



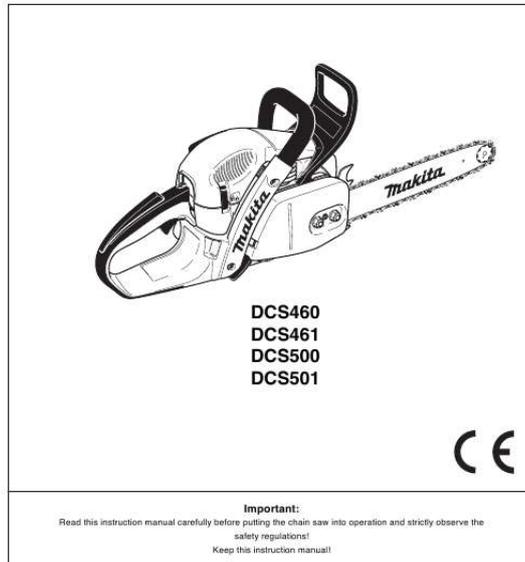
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You can read the recommendations in the user guide, the technical guide or the installation guide for MAKITA DCS500. You'll find the answers to all your questions on the MAKITA DCS500 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual MAKITA DCS500
User guide MAKITA DCS500
Operating instructions MAKITA DCS500
Instructions for use MAKITA DCS500
Instruction manual MAKITA DCS500



Instruction Manual
Original Instruction Manual



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Manual abstract:

The Featherlight-Start system lets you start the saw effortlessly with a spring-loaded starting assist. MAKITA chain saws DCS460, 461, 500, 501 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. @@@@Be especially careful to observe all safety precautions! @@2 Packing

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.....31-32 EU Conformity Declaration The undersigned, Tamiro Kishima and Rainer Bergfeld, as authorized by DOLMAR GmbH, declare that the MAKITA machines, Type: DCS460, 461 (178) DCS500, 501 (179) EU prototype test certificate No. M6T 09 10 24243 108 M6T 09 10 24243 108 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 2006/42/EG, EU EMC Directive 2004/108/ EG, Outdoor Noise Directive 2000/14/EG.

The most important standards applied to properly meet the requirements of the above EU Directive were: EN 11681-1, EN ISO 14982, CISPR 12. The conformity assessment procedure 2000/14/EG was performed per Annex V. The measured noise level (Lwa) is 111 dB(A). The guaranteed noise level (Ld) is 112 dB(A). The EU-Type-Examination Certificate was performed by: TÜV Product Service GmbH, Zertifikatstelle, Ridlerstr. 31, D-80339 München. The technical documentation is on file at DOLMAR GmbH, Jenfelder Straße 38, Abteilung FZ, D-22045 Hamburg, Hamburg, 4.11.2009 For DOLMAR GmbH

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). Tamiro Kishima Managing Director 2 Rainer Bergfeld Managing Director RE Y Delivery inventory DCS461/501 = Saw with decompression valve 2 3 4 1. 2. 3. 4.

5. 6. 7. 8. Chain saw Guide bar 5 Saw chain Chain protection cover Universal wrench Offset screwdriver Screwdriver for carburetor adjustment Instruction manual (not shown) 6 7 1 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! Particular care and caution! Chain brake Forbidden! Wear protective helmet, eye and ear protection! Wear protective gloves! No smoking! Carburetor adjustment No open fire! Chain oil fill/oil pump Stop engine! Saw chain oil adjustment screw Push decompression valve First aid Start engine Recycling Combination switch Start/Stop (I/O), Choke CE - Marking Safety position 3 Caution, kickback! Fuel and oil mixture Normal / Winter operation

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. Protective gloves (6) made of thick leather are part of the prescribed equipment and must always be worn during operation of the chain saw. During operation of the chain saw safety shoes or safety boots (7) fitted with anti skid sole, steel toe caps and protection for the leg must always be worn. Safety shoes equipped with a protective layer provide protection against cuts and ensure a secure footing. - 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). - - - 1 - - 2 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.



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e. it should be tight-fitting but not be a hindrance.

Do not wear jewellery or clothing which could become entangled with bushes or shrubs. If you have long hair, always wear a hairnet! It is necessary to wear a protective helmet whenever working with the chain saw. The protective helmet (1) is to be checked in regular intervals for damage and is to be replaced after 5 years at the latest. Use only approved protective helmets. The face shield (2) of the protective helmet (or the goggles) protects against sawdust and wood chips.

