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You can read the recommendations in the user guide, the technical guide or the installation guide for HUSQVARNA 455 E RANCHER. You'll find the answers to all your questions on the HUSQVARNA 455 E RANCHER in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HUSQVARNA 455 E RANCHER
User guide HUSQVARNA 455 E RANCHER
Operating instructions HUSQVARNA 455 E RANCHER
Instructions for use HUSQVARNA 455 E RANCHER
Instruction manual HUSQVARNA 455 E RANCHER

Operator's manual (EPA II)

455e Rancher
455 Rancher 460 Rancher

Please read the operator's manual carefully and make sure you understand the instructions before using the machine.



English



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Manual abstract:

Contact of the guide bar tip with any object must be avoided. Refuelling. Tip contact may cause the guide bar to move suddenly upward and backward (so-called kickback), which may cause serious injury. Other symbols/decals on the machine refer to special certification requirements for certain markets. The chain brake must be engaged when the chain saw is started. Filing with oil and adjusting oil flow. 2 – English KEY TO SYMBOLS You will find the following labels on your chain saw: EPA II The Emissions Compliance Period referred to on the Emission Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emissions requirements. Category C = 50 hours, B = 125 hours, and A = 300 hours. Maintenance, replacement, or repair of the emission control devices and system may be performed by any nonroad engine repair establishment or individual. The engine exhaust from this product contains chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

English – 3 CONTENTS Contents KEY TO SYMBOLS Symbols on the machine:

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... Symbols in the operator's manual: ..

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.. @@INTRODUCTION Dear customer! ...

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..... WHAT IS WHAT? What is what on the chain saw?

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..... Personal protective equipment

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..... Machine's safety equipment

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..... Cutting equipment ..

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..... @@FUEL HANDLING Fuel ...

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.... *STARTING AND STOPPING Starting and stopping* .

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How to avoid kickback

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Checking, maintaining and servicing chain saw safety equipment

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Muffler

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Spark plug

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. Lubricating the bar tip sprocket

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Needle bearing lubrication

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. Adjustment of the oil pump

If the retailer who sells your machine is not one of our authorized dealers, ask for the address of your nearest servicing dealer. It is our wish that you will be satisfied with your product and that it will be your companion for a long time. Think of this operator's manual as a valuable document. By following its' content (using, service, maintenance etc) the life span and the second-hand value of the machine can be extended. If you ever lend or sell this machine, make sure that the borrower or buyer gets the operator's manual, so they will also know how to properly maintain and use it.

Thank you for using a Husqvarna product. Husqvarna AB has a policy of continuous product development and therefore reserves the right to modify the design and appearance of products without prior notice. For customer assistance, contact us at our website: www.usa.husqvarna.com

English – 5 WHAT IS WHAT? 29 1 2 3 4 30 10 23 31 32 5 11 12 13 14 9 8 7 6 27 15 16 26 28 25 24 23 22 21 20 19 18 17 What is what on the chain saw? 1 2 3 4 5 6 7 8 9 Cylinder cover Starter handle Air purge Stop switch (Ignition on/off switch.) Rear handle Choke control/Start throttle lock Fuel tank Adjuster screws carburetor Starter 17 Chain 18 Bar 19 Bumper spike 20 Chain tensioning screw 21 Chain catcher 22 Oil pump adjustment screw 23 Clutch cover 24 Right hand guard 25 Throttle control 26 Operator's manual (EPA) 27 Combination spanner 28 Bar guard 29 Information and warning decal 30 Product and serial number plate 31 Knob (455e Rancher) 32 Chain tensioner wheel (455e Rancher) 10 Chain oil tank 11 Throttle lockout 12 Decompression valve 13 Front handle 14 Front hand guard 15 Muffler 16 Bar tip sprocket 6 – English GENERAL SAFETY PRECAUTIONS Before using a new chain saw • • Please read this manual carefully. Check that the cutting equipment is correctly fitted and adjusted. See instructions under the heading Assembly. Refuel and start the chain saw. See the instructions under the headings Fuel Handling and Starting and Stopping. Do not use the chain saw until sufficient chain oil has reached the chain. See instructions under the heading Lubricating cutting equipment. Long-term exposure to noise can result in permanent hearing impairment. So always use approved hearing protection.

Important IMPORTANT! The machine is only designed for cutting wood. You should only use the saw with the bar and chain combinations we recommend in the chapter Technical data. Never use the machine if you are fatigued, while under the influence of alcohol or drugs, medication or anything that could affect your vision, alertness, coordination or judgement. Wear personal protective equipment. See instructions under the heading Personal protective equipment. Do not modify this product or use it if it appears to have been modified by others. Never use a machine that is faulty. Carry out the checks, maintenance and service instructions described in this manual. Some maintenance and service measures must be carried out by trained and qualified specialists. See instructions under the heading Maintenance.

Never use any accessories other than those recommended in this manual. See instructions under the headings Cutting equipment and Technical data.

CAUTION! Always wear protective glasses or a face visor to reduce the risk of injury from thrown objects. A chain saw is capable of throwing objects, such as wood chips, small pieces of wood, etc, at great force. This can result in serious injury, especially to the eyes.

WARNING! Running an engine in a confined or badly ventilated area can result in death due to asphyxiation or carbon monoxide poisoning.



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WARNING! Faulty cutting equipment or the wrong combination of bar and saw chain increases the risk of kickback! Only use the bar/saw chain combinations we recommend, and follow the filing instructions. See instructions under the heading Technical data. •••! **WARNING!** Under no circumstances may the design of the machine be modified without the permission of the manufacturer. Always use genuine accessories.

Non-authorized modifications and/or accessories can result in serious personal injury or the death of the operator or others. Your warranty may not cover damage or liability caused by the use of nonauthorized accessories or replacement parts. **WARNING!** A chain saw is a dangerous tool if used carelessly or incorrectly and can cause serious, even fatal injuries. It is very important that you read and understand the contents of this operator's manual. **WARNING!** The inside of the muffler contain chemicals that may be carcinogenic. Avoid contact with these elements in the event of a damaged muffler. **WARNING!** Long term inhalation of the engine's exhaust fumes, chain oil mist and dust from sawdust can represent a health risk. **WARNING!** The ignition system of this machine produces an electromagnetic field during operation. This field may under some circumstances interfere with pacemakers. To reduce the risk of serious or fatal injury, we recommend persons with pacemakers to consult their physician and the pacemaker manufacturer before operating this machine.

