

GASOLINE SCARIFIER GT5654



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Safety Messages

Your safety and the safety of others are very important. We have provided important safety messages in this manual and on the Gasoline Engine Scarifier. Please read these messages carefully. A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol.

IMPORTANT NOTICES

Please pay special attention to statements by the following words:

WARNING

A warning is used to alert the user to fact that hazardous operating and maintenance procedures may result in injury to or death of personnel if not strictly observed.

CAUTION

A caution is used to alert the user to fact that hazardous operating and maintenance procedures may result in damage to or destruction of equipment if not strictly observed.

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I . SCARIFIER SAFETY

Read carefully before use and keep for future reference.

1 Training

1) Read the instructions carefully. Be familiar with the controls and the proper use of the machine.

2 Preparation

- 1) Never allow people unfamiliar with these instructions or children to use the machine. Local regulations can restrict the age of the operator;
- 2) Never operate the machine while people, especially children, or pets are nearby;
- 3) Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property;
- 4) Wear ear protection and safety glasses at all times while operating the machine;
- 5) While operating the machine. Always wear substantial footwear and long trousers. Do not operate the machine when barefoot or wearing open sandals;
- 6) Thoroughly inspect the area where the machine is to be used and remove all stones, wires, bones and other foreign objects,
- 7) Warning-Petrol is highly flammable;
- 8) Store fuel in containers specifically designed for this purpose;
- 9) Refuel outdoors only and do not smoke while refueling;
- 10) Add fuel before starting the engine. Never remove the cap of the fuel tank or add petrol while the engine is running or when the engine is hot;
- 11) If petrol is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated;
- 12) Replace all fuel tanks and container caps securely;
- 13) Replace faulty silencers;
- 14) Before using, always visually inspect to see that the tines, bolts are not worn or damaged. Replace worn or damaged tines and bolts in sets to preserve balance;
- 15) For rear discharge appliances with exposed rear rollers, when used without a catcher, full eye protection shall be worn.

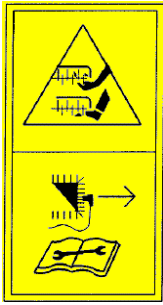
3 Operation

- 1) Do not operate engine in a confined space where dangerous carbon monoxide fumes can collect;
- 2) Operate the machine only in daylight or in good artificial light;
- 3) Avoid operating the machine in wet grass.
- 4) Always be sure of your footing on slopes;
- 5) Walk, never run;
- 6) Always work across the face of slopes, never up and down;
- 7) Exercise extreme caution when changing direction on slopes;
- 8) Do not operate the machine on steep slopes;
- 9) Use extreme caution when reversing or pulling the machine towards you;
- 10) Stop the tines if the machine has to be tilted for transportation. Do not operate the tines when crossing surfaces other than grass, and when transporting the machine to and from the working area;
- 11) Never operate the machine with defective guards, or without safety devices, for example deflectors and/or catchers, in place;
- 12) Do not change the engine governor settings or over-speed the engine;
- 13) Disengage all tine and drive clutches before starting the engine;

- 14) Start the engine or switch on the motor carefully according to instructions and with feet well away from the tine(s);
- 15) Do not tilt the machine when starting the engine or switching on the motor, except if the machine has to be tilted for starting. In this case, do not tilt it more than absolutely necessary and lift only the part which is away from the operator;
- 16) Do not start the engine when standing in front of the discharge chute.
- 17) Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times;
- 18) Never pick up or carry a machine while the engine is running;
- 19) Stop the engine, disconnect the spark plug wire and for battery start machine remove the ignition key:
 - before clearing blockages or unclogging chute;
 - before checking, cleaning or working on the machine;
 - after striking a foreign object. Inspect the machine for damage and make repair before restarting and operating the machine;
 - if the machine starts to vibrate abnormally (check immediately);
- 20) Stop the engine, disconnect the spark plug wire and for battery start machines remove the ignition key:
 - whenever you leave the machine;
 - before refueling;
- 21) Reduce the throttle setting during engine shut down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of aerating or scarifying.

