STIHL®

STIHL FS 300, 350, 400, 450, 480

Instruction Manual
Notice d'emploi

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

Original Instruction Manual

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

STIHL®

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

Some special safety precautions must be observed to reduce the risk of personal injury when operating this power tool because of the very high speed of its cutting attachment.

It is important you read and understand the instruction manual before using your power tool for the first time and keep the manual 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 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.

Do not lend or rent your power tool without the instruction manual. Be sure that anyone using it understands the information contained in this manual.

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. To reduce health risks, STIHL recommends that persons with pacemakers consult their physician and the pacemaker manufacturer before operating this tool.

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

Depending on the cutting attachment fitted, use your power tool only for cutting grass, wild growth, shrubs, scrub, bushes, small diameter trees and similar materials.

Do not use your power tool for any other purpose since **this may result in accidents**.

Only use cutting attachments and accessories that are explicity approved for this power tool model by STIHL or are technically identical. 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 the unit. The solid jet of water may damage parts of the unit.

The deflector on this power tool cannot protect the operator from all objects thrown by the cutting attachment (stones, glass, wire, etc.). Such objects may ricochet and then hit the operator.

Clothing and Equipment

Wear proper protective clothing and equipment.

Clothing must be sturdy but allow complete freedom of movement. Wear snug-fitting clothing, an overall and jacket combination, do not wear a work coat.

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.).

Wear steel-toed safety boots with non-slip soles.

Sturdy shoes with non-slip soles may be worn as an alternative only when using mowing heads.

Wear a safety hard hat for thinning operations, when working in high scrub and where there is a danger of head injuries from falling objects. To reduce the risk of injury from thrown objects, always wear a face shield and safety glasses.

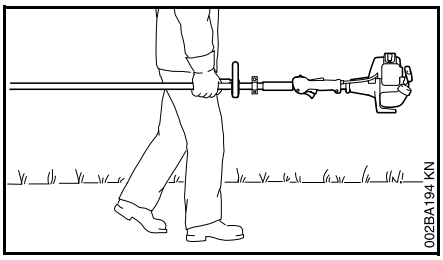
A face shield alone does not provide adequate eye protection.

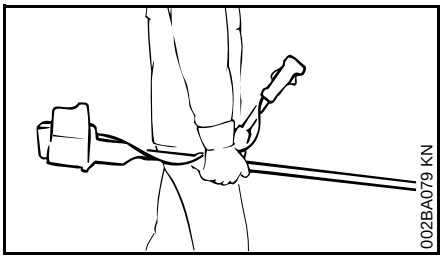
Wear hearing protection, e.g. earplugs or ear muffs.

Wear heavy-duty gloves.

STIHL offers a comprehensive range of personal protective clothing and equipment.

Transporting the Power Tool





Always turn off the engine.

Carry the unit hanging from the shoulder strap or properly balanced by the drive tube. Fit transport guard on metal cutting attachments to avoid the risk of injury from blade contact

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

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.

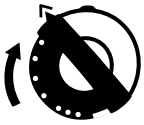
Do not fuel a hot engine – **fuel may spill and cause a fire**.

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 manual.

- 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 interlock (if fitted) 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**.
- Cutting tool or attachment: Check for correct and secure assembly and good condition.
- Check protective devices (e.g. deflector for cutting tool, rider plate) for damage or wear. Always replace damaged parts. Do not operate your machine with a damaged deflector or worn rider plate (lettering and arrows no longer legible).
- Never attempt to modify the controls or the 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. See chapters on "Fitting the Harness" and "Balancing the Trimmer/Brushcutter".

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: Practise removing and putting down the machine as you would in an emergency. To avoid damage, do not throw the machine to the ground when practising.

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 cutting attachment must be clear of the ground and all other obstructions because it may begin to run when the engine starts.

Your power tool is a one-person unit. **To reduce the risk of injury** from thrown objects, do not allow other persons within a radius of 15 meters of your own position – even when starting.

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

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

Check idle speed setting: The cutting attachment must not rotate when the engine is idling with the throttle trigger released.

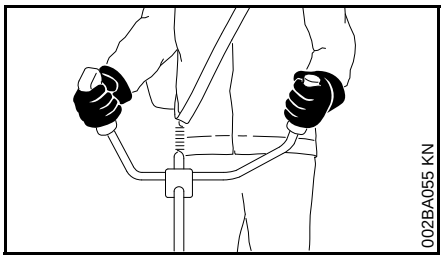
To reduce the risk of fire, keep hot exhaust gases and hot muffler away from easily combustible materials (e.g. wood chips, bark, dry grass, fuel).

Holding and Controlling the Power Tool

Always hold the unit firmly with both hands on the handles.

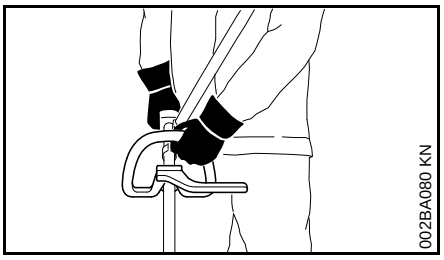
Make sure you always have good balance and secure footing.

Models with bike handle



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

Models with loop handle

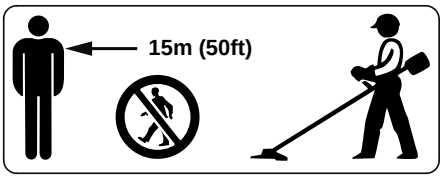


On units with a loop handle and barrier bar, left hand on loop handle, right hand on control handle, even if you are left-handed.

During Operation

Make sure you always have good balance and secure footing.

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**.



To reduce the risk of personal injury , do not allow any other persons within a radius of 15 meters of your own position. To reduce the risk of damage to property, also maintain this distance from other objects (vehicles, windows).

The correct engine idle speed is important to ensure that the cutting attachment stops rotating when you let go of the throttle trigger.

Check and correct the idle speed setting at regular intervals. If the cutting attachment still rotates at idle speed, have your dealer make proper adjustments or repairs. STIHL recommends a STIHL servicing dealer.

Take special care in slippery conditions – damp, snow, ice, on slopes or uneven ground.

Watch out for obstacles: Roots, tree stumps or holes which could cause you to trip or stumble.

Always stand on the ground while working, never on a ladder, work platform or any other insecure support.

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.

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 for cutting.

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, have the machine checked by your servicing dealer.

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

To **reduce the risk of injury** from thrown objects, never operate the unit without the proper deflector for the type of cutting attachment being used.

Inspect the work area: Stones, pieces of metal or other solid objects can be thrown and cause personal injury or damage the cutting attachment and property (e.g. parked vehicles, windows).

Special care must be taken when working in difficult, over-grown terrain.

When cutting high scrub, under bushes and hedges: Keep cutting tool at minimum height of 15 cm to avoid harming small animals.

Always shut off the engine before leaving the unit unattended.

Check the cutting attachment at regular short intervals during operation or immediately if there is a noticeable change in cutting behavior:

- Turn off the engine. Hold the unit firmly and wait for the cutting attachment to come to a standstill.
- Check condition and tightness, look for cracks.
- Check sharpness.
- Replace damaged or dull cutting attachments immediately, even if they have only superficial cracks.

Clean grass and plant residue off the cutting attachment mounting at regular intervals – remove any build up of material from the cutting attachment and deflector.

To **reduce the risk of injury**, shut off the engine before replacing the cutting attachment.

Do not continue using or attempt to repair damaged or cracked cutting attachments by welding, straightening or modifying the shape (out of balance).

This may cause parts of the cutting attachment to come off and hit the operator or bystanders at high speed and **result in serious or fatal injuries**.

When using mowing heads

Equip the deflector with the additional components specified in the instruction manual.

Use only the deflector with properly mounted line limiting blade to ensure the mowing lines are automatically trimmed to the approved length.

To **reduce the risk of injury**, always turn off the engine before adjusting the nylon line of manually adjustable mowing heads

Using the unit with over-long nylon cutting lines reduces the motor's operating speed. The clutch then slips continuously and this causes overheating and damage to important components (e.g. clutch, polymer housing components) – and this can increase the risk of injury from the cutting attachment rotating while the engine is idling.

When using metal cutting tools

STIHL recommends the use of original STIHL metal cutting attachments. They are specifically designed to match your model and meet your performance requirements.

Metal cutting attachments rotate at very high speed. The forces that occur act on the machine, the attachment and the material being cut.

Sharpen metal cutting attachments regularly as specified.

Unevenly sharpened metal cutting attachments cause out-of-balance which can impose extremely high loads on the machine and increase the **risk of breakage**.

Dull or improperly sharpened cutting edges can put a higher load on the cutting attachment and increase the **risk of injury** from cracked or broken parts.

Inspect metal cutting attachments for cracks or warping after every contact with hard objects (e.g. stones, rocks, pieces of metal). To **reduce the risk of injury**, remove burrs and other visible build-ups of material (use a file) because they may become detached and be thrown at high speed during operation.

To reduce the above-mentioned risks when using a metal cutting attachment, never use a metal cutting attachment with a diameter larger than specified. It must not be too heavy. It must be manufactured from materials of adequate quality and its geometry must be correct (shape, thickness).

To **reduce the risk of injury**, a metal cutting attachment not manufactured by STIHL must not be heavier, thicker, have a different shape or a diameter larger than the largest metal cutting attachment approved by STIHL for this power tool model.

Vibrations

Prolonged use of the power tool may result in vibration-induced circulation problems in the hands ("white finger 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 sensation)
- Low outside temperatures
- Amount of gripping force (holding the power tool tightly restricts circulation)

Users who use the machine periodically or for long periods or users who repeatedly experience corresponding symptoms (e.g., tingling sensation in fingers), should undergo a medical examination.

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.

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual. However, if you make a warranty claim for a component which has not been serviced or maintained properly or if nonapproved replacement parts were used, STIHL may deny coverage.

For any maintenance please refer to the maintenance chart and to the warranty statement near the end of the instruction manual.

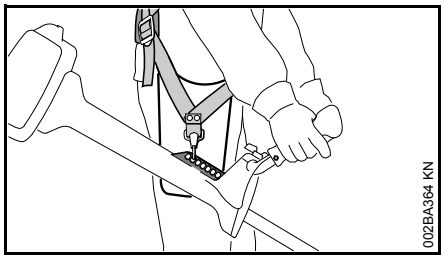
Symbols on Deflectors

An arrow on the deflector shows the correct direction of rotation of the cutting attachments.

Use deflector in combination with mowing heads only. Do not use metal cutting attachments.

Harness / Strap

The harness is included in the scope of supply or available as a special accessory.

