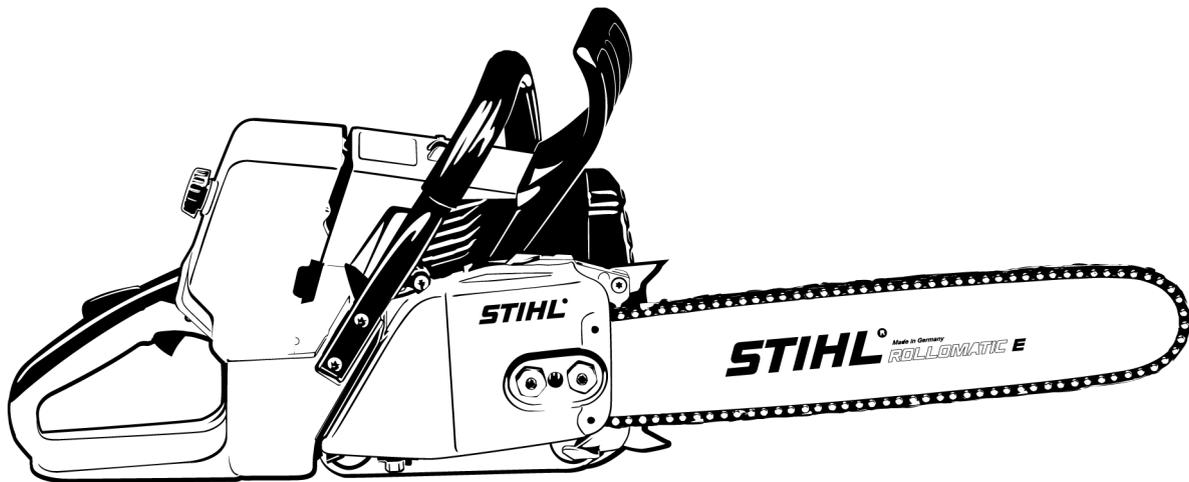


**STIHL**<sup>®</sup>

# Chain Saw Safety Manual





# Contents

Safety Precautions	2
Reactive Forces	7
Working Techniques	8
Maintenance and Care	17
Main Parts	19

This manual contains the safety precautions and recommended cutting techniques outlined in the instruction manuals for STIHL chain saws.

The chapter on "Main Parts of the Saw" shows the MS 211 as an example. Other chain saw models may have different parts and controls.

This manual contains references to various chapters in the model-specific instruction manuals.

You should therefore always refer to the instruction manual of your particular saw model.

Please contact your STIHL dealer if you have any questions after reading this manual.

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## Safety Precautions



Special safety precautions must be observed to reduce the risk of personal injury when working with a chain saw because of the very high chain speed and very sharp cutters.



It is important that you read the instruction manual before first use and keep it in a safe place for future reference. Non-observance of the instruction manual may result in serious or even fatal injury.

### General

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Observe all applicable local safety regulations, standards and ordinances.

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

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

Minors should never be allowed to use a chain saw.

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

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

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

To operate a chain saw 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 chain saw.

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

To reduce the risk of accidents or injury, put off the work in poor weather conditions (rain, snow, ice, wind).

Persons with pacemakers only: The ignition system of your chain saw 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 power tool.

### Intended use

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The machine may only be used to saw wood and wooden objects.

Do not use the machine for any other purpose – risk of accidents!

Do not modify the machine in any way – this may increase the risk of personal injury. STIHL excludes all liability for personal injury and damage to property caused while using unauthorised attachments.

## Clothing and Equipment

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Wear proper protective clothing and equipment.



Clothing must be sturdy and snug-fitting, but allow complete freedom of movement. Wear snug fitting clothing with **cut-retardant pads** – no loose-fitting jacket.

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



Wear suitable **safety shoes** – with cut-retardant material, non-slip soles and steel toe caps.



### WARNING



To reduce the risk of eye injuries, wear tight-fitting safety goggles conforming to standard EN 166 or a face shield. Make sure that the safety goggles and the face shield fit correctly.

Wear "personal" hearing protection – for example, ear defenders.

Wear a hard hat wherever there is any risk of falling objects.

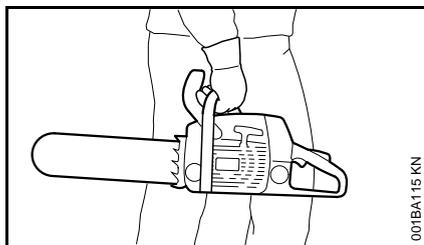


Wear sturdy protective gloves made of a resistant material (e.g. leather).

STIHL can supply a comprehensive range of personal protective equipment.

## Transport

Before any transport – even over short distances – switch off the machine, engage the chain brake and attach the chain scabbard. This avoids the risk of the saw chain starting unintentionally.



Always carry the chain saw by the handle – with the hot muffler away from your body, the guide bar must point to the rear. Avoid touching hot parts of the machine, especially the surface of the muffler – risk of burns!

In vehicles: Properly secure the machine to prevent tipping, damage and chain oil or fuel spillage.

## Cleaning

Clean plastic parts with a cloth. Harsh detergents can damage the plastic.

Clean the dust and dirt off the machine – do not use any grease solvents for this purpose.

Clean the ventilation slots if necessary.

Do not use a high-pressure cleaner to clean the machine. The hard jet of water can damage parts of the machine.

## Accessories

Only use those tools, guide bars, chains, chain sprockets, accessories or technically equivalent components that have been approved by STIHL for this machine. If you have any questions in this respect, consult a servicing dealer. Use only high quality tools and accessories. Otherwise, there may be a risk of accidents and damage to the machine.

STIHL recommends the use of genuine STIHL tools, guide bars, chains, chain sprockets and accessories. They are specifically designed to match your model and meet your performance requirements.

## Refuelling



**Gasoline is an extremely flammable fuel** – keep clear of naked flames and fire – do not spill any fuel – no smoking.

Switch off the engine before refuelling.

Never refuel the machine while the engine is still hot – the fuel may spill over – **risk of fire!**

Open the fuel filler cap carefully so that any excess pressure is relieved gradually and fuel does not splash out.

The machine may only be refuelled in a well ventilated place. Clean the machine immediately if fuel is spilled. Do not spill fuel over your clothing – contaminated clothing must be changed immediately.

The machines can be equipped with the following filler caps as standard:

### Cliplock filler cap (bayonet-type)



Place the cliplock filler cap (bayonet-type) in position, turn as far as stop and fold the cliplock down.

