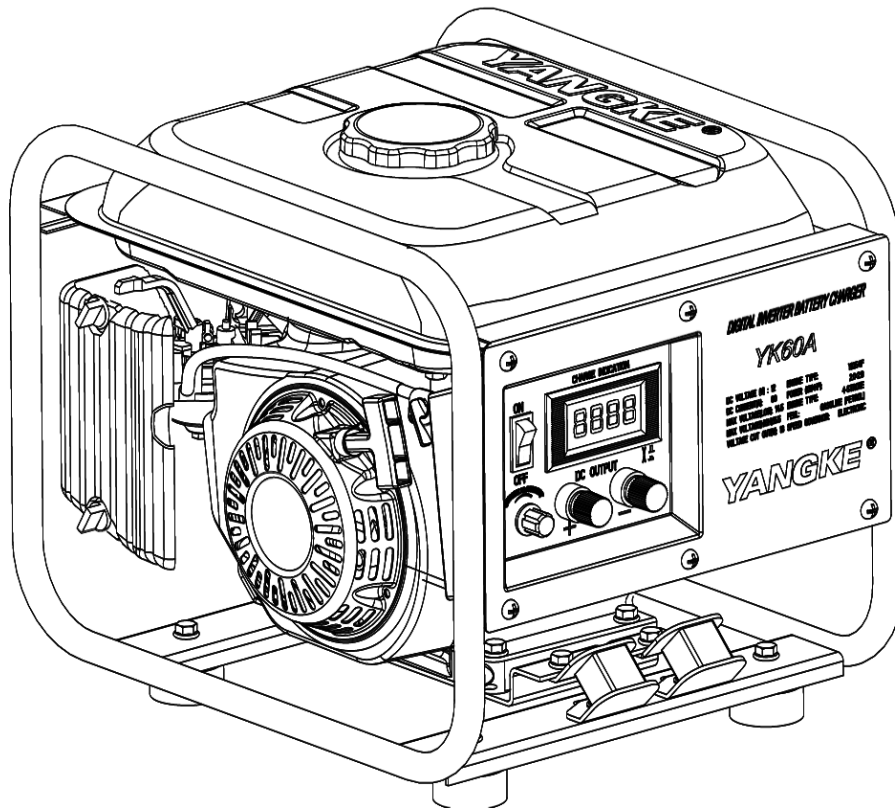


YK60A

YANGKE®

DIGITAL INVERTER BATTERY CHARGER



OWNER'S MANUAL

PLEASE READ THIS MANUAL CAREFULLY.
IT CONTAINS IMPORTANT SAFETY INFORMATION.

PREFACE



Thank you for purchasing YANGKE generator.

This manual covers the operation and maintenance of the YK60A series battery charger.

All information in this publication is based on the latest product information available at the time of approval for printing.

We reserve the right to make changes at any time without notice and without incurring any obligation.

No part of this publication may be reproduced without written permission.

This manual should be considered a permanent part of the generator and should remain with it if it is resold.

Our generator is designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the generator. Failure to do so could result in personal injury or equipment damage.

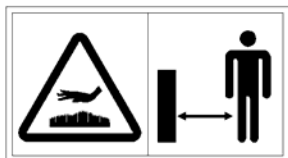
If a problem should arise, or if you have any question about the generator, consult our authorized dealer.

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1. SAFETY INSTRUCTIONS

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- YANGKE charger is designed to give safe and dependable service if operated according to instructions.
- Read and understand the Owner's Manual before operating the charger. Failure to do so could result in personal injury or equipment damage.
- Exhaust gas contains poisonous carbon monoxide. Never run the charger in an enclosed area.
- Be sure to provide adequate ventilation.
- When installed in ventilated protection should be observed.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine.
- Be careful not to touch the muffler while it is hot.
- Let the engine cool before storing the charger indoors.
- The engine exhaust system will be heated during operation and remain hot immediately after stopping the engine.
- To prevent scalding, pay attention to the warning marks attached to the charger.

TO ENSURE SAFE OPERATION



- Gasoline is extremely flammable and explosive under certain conditions. Refuel in a well ventilated area with the engine stopped.



- Keep away from cigarette, smoke and sparks when refueling the charger. Always refuel in a well-ventilated location.



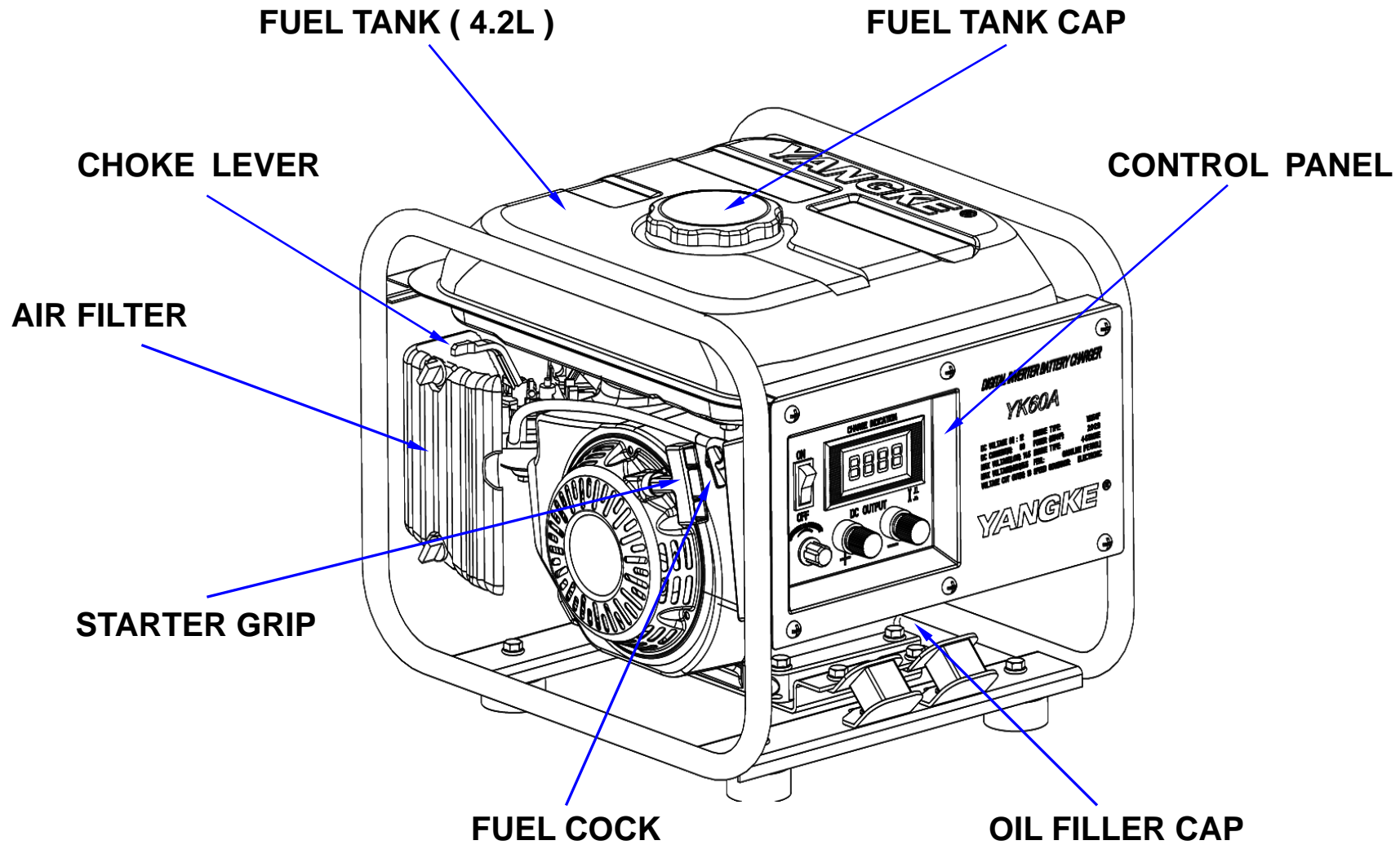
- Wipe up spilled gasoline at once.
- Connections for standby power to a building's electrical system must be made by a qualified electrician and must comply with all applicable laws and electrical codes. Improper connections can allow electrical current from the charger to back feed into the utility lines. Such back feed may electrocute utility company workers or others who contact the lines during a power outage, and when utility power is restored, the charger may explode, burn, or cause fires in the building's electrical system.



