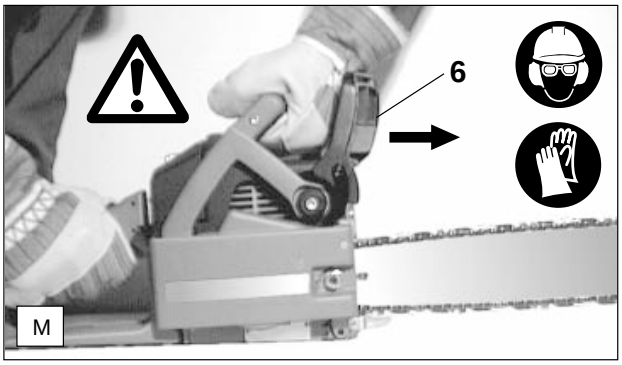
Chain Saw

Maintenance Information

Checking the safety chain brake



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

- Start the engine as described (make sure you have a good footing, and place the saw on the ground in such a way that the blade 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 saw! Take the saw to a MAKITA service center.

Adjusting the carburetor

CAUTION:

Optimum perfornance can only be achieved if the carburetor is adjusted correctly. For this work, which should be carried out by an expert, the engine must be warmed up for a period of 3-5 min. and the air filter must be clean.

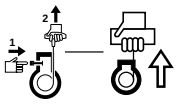
The carburetor has been adjusted by MAKITA on the basis of atmosheric pressure conditions at sea level. Other atmospheric pressure conditions or the running-in process of a new engine may require readjustment of the carburetor.

It is urgently recommended to use a revolution indicator (O/1) (order number 950 233 210) in order to achieve a correct adjustment of the carburetor. Adjust the carburetor using a 4 mm screwdriver.

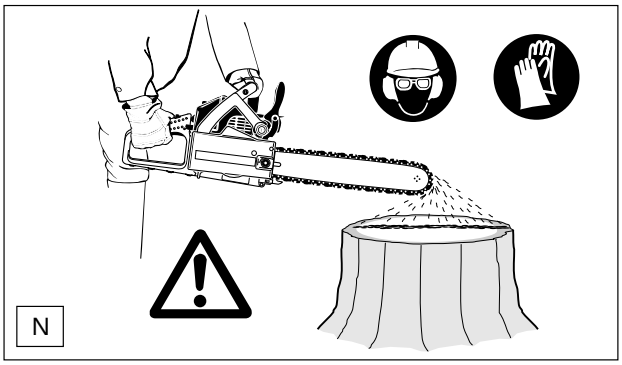
The screwdriver shown (O/2) (order number 944 340 001) has a molded-on lug to assist in adjustment.

For adjusting the carburetor correctly the following steps must be carried out:

1. Warm up engine
2. Switch off engine
3. Basic adjustment
4. Start engine
5. Set idle speed
6. Adjust speed
7. Check idling speed
8. Check acceleration
9. Check max. speed or output
10. Repeat adjustment procedure starting with step 5, until idling speed, max. speed and acceleration are reached with the adjustment made.



Checking the chain lubrication

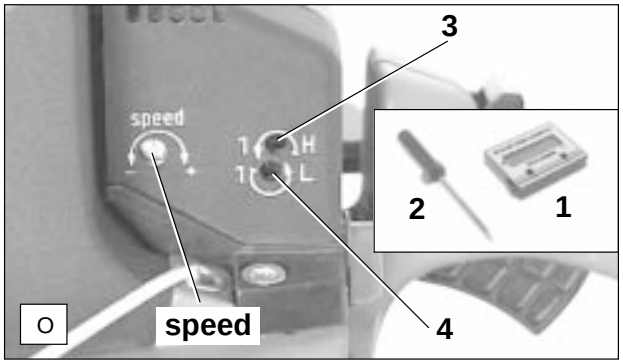


Never work with the chain saw withoute sufficient chain lubrication. Otherwise the service life of the chain and guide bar will be reduced.

Before starting work check the oil level in the tank and the oil feed. Check the oil feed rate as described below:

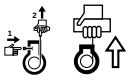
- Start the chain saw.
- Hold the running chain saw approx. 15 cm above a trunk or the ground (use an appropriate base).

If the lubrication is sufficient, you will see a light oil trace because oil will be flung off the sawing device.



