MAXWATT®

POWER WHEN YOU NEED IT

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID THE WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description, and packaging.

Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols

 You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.	 You CAN be KILLED or **SERIOUSLY INJURED if you** do not follow instructions.	 You CAN be INJURED if you do not follow instructions or equipment damage may occur.

It is vital that you read and understand this user manual before using the product, including safety warnings, and any assembly and operating instructions.
Keep the manual for future reference.

Safety precautions and recommendations detailed here must be fully understood and followed to reduce the risk of injury, fire, explosion, electrical hazard, and/or property damage.

Safety information presented here is generic in nature – some advice may not be applicable to every product. The term "equipment" refers to the product, be it electrical mains powered, battery powered or combustion engine powered.

- **Before Use** - If you are not familiar with the safe operation/handling of the equipment or are in any way unsure of any aspect of suitability or correct use for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.
- Do NOT operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases or dust. The equipment may create sparks or heat that may ignite flammable substances.
- Keep clear of moving parts.
- Equipment may be a potential source of electric shock or injury if misused.
- Do NOT operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.
- Do NOT allow others to use the equipment unless they have read this manual and are adequately trained.
- Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.

General Work Area Safety

- Work areas should be clean and well lit.
- Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.
- If devices are provided for connecting dust extraction / collection facilities, ensure these are connected and used properly. Dust collection can reduce dust-related hazards.

General Personal Safety

- Wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from eye and ear injury, poisoning, burns, cutting and crush injuries. Protective equipment such as safety goggles, respirators, non-slip safety footwear, hard hat, hearing protection etc should be used for appropriate equipment / conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.
- Stay alert and use common sense when operating the equipment. Do not over-reach. Always maintain secure footing and balance.
- Do not use the equipment if tired or under the influence of drugs, alcohol or medication.
- This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities.

General Fuel Safety

- Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- Do not spill fuel. If you spill fuel, wipe it off the equipment immediately – if fuel gets on your clothing, change clothing.
- Do NOT smoke near fuel or when refuelling.
- Always shut off the engine before refuelling.
- Do NOT refuel a hot engine.
- Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly.
- Always refuel in well ventilated areas.
- Always check for fuel leakage. If fuel leakage is found, do not start or run the engine until all leaks are fixed.

General Carbon-Monoxide Safety

- Using a combustion engine indoors **CAN KILL IN MINUTES.** Engine exhaust contains carbon-monoxide – a poison you cannot smell or see.
- Use combustion engines OUTSIDE only, and far away from windows, doors and vents.

General Equipment Use and Care

- The equipment is designed for domestic use only.
- Handle the equipment safely and carefully.
- Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorised service centre or technician before use.
- Prevent unintentional starting of the equipment - ensure equipment and power switches are in the OFF position before connecting or moving equipment. Do not carry equipment with hands or fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.
- Do not force the equipment. Use the correct equipment for your application. Equipment will perform better and be safer when used within its design and usage parameters.
- Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.
- Always keep equipment components (engines, hoses, handles, controls, frames, housings, guards etc) and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment clean and, where applicable, properly lubricated.
- Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place or store the equipment near flammable materials, combustible gases or liquids etc.
- The equipment is not weather-proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or humid.
- Do not clean equipment with solvents, flammable liquids or harsh abrasives.
- For specific equipment safety use and care, see Equipment Safety.

