

# Makita®

0701031

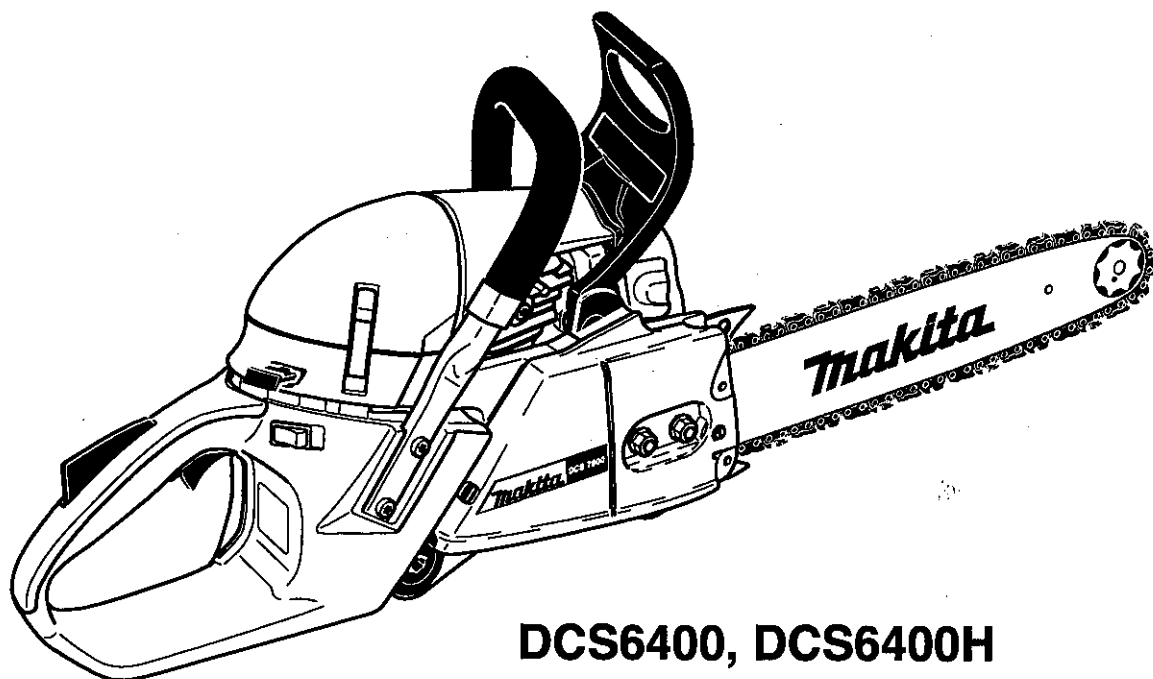
## Instruction Manual

Machine Type: 701

Machine Type NO. - chain saw Large 2 stroke

Manual NO. - 422

R/A NO. - 275



**DCS6400, DCS6400H**

**DCS6401, DCS6401H**

**DCS7300, DCS7300H**

**DCS7301, DCS7301H**

**DCS7900, DCS7900H**

**DCS7901, DCS7901H**

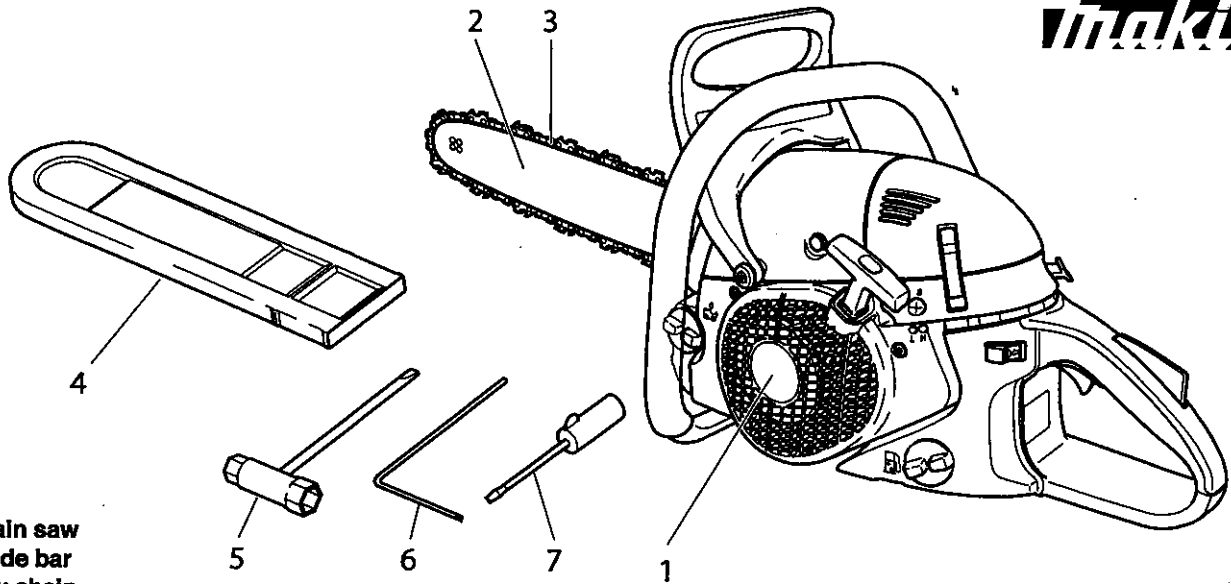


**Important:**

Read this instruction manual carefully before putting the chain saw into operation and strictly observe the safety regulations!

Keep this instruction manual!

## Delivery inventory



1. Chain saw
2. Guide bar
3. Saw chain
4. Chain protection cover
5. Universal wrench
6. Offset screwdriver
7. Screwdriver for carburetor adjustment
8. 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 saw and in the Instruction Manual:

	<b>Read instruction manual and follow the warning- and safety precautions!</b>		<b>Caution, kickback!</b>
	<b>Particular care and caution!</b>		<b>Chain brake</b>
	<b>Forbidden!</b>		<b>Fuel and oil mixture</b>
	<b>Wear protective helmet, eye and ear protection!</b>		<b>Working in summer / winter</b>
	<b>Wear protective gloves!</b>		<b>Handle heating</b>
	<b>No smoking!</b>		<b>Carburetor adjustment</b>
	<b>No open fire!</b>		<b>Chain oil fill/oil pump</b>
	<b>Stop engine!</b>		<b>Saw chain oil adjustment screw</b>
	<b>Push the starting valve</b>		<b>First aid</b>
	<b>Start engine</b>		<b>Recycling</b>
	<b>Off switch</b>		<b>CE - Marking</b>

