Westinghouse

USER MANUAL

REMOTE START

PUSH BUTTON ELECTRIC START

ENGINE START STOP

DUAL FUEL

iGen**4500**DF

Digital Inverter Generator

Gasoline: 3700 Running Watts | 4500 Peak Watts

Propane: 3330 Running Watts | 4050 Peak Watts

CALIFORNIA ENERGY COMMISSION COMPLIANT BC

⚠WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. Tominimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your equipment in a well-ventilatedarea and wear gloves or wash your hands frequently when servicing your equipment. For more information go to www.P65Warnings.ca.gov.

DISCLAIMERS:
All information, illustrations and specifications in this manual are based on the latest information available at the time of publishing. The illustrations used in this manual are intended as representative reference views only. Moreover, because of our continuous product improvement policy, we may modify information, illustrations and/or specifications to explain and/or exemplify a product, service or maintenance improvement. We reserve the right to make any change at any time without notice. Some images may vary depending upon which model is shown.

⚠ DANGER

This manual contains important instructions for operating this generator. For your safety and the safety of others, be sure to read this manual thoroughly before operating the generator. Failure to properly follow all instructions and precautions can cause you and others to be seriously hurt or killed.

TABLE OF CONTENTS

NOTICE

This inverter is NOT equipped with altitude carburetor modification. Even with a carburetor modification, engine horsepower will decrease about 3.5% for each 300 meter (1,000 foot) increase in altitude. The effect of altitude on horsepower will be greater if no carburetor modification is made. A decrease in engine horsepower will decrease the power output of the generator. Contact our service team to order altitude kits.

iGen4500DF TECHNICAL SPECIFICATIONS

Model	Running Watts Gas/LPG	Peak Watts Gas/LP	Fuel Tank Size (G/L)	Rated Speed (RPM)	Ignition Type	Spark plug	Engine Disp (cc)	Stroke X Bore	Oil Cap. (L)	Oil Type	THD	Mobile App Ready
iGen4500DF	3700/ 3330	4500/ 4050	3.4/13	3600	TCI	F7RTC	224	70X58	0.60	10W30	<3%	No

FOR YOUR RECORDS:

Date of Purchase:	
Inverter Model Number:	
Purchased from Store/Dealer:	
Inverter Serial Number:	

IMPORTANT: KEEP YOUR PURCHASE RECEIPT TO ENSURE TROUBLE-FREE WARRANTY COVERAGE.

PRODUCT REGISTRATION

To ensure trouble-free warranty coverage, it is important you register your Westinghouse inverter.
You can register your generator by either:

1. Filling in the product registration form below and mailing to:

Product Registration
MWE Investments LLC
777 Manor Park Drive
Columbus, Ohio 43228

2. Registering your product Online at **www.westinghouseportablepower.com/register-your-product/**
   To register your generator you will need to locate the following information:
   - Model Info Decal located on side panel.
   - Serial Number.

WESTINGHOUSE PRODUCT REGISTRATION FORM

PERSONAL INFORMATION

First Name: _____

Last Name: _____

Street Address: _____

Street Address: _____

City, State, ZIP:_____

Country: _____

Phone Number: _____

E-Mail: _____

INVERTER INFORMATION

Model Number: _____

Serial Number:_____

Date Purchased: _____

Purchased From:_____

SAFETY

SAFETY DEFINITIONS

The words DANGER, WARNING, CAUTION and NOTICE are used throughout this manual to highlight important information. Be certain that the meanings of these alerts are known to all who work on or near the equipment.

This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alerts symbol.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, *will* result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, *could* result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, *could* result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the generator, personal property and/or the environment, or cause the equipment to operate improperly.

NOTE: Indicates a procedure, practice or condition that should be followed in order for the generator to function in the manner intended.

SAFETY SYMBOL DEFINITIONS

Symbol	Description
	Safety Alert Symbol
	Asphyxiation Hazard
	Burn Hazard
	Burst/Pressure Hazard
	Don't leave tools in thearea
	Electrical Shock Hazard
	Explosion Hazard
	Fire Hazard
	Lifting Hazard
	Pinch-Point Hazard
	Read Manufacturer's Instructions
	Read Safety Messages Before Proceeding
	Wear Personal Protective Equipment (PPE)

SAFETY

GENERAL SAFETY RULES

⚠ DANGER

Never use the inverter in a location that is wet or damp. Never expose the inverter to rain, snow, water spray or standing water while in use. Protect the inverter from all hazardous weather conditions. Moisture or ice can cause a short circuit or other malfunction in the electrical circuit.

Never operate the inverter in an enclosed area. Engine exhaust contains carbon monoxide. Only operate the inverter outside and away from windows, doors and vents.

⚠ WARNING

Voltage produced by the inverter could result in death or serious injury.

- Never operate the inverter in rain or a flood plain unless proper precautions are taken to avoid being subject to rain or a flood.
- Never use worn or damaged extension cords.
- Always have a licensed electrician connect the inverter to the utility circuit.
- Never touch an operating inverter if the inverter is wet or if you have wet hands.
- Never operate the inverter in highly conductive areas such as around metal decking or steel works.
- Always use grounded extension cords. Always use three-wire or double-insulated power tools.
- Never touch live terminals or bare wires while the inverter is operating.
- Be sure the inverter is properly grounded before operating.

⚠ WARNING

Gasoline, gasoline vapors & liquid petroleum gas (LPG) are extremely flammable and explosive under certain conditions.

- Always refuel the inverter outdoors, in a well-ventilated area.
- Never remove the fuel cap with the engine running.
- Never refuel the inverter while the engine is running. Always turn engine off and allow the inverter to cool before refueling.
- Only fill fuel tank with gasoline.
- Keep sparks, open flames or other form of ignition (such as matches, cigarettes, static electric sources) away when refueling.
- Never overfill the fuel tank. Leave room for fuel to expand. Overfilling the fuel tank can result in a sudden overflow of gasoline and result in spilled gasoline coming in contact with HOT surfaces. Spilled fuel can ignite. If fuel is spilled on the inverter, wipe up any spills immediately. Dispose of rag properly. Allow area of spilled fuel to dry before operating the inverter.
- Wear eye protection while refueling.
- Never use gasoline as a cleaning agent.
- Store any containers containing gasoline or propane in a well-ventilated area, away from any combustibles or source of ignition.
- Check for fuel leaks after refueling. Never operate the engine if a fuel leak is discovered.

⚠ WARNING

Never operate the inverter if powered items overheat, electrical output drops, there is sparking, flames or smoke coming from the inverter, or if the receptacles are damaged.

Never use the inverter to power medical support equipment.

Always remove any tools or other service equipment used during maintenance from the inverter before operating.

NOTICE

Never modify the inverter.

Never operate the inverter if it vibrates at high levels, if engine speed changes greatly or if the engine misfires often.

Always disconnect tools or appliances from the generator before starting.

SAFETY

FUEL SAFETY

⚠ DANGER

Gasoline and liquid petroleum gas (LPG) are highly explosive and flammable. Explosions and fire can cause severe burns or death.

Gasoline and gasoline vapor (Gas)
- Gasoline is highly flammable and explosive.
- Gas expands and contracts with different temperatures.
- In case of a gas fire, do not attempt to extinguish the flame if the fuel shutoff valve is in the on position. Introducing an extinguisher to a generator with an open fuel valve could create an explosion hazard.
- Gas has a distinctive odor, this will help detect potential leaks quickly.
- Gas vapors can cause a fire if ignited.
- Gasoline is a skin irritant and needs to be cleaned up immediately if it comes in contact with the skin.

Liquid Petroleum Gas (Propane/LPG)
- LPG/Propane is highly flammable and explosive.
- Flammable gas under pressure can cause a fire or explosion if ignited.
- LPG/Propane can settle in low places because it is heavier than air.
- LPG/Propane has a distinctive odor added to help detect potential leaks.
- Always keep LPG/Propane tank in an upright position.
- When exchanging LPG/Propane tanks, be sure the tank value is the same type.
- In case of a LPG/Propane fire, do not attempt to extinguish unless the fuel supply can be shut off.
- LPG/Propane will burn the skin. Prevent skin contact at all times.

⚠ WARNING

Never use a gas container, LPG connector hose, LPG tank or any other fuel item that appears to be damaged.

When starting generator:
- Make sure that the gas cap, air filter, spark plug, fuel lines and exhaust system are properly in place.
- If you spill any gasoline on the tank, allow it to fully evaporate before operating.
- Make sure the generator and propane tank are on a flat surface before operating.
- If there is a propane odor do not start the unit because there may be a potential leak.
- Never place propane tank near engine exhaust.

When transporting or servicing the generator:
- Make certain the fuel shutoff valve is off and the fuel tank is empty.
- Make sure the LPG tank and LPG hose is not attached to the generator.
- Disconnect the spark plug wire.

When storing the generator:
- Store away from sparks, open flames, pilot lights, heat and other sources of ignition.
- Do not store gas or LPG tank near furnaces, water heaters or any other appliances that produce heat or have automatic ignitions.

⚠ CAUTION

Only use approved LPG tanks with OPD (overfilling prevention device) valve. Always keep the tank in a vertical position with the valve on top and installed at ground level on a flat surface. Do not allow tanks to be around any heat source and make sure it is not exposed to the sun, rain and dust. When transporting and storing, turn off the tank valve and fuel valve, and disconnect the tank. Make sure to always cover the generator and tank outlet with protective plastic caps.

Large (500-1000 gallon) LPG tanks will require a certified plumber to install the fuel line to the generator and the loose regulator is not used (the regulator that is attached to the fuel tank). The pressure as measured at the regulator mounted to the generator must be 7” to 14” of water column. The plumber will ensure that the pressure is correct or install a step down regulator if needed.

⚠ CAUTION

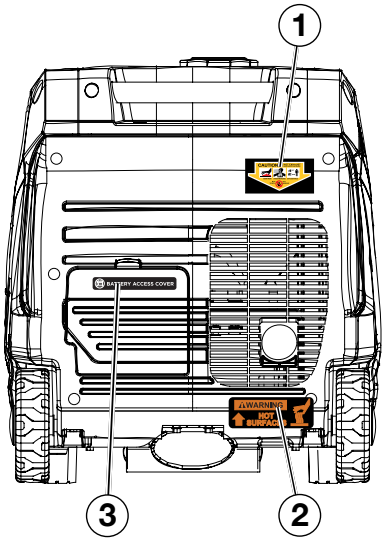
Do not allow children to tamper or play with the propane tank or hose connections.

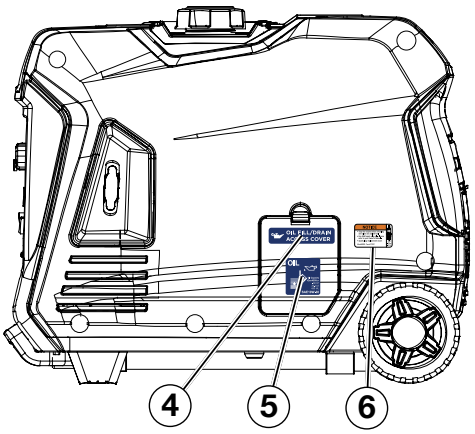
⚠ WARNING

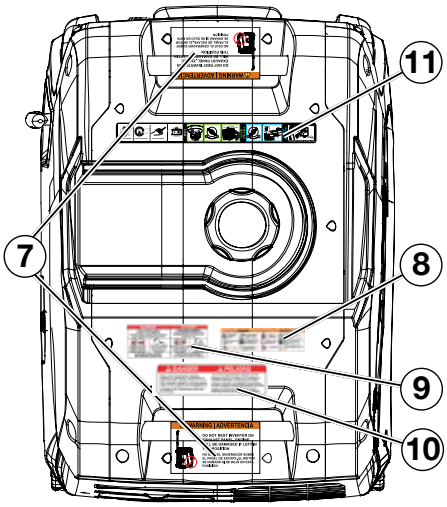
If there is a strong smell of propane while operating the generator close the valve on the propane tank immediately. Once the propane is off, use soapy water to check for leaks on the hose and connections on the tank valve and the generator. Do not smoke or light a cigarette or check for leaks using any open flame source such as a match or lighter. If a leak is found contact a qualified technician to inspect and repair the LPG system before using the generator.