!!!! English – 7 **GENERAL SAFETY PRECAUTIONS** Always use common sense It is not possible to cover every conceivable situation you can face when using a chain saw. Always exercise care and use your common sense. Avoid all situations which you consider to be beyond your capability. If you still feel uncertain about operating procedures after reading these instructions, you should consult an expert before continuing. Do not hesitate to contact your dealer or us if you have any questions about the use of the chain saw. We will willingly be of service and provide you with advice as well as help you to use your chain saw both efficiently and safely. Attend a training course in chain saw usage if possible. Your dealer, forestry school or your library can provide information about which training materials and courses are available. •••••Hearing protection Protective goggles or a visor Gloves with saw protection Trousers with saw protection Boots with saw protection, steel toe-cap and non-slip sole Always have a first aid kit nearby. Fire Extinguisher and Shovel Generally clothes should be close-fitting without restricting your freedom of movement.

IMPORTANT! Sparks can come from the muffler, the bar and chain or other sources. Always have fire extinguishing tools available if you should need them. Help prevent forest fires. Machine's safety equipment Work is constantly in progress to improve the design and technology - improvements that increase your safetyugh time to slow down and stop the chain before the chain saw hits you. Only you and proper working technique can eliminate kickback and its danger. • In the felling position the left hand is in a position that makes manual activation of the chain brake impossible. With this type of grip, that is when the left hand is placed so that it cannot affect the movement of the front hand guard, the chain brake can only be activated by the inertia action. Throttle lockout The throttle lockout is designed to prevent accidental operation of the throttle control. When you press the lock (A) (i.e. when you grasp the handle) it releases the throttle control (B). When you release the handle the throttle control and the throttle lockout both move back to their original positions. This arrangement means that the throttle control is automatically locked at the idle setting. Will my hand always activate the chain brake during a kickback? No. It t in order to: ••Reduce the risk of kickback. Reduce the risk of the saw chain breaking or jumping off the bar. Obtain optimal cutting performance. Extend the life of cutting equipment. Avoid increasing vibration levels. Stop switch Use the stop switch to switch off the engine.

•••General rules • Only use cutting equipment recommended by us! See instructions under the heading Technical data. • Keep the chain's cutting teeth properly sharpened! Follow our instructions and use the English – 11 **GENERAL SAFETY PRECAUTIONS** recommended file gauge. A damaged or badly sharpened chain increases the risk of accidents. ! **WARNING!** Any contact with a rotating saw chain can cause extremely serious injuries. Some terms that describe the bar and chain • Maintain the correct depth gauge setting! Follow our instructions and use the recommended depth gauge clearance. Too large a clearance increases the risk of kickback. To maintain the safety features of the cutting equipment, you should replace a worn or damaged bar or chain with a bar and chain combinations recommended by Husqvarna. See instructions under the heading Technical Data for a list of replacement bar and chain combinations we recommend. Bar •• Keep the chain properly tensioned! If the chain is slack it is more likely to jump off and lead to increased wear on the bar, chain and drive sprocket. •Number of teeth on bar tip sprocket (T).

Length (inches/cm) •Keep cutting equipment well lubricated and properly maintained! A poorly lubricated chain is more likely to break and lead to increased wear on the bar, chain and drive sprocket. •Chain pitch (inches). The spacing between the drive links of the chain must match the spacing of the teeth on the bar tip sprocket and drive sprocket. Cutting equipment designed to reduce kickback •Number of drive links. The number of drive links is determined by the length of the bar, the chain pitch and the number of teeth on the bar tip sprocket.

! **WARNING!** Faulty cutting equipment or the wrong combination of bar and saw chain increases the risk of kickback! Only use the bar/saw chain combinations we recommend, and follow the filing instructions. See instructions under the heading Technical data. • Bar groove width (inches/mm). The groove in the bar must match the width of the chain drive links. The only way to avoid kickback is to make sure that the kickback zone of the bar never touches anything.

By using cutting equipment with "built-in" kickback reduction and keeping the chain sharp and wellmaintained you can reduce the effects of kickback. Bar The smaller the tip radius the lower the chance of kickback. Chain A chain is made up of a number of links, which are available in standard and low-kickback versions. **IMPORTANT!** No saw chain design eliminates the danger of kickback. 12 – English Chain • Chain pitch (inches) • Chain oil hole and hole for chain tensioner. The bar must be matched to the chain saw design.



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GENERAL SAFETY PRECAUTIONS • Drive link width (mm/inches) 3 File position 4 • Number of drive links. Round file diameter It is very difficult to sharpen a chain correctly without the right equipment. We recommend that you use our file gauge. This will help you obtain the maximum kickback reduction and cutting performance from your chain.

Sharpening your chain and adjusting depth gauge setting General information on sharpening cutting teeth • Never use a blunt chain. When the chain is blunt you have to exert more pressure to force the bar through the wood and the chips will be very small. If the chain is very blunt it will produce wood powder and no chips or shavings. A sharp chain eats its way through the wood and produces long, thick chips or shavings. See instructions under the heading Technical data for information about sharpening your chain. • **! WARNING!** Departure from the sharpening instructions considerably increases the risk of kickback.

Sharpening cutting teeth • The cutting part of the chain is called the cutter and consists of a cutting tooth (A) and the depth gauge (B). The cutters cutting depth is determined by the difference in height between the two (depth gauge setting). To sharpen cutting teeth you will need a round file and a file gauge. See instructions under the heading Technical data for information on the size of file and gauge that are recommended for the chain fitted to your chain saw.

• Check that the chain is correctly tensioned. A slack chain will move sideways, making it more difficult to sharpen correctly. When you sharpen a cutting tooth there are four important factors to remember. 1 Filing angle • Always file cutting teeth from the inside face. Reduce the pressure on the return stroke.

File all the teeth on one side first, then turn the chain saw and file the teeth on the other side. 2 Cutting angle English – 13 **GENERAL SAFETY PRECAUTIONS** • File all the teeth to the same length. When the length of the cutting teeth is reduced to 0.16 inch (4 mm) the chain is worn out and should be replaced. Tensioning the chain ! General advice on adjusting depth gauge setting • When you sharpen the cutting tooth (A) the depth gauge setting (C) will decrease.

