Operator's manual Manuel d'utilisation
Manual de instrucciones

K970 III Chain

Please read the operator's manual carefully and make sure you understand the instructions before using the machine.
Lire attentivement et bien assimiler le manuel d'utilisation avant d'utiliser la machine.
Lea detenidamente el manual de instrucciones y asgúrese de entender su contenido antes de utilizar la máquina.

US CA UE

KEY TO SYMBOLS

Manual version

This manual is the North American version used in the US and Canada. It contains information specific for North America which may not be applicable to countries outside North America.

Symbols on the machine

WARNING! The machine can be a dangerous tool if used incorrectly or carelessly, which can cause serious or fatal injury to the operator or others.

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

Wear personal protective equipment. See instructions under the heading "Personal protective equipment".

WARNING! Dust forms when cutting, this can cause injuries if inhaled. Use an approved breathing mask. Avoid inhaling exhaust fumes. Always provide for good ventilation.

WARNING! Kickbacks can be sudden, rapid and violent and can cause life threatening injuries. Read and understand the instructions in the manual before using the machine.

WARNING! Sparks from the diamond chain can cause fire in combustible materials such as: petrol (gas), wood, clothes, dry grass etc.

Ensure the chain is not cracked or damaged in any other way.

Do not use chains for wood cutting.

Choke.

Air purge

Decompression valve

Starter handle

Refuelling, petrol/oil mix

Starting instruction decal
See instructions under the heading Starting and stopping.

Type plate

Row 1: Brand, Model (X,Y)

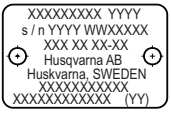
Row 2: Serial No. with manufacturing date (Y, W, X): Year, Week, Sequence No.

Row 3: Product No. (X)

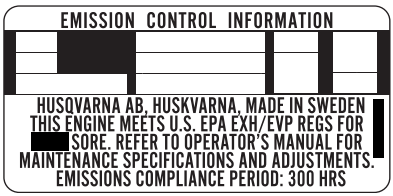
Row 4: Manufacturer

Row 5: Manufacturer address

Row 6-7: If applicable, EC typ-approval (X, Y): Approval code, Approval stage



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 and California emissions requirements.



Other symbols/decals on the machine refer to special certification requirements for certain markets.

KEY TO SYMBOLS

Explanation of warning levels

The warnings are graded in three levels.

WARNING!

WARNING! Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

CAUTION!

CAUTION! Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE!

NOTICE! Is used to address practices not related to personal injury.

Note the following before starting:

WARNING! Cutting, especially when DRY cutting, generates dust that comes from the material being cut, which frequently contains silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Exposure to excessive amount of such dust can cause:

Respiratory disease (affecting your ability to breath), including chronic bronchitis, silicosis and pulmonary fibrosis from exposure to silica. These diseases may be fatal;

Skin irritation and rash.

Cancer according to NTP* and IARC* */ National Toxicology Program, International Agency for Research on Cancer

Take precautionary steps:

Avoid inhalation of and skin contact with dust, mist and fumes.

Wear and ensure that all bystanders wear appropriate respiratory protection such as dust masks designed to filter out microscopic particles. (See OSHA 29 CFR Part 1926.1153)

Wet cut when feasible, to minimize dust.

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

NOTICE! **CALIFORNIA AIR RESOURCES BOARD (CARB):** This machine is considered a preempt Off-Road Applicatoin as relating to CARB standards. The U.S. EPA has sole authority to establish emission standards for preempt construction equipment. For more information see www.arb.ca.gov/msprog/offroad/preempt.htm

Contents

PRESENTATION

Dear customer!

Thank you for choosing a Husqvarna product!

It is our wish that you will be satisfied with your product and that it will be your companion for a long time. A purchase of one of our products gives you access to professional help with repairs and services. If the retailer who sells your machine is not one of our authorised dealers, ask him for the address of your nearest service workshop.

This operator's manual is a valuable document. Make sure it is always at hand at the work place. By following its content (operating, 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.

More than 300 years of innovation

Husqvarna AB is a Swedish company based on a tradition that dates back to 1689, when the Swedish King Karl XI ordered the construction of a factory for production of muskets. At that time, the foundation was already laid for the engineering skills behind the development of some of the world's leading products in areas such as hunting weapons, bicycles, motorcycles, domestic appliances, sewing machines and outdoor products.

Husqvarna is the global leader in outdoor power products for forestry, park maintenance and lawn and garden care, as well as cutting equipment and diamond tools for the construction and stone industries.

Owner responsibility

It is the owner's/employer's responsibility that the operator has sufficient knowledge about how to use the machine safely. Supervisors and operators must have read and understood the Operator's Manual. They must be aware of:

- The machine's safety instructions.
- The machine's range of applications and limitations.
- How the machine is to be used and maintained.

Local regulations could restict the use of this machine. Find out what regulations are applicable where you work before you start using the machine.

The manufacturer's reservation

Subsequent to publishing this manual Husqvarna may issue additional information for safe operation of this product. It is the owner's obligation to keep up with the safest methods of operation.

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 information and assistance, contact us at our website: www.husqvarna.com

Design and features

This Husqvarna diamond chain power cutter is a portable handheld cut-off machine designed to cut hard materials like concrete masonry and stone and should not be used for any purpose not described in this manual. Safe operation of this product requires the operator to read this manual carefully. Ask your dealer or Husqvarna should you need more information.

Some of the unique features of your product are described below.

SmartCarb™

Built-in automatic filter compensation maintains high power and reduces fuel consumption.

Dura Starter™

Dust sealed starter unit, where the return spring and the pulley bearing are sealed which makes the starter virtually maintenance free and even more reliable.

X-Torq®

The X-Torq® engine provides a more accessible torque for a wider range of speeds which results in maximum cutting capacity. X-Torq® reduces the fuel consumption by up to 20% and the emissions by up to 60%.

EasyStart

The engine and starter are designed to ensure quick and easy starting of the machine. Reduces the pull resistance in the starter cord by up to 40%. (Reduces the compression during starting.)

Air purge

When you push the air purge diaphragm, fuel is pumped through to the carburettor. Fewer pulls are required for starting, meaning the machine becomes easier to start.

Efficient vibration damping system

Efficient vibration dampers spare arms and hands.

