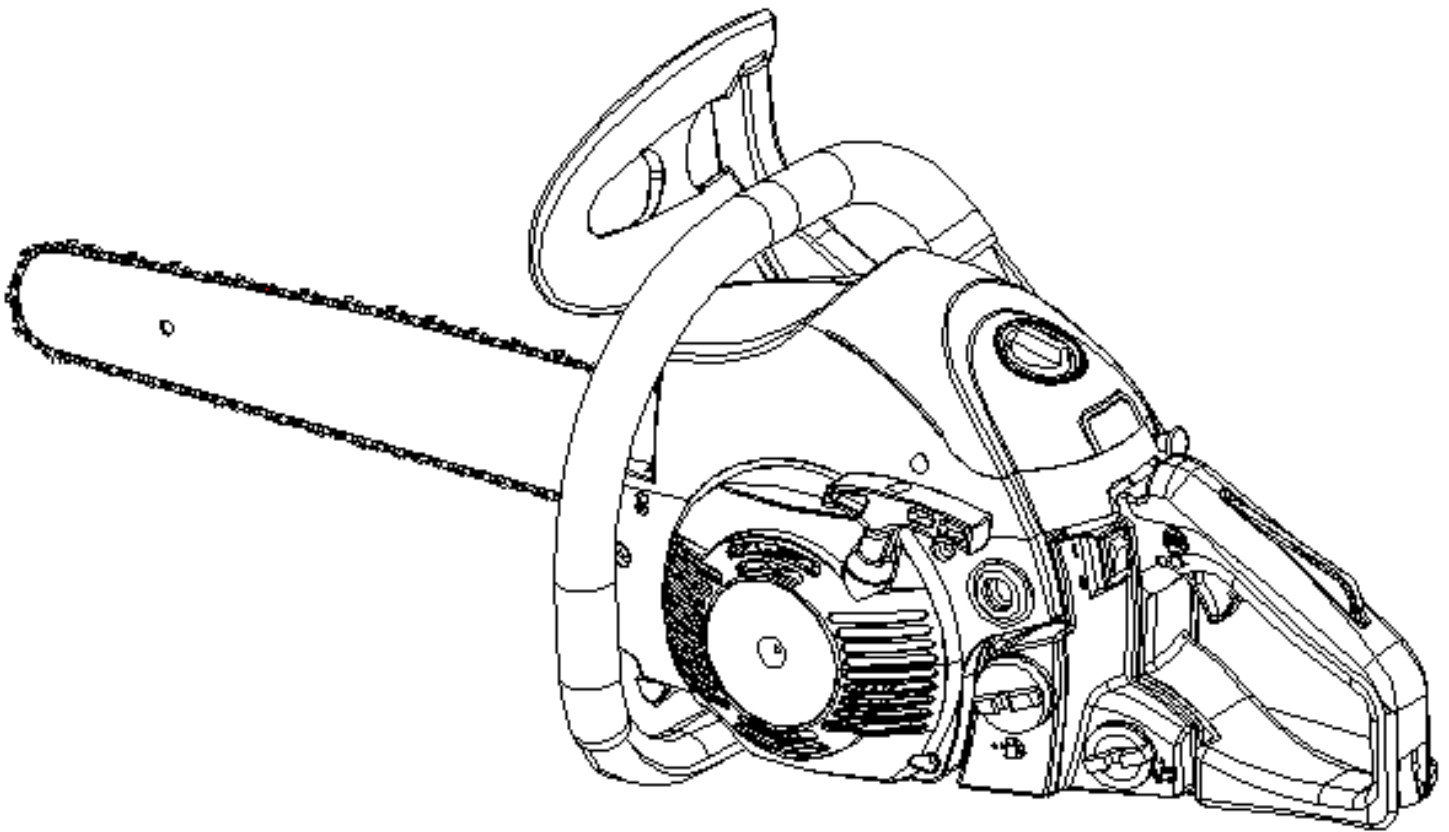


OPERATOR'S MANUAL



ST-CS4500 18" PETROL CHAINSAW



IMPORTANT! IT IS ESSENTIAL THAT YOU READ THE INSTRUCTIONS IN THIS MANUAL BEFORE ASSEMBLING, OPERATING AND MAINTAINING THIS MACHINE.



READ THIS MANUAL CAREFULLY BEFORE OPERATING THE MACHINE



WARNING:

THIS SYMBOL INDICATES IMPORTANT SAFETY PRECAUTIONS

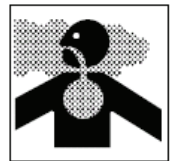
Safety Precautions

INTRODUCTION

- Read this Owner/Operator Manual carefully. Be sure you understand how to operate this chainsaw properly before you use it. Failure to do so could result in serious injury.
- Keep this manual handy so that you may refer to it later whenever any questions arise. Also note that you are able to contact the dealer from whom you purchased the product for assistance.
- Always include this manual when selling, lending, or otherwise transferring the ownership of this product.
- This product has been designed to be used as a chain saw and it should never be used for any other purpose, doing so could result in unforeseen accidents and injuries occurring.
- This chainsaw is equipped with extremely sharp saw chain, and when used incorrectly the saw chain can be dangerous.
- When using this chainsaw for the first time, take the chain saw to a wide, clear, open space, start the engine, and practice handling the chain saw until you are sure that you will be able to handle it properly in actual operation.
- You should never use this chainsaw when under the influence of alcohol, suffering from exhaustion or lack of sleep, suffering from drowsiness as a result of having taken medicine, or at any other time when your judgment might be impaired or that you might not be able to operate the chain saw properly and in a safe manner.
- Never allow children or anyone unable to fully understand the directions given in this manual to use this chain saw.
- When planning your work schedule, allow plenty of time to perform the work and allow plenty of time for rest. Limit the amount of time you continuously use the chain saw to 30~40 minutes per session, and take 10~20 minutes of rest between work sessions. Also try to keep the total amount of work performed in a single day to 2 hours.
- Do not climb the tree and operate the chain saw unless you are specially trained to do so.
- Avoid running the engine indoors. The exhaust gases contain harmful carbon monoxide.



- Clean and maintain the product as described in these instructions before storage. Always use guards on saws when storing
- Inspect the product before each use, after dropping the products or exposing to other impacts to identify significant defects.
- Take a break if you have used the chainsaw for a prolonged period of time. Long-term exposure to vibration can result in white-finger disease, a loss of sensation in the hands and the inability to feel and regulate temperature



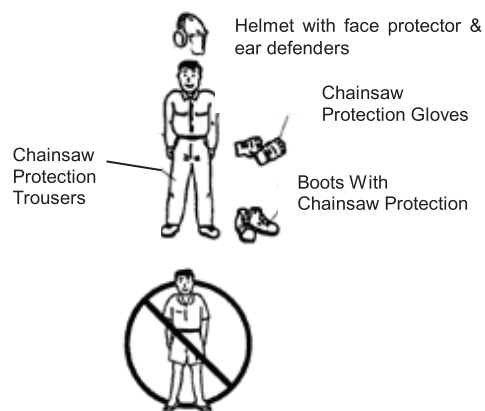
■ Never use the chain saw in conditions as described below:

- When the ground is slippery or when other conditions exist which might make it difficult to maintain a steady posture while using the chain saw.
- At night, at times of heavy fog, or at any other times when your field of vision is limited and it would be difficult to gain a clear view of the area where the chain saw is to be used.
- In heavy rain, during lightning storms, at times of strong or gale-force winds, or at any other times when weather conditions might make it unsafe to use this product.
- Lack of sleep, tiredness, or physical exhaustion results in lower attention spans, and this in turn can lead to accidents and injury.