To maintain optimal cutting performance the depth gauge (B) has to be filed down to achieve the recommended depth gauge setting. See instructions under the heading Technical data to find the correct depth gauge setting for your particular chain. **WARNING!** A slack chain may jump off the bar and cause serious or even fatal injury. The more you use a chain the longer it becomes. It is therefore important to adjust the chain regularly to take up the slack. Check the chain tension every time you refuel. **NOTE!** A new chain has a running-in period during which you should check the tension more frequently. Tension the chain as tightly as possible, but not so tight that you cannot pull it round freely by hand. ! **WARNING!** The risk of kickback is increased if the depth gauge setting is too large! 455 Rancher, 460 Rancher Adjustment of depth gauge setting • • The cutting teeth should be newly sharpened before adjusting the depth gauge setting. We recommend that you adjust the depth gauge setting every third time you sharpen the cutting teeth.

NOTE! This recommendation assumes that the length of the cutting teeth is not reduced excessively. You will need a flat file and a depth gauge tool. We recommend that you use our depth gauge tool to achieve the correct depth gauge setting and bevel for the depth gauge. Loosen the bar nuts that hold the chain cover/chain brake. Use the combination spanner. Then tighten the bar nuts by hand as tight as you can. • • Raise the tip of the bar and stretch the chain by tightening the chain tensioning screw using the combination spanner. Tighten the chain until it does not sag from the underside of the bar. • • Place the depth gauge tool over the chain. Detailed information regarding the use of the depth gauge tool, will be found on the package for the depth gauge tool.

Use the flat file to file off the tip of the depth gauge that protrudes through the depth gauge tool. The depth gauge setting is correct when you no longer feel resistance as you draw the file along the depth gauge tool. Use the combination spanner to tighten the bar nuts while lifting the tip of the bar at the same time. Check that you can pull the chain round freely by hand and that it does not sag from the underside of the bar. The position of the chain tensioning screw on our chain saws varies from model to model.

See instructions under the heading What is what? to find out where it is on your model. 14 – English **GENERAL SAFETY PRECAUTIONS 455e Rancher Lubricating cutting equipment** • Release the knob by folding it out. ! Chain oil **WARNING!** Poor lubrication of cutting equipment may cause the chain to snap, which could lead to serious, even fatal injuries. Chain oil must demonstrate good adhesion to the chain and also maintain its flow characteristics regardless of whether it is warm summer or cold winter weather. As a chain saw manufacturer we have developed an optimal chain oil which has a vegetable oil base.

We recommend the use of our own oil for both maximum chain life and to minimise environmental damage. If our own chain oil is not available, standard chain oil is recommended. Never use waste oil! Using waste oil can be dangerous to you and damage the machine and environment. **IMPORTANT!** When using vegetable based saw chain oil, dismantle and clean the groove in the bar and saw chain before long-term storage. Otherwise there is a risk of the saw chain oil oxidizing, which will result in the saw chain becoming stiff and the bar tip sprocket jamming. Filling with chain oil • All our chain saws have an automatic chain lubrication system. On some models the oil flow is also adjustable. • Turn the knob anti clockwise to loosen the bar cover. • Adjust the tension on the chain by turning the wheel down (+) for tighter tension and up (-) to loosen the tension. • Tighten the bar clutch by turning the knob clockwise.

• The saw chain oil tank and the fuel tank are designed so that the fuel runs out before the saw chain oil. However, this safety feature requires that you use the right sort of chain oil (if the oil is too thin it will run out before the fuel), and that you adjust the carburetor as recommended (a lean mixture may mean that the fuel lasts longer than the oil) and that you also use the recommended cutting equipment (a bar that is too long will use more chain oil). Checking chain lubrication • Check the chain lubrication each time you refuel. See instructions under the heading Lubricating the bar tip sprocket. • Fold the knob back in to lock the tensioning. English – 15 **GENERAL SAFETY PRECAUTIONS** Aim the tip of the bar at a light coloured surface about 20 cm (8 inches) away.



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After 1 minute running at 3/4 throttle you should see a distinct line of oil on the light surface. Chain drive sprocket The clutch drum is fitted with one of the following drive sprockets: A Spur sprocket (the chain sprocket is welded on the drum) B Rim sprocket (replaceable) If the chain lubrication is not working: •

Check that the oil channel in the bar is not obstructed. Clean if necessary. Regularly check the degree of wear on the drive sprocket.

Replace if wear is excessive. Replace the drive sprocket whenever you replace the chain. Needle bearing lubrication • Check that the groove in the edge of the bar is clean. Clean if necessary. Both versions of sprockets have a needle bearing on the drive shaft, which has to be greased regularly (once a week).

CAUTION! Use only high quality bearing grease or engine oil. See instructions under the heading Maintenance, Needle bearing lubrication. Checking wear on cutting equipment Check the chain daily for: • Check that the bar tip sprocket turns freely and that the lubricating hole in the tip sprocket is not blocked.

Clean and lubricate if necessary. ••• Visible cracks in rivets and links.

Whether the chain is stiff. Whether rivets and links are badly worn. If the chain lubrication system is still not working after carrying out the above checks and associated measures you should contact your servicing dealer. Replace the saw chain if it exhibits any of the points above. We recommend you compare the existing chain with a new chain to decide how badly the existing chain is worn. When the length of the cutting teeth has worn down to only 0.16 inch (4 mm) the chain must be replaced. 16 – English GENERAL SAFETY PRECAUTIONS Bar ! Check regularly: • Whether there are burrs on the edges of the bar.

Remove these with a file if necessary. WARNING! Most chain saw accidents happen when the chain touches the operator.

Wear personal protective equipment. See instructions under the heading Personal protective equipment. Do not tackle any job that you feel you are not adequately trained for. See instructions under the headings Personal protective equipment, How to avoid kickback, Cutting equipment and General working instructions. Avoid situations where there is a risk of kickback. See instructions under the heading Machine's safety equipment. • Whether the groove in the bar has become badly worn. Replace the bar if necessary. • Whether the tip of the bar is uneven or badly worn. If a hollow forms on the underside of the bar tip this is due to running with a slack chain.

Use the recommended protective equipment and check its condition. See instructions under the heading General working instructions. Check that all the chain saw safety features are working. See instructions under the headings General working instructions and General safety precautions. • To prolong the life of the bar you should turn it over daily.

English – 17 ASSEMBLY Fitting the bar and chain Tension the chain by turning the chain tensioning screw clockwise using the combination spanner. The chain should be tensioned until it does not sag from the underside of the bar. ! WARNING! Always wear gloves, when working with the chain. 455 Rancher, 460 Rancher Check that the chain brake is in disengaged position by moving the front hand guard towards the front handle. The chain is correctly tensioned when it does not sag from the underside of the bar, but can still be turned easily by hand.

