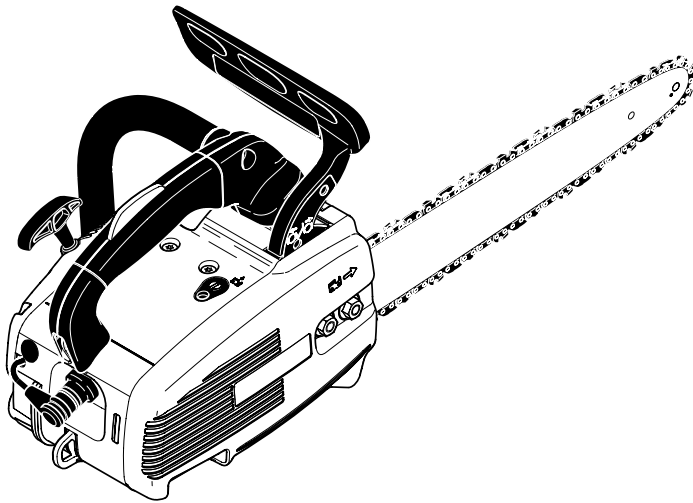




Instruction Manual

Original Instruction Manual



DCS3410TH



Important:

Read this instruction manual carefully before putting the chain saw into operation and strictly observe the safety regulations! Only persons who have completed training in working from elevated platforms (cherry pickers, lifts), from platforms mounted on ladders or who are proficient in climbing with ropes are permitted to operate this chain saw. Keep this Instruction Manual!

Thank you for purchasing a MAKITA product!

Congratulations on choosing a MAKITA chain saw! We are confident that you will be satisfied with this modern piece of equipment.

The DCS3410TH (Tophandle) is a very light and handy chain saw with the handle on the top. This model was developed especially for tree surgery and care. Only persons who have completed training in working from elevated platforms (cherry pickers, lifts), from platforms mounted on ladders or who are proficient in climbing with ropes are permitted to operate this chain saw.



The automatic chain lubrication with variable-flow oil pump and maintenance-free electronic ignition ensure trouble-free operation, while the hand-saving anti-vibration system and ergonomic grips and controls make work easier, safer, and less tiring for the user.

The safety features of the DCS3410TH are state of the art and meet all German and international safety standards.

They include handguards on both grips, grip safety, chain catch, safety saw chain, and chain brake. The chain brake can be actuated manually, and is also inertia-actuated automatically in case of kickback.



In order to ensure the proper functioning and performance of your new chain saw, and to safeguard your own personal safety, it is imperative that you read this instruction manual thoroughly before operation. Be especially careful to observe all safety precautions! Failure to observe these precautions can lead to severe injury or death!

EU Conformity Declaration

The undersigned, Tamiro Kishima and Rainer Bergfeld, as authorized by DOLMAR GmbH, declare that the MAKITA machines,

Type: 170 **EU prototype test certificate No.**

DCS3410TH **M6T 09 06 24243 098**

manufactured by DOLMAR GmbH, Jenfelder Str. 38, 22045 Hamburg, Germany, conforms to the basic safety and health requirements of the applicable EU guidelines:

EU Machinery Directive 98/37/EG, EU EMC Directive 2004/108/EG, Outdoor Noise Directive 2000/14/EG. Starting on 29 Dec. 2009, Directive 2006/42/EG will come into force, replacing Directive 98/37/EG. This product meets the requirements of the new Directive.

The most important standards applied to properly meet the requirements of the above EU Directive were: EN 14982, EN ISO 11681-2, EN 61000-4-2, EN 61000-4-3, CISPR 12.

The conformity assessment procedure 2000/14/EG was performed per Annex V. The measured noise level (L_{wa}) is 106 dB(A). The guaranteed noise level (L_d) is 108 dB(A).

The EU Type-Examination Certificate was performed by: TÜV Product Service GmbH, Zertifizierungsstelle, Ridlerstraße 31, D-80339 München.

The technical documentation is on file at DOLMAR GmbH, Abteilung FZ, Jenfelder Strasse 38, 22045 Hamburg, Germany.

Hamburg, 13.7.2009 for DOLMAR GmbH

Tamiro Kishima
Managing Director

Rainer Bergfeld
Managing Director

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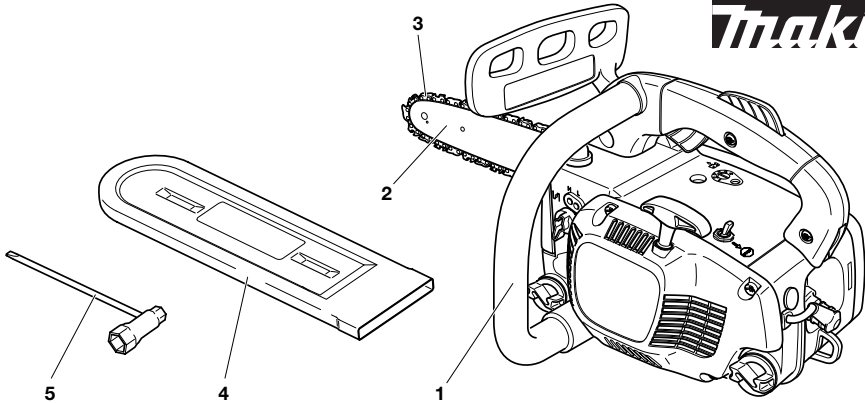
Packing

Your MAKITA chain saw will be delivered in a protective cardboard box to prevent transport damage.

Cardboard is a basic raw material and is consequently reusable or suitable for recycling (waste paper recycling).



Delivery inventory



- 1. Chain saw
- 2. Guide bar
- 3. Saw chain
- 4. Chain protection cover
- 5. Assembly tool
- 6. Instruction manual (not shown)

In case one of the parts listed should not be included in the delivery inventory, please consult your sales agent.

Symbols

You will notice the following symbols on the chain saw and in the instruction manual:

	Read instruction manual and follow the warning- and safety precautions!		STOP-switch (short-circuit switch)		Chaine brake
	Warning This saw is to be used by properly trained operators only.		Stop engine!		Fuel and oil mixture
			Engine -manual start		Chain oil
	Particular care and caution!		Saw chain oil adjustment screw		
	Forbidden!		Choke lever		Direction of chain movement
	Wear protective helmet, eye and ear protection!		Carburetor adjustment		First aid
	Wear protective gloves!		CAUTION: Kickback!		Recycling
	No smoking!				CE-Marking
	No open fire!		Hold the saw with both hands while working! One-handed use is extremely hazardous!		

SAFETY PRECAUTIONS

Power chain saws

This power chain saw may be used only for sawing wood out of doors. It is intended for the following uses depending on its class:

- **Professional and mid-class:** Use on small, medium and large trees: felling, limb removal, cutting to length, thinning.
- **Hobbyklasse:** Occasional use on small trees, fruit-tree care, felling, limb removal, cutting to length.

Unauthorised users:

Persons who are not familiar with the Instruction Manual, children, young people, and persons under the influence of drugs, alcohol or medication must not use this saw.

General precautions

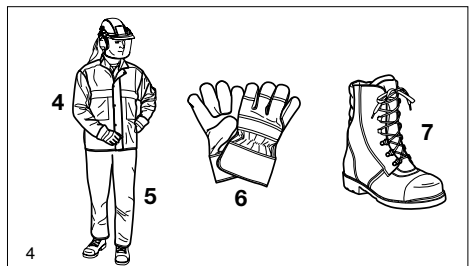
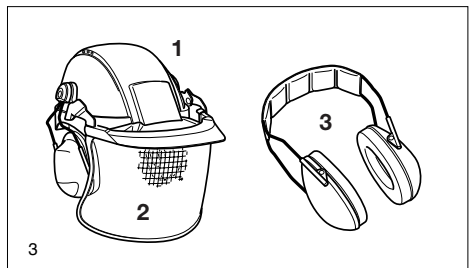
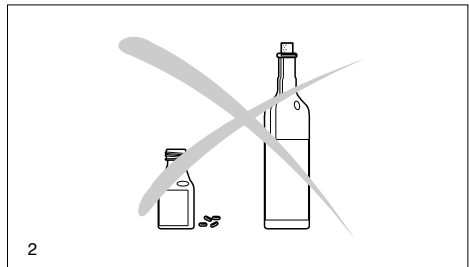
- To ensure correct operation the user has to read this instruction manual to make himself familiar with the characteristics of the chain saw. Users insufficiently informed will endanger themselves as well as others due to improper handling.
- Lend this chain saw only to persons with training and experience in the use of tree-surgery saws. Always hand over the instruction manual.
- Children and young persons aged under 18 years must not be allowed to operate the chain saw. Persons over the age of 16 years may, however, use the chain saw for the purpose of being trained as long as they are under the supervision of a qualified trainer.
- Use chain saws always with the utmost care and attention.
- Operate the chain saw only if you are in good physical condition. If you are tired, your attention will be reduced. Be especially careful at the end of a working day. Perform all work calmly and carefully. The user has to accept liability for others.
- Never work under the influence of alcohol, drugs or medication.
- A fire extinguisher must be available in the immediate vicinity when working in easily inflammable vegetation or when it has not rained for a long time (danger of fire).

Protective equipment

- In order to avoid head, eye, hand or foot injuries as well as to protect your hearing the following protective equipment must be used during operation of the chain saw:
- The kind of clothing should be appropriate, i. e. it should be tight-fitting but not be a hindrance. Do not wear jewellery or clothing which could become entangled with bushes or shrubs. If you have long hair, always wear a hairnet!
- It is necessary to wear a protective helmet whenever working with the chain saw. The protective helmet (1) is to be checked in regular intervals for damage and is to be replaced after 5 years at the latest. Use only approved protective helmets.
- The face shield (2) of the protective helmet (or the goggles) protects against sawdust and wood chips. During operation of the chain saw always wear a goggle or a face shield to prevent eye injuries.
- Wear adequate noise protection equipment (ear muffs (3), ear plugs, etc.). Octave brand analysis upon request.
- The protective jacket (4) consists of 22 layers of nylon and protects the operator against cuts. It is always to be worn when working from elevated platforms (cherry pickers, lifts), from platforms mounted on ladders or when climbing with ropes.
- The protective brace and bib overall (5) is made of a nylon fabric with 22 layers and protects against cuts. We strongly recommend its use.
- Protective gloves (6) made of thick leather are part of the prescribed equipment and must always be worn during operation of the chain saw.
- During operation of the chain saw safety shoes or safety boots (7) fitted with anti skid sole, steel toe caps and protection for the leg must always be worn. Safety shoes equipped with a protective layer provide protection against cuts and ensure a secure footing. For working in trees the safety boots must be suitable for climbing techniques.

CAUTION:

This chain saw is designed especially for tree care and surgery. All work with this chain saw is to be carried out by properly trained persons only. Observe all literature, procedures and recommendations from the relevant professional organisation. Failure to do so constitutes a high accident risk! We recommend always using a rising platform (cherry picker, lift) for sawing in trees. Rappelling techniques are extremely dangerous and require special training! The operator must be trained in and familiar with the use of safety equipment and working and climbing techniques! Always use the appropriate belts, ropes and carabiners when working in trees. Always use restraining equipment for both the operator and the saw!



