HAHN A SYN s.r.o.
Lelkova 186/4
747 21 Kravaře
CZECH REPUBLIC
info@hahn-profi.cz

Hahn & Sohn GmbH
Janahof 53
93413 Cham
Deutschland
hahn@hahn-sohn.de

POWER RIPPER
CEDRUS GL05
INSTRUCTIONS FOR USE

PREFACE

This user manual contains the most important information about the device, its structure, functions and use. Before starting work, read the operating instructions carefully. Safe and correct use will allow you to achieve the best results.

All information contained in the manual is based on the latest data about the product as of the date of printing the document. Due to continuous improvement of devices and changes to them, the user manual may differ from the actual condition of the device.

The manufacturer reserves the right to make changes to the product at any time. Product specifications may change without notice. It is prohibited to copy or reproduce the manual and its elements without the manufacturer's consent.

This user manual should be treated as an integral part of the device and in case of transfer of the device to third parties or resale, it should be provided with the device.

Operating the device in accordance with the operating instructions and the messages contained therein is crucial for maintaining long-term and safe operation of the device and for meeting users' expectations. Failure to read, understand or follow the operating instructions may result in serious injury and damage to the device.

CEDRUS is not responsible for any errors arising in the printing of this manual, which do not directly affect the use of the device and only concern detailed technical or descriptive data.

The devices are modernized during production, so some data contained in this manual may differ from the actual data, which also does not affect the way the device is used.

The photos and illustrations contained in this manual are for llustrative purposes only, and the physical condition of the device may differ from the actual condition.

Information marked in this way indicates actions that the user should take to prevent situations that may lead to damage to the device, damage to property, serious injury to the user and other people, and in extreme cases even death.

Please keep these instructions for future reference.

Thank you for choosing a power tiller of our company. This machine is small, light, multi-functional, and with a high efficiency for cultivating. It can climb hills, run in water, walk over the field ridges and ditches, move freely and change the directions easily, and it is especially applicable for various working in hilly area, dry land, paddy field, orchard, vegetable garden and greenhouse, etc. Cultivating, ditching & ridging, and transport are the machine's basic functions. Moreover, after being equipped with relative devices and tools, it may be used to pump water, spray water and pesticide, reap the crops, generate electricity, fertilizer, implant seeds, threshing, cut tendrils, grind something, etc. The machine has a simple structure, can be easily repaired and its fuel consumption is small, it is your ideal micro agricultural machine.

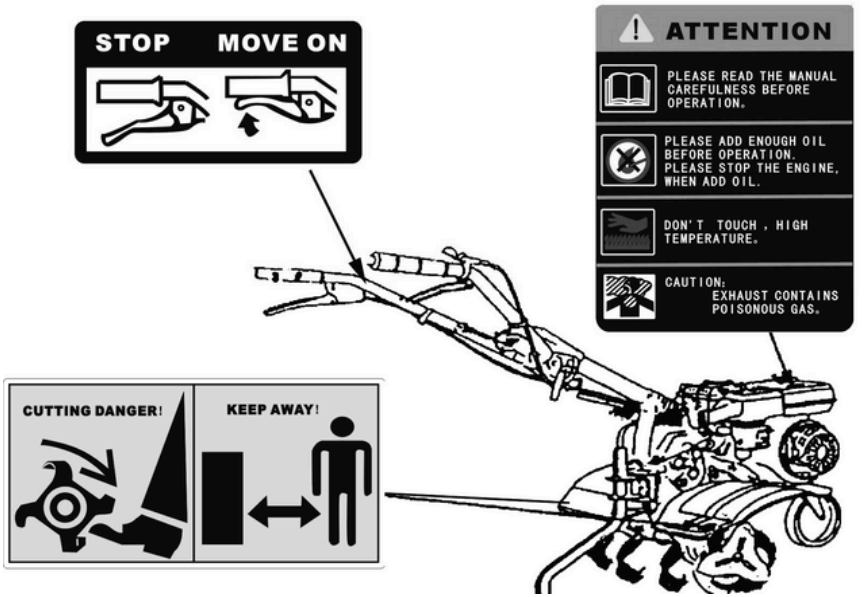
Before you use the machine, please read the instruction manual carefully. it can guide you to solve the problems when you are installing, manipulating and repairing the machine.

With the continuous innovation and improvement of the products, the contents of instruction manual may differ slightly from the actual situations, your understanding and pardon is highly appreciated. If you find some problems or have some good suggestions, please do not hesitate to contact us.

CONTENTS

1. SAFETY LABELS

The following safety labels appear on the machine. They are there to remind you of the care and attention required in use. This is what the symbols mean:



2. SAFETY INSTRUCTION

1) ***Training***

a) Read the instructions carefully. Be familiar with the controls and the proper use of the equipment;
b) Never allow children or people unfamiliar with these instructions to use the machine. Local regulations can restrict the age of the operator;
c) Never work while people, especially children, or pets are nearby;
d) Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

2) ***Preparation***

a) While working, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals;
b) Thoroughly inspect the area where the equipment is to be used and remove all objects which can be thrown up by the machine;
c) WARNING – Petrol is highly flammable:

- Store fuel in container specifically designed for this purpose;
- Refuel outdoors only and do not smoke while refueling;
- 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;
- 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;
- replace all fuel tank and container caps securely;

d) Replace faulty silencers;
e) Before using, always visually inspect to see that the tools are not worn or damaged. Replace worn or damaged elements and bolts in sets to preserve balance.