# SAFETY PRECAUTIONS

## Intended use

### 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

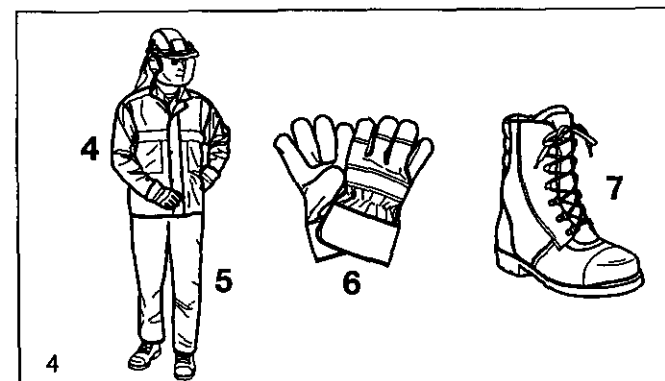
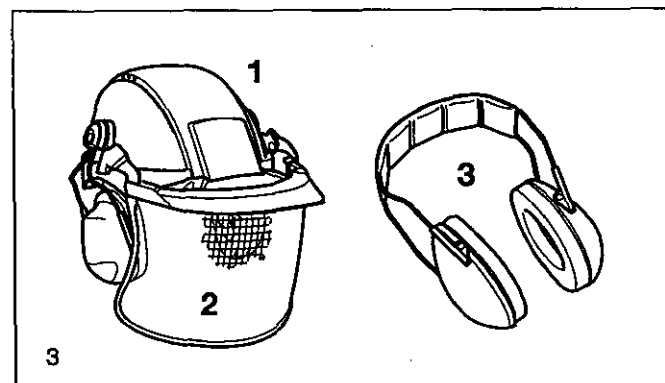
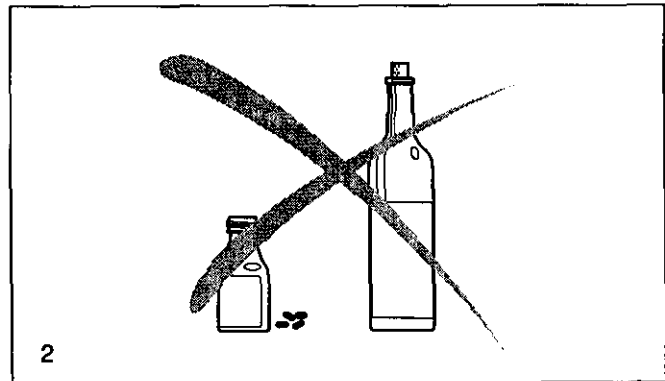
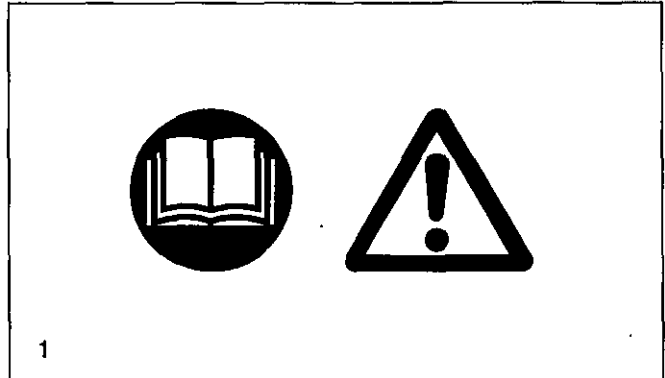
- To ensure correct operation the user has to read this instruction manual to make himself familiar with the characteristics of the chain saw. Users insufficiently informed will endanger themselves as well as others due to improper handling.
- It is recommended to lend the chain saw only to people who are experienced in working with chain saws. Always hand over the instruction manual.
- First users should ask the dealer for basic instructions to become familiarized with the characteristics of engine powered sawing or even attend a recognized course of instruction.
- 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 use the chain saw after having consumed 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 band analysis upon request.
- The safety jacket (4) is provided with special signal-coloured shoulder straps and is comfortable and easy to care for.
- 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.

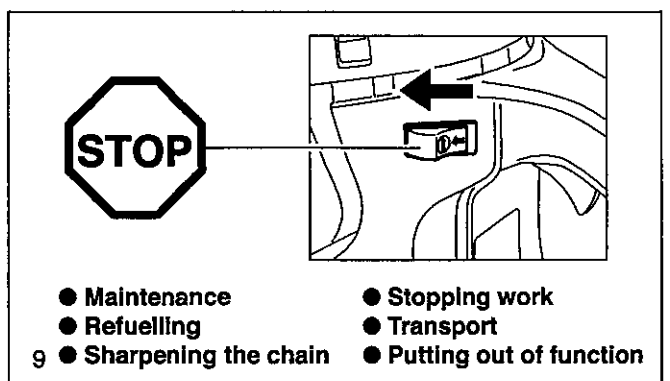
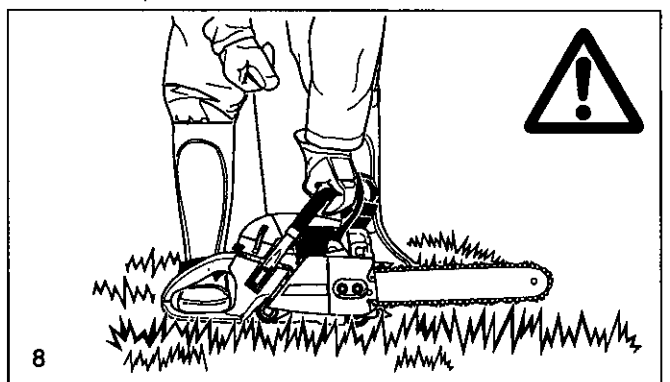
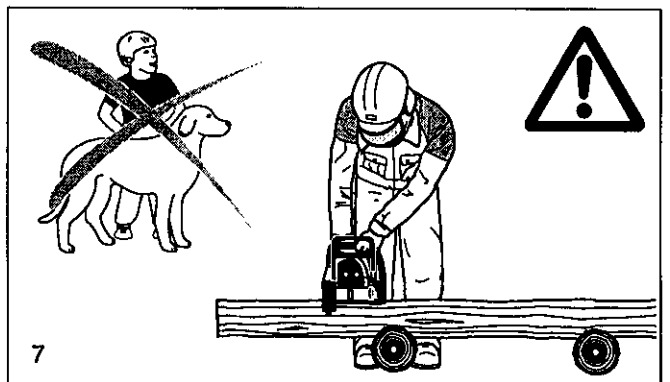
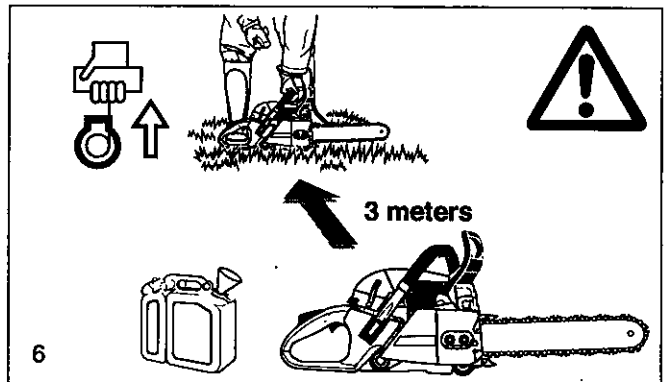


## Fuels / Refuelling

- 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. Inhalation of fuel vapours can be hazardous to your health.
- Do not spill fuel or chain oil. When you have spilt 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 plugs 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.

## Putting into operation

- **Do not work on your own. Another person must be nearby in case of emergencies (within shouting distance).**
- 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.
- 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.
- **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.
- **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.**



## Kickback

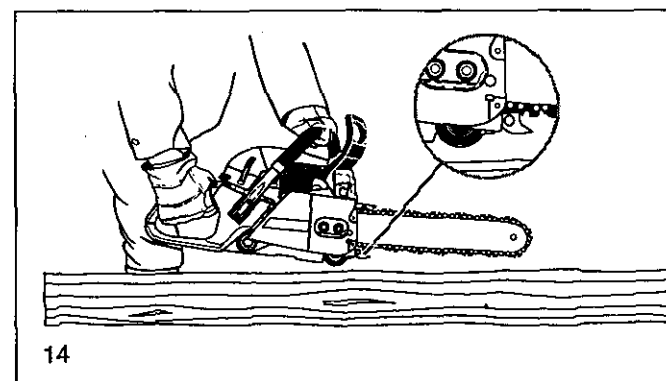
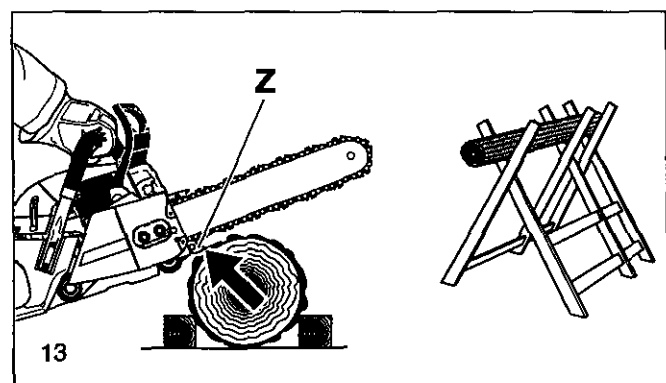
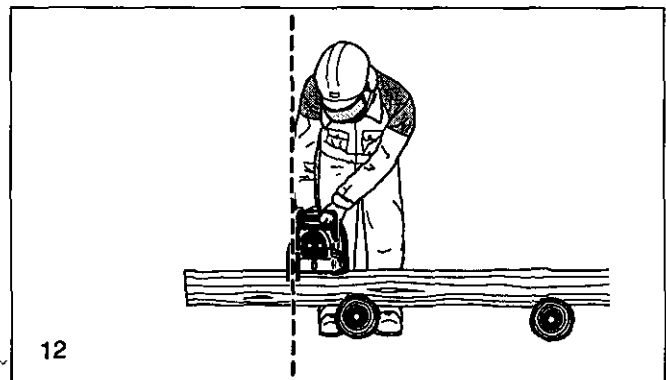
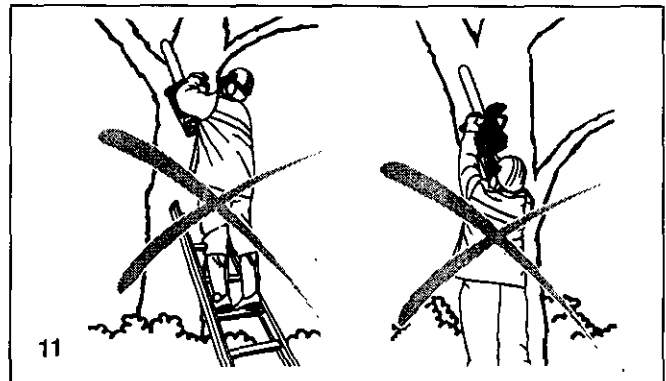
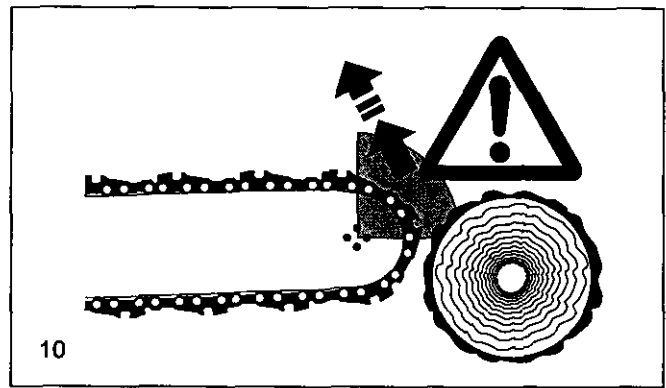
- When working with the chain saw dangerous kickbacks may occur.
- Kickback occurs when the upper part of the end of the guide bar inadvertently touches wood or other hard objects (10).
- This causes the saw to be thrown back toward the user with great force and out of control. **Risk of injury!**

