



633GC

Concrete Cutting Chainsaw



OPERATOR'S MANUAL

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SYMBOLS & LABELS

THE FOLLOWING SYMBOLS & DEFINITIONS ARE FOUND THROUGHOUT THIS MANUAL AND ARE DESIGNED TO MAKE YOU AWARE OF POTENTIAL HAZARDS OR UNSAFE PRACTICES.



A potentially hazardous situation exists which, if not avoided, could result in death or serious injury.



A potentially hazardous situation exists which, if not avoided, may result in minor or moderate injury or property damage.



A potential situation exists which, if not avoided, may result in product or property damage.

THE FOLLOWING SYMBOLS & LABELS MAY BE FOUND IN THIS MANUAL OR ON THE SAW



Read the operator's manual carefully and understand the contents before you use this equipment.



Always use:

- Protective helmet
- Ear protection
- Protective glasses or full face protection



Wear hand protection



SAFETY

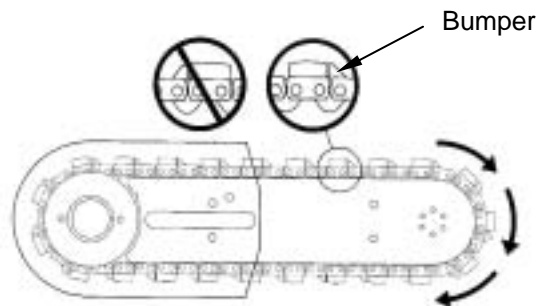
THE FOLLOWING SYMBOL APPLIES TO ALL THE ITEMS LISTED ON THIS PAGE



A potentially hazardous situation exists which, if not avoided, could result in death or serious injury.

Chain breakage can result in high-speed ejection of parts, which can result in death or serious personal injury to operators or bystanders. The items listed below are critical to minimizing the risk of chain breakage and injury.

- **DO NOT** operate a diamond chainsaw with a damaged, modified, broken, or missing side cover, bottom guard, or guard flap. The side cover, bottom guard, and guard flap provides protection against contact with moving parts, ejected debris, broken chain, thrown water and concrete slurry.
- **DO NOT** install or run the chain backwards. The bumper must lead the segment into the cut.



- **DO NOT** insert a diamond chainsaw into a slot narrower than the chain segments. Rapid pushback might occur. Reference: Most diamond segments are .225 inches (5.72 mm) wide.
- **DO NOT** use damaged, modified or improperly repaired chain.
- **DO NOT** run a diamond chainsaw upside-down. Concrete debris can fly back into the operator's face.
- **DO NOT** cut ductile iron pipe with the diamond chainsaw. Segment loss or chain breakage may occur.

SAFETY

THE FOLLOWING SYMBOL APPLIES TO ALL ITEMS LISTED ON THIS PAGE



A potentially hazardous situation exists which, if not avoided, may result in minor or moderate injury or property damage.

- Always turn a diamond chainsaw OFF when performing maintenance on the saw including chain tensioning.
- Never use equipment that is not functioning properly. Have the saw repaired by qualified service personnel.
- Turn engine OFF before refueling. Keep away from open flame. Always provide for good ventilation when handling fuel. Move diamond chainsaw at least 10 feet (3 m) away from refueling area before starting.
- SealPro™ diamond chains require a minimum water pressure of 20 psi (1.4 bar). Insufficient water supply may result in excessive wear to the chain, which can lead to loss of strength and chain breakage.
- Never start a diamond chainsaw unless the bar, chain and side cover are properly installed.



GENERAL SAFETY PRECAUTIONS

- Always wear protective clothes, including hard hat, eye protection, hearing protection, and gloves.
- Avoid loose fitting clothing.
- Perform safety checks before starting each day.
- Always operate tool with solid footing and with both hands on saw.
- Remove or control slurry to prevent slippery conditions while cutting.
- Be sure there are no obstructions (plumbing, electrical conduit, air ducts) and no unnecessary people present.
- Set up a well-marked safety zone with a roped boundary and clear signs.
- Provide adequate ventilation when working in an enclosed area. Breathing exhaust gases is dangerous.
- To avoid electrocution, check for live electrical wiring near cutting area.

SAFETY

THE FOLLOWING SYMBOL APPLIES TO ALL ITEMS LISTED ON THIS PAGE

IMPORTANT

A potential situation exists which, if not avoided, may result in product or property damage.