3) ***Operation***

a) Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect;
b) Work only in daylight or in good artificial light;
c) Always be sure of your footing on slopes;
d) Walk, never run with the machine;
e) Exercise extreme caution when changing direction on slopes;
f) Do not work on excessively steep slopes;
g) Use extreme caution when reversing or pulling the machine towards you;
h) Do not change the engine governor settings or overspeed the engine;
i) start the engine carefully according to manufacturer instructions and with feet well away from the tool(s);
j) Do not put hands or feet near or under rotating parts;
k) Never pick up or carry a machine while the engine is running;

l) Stop the engine:

- Whenever you leave the machine;
- Before refueling;

m) 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 working;

4) ***Maintenance and storage***

a) Keep all nuts, bolts and screws tight to ensure the equipment is in safe working condition;

b) Never store the equipment with petrol in the tank inside a building where fumes can reach an open flame or spark;

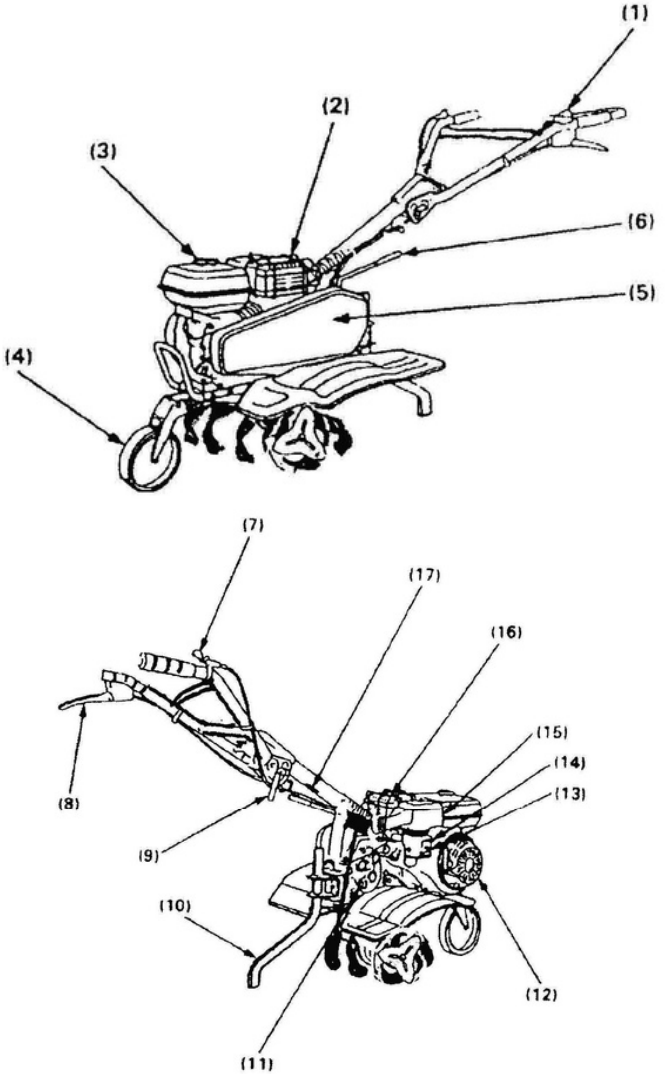
c) Allow the engine to cool before storing in any enclosure;

d) To reduce the fire hazard, keep the engine, silencer and petrol storage area free of vegetative material and excessive grease;

e) Replace worn or damaged parts for safety;

f) If the fuel tank has to be drained, this shall be done outdoors.

3. COMPONENTS



1. switch 2. Muffler 3. Fuel tank cover 4. Front wheel 5. Belt cover 6. Shift handle 7. Throttle lever 8. Clutch handle 9. Handrail height adjustor 10. Depth regulator 11. Dipstick 12. Starter 13. Fuel valve 14. Choke 15. Air cleaner 16. Muffler 17. Nameplate