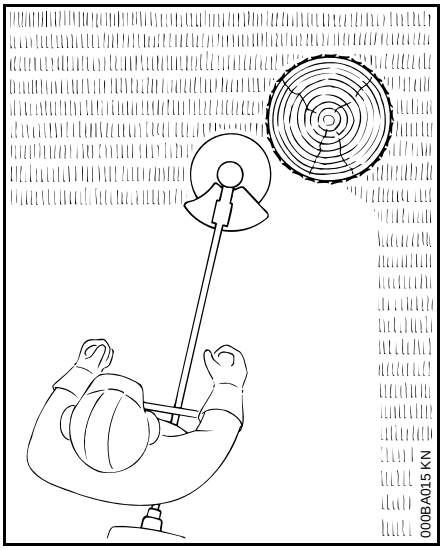


- Use a shoulder strap.
- With the engine running, attach the machine to the shoulder strap.

Grass cutting blades, brush knives and shredder blades must always be used in combination with a full harness.

Circular saw blades must always be used in combination with a full harness with a quick-release system.

Mowing Head with Nylon Lines



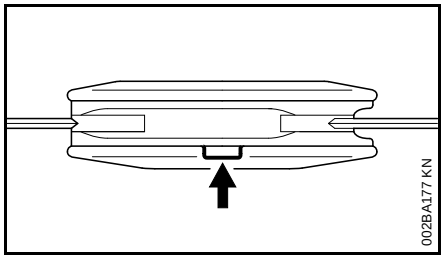
Nylon line achieves a soft cut for edging and trimming around trees, fence posts, etc. – less risk of damaging tree bark.

⚠ **To reduce the risk of injury, never** use steel wire in place of the nylon cutting line.

STIHL Polycut Mowing Head with Polymer Blades

For mowing unobstructed edges of meadows (without posts, fences, trees or similar obstacles).

Check the wear limit marks!

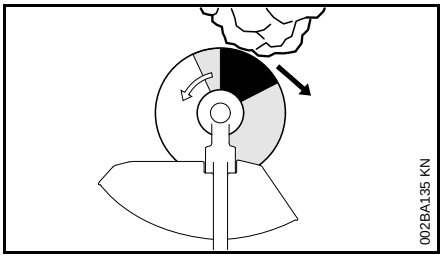


If one of the wear limit marks on the PolyCut mowing head is worn through (arrow): Do not continue using the mowing head. Install a new one. There is otherwise a **risk of injury** from thrown parts of the head.

It is important to follow the maintenance instructions for the Polycut mowing head.

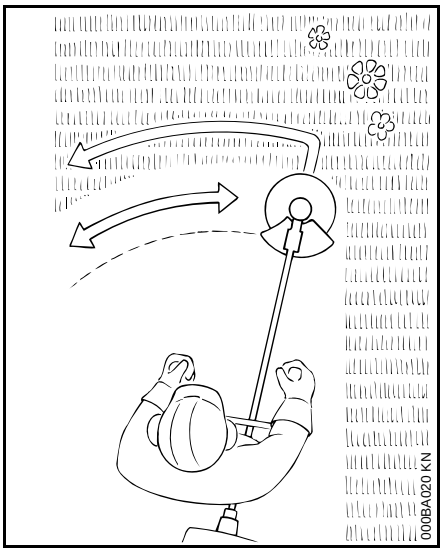
Risk of Kickout (Blade Thrust) with Metal Cutting Attachments

When using metal cutting attachments (grass cutting blade, brush knife, shredder blade, circular saw blade) there is a risk of kickout when the rotating blade comes into contact with a solid object such as a tree trunk, branch, tree stump, rock or similar. The machine is thrown to the right or to the rear – opposite to the attachment's direction of rotation.



The **risk of kickout is greatest** when the **black area** of the rotating cutting attachment comes into contact with a solid object.

Grass Cutting Blade



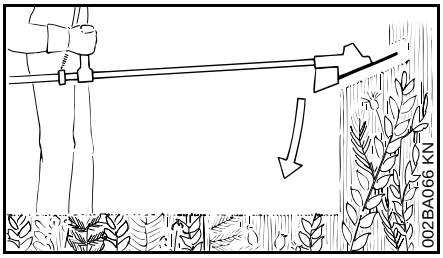
Use for grass and weeds only – sweep the brushcutter in an arc like a scythe.

⚠ Improper use may damage the grass cutting blade – **risk of injury** from thrown parts.

Resharpen the grass cutting blade according to instructions when it has dulled noticeably.

Brush Knife

Suitable for cutting matted grass, wild growth and scrub, thinning young stands with a maximum stem diameter of 2 cm. To **reduce the risk of personal injury**, never attempt to cut thicker wood.



To cut wild growth and scrub, lower the brush knife down onto the growth to achieve shredding effect – do not use the cutting attachment above waist height.

Exercise extreme caution when using this method of cutting. The higher the cutting attachment is off the ground, the greater the risk of injury from cuttings being thrown sideways.

Use the brushcutter like a scythe (sweep it to the right and left) at ground level when cutting grass and thinning young stands.

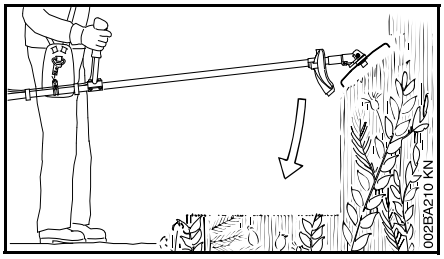
Warning! Improper use of a brush knife may cause it to crack, chip or shatter – **risk of injury** from thrown parts.

To reduce the risk of injury it is essential to take the following precautions

– Avoid contact with stones, rocks, pieces of metal and other solid foreign objects.
– Never cut wood or shrubs with a stem diameter of more than 2 cm – use a circular saw blade for this purpose.
– Inspect the brush knife at regular short intervals for signs of damage. Do not continue working with a damaged brush knife.
– Resharpen the brush knife regularly (when it has dulled noticeably) and have it balanced if necessary (STIHL recommends a STIHL servicing dealer).

Shredder Blade

Suitable for thinning and shredding tough, matted grass and scrub.



To cut wild growth and scrub, lower the shredder blade down onto the growth to achieve shredding effect – do not use the cutting attachment above waist height.

Exercise extreme caution when using this method of cutting. The higher the cutting attachment is off the ground, the greater the risk of injury from cuttings being thrown sideways.

Warning! Improper use may damage the shredder blade – **risk of injury** from thrown parts.

To reduce the risk of injury it is essential to take the following precautions:

– Avoid contact with stones, rocks, pieces of metal and other solid foreign objects.
– Never cut wood or shrubs with a stem diameter of more than 2 cm.
– Inspect the shredder blade at regular short intervals for signs of damage. Do not continue working with a damaged shredder blade.
– Resharpen the shredder blade when it has dulled noticeably and have it balanced if necessary (by servicing dealer).

Circular Saw Blade

For cutting shrubs and trees:

Up to a stem diameter of 4 cm when used on brushcutters.

Up to a stem diameter of 7 cm when used on clearing saws.

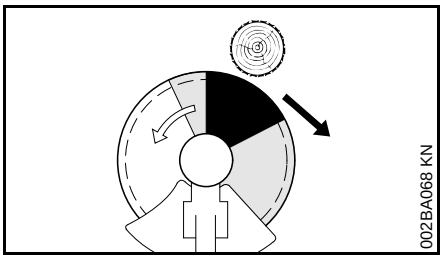
Before starting the cut, accelerate the engine up to full throttle. Perform cut with uniform pressure.

Use circular saw blades only with a matching limit stop of the correct diameter.

⚠ To reduce the risk of blade damage, avoid contact with stones and the ground. Resharpen the blade properly in good time – dull teeth may result in the blade cracking and shattering and causing serious injury.

When felling, maintain a distance of at least two tree lengths from the next felling site.

Risk of kickout

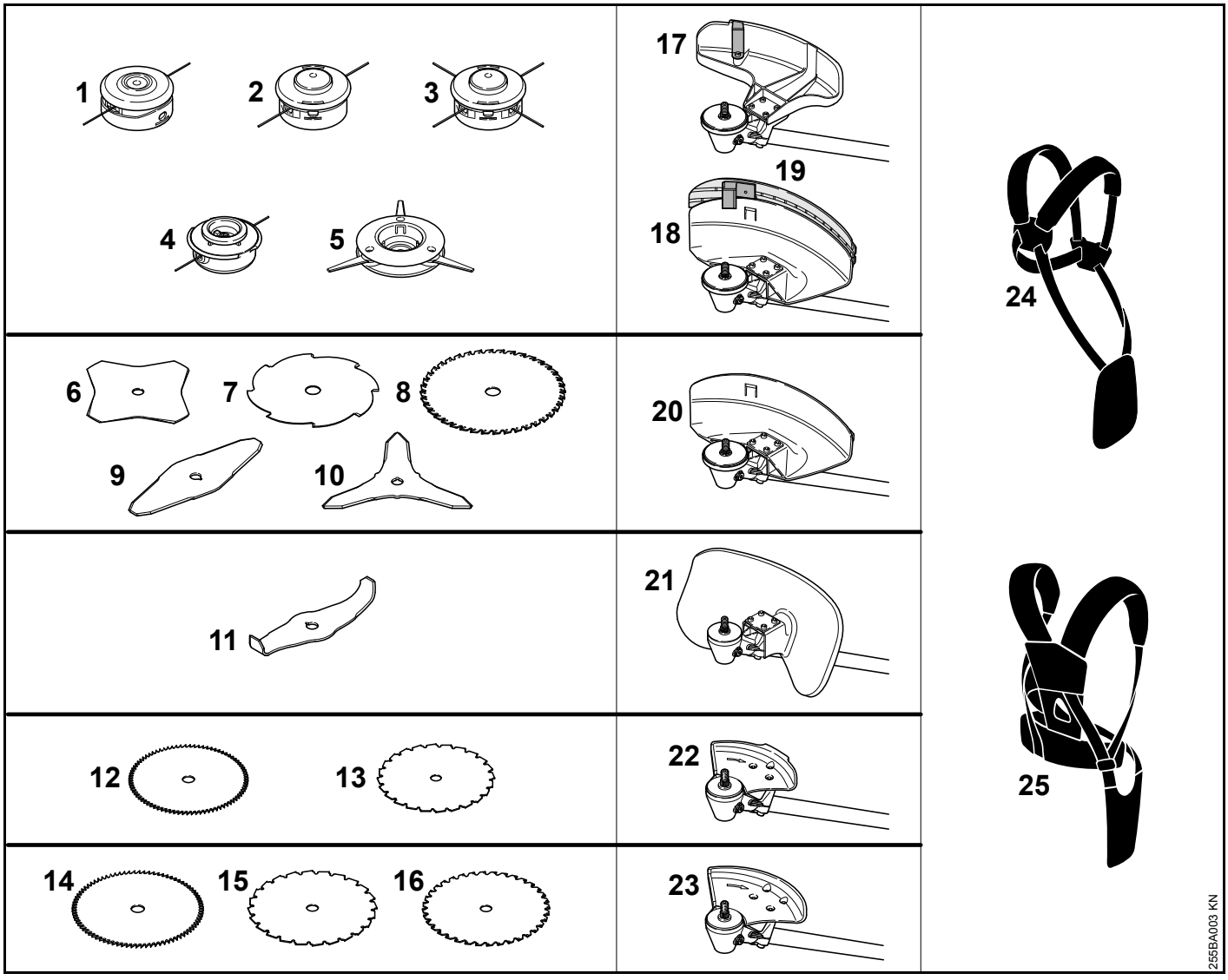


The risk of kickout is highest in the black area of the blade: Do not use this area of the circular saw blade for cutting.

