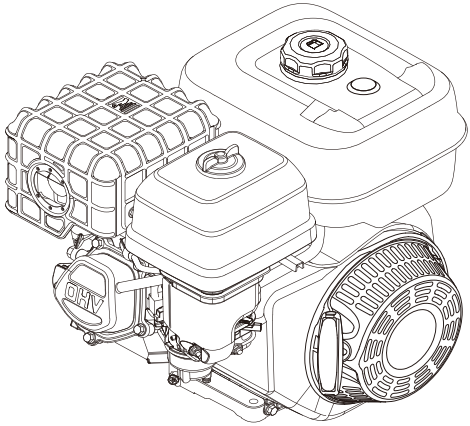
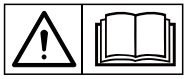


ORIGINAL INSTRUCTIONS

GB340/GB390/GB420/GB460/
GB530V/GB550V SERIES
GASOLINE ENGINE

OPERATOR'S MANUAL



Read this manual carefully before operation.
This manual includes important guidance for safety operation.

This manual includes important safety information and instructions on the engine, **please read this manual carefully**. Property damage and even personal injury or death can result if instructions are not followed.

This manual shall be considered as a permanent part of the engine and shall remain with the engine if resold.

The pictures and illustrations are only for one model of this series of products, which can be used by other configurations for reference. The pictures and illustrations may be different from the material objects and are only for reference.

All the information of this manual is on the basis of the latest product information at the time of printing and our company reserves the right to modify. The product and manual are subject to change or modification without further notice at any time and our company assumes no responsibility for this.

Write down the serial number of the engine and purchase information in the following blanks. Keep this manual and receipt with due care for future use.

Type:

_____

Serial number:

_____

Date of purchase:

_____

Contents

I. Use safety

Please pay attention to this safety warning mark. Possible personal injury or death can be avoided if all the safety regulations on this warning mark are followed.

Safety information consists of a warning mark and corresponding warning words like “DANGER”, “WARNING” or “CAUTION”.

⚠DANGER

It means a dangerous situation that a lot of property damage and severe personal injury or death will result if the instruction is not followed strictly.

⚠WARNING

It means a dangerous situation that property damage and severe personal injury or death can result if the instruction is not followed strictly.

⚠CAUTION

It means a dangerous situation that property damage or personal injury can result if the instruction is not followed strictly.

⚠WARNING

Please read this manual carefully before use.

It is strictly prohibited to operate the engine before the regulations mentioned in this manual on safety, operation and maintenance instructions are not fully known. **Property damage and personal injury or death can result if related instructions are not followed.**

The warnings and precautions in this manual cannot cover all the possible conditions and the users must know about the product knowledge not mentioned in this manual and maintain a careful operating attitude.

⚠WARNING

It is prohibited to refit the engine without authorization and use it in inapplicable occasions.

⚠DANGER

It is prohibited to tamper with the speed regulating mechanism of the engine.

The engine running in high speed is very dangerous, which will increase the risk of personal injury and equipment damage.

It will reduce the lifetime of the engine to operate the engine in low speed and high load.

⚠DANGER

Toxic fumes

The engine exhaust contains carbon monoxide, a kind of odorless, colorless and toxic gas. **Operating the engine indoors will cause personal death!**

It is prohibited to use the engine in a building or any other closed environment even when the doors and windows are open.

The engine shall be placed in a well ventilated area with the air flow and wind direction noticed in the meantime.

⚠DANGER

Fire or explosion

Fire or explosion will cause severe burn or death.

Gasoline is inflammable and explosive. Please keep away from any inflammables when operating the engine.

Please refuel the tank in outdoor and well ventilated area and in the meantime ensure that the engine is in shutdown state.

Be sure to wipe off all the spilled fuel and operate the engine after the fuel is dried.

It is prohibited to operate the engine when there is a fuel system leakage.

Use appropriate fuel storage devices and processing measures. It is prohibited to stack fuel or inflammables near the engine.

Please empty the fuel tank before storing or transporting the engine.

Please provide fire extinguishers nearby to prevent fires.

⚠WARNING

Hot surface

Lots of heat will be generated as the engine is running and touching the hot surface will cause severe burn.

Avoid contact with hot exhaust.

Do not touch the engine soon after the operation or shutdown of the engine.

Leave a space of at least 0.9m around the engine to ensure its good cooling.

The inflammable materials will be ignited when contacting with the hot surface, so do not place any inflammables within a range of 1.5m.

⚠WARNING

Recoil

Your hands and arm will be pulled towards the engine when the start plate recoils rapidly in a speed faster than that of the pulling process.

Trauma, crush injury, sprain or bone fracture can result if there is no precaution.

⚠DANGER

Moving parts

Moving parts will cause severe injury and please keep your hands and feet away from the moving parts.