This helps reduce the risk of unit vibrations causing an incorrectly tightened filler cap to loosen or come off and spill quantities of fuel.



Look out for leaks! Never start the engine if fuel has been spilled or is leaking – **Fatal burns may result!**

## Before Starting Work

Check that your saw is properly assembled and in good condition – refer to appropriate chapters in the instruction manual.

- Check the fuel system for leaks, paying special attention to visible parts such as the tank cap, hose connections and the manual fuel pump (on machines so equipped). If

there are any leaks or damage, do not start the engine – **risk of fire**. Have your saw repaired by a servicing dealer before using it again.

- Check operation of chain brake, front hand guard
- Correctly mounted guide bar
- Correctly tensioned chain
- The trigger and trigger lockout must move freely and spring back to the idle position when they are released.
- Master Control lever must move easily to **STOP, 0** or 
- 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 saw.
- Make sure there is sufficient fuel and chain oil in the tanks.

**To reduce the risk of personal injury**, do not operate your saw if it is damaged or not properly assembled.

### Starting the chain saw

Always work on a level surface. Ensure a firm and secure footing. Hold the machine securely – the chain must not touch any objects or the floor – danger of injury due to the rotating saw chain.

Your chain saw is a one-person saw. Do not allow other persons to be in the working area – not even while starting.

Do not start the chain saw if the chain is in a cut.

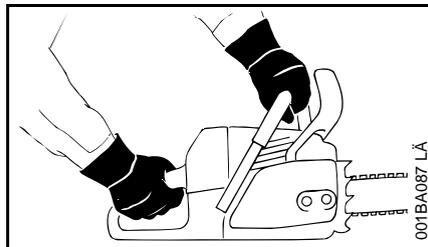
Move at least 3 meters away from the place where the machine was refuelled and never start the motor in enclosed spaces.

Lock the chain with the chain brake before starting – **risk of injury** due to rotating chain!

Do not drop-start the engine – start as described in the Instruction Manual.

### During operation

Ensure you always have a firm and safe footing. Take special care when the bark is wet – **danger of slipping!**



Always hold the chain saw **firmly with both hands**: Right hand on the rear handle – even if you are left-handed. To ensure reliable control, wrap your thumbs tightly around the handlebar and handle.

In the event of impending danger or in an emergency, switch off the engine immediately by moving the Master Control lever / stop switch to **STOP, 0** or 

Never let the machine run unattended.

Exercise caution with slippery surfaces, water, snow, ice, steep slopes, uneven ground or green wood that has just been stripped of its bark – **danger of slipping!**

Use caution with tree stumps, roots, ditches – **danger of stumbling!**

Do not work alone – keep within calling distance of others who are trained in emergency procedures and can provide help in an emergency. Helpers at the cutting site must also wear protective clothing (helmet!) and stand well clear of the branches being cut.

More care and attention than usual are required when wearing ear protection, as warning sounds (shouts, beeps, etc.) cannot be heard properly.

Take a break in good time to avoid tiredness or exhaustion – **risk of accidents!**

Dust (e. g., sawdust), fumes and smoke produced while using the machine may be hazardous to health. If dust is generated, wear a dust mask.

When the engine is running: Note that the saw chain continues to rotate for a short period after you let go of the throttle trigger – coasting effect.

**No smoking** when working with or near the chain saw - **risk of fire!** Combustible fuel vapour may escape from the fuel system.

Examine the saw chain periodically at short intervals and as soon as you note any tangible changes:

- Switch off the engine; wait until the saw chain is stationary
- Check condition and secure fitting
- Check sharpness

Never touch the saw chain when the engine is running. If the saw chain becomes jammed by an object, switch off the engine immediately before attempting to remove the object – **risk of injury!**

Always turn off the engine before leaving the machine unattended.

To change the saw chain, switch off the engine. **Risk of injury** from the motor starting unintentionally!

Keep easily combustible materials (e. g., wood chips, bark, dry grass, fuel) away from hot exhaust gases and hot mufflers – **risk of fire!** Mufflers with catalytic converters can become especially hot.

Never work without chain lubrication – monitor the oil level in the oil tank. Stop work immediately if the oil level in the oil tank is too low and top up with chain oil – see also "Topping up with chain oil" and "Check chain lubrication".

If the machine 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 work".

Check the fuel system for leaks and make sure the safety devices are working properly. Never continue using

a machine that is not in perfect working order. In case of doubt, have the unit checked by your servicing dealer.

Check for correct idling, so that the saw chain stops moving when the throttle trigger is released. Check the idle setting regularly and correct when possible. Have the machine repaired by a STIHL servicing dealer if the saw chain still continues to move during idling.



The chain saw produces poisonous exhaust gases as soon as the engine starts. These gases may be colourless and odourless and may contain unburnt hydrocarbons and benzene. Never work with the machine indoors or in poorly ventilated areas, even if your machine is equipped with a catalytic converter.

Ensure proper ventilation when working in trenches, hollows or other confined locations – **risk of fatal injury from breathing toxic fumes!**

If you feel sick, have a headache, vision problems (e. g., your field of vision gets smaller), hearing problems, dizziness or inability to concentrate, stop work immediately. Such symptoms may be caused by an excessively high concentration of exhaust emissions – **risk of accident!**

#### After finishing work

Switch off the motor, engage the chain brake and attach the chain scabbard.

#### Storage

When the machine is not in use, it should be stored in such a way that no-one is endangered. Secure the machine against unauthorised use.

Store the machine in a safe, dry room.

#### 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

Always switch off the engine before any repair, cleaning or maintenance work and any work on the chain. **Risk of injury** if the engine starts inadvertently!

Exception: adjustment of carburettor and idle speed.

The machine must be serviced regularly. Do not attempt any maintenance or repair work not described in the Instruction Manual. All other work should be carried out by a servicing dealer.

STIHL recommends that maintenance and repair work be carried out only by authorised STIHL dealers. STIHL dealers receive regular training and are supplied with technical information.

Use only high-quality spare parts. Otherwise, there may be a risk of accidents and damage to the machine. If you have any questions in this respect, consult a servicing dealer.

Do not modify the machine in any way – this may increase the risk of personal injury –**risk of accidents!**

To reduce the **risk of fire** due to ignition outside the cylinder, move the master control level to **STOP, 0** or  $\odot$  before turning the engine over on the starter when the spark plug boot is removed or the spark plug is unscrewed!