There is also a risk of kickout when using the lighter shaded areas of the blade: These areas of the blade should only be used by experienced operators with specialized training.

STIHL recommends that you use the non-shaded area of the circular saw blade. Always start the cut with this area of the blade.

Approved Combinations of Cutting Attachment, Deflector, Limit Stop and Harness



Approved Combinations

Select correct combination from the table according to the cutting attachment you intend to use.

⚠ For safety reasons only the cutting attachment and deflectors or limit stops shown in each row of the table may be used together. No other combinations are permitted because of the **risk of accidents**.

Cutting Attachments

Mowing heads

1 STIHL SuperCut 40-2
2 STIHL AutoCut 40-2
3 STIHL AutoCut 40-4[1)]
4 STIHL TrimCut 41-2
5 STIHL PolyCut 40-3

Metal cutting attachments

6 Grass cutting blade 230-4
7 Grass cutting blade 255-8
8 Grass cutting blade 250-40 Spezial
9 Brush knife 305-2 Spezial
10 Brush knife 300-3
11 Shredder blade 270-2
12 Scratcher tooth circular saw blade 200
13 Chisel tooth circular saw blade 200
14 Scratcher tooth circular saw blade 225[2)]
15 Chisel tooth circular saw blade 225[2)]
16 Carbide tipped circular saw blade 225[2)]

⚠ Non-metal grass cutting blades, brush knives, shredder blades and circular saw blades are not approved.

Deflectors, limit stops

Deflectors

17 Deflector**only** for mowing heads
18 Deflector **with**
19 Skirt and blade for mowing heads (see "Mounting the Deflector").
20 Deflector **without** skirt and blade for mowing tools 6 to 10
21 Deflector for shredder blade

Limit stops

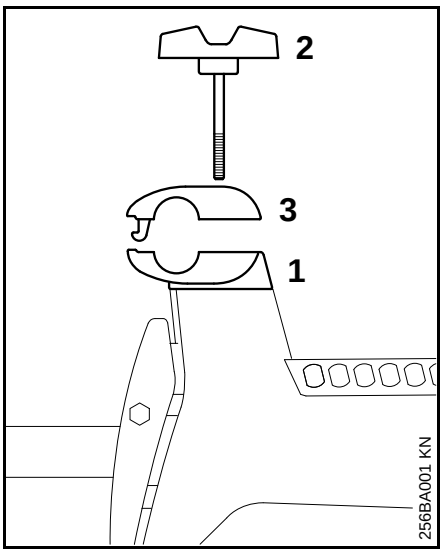
22 Limit stop for circular saw blades 200
23 Limit stop for circular saw blades 225

Harnesses

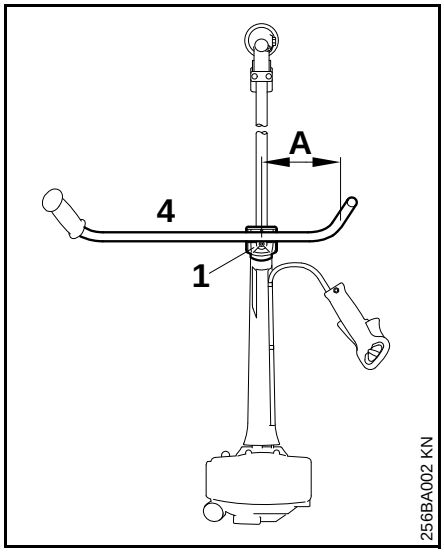
24 Full harness must be used
25 Deluxe full harness

1) for FS 450, 480 only
2) for FS 400, 450, 480 only

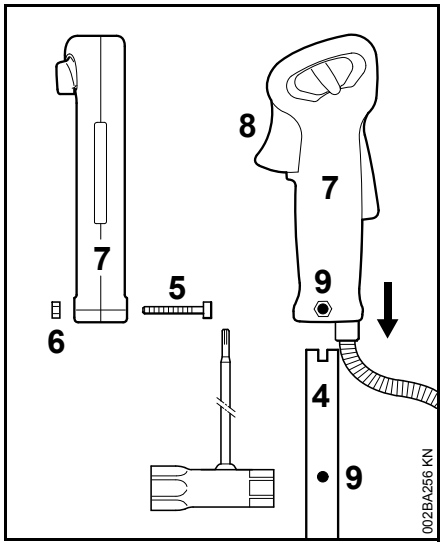
Mounting the Bike Handle



- Hold the lower clamp (1) steady.
- Unscrew and remove the clamping screw (2). The clamps are loose once the clamping screw has been removed.
- Remove the upper clamp (3) from the lower clamp.



- Place the handlebar (4) in the lower clamp (1) so that distance A is no more than 15 cm.
- Place the upper clamp in position and press it down.
- Insert the clamping screw.
- Line up the handlebar at a right angle to the drive tube.
- Tighten down the clamping screw firmly.



- Take out the screw (5), the nut (6) remains in the control handle (7).
- Push the control handle onto the end of the handlebar (4) until the holes (9) line up – the throttle trigger (8) must point towards the gearbox.
- Insert the screw and tighten it down firmly.
- Go to "Adjusting the Throttle Cable".

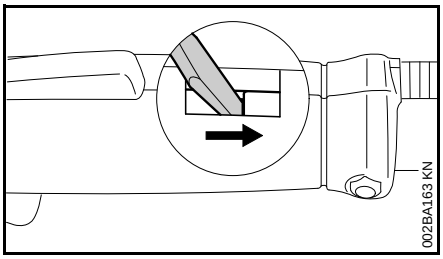
Transport and storage position: Loosen the clamping screw, turn the handlebar in line with the drive tube and fold the handles down.

Adjusting the Throttle Cable

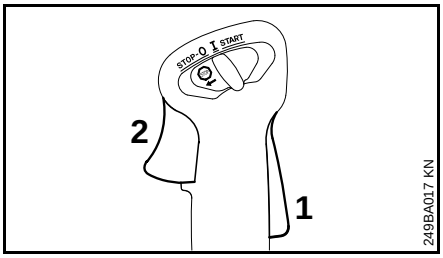
Some machine versions are equipped with a throttle cable adjuster on the control handle.

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.



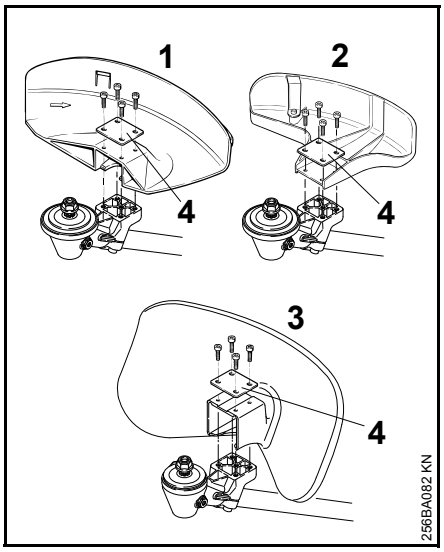
- Use a suitable tool to push the slide to the end of the slot (see illustration).



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

Mounting the Deflector

Deflector

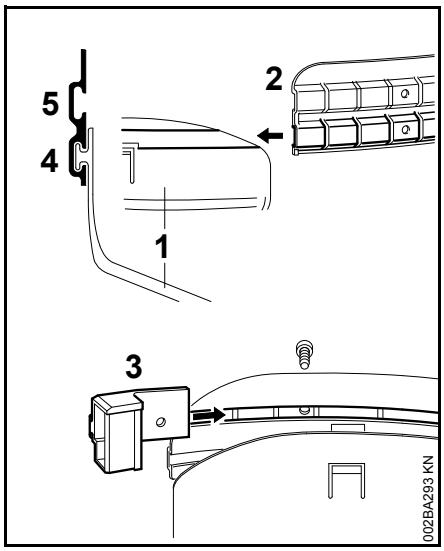


1 Deflector for mowing tools
2 Deflector for mowing heads
3 Deflector for shredder blade
4 Plate

Mounting the deflector

- Place the deflector and plate in position.
- Insert the screws and tighten them down firmly.

Fitting the skirt and blade



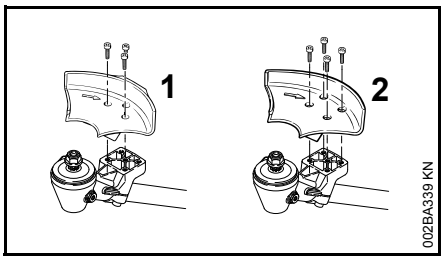
⚠ These parts must be fitted to the deflector (1) when you use a mowing head.

- Slide the skirt (2) onto the deflector (1) – use guide slot (4) for all nylon line mowing heads.
- Push the blade (3) into the upper guide slot on the skirt and line it up with the first hole.
- Insert the screw and tighten it down firmly.

PolyCut 40-3 mowing head

- Slide the skirt into guide slot (5) for the PolyCut 40-3.

Limit stop



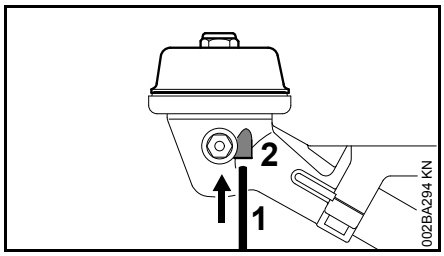
1 Limit stop for circular saw blades 200
2 Limit stop for circular saw blades 225

Mounting the limit stop

- Place the limit stop in position.
- Insert the screws and tighten them down firmly.