4 Maintenance and storage

- 1) Keep all nuts, bolts and screws tight to be sure the machine is in a safe working condition;
- 2) Never store the machine with petrol in the tank inside a building where fumes can reach an open flame or spark;
- 3) Allow the engine to cool before storing in any enclosure;
- 4) To reduce the fire hazard, keep the engine, silencer, battery compartment and petrol storage area free of grass, thatch, moss, leaves or excessive grease;
- 5) Check the catcher frequently for wear or deterioration;
- 6) Examine the machine regularly and replace worn or damaged parts for safety;
- 7) If the fuel tank has to be drained, this should be done outdoors. The drained fuel should be stored in a container specifically designed for fuel storage or it should be disposed of carefully.
- 8) Avoid long-term skin contact with fuel, oil and inhalation of fumes. Wash your hands with soap and water as soon as possible after handling used oil.
- 9) Please dispose of used oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station or recycling center for reclamation. Do not throw it in the trash, pour it on the ground, or down a drain.



Always remove the spark plug connector
Before working on the cutters!
Keep fingers and feet well away from the cutters!
Always switch off the appliance and remove the spark
Plug connector before adjusting, cleaning or checking it.

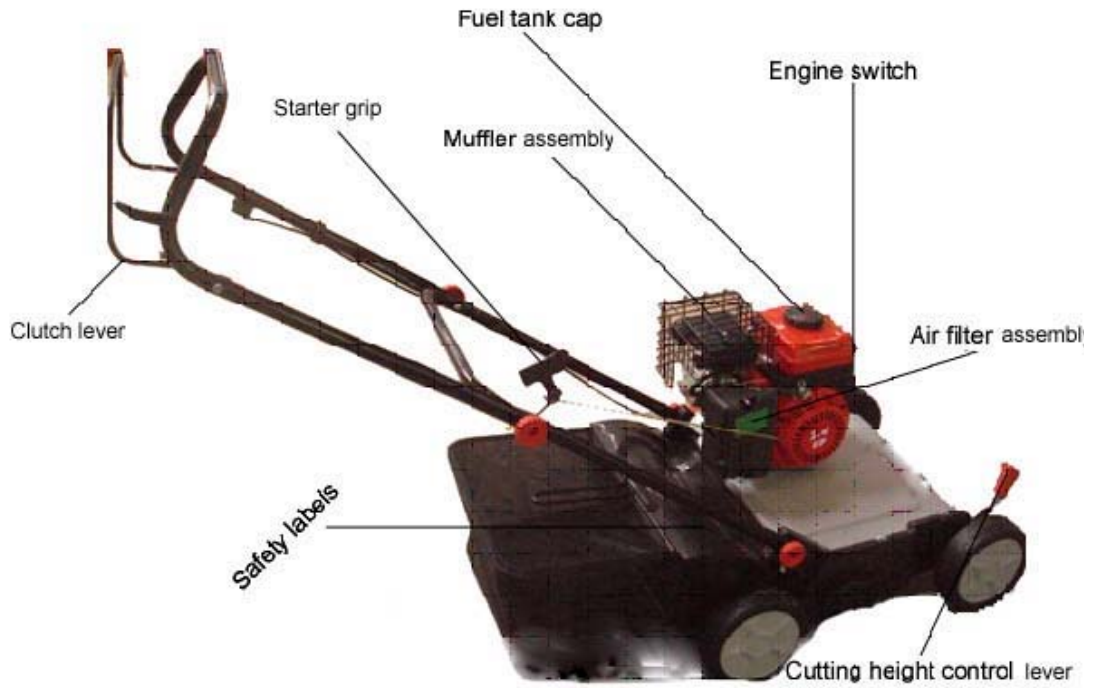


Always wear eye and ear protection!



Guaranteed sound power level: 102 dB(A)

III. PARTS INTRODUCTION.



IV PRE-OPERATION PREPARATION

4.1 INSTALLATION GUIDE

Completeness inspection. Packing cases shall contain: Scarifier, Operating Instruction Manual and screw & nut bag, spark plug wrench (for maintenance). Check if the shield and covers are installed correctly and all fixed bolts are set in right position before installation. Replace any damaged parts. Follow assembling prompts provided by manufacturer.