- Always make a pre-operation inspection before you start the engine. You may prevent an accident or equipment damage.

- Place the charger at least 1M (3ft) away from buildings or other equipment during operation.
- Operate the charger on a level surface. If the charger is tilted, fuel spillage may result.
- Know how to stop the charger quickly and understand operation of all the controls. Never permit anyone to operate the charger without proper instructions.
- Keep children and pets away from the charger when it is in operation.
- Keep away from rotating parts while the charger is running.
- The charger is a potential source of electrical shocks when misused; do not operate with wet hands.
- Do not operate the charger in rain or snow and do not let it get wet.

2. COMPONENT IDENTIFICATION

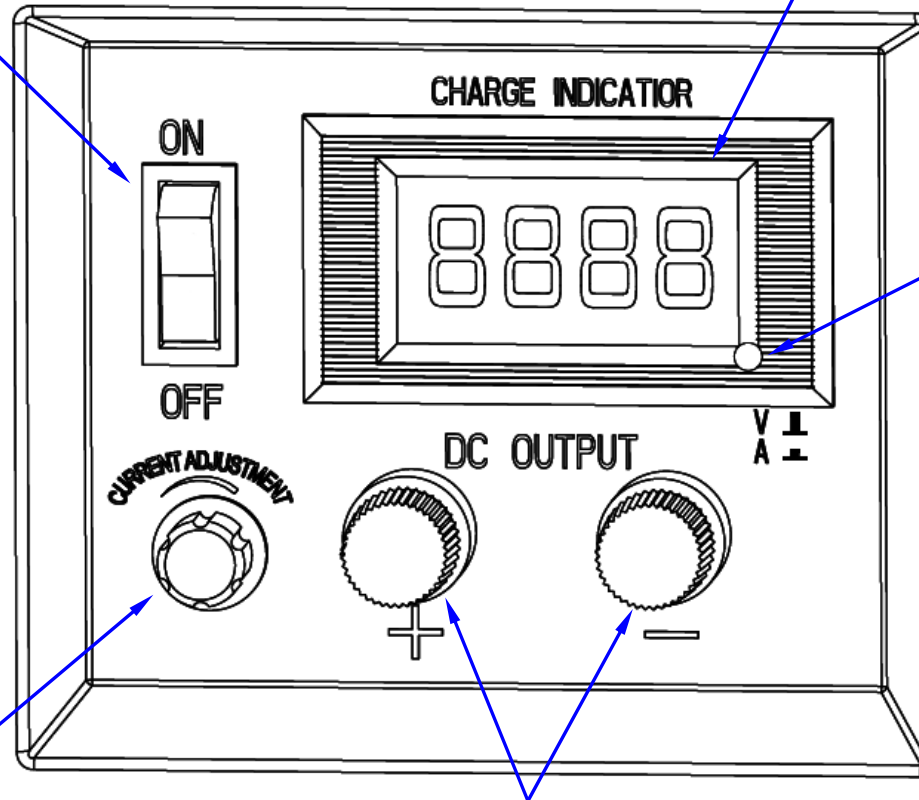


CONTROL PANEL

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ENGINE SWITCH

LED DIGITAL METER (Volt & Amp)



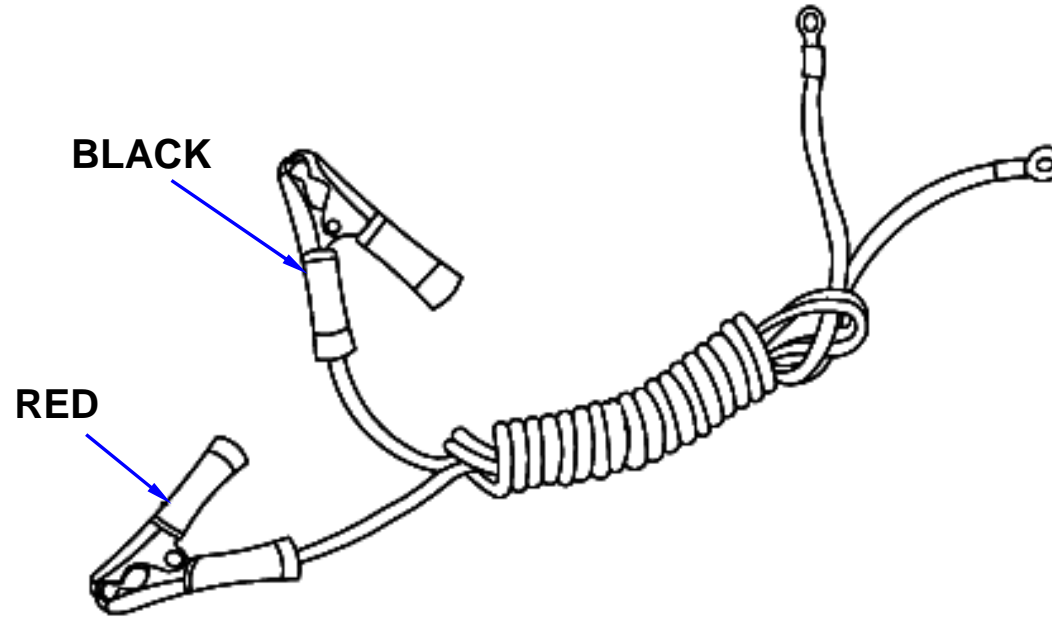
Push button:
Amp / Volt
⏏: VOLTAGE
⏏: CURRENT

CURRENT ADJUSTMENT KNOB

TERMINAL POST

(RED is positive "+", BLACK is negative "-")