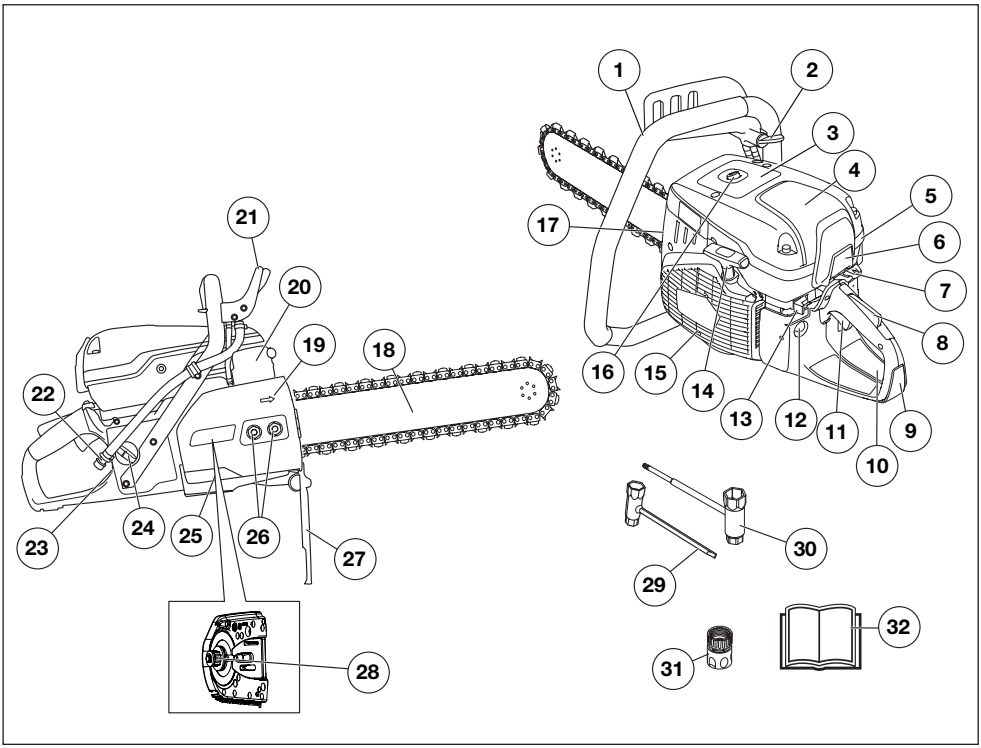
Large cutting depth

Gives a cutting depth of 450 mm (18”). Cuts can be made efficiently from a single direction. Small openings with dimensions of 11x11 cm (4x4 ") can be cut which is perfect for cutting openings with irregular shapes.

Water cooling and dust management

The cutting equipment is provided with water cooling and dust management system for wet cutting and dust suppression.

PRESENTATION



What is what on the power cutter - K970 III Chain?

1 Front handle
2 Water tap
3 Warning decal
4 Air filter cover
5 Cylinder cover
6 Engine air intake
7 Choke control with start throttle lock
8 Throttle trigger lockout
9 Rear handle
10 Starting instruction decal
11 Throttle trigger
12 Air purge
13 Stop switch
14 Starter handle
15 Starter housing
16 Decompression valve
17 Chain tensioner
18 Guide bar and diamond chain (optional)
19 Direction of chain rotation
20 Muffler
21 Hand guard
22 Water connection with filter
23 Type plate
24 Fuel cap
25 Clutch cover
26 Bar nut
27 Spray guard
28 Splineway
29 Combination spanner, flat
30 Combination spanner
31 Water connector, GARDENA®
32 Operator's manual

General

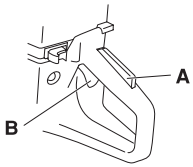
WARNING! Never use a machine that has faulty safety equipment! If your machine fails any checks contact your service agent to get it repaired.

The engine should be switched off, and the stop switch in STOP position.

This section describes the machine's safety equipment, its purpose, and how checks and maintenance should be carried out to ensure that it operates correctly.

Throttle trigger lockout

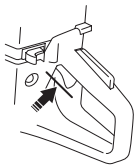
The throttle trigger lock is designed to prevent accidental operation of the throttle. When the lock (A) is pressed in this releases the throttle (B).



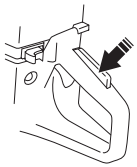
The trigger lock remains pressed in as long as the throttle is pressed. When the grip on the handle is released the throttle trigger and the throttle trigger lock both return to their original positions. This is controlled by two independent return spring systems. This means that the throttle trigger is automatically locked in the idle position.

Checking the throttle lockout

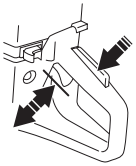
- Make sure that the throttle trigger is locked at idle setting when the throttle trigger lockout is released.



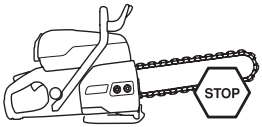
- Press the throttle lockout and make sure it returns to its original position when you release it.



- Check that the throttle trigger and throttle lockout move freely and that the return springs work properly.

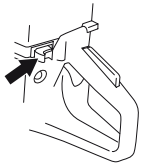


- Start the diamond chain saw and apply full throttle. Release the throttle control and check that the chain stops and remains stationary. If the chain rotates when the throttle control is in the "IDLE POSITION" you should check the carburettor's "IDLE ADJUSTMENT". See instructions in the section "Maintenance".



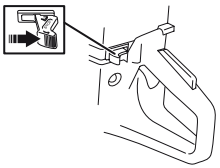
Stop switch

Use the stop switch to switch off the engine.



Checking the stop switch

- Start the engine and make sure the engine stops when you move the stop switch to the stop setting.

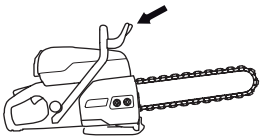


Hand guard

WARNING! Always check that the guard is correctly fitted before starting the machine.

The hand guard prevents hands from coming into contact with the moving cutting chain, for example, if the operator loses grip on the front handle.

- Check that the hand guard is not damaged. Replace the guard if damaged.

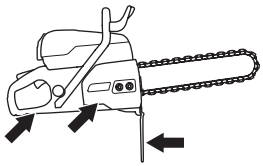


Clutch cover, spray guard and rear right hand guard

Clutch cover and spray guard provides protection against contact with moving parts, ejected debris, thrown water and concrete slurry. The spray guard and rear right hand guard are also design to catch the diamond chain if it snaps or jump of.

Checking the clutch cover and spray guard

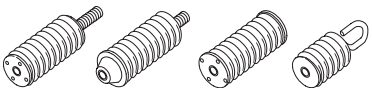
- Ensure there are no cracks or holes from slurry blasting in the clutch cover and spray guard. Replace cover or guard if damaged.



Vibration damping system

WARNING! Overexposure to vibration can lead to circulatory damage or nerve damage in people who have impaired circulation. Contact your doctor if you experience symptoms of overexposure to vibration. Such symptoms include numbness, loss of feeling, tingling, pricking, pain, loss of strength, changes in skin colour or condition. These symptoms normally appear in the fingers, hands or wrists. These symptoms may be increased in cold temperatures.

- Your machine is equipped with a vibration damping system that is designed to reduce vibration and make operation easier.
- The machine´s vibration damping system reduces the transfer of vibration between the engine unit/cutting equipment and the machine´s handle unit. The engine body, including the cutting equipment, is insulated from the handles by vibration damping units.



Checking the vibration damping system

WARNING! The engine should be switched off, and the stop switch in STOP position.

- Check the vibration damping units regularly for cracks or deformation. Replace them if damaged.
- Check that the vibration damping element is securely attached between the engine unit and handle unit.

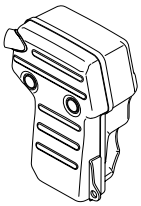
Muffler

WARNING! Never use a machine without a muffler, or with a faulty muffler. A damaged muffler may substantially increase the noise level and the fire hazard. Keep fire fighting equipment handy.

The muffler gets very hot during and after use as well as when idling. Be aware of the fire hazard, especially when working near flammable substances and/or vapors.

Keep fire fighting equipment handy.

The muffler is designed to keep noise levels to a minimum and to direct exhaust fumes away from the user.



Inspecting the muffler

- Check regularly that the muffler is complete and secured correctly.

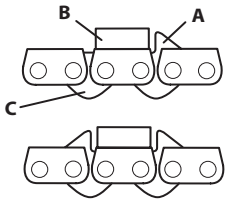
DIAMOND CHAINS

General

WARNING! Chain breakage can result in serious injury if the chain is thrown towards the operator.

Faulty cutting equipment or the wrong combination of bar and diamond chain increases the risk of kickback! Use only the bar and diamond chain combinations that Husqvarna recommend.

There are two basic types of diamond chain available on the market.