SAFETY

SAFETY LABELS AND DECALS







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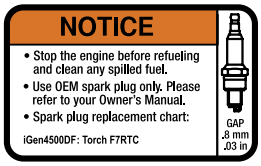

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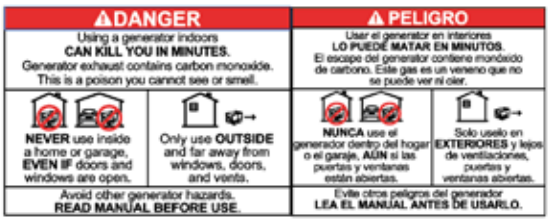

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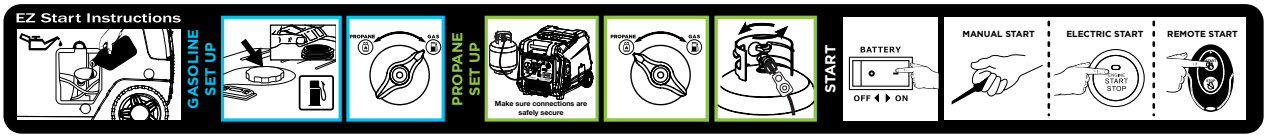


UNPACKING

⚠ CAUTION

Always have assistance when lifting the generator. The generator is heavy; lifting it could cause bodily harm.

Avoid cutting on or near staples to prevent personal injury.

Tools required – box cutter or similar device.

1. Carefully cut the packing tape on top of the carton.
2. Fold back top flaps to reveal the upper packing tray.
3. Remove and save the instruction manual, oil bottle, oil funnel, LPG hose, spark plug socket wrench & battery charger.
4. Remove and discard the upper packing tray.
5. Unfold the top of the plastic bag enclosing the generator.
6. Carefully cut the vertical corners of the carton to access the generator.
7. Recycle or dispose of the packaging materials properly.

WHAT COMES IN THE BOX

Manual
Quick Start Guide/Maintenance Schedule
LPG Hose with regulator (1)
Wireless Remote Starter (1)
.6 Liter Bottle of SAE 10W30 Oil (1)
Battery Charger (1)
Spark Plug Socket Wrench (1)
Wheel Kit Accessories Box
Oil Funnel (1)

If any parts are missing, contact our service team at service@wpowereq.com or call 1-855-944-3571.

ASSEMBLY

HOOKING UP THE BATTERY

⚠ WARNING

To avoid electrics hock:

- ALWAYS connect the positive (+) battery cable (red boot) first when connecting battery cables.
- ALWAYS disconnect the negative (-) battery cable (black boot) first when disconnecting battery cables.
- NEVER connect the negative (-) battery cable (black boot) to the positive (+) post on the battery.
- NEVER connect the positive (+) battery cable (red boot) to the negative (-) post on the battery.
- NEVER touch both battery posts simultaneously.
- NEVER place a metal tool across both battery posts.
- ALWAYS use insulated or nonconducting tools when installing the battery.

NOTE: THE INVERTER COMES EQUIPPED WITH THE POSITIVE BATTERY CABLE (RED BOOT) ALREADY ATTACHED.

1. Unclip the battery access panel on the back of the unit next to the muffler (see Figure 1).

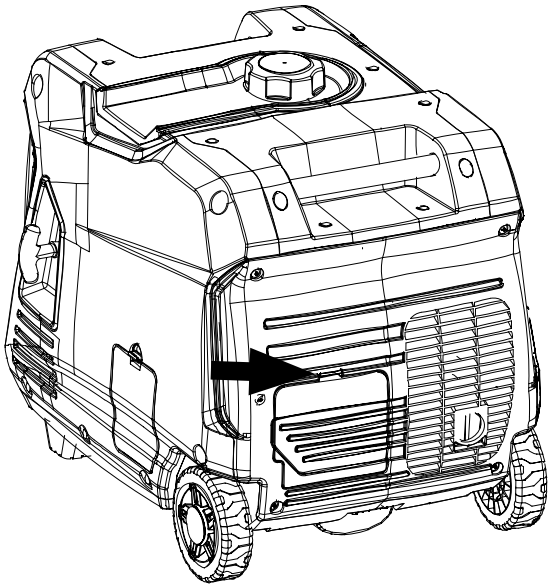
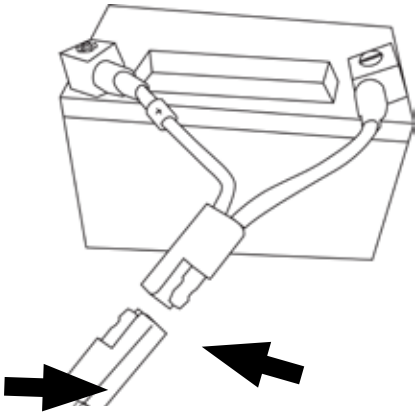


Figure 1: Battery service panel

2. Pull down on the battery strap clip and unhook it from the mounting base.

3. Lift the battery up, withdraw it bottom-first through the battery access port and then stand it up vertically in its normal orientation.



4. Clip the battery quick connect from the battery leads to the main lead inside the inverter (see image above).

5. Verify the positive (+) battery cable (red boot) is securely tightened to the positive (+) battery post. Make sure boot is over battery post.

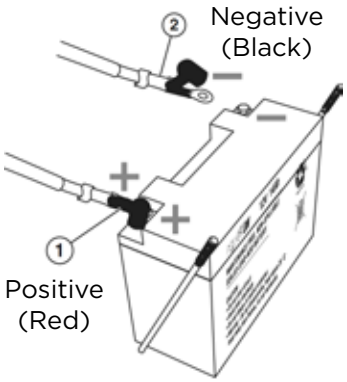


Figure 2: Installing battery leads

6. Insert the battery top-first through the battery access port and stand it up vertically on its mounting base.

7. Check that the battery is positioned correctly and that the battery cables are not kinked or pinched.

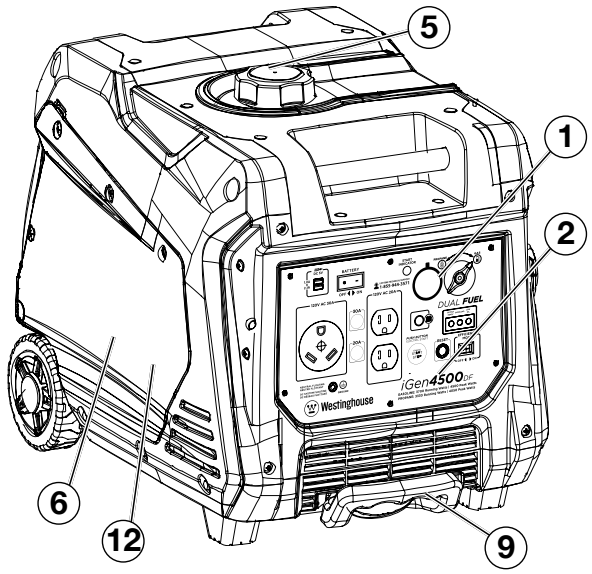
8. Pass the battery strap under the negative (-) battery cable and centrally over the top of the battery. Then pull down on the battery strap clip and hook it onto the mounting base.

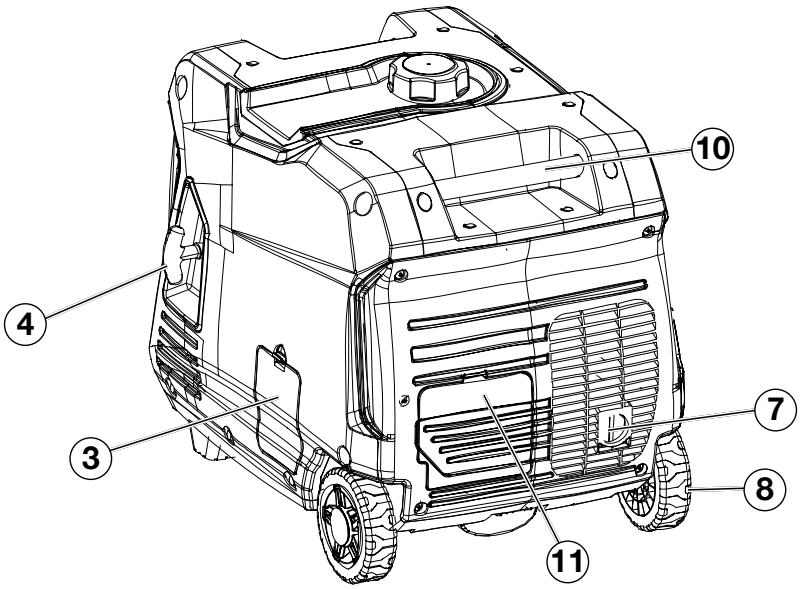
9. Replace the battery access cover.

NOTE: The electric start generator is equipped with a battery charging feature. Once the engine is running, a small charge is supplied to the battery via the battery cables and will slowly recharge the battery.

FEATURES

BASIC INVERTER FEATURES iGen4500DF

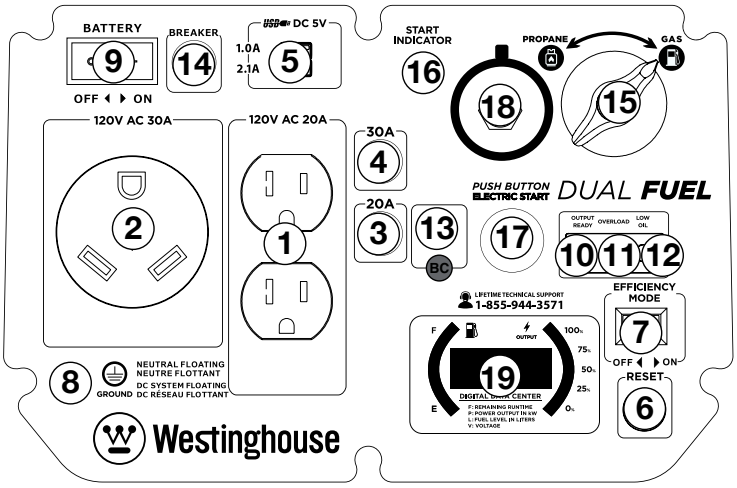




1. **Propane Hook Up:** Hook up your propane tank with the LPG hose provided to this inlet.
2. **Control Panel:** Contains the reset breaker, outlets and warning lights.
3. **Oil Access Cover:** Remove the cover to access the oil fill/drain plug.
4. **Recoil Handle:** Pull to manually start the engine.
5. **Fuel Cap:** Close until clicking sound is heard.
6. **Engine Service Panel:** Remove the panel to access the engine, choke, air filter, spark plug and float bowl for maintenance.
7. **Muffler and Spark Arrestor:** Avoid contact until the engine is cooled down. The spark arrestor prevents sparks from exiting the muffler. It must be removed for servicing.
8. **Roller Board Wheels:** For easy portability.
9. **Telescoping Handle:** Extends and retracts for easy access.
10. **Carry Handles:** Built in handles to allow for easy pick up.
11. **Battery Access Panel:** Easy access to battery.
12. **Automatic Choke:** Unit will automatically set choke for electric and manual start (if battery is dead or disconnected you may have to set choke manually).

FEATURES

CONTROL PANEL FEATURES iGen4500DF



1. **120-Volt, 20-Amp Duplex Outlet (NEMA 5-20R):** The outlet is capable of carrying a maximum of 20 amps.

2. **120-Volt 30 Amp TT-30 Outlet:** Travel Trailer outlet can supply a maximum of 30 amps and 120 volts.

3. **20-Amp Circuit Breaker:** Each circuit breaker limits the current that can be delivered through the 120-volt duplex outlets to 20amps.

4. **30-Amp Circuit Breaker:** Each circuit breaker limits the current that can be delivered through the 120-volt TT-30 outlets to 30amps.

5. **USB Duplex:** 5V DC USB outlets that come with 1 and 2.1 amp rating. 5-Volt DC USB devices or extension cords must be fitted with a standard Type “A” USB male plug for connection to the generator

6. **Reset Breaker:** If the inverter is overloaded, the reset breaker will trip. The engine will continue to run, but there will be no output from the inverter. Unplug the devices and reduce the load. Push in the reset breaker to reset it.