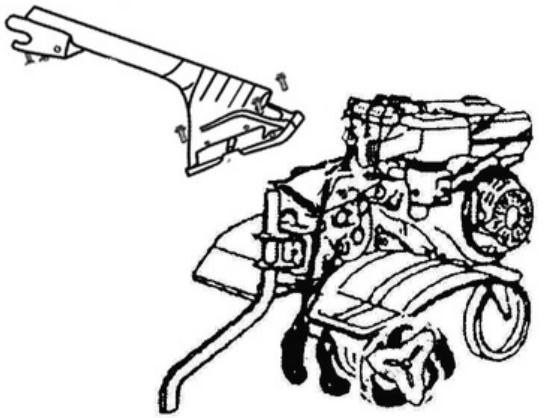
4. ASSEMBLY

4.1 UNPACKING

4.1.1 Remove all loose items from the carton.

4.1.2 Remove the plastic bag and it's ready for assembly.

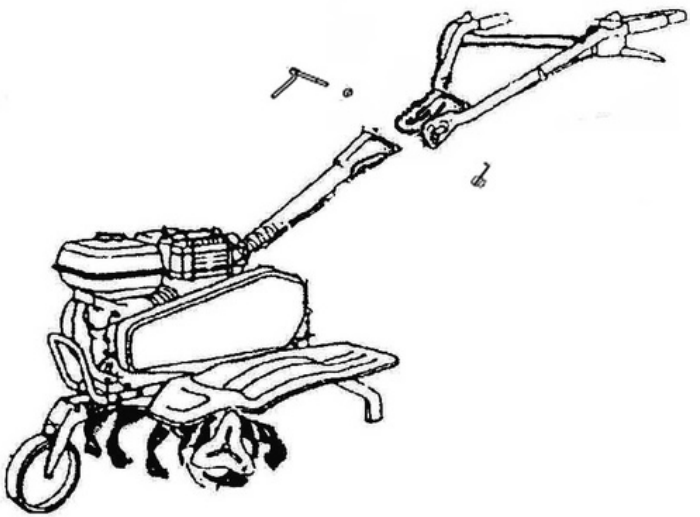
4.2 Assemble the connection tube with gear box by four M8×16 bolts.



4.3 Handrail

4.3.1 Assemble the handrail with connection tube.

4.3.2 Tighten them by handle adjuster.

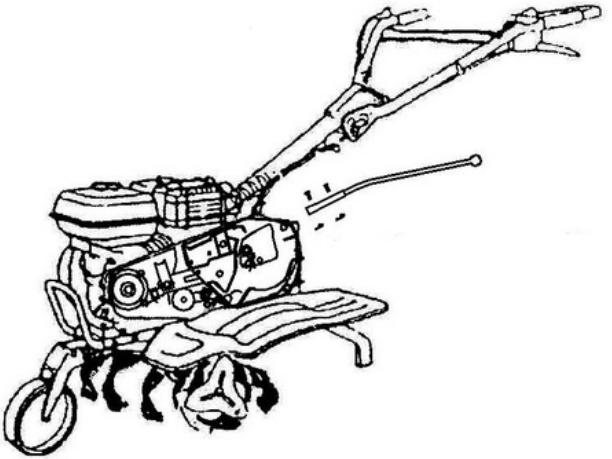


4.4 Shift lever

4.4.1 Remove belt box cover.

4.4.2 Remove passive belt wheel.

4.4.3 Assemble shift lever with pin.

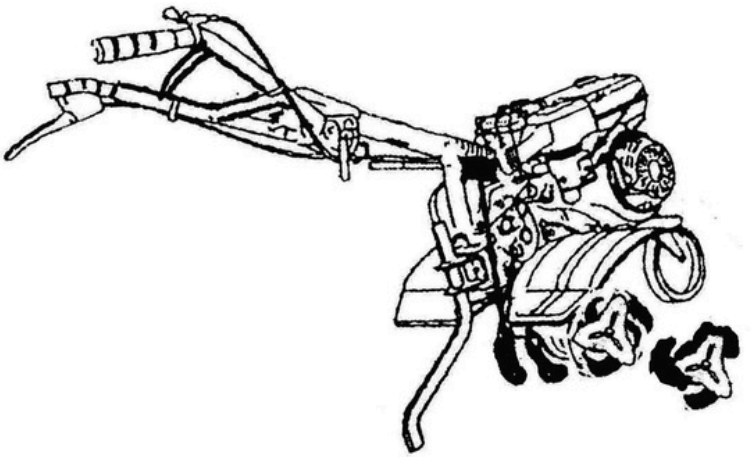


4.4.4 Assemble the passive belt wheel and belt box cover.

4.5 Blade

4.5.1 Lean the machine left side.

4.5.2 Fix the outboard blade at right side by pin.

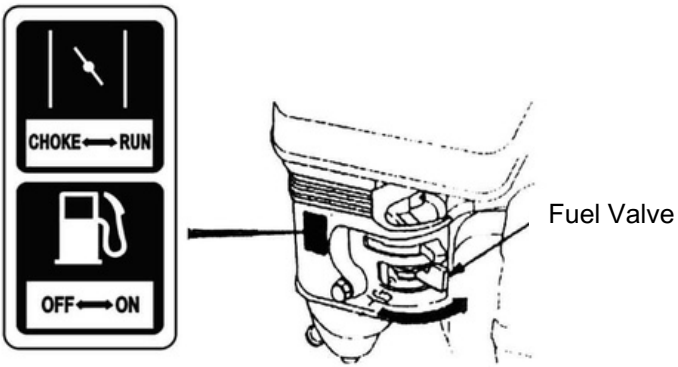


4.5.3 Assemble left side blade as above step.

5. CONTROLS

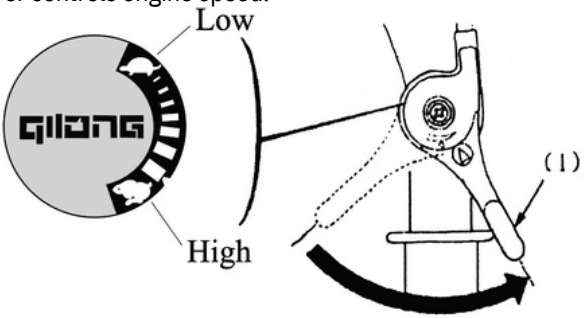
5.1 FUEL VALVE LEVER

The fuel valve opens and closes the passage between the fuel tank and the carburetor.
The fuel valve lever must be in the “ON” position for the engine to run.
When the engine is not in use, leave the fuel valve lever in the “OFF” position to prevent carburetor flooding and to reduce the possibility of fuel leakage.