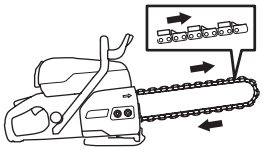
A) Drive link with raker

B) Cutting link with diamond segment

C) Drive link without raker

When using a chain with double rakers, the chain can be fitted either way round.

When using a chain with one raker, the chain should always be fitted the right way round. The raker should guide the segment at the right height in the cut.



Check the chain

- Check that the chain does not show signs of damage in the form of play on the links, broken raker or drive links or broken segments.
- If the chain has been exposed to hard jamming or other abnormal overloading, the chain should be dismantled from the bar for careful inspection.

Check the saw

The saw is equipped with a number of safety features that protect the operator in the event of chain breakage. These safety features must be checked before work starts. Never use the saw if any of the following parts are damaged or missing:

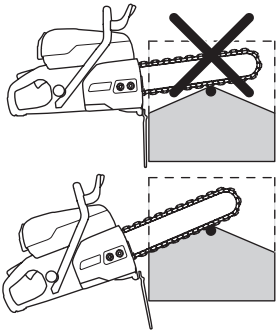
- Cover over drive gear
- Damaged or missing hand guard
- Damaged chain
- Damaged or missing spray guard.
- Damaged rear right hand guard

Material

WARNING! Under no circumstances may the diamond chain saw be converted to cut other materials than those it is intended for. It must never be equipped with a timber saw chain.

This machine is designed for and intended for sawing concrete, brick and different stone materials. All other use is improper.

The saw must never be used to cut pure metals. This will probably result in broken segments or chain breakage. The diamond segment can cut reinforced concrete. Try to cut the reinforcement together with as much concrete as possible, this will save the chain.



Glazing

After cutting extremely hard concrete or stone the diamond segment may lose some or all of its cutting capacity. This can also occur if you are forced to cut with a low partial pressure (the diamond chain runs against the workpiece along the entire length of the bar). The solution to the problem is to cut in a soft abrasive material such as sandstone or brick, for a short while.

Transport and storage

- After completed work, the diamond chain saw shall be run with water pressure for at least 15 sec. to clean bar, chain and drive mechanism of particles. Rinse the machine with water. If the machine is not to be used for a while, we recommend oiling the chain and bar to prevent corrosion.
- Inspect all cutting equipment for transport and storage damage.

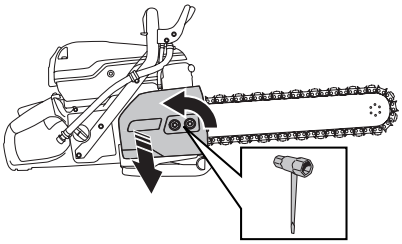
Fitting / changing the rim sprocket, guide bar and diamond chain

WARNING! Always wear gloves, when working with the chain.

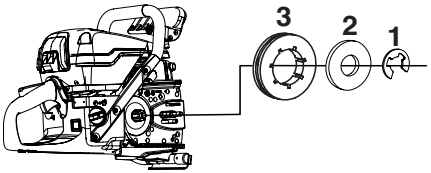
NOTICE! When fitting a new chain, the chain tension has to be checked frequently until the chain is run-in. Check the chain tension regularly. A correctly tensioned chain ensures good cutting performance and long life.

For more information about splineway and rim sprocket, see "Splineway combinations for different cutting equipments" in the "Technical data" section.

- Unscrew the bar nuts and remove the cover.



- Dismantle the retaining ring. (1)
- Remove the washer. (2)
- Change the rim sprocket. (3)



- Reassemble in reverse order.

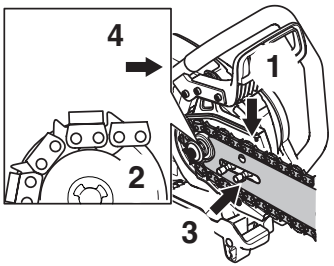
Guide bar and diamond chain

1 Place the diamond chain on the guide bar. Begin on the top side of the bar.

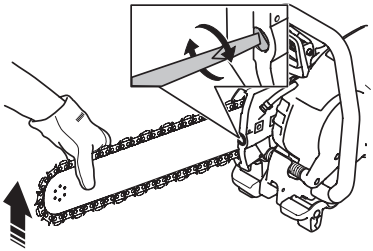
2 Place the chain over the rim sprocket.

3 Fit the guide bar and the diamond chain over the bar bolts and align the hole in the guide bar with the chain tensioner adjuster pin. Check that the drive links of the chain fit correctly over the rim sprocket and that the chain is correctly located in the groove in the bar.

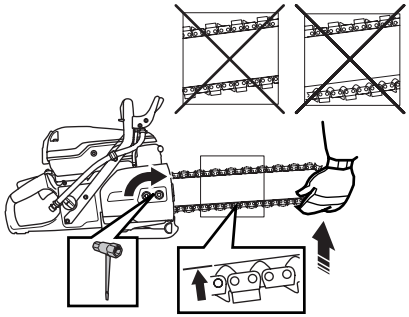
4 Make sure that the bumpers on the drive links are facing forward on the top edge of the bar. When using a chain with double bumpers, the chain can be fitted either way round.



- Fit the cover and tightening the bar nuts easily by hand. Tension the chain by turning the chain tensioning screw clockwise using the combination tool.



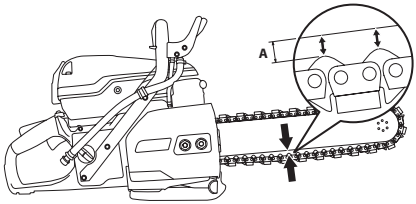
- For right tension of the diamond chain, see picture. Hold up the bar tip and tighten the bar nuts with the combination tool. Make sure the chain can be turned around the bar easily by hand.



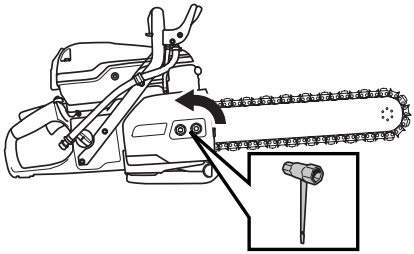
How to tension the chain

WARNING! A slack diamond chain may jump off and cause serious or even fatal injury.

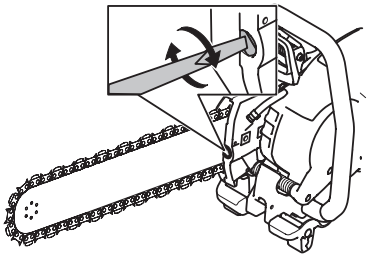
- If the play between drive link and bar is bigger than 1/2” (12 mm) (**A**), the chain is too loose and must be tightened.



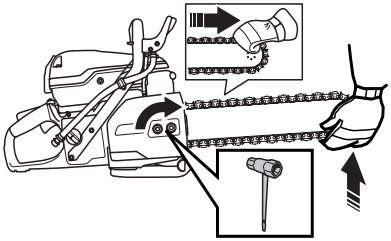
- Loosen the bar nuts that hold the cover. Use the combination tool. Then tighten the bar nuts by hand as tight as you can.



- Stretch the diamond chain by tightening the chain tensioning screw using the combination tool. Tighten the diamond chain until it does not sag from the underside of the bar.

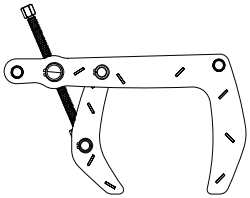


- Use the combination tool to tighten the bar nuts while lifting the tip of the bar at the same time. Check that you can pull the diamond chain round freely by hand and that it does not sag from the underside of the bar.