7. **Efficiency Mode Switch:** Move the switch to the ON position when powering small resistive loads such as a computer or electric light; the engine speed will automatically be kept to a minimum, thereby reducing fuel consumption and noise. Select the OFF position when powering large inductive loads such as an air conditioner or electric pump; the engine speed will be kept higher for maximum electrical starting power.

8. **Ground Terminal:** The ground terminal is used to externally ground the inverter.

9. **Battery Switch:** Turns battery on and off. Must be on before electric start.

10. **Output Ready LED:** Indicates the inverter is ready to be used.

11. **Overload LED:** Indicates that the inverter is overloaded.

12. **Low Oil LED:** Indicates low oil level.

13. **Battery Charging Port**: Used to charge battery when unit is off.

14. **Main Circuit Breaker**: The main circuit breaker controls total output of all outlets to protect the generator.

15. **Fuel Selector Switch:** Select and turn on gas or propane. You cant switch fuel sources while unit is running.

16. **Start Indicator:** Indicates that power is on, light will remain lit the whole time the unit is on.

17. **Push Button Automated Start:** Push once to automatically start the engine. Push again to stop the engine.

18. **Propane Hook Up:** Hook up your propane tank with the LPG hose provided to this inlet.

19. **LED Data Center:** Displays remaining run time (F), power output in kW (P), fuel level in liters (L), voltage (V), and lifetime hours.

Remaining Run Time: Displays time remaining with current fuel level and power output. Does not display lifetime hours.

Power Output: Displays electrical power output to receptacles in kilowatts.

Fuel level: Displays current fuel level in liters.

Voltage: Displays current voltage output of generator.

Lifetime Hours: Displays the total run time of the generator.

OPERATION

BEFORE STARTING THE INVERTER

BEFORE STARTING THE INVERTER, REVIEW SAFETY SECTION STARTING ON PAGE 4.

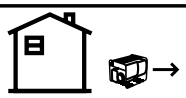
Location Selection – Before starting the inverter, avoid exhaust and location hazards by verifying:

- You have selected a location to operate the inverter that is outdoors and well ventilated.
- You have selected a location with a level and solid surface on which to place the inverter.
- You have selected a location that is at least 6 feet (1.8 m) away from any building, other equipment or combustible material.
- If the inverter is located close to a building, make sure it is not located near any windows, doors and/or vents.

⚠DANGER

Using a generator indoors
CAN KILL YOU IN MINUTES.
Generator exhaust contains carbon monoxide.
This is a poison you cannot see or smell.

NEVER use inside a home or garage, **EVEN IF** doors and windows are open.



Only use **OUTSIDE** and far away from windows, doors, and vents.

Avoid other generator hazards.
READ MANUAL BEFORE USE.

⚠ WARNING

Always operate the inverter on a level surface. Placing the inverter on non level surfaces can cause the inverter to tip over, causing fuel and oil to spill. Spilled fuel can ignite if it comes in contact with an ignition source such as a very hot surface.

NOTICE

Only operate the inverter on a solid, level surface. Operating the inverter on a surface with loose material such as sand or grass clippings can cause debris to be ingested by the inverter that could:
• Block cooling vents
• Block air intake system

Weather – Never operate your inverter outdoors during rain, snow or any combination of weather conditions that could lead to moisture collecting on, in or around the generator.

Dry Surface – Always operate the inverter on a dry surface free of any moisture.

No Connected Loads – Make sure the inverter has no connected loads before starting it. To ensure there are no connected loads, unplug any electrical extension cords that are plugged into the control panel receptacles.

NOTICE

Starting the inverter with loads already applied to it could result in damage to any appliance being powered off the inverter during the brief start-up period.

Grounding the iGen Inverters
Consult with your local municipalities for your grounding codes.

⚠ WARNING

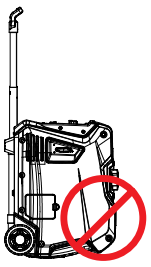
Be sure the inverter is properly connected to earth ground before operating.

High Altitude Operation
Engine power is reduced the higher you operate above sea level. Output will be reduced approximately 3.5% for every 1000ft of increased altitude from sea level. This is a natural occurrence and cannot be adjusted by engine. Increased exhaust emissions can also result due to increased fuel mixture. Other issues include hard starting, increased fuel consumption and spark plug fouling.

High Altitude Carburetor Kit Part Number: 140540
High Altitude DF Regulator Part Number: 140547
Note: You must purchase the Dual Fuel Regulator along with carburetor kit for proper high altitude operation.

⚠ WARNING

Do not rest inverter on exhaust panel. Do not move Generator while it is on. The inverter will be damaged if operated in this manner.



OPERATION

NOTICE

During the first five hours of operating the generator make sure to not exceed 50% of the rated running watts until the unit is broken in properly. Make sure to vary to load occasionally to allow stator windings to heat and cool. Adjusting the load will also help seat piston rings. Check oil more often during the first couple times of operating the generator.

NOTICE

Weather will affect engine oil performance. Change the type of engine oil used based on weather conditions to suit the engine needs.

PROGRAMMING THE GENERATOR FOR REMOTE START

NOTICE

The key fob included with the generator should come already paired with the unit. If it does not you can follow the directions below to reconnect. If your unit was shipped without a key fob please contact our customer support team.

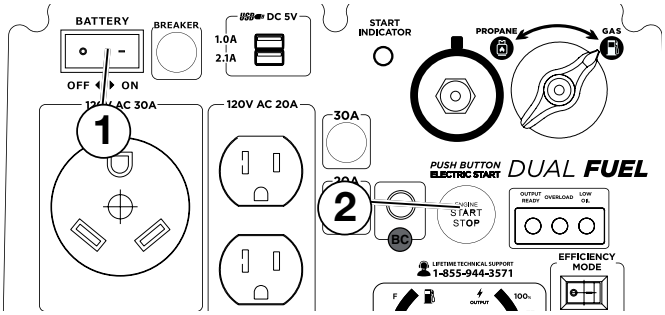
⚠ WARNING

Always make sure the area around the generator is clear of bystanders before using the remote start to start the generator.

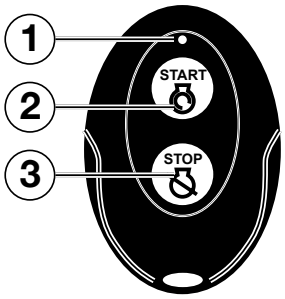
The generator can be started remotely from up to a maximum of 109 yards (100 M) away using the remote start key fob with new, fully charged batteries in the key fob. As the batteries' state of charge in the key fob reduces, the distance to start the generator will also reduce.

If the key fob is replaced or needs to be reconnected, you will need to go through this procedure with the new fob.

1. Turn the battery switch to the **ON** position.
2. Press and hold the electric start button on the control panel of the generator for 10s, then let go, and the start indicator light will flash green.



3. Press the start button on remote fab, and it will pair with generator automatically. Then the start indicator light on the generator will stop flashing.
4. Start the unit.



Remote Start Key Fob
1 - Pairing Indicator light
2 - Start Button | 3 - Stop Button

OPERATION

POWER CORD

Using Extension Cords

Westinghouse Portable Power assumes no responsibility for the content within this table. The use of this table is the responsibility of the user only. This table is intended for reference only. The results produced by using this table are not guaranteed to be correct or applicable in all situations as the type and construction of cords are highly variable. Always check with local regulations and a licensed electrician prior to installing or connecting an electrical appliance

Extension Cord Wire Gauge Size

	LENGTH OF EXTENSION CORD (ft)								
AMPS	10	20	30	40	50	60	80	100	120
5	20	18	16	14	12	12	10	10	8
10	18	16	14	12	12	10	10	8	8
15	16	14	12	12	10	10	8	8	6
20	14	12	12	10	10	8	8	6	6
25	12	12	10	10	8	8	6	6	6
30	12	10	10	8	8	6	6	6	6
35	10	10	8	8	6	6	6	6	6

INVERTER PARALLELING OPERATION

⚠ DANGER

Never connect the paralleling cord to the inverters with the inverters running. The inverters must not be running and both the paralleling cord switches must be off when connecting the cords.

⚠ WARNING

Do not attempt to parallel the Westinghouse inverter with any other manufacturers' inverters. Do not use the paralleling cord for any application other than inverter paralleling. Do not use this cord on other manufacturers' inverters.

Always ensure that both ends of the paralleling cord are switched off before connecting the inverters.

INVERTER PARALLELING OPERATION

1. Using only the Westinghouse paralleling cord with both cord switches set to **OFF** (O), connect one male plug to one inverter and connect the remaining plug into the other inverter. Either of the receptacles on the inverters can be used.
2. Start one of the inverters and wait until the ready light is on.
3. Turn both cord switches to ON (I).
4. Start the remaining inverter; wait until the ready light is on before connecting the load.
5. When power is present, a light will illuminate in the three-prong plug that is plugged into the inverter.
6. To stop the inverters, unplug all connected loads, turn both cord switches to **OFF** (O) and unplug the cord on each inverter.
7. If during operation the inverters' output is stopped due to overloading, reduce the connected load by unplugging appliances, and then push the reset button and restart the inverter. When the ready light is on, the load can be reconnected.

OPERATION

INITIAL OIL FILL

BEFORE ADDING ENGINE OIL, REVIEW SAFETY SECTION STARTING ON PAGE 4.

NOTICE

Engine oil must be added when the inverter is on a flat, level surface, or an inaccurate reading may result. Do not overfill. If the engine is overfilled with oil, it can cause serious engine damage.

1. Unclip and remove the oil service panel to access the oil fill/drain plug (see Figure 3).

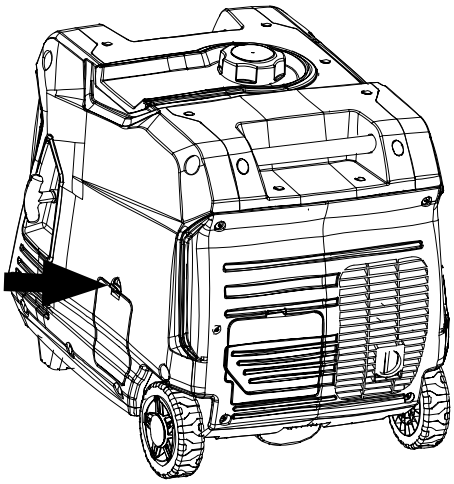


Figure 3: Oil service panel

2. Clean area around oil fill/drain plug and remove plug.
3. Using the supplied funnel and oil, pour the entire bottle of oil into the engine. See correct oil level in Figure 4 below.

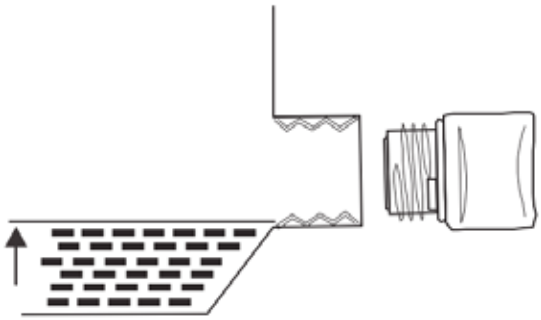


Figure 4: Engine oil correct level

4. Do not overfill, if oil level is too high, oil will drain out through the fill plug.

ADDING/CHECKING ENGINE FLUIDS AND FUEL

BEFORE ADDING/CHECKING ENGINE FLUIDS AND FUEL, REVIEW SAFETY SECTION STARTING ON PAGE 4.

⚠ DANGER

Filling the fuel tank with gasoline while the inverter is running can cause gasoline to leak and come in contact with hot surfaces that can ignite the gasoline.

Before starting the inverter, always check the level of:

- Engine oil
- Gasoline in the fuel tank

Once the inverter is started and the engine gets warm, it is not safe to add gasoline to the fuel tank or engine oil to the engine while the engine is running or the engine and muffler are hot.

CHECKING AND / OR ADDING ENGINE OIL

⚠ WARNING

Internal pressure can build in the engine crankcase while the engine is running. Removing the oil fill plug/dipstick while the engine is hot can cause extremely hot oil to spray out of the crankcase and can severely burn skin. Allow engine oil to cool for several minutes before removing the oil fill plug/dipstick.

The unit as shipped does not contain oil in the engine. You must add engine oil before starting the inverter for the first time. See *Initial Oil Fill* for instructions on checking engine oil level and the procedure for adding engine oil.