Basic adjustment (step 3)

- First, carefully turn the 2 adjusting screws for the main jet (O/3) and the idle jet (O/4) to the right (clockwise) until you feel them stop.
- Now turn both screws one turn to the left (counter-clockwise).



Set idle speed (step 5)

- If the chain turns when the engine is idling, unscrew the throttle-valve stop screw (O/speed) until the chain stops. If the engine runs unevenly, screw the screw (O/speed) back in.
- Idling speed should be 2,600 rpm.

Adjust speed (output) (step 6)

- Adjust the speed by adjusting the main jet screw (O/3) to 11,500 rpm (DCS 340, 341), 12,000 rpm (DCS 400, 401).

Check idle speed (item 7)

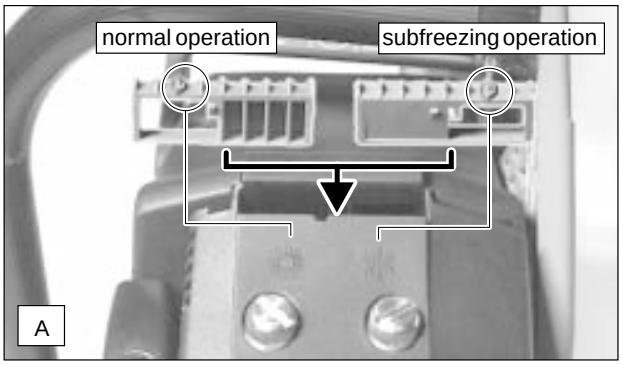
- After having adjusted the max. speed ensure the idle speed is set to 2,600 1rpm. (the chain must not turn). Use the idle jet screw (O/4) to regulate it. Turn in the screw (O/4) to speed up, and turn out the screw (O/4) to speed down the engine.

Check acceleration (item 8)

- Now check the acceleration, i. e. the time necessary for speeding up from idle speed to max. speed. To do this, press the throttle lever hard.
- If the acceleration is too low, turn out the idle jet screw (O/4) approx. 1/8 rotation.

Do not run the engine without load a high speed, open throttle fully only, if you are sawing!

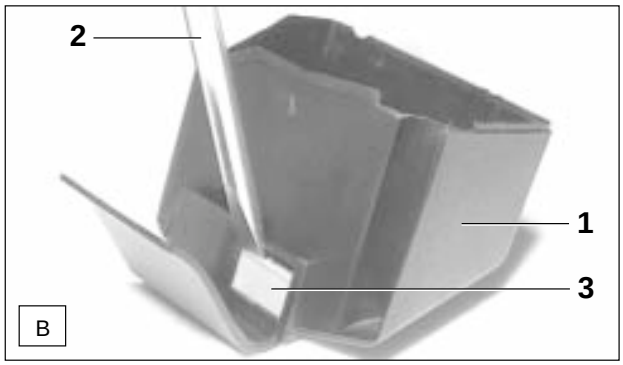
Working in winter



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 (marking (circled) on insert in "snowflake" position).

At temperatures above freezing the carburetor must NOT be fed heated air (marking (circled) on insert in "sun" position).

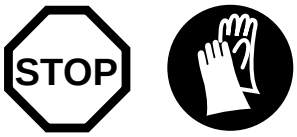
Failure to follow these instructions can lead to damage to the cylinder and piston!



- Remove the filter cover (B/1).
- Position the universal wrench (B/2) as shown above and push the insert (B/3) out by tapping the wrench.
- Put the insert (B/3) back in in the appropriate position, i.e. with the marking next to the sun symbol for normal operation or the snowflake symbol for subfreezing operation.
- Replace filter cover (B/1).

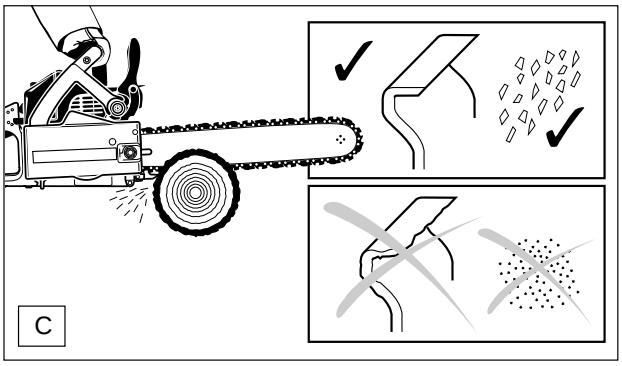
MAINTENANCE

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!