5.2 THROTTLE LEVER

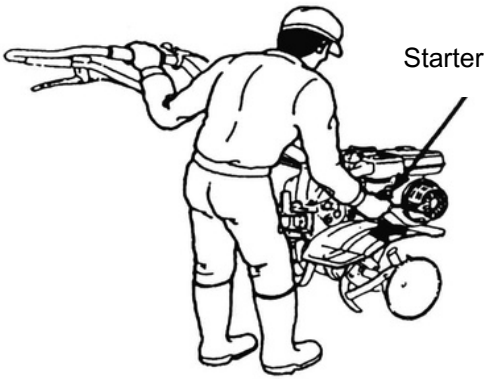
The throttle lever controls engine speed.



Put the throttle lever on position “H” can make the engine run faster and position “L” can make the engine run slower.

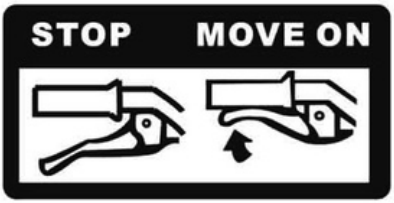
5.3 RECOIL STARTER GRIP

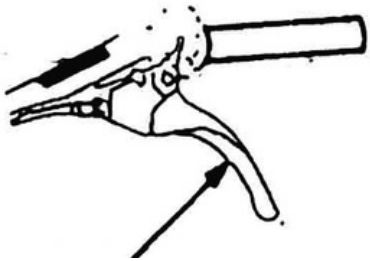
Pulling the starter handle operates the recoil starter to crank the engine.



5.4 CLUTCH LEVER

It situated on the left handrail. Connect the worm bar and engine output shaft to drive the hoe blade when the lever is squeezed.





Clutch handle

5.4 SHIFT HANDLE

The machine has two shifts. The shift handle should be operated to the suitable position to let the machine go forward or go backward. (see 7.2.2)

6. BEFORE OPERATION

6.1 CHECK THE GENERAL CONDITION

● Look around and underneath the engine for signs of oil or gasoline leaks. ● Remove any excessive dirt or debris, especially around the muffler and recoil starter. ● Look for signs of damage. ● Check that all shields and covers are in place, and all nuts, bolts, and screws are tightened.

6.2 CHECK THE ENGINE

● Check the oil level. (see 8.5)
For convenience to transporting, there is no fuel and oil in the engine, Fill the engine with oil before using.
● Check the air filter. (see 8.9)
● Check the fuel level. (see 8.4)

NOTICE: The engine can be seriously damaged without oil. Always check the oil level before using. The machine must stand on level ground when checking.

7. OPERATION

CAUTION

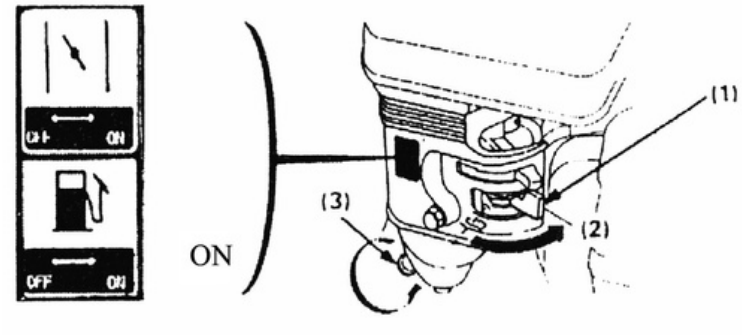
The Motor is equipped with fenders. The motor may never be started without it or with a defect fender.

CAUTION

Before start the engine, be sure the clutch is disengaged and the shift lever is in the neutral position to prevent sudden uncontrolled movement when the engine stars. (see 7.2)

7.1 STARTING THE ENGINE

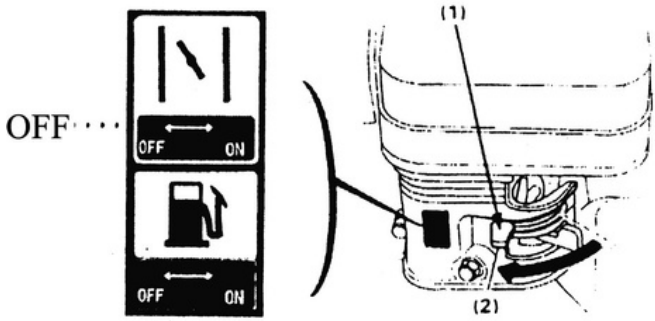
7.1.1 Move the fuel valve lever to the ON position.



(1)Fuel valve (2)"ON" (3)Drain bolt

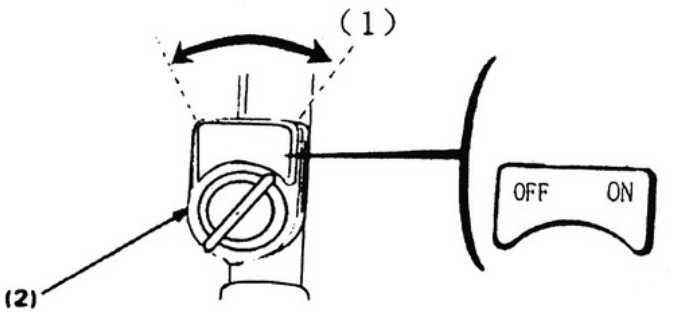
7.1.2 Put the choke lever to a suitable position

Note: Do not use choke if the engine is warm or the temperature is high.



