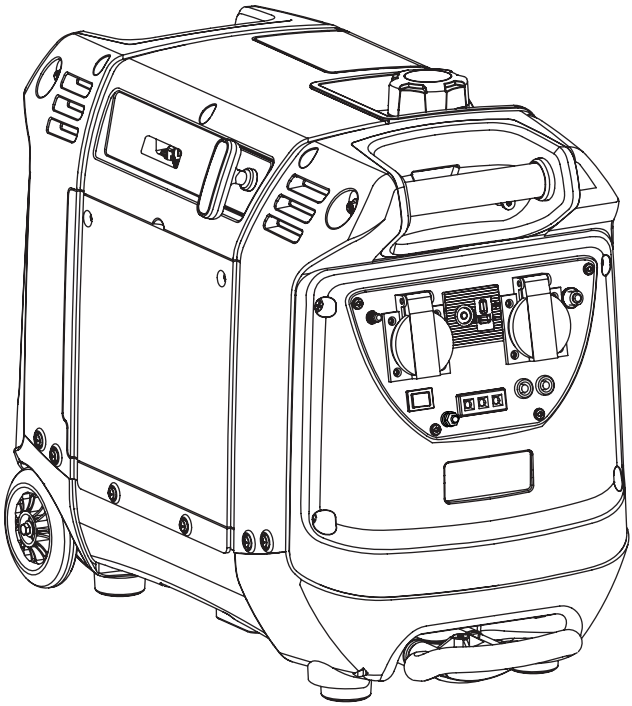
RIG2000PC

DIGITAL INVERTER GENERATOR

OPERATOR'S MANUAL (ORIGINAL INSTRUCTIONS)



Important! It is essential that you read the instructions in this manual before assembling, maintaining and operating this machine.

Subject to technical modifications.

DESCRIPTION

1. Engine cover
2. Engine/choke lever/on-off switch/fuel valve lever
3. Starter grip and rope
4. Fuel cap
5. Parallel kit terminal
6. 10 Amp, AC circuit breaker
7. 240 Volt AC, 15 Amp receptacles
8. DC circuit breaker
9. 12 Volt DC receptacle
10. Auto idle switch
11. Power indicator
12. Overload indicator
13. Low oil indicator
14. Reset button
15. Ground terminal
16. Retractable handle
17. Battery charging cable
18. Spark plug cover
19. Muffler with spark arrestor screen
20. Wheel
21. Funnel
22. Oil cap/dipstick
23. Off
24. On
25. Engine/choke lever in off position
26. Cold start position
27. Run position
28. Battery
29. Screw
30. Washer
31. Air filter cover
32. Filter element, large
33. Filter element, small
34. Container
35. Spark plug cap
36. Spark plug
37. Carburetor drain screw

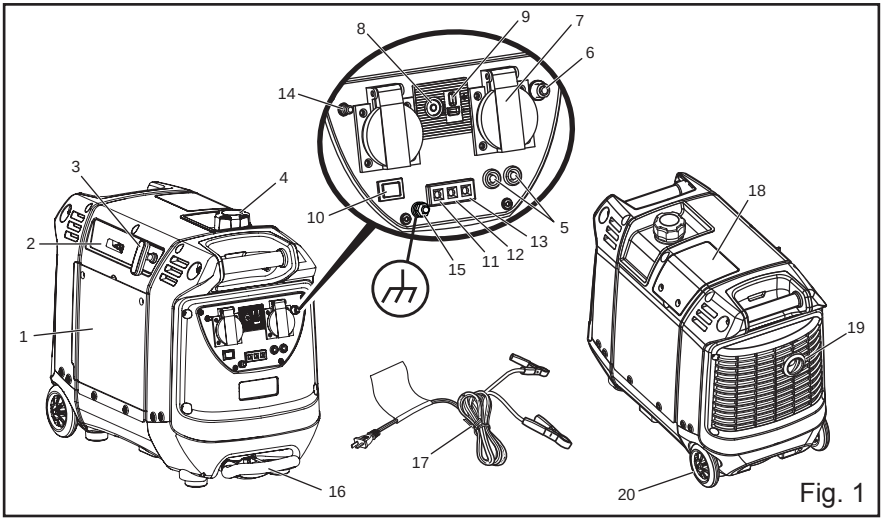


Fig. 1

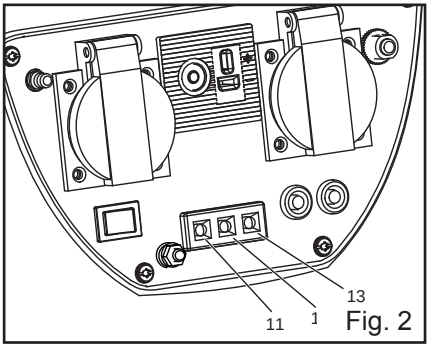


Fig. 2

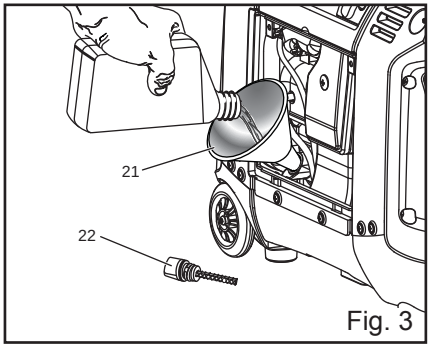


Fig. 3

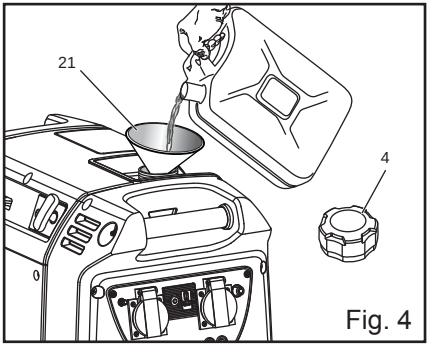


Fig. 4

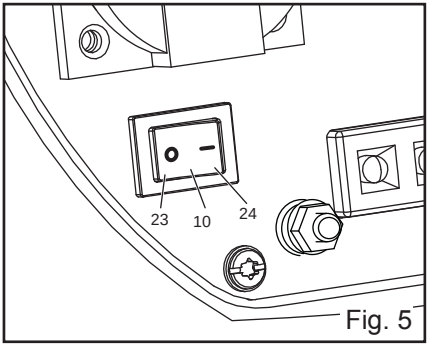


Fig. 5

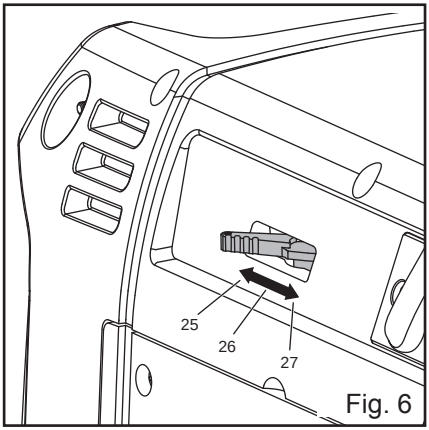
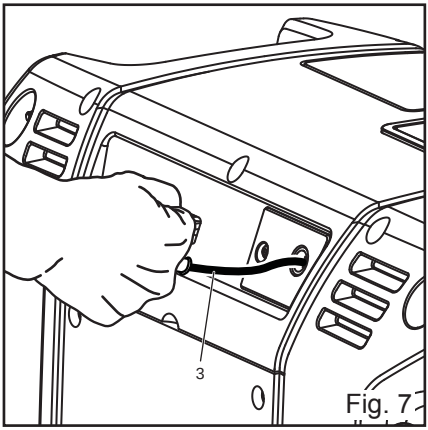