Do not service or store the machine near a naked flame – **risk of fire** due to the fuel.

Check fuel cap regularly for tightness.

Use only spark plugs that are in perfect condition and have been approved by STIHL – see "Specifications".

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

Check that the muffler is in perfect working condition.

Do not use the machine if the muffler is damaged or missing – **risk of fire, damage to hearing!**

Never touch a hot muffler – **risk of burns!**

The condition of the anti-vibration elements influences vibration behaviour – inspect anti-vibration elements periodically.

**Inspect chain catcher** – replace if damaged.

### **Switch off the engine**

- To check the chain tension
- To retension the chain
- To replace the chain
- For remedying malfunctions

**Observe sharpening instructions** – for safe and proper handling, always keep the chain and guide bar in flawless condition. Keep the chain properly sharpened, tensioned and well lubricated.

Change chain, guide bar and chain sprocket in due time.

Regularly check that the clutch drum is in perfect working condition.

Always store fuel and chain lubricant only in the specified type of containers and ensure they are correctly labelled. Store in a dry, cool and secure place protected against light and sunlight.

In the event of a chain brake malfunction, switch off the machine immediately – **risk of injury!** Consult a

servicing dealer – do not use the machine until the malfunction has been remedied, see "Chain brake".

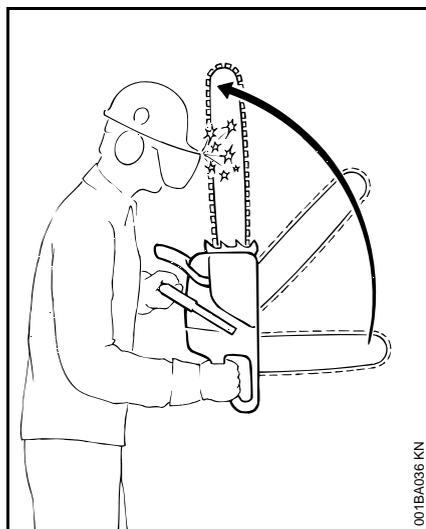
## Reactive Forces

The most common reactive forces are: kickback, pushback and pull-in.

### Dangers of kickback

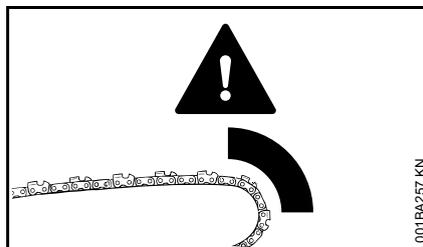


Kickback can result in fatal cuts.



Kickback occurs when the saw is suddenly thrown up and back in an uncontrolled arc towards the operator.

### Kickback occurs if, for example,



- The saw chain in the area of the upper quarter of the guide bar nose unintentionally comes into contact with wood or a solid object – e. g., unintentionally touches another limb during limbing
- The saw chain at the nose of the guide bar is briefly pinched in the cut

### QuickStop chain brake:

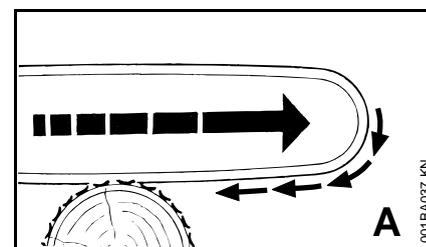
This device reduces the risk of injury in certain situations – it cannot prevent kickback. If activated, the brake stops the saw chain within a fraction of a second – refer to chapter "Chain brake" in this Instruction Manual.

### Reducing the risk of kickback

- Work cautiously and methodically
- Hold the chain saw firmly with both hands and maintain a secure grip
- Always cut at full throttle
- Be aware of the location of the guide bar nose
- Do not cut with the guide bar nose

- Be especially careful with small, tough limbs, undergrowth and offshoots – the saw chain may become caught in them
- Never cut several limbs at once
- Do not lean too far forward
- Do not cut above shoulder height
- Use extreme caution when re-entering a previous cut
- Do not attempt plunge cuts if you are not experienced in this cutting technique
- Be alert for shifting of the log or other forces that may cause the cut to close and pinch the chain
- Always cut with a correctly sharpened, properly tensioned saw chain – the depth gauge setting must not be too large
- Use low-kickback saw chains as well as narrow-radius guide bars

### Pull-in (A)

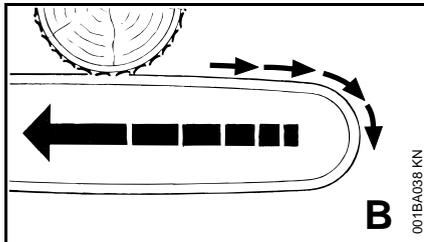


When the chain on the bottom of the bar – overbucking – is suddenly pinched, caught or encounters a foreign object in the wood, the chain saw may suddenly

be drawn forward toward the log – **to avoid this, engage the bumper spike firmly in the wood.**

### Pushback (B)

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When the chain on the top of the bar – underbucking – is suddenly pinched, caught or encounters a foreign object in the wood, the chain saw may suddenly be driven straight back toward the operator – **to avoid this:**

- Do not allow the top of the guide bar to become jammed
- Do not twist the guide bar in the cut

### Be very careful

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- With freely hanging limbs
- With trunks that are under tension between other trees because they fell unfavourably
- When working in windbreaks

In these cases, do not use a chain saw – use a hoist, winch or dragline instead.

Pull out trunks that are lying about and have been cut free. Whenever possible, deal with them in open areas.

**Dead wood** (brittle, rotten or dead wood) poses a significant, highly unpredictable hazard. It is extremely difficult or even practically impossible to recognise the danger. Use aids such as winches or draglines.

When **felling close to roads, rail lines, power lines**, etc., work with particular care. If necessary, notify police, power companies or railway authorities.

## Working Techniques

Sawing and felling work, including all related work (plunge cutting, limbing, etc.) may only be carried out by persons who have been specially trained and instructed. Persons who are not experienced chain saw users should not carry out any such work – increased risk of accidents!

Country-specific legislation on felling technique must be complied with during felling work.

### Cutting

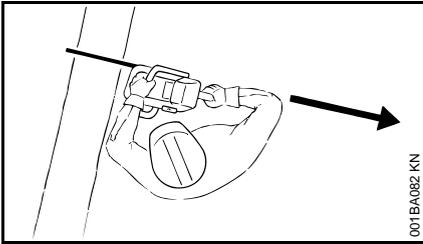
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Do not operate your saw with the starting throttle lock engaged. Engine speed cannot be controlled with the throttle trigger in this position.