It is prohibited to put your fingers, hands or body close to the engine when the engine is running.

It is prohibited to cover or wrap the engine, or remove the protective devices when the engine is running.

Moving parts will entangle your hands, feet, hair, clothes, etc., which will cause traumatic amputation or severe bone fracture. Please tie up the long hair and do not wear loose and swinging accessories which can be rolled into the engine.

⚠WARNING

Read the instructions of the equipment driven by the engine for more safety rules to know about the start, stop and operation of the engine, as well as the safety information which may be required during the operation of the engine.

⚠WARNING

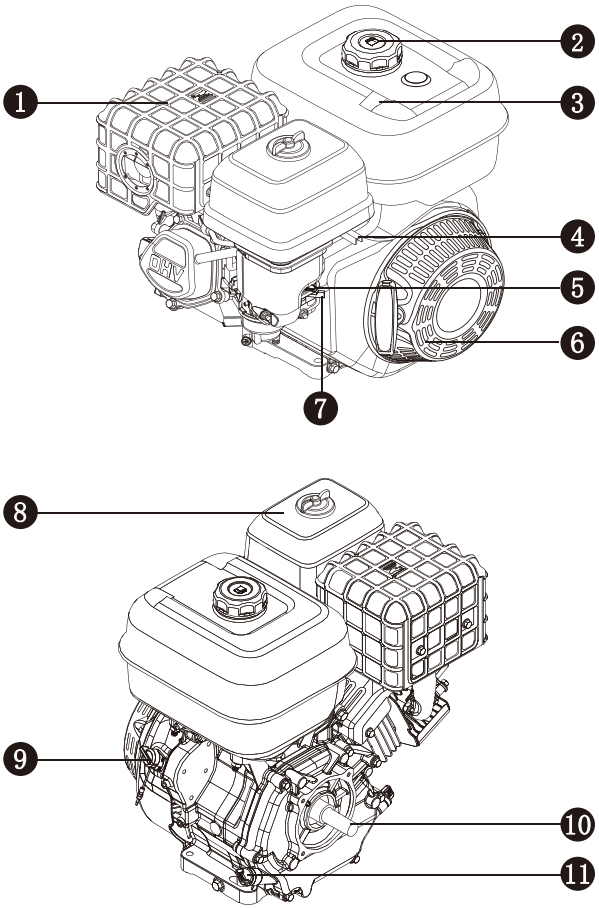
Fire

There may be sparks as the engine is running, which will cause the ignition of dry goods nearby.

The muffler of the engine may not be equipped with a spark arrester. If the engine is not equipped with a spark arrester but is to be used in an area with inflammables (such as crops, forest, grassland or other similar objects), it must be installed with an approved spark arrester.

In some areas, the regulations require that the engine must be equipped with a spark arrester. Please contact local fire department for laws and regulations on fire prevention requirements.

II. Characteristics and control



1. Muffler shield
2. Fuel tank cap
3. Fuel tank
4. Throttle lever
5. Choke lever
6. Recoil starter
7. Fuel switch
8. Air cleaner
9. OFF/ON switch
10. Crankcase
11. Oil dipstick

III. Use

1. Check items before use

1 Operation place

It shall be only used outdoors and the surrounding area of the engine shall be cleaned.

Please place the engine in a well ventilated area and pay attention to the wind direction and air flow.

Please place the engine on a horizontal surface before operating the engine.

⚠DANGER

Toxic fumes

The engine exhaust contains carbon monoxide. Using the engine indoors will cause personal death!

It is prohibited to operate the engine in a building or any other closed environment even when the doors and windows are open.

High altitude

The carburetor may be required to be equipped with high altitude kits to ensure the normal running of the engine in a high altitude area. If the engine is always to be used in an area over 1,500 masl, please consult the local dealer for information of high altitude kits.

⚠CAUTION

The engine power will come down with increasing altitude even though carburetor kits are used and the power will come down about 3.5% as the altitude increases 300m. The effect of the elevation on engine power will be greater without carburetor kits.

⚠CAUTION

Using high altitude carburetor kits in an area lower than 1,500 masl can cause overheating of the engine and thus cause severe damage to the engine. Please restore factory specifications of the carburetor at the dealer when using the engine in a low altitude area.

2 Conditions of usage

Check for looseness or damage of the parts and observe for the

leakage of engine oil or fuel and other abnormal conditions that can affect the operation of the engine. Repair or replace all damaged or defective parts in time.

⚠WARNING

All problems that have been found must be corrected before operation of the engine, or property damage and severe personal injury and even death will result.

Clean off the dirt or foreign bodies on engine surface，especially around the muffler and the hand starter.

Refer to the instructions of the equipment driven by the engine for more operation information.