NOTICE

The engine does not contain engine oil as shipped. Attempting to start the engine without adding engine oil will permanently damage internal engine components.

The engine is equipped with a low oil shutdown switch. If the oil level becomes low, the engine may shut down and not start until the oil is filled to the proper level.

The owner of the inverter is responsible to ensure the proper oil level is maintained during the operation of the generator. Failure to maintain the proper oil level can result in engine damage.

OPERATION

ADDING GASOLINE TO THE FUEL TANK

⚠ WARNING

Never refuel the inverter while the engine is running.

Always turn the engine off and allow the inverter to cool before refueling.

⚠ CAUTION

Avoid prolonged skin contact with gasoline. Avoid prolonged breathing of gasoline vapors.

Required Gasoline – Only use gasoline that meets the following requirements:

- Unleaded gasoline only
- Gasoline with maximum 10% ethanol added
- Gasoline with an 87 octane rating or higher

Filling the Fuel Tank – Follow the steps below to fill the fuel tank:

1. Shut off the inverter.
2. Allow the inverter to cool down so all surface areas of the muffler and engine are cool to the touch.
3. Move the inverter to a flat surface.
4. Clean area around the fuel cap.
5. Remove the fuel cap by rotating counterclockwise.

NOTICE

Do not overfill the fuel tank. Spilled fuel will damage some plastic parts.

6. Slowly add gasoline into the fuel tank. Be very careful not to overfill the tank. The gasoline level should NOT be higher than the red ring (see Figure 5).
7. Install the fuel cap by rotating clockwise.

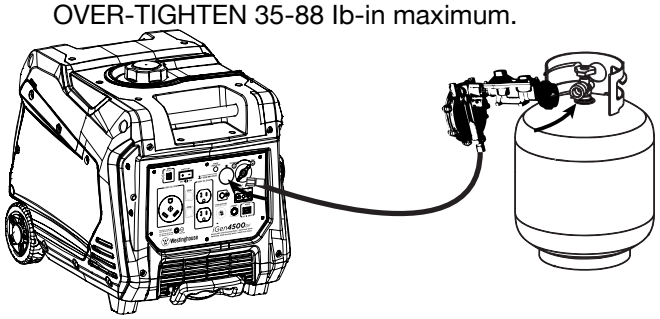
Figure 5: Maximum gasoline fill level

CONNECTING THE LPG/PROPANE TANK

BEFORE CONNECTING PROPANE TANK TO THE GENERATOR PLEASE REVIEW FUEL SAFETY SECTION ON PAGE 6

Connecting LPG Tank

1. Make sure the inverter is off, on a flat surface in well ventilated area.
2. Make sure propane tank valve is in the off position.
3. Make sure the fuel selector switch on the inverter control panel is pointing downward to “Propane”.
4. Remove the plastic cover on the generator propane inlet valve.
5. Using your fingers tighten the LPG hose (included) end below to the generator propane inlet. DO NOT OVER-TIGHTEN 35-88 lb-in maximum.



6. Attach the other end of the hose to a tank of LPG/ Propane and hand tighten.
7. Check all connections for leaks by wetting the fittings with soapy water. Anywhere that bubbles appear or grow indicates a leak in the connection. If a leak exists at a fitting then turn off the tank valve and tighten the fitting. Turn the gas back on and recheck with soapy water again. If the leak continues or if the leak is not at a fitting then do not use the generator and contact customer service.

NOTICE

- The LPG tank can be of any capacity but the tank must conform to the standard as previously listed in *Fuel Safety* section.
- LPG tanks that use liquid withdrawal system can not be used on these models.
- Verify the requalification date on the tank has not expired.
- All new tanks must be purged of air and moisture prior to filling. Used tanks that have not been plugged or kept closed must also be purged
- The purging process should be done by a LPG supplier. (Tanks from an exchange supplier should have been purged and filled properly already)
- Always position the tank so the connection between the valve and the gas inlet won’t cause sharp bends or kinks in the hose.

⚠ WARNING

Do not start generator if you smell propane. This may result in explosion hazard. Do not use provided LPG hose for any other appliances. Always turn off the propane tank and disconnect LPG hose when not in use.

OPERATION

STARTING THE INVERTER

BEFORE STARTING THE INVERTER, REVIEW SAFETY SECTION STARTING ON PAGE 4.

For proper starting and operation of the inverter, make sure you review the inverter features and their descriptions in *Features* section.

Before attempting to start the inverter, verify the following:

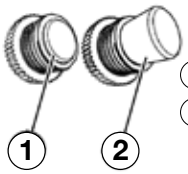
- The engine is filled with engine oil (see Figure 4: *Engine Oil Correct Level*).
- The inverter is situated in a proper location (see *Location* Selection).
- The inverter is on a dry surface (see *Weather and Dry Surface*).
- All loads are disconnected from the inverter (see *No Connected Loads*).
- The inverter is properly grounded (see *Grounding the Inverter*)

⚠ DANGER

Never use the inverter in a location that is wet or damp. Never expose the inverter to rain, snow, water spray or standing water while in use. Protect the inverter from all hazardous weather conditions. Moisture or ice can cause a short circuit or other malfunction in the electrical circuit.

Never operate the inverter in an enclosed area. Engine exhaust contains carbon monoxide. Only operate the inverter outside and away from windows, doors and vents.

1. Check oil levels (see *Initial Oil Fill*)
2. Make sure nothing is plugged into any of the outlets.
3. Make sure battery is connected (see *Hooking Up the Battery*).
4. Make sure the circuit breakers are properly set (see Figure 6).



① 120V Circuit Breaker Operating Position
② 120V Circuit Breaker Tripped Position

Figure 6: Breakers

5. Select fuel source for start up:

FOR GASOLINE

a. Make sure there is gas in the tank (see *Adding Gasoline to the Fuel Tank*).

b. Turn fuel selector knob to **GASOLINE** (see Figure 7).

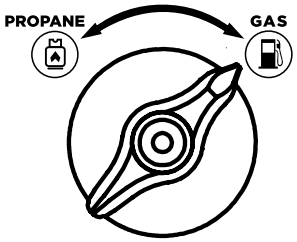


Figure 7: Turn Fuel selector to GAS position

FOR LPG/PROPANE:

a. Make sure the LPG hose is safely secured from the generator to the tank (see *Connecting the LPG Tank*).

b. Turn the fuel selector knob to **PROPANE** (see Figure 8).

c. Fully open the valve on the propane tank.

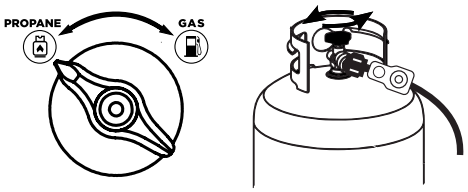


Figure 8: Turn fuel selector to PROPANE position
Propane tank valve - OPEN

6. Turn battery switch **ON**.
7. Choose starting method:

a. Recoil Start: Firmly grasp and pull the recoil handle slowly until you feel increased resistance. At this point, apply a rapid pull while pulling up and slightly away from the generator.

b. Remote Start: Click **START** on the wireless key FOB provided.

c. Push Button Start: Push and hold the engine start push button for 1 second and release.

- The engine will automatically set the choke and begin the start sequence.
- If the engine fails to start, the generator controls will attempt to start the engine two more times for a total of three attempts.
- If the engine has failed to start after three attempts the engine start button can be pushed again to begin the automatic start sequence.
- The push button can be pushed at any time during the automatic start sequence to abort the engine start attempt.

OPERATION

SWITCHING FUEL SOURCES

PLEASE REVIEW FUEL SAFETY SECTION ON PAGE 6

The below assumes that the propane fuel line is already attached to the generator securely and safely.

While the unit is running simply turn the **FUEL SELECTOR** knob to the desired fuel source. If you want to switch from gasoline to propane make sure the propane tank valve is open before you switch. When you move from propane to gasoline shut the propane valve after you have switched to gas.

NOTICE

If you do not plan on operating the unit on propane do not leave the propane tank valve open.

When starting on propane the engine may run rough for a few seconds while it purges gasoline in the carburetor.

If the engine fails when switching fuel sources simply restart the unit on the fuel source that you switched to.

STOPPING THE INVERTER

Normal Operation

During normal operation, use the following steps to stop your inverter:

1. Remove any connected loads from the control panel receptacles.
2. Allow the inverter to run at “no load” to reduce and stabilize engine and alternator temperatures.
3. Press and hold the Push Start/Stop Button for 1 second, or press “Stop” on remote start key fob, (see Figure 9).
4. Switch battery to **OFF**.

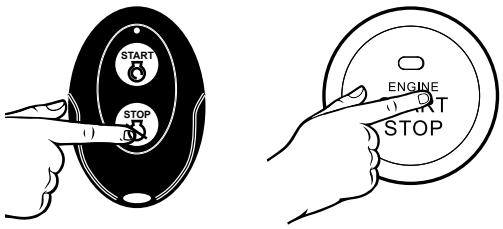


Figure 9: Stopping generator

USING EFFICIENCY MODE

The inverter is equipped with an efficiency mode switch to minimize fuel consumption. In efficiency mode, the inverter will sense the load and adjust the engine RPM to the current load requirements. Efficiency mode should be used only after the inverter has been warmed up to operating temperature.

1. To turn on the efficiency mode, press the switch to the **ON** position).
2. If no load is present, the inverter RPM will drop down to an idle speed.
3. As a load is applied, the inverter will sense the load and engine RPM will increase according to the load applied.
4. To run the inverter at maximum power and RPM, press the efficiency mode switch to the **OFF** position.

OVERLOAD RESET

An electrical overload or short circuit will trip the overload protection system by disconnecting the generator’s AC output even though the engine is still running. If this occurs, the overload alarm light will be illuminated red and the output indicator light will be off. The AC output can be restored as follows:

1. Turn off and unplug any electrical devices or cords from the 120-Volt AC and 5-Volt DC USB receptacles on the control panel.
2. Press the generator reset button on the control panel until the overload alarm light goes off and the output indicator light is illuminated green.
3. Check that the intended electrical running and starting loads do not exceed the generator’s capacity or have a licensed electrician rectify any fault causing a short circuit in the load.
4. Reconnect any electrical devices or cords to the receptacles on the control panel and then turn on the electrical loads as required.

OPERATION

TRANSPORTING THE GENERATOR

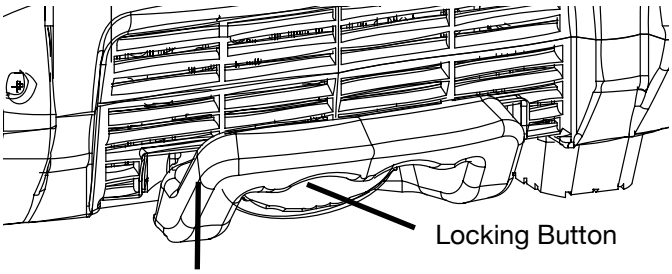
The generator should be stopped and both the fuel control switch and fuel cap vent should be turned to the OFF position before transporting the generator. Keep the unit level during transport to minimize the possibility of fuel leakage or, if possible, drain out the fuel prior to transport.

If the generator has been operating, allow the unit to cool down before loading it onto the transport vehicle.

The iGen4500's wheels are only intended for ease of moving the generator around by hand. The wheels are not suitable for towing the generator either on or off-road.

Use only the generator's fixed handle(s) for lifting the unit or attaching any load restraints such as ropes or tie-down straps. Do not attempt to lift or secure the generator by holding onto any of its other components.

The iGen4500 is also equipped with an extendable handle. To deploy it, push on the locking button and pull on the handle until it's fully extended. To stow it, push on the locking button and push on the handle until it's fully retracted. Only extend or retract the handle while the generator is stationary and resting on a horizontal surface.



The extendable handle is intended for ease of wheeling the generator around by hand. Do not use the extendable handle to lift the generator entirely off the ground, tow it or up-end it.

POWER OUTPUT AND DEMAND

The generator should not be run completely unloaded for extended periods otherwise the engine may be damaged. It is recommended that the generator should always be operated with at least one-third of its rated 120-Volt AC power output. 120-Volt AC devices have two different electric power demands that must be taken into consideration, namely the running power and the starting/peak power. Both are measured in Watts (typically abbreviated as "W").