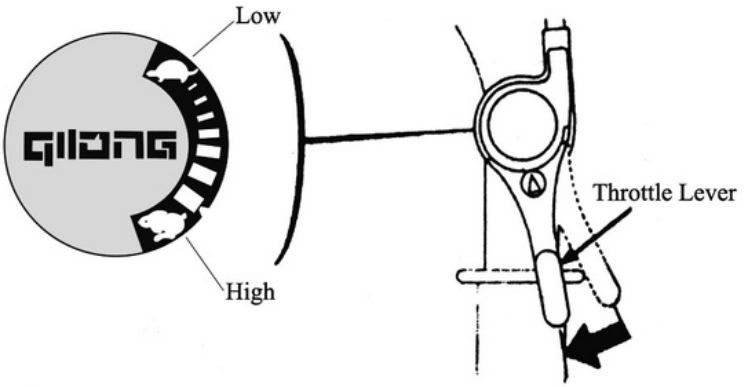
(1)Choke lever (2)"OFF"

7.1.3 Move the engine switch to the ON position.



(1) "ON" (2) Engine switch

7.1.4 Move the throttle lever to the left.

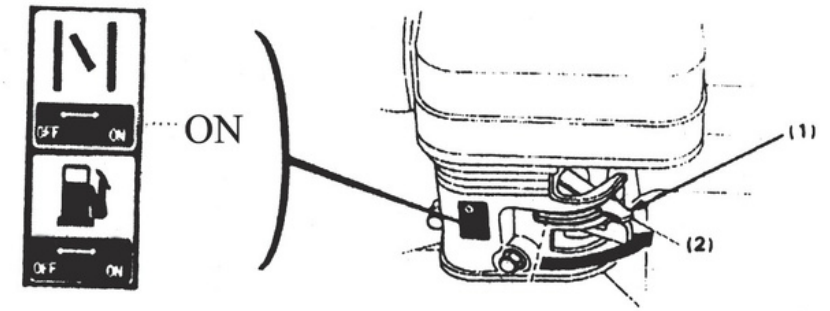


7.1.5 Make sure the shift handle is in the natural position (see 7.2.2)
7.1.6 Your left hand grips the handle tightly to make sure the machine is in stability. Your right hand pull the starter grip lightly until you feel resistance, then pull briskly. Next return the starter grip gently.

⚠ CAUTION

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

7.1.7 As the engine warm up, open the choke gradually.



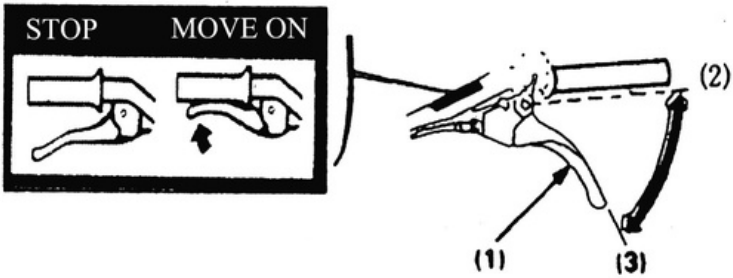
(1)Choke lever (2)"ON"

7.2 OPERATE THE MACHINE

7.2.1 Start the engine as above. Let the engine run a few minutes to warm before use.
7.2.2 Move the shift handle to the desired position (forward/backward).

Engine	Model	Shift Gear
R210	RG3.6-7.5Q-D	2 forward position，1 neutral position，1backward position

7.2.3 Squeeze the clutch lever on "MOVE ON" position and the machine now move forward/backward.
7.2.4 Release the clutch lever on "STOP" position to stop the machine to move on.



(1)Clutch lever (2)"engaged":move on (3)"disengaged":stop

Note: If the shift lever will not engage the desired gear, stop the engine, then squeeze the clutch lever and move the tiller slightly to reposit the gears.

⚠ CAUTION

Reduce engine speed (move the throttle lever to the low position) before operate the clutch.

⚠ CAUTION

Always release the clutch lever on the "STOP" position before operate with the shift handle.