During operation of the chain saw always wear a goggle or a face shield to prevent eye injuries. Wear adequate noise protection equipment (ear muffs (3), ear plugs, etc.). Octave band analysis upon request. The safety jacket (4) is provided with special signal-coloured shoulder straps and is comfortable and easy to care for. The protective brace and bib overall (5) is made of a nylon fabric with 22 layers and protects against cuts. We strongly recommend its use. 1 3 - - 2 3 - - 4 7 5 4 6 4 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 plow area 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 . - 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. 16 45° 2 1/2 45° 17 = cutting down area 18 19 7 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.

20 - - - 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! 8 21 - 22

SERVICE 23 24 Technical data Stroke volume Bore Stroke Max.

power at speed 3) Max. torque at speed 3) Idling speed / max. engine speed with bar and chain Clutch engagement speed Sound pressure level at the workplace LpA, eq per ISO/CD 22868 1) 4) Sound power level LWA, eq per ISO/CD 22868 1) 4) Vibration acceleration ahv, eq per ISO 22867 1) 4) - Tubular handle - Rear handle Carburetor Ignition system Spark plug or spark plug Electrode gap Fuel consumption at max. load per ISO 7293 3) Specific consumption at max. load per ISO 7293 3) Fuel tank capacity Chain oil tank capacity Mixture ratio (fuel/two-stroke oil) - when using MAKITA oil - when using Aspen Alkylat (two-stroke fuel) - when using other oils Chain brake Chain speed 2) Sprocket pitch Number of teeth Chain type Pitch / gauge Guide bar, length of a cut Guide bar type Weight (fuel tank empty, without chain, guide bar and accessories) Figures derived in equal part from idling, full-load and racing speed.



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2) At max. power. 3) For models without starting valve. 4) Uncertainty (K=). 1) DCS460 / DCS461 cm³ mm mm kW / l/min Nm / l/min l/min dB(A) dB(A) m/s² m/s² Type Type Type Type mm kg/h g/kWh 1 1 45,6 43 31,4 2,2 / 10,000 2,7 / 7,000 2,500 / 13,800 3,900 102,1 / KpA = 2,5 108,3 / KWA = 2,5 DCS500 / DCS501 49,9 45 31,4 2,4 / 10,000 2,9 / 7,000 2,500 / 13,800 3,900 102,4 / KpA = 2,5 108,8 / KWA = 2,5 4,1 / K=2 5,2 / K=2 3,6 / K=2 3,7 / K=2 membrane carburetor condenser ignition system NGK BPMR 7A BOSCH WSR 6F 0,5 1,1 1,2 500 500 0,47 0,27 50 : 1 50 : 1 (2%) 50 : 1 (quality grade: JASO FC or ISO EGD) engages manually or in case of kickback .

325= 19,3 3/8= 22,2 .325 oder 3/8 7 see the Extract from the spare-parts list .325 / 0,050, 0,058 or 3/8 / 0,058 33 / 38 / 45 / 53 see the Extract from the spare-parts list 5.5 5.5 m/s inch Z inch cm kg 4 1 2 3 5 6 7 8 9 Denomination of components 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Identification plate (15) Indicate when ordering spare parts Serial number Year of manufacture Handle Cover Cover clasp Tubular handle Hand guard (release for chain brake) Muffler Spike bar Chain tensioning screw Retaining nuts Chain catch Sprocket guard Decompression valve (only on "DCS461/501" model saws) Adjusting screw for oil pump (bottom side) Adjusting screws for carburetor Identification plate Starter grip Combination switch (Choke / Start / Stop) Throttle lever Safety locking button Rear hand guard Fuel tank cap Fan housing with starting assembly Oil tank cap Guide bar Chain (Blade) 15 14 13 12 11 10 16 24 25 17 18 19 23 22 21 20 9 PUTTING INTO OPERATION CAUTION: Before doing any work on the guide bar or chain, always switch off the engine and pull the plug cap off the spark plug (see „Replacing the spark plug“). Always wear protective gloves! CAUTION: Start the chain saw only after having assembled it completely and inspected. A Mounting the guide bar and saw chain Use the universal wrench delivered with the chain saw for the following work. 1 2 Put the chain saw on a stable surface and carry out the following steps for mounting the guide bar and saw chain: Release the chain brake by pulling the hand guard (1) in direction of arrow. Unscrew retaining nuts (2). Pull off the sprocket guard (3).