Note: The diamond chainsaw 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 correct mixture is obtained. When mixing small amounts of fuel, even small inaccuracies can drastically affect the ratio of the mixture.

- This engine is designed to be operated on unleaded gasoline.
- Use high quality, unleaded gasoline with a minimum octane rating of 90. If lower octane gasoline is used, engine temperature will increase which can result in a piston seizure and damage to the engine.
- Use “high quality” two-stroke engine oil, which is specifically developed for chain saws. Fuel mixture: 4%, 25:1 gasoline/oil mixture. This is twice as much oil as 50:1. Incorrect fuel mixture is the number one cause of piston seizure failure.
- Never use two-stroke oil intended for water-cooled engines, such as outboard engine oil.
- Never use oil intended for four-stroke engines.

ENGINE BREAK-IN

- It is very important to break-in a new engine to “seat” all moving parts, especially the piston rings.
- To break-in the engine, run one full tank of 25:1 fuel at idle, cycling the throttle every 5 to 10 minutes to prevent loading.
- Failure to break-in an engine can result in piston seizure.

TECHNICAL SPECIFICATIONS

Engine	2 Stroke, Air cooled
Displacement	101cc (6.2 cu in)
Horsepower	6.5 HP (4.8kw) @ 8700 RPM
Carburetor	Walbro WGAK3, Throttle shaft sealed
Idling Speed	2800-3200 rpm
No Load Maximum Speed	11,500+/-500 rpm, Mechanically governed
Ignition	Selettra electronic – Water resistant
Spark Plug	Champion CJ7Y or Bosch BWS7F
Fuel ratio	4%, (25:1 gasoline/oil)
Fuel Capacity	1 Liter (34oz)
Clutch	Centrifugal, three shoe, single spring
Weight with Bar and Chain	27.5 lbs (12.5kg)
Bar Lengths	14 in (36cm) & 16 in (41cm)
Actual Cutting Lengths	14 in (36cm) & 16.2 in (41cm)
Vibration Level	8 meters/sec ² (front handle)
Noise Level	102dB at 3 ft (1m)
Water Pressure Requirements	Minimum: 20 psi (1.4 bar)
Water Flow Requirements	2 gpm(8 lpm) minimum
Chain Speed	4,950 fpm (25m/s), free running)
Engine Break-in Period	One tank, without feed load, cycling throttle

SET-UP

BAR AND CHAIN INSTALLATION



STEP 1
Disconnect chain brake arm, loosen side cover nuts and remove side cover.

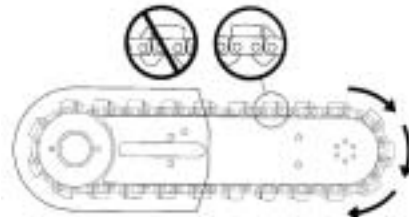


STEP 4
Mount the chain on the bar starting at the drive sprocket & continue over the bar nose.



STEP 2
Place bar onto studs and chain adjustment pin.

Install the chain correctly. The bumper must always lead the segment into the cut as shown here.



STEP 3
Move chain adjuster pin back towards drive sprocket by turning chain-tensioning screw counter clockwise.



STEP 5
Make sure all the drive links are inside the bar groove then pre-tension the chain.

SET-UP

BAR AND CHAIN INSTALLATION



STEP 6

Install side cover and thread the side cover nuts on finger tight. Reattach the chain brake arm.



STEP 8

Hold the bar nose up and tension the chain. The chain should be tight but able to be pulled around the bar by hand. See Note 2



STEP 7

Manually pull the chain across the top of the bar away from the Wallwalker®. It is normal for the chain hanging under the bar to alternately tighten and loosen as the chain rotates. See Note 1.



STEP 9

Continue to lift up on the nose of the bar and firmly tighten the side cover nuts. See Note 3.

Note 1: Be aware that the bar rails may develop sharp edges over time so always pull the chain by the diamond segments.

Note 2: Do not “over tension” the chain. Loss of power will result. It is normal for the driveline to hang underneath the bar. The chain should be tight but be able to be pulled around the bar by hand.

Note 3: To prevent chain tensioner breakage, be sure the side cover nuts are tightened to approximately 20 ft-lbs (27Nm).