■ WORK CLOTHING AND SAFETY EQUIPMENT

When using the chain saw, we recommend using clothing with chainsaw protection:

- Helmet, face protector visor and ear defenders
- Gloves with chainsaw protection.
- Trousers with chainsaw protection.
- Boots with chainsaw protection, steel toe caps and non slip sole.



■ SAFETY AND OPERATION



- This chain saw is equipped with a very sharp saw chain, and when used incorrectly the saw chain can be extremely dangerous.
- Improper handling can cause accidents which may in turn lead to serious injury or death. For this reason, you should always be careful to adhere to the following instructions when using your chain saw.
- Never hold the chain saw in a way in which the saw chain is pointed towards someone else.
- Never allow the saw chain to come into contact with your body while the engine is in operation.
- Always turn off the engine before adjusting the chainsaw, removing branches which have become stuck in the saw chain, or at any other time when coming into close proximity with the saw chain.
- Always wear chainsaw safety gloves when adjusting the chainsaw.
- Always place the guide bar cover provided over the saw chain when not in use.
- Falling branches may fall onto the operators body or head, resulting in injuries, scratches, and cuts, and for this reason you should always wear a chainsaw helmet and chainsaw safety clothing when operating the chain saw.

■ SAFE HANDLING OF FUEL

- The engine of the chain saw is designed to run on a two stroke fuel/oil mixture. This fuel is highly flammable, never store cans of fuel or refill the fuel tank in any place where there is a source of heat or fire which might ignite the fuel.
- Do not smoke whilst operating the chain saw or refilling, keep lit cigarettes away from the chain saw at all times.
- When refilling the fuel tank always stop the engine first and carefully make sure that there are no sparks or open flames anywhere nearby before refuelling.
- If any fuel spillage occurs during refuelling, use a dry rag to wipe any fuel which has been spilled onto the chain saw before starting the engine.
- After refuelling, screw the fuel cap back tightly onto the fuel tank and carry the chain saw to a spot 5 metres or more away from where it was refuelled before starting the engine.



■ BEFORE OPERATING THE CHAIN SAW

- Before beginning work, carefully check the work area and remove any obstacles and clear a retreat path from falling trees.
- Within a perimeter of 15 metres of the work area should be considered a hazardous area into which no one should enter while the chain saw is being used, and when necessary this area should be marked with a warning rope, warning signs, or other forms of warning. When work is to be performed simultaneously by two or more operators, care should also be taken to constantly look around to check the presence and locations of other operators within the work area to maintain a safe distance between each operator.
- Before beginning work, each component of the chain saw should be checked to make sure that it is in proper working order, make sure that there are no loose screws or bolts, fuel leaks, ruptures, dents, or any other problems which might interfere with safe operation. Be especially careful to check that there is no damage to the saw chain or chain brake.
- Never use the chain saw when the saw chain, guide bar or sprocket are excessively worn, or blunt, or when any sort of damage has occurred.
- Keep all parts of your body away from the chainsaw chain when the engine is running.

■ BEFORE STARTING THE ENGINE

- Carefully check the work area to make sure that no obstacles exist within a perimeter of 15 metres around the chain saw before starting the engine.
- To start the engine, place the chainsaw onto the ground in a flat clear area and hold it firmly in place to ensure that neither the saw chain or the throttle come into contact with any obstacles when the engine starts.
- After starting the engine, make sure that the saw chain stops moving when the throttle trigger is released (idle). If the saw chain continues to move when the engine is at idle, adjust the idle screw on the carburettor to a point where the saw chain stops moving, if this cannot be achieved, take the chain saw to your authorised servicing dealer for adjustment.

■ AVOID NOISE PROBLEMS

- Check and follow the local regulations for sound level and hours of operations for garden machinery.
- In general, operate chain saws between 8 am, and 5 pm on week days and 9 am to 5 pm. weekends.
- Avoid using the chain saw late at night and/or early in the morning.

■ SAFETY WHEN USING THE CHAIN SAW

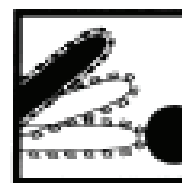
- When using the chain saw, grip the handles firmly with both hands, place your feet slightly apart so your weight is distributed evenly across both legs, and always maintain a steady even posture while working.
- Maintain full engine speed when cutting.
- Never allow other persons to come within the work area as doing so might expose them to danger.
- Keep work area clear of all persons, particularly small children and pets. Injury may result from flying debris.
- If a branch or other object gets caught in the saw chain during operation, always stop the engine before removing the object.
- To protect yourself against injury from falling branches, wear the required safety equipment.
- Never touch the spark plug or plug HT cable while the engine is in operation, doing so may result in an electrical shock.
- Never touch the exhaust, spark plug, or other parts of the engine while the engine is in operation or immediately after shutting down the engine. These parts reach high temperatures during operation and doing so could result in serious burns.
- When you finish cutting in one location and wish to continue work in another area, stop the engine, place the protective cover over the guide bar, and turn the chain saw so that the saw chain faces away from your body before carrying it to the new location.
- Always remove fuel from the fuel tank before transportation to prevent fuel spillage.
- Never leave the chain saw exposed to direct sunlight as this can heat the fuel tank and may cause a discharge of fuel, and flood the engine.



■ KICKBACK AND PINCHING SAFETY PRECAUTIONS

■ BEWARE OF KICKBACK

Kickback can occur whenever the tip of the guide bar touches an object when the chain saw is operating. Kickback may force the guide bar up and back towards the operator at speed.

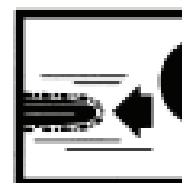


■ BEWARE OF PINCHING

Pinching the saw chain along the tip of the guide bar may force the guide bar back rapidly toward the operator. Pinching can occur whenever wood closes around the moving saw chain.

Both kickback and pinching may cause the operator to lose control of the chain saw, which could result in serious personal injury.

- Understand kickback and pinching.
- Keep a firm grip on the chain saw with both hands whenever the engine is running.
- A firm grip will help you reduce the affects of kickback and pinching as well as maintaining safe control of the chain saw.
- Cut at full engine speeds.
- Follow the manufacturer's instructions for sharpening and maintaining the chain.
- Use only genuine spare parts.



■ SAFETY SYMBOLS

1. Warning, Danger, Caution



2. Read the documentation and safety instructions which are provided in this user manual.



3. When operating the chainsaw, use protective equipment, helmet, visor, ear defenders, and chainsaw safety clothing.



4. Use the chain saw with two hands.



5. Keep hands and feet away from moving parts. Always keep a safe distance from the saw chain.



6. Beware of objects being thrown from the operating zone.



7. Warning! Danger of kickback



8. Directive 2000-14/CE. Guaranteed noise levels.



9. Danger: risk of exhaust fumes intoxication.



10. Danger: risk of fire or explosion.



11. Hot surface, risk of burn.



■ Taking care of warning labels

Always keep warning labels clean and free of scratches, which might make them illegible or difficult to read. If the warning labels provided with your chain saw become damaged, peel off, or otherwise become illegible or difficult to read, order new labels from the authorised servicing dealer and replace the damaged labels. When applying new labels, first wipe away any dirt and dry the surface before applying the new label in the same place as the original label.