Work calmly and carefully – in daylight conditions and only when visibility is good. Ensure you do not endanger others – stay alert at all times.

First-time users are advised to practice cutting logs on a sawhorse – see "When cutting small logs".

Use the shortest possible guide bar: The chain, guide bar and chain sprocket must match each other and your saw.



Position the saw so that your body is **clear of the cutting attachment**.

Always pull the saw out of the cut with the chain running.

Use your chain saw for cutting only. It is not designed for prying or shoveling away limbs, roots or other objects.

Do not underbuck freely hanging limbs.

Take care when cutting scrub and young trees. The saw chain may catch and throw thin shoots in your direction.

**To reduce the risk of injury**, take special care when cutting shattered wood because of the risk of injury from splinters being caught and thrown in your direction.

Make sure your saw does not touch any foreign materials: Stones, nails, etc. may be flung off and damage the saw chain. The saw may kick back unexpectedly – **risk of accidents**.

If the rotating chain makes contact with a rock or other solid object there is a risk of sparking which may cause easily combustible material to catch fire under certain circumstances. Dry plants and scrub are also easily combustible, especially in hot and dry weather conditions. If there is a risk of fire, do not use your chainsaw near combustible

materials, dry plants or scrub. Always contact your local forest authority for information on a possible fire risk.



If on a slope, stand on the uphill side of the log. Watch out for rolling logs.

#### **When working at heights:**

- Always use a lift bucket
- Never work on a ladder or in a tree
- Never work on an insecure support
- Do not work above shoulder height
- Never operate your power tool with one hand

Begin cutting with the saw at full throttle and engage the spiked bumper firmly in the wood, and then continue cutting.

Never work without the spiked bumper because the saw may pull you forwards and off balance. Always engage the spiked bumper securely in the tree or limb.

Note when reaching the end of a cut that the saw is no longer supported in the kerf. You have to take the full weight of the machine since **it might otherwise go out of control**.

#### **When cutting small logs:**

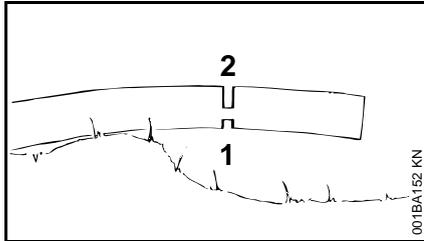
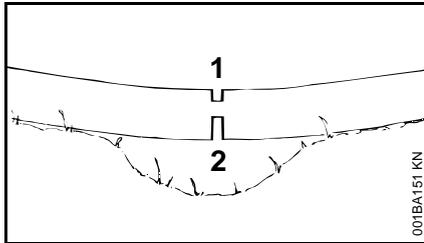
- Use a sturdy and stable support – sawhorse.
- Never hold the log with your leg or foot.
- Never allow another person to hold the log or help in any other way.

#### **Limbing:**

- Use a low kickback chain.
- Work with the saw supported wherever possible.
- Do not stand on the log while limbing it.
- Do not cut with the bar nose.
- Watch for limbs which are under tension.
- Never cut several limbs at once.

#### **Lying or standing logs under tension:**

Always make cuts in the correct sequence (first at the compression side (1), then at the tension side (2), the saw may otherwise pinch or kick back – **risk of injury**).



- Make relieving cut at the compression side (1)
- Make bucking cut at the tension side (2)

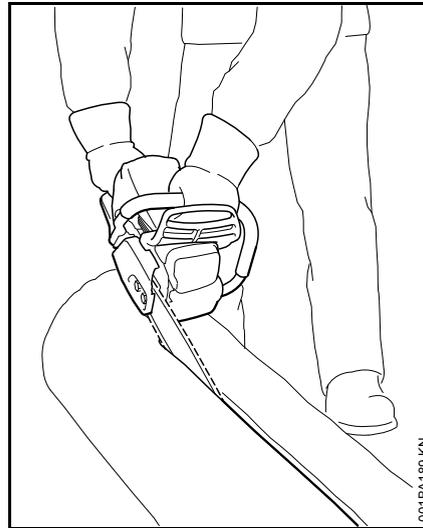
Be wary of **pushback** when making bucking cut from the bottom upwards (underbuck).



#### NOTICE

Do not cut a lying log at a point where it is touching the ground because the saw chain will otherwise be damaged.

#### Ripping cut:

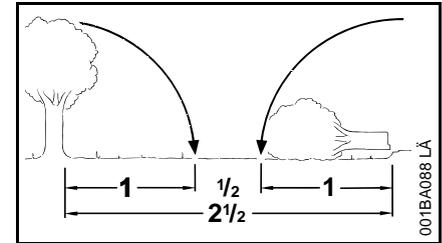


Cutting technique in which the spiked bumper is not used – risk of pull-in – start the cut with the guide bar at the shallowest possible angle – take extra care since there is an increased **danger of kickback**.

#### Preparations for Felling

Check that there are no other persons in the felling area – other than helpers.

Make sure no-one is endangered by the falling tree – the noise of your engine may drown any warning calls.



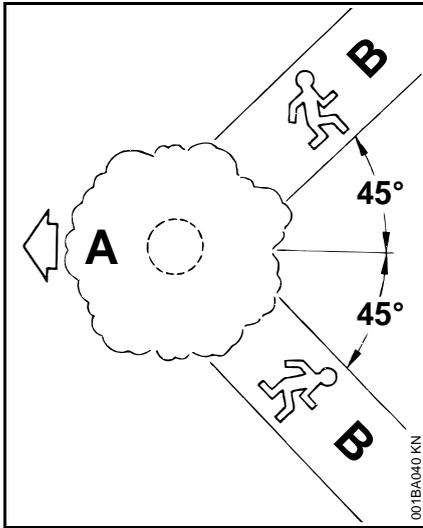
Maintain a distance of at least 2 1/2 tree lengths from the next felling site.

#### Determine direction of fall and escape path.

Select gap in stand into which you want the tree to fall.

