



Instruction Manual

Original Instruction Manual



DCS430
DCS431
DCS520
DCS5200



Important:

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

Keep this instruction manual!

Table of contents	Page		Page
EU conformity declaration	2	Warm start	14
Packing	2	Starting under special conditions	14
Delivery inventory	3	Stopping the engine	14
Symbols	3	Checking the chain brake	15
SAFETY PRECAUTIONS	4	Checking the chain lubrication	15
General precautions	4	Adjusting the carburetor (only for EU-countries).....	15
Protective equipment	4	Adjusting the carburetor (only for not EU-countries).....	16
Fuels / Refuelling	5	Working in winter	17
Putting into operation	5	MAINTENANCE	17
Kickback	6	Sharpening the saw chain	17-18
Working behavior/Method of working	6-7	Cleaning the guide bar	18
Transport and storage	8	Cleaning the brake band and sprocket interior	19
Maintenance	8	Replacing the saw chain	19
First aid	8	Replacing the suction head	19
Technical data	9	Cleaning the air filter	20
Denomination of components	9	Replacing the spark plug	20
PUTTING INTO OPERATION	10	Replacing the starter cable	21
Mounting the guide bar and saw chain	10-11	Replacing the return spring	21
Tightening the saw chain	11	Mounting the fan housing	21
Chain brake	11	Instructions for periodic maintenance	22
Fuels / Refuelling	12-13	Service, spare parts and guarantee	22-23
Adjusting the chain lubrication	13	Trouble shooting	23
Starting the engine	14	Extract from spare parts list	24
Cold start	14	Accessories	24

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 MAKITA-chain saws are light, handy saws with high performance, a good power-to-weight ratio, and a wide range of speeds for top utility.

The long-life "Nikasil"-lined cylinder, tough die-cast magnesium crankcase with sturdy, easy-to-operate central guide-bar mounting and rugged metal spike bar make this saw a reliable, hard-working tool.

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.

MAKITA chain saws are equipped with the latest safety features and meet all national and international standards. These features include: hand guards on both handles, grip throttle lever lock, 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.

The following industrial property rights apply: US 4465440, US 5411382, EP 0236858, EP 0560201, GBM 8710075, GBM 8809928, GBM 9203378, GBM 29616652.

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!



Packing

Your MAKITA chain saw comes delivered in a protective cardboard box to protect against shipping damage.

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



EU Conformity Declaration

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

Type	EU prototype test certificate No.
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DCS520	(026)	K-EG-2009/4661
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DCS5200	(027)	K-EG-2009/4662
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manufactured by DOLMAR GmbH, Jenfelder Str. 38, 22045 Hamburg, Germany, conforms to the basic safety and health requirements of the applicable EU Directives:

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 Directives were: EN 11681-1, CISPR 12, EN 50082-1, DIN VDE 0879 T1.

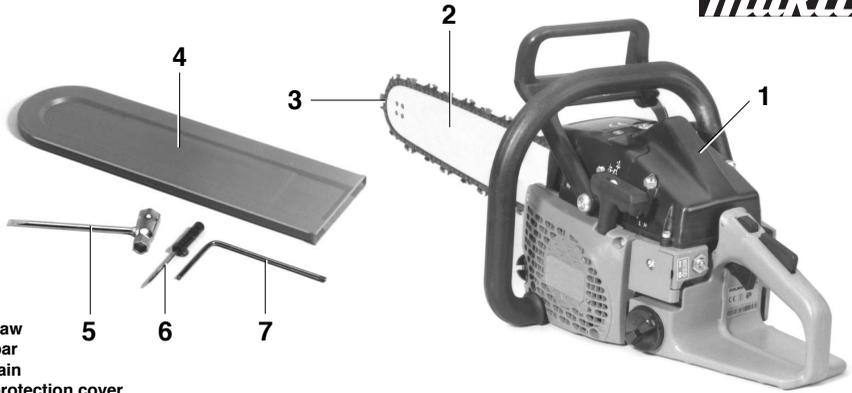
The conformity assessment procedure 2000/14/EG was performed per Annex V. The measured sound power level (L_{w}) is 112 dB(A). The guaranteed sound power level (L_d) is 113 dB(A).

The EU Type-Examination Certificate was performed by: Deutsche Prüf- und Zertifizierungsstelle für Land- und Forsttechnik, Max-Eyth Weg 1, D-64823 Groß-Umstadt.

The technical documentation is on file at DOLMAR GmbH, Abteilung FZ, Jenfelder Strasse 38, 22045 Hamburg, Germany. Hamburg, 29.12.2009 for DOLMAR GmbH

Tamiro Kishima
Managing Director

Rainer Bergfeld
Managing Director



- 1. Chain saw
- 2. Guide bar
- 3. Saw chain
- 4. Chain protection cover
- 5. Universal wrench
- 6. Screwdriver for carburetor adjustment
(only in delivery for model DCS5200)
- 7. Offset screwdriver
- 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:

	Read instruction manual and follow the warning- and safety precautions!		Wear protective gloves!
	Particular care and caution!		Chain brake
	Forbidden!		Caution, kickback!
	Wear protective helmet, eye and ear protection!		Fuel and oil mixture
	No smoking!		Carburetor adjustment
	No open fire!		Chain oil fill/oil pump
	On/Off (I/O) switch		Working in winter
	Press starting valve		First aid
	Engine - manual start		Recycling
	Choke lever		CE - Marking
	Stop engine!		

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

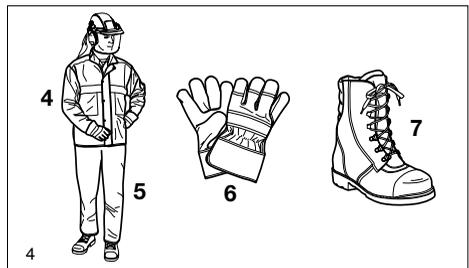
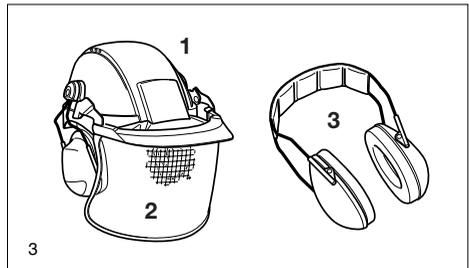
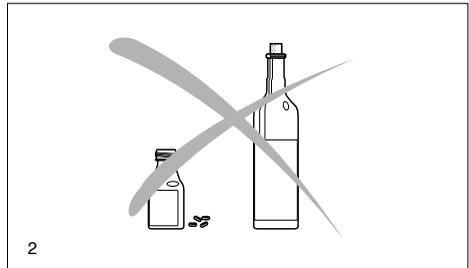
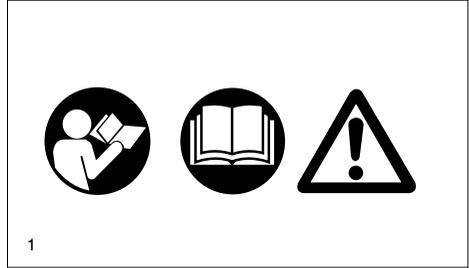
- **To ensure correct operation the user has to read this instruction manual** to make himself familiar with the characteristics of the chain saw. Users insufficiently informed will endanger themselves as well as others due to improper handling.
- It is recommended to lend the chain saw only to people 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 brand 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 to be worn. Safety shoes equipped with a protective layer provide protection against cuts and ensure a secure footing.