■ EXPLANATION OF SYMBOLS ON THE MACHINE

For safe operation and maintenance, symbols are carved in relief on the machine:



FUEL TANK

Fuel tank 2 stroke mix
Position: Fuel cap



CHAIN OIL

Chain oil tank
Position: oil cap



IGNITION SWITCH

Setting the switch to the "O" position, the engine stops immediately.
Position: Left of the rear handle.



CHOKE OPERATION

Starting mode when the engine is hot. (choke off)
Position: Air cleaner cover.



Starting mode when the engine is cold. (choke on)
Position: Air cleaner cover.

H

CARBURETOR ADJUSTMENTS

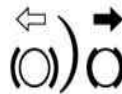
The screw under the "H" stamp is High-speed adjustment screw.
Position: Left side of top cover

L

The screw under the "L" stamp is Slow-speed adjustment screw.
Position: Left side of top cover

T

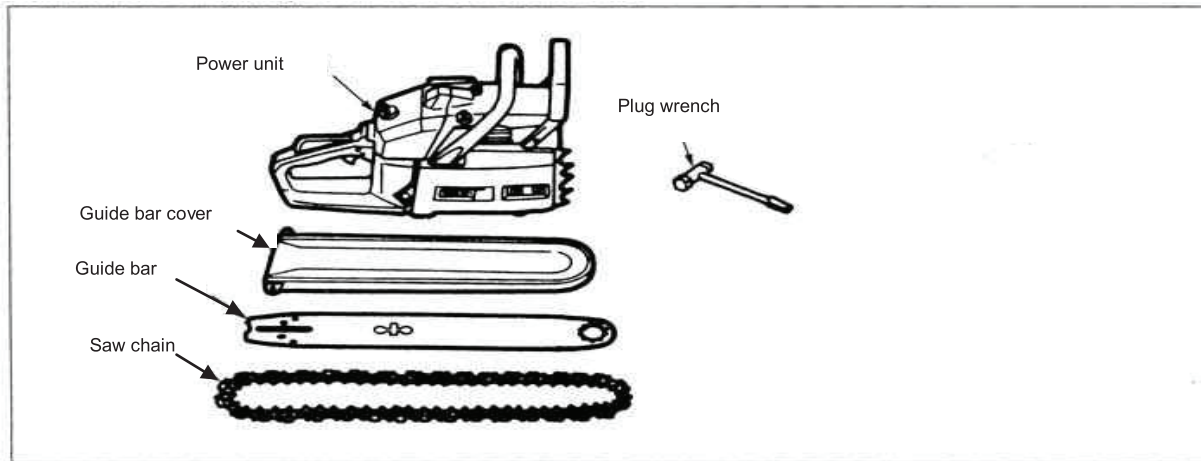
The screw the "T" stamp is Idle adjustment screw.
Position: Left side of top cover



CHAIN BRAKE OPERATION

Shows the directions that the chain brake is Released (white arrow) and Activated (black arrow).
Position: Front of chain brake cover

■ INSTALLING THE GUIDE BAR AND CHAIN



■ The chainsaw package contains the items as illustrated.

1. Power unit
2. Guide bar cover
3. Guide bar
4. Saw chain
5. Plug wrench
6. Owner's manual.

Open the box and install the guide bar and saw chain on the power unit as follows:

The saw chain is very sharp. Use chainsaw protective gloves for safety.

1. Pull the chain brake lever towards the front handle to check that the chain brake is off.
2. Loosen the nuts and remove the chain cover.
3. Fit the spiked bumper in correct direction.
4. Fit the guide bar over the bar bolts.
5. Fit the saw chain to the drive sprocket and while fitting the saw chain around the guide bar, adjust the position of the chain tensioner located in the side cover to fit into the tension adjustment hole in the guide bar.
6. Fit the chain cover to the power unit and fasten the nuts finger tight.
7. While holding up the tip of the guide bar, adjust the chain tension by turning the tensioner screw until the chain does not sag from the underside of the guide bar.
8. Tighten the bar nuts securely to 12/15N.M with the bar held upwards, then check the chain for smooth rotation and proper tension by rotating the chain by hand in a clockwise direction when viewed from the chain cover side.

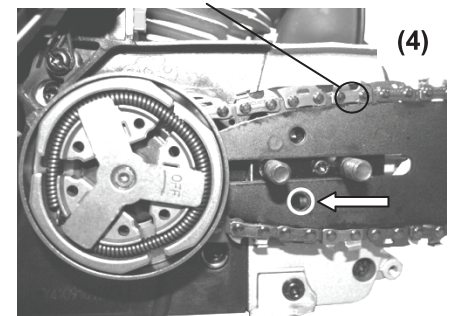
A new chain will expand in length at the beginning of use. Check and readjust the tension frequently, as a loose saw chain can easily derail or cause rapid wear to itself and the guide bar and sprocket.

It is important to maintain the proper chain tension. Rapid wear of the guide bar or the saw chain becoming derailed can be caused by improper tension, especially when using a new saw chain.

(3)



(4)



(6)



■ TWO-STROKE FUEL

WARNING

- Fuel is very flammable. Do not smoke or bring any flame or sparks near fuel. Always stop the engine and allow it cool before refuelling. Refuel outdoors on bare ground, restart engine at least 5m away from the refuelling stop.



The engine is lubricated by oil mixed into petrol. Prepare a mixture of unleaded petrol and semi-synthetic two-stroke oil that meets the specifications of: *API TC, ISO-L-EGC, JASO FC (Low Smoke) oil.*

FUEL MIX

Petrol to 2 stroke oil mixing ratio is 40:1.



**We recommend using B3C 2-stroke Oil with Ethanol Shield.
B3C 2-stroke oil is suitable to mix petrol to oil at 50:1 in this chainsaw.**

B3C 2-stroke Oil 'Ethanol Shield' product code:

100ml (one shot to 5lr petrol).....B3C2ST1S

1ltr.....B3C2STLRT

- **FUEL WITH NO OIL (RAW PETROL) will cause severe damage to the engine which is not covered by manufacturers warranty.**
- Use fresh, unleaded petrol (95 RON) and semi-synthetic oil specially made for high performance two-stroke engines. Mix in a ratio of **40 parts petrol to 1 part of oil.**
- By using two-stroke oil specially made for two-stroke engines you will reduce the formation of ash and carbon deposits on the spark plug, piston, exhaust muffler and cylinder as well as reducing emissions of harmful exhaust gases.
- Oil FOR 4-CYCLE ENGINES should not be used as two stroke lubrication oil as it can cause fouling of the spark plug, exhaust port blocking, piston ring sticking and other internal engine damage.