### 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!
- Never apply the end of the bar when starting to make a cut.
- 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 up into trees to perform sawing with the chain saw.
- 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 cutting down trees or performing crosscuts the spike bar (13, Z) must be applied to the wood to be cut.**
- 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!**

- 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**

- only those people are within the working area which are actually involved in cutting down the tree.
- every worker involved can withdraw without stumbling (the people should withdraw backwards in a diagonal line, i. e. at a degree of 45°).
- the bottom part of the trunk is free from foreign objects, underbrush and branches. Make sure to have a safe footing (risk of stumbling).
- 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.

**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.

**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.

- **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.

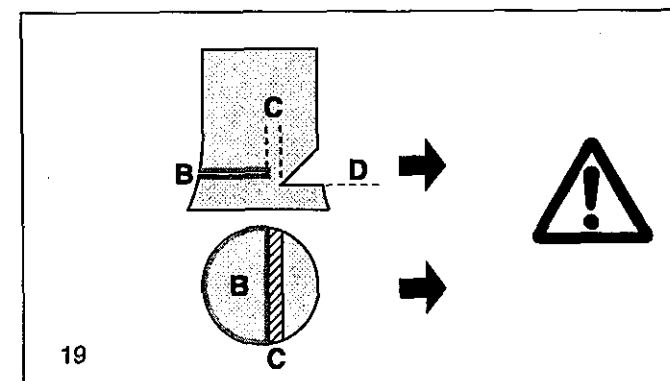
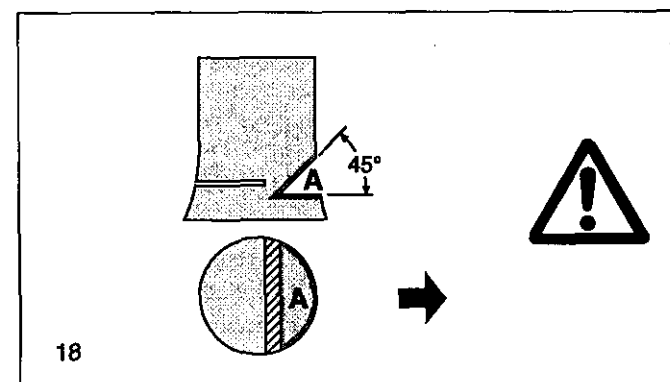
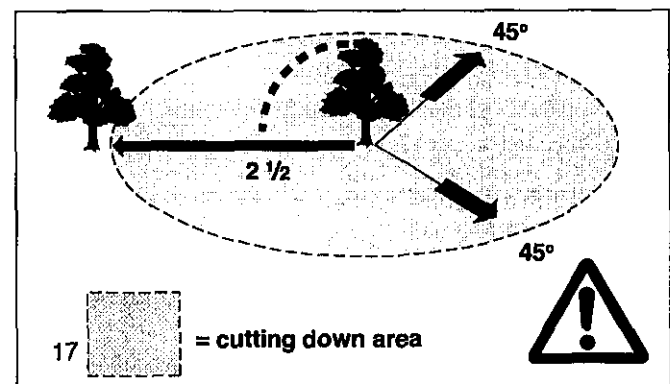
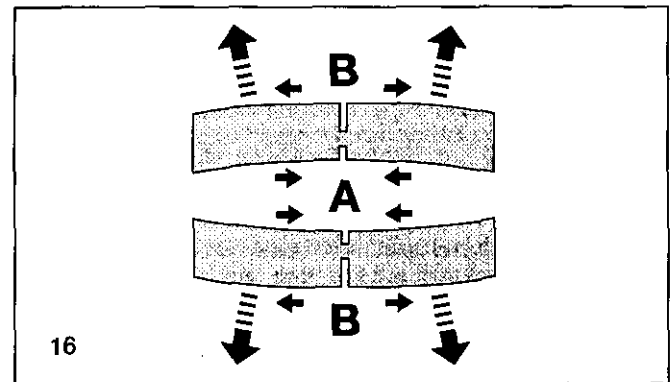
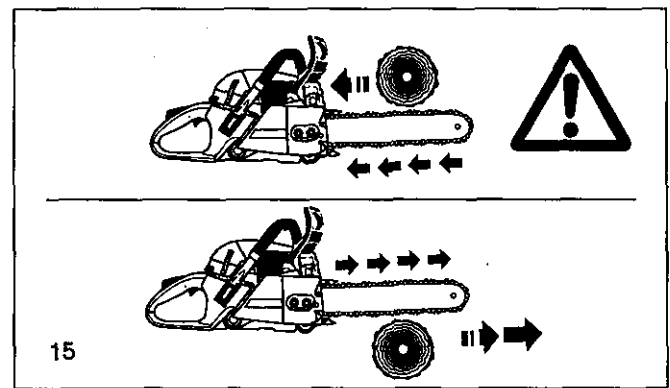
- Secure the cut only with wedges made of plastic or aluminium. Do not use iron wedges. If the saw hits an iron wedge the chain can be seriously damaged or torn.

- 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.



## 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 that the chain is always sharpened and tightened correctly (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.