B 3 Remove the plastic transport cover (*) and dispose of properly. Turn chain tensioning screw (4) to the left (counter-clockwise) until the pin (5) of the chain tensioner is underneath the threaded pin (6). 6 5 4 C Put on the guide bar (7). Make sure that the pin (5) of the chain tensioner engages in the hole in the guide bar. D 10 5 7 Lift the chain (9) over the sprocket (8). CAUTION: Do not insert the chain between the chain sprocket and the disc. Guide the chain from above about halfway into the groove (10) on the guide bar. Place the chain over the chain catch (11) on the bottom. CAUTION: Note that the cutting edges along the top of the chain must point in the direction of the arrow! 9 8 1 10 E Pull the chain (9) around the sprocket nose (12) of the guide bar in the direction of the arrow. 9 12 F Replace the sprocket guard (3).

Tighten the nuts (2) only hand-tight to begin with. 3 2 G Tightening the saw chain Turn the chain tensioning screw (4) to the right (clockwise) until the saw chain catches in the groove on the lower side of the guide bar (see circle). Slightly lift the end of the guide bar and turn the chain adjusting screw (4) to the right (clockwise) until the chain rests against the bottom side of the guide bar. While still holding up the tip of the guide bar, tighten the retaining nuts (2) with the universal wrench. 2 4 H 11 Checking the chain tension The tension of the chain is correct if the chain rests against the bottom side of the guide bar and can still be easily turned by hand.

While doing so the chain brake must be released. Check the chain tension frequently - new chains tend to get longer during use! When checking the chain tension the engine must be switched off. NOTE: It is recommended to use 2-3 chains alternatively. In order to guarantee uniform wear of the guide bar the bar should be turned over whenever replacing the chain. 2 Retightening the saw chain Loosen the nuts (2) about one turn with the universal wrench.

Raise the tip of the guide bar a little and turn the chain tensioning screw (4) to the right (clockwise) until the saw chain is again up against the bottom edge of the guide bar (see circle). While keeping the tip of the guide bar raised, tighten the nuts (2) again with the universal wrench. A 4 Chain brake The DCS460, 461, 500, 501 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 saw! B 2 1 Engaging the chain brake (braking) If the kickback is strong enough the sudden acceleration of the guide bar combined with the inertia of the hand guard (1) will automatically actuate the chain brake. 1 To engage the chain brake manually, simply push the hand guard (1) forward (towards the tip of the saw) with your left hand (arrow 1). Releasing the chain brake Pull the hand guard (1) towards you (arrow 2) until you feel it catch. The brake is now released.

C 12 Fuel CAUTION: This saw is powered by mineral-oil products (gasoline and oil). Be especially careful when handling gasoline . Do not smoke. Keep tool well away from open flames, spark, or Pre (explosion hazard). Gasoline 50:1 50:1 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 aircooled 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.



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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 order number 980 008 606 100 ml 1000 cm³ (1 litre) + 5000 cm³ (5 litres) 10000 cm³ (10 litres) OIL OIL 50:1 20 cm³ 100 cm³ 200 cm³ 20 cm³ 100 cm³ 200 cm³ Thoroughly shake the mixture before Plling it into the chain saw tank.

It is not wise to add more engine oil than speciPed to ensure safe operation. This will only result in a higher production of combus-tion residues which will pollute the environment and clog the exhaust channel in the cylinder as well as the muffßer. 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! 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 50:1 when using MAKITA high-performance two-stroke engine oil, i. e. mix 50 parts gasoline with 1 part oil. when using other synthetic two-stroke engine oils (quality grade JASO FC or ISO EGD), i. e.

@@@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. @@@@Waste oil contains high amounts of carcinogenic substances. @@@@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. @@@@Be careful not to spill fuel or chain oil! Be careful not to spill fuel or chain oil! @@@@Do this only with the engine turned off! @@@@Hold the running chain saw approx.

15 cm above a trunk or the ground (use an appropriate base). @@@@This does not constitute a defect! @@You can adjust the oil pump feed rate with the adjusting screw (1). The adjusting screw is on the bottom side of the housing. The oil pump comes factory-set to a medium feed rate. @@@@While working make sure there is enough chain oil in the tank.

