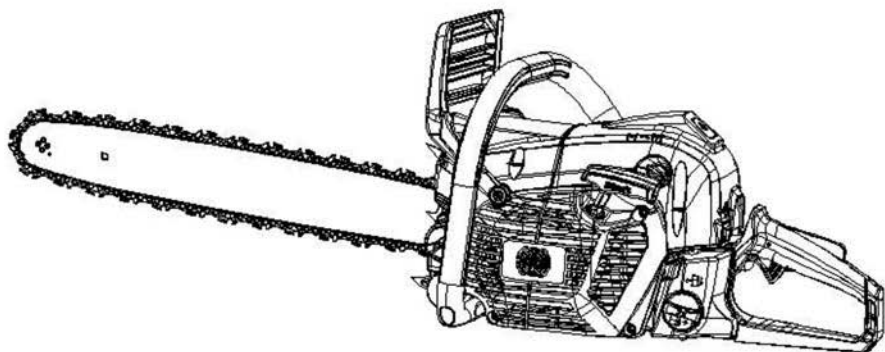


LITTLE BEAVER

PETROL CHAIN SAW DUEFCS151 OWNER'S MANUAL




WARNING

- Read and follow all safety precautions in the operator's manual(s). Failure to follow instructions could result in serious personal injury.
- Keep this manual handy.

CONTENTS

**SAFETY FIRST**

Instructions contained in warnings within this manual marked with a symbol  concern critical points which must be taken into consideration to prevent possible serious bodily injury, and for this reason you are requested to read all such instructions carefully and follow them without fail.

■ WARNINGS IN THE MANUAL**WARNING**

This mark indicates instructions which must be followed in order to prevent accidents which could lead to serious bodily injury or death.

**IMPORTANT**

This mark indicates instructions which must be followed, or it leads to mechanical failure, breakdown, or damage.

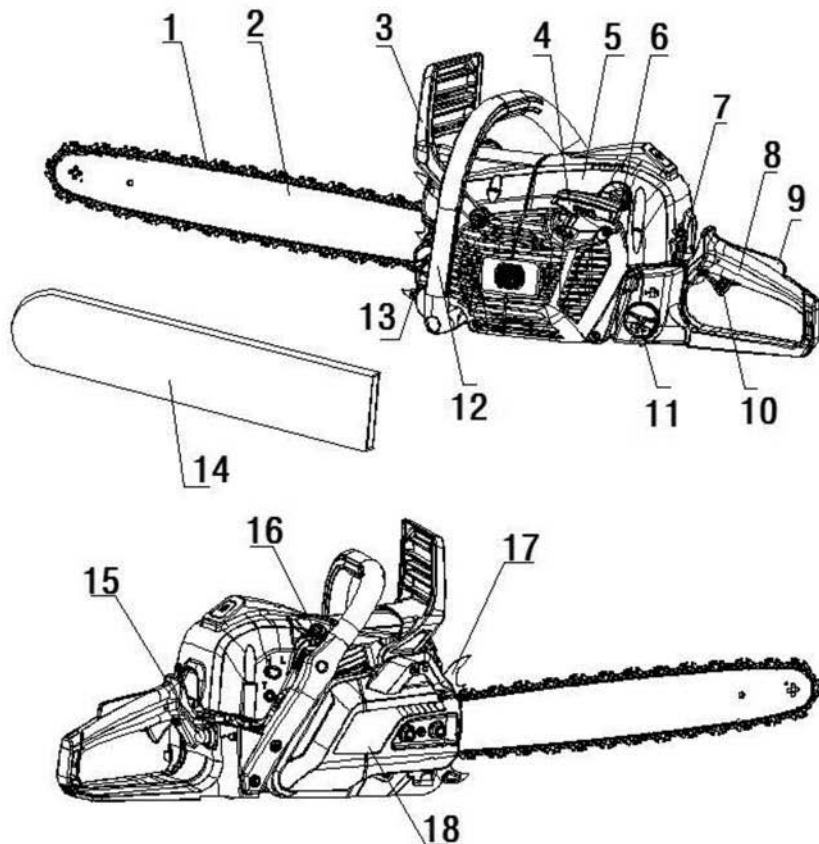
**NOTE**

This mark indicates hints or directions useful in the use of the product.

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1. Parts location

- | | | |
|---------------------|----------------------|---------------------------|
| 1. Saw chain | 7. Engine switch | 13. Oil tank cap |
| 2. Guide bar | 8. Rear handle | 14. Guide bar |
| 3. Front hand guard | 9. Trigger lock-out | 15. Primer bulb |
| 4. Starter handle | 10. Throttle trigger | 16. Pressure relief valve |
| 5. Cylinder shield | 11. Fuel tank cap | 17. Spiked bumper |
| 6. Choke knob | 12. Front handle | 18. Clutch cover |



2. Symbols on the machine



(1) Read, understand and follow all warnings.



(2) Read operator's manual carefully before operating saw.



(3) Contact of the guide bar tip with any object should be avoided.

Tip contact may cause the guide bar to move suddenly upward and backward, which may cause serious injury.



(4) Do not operate a chain saw with one hand!

A chain saw is intended for two-handed use.



(5) Appropriate eye, hearing, and head protection devices must be worn



(7) Always wear safety and anti-vibration(AV) gloves when operating the device.



(8) Always wear safety and slip-resistant boots when operating the device.

2. Symbols on the machine

For safe operation and maintenance, symbols are carved in relief on the machine. According to these indications, please be careful not to make any mistake.



(a). The port to refuel the "MIX GASOLINE"

Position: near the fuel cap



(b). The port to refuel the chain oil

Position: near the oil cap



(c). Operate the engine switch

Flipping the switch to the left position, immediately the engine stops

Position: at the left side of the rear handle



(d). Operate the choke knob

Turn left the choke knob, close the choke; turn right the choke knob, open the choke.

Position: at the upper cover.