Pay special attention to the following points:

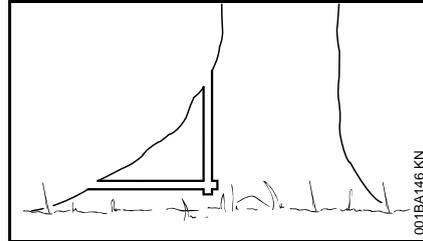
- The natural lean of the tree
- Any unusually heavy limb structure, damage
- The wind direction and speed – do not fell in high winds
- Sloping ground
- Neighboring trees
- Snow load
- Soundness of tree – take special care if trunk is damaged or in case of deadwood (dry, decayed or rotted wood)



- A** Direction of fall  
**B** Escape path (or retreat path)
- Establish paths of escape for everyone concerned – opposite to direction of fall at about 45°.
  - Remove all obstacles from escape paths.
  - Place all tools and equipment a safe distance away from the tree, but not on the escape paths.
  - Always keep to the side of the falling tree and only walk away along the preplanned escape path.
  - On steep slopes, plan escape routes parallel to the slope.
  - When walking away along the escape path, watch out for falling limbs and watch the top of the tree.

### Preparing work area at base of tree

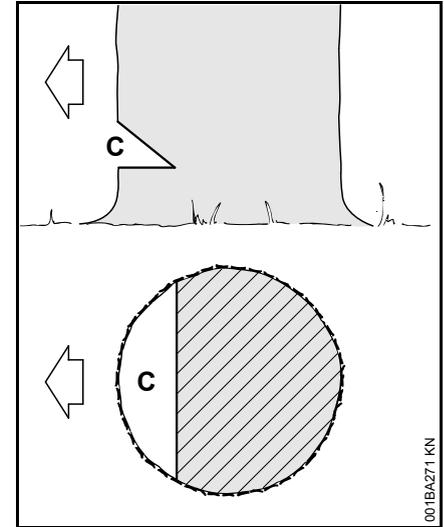
- First clear the tree base and work area from interfering limbs and brush to provide a secure footing.
- Clean lower portion of tree base (e.g. with an axe) – sand, stones and other foreign objects will dull the saw chain.



- Make the vertical cut first, then the horizontal – but only if the wood is sound

### Felling Notch

#### Preparing felling notch

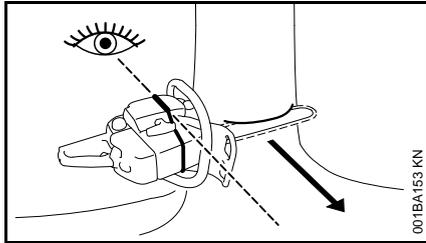


The felling notch (C) determines the direction of fall.

Important:

- Make felling notch at a right angle to the planned direction of fall.
- Cut close to the ground.
- Cut to a depth of about 1/5 to 1/3 of the trunk diameter.

### Determine direction of fall with gunning sight on shroud and fan housing



Your chainsaw has a gunning sight on the shroud and fan housing. Use this gunning sight.

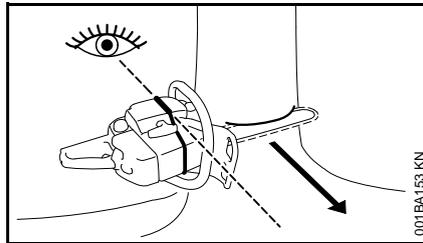
### Making Felling Notch

Position the saw so that the felling notch is at a right angle to the direction you want the tree to fall.

The sequence in which the felling notch is made with a horizontal cut (bottom) and angled cut (top) is defined in country-specific regulations.

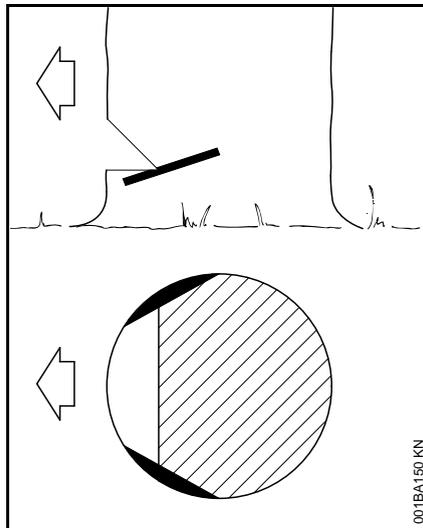
- Make horizontal cut (bottom)
- Make the angled cut (top) at about 45° - 60° to the horizontal cut.

### Check direction of fall



- Position the saw in the horizontal cut. The gunning sight must point in the planned direction of fall – if necessary, correct direction of fall by re-cutting the felling notch.

### Sapwood cuts



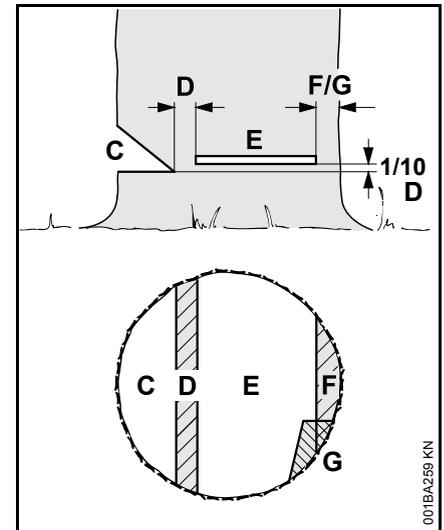
Sapwood cuts in long-fibered softwood help prevent sapwood splintering when the tree falls. Make cuts at both sides of the trunk at same height as bottom of

felling notch to a depth of about 1/10 of trunk diameter. On large diameter trees, cut to no more than width of guide bar.

Do not make sapwood cuts if wood is diseased.

### Basic Information on Felling Cut

#### Stump dimensions



The **felling notch** (C) determines the direction of fall.

The **hinge** (D) helps control the falling tree.

- Width of hinge: about 1/10 of tree diameter.
- **To reduce the risk of accidents**, do not cut through the hinge – you could lose control of the direction of fall.
- Leave a broader hinge on rotten trees.

The tree is felled with the **felling cut** (E).

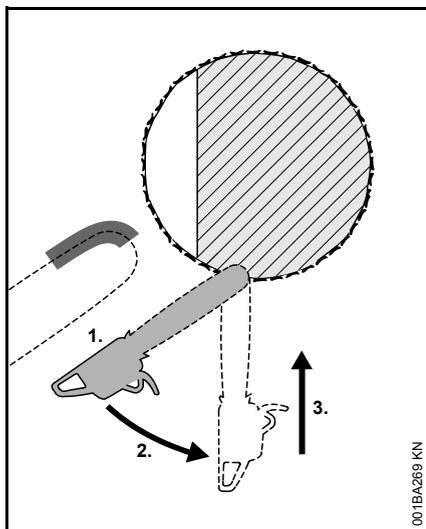
- Cut horizontally.
- 1/10 (at least 3 cm) of width of hinge (D) higher than bottom of felling notch (C).