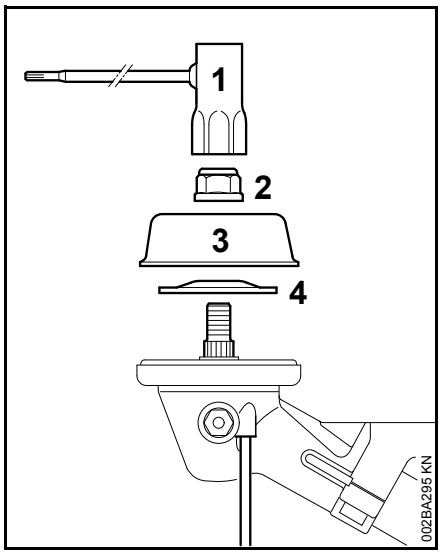
Mounting the Cutting Attachment

Blocking the Drive Shaft



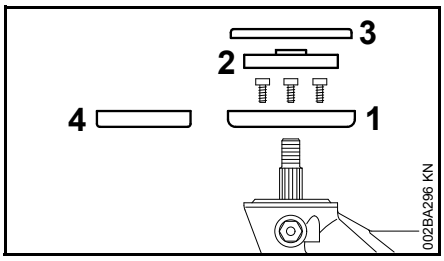
- Insert the stop pin (1) in the bore (2) in the gearhead as far as stop, apply slight pressure.
- Rotate the shaft until the stop pin slips into position.

Removing the Mounting Hardware



- Block the drive shaft.
- Use the combination wrench (1) to loosen and remove the nut (2) clockwise.
- Remove the rider plate (3) and thrust washer (4) (where fitted).

Mounting the Guard Ring



The guard ring (1, 4) is included in the scope of supply or available as a special accessory.

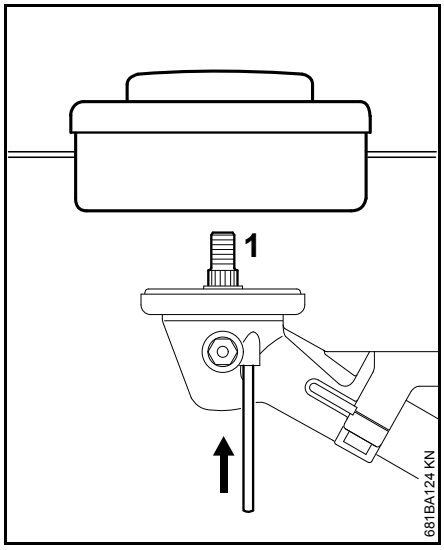
For optimum protection from the ingress of grass when using **mowing tools**:

- Mount the guard ring (1) for mowing applications, fit the thrust plate (2) and thrust washer (3).

Before mounting a **circular saw blade**:

- Remove the guard washer (3) and thrust plate (2).
- Remove the guard ring (1) for mowing applications.
- Fit the guard ring (4) for saw blades.
- Fit the thrust plate (2).

STIHL SuperCut, STIHL AutoCut, STIHL TrimCut



- Block the drive shaft.
- Screw the mowing head counterclockwise onto the shaft (1) and tighten it down firmly.

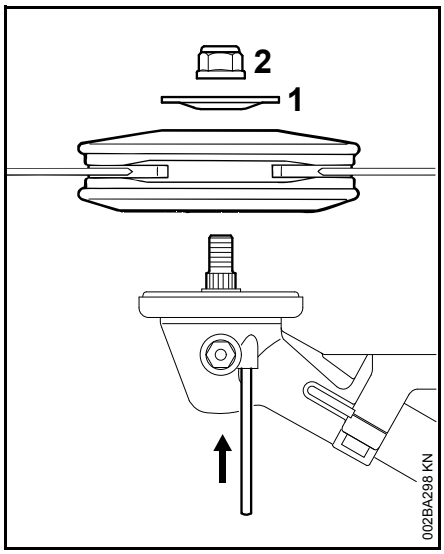
Remove the tool used to block the shaft.

Keep the instruction sheet for the mowing head in a safe place.

Removing the mowing head

- Block the drive shaft.
- Unscrew the mowing head clockwise.

STIHL PolyCut 40-3 Mowing Head



- Block the drive shaft.
- Position the mowing head on the shaft.
- Fit the thrust washer (1) – convex side must face down.
- Screw on the nut (2) counterclockwise and tighten it down firmly.

Remove the tool used to block the shaft.

Removing STIHL PolyCut 40-3

- Block the drive shaft.
- Unscrew the mounting nut clockwise.

If the mounting nut has become too loose, fit a new one.

Adjusting Nylon Line

The instruction sheet supplied with the mowing head contains a detailed description.

SuperCut mowing head

Fresh line is advanced automatically and trimmed to the correct length by the blade on the deflector. Line feed operates only if both lines are still at least 6 cm long.

AutoCut mowing head

- Hold the rotating mowing head above the grass surface.
- Tap it on the ground once – fresh line is advanced and the blade on the deflector trims it to the right length.

Line feed operates only if both lines are still at least 2.5 cm long.

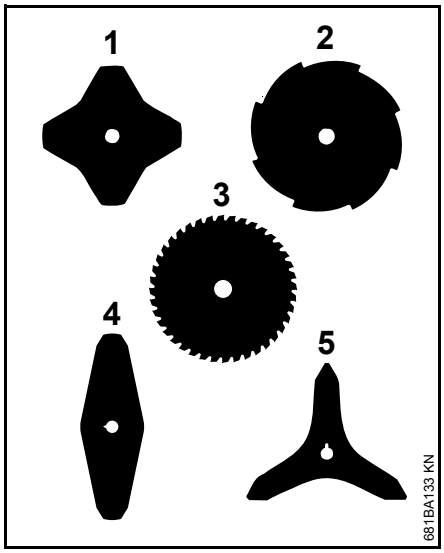
TrimCut mowing head

- Shut off the engine – push the slide control in the direction of the arrow on the stop symbol (STOP) to **STOP**-**0**.
- Pull the spool up – rotate it about 1/6 turn counterclockwise until it engages – and allow it to spring back.
- Pull ends of the lines outward.

Repeat the above procedure as necessary until both lines are about 14 cm long.

Rotating the spool from one stop to the next advances about 4 cm of fresh line.

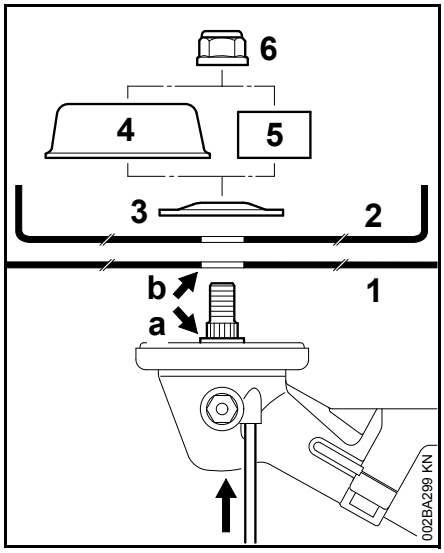
Grass Cutting Blades, Brush Knife, Shredder Blade



Cutting attachments with 2, 3 or 4 blades may point in either direction – these cutting attachments must be turned over regularly to help avoid one-sided wear.

The cutting edges of the grass cutting blades 255-8 (2) and 250-40 Spezial (3) must point clockwise.

- Fit the guard ring for mowing applications.



- Place the cutting attachment (1) in position.

⚠ Collar (a) must locate in the cutting attachment's mounting hole (b).

The cutting edges of the shredder blade (2) must point upwards.

- Fit the thrust washer (3) – convex side must face up.
- Fit the rider plate (4) (for mowing) or guard ring (5) (for shredder blade).
- Block the drive shaft.
- Screw on the nut (6) counterclockwise and tighten it down firmly.

Remove the tool used to block the shaft.

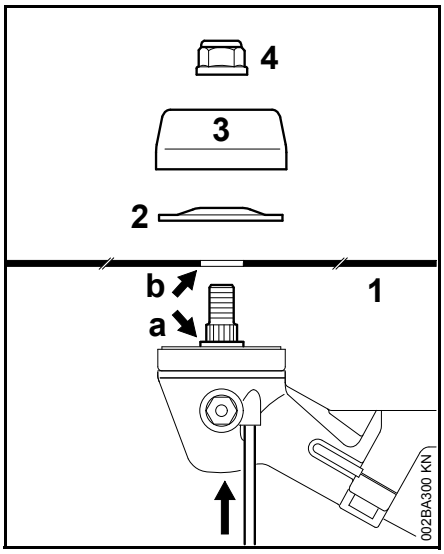
Removing the cutting attachment

- Block the drive shaft.
- Unscrew the mounting nut clockwise.

⚠ If the mounting nut has become too loose, fit a new one.

Circular Saw Blades 200 and 225

- Fit the guard ring for saw blades.



- Place the cutting attachment (1) in position – the cutting edges must point clockwise.

⚠ Collar (a) must locate in the cutting attachment's mounting hole (b).

- Fit the thrust washer (2) – convex side must face up.
- Fit the rider plate (3) (for saw blades).

- Block the drive shaft.
- Screw on the nut (4) counterclockwise and tighten it down firmly.

⚠ Remove the tool used to block the shaft.

Removing the cutting attachment

- Block the drive shaft.
- Unscrew the mounting nut clockwise.

⚠ If the mounting nut has become too loose, fit a new one.

Fuel

This engine is certified to operate on unleaded gasoline and with the mix ratio 50:1.

Your engine requires a mixture of high-quality premium gasoline and high-quality two-stroke air-cooled engine oil.

Use premium branded unleaded gasoline with a minimum octane rating of 89 RON.

Note: Models equipped with a **catalytic converter** require **unleaded** gasoline. A few tankfuls of leaded gasoline can reduce the efficiency of the catalytic converter by more than 50%.

Fuel with a lower octane rating may result in preignition (causing "pinging") which is accompanied by an increase in engine temperature. This, in turn, increases the risk of the piston seizure and damage to the engine.

The chemical composition of the fuel is also important. Some fuel additives not only detrimentally affect elastomers (carburetor diaphragms, oil seals, fuel lines etc.), but magnesium castings as well. This could cause running problems or even damage the engine. For this reason it is essential that you use only high-quality fuels!

Fuels with different percentages of ethanol are being offered. Ethanol can affect the running behaviour of the engine and increase the risk of lean seizure.

Use only STIHL two-stroke engine oil or equivalent high-quality two-stroke air-cooled engine oils for mixing.

We recommend STIHL 50:1 two-stroke engine oil since it is specially formulated for use in STIHL engines.

Do not use BIA or TCW (two-stroke water cooled) mix oils!

Use only **STIHL 50:1 heavy-duty engine oil** or an equivalent quality two-stroke engine oil for the fuel mix in models equipped with a **catalytic converter**.

Take care when handling gasoline. Avoid direct contact with the skin and avoid inhaling fuel vapour.