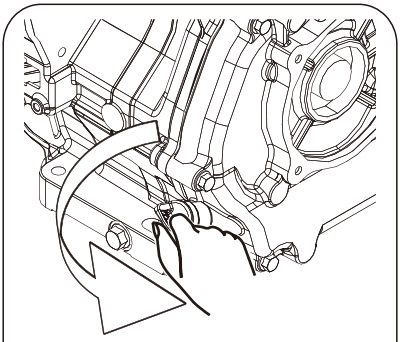
Do not operate the engine beyond its maximum limit range. Refer to the Specifications for more details.

3 Engine oil

Place the engine in shutdown state on the level ground.

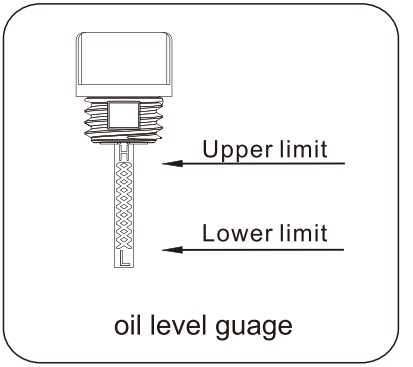
Remove the oil level gauge and wipe it clean.

Insert the oil level gauge into the filler and remain it at the neck of the filler. Do not screw the oil level gauge into the filler.



remove dipstick

Take out the oil level gauge again and check the oil level. The oil level shall reach the position above the lower limit of the scale of oil level gauge.



oil level guage

Fill the recommended oil to the upper limit position of the oil level gauge if the oil level is too low.

Screw the oil level gauge again.

Please refer to the section of **Maintenance** for more information on oil filling.

Engine oil volume (rated): see parameter.

⚠WARNING

The engine is not filled with oil before it leaves the factory. Before not filling recommended type and quantity of engine oil correctly, any action tempering to rotate the crankshaft or start the engine can cause permanent damage to the engine and lead to invalid warranty of the product in the meantime.

⚠WARNING

Engine oil is an important factor affecting the performance and lifetime of the engine. Please use the four-stroke engine oil recommended in the section of **Maintenance**.

4 Engine fuel

Check the fuel level when the engine is in shutdown state. Please fill fuel if required.

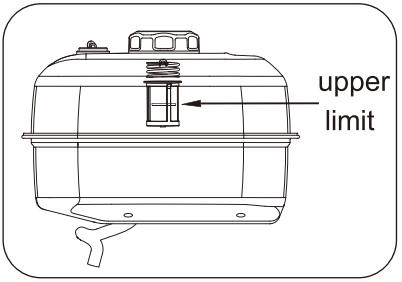
⚠CAUTION

Pressure will be formed within the tank due to volatilization of the gasoline. Cool the engine for at least 2 minutes before removing the tank cap. Loosen the fuel cap slowly to release the pressure within the tank.

Use fresh and clean unleaded gasoline.

Do not mix the engine oil with the fuel oil.

Ensure that the level of filled gasoline doesn't exceed the upper limit of the filling mark to reserve volatilization space for the gasoline.



Fuel oil volume (rated): see parameter.

⚠DANGER

The level shall not exceed the upper limit of filling when fuel oil is being filled into the tank. Excessive filling will cause unstable operation of the engine and even flame out and damage to the canister (if equipped) and lead to invalid warranty of the product.

⚠DANGER

Fire or explosion

Gasoline is a kind of inflammable and explosive substance.

Do not fill fuel oil into the tank indoors or when the engine is running or in high temperature state.

Please refuel the tank in outdoor and well ventilated environment and in the meantime ensure that the engine is in shutdown state.

Wipe off the spilled fuel each time when the filling is completed.

Check for damage or leakage of the fuel system regularly. It is prohibited to operate the engine when there is a fuel system leakage.

Use appropriate fuel storage devices and processing measures. It is prohibited to stack fuel or inflammables near the engine.

Please provide fire extinguishers nearby to prevent fires.

Do not use cleaning agents of engine or carburetor in the fuel tank, or it will lead to deposition of colloids on the parts of the fuel system (such as: carburetor, fuel filter, fuel pipe or fuel tank) during the process of storage and cause permanent damage.

In addition, experience show that gasoline-alcohol blended fuel (so-called alcohol (ethanol or methanol) gasoline) will absorb water during the process of storage, which will lead to decomposition and formation of acid liquor.

Acidic fuel can damage the fuel system of an engine while in storage. Be sure to review the instructions given in “Storage” chapter.

Gasoline/alcohol blended fuel: The fuel with a volume ratio of 10% alcohol and 90% unleaded gasoline is usable fuel. Gasoline/alcohol blended fuel of other mixing ratios are not usable.

Damages to the engine caused by usage of deteriorated fuel, invalid fuel or polluted fuel are not within the scope of warranty.

⚠CAUTION

In order to reduce the deposition of colloids in the fuel system and ensure the startability, do not use the remaining gasoline repeatedly.