The **holding strap** (F) or **stabilizing strap** (G) supports the tree and helps prevent it from falling prematurely.

- Width of strap: about 1/10 to 1/5 of tree diameter.
- Do not cut into the strap while making the felling cut.
- Leave a broader strap on rotten trees.

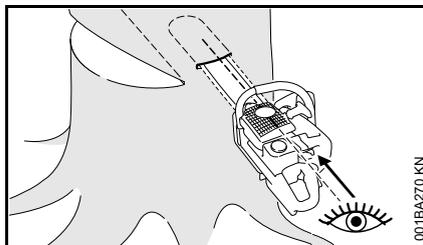
### Plunge cutting

- For relieving cuts during bucking
- For wood carving



- Use a low kickback chain and exercise particular caution

1. Begin cut by applying the lower portion of the guide bar nose – do not use upper portion because of – **risk of kickback**. Start cutting at full throttle until depth of kerf is twice the width of the guide bar.
2. Swing saw slowly into plunge-cutting position – take care because of the **risk of kickback or pushback**.
3. Make the plunge cut very carefully. **Danger of pushback.**



Use the plunge-cutting sight if possible. The plunge-cutting sight and the top and bottom of the guide bar are parallel.

When making the plunge cut, the sight helps keep the hinge horizontal, i.e. the same thickness all round. To do this, hold the plunge-cutting sight parallel to the chord of the felling notch.

### Felling wedges

Make use of wedges as soon as possible, i.e. providing they do not interfere with cutting. Drive wedge into felling cut with a suitable tool.

Use only aluminum or plastic wedges – never steel. Steel wedges can seriously damage the saw chain and cause dangerous kickback.

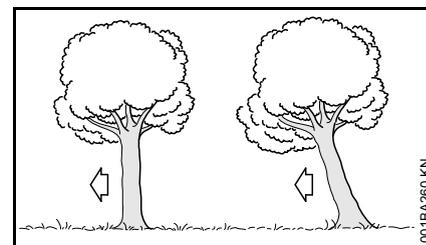
Select felling wedges that suit the diameter of the tree and width of the kerf (felling cut (E)).

Contact your STIHL dealer for advice on selecting the right felling wedge (length, width and height).

### Choosing Right Felling Cut

The criteria for choosing the right felling cut are the same as those for determining the direction of fall and the escape path.

There are many different variations of these characteristics. Only the two most common characteristics are described in this manual:

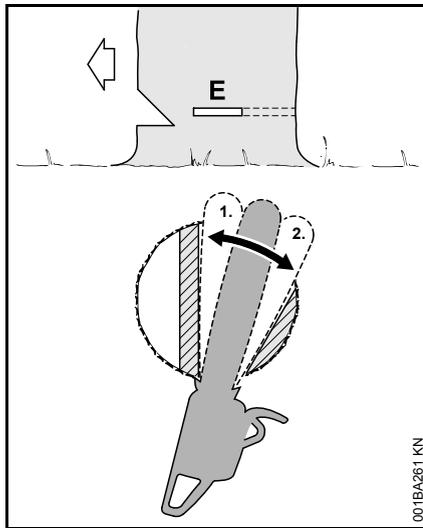


Left:	Normal tree – vertical trunk with uniform tree crown.
Right:	Leaner – tree crown leans in direction of fall.

### Felling Cut with Stabilizing Strap (Normal Tree)

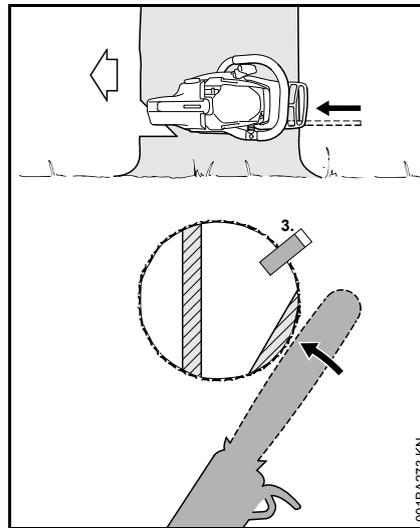
#### A) Small diameter trees

Perform this felling cut when the tree diameter is smaller than the length of the guide bar.



Shout a warning before starting the felling cut.

- Start felling cut (E) using plunge-cut method – insert full length of guide bar in the trunk.
- Engage the spiked bumper behind the hinge and use it as a pivot – avoid repositioning the saw more than necessary.
- Enlarge felling cut as far as hinge (1).
- Do not cut into the hinge.
- Enlarge felling cut as far as stabilizing strap (2).
- Do not cut into the stabilizing strap.



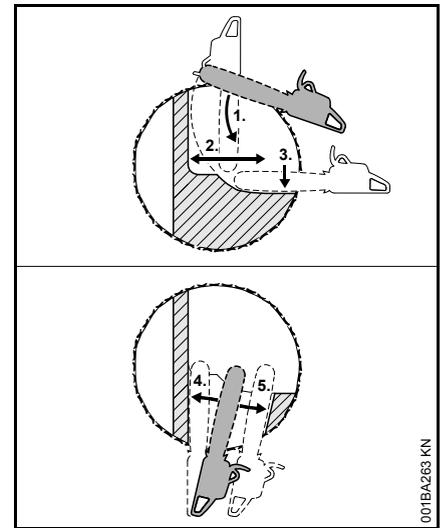
- Insert a felling wedge (3).

Shout a second warning immediately before the tree falls.

- Holding the saw with outstretched arms, cut through the stabilizing strap horizontally at the same level as the felling cut.

### B) Large diameter trees

Perform this felling cut when the tree diameter is greater than the length of the guide bar.



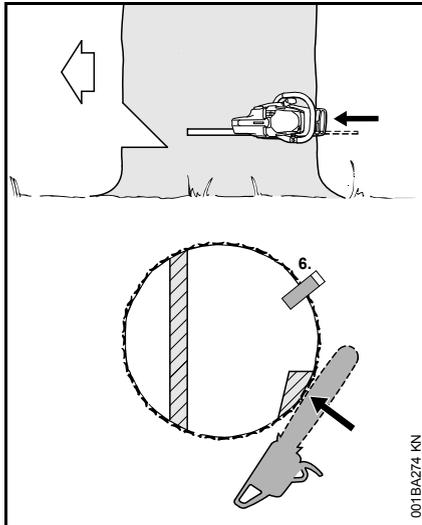
Shout a warning before starting the felling cut.