OPERATION

FUEL HANDLING



CAUTION

FUEL MIXTURE: 4% 25:1 gasoline/oil mixture.

GASOLINE	OIL
US Gallon	US Fl oz
1	5.2
2 ½	12.8
5	25.6

GASOLINE	OIL
Liters	ml
1	40
4	160
10	400
20	800

- Use high quality, unleaded gasoline with a minimum octane rating of 90. If lower octane gasoline is used, engine temperature will increase which can result in a piston seizure and damage to the engine.
- Always provide for good ventilation when handling fuel.
- Take care when handling gasoline. Avoid direct contact with skin and avoid inhaling fuel vapor.

FUEL MIXING

- Always mix the gasoline and oil in a clean container intended for fuel.
- Keep canister tightly closed in order to avoid any moisture getting into the mixture.
- Always start by filling half the amount of the gasoline to be used. Then add the entire amount of two-stroke oil. Mix (shake) the fuel mixture. Then add the remaining amount of gasoline.
- Do not mix more than one-month's supply of fuel. This avoids the risk of oil separation and gasoline breakdown (varnishing).
- If the saw is not used for an extended period of time (3 months) the fuel tank should be emptied and cleaned.

FUELING

- Always shut off the engine before fueling.
- Before fueling, clean the area around fuel cap to ensure that no dirt falls into the fuel tank. Contamination in the fuel tank can lead to malfunction.
- Thoroughly shake the mixture in the canister before fueling.
- Slowly open the fuel cap, so that possible pressure build-up in the tank is released.
- After fueling, tighten the fuel cap carefully and secure with a wrench.

OPERATION

STARTING AND STOPPING A DIAMOND CHAINSAW



Never start a diamond chainsaw without the bar, chain and side cover properly assembled. Otherwise, the clutch can come loose and cause personal injuries.



Always move a diamond chainsaw at least 10 feet (3 m) away from the fueling area before starting.



Place the diamond chainsaw on clear ground, ensure that secure footing is established and chain is not contacting any objects.

COLD ENGINE

- Disengage the chain brake by pulling the hand guard towards the front handle.
- Toggle ignition switch to the start position and pull the choke lever out.
- Lock throttle in start position by depressing the trigger interlock and trigger at the same time. Depress and hold throttle lock button while releasing trigger and trigger interlock in succession.
- Open water valve ¼ turn for starting. Once saw has started, fully open water valve.
- Place diamond chainsaw on the ground making sure the chain is free of any obstructions. Place right foot on the base of the rear handle. Place left hand on front handle. With right hand, slowly pull starter handle until the starter pawls engage. Then give a short strong pull on the starter handle. Allow the starter rope to rewind and pull again as necessary.
- As soon as the engine fires, push the choke lever in. Continue to pull starter as necessary. When engine starts, depress trigger to unlock and allow engine to idle. Cycle the throttle several times to help warm up the engine.

WARM ENGINE

- Use the same procedure as for starting cold engine, but without choke. If choke is used, the carburetor will flood with gas. To recover from a flooded engine, push choke lever in, hold the trigger fully open, and pull starter handle until engine starts.
Note: It may be necessary to use the side of your foot to hold the trigger fully open.

STOPPING THE SAW

- To turn the engine off, toggle ignition switch to the, "STOP" position. Close water valve.

OPERATION

PRE-CUT CHECKLIST

- Proper Chain Installation: The bumper should lead the segment into the cut.
- Proper Chain Tension: The chain should be tight but easily pulled around the bar by hand.
- Ensure all safety devices are properly mounted and functional and that all controls are in proper working order.
- Be sure there are no obstructions (plumbing, electrical conduit, air ducts) and no unnecessary people present.
- Always wear protective clothes, including hard hat, eye protection, hearing protection, non-slip safety boots, gloves and avoid loose fitting clothes
- Adequate Water Supply and Pressure:
Minimum Flow: 2 gpm (8 lpm)
Minimum Water Pressure: 20 psi (1.4 bar)

IMPORTANT

The single most important factor an operator can control to increase chain life is to use adequate water pressure. Insufficient water supply will result in excessive wear to the chain, which can lead to loss of strength and chain breakage.



Note: Diamond chains with SealPro™ require a minimum water pressure of 20 psi (1.4 bar).