5 Equipment inspection

Inspect the equipment driven by this engine. Please refer to the instruction provided by the manufacturer of the equipment for relevant instructions of safety

measures and usage information that shall be followed before starting the engine.

⚠WARNING

There is a specific scope of application for the design and manufacturing of this engine. It is prohibited to tamper with the engine or use it in an occasion beyond its design scope. If you have any doubt about the specific scope of application, please consult the local dealer.

2. Starting the engine

1

Implement the check items before use.

2

Turn the fuel switch to “ON” position(if equipped). Turn the choke lever to off position(choke must be off when engine hot started).

3

Turn the throttle lever(if equipped) to the certain position, and then turn on the switch to start engine.

⚠CAUTION

Choke plate need to be set in different width for temp. or other factors during engine start. Choke should stay in the half open or full open width during re-start hot engine.

4

Manual starting

⚠WARNING

Check starter cord conditions before operating. Have it replaced immediately by local authorized dealer if cord is frayed.

When starting engine, grasp the recoil starter handle and pull slowly until resistance is felt. Then pull rapidly to avoid kickback.

⚠WARNING

KICKBACK

Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

Unintentional startup can result in accident.

After engine started, do not release the starter handle suddenly or it will hit engine heavily, it should be released slowly towards the direction of cord return in case of damage recoil starter. Operate engine in the tilt angle of 10 degree in all direction.

Electric start

(for applicable model)

Turn the key to the “START” position and keep moving up until engine starts. After engine starts, release the key and return it to the “ON” position.

If engine can not rotate by the electric starter, turn off the starter. Do not attempt to restart engine before trouble shooting. Do not restart engine with any battery replaced.

⚠WARNING

Do not continuously start the engine for more than 15 seconds at a time. If engine fails to start, cool the starter for 1 minute before re-start. Otherwise, it may cause damage to the starting motor.

⚠CAUTION

If engine cannot be started or shut down after start for three times, check to ensure that engine is placed on a horizontal surface and is filled with enough oil.

If engine is equipped with a low oil level sensor, when oil in the crankcase is below the minimum level, this will prevent the engine from start.

Make the oil routine inspection during the running-in.For the recommended maintenance intervals, see the section maintenance and servicing.

If engine speed is raised to the speed over starter but does not keep running(fails to start), then the engine must completely stop before start again. If flywheel starts to rotate automatically, but starter is still engaged, then there may be a conflict between flywheel external gear and starter position, which may cause damage to the starter.

5

After engine started, choke plate should be slowly move to full “ON” position. Run engine under idle speed for (3-5) minutes, if engine running unstable(with engine shaking appearance), then move the choke plate to half “ON” position, and turn to full “ON” position till engine running stable.

⚠CAUTION

When the engine is warming up, partially open the choke until engine temperature rises to a certain level.

3. Stopping the engine

1

Remove the load on the engine if applicable.

2

Reserve a few minutes’ time to make the engine run in unloaded condition to stabilize the internal temperature.

3

Turn the engine switch to the **OFF** position to stop the engine.

(if it is electric start, turn the key to the “OFF” position.)

4

Please turn the fuel switch(if equipped) to OFF position.

IV. Maintenance

It is the owner's/operator's responsibility to complete all scheduled maintenance in a timely manner. Correct any issue before operating the engine. Always follow the inspection and maintenance recommendations and schedules in this manual.

⚠WARNING

Improper maintenance or failure to correct a problem before operation can cause a malfunction and result in property damage, serious injury or DEATH.

Improper maintenance will void your warranty.

Before servicing the engine, stop the engine, disconnect all electric devices and battery (if equipped) and allow the engine to cool down.

⚠DANGER

Accidental starts can cause severe injury or death. Remove and ground spark plug wire before performing any service.

⚠CAUTION

The filter element may contains PAHs, PAHs are harmful for your health. Please wear gloves for protection during air filter maintenance.

1. Maintenance schedule

Stop engine before any servicing, disconnect all electric devices and battery(if equipped) and allow the engine to cool down.

Follow the service intervals indicated in the chart below. Service your engine more frequently when operating in adverse conditions.

Contact your local service dealer for your engine or engine maintenance needs.

		Each time before use	The first month or 10 hours[Note2]	Every three months or 50 hours[Note2]	Every 6 months or 100 hours[Note2]	Every year or 300 hours[Note2]
Engine oil	Inspection	√				
	Replacement		√		√	
Air filter	Inspection	√				
	Cleaning			√ [Note3]		
Spark plug	Inspection and adjustment				√	
	Replacement					√
Spark arrester [Note1]	Cleaning				√	
Idle speed	Inspection and adjustment					√ [Note4]
Valve clearance	Inspection and adjustment					√ [Note4]
Carbon canister [Note1]	Inspection	Every two years[Note4]				
Low permeability oil tube [Note1]	Inspection	Every two years[Note4]				
Oil tube	Inspection	Every two years[Note4]				

Note 1: Applicable types.