Pipe clamp (Accessory)

For use with Husqvarna K 970 Ring and Chain and K 6500 Ring and Chain. A convenient accessory for producing straight, precise cuts in concrete pipes.



FUEL HANDLING

General

WARNING! Running an engine in a confined or badly ventilated area can result in death due to asphyxiation or carbon monoxide poisoning. Use fans to ensure proper air circulation when working in trenches or ditches deeper than one meter (3 foot).

Fuel and fuel fumes are flammable and can cause serious injury when inhaled or allowed to come in contact with the skin. For this reason observe caution when handling fuel and make sure there is adequate ventilation.

The exhaust fumes from the engine are hot and may contain sparks which can start a fire. Never start the machine indoors or near combustible material!

Do not smoke and do not place any hot objects in the vicinity of fuel.

Fuel

NOTICE! The machine is equipped with a two-stroke engine and must always be run using a mixture of gasoline and two-stroke engine 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

- Use good quality unleaded gasoline.
- 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 at continuous high revs a higher octane rating is recommended.

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).

Ethanol blended fuel, E10 may be used (max 10% ethanol blend). Using ethanol blends higher than E10 will create lean running condition which can cause engine damage.

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.

Mixing

- 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.

Mixing ratio

- 1:50 (2%) with HUSQVARNA two-stroke oil or equivalent.
- 1:33 (3%) with oils class JASO FB or ISO EGB formulated for air-cooled, two-stroke engines or mix as per recommendation from the oil manufacturer.

Gasoline, litre	Two-stroke oil, litre
	2% (50:1)
5	0,10
10	0,20
15	0,6/0,30
20	0,40
US gallon	**US fl. oz.**
1	2 1/2
2 1/2	6 1/2
5	12 7/8

FUEL HANDLING

Fueling

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 refueling. The engine should be switched off, and the stop switch in STOP position.

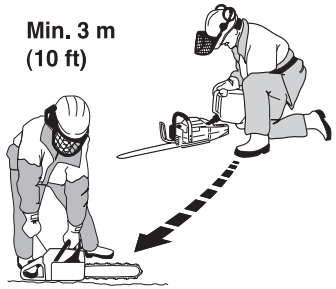
When refuelling, open the fuel cap slowly so that any excess pressure is released gently.

Clean the area around the fuel cap.

Tighten the fuel cap carefully after refueling.

If the cap is not properly tightened the cap might vibrate lose and fuel may escape from the fuel tank creating a fire hazard.

Move the machine at least 10 ft (3 m) from the refuelling point before starting it.



Never start the machine:

- If you have spilled fuel or engine 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.
- Unless the fuel cap is securely tightened after refueling.

Transport and storage

- Store and transport the machine and fuel so that there is no risk of any leakage or fumes coming into contact with sparks or open flames, for example, from electrical machinery, electric motors, electrical relays/ switches or boilers.
- When storing and transporting fuel always use approved containers intended for this purpose.

Long-term storage

- When storing the machine for long periods the fuel tank must be emptied. Contact your local gas station to find out where to dispose of excess fuel.

Protective equipment

General

- Do not use the machine unless you are able to call for help in the event of an accident.

Personal protective equipment

You must use approved personal protective equipment whenever you use the machine. Personal protective equipment cannot eliminate the risk of injury but it will reduce the degree of injury if an accident does happen. Ask your dealer for help in choosing the right equipment.

WARNING! The use of products such as cutters, grinders, drills, that sand or form material can generate dust and vapors which may contain hazardous chemicals. Check the nature of the material you intend to process and use an appropriate breathing mask.

Long-term exposure to noise can result in permanent hearing impairment. Always use approved hearing protection. Listen for warning signals or shouts when you are wearing hearing protection. Always remove your hearing protection as soon as the engine stops.

Always wear:

- Approved protective helmet
- Hearing protection
- Approved eye protection. If you use a face shield then you must also wear approved protective goggles. Approved protective goggles must comply with standard ANSI Z87.1 in the USA or EN 166 in EU countries. Visors must comply with standard EN 1731.
- Approved respiratory protection
- Heavy-duty, firm grip gloves.
- Tight-fitting, heavy-duty and comfortable clothing that permits full freedom of movement. Cutting generates sparks that can ignite clothing. Husqvarna recommends that you wear flame-retardant cotton or heavy denim. Do not wear clothing made of material such as nylon, polyester or rayon. If ignited such material can melt and cling to the skin. Do not wear shorts
- Boots with steel toe-caps and non-slip sole

Other protective equipment

CAUTION! Sparks may appear and start a fire when you work with the machine. Always keep fire fighting equipment handy.

- Fire Extinguisher
- Always have a first aid kit nearby.

General safety precautions

This section describes basic safety directions for using the machine. This information is never a substitute for professional skills and experience.

- Please read the operator's manual carefully and make sure you understand the instructions before using the machine. It is recommended that first time operators also obtain practical instruction before using the machine.
- Keep in mind that it is you, the operator that is responsible for not exposing people or their property to accidents or hazards.
- The machine must be kept clean. Signs and stickers must be fully legible.

Always use common sense

It is not possible to cover every conceivable situation you can face. Always exercise care and use your common sense. If you get into a situation where you feel unsafe, stop and seek expert advice. Contact your dealer, service agent or an experienced user. Do not attempt any task that you feel unsure of!

WARNING! The machine can be a dangerous tool if used incorrectly or carelessly, which can cause serious or fatal injury to the operator or others.

Never allow children or other persons not trained in the use of the machine to use or service it.

Never allow anyone else to use the machine without first ensuring that they have read and understood the contents of the operator's manual.

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.

WARNING! Unauthorized modifications and/or accessories may lead to serious injury or death to the user or others. Under no circumstances may the design of the machine be modified without the permission of the manufacturer.

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 safety 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.

Always use genuine accessories.

Your warranty may not cover damage or liability caused by the use of non-authorized accessories or replacement parts.

WARNING! This machine produces an electromagnetic field during operation. This field may under some circumstances interfere with active or passive medical implants. To reduce the risk of serious or fatal injury, we recommend persons with medical implants consult their physician and the medical implant manufacturer before operating this machine.

Work area safety

WARNING! The safety distance for the power cutter is 50 feet (15 metres). You are responsible to ensure that animals and onlookers are not within the working area. Do not start cutting until the working area is clear and you are standing firmly.

- Observe your surroundings to ensure that nothing can affect your control of the machine.
- Ensure that no one/nothing can come into contact with the cutting equipment or be hit by parts thrown by the diamond chain.
- Do not use the machine in bad weather, such as dense fog, heavy rain, strong wind, intense cold, etc. Working in bad weather is tiring and can lead to dangerous conditions, e.g. slippery surfaces.
- Never start to work with the machine before the working area is clear and you have a firm foothold. Look out for any obstacles with unexpected movement. Ensure when cutting that no material can become loose and fall, causing injury to the operator. Take great care when working on sloping ground.
- Ensure that the working area is sufficiently illuminated to create a safe working environment.
- Make sure that no pipes or electrical cables are routed in the working area or in the material to be cut.
- If cutting into a container (drum, pipe, or other container) you must first make sure it does not contain flammable or other volatile material.

Water cooling and dust management

Water cooling must always be used. Dry cutting causes immediate overheating and bar and chain failure with a risk of personal injury.

In addition to cooling the bar and chain, the flow of water pushes particles away from the bar and the drive links. As a result it is important with a high water pressure. For recommended water pressure and flow, see ”Technical data” section.

If water hoses loosen from their supply sources, this indicates that the machine is connected to a water pressure that is too high.

Wet cutting also provides adequate dust suppression.