Fuels / Refuelling

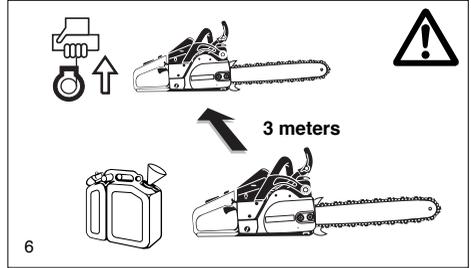
- Stop the engine before refuelling the chain saw.
- Do not smoke or work near open fires (5).
- Let the engine cool down before refuelling.
- Fuels can contain substances similar to solvents. Eyes and skin should not come in contact with mineral oil products. Always wear protective gloves when refuelling. 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

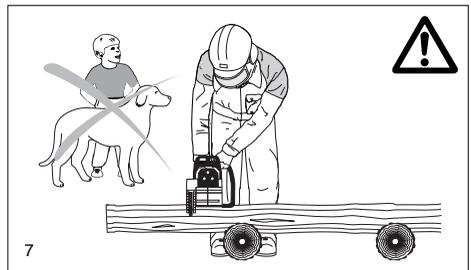
- **Do not work on your own. Another person must be nearby in case of emergencies** (within shouting distance).
- Ensure that there are no children or other people within the working area. Pay attention to any animals in the working area, as well (7).
- **Before starting work the chain saw must be checked 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 dripping from the chain or guide bar after having stopped the saw chain will pollute the soil. Always use an appropriate base.



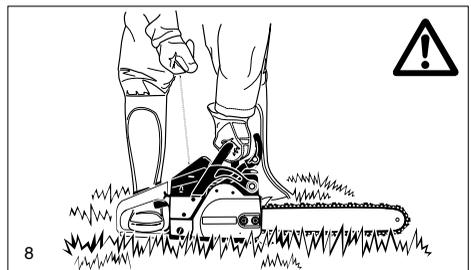
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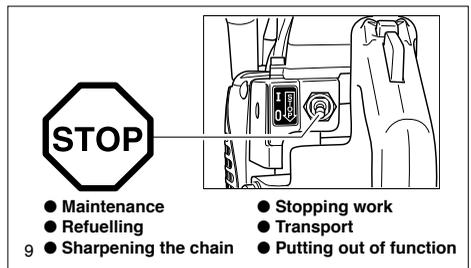
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8



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).
- 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.**

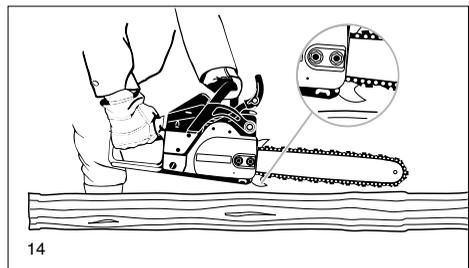
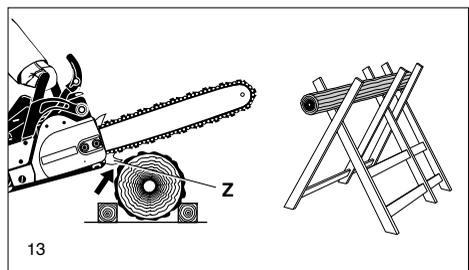
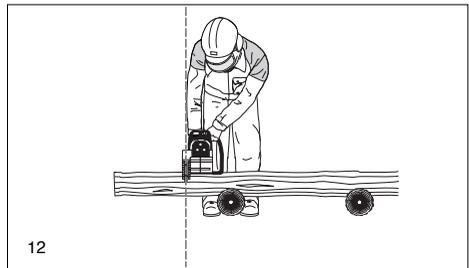
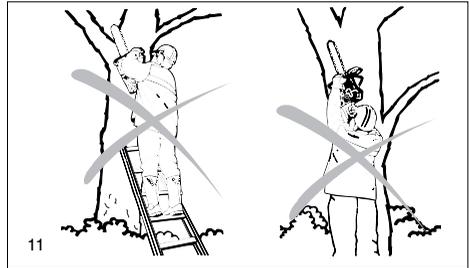
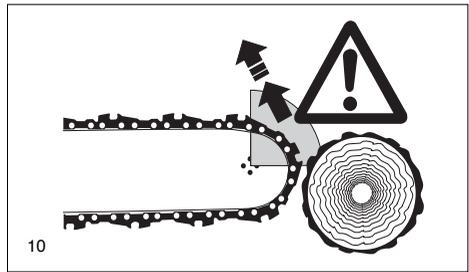
- Before performing a **crosscut** firmly apply the spike bar to the timber, only then can the timber be cut with the chain running. For this the chain saw is lifted at the back handle and guided with the tubular handle. The spike bar serves as a centre of rotation. Continue by slightly pressing down 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**
 - 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.

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.

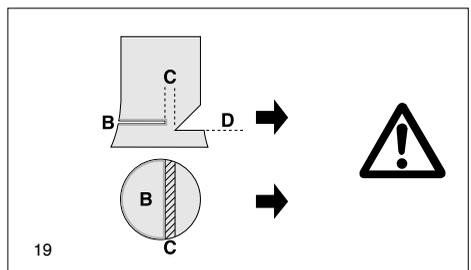
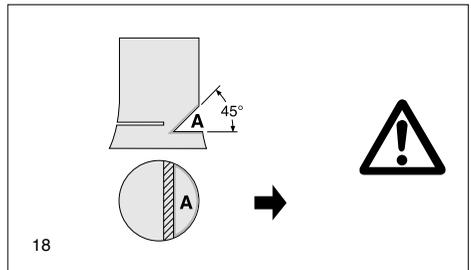
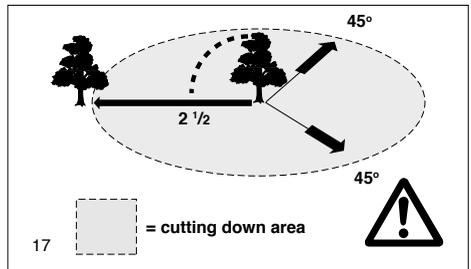
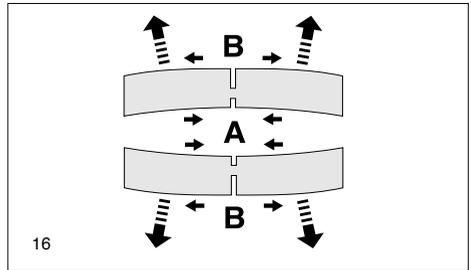
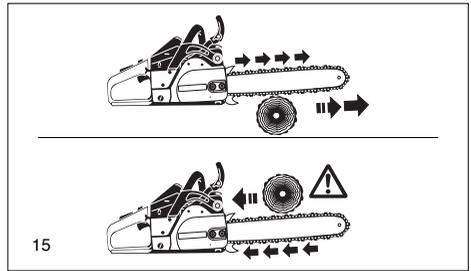
Cutting the roots:

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

Notching the trunk (18, A):

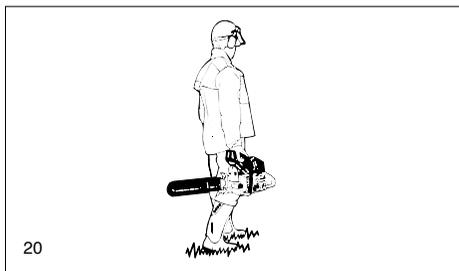
The notch determines the direction of fall and guides the tree. The trunk is notched perpendicular to the direction of fall and penetrates 1/3 - 1/5 of the trunk diameter. Perform the cut near the ground.