Note 2: Before each season and after then (whichever comes first).

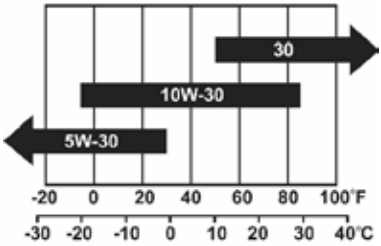
Note 3: Service more frequently under sever, dusty, dirty conditions.

Note 4: To be performed by knowledgeable, experienced owners or the authorized dealer.

2. Daily maintenance

Engine oil

SAE 10W-30 is generally recommended for use in regular and full temperature range. Engine oil of other viscosities can be selected according to the actual average ambient temperature and the information shown in the chart.



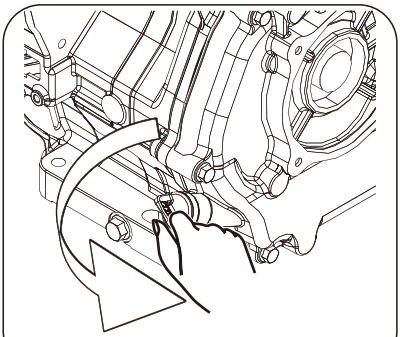
Ambient temperature

Engine oil volume (capacity):
see parameter.

Engine oil filling

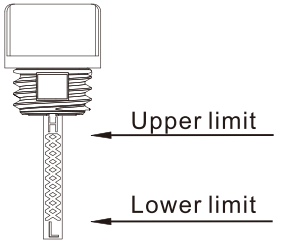
a. Place the engine on a horizontal surface.

b. Remove the oil level gauge and wipe it clean.



remove dipstick

c. Fill engine oil of recommended type to the upper limit of the filling scale.



oil level guage

⚠CAUTION

Inspection of scale mark of filling

Insert the oil level gauge into the engine oil filler again and remain it at the neck of the filler. Do not screw the oil level gauge into the filler.

d. Tighten the oil level gauge completely.

Oil change

⚠CAUTION

Change the engine oil after the engine is running in heat engine condition.

a. Place the engine on a horizontal surface.

b. Clean the area around the oil level gauge and oil drain plug.

c. Remove the oil level gauge.

d. Remove the oil drain plug and drain the engine oil.

e. Put the oil drain plug back and screw it tightly.

f. Fill recommended engine oil to the upper limit of engine oil scale (refer to the above instruction of engine oil filling).

g. Tighten the oil level gauge completely.

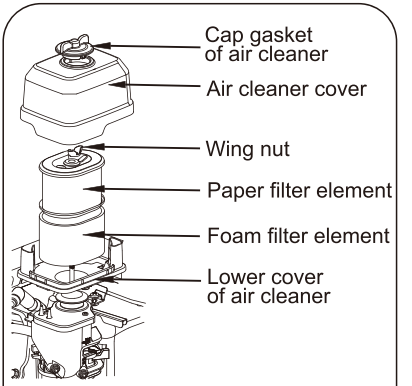
h. Please use calibrated recovery device to dispose used engine oil.

⚠WARNING

The engine is not filled with oil before it leaves the factory. Before not filling recommended type and quantity of engine oil correctly, any action to operate the engine can cause damage to the engine and lead to invalid warranty of the product in the meantime.

Air filter

a. Unscrew the nut and remove the cover of the air cleaner.



Remove air cleaner cover

b. Unscrew the wing nut and remove the filter element.

Foam filter element:

Place and wash the foam filter element in liquid detergent and warm water, wrap it in a clean cloth and squeeze it to dry it completely. Then soak it in clean engine oil, take it out wrapping with a clean absorbent cloth and squeeze redundant engine oil.

Paper filter element:

Tap the hard surface of the filter element for several times to make the dirt fall off or aerate the filter element with compressed air from the inside out to blow off the dirt. Do not brush off the dirt with a brush as doing so will make the dirt fall into the filter paper. Replace the filter element if it is too dirty.

c. Put back the filter element in its assembly.

d. Put the air cleaner cover in place and fix it with nuts.

⚠WARNING

It is prohibited to operate the engine without an air cleaner, or it will damage the engine.

Spark plug

a. Clean the dirt on the cap and bottom of the spark plug.

b. Remove the cap of the spark plug.

