Make sure you have a firm footing.
- Hold the unit with your left hand and press it down **firmly** – your thumb should be under the fan housing.

Do not stand or kneel on the drive tube.



- 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.

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.

When the engine begins to fire:

- Set the choke lever to ⇶.
- Continue cranking.

As soon as the engine runs

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

⚠

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

Your machine is now ready for operation.

Shut odd the engine.

- Push the slide control in the direction of the arrow on the stop symbol (STOP) to **STOP-0**.

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 briefly.

If the engine does not start

Choke lever

If you did not move the choke lever to ⇶ quickly enough after the engine began to fire, the combustion chamber is flooded.

- Set the choke lever to ⥱ .
- Set the slide control, lockout lever and throttle trigger to 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

- Move the slide control to **STOP**-**0**.
- Remove the spark plug – see "Spark Plug".
- Dry the spark plug.
- 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 lever to ⥱ – even if the engine is cold.
- Now start the engine.

Throttle cable adjustment

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

Fuel tank run until completely dry

- After refueling, press the fuel pump bulb at least five times – even if the bulb is filled with fuel.
- Set the choke lever to suit the engine temperature.
- Start the engine.

Operating Instructions

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.

During Operation

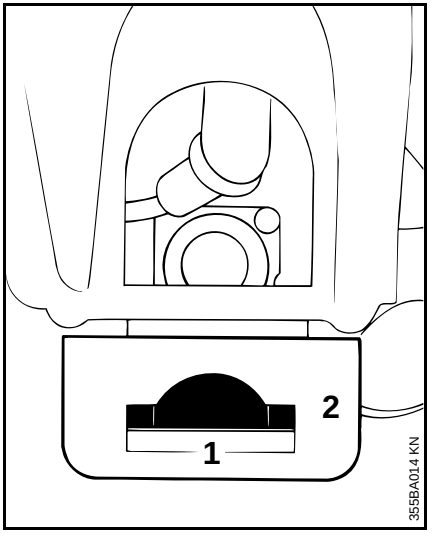
After a long period of full throttle operation, allow the engine to run for a short while at idle speed so that engine heat can be dissipated by the flow of cooling air. This protects engine-mounted components (ignition, carburetor) from thermal overload.

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".

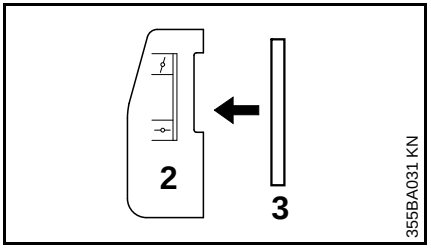
Cleaning the Air Filter

If there is a noticeable loss of engine power

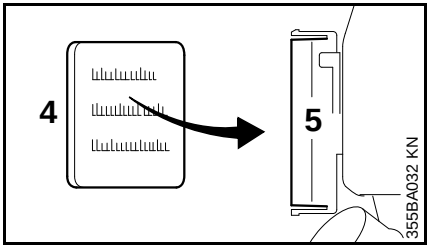


- Set the choke lever to ⥱.
- Press in the tab (1) and swing the filter cover (2) away.
- Clean away loose dirt from around the filter.
- Remove the foam and felt filter elements.
- Wash the foam element in a clean, non-flammable solution (e.g. warm soapy water) and then dry.
- Fit a new felt element – do not wash. As a temporary measure you can knock it out on the palm of your hand or blow it out with compressed air.

Replace damaged parts.



- Fit the foam filter element (3) in the filter cover (2).



- Place the felt element (4) (lettering facing inwards) in the filter housing (5).
- Fit the filter cover and make sure it snaps into position.