CHARGING WIRE

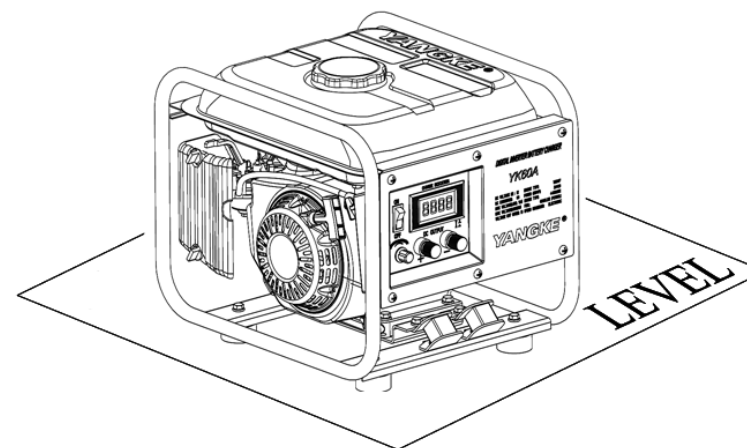


Leads with alligator clamps

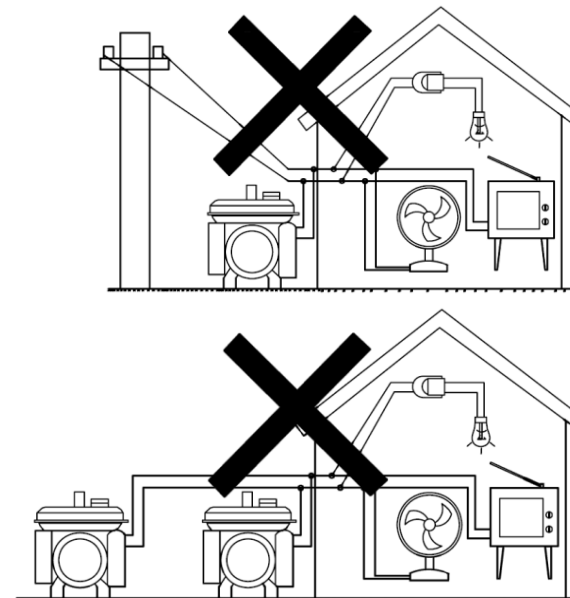
3. PRE-OPERATION INSPECTION

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- Be sure to check the generator standing on a horizontal level surface with the engine stopped.



- Do not connect to mains supply power.
- Do not connect the generators in parallel.
- Connections for standby power to a building's electrical system must be made by a qualified electrician and must comply with all applicable laws and electrical codes. Improper connections can allow electrical current from the generator to backfeed into the utility lines. Such backfeed may electrocute utility company workers or others who contact the lines during a power outage, and when utility power is restored, the generator may explode, burn, or cause fires in the building's electrical system.



1. Check the engine oil level

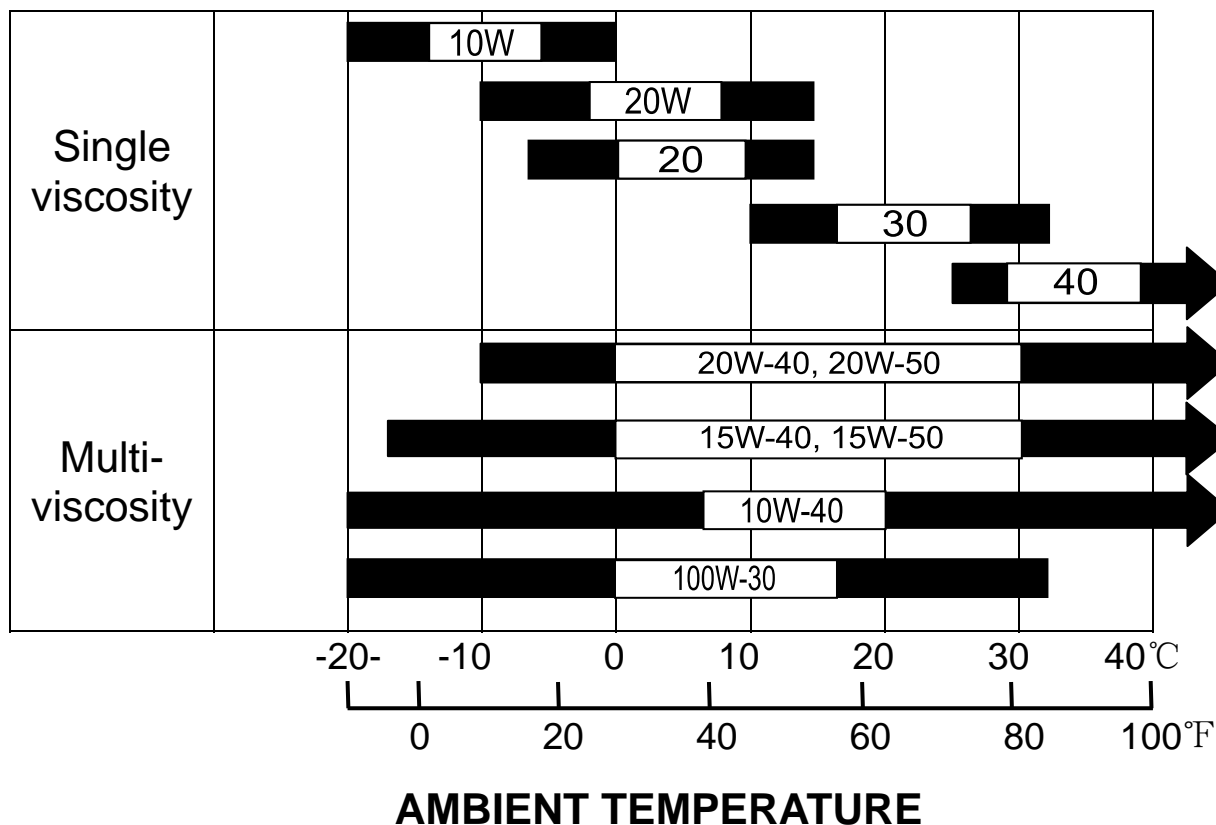


- Using non-detergent oil or 2-stroke engine oil could shorten the engine's service life.

Use high-detergent premium quality 4-stroke engine oil, certified to meet or exceed U.S automobile manufacturer's requirements for API Service Classification SG, SF.

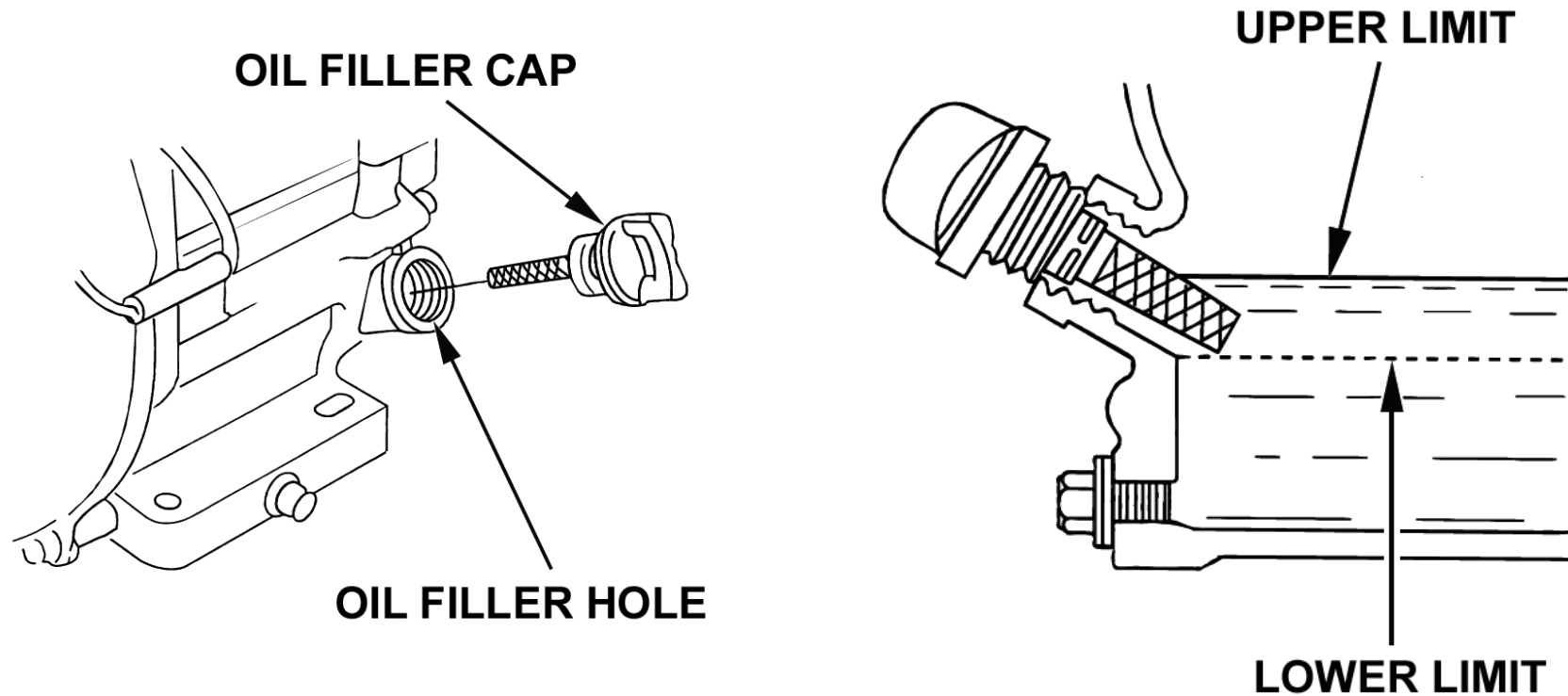
Select the appropriate viscosity for the average temperature in your area.