Fig. 6



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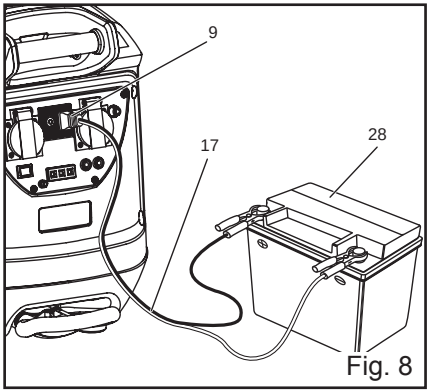


Fig. 8

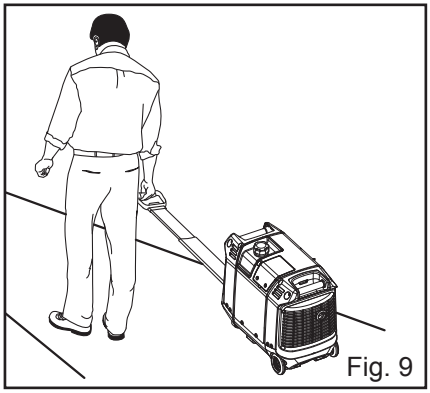


Fig. 9

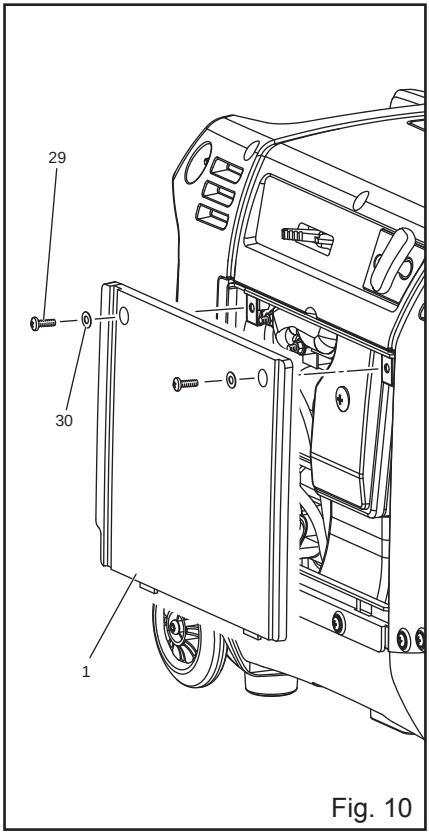


Fig. 10

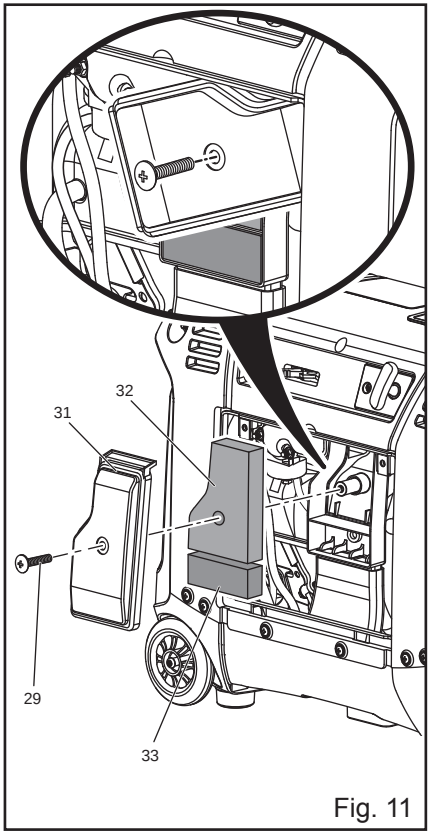


Fig. 11

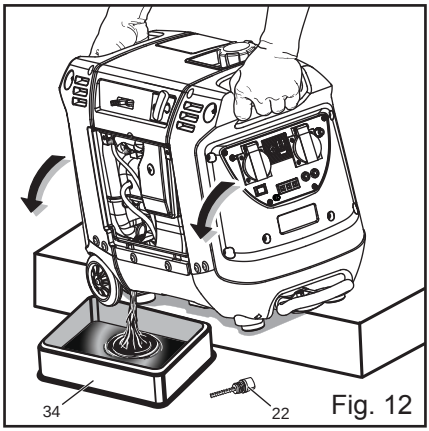


Fig. 12

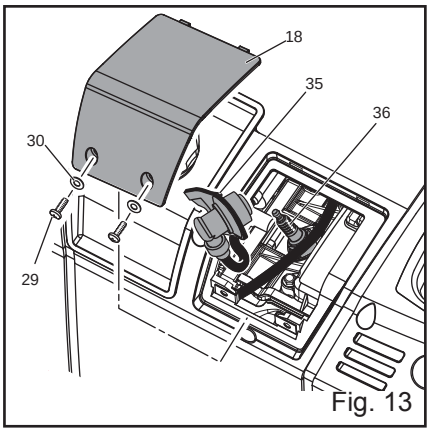


Fig. 13

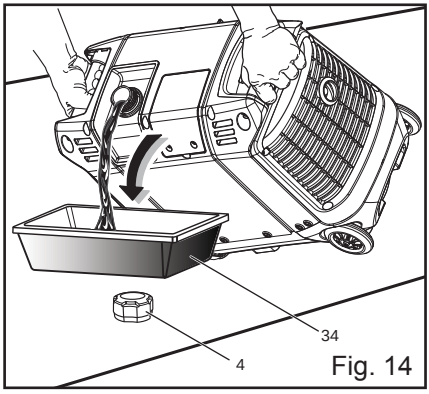


Fig. 14

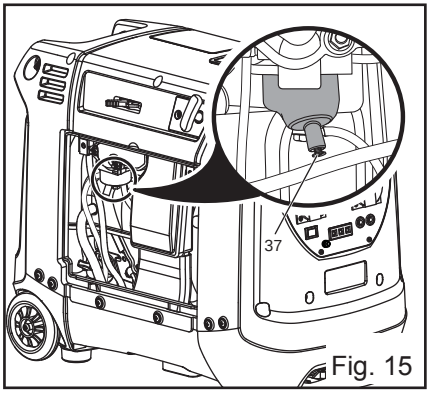


Fig. 15

INTRODUCTION

This product has many features for making its use more pleasant and enjoyable. Safety, performance, and dependability have been given top priority in the design of this product, making it easy to maintain and operate.