- Engage the spiked bumper at the required height of the felling cut and use it as a pivot – avoid repositioning the saw more than necessary.
- The guide bar nose enters the wood (1) before it reaches the hinge – hold the saw horizontally and swing it as far as possible.
- Enlarge felling cut as far as hinge (2).
- Do not cut into the hinge.
- Enlarge felling cut as far as stabilizing strap (3).
- Do not cut into the stabilizing strap.

Continue the felling cut on the other side of the trunk.

Make sure the second cut is at the same height as the first cut.

- Start felling cut using plunge-cut method.
- Enlarge felling cut as far as hinge (4).
- Do not cut into the hinge.
- Enlarge felling cut as far as stabilizing strap (5).
- Do not cut into the stabilizing strap.



- Insert a felling wedge (6).

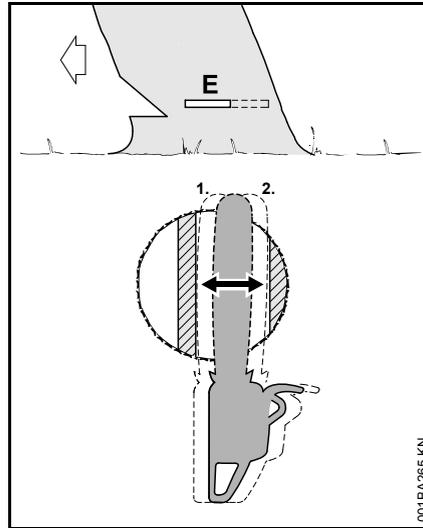
Shout a second warning immediately before the tree falls.

- Holding the saw with outstretched arms, cut through the stabilizing strap horizontally at the same level as the felling cut.

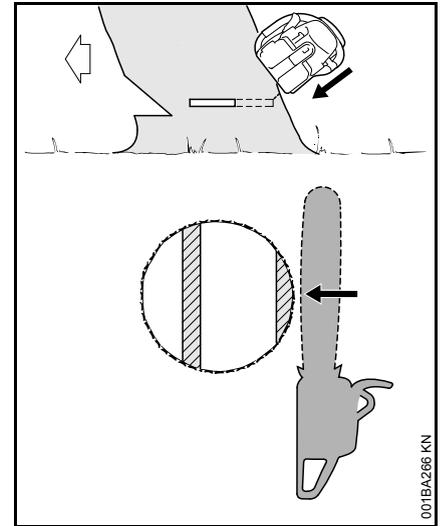
### Felling Cut with Holding Strap (Leaner)

#### A) Small diameter trees

Perform this felling cut when the tree diameter is smaller than the length of the guide bar.



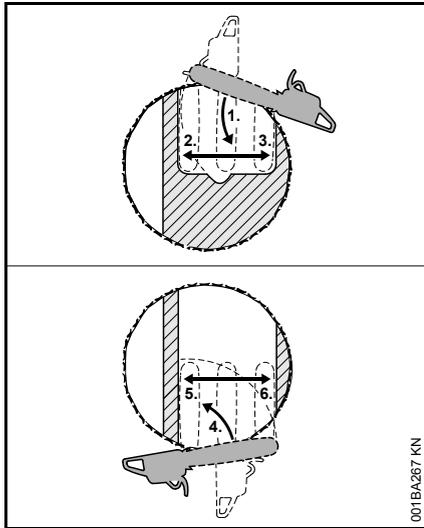
- Plunge the guide bar into the trunk until it emerges at the other side.
- Enlarge the felling cut (E) in direction of hinge (1).
- Cut horizontally.
- Do not cut into the hinge.
- Enlarge the felling cut in direction of holding strap (2).
- Cut horizontally.
- Do not cut into the holding strap.



Shout a second warning immediately before the tree falls.

- Cut through the holding strap at a downward angle from outside with outstretched arms.

## B) Large diameter trees



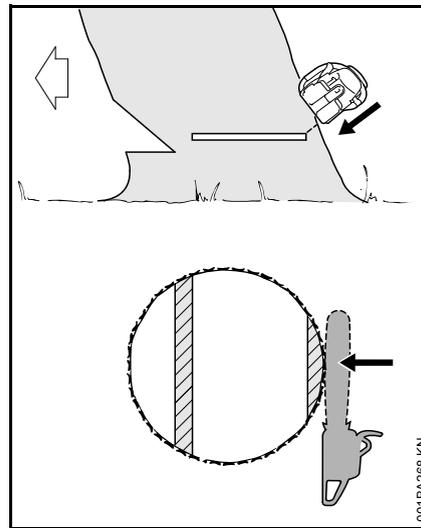
Perform this felling cut when the tree diameter is greater than the length of the guide bar.

- Engage the spiked bumper behind the holding strap and use it as a pivot – avoid repositioning the saw more than necessary.
- The guide bar nose enters the wood (1) before it reaches the hinge – hold the saw horizontally and swing it as far as possible.
- Do not cut into the holding strap or hinge.
- Enlarge felling cut as far as hinge (2).
- Do not cut into the hinge.
- Enlarge felling cut as far as holding strap (3).
- Do not cut into the holding strap.

Continue the felling cut on the other side of the trunk.

Make sure the second cut is at the same height as the first cut.

- Engage the spiked bumper behind the hinge and use it as a pivot – avoid repositioning the saw more than necessary.
- The guide bar nose enters the wood (4) before it reaches the holding strap – hold the saw horizontally and swing it as far as possible.
- Enlarge felling cut as far as hinge (5).
- Do not cut into the hinge.
- Enlarge felling cut as far as holding strap (6).
- Do not cut into the holding strap.



Shout a second warning immediately before the tree falls.

- Cut through the holding strap at a downward angle from outside with outstretched arms.