(e). Adjust the oil pump

If you turn the rod by screwdriver counter-clockwise, the chain oil flow more, and if you turn it clockwise, less.

Position: Bottom of the rear handle



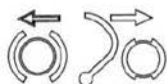
(f). The screw under the "H" stamp is The High-speed mixture adjustment screw.

The screw under the "L" stamp is The Low-speed mixture adjustment screw.

The screw up the "T" stamp is the idle speed adjustment screw.

Position: upper-right of the rear handle

2. Symbols on the machine



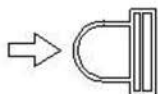
(g). Shows the directions that the chain brake is released (white arrow) and activated (black arrow).

Position: Front handle guard



(h). Shows the direction of the saw chain installation.

Position: Front of the chain cover



(i). Press the direction of the primer bulb.

Position: Right side of the tank base

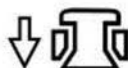


(j). Carburetor anti-freeze mechanism

Normal operating mode



Anti-freeze mode



(k). Cylinder pressure reducing valve device



(K). Engine manual start.

3. For safe operation

1. Before using our products, please read this manual carefully to understand the proper use of your unit. Chain saws shall be used in accordance with the operating instructions and safety precautions listed in the operator's manual(s). It shall be the responsibility of the owner to see that such instructions and precautions are given to every operator who uses the saw;
2. Never operate a chain saw when you are fatigued, ill, or upset, or under the influence of medication that may make you drowsy, or if you are under the influence of alcohol or drugs.
3. Operate the chain saw only in well ventilated areas. Never start or run the engine inside a closed room or building. Exhaust fumes contain dangerous carbon monoxide. Lubrication oil mist and saw dust are poisonous to the operator.
4. Never cut in high wind, bad weather, when visibility is poor or in very high or low temperatures. Always check the tree for dead branches which could fall during the felling operation.
5. Use safety and slip-resistant footwear, snug-fitting clothing, protective gloves; and eye, hearing, and head protection devices.
It is believed that a condition called Raynaud's phenomenon, which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Loss of color and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.
Keep your body warm, especially the head, neck, feet, ankles, hands and wrists.
Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking. Keep the saw chain sharp and the saw, including the AV system, well maintained. A dull chain will increase cutting time, and pressing a dull chain through wood will increase the vibrations transmitted to your hands. A saw with loose components or with damaged or worn AV buffers will also tend to have higher vibration levels. Limit the hours of operation.
All the above mentioned precautions do not guarantee that you will not sustain white

3. For safe operation

finger disease or carpal tunnel syndrome. Therefore, continual and regular users should monitor closely the condition of their hands fingers.

If any of the above symptoms appear, seek medical advice immediately.

6. Always use caution when handling fuel. Wipe up all spills and then move the chain saw at least ten(10)feet (three(3) m) from the fueling point before starting the engine. Allow your chain saw to cool down before refueling.

7. Eliminate all sources of sparks or flame (e.g. smoking, open flames, or work that can cause sparks) in the areas where fuel is mixed, poured, or stored.

Do not smoke while handling fuel or while operating the chain saw.

8. Do not allow other persons to be near the chain saw when starting the engine or cutting a wood. Keep bystanders and animals out of the work area. Children, pets, and bystanders should be a minimum of 30feet (10m) away when you start or operate the chain saw. When felling, keep at least two tree lengths away from your fellow workers.

9. Never start cutting until you have a clear work area, secure footing, and planned retreat path from the falling tree. Always keep proper footing and operate the chain saw only when standing on a fixed, secure and level surface.

10. A chain saw is intended for two-handed use. Do not operate a chain saw with one hand! Serious injury to the operator, helpers, bystanders, or any combination of these persons may result from one-handed operation. Always hold the chain saw firmly with both hands when the engine is running. Use a firm grip with thumb and fingers encircling the chain saw handles.

11. Keep all parts of your body away from the saw chain when the engine is running. Before you start the engine, make sure the saw chain is not contacting anything.

12. Always carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body.

3. For safe operation

13. Always inspect the chain saw before each use for worn, loose, or changed parts. Never operate a chain saw that is damaged, improperly adjusted, or is not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.
14. All chain saw service, other than the items listed in the Operator's Manual, should be performed by maintenance service center of manufacturer or importer (e.g., if improper tools are used to remove the flywheel, or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur which could subsequently cause the flywheel to disintegrate).
15. Always shut off the engine before setting it down. Before fuelling, servicing, or transporting your chain saw, switch off the engine.
16. Use extreme caution when cutting small size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
17. When cutting a limb that is under tension, be alert for spring back so that you will not be struck when the tension in the wood fibers is released.
18. Keep the handles dry, clean and free of oil or fuel mixture.
19. Guard against kickback. Kickback is the upward motion of the guide bar which occurs when the saw chain at the nose of the guide bar contacts an object. Kickback can lead to dangerous loss of control of the chain saw.
20. When transporting and storing your chain saw, make sure the appropriate guide bar scabbard is in place. Securely place the machine during transport to prevent loss of fuel, damage or injury.
21. Apply only light pressure and run the engine at full throttle while using chain saw in order to avoid blockage of saw is occurred in wood.
22. Do not operate a chain saw in a standing tree e.g. pruning or limbing, unless you have been specifically trained to do so.
23. When a chain saw is being used, a fire extinguisher should be available.
24. Hold the chain saw by the insulated gripping surface only, because the chain saw may contact hidden electrical wiring or (in the case of type 2 saws) its own power cord.

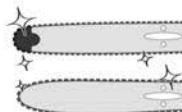
3. For safe operation

KICKBACK SAFETY PRECAUTIONS FOR CHAIN SAW USERS**WARNING**

Kickback may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut. Tip contact in some cases may cause a lightning 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 you to lose control of the saw which could result in serious personal injury.



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



(1) With a basic understanding of kickback you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.

(2) Keep a good grip on the 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 saw. Don't let go.

(3) Make certain that the area in which you're 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 saw.