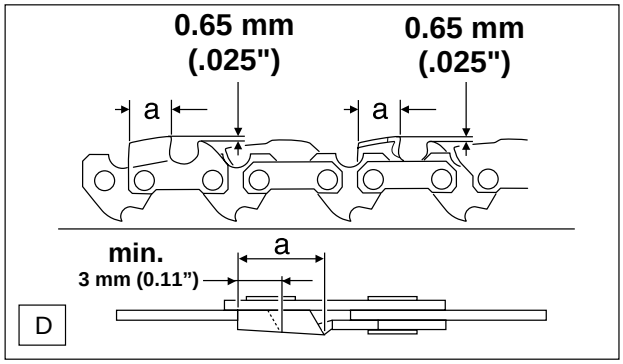
The chain needs sharpening when:

- 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 center when you have already sharpened it yourself several times.



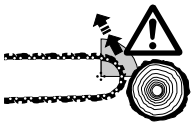
Proper sharpening:

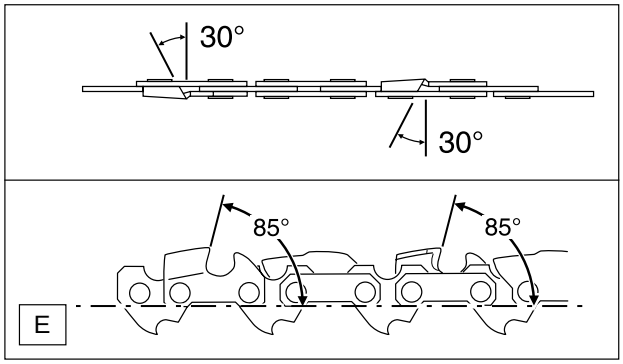
CAUTION:

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

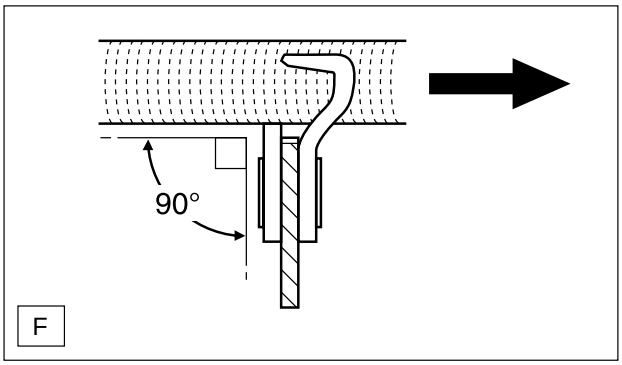
- All cutters must be of the same length (dimension a). Cutters with different lengths result in rough running of the chain and can cause cracks in the chain.
- Minimum cutter length is 0.11" (3 mm). Do not resharpen the chain when the minimum cutter length has been reached; at this point, the chain must be replaced (see the Extract from the spare-parts list and "Replacing the chain").
- The depth of the cut is determined by the difference in height between the depth limiter (round nose) and the cutting edge.
- The best results are obtained with a depth-limiter depth of 0.65 mm (.025").

CAUTION:
Excessive depth increases the risk of kickback!



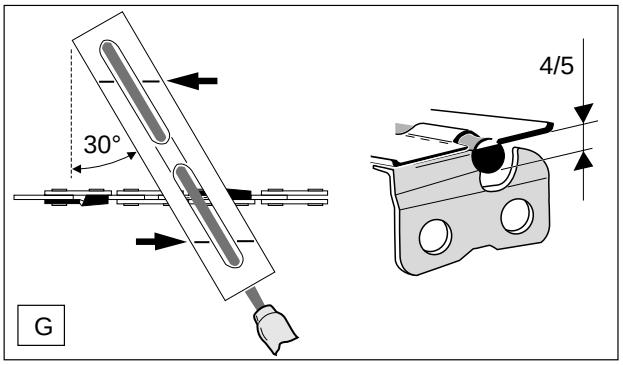


- All cutters must be sharpened to the same angle, 30°. Different angles result in a roughly, irregularly running chain, increase wear and tear and cause chain breakage.
- The 85° front rake of the cutter results from the cut depth of the round file. If the proper file is used in the right manner, the correct front rake will be obtained automatically.