Fuels / Refuelling

- Stop the engine before refuelling the chain saw.
- Do not smoke or work near open fires (5).
- Let the engine cool down before refuelling.
- Fuels can contain substances similar to solvents. Eyes and skin should not come in contact with mineral oil products. Always wear protective gloves when refuelling. Frequently clean and change protective clothes. Do not breathe in fuel vapors.
- Do not spill fuel or chain oil. When you have spilled fuel or oil immediately clean the chain saw. Fuel should not come in contact with clothes. If your clothes have come in contact with fuel, change them at once.
- Ensure that no fuel or chain oil oozes into the soil (environmental protection). Use an appropriate base.
- Refuelling is not allowed in closed rooms. Fuel vapors will accumulate near the floor (explosion hazard).
- Ensure to firmly tighten the screw caps of the fuel and oil tanks.
- Change the place before starting the engine (at least 3 m from the place of refuelling) (6).
- Fuel cannot be stored for an unlimited period of time. Buy only as much as will be consumed in the near future.
- Use only approved and marked containers for the transport and storage of fuel and chain oil. Ensure children have no access to fuel or chain oil.

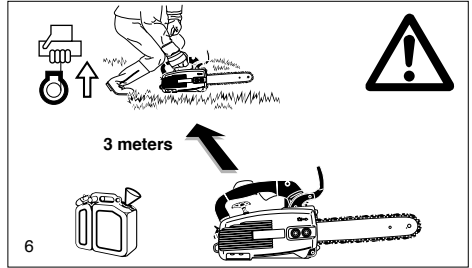


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Putting into operation

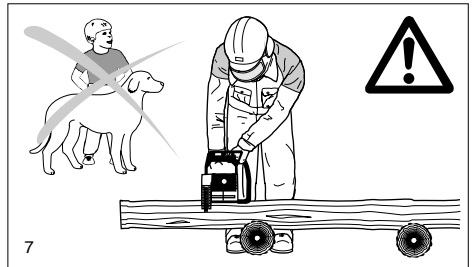
- Do not work on your own. There must be someone around in case of an emergency.

- Ensure that there are no children or other people within the working area. Pay attention to any animals in the working area, as well (7).
 - **Before starting work the chain saw must be checked for perfect function and operating safety according to the prescriptions.**
- Check especially the function of the chain brake, the correct mounting of the guide bar, the correct sharpening and tightening of the chain, the firm mounting of the sprocket guard, the easy motion of the throttle lever and the function of the throttle lever lock, the cleanliness and dryness of the handles, and the function of the ON/OFF switch.



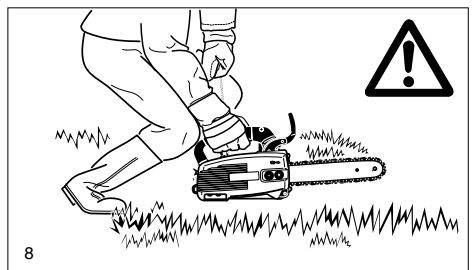
6

- Put the chain saw only into operation if it is completely assembled. Never use the chain saw when it is not completely assembled.
- Before starting the chain saw ensure that you have a safe footing.
- Put the chain saw into operation only as described in this instruction manual (8). Other starting methods are not allowed.
- When starting the chain saw it must be well supported and securely held. The guide bar and chain must not be in contact with any object.



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- **When working with the chain saw always hold it with both hands.** Take the back handle with the right hand and the tubular handle with the left hand. Hold the handles tightly with your thumbs facing your fingers. It is extremely dangerous to work with one hand, as the saw can fall through the completed cut uncontrolled (high risk of injury). Furthermore, it is impossible to control kickback with one hand.

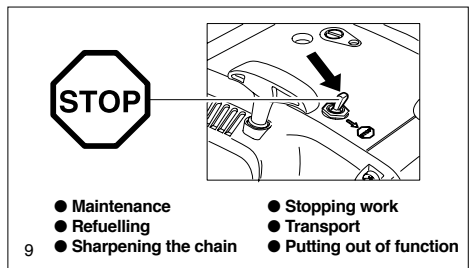


8

- **CAUTION: When releasing the throttle lever the chain will keep on running for a short period of time (free-wheeling).**
- Continuously ensure that you have a safe footing.
- Hold the chain saw such that you will not breathe in the exhaust gas. Do not work in closed rooms (danger of poisoning).
- **Switch off the chain saw immediately if you observe any changes in its operating behavior.**

- **The engine must be switched off before checking the chain tension, tightening the chain, replacing it or clearing malfunctions (9).**

- When the sawing device is hit by stones, nails or other hard objects, switch off the engine immediately and check the sawing device.
- When stopping work or leaving the working place switch off the chain saw (9) and put it down such that nobody is endangered.
- Do not put the overheated power chain saw in dry grass or on any inflammable objects. The muffler is very hot (danger of fire).
- **CAUTION: Oil dropping from the chain or guide bar after having stopped the saw chain will pollute the soil. Always use an appropriate base.**



9

Kickback

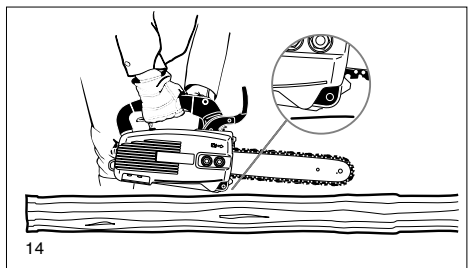
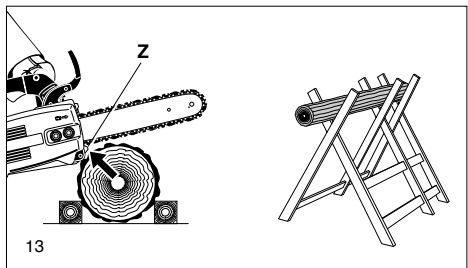
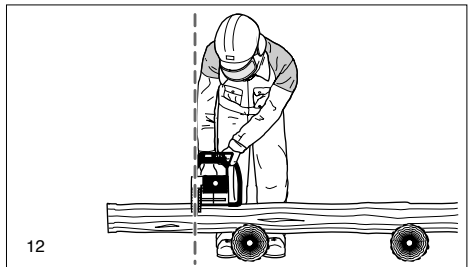
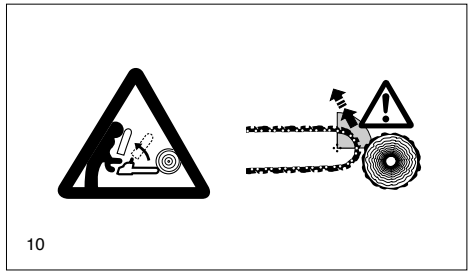
- When working with the chain saw dangerous kickbacks may occur.
- Kickback occurs when the upper part of the end of the guide bar inadvertently touches wood or other hard objects (10).
- Before the saw chain enters the cut, it can slip to the side or jump (caution: high risk of kickback).
- This causes the saw to be thrown back toward the user with great force and out of control. **Risk of injury!**

In order to prevent kickback, follow these rules:

- Only specially-trained persons should perform plunge cuts, i.e., piercing timber or wood with the tip of the saw!
- Always observe the end of the guide bar. Be careful when continuing an already started cut.
- When starting to cut the chain must be running.
- Ensure that the chain is always sharpened correctly. Pay special attention to the height of the depth limiter.
- Never cut several branches at the same time. When cutting a branch ensure that no other branch is touched.
- When crosscutting a trunk be aware of the trunks next to it.

Working behavior/Method of working

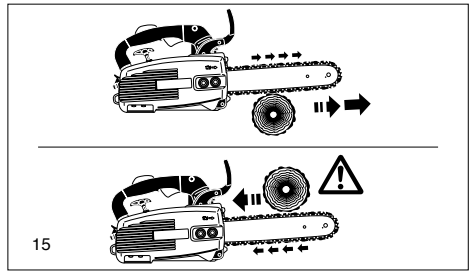
- Only use the chain saw during good light and visibility periods. Be aware of slippery or wet areas, and of ice and snow (risk of slipping). The risk of slipping is extremely high when working on recently peeled wood (bark).
- Never work on unstable surfaces. Make sure that there are no obstacles in the working area, risk of stumbling. Always ensure that you have a safe footing.
- Never saw above your shoulder height (11).
- Never saw while standing on a ladder (11).
- Never climb a tree and work without the appropriate restraining systems for the operator and the saw. We recommend always working from a rising platform (cherry picker, lift).
- Do not work leaning too far over.
- Guide the chain saw in such a way that no part of your body is within the elongated swivelling range of the saw (12).
- Use the chain saw for sawing wood only.
- Avoid touching the ground with the chain saw while it is still running.
- Never use the chain saw for lifting up or removing pieces of wood or other objects.
- Remove foreign objects such as sand, stones and nails found within the working area. Foreign objects may damage the sawing device and can cause dangerous kickback.
- When sawing pre-cut timber use a safe support (sawing jack, 13). Do not steady the workpiece with your foot, and do not allow anyone else to hold or steady it.
- Secure round pieces against rotation.
- **For felling and crosscuts the spike bar (13, Z) must be applied to the wood to be cut.** We also recommend using the spike bar when cutting off thick branches.
- Before performing a **crosscut** firmly apply the spike bar to the timber, only then can the timber be cut with the chain running. For this the chain saw is lifted at the back handle and guided with the tubular handle. The spike bar serves as a centre of rotation. Continue by slightly pressing down the tubular handle and simultaneously pulling back the chain saw. Apply the spike bar a little bit deeper and once again lift the back handle.
- **When the timber must be pierced for cutting or longitudinal cuts are to be performed it is urgently recommended to have this carried out by specially trained persons only** (high risk of kickback).
- Do **longitudinal - lengthwise - cuts** at the lowest possible angle (14). Be very careful when doing this type of cut, as the spike bar cannot grip.
- The saw must be running whenever you remove the chain saw from the wood.
- When performing several cuts the throttle lever must be released in between.



- Be careful when cutting splintery wood. Cut pieces of wood may be pulled along (risk of injuries).
- When cutting with the upper edge of the guide bar, the chain saw may be pushed in the direction of the user if the chain gets clamped. For this reason use the lower edge of the bar whenever possible. The chain saw will then be pushed away from you (15).
- If the timber is under tension (16), first cut the pressure side (A). Then the crosscut can be performed on the tension side (B). Thus clamping of the guide bar can be avoided.

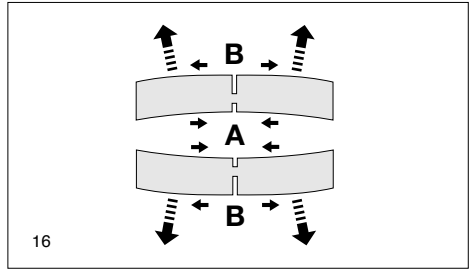
CAUTION:

People felling trees or cutting of branches must be specially trained. High risk of injuries!



15

- When cutting of branches, the chain saw should be supported on the trunk. Do not use the end of the bar for cutting (risk of kickback).
- Be aware of branches under tension. Do not cut free branches from below.
- Never perform detensioning cuts while standing on the trunk.
- **Before cutting down a tree ensure that**
 - a) only those people are within the working area which are actually involved in cutting down the tree.
 - b) every worker involved can withdraw without stumbling (the people should withdraw backwards in a diagonal line, i. e. at a degree of 45°).
 - c) the bottom part of the trunk is free from foreign objects, underbrush and branches. Make sure to have a safe footing (risk of stumbling).
 - d) the next working place is at least 2 1/2 tree lengths away (17). Before cutting down the tree check the direction of fall and make sure that there are neither people nor objects within a distance of 2 1/2 tree lengths.

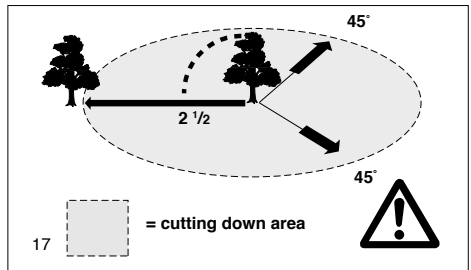


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Judging the tree:

Direction of hanging - loose or dry branches - height of the tree - natural overhang - is the tree rotten?