Adjusting the Carburetor

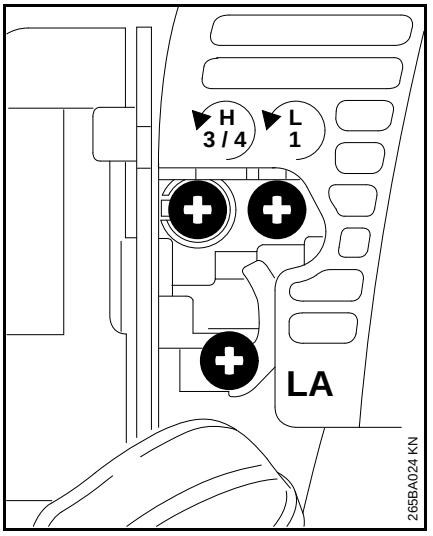
The carburetor comes from the factory with a standard setting.

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

With this carburetor it is only possible to adjust the high speed and low speed screws within fine limits.

Standard Setting

- Shut odd the engine.
- Mount the KombiTool complete with working tool or cutting attachment.
- Check the air filter and clean or replace as necessary.
- Check that the throttle cable is properly adjusted – readjust if necessary – see chapter on "Adjusting the Throttle Cable".
- Check the spark arresting screen (not in all versions) and clean or replace as necessary.



- 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 1 turn.
- Start and warm up the engine if necessary.
- Adjust idle speed with the idle speed screw (LA) so that the cutting attachment does not move.

Fine Tuning

A slight correction of the setting of the high speed screw (H) may be necessary if engine power is not satisfactory when operating at high altitude, sea level or after changing the working tool.

Rule of thumb:

Turn the high speed screw (H) about one quarter turn for every 1000m change in altitude.

Conditions for adjustment

- Carry out standard setting on low speed screw (L).
- Warm up the engine for about 3 minutes.
- Open the throttle wide.

At high altitude

- Turn the high speed screw (H) clockwise (leaner), no further than stop, until there is no further noticeable increase in engine speed.

At sea level

- Turn the high speed screw (H) counterclockwise (richer), no further than stop, until there is no further noticeable increase in engine speed.

It is possible that maximum engine speed may be reached with the standard setting in each case.

Adjusting Idle Speed

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

- Warm up the engine for about 3 minutes.

Engine stops while idling

- Turn the idle speed screw (LA) slowly clockwise until the engine runs smoothly – the working tool or cutting attachment must not move.

Cutting attachment runs when engine is idling

- Turn the idle speed screw (LA) counterclockwise until the working tool or cutting attachment stops moving and then rotate the screw another 1/2 to 1 turn in the same direction.

⚠

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

Erratic idling behavior, engine stops even though setting of LA-screw has been corrected, poor acceleration

Idle setting is too lean

- Idle setting is too lean: Rotate the low speed screw (L) about 1/4 turn counterclockwise until the engine runs and accelerates smoothly.

Erratic idling behavior

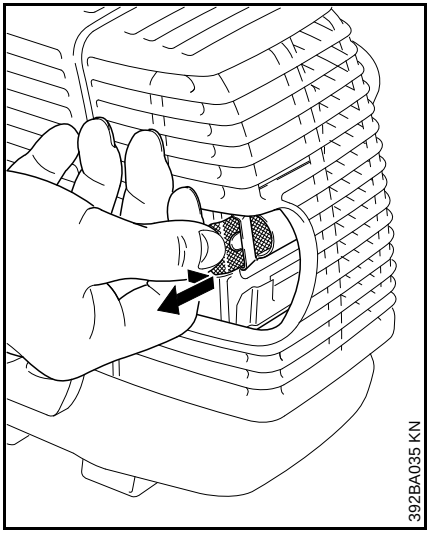
Idle setting is too rich

- Rotate the low speed screw (L) about 1/4 turn clockwise until the engine runs and accelerates smoothly.

Spark Arresting Screen in Muffler

In some countries the muffler is equipped with a spark arresting screen.

If the engine is down on power, check the spark arresting screen in the muffler.