- 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.



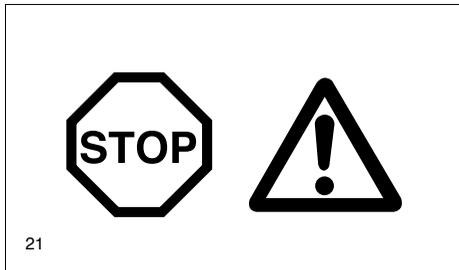
Transport and storage

- 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.

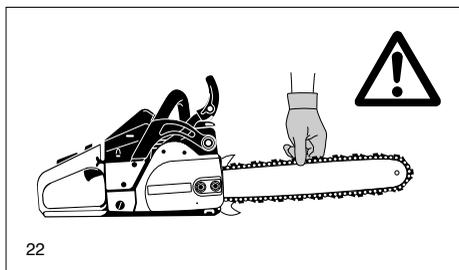


Observe the accident prevention instructions issued by trade associations and insurance companies. Do not perform any modifications on the chain saw. You will put your safety at risk.

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.

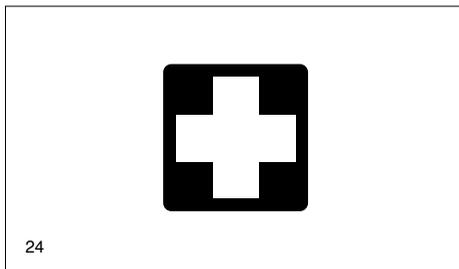
When calling for help, give the following information:

- 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

		DCS430, 431	DCS520	DCS5200
Stroke volume	cm ³	43	52	52
Bore	mm	40	44	44
Stroke	mm	34	34	34
Max. power at speed	kW / RPM	2.0 / 9,000	2.4 / 9,000	2.7 / 9,000
Max. torque at speed	Nm / RPM	2.4 / 6,000	2.9 / 6,000	3.1 / 6,000
Idling speed / max. engine speed with bar and chain	RPM	2,500 / 12,500	2,500 / 12,500	2,500 / 13,000
Clutch engagement speed	RPM	3,600	3,600	3,600
Sound pressure level (at the workplace)				
L _{PA,eq} per ISO 22868 ^{1) 3)}	dB(A)	101 / K _{PA} = 2,5	101 / K _{PA} = 2,5	101 / K _{PA} = 2,5
Sound power level L _{WA,eq} per ISO 22868 ^{1) 3)}	dB(A)	110 / K _{WA} = 2,5	110 / K _{WA} = 2,5	110 / K _{WA} = 2,5
Vibration acceleration a _{hV,eq} per ISO 22867 ^{1) 3)}				
- Tubular handle	m/s ²	5,9 / K=2	5,9 / K=2	5,9 / K=2
- Rear handle	m/s ²	5,2 / K=2	5,2 / K=2	5,2 / K=2
Carburetor (diaphragm carburetor)	Type	Walbro WT-76 C	Walbro WT-76 C	Walbro WT-76 C
Ignition system	Type	electronic	electronic	electronic
Spark plug	Type	BOSCH WSR 6F	BOSCH WSR 6F	BOSCH WSR 6F
Electrode gap	mm	0.5	0.5	0.5
or spark plug	Type	NGK BPMR 7A	NGK BPMR 7A	NGK BPMR 7A
Fuel consumption at max. load per ISO 7293	kg/h	0.90	1.08	1.21
Specific consumption at max. load per ISO 7293	g/kWh	450	450	450
Fuel tank capacity	l	0.56	0.56	0.56
Chain oil tank capacity	l	0.28	0.28	0.28
Mixture 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			engages manually or in case of kickback	
Chain speed ²⁾	m/s		19.7	19.9
Sprocket pitch	inch		3/8	.325
Number of teeth	Z		7	8
Chain type (see the Extract from the spare-parts list)				
Pitch / gauge	inch		3/8 - .325 / .058	
Guide bar, length of a cut	cm		33, 38, 45	
Guide-bar type (see the Extract from the spare-parts list)				
Weight (fuel tank empty, without chain and guide bar)	kg		5,1	

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

²⁾ At max. power. ³⁾ Uncertainty (K=).

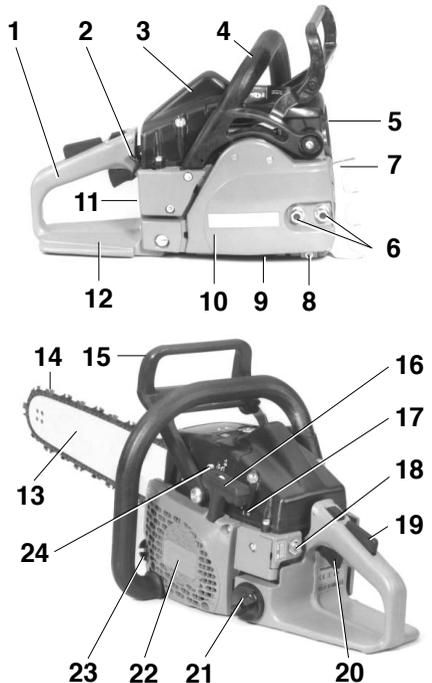
Denomination of components



Serial number
Year of manufacture

Identification plate (11)
Indicate when ordering spare parts

- 1 Handle
- 2 Choke
- 3 Filter cover
- 4 Tubular handle
- 5 Muffler
- 6 Retaining nuts
- 7 Spike bar
- 8 Chain catches
- 9 Adjusting screw for oil pump (bottom side)
- 10 Sprocket guard
- 11 Identification plate
- 12 Hand guard
- 13 Guide bar
- 14 Chain
- 15 Hand guard (release for chain brake)
- 16 Starter grip
- 17 Adjusting screws "S-L-H" for carburetor
- 18 I/STOP-switch
- 19 Safety locking button
- 20 Throttle lever
- 21 Fuel tank cap
- 22 Fan housing with starting assembly
- 23 Oil tank cap
- 24 Starting valve (only DCS431)



PUTTING INTO OPERATION

Mounting the guide bar and saw chain

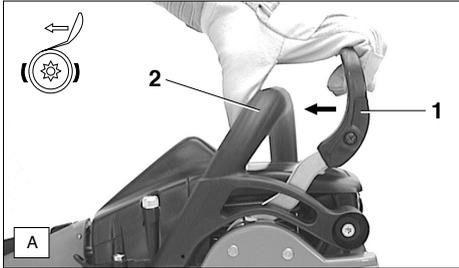
Use the universal wrench delivered with the chain saw for the following work.

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

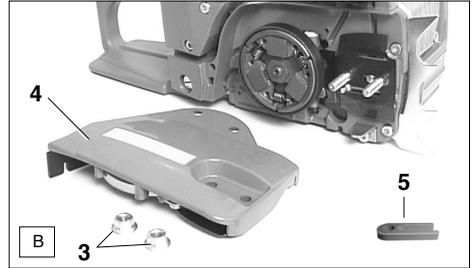


CAUTION: Before doing any work on the guide bar or chain, always switch off the engine and pull the plug cap off the spark plug (see "Replacing the spark plug"). Always wear protective gloves!

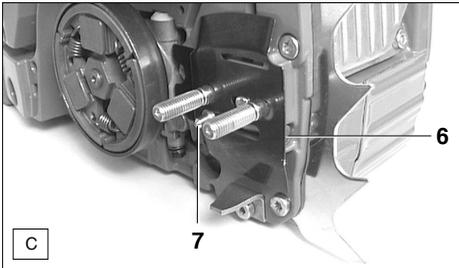
CAUTION: Start the chain saw only after having assembled it completely and inspected.