The canister should be kept tightly closed in order to avoid any moisture getting into the mixture.

The fuel tank and the canister in which fuel mix is stored should be cleaned from time to time.

Fuel mix ratio

Only mix sufficient fuel for a few days work, not to exceed 3 months of storage. Store in approved safety fuel-canisters only. When mixing, pour oil into the canister first, and then add gasoline.

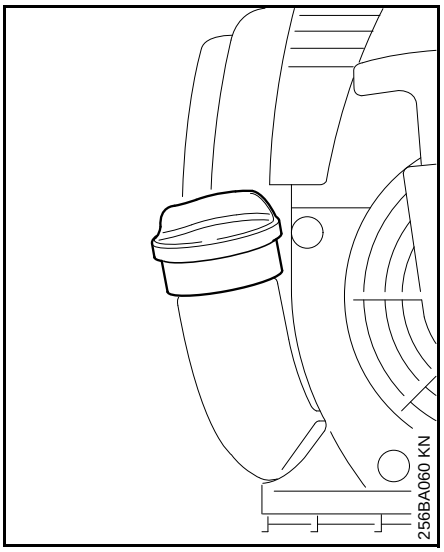
Examples

Gasoline	Oil (STIHL 50:1 or equivalent high-quality oils)	
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)

Dispose of empty mixing-oil canisters only at authorized disposal locations.

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.

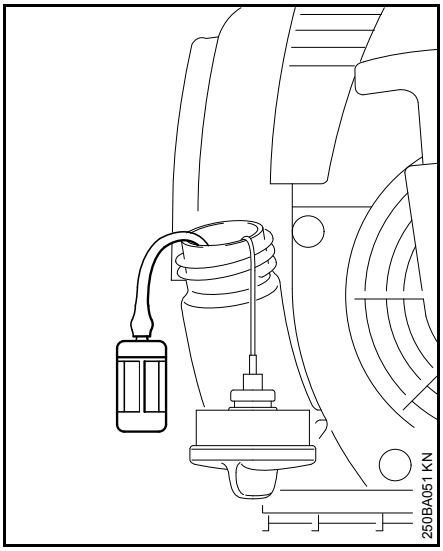
Filling Up with Fuel

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

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

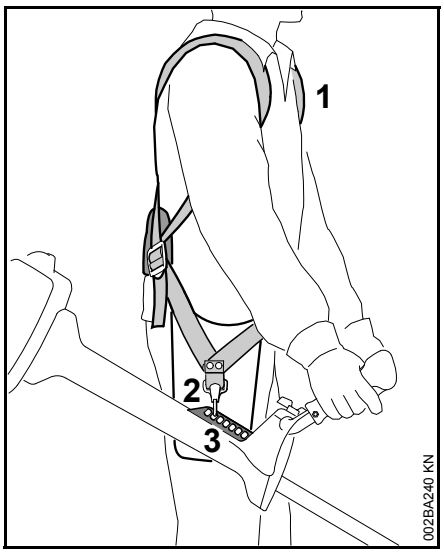
Changing the Fuel Pickup Body



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.

Fitting the Full Harness



- Put on the full harness (1).
- Adjust the length of the strap so that the spring hook (2) is about a hand's width below your right hip. Over-long ends of straps may be shortened after completing the adjustment.
- Attach the spring hook to the machine's perforated strip (3).

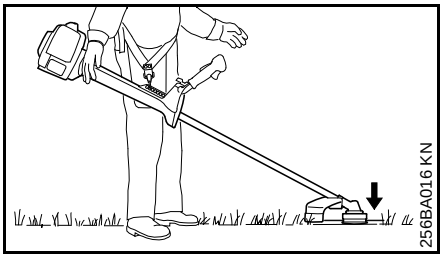
Find the right attachment point for the cutting attachment you are using – see "Balancing the Brushcutter".

Balancing the Trimmer/Brushcutter

The unit is balanced differently, depending on the cutting attachment used.

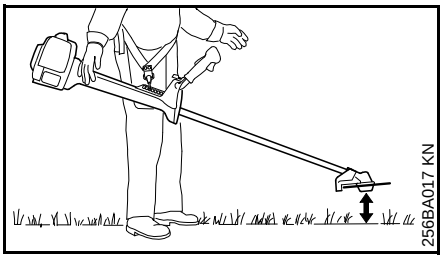
- With the unit suspended from the harness, see how it is balanced and change attachment point as necessary:

Mowing attachments



Mowing heads, grass cutting blades and brush knives and shredder blades should just touch the ground.

Circular saw blades

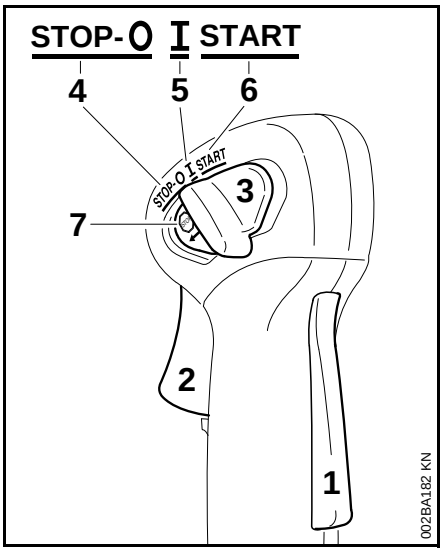


Circular saw blades should "hover" about 20 cm above the ground.

Starting / Stopping the Engine

Control handle

Controls



1 Throttle trigger lockout
2 Throttle trigger
3 Slide control

Positions of slide control

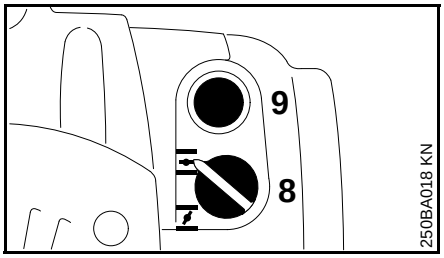
4 **STOP-0** – engine off – the ignition is switched off
5 **I** – normal run position – the engine is running or can start
6 **START** – the ignition is switched on – the engine can start

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 throttle 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 throttle trigger lockout in that order. This is the **starting throttle position**.

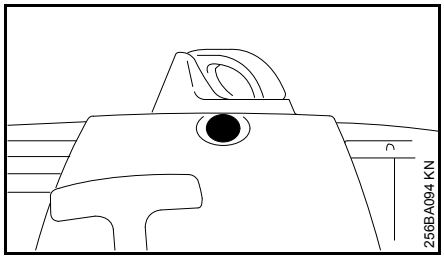


- Set the choke knob (8):

if the engine is cold

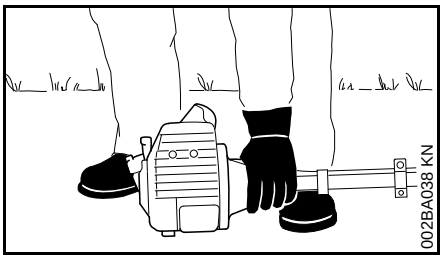
for warm start – also use this position if the engine has been running but is still cold.

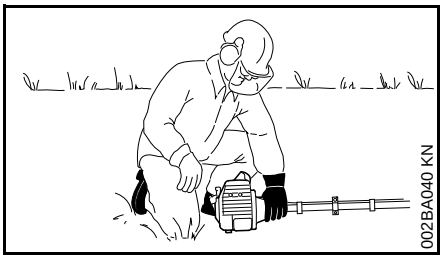
- Press the fuel pump bulb (9) at least five times – even if the bulb is already filled with fuel.



- Press in the decompression valve button **for each starting attempt**.

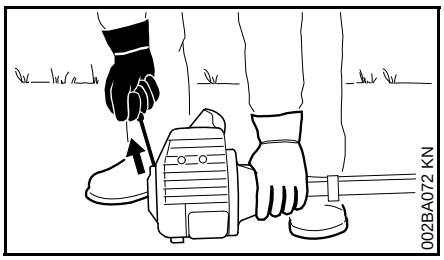
Cranking





- Place the unit on the ground: It must rest securely on the engine support and the deflector. Check that the cutting attachment is not touching the ground of any other obstacles.
- Make sure you have a firm footing.
- Hold the unit **firmly** on the ground with your left hand and press down – do not touch the throttle trigger or throttle trigger lockout – 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:

- Turn the choke knob to ⚌.
- Press in button to open the decompression valve.
- Continue cranking until the engine runs.

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 cutting attachment must not rotate when the engine is idling.

Your machine is now ready for operation.

Shut off 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 for a short period.

FS 400, 450: Change over to winter mode if necessary – see section on "Winter Operation".

If the engine does not start

Choke knob

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

- Turn the choke knob to ⚌.
- 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

- Move the slide control to **STOP**-**0**.
- Remove the spark plug – see "Spark Plug".
- Dry the spark plug.
- Open the throttle wide and hold it that position.
- 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 ⚌ – even if the engine is cold.
- 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 knob according to 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.

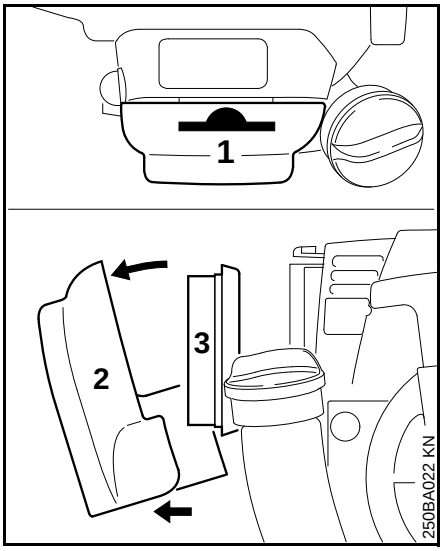
After Finishing Work

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 perionds – see "Storing the Machine".

Cleaning the Air Filter

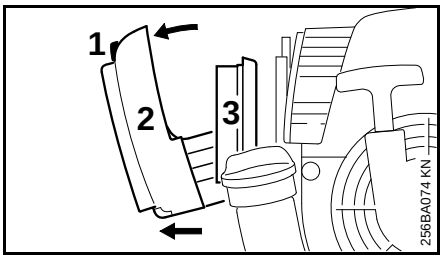
If there is a noticeable loss of engine power

FS 300, FS 350



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

FS 400, FS 450, FS 480



- Turn the choke knob to ⚡.
- Loosen the screw (1).
- Remove the filter cover (2).
- Clean away loose dirt from around the filter and inside the filter cover.
- Remove and check the filter element (3) – replace if dirty or damaged.
- Install the filter element in the filter cover.
- Refit the filter cover.

Engine Management

Exhaust emissions are controlled by the design of the fundamental engine parameters and components (e.g. carburation, ignition, timing and valve or port timing) without the addition of any major hardware.