Basic working techniques

WARNING! Do not lean the saw to the side, this can cause the chain to jam or break with personal injury as a consequence.

Under all circumstances avoid grinding using the side of the bar and chain; it will almost certainly be damaged, break and can cause immense damage. Only use the cutting section.

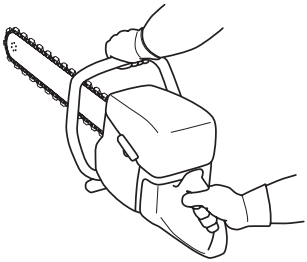
Before entering an existing slot made by another blade, check that the slot is not thinner than your blade as that may result in binding in the cutting slot and a kickback.

Never use diamond chains to cut plastic material. The heat produced during cutting may melt the plastic and it can stick to the chain and cause a kickback.

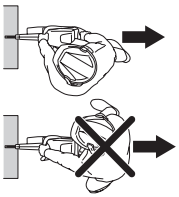
Cutting metal generates sparks that may cause fire. Do not use the machine near ignitable substances or gases.

- This machine is designed for and intended for sawing concrete, brick and different stone materials. All other use is improper.
- Check that the chain does not show signs of damage in the form of play on the links, broken raker or drive links or broken segments.

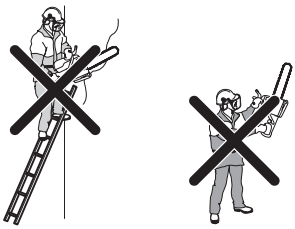
- Check that the chain is fitted correctly and does not show signs of damage. See the instructions in the sections "Diamond chains" and "Maintenance".
- Never cut asbestos materials!
- Hold the saw with both hands; keep a firm grip with thumbs and fingers encircling the handles. The right hand should be on the rear handle and the left hand on the front handle. All operators, weather right or left handed shall use this grip. Never operate a power cutter holding it with only one hand.



- Stand parallel to the cutting chain. Avoid standing straight behind. In the event of a kickback the saw will move in the plane of the bar with the chain.

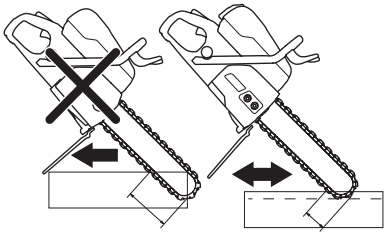


- Maintain a safe distance from the cutting chain when the engine is running.
- Never leave the machine unsupervised with the motor running.
- Never move the machine when the cutting equipment is rotating.
- Never use the kickback zone of the bar **for cutting**. See instructions under the heading "Kickback".
- Keep a good balance and a firm foothold.
- Never cut above shoulder height.
- Never cut from a ladder. Use a platform or scaffold if the cut is above shoulder height. Do not overreach



- Stand at a comfortable distance from the work piece.
- Check that the cutting equipment is not in contact with anything when the machine is started.
- Apply the chain gently with high rotating speed (full throttle) Maintain full speed until cutting is complete.
- Let the machine work without forcing or pressing the chain.
- Feed down the machine in line with the bar and cutting chain. Pressure from the side can damage the bar and the cutting chain and is very dangerous.

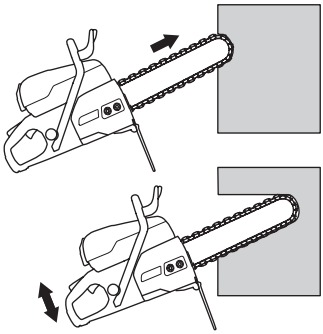
- Move the cutting chain slowly backwards and forwards to give a small contact surface between the cutting chain and material to be cut. This will mean the cutting chain temperature is kept down resulting in efficient cutting.



In principle there are two ways to start the process of entering a thick object to be cut.

Plunge-cut method

- Start by making a 10 centimetre deep cut in the wall using the lower part of the tip of the bar. Straighten up the saw at the same time as the tip of the bar is inserted in the slot. Raising and lowering the saw at the same time as it is pressed into the wall provides an effective method of cutting to the full depth.



Pilot method

WARNING! Never use a power cutter with a standard cutting blade for pilot cutting. The cutting blade produces a pilot slot that is too thin and continued cutting with the diamond chain saw results infallibly in dangerous kickback and jamming in the slot.

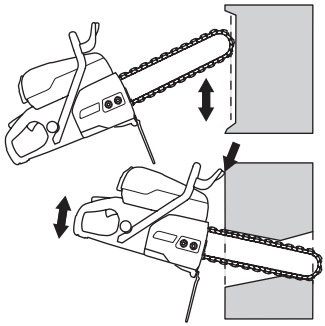
This method is recommended when attempting to cut absolutely straight and square.

For best cutting economy, pre-cut with a power cutter equipped with Husqvarna's special pre-cutting blade intended for further cutting with diamond chain saw.

- Start by securing a board where the cut is to be made. This serves as a guide for the cut. Cut to a depth of a few centimetres along the entire line, using the lower section of the tip of the bar. Go back and cut another few centimetres. Repeat until a depth of between 5–10 centimetres is reached, depending on precision demands and the thickness of the object. The pilot cut guides the bar straight during continued cutting, which takes place according to the plunge-cut method until full depth is reached, use the hand guard as a break point/stop.

Pendulum technique

- The cut is made using a pendulum motion and the saw is only held straight at the ends of the cut. Use the hand guard as a break point/stop.



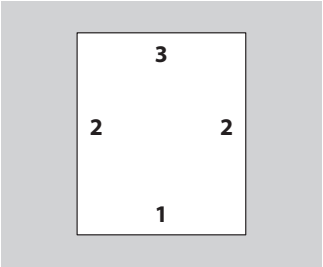
Cutting holes

NOTICE! If the upper horizontal cut is made before the lower horizontal cut, the work piece will fall on the diamond chain and guide bar and jam it.

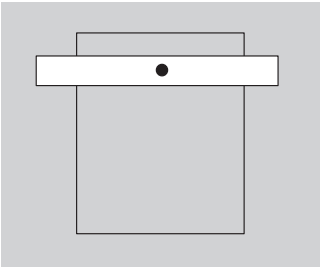
As it is usually a question of large and heavy pieces that are cut when using the diamond chain saw the forces are so great that jamming can result in irreparable damage to both the bar and chain.

Plan the work so that you do not get crushed by the bar when the pieces fall apart. Planning is also extremely important for your own safety!

- First make the lower horizontal cut. Now make the upper horizontal cut. Finish with the two vertical cuts.



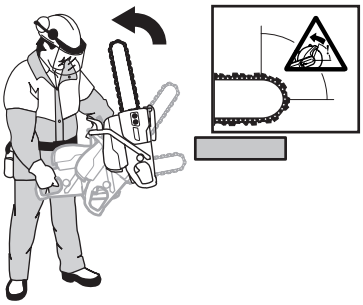
- When cutting out large holes it is important that the piece to be cut out is braced so that it cannot fall against the operator.



Kickback

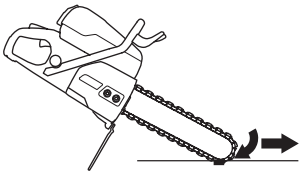
WARNING! Kickbacks are sudden and can be very violent. The power cutter can be thrown up and back towards the user in a rotating motion causing serious or even fatal injury. It is vital to understand what causes kickback and how to avoid it before using the machine.

Kickback is the sudden upward motion that can occur if the chain is pinched or stalled in the kickback zone. Most kickbacks are small and pose little danger. However a kickback can also be very violent and throw the power cutter up and back towards the user in a rotating motion causing serious or even fatal injury.