PLANNING THE CUT

- Select the proper chain type for the material being cut.
- Outline the cut with a permanent marker for a visual cutting guide.
- Avoid pinching the bar and chain. Always cut the bottom of an opening first, then top, and then the sides. Save the easiest cut for last.
- For the straightest cuts use the "Step Cut" method. First score the entire cut line approximately a half-inch deep using the nose of the bar. Next deepen the cut by about two inches. Then plunge all the way through and complete the cut using the Wallwalker®.
- Be sure cut concrete cannot fall and injure operator or bystanders. Concrete is very heavy, one cubic foot = 12"x12"x12" = 150 lbs. (30cm x 30cm x 30cm = 68kg).
- Check for live electrical wiring near the cutting area or in the concrete to avoid electrocution.

OPERATION

CUTTING WITH THE 633GC

To start a cut, hold trigger on full throttle and slowly plunge the nose of the bar straight into the wall. Lengthen the cut and engage the point of the fixed Wallwalker®. Use the fixed Wallwalker® as a pivot point and pull up on the rear handle to rotate the bar into the cut.

CUTTING TIPS

- Always operate a diamond chainsaw at full throttle. Apply enough feed force so that the free running RPM drops 20 to 30%. If too much force is applied, the saw will lug or stall. The chain will not have enough speed to cut effectively. If too little feed force is applied, the diamonds will skid and glaze over.
- Plunge cut instead of starting at the top of the wall. This will reduce chatter, extend diamond life, create a straighter cut and more quickly enable the use of the fixed Wallwalker®.
- For straight cuts use the “step cut” method. First score the entire cut line with the nose of the bar approximately ½ inch (12mm) to 1 inch (25mm) deep. Next, deepen the cut by about 2 inches (50 mm). This groove will help guide the bar for a straight cut. Then plunge all the way through and complete the cut using the fixed Wallwalker®.
- Use the fixed Wallwalker® to cut efficiently and reduce user fatigue. The fixed Wallwalker® is a fulcrum that can be used to apply additional force when cutting. To use correctly, plunge into the wall and simply engage the point of the fixed Wallwalker® into the cut and pry upward with the rear handle.

Wallwalker® point



- As the saw begins to rotate up, feed force is developed down the line of the intended cut. Once the saw is fully rotated upwards, pull the saw out of the cut a few inches and re-engage the pick into the cut and repeat.
- When cutting heavy rebar, slowly “rock” the saw so that you’re always cutting concrete as well as steel. This will help keep the diamonds exposed. Also, expect less chain life when cutting heavy rebar.
- Expect more chain stretch when making nose buried cuts for extended periods of time, as the chain does not have a chance to “throw” the slurry away from the nose of the bar.
- If the saw begins to cut consistently crooked, turn the bar over and use the other side. Dress worn rails with belt grinder. Note: The normal life of a guide bar is 2 to 3 chains. Heavy rebar can shorten bar life.
- When using a new chain, you can increase the cutting speed by “opening up the diamonds”. Make a few cuts in an abrasive material such as a cinder block.

OPERATION

SYSTEM CLEAN-UP

- After cutting, run saw for at least 15 seconds with the water on to flush slurry and debris from chain, bar and drive sprocket.
- Wash concrete slurry from saw assembly.
- Avoid getting any water in the carburetor or exhaust system. If water enters exhaust port, point bar tip down and pull starter handle several times to expel water out of muffler.
- Remove bar and chain. Flush out chain tensioner with high water pressure and lube with grease.
- After cleaning saw, spray entire saw body, chain, bar, drive sprocket, with a lightweight oil. This will minimize rust and reduce slurry build up on saw assembly.

MAINTENANCE



CAUTION

Diamond chainsaws operate in very harsh and abusive conditions. Daily preventative maintenance to the following basic items will significantly reduce unplanned downtime.

- Fasteners
- Air Filters
- Starter Housing Assembly and Rope
- Sprocket, Clutch and Bearing
- Chain Tensioner

The following sticker is on the saw as a reminder to perform daily maintenance on these basic items.



FASTENERS

IMPORTANT

Inspect and tighten all fasteners before and after each use. Use blue Loctite #242.

- Muffler bolts, torque two upper bolts @ 9 ft-lbs (12Nm), lower bolt @ 3 ft-lbs (4Nm).
- Guard Flap and Bottom Guard bolts.
- Starter Housing Assembly bolts.
- Wallwalker® mounting bolts.
- Cylinder Cover bolts.