Hold up the bar tip and tighten the bar nuts with the combination spanner. Remove the bar nuts and remove the clutch cover (chain brake). Take off the transportation ring (A). When fitting a new chain, the chain tension has to be checked frequently until the chain is run-in. Check the chain tension regularly. A correctly tensioned chain ensures good cutting performance and long life. 455e Rancher Fit the bar over the bar bolts. Place the bar in its rearmost position.

Place the chain over the drive sprocket locate it in the groove on the bar. Begin on the top edge of the bar.

Check that the chain brake is in disengaged position by moving the front hand guard towards the front handle. Make sure that the edges of the cutting links are facing forward on the top edge of the bar. Fit the clutch cover and locate the chain adjuster pin in the hole in the bar. Check that the drive links of the chain fit correctly over the drive sprocket and that the chain is correctly located in the groove in the bar. Tighten the bar nuts finger tight. Remove the knob and remove the clutch cover (chain brake). Take off the transportation ring. 18 – English ASSEMBLY Fit the bar over the bar bolts. Place the bar in its rearmost position. Place the chain over the drive sprocket locate it in the groove on the bar.

Begin on the top edge of the bar. Make sure that the edges of the cutting links are facing forward on the top edge of the bar. Fit the clutch cover and locate the chain adjuster pin in the hole in the bar. Check that the drive links of the chain fit correctly over the drive sprocket and that the chain is correctly located in the groove in the bar. Tighten the bar nuts finger tight.

Tension the chain by turning the wheel down (+). The chain should be tensioned until it does not sag from the underside of the bar. The chain is correctly tensioned when it does not sag from the underside of the bar, but can still be turned easily by hand. Hold up the bar tip and tighten the bar knob by turning the knob clockwise. When fitting a new chain, the chain tension has to be checked frequently until the chain is run-in.

Check the chain tension regularly. A correctly tensioned chain ensures good cutting performance and long life. English – 19 FUEL HANDLING Fuel Note!

The machine is equipped with a two-stroke engine and must always be run using a mixture of gasoline and two-stroke oil. It is important to accurately measure the amount of oil to be mixed to ensure that the correct mixture is obtained. When mixing small amounts of fuel, even small inaccuracies can drastically affect the ratio of the mixture. Gasoline, litre Two-stroke oil, litre 2% (1:50) 5 10 15 20 US gallon 1 2 1/2 0,10 0,43/0,20 0,30 0,40 US fl. oz. 2 1/2 6 1/2 12 7/8 ! Gasoline WARNING! Always ensure there is adequate ventilation when handling fuel. 5 Mixing •• Use good quality unleaded gasoline.

CAUTION! Engines equipped with catalytic converters must be run on unleaded fuel mixtures.

Leaded gasoline will destroy the catalytic converter and it will no longer serve its purpose. The green fuel cap on saws fitted with catalytic converters means that only unleaded gasoline can be used. The lowest recommended octane grade is 87 ((RON+MON)/2). If you run the engine on a lower octane grade than 87 so-called knocking can occur. This gives rise to a high engine temperature and increased bearing load, which can result in serious engine damage. When working with continuous high revs (e.g. limbing) a higher octane is recommended.



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••• Always mix the gasoline and oil in a clean container intended for fuel. Always start by filling half the amount of the gasoline to be used. Then add the entire amount of oil. Mix (shake) the fuel mixture. Add the remaining amount of gasoline. Mix (shake) the fuel mixture thoroughly before filling the machine's fuel tank. Do not mix more than one month's supply of fuel at a time.

If the machine is not used for some time the fuel tank should be emptied and cleaned. Environment fuel HUSQVARNA recommends the use of alkylate fuel or environmental fuel for four-stroke engines blended with two-stroke oil as set out below. Note that carburetor adjustment may be necessary when changing the type of fuel (see instructions under the heading Carburetor). Running-in Avoid running at a too high speed for extended periods during the first 10 hours. •••

Two-stroke oil • For best results and performance use HUSQVARNA two-stroke engine oil, which is specially formulated for our air-cooled two stroke-engines.

Never use two-stroke oil intended for water-cooled engines, sometimes referred to as outboard oil (rated TCW). Never use oil intended for four-stroke engines. Chain oil • We recommend the use of special oil (chain oil) with good adhesion characteristics. •• Mixing ratio 1:50 (2%) for all engines. • Never use waste oil. This results in damage to the oil pump, the bar and the chain. 20 – English FUEL HANDLING •• It is important to use oil of the right grade (suitable viscosity range) to suit the air temperature. In temperatures below 32°F (0°C) some oils become too viscous. This can overload the oil pump and result in damage to the oil pump components. Contact your service agent when choosing chain oil.

• Move the machine at least 10 ft (3 m) from the refuelling point before starting it. • Fueling • Never start the machine: If you have spilled fuel or chain oil on the machine. Wipe off the spillage and allow remaining fuel to evaporate. If you have spilled fuel on yourself or your clothes, change your clothes. Wash any part of your body that has come in contact with fuel. Use soap and water. If the machine is leaking fuel. Check regularly for leaks from the fuel cap and fuel lines. ! WARNING! Taking the following precautions, will lessen the risk of fire: Do not smoke and do not place any hot objects in the vicinity of fuel. Always stop the engine and let it cool for a few minutes before refuelling.

When refuelling, open the fuel cap slowly so that any excess pressure is released gently. Tighten the fuel cap carefully after refuelling. Always move the machine away from the refuelling area before starting. 1 2 3 ! • WARNING! Never use a machine with visible damage to the spark plug guard and ignition cable. A risk of sparking arises, which can cause a fire.

Transport and storage Always store the chain saw and fuel so that there is no risk of leakages or fumes coming into contact with sparks or naked flames from electrical equipment, electric motors, relays/switches, boilers and the like. Always store fuel in an approved container designed for that purpose. For longer periods of storage or for transport of the chain saw, the fuel and chain oil tanks should be emptied. Ask where you can dispose of waste fuel and chain oil at your local gas station. Ensure the machine is cleaned and that a complete service is carried out before long-term storage.

The bar guard must always be fitted to the cutting attachment when the machine is being transported or in storage, in order to prevent accident contact with the sharp chain. Even a non-moving chain can cause serious cuts to yourself or persons you bump into with an exposed chain. Clean the area around the fuel cap. Clean the fuel and chain oil tanks regularly. The fuel filter must be replaced at least once a year. Contamination in the tanks causes malfunction. Make sure the fuel is well mixed by shaking the container before refuelling. The capacities of the chain oil tank and fuel tank are carefully matched. You should therefore always fill the chain oil tank and fuel tank at the same time. ••• Long-term storage ! WARNING! Fuel and fuel vapor are highly flammable.