General Electrical Safety

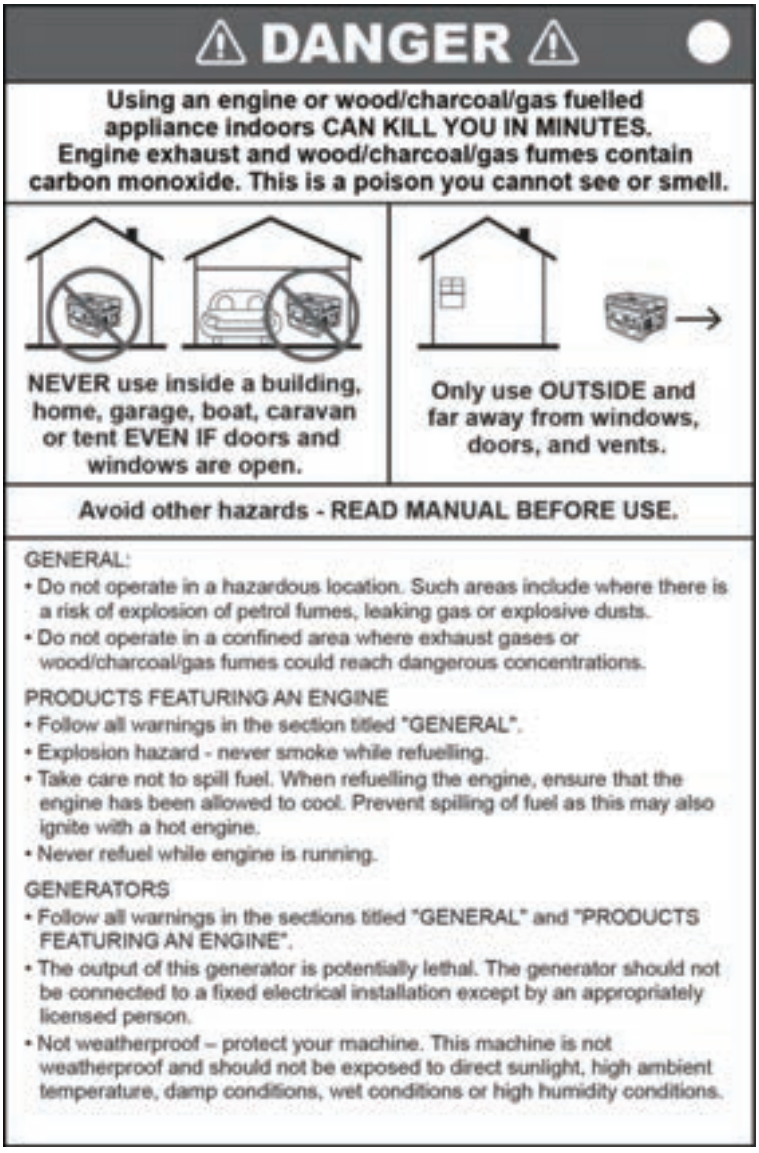
- Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.
- Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment.
- When wiring electrically powered equipment, follow all electrical and safety codes.
- Wherever possible, use a residual current device (RCD).
- High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.

General Electrical Safety

- Electrically grounded equipment must have an approved cord and plug and be connected to a grounded electrical outlet.
- Do NOT bypass the ON/OFF switch and operate equipment by connecting and disconnecting the electrical cord.
- Do NOT use equipment that has exposed wiring, damaged switches, covers or guards.
- Do NOT use electrical equipment in wet conditions or in damp locations.
- Do NOT use electrical cords to lift, move or carry equipment.
- Do NOT coil or knot electrical cords, and ensure electrical cords are not trip hazards.

General Service Information

- The equipment must be serviced or repaired at authorised service centres by qualified personnel only.
- Replacement parts must be original equipment manufacturer (OEM) to ensure equipment safety is maintained.
- Do NOT attempt any maintenance or repair work not described in this manual.
- After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before making adjustments, changing accessories or performing repair or maintenance.
- Do NOT make adjustments while the equipment is running.
- Perform service related activities in suitable conditions, such as a workshop.
- Replace worn, damaged or missing warning/safety labels immediately.



Equipment Safety

Generators can cause serious or fatal injury if proper safety precautions are not followed. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment.**

Operator

- If you are untrained in the use of a generator, it is highly recommended that you be trained/instructed by a suitably qualified or experienced person before using the equipment.
- NEVER operate the machine when tired, or under the influence of any substance (medication, alcohol, drugs etc) that may impair your judgement, alertness, physical strength, vision or dexterity.
- Maintain sure-footing and balance always when using or handling the machine and have full awareness of your surroundings and any possible hazards.
- Do not operate the equipment with wet hands or clothing.

Work Area Safety

- Be aware of fire risks resulting from machine use. Ensure that the machine exhaust and spark arrestor (if equipped) is well maintained and that engine is tuned correctly.
- Refuel outdoors only. Avoid fuel spillage. Start the machine at least 3m (10ft) away from the fuelling location.
- If the generator is for back-up power to a house etc, it must be connected to the building electrical system by a qualified electrician and must comply with relevant laws and electrical codes. If not connected correctly, use of the generator may cause electrocution, electric shock, explosion and fire hazards.
- Operate the generator on solid, level surfaces only, with at least 1m (3ft) between it and other equipment or objects.

Operational Safety

- Do NOT use the machine if the throttle or any safety guard or mechanism is not installed or is not operating correctly – have the machine inspected and repaired at an authorised service centre before using it again.
- The generator creates high voltage and current electricity. Do not connect incompatible devices.
- Never insert any object other than compatible connectors into any generator output connector.
- When using the generator, ensure to keep it and all connected cables away from other electrical cables.

Transportation Safety

- Always STOP the engine before transporting or working on it (refuelling, adjusting etc).
- When transporting the machine in a vehicle, ensure the engine is OFF, all appliances are disconnected, and the machine is secured in an upright position to prevent tip-over, machine damage or fuel spills.