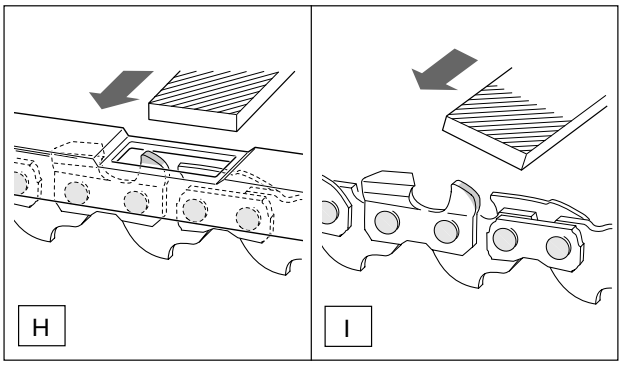


Files and how to work with them

- Use a special round file for chains (dia. 4 mm) for sharpening the chain. Normal round files are not appropriate for this work. See "Accessories" for the order number.
- The file should cut only when pushed forwards (arrow). Lift the file when leading it backwards.
- First sharpen the shortest cutter. The length of this cutter is then the standerd for all other cutters of the chain.
- Always guide the file horizontally (90º to the guide bar).



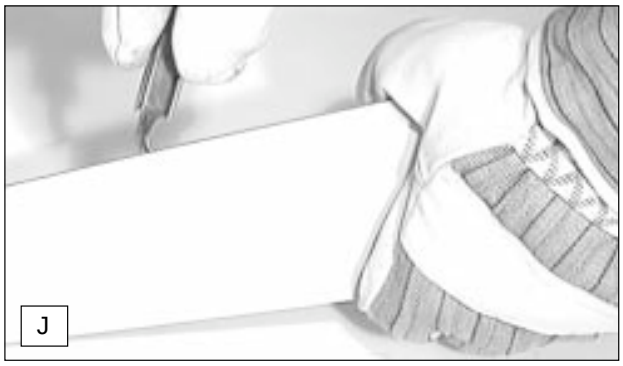
- The file holder makes file guidance easier. It is marked for the correct 30° sharpening angle (keep the marks parallel with the chain when filing, see illustration) and limits the cut depth to the correct 4/5 of the file diameter. See "Accessories" for the order number.



- 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 (H). See "Accessories" for the order number.
- Round off the front of the depth limiter (I).

Cleaning the guide bar, lubricating the sprocket nose

CAUTION:
Protective gloves must be worn.



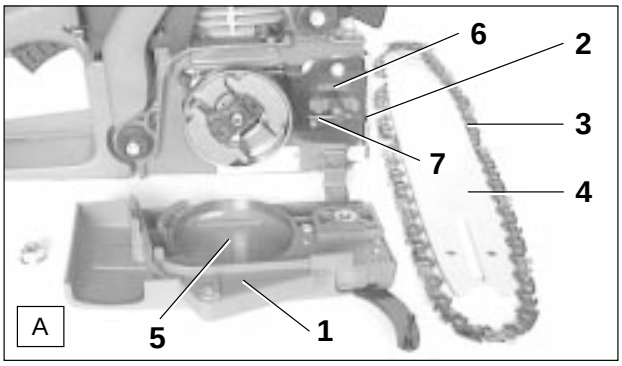
Regularly inspect the bearing surfaces of the guide bar for damage, and clean them with a suitable tool.

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

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

Multi-purpose grease (order no. 944 360 000)
Grease gun (order no. 944 350 000)

Cleaning the brake band and sprocket interior



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!

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

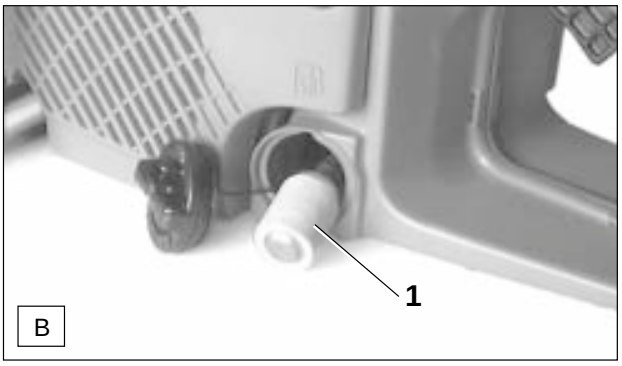
- For replacing the guide bar, chain, and sprocket see "PUTTING INTO OPERATION".