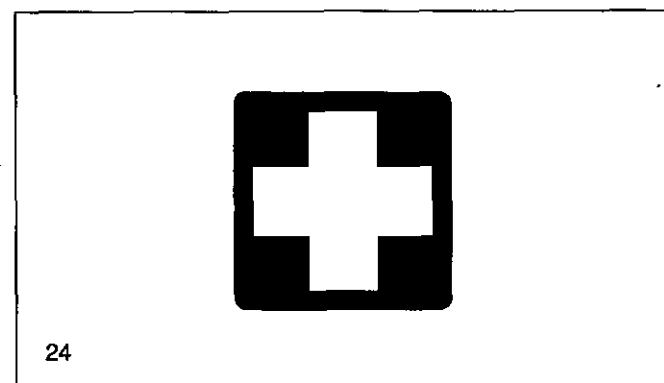
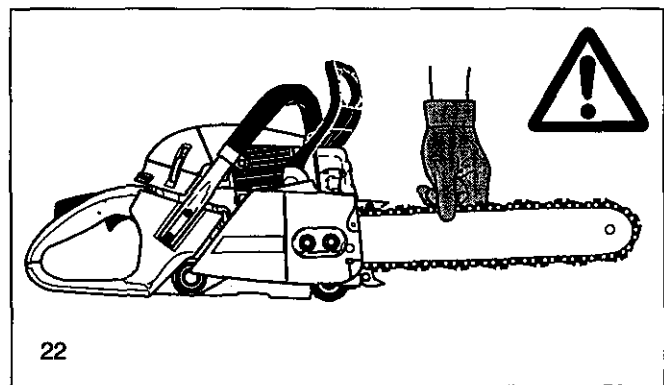
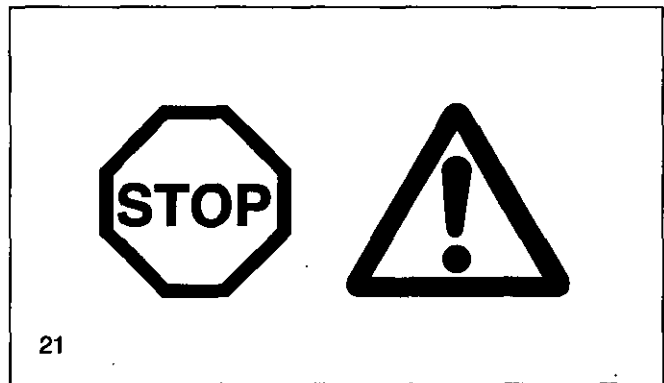
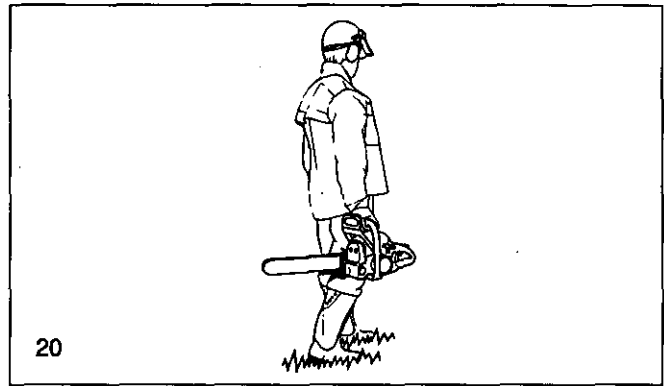
**When calling for help, give the following information:**

- 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

		DCS6400 / H DCS6401 / H	DCS7300 / H DCS7301 / H	DCS7900 / H DCS7901 / H
Stroke volume	cm <sup>3</sup>	64	72.6	78.5
Bore	mm	47	50	52
Stroke	mm	37	37	37
Max. power at speed <sup>3)</sup>	kW / 1/min	3.5 / 9,000	4.2 / 9,500	4.6 / 9,500
Max. torque at speed <sup>3)</sup>	Nm / 1/min	4.2 / 6,500	4.8 / 7,000	5.2 / 7,000
Idling speed / max. engine speed with bar and chain	1/min	2,500 / 13,500	2,500 / 13,500	2,500 / 13,500
Clutch engagement speed	1/min	3,200	3,200	3,200
Sound pressure level at the workplace L <sub>DA,AV</sub> per ISO/CD 22868 <sup>1)</sup>	dB (A)	104.3	104.3	104.3
Sound power level L <sub>WA,AV</sub> per ISO/CD 22868 <sup>1)</sup>	dB (A)	113.3	113.3	113.3
Vibration acceleration a <sub>h,w,eq</sub> per ISO 22867 <sup>1)</sup>				
- Tubular handle	m/s <sup>2</sup>	5.9	6.2	6.6
- Rear handle	m/s <sup>2</sup>	3.6	4.1	4.5
Carburetor (diaphragm carburetor)	Type	ZAMA		
Ignition system	Type	electronic		
Spark plug	Type	NGK BPMR 7A / BOSCH WSR 6F		
Electrode gap	mm	0.5		
Fuel consumption at max. load per ISO 7293 <sup>3)</sup>	kg/h	1.72	2.33	2.3
Specific consumption at max. load per ISO 7293 <sup>3)</sup>	g/kWh	500	510	505
Fuel tank capacity	l	0.75		
Chain oil tank capacity	l	0.42		
Mixture ratio (fuel/two-stroke oil)				
- when using MAKITA oil		50 : 1		
- when using other oils		40 : 1		
Chain brake		engages manually or in case of kickback		
Chain speed <sup>2)</sup>	m/s	19.74	20.83	20.83
Sprocket pitch	inch	3/8		
Number of teeth	Z	7		
Chain type see the Extract from the spare-parts list		099		
Pitch / gauge	inch	3/8 / .058		
Guide bar, length of a cut	cm	38 / 45 / 50 / 60 / 70		
Guide-bar type see the Extract from the spare-parts list				
Weight (fuel tank empty, without chain and guide bar)	kg	6.3	6.3	6.3

<sup>1)</sup> Figures derived in equal part from idling, full-load and racing speed.

<sup>2)</sup> At max. power

<sup>3)</sup> For models without starting valve

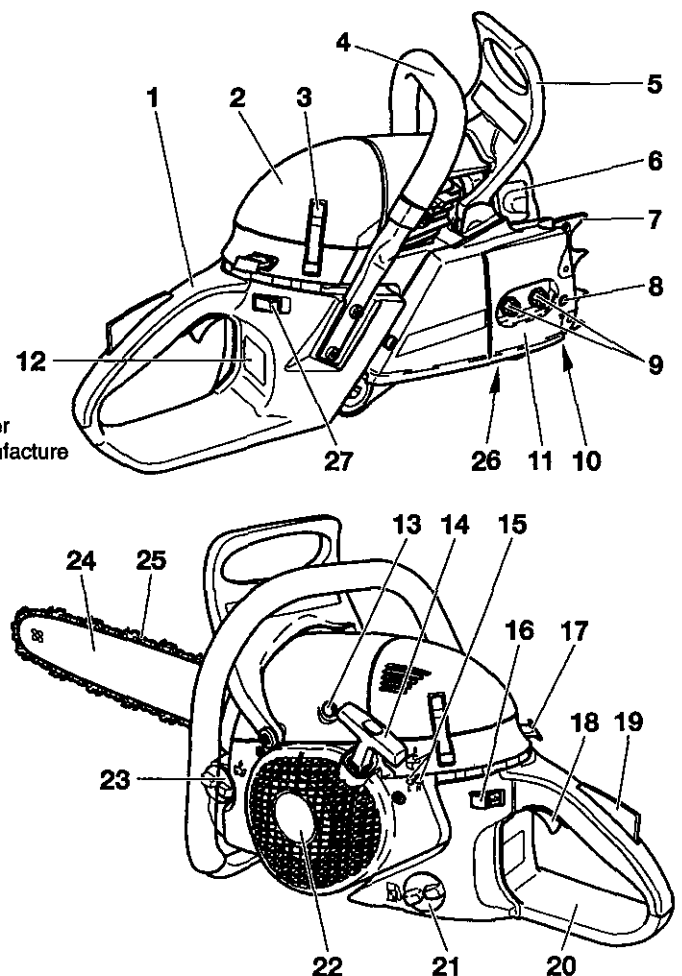
## Denomination of components

- 1 Handle
- 2 Filter hood
- 3 Filter hood clip
- 4 Tubular handle
- 5 Hand guard (release for chain brake)
- 6 Muffler
- 7 Spike bar
- 8 Chain tensioning screw
- 9 Retaining nuts
- 10 Chain catch
- 11 Sprocket guard
- 12 Identification plate
- 13 Starting valve (option)
- 14 Starter grip
- 15 Adjusting screws for carburetor
- 16 I/STOP-switch
- 17 Choke switch and half-throttle lock
- 18 Throttle lever
- 19 Safety locking button
- 20 Rear hand guard
- 21 Fuel tank cap
- 22 Fan housing with starting assembly
- 23 Oil tank cap
- 24 Guide bar
- 25 Chain
- 26 Adjusting screw for oil pump (bottom side)
- 27 Switch for handle heating (only on type "H" models)

Identification plate (12)  
Indicate when ordering spare parts



Serial number  
Year of manufacture





## PUTTING INTO OPERATION



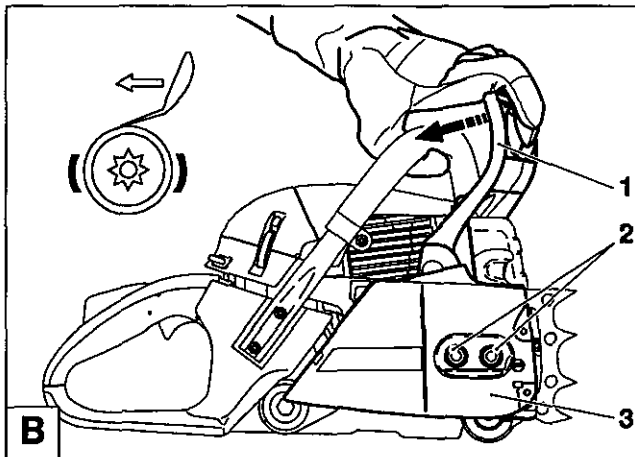
### CAUTION:

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:

Start the chain saw only after having assembled it completely and inspected.