Table of Contents

Safety **2**

Equipment Safety **4**

Parts Identification **7**

Before Use Checklist **8**

- Engine Oil 8
- Air Filter 8
- Fuel 8
- Priming the Fuel System 8
- Battery 10

Engine Starting **11**

- Starting 11
- Jump Starting 12
- Stopping the Engine 12
- Environmental Considerations 12

Generator Operation **14**

- Understanding Rated Output 14
- Calculating Generator Load 15
- Control Panel and Functions 16
- Grounding the Generator 17
- AC Applications 17
- DC Applications 18
  - Battery Charging 18

Maintenance **19**

- Maintenance Schedule – Diesel Engines / Machines 19
- Engine Oil 20
  - Checking and Changing Engine Oil 20
  - Oil Strainer 21
- Air Filter 22
  - Inspection and Cleaning 22
  - Removal/Installation 22
- Fuel Filter 23
- Battery 24
  - Battery Removal/Installation 24

Transportation and Storage **25**

- Preparing for Transport and Storage 25
- Long Term Storage 25

Troubleshooting **26**
Specifications **28**
Warranty Information **31**

Main Technical Specifications and Data

Model		MX10000DSE	MX14000DSE	MX15000DSE
Generator Set	Rated power (KW)	8	9.5	11.5
	Maximum power (KW)	8.5	10	12
	Voltage (V)	240	240	240
	Frequency (HZ)	50	50	50
	Fuel tank (L)	30	30	30
	Cont. hour (H)	9.5	8.8	7.2
	Start method	Electric	Electric	Electric
	Battery (AH)	36	36	45
	Gross weight (kg)	223	241	290
	Package dimension (cm)	108X75X87	113X75X87	123X76X89
	20GP loading QTY	30	30	26
	40HQ loading QTY	99	93	80
Engine	Model	HR688FG	HR1105FD	HR998F
	Hp	15	20	25
	Displacement (cc)	633	762	998
	Lubricating oil capacity (L)	1.6	2.2	3
Alternator	Model	204X150	245X130	245X150
	Category	100%Copper	100%Copper	100%Copper

Before Use Checklist

Ensure that you carry out all procedures below before starting the engine or operating the equipment. All procedures described are generic in nature. **Failure to follow the checklist and carry out the procedures correctly may result in making the** product warranty void. The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see Engine Oil. Failure to add engine oil **will void the product warranty.**

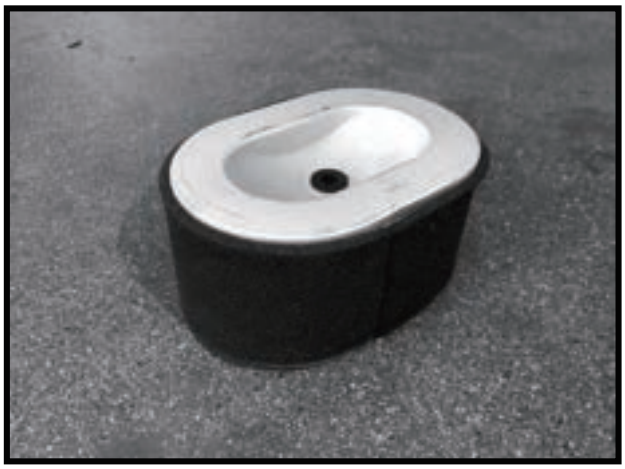
Engine Oil

Four-stroke engines require engine oil in the crankcase for lubrication of internal components. Severe or irreparable damage may occur if the engine is allowed to run without engine oil. The engine oil level requires regular maintenance. Check the engine oil level and ensure that the oil level is at or just under the maximum level indicator.

Some machines may feature an oil level sensor that will prevent the engine being started or automatically stop the engine if the oil level falls below an acceptable level. This system, however, is not to be solely relied upon. **Always check that the engine oil level is at or near the "MAX" indicator before starting the engine.** See Engine Oil.

Air Filter

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The air filter requires regular maintenance. Always check the air filter before starting the engine. See Air Filter.



Fuel

Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.

Adequately fill the fuel tank with the correct fuel type.

- Use commercial **light diesel fuel**. Do not use old or contaminated fuel.

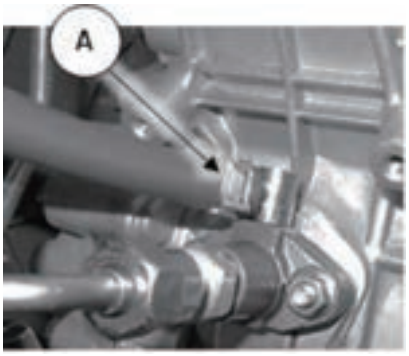
To fill or top up fuel:

1. Place the machine in an upright position on a flat and level surface.
2. Clean the machine around the fuel filler so that no dirt or other material enters the tank when the cap is removed.
3. Remove (rotate left) the fuel filler cap.
4. Using a funnel, carefully fill the tank with fuel. Do not fill above the top of the strainer (if equipped) or otherwise overfill the tank.
5. When finished, reinstall (rotate right) the fuel filler cap until firm. Wipe away any residual fuel from the machine. If fuel has been spilt, move the machine away from the spillage before starting the engine.