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 center.

Replacing the suction head

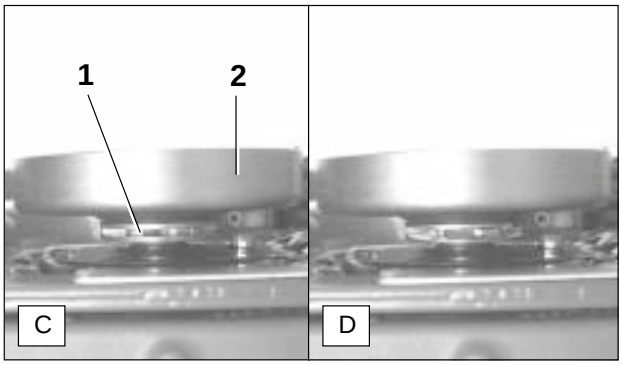


The felt filter (B/1) of the suction head can become clogged. It is recommended to replace the suction head once every three months in order to ensure unimpeded fuel flow to the carburetor. To remove the suction head for replacement, pull it out through the tank filler neck using a piece of wire bent at one end to form a hook.

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 (C/1) before mounting a new chain.

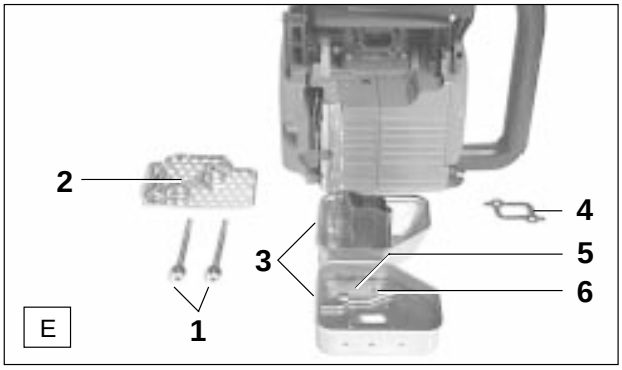
The sprocket is located underneath the clutch drum (C/2).

CAUTION:

Worn out sprockets (D) 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 center.

Replacing / cleaning the spark arrester screen



The spark arrester screen should be checked and cleaned regularly.

- Unscrew the muffler bolts (E/1) and remove the protective screen (E/2).
- Carefully remove the muffler (E/3).

NOTE: If the muffler gasket (E/4) is damaged, replace it.

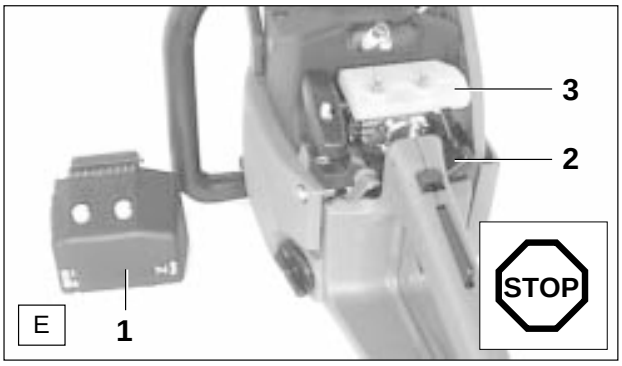
- Unscrew bolt (E/6) and remove the spark arrester screen (E/5).

CAUTION:

Do not use sharp or pointed objects for screen cleaning. Damaged or misformed screen wires may result.

- Reassemble the spark arrester screen (E/5) and tighten the screw (E/6).
- Tighten muffler bolts (E/1) to 5.6 $^{+0.07}$ ft. lbs. (8.0 $^{+0.1}$ Nm).

Cleaning the air filter



- Remove the filter cover (E/1) (2 screws).

CAUTION:

Press the choke (E/2) up to shut the choke valve and to prevent dirt particles from entering the carburetor.

- Pull the air filter (E/3) off the carburetor.
- Cover the carburetor with a clean cloth.

- Grasp the top and bottom sections of the air filter as shown in figure F and pull apart.

CAUTION: To prevent injury to the eyes, do NOT blow out dirt particles!

Do not use fuel to clean the air filter.