SAE Viscosity Grades



- Running the engine with insufficient oil can caused serious engine damage.

Remove the oil filler cap, and wipe the dipstick with a clean rag, check the oil level by inserting the dipstick in the filler hole without screwing it in. If the oil level is below the end of the dipstick, refill the recommended oil up to the top of the filler neck.



Engine oil capacity: **0.35 L**

2. Check the fuel level

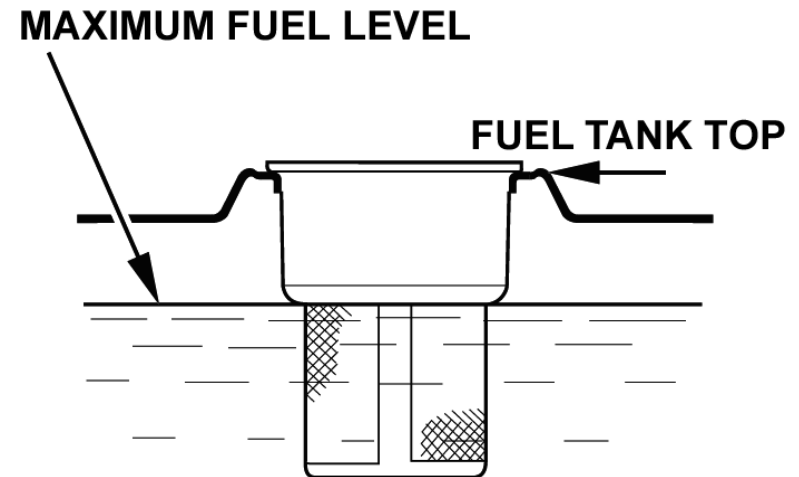
Use automotive gasoline (Unleaded is preferred to minimize combustion chamber deposits).

If the fuel level is low, refuel the fuel tank until the level as specified. Do not overfill. Wipe up spilled fuel before starting the engine.

Never use an oil /gasoline mixture or dirty gasoline.

Avoid getting dirt, dust or water in the fuel tank.

After refueling, tighten the fuel tank cap securely.



Fuel tank capacity: **4.2 L**

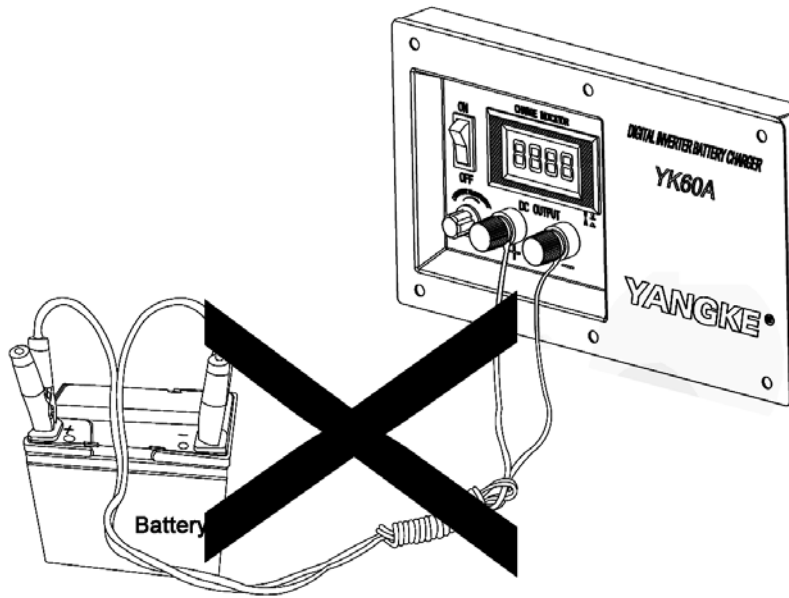
CAUTION

- 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 refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel above the upper limit mark). After refueling, make sure the fuel tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor 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 vapor.
- KEEP OUT OF REACH OF CHILDREN.

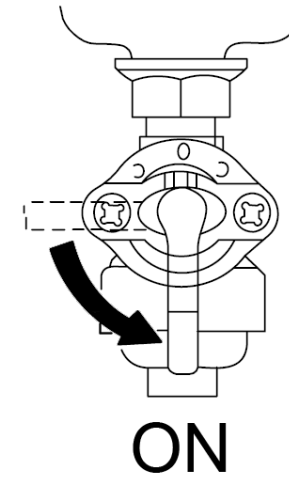
4. STARTING THE ENGINE

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Before starting, do not connect the battery.



1. Turn the fuel cock to "ON" position.

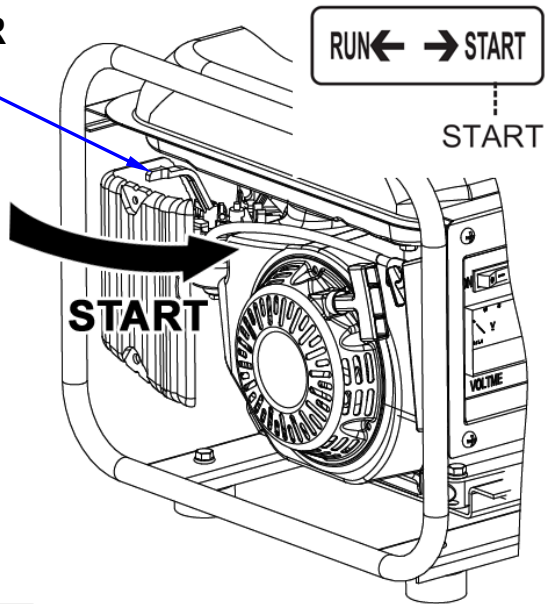


2. Turn the engine switch to "ON" position.



3. Turn the choke lever to “**START**” position.

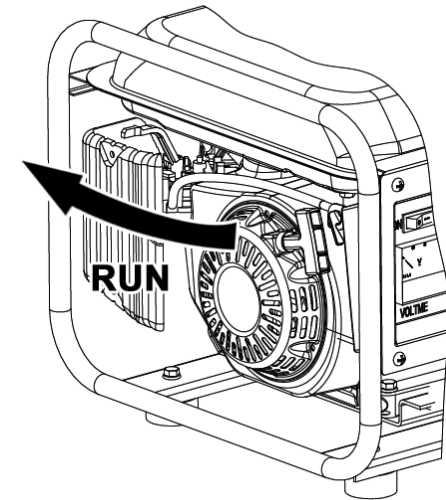
CHOKE LEVER



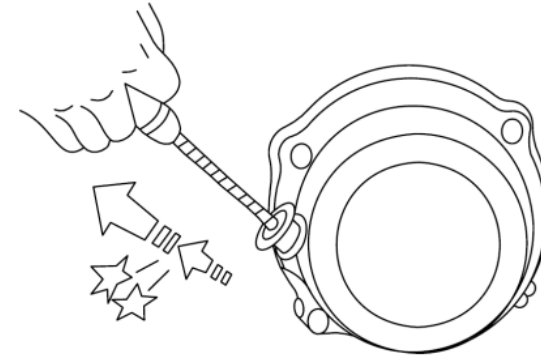
CAUTION

- Do not use the choke when the engine is warm or the air temperature is high.