- Take into account the direction and speed of the wind. If strong gusts are occurring, do not do any felling. Avoid sawdust (pay attention to the direction the wind is blowing)!



17

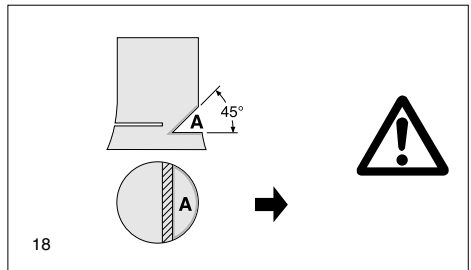
Cutting the roots:

Start with the strongest root. First do the vertical and then the horizontal cut.

- **Notching the trunk (18, A):**

The notch determines the direction of fall and guides the tree. The trunk is notched perpendicular to the direction of fall and penetrates 1/3 - 1/5 of the trunk diameter. Perform the cut near the ground.

- When correcting the cut, always do so over the whole width of the notch.



18

- **Cut down the tree (19, B)** above the bottom edge of the notch (D). The cut must be exactly horizontal. The distance between both cuts must be approx. 1/10 of the trunk diameter.

- The **material between both cuts (C)** serves as a hinge. Never cut it through, otherwise the tree will fall without any control. Insert felling wedges in time.

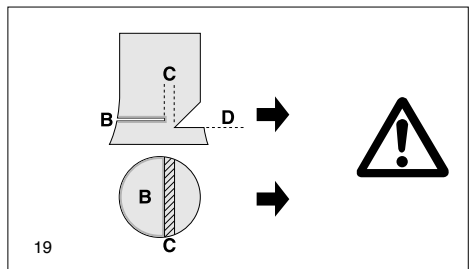
- Secure the cut only with wedges made of plastic or aluminium. Do not use iron wedges. If the saw hits an iron wedge the chain can be seriously damaged or torn.

- When cutting down a tree always stay sideways of the falling tree.

- When withdrawing after having performed the cut, be alert for falling branches.

- When working on sloping ground the user of the chain saw must stay above or sideways of the trunk to be cut or the tree already cut down.

- Be alert for trunks which may roll towards you.



19

Transport and storage

- When changing your location during work switch off the chain saw and actuate the chain brake in order to prevent an inadvertent start of the chain.
- Never carry or transport the chain saw with the chain running.
- When transporting the chain saw over long distances the guide bar protection cover (delivered with the chain saw) must be applied.
- Carry the chain saw with the tubular handle. The guide bar points backwards (20). Avoid coming in contact with the muffler (danger of burns).
- Ensure safe positioning of the chain saw during car transportation to avoid fuel or chain oil leakage.
- Store the chain saw safely in a dry place. It must not be stored outdoors. Keep the chain saw away from children.
- Before storing the chain saw over a long period of time or shipping it the fuel and oil tanks must be completely emptied.

Maintenance

- **Before performing maintenance work switch off the chain saw (21) and pull out the plug cap.**
- Before starting work always check the operating safety of the chain saw, in particular the function of the chain brake. Make sure the saw chain is properly sharpened and tensioned (22).
- Operate the chain saw only at a low noise and emission level. For this ensure the carburetor is adjusted correctly.
- Regularly clean the chain saw.
- Regularly check the tank cap for tightness.

Observe the accident prevention instructions issued by trade associations and insurance companies. Do not perform any modifications on the chain saw. You will put your safety at risk.

Perform only the maintenance and repair works described in the instruction manual. All other work must be carried out by MAKITA Service.

Use only original MAKITA spare parts and accessories.

Using spare parts other than original MAKITA parts or accessories and guide bar/chain combinations or lengths which are not approved bring a high risk of accidents. We cannot accept any responsibility for accidents and damage resulting from using sawing devices or accessories which have not been approved.

First aid

For the event of a possible accident, please make sure that a first aid kit is always immediately available close by. Immediately replace any items used from the first aid box.

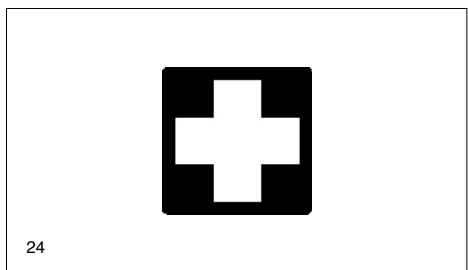
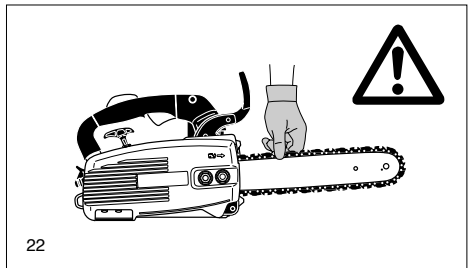
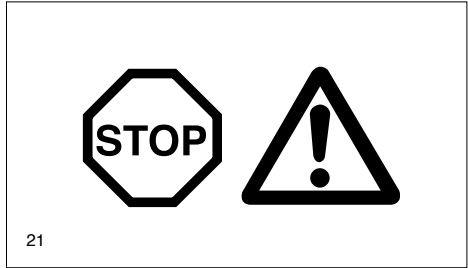
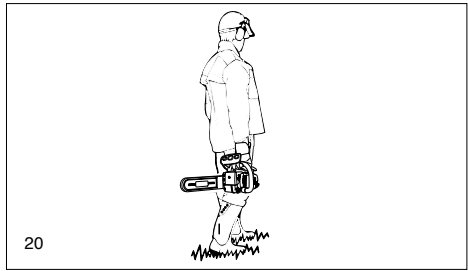
When calling for help, give the following information:

- Place of the accident
- What happened
- Number of injured people
- Kind of injuries
- Your name!

NOTE

Individuals with poor circulation who are exposed to excessive vibration may experience injury to blood vessels or the nervous system.

Vibration may cause the following symptoms to occur in the fingers, hands or wrists: "Falling asleep" (numbness), tingling, pain, stabbing sensation, alteration of skin colour or of the skin. **If any of these symptoms occur, see a physician!**



Technical data

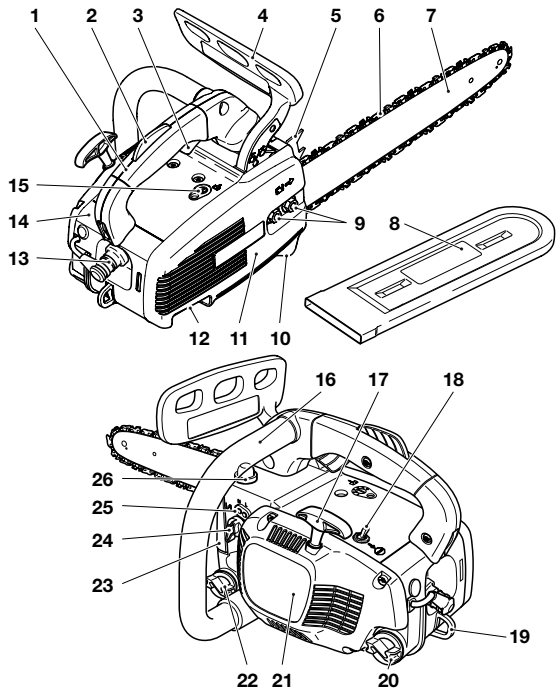
		DCS3410TH
Stroke volume	cm ³	34
Bore	mm	38
Stroke	mm	30
Max. power at operating speed	kW / rpm	1,4 / 8.500
Max. torque at speed	Nm / rpm	1,6 / 6.500
Idling speed / max. engine speed with bar and chain	rpm	3.000 / 12.500
Coupling speed	rpm	4.500
Sound pressure level at the workplace $L_{pA,eq}$ per ISO/CD 22868 ¹⁾³⁾	dB (A)	94,1 / $K_{pA} = 2,5$
Sound power level $L_{WA,eq}$ per ISO/CD 22868 ¹⁾³⁾	dB (A)	102,9 / $K_{WA} = 2,5$
Vibration acceleration $a_{w,eq}$ per ISO 22867 ¹⁾³⁾		
- Tubular handle	m/s ²	4,7 / $K = 2,0$
- Rear handle	m/s ²	5,2 / $K = 2,0$
Carburetor (diaphragm carburetor)	Type	WALBRO WT-778
Ignition system	Type	electronic
Spark plug	Type	NGK BPMR 7A
Electrode gap	mm	0,5
Fuel consumption at max. load per ISO 7293	kg/h	0,65
Specific consumption at max. load per ISO 7293	g/kWh	463
Fuel tank capacity	l	0,28
Chain oil tank capacity	l	0,22
Mix ratio (fuel/two-stroke oil)		
- when using MAKITA oil		50 : 1
- when using Aspen Alkylat (two-stroke fuel)		50 : 1 (2%)
- when using other oils		50 : 1 (quality grade: JASO FC or ISO EGD)
Chain brake		Actuation manually or by kickback
Chain speed ²⁾	m/s	21
Sprocket pitch	inch	3/8 / 1/4
Number of teeth	Z	6 / 8
Chain type - see the Extract from the spare-parts list		
Pitch / Driving element strength	inch	3/8 / .050 1/4 / .050
Guide bar, length of a cut	cm	30 / 35
Guide bar type - see the Extract from the spare-parts list		
Weight (fuel tank empty, without chain and guide bar)	kg	3,3

¹⁾ Figures derived in equal part from idle, full-load, and top-speed operation.

²⁾ At 1.33 times rated speed. ³⁾ Uncertainty (K=).

Denomination of components

- 1 Rear handle
- 2 Safety locking button (throttle lock)
- 3 Throttle lever
- 4 Hand guard (release for chain brake)
- 5 Spike bar (accessories)
- 6 Chain
- 7 Guide bar
- 8 Chain protection cover
- 9 Retaining nuts
- 10 Chain catch (safety device)
- 11 Sprocket guard
- 12 Muffler
- 13 Spark plug
- 14 Serial number
- 15 Adjusting screw for oil pump
- 16 Front grip (tubular handle)
- 17 Starter grip
- 18 I/STOP-switch (short-circuit switch)
- 19 Carabiner or rope attachment point
- 20 Oil tank cap
- 21 Fan housing with starting assembly
- 22 Fuel tank cap
- 23 Air filter cover
- 24 Choke switch
- 25 Adjusting screws for carburetor
- 26 Fuel pump (Primer)



PUTTING INTO OPERATION



CAUTION:

Before doing any work on the guide bar or chain, **always** switch off the engine and pull the plug cap off the spark plug (see „Replacing the spark plug“). Always wear protective gloves!

CAUTION:

Do not start the saw until it has been completely assembled and inspected!

A

Mounting the guide bar and saw chain

Use the universal wrench delivered with the chain saw for the following work.

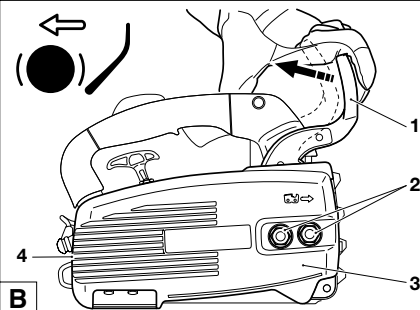
Put the chain saw on a stable surface and carry out the following steps for mounting the guide bar and chain:

Disengage the chain brake by pulling the hand guard (1) in the direction of the arrow.

Unscrew retaining nuts (2).

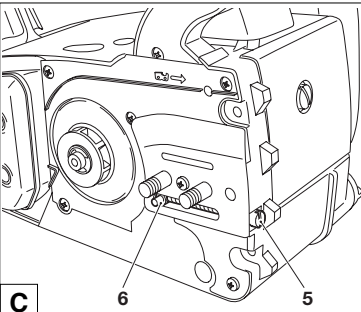
Carefully spread the sprocket guard (3), pull it from its fixture (4) and remove it.