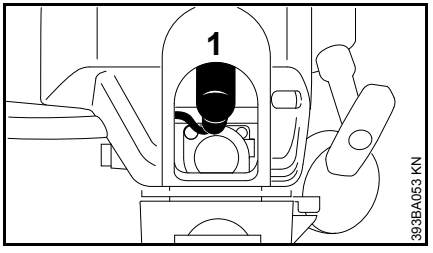
- Lift the spark arresting screen and pull it out.
- Clean the spark arresting screen. If the screen is damaged or heavily carbonized, fit a new one.
- Refit the spark arresting screen.

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".

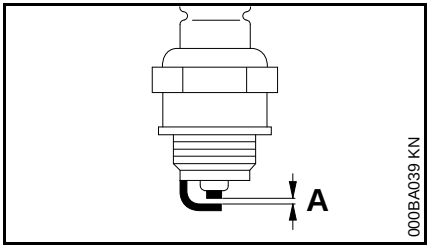
Removing the Spark Plug

- Move the slide control to **STOP-0**.



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

Checking the spark plug



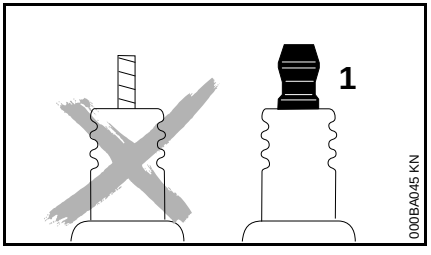
- Clean dirty spark plug.
- Check electrode gap (A) and readjust if necessary – see "Specifications".
- Rectify the problems which have caused fouling of the spark plug.

Possible causes are:

– Too much oil in fuel mix.

– Dirty air filter.

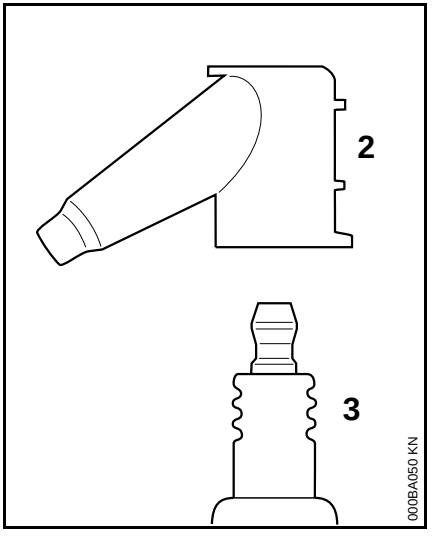
– Unfavorable running conditions.



⚠

If the spark plug comes with a detachable adapter nut (1), screw the adapter onto the thread and tighten it down **firmly** to reduce the **risk of arcing and fire**.

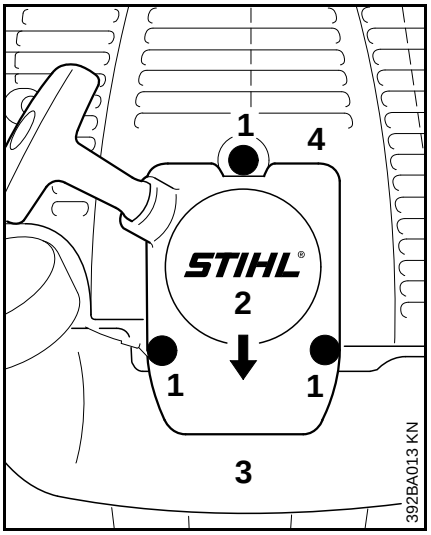
Installing the Spark Plug



- Screw the spark plug (3) into the cylinder and fit the boot (2) (press it down firmly).