## Maintenance and Care

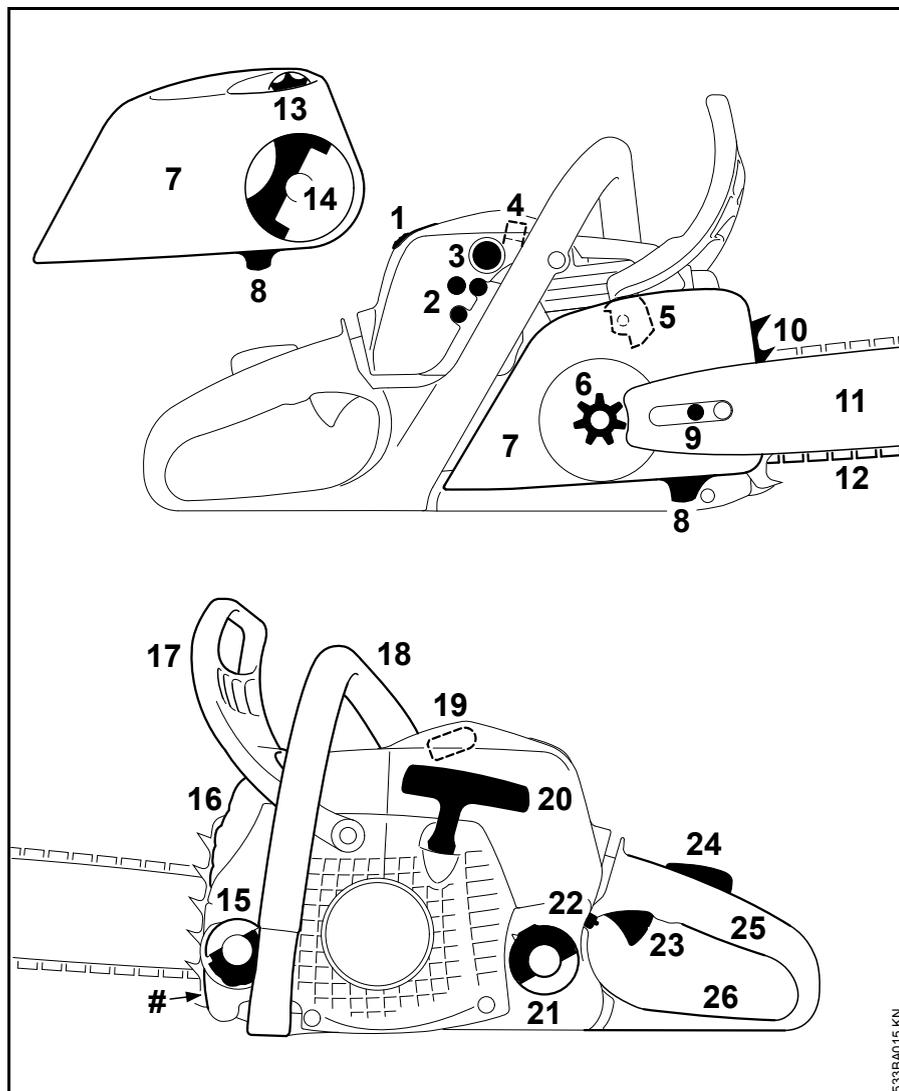
The following maintenance intervals apply to normal usage and operating conditions. If your daily working time is longer or operating conditions are difficult (very dusty work area, resin-rich wood, tropical wood, etc.), shorten the specified intervals accordingly. If you only use your power tool occasionally, extend the intervals accordingly.		before starting work	after finishing work or daily	after each refueling stop	weekly	monthly	every 12 months	if problem	if damaged	as required
Complete machine	Visual inspection (condition, leaks)	X		X						
	Clean		X							
Throttle trigger, trigger lockout, choke lever, stop switch, Master Control lever (depending on version)	Check operation	X		X						
Chain brake	Check operation	X		X						
	Have checked by servicing dealer <sup>1)</sup>									X
Manual fuel pump (if fitted)	Check	X								
	Have repaired by servicing dealer <sup>1)</sup>								X	
Pickup body/filter in fuel tank	Check					X				
	Clean, replace filter element					X		X		
	Replace						X		X	X
Fuel tank	Clean					X				
Chain oil tank	Clean					X				
Chain lubrication	Check	X								
Chain	Inspect, also check sharpness	X		X						
	Check chain tension	X		X						
	Sharpen									X
Guide bar	Check (wear, damage)	X								
	Clean and turn over									X
	Deburr				X					
	Replace								X	X
Chain sprocket	Check				X					
Air filter	Clean							X		X
	Replace								X	

The following maintenance intervals apply to normal usage and operating conditions. If your daily working time is longer or operating conditions are difficult (very dusty work area, resin-rich wood, tropical wood, etc.), shorten the specified intervals accordingly. If you only use your power tool occasionally, extend the intervals accordingly.		before starting work	after finishing work or daily	after each refueling stop	weekly	monthly	every 12 months	if problem	if damaged	as required
Antivibration elements	Check	X						X		
	Have replaced by servicing dealer <sup>1)</sup>								X	
Air inlet on fan housing	Clean		X		X					X
Cylinder fins	Clean		X			X				X
Carburetor	Check idle adjustment – chain must not rotate	X		X						
	Adjust idle speed; if necessary, have saw serviced or repaired by dealer <sup>1)</sup>									X
Spark plug	Readjust electrode gap							X		
	Replace after every 100 hours of operation									
All accessible screws and nuts (not adjusting screws)	Retighten <sup>2)</sup>									X
Chain catcher	Check	X								
	Replace								X	
Exhaust port	Decoke after first 139 hours of operation, then every 150 hours of operation									X
Safety labels	Replace								X	

<sup>1)</sup> STIHL recommends a STIHL servicing dealer

<sup>2)</sup> Firmly tighten down the cylinder base screws of professional saws (3.4 kW or more) after 10 to 20 hours of operation.

## Main Parts



- 1 Shroud slide
- 2 Carburetor adjusting screws
- 3 Manual fuel pump (Easy Start<sup>1)</sup>)
- 4 Slide (summer operation/ winter operation, MS 211 only)
- 5 Chain brake
- 6 Chain sprocket
- 7 Chain sprocket cover
- 8 Chain catcher
- 9 Side chain tensioner
- 10 Bumper spike
- 11 Guide bar
- 12 Oilomatic saw chain
- 13 Adjusting wheel (quick tensioner)
- 14 Wings of the wing nut<sup>1)</sup> (quick tensioner)
- 15 Oil filler cap
- 16 Muffler
- 17 Front hand guard
- 18 Front handle (handlebar)
- 19 Spark plug boot
- 20 Starter grip
- 21 Fuel tank twist lock
- 22 Master Control lever
- 23 Throttle trigger
- 24 Throttle trigger interlock
- 25 Rear handle
- 26 Rear hand guard
- # Serial number

1) According to version





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