MAINTENANCE

AIR FILTERS

IMPORTANT

The air filtration system consists of a pleated cloth air filter and an internal spit-back screen. Both must be kept clean for engine to operate properly. If the saw is not reaching full RPM, most likely one or both of the air filters are dirty.

- The air filter (Figure 1) is a life time filter. To clean use mild soap and water and let air dry. Do not use hi pressure air to clean or dry air filter. Compressed air will damage cotton pleats. After filter has been cleaned and dried, re-oil with K&N filter oil. Apply a bead of oil along the full length of each pleat. Allow 15-20 minutes for the oil to wick. Avoid over oiling. One filter requires only a ¼ oz (10ml) of filter oil. The filter should be reddish-pink color when properly oiled.



Figure 1

- The spit-back screen (Figure 2) should be free of holes and be white in color. To clean, use with mild solvent or gasoline and dry with high pressure air. If spit-back screen is dirty the saw will not reach full RPM.
- During re-assembly, tighten air filter wing-nut “finger tight” plus an 1/8” of a turn with wrench.



Figure 2

MAINTENANCE

STARTER HOUSING ASSEMBLY

IMPORTANT

It is common for concrete slurry to get inside the starter housing assembly during cutting. This can cause the starter pawls to stick and not engage when the rope is pulled.

- After each usage, thoroughly flush the starter housing assembly with water.
- Oil the recoil spring by spraying lightweight oil into the port (Figure 3).
- Oil the starter pawls by spraying lightweight oil into the starter housing through the vents.
- Check the starter rope for fraying, replace as necessary.

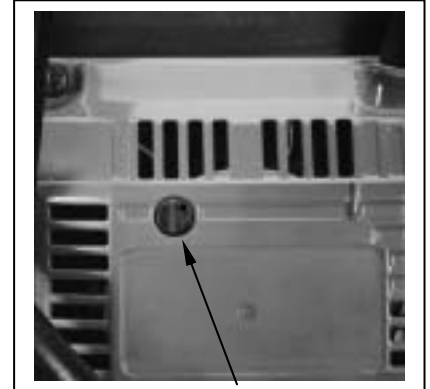


Figure 3 Oil Port Open

Starter Rope Replacement

- Remove the 4 screws that attach the starter assembly to the crankcase. Then remove the pulley dust cover.
- Pull the cord out approximately 8" and lift the cord up into the notch in the pulley (Figure 4). Relax the recoil spring by placing thumb on pulley and gently allow the pulley to unwind entirely. Undo the screw in the center of the pulley and remove the pulley.
- Thread the new cord through the starter cover and fasten it to the pulley. Wind approximately 4 turns of the starter cord on to the pulley. Assemble the starter pulley against the recoil spring so the end of the spring engages into the backside of the pulley. Install the retaining screw in the center of the pulley.



Figure 4

Tensioning the Recoil Spring

- Lift the starter cord up into the notch on the starter pulley (Figure 5) and wind the pulley clockwise 7 full turns. Remove the cord from the pulley notch while pinching the pulley. Release the pulley slowly allowing it to wind the rope counterclockwise onto the pulley.
- When completed, the starter handle should be pulled back in the starter housing under its own tension.
- To check that the starter pulley was assembled correctly, pull the cord completely out of the housing, grip the pulley and turn clockwise another ½ turn. If the pulley turns another ½ turn it is correctly assembled.



Figure 5

MAINTENANCE

Starter Housing Assembly

- To reattach the starter housing, first pull the starter cord out, then hold the starter housing against the crankcase (Figure 6). Slowly release the starter cord to enable the pulley to fit between the pawls.
- Insert and tighten the screws. Use blue Loctite # 242.



Figure 6

CHAIN TENSIONER

IMPORTANT

The chain tensioner (Figure 7) can become clogged with concrete slurry during cutting. After each usage, thoroughly flush the chain tensioner with water. Then apply a liberal amount of grease.

Most Common Causes of Tensioner Damage

- Side cover nuts are not tight enough. They should be torqued to 20 ft-lbs (27Nm).
- Chain tensioning is attempted without loosening the side cover nuts.
- Concrete debris in tensioner pocket.