5. Move the choke lever to the “**RUN**” position after the engine warms up.



4. Pull slowly on recoil start until engaged then pull it briskly.



CAUTION

- Do not allow the start grip to snap back, return it slowly by hand.

5. CHARGING FOR THE BATTERY

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 **CAUTION**

- Do not exceed the current limit specified for any one receptacle.
- Do not connect the charger to a household circuit. This could cause the damage to the charger or to electrical appliances in the house.
- Do not modify or use the charger for other purposes than it is intended for. Also observe the following when using the charger.
- Do not connect charger in parallel.
- Do not connect an extension to the exhaust pipe.
- When an extension cable is required, be sure to use a touch rubber sheathed flexible cable.
- Limit length of extension cable: 1.3M for cables if 4.0mm².
- Keep the charger away from other electric cables or wires such as commercial power supply lines.

 **NOTE**

- Most chargers require their rated wattage.
- The battery charger should be operated on a clean surface, such as the vehicles rubber floor mat.

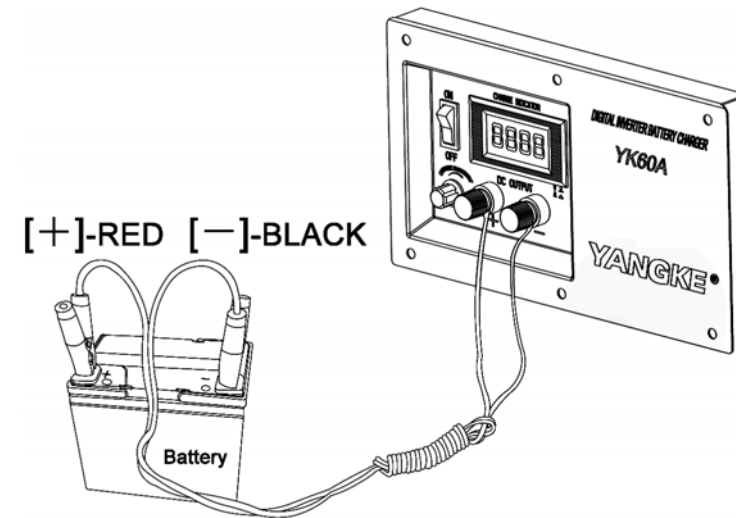
- This charger is designed for recharging 1N70 sized battery only. Charging larger battery capacities will cause overheating or stall the engine.
- Deep cycle batteries can be charged with this charger, but some will not accept a fast recharge & may require a slow trickle charging for a long period of time, which may not be the most efficient system.



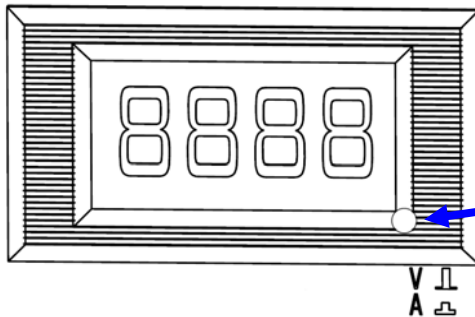
- Batteries contain a sulphuric acid electrolyte, which is a highly corrosive poison that will produce gasses when recharged and can explode if ignited.
This can cause serious injury or possibly death.
- The battery gives off explosive gases; keep spark, flames and cigarettes away. Provide adequate ventilation when charging.
- The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.
 - If electrolyte gets on your skin, flush with water.
 - If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician.
- KEEP OUT OF REACH OF CHILDREN.

OPERATING THE CHARGER

1. The battery charger “CURRENT ADJUSTMENT” knob should be in the “0” position before starting.
2. Start each engine according to “STARTING THE ENGINE”, and the readout on the digital display should be 0.00 to -0.03.
3. Connect the alligator clamps to the battery in the correct order (RED is positive ‘+’, BLACK is negative ‘-’).

**CAUTION**

Never reverse the polarities, as it may cause severe damage or may cause an explosion due to the hydrogen gases produced during charging



LED Amp / Volt digital meter

Push the button will display charging Voltage (V) or Current (A) respectively.

⏏ : **VOLTAGE(V)**

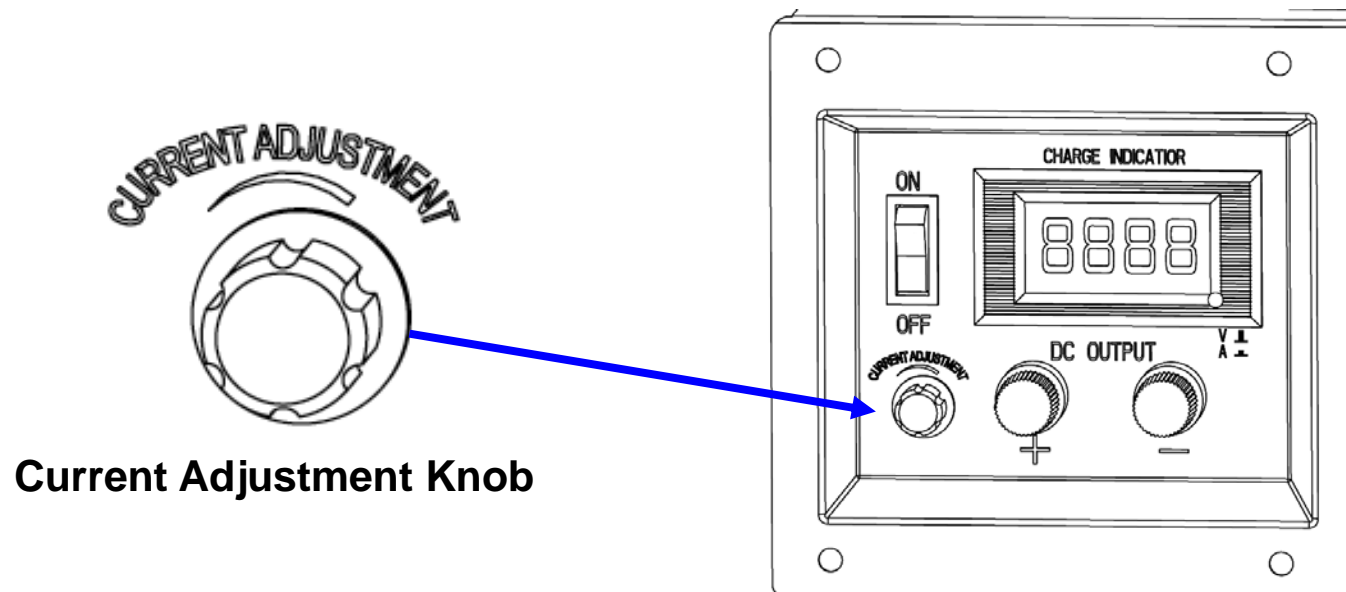
⏏ : **CURRENT(A)**

4. Turn the “CURRENT ADJUSTMENT” knob slowly from the “0” position to the “Max” position, and observe the digital readout on the battery charger at the same time. Set an appropriate charge current according to the battery type.