Adjusting the Carburetor

General Information

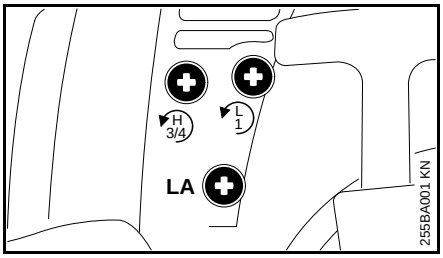
The carburetor comes from the factory with a standard setting.

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

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

Standard Setting

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



- Turn high speed screw (H) counterclockwise as far as stop **(no more than 3/4 turn)**.
- Carefully turn the low speed screw (L) clockwise down onto its seat, then turn it back **one full turn** counterclockwise.
- Warm up the engine.
- Adjust idle speed with the idle speed screw (LA) so that the cutting attachment does not turn.

Adjusting Idle Speed

Engine stops while idling

- Carry out standard setting on low speed screw (L).
- Turn the idle speed screw (LA) slowly clockwise until the engine runs smoothly – the cutting attachment must not rotate.

Cutting attachment rotates when engine is idling

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

Erratic idling behavior, poor acceleration

- Carry out standard setting on low speed screw (L).

Idle setting is too lean –

- Turn the low speed screw (L) slowly counterclockwise 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).

Fine tuning for operation at high altitude

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

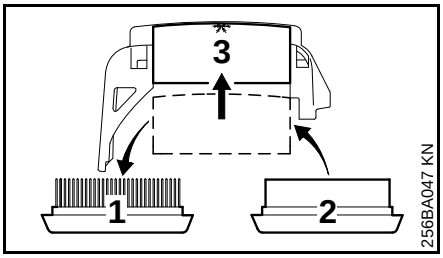
- Check the standard setting.
- Warm up the engine.
- Turn the high speed screw (H) slightly clockwise (leaner).

Winter Operation

FS 400, FS 450, FS 480

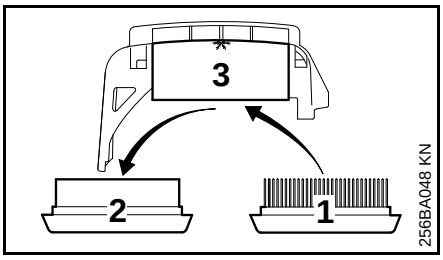
Mount the "Intake Air Preheating Kit" 4128 007 1001 (special accessory) to reduce the risk of air filter and carburetor icing

At temperatures below 10°C, in powdery or drifting snow



- Remove the standard air filter (1) and install the special filter (2) for winter operation.
- Push the cover (3) up against the underside of the filter cover. This is the **winter position**.

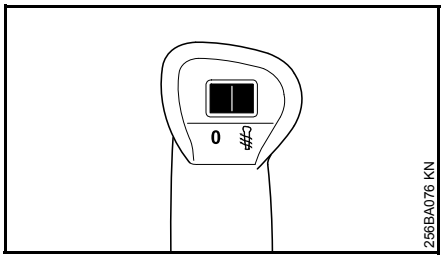
At temperatures above 10°C



- Remove the special air filter (2) for winter operation and install the standard filter (1) in its place.
- Push the cover (3) into the **summer position**.

Electric Handle Heating

Switching on the handle heating (depending on model)



- Move the switch in the left handle to ⋕ – move the switch back to **0** to turn off the heating.

If the handle temperature feels too high – move the switch to **0**.

There is no risk of overheating during long periods of operation. The heating system is maintenance-free. Contact your dealer if you have any problems. STIHL recommends a STIHL servicing dealer.

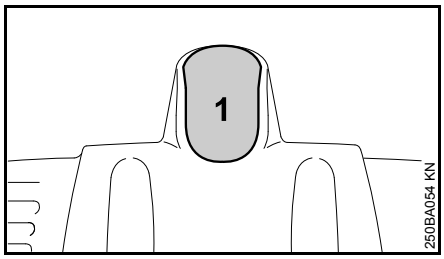
Spark Plug

- 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

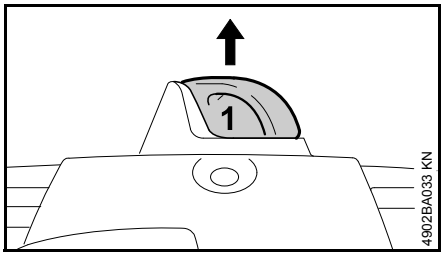
- Move the slide control to **STOP**-**0**.

FS 300, FS 350



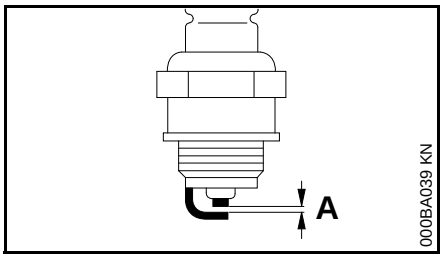
- Pull off the spark plug boot (1).
- Unscrew the spark plug.

FS 400, FS 450, FS 480



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

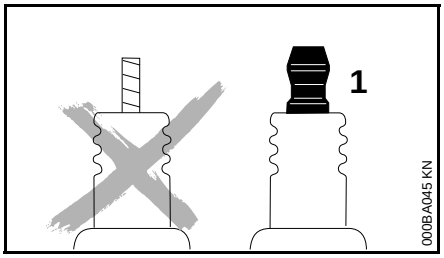
Checking the spark plug



- 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 home the spark plug, fit the boot and press it down firmly.

Engine Running Behavior

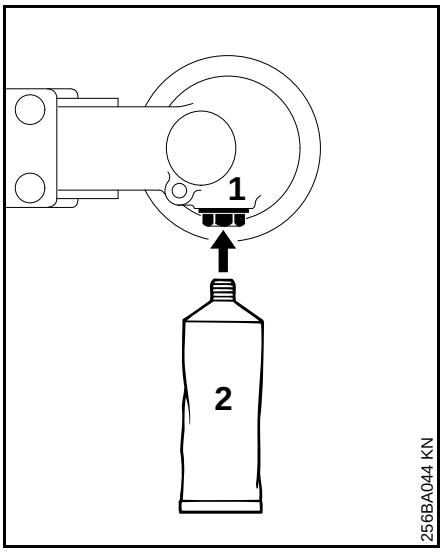
If engine running behavior is unsatisfactory even though the air filter is clean and the carburetor and throttle cable are properly adjusted, the cause may be the muffler.

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.

Lubricating the Gearbox

Use STIHL gear lubricant for brushcutters – see "Special Accessories" – for lubrication.



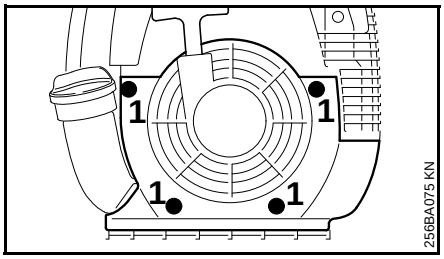
- Check grease level about every 100 hours of operation.
- Unscrew the filler plug (1). If no grease can be seen on the inside of the filler plug, screw the tube of lubricant (2) into the filler hole.
- Squeeze up to 5 g grease into the gearbox.

Do not completely fill the gearbox with grease.

- Refit the filler plug and tighten it down firmly.

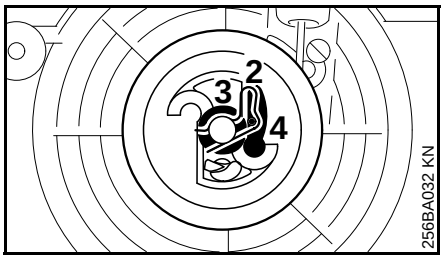
Replacing the Starter Rope and Rewind Spring

Removing the Fan Housing



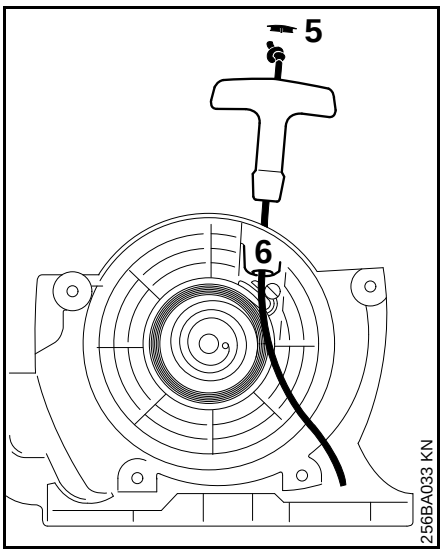
- Take out the screws (1).
- Remove the fan housing.

Replacing the Starter Rope

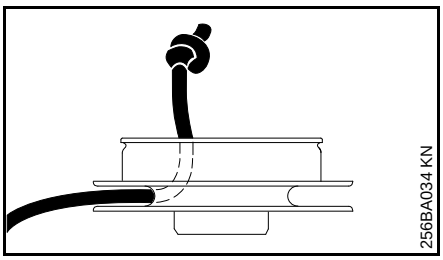


- Remove the spring clip (2).
- Carefully remove the rope rotor with washer (3) and pawl (4).

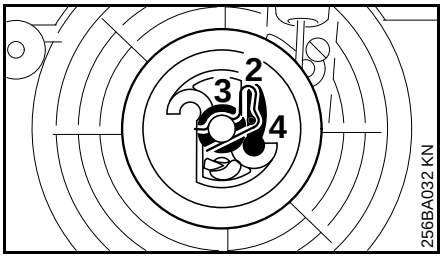
⚠ The rewind spring may pop out and uncoil during this operation – take care to avoid the risk of injury.



- 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.

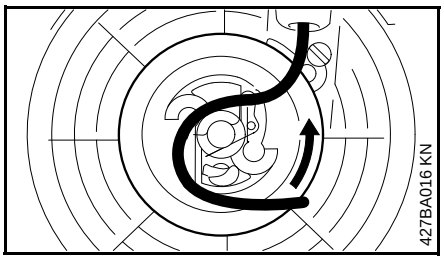


- Pull the rope through the rotor and secure it with a simple overhand knot.
- Coat rope rotor bearing bore with non-resinous oil – see "Special Accessories".
- Slip the rotor over the starter post – turn it back and forth to engage the anchor loop of the rewind spring.



- 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.

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.

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.

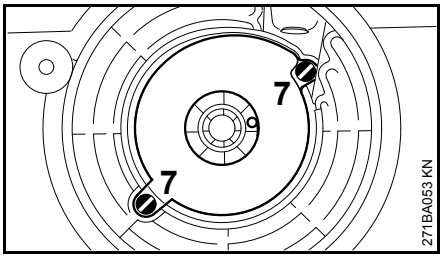
When the starter rope is fully extended it must still be possible to rotate the rotor another one and a half turns. If this is not the case, the spring is overtensioned and could break.