DANGER
GROUNDING THE GENERATOR (See Figure 1)
In Australia and New Zealand, grounding of portable generators is not recommended or required. Consult with local electricians to determine grounding requirements before operating with a ground connection.

IMPORTANT SAFETY INSTRUCTIONS

DANGER:
Carbon Monoxide. Using a generator indoors can kill you in minutes.
Generator exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

- Never use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.
- Only use a generator outdoors and far away from open windows, doors, and vents. These openings can pull in generator exhaust.

Even when you use a generator correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home.
If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

WARNING:
Read and understand all instructions. Failure to follow all instructions listed below may result in electrocution, fire, and/or carbon monoxide poisoning, which will cause death or serious injury.

WARNING:
Before using the ground terminal, consult a qualified electrician to comply with the intended use of the generator.

SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the generator and batteries.

- Do not connect to a building's electrical system unless the generator and transfer switch have been properly installed and the electrical output has been verified by a qualified electrician. The connection must isolate the generator power from utility power and must comply with all applicable laws and electrical codes.
- Do not allow children or untrained individuals to use this unit.
- Do not start or operate the engine in a confined space, building, near open windows, or in other unventilated space where dangerous carbon monoxide fumes can collect. Carbon monoxide, a colorless, odorless, and extremely dangerous gas, can cause unconsciousness or death.
- Never start or run the engine inside a closed or partially enclosed area. Breathing exhaust fumes will kill you.
- Wear eye protection as well as hearing protection when operating this equipment.
- Keep all bystanders, children, and pets at least 3 m away.
- Wear sturdy and dry shoes or boots. Do not operate while barefoot.
- Do not operate the generator when you are tired or under the influence of drugs, alcohol, or medication.
- Keep all parts of your body away from any moving parts and all hot surfaces of the unit.
- Product users in some states, must comply with fire prevention regulations. This product is equipped with a spark arrestor in accordance with Australian requirements.
- Do not touch bare wire or receptacles.
- Do not use the generator with electrical cords which are worn, frayed, bare, or otherwise damaged.
- Before storing, allow the engine to cool and drain fuel from the unit.
- Do not operate or store the generator in rain, snow, or wet weather.
- Store the generator in a well-ventilated area with the fuel tank empty. Fuel should not be stored near the generator.
- Empty the fuel tank, turn the engine/choke lever to the off position and restrain the unit from moving before transporting in a vehicle.
- Allow engine to cool for five minutes before refuelling.
- To reduce the risk of fire and burn injury, handle fuel with care. It is highly flammable.
- Do not smoke while handling fuel.
- Store fuel in a container approved for gasoline.

- Position the unit on level ground, stop engine, and allow to cool before refuelling.
- Loosen fuel cap slowly to release pressure and to keep fuel from escaping around the cap.
- Tighten the fuel cap securely after refuelling.
- Wipe spilled fuel from the unit.
- Never attempt to burn off spilled fuel under any circumstances.
- Use only authorised replacement parts and accessories and follow instructions in the Maintenance section of this manual. Use of unauthorised parts or failure to follow Maintenance instructions may create a risk of shock or injury.
- Maintain the unit per maintenance instructions in this Operator's Manual.
- Inspect the unit before each use for loose fasteners, fuel leaks, etc. Replace damaged parts.
- Generators vibrate in normal use. During and after the use of the generator, inspect the generator as well as extension cords and power supply cords connected to it for damage resulting from vibration. Have damaged items repaired or replaced as necessary. Do not use plugs or cords that show signs of damage such as broken or cracked insulation or damaged blades.
- For power outages, permanently installed stationary generators are better suited for providing back-up power to the home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing the generator components, possibly leading to generator failure.
- Use only authorised replacement parts and accessories and follow instructions in the Maintenance section of this manual. Use of unauthorised parts or failure to follow maintenance instructions may create a risk of shock or injury.
- Maintain the unit as per the maintenance instructions in this operator's manual.
- Inspect the unit before each use for loose fasteners, fuel leaks, etc. Replace damaged parts.

SPECIFIC SAFETY RULES

WARNING:
When this generator is used to supply a building wiring system: the generator must be installed by a qualified electrician and connected to a transfer switch as a separately derived system in accordance with Australian Wiring Rules. The generator shall be connected through a transfer switch that switches all conductors other than the equipment grounding conductor. The frame of the generator shall be connected to an approved grounding electrode. Failure to isolate the generator from power utility can result in death or injury to electric utility workers.

- Do not use this generator to provide power for emergency medical equipment or life support devices.
- Exhaust fumes contains poisonous carbon monoxide, a colourless, odourless gas. Breathing exhaust fumes can cause loss of consciousness and can lead to death. If running in a confined or partially-enclosed area, the air may contain a dangerous amount of carbon monoxide. To keep exhaust fumes from building up, always provide adequate ventilation.
- Always use a battery-powered carbon monoxide detector when running the generator. If you begin to feel sick, dizzy, or weak while using the generator, shut it off and get to fresh air immediately. See a doctor. You may have carbon monoxide poisoning.
- Place the generator on a flat, stable surface with a slope of no more than 4°.
- Operate outdoors in a well-ventilated, well-lit area isolated from working areas to avoid noise interference.
- Operating the generator in wet conditions could result in electrocution. Keep the unit dry.
- Keep the generator a minimum of 1 m away from all types of combustible material.
- Do not operate the generator near hazardous material.
- Do not operate the generator at a petrol station.
- Do not touch the muffler or cylinder during or immediately after use; they are hot and will cause burn injury.
- This generator has a neutral floating condition. This means the neutral conductor is not electrically connected to the frame of the machine.
- Do not connect to a building's electrical system unless a transfer switch has been properly installed by a qualified electrician.
- Do not allow the generator's gas tank to overflow when filling. Fill to 25 mm (1") below the top neck of the gas tank to allow for fuel expansion. Do not cover the fuel tank cap when the engine is running. Covering the fuel tank cap during use may cause engine failure and/or damage to the tool.
- Do not smoke when filling the generator with gasoline.
- Allow the engine to remain in a shut-down condition for at least five minutes before adding unleaded fuel

or oil.

- Do not remove the oil dipstick or the fuel tank cap when the engine is running.
- Pay close attention to all safety labels located on the generator.
- Keep children a minimum of 3 m away from the generator at all times.
- The product operates best in temperatures between -5°C and 40°C with a relative humidity of 90% or less.
- Operating voltage and frequency requirement of all electronic equipment should be checked prior to plugging them into this generator. Damage may result if the equipment is not designed to operate within a ±10% voltage variation, and ±3 Hz frequency variation from the generator name plate ratings.
- The product is for outdoor use only.
- Operation of the generator at altitudes above 1,000 m may require retuning. Consult a qualified service technician.
- When using extension lines or mobile distribution networks the total length of lines for a cross section of 1.5 mm^2 should not exceed 60 m; for a cross section of 2.5 mm^2 this should not exceed 100 m.
- The generating set must not be connected to other power sources except another RIG2000PC with the RIGPC1000 Parallel Cable (sold separately).
- Save these instructions. Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also.