The max charge current of this charger is 60A/12V or 30A/24V, and the voltage is 15V or 28V, so the battery can be charged quickly.

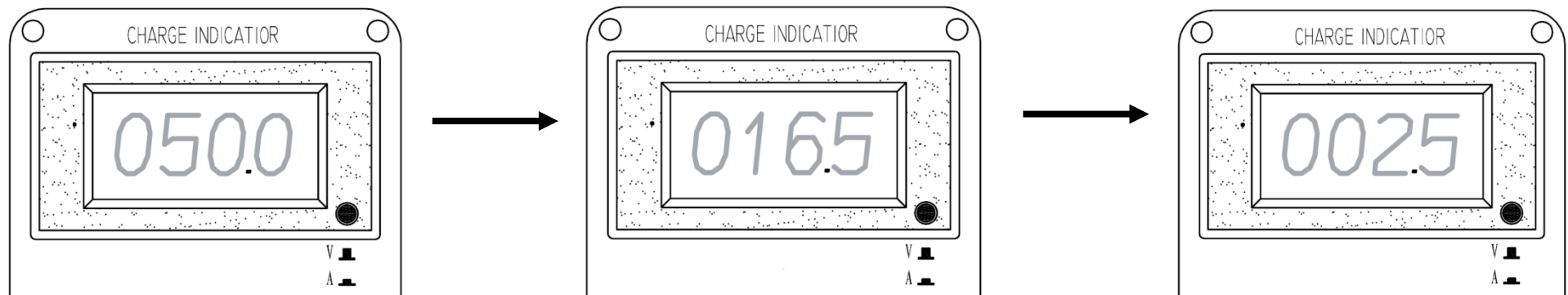
Adjust the “CURRENT ADJUSTMENT” knob to a suitable position, so the engine does not sound overloaded and observe the charge rate.

If turned to the “Max” position too fast, the engine may stop or become noisy.



Current Adjustment Knob

5. During the charge course, the readout on the “CHARGE CURRENT DISPLAY” will decrease slowly. The lead acid battery should be fully charged when the amp readout didn't come down any more. The value depends on the battery size.



Some deep cycle batteries will take much longer to charge, as a fast surface charge will build up on the internal plates, causing the amp input to cut back to a slow trickle charge.

6. Before removing the alligator clamps, switch off the engine, turn the “CURRENT ADJUSTMENT” knob to the “0” position. This will avoid sparks.

The 60amp charger is designed for recharging 1 N70 car battery only, do not use this on large solar installations, if used with larger battery capacities the charger may overheat and cause failures to electronic components.

 **NOTICE**

THIS BATTERY CHARGER WILL NOT CHARGE A DEAD BATTERY AND SHOULD NOT BE RELIED ON FOR EMERGENCY SITUATIONS OR RUNNING MEDICAL EQUIPMENT.

 **CAUTION**

- Disconnect battery charger leads from battery as soon as charging is complete, to avoid battery being discharged slowly.
- Do not recharge non-rechargeable batteries.

 **WARNING**

- Do not use electrical appliances in the rain.

 **NOTE**

- Never leave your battery charger unattended whilst it is running. Petrol engines may vibrate and fall over, which could cause a fire.
- Substantial overloading that continuously lights the overload indicator light (red) may damage the charger. Marginal overloading that temporarily lights the overload indicator light (red) may shorten the service life of the charger.
- Be sure that the batteries are in good working order before connecting them to the charger. If there is an abnormality during the charge course, turn off the charger engine switch immediately. Then disconnect the batteries, and examine it for signs of malfunction.

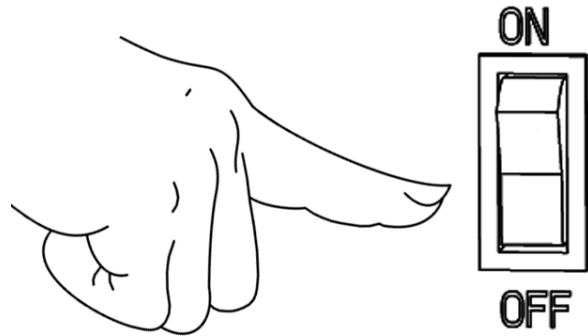
6. STOPPING THE ENGINE

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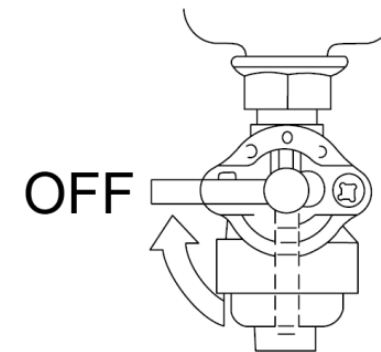
To stop the engine in an emergency, turn the engine switch to the "OFF" position.

IN NORMAL USE:

1. Remove the alligator clamps from the connected battery.
2. Turn the engine switch to the "OFF" position.



3. Turn fuel cock lever fully clockwise to the "OFF" position.



7. MAINTENANCE

7.1 Maintenance schedule

ITEM	REGULAR SERVICE PERIOD	EACH USE	FIRST MONTH OR 10 HRS.	EVERY 3 MONTHS OR 50 HRS.	EVERY 6 MONTH OR 100 HRS.	EVERY YEAR OR 300 HRS.
	Perform at every indicated month or operating hour interval, whichever comes first.					
Engine oil	Check	●				
	Change		●		●	
Air cleaner	Check	●				
	Clean			● (2)		
Spark plug	Clean – adjust				●	
	Replace					●
Fuel filter & fuel cock	Clean, Replace if necessary				●	
Fuel tank	Clean	Every year				
Valve clearance	Check - adjust					● (3)
Combustion chamber	Clean	After every 300 hrs (3)				
Fuel tube	Check	Every 2 years (Replace if necessary)				

The purpose of the maintenance and adjustment schedule is to keep the generator in the best operation condition.

NOTE:

(1) Log hours of operation to determine proper maintenance.

(2) Service more frequently when used in dusty areas.

(3) These items should be serviced by an authorized dealer, unless the owner has the proper tools and is mechanically proficient.

7.2 Change engine oil

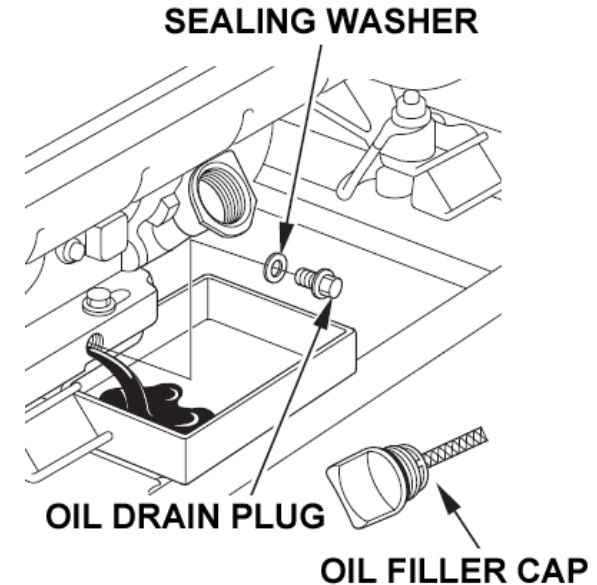
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Drain the oil while the engine is still warm to assure rapid and complete draining.