A



### Mounting the guide bar and saw chain

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

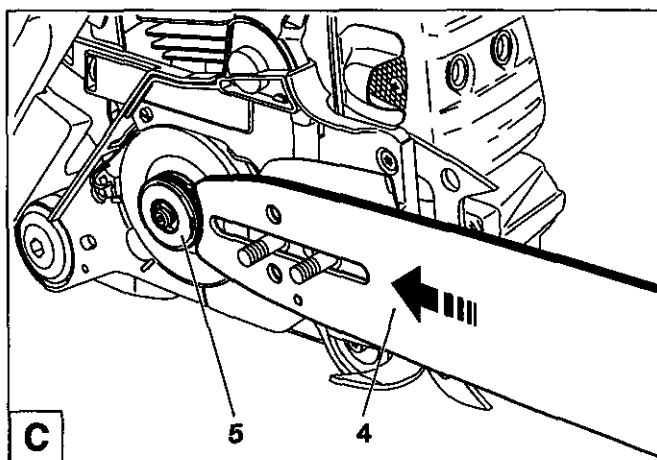
Put the chain saw on a stable surface and carry out the following steps for mounting the guide bar and saw chain:

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

Unscrew retaining nuts (2).

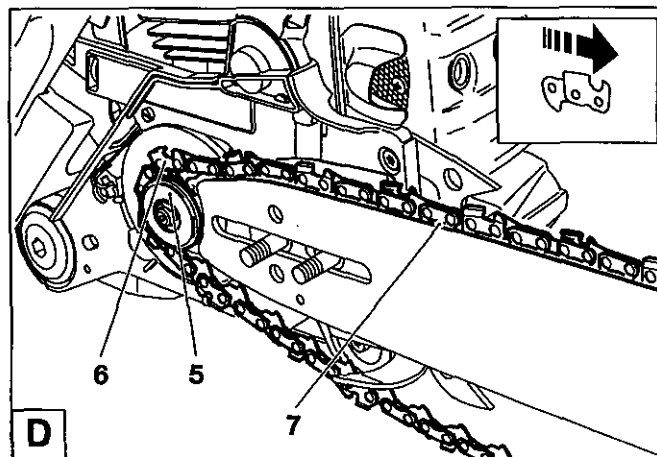
Pull off the sprocket guard (3).

B



Position the guide bar (4) and push against the sprocket (5) as shown by the arrow.

C



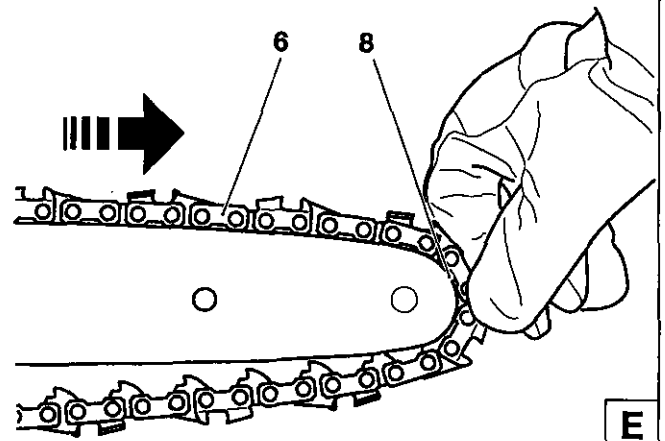
Lift the chain (6) over the sprocket (5). Using your right hand, guide the chain into the top guide groove on the guide bar (7).

### CAUTION:

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

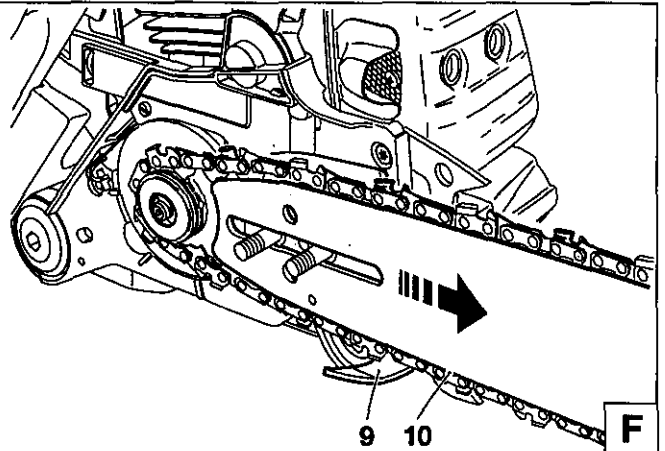
D

Pull the chain (6) around the sprocket nose (8) of the guide bar in the direction of the arrow.

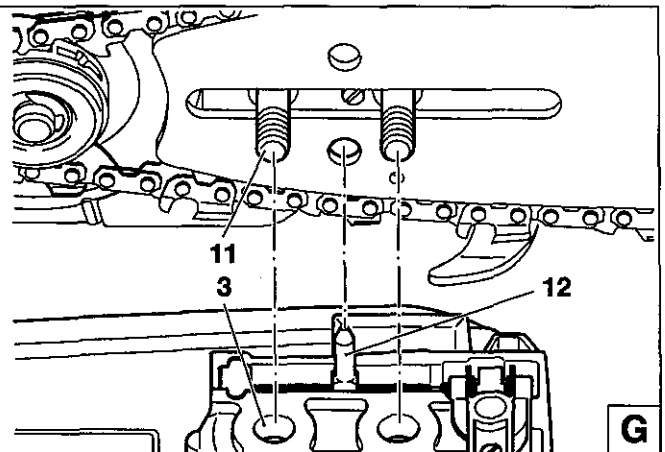


Guide the chain over the chain catch (9).

Pull the guide bar as shown by the arrow to take the slack out of the chain, so that it comes up to the bottom edge of the guide bar (10).



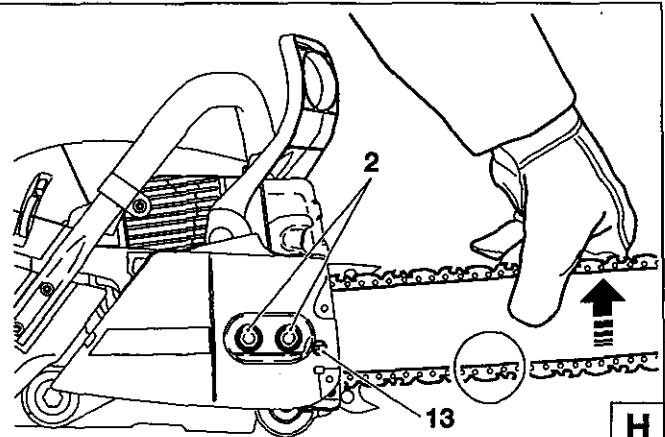
Line up the holes in the sprocket guard (3) with the bolts (11).  
Turn the chain tensioning screw (H/13) until the chain tensioning bolt (12) is aligned with the hole in the guide bar.  
Replace the sprocket guard.  
Manually tighten the retaining nuts (H/2).