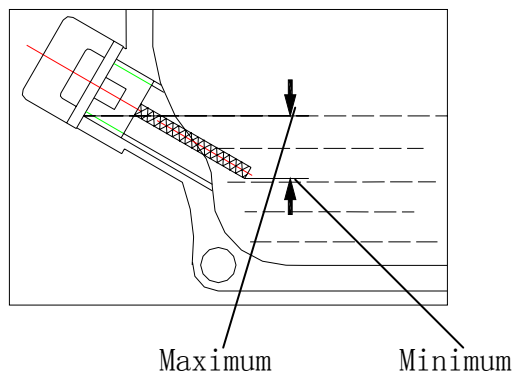
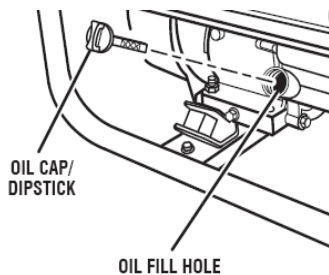
4.2 ENGINE OIL CHECK

CAUTION

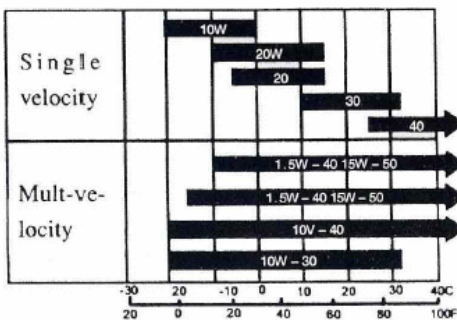
- ※ The quality of the engine oil is one of the key factors in deciding engine performance and service life. Do not use dirty engine oil or vegetable oil.
- ※ Be sure to check engine oil level with the engine cold and standing on level ground. Use 4-stroke gasoline engine oil or engine oil equivalent in quality with SF, SG from API. Oil viscosity varies with average temperature, so engine oil with proper viscosity in accordance with your region temperature.

If the engine stops and cannot restart, check the engine oil level first.

- a、 remove the oil filler cap/dipstick and wipe it clean,
- b、 insert the filler cap/dipstick into the oil filler neck, but do not screw it in, then remove it to check the oil level.
- c、 If the oil level on dipstick is near or below the lower limit mark on the dipstick, remove the oil filler cap/dipstick, and fill with the recommended oil to the upper limit mark (bottom edge of the oil fill hole). Do not overfill.
- d. Reinstall the oil filler cap/dipstick.



Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.



NOTICE

Running the engine with insufficient oil can cause serious engine damage.

4.3 FUEL RECOMMENDATION

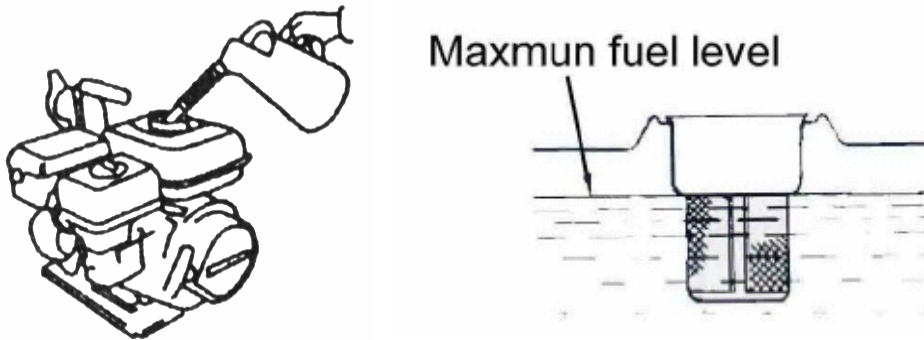
- Remove the filler cap check fuel level.
- Refill the tank if the fuel level is low. Do not fill above the shoulder of the fuel strainer.

WARNING

- Gasoline is extremely flammable and is explosive under certain conditions.
- Refuel in a well*ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is re-fuelled or where gasoline is stored.
- Do not overfill the fuel when re-fuelling .Spilled fuel or fuel vapour may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Avoid repeated or prolonged contact with skin or breathing of vapour.

KEEP OUT OF REACH OF CHILDREN

Fuel tank capacity: 2.5L



Use unleaded gasoline with a pump octane rating of 86 or higher.

This engine is designed to operate on unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust life.