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

Replacing a Broken Rewind Spring

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

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 face protection 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 – see "Special Accessories".
- Place the replacement spring with spring housing in position – bottom plate facing up.

If the spring pops out of the housing during installation: Refit it clockwise, starting outside and working inwards.

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

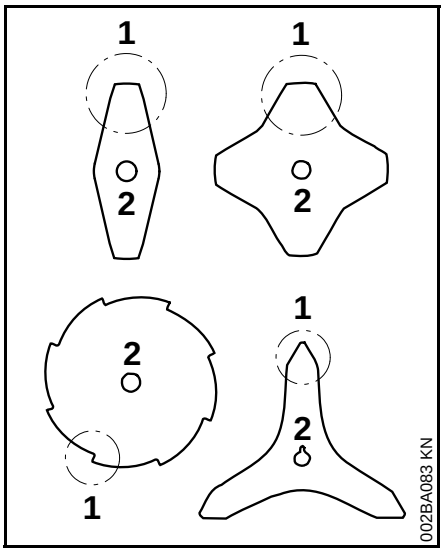
Storing the Machine

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.
- Remove, clean and inspect the cutting attachment.
- Thoroughly clean the machine – pay special attention to the cylinder fins and air filter.
- Store the machine in a dry and secure location – out of the reach of children and other unauthorized persons.

Sharpening Metal Cutting Blades

- Use a sharpening file (special accessory) to sharpen dull cutting attachments. In case of more serious wear or nicks: Resharpen with a grinder or have the work done by a dealer – STIHL recommends a STIHL servicing dealer.
- Resharpen frequently, take away as little material as possible: two or three strokes of the file are usually enough.



- Resharpen the cutters (1) uniformly – do not alter the contour or the parent blade (2) in any way.

See cutting attachment packaging for additional sharpening instructions.

Balancing

- After resharpening about 5 times, check the cutting attachment for out-of-balance on a STIHL balancer (special accessory) or have it checked by a dealer and re-balanced as necessary – STIHL recommends a STIHL servicing dealer.

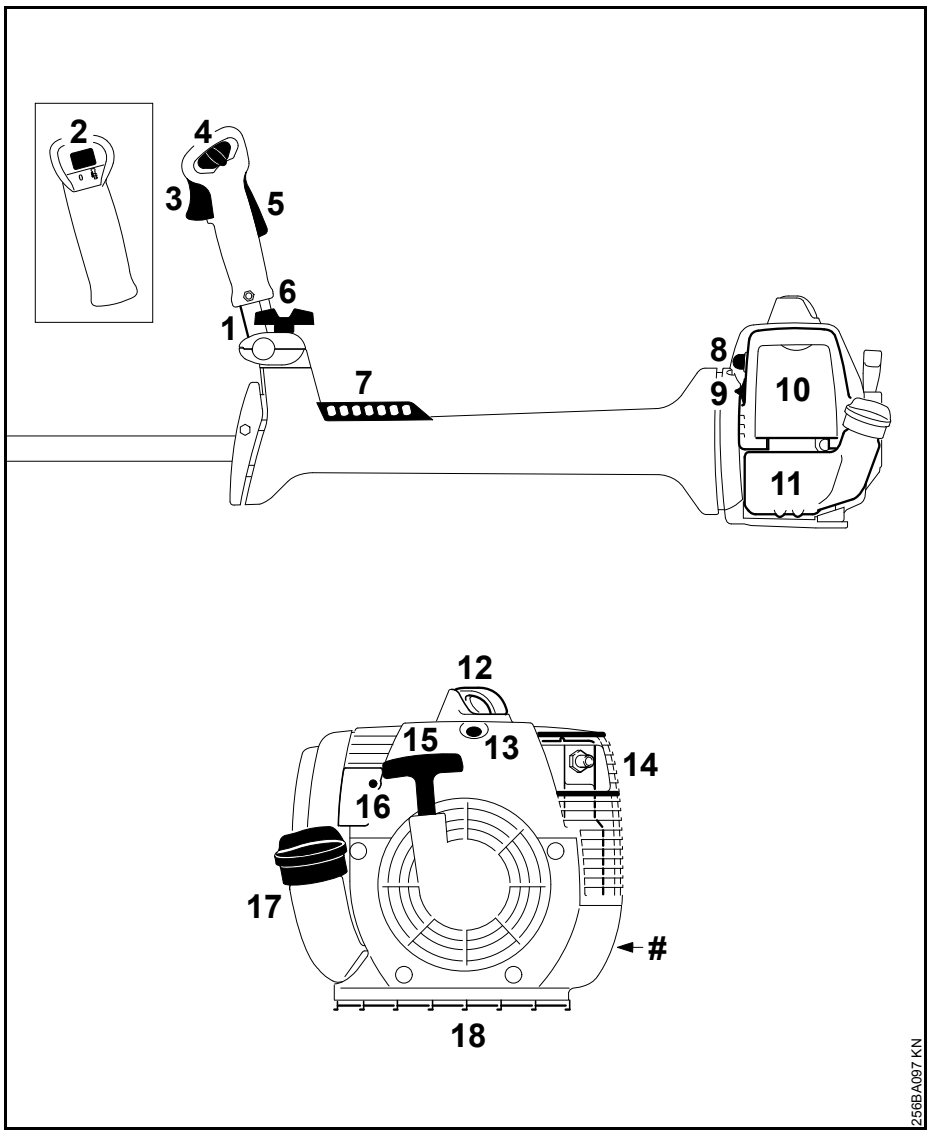
Maintenance and Care

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		X
Carburetor	Check idle adjustment – the cutting attachment must not turn	X		X						
	Readjust idle									X
Spark plug	Readjust electrode gap							X		
	Replace after every 100 operating hours									
Cooling inlets	Visual Inspection		X							
	Clean									X
Spark Arrestor in Muffler	Check[1)]							X		X
	Clean or replace [1)]								X	
All accessible screws and nuts (not adjusting screws)	Retighten									X
Antivibration elements	Check	X						X		X
	Replace[1)]								X	
Cutting Attachment	Visual Inspection	X		X						
	Replace								X	
	Check tightness	X		X						

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
Metal cutting attachment	Sharpen	X								X
Gearbox lubrication	Check				X			X		X
	Replenish									X
Safety labels	Replace								X	

1) STIHL recommends that this work be done by a STIHL servicing dealer

Main Parts



1 Handlebar
2 Handle Heating Switch (Special Option)
3 Throttle Trigger
4 Slide Control
5 Throttle Trigger Lockout
6 Clamp Screw
7 Carrying Strip
8 Fuel Pump
9 Choke Knob
10 Filter Cover
11 Fuel Tank
12 Spark Plug Boot
13 Decompression Valve (Automatically Resetting)
14 Muffler with Spark Arresting Screen
15 Starter Grip
16 Carburetor Adjusting Screws
17 Fuel Filler Cap
18 Machine Support
Serial Number

Definitions

1 Handlebar
For holding and controlling the unit with the hand during operation.

2 Handle Heating Switch (Special Option)
For switching the electric handle heating on and off.

3 Throttle Trigger
Controls the speed of the engine.

4 Slide Control
For starting throttle, run and stop. Keeps the choke partially open during starting and switches off the ignition to stop the engine.

5 Throttle Trigger Lockout
Must be depressed before the throttle trigger can be activated.

6 Clamp Screw
Locks handlebar in selected position.

7 Carrying Strip
The device to connect the clearing saw to the harness.

8 Fuel Pump
Provides additional fuel feed for a cold start.

9 Choke Knob
Eases engine starting by enriching mixture.

10 Filter Cover
Encloses and protects the air filter.

11 Fuel Tank
For fuel and oil mixture.

12 Spark Plug Boot
Connects the spark plug with the ignition lead.

13 Decompression Valve (Automatically Resetting)
Releases compression pressure to make engine starting easier – when activated.

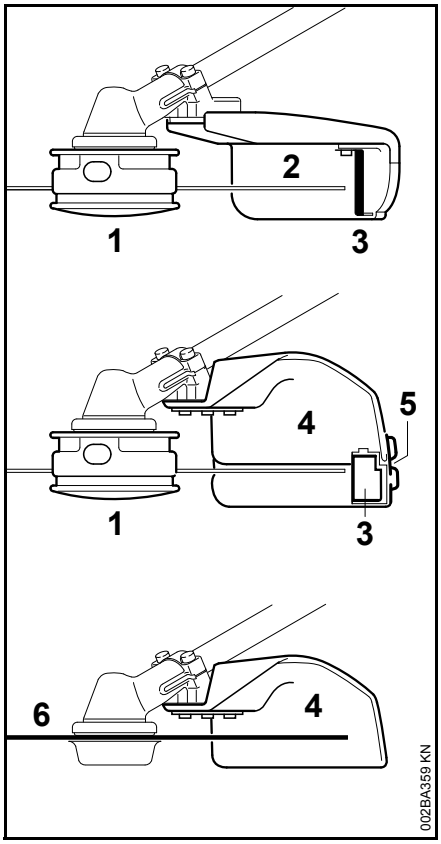
14 Muffler with Spark Arresting Screen
Muffler reduces exhaust noises and diverts exhaust gases away from operator.
Spark arresting screen is designed to reduce the risk of fire.

15 Starter Grip
The grip of the pull starter, for starting the engine.

16 Carburetor Adjusting Screws
For tuning the carburetor.

17 Fuel Filler Cap
For closing the fuel tank.

18 Machine Support
For resting machine on the ground.



1 Mowing Head
2 Deflector for Mowing Heads
3 Line Limiting Blade
4 Deflector with Skirt for all Mowing Attachments
5 Skirt
6 Metal Mowing Tool

Definitions

1 Mowing Head
The cutting attachment, i. e. mowing head, for different purposes.

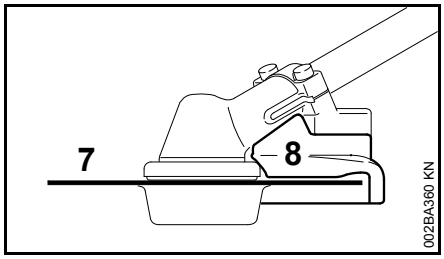
2 Deflector for Mowing Heads
The deflector is designed to reduce the risk of injury from foreign objects flung backwards toward the operator by the cutting attachment and from contact with the cutting attachment.

3 Line Limiting blade
Metal blade at the deflector in order to keep the line of the mowing head at the proper length.

4 Deflector with Skirt for all Mowing Attachments
The deflector is designed to reduce the risk of injury from foreign objects flung backwards toward the operator by the cutting attachment and from contact with the cutting attachment. Is not designed to contain fragmented metal blades.