■ FUEL STORAGE

- Mixed two stroke fuel which has been left unused for a period of one month or more may damage the carburettor and result in the engine failing to start or operate correctly.
- When storing the chainsaw for a period of more than one month, empty the fuel tank, and run the engine to empty the carburettor of fuel.
- Two stroke fuel can cause deterioration of rubber and/or plastic components during prolonged storage.
- It is important to only use good quality, fresh fuel mix.

■ FUELLING

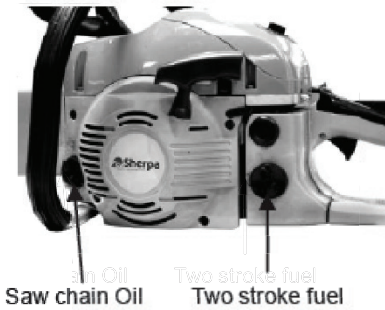
- Shake the fuel container to thoroughly mix the two-stroke oil and petrol.
- Clean dirt and sawdust from around the fuel cap before removing.
- Pour two-stroke fuel into the fuel tank with a filtered funnel, up to 80% of the fuel tanks capacity.
- Replace the fuel cap and tighten securely. Spilled fuel must be wiped away from the chain saw before starting the engine.
- Move at least 5m away from the refuelling area before restarting the engine.

■ CHAIN OIL- GUIDE BAR AND SAW CHAIN LUBRICATION

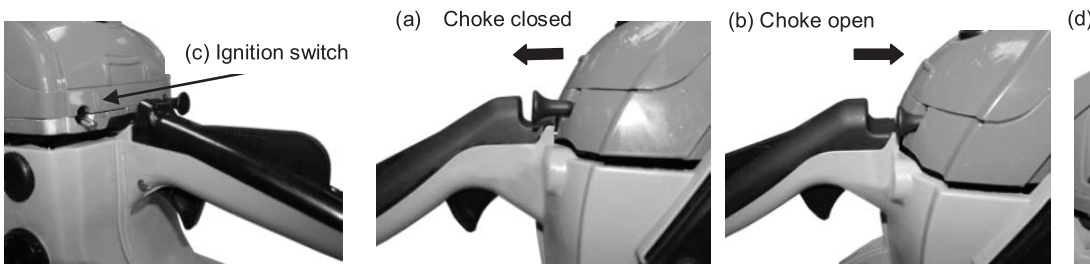
- Chain oil lubricates the saw chain and guide bar during operation,
- We recommend the use of SAE30 grade chain oil with good adhesion (anti-fling) characteristics.
- Fill the chain oil tank every time you fill the fuel tank.
- Failure to lubricate the guide bar and saw chain will result in overheating of these components resulting in premature wear or permanent damage.
- **Do not use waste or regenerated oil that can cause damage to the oil pump and harm the environment.**

■ STARTING THE ENGINE

- Keep clear of the saw chain as it will start rotating when engine starts.
- Fill fuel and chain oil tanks respectively, and tighten the caps securely.



- Set the ignition switch to "I" position (c).



- Pull out the choke lever to the closed position (a). The choke will close and the throttle will be set in the starting position.
- Place the saw on the ground, grip the front handle with your left hand, place your right foot through the rear handle. Pull the starter handle with your right hand.
- CAUTION do not pull the starter cord all the way out and do not let go of the starter handle when the cord is extended, this can damage the starter mechanism.
- When the engine has fired, push in the choke lever in (b) and then pull the starter handle again to start the engine.
- Allow the engine to warm up; pulling the throttle lever slightly will reset the throttle control and allow the engine to idle.



■ Starting hot engine

- Set the ignition switch to "I" position (c).
- Pull the choke lever to closed position (a), then push the choke lever to the open position (b), this will set the throttle to the hot start position.
- Pull the starter handle until the engine runs.
- Pulling the throttle lever slightly will reset the throttle control allow the engine to idle.

■ Overchoking

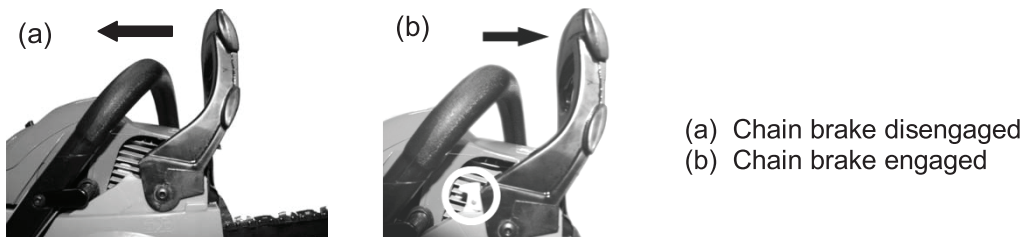
Should the engine become flooded due to overchoking, turn the ignition switch off, unscrew the spark plug, wipe it dry or replace, pull the recoil starter several times without the spark plug in place and with choke in the open position (b). This will help clean and ventilate the combustion chamber.

■ CHAIN BRAKE

- The chainsaw is equipped with an automatic chain brake to stop the saw chain rotation when activated, eg kickback during saw cutting. The brake is automatically operated by inertial force, which acts on the weight fitted inside the chain brake handle. The brake can also be operated manually when the brake handle is pushed forward towards the guide bar.
- To release the chain brake, pull back the brake handle toward the front handle until a “click” sound is heard. The chain brake is now reset and the saw chain is able to rotate.

How to check:

- You must check the chain brake operation before each usage by running the chainsaw at full throttle for 1-2 seconds and pushing the chain brake handle forward (b).
- The saw chain should stop immediately with the engine at full speed.
- If the saw chain is slow to stop or does not stop, replace the chain brake band or chain brake assembly before use.
- Disengage the chain brake after testing. (a)



■ KICKBACK SAFETY PRECAUTIONS FOR CHAIN SAW USERS



Kickback may occur when the nose or tip of the guide bar touches an object, or when the wood being cut closes in and pinches the saw chain. Top contact of the guide bar may cause a fast reverse reaction, kicking the guide bar up and back towards the operator. Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator. Either of these reactions may cause the operator to lose control of the chain saw which could result in serious personal injury.

Do not rely exclusively on the safety devices built into the chainsaw. As a chain saw user you should take several steps to keep the cutting work free from accident or injury.

- With a basic understanding of kickback you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.
- Keep a good grip on the chain saw with both hands, the right hand on the rear handle, and the left hand on the front handle, when the engine is running. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip will help you reduce kickback and maintain control of the chainsaw.
- Make certain that the area in which you are cutting is free from obstructions. Do not let the nose of the guide bar contact a log, branch, or any other obstruction which could be hit while you are operating the chainsaw.
- Cut at high engine speeds.
- Do not overreach or cut above shoulder height.
- Follow manufacturers sharpening and maintenance instructions for sharpening saw chain.
- Only use replacement guide bars and saw chains specified by the manufacturer or the equivalent.

■ BEFORE STARTING WORK

Always follow the safety regulations:

- Before starting work we recommended to first practice sawing easy logs. This also helps you get accustomed to your chainsaw's operation.
- The chain saw must only be used for cutting wood. It must not be used to cut other types of material.
- The chainsaw should cut easily without force. When cutting apply only light pressure while running the engine at full throttle.
- When the saw chain is caught in the cut, do not attempt to pull it out by force, turn off the engine and use a wedge or a lever to release the saw chain and guide bar.