B



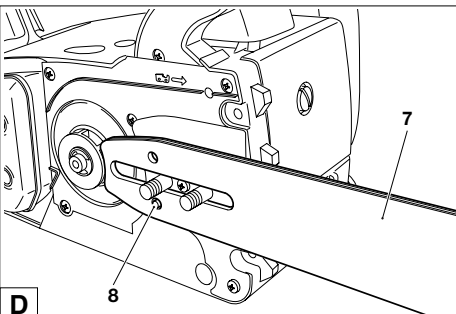
Turn the chain adjusting screw (5) to the left (counterclockwise) until the pin (6) is at the left stop.

C



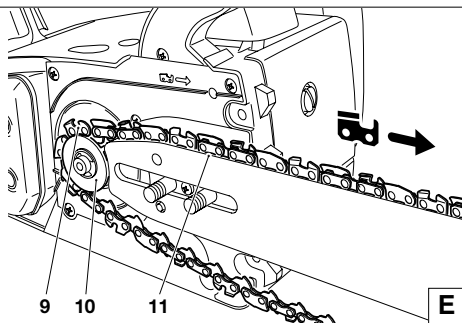
Position the guide bar (7). Make sure that the pin (8) of the chain tightener is in the hole on the guide bar.

D

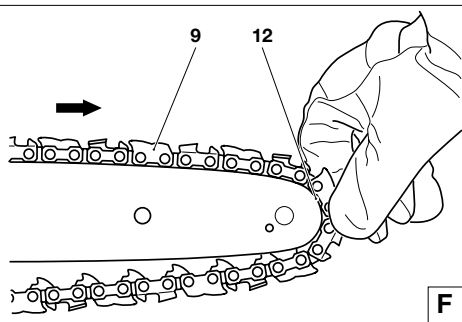


Lift the chain (9) over the sprocket (10). Using your right hand, guide the chain into the top guide groove (11) on the guide bar.

Note that the cutting edges along the top of the chain must point in the direction of the arrow!

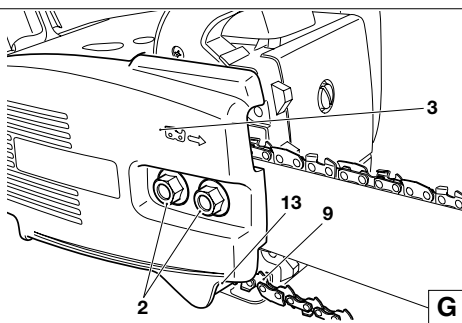


Pull the chain (9) around the sprocket nose (12) of the guide bar in the direction of the arrow.



First, push the sprocket guard (3) into its fixture (B/4), then push it over the retaining bolts while lifting the saw chain (9) over the chain catch (13).

Manually tighten the retaining nuts (2).

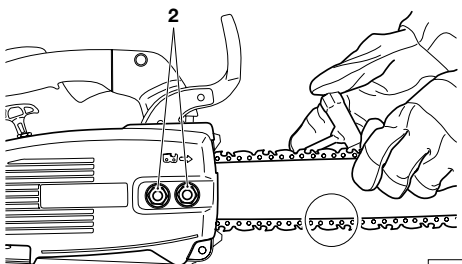


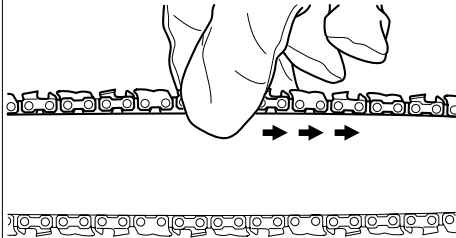
Tightening the saw chain

Turn the chain tightener (C/5) to the right (clockwise) until the chain engages the guide groove of the bottom side of the bar (see circle).

Slightly lift the end of the guide bar and turn the chain adjusting screw (C/6) to the right (clockwise) until the chain rests against the bottom side of the guide bar.

While still holding up the tip of the guide bar, tighten the retaining nuts (2) with the universal wrench.





A

Checking the chain tension

The tension of the chain is correct if the chain rests against the bottom side of the guide bar and can still be easily turned by hand.

While doing so the chain brake must be released.

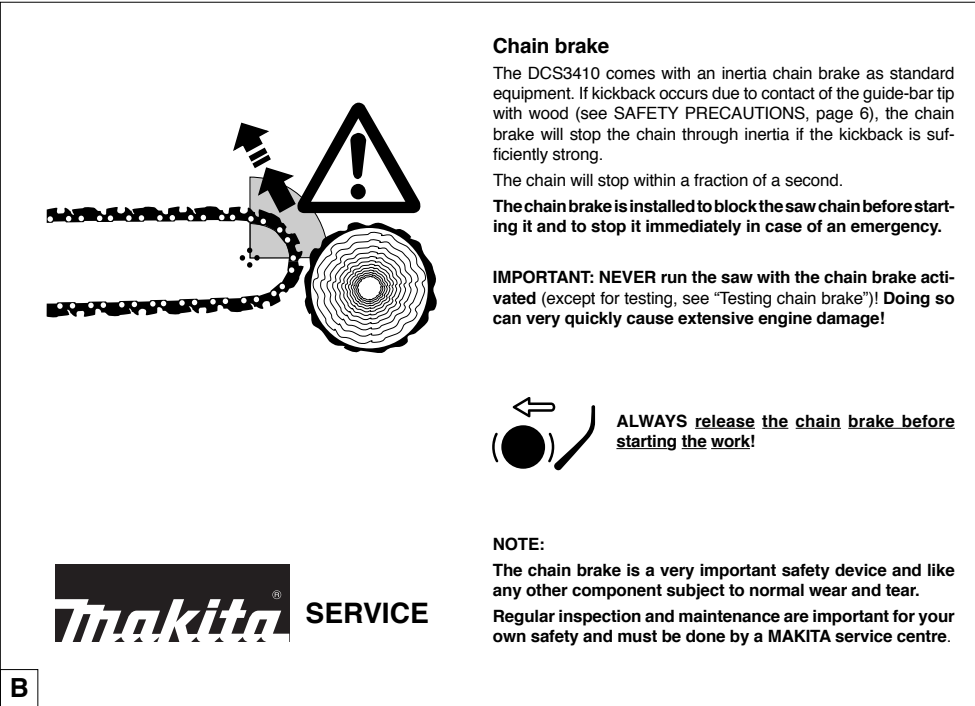
Check the chain tension frequently - new chains tend to get longer during use!

When checking the chain tension the engine must be switched off.

NOTE:

It is recommended to use 2-3 chains alternatively.

In order to guarantee uniform wear of the guide bar the bar should be turned over whenever replacing the chain.



Chain brake

The DCS3410 comes with an inertia chain brake as standard equipment. If kickback occurs due to contact of the guide-bar tip with wood (see SAFETY PRECAUTIONS, page 6), the chain brake will stop the chain through inertia if the kickback is sufficiently strong.

The chain will stop within a fraction of a second.

The chain brake is installed to block the saw chain before starting it and to stop it immediately in case of an emergency.

IMPORTANT: NEVER run the saw with the chain brake activated (except for testing, see "Testing chain brake")! **Doing so can very quickly cause extensive engine damage!**



ALWAYS release the chain brake before starting the work!

NOTE:

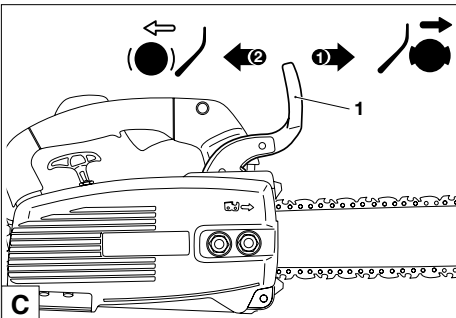
The chain brake is a very important safety device and like any other component subject to normal wear and tear.

Regular inspection and maintenance are important for your own safety and must be done by a MAKITA service centre.



SERVICE

B



Engaging the chain brake (braking)

If the kickback is strong enough the sudden acceleration of the guide bar combined with the inertia of the hand guard (1) will **automatically** actuate the chain brake.

To engage the chain brake **manually**, simply push the hand guard (1) forward (towards the tip of the saw) with your left hand (arrow 1).

Releasing the chain brake

Pull the hand guard (1) towards you (arrow 2) until you feel it catch. The brake is now released.

C

Fuel

CAUTION:

This saw is powered by mineral-oil products (gasoline and oil).

Be especially careful when handling gasoline .

Do not smoke. Keep tool well away from open flames, spark, or fire (explosion hazard).



Fuel mixture

This tool is powered by a high-performance air-cooled two-stroke engine. It runs on a mixture of gasoline and two-stroke engine oil.

The engine is designed for unleaded regular gasoline with a min. octane value of 91 ROZ. In case no such fuel is available, you can use fuel with a higher octane value. This will not affect the engine.


In order to obtain an optimum engine output and to protect your health and the environment use unleaded fuel only.

To lubricate the engine, use a synthetic oil for two-stroke air-cooled engines (quality grade JASO FC or ISO EGD), which has to be added to the fuel. The engine has been designed for use of MAKITA high-performance two-stroke engine oil and a mixture ratio of only 50:1 to protect the environment. In addition, a long service life and reliable operation with a minimum emission of exhaust gases are ensured.

MAKITA high-performance two-stroke engine oil is available in the following sizes to suit your individual requirements:

1 l	order number 980 008 607
100 ml	order number 980 008 606

In case MAKITA high-performance two-stroke engine oil is not available, it is urgently recommended to use a mixture ratio of 50:1 with other two-stroke engine oils, as otherwise optimum operation of the engine cannot be guaranteed.

 **Caution: Do not use ready-mixed fuel from petrol stations.**

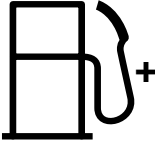

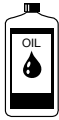
The correct mixture ratio:

50:1 when using MAKITA high-performance two-stroke engine oil, i. e. mix 50 parts gasoline with 1 part oil.

50:1 when using other synthetic two-stroke engine oils (quality grade JASO FC or ISO EGD), i. e. mix 50 parts gasoline with 1 part oil.

NOTE:

For preparing the fuel-oil mixture first mix the entire oil quantity with half of the fuel required, then add the remaining fuel.

Gasoline	50:1	50:1
		
1000 cm ³ (1 litre)	20 cm ³	20 cm ³
5000 cm ³ (5 litres)	100 cm ³	100 cm ³
10000 cm ³ (10 litres)	200 cm ³	200 cm ³

Thoroughly shake the mixture before filling it into the chain saw tank.

It is not wise to add more engine oil than specified to ensure safe operation. This will only result in a higher production of combustion residues which will pollute the environment and clog the exhaust channel in the cylinder as well as the muffler. In addition, fuel consumption will rise and performance will decrease.

The Storage of Fuel

Fuels have a limited storage life. Fuel and fuel mixtures age through evaporation, especially at high temperatures. Aged fuel and fuel mixtures can cause starting problems and damage the engine. Purchase only that amount of fuel, which will be consumed over the next few months. At high temperatures, once fuel has been mixed it should be used up in 6-8 weeks.

Store fuel only in proper containers, in dry, cool, secure locations!

AVOID SKIN AND EYE CONTACT

Mineral oil products degrease your skin. If your skin comes in contact with these substances repeatedly and for an extended period of time, it will desiccate. Various skin diseases may result. In addition, allergic reactions are known to occur.

Eyes can be irritated by contact with oil. If oil comes into your eyes, immediately wash them with clear water.

If your eyes are still irritated, see a doctor immediately!