The steady state continuous load is the running power demand and this is often marked on the device near its model number or serial number. Sometimes the device might only be marked with its voltage (i.e. 120 V) and current draw (e.g. 6 Amp or 6 A), in which case the running power demand in Watts can be obtained by multiplying the voltage times the current, e.g. 120 V × 20 A = 2,400 W.

Simple resistive 120-Volt AC devices such as incandescent bulbs, toasters, heaters, etc. have no extra power demand when starting, and so their starting power demands are the same as their running power demands.

More complex120-Volt AC devices containing inductive or capacitive elements such as electric motors have a momentary extra power demand when starting, which can be up to seven times the running power demand or more. Manufacturers of such devices rarely publish this starting power demand and so it's often necessary to estimate it. A rule of thumb for devices fitted with an electric motor is to apply a starting power multiplier of 1.2 for small hand-held or portable devices and a value of 3.5 for larger stationary devices. For example, a 900 W angle grinder can be assumed to have a starting power demand of at least 1.2 × 900 W, which equals 1,080 W. Similarly, a 1,650 W air compressor can be assumed to have a starting power demand of at least 3.5 × 1,650 W, which equals 5,775 W.
To prevent overloading of the generator's 120-Volt AC system:

1. Add up the running power demand of all the 120-Volt AC devices that will be connected to the generator at one time. This total must not be greater than the generator's specified running power output.
2. Add up the running power demand again, but for the largest motor-driven device use the value of its starting power demand instead of its running power demand. This total must not be greater than the generator's specified starting power output.
3. The total running power demand of all the devices that will be connected to any one of the generator's outlets must not exceed the generator's specified running power output or 3,700 W, whichever is the lesser.

MAINTENANCE

BEFORE PERFORMING MAINTENANCE ON THE INVERTER, REVIEW THE SAFETY SECTION STARTING ON PAGE 4, AS WELL AS THE FOLLOWING SAFETY MESSAGES.

⚠ WARNING

Avoid accidentally starting the inverter during maintenance by removing the spark plug boot from the spark plug. For electric start inverters, also disconnect the battery cables from the battery (disconnect the black negative (-) cable first) and place the cables away from the battery posts to avoid arcing.

Allow hot components to cool to the touch prior to performing any maintenance procedure.

Internal pressure can build in the engine crankcase while the engine is running. Removing the oil fill plug/ dipstick while the engine is hot can cause extremely hot oil to spray out of the crankcase and can severely burn skin. Allow engine oil to cool for several minutes before removing the oil fill plug/dipstick.

Always perform maintenance in a well-ventilated area. Gasoline fuel and fuel vapors are extremely flammable and can ignite under certain conditions.

⚠ CAUTION

Avoid skin contact with engine oil or gasoline. Prolonged skin contact with engine oil or gasoline can be harmful. Frequent and prolonged contact with engine oil may cause skin cancer. Take protective measures and wear protective clothing and equipment. Wash all exposed skin with soap and water.

⚠ WARNING

Failure to perform periodic maintenance or not following maintenance procedures can cause the inverter to malfunction and could result in death or serious injury.

NOTICE

Periodic maintenance intervals vary depending on inverter operating conditions. Operating the inverter under severe conditions, such as sustained high-load, high-temperature, or unusually wet or dusty environments, will require more frequent periodic maintenance. The intervals listed in the maintenance schedule should be treated only as a general guideline.

Following the maintenance schedule is important to keep the inverter in good operating condition. The following is a summary of maintenance items by periodic maintenance intervals.

TABLE 1: MAINTENANCE SCHEDULE - OWNER PERFORMED*

Maintenance Item	Before Every Use	After First 20 Hours or First Month of Use	After 50 Hours of Use or Every 6 Months	After 100 Hour of Use or Every 6 Months	After 300 Hours of Use or Every Year
Engine Oil	Check Level	Change	Change	-	-
Cooling Features	Check/Clean	-	-	-	-
Air Filter	Check	-	Clean*	-	Replace
Spark Plug	-	-	-	Check/Clean	Replace
Spark Arrestor	-	-	-	Check/Clean	-
Valve Clearance**	-	-	-	Check/Adjust	

*Service more frequently if operating in dry and dusty conditions
**Recommend to have service done by authorized Westinghouse service dealer

MAINTENANCE

ENGINE OIL MAINTENANCE

Engine Oil Specification

1. Only use the engine oil specified in Figure 10.
2. Only use 4-stroke/cycle engine oil. **NEVER USE 2-STROKE/CYCLE OIL**. Synthetic oil is an acceptable substitute for conventional oil.

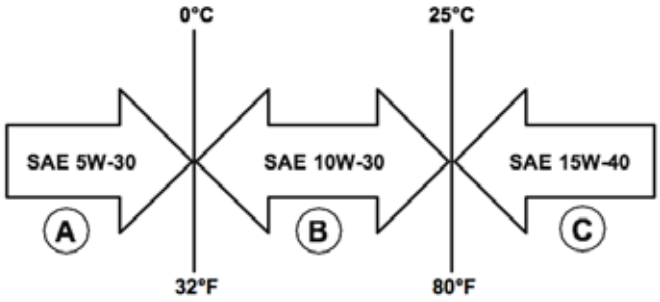


Figure 10: Recommended oil

CHECKING ENGINE OIL

NOTICE

Always maintain proper engine oil level. Failure to maintain proper engine oil level could result in severe damage to the engine and/or shorten the life of the engine.
Always use the specified engine oil. Failure to use the specified engine oil can cause accelerated wear and/or shorten the life of the engine.

Engine oil level should be checked before every use.

1. Always operate or maintain the inverter on a flat surface.
2. Stop engine if running.
3. Let engine sit and cool for several minutes (allow crankcase pressure to equalize).
4. Remove the oil service panel to access the oil fill/drain plug (see Figure 3 in *Initial Oil Fill* section).
5. With a damp rag, clean around the oil fill/drain plug.
6. Remove the oil fill/drain plug.
7. Check oil level: When checking the engine oil, remove the oil fill/ drain plug (see Figure 4 *Initial Oil Fill* section).
   - The oil level is acceptable if oil is visible at the bottom of the threads of the oil fill plug.
   - If oil level is low, add to the correct level using the supplied oil fill bottle. Do not overfill the oil crankcase.

NOTICE

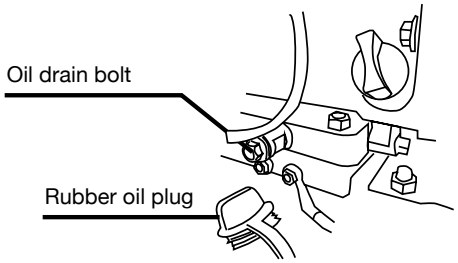
Engine oil must always be checked and added when the inverter is on a flat, level surface, or an inaccurate reading may result, causing serious engine damage.

ADDING ENGINE OIL

1. Always operate or maintain the inverter on a flat surface.
2. Stop engine if running.
3. Let engine sit and cool for several minutes (allow crankcase pressure to equalize).
4. Remove the engine service panel to gain access to the oil fill/drain plug.
5. Thoroughly clean around the oil fill/drain plug.
6. Remove the oil fill/drain plug.
7. Select the proper engine oil as specified in Figure 10.
8. Using the supplied oil funnel, slowly add engine oil to the engine. Stop frequently to check the oil level and avoid overfilling.

CHANGING ENGINE OIL

1. Stop the engine.
2. Let engine sit and cool for several minutes (allow crankcase pressure to equalize).
3. Remove the oil service panel to gain access to the oil fill/drain plug.
4. Place oil pan (or suitable container) under the rubber plug just below the oil fill/drain cap.
5. Unscrew the rubber plug so the oil can drain out the bottom of the generator.
6. Using a 10mm wrench, remove the oil drain bolt (pictured below) to allow oil to drain.



7. Allow oil to completely drain, dispose of used engine oil properly.
8. Fill crankcase with oil following the steps outlined in *Adding Engine Oil* above and tighten oil plug.
9. Use a rag and remove access oil at the bottom of the unit and replace the rubber oil cap as well as the oil drain bolt. Replace access panel.

NOTICE

Never dispose of used engine oil by dumping the oil into a sewer, on the ground, or into groundwater or waterways. Always be environmentally responsible. Follow the guidelines of the EPA or other governmental agencies for proper disposal of hazardous materials. Consult local authorities or reclamation facility.

MAINTENANCE

AIR FILTER MAINTENANCE

⚠ WARNING

Never use gasoline or other flammable solvents to clean the air filter. Use only household detergent soap to clean the air filter.

Cleaning the Air Filter

The air filter must be cleaned after every 50 hours of use or 3 months (frequency should be increased if inverter is operated in a dusty environment).

1. Turn off the inverter and let it cool for several minutes if running.
2. Remove the Engine Service Panel to gain access to the air filter (see Figure 11).

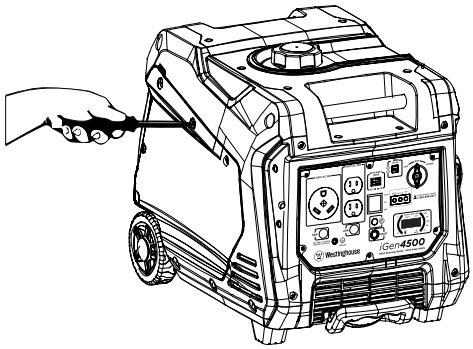


Figure 11: Remove engine service panel

3. Turn the 2 knobs on the air cleaner to unlock the cover. Tip the cover down to access the foam element (see Figure 12).

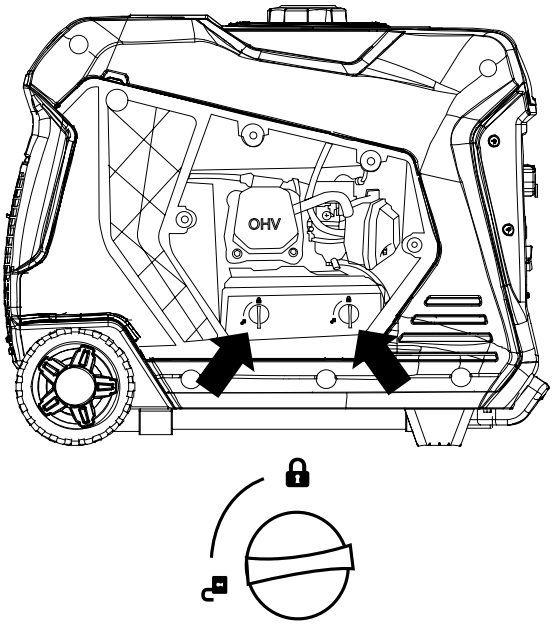


Figure 12: Unlock air filter cover

4. Remove the foam element from the air cleaner housing.
5. Wash the foam air filter element by submerging the element in a solution of household detergent soap and warm water. Slowly squeeze the foam to thoroughly clean.

NOTICE

NEVER twist or tear the foam air filter element during cleaning or drying. Only apply slow but firm squeezing action.

6. Rinse in clean water by submerging the air filter element in fresh water and applying a slow squeezing action (see Figure 13).

Figure 13: Squeeze air filter

NOTICE

Never dispose of soap cleaning solution used to clean the air filter by dumping the solution into a sewer, on the ground, or into ground water or waterways. Always be environmentally responsible. Follow the guidelines of the EPA or other governmental agencies for proper disposal of hazardous materials. Consult local authorities or reclamation facility.

7. Dispose of used soap cleaning solution properly.
8. Dry the air filter element by again applying a slow firm squeezing action.
9. Return the air filter element to its position in the air cleaner housing.
10. Install the air cleaner cover, making sure the knobs lock into place.
11. Install the engine service panel.

MAINTENANCE

DRAINING THE FLOAT BOWL

1. Remove the Engine Service Panel to access the carburetor (see Figure 11 in *Air Filter Maintenance*).
2. Locate the clear plastic hose from the float that is extending towards the bottom of the inverter, pull those hose outside the body and place a suitable container under it to catch the drained fuel (see Figure 14).