SYMBOLS

Some of the following symbols may be used on this tool. Please study them and learn their meaning.
Proper interpretation of these symbols will allow you to operate the tool better and safer.

SYMBOLS	DESIGNATION/EXPLANATION
	Do not expose to rain or use in damp locations.
	To reduce the risk of injury, the user must read and understand the operator's manual before using this product.
	Precautions that involve your safety.
	Failure to use in dry conditions and to observe safe practices can result in electric shock.
	Running the generator gives off carbon monoxide, an odourless, colourless, poison gas. Breathing carbon monoxide can cause nausea, fainting, or death.
	Fuel and its vapours are extremely flammable and explosive. Fire or explosion can cause severe burns or death.
	To reduce the risk of injury or damage, avoid contact with any hot surface.
	Guaranteed sound power level is 82 dB.
	Add oil.
	Regulatory Compliance Mark (RCM). This product meets applicable regulatory requirements.

The following signal words and meanings are intended to explain the levels of risk associated with this product.

	**DANGER**	Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.
	**WARNING**	Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
	**CAUTION**	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	CAUTION	(Without Safety Alert Symbol) Indicates a situation that may result in property damage.

SERVICE

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service, contact your nearest authorised service centre for repair. When servicing, use only original manufacturer's replacement parts, accessories and attachments.

WARNING:
Observe all normal safety precautions related to avoid electrical shock.

DANGER:
To avoid death or serious personal injury, do not attempt to operate this product until you read thoroughly and understand completely the operator's manual. If you do not understand the warnings and instructions in the operator's manual, do not use this product. Call your nearest authorised service centre for assistance.

WARNING:
The operation of any products can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and, when needed, a full face shield. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always wear eye protection.

SAVE THESE INSTRUCTIONS

SAFETY LABELS

The information below can be found on the generator. For your safety, please study and understand all of the labels before starting the generator.

If any of the labels come off the unit or become hard to read, contact the authorised service centre for replacement.

- You will be killed or seriously hurt if you do not follow the operator's manual instructions.
- Risk of Fire. Do not add fuel while the product is operating.
- Generator is a potential source of electric shock. Do not expose to moisture, rain, or snow. Do not operate with wet hands or feet.
- Exhaust contains poisonous carbon monoxide gas that can cause unconsciousness or death. Operate in well-ventilated, outdoor areas away from open windows or doors.
- Do not expose to rain or use in damp locations.
- 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.
- Do not use E15 or E85 fuel (or fuel containing greater than 10% ethanol) in this product.

FUEL WARNING

No smoking when filling with unleaded fuel. Do not overfill. Full level is 25 mm below the top of the fuel neck. Stop the engine for five minutes before refuelling to avoid the heat from the muffler igniting fuel vapours.

ENGINE LUBRICANT WARNING

You must add oil before first operating the generator. Always check the oil level before each operation. The oil level should always register within the hatched area on the dipstick. The unit is equipped with an oil sensor which will automatically shut off the engine if oil level falls below a safe limit.

HOT SURFACE WARNING

Do not touch the muffler or aluminium cylinder of the engine. They are very HOT and will cause severe burns. Don't put any flammable or combustible materials in the direct path of the exhaust.

CLEARANCE WARNING

While operating and before storing a hot unit, keep at least 1 m of clearance on all sides of this product, including overhead. Allow a minimum of 30 minutes of "cool down" time before storage. Heat created by the muffler and exhaust gases could be hot enough to cause serious burns and/or ignite combustible objects.

ELECTRICAL

EXTENSION CORD CABLE SIZE

Refer to the table below to ensure the cable size of the extension cords you use are capable of carrying the required load. Inadequate size cables can cause a voltage drop, which can damage the appliance and overheat the cord.

Current in Amperes	Load in Watts	Maximum Allowable Cord Length			
	At 240 V	6.0 mm² Wire	4.0 mm² Wire	1.5 mm² Wire	1.0 mm² Wire
2.5	600	300 m	180 m	120 m	75 m
5	1200	150 m	90 m	60 m	40 m
7.5	1800	100 m	60 m	40 m	30 m
10	2400	75 m	45 m	30 m	15 m
15	3600	45 m	30 m	20 m	
20	4800	40 m	20 m		
25	6000	30 m			
30	7200	20 m			
40	9600				

ELECTRICAL MOTOR LOADS

It is characteristic of common electric motors in normal operation to draw up to six times their full load running current while starting. This table may be used to estimate the watts required to start electric motors; however, if an electric motor fails to start or reach running speed, turn off the appliance or tool immediately to avoid equipment damage. Always check the requirements of the tool or appliance being used compared to the rated output of the generator.

Motor Size (H.P.)	Running Watts	Watts Required to Start Motor		
		Universal	Capacitor	Split Phase
1/8	275	N/A	850	1200
1/6	275	600	850	2050
1/4	400	800	1050	2400
1/3	450	950	1350	2700
1/2	600	1000	1800	3600
3/4	850	1200	2600	-
1	1100	N/A	3300	-

CAUTION:
Operating voltage and frequency requirement of all electronic equipment should be checked prior to plugging them into this generator. Damage may result if the equipment is not designed to operate within a ±10% voltage variation, and ±3 Hz frequency variation from the generator name plate ratings. To avoid damage, always have an additional load plugged into the generator if solid state equipment (such as a television set) is used. A power line conditioner is recommended for some solid state applications.

ELECTRICAL

GENERATOR CAPACITY

Make sure the generator can supply enough continuous (running) and surge (starting) watts for the items you will power at the same time. Follow these simple steps.

1. Select the items you will power at the same time.
2. Total the continuous (running) watts of these items. This is the amount of power the generator must produce to keep the items running. See the wattage reference chart at right.
3. Estimate how many surge (starting) watts you will need. Surge wattage is the short burst of power needed to start electric motor-driven tools or appliances such as a circular saw or refrigerator. Because not all motors start at the same time, total surge watts can be estimated by adding only the item(s) with the highest additional surge watts to the total rated watts from step 2.

Example:

Tool or Appliance	Running Watts*	Additional Starting Watts*
Refrigerator	700	1350
Portable fan	40	120
Laptop	250	250
46" flat panel television	190	190
Light (75 Watts)	75	75
	1255 total Running watts	1350 highest starting watts

Total Continuous (Running) Watts	1255
Plus Highest Additional Surge Watts	+1350
Equals Total Generator Output Required	2605

POWER MANAGEMENT

To prolong the life of the generator and attached devices, it is important to take care when adding electrical loads to the generator. There should be nothing connected to the generator outlets before starting its engine. The correct and safe way to manage generator power is to sequentially add loads as follows:

1. With nothing connected to the generator, start the engine as described later in this manual.
2. Plug in and turn on the first load, preferably the largest load (highest wattage) you have.
3. Permit the generator output to stabilise (engine runs smoothly and attached device operates properly).
4. Plug in and turn on the next load.
5. Again, permit the generator to stabilise.
6. Repeat steps 4 and 5 for each additional load.