(4) Cut at high engine speeds.

(5) Do not overreach or cut above shoulder height.

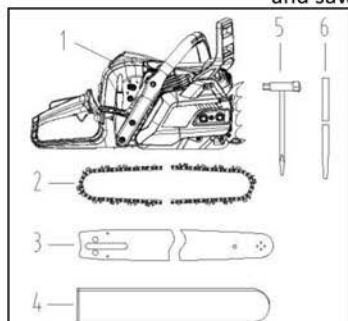
(6) Follow manufacturers sharpening and maintenance instructions for saw chain.

(7) Only use replacement bars and chains specified by the manufacturer or the equivalent.

4. Installing guide bar and saw chain

⚠ WARNING

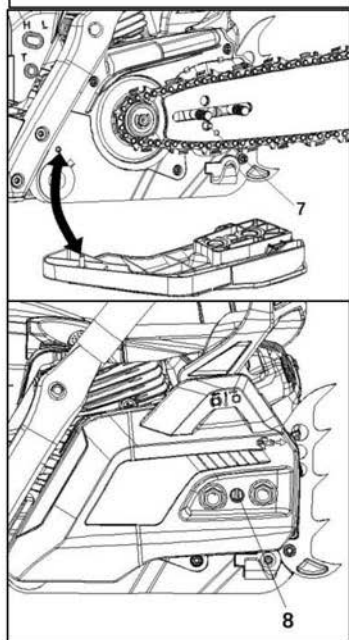
The saw chain has very sharp edges. Use protective gloves for safety. Make sure the engine stopped before guide bar and saw chain adjustments.



A standard saw unit package contains the items as shown below.:

- (1) Power unit
- (2) Saw chain
- (3) Guide bar
- (4) Guide bar scabbard
- (5) Plug wrench
- (6) File

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



1. Pull the guard towards the front handle to check that the chain brake is not on.

2. Loosen two nuts and remove the clutch cover.

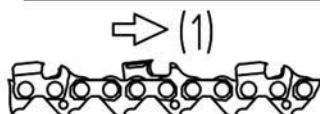
3. Mount the guide bar to the power unit; while inserting the chain tensioner nut into the lower hole of the guide bar. Gear the chain to the sprocket and, while fitting the saw chain around the guide bar, then install the clutch cover, and fasten two nuts to finger tightness.

- (7) Chain tensioner nut
- (8) Chain tensioner screw

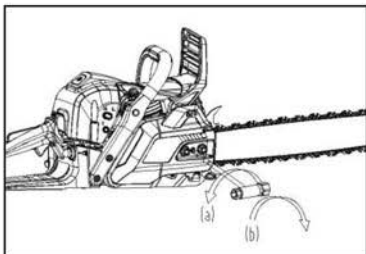
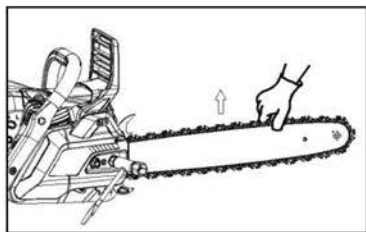
📖 NOTE

Pay attention to the correct direction of the saw chain.

- (1) Moving direction



4. Installing guide bar and saw chain



6. While holding up the tip of the bar, adjust the chain tension by turning the tensioner screw until the tie straps just touch the bottom side of the bar rail.

7. Tighten the nuts securely with the bar tip held up (12 ~ 15 Nm). Then check the chain for smooth rotation and proper tension while moving it by hand. If necessary, readjust with the chain cover loose.

8. Adjust the chain tensioner screw.

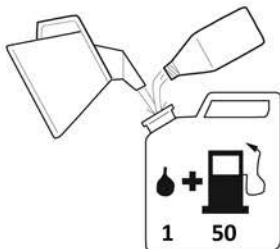
(a) Turn counter-clockwise: Loosen the chain

(b) Turn clockwise: Tighten the chain

! IMPORTANT

It is very important to maintain the proper chain tension. Rapid wear of the guide bar or the chain coming off easily can be caused by improper tension. Especially when using a new chain, take good care of it since it should expand when first used.

The Spiked bumper belongs to the chain saw. It must be screwed up on chain saw before the initial use. Please fix the spiked bumper with two screws on the forefront of the chain saw.


■ Fuel

The engines are lubricated by oil specially formulated for air-cooled 2-cycle gasoline engine use. If oil is not available, use an antioxidant added quality oil expressly labeled for air-cooled 2-cycle engine use.

5. Fuel and chain oil

RECOMMENDED MIXING RATIO**GASOLINE 50 : OIL 1**

These engines are certified to operate on unleaded gasoline.

**⚠ WARNING**

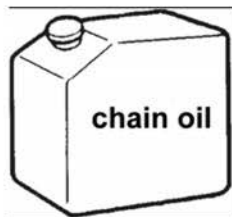
The fuel is highly flammable. Do not smoke or bring any flame or sparks near fuel.

❗ IMPORTANT

1. FUEL WITH NO OIL(RAW GASOLINE) – It will cause severe damage to the engine inner parts very quickly.
2. OIL FOR 4-CYCLE ENGINE USE or WATER COOLED 2-CYCLE ENGINE USE – It can cause spark plug fouling, exhaust port blocking, or piston ring sticking.

■ HOW TO MIX FUEL

1. Measure out the quantities of gasoline and oil to be mixed.
2. Put some of the gasoline into a clean, approved fuel container.
3. Pour in all of the oil and agitate well.
4. Pour in the rest of gasoline and agitate again for at least one minute.
5. Put a clear indication on the outside of the container to avoid mixing up with gasoline or other containers.