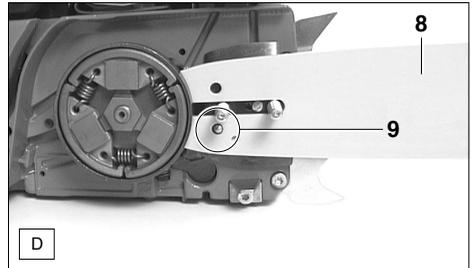
- Always release the chain brake before removing or replacing the sprocket guard (B/4). To do so, pull the hand guard (A/1) towards the tubular handle (A/2) until you feel it catch.



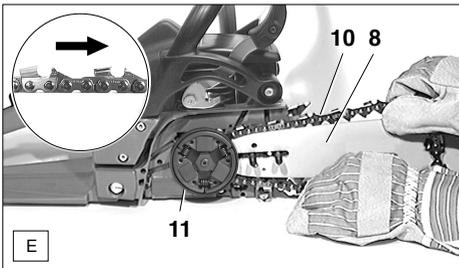
- Unscrew retaining nuts (B/3).
- Pull off the sprocket guard (B/4).
- Remove the plastic transport cover (B/5) and dispose of properly.



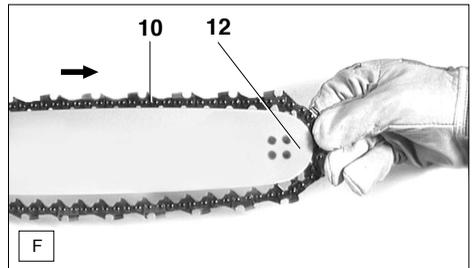
- Turn the chain adjusting screw (C/6) to the left (counter-clockwise) until the pin (C/7) is at the left stop.



- Position the guide bar (D/8). Make sure that the pin (D/9) of the chain tightener is in the hole (circled) on the guide bar.

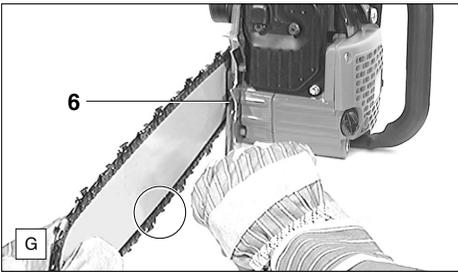


- Lift the chain (E/10) over the clutch drum and onto the sprocket (E/11). Using your right hand, guide the chain into the top guide groove on the guide bar (E/8). Note that the cutting edges along the top of the chain must point in the direction of the arrow!

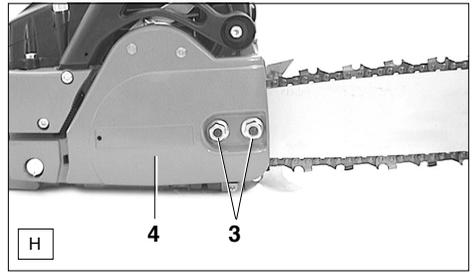


- Lead the chain (F/10) around the sprocket nose (F/12) of the guide bar.

NOTE: The chain should be easy to pull in the direction of the arrow. The clutch drum (E/11) should turn with the chain (the sprocket engages the chain).

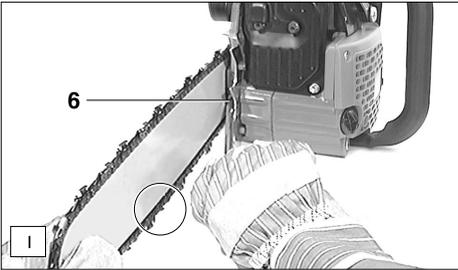


- Turn the chain tightener (G/6) to the right (clockwise) until the chain engages the guide groove of the bottom side of the bar (see circle). Press the guide bar against the housing with your left hand.



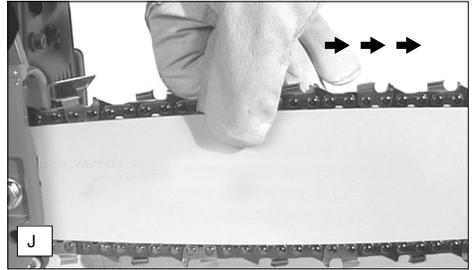
- Replace the sprocket guard (H/4).
- Manually tighten the retaining nuts (H/3).

Checking the chain tension



Tightening the saw chain

- Slightly lift the end of the guide bar and turn the chain adjusting screw (I/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 (H/3) with the universal wrench.



- 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.

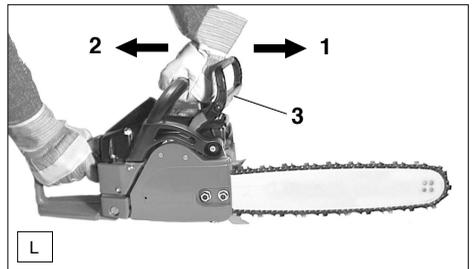
Chain brake



The MAKITA models 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!



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 (L/3) will **automatically** actuate the chain brake.

To engage the chain brake **manually**, simply push the hand guard (L/3) forward (towards the tip of the saw) with your left hand (arrow 1).

Releasing the chain brake

Pull the hand guard (L/3) towards you (arrow 2) until you feel it catch. The brake is now released.

Fuel / Refuelling



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
A 10000 cm ³ (10 litres)	200 cm ³	200 cm ³

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:

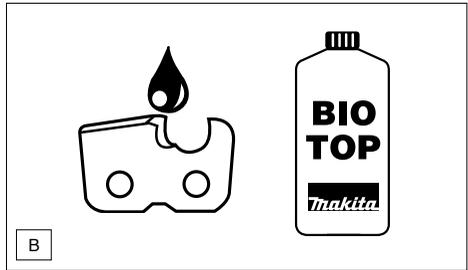
For preparing the fuel-oil mixture first mix the entire oil quantity with half of the fuel required, then add the remaining fuel. Thoroughly shake the mixture before filling it into the chain saw tank.

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!



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:

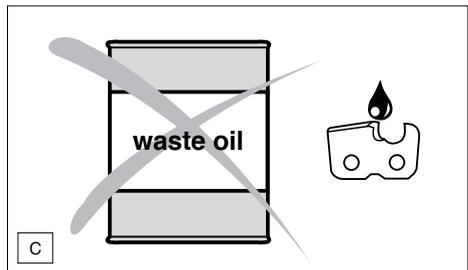
- 1 l order number 980 008 610
- 5 l order number 980 008 611

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).

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.



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!

Refuelling

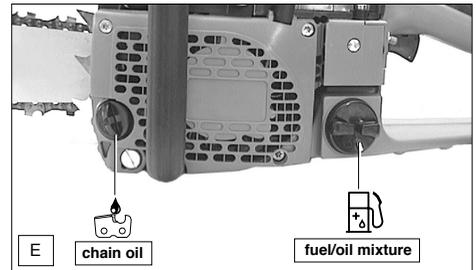


FOLLOW THE SAFETY PRECAUTIONS!

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.