Never add more loads than the generator capacity. Take special care to consider surge loads in generator capacity as previously described.

CAUTION:

Do not overload the generator's capacity. Exceeding the generator's wattage/amperage capacity can damage the generator and/or electrical devices connected to it.

Application/Equipment	Estimated Starting Watts*	Estimated* Additional Starting Watts
Emergency / Home Standby		
Lights (qty. 4 x 75 W)	300	300
Refrigerator	700	1350
46" flat panel television	190	190
Satellite receiver	250	250
Portable fan	40	120
Heater	1300	1300
Laptop	250	250
Slow cooker	270	270
Radio	50	50
DIY/Job Site		
Electric drill − 10 mm (3/8")	600	1000
Quartz halogen work light	1000	1000
Reciprocating saw	960	1920
Circular saw − 184 mm (7-1/4")	1400	2300
Mitre saw − 254 mm (10")	1800	1800
Airless sprayer − 1/3 HP	600	1200

*Wattages listed are approximate. Check tool or appliance for actual wattage.

PRODUCT SPECIFICATIONS

Product weight and dimension	
Product weight (kg)	23.5
Width (mm)	300
Height (mm)	450
Length - Handle retracted (mm)	550
Length - Handle extended (mm)	1050
Engine	
Engine type	Single overhead cam (SOHC)
Spark plug	NGK CR6HSA
Lubricant type	SAE 10W 30
Engine lubricant volume	400 ml
Fuel type	Unleaded fuel

Fuel tank volume	3.8 L
Run time (half load)	5 hours
Run time (full load)	3 hours
Generator	
Rated Voltage	240 V AC/12 V DC
Rated Amps	6.67 A AC/7.5 A DC
Rated Running Watts	1,600 W
Starting Watts	2,000 W
Rated Frequency	50 Hz
Floating neutral	Yes
Noise specifications	
Uncertainty (dB)	2
Noise level (4m) LpA dB (A)	72
Noise level (7m) LpA dB (A)	67
Noise level LwA dB (A)	82

FEATURES

KNOW YOUR GENERATOR

See Figure 1.

The safe use of this product requires an understanding of the information on the product and in this operator's manual as well as a knowledge of the project you are attempting. Before use of this product, familiarise yourself with all operating features and safety rules.

240 V AC RECEPTACLES

Your generator has two single phase, 50 Hz outlets that are 240 Volt AC, 15 Amp receptacles. These can be used for operating appropriate appliances, electrical lighting, tools, and motor loads.

AIR FILTERS

The air filters help to limit the amount of dirt and dust drawn into the unit during operation.

AUTO IDLE SWITCH

The auto idle switch is used to control the speed of the engine and conserve fuel. When the switch is in the ON (I) position and no appliances are connected to the unit, the engine will idle. If an appliance is added, the engine speed will increase to power the item. If the appliance is removed, the engine will return to idle.

BATTERY CHARGING CABLE

The battery charging cable makes it easy to charge 12 Volt lead acid batteries with the generator.

NOTE: Only use battery charging cable to charge vented wet lead acid batteries.

CARRY HANDLES

The generator is equipped with two carry handles for easy transport. Both handles should be used to carry the generator.

DC CIRCUIT BREAKER

The circuit breaker is provided to protect the generator against electrical overload.

DC RECEPTACLE

Your generator has a 12 volt, 7.5 Amp DC receptacle for charging lead acid batteries.

ENGINE/CHOKE LEVER/ON-OFF SWITCH/FUEL VALVE LEVER

The engine/choke lever/ on-off switch/fuel valve lever is used when starting, stopping, and running the engine.

FUEL TANK

The fuel tank has a capacity of 3.8 L.

GROUND TERMINAL

The ground terminal is used to assist in properly grounding the generator to help protect against electrical shock. Consult with a local electrician for grounding requirements in your area.

LED DISPLAY

LEDs provide feedback to indicate whether the generator is in use, overloaded, or in need of lubricant.

OIL CAP/DIPSTICK

Remove the oil fill cap to check and add oil to the generator when necessary.

PARALLEL KIT TERMINALS

The non-polarized parallel kit terminals are used with a parallel kit (sold separately) that will allow generators to be linked together to increase output.

NOTE: Read and understand the parallel kit's instructions prior to use. Kit is for usage with this unit only.

RESET BUTTON

The reset button is used to restore power if an overload occurs. To restore power, depress the reset button.

RETRACTABLE HANDLE

The generator is equipped with a retractable handle that can be adjusted for storage and transportation.

STARTER GRIP AND ROPE

The starter grip and rope is used (along with the engine/

choke lever) to start the generator's engine.

ASSEMBLY

UNPACKING

This product has been shipped completely assembled.

- Remove one end of the box and carefully slide out the generator and any accessories.

  NOTE: The generator is heavy. If you must lift the unit out of the box, get another person to help you and lift with your legs, not your back.
- Inspect the unit carefully to make sure no damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the product.
- If any parts are damaged or missing, please contact your nearest authorised service centre for assistance.

PACKING LIST

Generator

Battery charging cable

Engine lubricant (SAE 10W 30) (355 ml)

Screwdriver

Paper funnel

Spark plug wrench

Operator's manual

WARNING:
If any parts are damaged or missing do not operate this product until the parts are replaced. Failure to heed this warning could result in serious personal injury.

WARNING:
Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is considered as misuse and could result in a hazardous condition leading to possible serious personal injury.

OPERATION

DANGER:
Carbon Monoxide. Using a generator indoors WILL KILL YOU IN MINUTES.

Generator exhaust fumes contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. If you can smell the generator exhaust fumes, you are breathing CO. But even if you cannot smell the exhaust fumes, you could be breathing CO.

- Never use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.
- ONLY use a generator outdoors and far away from open windows, doors, and vents. These openings can pull in generator exhaust fumes.

Even when you use a generator correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home.

If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air immediately. See a doctor. You could have carbon monoxide poisoning.

WARNING:
Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

WARNING:
Do not use any attachments or accessories not recommended by the manufacturer of this product. The use of attachments or accessories not recommended can result in serious personal injury.

APPLICATIONS

This generator is designed to supply electrical power for operating compatible electrical lighting, appliances, tools, and motor loads.

BEFORE OPERATING THE UNIT

- Only use outdoors and far away from windows, doors, and vents.
- Never use inside a home or garage, EVEN IF doors and windows are open.
- Always position the generator on a flat firm surface.