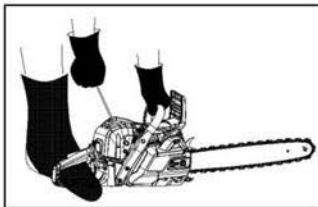
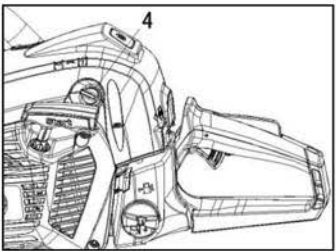
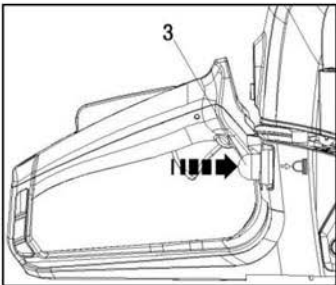
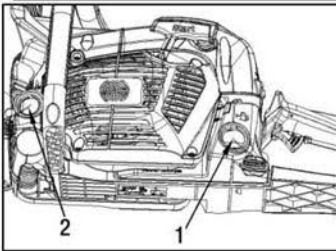
**■ CHAIN OIL**

Use special chain saw oil all year round.

📖 NOTE

Do not use waste or regenerated oil that can cause damage to the oil pump.

6. Operation



■ STARTING ENGINE

Cold starting: A “cold” start of the engine means starting it after at least 10 minutes from when it was switched off or after refueling.

1. Untwist the fuel cap and oil cap thoroughly, but don't remove them from machine, just hang up them.
2. Put fuel and oil into the fuel tank and the oil tank to 80% of the full capacity.

3. Fasten two caps securely and wipe up any fuel spillage around the unit.

4. Continuously push the priming bulb until fuel comes in the bulb.

(1) Fuel tank opening (2) Oil tank opening

(3) Primer bulb (4) Choke knob

5. Pull out the choke knob. The choke will close and the throttle lever will then be set in the starting position.



NOTE

When restarting immediately after stopping the engine set choke in the open position.

6. Push the front handle guard down toward the front to activate the chain brake.

7. While holding the chain saw securely on the ground, Grip the starter handle, slowly pull out the cord with your right hand until you feel some resistance (the starter pawls grip), and now quickly and powerfully pull the cord. **Never twist the starter cord around your hand.**

8. When first firing occur, turn the choke knob counter-clockwise to open the choke.

Note: setting the choke manually can temporarily

6. Operation

set the throttle in a partially open position to aid starting.

9. Hold the chain saw securely on the ground, and repeat pull out the cord until the engine start.

10. Pull up the front handle guard toward the front handle to release brake. Then, allow the engine to warm up with the trigger pulled slightly.

⚠ WARNING

Before you start the engine, make sure the saw chain is not contacting anything. Make sure the chain brake always is activated before each starting.

Hot starting:

To hot start the engine immediately after it has stopped, follow steps 1 – 2 – 3 – 4 – 6 – 9 – 10 of the above procedure, making sure the primer bulb is activated 2-3 times only.

■ CHECKING OIL SUPPLY

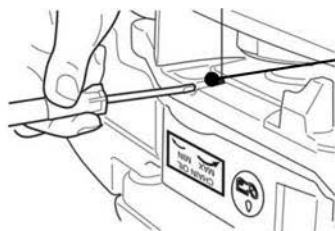
After starting the engine, run the chain at medium speed and see if chain oil is scattered off as shown in the figure.



Chain oil

The chain oil flow can be changed by inserting a screwdriver in the hole on bottom of the clutch side.

Adjust according to your work conditions.



Chain oil flow adjusting shaft

Turn the shaft clockwise – Flow rich

Turn the shaft counter-clockwise – Flow lean

⚠ IMPORTANT

The oil tank should become nearly empty by the time fuel is used up. Be sure to refill the oil tank every time when refueling the saw.

6. Operation

■ CHECKING FUNCTIONAL OF THE CLUTCH

Before each use, you shall confirm that there is no chain movement when the chain saw running at idling speed.

■ ADJUSTING CARBURETTOR

The carburetor on your unit has been factory adjusted, but may require fine tuning due to change in operating conditions. If the carburetor needs to be adjusted, contact your dealer or maintenance service center of manufacturer or importer. Don't adjust it by yourself. Before adjusting the carburetor, make sure that provided are clean air/fuel filters and fresh, properly mixed fuel.

When adjusting, take the following steps:

⚠ IMPORTANT

Be sure to adjust the carburetor with the bar chain attached.

1. H and L needles are restricted within the number of turn as shown below.

H needle -1/4 L needle -1/4

2. Start engine and allow it to warm up in low speed for a few minutes.

3. Turn idle adjusting screw (T) counter-clockwise so that saw chain does not turn. If idling speed is too slow, turn the screw clockwise.

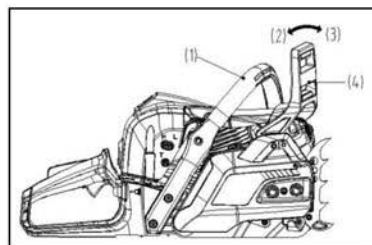
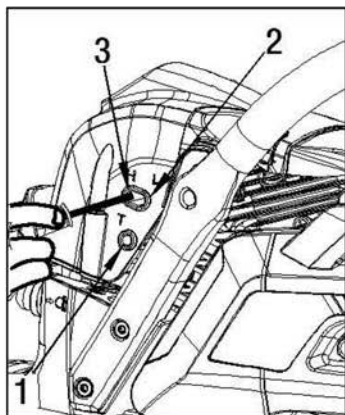
4. Make a test cut adjust the H needle for best cutting power, not for maximum speed.

(1) Idle adjusting screw (2) L needle

(3) H needle

■ CHAIN BRAKE

The chain brake is a device which stops the chain instantaneously if the chain saw recoils due to kickback.



(1) Front handle

(3) Brake

(2) Release

(4) Front handle guard

6. Operation

Normally, the brake is activated automatically by inertial force. It can also be activated manually by pushing the brake lever (Front handle guard) down toward the front. When the brake operates, a white cone pops up from the base of the brake lever. To release brake, pull up the front handle guard toward the front handle till “click” sound is heard.