5 Skirt
The skirt at the bottom of the deflector must be utilized as described in the chapter "Mounting the Deflector".

6 Metal Mowing Tool
The cutting attachment, i. e. blade, made from metal for different purposes.



7 Circular Saw Blade
8 Limit Stop for Circular Saw Blade

Definitions

7 Circular Saw Blade
Cutting attachment made of metal for cutting wood.

8 Limit Stop for Circular Saw Blade
Designed to position the brushcutter steady against the wood in order to reduce the risk of injury from loss of control from reactive forces such as thrust out.

Specifications

EPA / CEPA

The Emission Compliance Period referred to on the Emissions Compliance Label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements.

Category

A = 300 hours
B = 125 hours
C = 50 hours

Engine

STIHL single cylinder two-stroke engine

FS 300

Displacement:	30.8 cm^3
Bore:	35 mm
Stroke:	32 mm
Engine power to ISO 8893:	1.3 kW (1.8 HP) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,300 rpm
Max. output shaft speed (cutting attachment):	8,790 rpm

FS 350

Displacement:	40.2 cm^3
Bore:	40 mm
Stroke:	32 mm
Engine power to ISO 8893:	1.6 kW (2.2 HP) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,300 rpm
Max. output shaft speed (cutting attachment):	8,790 rpm

FS 400

Displacement:	40.2 cm^3
Bore:	40 mm
Stroke:	32 mm
Engine power to ISO 8893:	1.9 kW (2.6 HP) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,500 rpm
Max. output shaft speed (cutting attachment)	
FS 400:	8,930 rpm
FS 400 with long shaft:	8,930 rpm
FS 400 with short shaft:	8,750 rpm

FS 450

Displacement:	44.3 cm^3
Bore:	42 mm
Stroke:	32 mm
Engine power to ISO 8893:	2.1 kW (2.9 HP) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,500 rpm
Max. output shaft speed (cutting attachment):	
FS 450:	8,930 rpm
FS 450 with long shaft:	8,930 rpm
FS 450 with short shaft:	8,750 rpm

FS 480

Displacement:	48.7 cm^3
Bore:	44 mm
Stroke:	32 mm
Engine power to ISO 8893:	2.2 kW (3.0 HP) at 9,000 rpm
Idle speed:	2,800 rpm
Cut-off speed (rated):	12,500 rpm
Max. output shaft speed (cutting attachment):	
FS 480:	8,930 rpm
FS 480 with long shaft:	8,930 rpm
FS 480 with short shaft:	8,750 rpm

Ignition System

Electronic magneto ignition

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

This spark ignition system meets all requirements of the Canadian Interference-Causing Equipment Regulations ICES-002.

Fuel System

All position diaphragm carburetor with integral fuel pump

Fuel tank capacity:

FS 300:	0.64 l
FS 350:	0.64 l
FS 400:	0.67 l
FS 450:	0.67 l
FS 480:	0.67 l

Weight

dry, without cutting attachment and deflector

FS 300:	7.3 kg
FS 350:	7.3 kg
FS 400:	8.0 kg
FS 400 with short shaft:	8.1 kg
FS 400 with long shaft:	8.1 kg
FS 450:	8.0 kg
FS 450 with short shaft:	8.1 kg
FS 450 with long shaft:	8.1 kg
FS 480:	8.0 kg
FS 480 with short shaft:	8.1 kg
FS 480 with long shaft:	8.1 kg
FS 480 with short shaft and handle heating:	8.3 kg
FS 480 with handle heating:	8.3 kg

Overall length

without cutting attachment

FS 300:	1765 mm
FS 350:	1765 mm
FS 400:	1765 mm
FS 400 with short shaft:	1635 mm
FS 400 with long shaft:	1825 mm
FS 450:	1765 mm
FS 450 with short shaft:	1635 mm
FS 450 with long shaft:	1825 mm
FS 480:	1765 mm
FS 480 with short shaft:	1635 mm
FS 480 with long shaft:	1825 mm

Special Accessories

Cutting Attachments

Mowing heads

1 STIHL SuperCut 40-2
2 STIHL AutoCut 40-2
3 STIHL AutoCut 40-4[1)]
4 STIHL TrimCut 41-2
5 STIHL PolyCut 40-3

Metal cutting attachments

6 Grass cutting blade 230-4
7 Grass cutting blade 255-8
8 Grass cutting blade 250-40 Spezial
9 Brush knife 305-2 Spezial
10 Brush knife 300-3
11 Shredder blade 270-2
12 Scratcher tooth circular saw blade 200
13 Chisel tooth circular saw blade 200
14 Scratcher tooth circular saw blade 225[2)]
15 Chisel tooth circular saw blade 225[2)]
16 Carbide tipped circular saw blade 225[2)]

⚠ Use cutting attachments only as specified in the chapter on "Approved Combinations of Cutting Attachment, Deflector, Limit Stop and Harness".

1) Approved for FS 450, 480 only
2) Approved for FS 400, 450, 480 only

Special accessories for cutting attachments

- Nylon line for mowing heads 1 to 5
- Prewound spool with nylon line for 1 to 4
- Thermoplastic blades, pack of 12; for mowing head 5
- Transport guard for 6 to 16

Sharpening aids for metal cutting attachments

- Flat sharpening files for 6, 7, 9 and 12, 14, 16
- File holder with round file, for 13, 15
- Saw set, for 13, 15
- STIHL balancer for 6 to 16
- Sharpening templates (metal or cardboard), for 9, 10

Mounting hardware for metal cutting attachments

- Thrust washer
- Rider plate for mowing and sawing applications
- Guard ring for brush knife and shredder blade
- Nut

Other special accessories

- Safety glasses
- Combination wrench
- Locking pin
- Carburetor screwdriver
- Full harness

- Deluxe full harness
- Deluxe full harness, large
- STIHL gear lubricant for brushcutters
- STIHL filler nozzle for fuels
- Special resin-free lubricating oil

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

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).

STIHL Limited Emission Control Warranty Statement

This statement is given voluntarily, based on the MOU (Memorandum of Understanding) as agreed in April 1999 between Environmental Canada and STIHL Limited

Your Warranty Rights and Obligations

STIHL Limited is pleased to explain the Emission Control System Warranty on your equipment type engine. In Canada new 1999 and later model year small off-road equipment engines must be designed, built and equipped, at the time of sale, to meet the U.S. EPA regulations for small non road engines. The equipment engine must be free from defects in materials and workmanship which cause it to fail to conform with U.S. EPA standards for the first two years of engine use from the date of sale to the ultimate purchaser.

STIHL Limited must warrant the emission control system on your small off-road engine for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road equipment engine.

Your emission control system includes parts such as the carburetor and the ignition system. Also included may be hoses, and connectors and other emission-related assemblies.

Where a warrantable condition exists, STIHL Limited will repair your small off-road equipment engine at no cost to you,

including diagnosis (if the diagnostic work is performed at an authorized dealer), parts, and labor.

Manufacturer's Warranty Coverage

In Canada 1999 and later model year small off-road equipment engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by STIHL Limited free of charge.

Owner's Warranty Responsibilities:

As the small off-road equipment engine owner, you are responsible for the performance of the required maintenance listed in your instruction manual. STIHL Limited recommends that you retain all receipts covering maintenance on your small off-road equipment engine, but STIHL Limited cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

Any replacement part or service that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of the engine manufacturer.

As the small off-road equipment engine owner, you should be aware, however, that STIHL Limited may deny you warranty coverage if your small off-road equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road equipment engine to a STIHL service center as soon as a problem exists. The warranty repairs will be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, please contact a STIHL customer service representative at www.stihl.ca

or you can write to:

STIHL Ltd.,
1515 Sise Road
Box 5666
CA-LONDON ONTARIO; N6A 4L6

Coverage by STIHL Limited

STIHL Limited warrants to the ultimate purchaser and each subsequent purchaser that your small off-road equipment engine will be designed, built and equipped, at the time of sale, to meet all applicable regulations. STIHL Limited also warrants to the initial purchaser and each subsequent purchaser that your engine is free from defects in materials and workmanship which cause the engine to fail to conform with applicable regulations for a period of two years.

Warranty Period

The warranty period will begin on the date the utility equipment engine is purchased by the initial purchaser and you have signed and sent back the warranty card to STIHL Ltd. If any emission-related part on your engine is defective, the part will be replaced by STIHL Limited at no cost to the owner. Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" will be warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance will be warranted for the period of time up to the first scheduled replacement point for that part.

Diagnosis

You, as the owner, shall not be charged for diagnostic labor which leads to the determination that a warranted part is defective. However, if you claim warranty for a component and the machine is tested as non-defective, STIHL Limited will charge you for the cost of the emission test. Mechanical diagnostic work will be performed at an authorized STIHL servicing dealer. Emission test may be performed either at

STIHL Incorporated,
536 Viking Drive, P.O. Box 2015,
Virginia Beach, VA 23452

or at any independent test laboratory.

Warranty Work

STIHL Limited shall remedy warranty defects at any authorized STIHL servicing dealer or warranty station. Any such work shall be free of charge to the owner if it is determined that a warranted part is defective. Any manufacturer-approved or equivalent replacement part may be used for any warranty maintenance or repairs on emission-related parts and must be provided without charge to the owner. STIHL Limited is liable for damages to other engine components caused by the failure of a warranted part still under warranty.

The following list specifically defines the emission-related warranted parts:

- Air Filter
- Carburetor
- Fuel Pump
- Choke (Cold Start Enrichment System)
- Control Linkages
- Intake Manifold
- Magneto or Electronic Ignition System (Ignition Module)
- Spark Plug
- Catalytic Converter (if applicable)
- Fuel Tank
- Fuel Cap
- Fuel Line
- Fuel Line Fittings
- Clamps
- Fasteners

Where to make a Claim for Warranty Service

Bring the product to any authorized STIHL servicing dealer and present the signed warranty card.

Maintenance Requirements

The maintenance instructions in this manual are based on the application of the recommended 2-stroke fuel-oil mixture (see also instruction "Fuel"). Deviations from this recommendation regarding quality and mixing ratio of fuel and oil may require shorter maintenance intervals.

Limitations

This Emission Control Systems Warranty shall not cover any of the following:

1. repair or replacement required because of misuse, neglect or lack of required maintenance
2. repairs improperly performed or replacements not conforming to STIHL Limited specifications that adversely affect performance and/or durability, and alterations or modifications not recommended or approved in writing by STIHL Limited
3. replacement of parts and other services and adjustments necessary for required maintenance at and after the first scheduled replacement point