D

Chain oil



Use an oil with adhesive additive for lubricating the chain and guide bar. The adhesive additive prevents the oil from being flung off the chain too quickly.

We recommend the use of chain oil which is bio-degradable in order to protect the environment. The use of bio-degradable oil may even be required by local regulations.

The chain oil BIOTOP sold by MAKITA is made of special vegetable oils and is 100% bio-degradable. BIOTOP has been granted the „blue angel“ (Blauer Umweltschutz-Engel) for being particularly environment-friendly (RAL UZ 48).



BIOTOP chain oil is available in the following sizes:

1 l	order number 980 008 610
5 l	order number 980 008 611

Bio-degradable oil is stable only for a limited period of time. It should be used within 2 years from the date of manufacture (printed on the container).

E

Important note on bio-degradable chain oils:

If you are not planning to use the saw again for an extended period of time, empty the oil tank and put in a small amount of regular engine oil (SAE 30), and then run the saw for a time. This is necessary to flush out all remaining bio-degradable oil from the oil tank, oil-feed system, chain and guide bar, as many such oils tend to leave sticky residues over time, which can cause damage to the oil pump or other parts.

The next time you use the saw, fill the tank with BIOTOP chain oil again. In case of damage caused by using waste oil or inappropriate chain oil the product guarantee will be null and void.

Your salesman will inform you about the use of chain oil.



NEVER USE WASTE OIL

Waste oil is very dangerous for the environment.

Waste oil contains high amounts of carcinogenic substances.

Residues in waste oil result in a high degree of wear and tear at the oil pump and the sawing device.

In case of damage caused by using waste oil or inappropriate chain oil the product guarantee will be null and void.

Your salesman will inform you about the use of chain oil.

AVOID SKIN AND EYE CONTACT

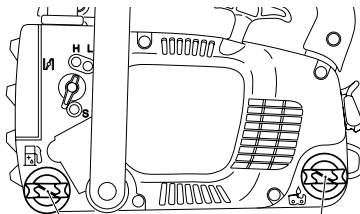
Mineral oil products degrease your skin. If your skin comes in contact with these substances repeatedly and for an extended period of time, it will desiccate. Various skin diseases may result. In addition, allergic reactions are known to occur.

Eyes can be irritated by contact with oil. If oil comes into your eyes, immediately wash them with clear water.

If your eyes are still irritated, see a doctor immediately!

A

Refuelling



FOLLOW THE SAFETY PRECAUTIONS!

Be careful and cautious when handling fuels.

The engine must be switched off!

Thoroughly clean the area around the caps, to prevent dirt from getting into the fuel or oil tank.

Unscrew the cap and fill the tank with fuel (fuel/oil mixture) or chain oil as the case may be. Fill up to the bottom edge of the filler neck. Be careful not to spill fuel or chain oil!

Tighten the tank cap as far as it will go.

After refuelling, clean the tank cap and surroundings and make sure the cap is sealed!

Lubricating the chain



During operation there must always be sufficient chain oil in the chain-oil tank to provide good chain lubrication. One filling is sufficient for about one half-hour of continuous operation. When working, check that there is still sufficient chain oil in the tank and top up if necessary. **Check only when the engine is switched off!**

B

Adjusting the chain lubrication

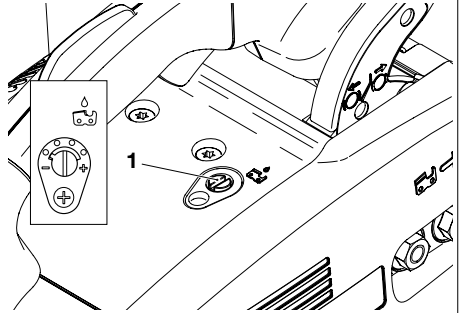
The engine must be switched off.



You can adjust the oil pump feed rate with the adjusting screw (1). The amount of oil can be adjusted using the universal wrench.

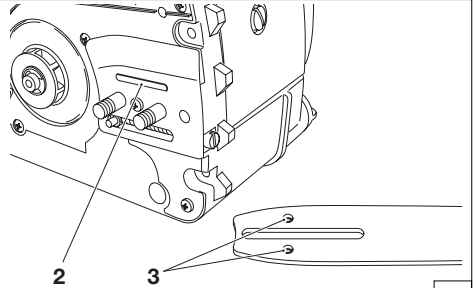
Recommended settings:

- 25 cm guide bar
- 30 cm guide bar
- 35 cm guide bar
- 40 cm guide bar



C

To ensure troublefree operation of the oil pump the oil guide groove at the crank case (2) and the oil inlet bore in the guide bar (3) must be cleaned regularly.



D

Checking the chain lubrication

Never work with the chain saw without sufficient chain lubrication. Otherwise the service life of the chain and guide bar will be reduced.

Before starting work check the oil level in the tank and the oil feed.

Check the oil feed rate as described below:

Start the chain saw (see "Starting the engine").

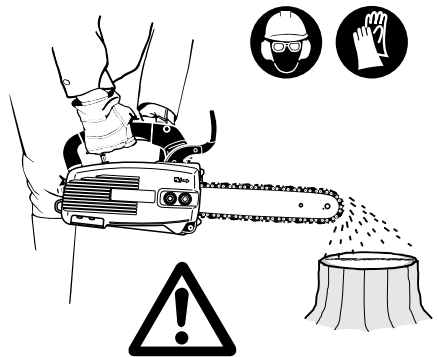
Hold the running chain saw approx. 15 cm above a trunk or the ground (use an appropriate base).

If the lubrication is sufficient, you will see a light oil trace because oil will be flung off the sawing device. Pay attention to the direction the wind is blowing and avoid unnecessary exposure to the oil spray!

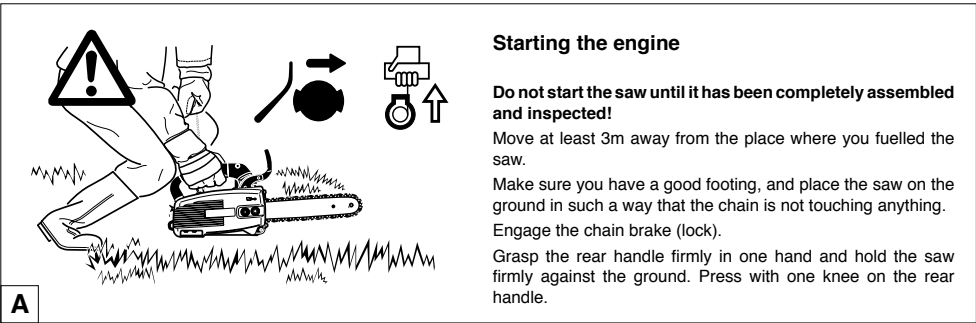
Note:

After the saw has been turned off it is normal for residual chain oil to drip from the oil feed system, the guide bar and the chain for a time. This does not constitute a defect!

Place the saw on a suitable surface.



E



Starting the engine

Do not start the saw until it has been completely assembled and inspected!

Move at least 3m away from the place where you fuelled the saw.

Make sure you have a good footing, and place the saw on the ground in such a way that the chain is not touching anything. Engage the chain brake (lock).

Grasp the rear handle firmly in one hand and hold the saw firmly against the ground. Press with one knee on the rear handle.

A

IMPORTANT: The choke switch (5) is coupled to the throttle lever (1). It will revert to its original position automatically once the throttle lever has been pressed.
 If the throttle lever is pressed before the engine starts, then the choke switch (5) will have to be reset to the appropriate position.

Cold start:



Prime the fuel pump (6) by pressing it several times until you can see fuel in the pump.

Move the short-circuit switch (3) forward in the direction of the arrow.

Turn the choke lever (5) up (see "Cold start" illustration). This simultaneously actuates the half-throttle lock.

Slowly pull out the starter cable (4) until you notice resistance (the piston is positioned before the top dead centre).

Now pull the starter cable with a fast and forceful movement until you hear the first ignition.

CAUTION: Do not pull out the starter cable more than approx. 50 cm, and lead it back by hand. For efficient starting, it is important to pull the starter cable quickly and powerfully.

Turn the choke lever (5) down (see "Warm start" illustration) and pull the starter cable again. As soon as the engine is running, grasp the rear handle (this actuates the grip safety (2)) and tap the throttle (1). This will release the half-throttle lock and the engine will run in idle.

Caution: The engine is to be run at idling speed immediately after starting or damage may occur to the chain brake.

Now release the chain brake.



Warm start:

As for cold start, except before pulling the starter cable, turn the choke lever (5) briefly to the "Cold start" position and then immediately back to "Warm start" (this activates the half-throttle lock).

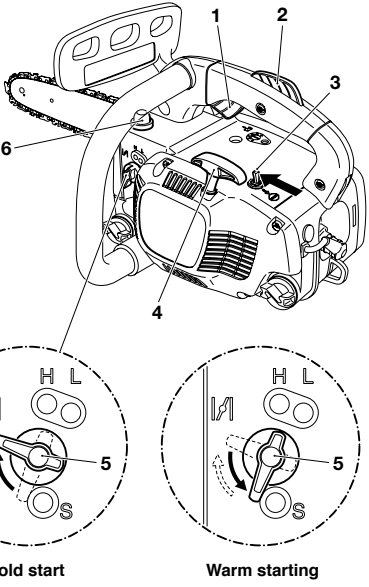
Important: If the fuel tank has been completely emptied and the engine has stopped due to lack of fuel prime the fuel pump (6) by pressing it several times until you can see fuel in the pump.

Stopping the engine



Put the short-circuiting switch (3) in position „STOP“.

B



Checking the chain brake

Do not work with the chain saw without first checking the chain brake!

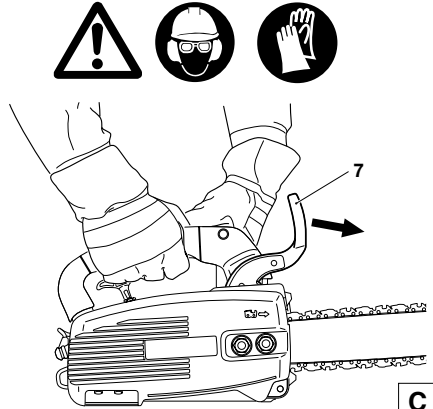
Start the engine as described (make sure you have a good footing, and place the chain saw on the ground in such a way that the guide bar is free of contact).

Grasp the tubular handle firmly with one hand and hold the grip with the other.

With the engine running at moderate speed, press the hand guard (7) in the direction of the arrow with the back of your hand until the chain brake engages. The chain should stop immediately.

Immediately release the throttle and release the chain brake.

IMPORTANT: If the chain does not stop immediately in this test, do not under any circumstances proceed with work. Contact a MAKITA service center.



Adjusting the carburetor

(only for EU-countries)



CAUTION:

Do not adjust the carburetor until the machine has been completely assembled and checked! Do not adjust the carburetor without a tachometer!

Carburetor adjustment is necessary for optimum engine performance, for safer and more economical operation. Adjust the carburetor only with the engine warm, a clean air filter, and properly installed cutting tool.

Carburetor adjustment may be done only by a MAKITA service centre. Improper adjustment can cause damage to the engine.

In order to comply with new emissions legislation, limits have been placed on the carburetor adjusting screws (H) and (L).

This limitation (to about 180 degrees) prevents an excessively rich mixture. This in turn ensures compliance with emissions rules as well as optimum engine performance and economical fuel consumption.

You will need a tachometer (8, part No. 950 233 210) for optimum adjustment. Exceeding the maximum permissible speed can lead to overheating and under-lubricating, and damage to the engine!

Factory setting of adjusting screws (H) and (L): Turned out almost all the way (counterclockwise).