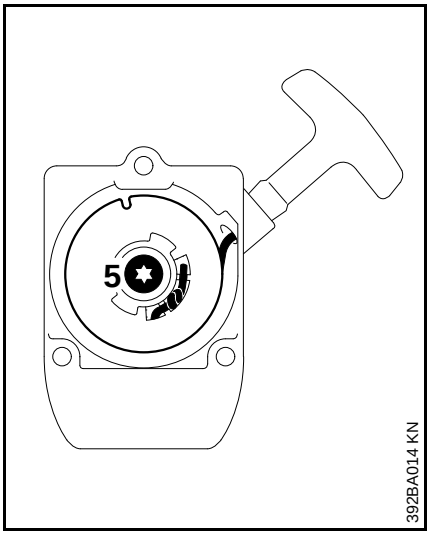
Replacing the Starter Rope and Rewind Spring

Removing the Starter Cover



- Take out the screws (1).
- Lift the cover (2) away from the tank (3) and pull it out from under the shroud (4).

Remove the rope rotor.

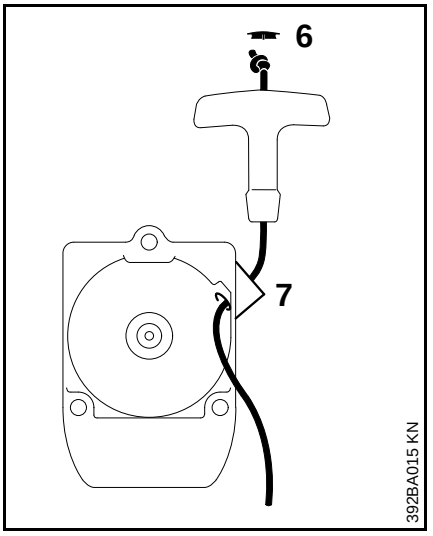


- Take out the screw (5) and remove the rope rotor.

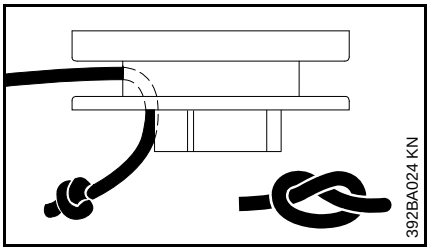
⚠

The rewind spring is seated in the rope rotor and may pop out and uncoil if care is not taken. The pieces of broken spring may be under tension and fly apart unexpectedly when you remove the rope rotor – **to help reduce the risk of injury,** wear face protection and work gloves.

Replacing the starter rope



- Use a screwdriver to pry the cap (6) out of the starter grip.
- Remove the remaining rope from the rotor and grip, making sure the ElastoStart sleeve is not pushed out of the grip.
- Tie a simple overhand knot in the new rope and then thread it through the top of the grip and the rope bushing (7).
- Refit the cap in the grip.



- Thread the rope through the rotor and secure it with a simple overhand knot.
- Go to "Installing the Rope Rotor".

Replacing a broken rewind spring

Two types of replacement springs are available from the factory:

– A ready-to-fit rewind spring secured with a wire retainer.

– A rope rotor with pre-installed rewind spring.

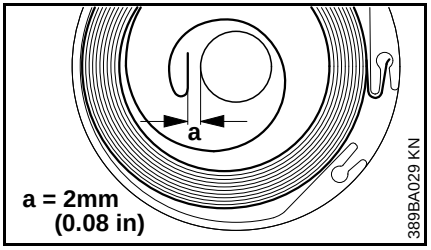
Installing the ready-to-fit rewind spring

- Lubricate the spring with a few drops of non-resinous oil – see "Special Accessories" – do not open the wire retainer!
- Carefully remove the parts of the old spring from the starter cover and rope rotor.
- Insert the new rewind spring in the rope rotor and, at the same time, engage the outer spring loop in the rotor's recess – the wire retainer slips off in this process. If the spring pops out and uncoils, refit it in the counterclockwise direction, starting outside and working inwards.
- Go to "Installing the Rope Rotor".