■ RUNNING IN

During the first ten hours of work, avoid running the engine at maximum speed for a prolonged period until all the components have bedded in. After the engine has been run in, it will reach its maximum power.

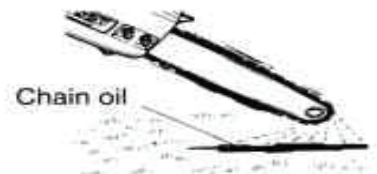
After two hours of work, check that all nuts bolts and screws are securely fastened and tighten if necessary.

■ STOPPING ENGINE

- Release the throttle lever and allow the engine to run at idle for half a minute.
- Shift the ignition switch to the STOP position ("0").
- Except for an emergency, avoid stopping the engine while at full throttle.

■ CHECKING THE SAW CHAIN LUBRICATION SUPPLY

After starting the engine, run the chainsaw at medium speed and see if chain oil is sprayed as shown in the figure.



■ CARE AND MAINTENANCE OF YOUR CHAINSAW

- In order to maintain the chain saw in good working order, perform the maintenance and checking operations described in this manual at regular intervals. In the event that any part needs to be replaced, please contact the nearest authorised service dealer for assistance.
- Always stop the engine and allow to cool before performing any maintenance or checking procedures.
- When sharpening, removing, or reattaching the saw chain always wear chainsaw safety gloves and use only appropriate tools and equipment to prevent injury.
- When replacing saw chain or any other parts, use only genuine spare parts and approved lubricants.
- Disconnect the spark plug to prevent accidental starting when carrying out routine maintenance.

■ MAINTENANCE AFTER EACH USE

■ AIR FILTER

To clean dirt in the air filter, split the air filter into halves and wash with warm soapy water. When using compressed air, blow from the inside.



To assemble the air filter halves, press until they click together.

■ OILING PORT

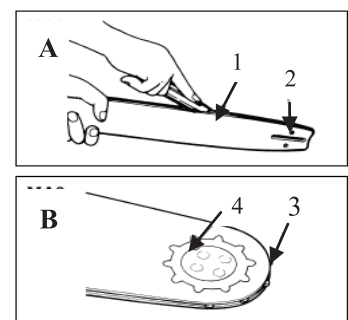
Dismount the guide bar and check the oiling port for clogging and clean as necessary.

■ GUIDE BAR

When the guide bar is dismounted, remove sawdust from the bar groove and the oiling port.

Grease the nose sprocket with a sprocket grease gun (Oregon part number 21939)

1. Guide bar groove (A-1)
2. Oil hole (A-2)
3. Drive sprocket (B-3)
4. Grease point (B-4)



■ OTHERS

Check for fuel leakage, loose fastenings and damage to major parts, especially handle joints, guide bar mountings and chain brake. If any defects are found, make sure they are repaired before operating the chainsaw. Check guide bar and saw chain for excessive wear or damage, and replace as necessary. Never fit a new chain on a worn sprocket, or a worn chain on a new sprocket.

■ PERIODICAL SERVICE POINTS

■ CYLINDER FINS

Chainsaw dust clogging between the cylinder fins will cause overheating of the engine. Periodically check and clean the cylinder fins after removing the cylinder cover. When installing the cylinder cover, make sure that switch wires and grommets are fitted correctly.

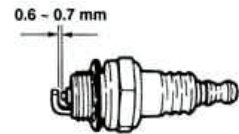
■ FUEL FILTER

Using a wire hook, take the fuel filter from the fuel tank and clean or replace with new fuel filter.



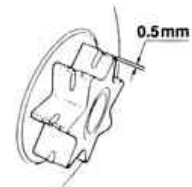
■ SPARK PLUG

Reset the gap to 0.85mm, or replace the spark plug LT7 as necessary.



■ SPROCKET

Check for cracks and for excessive wear interfering with the chain drive. If the wear is considerable, replace sprocket and saw chain. Never fit a new chain on a worn sprocket, or a worn chain on a new sprocket.



■ ADJUSTING SAW CHAIN LUBRICATION FLOW RATE



Never fill the oil tank or adjust the saw chain oiler with the engine running.

An increase in the oil flow rate will increase oil consumption, requiring more frequent checks of the oil tank. To ensure sufficient lubrication, it may be necessary to check the oil level more frequently than at fuel tank refills. The guide bar and saw chain are lubricated automatically by a pump that operates whenever the saw chain rotates. The pump is set at the factory to deliver a minimum flow rate, but it can be adjusted in the to deliver more oil. A temporary increase in oil flow is recommended when cutting hardwood.

■ OIL PUMP ADJUSTMENT

- Stop the engine and make sure the ignition switch is in the OFF position.
- Place the chainsaw on its side.
- With a screwdriver, adjust the oil flow rate adjusting screw and turn in the required direction.
- **Clockwise-decrease lubrication**
- **Counter clockwise-increase lubrication.**



■ SAW CHAIN SHARPENING:



Be sure to wear safety gloves.

■ THE SAW CHAIN NEEDS TO BE SHARPENED WHEN:

- Sawdust becomes like powder.
- You need extra force to cut.
- The cut path does not go straight.
- Vibration increases.
- Fuel consumption increases.

■ SAW CHAIN SHARPENING

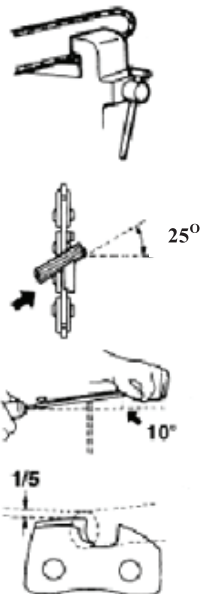
- Clamp chain saw guide bar in a vice to secure. (Dia 1)
- Sharpen chain with a 5/32 file and holder (Oregon part number 16265) Place file on the cutter and push straight forward. Keep the file position as illustrated (Dia 1). After every cutter has been set, check the depth gauge and file it to the proper level as illustrated (Dia 2).
- Make sure every cutter has the same length and edge angles as illustrated (Dia 3).

(Dia 1) Filing saw chain cutters

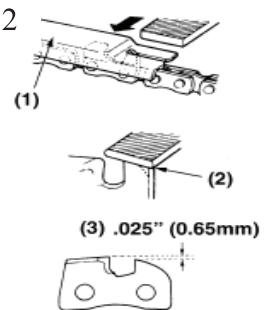
(Dia 2) File saw chain with depth gauge

(Dia 3) Recommended sharpening angles

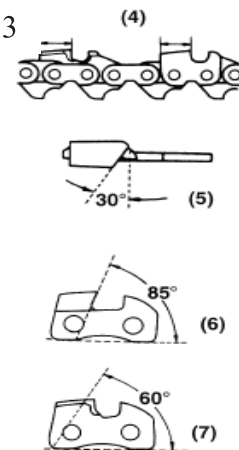
Dia 1



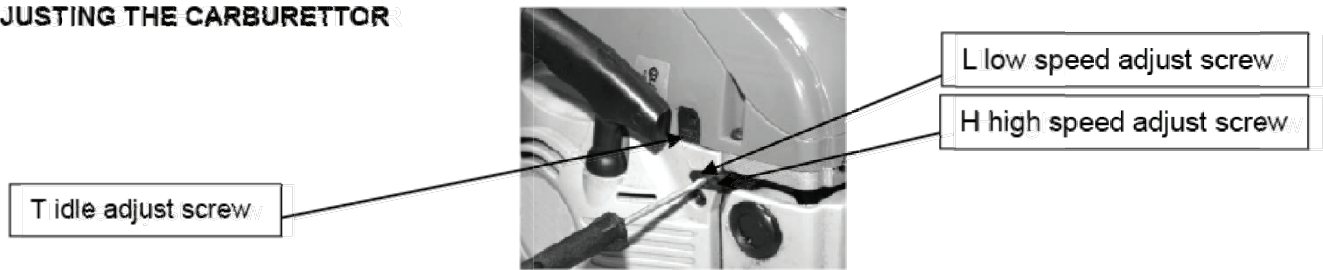
Dia 2



Dia 3



■ ADJUSTING THE CARBURETTOR



The carburettor has been factory adjusted, but may require fine tuning due to a change in operating conditions. Carburettor adjustments should be made by the supplying dealer using specialist tools as follows.