Take care when handling fuel and chain oil. Be aware of the risks of fire, explosion and those associated with inhalation. Empty the fuel/oil tanks in a well ventilated area. Store the fuel in approved cans in a safe place. Fit the bar guard. Clean the machine. See instructions under the heading Maintenance schedule. Fuel safety •• Never refuel the machine while the engine is running. Make sure there is plenty of ventilation when refuelling or mixing fuel (gasoline and 2-stroke oil). English – 21 STARTING AND STOPPING Starting and stopping Decompression valve (C): Press the valve to reduce the pressure in the cylinder and make starting easier.

@ @ @ @ @ @ @ @ @ @ Otherwise the clutch can come loose and cause personal injuries. Place the machine on firm ground. @ @ @ @ @ @ @ @ @ @ This should automatically set the stop switch to the start position. @ @ @ @ @ @ @ @ @ @ Hold the chain saw on the ground by placing your right foot through the rear handle. @ @ @ @ @ @ @ @ @ @ The chain brake should be activated when starting.

See instructions under the heading Start and stop. Do not drop start. @ @ @ @ @ @ @ @ @ @ Immediately press and release the throttle when the engine starts. That will disengage the throttle latch. CAUTION! @ @ @ @ @ @ @ @ @ @ Exhaust fumes can be dangerous if inhaled.

@ @ @ @ @ @ @ @ @ @ Pull the front hand guard towards the front handle. The chain brake is now disengaged. Your saw is ready for use. Always hold the saw with both hands. @ @ @ @ @ @ @ @ @ @ All people, whether right or left handed, should use this grip. @ @ @ @ @ @ @ @ @ @ See instructions under the heading Assembly. @ @ @ @ @ @ @ @ @ @ Check that the rear right hand guard is not damaged. Check that the throttle lockout works correctly and is not damaged. Check that the stop switch works correctly and is not damaged. Check that all handles are free from oil.

Check that the anti vibration system works and is not damaged. Check that the muffler is securely attached and not damaged. @ @ @ @ @ @ @ @ @ @ Check that the chain catcher is in place and not damaged. CAUTION! @ @ @ @ @ @ @ @ @ @ cutting many small branches at the same time). @ @ @ @ @ @ @ @ @ @ This section describes basic safety rules for using a chain saw. @ @ @ @ @ @ @ @ @ @ Do not attempt any task that you are not sure you can handle! @ @ @ @ @ @ @ @ @ @ See instructions under the heading How to avoid kickback. @ @ @ @ @ @ @ @ @ @ Wear personal protective equipment. See instructions under the heading Personal protective equipment. 4 Make sure you can move and stand safely. Check the area around you for possible obstacles (roots, rocks, branches, ditches, etc.

) in case you have to move suddenly. Take great care when working on sloping ground. 5 Basic safety rules 1 • Look around you: To ensure that people, animals or other things cannot affect your control of the machine. Take great care when cutting a tree that is under tension. A tree that is under tension may spring back to its normal position before or after being cut.



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If you position yourself incorrectly or make the cut in the wrong place the tree may hit you or the machine and cause you to lose control. Both situations can cause serious personal injury. 24 – English WORKING TECHNIQUES Have control over the workpiece. If the pieces you intend to cut are small and light, they can jam in the saw chain and be thrown towards you. Even if this does not need to be a danger, you may be surprised and lose control of the saw. Never saw stacked logs or branches without first separating them. Only saw one log or one piece at a time. Remove the cut pieces to keep your working area safe. 6 Before moving your chain saw switch off the engine and lock the chain using the chain brake. Carry the chain saw with the bar and chain pointing backwards. Fit a guard to the bar before transporting the chain saw or carrying it for any distance. 7 When you put the chain saw on the ground, lock the saw chain using the chain brake and ensure you have a constant view of the machine. Switch the engine off before leaving your chain saw for any length of time. 4 Never use the chain saw above shoulder height and avoid cutting with the tip of the bar. Never use the chain saw one-handed! General rules 1 If you understand what kickback is and how it happens then you can reduce or eliminate the element of surprise.

By being prepared you reduce the risk. Kickback is usually quite mild, but it can sometimes be very sudden and violent. Always hold the chain saw firmly with your right hand on the rear handle and your left hand on the front handle. Wrap your fingers and thumbs around the handles. You should use this grip whether you are right-handed or left-handed. This grip minimizes the effect of kickback and lets you keep the chain saw under control. Do not let go of the handles! 2 5 In order to keep control of your saw, always maintain a firm foothold. Never work on a ladder, in a tree or on any other insecure support. 3 Most kickback accidents happen during limbing. Make sure you are standing firmly and that there is nothing in the way that might make you trip or lose your balance.

Lack of concentration can lead to kickback if the kickback zone of the bar accidentally touches a branch, nearby tree or some other object. 6 Always use a fast cutting speed, i.e. full throttle. English – 25 WORKING TECHNIQUES 7 Take great care when you cut with the top edge of the bar, i.e. when cutting from the underside of the object. This is known as cutting with a pushing chain. The chain tries to push the chain saw back towards the user. If the saw chain is jamming, the saw may be pushed back at you.

• Cutting from above = Cutting with a pulling chain. Cutting from below = Cutting with pushing chain. Cutting with a pushing chain increases the risk of kickback. See instructions under the heading How to avoid kickback. Terms Cutting = General term for cutting through wood. Limbing = Cutting branches off a felled tree. Splitting = When the object you are cutting breaks off before the cut is complete. @@@@ Never use a chain saw by holding it with one hand. A chain saw is not safely controlled with one hand. @@@@ IMPORTANT! If the chain jams in the cut: stop the engine! Don't try to pull the chain saw free.

@@@ • Reduce the speed to idle after every cut (running the engine for too long at full throttle without any load, i.e. without any resistance from the chain during cutting, can lead to serious engine damage). 26 – English WORKING TECHNIQUES The following instructions describe how to handle the common situations you are likely to encounter when using a chain saw. Limbing When limbing thick branches you should use the same approach as for cutting. Cut difficult branches piece by piece. Cut all the way through the log from above. Avoid letting the chain touch the ground as you finish the cut. Maintain full throttle but be prepared for what might happen. 1 2 3 If it is possible (can you turn the log?) stop cutting about 2/3 of the way through the log. Turn the log and finish the cut from the opposite side. Cutting ! WARNING! Never attempt to cut logs while they are in a pile or when a couple of logs are lying together. Such procedures drastically increase the risk of kickback which can result in a serious or fatal injury. The log is supported at one end. There is a high risk that it will split.