Reactive force

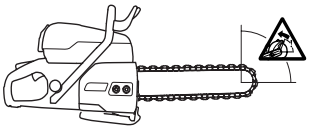
A reactive force is always present when cutting. The force pulls the machine in the opposite direction to the chain rotation. Most of the time this force is insignificant. If the chain is pinched or stalled the reactive force will be strong and you might not be able to control the power cutter.



Never move the machine when the cutting equipment is rotating. Gyroscopic forces can obstruct the intended movement.

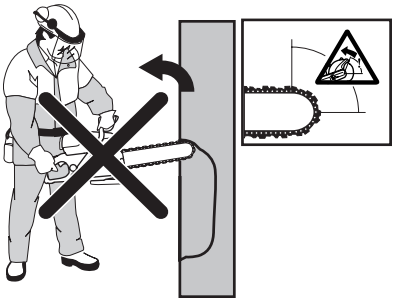
Kickback zone

Never use the kickback zone of the bar **for cutting**. If the chain is pinched or stalled in the kickback zone, the reactive force will push the power cutter up and back towards the user in a rotating motion causing serious or even fatal injury.



Climbing kickback

If the kickback zone is used for cutting the reactive force drives the bar with the chain to climb up in the cut. Do not use the kickback zone. Use the lower quadrant of the bar to avoid climbing kickback.



Pinching kickback

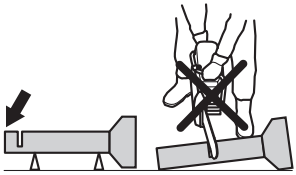
Pinching is when the cut closes and pinches the cutting equipment. If the chain is pinched or stalled the reactive force will be strong and you might not be able to control the power cutter.

If the chain is pinched or stalled in the kickback zone, the reactive force will push the power cutter up and back towards the user in a rotating motion causing serious or even fatal injury. Be alert for potential movement of the work piece. Be alert to movement of the work piece or anything else that can occur, which could cause the cut to close and pinch the cutting equipment.

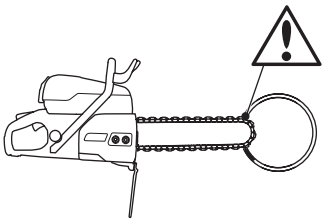
Pipe cutting

Special care should be taken when cutting in pipes. If the pipe is not properly supported and the cut kept open through out the cutting, the bar might be pinched in the kickback zone and cause a severe kickback. Be especially alert when cutting a pipe with a belled end or a pipe in a trench that, if not properly supported, may sag and pinch the diamond chain and guide bar.

Before starting the cut the pipe must be secure so it does not move or roll during cutting.



If the pipe is allowed to sag and close the cut, the bar will be pinched in the kick back zone and a severe kick back might develop. If the pipe is properly supported the end of the pipe will move downward, the cut will open and no pinching will occur.

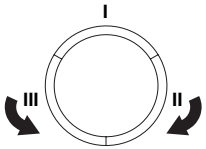


Proper sequence cutting a pipe

1 First cut section I.

2 Move to side II and cut from section I to bottom of the pipe.

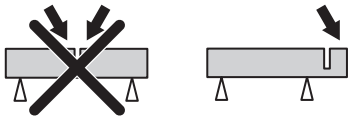
3 Move to side III and cut the remaining part of the pipe ending at the bottom.



How to aviod kickback

Avoiding kickback is simple.

- The work piece must always be supported so that the cut stays open when cutting through. When the cut opens there is no kickback. If the cut closes and pinches the cutting equipment there is always a risk of kickback.



- Take care when inserting the chain in an existing cut. Never cut in a narrower pre-cut cut.
- Be alert to movement of the work piece or anything else that can occur, which could cause the cut to close and pinch the cutting equipment.

Transport and storage

- Secure the equipment during transportation in order to avoid transport damage and accidents.
- For transport and storage of diamond chains, see the section "Diamond chains".
- For transport and storage of fuel, see the section "Fuel handling".
- Store the equipment in a lockable area so that it is out of reach of children and unauthorized persons.

Before starting

WARNING! Note the following before starting: Please read the operator's manual carefully and make sure you understand the instructions before using the machine.

Wear personal protective equipment. See under heading "Personal protective equipment".

Do not start the machine without the clutch cover fitted. Otherwise the clutch could come loose and cause personal injuries.

Check that the fuel cap is properly secured, and that there is no fuel leakage.

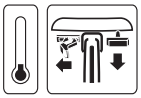
Make sure no unauthorised persons are in the working area, otherwise there is a risk of serious personal injury.

- Perform daily maintenance. See instructions in the section "Maintenance".

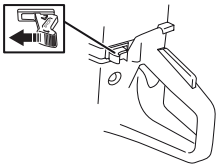
Starting

WARNING! The chain rotates when the engine starts. Make sure it can rotate freely.

With a cold engine:

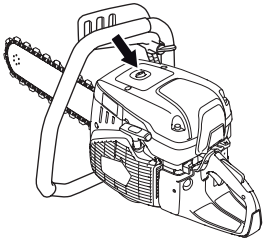


- Make sure that the stop switch (STOP) is in the left position.

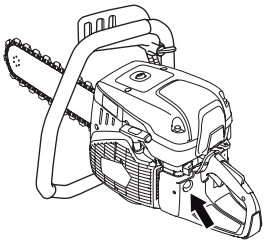


- Start throttle position and choke is obtained by pulling out the choke control completely.

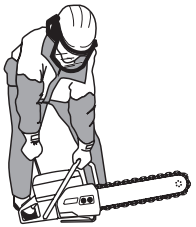
- **Decompression valve:** Press in the valve to reduce the pressure in the cylinder, this is to assist starting the power cutter. The decompression valve should always be used when starting. The valve automatically returns to its initial position when the machine starts.



- Press the air purge diaphragm repeatedly until fuel begins to fill the diaphragm (about 6 times). The diaphragm need not be completely filled.



- Grip the front handle with your left hand. Put your right foot on the lower section of the rear handle pressing the machine against the ground. Pull the starter handle with your right hand until the engine starts. **Never wrap the starter cord around your hand**



- Push in the choke control as soon as the engine starts, with the choke pulled out the engine will stop

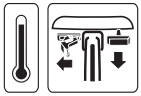
after a few seconds. (If the engine stops anyway, pull the starter handle again.)

- Press the throttle trigger to disengage the start throttle and the machine will idle.

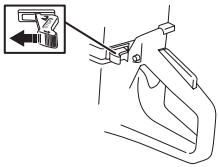
NOTICE! Pull with your right hand out the starter cord slowly until you feel a resistance (as the starter pawls engage) and then pull firmly and rapidly.

Do not pull the starter cord all the way out and do not let go of the starter handle when the cord is fully extended. This can damage the machine.

With a warm engine:



- Make sure that the stop switch (STOP) is in the left position.

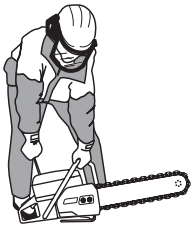


- Set the choke control in the choke position. The choke position is also the automatic start throttle position.

- **Decompression valve:** Press in the valve to reduce the pressure in the cylinder, this is to assist starting the power cutter. The decompression valve should always be used when starting. The valve automatically returns to its initial position when the machine starts.

- Push the choke control to disable the choke (the start throttle position remains).

- Grip the front handle with your left hand. Put your right foot on the lower section of the rear handle pressing the machine against the ground. Pull the starter handle with your right hand until the engine starts. **Never wrap the starter cord around your hand**



- Press the throttle trigger to disengage the start throttle and the machine will idle.