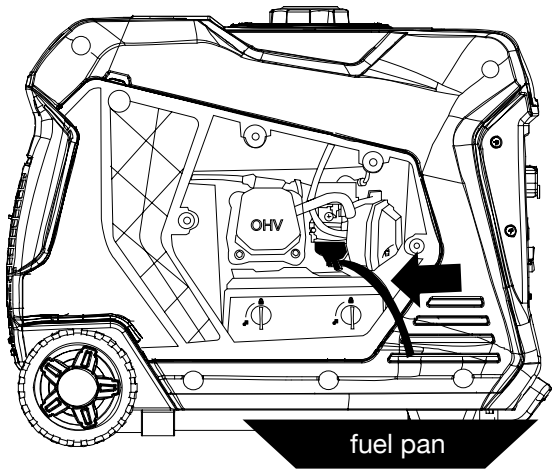


Figure 14: Fuel drain hose

3. Loosen the float bowl drain screw until fuel is seen draining from the float bowl (see Figure 15).

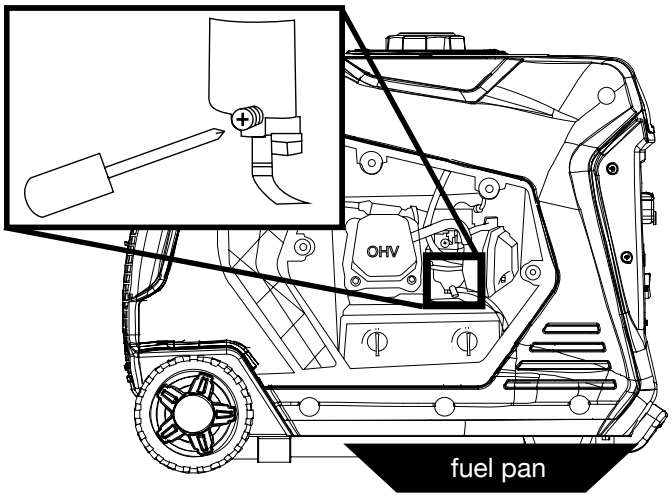


Figure 15: Loosen float bowl screw

4. Allow fuel to drain into the container, and then tighten the float bowl drain screw.

NOTICE

Never dispose of fuel by dumping fuel into a sewer, on the ground, or into groundwater or waterways. Always be environmentally responsible. Follow the guidelines of the EPA or other governmental agencies for proper disposal of hazardous materials. Consult local authorities or reclamation facility.

5. Install the engine service panel.

SPARK PLUG MAINTENANCE

The spark plug must be checked and cleaned after every 100 hours of use or 6 months and must be replaced after 300 hours of use or every year.

1. Stop the inverter and let it cool for several minutes if running.
2. Move the inverter to a flat, level surface.
3. Remove the Engine Service Panel to gain access to the spark plug (see Figure in *Air Filter Maintenance*).
4. Remove the spark plug cover by firmly pulling the metal spark plug boot handle directly away from the engine (see Figure 16).

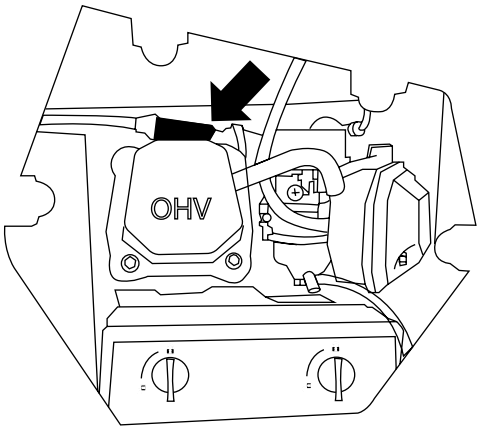


Figure 16: Pull off spark plug cover

NOTICE

Never apply any side load or move the spark plug laterally when removing the spark plug. Applying a side load or moving the spark plug laterally may crack and damage the spark plug boot.

5. Clean area around the spark plug.
6. Using the spark plug socket wrench provided, remove the spark plug from the cylinder head (see Figure 17).

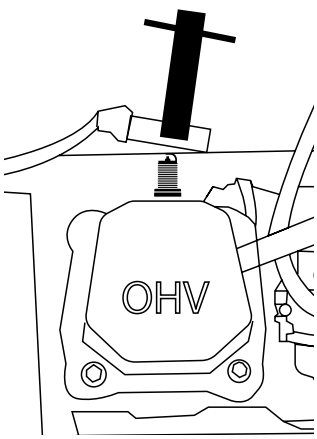


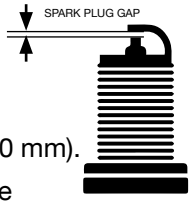
Figure 17: Remove spark plug

MAINTENANCE

Spark Plug Maintenance - *Continued*

7. Place a clean rag over the opening created by the removal of the spark plug to make sure no dirt can get into the combustion chamber.
8. Inspect the spark plug for:
   - Cracked or chipped insulator
   - Excessive wear
   - Spark plug gap of 0.032 in. (0.80 mm).

   If the spark plug fails any one of the conditions listed above, replace the plug.



NOTICE

Only use the recommended spark plug. See chart below. Using a non- recommended spark plug could result in damage to the engine.

9. Install the spark plug by carefully following the steps outlined below:
   a. Carefully insert the spark plug back into the cylinder head. Hand-thread the spark plug until it bottoms out.
   b. Using the spark plug socket wrench provided, turn the spark plug to ensure it is fully seated.
   c. Replace the spark plug boot, making sure the boot fully engages the spark plug's tip.
   d. Install the spark plug access cover.

Recommended Spark Plug Replacement:

Westinghouse Model Number	Torch Spark plug	Champion	Bosch	Autolite
iGen4500DF	F7RTC	N9YC	W7DC	52

CLEANING THE SPARK ARRESTOR

Check and clean the spark arrestor after every 100 hours of use or 6 months.

1. Stop the inverter and let it cool for several minutes if running.
2. Move the inverter to a flat, level surface.
3. Remove the screws holding the muffler cover in place (see Figure 18).
4. Loosen the clamp holding the spark arrestor onto the muffler.
5. Slide the spark arrestor band clamp off the spark arrestor screen.

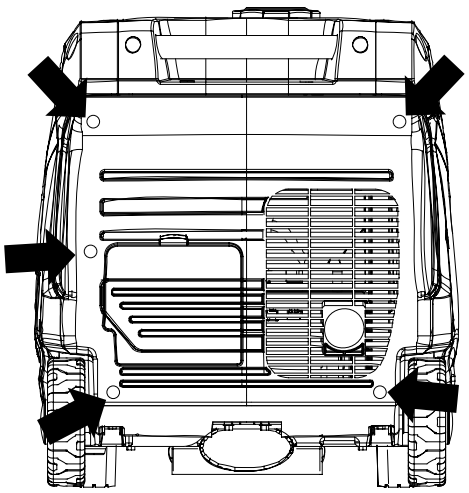


Figure 18: Remove muffler access panel

6. Pull the spark arrestor screen off the muffler exhaust pipe.
7. Using a wire brush, remove any dirt and debris that may have collected on the spark arrestor screen.
8. If the spark arrestor screen shows signs of wear (rips, tears or large openings in the screen), replace the spark arrestor screen.
9. Install the spark arrestor components in the following order:
   a. Place spark arrestor screen over the muffler exhaust pipe. Push on the screen until it fully bottoms out.
   b. Place the spark arrestor band clamp over the screen and tighten with a flathead screwdriver
10. Replace the discharge gate.

CHECKING AND ADJUSTING VALVE LASH

⚠ CAUTION

Checking and adjusting valve lash must be done when the engine is cold.

1. Remove the rocker arm cover and carefully remove the gasket. If the gasket is torn or damaged, it must be replaced.
2. Remove the spark plug so the engine can be rotated more easily.
3. Rotate the engine to top dead center (TDC) of the compression stroke. Looking through the spark plug hole, the piston should be at the top.

4. Both the rocker arms should be loose at TDC on the compression stroke. If they are not, rotate the engine 360°.
5. Insert a feeler gauge between the rocker arm and the push rod and check for clearance (see Figure 19). See table below for valve lash specifications

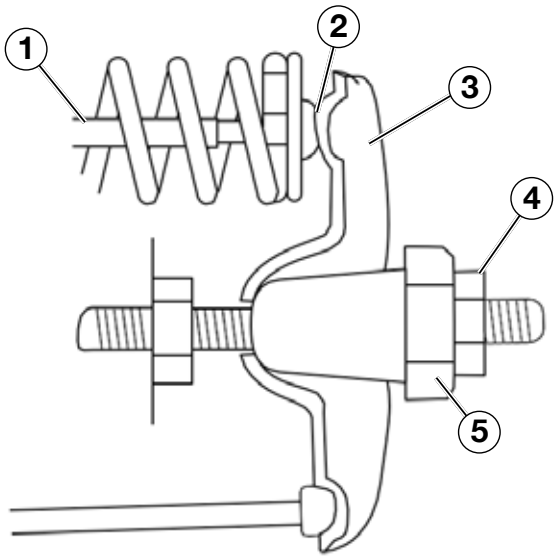


Figure 19
(1) Push Rod, (2) Feeler Gauge Area
(3) Rocker Arm, (4) Jam Nut, (5) Adjusting Nut

Standard Valve Lash

	Intake Valve	Exhaust Valve
Valve Lash	0.0035 ± 0.0043 in (0.09 ± 0.11 mm)	0.0043 ± 0.0051 in (0.11 ± 0.13 mm)
Bolt Torque	8-12N.m	8-12N.m

6. If an adjustment is required, hold the adjusting nut and loosen the jam nut.
7. Turn the adjusting nut to obtain the correct valve lash. When the valve lash is correct, hold the adjusting nut and tighten the jam nut to 106 in-lb (12 N•m).
8. Recheck the valve lash after tightening the jam nut.
9. Perform this procedure for both the intake and exhaust valves.
10. Install the rocker arm cover, gasket and spark plug.

CLEANING THE INVERTER

It is important to inspect and clean the inverter before every use.

Clean All Engine Air Inlet and Outlet Ports – Make sure all engine air inlet and outlet ports are clean of any dirt and debris to ensure the engine does not run hot.

BATTERY SERVICE

To ensure the battery remains charged, the generator should be started every 2 to 3 months and run for a minimum of 15 minutes or a charger should be plugged into the generator and the generator should be charged overnight. Plug the cord from the charger into the charging port "⎙" on the generator. Plug the charger into a 110/120-volt AC outlet.

Battery Replacement

1. Remove the engine service panel (see Figure 11 in *Air Filter Maintenance* section)
2. Remove the spark plug wire from spark plug (see Figure 16 in *Spark Plug Maintenance* section).
3. Remove battery service panel (see Figure 1 *Hooking Up the Battery* section).
4. Loosen the rubber strap holding the battery in place.
5. Disconnect the black negative (-) battery cable from the battery first.
6. Disconnect the red positive (+) battery cable second and remove the battery.

NOTICE

Dispose of the used battery properly according to the guidelines established by your local or state government.

7. Install the new battery into the generator frame.
8. Connect the red positive (+) battery cable to the battery first.
9. Connect the black negative (-) battery cable to the battery second.
10. Replace rubber strap to hold battery in place.
11. Replace battery service panel.
12. Install the spark plug wire onto spark plug.
13. Replace engine service panel.

See below for the battery specification when replacing the battery.

After Market Battery Model	YT5AL
Volts	12
Amp Hr	5
Dimensions	4.63 in by 2.38 in by 5 in

MAINTENANCE

STORAGE

⚠ WARNING

Never store an inverter with fuel in the tank indoors or in a poorly ventilated area where the fumes can come in contact with an ignition source such as a: 1) pilot light of a stove, water heater, clothes dryer or any other gas appliance; or 2) spark from an electric appliance.

NOTICE

Gasoline stored for as little as 60 days can go bad, causing gum, varnish and corrosive buildup in fuel lines, fuel passages and the engine. This corrosive buildup restricts the flow of fuel, preventing an engine from starting after a prolonged storage period.