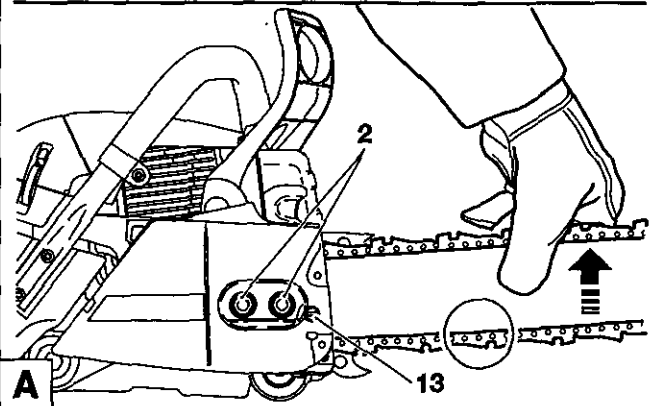
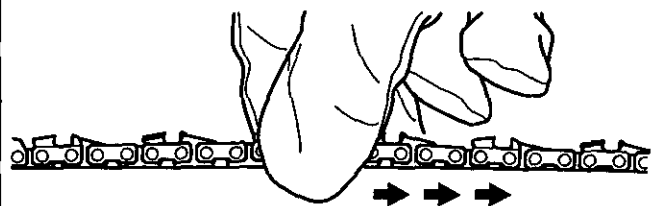


### Tightening the saw chain

Slightly lift the end of the guide bar and turn the chain adjusting screw (13) 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.





### 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.

### Retightening the saw chain

**Loosen the nuts (2) about one turn with the universal wrench.** Raise the tip of the guide bar a little and turn the chain tensioning screw (13) to the right (clockwise) until the saw chain is again up against the bottom edge of the guide bar (see circle).

While keeping the tip of the guide bar raised, tighten the nuts (2) again with the universal wrench.

### Chain brake

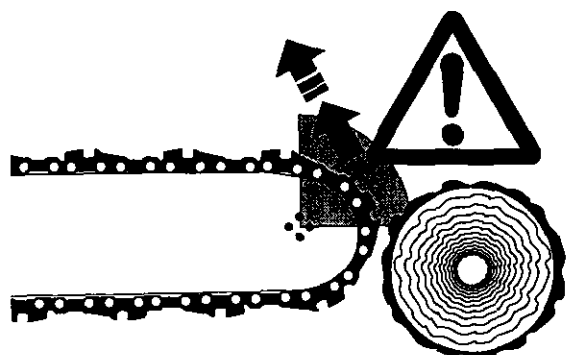
The DCS comes with an inertia chain brake as standard equipment. If kickback occurs due to contact of the guide-bar tip with wood (see SAFETY PRECAUTIONS, page 6), the chain brake will stop the chain through inertia if the kickback is sufficiently strong.

The chain will stop within a fraction of a second.

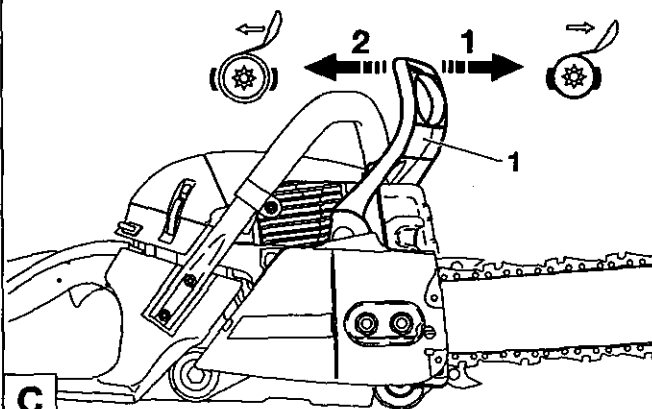
**The chain brake is installed to block the saw chain before starting it and to stop it immediately in case of an emergency.**

**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!**



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.

## Fuel

### CAUTION:

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

Be especially careful when handling gasoline (petrol).

Avoid all flame or fire. Do not smoke (explosion hazard).

### Fuel mixture

The engine of the chain saw is a high-efficiency 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.**

For lubricating the engine use a two-stroke engine oil (quality grade: JASO FC or ISO EGD), which is 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 40:1 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:

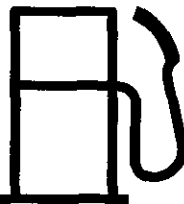


**50:1** when using MAKITA high-performance two-stroke engine oil, i. e. mix 50 parts gasoline with 1 part oil.

**40:1** when using other two-stroke engine oils, i. e. mix 40 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. Thoroughly shake the mixture before filling it into the chain saw tank.



Gasoline	50:1	40:1
		
1000 cm <sup>3</sup> (1 litre)	20 cm <sup>3</sup>	25 cm <sup>3</sup>
5000 cm <sup>3</sup> (5 litres)	100 cm <sup>3</sup>	125 cm <sup>3</sup>
10000 cm <sup>3</sup> (10 litres)	200 cm <sup>3</sup>	250 cm <sup>3</sup>

**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. Therefore fuel and fuel mixtures, which have been stored for too long, can cause starting problems. Purchase only that amount of fuel, which will be consumed over the next few months.

**Store fuel safely in a dry place in approved containers only.**

### 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

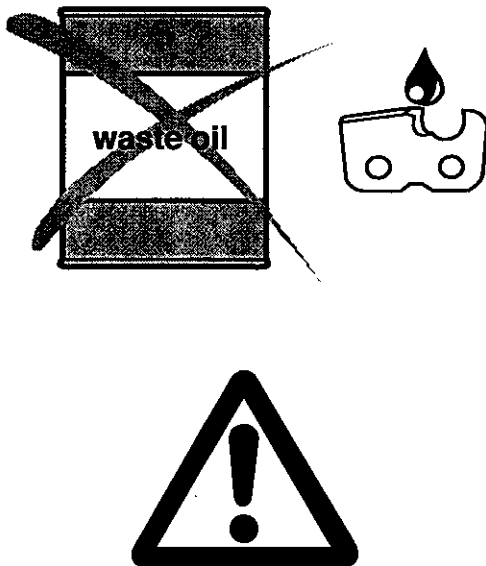
### Important note on bio-degradable chain oils

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 dam-

age 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

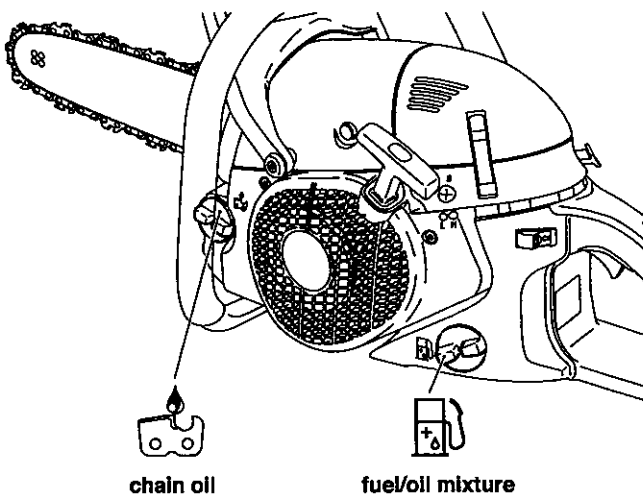
Mineral oil products degrease your skin. If your skin comes in contact with these substances repeatedly and for an extended period of time, it will desiccate. Various skin diseases may result. In addition, allergic reactions are known to occur.

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!

Tightly screw on the cap.

**Clean screw cap and tank after refuelling.**

### 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. While working make sure there is enough chain oil in the tank. If necessary, add oil. **The engine must be switched off!**

B

## 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“).

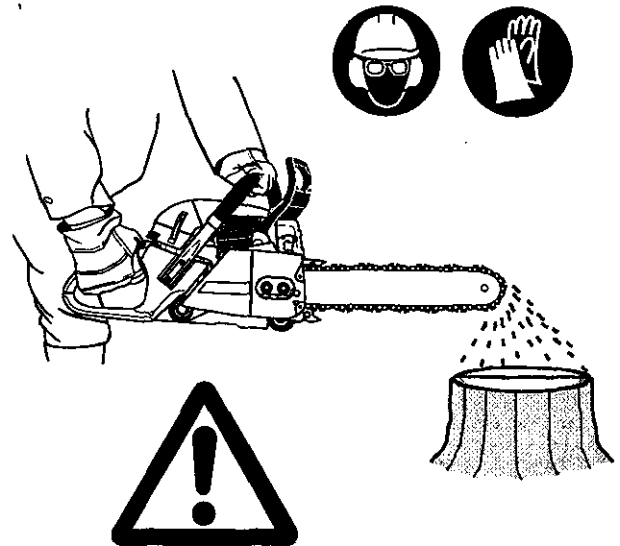
Hold the running chain saw approx. 15 cm above a trunk or the ground (use an appropriate base).