NOTICE! Pull with your right hand out the starter cord slowly until you feel a resistance (as the starter pawls engage) and then pull firmly and rapidly.

Do not pull the starter cord all the way out and do not let go of the starter handle when the cord is fully extended. This can damage the machine.

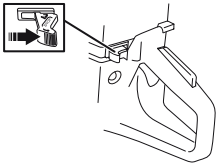
WARNING! When the engine is running the exhaust contains chemicals such as unburned hydrocarbons and carbon monoxide. The content of the exhaust fumes is known to cause respiratory problems, cancer birth defects or other reproductive harm.

Carbon monoxide is colorless and tasteless and is always present in exhaust fumes. The onset of carbon monoxide poisoning is distinguished by a slight dizziness which may or may not be recognized by the victim. A person may collapse and lapse into unconsciousness with no warning if the concentration of carbon monoxide is sufficiently high. Since carbon monoxide is colorless and odorless, its presence can not be detected. Any time exhaust odors are noticed, carbon monoxide is present. Never use a gasoline powered power cutter indoors or in trenches more than 3 feet (1 meter) deep or in other areas with poor ventilation. Ensure proper ventilation when working in trenches or other confined areas.

Stopping

CAUTION! The chain continues to rotate up to a minute after the motor has stopped. (Chain coasting.) Make sure that the chain can rotate freely until it is completely stopped. Carelessness can result in serious personal injury.

- Stop the engine by moving the stop switch (STOP) to the right.



MAINTENANCE

General

WARNING! The user must only carry out the maintenance and service work described in this manual. More extensive work must be carried out by an authorized service workshop.

The engine should be switched off, and the stop switch in STOP position.

Wear personal protective equipment. See under heading ”Personal protective equipment”.

The life span of the machine can be reduced and the risk of accidents can increase if machine maintenance is not carried out correctly and if service and/or repairs are not carried out professionally. If you need further information please contact your nearest servicing dealer.

- Let your Husqvarna dealer regularly check the machine and make essential adjustments and repairs.

Maintenance schedule

In the maintenance schedule you can see which parts of your machine that require maintenance, and with which intervals it should take place. The intervals are calculated based on daily use of the machine, and may differ depending on the rate of usage.

Daily Maintenance	**Weekly maintenance**	**Monthly maintenance**
Cleaning	**Cleaning**	**Cleaning**
External cleaning		Spark plug
Cooling air intake		Fuel tank
Functional inspection	**Functional inspection**	**Functional inspection**
General inspection	Vibration damping system*	Fuel system
Throttle lockout*	Muffler*	Air filter
Stop switch*	Drive belt	Drive gear, clutch
Hand guard, rear right hand guard, clutch cover and spray guard*	Carburetor	
Bar and diamond chain**	Starter housing	
Water delivery system		
Check for fuel leaks		

*See instructions in the section "Machine’s safety equipment".

** See instructions in the section "Diamond chains", "Assembling and adjustments" and ”Maintenance”.

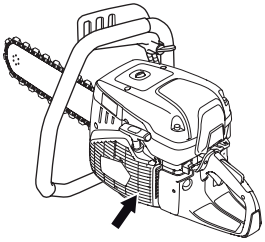
Cleaning

External cleaning

- Clean the machine daily by rinsing it with clean water after the work is finished.

Cooling air intake

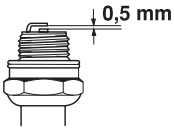
- Clean the cooling air intake when needed.



NOTICE! A dirty or blocked air intake results in the machine overheating which causes damage to the piston and cylinder.

Spark plug

- If the machine is low on power, difficult to start or runs poorly at idle speed: always check the spark plug first before taking other steps.
- Ensure that the spark plug cap and ignition lead are undamaged to avoid the risk of electric shock.
- If the spark plug is dirty, clean it and at the same time check that the electrode gap is 0.5 mm. Replace if necessary.



NOTICE! Always use the recommended spark plug type! Use of the wrong spark plug can damage the piston/cylinder.

These factors cause deposits on the spark plug electrodes, which may result in operating problems and starting difficulties.

- An incorrect fuel mixture (too much or incorrect type of oil).
- A dirty air filter.

Functional inspection

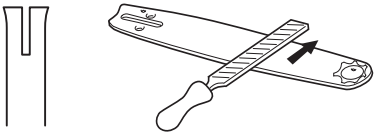
General inspection

- Check that nuts and screws are tight.

Bar

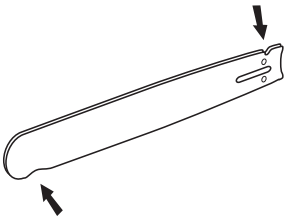
Check regularly:

- Whether there are burrs on the edges of the bar. Remove these with a file if necessary.



- 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.



- To prolong the life of the bar you should turn it over when changing the diamond chain.

Carburetor

The carburettor is equipped with fixed needles to ensure the machine always receives the correct mixture of fuel and air. When the engine lacks power or accelerates poorly, do the following:

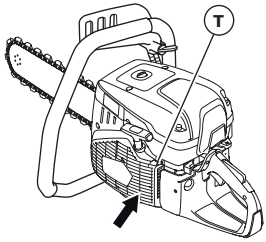
- Check the air filter and replace if necessary. When this does not help, contact an authorised service workshop.

Adjusting the idle speed

CAUTION! Contact your dealer/service workshop, if the idle setting cannot be adjusted so that the diamond chain is stationary. Do not use the machine until it has been properly adjusted or repaired.

Start the engine and check the idling setting. When the carburetor is set correctly the diamond chain should be still while engine is idling.

- Adjust the idle speed using the T screw. Turn the idle speed screw clockwise until the chain starts to rotate. Now turn the screw anti-clockwise until the chain stops rotating.



Rec. idle speed: 2700 rpm

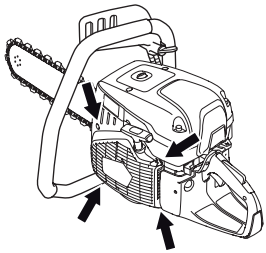
Starter housing

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.

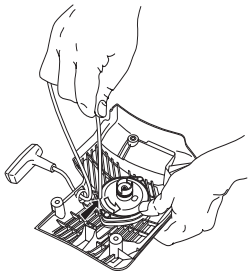
Always be careful when changing the recoil spring or the starter cord. Always wear protective goggles.

Changing a broken or worn starter cord

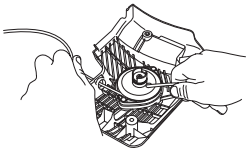
- Loosen the screws that hold the starter against the crankcase and remove the starter.



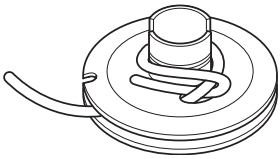
- Pull the cord out about 30 cm and lift it into the cut-out in the periphery of the starter pulley. When the cord is intact: Release the spring tension by letting the pulley rotate slowly backwards.



- Remove any remnants of the old starter cord and check that the return spring works. Insert the new starter cord through the hole in the starter housing and in the cord pulley.

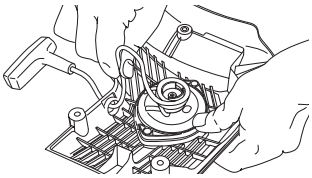


- Secure the starter cord around the cord pulley as illustrated. Tighten the fastening well and ensure that the free end is as short as possible. Secure the end of the starter cord in the starter handle.