If you have a pile of logs, each log you attempt to cut should be removed from the pile, placed on a saw horse or runners and cut individually. Remove the cut pieces from the cutting area. By leaving them in the cutting area, you increase the risk for inadvertently getting a kickback, as well as increasing the risk of losing your balance while working. Start by cutting from below (about 1/3 of the way through). Finish by cutting from above so that the two cuts meet. The log is supported at both ends. There is a high risk that the chain will jam. The log is lying on the ground. There is little risk of the chain jamming or the object splitting. However there is a risk that the chain will touch the ground when you finish the cut. Start by cutting from above (about 1/3 of the way through). English – 27 WORKING TECHNIQUES Finish by cutting from below so that the two cuts meet. You may find you are forced to let the tree fall in its natural direction because it is impossible or dangerous to try to make it fall in the direction you first intended. Another very important factor, which does not affect the felling direction but does affect your safety, is to make sure the tree has no damaged or dead branches that might break off and hit you during felling. The main point to avoid is letting the tree fall onto another tree.

It is very dangerous to remove a trapped tree and there is high accident risk. See instructions under the heading Freeing a tree that has fallen badly. Tree felling technique IMPORTANT! It takes a lot of experience to fell a tree. Inexperienced users of chain saws should not fell trees. Do not attempt any task beyond your experience level! Safe distance The safe distance between a tree that is to be felled and anyone else working nearby is at least 2 1/2 tree lengths. Make sure that no-one else is in this "risk zone" before or during felling. IMPORTANT! During critical felling operations, hearing protectors should be lifted immediately when sawing is completed so that sounds and warning signals can be heard. Felling direction The aim is to fell the tree in a position where you can limb and cross-cut the log as easily as possible. You want it to fall in a location where you can stand and move about safely. Once you have decided which way you want the tree to fall you must judge which way the tree would fall naturally.

Several factors affect this: •••••Lean of the tree Bend Wind direction Arrangement of branches Weight of snow Obstacles within the reach of the tree: for example, other trees, power lines, roads and buildings.



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Look for signs of damage and rot in the stem, this makes it more probably that the tree will break and start to fall before you expect it to. Remove any undergrowth from the base of the tree and check the area for obstacles (stones, branches, holes, etc.) so that you have a clear path of retreat when the tree starts to fall. Your path of retreat should be roughly 135 degrees away from the intended felling direction.

Clearing the trunk and preparing your retreat Delimb the stem up to shoulder height. It is safer to work from the top down and to have the tree between you and the saw. Da ng er zo ne on cti ire gd llin Fe Retreat path Retreat path e zon er ng Da Da ng er zo ne 28 – English WORKING TECHNIQUES Felling Felling cut WARNING! Unless you have special training we advise you not to fell trees with a diameter larger than the bar length of your saw! The felling cut is made from the opposite side of the tree and it must be perfectly horizontal. Stand on the left side of the tree and cut on the pull stroke. Make the felling cut about 1.

5-2 inches (3-5 cm) above the bottom directional cut. ! Felling is done using three cuts. First you make the directional cuts, which consist of the top cut and the bottom cut, then you finish with the felling cut. By placing these cuts correctly you can control the felling direction very accurately. Directional cuts To make the directional cuts you begin with the top cut. Stand to the right of the tree and cut on the pull stroke. Finish the felling cut parallel with the directional cut line so that the distance between them is at least 1/10 of the trunk diameter. The uncut section of the trunk is called the felling hinge. Next make the bottom cut so that it finishes exactly at the end of the top cut. The felling hinge controls the direction that the tree falls in.

The directional cuts should run 1/4 of the diameter through the trunk and the angle between the top cut and bottom cut should be 45°. All control over the felling direction is lost if the felling hinge is too narrow or non-existent, or if the directional cuts and felling cut are badly placed. The line where the two cuts meet is called the directional cut line. This line should be perfectly horizontal and at right angles (90°) to the chosen felling direction. When the felling cut and directional cut are complete the tree should start to fall by itself or with the aid of a felling wedge or breaking bar. English – 29 WORKING TECHNIQUES We recommend that you use a bar that is longer than the diameter of the tree, so that you can make the felling cut and directional cuts with single cutting strokes. See instructions under the heading Technical data section to find out which lengths of bar are recommended for your saw. The safest method is to use a winch. • Tractor-mounted • Portable Cutting trees and branches that are in tension There are methods for felling trees with a diameter larger than the bar length. However these methods involve a much greater risk that the kickback zone of the bar will come into contact with the tree.

Preparations: Work out which side is in tension and where the point of maximum tension is (i.e. where it would break if it was bent even more). Freeing a tree that has fallen badly Freeing a "trapped tree" It is very dangerous to remove a trapped tree and there is high accident risk. Never try to fell the tree that is trapped.

Decide which is the safest way to release the tension and whether you are able to do it safely. In complicated situations the only safe method is to put aside your chain saw and use a winch. General advice: Position yourself so that you will be clear of the tree or branch when the tension is released. Make one or more cuts at or near the point of maximum tension. Make as many cuts of sufficient depth as necessary to reduce the tension and make the tree or branch break at the point of maximum tension.

Never work in the risk zone of the hanging trapped tree. Never cut straight through a tree or branch that is in tension! If you must cut across tree/limb, make two to three cuts, one inch apart, one to two inches deep. Continue to cut deeper until tree/limb bends and tension is released. Cut tree/limb from outside the bend, after tension has been released. 30 – English WORKING TECHNIQUES How to avoid kickback Limbing WARNING! A majority of kickback accidents occur during limbing. Do not use the kickback zone of the guide bar. Be extremely cautious and avoid contacting the log, other limbs or objects with the nose of the guide bar. Be extremely cautious of limbs under tension. They can spring back toward you and cause loss of control resulting in injury. ! WARNING! Kickback can happen very suddenly and violently; kicking the chain saw, bar and chain back at the user.