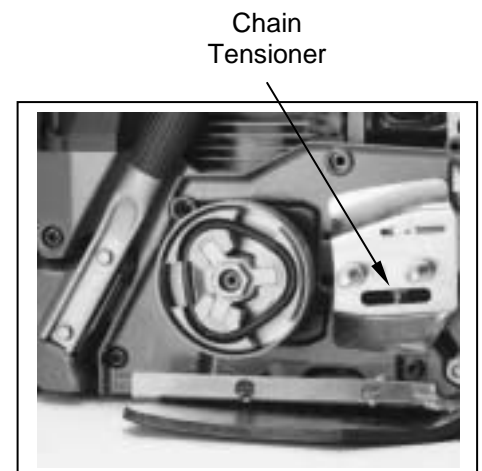


Figure 7

MAINTENANCE

DRIVE SPROCKET

IMPORTANT

The drive sprocket (rim sprocket) is a wear item and should be replaced with every new chain.

IMPORTANT

The needle bearing inside the splined adapter should be greased after every use and should be replaced with every new rim sprocket.

- A rim sprocket system (Figure 8) consists of a Clutch Cup with a Splined Adapter and a Rim Sprocket. When the rim sprocket wears out, only the rim sprocket needs to be replaced. The clutch cup and adapter are also wear items and will eventually need to be replaced, but will usually last 3 to 5 rims.
- Inspect drive sprocket for wear. Replace rim sprocket if grooves cut into the top of the rim
- Check drive sprocket bearing by spinning clutch cup. Replace if worn out.
- The needle bearing on the drive shaft has to be greased regularly (daily). Use high quality water-resistant bearing grease.
- Bearing Tip: It is not necessary to remove the clutch cup to grease the bearing. There is a channel that goes directly from the drive shaft to the bearing (Figure 9). Simply inject grease directly into the end of the drive shaft.

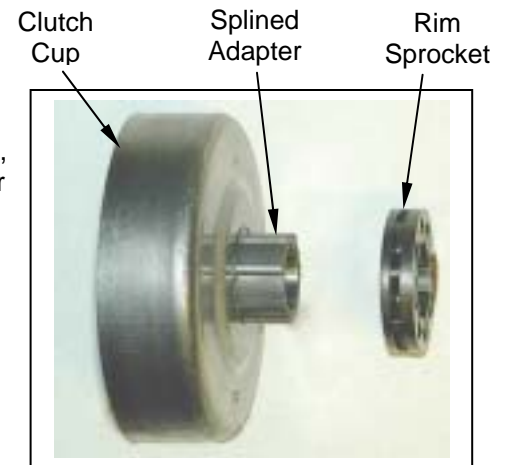


Figure 8

Grease Hole



Figure 9

Drive Sprocket Removal

- Remove bar, chain, and clutch dust shield.
- Remove spark plug and insert piston stop (supplied with each saw) into spark plug hole. Pull starter rope gently until the piston stops against the tool. Using a 19mm wrench, rotate the clutch in the clockwise direction to remove. If an impact wrench is used the spark plug does not have to be removed.
- Carefully slide the clutch cup/drive sprocket assembly off the shaft. The needle bearing may stay with the cup or remain on the shaft. Remove the needle bearing and inspect for heavy wear or damage.

MAINTENANCE

Drive Sprocket Installation

- Assemble the rim sprocket onto the splined adapter, either direction.
- Slide thin metal washer onto drive shaft, slide new needle bearing onto shaft and slide new clutch cup assembly onto bearing (Figure 10).
- Apply a liberal amount of waterproof grease to the needle bearing by simply injecting it directly into the end of the drive shaft. Rotate the clutch cup while grease is being injected to ensure that the entire bearing is coated.
- Install the clutch by rotating it counter clockwise onto the drive shaft and firmly tighten. Torquing the clutch is not necessary, as starting the saw will automatically tighten the clutch. Replace clutch slurry shield. Installation of drive sprocket assembly is now complete.



Figure 10

SPARK PLUG

- A worn or fouled spark plug can result in loss of power, difficult to start or rough idle (Figure 11).
- If the spark plug is dirty, clean with a wire brush and check the electrode gap. Readjust if necessary. The correct gap is 0.50mm (.020").
- The spark plug should be replaced after 40 hours of operation or earlier if the electrodes are badly eroded.
- Always use the recommended spark plug type. An incorrect spark plug can severely damage the piston and cylinder.