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

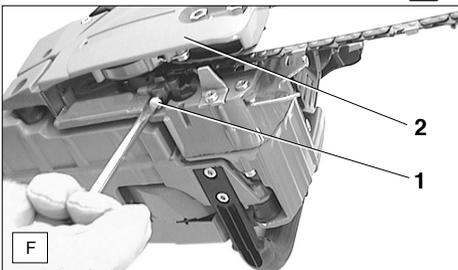


Lubricating the chain



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

Adjusting the chain lubrication



The engine must be switched off.

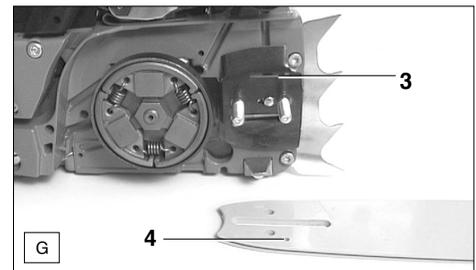
You can adjust the oil pump feed rate with the adjusting screw (F1). The adjusting screw is located in the housing underneath the sprocket guard (F2). It is accessible from below.

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

Note: To set from minimum to maximum oil supply, turn the adjusting screw (F1 with adjustment markings) **max.** a 1/4-turn.

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.

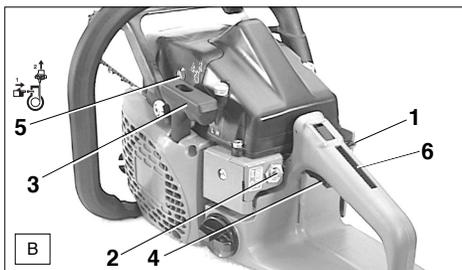
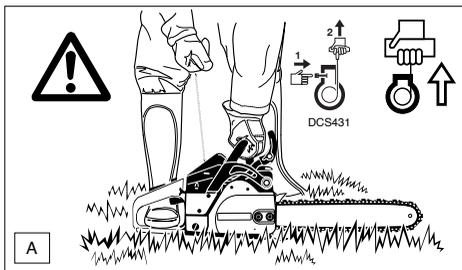


To ensure troublefree operation of the oil pump the oil guide groove at the crank case (G/3) and the oil inlet bore in the guide bar (G/4) must be cleaned regularly.

To change the feed quantity use the universal wrench and adjust the adjusting screw (F/1) in the following way:

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

Starting the engine



Cold-starting

The carburetors of these saws have a **choke valve** for cold starting (mixture enrichment).

To make it easier to start, the chain saw DCS431 is equipped with a semi-automatic starting valve (B/5). Pushing this valve in reduces the amount of compression effort needed, so that it is easier to bring the engine up to starting speed when pulling the starter cable. The high pressure increase in the combustion chamber that results from the first ignitions will automatically close the starting valve (button pops back out).

Models DCS430, DCS520 and DCS5200 do not have a starting valve. Starting and carburetor adjustment are as for model DCS431 except without the instruction "Push the starting valve".

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

Put the short-circuiting switch (B/2) in position "I" (START).

Slowly pull out the starter cable (B/3) until you notice resistance (the piston is positioned before the top dead centre).

Push the starting valve (B/5) (only DCS431).

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.

When you hear the first ignition, push the choke (B/1) in. Push the starting valve again (only DCS431) and pull the starter cable.

As soon as the engine is running, grasp the rear handle (this actuates the grip safety (B/6)) and tap the throttle (B/4). 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.



- 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 rear handle by standing in the hand guard.

Warm starting

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

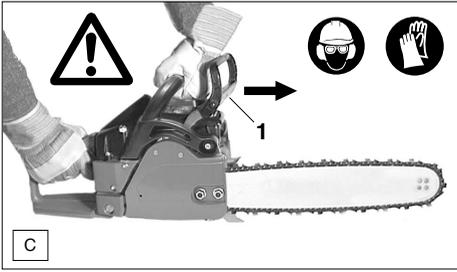
If the engine doesn't start after 2 or 3 pulls, repeat the entire starting procedure as described for cold starting.



Stopping the engine

Put the short-circuiting switch (B/2) in position "O" (STOP).

Checking the chain brake

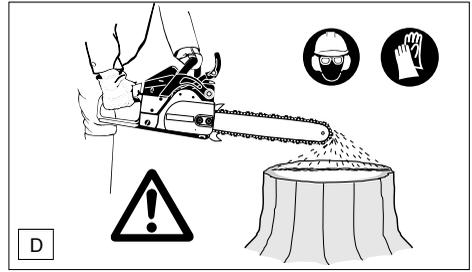


Do not work with the chain saw without first checking the chain brake!

- 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 (C/1) 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.

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.
- 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!

Adjusting the carburetor

(only for EU-countries)



Carburetor adjustment must only be done with the engine warm, a clean air filter and the saw chain properly tensioned and mounted. Always have a MAKITA service centre do carburetor adjustment, since incorrect adjustment can cause considerable damage to the engine.

Due to new emissions regulations, the adjustment range of screws (H) and (L) has been limited. **This adjustment range limitation (to about 180 degrees) prevents over-rich settings.** This ensures compliance with emissions regulations, optimum engine performance and economical fuel consumption.

Factory setting of adjustment screws (H) and (L):

Screwed out almost all the way (counter-clockwise).

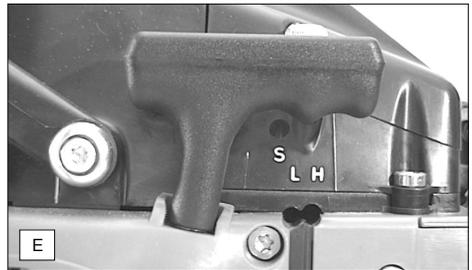
For proper adjustment, proceed as follows:

Checking adjustment screw (H)

Before starting, make sure that adjustment screw (H) is unscrewed all the way (until you feel a stop). **Limitations do not protect against too lean running** (insufficient fuel)!



1. Start engine and let it warm up (3-5 minutes)
2. Set idle
3. Check acceleration
4. Set highest 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 (counter-clockwise) lowers the idle speed. **The chain or blade must not move in idle!**



3. Check acceleration

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

Unscrew adjustment screw (L) counter-clockwise in small steps until acceleration is good.



4. Set the top speed

Set the top speed with a minimal adjustment to screw (H) in accordance with the technical data.

Screwing in adjustment screw (H) clockwise increases engine speed. **Never exceed the top speed under any circumstances!**



5. Checking the idle speed

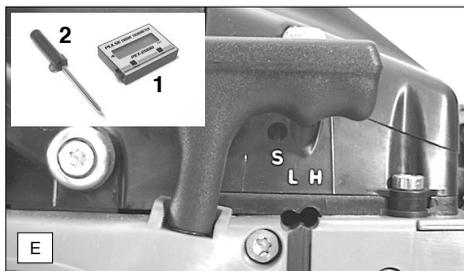
After setting the maximum permissible speed, check the idle speed (the saw chain or cutting tool must not turn in idle).

Repeat the adjustment procedure starting with step 2 above until idle speed, acceleration, and speed are all good.



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 (1, 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 (2) 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 acceleration
4. Check top speed
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) $1\frac{1}{2}$ and (L) $1\frac{1}{2}$ 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. Check top speed

The basic setting $H=1\frac{1}{2}$ and $L=1\frac{1}{2}$ gives a maximum speed of about 13,500 rpm.

For higher speed (electronically limited), 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) $1\frac{1}{4}$ turns.

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.