If this happens when the chain is moving it can cause very serious, even fatal injuries. It is vital you understand what causes kickback and that you can avoid it by taking care and using the right working technique. ! What is kickback? The word kickback is used to describe the sudden reaction that causes the chain saw and bar to jump off an object when the upper quadrant of the tip of the bar, known as the kickback zone, touches an object. Make sure that you can stand and move about safely. Work on the left side of the trunk. Work as close as possible to the chain saw for maximum control. If possible, let the weight of the chain saw rest on the trunk. Kickback always occurs in the cutting plane of the bar. Normally the chain saw and bar are thrown backwards and upwards towards the user. However, the chain saw may move in a different direction depending on the way it was being used when the kickback zone of the bar touched the object.

Keep the trunk between you and the chain saw as you move along the trunk. Cutting the trunk into logs See instructions under the heading Basic cutting technique. Kickback only occurs if the kickback zone of the bar touches an object. English – 31 MAINTENANCE General The user must only carry out the maintenance and service work described in this manual. More extensive work must be carried out by an authorised service workshop.

CAUTION! If the chain rotates while idling the T-screw must be turned anti-clockwise until the chain stops. Rec. idle speed: 2700 rpm Fine adjustment When the machine has been "run-in" the carburetor should be finely adjusted. The fine adjustment should be carried out by a qualified person. First adjust the L-jet, then the idling screw T and then the H-jet.

Carburetor adjustment Due to existing environmental and emissions legislation your chain saw is equipped with movement limiters on the carburetor adjuster screws. These limit the adjustment possibilities to a maximum of a 1/2 turn. H Conditions • Before any adjustments are made the air filter should be clean and the cylinder cover fitted. Adjusting the carburetor while a dirty air filter is in use will result in a leaner mixture next time the filter is cleaned.



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This can give rise to serious engine damage. Do not attempt to adjust the L and H jets beyond either stop as this could cause damage. Now start the machine according to the starting instructions and let it warm up for 10 minutes. Place the machine on a flat surface so that the bar points away from you and so that the bar and chain do not come into contact with the surface or other objects. Your Husqvarna product has been designed and manufactured to specifications that reduce harmful emissions. Function • The carburetor governs the engine's speed via the throttle control.

Air and fuel are mixed in the carburetor. The air/fuel mixture is adjustable. Correct adjustment is essential to get the best performance from the machine. • The setting of the carburetor means that the engine is adapted to local conditions, for example, the climate, altitude, fuel and the type of 2-stroke oil. • The carburetor has three adjustment controls: - L = Low speed jet - H = High speed jet - T = Idle adjustment screw • • The L and H-jets are used to adjust the supply of fuel to match the rate that air is admitted, which is controlled with the throttle. If they are screwed clockwise the air/fuel ratio becomes leaner (less fuel) and if they are turned anti-clockwise the ratio becomes richer (more fuel). A lean mixture gives a higher engine speed and a rich mixture gives a lower engine speed. The T-screw regulates the throttle setting at idle speed. If the T-screw is turned clockwise this gives a higher idle speed; turning it anti-clockwise gives a lower idle speed. Basic settings and running in The basic carburetor settings are adjusted during testing at the factory.

Avoid running at a too high speed for extended periods during the first 10 hours. 32 – English L 1/2 1/2 • • • Low speed jet L Turn the low speed jet L clockwise until it stops. If the engine accelerates poorly or idles unevenly, turn the low speed jet L anticlockwise until good acceleration and idling are achieved. Fine adjustment of the idling speed T Adjust the idle speed with the T-screw. If it is necessary to re-adjust, turn the T-screw clockwise while the engine is running, until the chain starts to rotate.

Then turn counterclockwise until the chain stops. A correctly adjusted idle speed setting occurs when the engine runs smoothly in every position. It should also be good margin to the rpm when the chain starts to rotate. L H ! T WARNING! Contact your servicing dealer, if the idle speed setting cannot be adjusted so that the chain stops at idle. Do not use the chain saw until it has been properly adjusted or repaired.

High speed jet H At the factory the engine is adjusted at sea level. When working at a high altitude or in different weather conditions, temperatures and atmospheric humidity, it may be necessary to make minor adjustments to the high speed jet. CAUTION! If the high speed jet is screwed in too far, it may damage the piston/cylinder. When test run at the factory, the high speed jet is set so that the engine satisfies the applicable legal requirements at the same time as achieving maximum performance. The carburetor's high speed jet is then locked using a limiter cap in the fully screwed out position. The limiter cap limits the potential to adjust the high speed jet to at most half a turn. MAINTENANCE To adjust the carburetor correctly you should contact a mechanic with access to a rev counter. CAUTION! As the spark is cut off, the rev counter does not show speeds higher than 13600 rpm. Move the front hand guard forwards and back to make sure it moves freely and that it is securely anchored to the clutch cover. Correctly adjusted carburetor When the carburetor is correctly adjusted the machine accelerates without hesitation and the machine 4-cycles a little at max.

speed. It is also important that the chain does not rotate at idle. If the L-jet is set too lean it may cause starting difficulties and poor acceleration. If the Hjet is set too lean the machine will have less power, poor acceleration and could suffer damage to the engine. Checking the inertia brake release Checking, maintaining and servicing chain saw safety equipment Note! All servicing and repair work on the machine requires special training. This is especially true of the machine's safety equipment. If your machine fails any of the checks described below we recommend you to contact our servicing dealer. With the engine turned off, hold the chain saw over a stump or other firm object. Let go of the front handle so that the bar drops towards the stump as the chain saw rotates around the rear handle. Chain brake and front hand guard Checking brake band wear When the bar hits the stump the brake should be applied. Brush off any wood dust, resin and dirt from the chain brake and clutch drum. Dirt and wear can impair operation of the brake. Checking the brake trigger Place the chain saw on firm ground and start it. Make sure the chain does not touch the ground or any other object. See the instructions under the heading Start and stop.

Regularly check that the brake band is at least 0.024 inch (0.6 mm) thick at its thinnest point. Checking the front hand guard Make sure the front hand guard is not damaged and that there are no visible defects such as cracks. Grasp the chain saw firmly, wrapping your fingers and thumbs around the handles. English – 33 MAINTENANCE Apply full throttle and activate the chain brake by tilting your left wrist forward onto the front hand guard. Do not let go of the front handle. The chain should stop immediately. Chain catcher Check that the chain catcher is not damaged and is firmly attached to the body of the chain saw. Throttle lockout • Make sure the throttle control is locked at the idle setting when the throttle lockout is released. Right hand guard • Press the throttle lockout and make sure it returns to its original position when you release it. Check that the right hand guard is not damaged and that there are no visible defects, such as cracks. • Check that the throttle control and throttle lockout move freely and that the return springs work properly. Vibration damping system Regularly check the vibration damping units for cracks or deformation. • Start the chain saw and apply full throttle.