SPECIAL REQUIREMENTS:

Please consult a qualified electrician, electrical inspector, or the local agency having jurisdiction:

- In some areas, generators are required to be registered with local utility companies.
- If the generator is used at a construction site, there may be additional regulations which must be observed.

LED DISPLAY

See Figure 2.

Power:

The power indicator will light when the generator is on and the receptacles are operational.

NOTE: If the generator is overloaded, the power indicator light will go off.

Overload:

The overload indicator will light if the generator's wattage/amperage capacity is exceeded. To reset the generator, remove all loads from the generator and press the reset button (see fig. 1). Add loads back to the generator one at a time being careful not to exceed the generators wattage rating.

Lubricant:

The oil indicator will light and the engine will automatically shut off whenever the lubricant level in the engine becomes low. The engine may not be restarted until sufficient engine lubricant has been added to the generator.

NOTE: It is normal for the indicator lights to illuminate and/or blink each time the engine is started. Once the engine warms up, the lights should default to the pattern above.

CHECKING/ADDING LUBRICANT

See Figure 3.

CAUTION:
Attempting to start the engine before it has been properly filled with oil will result in equipment failure.

Engine lubricant has a major influence on engine performance and service life. For general, all-temperature use, SAE 10W-30 is recommended. Always use a 4-stroke motor lubricant that meets or exceeds the requirements for API service classification SJ.

NOTE: Non-detergent or 2-stroke engine lubricants will damage the engine and should not be used.

- Loosen the screws at the side of the engine cover. Remove cover and set aside.
- Unscrew the oil cap/dipstick and remove.
- Wipe dipstick clean and re-seat in hole; do not re-thread.
- Remove dipstick again and check lubricant level. Lubricant level should fall between the minimum and maximum marks on the dipstick.
- If level is low, add engine lubricant until the fluid level rises between the minimum and maximum marks on the dipstick.
- Replace and secure the oil cap/dipstick.

USING FUEL STABILISER

Fuel gets old, oxidizes, and breaks down over time. Adding a fuel stabilizer (not included) extends the usable life of fuel and helps prevent deposits from forming that can clog the fuel system. Follow fuel stabilizer manufacturer's directions for correct ratio of stabilizer to fuel.

- Mix fuel stabilizer and gasoline prior to filling the tank by using an approved fuel container and shaking gently to combine.

  NOTE: To control the amount of fuel stabilizer being added to the engine, always mix fuel stabilizer with gasoline before fueling the tank rather than adding fuel stabilizer directly into the generator's fuel tank.
- Replace and secure the fuel tank cap.
- Start and run the engine for at least 5 minutes to allow stabilizer to treat the entire fuel system.

OXYGENATED FUELS

CAUTION:
Do no use E15 or E85 fuel (or fuel containing greater than 10% ethanol) in this product. It is a violation of federal law and will damage the unit and void your warranty.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentage of oxygenates stated below are not covered under warranty.

Ethanol. Gasoline containing up to 10% ethanol by volume (commonly referred to as E10) is acceptable. E15 and E85 are not.

CHECKING/ADDING FUEL

See Figure 4.

WARNING:
Gasoline and its vapours are highly flammable and explosive. To prevent serious personal injury and property damage, handle gasoline with care. Keep away from ignition sources, handle outdoors only, do not smoke while adding fuel, and wipe up spills immediately.

When adding fuel to the generator, make sure the unit is sitting on a flat, level surface. If the engine is hot, let the generator cool before adding fuel. Always fill the fuel tank outdoors with the machine turned off.

- Remove the fuel cap.
- Fill the fuel tank to 25 mm below the top of the fuel neck.
- Replace and secure the fuel cap.

NOTE: Always use unleaded gasoline with a pump octane rating of 91 or higher. Never use old, stale, or contaminated unleaded fuel, and do not use an oil/fuel mixture. Do not allow dirt or water into the fuel tank. Do not use E85 fuel.

STARTING THE ENGINE

See Figures 5-7.

CAUTION:
On a level surface with the engine off, check the lubricant level before each use of the generator.

NOTE: If location of generator is not level, the unit may not start or may shut down during operation.

To start generator the first time:

Your new inverter generator is equipped with a mechanical fuel pump. The initial start up will require additional pulls of the recoil starter to prime the fuel system.

- Add engine lubricant per the Operator's Manual instructions.
- Turn the ENGINE/CHOKE LEVER to the CHOKE position.
- Fill the fuel tank per the Operator's Manual instructions.
- Pull the engine recoil five (5) times to prime the fuel system.
- Press the AUTO IDLE SWITCH to the OFF position.
- Pull the recoil starter until the engine starts.
- Move the CHOKE LEVER to the RUN position.
- For quieter more efficient operation, place the AUTO IDLE switch in the ON position.

To start subsequent times:

NOTE: Subsequent starting should only require 6 pulls maximum.

- Unplug all loads from the generator.
- Place the auto idle switch in the off position.
- Slide the engine/choke lever to the start (centre) position.

  NOTE: When the engine/choke lever is in the start (centre) position, the fuel will flow from the fuel tank to the engine. If engine is warm, move the engine/choke lever right to the run (restart) position.
- Pull the starter grip and rope until the engine runs (a maximum of 6 times).

  NOTE: Do not allow the grip to snap back after starting; return it gently to its original place. Initial starting of the unit may require additional pulls to prime the fuel system.
- Allow the engine to run for 15-30 seconds, then move the engine/choke lever right to the run position.

STOPPING THE ENGINE

See Figures 5-6.

- Remove any load from the generator.
- Place the engine/choke lever in the off position.

To stop the engine in an emergency situation:

- Put the engine/choke lever in the off position.

WARNING:
While operating and before storing a hot unit, keep at least 1 m of clearance on all sides of this product, including overhead. Allow a minimum of 30 minutes of "cool down" time before storage. Heat created by the muffler and exhaust gases could be hot enough to cause serious burns and /or ignite combustible objects.

USING THE BATTERY CHARGING CABLE

See Figure 8.

WARNING:
The 12 V DC receptacle is designed to charge vented wet lead acid batteries only. Other types of batteries could burst, causing personal injury and damage.

CAUTION:
The 12 V DC receptacle provides continuous charge. Do not overcharge battery or leave battery unattended. Doing so may cause damage to the battery.

CAUTION:
Do not use the generator to jump start vehicles. Doing so could result in damage to the vehicle or it's electrical components.

- Place the auto idle switch in the OFF position.
- Using the battery clamps, connect the battery charging cable assembly to the battery terminal. Connect the red wire to the positive (+) terminal first, then connect the black wire to the negative (–) terminal. Make sure all connections are secure.

  NOTE: Be careful not to short across the terminals when installing. Shorting the terminals together can cause sparks, damage to the battery or generator, or even burns or explosions.

  NOTE: To prevent short circuit, keep away from a metal surface during clamp connection.
- Connect the battery charging cable assembly to the 12 V DC receptacle.
- Start the generator.