WARNING

When the brake operates, release the throttle trigger to slow down the engine speed. Continuous operation with the brake engaged will generate heat from the clutch and may cause trouble.

Be sure to confirm brake operation on the daily inspection.



How to confirm:

- 1) Turn off the engine.
 - 2) Holding the chain saw horizontally, release your hand from the front handle, hit the tip of the guide bar to a stump or a piece of wood, and confirm brake operation. Operating level varies by bar size.
- In case the brake is not effective, ask our dealer inspection and repairing.

• CARBURETOR ANTI-FREEZE MECHANISM

Operating chain saws in temperatures of 0 – 5°C at times of high humidity may result in ice forming within the carburetor, and this in turn may cause the output power of the engine to be reduced or for the engine to fail to operate smoothly.

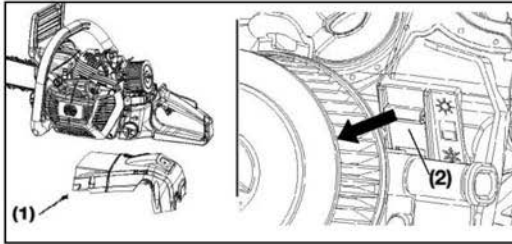
This product has accordingly been designed with a ventilation hatch on the right side of the surface of the cylinder cover to allow warm air to be supplied to the engine and to thereby prevent icing from occurring.

Under normal circumstances the product should be used in the normal operating mode, i.e., in the mode which it is set at the time of shipment.

However when the possibility exists that icing may occur, the unit should be set to operate in the anti-freeze mode before use

Continuing to use the product in the anti-freeze mode even when temperatures have risen and returned to normal, may result in the engine failing to start properly or in the

engine failing to operate at its normal speed, and for this reason you should always be sure to return the unit to the normal operating mode if there is no danger of icing occurring.



HOW TO SWITCH BETWEEN OPERATING MODES

(1) Cylinder cover

(2) Icing cap

1. Flip the engine switch to turn off the engine.
2. Remove the cover to the air filter, remove the air filter, and then

remove the choke knob from the cylinder cover.

3. Loosen the screws holding the cylinder cover in place (i.e., the three screws on the inside and the one screw on the outside of the cover), and then remove the cylinder cover.

4. Press with your finger down on the icing cap located on the right-hand side of the cylinder cover to remove the icing cap.

5. Adjust the icing cap so that the “snow” mark faces upwards and then return it to its original position in the cylinder cover.

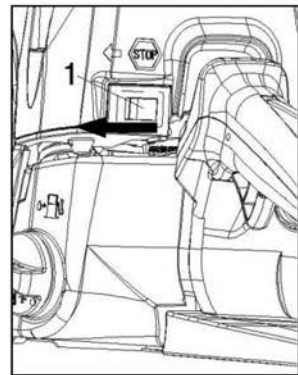
6. Fix the cylinder cover back into its original position, and then fix all other parts back into their proper positions.

■ Stopping engine

1. Release the throttle trigger to allow the engine idling for a few minutes.

2. Press down the “0” side of switch.

(1) Engine switch



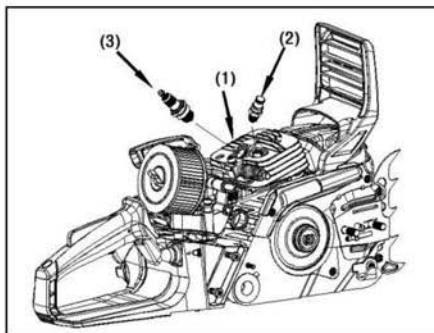
■ Decompression valve (if applicable)

After extended period of use decompression valve may not close or come out due to the built up carbon inside of the valve mounting hole in cylinder. To remove the carbon, take the following steps:

a)

Remove air cleaner cover, cylinder cover, spark plug and decompression valve from the engine.

- 1) cylinder
- 2) Decompression valve
- 3) Spark plug



- b) Clean the electrodes with a wire brush. Viewing through the spark plug hole, crank down the piston to the lowest position by pulling recoil starter slowly.
 - c) Prepare diameter 2-2.3mm drill bit.
 - d) Lay down the engine facing the valve mounting hole downward so that the removed carbon will not drop into cylinder.
 - e) Insert the drill bit into the hole turning slowly so that the bit will scrape off the built up carbon.
 - f) Make sure to remove the drill bit and pull recoil starter several times.
- Reinstall the disassembled parts.

7. Sawing

⚠ WARNING

Before proceeding to your job, read "For Safe Operation" section it is recommended to first practice sawing easy logs. This also helps you get accustomed to your unit.

Always follow all the safety regulations which can restrict the use of the machine. The chain saw must only be used for cutting wood. It is forbidden to cut other types of material. Vibrations and kickback vary with different materials and the requirements of the safety regulations would not be respected. Do not use the chain saw as a lever for lifting, moving or splitting objects. Do not lock it over fixed stands. It is forbidden to hitch tools or applications to the P.T.O. that are not specified by the manufacturer.

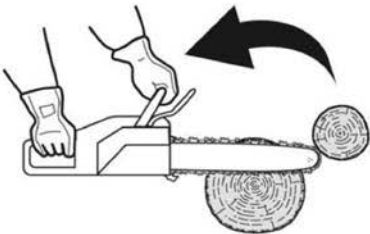
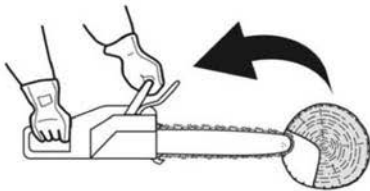
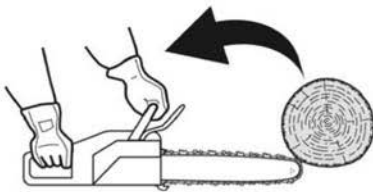
It is not necessary to force the saw into the cut. Apply only light pressure while running the engine at full throttle.