NOTICE

Fuel can damage paint and some types of plastic. Be careful not to spill fuel when filling your tank. Damage caused by spilling fuels not covered under warranty. Never use stale or contaminated gasoline or oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

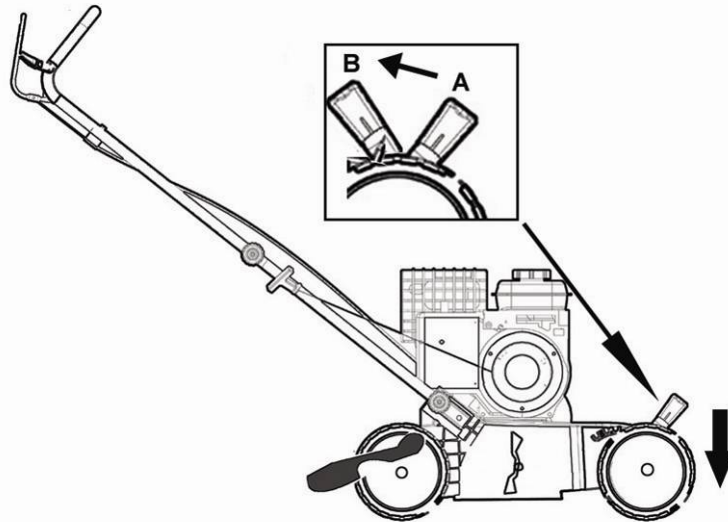
4.4 AIR CLEANER FILTER ELEMENT CHECK (see 8.2)

4.5 CHECK THE SCARIFYING PLACE

Thoroughly inspect the area where the machine is to be used and remove all stones, wires, bones and other foreign objects.

4.6 Scarifying depth

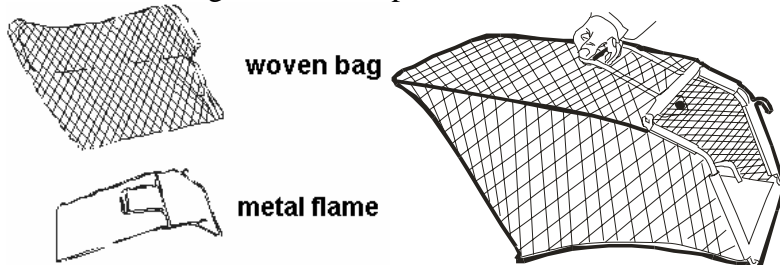
The scarifying depths are approximate value, and the practice depths are various according to the condition of the lawn and its soil. The cutting height control level, if push forward which can raise the height of base, if push back which will lower the height of base. The depth of scarifying if from 5mm to 15mm (all is approximate value).If you need to adjust the depth of scarifying, please put the height control level outward and shift gear.



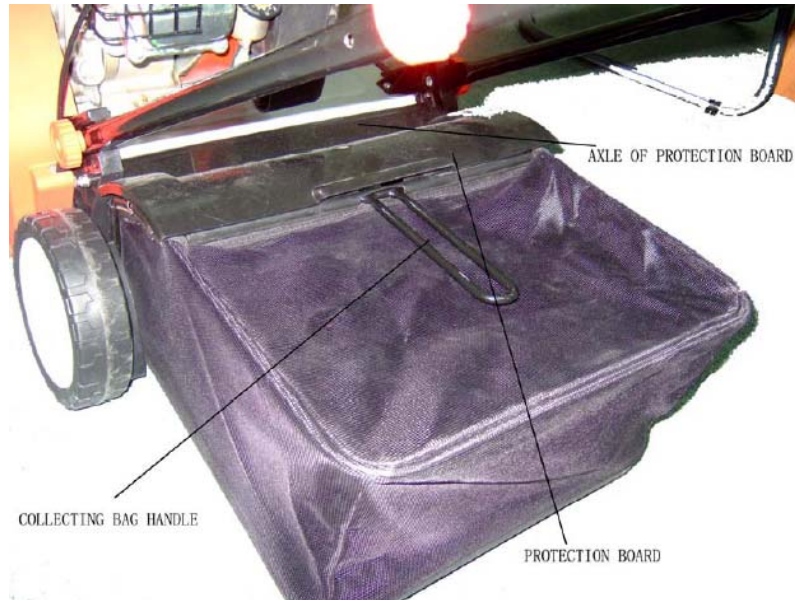
LOCATION	GEAR	DEPTH OF SCARIFYING
A	START GEAR	
B	COMBING GEAR SCRATCHING GEAR	
1		+10
2		0
3		-3
4		-6
5		-9
6		-12

4.7 install the grass catcher

a. assemble the grass catcher: put the metal frame into the slot of woven bag.



b. Carry the protection board with one hand; hold the grass catcher with the other hand then put the grass catcher to the axle of protection board.