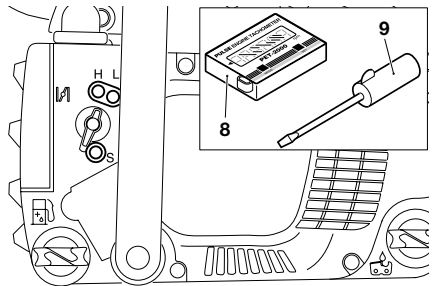
Use a screwdriver (9, blade width 4 mm, part No. 944 340 001) to adjust the screws.

For proper adjustment, proceed as follows:

Checking adjusting screw (H)

Before starting the engine make sure that adjusting screw (H) is turned out counterclockwise until it reaches a noticeable stop. **The limitations do not prevent excessively lean (under-lubricated) running!**

1. Start engine and let it warm up (3-5 minutes)
2. Set idle
3. Check acceleration
4. Set maximum permissible speed
5. Check idle speed



2. Set idle

Set the idle speed per the technical specifications. Turning the adjusting screw (S) in (clockwise) increases the idle speed. Turning it out (counterclockwise) lowers the idle speed. **The cutting tool must not rotate!**

3. Check acceleration

When the throttle is pressed, the engine should go smoothly from idle to high speed. Turn adjusting screw (L) out (counterclockwise) in small increments until acceleration is good.

4. Set maximum permissible speed

Set the maximum speed by minimal adjustments of the adjusting screw (H) in accordance with the technical specifications. Turning the adjusting screw (H) clockwise increases the speed. **Never exceed the maximum permissible speed!**

5. Check idle speed

Check the idle speed after setting the top speed (the cutting tool must not rotate!). Repeat the adjustment procedure starting at Step 2, until the engine runs with the correct idle speed, good acceleration, and maximum permissible speed.

Adjusting the carburetor

(only for not EU-countries)



Carburetor adjustment is necessary for optimum engine performance, for safer and more economical operation. The engine should be warm, the air filter clean, and the chain properly tensioned. Have carburetor adjustment done by an authorised MAKITA service centre.

The carburetor is factory-adjusted for the air pressure at sea level. At other elevations or under other conditions of weather, temperature, or humidity, or when breaking in a new engine, it may be necessary to make slight adjustments to the carburetor.

You will need a tachometer (E/8) (part No. 950 233 210) for optimum adjustment. **Exceeding the maximum permissible speed can lead to overheating and under-lubricating, and damage to the engine!**

If not using a tachometer, do not go below the specified basic setting of the main nozzle (H). Doing so may cause engine damage due to overheating and insufficient lubrication!

Adjust the carburetor using a 4 mm screwdriver. The screwdriver shown (E/9) (part No. 944 340 001) has a molded-on lug to assist in adjustment.

Before undertaking the adjustment, run the engine for 3-5 minutes to warm it up, but not at high speed!

For proper adjustment, proceed as follows:

1. Basic setting (engine off)
Start engine and let it warm up.
2. Set idle
3. Check acceleration
4. Set maximum permissible speed
5. Check idle speed

Repeat steps 2-5 until you get the right idle speed, good acceleration and maximum permissible speed.

1. Basic setting

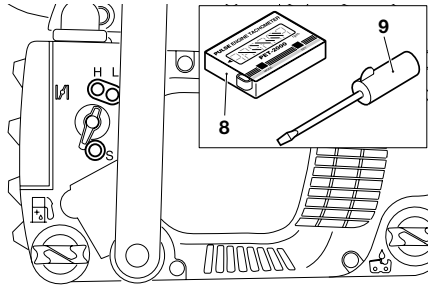
Carefully turn the adjusting screws for the main nozzle (H) and idle nozzle (L) clockwise until you feel a stop.

Turn adjusting screws (H) and (L) 1/4 turn counter-clockwise.

2. Set idle

Set the idle speed per the technical specifications.

Turning the adjusting screw (S) in (clockwise) increases the idle speed. Turning it out (counter-clockwise) lowers the idle speed. In no case should the chain move.



3. Check acceleration

When the throttle is pressed, the engine should go smoothly from idle to high speed.

If this is too slow, turn the adjusting screw (L) in small (max. 1/8 turns) increments counter-clockwise.

4. Set maximum permissible speed

Set the maximum speed by minimal adjustments of the adjusting screw (H) in accordance with the technical specifications. Turning the adjusting screw (H) clockwise increases the speed, turning it counter-clockwise reduces the speed.

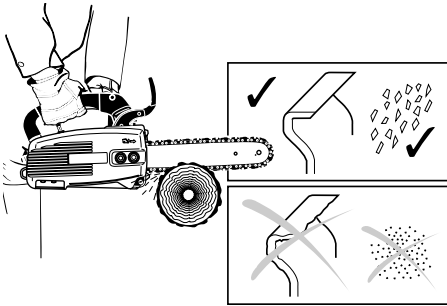
5. Check idle speed

Check the idle speed after setting the top speed (the chain must not move).

Repeat the adjustment procedure starting at Step 2, until the engine runs with the correct idle speed, good acceleration, and maximum permissible speed.

MAINTENANCE

Sharpening the saw chain



A

CAUTION: Before doing any work on the guide bar or chain, **always switch off the engine and pull the plug cap off the spark plug** (see „Replacing the spark plug“). **Always wear protective gloves!**

The chain needs sharpening when:

The sawdust produced when sawing damp wood looks like wood flour.

The chain penetrates the wood only under great pressure.

The cutting edge is visibly damaged.

The saw is pulled to the left or right when sawing. This is caused by uneven sharpening of the chain.

Important: Sharpen frequently, but without removing too much metal!

Generally, 2 or 3 strokes of the file will be enough.

Have the chain resharpened at a service centre when you have already sharpened it yourself several times.

Proper sharpening:

CAUTION: Use only chains and guide bars designed for this saw (see the Extract from the spare-parts list)!

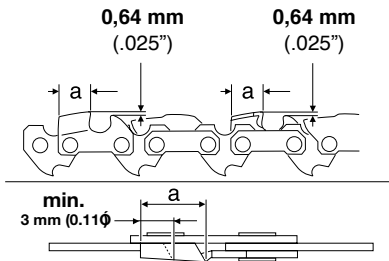
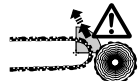
All cutters must be of the same length (dimension a). Cutters with different lengths result in rough running of the chain and can cause cracks in the chain.

Minimum cutter length is 3 mm. Do not resharpen the chain when the minimum cutter length has been reached; at this point, the chain must be replaced (see the Extract from the spare-parts list and „Replacing the chain“).

The depth of the cut is determined by the difference in height between the depth limiter (round nose) and the cutting edge.

The best results are obtained with a depth-limiter depth of 0.64 mm (.025”).

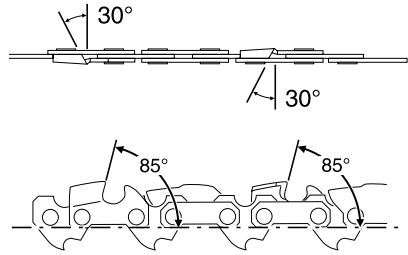
CAUTION: Excessive depth increases the risk of kickback!



B

All cutters must be sharpened to the same angle, 30°. Different angles result in a roughly, irregularly running chain, increase wear and tear and cause chain beakage.

The 85° front rake of the cutter results from the cut depth of the round file. If the proper file is used in the right manner, the correct front rake will be obtained automatically.



C

Files and how to work with them

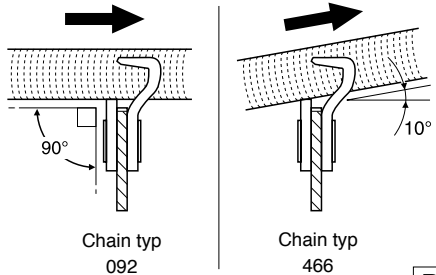
Use a special round file for chains (dia. 4 mm) for sharpening the chain. Normal round files are not appropriate for this work. See „Accessories“ for the order number.

The file should cut only when pushed forwards (arrow). Lift the file when leading it backwards.

First sharpen the shortest cutter. The length of this cutter is then the standard for all other cutters of the chain.

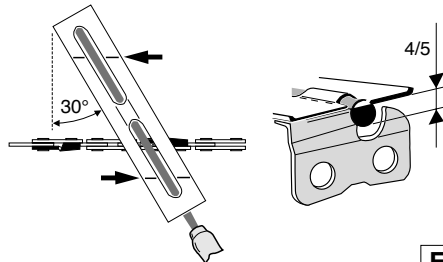
New saw teeth must be filed to the exact same shape as the used teeth, including on their running surfaces.

File depending on chain type (90° or 10° to the guide bar).



D

The file holder makes file guidance easier. It is marked for the correct 30° sharpening angle (keep the marks parallel with the chain when filing, see illustration) and limits the cut depth to the correct 4/5 of the file diameter. See „Accessories“ for the order number.

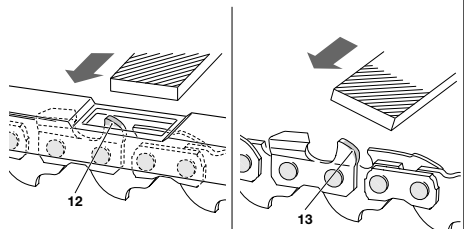


E

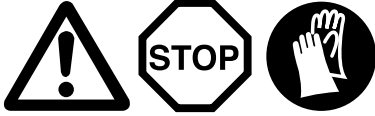
After having sharpened the chain, the height of the depth limiter must be checked by means of a chain gauge. See „Accessories“ for the order number.

Correct even the smallest excess height with a special flat file (12). See „Accessories“ for the order number.

Round off the front of the depth limiter (13).



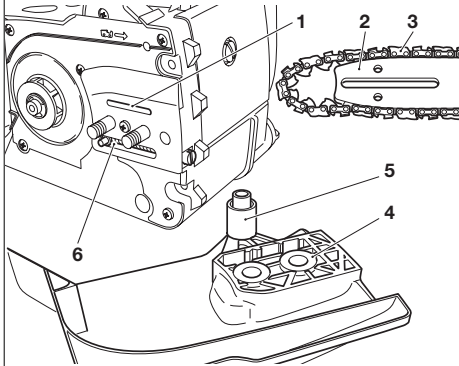
F



Cleaning the sprocket interior, checking and replacing the chain catch sleeve

CAUTION: Before doing any work on the guide bar or chain, always switch off the engine and pull the plug cap off the spark plug (see „Replacing the spark plug“). Always wear protective gloves!

CAUTION: Do not start the saw until it has been completely assembled and inspected!



Remove the sprocket guard (4) (see section on „PUTTING INTO OPERATION“ A – B) and clean the interior with a brush.

Remove the chain (3) and guide bar (2).

NOTE:

Make sure that no residue or contaminants remain in the oil guide groove (1) and the chain tightener (6).

For replacing the guide bar, chain, and sprocket see „PUTTING INTO OPERATION“.

Chain catch sleeve

Visually inspect the chain catch sleeve (5) for damage and replace if necessary.

Remove the sleeve by firmly pulling it upwards and off; then push on the new sleeve.

A



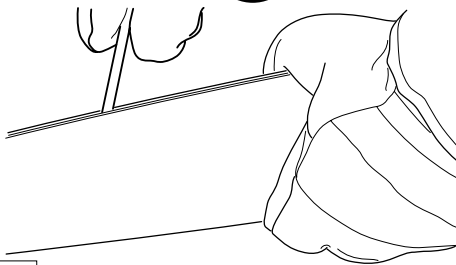
Cleaning the guide bar, lubricating the sprocket nose

CAUTION: Protective gloves must be worn.

Regularly inspect the bearing surfaces of the guide bar for damage, and clean them with a suitable tool.