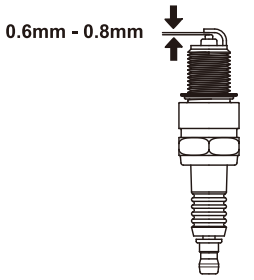
c. Use the spark plug socket to loosen and remove the spark plug.

d. Observe the spark plug and the spark plug gasket and replace it with a new one if it is damaged or worn. Use a wire brush to clean the spark plug if it is required to be reused.

e. Check the spark plug gap. Please bend the end of the electric shock carefully to adjust the clearance if required.

Spark plug gap:

0.6mm - 0.8mm



Check the spark plug gap

f. Screw the spark plug threads in the engine by hand carefully.

g. After the spark plug has been fixed, tighten it firmly with a spark plug socket.

Requirement for torque of spark plug: 20-25 N.m

h. Install the spark plug cap on the spark plug.

⚠WARNING

Use a spark plug of recommended type or its equivalent spark plug.

It is prohibited to use a spark plug with an improper range of heat value.

Spark arrester

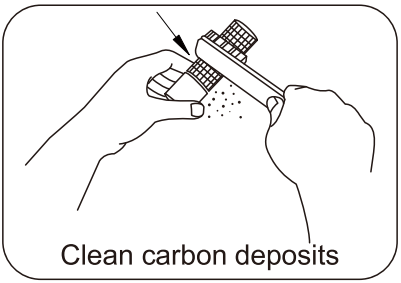
(if equipped)

a. Please cool the engine completely before checking the spark arrester.

b. Remove the two screws attached to the fixed cover plate, which connects to the end of the spark arrester and remains it in the muffler.

c. Remove the spark arrester screen.

d. Use a wire brush to remove carbon deposits from the spark arrester screen carefully.



Clean carbon deposits

e. Please replace the spark arrester if it is damaged.

f. Install the spark arrester on the muffler and fix it with the two screws in the meantime.

3. Idle speed

The idle speed has been preset in the factory and rarely requires an adjustment. Please contact the local authorized dealer if you need this adjustment.

⚠WARNING

Adjustment without authorization will damage the engine and the equipment driven by it and lead to invalid warranty of the product.

4. Adjustment

The engine doesn't require other maintenance and (or) adjustment.

Adjustment or tampering without authorization will damage the engine and the equipment driven by it and lead to invalid warranty of the product. Please contact the local authorized dealer if you have this kind of need.

⚠WARNING

Tampering without authorization will damage the engine and lead to invalid warranty of the product.

V. Troubleshooting

Failure	Cause	Solution
The engine cannot be started	The engine switch is in the **OFF** position	Set the engine switch to the **ON** position
	No fuel	Refuel the tank according to the instruction of this manual.
	Inadequate engine oil volume	Check the engine oil volume. The engine may be equipped with a low oil level sensor and it cannot be started when the engine oil level is lower than the lowest oil level limit.
	No ignition	Remove the spark plug cap. Clean the dirt around the base of the spark plug and remove the spark plug to insert it into the spark plug cap. Set the engine switch to the **ON** position and connect the electrode with any earth terminal of the engine. Pull the recoil starter and observe if there are any electrical sparks between the spark plug gap. If there are no sparks, replace the spark plug. Reinstall the spark plug and start the engine according to the instructions of this manual. Please consult the authorized dealer if needed or the engine cannot be started yet.

VI. Storage and transportation

Storage

The engine should be started at least once every 2 weeks and allowed to run for at least 20 minutes. Follow the instructions below for longer term storage if the engine will be out of service for 2 months or more.

⚠DANGER

Fire or explosion

Gasoline is highly flammable and extremely explosive. Empty the fuel tank and shut off fuel valve before storing or transporting this engine.

1.Change oil while engine is still warm from operation.

2.Allow the engine to cool completely.

3.Drain all fuel completely from the fuel tank, fuel hose and carburetor.

4.Remove spark plug and pour about 1 oz. of engine oil into cylinder. Reinstall spark plug. Crank engine slowly to distribute oil and lubricate cylinder.

5.Clean the engine according to the instructions in the Maintenance section.

6.Store the unit in a clean, dry area out of direct sunlight.

Transportation

To prevent fuel spillage when transporting or during temporary storage, the engine should be secured upright in its normal operating position, with the engine switch OFF.
The fuel switch should be turned OFF.

⚠WARNING

When transporting:
Do not over fill the tank.
Avoid a place exposed to direct sunlight when putting the engine on a vehicle. If the engine is left in an enclosed vehicle for many hours, high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion.

Do not drive on a rough road for an extended period with the engine on board. If you must transport the engine on a rough road, drain the fuel from the engine beforehand.

⚠CAUTION

Take care not to drop or strike the engine when transporting. Do not place heavy objects on the engine.