If necessary, add oil. D To ensure troublefree operation of the oil pump the oil guide groove at the crank case (2) and the oil inlet bore in the guide bar (3) must be cleaned regularly. @@This does not constitute a defect! Place the saw on a suitable surface. 2 3 E 15 Starting the engine Do not start the chain saw until after it is completely assembled and checked! Move at least 3 meters / 10 feet away from the place where the chain saw was fuelled. Make sure you have a secure footing, and place the saw on the ground in such a way that the guide bar and chain are not near anything.

Actuate the chain brake (block it). Hold the front handle Prmly with one hand and press the saw against the ground. Hold the down rear handguard with your right foot as shown. A Cold starting: Move the combination switch (1) up (choke position). This also actuates the half-throttle lock. Pull the starter cable (2) out slowly until you feel resistance (the piston is now just before top dead centre). 5 Push in decompression valve (5) (only on "DCS461/501" model saws). Now pull it quickly and powerfully until you hear the Prst audible ignition. 2 1 CAUTION: Do not pull the starter cable more than about 50 cm/20" out, and let it back in slowly by hand. Push in decompression valve (5) (only on "DCS461/501" model saws).

4 3 Move the combination switch (1) to the central "ON" position. Pull the starter cable again, quickly and Prmly. As soon as the engine is running, grasp the rear handle (the safety lock button (3) is actuated by the palm of the hand) and press the throttle trigger (4). The half-throttle lock will disengage and the engine will now idle. CAUTION: The engine must be put in idle immediately after starting. If this is not done, the clutch can be damaged. Now disengage the chain brake. Warm starting: Cold start (Choke) Warm start (ON) Engine off As described above for cold starting, but before starting push the combination switch (1) up (Choke position) and then right away back to the middle "ON" position. This is only to engage 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 Depress the combination switch (1). Combination switch in safety position (ignition current cut off, necessary for all maintenance, repair, and installation work) NOTE: After being pressed down, the combination switch will revert to the ON position again. The engine is switched off, but can be turned on again without moving the combination switch. IMPORTANT: To cut off the ignition current, push the combination switch all the way down past the resistance point to the . safety position (B 16 Checking the chain brake The chain brake must be checked before every use of the saw! Start the engine as described above (have a secure footing, place the chain saw on the ground so that the chain and guide bar are not near anything).

Hold the front handle Prmly, with your other hand on the rear grip. Let the engine run at medium speed and push the handguard (6) in the direction of the arrow using the back of your hand, until the chain brake engages. The chain should now stop immediately. Bring the engine back to idle and release the chain brake. Caution: If the chain does not stop immediately in this test, turn off the engine immediately.

Do NOT use the chain saw in this condition! Contact a MAKITA service centre. 6 C Working in winter In order to prevent carburetor icing in conditions of low temperature combined with high humidity, and below + 5°C in order to get up to operating temperature faster, heated air can be taken from the cylinder. Remove the cover (see "Cleaning the air Pilter"). Remove the insert (7) and insert it as shown for winter operation. If the temperature is above + 5°C (40°F) the engine needs to induct cold air. If this is not done, the cylinder and piston can be damaged! For temperatures above + 5°C (40°F) turn the insert 180° so that after it is inserted the induction opening (8) is closed. Put the cover back on. @@It is available as an accessory, part no. @@Do not adjust the carburetor without a tachometer! @@@@Carburetor adjustment may be done only by a MAKITA service centre.



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Improper adjustment can cause damage to the engine.

@@@ You will need a tachometer (part No. 950 233 210) for optimum adjustment. @@ Use a screwdriver (blade width 4 mm, part No. 944 340 001) to adjust the screws. For proper adjustment, proceed as follows: 4. @@ Turning the adjusting screw (H) clockwise increases the speed. Never exceed the maximum permissible speed! @@ The limitations do not prevent excessively lean running! 1. 2. 3. 4.

5. Start engine and let it warm up (3-5 minutes) Set idle Check acceleration Set maximum permissible speed Check idle speed 5. Check idle speed Check the idle speed after setting the top speed (the cutting tool must not rotate!). Repeat the adjustment procedure starting at Step 2, until the engine runs with the correct idle speed, good acceleration, and maximum permissible speed. 2.