Release the throttle control and check that the chain stops and remains stationary. If the chain rotates when the throttle control is in the idle position you should check the carburetor idle adjustment. Make sure the vibration damping units are securely attached to the engine unit and handle unit. 34 – English MAINTENANCE Stop switch use a muffler if the spark arrestor screen is missing or defective. Start the engine and make sure the engine stops when you move the stop switch to the stop setting. The muffler is designed to reduce the noise level and to direct the exhaust gases away from the operator. The exhaust gases are hot and can contain sparks, which may cause fire if directed against dry and combustible material.



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Muffler Starter ! Never use a machine that has a faulty muffler. WARNING! When the recoil spring is wound up in the starter housing it is under tension and can, if handled carelessly, pop out and cause personal injury. Care must be exercised when replacing the return spring or the starter cord.

Wear protective glasses and protective gloves. Changing a broken or worn starter cord Regularly check that the muffler is securely attached to the machine. • Loosen the screws that hold the starter against the crankcase and remove the starter. Some mufflers are equipped with a special spark arrestor screen. If your machine has this type of muffler, you should clean the screen at least once a week.

This is best done with a wire brush. A blocked screen will cause the engine to overheat and may lead to serious damage. Note! The screen must be replaced if it is damaged. If the screen is blocked the machine will overheat and this will cause damage to the cylinder and piston. Never use a machine with a muffler that is in poor condition.

Never • Pull out the cord approx. 30 cm (12 inches) and hook it into the notch in the rim of the pulley. Release the recoil spring by letting the pulley rotate slowly backwards. 1 2 English – 35 MAINTENANCE • Undo the screw in the centre of the pulley and remove the pulley. Insert and fasten a new starter cord to the pulley. Wind approx. 3 turns of the starter cord onto the pulley. Connect the pulley to the recoil spring so that the end of the spring engages in the pulley. Fit the screw in the center of the pulley. Insert the starter cord through the hole in the starter housing and the starter handle.

Make a secure knot in the end of the starter cord. Fitting the starter • To fit the starter, first pull out the starter cord and place the starter in position against the crankcase. Then slowly release the starter cord so that the pulley engages with the pawls. Fit and tighten the screws that hold the starter. • Tensioning the recoil spring • Hook the starter cord in the notch in the pulley and turn the starter pulley about 2 turns clockwise. Note! Check that the pulley can be turned an additional 1/2 turn when the starter cord is pulled all the way out. Air filter The air filter must be regularly cleaned to remove dust and dirt in order to avoid: • Carburettor malfunctions Starting problems Loss of engine power Unnecessary wear to engine parts Excessive fuel consumption. Remove the air filter after taking off the air filter cover. When refitting make sure that the air filter seals tightly against the filter holder. Clean the filter by brushing or shaking it.

••••• 1 2 Changing a broken recoil spring •• Lift off the pulley. See instructions under heading Changing a broken or worn starter cord. Remove the recoil spring from inside the pulley by tapping the pulley lightly with its inside face downwards against a work bench or the like. If the spring pops out during fitting, wind it up again, working from the outside in towards centre. Lubricate the recoil spring with light oil.

Fit the pulley and tension the recoil spring. The filter can be cleaned more thoroughly by washing it in water and detergent. An air filter that has been in use for a long time cannot be cleaned completely. The filter must therefore be replaced with a new one at regular intervals. A damaged air filter must always be replaced.

A HUSQVARNA chain saw can be equipped with different types of air filters according to working conditions, weather, season, etc. Contact your dealer for advice. • 36 – English MAINTENANCE Spark plug When lubricating, remove the clutch cover by loosening the two bar nuts. Lay the saw on its side with the clutch drum upwards. Lubrication involves engine oil dripping into the centre of the clutch drum as it rotates. The spark plug condition is influenced by: •••• Incorrect carburetor adjustment. An incorrect fuel mixture (too much or incorrect type of oil). A dirty air filter. These factors cause deposits on the spark plug electrodes, which may result in operating problems and starting difficulties. If the machine is low on power, difficult to start or runs poorly at idle speed: always check the spark plug first before taking any further action.

If the spark plug is dirty, clean it and check that the electrode gap is 0.020 inch (0.5 mm). The spark plug should be replaced after about a month in operation or earlier if necessary. Adjustment of the oil pump Adjustments are made by turning the screw using a screwdriver or combination spanner. The machine is supplied from the factory with the screw set to position 2. Turning the screw clockwise will reduce the oil flow and turning the screw anti-clockwise will increase the oil flow. Note! Always use the recommended spark plug type! Use of the wrong spark plug can damage the piston/cylinder. Check that the spark plug is fitted with a suppressor. Lubricating the bar tip sprocket Recommended settings: Bar 13"-15": Position 1 Bar 15"-18": Position 2 Bar 18"-20": Position 3 Lubricate the bar tip sprocket each time you refuel.

Use the special grease gun and a good quality bearing grease. These recommendations apply to Husqvarna's chain oil, for other chain oils increase the oil flow by one step. ! WARNING! The engine must be stopped when making adjustments. Cooling system Needle bearing lubrication To keep the working temperature as low as possible the machine is equipped with a cooling system. The cooling system consists of: The clutch drum has a needle bearing on the output shaft.

This needle bearing must be lubricated regularly (once a week). 1 2 3 4 Air intake on the starter. Air guide plate. Fins on the flywheel. Cooling fins on the cylinder.

English – 37 MAINTENANCE 5 Cylinder cover (directs cold air over the cylinder). ° ° Temperature 0°C (32°F) or colder: The cylinder cover is designed so it can be adjusted for running in cold weather, so that preheated air from the cylinder can pass into the carburetor space preventing icing of the air filter, etc. Clean the cooling system with a brush once a week, more often in demanding conditions. A dirty or blocked cooling system results in the machine overheating which causes damage to the piston and cylinder. "Air Injection" centrifugal cleaning Centrifugal cleaning means the following: All air to the carburetor passes through the starter. Dirt and dust is pushed out by the cooling fan. ° ° Temperature -5°C (23°F) or colder: For running the machine in cold weather or powder snow, a special cover is available, which is mounted on the starter housing. This reduces the intake of cold air and prevents large amounts of snow from being sucked in. IMPORTANT! In order to maintain operation of the centrifugal cleaning system it must be regularly maintained. Clean the air intake to the starter, the fins on the flywheel, the space around the flywheel, inlet pipe and carburetor compartment.



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