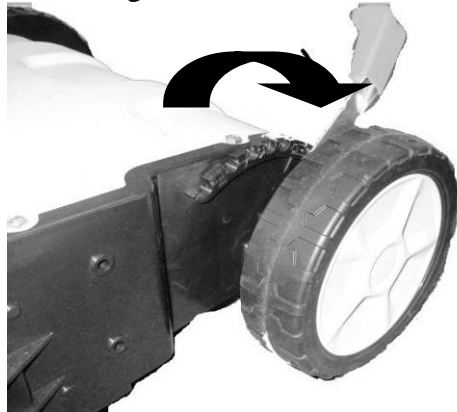


When the grass catcher is full, please stop the engine, then remove the collection bag
Warning!

- Always ensure the engine is stopped before fitting or removing the catcher.
- Never start the engine without first making sure the grass catcher is fitted.

V. STARTING UP

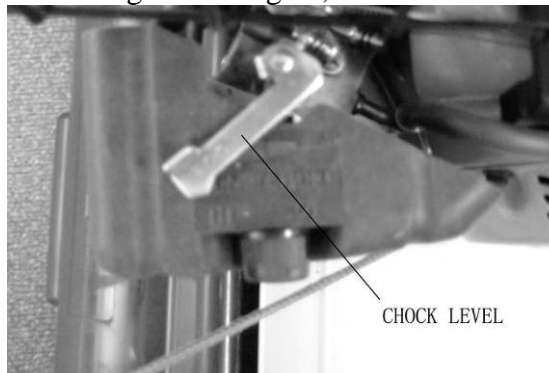
5.1 Adjust the height control level to starting gear (position A) in order that the cutter for scarifying cannot contact with ground.



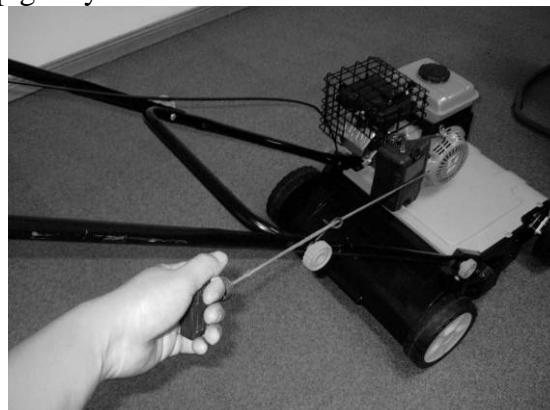
5.2 Open the fuel cock (set it at ON position).



5.3 Close the choke lever (set it at OFF position) if the engine is warm or the ambient temperature is high. For starting a cold engine, set the choke level at ON position.



5.4 Start engine: Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.



NOTICE

Do not allow the starter grip to snap back against the engine. Return it slowly to prevent damage to the starter.

While starting or operating, do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.

Engine revolution speed is adjusted at the optimum condition before shipping from the factory. Customers can not change it. When it fails to operate properly, consult your dealer and ask them to do the adjustment if it is necessary.