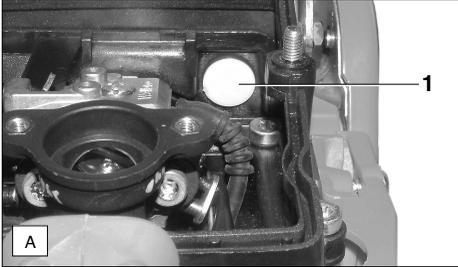
Working in winter



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

At temperatures above freezing the carburetor must NOT be fed heated air.

Failure to follow these instructions can lead to damage to the cylinder and piston!

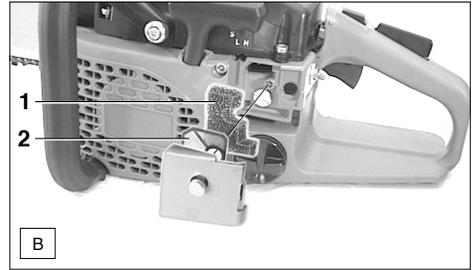


- Remove the filter cover and air filter (see "Cleaning the air filter").
- To enable hot-air induction from the cylinder, remove the plug (A/1) using the universal wrench.

NOTE:

Keep the plug in the saw's tool kit. You must put the plug back in at temperatures above 0° C / 32° F.

- Reinstall the air filter and filter cover.



- The snow filter (B/1, see "Accessories") prevents the induction of powder snow. It is placed under the prefilter (B/2).

NOTE:

Remove the snow filter before working at temperatures above 0° C (32° F)!

When not in use, store the snow filter in the assembly tool pouch.

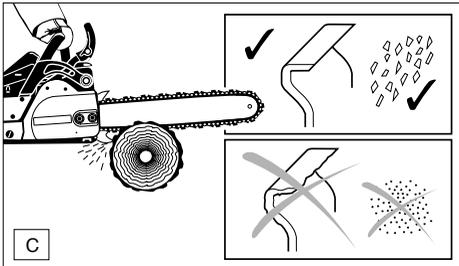
MAINTENANCE

Sharpening the saw chain



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!



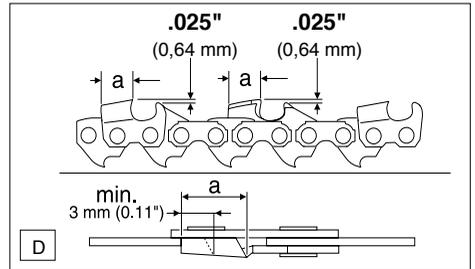
The chain needs sharpening when:

- 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:

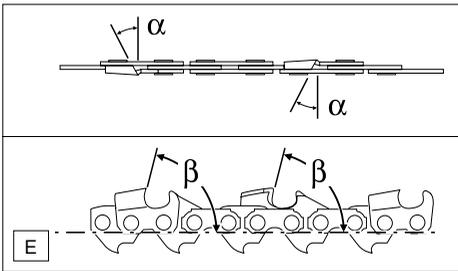
Use only chains and guide bars designed for this saw (see the Extract from the spare-parts list)!

- 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.
- The minimum cutter length: 0.11" (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 saw 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 .025" (0.64 mm).

CAUTION:

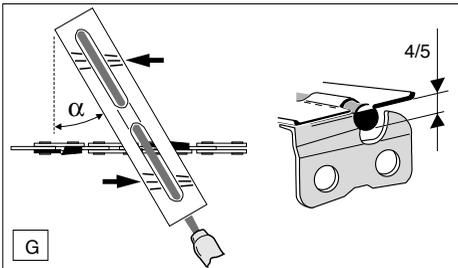
Excessive depth increases the risk of kickback!



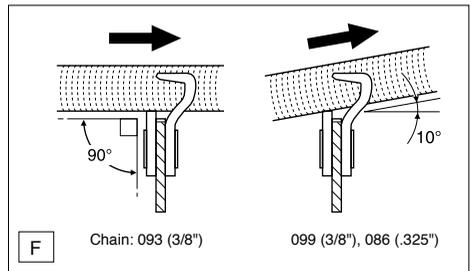


Chain	086 (.325")	093 (3/8")	099 (3/8")
Sharpening angle α	30°	35°	25°
Front rake β	85°	85°	60°

- The sharpening angle (α) must be identical for all cutters! Different angles result in a roughly, irregularly running chain, increase wear and tear and cause chain beakage.
- The front rake (β) 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.

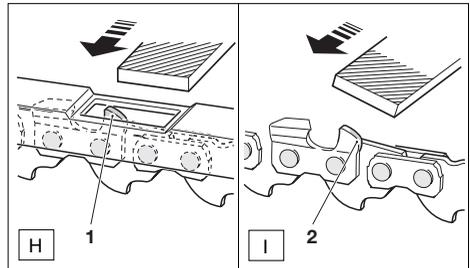


- The file holder makes file guidance easier. It is marked for the correct α sharpening angle (keep the marks parallel with the chain when filing, see illustration) and limits the cut depth to the correct 4/5 of the file diameter. See "Accessories" for the order number.



Files and how to work with them

- Sharpen using a special file holder with a saw chain round file:
 - 086 (.325") chain: File the first cutter half with a 4.8 mm dia. round saw-chain file, then switch to a 4.5 mm dia. file.
 - 093 (3/8") and 099 (3/8") chain: File the first cutter half with a 5.5 mm dia. round saw-chain file, then switch to a 4.8 mm dia. file.
- 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.
- Always guide the file as in Fig. F shown (chain 086 (.325"), 099 (3/8") = 10° and 093 (3/8") = 90°).

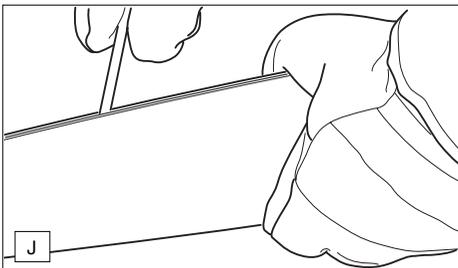


- After having sharpened the chain, the height of the depth limiter must be checked by means of a chain gauge. See "Accessories" for the order number.
- Correct even the smallest excess height with a special flat file (1). See "Accessories" for the order number.
- Round off the front of the depth limiter (2).

Cleaning the guide bar

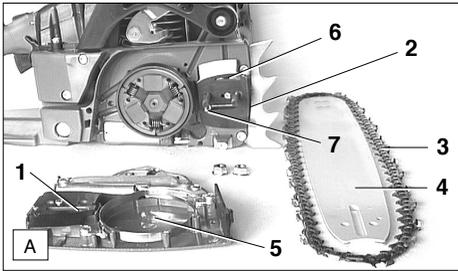
CAUTION:

Protective gloves must be worn!



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

Cleaning the brake band and sprocket interior



- Remove the sprocket guard (A/1) (See "PUTTING INTO OPERATION" figs. A and B).
- Turn the chain tightener screw (A/2) to the left (counter-clockwise) until you feel resistance.
- Remove the chain (A/3) and guide bar (A/4).
- Clean the interior with a brush, in particular the brake-band area (A/5).

NOTE:

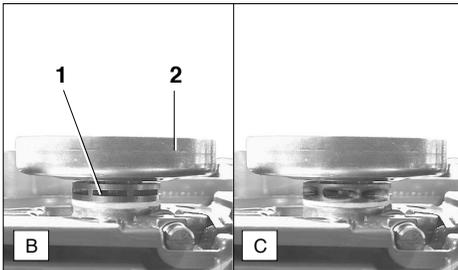
Make sure that no residue or contaminants remain in the oil guide groove (A/6) and the chain tightener (A/7).