VII. Specifications

1. Specifications of the engine

Category	Item		GB340(E)/ GB340(E)-3	GB390(E)/ GB390(E)-3
Main structure parameters	Air valve arrangement		Overhead valve	
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		82	88
	Piston stroke(mm)		64	64
	Total displacement(cm^3)		337	389
	Compression ratio		8.4:1	8.4:1
	Rated power(kW/min^{-1})		7.2/3600	8.5/3600
	Transmission ratio		/	/
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		24°±2°	25°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.15-0.20	0.15-0.20
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	6
	Oil capacity(L)		1.1	1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		GB340(E): 456×355×459 GB340-3(E): 456×337×467	456×355×459
	Net mass(kg)		GB340/GB340-3: 31.5 GB340E/GB340E-3: 34.5	GB390/GB390-3: 31.5 GB390E/GB390E-3: 34.5

Category	Item		GB390(E)-7	GB420(E)/ GB420(E)-3
Main structure parameters	Air valve arrangement		Overhead valve	
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		88	90
	Piston stroke(mm)		64	66
	Total displacement(cm^3)		389	420
	Compression ratio		8.4:1	9.0:1
	Rated power(kW/min^{-1})		8.5/3600	9.0/3600
	Transmission ratio		2:1	/
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		25°±2°	30°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.15-0.20	0.15-0.20
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	6
	Oil capacity(L)		1.1	1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×370×459	456×355×459
	Net mass(kg)		GB390-7:33.8 GB390E-7:36.8	GB420:30.5 GB420-3:30.5 GB420E:33.5 GB420E-3:33.5

Category	Item		GB420(E)-5	GB420(E)-7
Main structure parameters	Air valve arrangement		Overhead valve	
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		90	90
	Piston stroke(mm)		66	66
	Total displacement(cm^3)		420	420
	Compression ratio		9.0:1	9.0:1
	Rated power(kW/min^{-1})		9.0/3600	9.0/3600
	Transmission ratio		2:1	2:1
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		30°±2°	30°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15	0.15-0.20
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	6
	Oil capacity(L)		1.1	1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459	456×370×459
	Net mass(kg)		GB420-5: 30.5 GB420E-5: 33.5	GB420-7: 33.8 GB420E-7: 36.8

Category	Item		GB420B(E)	GB420B(E)-M
Main structure parameters	Air valve arrangement		Overhead valve	
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		90	90
	Piston stroke(mm)		66	66
	Total displacement(cm^3)		420	420
	Compression ratio		9.0:1	9.0:1
	Rated power(kW/min^{-1})		10.0/3600	10.5/3600
	Transmission ratio		/	/
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		28°±2°	28°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15	0.10-0.15
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	6
	Oil capacity(L)		1.1	1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459	456×355×459
	Net mass(kg)		GB420B:30.5 GB420BE:33.5	GB420B-M:30 GB420BE-M:33

Category	Item		GB420V(E)
Main structure parameters	Air valve arrangement		Overhead valve
	Number of air cylinders		1
	Air cylinder diameter(mm)		90
	Piston stroke(mm)		66
	Total displacement(cm^3)		420
	Compression ratio		9. 0:1
	Rated power(kW/min^{-1})		10.5/3600
	Transmission ratio		/
	Direction of rotation		Anticlockwise (From the PTO end direction)
	Ignition advance angle(°)		28°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15
	Spark gap(mm)		0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30
	Fuel supplier		Carburetor oil supply
	Fuel capacity(L)		6
	Oil capacity(L)		1.3
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459
	Net mass(kg)		GB420V: 30.5 GB420VE: 33.5

Category	Item		GB460(E)	GB460(E)-7
Main structure parameters	Air valve arrangement		Overhead valve	
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		92	92
	Piston stroke(mm)		69	69
	Total displacement(cm^3)		459	459
	Compression ratio		9.1:1	9.1:1
	Rated power(kW/min^{-1})		10.5/3600	10.5/3600
	Transmission ratio		/	2:1
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		28°±2°	28°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15	0.10-0.15
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	6
	Oil capacity(L)		1.1	1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459	456×370×459
	Net mass(kg)		GB460: 30.5 GB460E: 33.5	GB460-7: 33.8 GB460E-7: 36.8

Category	Item		GB460B(E)
Main structure parameters	Air valve arrangement		Overhead valve
	Number of air cylinders		1
	Air cylinder diameter(mm)		92
	Piston stroke(mm)		69
	Total displacement(cm^3)		459
	Compression ratio		9.1:1
	Rated power(kW/min^{-1})		11.0/3600
	Transmission ratio		/
	Direction of rotation		Anticlockwise (From the PTO end direction)
	Ignition advance angle(°)		28°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15
	Spark gap(mm)		0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30
	Fuel supplier		Carburetor oil supply
	Fuel capacity(L)		6
	Oil capacity(L)		1.1
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459
	Net mass(kg)		GB460B: 30.5 GB460BE: 33.5