  NOTE: The AC receptacles can be used while the DC receptacle is in use.
- The battery will become slightly warm to the touch while charging. This is normal and does not indicate a problem.
  NOTE: Only use battery charging cable assembly to charge vented wet lead acid batteries.
- When batteries become fully charged, disconnect the battery charging cable assembly from the battery. Disconnect the negative (black) wire first, then the positive (red) wire, being careful not to short across the terminals. Always abide by the safety warnings provided with the battery.
  NOTE: Most batteries will be completely charged after 30 to 120 minutes. However, it is highly recommended that you refer to your battery manufacturer's instructions for specific charge times.
- Unplug battery charging cable assembly and store for later use.

USING THE GENERATOR

Connect devices to be powered by generator by following the steps below:

- Make sure the generator can supply enough continuous (running) and surge (starting) watts for

the items you will power at the same time. See the Electrical section for how to calculate total amount of power needed.

- Start the generator with nothing connected.
- Plug in and turn on the first load, preferably the largest load (highest wattage) you have.
- Permit the generator output to stabilise (engine runs smoothly and attached device operates properly).
- Plug in and turn on the next load.
- Again, permit the generator to stabilise.
- Repeat previous two steps for each additional load.

WARNING:
Never add more loads than the generator capacity. Take special care to consider surge loads in generator capacity.

MOVING THE GENERATOR

See Figure 9.

- Place the auto idle switch in the off position.
- Place the engine/choke lever in the off position.
- Allow 30 minutes of "cool down" time before storing the machine.
- Pull the retractable handle out or carry by the carry handles.
- Facing the front of the generator, grasp the folding handle firmly with one hand.
- Lift the generator toward you until it balances on the wheels.
- Turn around and pull the unit along behind you to the desired location.
- Lower the generator until it sits securely on a flat surface.

HIGH ALTITUDE OPERATION

The product is not designed for high-altitude operation (altitudes greater than 1,500 m above sea level). Operating the product in higher altitudes may increase the engine's emissions, decrease fuel economy and performance and reduce the generator life.

MAINTENANCE

WARNING:
When servicing, use only identical replacement parts. Use of any other parts could create a hazard or cause product damage.

WARNING:
Always wear eye protection with side shields marked to comply with ANSI Z87.1. Failure to do so could result in objects being thrown into your eyes, resulting in possible serious injury.

Only the parts shown on the parts list are intended to be repaired or replaced by the customer. All other parts should be replaced at an authorised service centre.

GENERAL MAINTENANCE

Keep the generator in a clean and dry environment where it is not exposed to dust, dirt, moisture, or corrosive vapours. Do not allow the cooling air slots in the generator to become clogged with foreign material such as leaves, snow, etc.

Do not use a garden hose to clean the generator. Water entering the fuel system or other internal parts of the unit can cause problems that will decrease the life of the generator.

To clean the unit:

- Use a soft bristle brush to loosen and remove dirt and debris.
- Clean air vents with low pressure air that does not exceed 25 psi.
- Wipe the exterior surfaces of the generator with a damp cloth.

CHECKING/CLEANING AIR FILTER

See Figures 10-11.

For proper performance and long life, keep air filters clean.

- Loosen the screws on the side of the engine cover. Remove cover and set aside.
- Loosen the screw in the centre of the air filter cover and turn the cover 1/4 turn clockwise, pull the cover down and off the unit. Remove air filter cover and set aside.
- Remove both the large and the small air filters.
- Wash the air filters with warm, soapy water. Rinse and squeeze to dry.
- Reinstall the air filters.
  NOTE: Make sure the filters are seated properly inside the generator. Installing the filters incorrectly will allow dirt to enter the engine, causing rapid engine wear.
- Reinstall the air filter cover. Tighten screw to secure.
- Reinstall the engine cover. Tighten screws to secure.

CHANGING ENGINE LUBRICANT

See Figure 12.

For best performance, engine lubricant should be changed after every 100 hours or 6 months of operation.

- Loosen the screw at the top of the engine cover. Remove cover and set aside.
- Remove the oil fill cap/dipstick.
- Tilt the generator to the side and allow lubricant to drain from the oil fill hole into an approved container.
  NOTE: Drain the lubricant while the engine is still warm but not hot. Warm lubricant will drain quickly and more completely.

WARNING:
Do not change engine lubricant while it is hot. Accidental contact with hot engine lubricant could result in serious burns.

- Return the generator to an upright position and

refill with lubricant following the instructions in the Checking/Adding Lubricant section previously in this manual. For amount of lubricant needed to refill, see Specifications earlier in this manual.

- Replace and secure the oil cap/dipstick.
- Reinstall the engine cover. Replace the screw and tighten securely.
  NOTE: Used lubricant should be disposed of at an approved disposal site. See your local retailer for more information.

SPARK PLUG REPLACEMENT

See Figure 13.

The spark plug must be properly gapped and free of deposits in order to ensure proper engine operation. To check:

- Remove the spark plug cover.
- Remove the spark plug cap.
- Clean any dirt from around base of spark plug.
- Remove spark plug using spark plug wrench.
- Inspect spark plug for damage, and clean with a wire brush before reinstalling. If insulator is cracked or chipped, spark plug should be replaced. For replacement spark plug, see Product Specifications earlier in this manual.
- Measure plug gap. The correct gap is 0.60-0.70 mm (0.024−0.028"). To widen gap, if necessary, carefully bend the ground (top) electrode. To lessen gap, gently tap ground electrode on a hard surface.
- Seat spark plug in position; thread in by hand to prevent cross-threading.
- Tighten with wrench to compress washer. If spark plug is new, use 1/2 turn to compress washer appropriate amount. If reusing old spark plug, use 1/8 to 1/4 turn for proper washer compression.
  NOTE: An improperly tightened spark plug will become very hot and could damage the engine.

CAUTION:
Be careful not to cross-thread the spark plug. Cross-threading will seriously damage the product.

DRAINING FUEL TANK/CARBURETOR

See Figures 14-15.

To help prevent gum deposits in the fuel system, drain the fuel from the tank and carburetor before storing.

DRAINING THE FUEL TANK

CAUTION:
Remove all lubricant from the unit before draining the fuel tank. Failure to do so could cause damage to the unit.

- Remove the fuel cap.
- Tilt the generator and allow fuel to drain from the fuel tank into an approved container.
- When the fuel has drained from the tank, replace the fuel cap.

DRAINING THE CARBURETOR

- Loosen the screws at the top of the engine cover. Remove cover and set aside.
- Place the engine/choke lever in the run position.
- Position a suitable container under the carburetor drain screw to catch fuel; loosen the screw.
- Allow fuel to drain completely into container.
- Retighten drain screw securely.
- Place the engine/choke lever in the off position.

NOTE: Consult hazardous waste management guidelines in your area for the proper way to dispose of used fuel.

TRANSPORTING

- Place the engine/choke lever in the off position.
- Make sure engine and exhaust of unit is cool.
- Keep unit level to prevent fuel spillage.
- Do not drop or strike unit or place under heavy objects.