- For replacing the guide bar, chain, and sprocket see "PUTTING INTO OPERATION".

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 (B/1) before mounting a new chain. The sprocket is located underneath the clutch drum (B/2).

CAUTION:

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

Do not attempt to replace the sprocket yourself. Sprocket replacement requires special training and tools and must be done at a MAKITA service centre.



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.

NOTE:

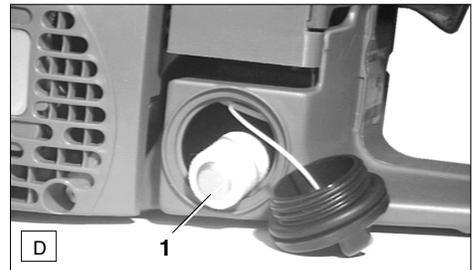
The chain brake is a very important safety device and like any other component subject to normal wear and tear.

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



SERVICE

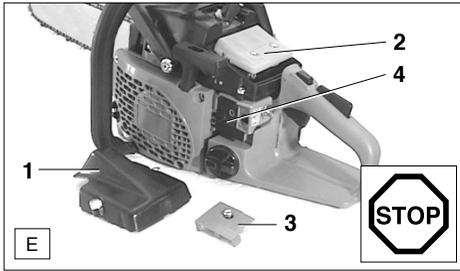
Replacing the suction head



The felt filter (D/1) 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



- Remove the filter cover (E/1) (2 screws).
- Loosen the screws on the air filter (E/2) and remove from intake manifold.
- Loosen the screw on the prefilter cover (E/3) and remove.
- Remove prefilter (E/4).

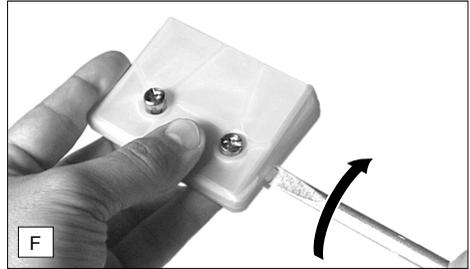
IMPORTANT:

Cover the intake opening with a clean cloth to prevent dirt particles from getting into the carburetor.

- Pry apart the top and bottom of the air filter as shown in Figure F.

CAUTION:

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



- Clean the air filter and prefilter 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**.
- Put the top and bottom sections back together.
- Before reinstalling the air filter, check the intake opening and remove any dirt particles. If there are any, remove them with a brush.

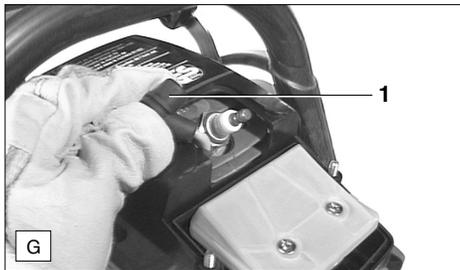
Clean frequently (several times a day) when working in very dusty or dirty conditions. Full engine power is possible only with a clean air filter and prefilter!

Important: For sawing dry wood and working on dusty ground we recommend using a **Robkoflok air filter** (available as an accessory). The Robkoflok filter keeps out even the smallest dust particles.

CAUTION: If the air filter or prefilter becomes damaged, replace 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.

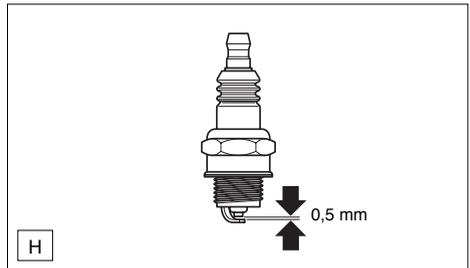
A hot engine can cause burns. Wear protective gloves!

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.

- Remove the filter cover (see "Cleaning the air filter").
- Pull the plug cap (G/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:

BOSCH WSR 6F or NGK BPMR 7A.



Electrode gap

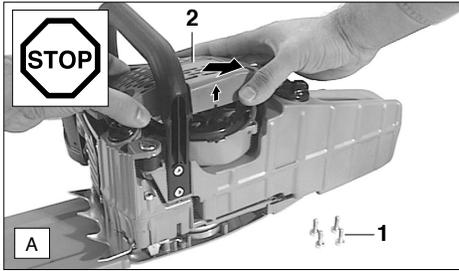
The electrode gap must be 0.5 mm.

Checking the ignition spark

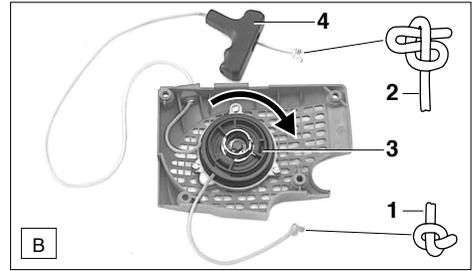
- Press the loosened spark plug with the ignition cable firmly connected against the cylinder using insulated pliers (not near the spark plug opening).
- ON/OFF switch in the "I" (ON) position.
- Pull the starter cable hard.

If the function is correct, an ignition spark must be visible near the electrodes.

Replacing the starter cable



- Unscrew the four screws (A/1) holding down the fan housing (A/2). Lift the housing slightly, pull in the direction of the arrow, and remove.
- Remove all pieces of cable.

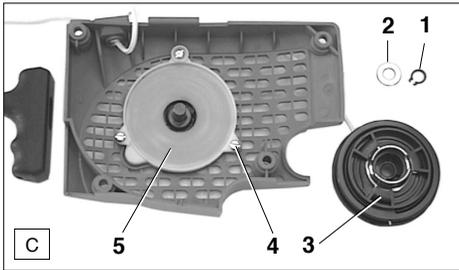


- Thread in a new cable (4 mm/.16" dia. x 1000 mm/39" long) as shown in Figure B and tie the ends as shown.
- Pull knot (B/1) into the cable pulley (B/3).
- Pull knot (B/2) into the cable grip (B/4).
- Wind the cable around the pulley in the direction shown by the arrow. Pull the cable out from the pulley by the grip, then hold the pulley firmly and wrap the cable around it another three times.

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.

Replacing the return spring



- Remove the fan housing (see above under "Replacing the starter cable").
- Take off the circlip (C/1) and washer (C/2) (circlip pliers, see "Accessories").
- Remove the cable pulley (C/3).
- Unscrew screws (C/4) and carefully remove spring housing (C/5) with spring.

CAUTION: Danger of injury! If the spring is broken it may pop out!



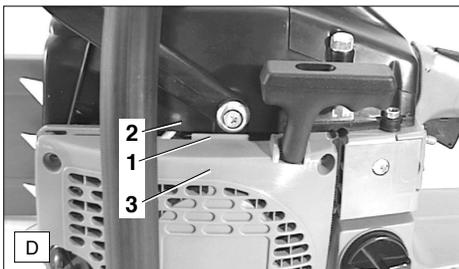
NOTE:

The old spring and spring housing should be recycled.

Replacement springs come already installed in a new spring housing. Before installing, grease the spring lightly with multi-purpose grease, order No. 944 360 000.

- Assemble in reverse order. When putting the cable pulley back on, turn it slightly until you feel it catch.
- Wind on the starter cable as described above under "Replacing the starter cable."

Mounting the fan housing



- Push the tab (D/1) extending out from the edge of the fan housing (D/3) under the hood (D/2).
- Position the screw holes.
- Push the fan housing (D/3) gently and pull the starter grip until the starter catches.
- Screw in the four fastening screws tightly.