Proper care should be taken to prepare the inverter for any storage

1. Make sure battery switch is **OFF**.
2. Clean the inverter.
3. Siphon all gasoline from the fuel tank as best as possible.
4. Start the engine on gasoline and allow the inverter to run until all the remaining gasoline in the fuel lines and carburetor is consumed and the engine shuts off.
5. Drain any remaining fuel from the float bowl. See *Draining the Float Bowl* section.
6. Change the oil (see *Changing Engine Oil* section).
7. Remove the spark plug (see *Spark Plug Maintenance* section) and place about 1 tablespoon of oil in the spark plug opening. While placing a clean rag over the spark plug opening, slowly pull the recoil handle to allow the engine to turn over several times. This will distribute the oil and protect the cylinder wall from corroding during storage.
8. Replace the spark plug (see *Spark Plug Maintenance* section).
9. Move the inverter to a clean, dry place for storage.

TROUBLESHOOTING

⚠ WARNING

Before attempting to service or troubleshoot the generator, the owner or service technician must first read the owner's manual and understand and follow all safety instructions. Failure to follow all instructions may result in conditions that can lead to voiding of the EPA certification or product warranty, serious personal injury, property damage or even death.

PROBLEM	POTENTIAL CAUSE	SOLUTION
Engine is running, but no electrical output	1. Circuit breakers are tripped.	1. Reset the circuit breakers and check for overload condition.
	2. The power cord's plug connector is not fully engaged in the generator's outlet.	2. Verify plug connector is firmly engaged in the generator's outlet.
	3. Faulty or defective power cord.	3. Replace power cord.
	4. Faulty or defective electrical appliance.	4. Try connecting a known good appliance to verify the generator is producing electrical power.
	5. If trying 1-4 above does not solve the problem, the cause might be the generator has a fault.	6. Take the generator to your nearest authorized service dealer.
Engine runs erratic; does not hold a steady RPM.	1. Dirty air filter.	1. Clean the air filter.
	2. Applied loads maybe cycling on and off.	2. As applied loads cycle, changes in engine speed may occur; this is a normal condition.
	3. If trying 1-2 above does not solve the problem, the cause might be a fault in the inverter.	3. Take the generator to your nearest authorized service dealer.

TROUBLESHOOTING

Inverter suddenly stops running.	1. Inverter is out of fuel.	1. Check fuel level. Add fuel if necessary.
	2. The low oil shut down switch has stopped the engine.	2. Check oil level and add oil if necessary.
	3. Too much load	3. Restart the inverter and reduce the load.

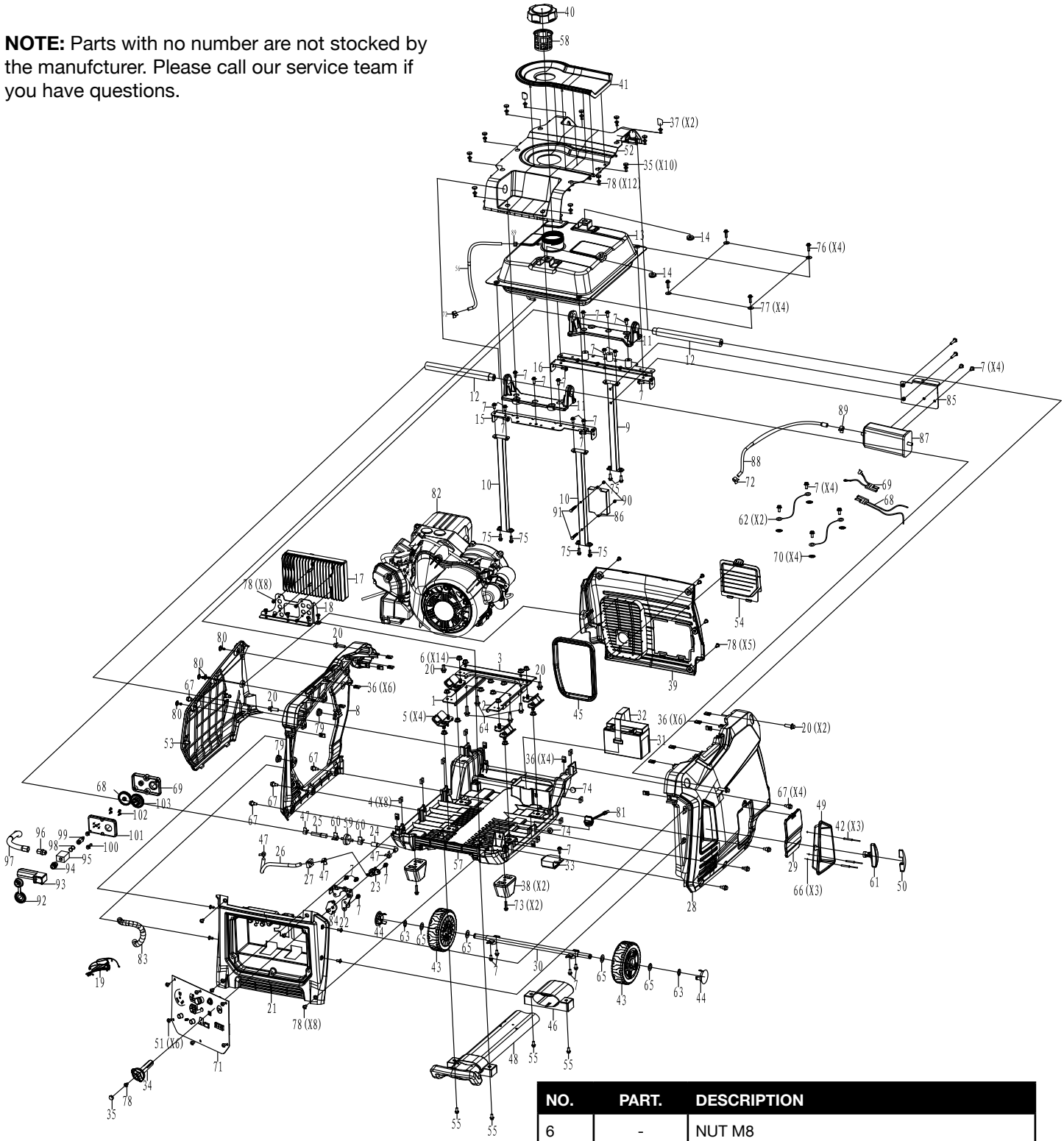
Frost on the propane tank or regulator	1. This can be a normal occurrence caused when liquid propane changes phase to a gas. As this process occurs the fuel tank or regulator will cool and allow humid air surrounding the propane tank or regulator to condense into frost.	1. As this can be normal, providing all the propane fuel handling equipment is functioning normally, no remedy is needed.
	2. The propane tank is not equipped with a OPD (rollover protection device) and has been stored in a horizontal position allowing liquid propane to enter the downstream fuel handling equipment.	2. If you suspect your propane fuel tank is not equipped with a OPD device, discontinue operation immediately and replace the propane fuel tank with a propane tank equipped with a roll over protection device.
	3. Propane fuel tank over filled.	3. If you suspect your propane fuel tank has been overfilled, discontinue operation immediately and return the propane fuel tank to the place of purchase or refilling.

Propane fuel smell	1. Fuel regulator or fuel hose and fittings not securely sealed.	1. Using a soap solution check each connection and tighten as needed.
	2. Propane fuel regulator vent active.	2. The propane fuel regulator is equipped with a small vent that will allow a small amount of propane fuel vapor to escape from the regulator when the propane tank valve is opened. This can be normal providing the venting of the propane is brief. If you suspect that this is abnormal, immediately discontinue use and have the propane regulator inspected by a qualified technician.
	3. Residual fuel from the carburetor dispersing after operation.	3. Normal, no remedy is needed.

Poor performance or engine stalling on propane	1. Propane fuel line kinked or crushed.	1. Inspect propane fuel line and remove kinks or other obstructions.
	2. Fuel selector valve not properly positioned.	2. Rotate the fuel valve fully until the pointer is directly in line with the desired fuel.
	3. Gasoline not purged from the carburetor before switching to propane.	3. Turn the propane fuel tank valve to closed. Move the fuel selector valve to propane. Turn the gasoline fuel valve to off. Start the engine and allow the engine to run until the fuel has been consumed in the carburetor. Begin propane start up procedure.

iGen4500DF EXPLODED VIEW

NOTE: Parts with no number are not stocked by the manufcturer. Please call our service team if you have questions.



NO.	PART.	DESCRIPTION
1	-	BOTTOM MOTOR BRACKET LEFT
2	-	BOTTOM MOTOR BRACKET RIGHT
3	-	BOTTOM MOTOR BRACKET BACK
4	-	SQUARE NUTS
5	100578	DAMPER

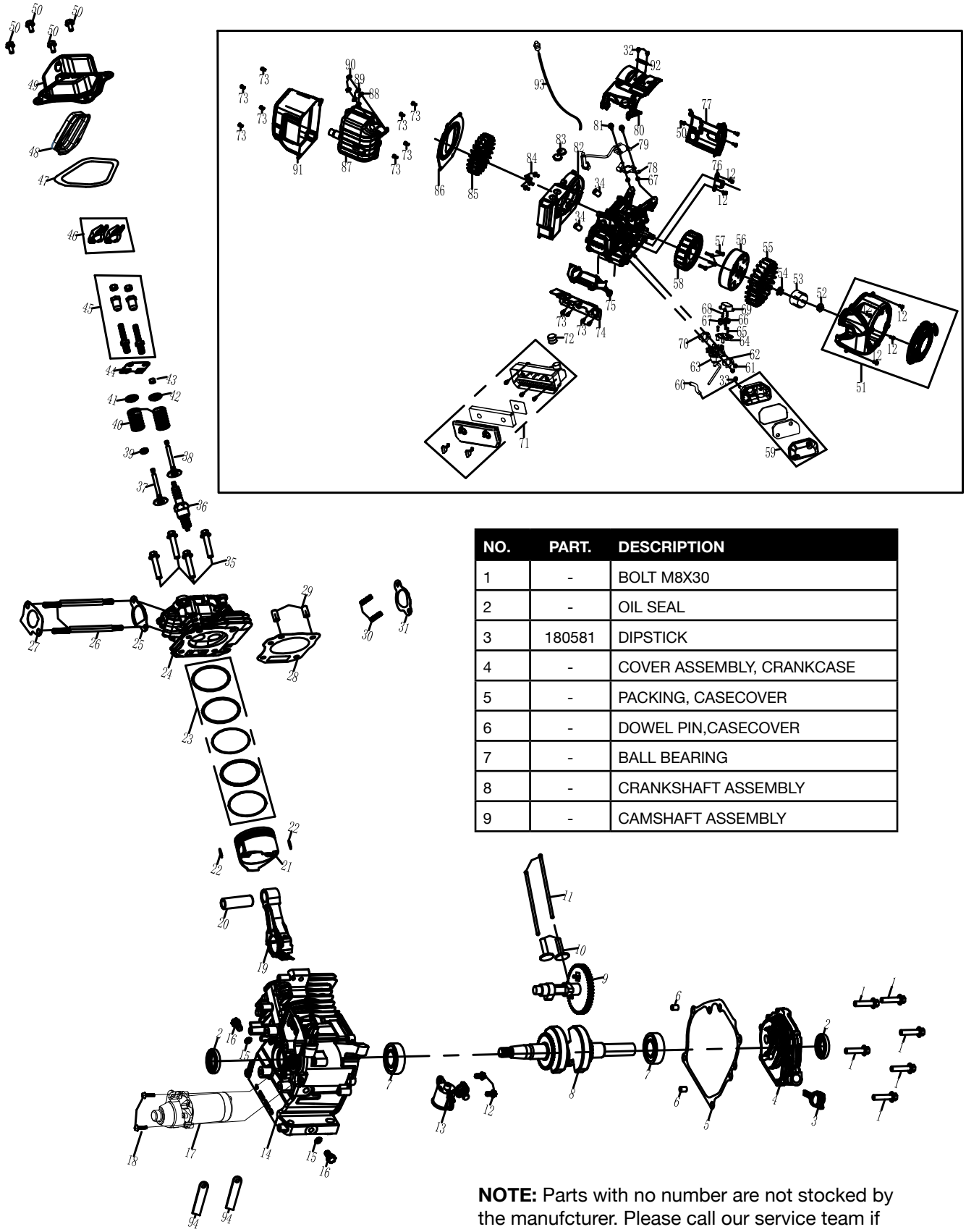
NO.	PART.	DESCRIPTION
6	-	NUT M8
7	-	BOLT M6X12
8	100562	LEFT SKELETON
9	-	BACK POST
10	-	FRONT POST
11	-	BRACKET
12	100567	HANDLE
13	150526	FUEL TANK