- Clean the air filter with a soft brush.
- If the filter is very dirty, clean it in lukewarm water with dishwashing detergent.
- Let the air filter **dry completely**.
- Put the top and bottom sections back together.
- Before re-installing the air filter, check the choke valve for dirt particles. If there are any, remove them with a brush.

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

CAUTION: Replace damaged air filters immediately. Pieces of cloth or large dirt particles can destroy the engine!

Replacing the spark plug

CAUTION:

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

Switch off the engine before starting any maintenance work.

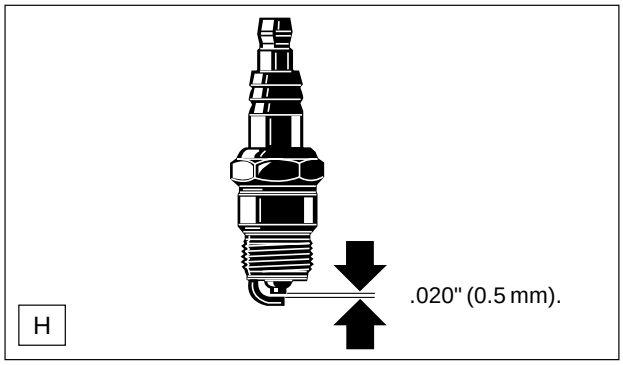
A hot engine can cause burns. Wear protective gloves!

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

- Remove the filter cover (see "Cleaning the air filter" above, Fig. E/1).
- 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:

NGK BPMR 6F or **CHAMPION RDJ-7Y**.



Electrode gap

The electrode gap must be .020" (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.

Instructions for daily and periodic maintenance

To ensure a long servicelife and to prevent any damage the maintenance work described in the following must be performed regularly. The product guarantee will be automatically invalidated if this maintenance is not carried out regularly and according to the instructions.

Perform the following servicing work daily after use. Make a habit of it, it does not require much time and your saw will always function properly.

Possibly hidden faults can be detected in this manner before causing expensive and annoying interruptions of your work. In case you should detect a fault in the safety equipment when performing daily servicing, the saw must not be used before elimination of the fault. 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 center.

			Page
General	Chain saw	Clean exterior, check for damage. In case of damage, have repaired by a qualified service center immediately	
	Saw chain	Sharpen regulary, replace in good time	24-25
	Chain brake	Have inspected regularly at an authorized service center	
	Guide bar	Turn over to ensure even wear of bearing surfaces Replace in good time	19
Before each start	Saw chain	Inspect for damage and sharpness	24
		Check chain tension	19
	Guide bar	Check for damage	
	Chain lubrication	Functional check	23
	Chain brake	Functional check	20
	OFF switch, Safety locking button, Throttle lever	Functional check	22
	Fuel/oil tank plug	Check for tightness	
Every day	Air filter	Clean	27
	Guide bar	Check for damage, clean oil intake bore	22
	Guide bar support	Clean, in particular the oil guide groove	22, 26
	Idle speed	Check that a sufficient difference is existing between idlind speed and engaging speed, to ensure that the chain is in standstill while the engine is idling.	23
Every week	Fan housing	Clean to ensure proper air cooling	
	Carburetor interior	Clean (remove filter cover for access)	27
	Chain brake	Clean the brake band (sawdust, oil)	26
	Spark plug	Check and replace if necessary	27
	Muffler	Check tightness of mounting, clean spark arrester screen	26
	Chain guide	Check	25
Every 3 months	Suction head	Replace	26
	Fuel, oil tanks	Clean	
Storage	Chain saw	Clean exterior, check for damage. In case of damage, have repaired by a qualified service center immediately	
	Guide bar/chain	Demount, clean and oil slightly	
		Clean the guide groove	26
	Fuel, oil tanks	Empty and clean	
	Carburetor	Run empty	

Service, spare parts and guarantee

Maintenance and repair

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

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

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

Please contact the general agent or importer indicated on the back cover of this Instruction Manual, who will gladly provide you with the address of your nearest MAKITA service center.

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 and function.

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.