Tensioning the recoil spring

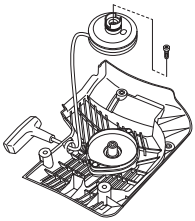
- Guide the cord through the cut-out in the periphery of the pulley and wind the cord 3 times clockwise around the centre of the starter pulley.



- Now pull the starter handle and in doing so tension the spring. Repeat the procedure once more, but this time with four turns.
- Note that the starter handle is drawn to its correct home position after tensioning the spring.
- Check that the spring is not drawn to its end position by pulling out the starter line fully. Slow the starter pulley with your thumb and check that you can turn the pulley at least a further half turn.

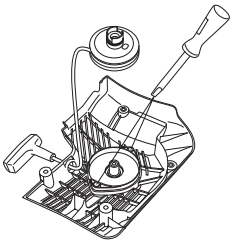
Changing a broken recoil spring

- Undo the bolt in the centre of the pulley and remove the pulley.

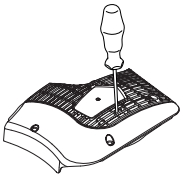


- Bear in mind that the return spring lies tensioned in the starter housing.

- Loosen the bolts holding the spring cassette.



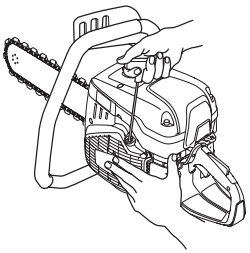
- Remove the recoil spring by turning the starter over and loosen the hooks, with the help of a screwdriver. The hooks hold the return spring assembly on the starter.



- Lubricate the recoil spring with light oil. Fit the pulley and tension the recoil spring.

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.



- Tighten the screws.

Fuel system

General

- Check that the fuel cap and its seal are not damaged.
- Check the fuel hose. Replace when damaged.

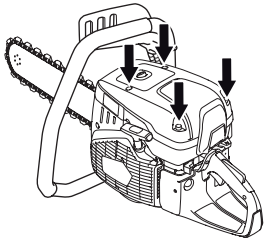
Fuel filter

- The fuel filter sits inside the fuel tank.
- The fuel tank must be protected from contamination when filling. This reduces the risk of operating disturbances caused by blockage of the fuel filter located inside the tank.
- The filter cannot be cleaned but must be replaced with a new filter when it is clogged. **The filter should be changed at least once per year.**

Air filter

The air filter only needs to be checked if the engine drops in power.

- Loosen the screws. Remove the air filter cover.



- Check the air filter and replace if necessary.

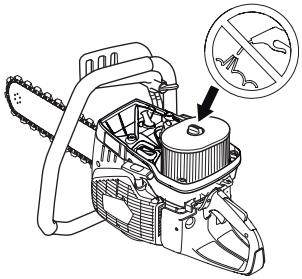
Replacing the air filter

CAUTION! Unhealthy dust can be spread during filter change. Wear approved respiratory protection. Dispose of filters correctly.

NOTICE!

The air filter must not be cleaned or blown clean with compressed air. This will damage the filter.

- Remove the screw.



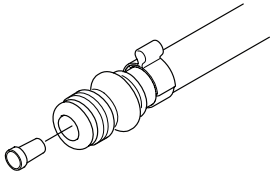
- Replace the air filter.

Drive gear, clutch

- Check the clutch centre, drive gear and clutch spring for wear.

Water delivery system

Check the nozzles in the guide bar and the filter in the water connection for clogging and clean as necessary.



Disposal, scrapping

This product should be submitted to an appropriate recycling station in accordance with local requirements.

By ensuring that this product is taken care of correctly, you can help to counteract the potential negative impact on the environment and people that can otherwise result through the incorrect waste management of this product.

For more detailed information about recycling this product, contact your municipality, your domestic waste service or the shop from where you purchased the product.

TROUBLESHOOTING

Troubleshooting schedule

WARNING! If service operations or troubleshooting does not require the machine to be on, the engine should be switched off, and the stop switch in STOP position.

Problem	Probable cause	Potential Solution
The machine does not start	Incorrect starting procedure.	See instructions under the heading Starting and stopping.
	Stop switch in the right (STOP) position	Make sure that the stop switch (STOP) is in the left position.
	There is no fuel in the fuel tank	Refill with fuel
	Spark plug defective	Replace the spark plug.
	Defective clutch	Contact your servicing dealer.
The chain rotates at idle	Idle speed too high	Adjust the idle speed
	Defective clutch	Contact your servicing dealer.
The chain does not rotate while throttling up	Chain tension too tight. Diamond chain should always be able to be pulled around the guidebar by hand. It is normal for the diamond chain links to hang below the guidebar.	Adjust the chain tension, see instructions in the section ”Assembling and adjustments”.
	Defective clutch	Contact your servicing dealer.
	Diamond chain fitted incorrectly	Make sure the diamond chain is properly installed.
The machine has no power while attempting to throttle up	Clogged air filter	Check the air filter and replace if necessary.
	Clogged fuel filter	Replace the fuel filter.
	Fuel tank vent blocked	Contact your servicing dealer.
Vibration levels are too high	Diamond chain fitted incorrectly	Check that the diamond chain is fitted correctly and does not show signs of damage. See the instructions in the sections "Diamond chains" and "Assembly and settings".
	Diamond chain defective	Change the diamond chain and make sure it is intact.
	Vibration damping elements defective	Contact your servicing dealer.
Temperature of the machine is too high	Air intake or cooling flanges blocked	Clean the machine’s air intake/cooling flanges
	Clutch slipping / is defective	Always cut at full throttle.
		Check clutch / contact your service agent
Poor cutting speed	Diamonds may be glazed or too low feed pressure.	Cut in a soft abrasive material such as sandstone or brick, for a short while.
Premature chain stretch.	Not enough water pressure. Insufficient water supply may result in excessive wear to the diamond chain, which can lead to loss of strenght and diamond chain breakage.	Increase the water pressure.
Diamond chain snaps or jumps of	Improper chain tension	Adjust the chain tension, see instructions in the section ”Assembling and adjustments”.
	Inserting saw into slot narrower than diamond chain segments.	See instructions in the section "Operation".
	Not enough feed pressure while cutting.	Avoid letting the saw bounce and chatter.

Technical data

	K 970 III Chain
Cylinder displacement, cu.in/cm^3	5.7 / 93.6
Cylinder bore, inch/mm	2.2 / 56
Stroke, inch/mm	1.5 / 38
Idle speed, rpm	2700
Wide open throttle - no load, rpm	9300 (+/- 150)
Power, hp/kW @ rpm	6.5 / 4.8 @ 9000
Spark plug	NGK BPMR 7A
Electrode gap, inch/mm	0.02 / 0.5
Fuel tank capacity, US fl.Oz/litre	33.8 / 1
Recommended water pressure, PSI/bar	22-150 / 1.5-10
Recommended water flow, gal/min / litres/min	2/8
Weight without fuel and cutting attachment, lb/kg	21.2 / 9.6

NOTE! This spark ignition system complies with the Canadian ICES-002 standard.

Recommended guide bar and diamond chain combinations

Guide bar and diamond chain	Number of diamond chain segments:	Diamond chain segment width, inch/mm:	Diamond chain pitch, inch/mm:	Max cutting depth, inch/mm	Chain speed at max. engine power speed, ft/s / m/s
12” (300 mm)	25	0.22 / 5.7	7/16 / 11.278	14 / 350	95 / 29
14” (350 mm)	32	0.22 / 5.7	3/8 / 9.525	16 / 400	85 / 26
16” (400 mm)	29	0.22 / 5.7	7/16 / 11.278	18 / 450	95 / 29