Figure 11

MAINTENANCE

CARBURETOR

- The function of the carburetor is to mix fuel with air. The mixture is adjustable but because the saw has to comply with modern emission standards, both the Low speed jet, L, and the High speed jet, H, are limited in travel. Therefore only minor adjustments can be made to compensate for local conditions like altitude, climate and fuel.
- The carburetor has three adjustment screws (Figure 12):

T – Idle Screw is adjusted so that the engine idles smoothly but the clutch does not engage.

L – Low Speed Jet is adjusted so that the engine promptly responds to sharp acceleration but operates smoothly at low RPM.

H – High Speed Jet is adjusted so that engine produces maximum RPM and power during the cut.

	Adjustment range*	Factory Setting
L = Low speed jet	$1 \frac{1}{4}$ to $1 \frac{3}{4}$	$1 \frac{1}{2}$
H = High speed jet	$\frac{1}{2}$ to 1	1

* Limited to 180 degrees for emission compliance

- The jets are limited by a plastic sleeve on the adjustment screw. The H jet limiter is white (Figure 13) and the L jet limiter is black.
- Before adjusting the carburetor, make sure the air filter and spit-back screen are clean and the engine is warmed up.
- If saw has been running satisfactorily and there is a gradual decrease in power and drop in RPM at full throttle, the spit-back screen may have become dirty or the air filter may have become saturated with water. Clean per page 16.

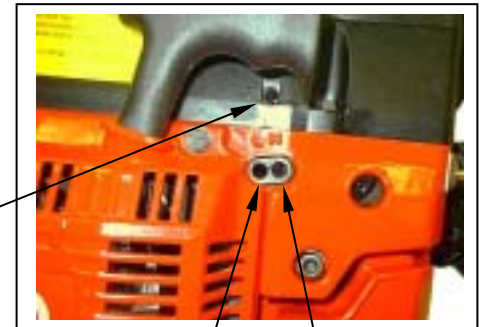


Figure 12

L H

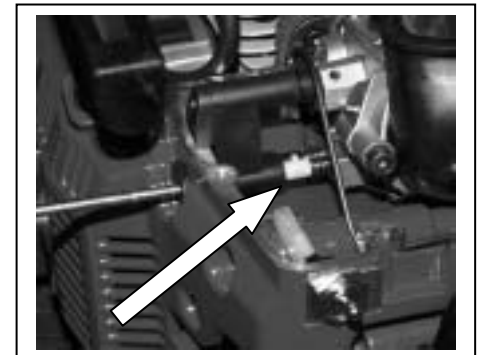


Figure 13

MAINTENANCE

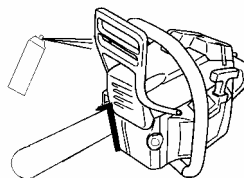
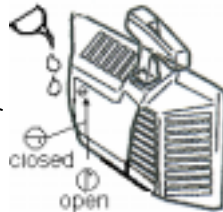
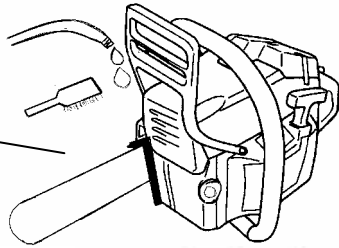
BARS

- The guide bar is designed to be used on both sides. If the cut is consistently leading to one side, turn bar over to expose a new set of rails.
- A table mounted belt grinder can be used to square up the rails of a worn bar. A badly worn bar can quickly damage an expensive chain. If the chain is touching the bottom of the bar groove, replace the bar.
- Check the bar for straightness. Minor adjustments can be made by bending the bar slightly.
- Proper chain tension will extend bar life. See page 9.
- Under some circumstances, especially low water pressure, the sprocket nose can wear out before the bar body. Sprocket nose replacement kits are available at an Authorized Dealer.
- Spray chain and bar with lightweight oil for storage.
- Store bar with the sprocket nose up.
- Periodically clean the water ports inside the groove of the bar using a small diameter piece of wire. Water port cleaners are available from an Authorized Dealer.
- The bar is solely a guide track for the chain. Never use the bar to lift, twist or pry concrete material.