- Make sure that the air filter and fuel filter are clean, and the fuel is freshly mixed.
- Stop the engine and screw in both the H and L needles until they stop. Never force them. Then set them back the initial number of turns as shown below.

H screw: 1 +or- $\frac{1}{4}$

L screw: 1 $\frac{1}{4}$ +or- $\frac{1}{4}$

1. Start the engine and allow it to warm up at half-throttle with saw chain and guide bar fitted.
2. Turn the **L** screw slowly to find a position where idling speed is at maximum, then set the **L** adjusting screw back a quarter ($\frac{1}{4}$) turn (counter clockwise).
3. Turn the idle adjusting screw **T** counter clockwise so that the saw chain does not turn. If the idling speed is too slow, turn the screw clockwise.
4. To check the low speed adjustment pull the throttle fully and the engine should not die, if it tries to die, open the **L** screw slightly and re-adjust idle if necessary.
5. Set the engine to full throttle, the **H** adjusting screw is turned clockwise to reduce fuel, as the fuel mixture is reduced, the engine will run faster until it sounds as if it is screaming, at this point, turn the **H** screw counter clockwise by quarter ($\frac{1}{4}$) turn to allow more fuel.

A two stroke engine relies on the fuel mixture to cool the engine; a lean fuelled engine will run fast but can overheat and lead to engine seizure.

Component	Procedure	Before use	Every 25 Hours use	Every 50 Hours use	Every 100 Hours use	note
Fuel leaks / spillage	Wipe out	X				
Fuel tank, filter	Inspect / clean		X			Replace if necessary
Idle adjust screw	See paragraph 3 above	X				Adjust carburettor if necessary
Spark plug BPMR7A	Clean and readjust plug gap			X		GAP .025" (0.6-0.7mm) Replace, if necessary
Cylinder fins, Intake air cooling vent	Clean		X			
Muffler, Spark arrestor, cylinder exhaust port	Clean			X		
Throttle lever, ignition switch	Check operation	X				
Air filter	Clean	X				
Screws, nuts, bolts	Tighten / replace	X			X	Not adjusting screws
Oiling port	Clean	X				
Guide bar	Clean	X				
Sprocket	Inspect / replace			X		
Saw chain	Inspect / sharpen	X				

TROUBLESHOOTING

Engine will not start, power loss.

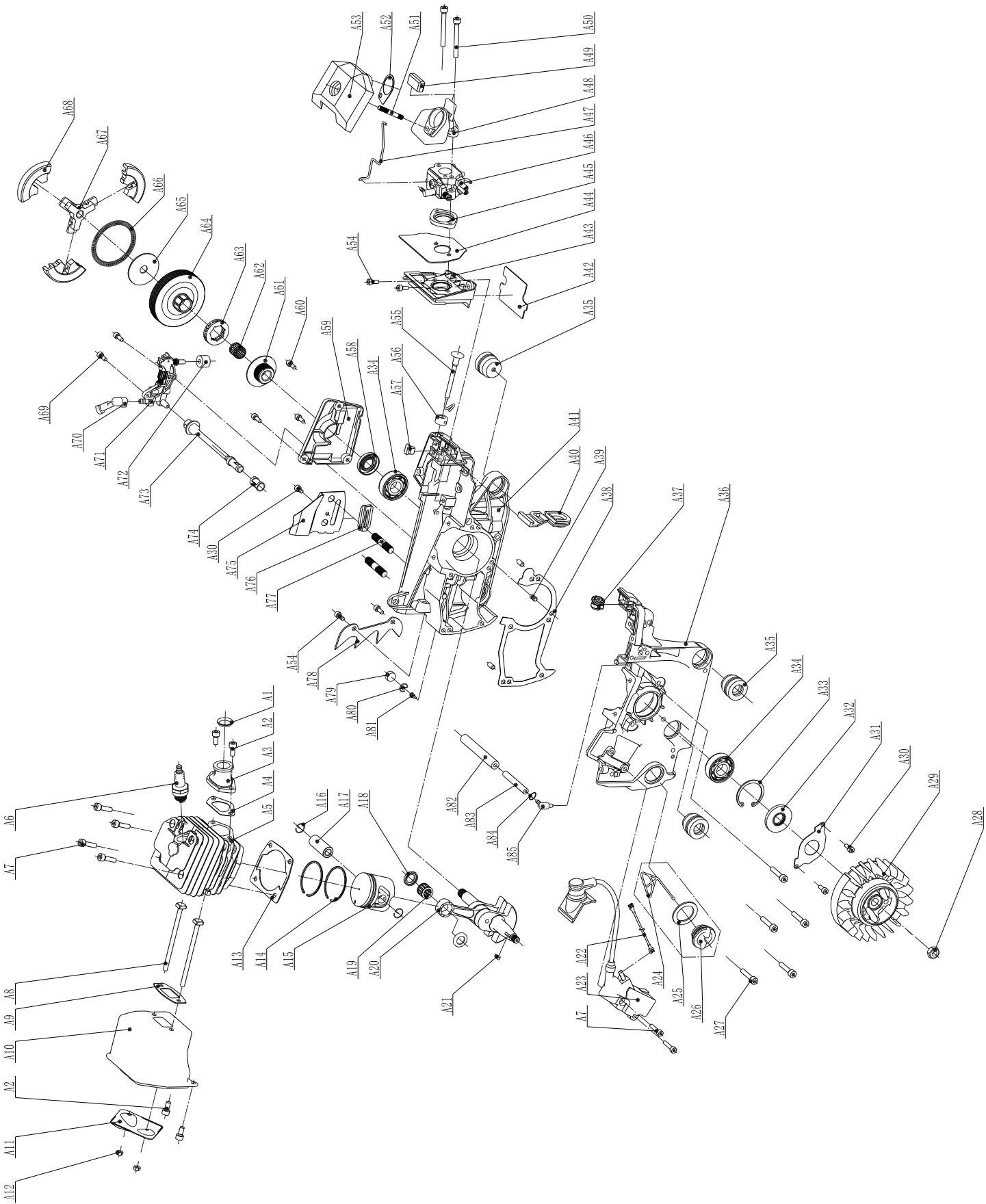
- Check that the fuel tank is not empty. Fill with mixed fuel.
- The fuel does not reach the carburettor. Change the fuel filter in the fuel tank.
- There is water in the fuel. Drain and clean the fuel system .
- The air filter is dirty. Clean the air filter.
- There are carbon deposits in the exhaust muffler restricting the engine. Clean or change the muffler.
- Spark plug is worn. Replace spark plug.
- Saw chain will not rotate. Chain brake is activated. Deactivate chain brake.