Set idle Set the idle speed per the technical specifications. Turning the adjusting screw (S) in (clockwise) increases the idle speed. Turning it out (counterclockwise) lowers the idle speed. The cutting tool must not rotate! 3. Check acceleration When the throttle is pressed, the engine should go smoothly from idle to high speed.

Turn adjusting screw (L) out (counterclockwise) in small increments until acceleration is good. A 18 Adjusting the carburetor (only for not EU-countries) @@ The engine should be warm, the air filter clean, and the chain properly tensioned. Have carburetor adjustment done by an authorised MAKITA service centre. The carburetor is factory-adjusted for the air pressure at sea level. At other elevations or under other conditions of weather, temperature, or humidity, or when breaking in a new engine, it may be necessary to make slight adjustments to the carburetor. You will need a tachometer (9, part No. 950 233 210) for optimum adjustment. Do not go below the specified setting of the main nozzle (H). Doing so may cause engine damage due to overheating and insufficient lubrication! Use the supplied carburetor screwdriver (8) for carburetor adjustment. It has a moulded-on projection that aids in adjusting.

Before undertaking the adjustment, run the engine for 3-5 minutes to warm it up, but not at high speed! 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 counterclockwise. 4.

Check top speed The basic setting H=11/2 and L=11/2 gives a maximum speed of about 13,800 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 13,800 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) 11/4 turns.

5. Check idle speed 9 8 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. 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) 11/2 and (L) 11/2 counterclockwise. 2. Set idle Set the idle speed per the technical specifications. Turning the adjusting screw (S) in (clockwise) increases the idle speed. Turning it out (counterclockwise) lowers the idle speed. In no case should the chain move. S H L B 19 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. A 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: 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 0.64 mm (.025"). CAUTION: Excessive depth increases the risk of kickback! 0,64 mm (.025") 0,64 mm (.

025") min. 3 mm (0.11") B The sharpening angle (α) must be identical for all cutters! 25° for chain type 686, 099 30° for chain type 086, 484 35° for chain type 093 The teeth will have the proper angle (β) automatically if the proper round file is used. 60° for chain type 686, 099 85° for chain type 086, 093, 484 Different angles result in a roughly, irregularly running chain, increase wear and tear and cause chain beakage. C 20 Files and how to work with them Use a special saw chain round file for sharpening.

Standard round files are unsuitable. For the order number, see "Accessories". Type 086, 484, 686: File the first cutter half with a 4,8 mm dia. round saw-chain file, then switch to a 4.5 mm dia. file. Type 093, 099: File the first cutter half with a 5,5 mm dia. round saw-chain file, then switch to a 4.8 mm dia. file.

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. Chain type 093 Chain type 086, 484, 686, 099 New saw teeth must be filed to the exact same shape as the used teeth, including on their running surfaces. File depending on chain type (90° or 10° to the guide bar). D 4/5 A File holder makes file guidance easier. It is marked for the correct sharpening angle of: α = 25° = 30° = 35° (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.



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See „Accessories“ for the order number. E After having sharpened the chain, the height of the depth limiter must be checked by means of a chain gauge. See „Accessories“ for the order number. Correct even the smallest excess height with a special flat file (1). See „Accessories“ for the order number. Round off the front of the depth limiter (2). F 1 2 21 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 (1) (See „PUTTING INTO OPERATION“ Pgs. B) and clean the interior with a brush. Turn the chain tensioning screw (2) to the left (counter-clockwise) until pin (3) of the chain tensioner is underneath the threaded pin (4). Remove the chain (5) and guide bar (6).

7 2 6 4 3 5 NOTE: Make sure there are no residues or foreign matter remaining in the oil guide groove (7) or on the chain tensioner (3). For replacing the guide bar, chain, and sprocket see „PUTTING INTO OPERATION“. 1 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 A 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. B 22 Replacing the saw chain CAUTION: Use only chains and guide bars designed for this saw (see the Extract from the spare-parts list)! When changing chain types, always make sure to use the clutch drum cpl. (12). It may be necessary to change the clutch drum cpl.

IMPORTANT: If the chain type is changed from .