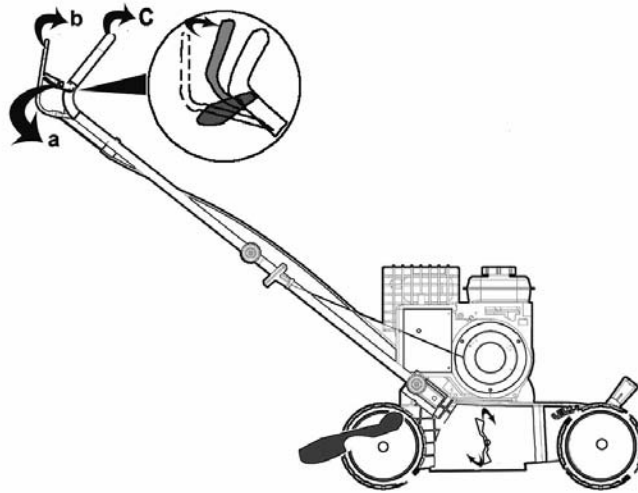
VI.OPERATION

1. Adjust the depth of scarifying you need.
2. Blade control:

Stand behind the unit, just press the safety trigger, and you will squeeze the Clutch lever, and then hold it against the upper handle.

When the Clutch lever is squeezed, the blades will be rotated.

When the Clutch lever is released, the blades will be stopped.



a: safety trigger b: Clutch lever c: upper handle

Notice:

Always ensure the blades have stopped before adjust the depth of scarifying.

SCARIFICATION NOTICE

Avoid touching the scarifier housing whilst the machine is in operation to avoid burns or other injuries.

In addition, never put your feet under the scarifier housing whilst the machine is operating.

In the event that the scarifier must be raised during the transportation, e.g. over the railing or wall, stop the engine in advance.. Always stop the engine when passing over gravel or other roadways..

VII STOPPING

In an emergency:

To stop the engine in an emergency, release switch off the engine



In normal use:

- 7.1 Release the blade control handle to stop the rotation of blades.
- 7.2 Switch off the engine
- 7.3 Turn the fuel cock (set to OFF).

VIII MAINTENANCE

To keep the Gasoline Engine Scarifier in a sound condition, the user should maintain it according to the table below:

Item	Frequency	Each time	First month or 20 hrs	Each season or 50 hrs	Every 6-month or 100 hrs	Each year or 300 hrs
	Engine oil	Oil level check	✓			
Replace			✓			
Air cleaner	Check	✓				
	Clean			✓ ①	✓ ①	
	Replace					✓ ★
Spark plug	Clean, adjust				✓	
	Replace					✓
Spark eliminator	Clean				✓	
Valve clearance	Check-adjust					✓ ②
Fuel supply line	Clean	Every two years				
Planing blade	Check	✓				
	Clean	✓				
	Replace	Blade damage				

CAUTION

Use only parts manufactured by the company or equivalents in quality; otherwise damage to engine may occur.

NOTES

★: Only for paper core air cleaners.

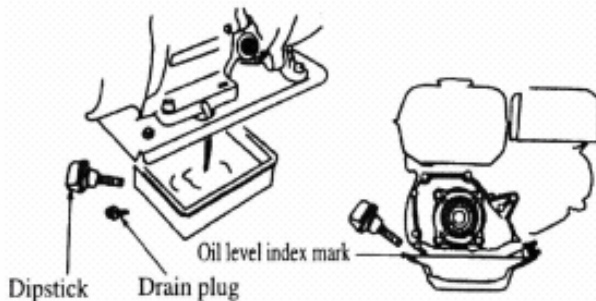
① More often than that in the schedule if in dusty circumstances.

② The items should be done by your dealer unless you are specially trained and is well equipped with tools.

8.1 Changing oil

Drain the engine oil when the engine is warm. Warm oil drains quickly and completely.

Warning! Pay attention that the engine oil may be very hot if it is drained off directly after the engine is shut off, or allow the engine to cool a few minutes before draining the oil.



- (1) Place a suitable container next to the engine to catch the used oil.
- (2) Remove the oil filler cap/dipstick and drain plug to drain the oil into the container.
- (3) Reinstall the drain plug and tighten securely.
- (4) Refill with the recommended oil to the specified level

OIL CAPACITY: 0.5L

We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash, pour it on the ground, or down a drain as the oil or gasoline is toxic.

8.2 AIR CLEANER MAINTENANCE

A dirty air cleaner will restrict air flow to the carburettor. To prevent carburettor malfunction, service the air cleaner regularly. Service more frequently when operating the pump in extremely dusty areas.

WARNING

Operating the engine without an air cleaner cover, or with a damaged air cleaner cover, will allow dirt to enter the engine, causing rapid engine wear.