■ Specifications

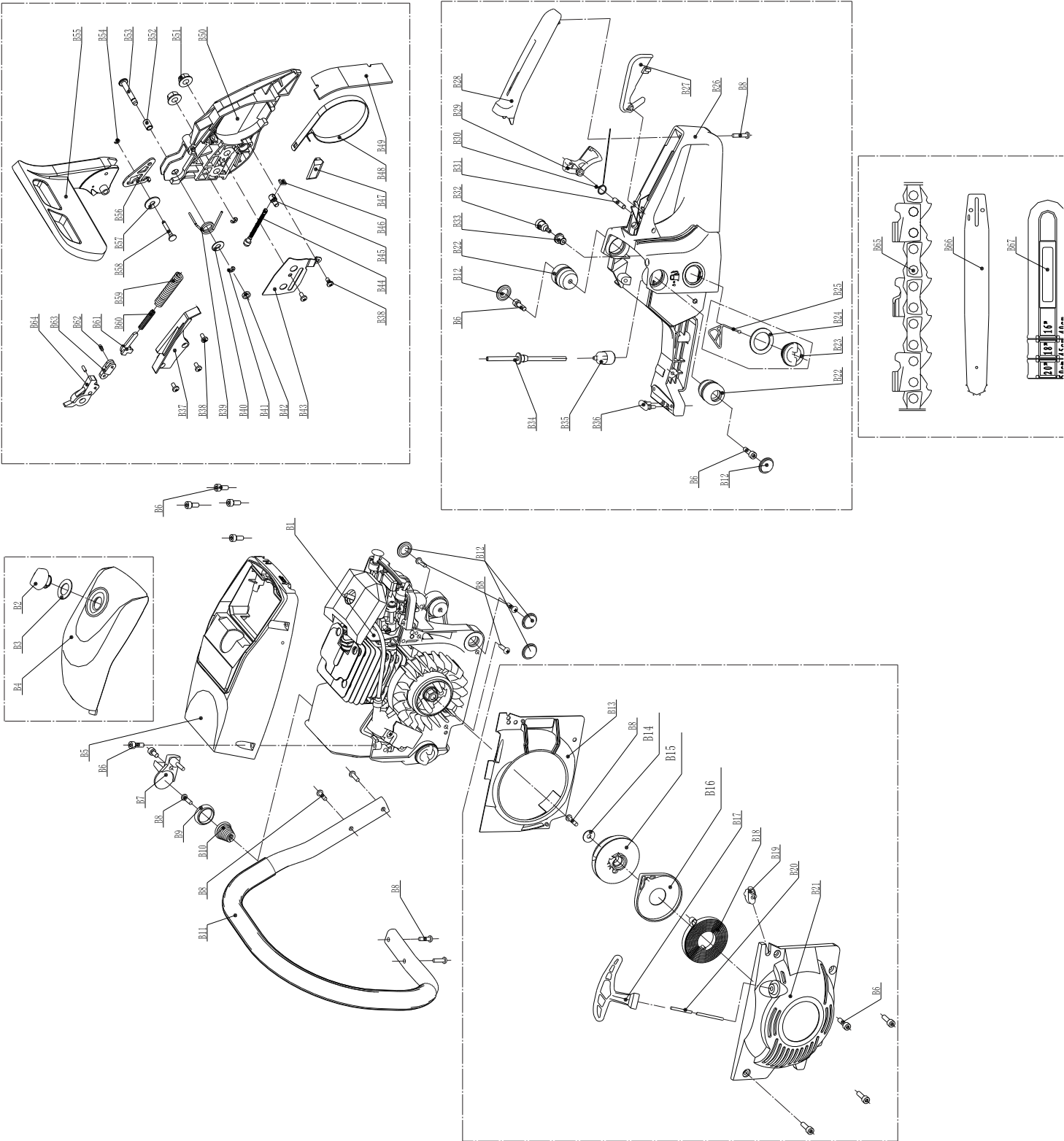
Model no.	ST-CS4500
Engine type	1E43F
Equipment mobility	Hand-held
Engine displacement	45 cm ³
Maximum engine power	1.8kw
Engine speed	10800min ⁻¹
Engine idling speed	3000±200min ⁻¹
Maximum chain speed	20.8 m/s
Usable cutting length	44cm / 50cm
Chain pitch	8.255mm (0.325")
Chain gauge	1.47mm (0.058")
Sprocket	7 Teeth x 8.255mm
Volume of fuel tank	550ml (Fuel ratio: 40:1)
Volume of oil tank	260ml
Specific fuel consumption at maximum engine power	850g/kWh
Type of chain and guide bar 18" 20"	KANGXIN BE18-72-5810P KANGXIN BE20-76-5812P
Spark plug model	L7T (LD)
Carburetor model	BIG DINT/MC16-02
Mass(without guide bar and chain and with empty tank)	5.0kg
Sound pressure/power lever (According to ISO22868)	LpA: 93.72dB(A)/ LwA:113.72dB(A) K=2.5 dB(A)
Guaranteed sound power level, LWA(2000/14/EC)	LwA: 117 dB(A)
Vibrations emission levels, m/s ² (According to ISO 22867)	Front handle 8.25m/s ² Rear handle 9.04m/s ² K=1.5 m/s ²

Specifications are subject to change without notice.

Engine Parts Diagram



Chainsaw Main Parts Diagram



TTCS-A1	Inner Guide
TTCS-A2	Bolt M5*12
TTCS-A3	Insulator
TTCS-A4	Gasket, Insulator
TTCS-A5	Cylinder
TTCS-A6	Spark Plug
TTCS-A7	Bolt M5*20
TTCS-A8	Square Screw M5*85
TTCS-A9	Gasket, Muffler
TTCS-A10	Muffler
TTCS-A11	Muffler Cap
TTCS-A12	Nut M5
TTCS-A13	Gasket, Cylinder
TTCS-A14	Piston Ring
TTCS-A15	Piston
TTCS-A16	Snap Ring
TTCS-A17	Piston Pin
TTCS-A18	Washer
TTCS-A19	Needle Bearing
TTCS-A20	Crankshaft
TTCS-A21	Key
TTCS-A22	Coil
TTCS-A23	Ignition Coil
TTCS-A24	Hook
TTCS-A25	Gasket, Oil cap
TTCS-A26	Oil Cap
TTCS-A27	Bolt M5*30
TTCS-A28	Nut M8
TTCS-A29	Rotor
TTCS-A30	Bolt M5*12
TTCS-A31	Cover, Oil Seal
TTCS-A32	Oil Seal
TTCS-A33	Retainer Ring
TTCS-A34	Bearing
TTCS-A35	Anti-vibration, Left Crankcase
TTCS-A36	Left Crankcase
TTCS-A37	Stop Switch
TTCS-A38	Gasket, Crankcase
TTCS-A39	Pin
TTCS-A40	Dust-proof Rubber
TTCS-A41	Right Crankcase
TTCS-A42	Washer, Insulator Gasket
TTCS-A43	Insulator Gasket
TTCS-A44	Gasket, Insulator Gasket
TTCS-A45	Manifold
TTCS-A46	Carburettor
TTCS-A47	Throttle Pull Rod
TTCS-A48	Intake Manifold
TTCS-A49	Anti-vibration, Intake Manifold
TTCS-A50	Bolt M5*50
TTCS-A51	Screw Gm5-m5x30