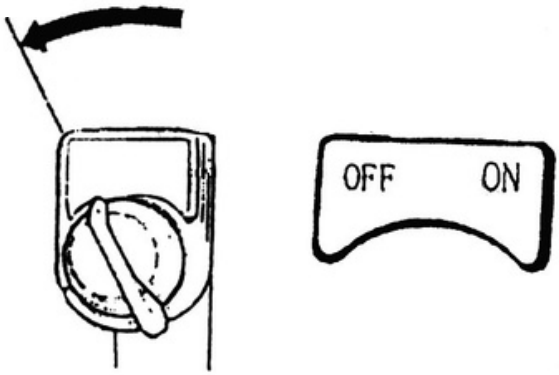
⚠ WARNING

If the soil fastened on the hoe blade, do not try to remove it before

- *Releasing the clutch lever.*
- *Stopping the engine.*
- *Disconnecting the spark plug cable.*
- *Waiting up to 30 minutes after use to allow the engine to cool.*
- *Do not put your hand inside the hoe blade.*

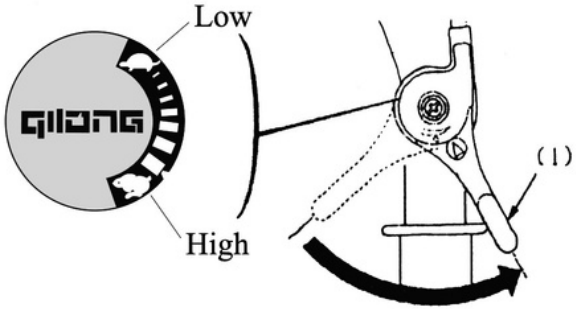
7.3 STOP THE ENGINE/AFTER USE IN AN EMERGENCY

Turn the engine switch to "OFF" immediately.

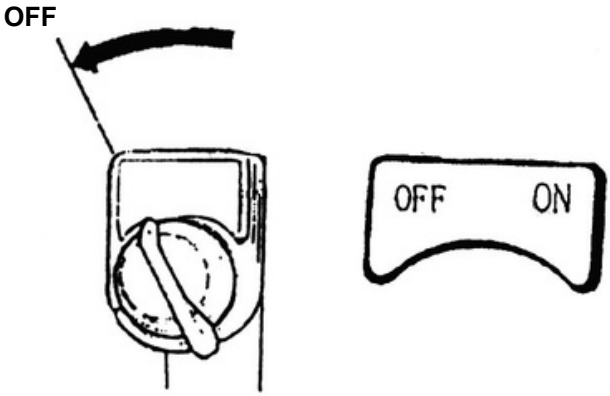


Normally, you should stop the engine as followed steps after use.

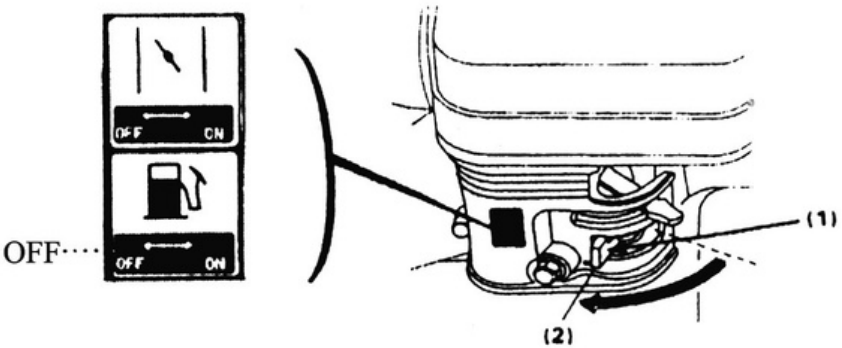
7.3.1 Move the throttle lever fully to the right.



7.3.2 Move the engine switch to the " OFF" position.



7.3.3 Move the fuel valve lever to the " OFF" position.



7.3.4 Clean both hoe blades.
Note: Waiting up to 30 minutes after use to allow the engine to cool
7.3.5 Tighten loose screws and nuts.
7.3.6 Check for loose or damaged parts. If required, change damaged parts.
7.3.7 Disconnecting the spark plug cable. (see 8.10)

8. SERVICING

8.1 SAFETY PRECAUTIONS

Make sure the engine is off before you begin any maintenance or repair. This will eliminate several potential hazards: ● Carbon monoxide poisoning from engine exhaust. Never run the machine indoors. The exhaust fumes contain carbon monoxide, a very toxic gas. ● Burns from hot parts. Let the engine cool and up to 30 minutes after use before touching.

● Injury from moving parts.

Read the instructions before you begin, and make sure you have the tools and skills required. To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks and flames away from all fuel related parts.

8.2 MAINTENANCE SCHEDULE

REGULAR SERVICE PERIOD(4)	Before each use	5Hrs. or First month	25Hrs. or Every 3 months	50Hrs. or Every 6 months	100Hrs or Every 6 months	250Hrs. or Every 2 year
Engine oil	Check	Change(2)		Change(2)		
Air filter	Check		Clean (1)	Clean (1)		Change
Linkages, lubricate	After every 10 Hrs.(3)					
Gear Oil	40 hours for the first time, 80 hours after then.					
Sediment cup				Clean		
Spark plug					Check Adjust	Change
Idle speed					Check Adjust (3)	
Valve clearance					Check Adjust (3)	
Combustion Chamber	After every 300 Hrs. (3)					
Fuel tank				Clean (3)		
Fuel filter				Clean (3)		
Fuel tube	Every 2 years (Replace if necessary) (3)					

(1) Service more frequently when used in dusty areas.
(2) Change oil every 25 hours when used in heavy load or in high ambient temperatures.
(3) These items should be serviced by a technician.

8.3 REFUELING

Use unleaded gasoline to produces fewer engine and spark plug deposits and extends exhaust system life.