MAINTENANCE

After Every Use

1. Rinse saw, bar & chain with water.
2. Check for loose fasteners. Tighten as necessary.
3. Inspect, flush and grease the chain tensioner.
4. Inspect drive sprocket for wear. Replace sprocket if groove cuts through the top of the tooth.
5. Check drive sprocket bearing for wear by spinning clutch cup. Replace if worn out.
6. Grease drive sprocket bearing. Inject grease into the end of the drive shaft. Spin clutch cup while greasing.
7. Check the starter cord for wear or damage. Replace as necessary.
8. Lube starter recoil spring. Spray lightweight oil into lube hole. Also, spray lightweight oil into the air intake slots on the starter housing to keep starter pawls from sticking.
9. Inspect air filter and spit-back screen. Clean and re-oil filter if dirty. The filter should be a reddish-pink color when cleaned and oiled properly.
10. Spit-back screen should be white with no oil build-up. Rinse in gas or solvent to clean.
11. Spray saw, bar and chain with lightweight oil.

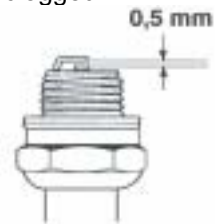


After 10 hours

1. Remove the starter cover and lubricate the starter recoil spring. Clean the fins and the starter pawls on the flywheel with a wire brush, then grease starter pawls.
2. Remove & clean the spark plug. Check the electrode gap. The correct gap is .020 inch (0.5mm).
3. Clean air filter using warm soapy water. Rinse the filter from the inside out. Air dry, don't use high-pressure air to dry the filter. Re-oil the filter using K&N air filter oil.
4. Clean the spit-back screen (inside the air filter) with gas or solvent.

After 40 hours

1. Change spark plug. Adjust electrode gap to .020 inch (0.5mm).
2. Check fuel filter located inside the fuel tank. Clean or replace if clogged.



TROUBLESHOOTING

- **SAW WON'T REACH FULL RPM** - Air filter or spit-back screen is dirty. Clean per page 16.
- **SLOW CHAIN SPEED** – Chain tension too tight. Chain should always be able to be pulled around the bar by hand. It is normal for the chain drive links to hang below the bar.
- **POOR CUTTING SPEED** - Diamonds may be “glazed over”. Make a few cuts in an abrasive material such as a cinder block to expose the diamonds.
- **PREMATURE CHAIN STRECH** - Not enough water pressure. The minimum water pressure required is 20 psi (1.4 bar). **Insufficient water supply may result in excessive wear to the diamond chain, which can lead to loss of strength and diamond chain breakage.**
- **CHAIN TENSIONER BREAKAGE** - Side cover nuts are not tight enough. Torque to 20 ft-lbs (27Nm).
- **WATER NOT FLOWING** - Water hose is kinked or supply is not turned on.
- **WON'T START** – Turn ignition switch on or possible broken spark plug.
- **WON'T START** – Low compression, less than 120 psi (8 bar). Possible incorrect fuel mixture.
 Reference: new = 150 to 180 psi (10 to 12 bar)
 used = 140 to 160 psi (9 to 11 bar)
- **DIFFICULT TO START** – Possible engine flooded. Turn ignition switch on, push choke in, hold throttle on full with foot and pull starter rope until engine starts.
- **DIFFICULT TO START** – Possible fouled spark plug. Remove spark plug, clean with wire brush and re-gap.
- **CHAIN BREAKAGE** – Chain installed backwards. Bumpers should lead segments into the cut.
- **CHAIN BREAKAGE** – Not enough feed pressure while cutting. Avoid letting the saw bounce and chatter.

REFERENCE

APPROXIMATE CUTTING RATES

Material	Cutting Rate
Hard aggregate & Steel	15-25 sq-in/min (90-160 sq-cm/min)
Medium aggregates	20-30 sq-in/min (160-190 sq-cm/min)
Masonry, Soft aggregates	30-50 sq-in/min (190-320 sq-cm/min)

INCH-FOOT DEFINITION

An in-ft is a measure of how much material is to be cut.
 An in-ft is defined as: depth in inches times length in feet.
 Note: $129 \text{ in-ft} = 1 \text{ m}^2$

Example: How many in-ft are in this doorway?

1. Determine the depth of the cut in inches.
For this example, 8 inches.
2. Determine the length of the cut in feet.
 $3+7+3+7=20$ feet
3. Multiply the two numbers
 $8 \text{ in} \times 20 \text{ ft} = 160 \text{ in-ft}$