Category	Item		GB460V(E)	GB460V(E)-5
Main structure parameters	Air valve arrangement		Overhead valve	Overhead valve
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		92	92
	Piston stroke(mm)		69	69
	Total displacement(cm^3)		459	459
	Compression ratio		9.5:1	9.5:1
	Rated power(kW/min^{-1})		12.0/3600	12.0/3600
	Transmission ratio		/	2:1
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		28°±2°	
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	
		Emission valve clearance(mm)	0.10-0.15	
	Spark gap(mm)		0.6-0.8	
Fuel and oil	Lubricating oil brand		SAE 10W-30	
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	
	Oil capacity(L)		1.1	
Dimension and mass	Dimension(mm) (Length × Width × Height)		456×355×459	
	Net mass(kg)		GB460V: 30.5 GB460VE: 33.5	GB460V-5: 31.5 GB460VE-5: 34.5

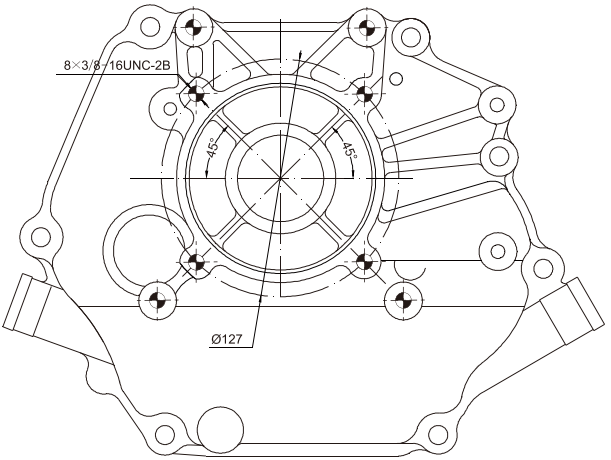
Category	Item		GB530V(E)	GB530V(E)-7
Main structure parameters	Air valve arrangement		Overhead valve	Overhead valve
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		92	92
	Piston stroke(mm)		79	79
	Total displacement(cm^3)		525	525
	Compression ratio		8.8:1	8.8:1
	Rated power(kW/min^{-1})		13.0/3600	12.5/3600
	Transmission ratio		/	2:1
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		22°±2°	22°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15	0.10-0.15
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	
	Oil capacity(L)		1.3	
Dimension and mass	Dimension(mm) (Length × Width × Height)		GB530V: 471×418×465 GB530VE: 490×418×465	GB530V-7: 471×387×465 GB530VE-7: 490×387×465
	Net mass(kg)		GB530V: 34.4 GB530VE: 38	GB530V-7: 39.6 GB530VE-7: 41.1

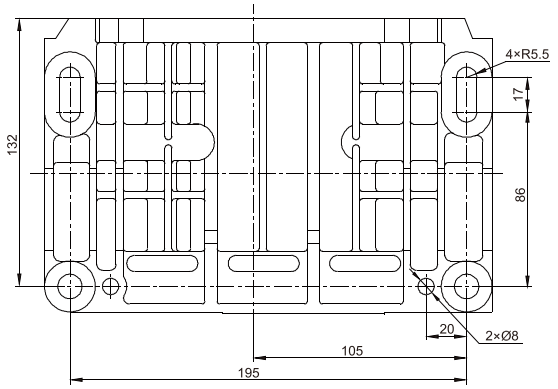
Category	Item		GB550V(E)	GB550V(E)-7
Main structure parameters	Air valve arrangement		Overhead valve	Overhead valve
	Number of air cylinders		1	1
	Air cylinder diameter(mm)		94	94
	Piston stroke(mm)		79	79
	Total displacement(cm^3)		548	548
	Compression ratio		8.6:1	8.6:1
	Rated power(kW/min^{-1})		13.5/3600	12.7/3600
	Transmission ratio		/	2:1
	Direction of rotation		Anticlockwise (From the PTO end direction)	
	Ignition advance angle(°)		22°±2°	22°±2°
	Valve clearance	Admission valve clearance(mm)	0.10-0.15	0.10-0.15
		Emission valve clearance(mm)	0.10-0.15	0.10-0.15
	Spark gap(mm)		0.6-0.8	0.6-0.8
Fuel and oil	Lubricating oil brand		SAE 10W-30	SAE 10W-30
	Fuel supplier		Carburetor oil supply	
	Fuel capacity(L)		6	
	Oil capacity(L)		1.3	
Dimension and mass	Dimension(mm) (Length × Width × Height)		GB550V: 471×418×465 GB550VE: 490×418×465	GB550V-7: 471×387×465 GB550VE-7: 490×387×465
	Net mass(kg)		GB550V: 34.4 GB550VE: 38	GB550V-7: 39.6 GB550VE-7: 41.1

Note: The engine parameters vary with different specification and configuration and may be changed at any time without prior notice.

2. Mounting dimensions

GB420 for example:





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