If the saw is used intensively it will be necessary to lubricate the return sprocket bearings regularly (once a week). To do this, first **thoroughly** clean the 2 mm hole at the tip of the guide bar, and then press in a small amount of multi-purpose grease.

Multi-purpose grease and grease guns are available as accessories.



Multi-purpose grease (order number 944 360 000)
Grease guns (order number 944 350 000)

B

Replacing the saw chain

CAUTION: Use only chains and guide bars designed for this saw (see the Extract from the spare-parts list)!

Check the sprocket (7) before mounting a new chain.

Remove the sprocket guard (see "PUTTING INTO OPERATION" A-H)

CAUTION: Worn out sprockets (8) may damage the new chain and must therefore be replaced.

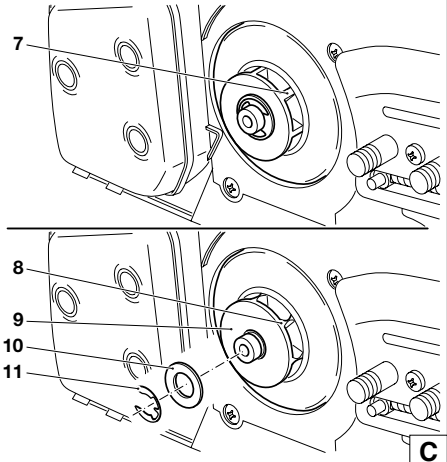
Replacing the clutch drum and sprocket

Release the chain brake if necessary.



Lever off the circlip (11) using the universal wrench and remove the washer (10).

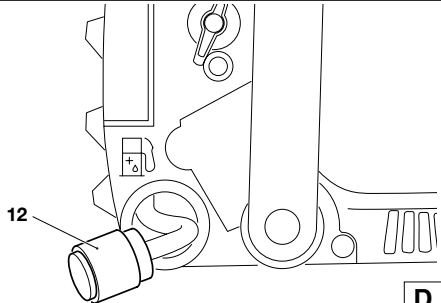
Pull off the clutch drum together with the sprocket (9) and fit a new clutch drum and sprocket in reverse order.



Replacing the suction head

The felt filter (12) of the suction head can become clogged. It is recommended to replace the suction head once every three months in order to ensure unimpeded fuel flow to the carburetor.

To remove the suction head for replacement, pull it out through the tank filler neck using a piece of wire bent at one end to form a hook.



Cleaning the air filter



Unscrew screw (14) and remove the filter cover (13).

IMPORTANT: Cover the intake opening with a clean cloth in order to prevent dirt particles from falling into the carburetor.

Remove the air filter.

CAUTION: To prevent injury to the eyes, do NOT blow out dirt particles! Do not use fuel to clean the air filter.

Clean the air filter with a soft brush.

If the filter is very dirty, clean it in lukewarm water with dish-washing detergent.

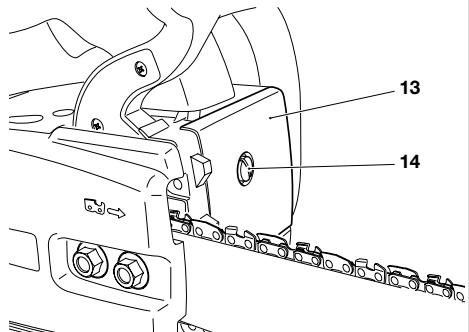
Let the air filter **dry completely**.

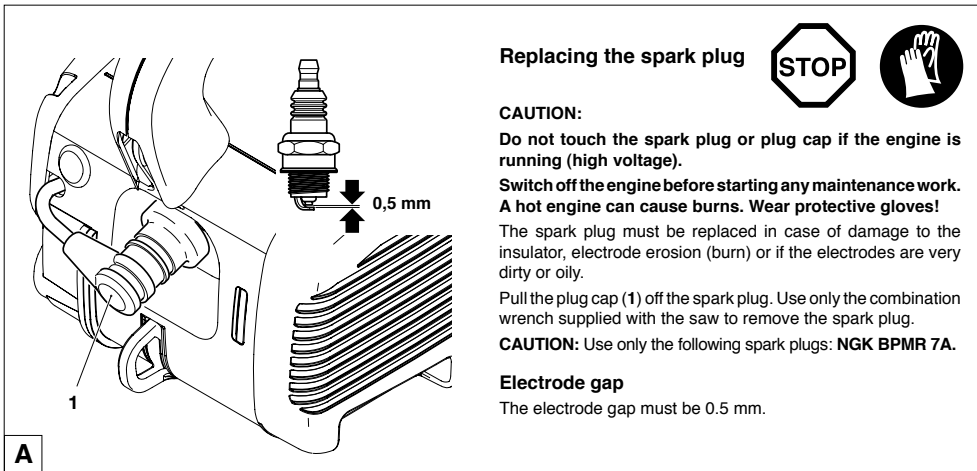
If the filter is very dirty, clean it frequently (several times a day), because only a clean air filter provides full engine power.

CAUTION:

Replace damaged air filters immediately.

Pieces of cloth or large dirt particles can destroy the engine!





Replacing the spark plug



CAUTION:

Do not touch the spark plug or plug cap if the engine is running (high voltage).

Switch off the engine before starting any maintenance work. A hot engine can cause burns. Wear protective gloves!

The spark plug must be replaced in case of damage to the insulator, electrode erosion (burn) or if the electrodes are very dirty or oily.

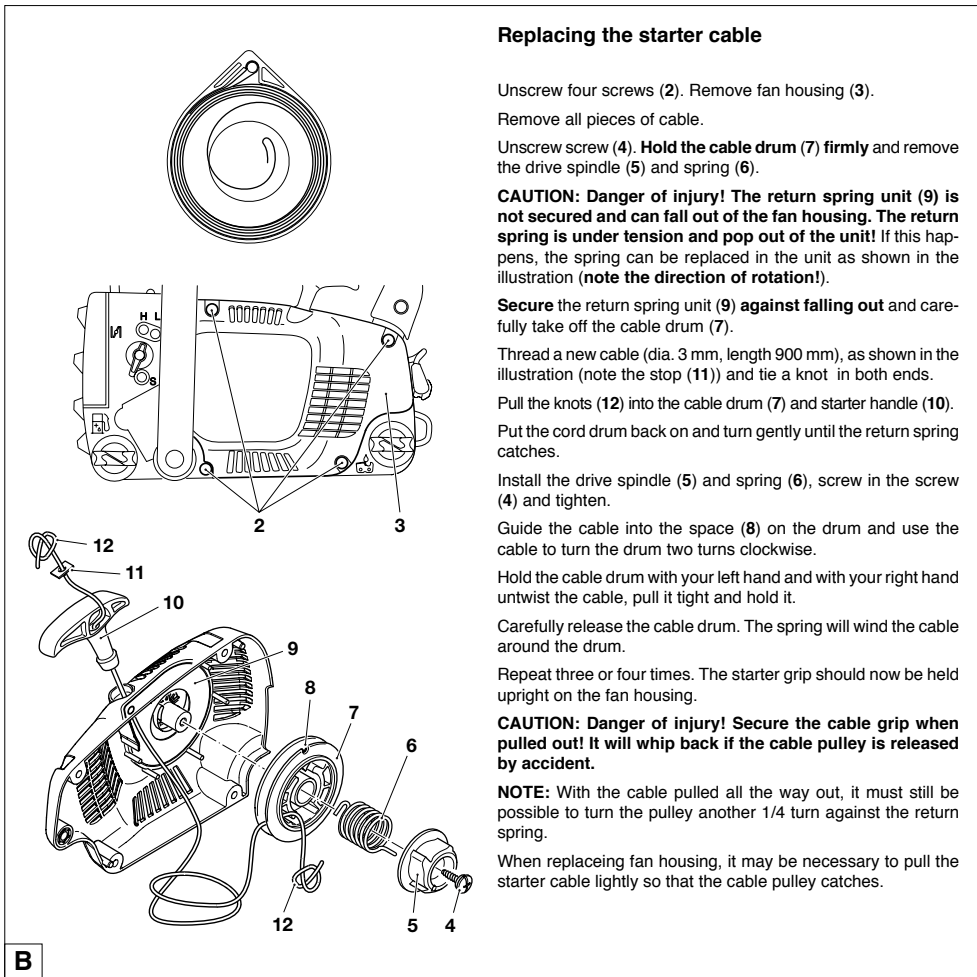
Pull the plug cap (1) off the spark plug. Use only the combination wrench supplied with the saw to remove the spark plug.

CAUTION: Use only the following spark plugs: NGK BPMR 7A.

Electrode gap

The electrode gap must be 0.5 mm.

A



Replacing the starter cable

Unscrew four screws (2). Remove fan housing (3).

Remove all pieces of cable.

Unscrew screw (4). Hold the cable drum (7) firmly and remove the drive spindle (5) and spring (6).

CAUTION: Danger of injury! The return spring unit (9) is not secured and can fall out of the fan housing. The return spring is under tension and pop out of the unit! If this happens, the spring can be replaced in the unit as shown in the illustration (note the direction of rotation!).

Secure the return spring unit (9) against falling out and carefully take off the cable drum (7).

Thread a new cable (dia. 3 mm, length 900 mm), as shown in the illustration (note the stop (11)) and tie a knot in both ends.

Pull the knots (12) into the cable drum (7) and starter handle (10).

Put the cord drum back on and turn gently until the return spring catches.

Install the drive spindle (5) and spring (6), screw in the screw (4) and tighten.

Guide the cable into the space (8) on the drum and use the cable to turn the drum two turns clockwise.

Hold the cable drum with your left hand and with your right hand untwist the cable, pull it tight and hold it.

Carefully release the cable drum. The spring will wind the cable around the drum.

Repeat three or four times. The starter grip should now be held upright on the fan housing.

CAUTION: Danger of injury! Secure the cable grip when pulled out! It will whip back if the cable pulley is released by accident.

NOTE: With the cable pulled all the way out, it must still be possible to turn the pulley another 1/4 turn against the return spring.

When replacing fan housing, it may be necessary to pull the starter cable lightly so that the cable pulley catches.

B

Replacing the return spring unit



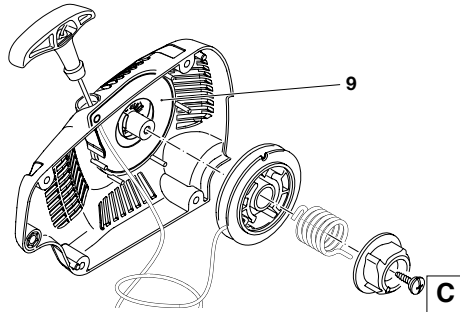
Remove and reinstall the fan housing and cable drum (see "Replacing the starter cable").

Carefully remove the return spring unit (9) from the fan housing.

CAUTION:

Danger of injury! If the spring is broken it can jump out!

Carefully fit the new return spring unit.



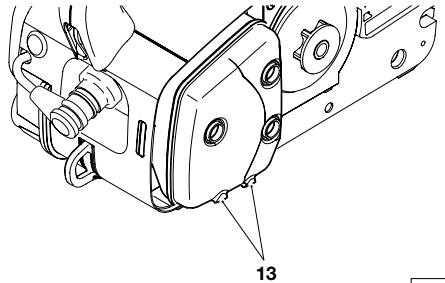
Cleaning the muffler



CAUTION: If the engine is hot there is a risk of burning. Wear protective gloves.

Remove the sprocket guard (see "PUTTING INTO OPERATION" Fig. B).

Remove deposits of carbon from the exhaust outlets (13) of the muffler.



Cleaning the cylinder space

Remove the sprocket guard (see "PUTTING INTO OPERATION" Fig. B).

If necessary remove muffler by loosening and removing the three screws (16).