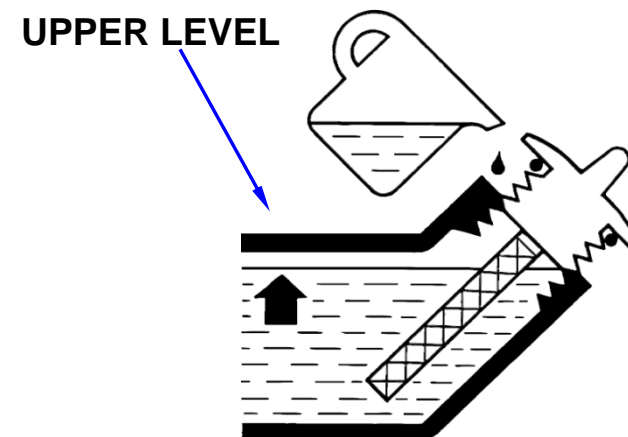
■ Make sure to turn the engine switch and the fuel cock level OFF before draining.

- (1) Warm up engine on level ground.
- (2) Remove the oil drain plug and sealing washer, remove the oil filler cap, and drain the oil.
- (3) Check the oil filter cap gasket. Replace if necessary.
- (4) Reinstall the oil drain plug and a new sealing washer. Tighten the plug securely.
- (5) Refill with the recommended oil and check the oil level.



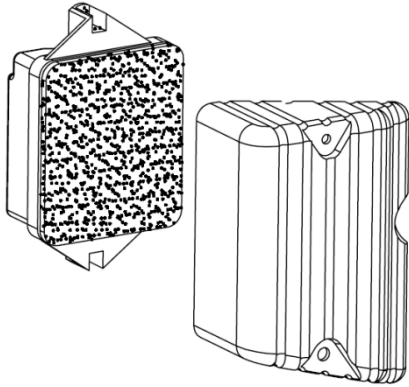
Wash your hands with soap and water after handling used oil.

Note: Please dispose of used engine oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station for reclamation. Do not throw it in the trash or pour it on the ground.



7.3 Air filter maintenance

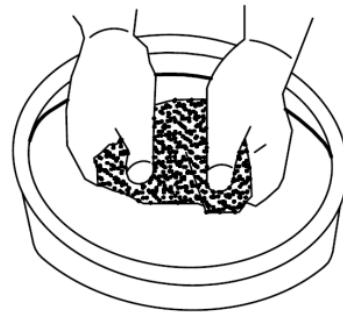
Take the air filter out.



* Never run engine without air filter.



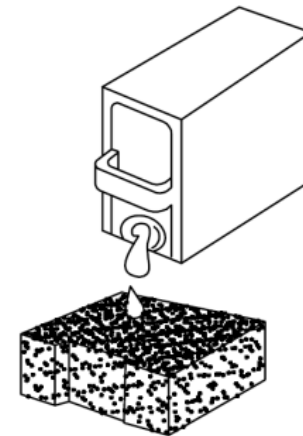
Wash filter in solvent.



Squeeze all oil out from the filter.



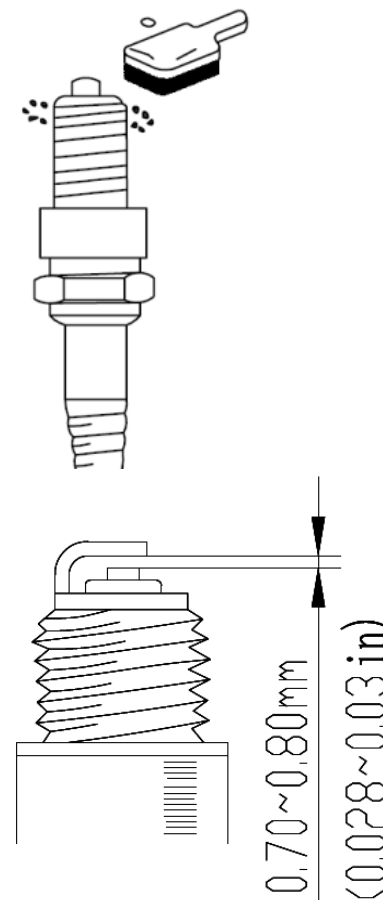
Using engine oil to permeate filter.



7.4 Spark plug maintenance

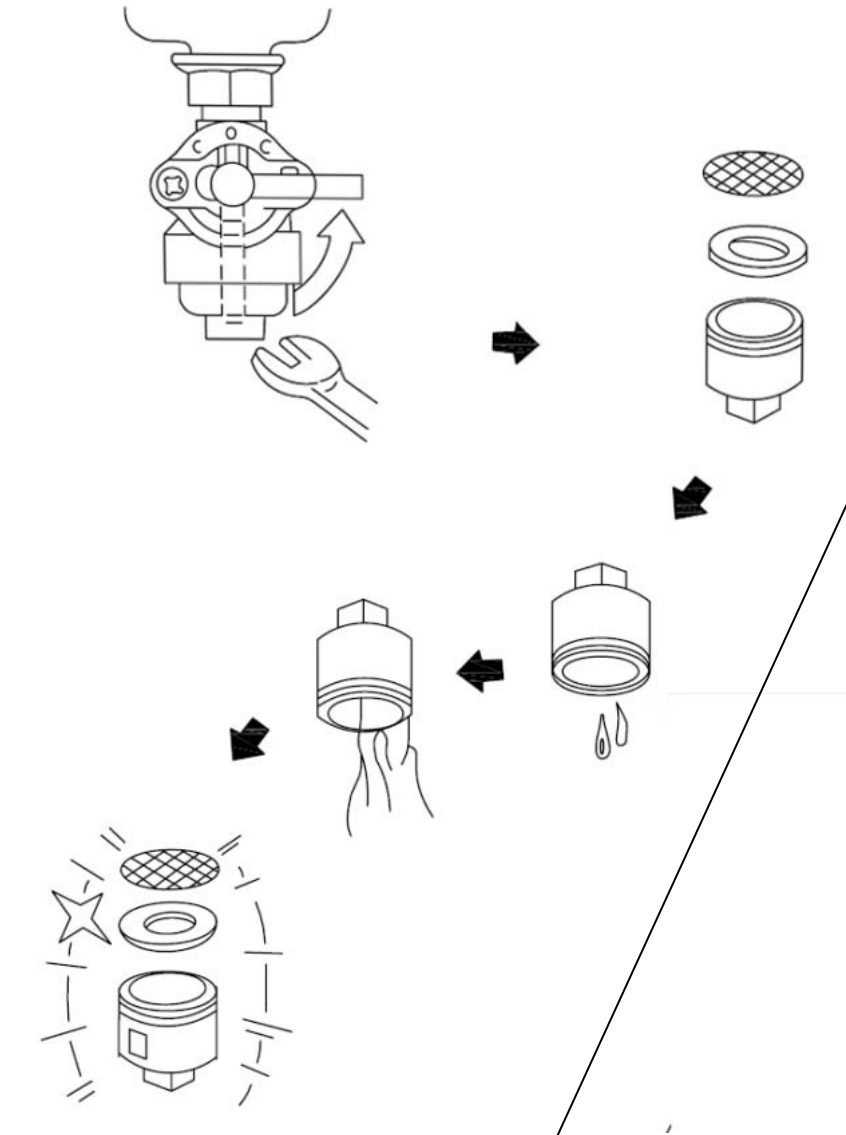
1. Remove the spark plug cap.
2. Clean any dirt from around the spark plug base.
3. Use the wrench to remove the spark plug.
4. Remove carbon deposits, and check for discoloration.
Standard: **Tan color**
5. Measure the plug gap with a feeler gauge.
The gap should be **0.7-0.8 mm (0.028-0.03 inch)**.
Corrected as necessary by carefully bending the side electrode.
6. Install the spark plug carefully, by hand, to avoid cross-threading.
7. After a new spare plug has been seated by hand, it should be tightened 1/2 turn with a wrench to compress its washer.
If a used plug is being reinstalled, it should be only require 1/8 or 1/4 turn after being seated.
8. Reinstall the spare plug cap on the spark plug securely.