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

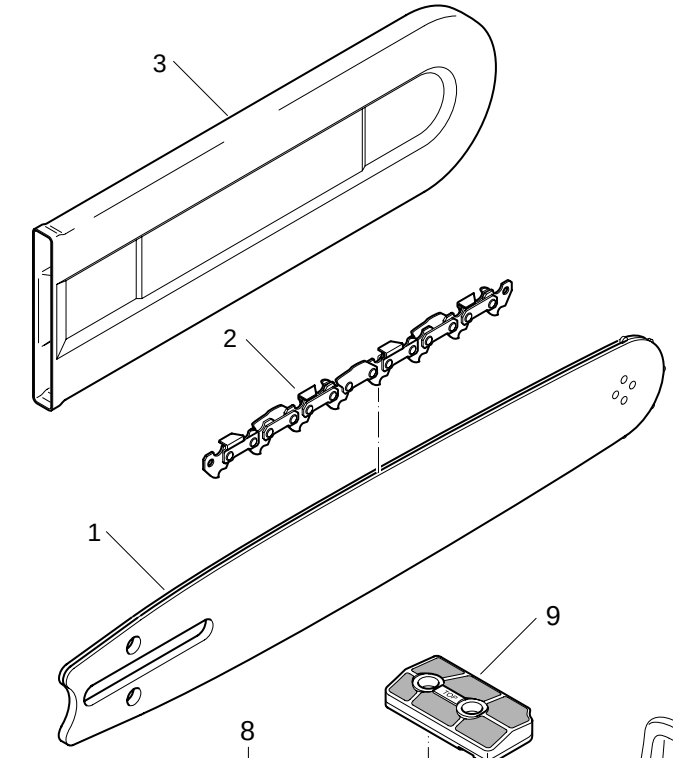
Troubleshootig

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	Malfunction in fuel supply system, compression system, mechanical malfunction.
		No ignition spark	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
		Outside	Spark plug does not seal.
	Mechanical malfunction	Starter does not engage	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 (DCS 341/401).
Insufficient power	Several systems may be involved simultaneously	Engine is idling	Air filter dirty, wrong carburetor adjustment, muffler clogged,exhaust channel in cylinder clogged.
No chain lubrication	Oil tank/pump	No oil on the chain	Oil tank empty. Oil guide groove dirty. Oil-pump adjusting screw incorrectly adjusted.