NOTICE

Never run the engine without the air cleaner. Rapid engine wear will result from contaminants, such as dust and dirt being drawn into the engine.

- a. Unscrew the wing nut, remove the air cleaner cover and remove the foam element.
- b. Wash the element in solution of household detergent and warm water, then rinse thoroughly, or wash in non-flammable or high flash point solvent. Allow the element to dry thoroughly.
- c. Soak the element in clean engine oil and squeeze out the excess oil. The engine will smoke during initial start-up if too much oil is left in the element.
- d. Reinstall the air cleaner element and the cover.



8.3 SPARK PLUG SERVICE

In order to service the spark plug, you will need a spark plug wrench (commercially available).

Recommended spark plugs: F6RTC

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

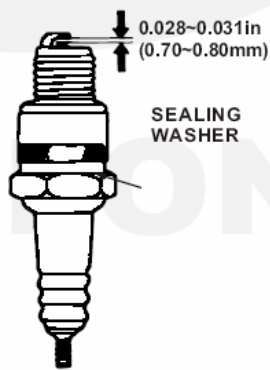
- a. Remove the spark plug cap.

Attention! Before removing the spark plug, first remove the muffler guard.



Spark plug cap

- b. Clean any dirt from around the spark plug base.
- c. Use a spark plug wrench to remove the spark plug.
- d. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.
- e. Measure the plug gap with a feeler gauge. Correct as necessary by carefully bending the side electrode. The gap should be:(0.70-0.80 mm)



- f. Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross-threading.
- g. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.
-If installing a new spark plug, tighten 1/2turn after the spark plug seats to compress the washer. If reinstalling a used spark plug, tighten 1/8-1/4 turns after the spark plug seats to compress the washer.

NOTICE

The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and could damage the engine.

Never use spark plug that has an improper heat range. Use only the recommended spark plugs or equivalent.

IX TRANSPORTATION/STORAGE

A. TRANSPORT

Transport with the fuel switch turned off. Transport or store the engine when it is cool to avoid any potential burn or fire hazards.

CAUTION

Do not incline the Gasoline Engine Scarifier so as to avoid spilling fuel. Spilled fuel vapour may ignite to cause fire.

B. STORAGE

If the Scarifier is not kept in use for a long time, be sure to store it properly. Make sure the storage area is dry and free of dust.

9.1 Make sure the storage site for the Scarifier is dry and clean.

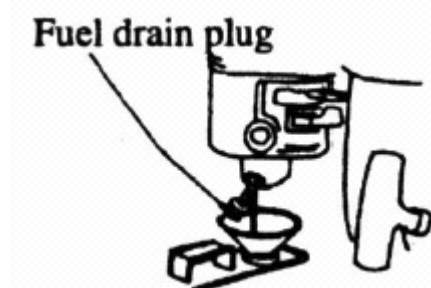
9.2 Empty fuel inside the fuel tank.

a. Set the fuel cock to OFF, drive off the fuel drain plug of the carburettor float room, drain out the fuel in the carburettor. Hold drained gasoline in a proper container.

b. Set the fuel cock to ON.

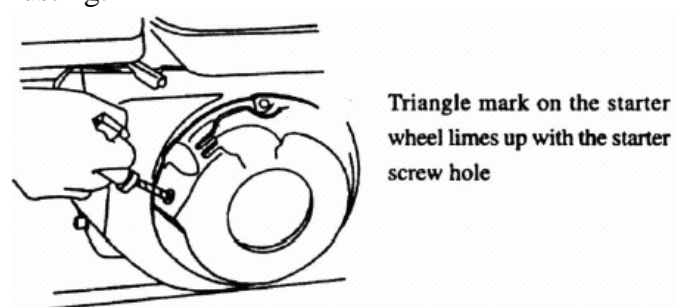
c. Reinstall the fuel drain plug of the carburettor float room.

9.3 Replace engine oil.



9.4 Dismantle the spark plug, and fill clean specified engine oil into the cylinder about one soup spoon. Turn the engine several times to distribute oil evenly and then reinstall the spark plug.

9.5 Pull the starter handle until feel anti-action, and then continues pulling until the triangle mark on the starter wheel lines up with the starter screw hole. In this location, both the air inlet and exhaust valves are closed, which may prevent the engine inside rusting.