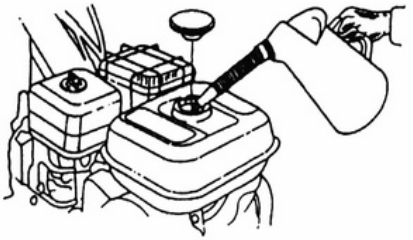
⚠ WARNING

- *Gasoline is highly flammable and explosive, and you can be burned or seriously injured when refueling.*
- *Stop engine and keep heat, sparks, and flame away.*
- *Refuel only outdoors.*
- *Gasoline is poisonous, be careful not to touch or inbreathe the vapor.*

8.4 ADDING FUEL

8.2.1 Remove the fuel tank cap.

8.2.2 Add fuel to the bottom of the fuel level limit in the neck of the fuel tank. Do not overfill. Wipe up spilled fuel before starting the engine.



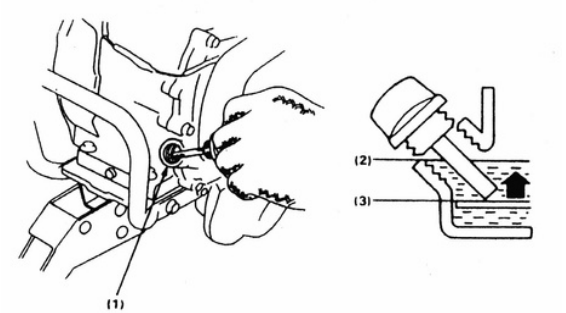
Fuel limit

8.5 ENGINE OIL LEVEL CHECK

8.5.1 Check the oil level when engine is stopped.

8.5.2 Remove the oil filler cap/dipstick and wipe it clean.

8.5.3 Insert the oil filler cap/dipstick into the oil filler neck as shown, but do not screw it in, then remove it to check the oil level.



(1) Oil filler cap/dipstick (2) Upper limit (3) Lower limit

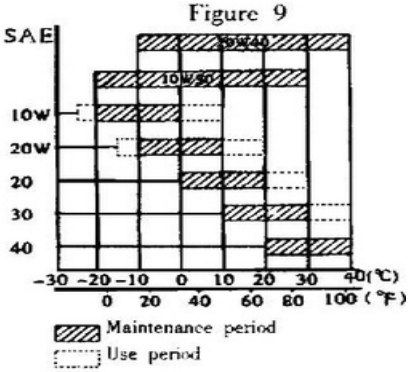
8.5.4 If the oil level is near or below the lower limit mark on the dipstick, remove the oil filler cap/dipstick, and fill with the recommended oil to the upper limit mark (bottom edge of the oil fill hole). Do not overfill.

8.5.5 Reinstall the oil filler cap/dipstick.

8.6 ENGINE OIL RECOMMENDATIONS

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil SAE 10W-30 is recommended for general use.

Figure 9



8.7 OIL CHANGE

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

8.7.1 Turn the fuel valve to off position to reduce the possibility of fuel.

8.7.2 Place a suitable container next to the engine to catch the used oil.

8.7.3 Remove the drain bolt and drain the oil into the container by slightly tipping the engine toward the oil filler cap/dipstick.

8.7.4 With the engine in a level position, fill to the upper limit mark on the dipstick with the recommended oil.

Engine oil capacity: 0.6L

⚠ WARNING

- *Running the engine with a low oil level can cause engine damage.*
- *Engine oil is poisonous, be careful not to touch it.*

8.7.5 Reinstall the oil filler cap/dipstick securely.

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.

8.8 LUBRICATION

⚠ WARNING

No service must be carried out before:
The engine has stopped.
The cable has been disconnected from the spark plug.

Lubricate the linkage every 10 hours of use and before long time storage. Use 10W oil. No parts inside the gearbox are to be lubricated. All bearings and bushings are permanently lubricated and require no maintenance. Lubricating these parts will only result in the grease getting on to the friction wheel and disc drive plate, which could damage the rubber clad friction wheel. For long time storage the above-mentioned parts should be lightly wiped with an oily rag to prevent rust.

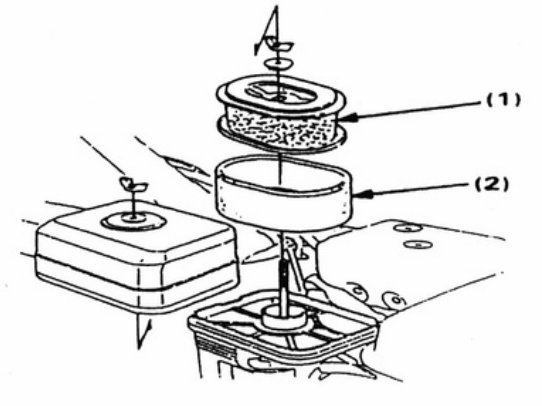
8.9 AIR CLEANER SERVICE

A dirty air filter will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dusty areas, clean the air filter more often than specified in the MAINTENANCE SCHEDULE.

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

8.9.1 INSPECTION

1. Remove the air cleaner cover. Be careful to prevent dirt and debris from falling into the air cleaner base.
2. Remove the air cleaner from the air cleaner base.
3. Inspect the air cleaner elements. Replace any damaged elements. Clean or replace dirty elements.