It is recommended that daily inspection before use and after dropping or other impacts to identify significant damage or defects.

Racing the engine with the chain seized in a cutaway can damage the clutch system. When the saw chain is caught in the cut, do not attempt to pull it out by force, but use a wedge or a lever to open the cut.

■ Guard against kickback

This saw is also equipped with a chain brake that will stop the chain in the event of kickback if operating properly. You must check the chain brake operation before each usage by running the saw at full throttle



7. Sawing

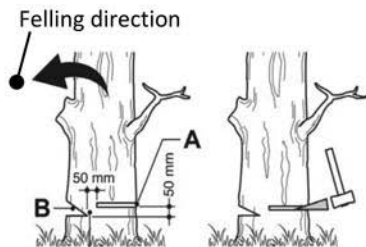
for 1 or 2 seconds and pushing the front hand guard forward. The chain should stop immediately with the engine at full speed. If the chain is slow to stop or does not stop then contact the maintenance service center of manufacturer or importer for replacing the brake band and clutch drum before use.

It is extremely important that the chain brake be checked for proper operation before each use and that the chain be sharp in order to maintain the kickback safety level of this saw. Removal of the safety devices, inadequate maintenance, or incorrect replacement of the bar or chain may increase the risk of serious personal injury due to kickback.



■ Felling a tree

1. Decide the felling direction considering the wind, lean of the tree, location of heavy branches, ease of job after felling, and other factors .
2. While clearing the area around the tree, arrange a good foothold and retreat path.
3. Make a notch cut one-third of the way into the tree on the felling side.
4. Make a felling cut from the opposite side of the notch and at a level slightly higher than the bottom of the notch.



⚠ WARNING

When you fell a tree, be sure to warn your neighboring workers of the danger.

- (A) Felling cut
(B) Notch cuts

7. Sawing

■ LOGGING AND LIMBING

⚠ WARNING

1. Always ensure your foothold as well as stability of the tree.
2. Be alert to the rolling over of a cut log.
3. Read the instructions in "For Safe Operation" to avoid kickback of the saw.

Before starting work, check the direction of bending force inside the log to be cut.

Always finish cutting from the opposite side of bending direction to prevent the guide bar from being caught in the cutaway.

Cutting an unpillowed log

Saw down halfway, then roll the log over and cut from the opposite side.

Cutting a pillowed log

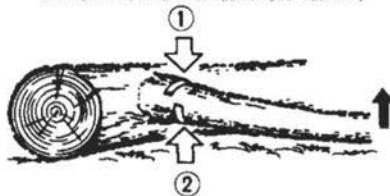
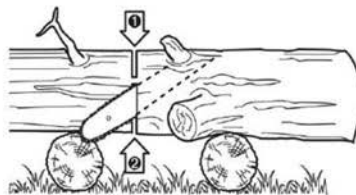
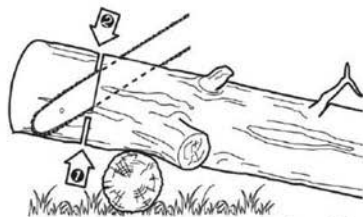
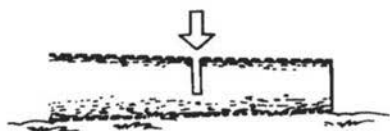
In the area A in the picture right above, saw up from the bottom one-third and finish by sawing down from the top. In the area B, saw down from the top one-third and finish by sawing up from the bottom.

Limbing a felled tree

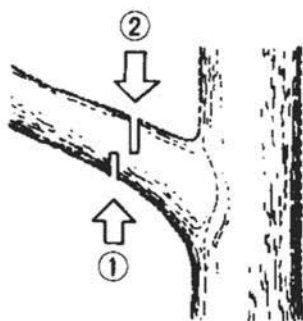
First check which way the limb is bent. Then make a shallow cut into the compressed side to prevent the limb from being torn. Cut through from the tensed side.

⚠ WARNING

Be alert to the spring back of a cut limb.



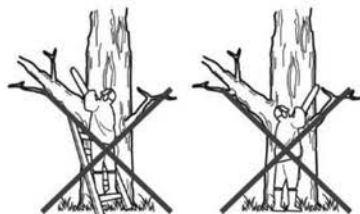
7. Sawing

**Pruning**

Cut up from the bottom, finish down from the top.

⚠ WARNING

1. Do not use an unstable foothold or a stepladder.
2. Do not overreach.
3. Do not cut above shoulder height.
4. Always use both hands to grip the saw.

**⚠ WARNING**

The Spiked bumper must always be put on while using the chain saw on tree trunk. Push the spiked bumper into the tree trunk by using the rear handle. Push the front handle in the direction of cutting line. The spiked bumper must be remaining set for further saw guiding if necessary. Use a spiked bumper when cutting trees and thick branches can ensure your safety and decrease the working strength and vibration level.

If there's barrier between the cutting material and chainsaw, turn off the machine. Wait until it stops completely. Wear the safety glove and remove the barrier. If the chain must be removed, please follow the instruction of relevant part like installation in manual. A trial run must be conducted after the cleaning and newly installation. If vibration or mechanical noise is discovered, please stop the use and contact your dealer.

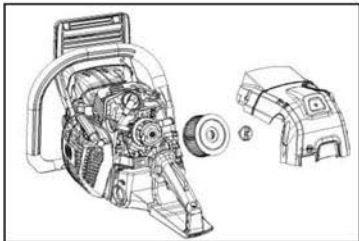
8. Maintenance

⚠ WARNING

Before cleaning, inspecting or repairing your unit, make sure that engine has stopped and is cool. Disconnect the spark plug to prevent accidental starting.