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	17-18
	Saw chain	Sharpen regularly, replace in good time	
	Chain brake	Have inspected regularly at an authorized service centre	11
	Guide bar	Turn over to ensure even wear of bearing surfaces Replace in good time	
Before each start	Saw chain	Inspect for damage and sharpness	17
		Check chain tension	11
	Guide bar	Check for damage	15
	Chain lubrication	Functional check	
	Chain brake	Functional check	15
	OFF switch, Safety locking button, Throttle lever	Functional check	14
Fuel/oil tank cap	Check for tightness		
Every day	Air filter, prefilter	Clean	20
	Guide bar	Check for damage, clean oil intake bore	13
	Guide bar support	Clean, in particular the oil guide groove	13, 19
	Idle speed	Check (chain must not run)	15
Every week	Fan housing	Clean to ensure proper air cooling	9, 21
	Starter cable	Check for damage	21
	Carburetor interior	Clean (remove filter cover for access)	20
	Chain brake	Clean the brake band (sawdust, oil)	19
	Spark plug	Check and replace if necessary	20
	Muffler	Check tightness of mounting	9
	Chain guide	Check	9
	Screws and nuts	Check their condition and that they are firmly secured.	
Every 3 months	Suction head	Replace	19
	Fuel, oil tanks	Clean	
Annually	Chain saw	Check at an authorized service centre	
Storage	Chain saw	Clean exterior, check for damage. In case of damage, have repaired by a qualified service centre immediately	18
	Guide bar/chain	Demount, clean and oil slightly	
	Fuel, oil tanks	Clean the guide groove of the guide bar	
	Carburetor	Empty and clean 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, function 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

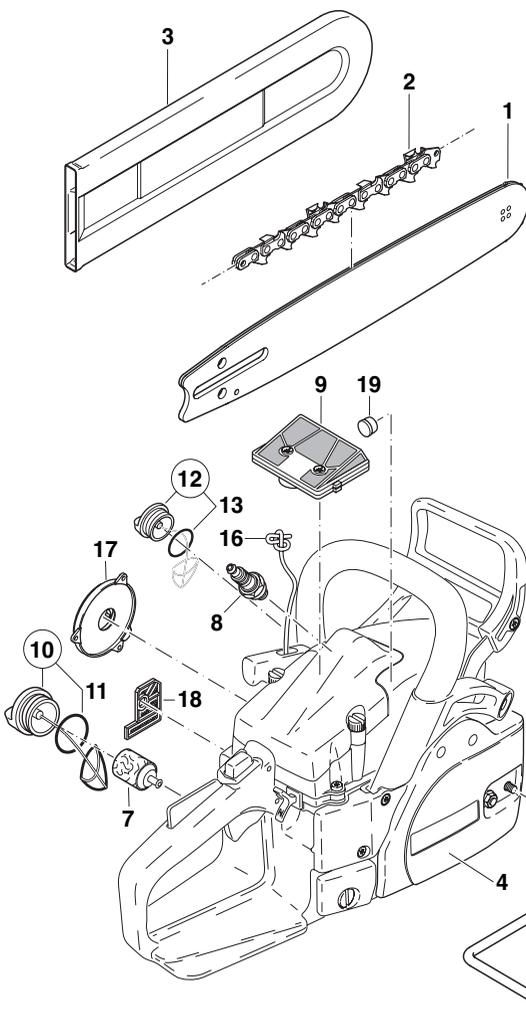
Malfunction	System	Observation	Cause
Chain does not run	Chain brake	Engine runs	Chain brake actuated.
Engine does not start or only with difficulty	Ignition system	Ignition spark No ignition spark	Malfunction in fuel supply system, compression system, mechanical malfunction. Switch on STOP, fault or short-circuit in the wiring, plug cap or spark plug defective.
	Fuel supply	Fuel tank is filled	Choke in wrong position, carburetor defective, suction head dirty, fuel line bent or interrupted.
	Compression system	Inside	Cylinder base packing ring defective, radial shaft packings defective, cylinder or piston rings defective
	Mechanical malfunction	Outside Starter does not engage	Spark plug does not seal. Spring in starter broken, broken parts inside the engine.
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. Starting valve dirty (DCS431).
Insufficient power	Several systems may be involved simultaneously	Engine is idling	Air filter or prefilter 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. Oil-pump adjusting screw incorrectly adjusted.

Extract from the spare parts list

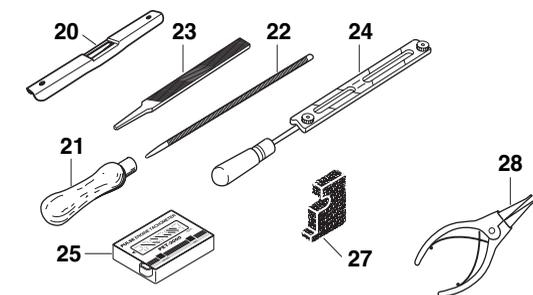
Use only original MAKITA parts. For repairs and replacement of other parts, see your MAKITA service centre.

DCS430, 431, 520

DCS5200



Pos.	MAKITA-No.	Qty.	Denomination
1	445 033 631	1	Sprocket nose bar .325", 13" (33 cm)
	445 038 631	1	Sprocket nose bar .325", 15" (38 cm)
	445 045 631	1	Sprocket nose bar .325", 18" (45 cm)
1	443 038 651	1	Sprocket nose bar 3/8", 15"
	443 045 651	1	Sprocket nose bar 3/8", 18"
2	528 086 656	1	Saw chain .325" for 13"
	528 086 664	1	Saw chain .325" for 15"
	528 086 672	1	Saw chain .325" for 18"
2	523 093 656	1	Saw chain 3/8" for 15"
	523 093 664	1	Saw chain 3/8" for 18"
2	528 099 656	1	Saw chain 3/8" for 15"
	528 099 664	1	Saw chain 3/8" for 18"
3	952 010 630	1	Chain protection for 13"-15"
	952 020 640	1	Chain protection for 18"
4	027 213 651	1	Sprocket guard, cpl.
5	923 208 004	2	Hexagonal nut M8
6	941 719 131	1	Universal wrench SW 13/19
7	963 601 121	1	Suction head
8	965 603 021	1	Spark plug
9	020 173 202	1	Air filter
10	965 451 901	1	Fuel tank cap, cpl.
11	963 232 045	1	O-Ring 31x4,5 mm
12	010 114 032	1	Oil tank plug, cpl.
13	963 100 051	1	Gasket
14	944 340 001	1	Carburetor screwdriver (only in delivery for model DCS5200)
15	940 827 000	1	Offset screwdriver
16	108 164 020	1	Starter cable
17	020 163 031	1	Return spring with housing
18	020 173 011	1	Prefilter
19	965 404 230	1	Plug



Accessories (not delivered with the chain saw)

20	953 100 090	1	Chain gauge
21	953 004 010	1	File handle
22	953 003 100	1	Round file, dia. 4,5 mm
	953 003 070	1	Round file, dia. 4,8 mm
	953 003 040	1	Round file, dia. 5,5 mm
23	953 003 060	1	Flat file
24	953 030 030	1	File holder 3/8"
	953 030 020	1	File holder .325"
25	950 233 210	1	Tachometer
27	020 173 061	1	Snow filter
28	946 101 010	1	Circlip pliers
-	020 173 300	1	Air filter (Robkoflok)
-	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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D-22004 Hamburg
Germany

Specifications subject to change without notice

Form: 995 707 058 (1.10 GB)