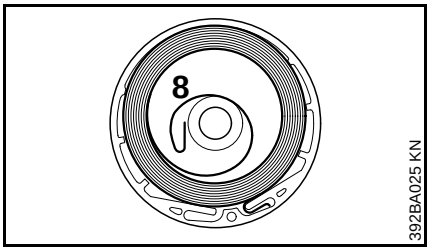
Installing rope rotor with rewind spring

- Carefully unpack the new rope rotor with rewind spring. The spring may pop out if not handled with care –**risk of injury.**
- Lubricate the spring with a few drops of non-resinous oil – see "Special Accessories".
- Go to "Installing the Rope Rotor".

Installing the Rope Rotor

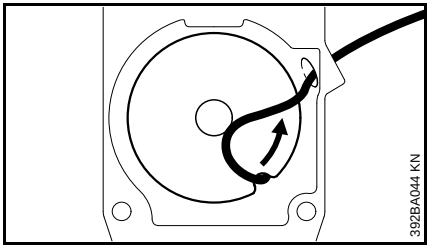


- Check dimension a for inner spring anchor loop and bend it slightly if necessary.
- Coat rope rotor bearing bore with non-resinous oil – see "Special Accessories".



- Slip the rotor over the starter post – turn it back and forth to engage the anchor loop (8) of the rewind spring.
- Insert the screw (5) and tighten it down firmly.
- Go to "Tensioning the Rewind Spring".

Tensioning the rewind spring

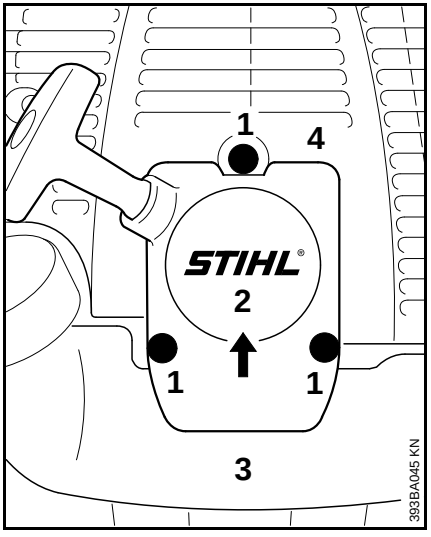


- Make a loop in the unwound starter rope and use it to turn the rope rotor six full revolutions counterclockwise.
- Hold the rotor steady. Pull out and straighten the twisted rope.
- Let go of the rotor.
- Release the rope slowly so that it winds onto the rotor.
- Check spring tension:

- The starter grip must be firmly seated in the rope bushing. If the grip droops to one side: Add one more turn on rope rotor to increase spring tension
- When the starter rope is fully extended it must still be possible to rotate the rotor another half turn. If this is not the case, the spring is overtensioned **and could break**. Take one turn of the rope off the rotor.

- Go to "Fitting the Starter Cover".

Fitting the Starter Cover



- Push the upper mounting boss of the cover (2) under the shroud (4).
- Line up the tank and push the bottom of the cover onto the tank.
- Insert the screws (1) and tighten them down firmly.

Storing the Machine

For periods of 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 – pay special attention to the cylinder fins and air filter.
- Remove, clean and inspect the working tool.
- Store the machine in a dry, high or locked location, out of the reach of children and other unauthorized persons.

Maintenance and Care

The following intervals apply to normal operating conditions only. If your daily working time is longer or operating conditions are difficult (very dusty work area, etc.), shorten the specified intervals accordingly.		before starting work	after finishing work or daily	after each refueling stop	weekly	monthly	every 12 months	if problem	if damaged	if required
Complete machine	Visual inspection (condition, leaks)	X		X						
	Clean		X							
Control handle	Check operation	X		X						
Air filter	Clean							X		X
	Replace								X	
Pickup body in fuel tank	Check							X		
	Replace						X		X	X
Fuel tank	Clean							X		X
Carburetor	Check idle adjustment – the working tool must not move	X		X						
	Adjusting Idle Speed									X
Spark plug	Adjust electrode gap							X		
	Replace after every 100 operating hours									
Cooling inlets	Visual Inspection		X							
	Clean									X
Sparl arresting screen[1] in muffler	Check							X		X
	Clean or replace								X	X
All accessible screws and nuts (not adjusting screws)	Retighten									X
Antivibration elements	Check	X						X		X
	Have replaced by dealer[2]								X	
Safety labels	Replace								X	