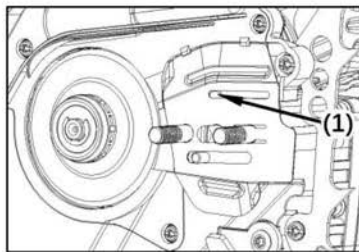
Follow the instructions to carry out regular maintenance, pre-operating procedures and daily maintenance routines. Improper maintenance may result in serious damage to the machine.

Keep your chain saw in good working condition always.

■ Maintenance after each use**1. Air filter**

Dust on the air filter surface can be removed by tapping a corner of the filter against a hard surface. To clean dirt in the meshes, split the filter into halves and brush in gasoline. When using compressed air, blow from the inside.

To assemble the filter halves, press the rim until it clicks.

**2. Oiling port**

Dismount the guide bar and check the oiling port for clogging.

(1) Oiling port

3. Guide bar

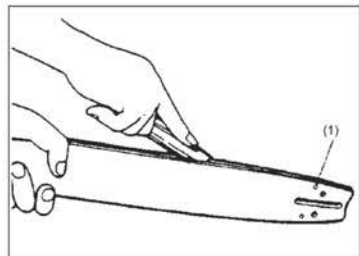
When the guide bar is dismantled, remove sawdust in the bar groove and the oiling port.

Grease the nose sprocket from the feeding port on the tip of the bar.

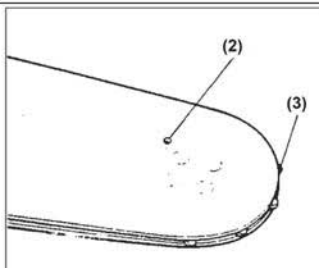
(1) Oiling port

(2) Grease port

(3) Sprocket



8. Maintenance



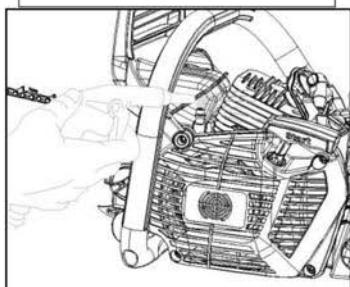
4. Others

Check for fuel leakage and loose fastenings and damage to major parts, especially handle joints and guide bar mounting. If any defects are found, make sure to have them repaired before operating again.

■ Periodical service points

1. Cylinder fins

Dust clogging between the cylinder fins will cause overheating of the engine. Periodically check and clean the cylinder fins after removing the air cleaner and the cylinder cover. When installing the cylinder cover, make sure that switch wires and grommets are positioned correctly in place.

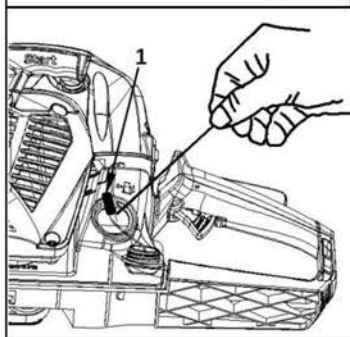


2. Fuel filter

(a) Using a wire hook, take out the filter from the filler port.

(1) Fuel filter

(b) Disassemble the filter and wash with gasoline, or replace with a new one if needed.



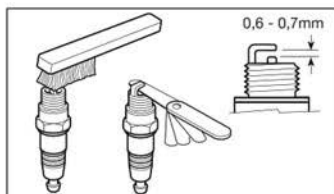
! IMPORTANT

- After removing the filter, use a pinch to hold the end of the suction pipe.
- When assembling the filter, take care not to allow filter fibers or dust inside the suction pipe.

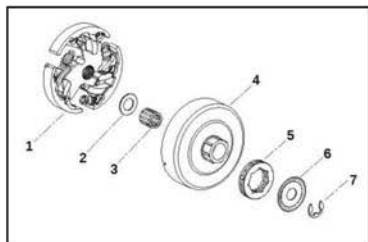
3. Spark plug

Clean the electrodes with a wire brush and reset the gap to 0.6mm - 0.7 mm as necessary.

Spark plug type: see chapter "Specifications"



8. Maintenance

**4. Sprocket**

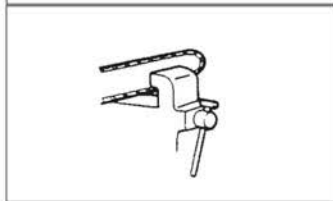
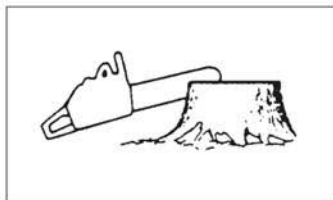
check for cracks and for excessive wear interfering with the chain drive. If the wear is considerable, replace it with new one. Never fit a new chain on a worn sprocket, or a worn chain on a new sprocket.

- (1) Clutch block (2) Washer
 (3) Needle bearing (4) Clutch drum
 (5) Sprocket (6) Washer
 (7) Clip spring_

5. Front and Rear absorber spring

Replace if spring is deformation.

Use only the spare parts which listed in this manual. Use the other spare part can cause serious injury.

**■ Saw chain****⚠ WARNING**

It is very important for smooth and safe operation to keep the cutters always sharp.

Your cutters need to be sharpened when:

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

Cutter setting standards:**⚠ WARNING**

Be sure to wear safety gloves.

Before filing:

- Make sure the saw chain is held securely.
- Make sure the engine is stopped.

9. Maintenance of Saw Chain and Guide Bar

- Use a round file of proper size for your chain.

Chain type: Oregon 21BPX

File size: 3/16" (4.8mm)


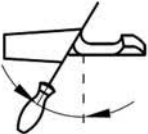
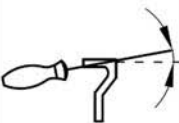


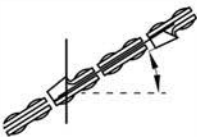


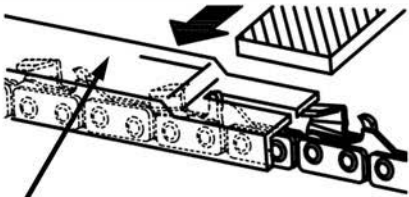

Place your file on the cutter and push straight forward.