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.



C

## Adjusting the chain lubrication

The engine must be switched off.



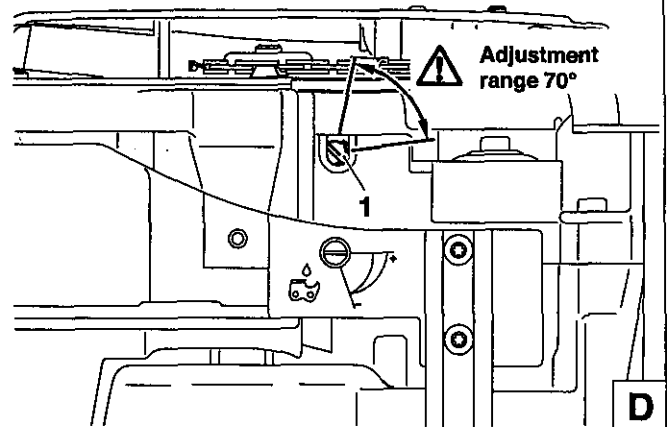
You can adjust the oil pump feed rate with the adjusting screw (1). The adjusting screw is on the bottom side of the housing.

The oil pump comes factory-set to a medium feed rate.

To change the feed quantity use the screwdriver and adjust the adjusting screw in the following way:

- Turn to the right to reduce the feed rate.
- Turn to the left to increase the feed rate.

Even very small adjustments to the adjusting screw (1) can influence the oil flow rate. While working make sure there is enough chain oil in the tank. If necessary, add oil.



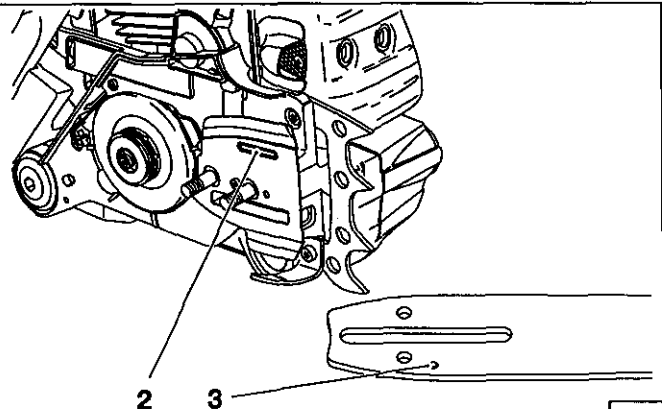
D

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.

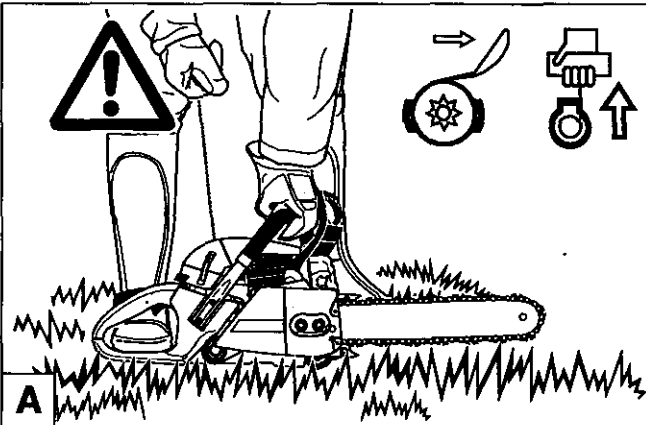
### Note:

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

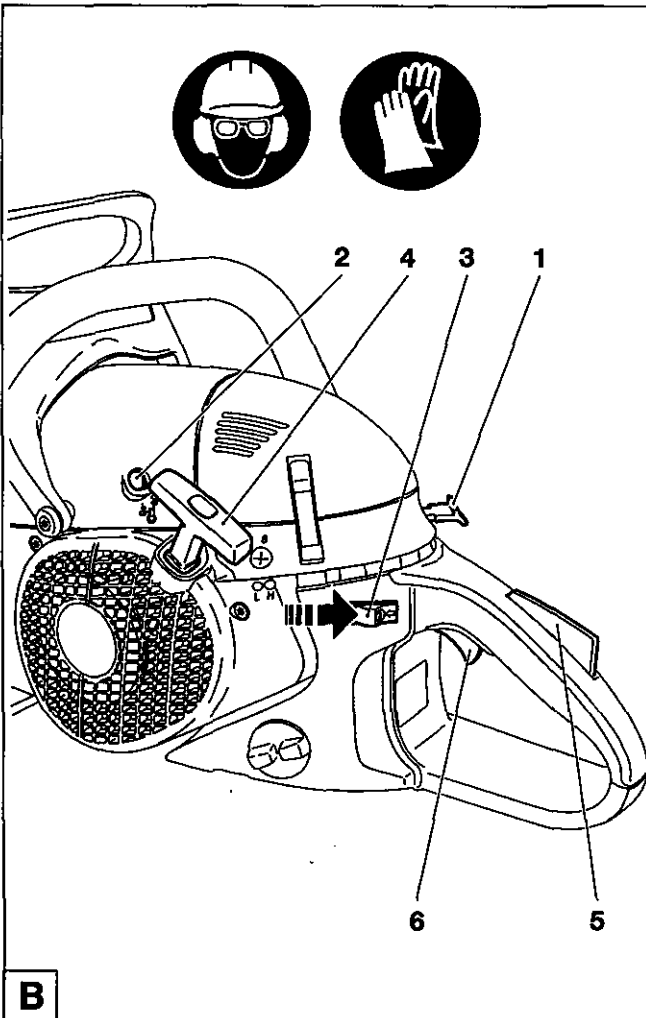
Start the chain saw only after having assembled it completely and inspected.

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).

Hold the tubular handle tightly with one hand and press the chain saw to the ground.

Steady the right foot by standing in the rear handle.



## Cold-starting:

Pull the choke (1) out until it audibly clicks. This simultaneously actuates the half-throttle lock.

Move the I/STOP ignition switch (3) as shown by the arrow.

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

Push the starting valve (2) (option).

**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.

Push the starting valve (2) (option).

**Depress the choke (1) and pull the starter cable again.** As soon as the engine is running, grasp the rear handle (this actuates the grip safety (5)) and tap the throttle (6). This will release the half-throttle lock and the engine will run in idle.

**CAUTION:** As soon as the engine is started it must be put in idle to prevent the chain brake from being damaged.

Now release the chain brake.

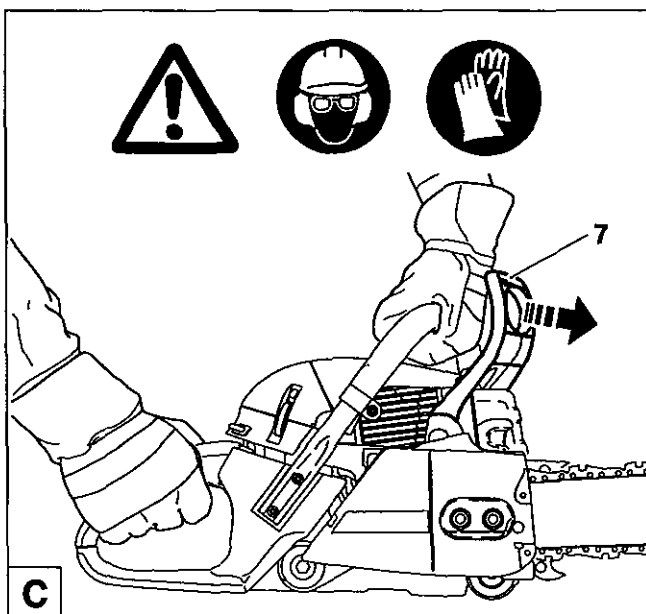
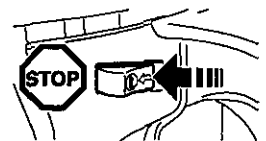


## Warm starting:

As described for cold starting, except before starting pull the choke (1) all the way out and back in one time, in order to activate the half-throttle lock.

## Stopping the engine

Move the I/STOP ignition switch to the "STOP" position.



## 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 when you test the chain brake, do NOT use the chain saw. Take the chain saw to 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.