9.6 Cover the Scarifier so keep dust away.

X. TROUBLESHOOTING

If you do not process, service and maintain this equipment correctly, some failures may be found. The following tables list some common failures and solution. As for other failures, we need to further service.

Failure list

Failure	Possible cause	Clearing
Abnormal noise, rattling	Bolts on the electrical motor are fixed or are off the case.	Tightening bolts
The electrical motor operates intermittently, then stops with crisp sound.	Cylinder, piston and base of crankshaft are fixed and no motor oil for crankcase.	Inspecting engine through special workshop
ENGINE CANNOT START	<p>ENGINE CANNOT START Check according to the following:</p> <ol style="list-style-type: none"> 1. Check if there is enough fuel; 2. Check if the fuel cock is turned on; 3. Check if the enters the carburettor; When the fuel cock is turned on, check through dismantle the fuel drain plug at the bottom of the carburettor. <p>WARING If fuel is spilled, be sure to wipe it dry before checking the spark plug and starting up the engine, otherwise spilled fuel or fuel vapour may ignite.</p> <ol style="list-style-type: none"> 4. Check if the engine switch is at ON; 5. Check if there is enough engine oil in the crankcase; <p>Check if there is spark plug spark;</p>	

Failures not included in the above table shall only performed by authorized workshops. See followed table:

Failure	Possible cause	Clearing
Unstable running, excessive vibration of equipment	Cutting shafts or blades are damage (overbalance)	Replacing damaged parts
The electrical motor operates intermittently, then stops with crisp sound.	Cylinder, piston and base of crankshaft are fixed and no motor oil for crankcase.	Inspecting engine through special workshop
The scarifier cannot work	V-belt pulley , Cutting shafts and blades are damage	Replacing damaged parts

Please find contracted guest service workshops of manufacturers. We shall not under damages arising from our equipments in accordance with product liability laws, if only, these damages are caused by incorrect repair or not using original parts or allowable parts during replacement, and the repair is not carried out by guest service center or professional persons authorized by us. Above opinions are also subject to auxiliary parts and spare parts.

XI. SPECIFICATIONS

Type		SPS38
Engine	Model	LY152F
	Rated Power output	1.7kW/ 3600/min
	Engine mode	Single cylinder, forced air cooling, 4-stroke
	Ignite mode	Transistor magneto
	Start mode	Recoil
Gasoline Engine Scarifier	Working width (mm)	380mm
	Casing	Steel plate
	Measured sound pressure level	78.6 dB(A)
	Measured sound power level	98.6 dB(A)
	Guaranteed sound power level	102 dB(A)
	Vibration	7.206 m/s ²
	Year of construction	Bj2007
	mass	24.5kg

EC Declaration of Conformity

We herewith declare, **SUMEC Manufacturing Venture Co., Ltd.**
MB102 Nanjing Hi-Tech Zone, 210032
Nanjing, People's Republic of China.

that the following machine complies with the appropriate basic safety and health requirements of the EC Directive based on its design and type, as brought into circulation by us.

In case of alteration of the machine, not agreed upon by us, this declaration will lose its validity

Machine Description: Lawn scarifier

Machine Type: SPS38

Trade name: N.A

Rated engine power: 1.7kW/3600/min

Cutting width: 380mm

Measured sound power level 98.6dB(A)

Guaranted sound power level: 102dB(A)

Applicable EC Directives: EC Machinery Directive: 98/37/EC
 EC Directive of Electromagnetic Compatibility : 2004/108/EC
 EC Directive of noise emission : 2000/14/EC

Applicable Harmonized Standards: EN 13684:2004
 EN ISO 14982:1998

Authorized Signature/Date/Place: MB102 Nanjing Hi-Tech Zone, 210032
 Nanjing, People's Republic of China.
 2007-09-21

Title of Signatory:

[Handwritten Signature]



Test Manager

This Declaration of Conformity has been prepared by TÜV Product Service. A specimen of this product meets the requirements of conformity test carried out by TÜV Product Service according with the applicable standards under the mentioned directives.

TÜV Product Service report reference no.: 70.403.07.474.02

Date: 2007-09-21





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