Keep the file position as illustrated.

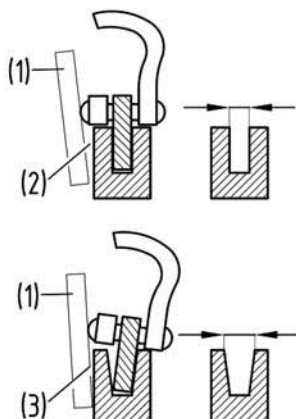
After every cutter has been set, check the depth gauge and file it to the proper level as illustrated.

Be sure to round off the front edge to reduce the chance of kickback or tie-strap breakage.

Make sure every cutter has the same length and edge angles as illustrated.

Type of chain	File diameter	Top plate angle	Down angle	Head tilt angle (55°)	Depth gauge standard
Type of chain					
		Vise rotate angle	Vise tilt angle	Side angle	
					
21BPX	3/16"	30°	10°	85°	0.025"
					
Depth gauge				File	

9. Maintenance of Saw Chain and Guide Bar

**Guide bar**

- Reverse the bar occasionally to prevent partial wear.
- The bar rail should always be a square. Check for wear of the bar rail. Apply a ruler to the bar and the outside of a cutter. If a gap is observed between them, the rail is normal. Otherwise, the bar rail is worn. Such a bar needs to be corrected or replaced.

(1) Ruler (2) Gap (3) No gap (4) Chain tilts

WARNING

The table contains a list of all possible combinations between bar and chain, indicating those which may be used on each machine, marked with the symbol “*”.

Pitch	Guide bar				Chain		Chain saw model
	Zoll	Length Inches/cm	Groove width Inches/mm	Code	Number of nose teeth	Code	
0.325"	20"/50cm	0.058"/1.5mm	Oregon 208PXBK095	7	Oregon 21BPX078XUL	78	*
0.325"	20"/50cm	0.058"/1.5mm	Oregon 188PXBK095	7	Oregon 21BPX072XUL	72	*

For replacement use only above bars and chains. If you use non-approved combinations it may cause serious personal injury and damage to the machine.

10. Storage

1. Empty the fuel tank and run the engine out of fuel.
2. Empty the oil tank.
3. Clean and maintain the entire unit.
4. Store the unit in a dry place out of the reach of children.
5. When storing or transporting your chain saw, use the appropriate guide-bar cover.

11. Waste disposal and environmental protection

Never pour remainders of chain lubricant or 2-stroke fuel mixture in the drain or sewerage system or soil, but dispose of it in a proper, environmentally friendly way, e.g., at a special collecting point or dump.

If your device should become useless somewhere in the future or you do not need it any longer, do not dispose of the device together with your domestic refuse, but dispose of it in an environmentally friendly manner. Thoroughly empty the oil/lubricant and fuel tanks and dispose of the remainders at a special collecting point or dump. Please also dispose of the device itself at an according collecting/recycling point. By doing so, plastic and metal parts can be separated and recycled. Information concerning the disposal of materials and devices are available from your local administration.

12. Troubleshooting guide

PROBLEME	CAUSE	REMEDY
1) Starting failure	<ul style="list-style-type: none"> – Check fuel for water or substandard mixture. – Check for engine flooding. – Check spark ignition. 	<ul style="list-style-type: none"> – Replace with proper fuel. – Remove and dry the spark plug. – Then pull the starter again with no choke. – Replace with a new plug.
2) Lack of power/Poor acceleration/ Rough idling	<ul style="list-style-type: none"> – Check fuel for water or substandard mixture. – Check air filter and fuel filter for clogging. – Check carburetor for inadequate adjustment. 	<ul style="list-style-type: none"> – Replace with proper fuel. – Clean. – Readjust speed needles.
3) Oil does not come out	<ul style="list-style-type: none"> – Check oil for substandard quality. – Check oil passage and ports for clogging. 	<ul style="list-style-type: none"> – Replace. – Clean.

If the unit seems to need further service, please consult with an authorized service shop in your area.

13. Specifications	
Power unit:	DUEFCS151
Displacement:	50.9 cm ³
Maximum engine power:	2.2 kW
Fuel:	Mixture (Unleaded Gasoline 50: two-cycle oil 1)
Fuel tank capacity:	510cm ³
Chain oil:	Engine oil SAE#10W-30
Oil tank capacity:	290cm ³
Carburettor:	Diaphragm type
Fuel consumption at maximum engine power:	520 g/kw·h
Idling speed range:	3000 ± 400 min ⁻¹
Maximum speed with cutting attachment:	13000 min ⁻¹
Ignition system:	C.D.I. with timing advance function
Spark plug:	CHAMPION RCJ7Y/ TORCH L7RTC/NGK BPMR7A/BOSCH L8RTF/ DENSO W22MPR
Oil feeding system:	Mechanical plunger pump with adjuster
Sprocket Teeth x Pitch:	7T×8.255 mm (0.325 in)
Dimensions (L x W x H):	470×245×290(mm)
Dry weight (without guide bar and chain, empty tanks):	5.8 kg
Sound pressure level at operation position (EN ISO 22868) L _{pA} :	100.8 dB(A)
Vibration Value (EN ISO 22867):	
Front handle:	4.2m/s ²
Rear handle:	4.4m/s ²
Uncertainty of stated value (2006/42EC):	1.5 m/s ²
Cutting head:	
Guide bar	

13. Specifications	
Type:	Sprocket nose
Size:	20 in/ 18 in
Cutting length:	48 cm/ 43 cm
Saw chain	
Type:	
Pitch:	8.255 mm (0.325 in)
Gauge:	1.47 mm (0.058in)

Combinations of guide bar/ saw chain:

- 1) 208PXBK095 / 21BPX078XUL
- 2) 188PXBK095 / 21BPX072XUL

specifications are subject to change without notice.