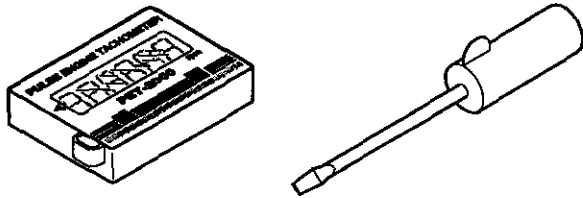
Carburetor adjustment may be done only by a MAKITA service centre. Improper adjustment can cause damage to the engine.

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

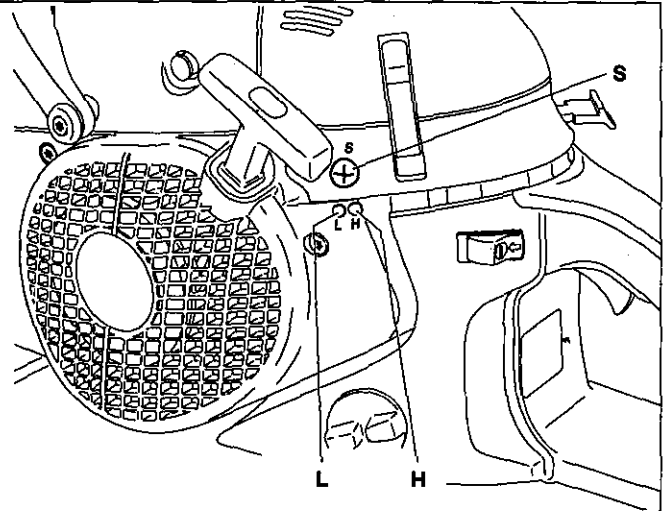
For proper adjustment, proceed as follows:

### 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. Set maximum permissible speed
4. Check acceleration
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. 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!

For units with electronic engine speed limitation: No tachometer is necessary to determine the maximum permissible speed, since exceeding this speed will result in clearly audible ignition misses!

### 4. 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.

### 5. Check idle speed

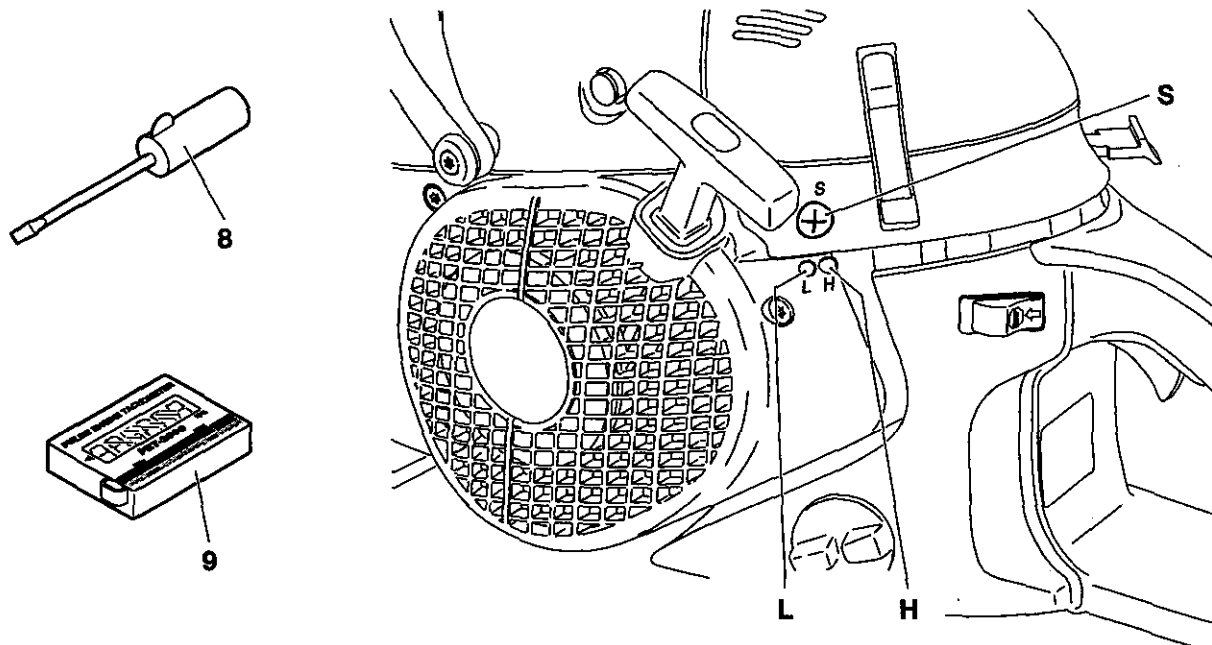


Check the idle speed after setting the top speed (the cutting tool must not rotate!).

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 (9, part No. 950 233 210) for optimum adjustment.

**Do not go below the specified setting of the main nozzle (H). Doing so may cause engine damage due to overheating and insufficient lubrication!**

Use the supplied carburetor screwdriver (8) for carburetor adjustment. It has a moulded-on projection that aids in adjusting.

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 warm up.
2. Set idle
3. Check top speed
4. Check acceleration
5. Check idle speed

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

### 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 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 top speed

The basic setting H=1 and L=1 gives a maximum speed of about 13,000 rpm. For higher speed (electronically limited to 13,500 rpm), turn the adjusting screw (H) a maximum 1/4 turn clockwise. The top speed in the governor can be clearly heard from the ignition misses. **Note:** Since there is an electronic speed governor (limiter) at 13,500 rpm that cuts off the ignition current, the top speed cannot be read from the tachometer. **Important: To prevent engine damage, never go below setting (H) 3/4 turns.**

### 4. 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.

### 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 top speed.

### Working in winter


In order to prevent carburetor icing in conditions of low temperature combined with high humidity, and below + 5°C in order to get up to operating temperature faster, heated air can be taken from the cylinder.

Remove the filter hood (see „Cleaning air filter“)

Remove the insert (10) and insert it as shown in position B for cold-weather operation.

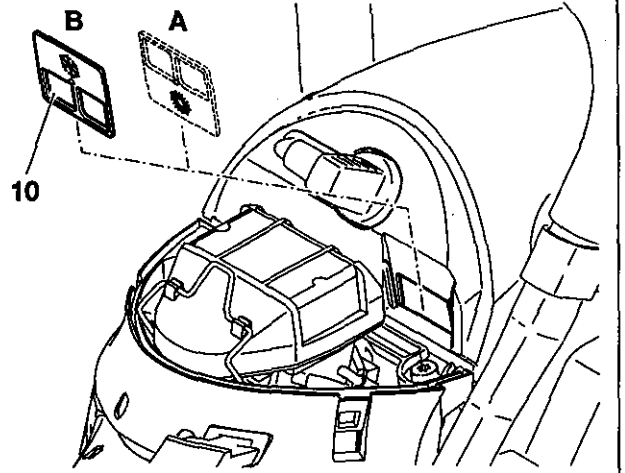
At temperatures above + 5°C the carburetor must NOT be fed heated air. Failure to follow these instructions can lead to damage to the cylinder and piston!

At temperatures over +5°C place the insert in position A for normal operation.

Position A  - Normal operation

Position B  - Cold-weather operation

Reinstall the filter hood.



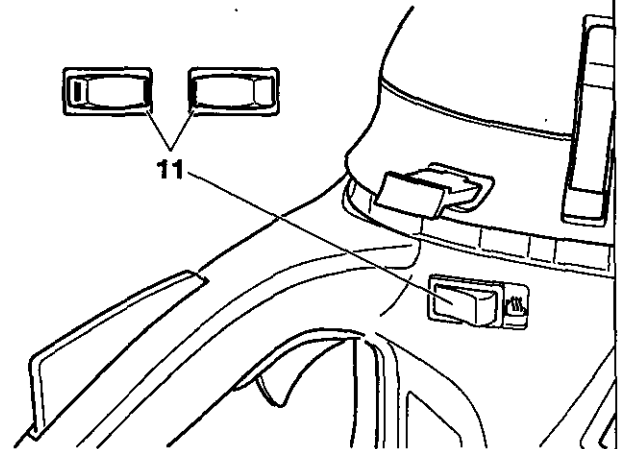
C

### Handle heating

(only DCS6400H, DCS6401H, DCS7300H, DCS7301H, DCS7900H, DCS7901H)

The electrically heated handles are activated by pushing the switch (11).

**On:** red marking on switch visible  
**Off:** red marking on switch not visible



D