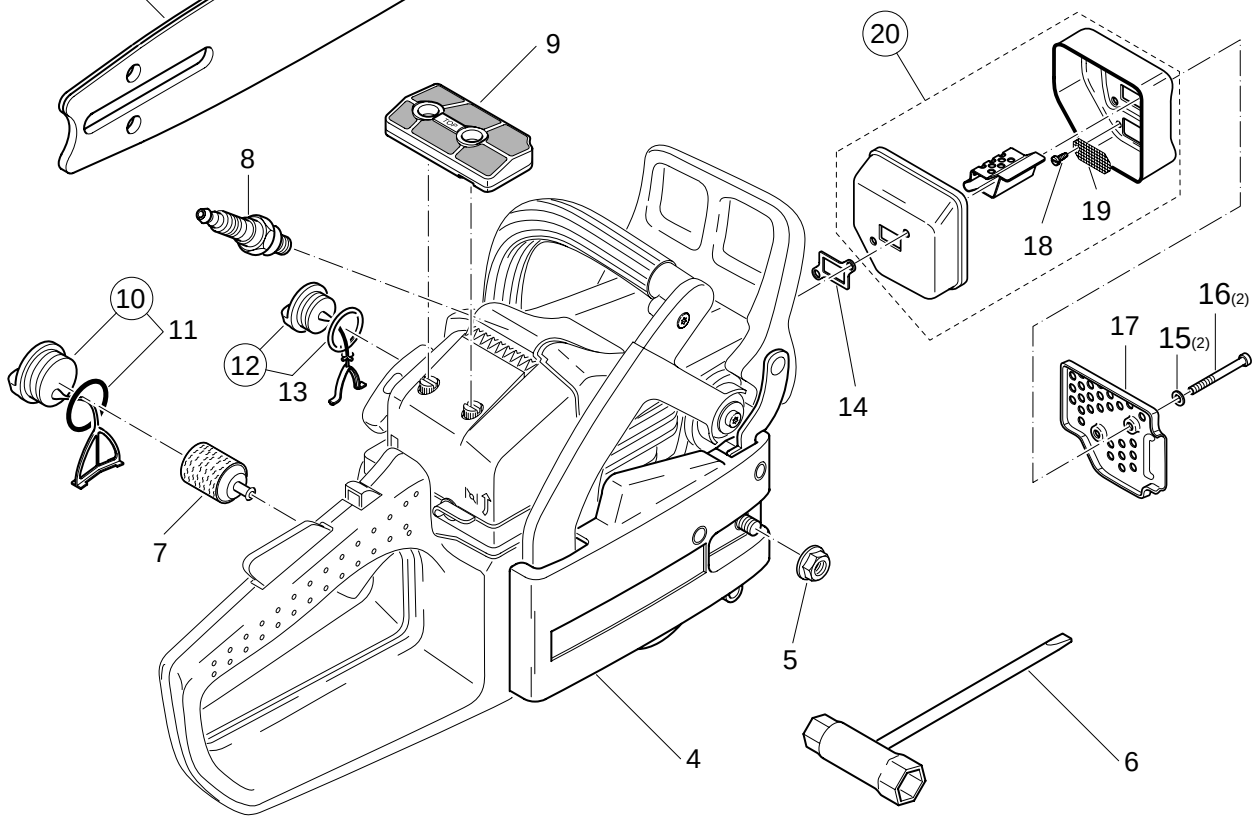
Extract from the spare parts list

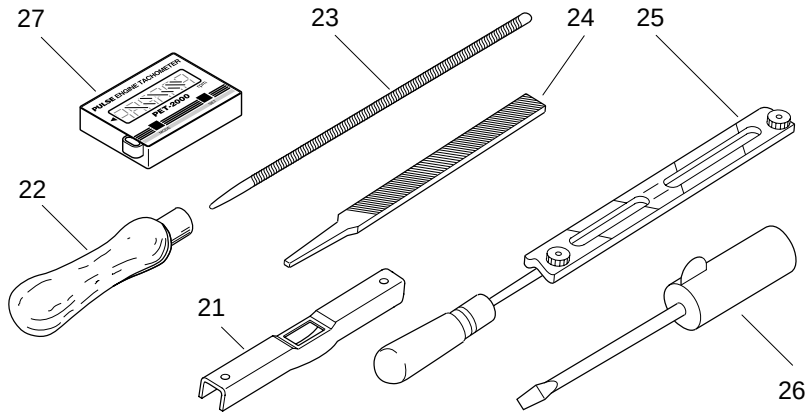
Use only original MAKITA parts. For repairs and replacement of other parts, see your MAKITA service center.

DCS 340 / DCS 341
DCS 400 / DCS 401



Pos.	MAKITA-No.	Qty.	Denomination
1	442 030 661	1	Sprocket nose bar 30 cm (12")
	442 035 661	1	Sprocket nose bar 35 cm (14")
	442 040 661	1	Sprocket nose bar 40 cm (16")
2	522 092 646	1	Saw chain 3/8" for 30 cm
	522 092 652	1	Saw chain 3/8" for 35 cm
	522 092 656	1	Saw chain 3/8" for 40 cm
3	952 100 633	1	Chain protection for 30-40 cm
4	028 213 670	1	Sprocket guard, cpl.
5	923 208 004	1	Hexagonal nut M8
6	941 716 131	1	Universal wrench SW 13/16
7	010 114 010	1	Suction head
8	965 603 018	1	Spark plug NGK BPMR 6F
9	028 173 141	1	Air filter
10	010 114 050	1	Fuel tank plug, cpl.
11	963 224 035	1	O-Ring 24 x 3.5
12	965 450 040	1	Oil tank plug, cpl.
13	963 100 041	1	Gasket
14	965 524 062	1	Gasket
15	928 405 000	2	Spring washer
16	908 205 605	2	Fillister screw
17	021 174 111	1	Protective screen
18	915 135 100	1	Screw 3.5 x 9.5
19	021 174 340	1	Spark arrester screen
20	021 174 320	1	Muffler





Accessories (not delivered with the chain saw)

21	953 100 090	1	Chain gauge
22	953 004 010	1	File handle
23	953 003 090	1	Round file, dia. 4 mm
24	953 003 060	1	Flat file
25	953 030 010	1	File holder (with 4 mm dia. round file)
26	944 340 001	1	Carburetor screwdriver
27	950 233 210	1	Tachometer
-	949 000 031	1	Combined can (for 5l fuel, 2.5l oil)