TTCS-A52	Gasket, Air-filter
TTCS-A53	Air-filter
TTCS-A54	Bolt M4*14
TTCS-A55	Hook
TTCS-A56	Anti-vibration, Hook
TTCS-A57	Anti-vibration Set, Hook
TTCS-A58	Oil Seal
TTCS-A59	Cover,oil Pump
TTCS-A60	Bolt M4*12
TTCS-A61	Worm
TTCS-A62	Needle Bearing
TTCS-A63	Sprocket
TTCS-A64	Clutch Drum
TTCS-A65	Gasket,clutch
TTCS-A66	Clutch spring
TTCS-A67	Retainer
TTCS-A68	Clutch shoes
TTCS-A69	Bolt M4*14
TTCS-A70	Nozzle
TTCS-A71	Oil Pump
TTCS-A72	Dust-proof Rubber
TTCS-A73	Oil Pipe
TTCS-A74	Oil Filter
TTCS-A75	Plate
TTCS-A76	Guide
TTCS-A77	Screw Aym8-m8x28
TTCS-A78	Bumper Spike
TTCS-A79	Sponge Filter
TTCS-A80	Snap Ring
TTCS-A81	Went Mouth
TTCS-A82	Insulation Pipe
TTCS-A83	Negative Pipe
TTCS-A84	Nozzle Dip
TTCS-A85	Elbow
TTCS-B1	Engine
TTCS-B2	Air filter lock nut
TTCS-B3	Lock nut washer
TTCS-B4	Air filter cover
TTCS-B5	Top cover
TTCS-B6	Bolt M5*14
TTCS-B7	Chain catcher
TTCS-B8	Bolt ST5*16
TTCS-B9	Taper spring plate
TTCS-B10	Taper spring
TTCS-B11	Handle
TTCS-B12	Dust proof cover
TTCS-B13	Guiding cover
TTCS-B14	Ø5 flat washer
TTCS-B15	Starter pulley
TTCS-B16	Spring cover
TTCS-B17	Starter handle

TTCS-B18	Spring
TTCS-B19	Washer
TTCS-B20	Starter rope
TTCS-B21	Starter cover
TTCS-B22	Long anti-vibration damper
TTCS-B23	Fuel tank cap
TTCS-B24	Fuel tank cap washer
TTCS-B25	Fuel tank cap clip
TTCS-B26	Fuel tank assembly
TTCS-B27	Throttle control arm
TTCS-B28	Trigger cover
TTCS-B29	Trigger
TTCS-B30	Trigger spring
TTCS-B31	Trigger pin
TTCS-B32	Balancer
TTCS-B33	Balancer seat
TTCS-B34	Fuel pipe
TTCS-B35	Fuel filter
TTCS-B36	Double-pin anti-vibration washer
TTCS-B37	Brake spring cover
TTCS-B38	Bolt ST4*8
TTCS-B39	Brake torsion spring
TTCS-B40	Washer Ø6 * Ø16* 0.8
TTCS-B41	Ø4 split washer
TTCS-B42	Damping rubber washer
TTCS-B43	Tensioner cover plate
TTCS-B44	Tensioner bolt
TTCS-B45	Tensioner lock nut
TTCS-B46	Tensioner clip
TTCS-B47	Chain guide
TTCS-B48	Brake belt
TTCS-B49	Oil baffle plate
TTCS-B50	Brake
TTCS-B51	M8 flange nut
TTCS-B52	Front guard pin cover
TTCS-B53	Front guard pin
TTCS-B54	Ø3 split washer
TTCS-B55	Front guard
TTCS-B56	Retainer
TTCS-B57	Washer Ø6 * Ø20* 1.2
TTCS-B58	Retainer pin
TTCS-B59	Big spring
TTCS-B60	Small spring
TTCS-B61	Control arm
TTCS-B62	Retainer Ø3*8
TTCS-B63	Negative leverage
TTCS-B64	Main leverage
TTCS-B65	Chain
TTCS-B66	Guide bar
TTCS-B67	Guide bar cover



CE Declaration of Conformity

We, Importer

Mower Magic Ltd, trading as Sherpa Tools

LN6 9AL

Declare that the Product detailed below:

Gasoline Chain Saw

Model: ST-CS4500

Satisfies the requirement of the Council Directives:

Machinery Directive 2006/42/EC

Electromagnetic Compatibility Directive EMC 2004/108/EC

Noise Directive 2000/14/EC amended by 2005/88/EC Annex VI

(Guaranteed sound power level: 117dB (A))

Emission directive 97/68/EC amended by 2010/26/EU

Notified body: Intertek Deutschland GmbH

Stangenstraße 1, 70771 Leinfelden-Echterdingen, Germany

Number of notified body: 0905

Batch No.: MRCA060291~MRCA060390

and conforms to the norms:

EN ISO 11681-1: 2011

EN ISO 14982: 2009

Position of Signatory: _____

Mr Jonathan Hall, **Managing Director**

Magic House, Station Road, North Hykeham, Lincoln, Lincolnshire, LN6 9AL

Date: 08/09/2015



Conditions Of Warranty

The manufacturer warrants this product against faulty materials and workmanship for a period of 2 years after the date of purchase to the original purchaser. The warranty is applicable when the product is used in a “home owner” application. If products are used for commercial or professional purposes, the warranty period of 3 months from the date of first purchase. Warranty does not extend to failure due to fair wear and tear.

The manufacturer undertakes to replace any spare parts that are classified as defective by and appointed service dealer. The manufacturer will not accept liability for the replacement of the machine, either partially or wholly, and/or consequential damages.

Warranty does not cover failure due to:

- Insufficient maintenance
- Incorrect fuel mixture and stale fuel
- Abnormal use or accidental damage
- incorrect assembly, adjustment or operation of the product, including saw chain, guide bar and sprocket
- spare parts that are subject to wear e.g. safety parts, saw chain, guide bar, sprocket, guards, deflectors, spark plugs, filters etc.

Neither does warranty extend to:

- Freight and parking costs
- Use of non-genuine spare parts i.e. those from another manufacturer
- Use of the machine for any other purpose than that for which it was designed
- Use and maintenance of the machine in a manner not described in the owner’s manual

As part of our policy of continuous product improvement, we reserve the right to alter or amend this specification without notice. As a result, the product may differ from the information contained herein, but any alteration will only be implemented without notice if it is classified as an improvement to the above specification.

READ THE MANUAL CAREFULLY BEFORE OPERATING THE MACHINE

Retain the receipt of purchase without which no warranty can be offered

Distributed by Sherpa Tools
Magic House
Station Road
North Hykeham
Lincoln
Lincolnshire
LN6 9AL

www.sherpatools.co.uk
01522 283 020



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