(1) Paper element
(2) Foam element

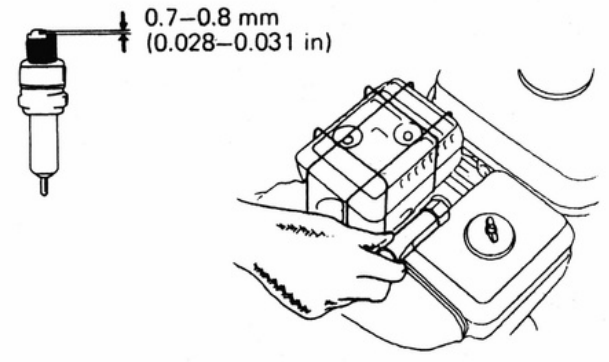
8.9.2 CLEANING

1. Remove the air cleaner cover and foam element, as described in the INSPECTIONprocedure.
2. Remove the paper element from the air cleaner base.
3. Paper air filter element: Tap the filter element several times on a hard surface to remove dirt.
Never try to brush off dirt; brushing will force dirt into the fibers.
4. Foam air filter element: Clean in warm soapy water, rinse, and dry thoroughly. Dip the filter element in clean engine oil, then squeeze out all excess oil.
5. Excess oil will restrict air flow through the foam element and may transfer to the paper element, soaking and clogging it.
6. Wipe dirt from the inside of the air cleaner base and cover, using a moist rag. Be careful to prevent dirt from entering the air duct that leads to the carburetor.
7. Reinstall the air cleaner elements, and make sure both elements are properly positioned. Install the air cleaner cover and tighten the wing bolts securely.

8.10 SPARK PLUG SERVICE

Recommended spark plug: F6RTC
1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a spark plug wrench.
3. Inspect the spark plug. Replace it if the electrodes are worn, or if the insulator is cracked or chipped.
4. Measure the spark plug electrode gap with a suitable gauge. The gap should be

0.028~0.031 in (0.70~0.80mm). Correct the gap if necessary, by carefully bending the side electrode.

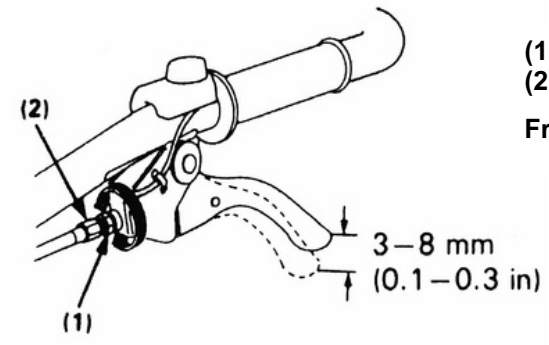


5. Install the spark plug carefully, by hand, to avoid cross-threading.
6. After the spark plug seats, tighten with a spark plug wrench to compress the sealing washer.
If reinstalling the used spark plug, tighten 1/8-1/4 turn after the spark plug seats.
If installing a new spark plug, tighten 1 / 2 turn after the spark plug seats.
NOTICE A loose spark plug can overhand and damage the engine. Overtightening the spark plug can damage the threads in the cylinder head.

7. Attach the spark plug cap.

8.11 Clutch cable

Check the free distance as follow. If the distance is not correct, loose the lock nut and adjust the bolt. Next tighten the lock nut and check for a proper clutch lever operation.



(1) Lock nut
(2) Adjust bolt

Free distance 3-8 mm

9. STORAGE

Never store the machine with petrol in the fuel tank in a confined area with bad ventilation. Petrol fumes could reach open flames, sparks and cigarettes etc.
If the machine is to be stored for a longer period than 30 days, the following methods are recommended.
1.Empty the fuel tank.
2.Start the engine and let it run until it stops due to lack of fuel.
3.Change the engine oil if it has not been done for 3 months.
4.Remove the spark plug and empty a little engine oil (about 30 ml) in the hole. Crank the engine a couple of times. Screw back the spark plug.
5.Clean the whole machine thoroughly.
6.Lubricate all the parts as shown in LUBRICATING above.
7.Inspect the machine for damage, repair if necessary.
8.Touch up any paint damage.
9.Rust protection to the metal surfaces.
10.Store the machine indoors if possible.

10. TRANSPORTING

If the engine has been running, allow it to cool for at least 15 minutes before loading the machine on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some materials. Keep the engine machine when transporting to reduce the possibility of fuel leakage. Move the fuel valve lever to the OFF position.

11. SPECIFICATIONS

	Item Model Engine type	GL05
Engine	Displacement (mL)	R210 Gasoline engine
	Rated Power [kW/(r/min)]	Air-cooled,4-storke,OHV,single cylinder
	Max. Torque [N·m/(r/min)]	212
	Igniting System	4.1
	Fuel Consumption(g/kw.h)	12
	Fuel Tank Capacity (L)	Transistorized Magneto
	Engine Oil Capacity (L)	≤395
	Machine's dimension (length × width × height) (mm)	3.6
	Tilling Width (mm)	0.6
Tiller	Tilling Depth (mm)	1700 ×650 ×1000
	Start mode	810
	Transmission mode	≥110
	Connection mode	Recoil starter
	Gear box oil capacity	Full gear transmission
		Direct connection
		1.0-1.1

The gearbox should be filled with high-quality 80W90 gear oil from leading manufacturers on the market, e.g. Motul, Valvoline, Liqui Moly.