.325" to 3/8", the chip deflector must be modified. See under „Instructions for changing the chain type.“ Check the sprocket before mounting a new chain. Worn out sprockets (8) may damage the new chain and must therefore be replaced. Remove the sprocket guard (See „PUTTING INTO OPERATION“ Pgs. B). 8 Remove the chain and guide bar. Remove circlip (9). CAUTION: The circlip will pop out of the groove. When removing it, hold your thumb against it to prevent it from popping off.

Remove thrust washer (11). If the chain sprocket (8) is worn, the clutch drum cpl. (12) must be replaced. For the part number consult the "Extract from the spare parts list". Put on the washer disc (13), new clutch drum cpl.

(12), cup washer (11) and new circlip (9) montieren (for the order number see "Extract from the spare parts list"). For replacing the guide bar, chain, and sprocket see „PUTTING INTO OPERATION A-H“. NOTE: Don't use a new chain on a worn chain sprocket. By the time 2 chains have worn, the sprocket has become worn out, so it should be replaced at least at every second chain replacement. To distribute the chain oil evenly, run a new chain at half-throttle for a few minutes before use.

New chains stretch, so check the chain tension frequently (see "Checking the chain tension"). 11 9 12 13 Instructions for changing the chain type Always wear protective gloves! Before using a 3/8" saw chain, be sure to first cut out the marked section of the chip deflector (14)! To do this, first cut along the marking

(15) with a sharp knife and then cut across to remove the piece. 15 14 NOTE: If switching to chain type .325" it will be necessary to install a new chip deflector (see „Extract from the spare parts list" for the part number). C 23 Cleaning the air filter 5 4 1 3 CAUTION: To prevent eye injury, always wear eye protection when cleaning the filter with compressed air! Do not use fuel to clean the air filter. Disengage the cover clasp (1) with the universal wrench and take off the cover (2). Push up the combination switch (3) (Choke position) to prevent dirt particles from falling into the carburetor. Unhook the clasp (4) in the direction of the arrow with a Pnger or the universal wrench. Pull the air filter (5) up and out. Take the pre-filter (5a) out of the cover (2).

IMPORTANT: Cover the intake opening with a clean cloth to prevent dirt particles from getting into the carburetor. Choosing the right filter: The fleece filter is for use in dry or dusty conditions. The nylon filter (available as accessory) is for use in damp conditions. The pre-filter keeps out sawdust, and prevents powder snow from getting in when working in winter. Pry apart the top and bottom of the air filter as shown in Figure. Cleaning the fleece filter: Carefully tap out dust or carefully blow out dust from the inside with compressed air. Do not brush the fleece, as this will force dirt particles into the fabric. If the filter is very dirty, it can be washed in lukewarm water with regular dishwashing detergent. Note that the fleece filter does not need to be cleaned until there is a noticeable loss of power. If cleaning the filter does not bring an improvement in performance, it is time to replace it.

Cleaning the nylon filter: Use a soft brush or blow out dirt from the inside with compressed air. If the filter is very dirty, it can be washed in lukewarm water with regular dishwashing detergent. 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! Cleaning the pre-filter: When the pre-filter becomes dirty, wash it in lukewarm soapy water using standard dishwashing liquid. Let the air filter dry completely.

Put the top and bottom sections back together. Place the pre-filter back in the cover. Before assembling the air filter, check the choke flap for any dirt particles. If there are any, remove them with a brush. CAUTION: If the air filter becomes damaged, replace immediately! Pieces of cloth or large dirt particles can destroy the engine! Insert the air filter (5) and press the clasp (4) in the direction of the arrow until it engages.

Move the combination switch (3) down and press the throttle (6) once all the way, to deactivate the half-throttle lock. Put the cover (2) back on and affix it with the cover clasps (1). 2 5a 5 4 3 6 A 24 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! 7 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.



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Remove the blower cover (see „Cleaning the air blower“). 0,5 mm Pull the plug cap (7) off the spark plug. Use only the combination wrench supplied with the saw to remove the spark plug. Electrode gap The electrode gap must be 0.

5 mm. CAUTION: Use only the following spark plugs: NGK BPRM 7A or BOSCH WSR 6F. B Checking the ignition spark 8 9 With the spark plug removed and the spark plug cap firmly seated, use insulated pliers to hold the spark plug (8) against the cylinder (not the spark plug hole). Put combination switch (9) in the ON position. Pull the starter cable hard. If the function is correct, an ignition spark must be visible near the electrodes. C Checking the muffler screws 10 Remove the retaining plate (10) by unscrewing screws (11, short) and (12, long). 11 12 The muffler screws are now accessible through the blind holes and can be checked for tight fit. If they are loose, hand-tighten them (Important - do not overtighten!). D 25 Replacing the starter cable/ Replacing the return spring pack/Replacing the starter spring Unscrew four screws (1).