1) not in all versions, market-specific

2) STIHL recommends a STIHL servicing dealer.

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.

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:

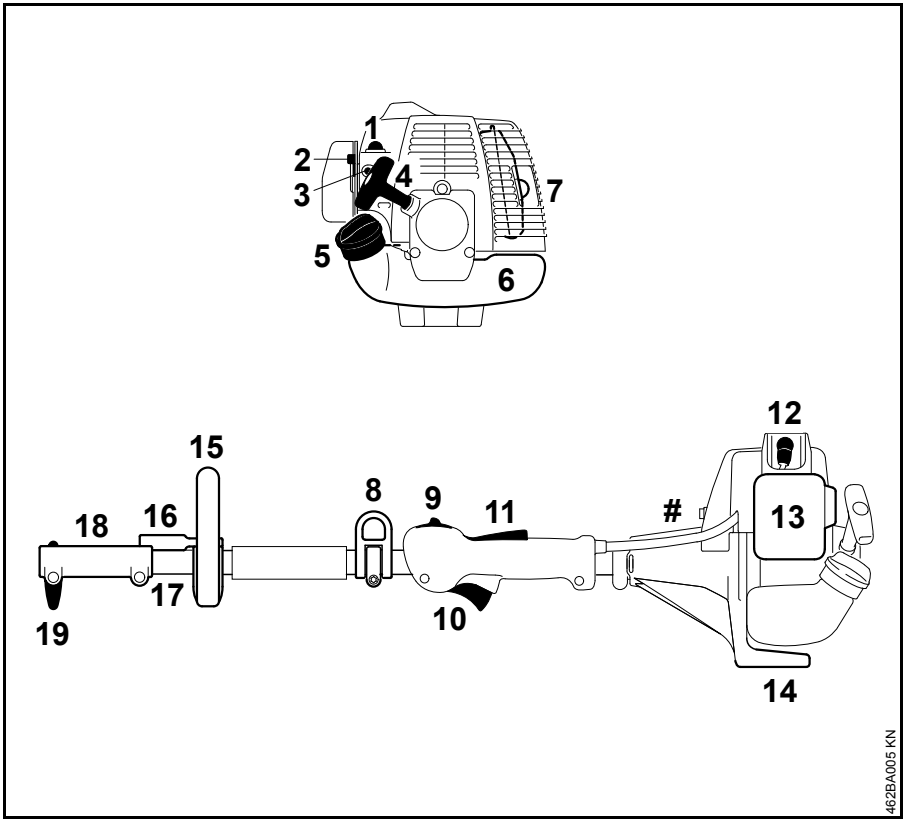
- Damage to the engine due to neglect or deficient maintenance (e.g. air and fuel filters), incorrect carburetor adjustment or inadequate cleaning of cooling air inlets (intake ports, cylinder fins).
- Corrosion and other consequential damage resulting from improper storage.
- Damage to the machine resulting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

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

Main Parts



1 Fuel pump
2 Choke lever
3 Carburetor adjusting screws
4 Starter grip
5 Fuel filler cap
6 Fuel tank
7 Muffler (some versions with spark arresting screen)
8 Carrying ring
9 Slide control
10 Throttle trigger
11 Throttle trigger interlock
12 Spark plug boot
13 Air filter cover
14 Machine support
15 Loop handle
16 Barrier bar
17 Drive tube
18 Coupling sleeve
19 Wing screw
Serial number