iGen4500DF EXPLODED VIEW PART NUMBERS

NO.	PART.	DESCRIPTION
14	-	VIBRATION ISOLATION PAD
15	-	FRONT TOP BRACKET
16	-	BACK TOP BRACKET
17	120538	INVERTER MODULE
18	-	INVERTER BRACKET
19	-	DEPUTY WIRING HARNESS
20	-	BOLT M8X20
21	100569	INTAKE CRATE
22	-	FUEL SELECT BRACKET
23	150535	FUEL VALVE
24	-	FUEL LINE Φ4XΦ10XΦ6XΦ12-95L
25	-	FUEL LINE Φ4XΦ10XΦ6XΦ12-55L
26	-	FUEL LINE Φ4XΦ10-194L
27	-	PIN
28	300248	RIGHT PANEL
29	100568	INSPECTION COVER
30	100574	AXLE
31	100579	BATTERY
32	100580	TIE WRAP
33	130526	DC VOLTAGE REGULATOR
34	300249	KNOB
35	150533	PLUG
36	-	LOCKINMG M6
37	-	CAP, CENTRIFUGAL COVER
38	100570	RUBBER FOOT
39	100564	DISCHARGE GRATE
40	150530	FUEL TANK CAP
41	150528	SPLASH GUARD
42	-	CORE PULLING RIVETS
43	100571	WHEEL
44	100577	HUB CAP
45	100565	MUFFLER SEAL
46	100573	HANDLE BRACKET
47	-	CLIP, FUEL LINE
48	100572	HANDLE ASSEMBLY
49	-	HANDLE DECORATED
50	170515	RECOIL ANCHOR
51	150532	BOLT M5X12
52	100561	TOP COVER
53	300250	LEFT SIDE PANEL
54	100566	DISCHARGE COVER
55	-	BOLT M6X40
56	150527	CONNECTING PIPE
57	-	ENGINE BOTTOM BOARD
58	150529	STRAINER

NO.	PART.	DESCRIPTION
59	150534	FUEL FILTER
60	150536	CLIP, FUEL LINE
61	170514	GRIP STARTER
62	-	GROUNDING WIRE
63	-	WHEEL A WILD CARD
64	-	BOLT M8X30
65	100575	WHEEL WASHER
66	-	FLAT WASHER
67	-	HEX FLANGE SCREWS M6X20
68	300251	FUEL SELECT GEAR LEFT
69	300252	FUEL SELECT BACK PLATE
70	-	TOOTH TYPE GASKET
71	300253	PANEL COMPLETE
72	-	CLIP, FUEL LINE
73	-	BOLT M6X25
74	-	STOP
75	-	BOLT M6X20
76	-	BOLT M6X20
77	-	GASKET, ROTOR BOLT
78	-	CROSS RECESSED PAN HEAD BOLTS M6X16
79	-	VIBRATION ISOLATION PAD
80	-	BOLT M6X16
81	300254	BASE OIL COVER
82	300255	ENGINE COMPLETE
83	-	CORRUGATED PIPE
84	-	PUII THE TRAY
85	150538	CANESTER BRACKET
86	130525	CONRTOLLER
87	150520	CARBON TANK
88	150540	CONNECTING PIPE
89	150539	VENT HOSE
90	-	NUTM6
91	-	BOLT M6X30
92	300256	GAS INLET PLUG
93	300257	SHEATH
94	300258	GAS INTAKE CONNECTOR
95	300259	L CONNECT
96	300260	GAS LINE CONNECT
97	300261	LOW PRESSURE PIPE
98	300262	SEALING WASHER
99	300263	SWITCH SHAFT
100	300264	DISC BOLT M5*10
101	300265	FRONT FUEL SELECT COVER
102	300266	CROSS SCREW M4*12.
103	300267	FUEL SELECT GEAR RIGHT

iGen4500DF ENGINE VIEW



NO.	PART.	DESCRIPTION
1	-	BOLT M8X30
2	-	OIL SEAL
3	180581	DIPSTICK
4	-	COVER ASSEMBLY, CRANKCASE
5	-	PACKING, CASECOVER
6	-	DOWEL PIN,CASECOVER
7	-	BALL BEARING
8	-	CRANKSHAFT ASSEMBLY
9	-	CAMSHAFT ASSEMBLY

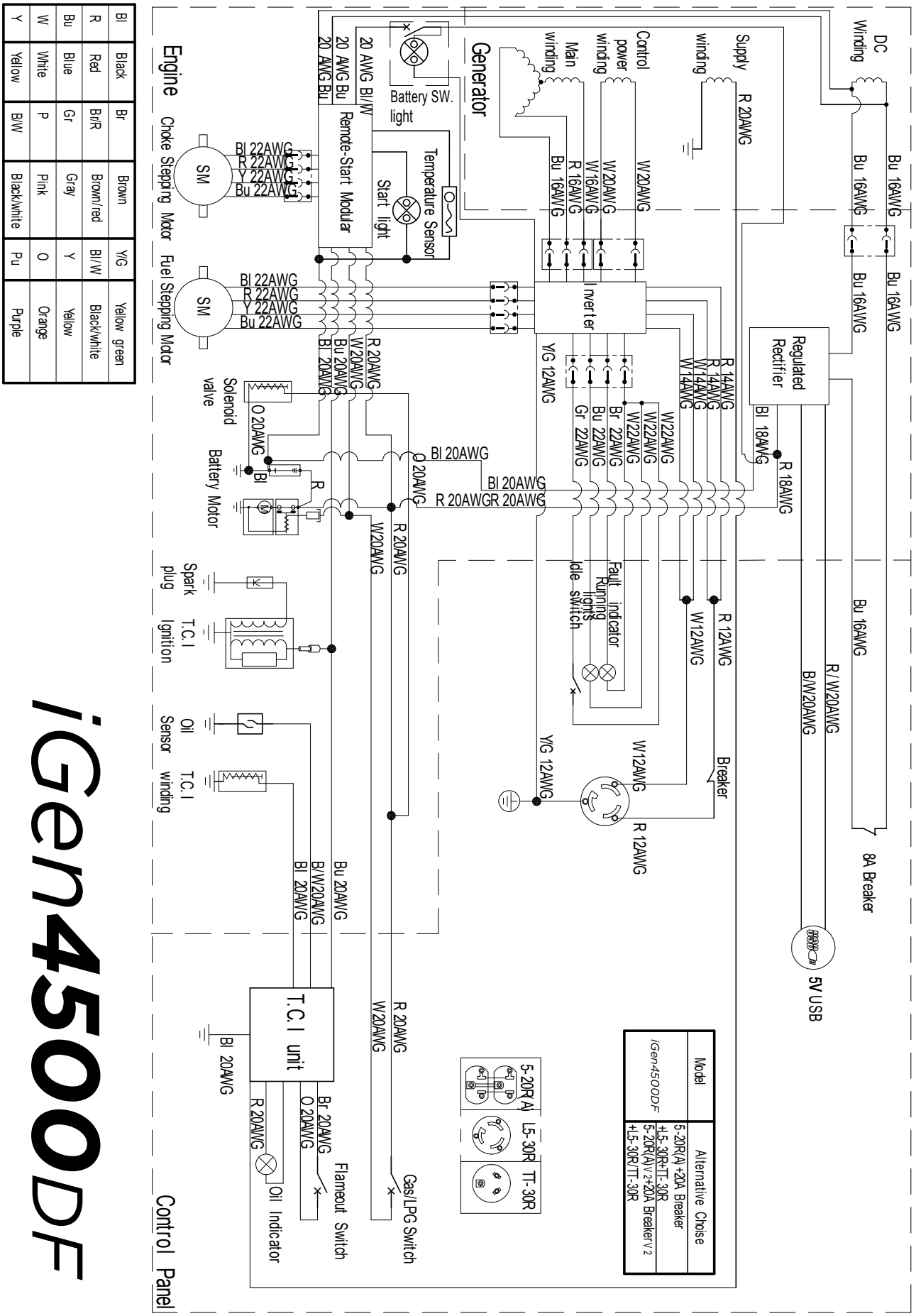
NOTE: Parts with no number are not stocked by the manufcturer. Please call our service team if you have questions.

iGen4500DF ENGINE VIEW PART NUMBERS

NO.	PART.	DESCRIPTION
10	-	LIFTER, VALVE
11	-	ROD, PUSH
12	-	BOLT M6X16
13	180582	STARTER SOLENOID
14	-	CRANKCASE
15	-	WASHER, DRAIN PLUG
16	-	BOLT DRAIN PLUG
17	170516	STARTING MOTOR ASSEMBLY
18	-	BOLT M6X25
19	180850	ROD ASSEMBLY., CONNECTING
20	180851	PIN, PISTON
21	180852	PISTON
22	180853	CLIP, PISTON
23	180854	SCRAPER RING SET, PISTON
24	180855	CYLINDER HEAD
25	180856	PACKING, INTAKE
26	180857	BOLT, STUD
27	180858	PACKING, CARBURETOR
28	180859	GASKET, CYLINDER HEAD
29	180860	PIN DOWEL
30	180861	BOLT, STUD
31	180862	PACKING, EXHAUST
32	-	BOLT M8X12
33	-	CAP, CENTRIFUGAL COVER
34	-	DOWEL PIN, CASECOVER
35	-	BOLT M8X60
36	180580	SPARK PLUG
37	180863	VALVE, IN
38	180864	VALVE EXHAUST
39	180865	RETURNER, INTAKE VALVE
40	180866	SPRING, VALVE
41	180867	SEAT, VALVE SPRING, IN
42	180868	SEAT, VALVE SPRING, EX
43	180869	ROTATOR
44	180870	PLATE, PUSH ROD GUIDE
45	180871	ADJUSTER ROCKER ARM
46	180872	ARM, ROCKER
47	180873	PACKING, HEADCOVER
48	-	COVER COMP, CYLINDER HEAD
49	-	COVER COMP, CYLINDER HEAD
50	-	BOLT M6X12
51	170512	RECOIL STARTER W/FAN HOUSING ASSY
52	-	BOLT
53	-	CUP, FLYWHEEL

NO.	PART.	DESCRIPTION
54	-	NUT M14
55	-	FAN, FLYWHEEL
56	-	ROTOR
57	-	BOLT M6X60
58	-	STATOR
59	160505	CARBURETOR ASSEMBLY
60	-	TUBE,BREATHER
61	100548	NUT M6
62	140517	SPACER, CARBURETOR
63	300268	CARBURETOR ASSEMBLY
64	140531	STEPPER MOTOR BRACKET
65	140533	CROSSING SCREW M4X25
66	140529	STEPPER MOTOR
67	140530	STEPPER MOTOR
68	140534	CROSSING SCREW M4X6
69	-	WATERPROOF COVER
70	140535	INSULATOR, CARBURETOR
71	160504	AIR CLEANER ASSEMBLY
72	-	TUBE, FUEL TANK TO CARBON
73	-	BOLT M6X20
74	-	BRACKET, AIR CLEANER
75	-	SHROUD, UPPER
76	-	THE TRIGGER
77	-	SHROUD,RIGHT
78	-	LGNITION COIL SUPPORT PLATE
79	180579	IGNITION COIL
80	-	SHROUD, ABOVE
81	-	BOLT M6X30
82	-	CENTRIFUGAL FAN HOUSING.
83	-	CAP,CENTRIFUGAL COVER
84	-	BOLT M8X20
85	-	FAN
86	-	ISOLATOR
87	110510	MUFFLER COMP ASSY
88	110512	FLAT WASHER
89	110502	SPRING WASHER
90	180524	NUT M8
91	110511	SHIELD, MUFFLER
92	-	CLAMP, CABLE CLAMP
93	110513	TEMPERATURE SENSOR
94	-	CLIP, WIRE HARNESS

iGen4500DF SCHEMATIC



Bl	Black	Br	Brown	Y/G	Yellow green
R	Red	Br/R	Brown/red	Bl/W	Black/white
Bu	Blue	Gr	Gray	Y	Yellow
W	White	P	Pink	O	Orange
Y	Yellow	B/W	Black/white	Pu	Purple

WestinghousePortablePower.com

Service Hotline: (855) 944-3571

777 Manor Park Drive
Columbus, OH 43228

Version 04.28.18KD