Remove fan housing (2). Remove the air guide (3) from the fan housing. CAREFUL! Injury hazard! Do not unscrew screw (7) if the return spring is under tension. If the starter cable is to be replaced although it is not broken, it will be necessary to first de-tension the cable drum return spring (13). To do this, use the grip to pull the cable all the way out of the fan housing.

Hold the cable drum with one hand, and with the other push the cable into the space (14). Carefully let the drum turn until the return spring is no longer under tension. Unscrew screw (7) and remove the driver (8) and spring (6). Carefully remove the cable drum. Remove any cable pieces. Thread a new cable (dia. 3.5 mm, length 1100 mm) as shown in the illustration (don't forget the washer (10)) and knot both ends as shown. Pull knot (11) into the cable drum (5). Pull knot (12) into the starter grip (9). Put the drum on its spindle and turn it slightly until the return spring engages. Place the spring (6) in the driver (8) and place them together in the cable drum (5) while turning slightly counter-clockwise. Insert screw (7) and tighten. Guide the cable into the slot (14) on the cable drum and turn the drum with the cable clockwise three times. Hold the cable drum with your left hand and with your right hand untwist the cable, pull it tight and hold it.

Carefully release the cable drum. The spring will wind the cable around the drum. Repeat the procedure once. The starter grip should now stand straight up on the fan housing. 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. CAUTION: Danger of injury! Secure the cable grip when pulled out! It will whip back if the cable pulley is released by accident. 1 7 8 2 11 6 5 14 13 4 3 4 4 Replacing the return spring pack Disassemble the fan housing and cable drum (see above). CAREFUL! Injury hazard! The return spring can pop out! Always wear eye protection and protective gloves! Lightly tap the fan housing on a wooden surface with the entire surface of the hollow side, and hold it down. Now lift the fan housing carefully and in small steps. This will allow the return spring pack (13), which should now have fallen out, to relax in a controlled manner if the return spring has popped out of the plastic pack.

Carefully insert a new return spring cassette and press down until it engages. Place the cable drum on it and turn it slightly until the return spring engages. Install the spring (6) and driver (8) and screw on tight with screw (7). Tension the spring (see above). 12 9 10 Mounting the fan housing Insert the air guide (3) in the fan housing so that the three recesses (4) engage.

Position the fan housing against the housing, press against it lightly and pull the starter grip until the starter engages. Tighten screws (1). Replacing the starter spring NOTE: If the spring (6) in the Featherlight-Starting system is broken, more effort will be required to start the engine and you will notice some resistance when pulling the starter cable. If you notice this, check the spring (6) and replace if necessary. 26 A Cleaning the cylinder area Remove cover. Remove the fan housing. CAUTION: To prevent eye injury, always wear eye protection when cleaning the blower with compressed air! The entire area (14) can now be brushed clean or cleaned with compressed air. A bottle brush can come in handy for cleaning out the cylinder ribs. 14 B Replacing the suction head 15 The felt blower (15) 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. C 27 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 Saw chain Chain brake Guide bar Starter cable Before each start Saw chain Guide bar Chain lubrication Chain brake Combination switch, Safety locking button, Throttle lever Fuel/oil tank cap Every day Air blower Guide bar Guide bar support Idle speed Every week Fan housing Cylinder area Spark plug Muffler Chain guide Screws and nuts Every 3 months Suction head Fuel, oil tanks Annually Storage Chain saw Chain saw Guide bar/chain Fuel, oil tanks Carburetor Clean exterior, check for damage. In case of damage, have repaired by a qualified service centre immediately Sharpen regularly, replace in good time Have inspected regularly at an authorized service centre Turn over to ensure even wear of bearing surfaces Replace in good time Check for damage. Replace if damaged. @@ Clean to maintain good cooling air flow. @@@@ Any work not described in this Manual may be performed only by a MAKITA service centre. 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. Repair attempts by third parties or unauthorized persons will void all warranty claims. 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.



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