STORING THE UNIT

When preparing to store the generator, allow the unit to cool completely, then follow the guidelines on the next page.

MAINTENANCE SCHEDULE

	Before each use	After 1st month or 20 hours of operation	Every 3 months or 50 hours of operation	Every 6 months or 100 hours of operation	Every year or after 300 hours of operation
Check engine lubricant	■				
Change engine lubricant		■		■	
Check air filter	■				
Clean air filter			■		
Change air filter					■
Check/adjust spark plug				■	
Replace spark plug					■
Check/adjust idle speed					■
Check/adjust valve clearance [1]					■
Clean fuel tank and filter [1]				■	
Check fuel hose	■				■
Fuel filter	Inspect				Replace
Check all hose connections	■				■
Inspect fuel tank vapor vent (if equipped)	■				■
Inspect carbon canister (CARB models only)	■				■

1. These items should only be carried out by an authorised service centre.

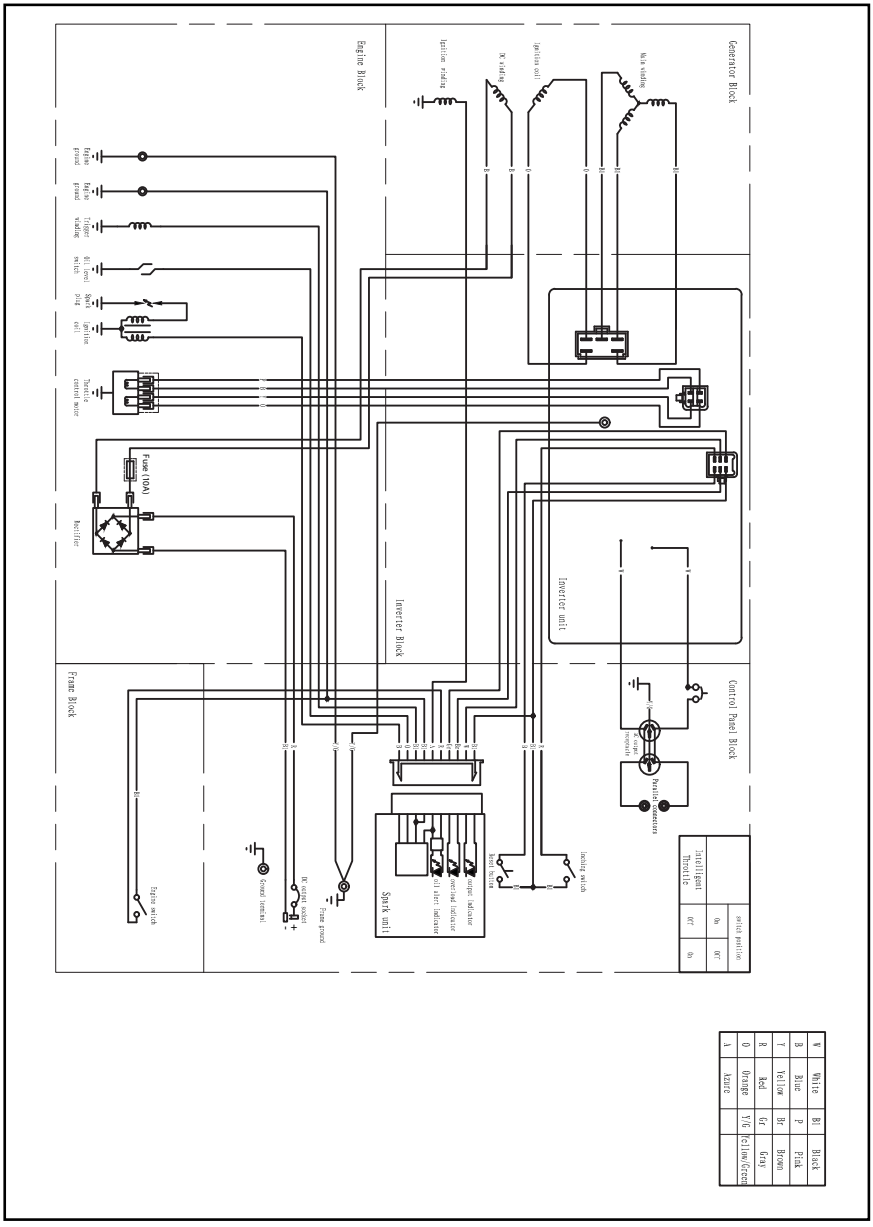
NOTE: Maintenance should be performed more frequently when generator is used in dusty areas.

When generator has exceeded the maximum figures specified in the table, maintenance should still be cycled according to the intervals of time or hours stated herein.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine will not start.	Engine/choke lever is in run position. No fuel. Stale gasoline or water in gasoline. Lubricant level is low. Spark plug faulty, fouled, or improperly gapped. Engine stored without treating or draining gasoline, or refueled with bad gasoline. Dirty fuel filter.	Move engine/choke lever to start position. Fill the fuel tank. Drain entire system and refill with fresh fuel. Check engine lubricant level and fill, if necessary. Replace spark plug. Drain fuel and carburetor. Refuel with fresh gasoline. Replace fuel filter or contact authorised service centre.
Engine is hard to start.	Water in gasoline. Weak spark at spark plug.	Drain entire system and refill with fresh fuel. Contact authorised service centre.
Engine lacks power.	Engine stored without treating or draining gasoline, or refueled with bad gasoline. Dirty air filter.	Drain fuel and carburetor. Refuel with fresh gasoline. If problem continues, contact your nearest authorised service centre. Clean or replace as needed.
DC receptacle does not work.	Circuit protector engaged Item plugged in is defective.	Remove any load from the generator. Turn the auto idle switch to off, then depress the DC circuit breaker. Try a different item.
AC receptacle does not work.	Item plugged in is defective. Generator is overloaded.	Try a different item. Remove loads and press the reset button.
Generator makes a “spark knock” or “pinging" noise.	An occasional light “knocking” or “pinging” under heavy load is not a cause for concern. However, if the knocking or pinging occurs under normal load at a steady engine speed, the problem may be with the brand of gasoline being used.	Switch to a different brand of gasoline, making sure that the octane rating is 91 or higher. If problem continues, contact your nearest authorised service centre.
If problem persists after trying the above solutions, contact your nearest authorised service centre for assistance.		
The following symptoms may indicate problems that will affect the emissions level of the unit: ■ Hard starting or stalling after starting ■ Rough idle ■ Misfiring or backfiring under load ■ Afterburning (backfiring) ■ Black exhaust smoke or high fuel consumption If you encounter any of these symptoms, have the unit inspected and repaired by the nearest authorised service centre.		

WIRING DIAGRAM



W	White	Bl	Black
B	Blue	P	Pink
Y	Yellow	Br	Brown
R	Red	Gy	Gray
O	Orange	Y/G	Yellow/Green
V	Violet		

20150408v3

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20150408v3