Stuff a rag into the cylinder port (17).

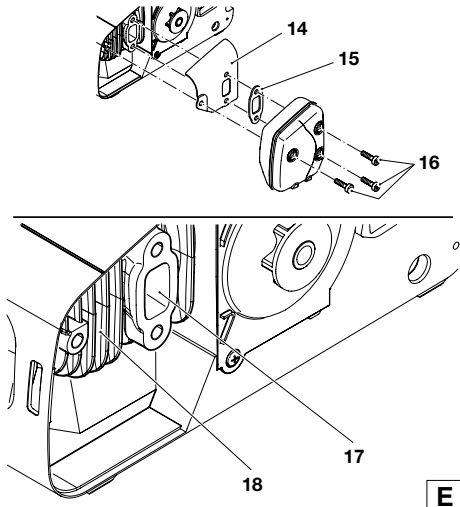
Use a suitable tool (wooden scraper) to clean out the cylinder space (18), especially the cooling fins.

Remove the rag from the cylinder port and refit the muffler according to the diagram.

Replace the gasket (15) and cowling (14) if necessary. Carefully remove any pieces of the old gasket from the muffler.

Ensure correct mounting position. The cowling should follow the contour of the cylinder to ensure correct heat transfer.

Tighten screws (16) to 10 Nm while the engine is cold.



Instructions for periodic maintenance

To ensure long life, prevent damage and ensure the full functioning of the safety features the following maintenance must be performed regularly. Guarantee claims can be recognized only if this work is performed regularly and properly. Failure to perform the prescribed maintenance work can lead to accidents!

The user of the chain saw must not perform maintenance work which is not described in the instruction manual. All such work must be carried out by a MAKITA service centre.

			Page
General	Chain saw	Clean exterior, check for damage. In case of damage, have repaired by a qualified service centre immediately	19-20
	Saw chain	Sharpen regularly, replace in good time	
	Chain brake	Have inspected regularly at an authorized service centre	
	Guide bar	Turn over to ensure even wear of bearing surfaces Replace in good time	12
Before each start	Saw chain	Inspect for damage and sharpness Check chain tension	19-20 12
	Guide bar	Check for damage	
	Chain lubrication	Functional check	15
	Chain brake	Functional check	17
	OFF switch, Safety locking button, Throttle lever	Functional check	16
	Fuel/oil tank plug	Check for tightness	
Every day	Air filter	Clean	22
	Guide bar	Check for damage, clean oil intake bore	15
	Guide bar support	Clean, in particular the oil guide groove	15, 21
	Idle speed	Check (chain must not run)	17-18
Every week	Fan housing	Clean to ensure proper air cooling	23
	Cylinder space	Clean	24
	Spark plug	Check and replace if necessary	23
	Muffler	Check tightness of mounting	24
	Chain catch sleeve	Check for damage, replace if necessary.	21
	Screws and nuts	Check their condition and that they are firmly secured.	
Every 3 months	Suction head	Replace	22
	Fuel, oil tanks	Clean	
Storage	Chain saw	Clean exterior, check for damage. In case of damage, have repaired by a qualified service centre immediately	21
	Guide bar/chain	Demount, clean and oil slightly Clean the guide groove of the guide bar	
	Fuel, oil tanks	Empty and clean	
	Carburetor	Run empty	

Service, spare parts and guarantee

Maintenance and repair


The maintenance and repair of modern engines as well as all safety devices require qualified technical training and a special workshop equipped with special tools and testing devices.

We therefore recommend that you consult a MAKITA service centre for all work not described in this instruction manual.

The MAKITA service centres have all the necessary equipment and skilled and experienced personnel, who can work out cost-effective solutions and advise you in all matters.

To find your local distributor, please visit www.makita-outdoor.com

Spare parts

Reliable long-term operation, as well as the safety of your chain saw, depend among other things on the quality of the spare parts used. Use only original MAKITA parts, marked 

Only original spare parts and accessories guarantee the highest quality in material, dimensions, functioning and safety.

Original spare parts and accessories can be obtained from your local dealer. He will also have the spare part lists to determine the required spare part numbers, and will be constantly informed about the latest improvements and spare part innovations.

Please bear in mind that if parts other than original MAKITA spare parts are used, this will automatically invalidate the MAKITA product guarantee.

Guarantee

MAKITA guarantees the highest quality and will therefore reimburse all costs for repair by replacement of damaged parts resulting from material or production faults occurring within the guarantee period after purchase. Please note that in some countries particular guarantee conditions may exist. If you have any questions, please contact your salesman, who is responsible for the guarantee of the product.

Please note that we cannot accept any responsibility for damage caused by:

- Disregard of the instruction manual.
- Non-performance of the required maintenance and cleaning.
- Incorrect carburetor adjustment.
- Normal wear and tear.
- Obvious overloading due to permanent exceeding of the upper performance limits.
- Use of guide bars and chains which have not been approved.
- Use of guide bar and chain lengths which have not been approved.
- Use of force, improper use, misuse or accidents.
- Damage from overheating due to dirt on the fan housing.
- Work on the chain saw by unskilled persons or inappropriate repairs.
- Use of unsuitable spare parts or parts which are not original MAKITA parts, insofar as they have caused the damage.
- Use of unsuitable or old oil.
- Damage related to conditions arising from lease or rent contracts.
- Damages caused by disregarding loose outer bolted connections.

Cleaning, servicing and adjustment work is not covered by the guarantee. All repairs covered by the guarantee must be performed by a MAKITA service centre.

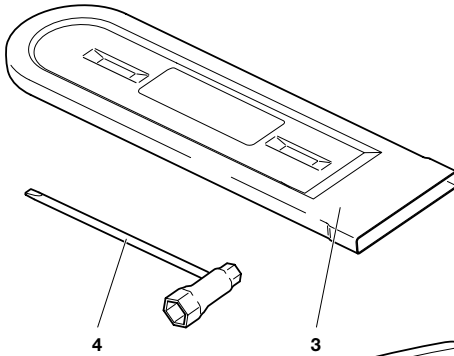
Trouble shooting

Malfunction	System	Observation	Cause
Chain does not run	Chain brake	Engine runs	Chain brake actuated.
Engine does not start or only with difficulty	Ignition system	Ignition spark No ignition spark	Malfunction in fuel supply system, compression system, mechanical malfunction. Switch on STOP, fault or short-circuit in the wiring, plug cap or spark plug defective. Choke in wrong position, carburetor defective, suction head dirty, fuel line bent or interrupted. Faulty crankcase gasket, radial shaft packings defective, cylinder or piston rings defective Spark plug does not seal. Spring in starter broken, broken parts inside the engine.
	Fuel supply	Fuel tank is filled	
	Compression system	Inside	
	Mechanical malfunction	Outside Starter does not engage	
Warm start difficulties	Carburetor	Fuel tank is filled Ignition spark	Wrong carburetor adjustment.
Engine starts, but dies immediately	Fuel supply	Fuel tank is filled	Wrong idling adjustment, suction head or carburetor dirty. Tank venting defective, fuel line interrupted, cable defective, STOP switch defective.
Insufficient power	Several systems may be involved simultaneously	Engine is idling	Air filter dirty, wrong carburetor adjustment, muffler clogged, exhaust channel in cylinder clogged.
No chain lubrication	Oil tank/pump	No oil on the chain	Oil tank empty. Oil guide groove dirty.

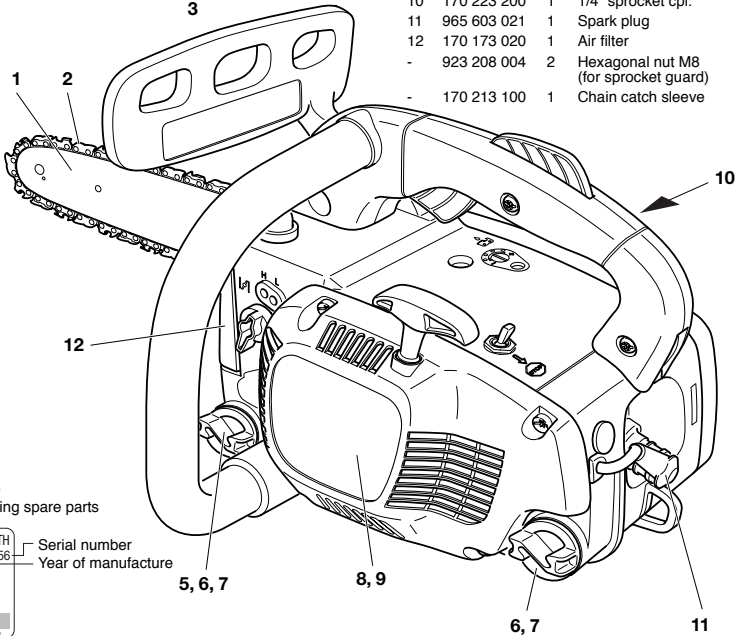
Extract from the spare parts list

Use only original MAKITA parts. For repairs and replacement of other parts, see your MAKITA service centre.

DCS3410TH



Pos.	MAKITA-No.	Qty.	Denomination
1	442 030 661	1	Sprocket nose bar 30 cm (12") 3/8"
	442 035 661	1	Sprocket nose bar 35 cm (14") 3/8"
	442 030 471	1	Carving bar 30 cm (12"), 1/4"
	442 035 471	1	Carving bar 35 cm (14"), 1/4"
2	528 092 646	1	Saw chain 3/8" for 30 cm
	528 092 652	1	Saw chain 3/8" for 35 cm
	512 466 668	1	Saw chain 1/4" for 30 cm
	512 466 676	1	Saw chain 1/4" for 35 cm
3	952 010 630	1	Chain protection for 30-35 cm
4	941 719 131	1	Universal wrench SW 13/19
5	963 601 121	1	Suction head
6	170 114 100	1	Tank cap, cpl.
7	963 225 030	1	O-Ring dia. 25 mm
8	021 164 010	1	Starter cable 3x900 mm
9	170 163 100	1	Return spring unit
10	170 223 100	1	3/8" sprocket cpl.
10	170 223 200	1	1/4" sprocket cpl.
11	965 603 021	1	Spark plug
12	170 173 020	1	Air filter
-	923 208 004	2	Hexagonal nut M8 (for sprocket guard)
-	170 213 100	1	Chain catch sleeve



Identification plate

Indicate when ordering spare parts



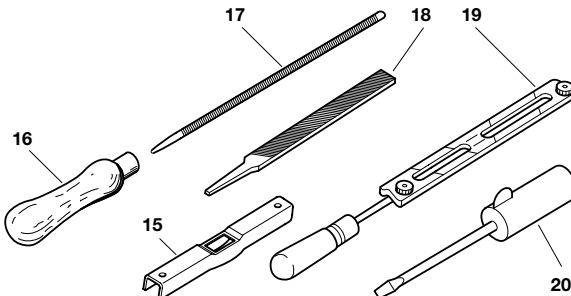
Serial number
Year of manufacture

5, 6, 7

8, 9

6, 7

11



Accessories (not delivered with the chain saw)

15	953 100 090	1	Chain gauge
16	953 004 010	1	File handle
17	953 003 090	1	Round file dia. 4 mm
18	953 003 060	1	Flat file
19	953 030 010	1	File holder (with round file dia. 4 mm)
20	944 340 001	1	Carburetor screwdriver
-	980 008 107	1	Two-stroke engine oil (1 l)
-	980 008 106	1	Two-stroke engine oil (100 ml)
-	980 008 210	1	BIOTOP-chain oil (1 l)
-	980 008 211	1	BIOTOP-chain oil (5 l)
-	949 000 035	1	Combined can (for 5l fuel., 2,5l chain oil)

To find your local distributor,
please visit www.makita-outdoor.com



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Germany

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