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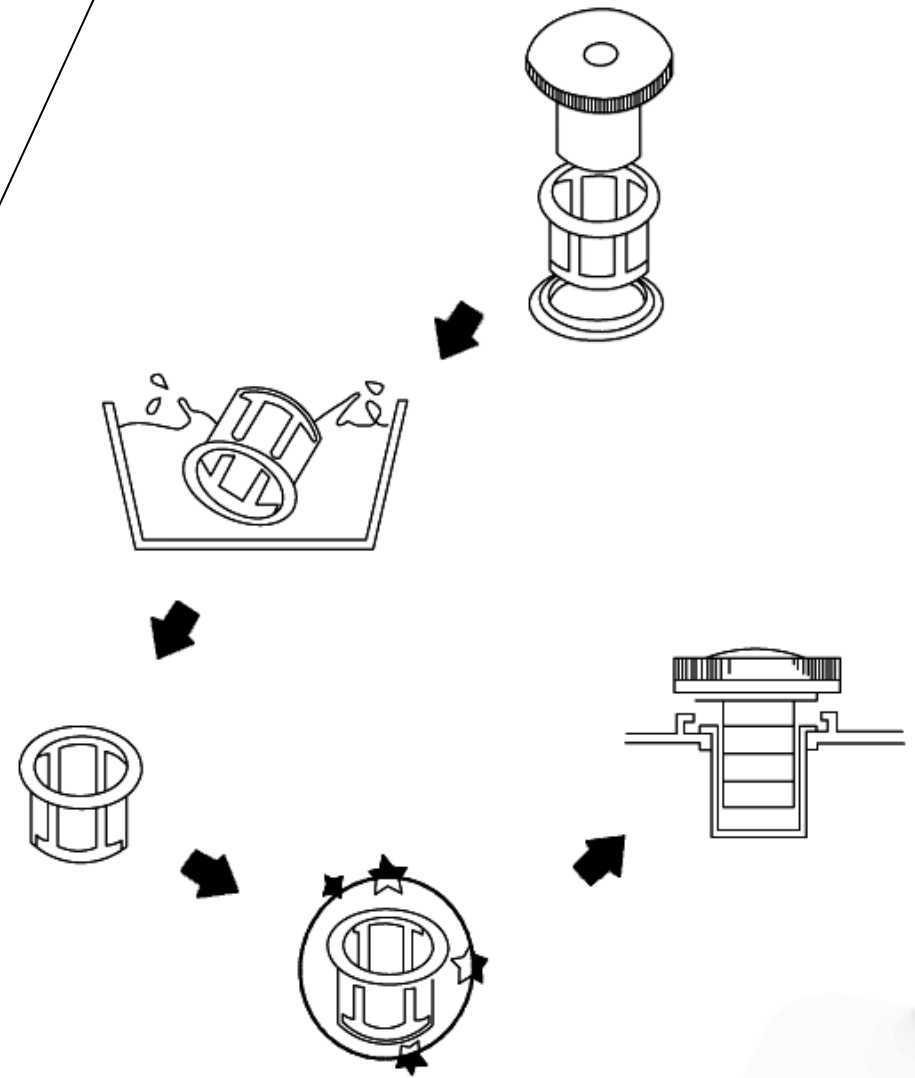


- The spark plug must be securely tightened. An improperly tightened plug can become very hot and possibly damage the generator.

7.5 Fuel cock maintenance



7.6 Fuel filter maintenance



8. TAKING CARE OF UNEXPECTED PROBLEMS

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● ENGINE NOT START

Trouble Diagnose	Correction
Fuel cock switch OFF.	Turn fuel cock level to ON.
Engine switch OFF.	Turn engine switch to ON.
Out of fuel.	Refuel.
Low oil level.	Add the recommended oil.
Bad fuel; generator stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor. Refuel with fresh gasoline.
Spark plug faulty, fouled, or improperly gapped.	Gap or replace spark plug.
Spark plug wet with fuel (flooded engine).	Dry and reinstall spark plug.
Fuel filter restricted, carburetor malfunction, ignition malfunction etc.	Take the generator to an authorized YANGKE servicing dealer.

To check spare plug:

- (1) Remove the spark plug cap and clean any dirt from around the spark plug.
- (2) Remove the spark plug and install the spark plug in the plug cap.
- (3) Set the plug side electrode on the cylinder head to ground.
- (4) Pull the recoil starter. Sparks should jump across the gap.



■ Be sure there is no spilled fuel around the spark plug. Spilled fuel may ignite.

● **ENGINE WORKS UNDER CAPACITY**

Trouble Diagnose	Correction
Air filter restricted.	Clean or replace air filter.
Bad fuel; generator stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and carburetor. Refuel with fresh gasoline.
Fuel filter restricted, carburetor malfunction, ignition malfunction etc.	Take the generator to an authorized YANGKE servicing dealer.

● **NO POWER FROM THE AC RECEPTACLES**

Trouble Diagnose	Correction
Overload or short circuit.	Check AC load. Stop and restart the engine.
Faulty power tool or appliance.	Replace or repair power tool or appliance. Stop and restart the engine.
Faulty generator.	Take the generator to an authorized YANGKE servicing dealer.

9. TRANSPORTING & STORAGE

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



WHEN TRANSPORTING THE GENERATOR:

- Do not overfill the tank (There should be no fuel in the filler neck).
- Do not operate the generator while it is on a vehicle. Take the generator off the vehicle and use it in a well ventilated place.
- Avoid a place exposed to direct sunlight when putting the generator on a vehicle. If the generator 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 generator on board. If you must transport the generator on a rough road, drain the fuel from the generator beforehand.

BEFORE STORING THE UNIT FOR AN EXTENDED PERIOD:

1. Make sure that the storage area is free of excessive humidity and dust.
2. Drain out the fuel completely.

10. TECHNICAL DATA

Specifications

Dimensions

Model	YK60A-1	YK60A-2
Length (mm)	380	
Width (mm)	310	
Height (mm)	310	
Net weight (KG)	17	

Generator

Model	YK60A-1	YK60A-2
Alternator type	Rare earth permanent-magnet Alternator, 100% copper winding	
DC output	Load voltage (V)	24
	DC output voltage (V)	24 – 30
	DC output current (A)	0 – 30

Engine

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Model	YK154F
Type	Single cylinder, 4-stroke, OHV gasoline engine
Displacement (cc)	87
Cylinder Bore x Stroke (mm)	54 × 38
Compression ratio	7.8 : 1
Engine speed (rpm)	2,600 - 3,300
Cooling system	Forced air-cooled
Starter system	Recoil starter
Ignition system	T.C.I.
Fuel	Automatic unleaded gasoline
Lube oil	SAE 10W30 (> CC grade)
Governor system	Electronic (Automatic)

Standard working conditions: 25°C, 1000 mbar, 30% relative humidity.

Specifications are subject to change without notice.

Memo

YANGKE®

SHANGHAI YANGKE IMP. & EXP. CO., LTD.

WWW.YANG-KE.COM