Specifications

Engine

Single cylinder two-stroke engine

Displacement:	25.4 cm^3
Bore:	34 mm
Stroke:	28 mm
Engine power to ISO 8893:	0.95 kW (1.3 HP) at 8,500 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	10,500 rpm

Ignition System

Electronic magneto ignition

Spark plug (resistor type):	Bosch WSR 6 F, NGK BPMR 7 A
Electrode gap:	0.5 mm

Fuel System

All position diaphragm carburetor with integral fuel pump

Fuel tank capacity:	0.44 l

Weight

dry, without KombiTool

KM 85 R:	4.0 kg

Noise and Vibration Data

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

KombiTool

For version see "Approved KombiTools".

Noise and vibration data measurements include idling and rated maximum speed in the following ratios.

FCS-KM, FCB-KM, FS-KM, FSB-KM, FH-KM and HT-KM	1:1
HL-KM	1:4
BF-KM, BK-KM, KB-KM, KW-KM, BG-KM and SP-KM	1:6

Sound pressure level L_{peq} to ISO 11201, ISO 22868, ISO 6081, ISO 7917

KM 85 R:	91 dB(A) ... 97 dB(A)

Sound power level L_{weq} to EN ISO 11680-1, ISO 10884, ISO 22868, ISO 3744

KM 85 R:	104 dB(A) ... 108 dB(A)

Vibration measurement $a_{hv,eq}$ to ISO 11789, ISO 20643, ISO 22867, ISO 7916, ISO 8662

Handle, left

KM 85 R:	2.2 m/s^2 ... 8.5 m/s^2

Handle, right

KM 85 R:	4.8 m/s^2 ... 8.2 m/s^2

The K-factor in accordance with Directive 2006/42/EC is 2.5 dB(A) for the sound pressure level and sound power level; the K-factor in accordance with Directive 2006/42/EC is 2.0 m/s^2 for the vibration measurement.

REACH

REACH is an EC regulation and stands for the Registration, Evaluation, Authorisation and Restriction of Chemical substances.

For information on compliance with the REACH regulation (EC) No. 1907/2006 see www.stihl.com/reach.

Special Accessories

- Safety glasses
- Shoulder strap
- Full harness
- Combination wrench
- Carburetor screwdriver
- STIHL ElastoStart (starter rope with grip)
- Special resin-free lubricating oil

Contact your STIHL dealer for more information on these and other special accessories.

See also notes on special accessories in the KombiTool instruction manual.

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).

EC Declaration of Conformity

ANDREAS STIHL AG & Co. KG
Badstr. 115
D-71336 Waiblingen

confirms that the product described below

Category:	KombiEngine
Make:	STIHL
Type:	KM 85 R
Serial identification:	4137
Displacement:	25.4 cm^3

conforms to the specifications of Directives 2006/42/EC and 2004/108/EC and has been developed and manufactured in compliance with the following standards:.

EN ISO 12100, EN 55012,
EN 61000-6-1 (in conjunction with the following KombiTools: BF-KM, BK-KM, BG-KM, FCB-KM, FCS-KM, FH-KM, FS-KM, FSB-KM, HL-KM, HT-KM, KB-KM, KW-KM and SP-KM).

The KombiEngine described here may be operated only in conjunction with the KombiTools approved by STIHL for use with this KombiEngine.

Technical documents deposited at:

ANDREAS STIHL AG & Co. KG
Produktzulassung (Product Licensing)

The year of manufacture and serial number are applied to the product.

Done at Waiblingen, 24.08.2009
ANDREAS STIHL AG & Co. KG

Elsner
Director Group Product Management

Quality Certification

All STIHL products comply with the highest quality standards.

An independent organization has certified that all products manufactured by STIHL meet the strict requirements of the ISO 9001 standard for quality management systems in terms of product development, materials purchasing, production, assembly, documentation and customer service.

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