Priming the Fuel System

When an engine is new or has been completely run out of fuel it may be necessary to "prime" the fuel system before attempting to start the engine. This means removing any air from the fuel line. To prime 4-stroke engines:

1. Fill the fuel tank with fuel.
2. Remove the fuel line (A) from the fuel injector using pliers to loosen the hose-clamp. Hold a container beneath the fuel line to catch any spilt fuel.
3. Place the fuel tap in the "ON" position and allow fuel to flow out (into the container) until no air bubbles can be seen in the fuel stream.
4. Push the fuel line back onto its connection point and re-fasten the hose clamp.
5. Clean up any spilled fuel. If fuel has been spilt, move the machine away from the spillage before starting the engine.
6. Start the engine.



Battery

The engine starting battery is shipped with the unit and comes with the NEGATIVE cable disconnected for shipping reasons. Complete the battery connection. To connect the battery:

1. Open the front engine access cover. Once open, the battery and cables are accessible.
2. Connect the NEGATIVE (-) cable (BLACK) and the POSITIVE (+) cable (RED) respectively to the battery.
3. Check that both cable connections at the battery terminals are secure, the protective rubber covers are protecting the connections, and the battery bracket is secure.

Engine Starting

Before starting the engine, ensure that you have followed all procedures described in the Before Use Checklist. The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see Engine Oil. **Failure to add engine oil will void the product warranty.** • **Before starting the generator, disconnect all output sockets so that no load is immediately placed on the generator as it starts up.** • The generator may feature in-built protection that will prevent the engine running if there is insufficient engine oil, the unit is over-temperature or is over-loaded.

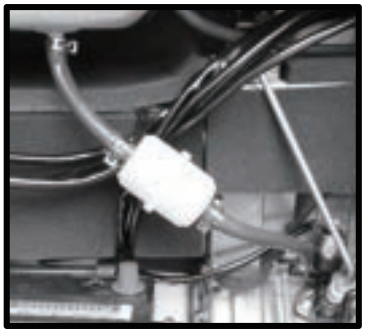
The following are procedures and images for Engine Starting.

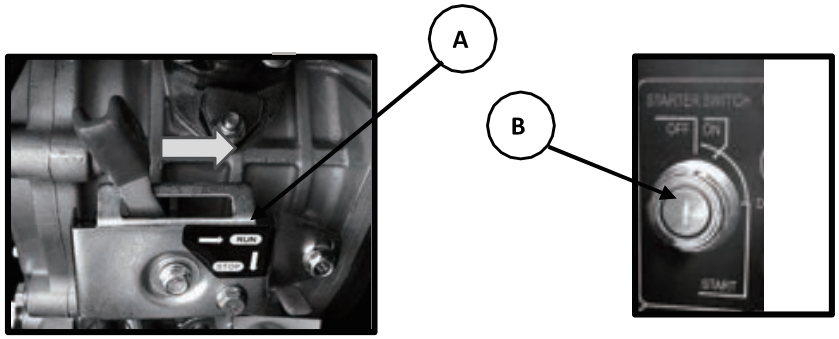
Once the engine has started, the engine speed will automatically regulate depending on connected load. For example, under high loads, the engine will run at higher speed to maintain the required output

Starting

Connect the battery before attempting to start the unit. If the battery is flat, charge it before using the generator, or use the jump-start method. Once the engine is running, it will charge the battery.

1. **FUEL** – Open the front engine access cover, then place the fuel tap in the "ON" position (rotate the lever right (clockwise).
2. **THROTTLE** – Place the throttle control (A) in the "RUN" position (to the right). Some models may use a screw to secure the throttle in position – to adjust, loosen the screw and move it to the required position, then tighten it again. Close the front engine access cover.
3. **START** – Insert the generator key into the ignition switch (B) on the control panel, then rotate it right to the "START" position, to engage the starter motor. The engine should start.
4. **RUN** – Rotate the generator key left to remain in the "ON" position.





Jump Starting

If the battery does not have enough charge to sufficiently crank the engine, the engine can be jump-started. Use a fully charged battery (the "jump" battery) and suitable jump-starting cables. To jump-start:

1. Ensure the ignition is OFF (for some models, this is the position that allows the key to be removed).
2. Connect the jump battery POSITIVE ("+") terminal to the engine battery POSITIVE ("+") terminal.
3. Connect the jump battery NEGATIVE ("-") terminal to the engine battery NEGATIVE ("-") terminal.
4. Follow the normal start procedure from step 1 onward.

Stopping the Engine

Disconnect connected devices and turn the ignition and fuel switches to OFF.

Stopping in an Emergency

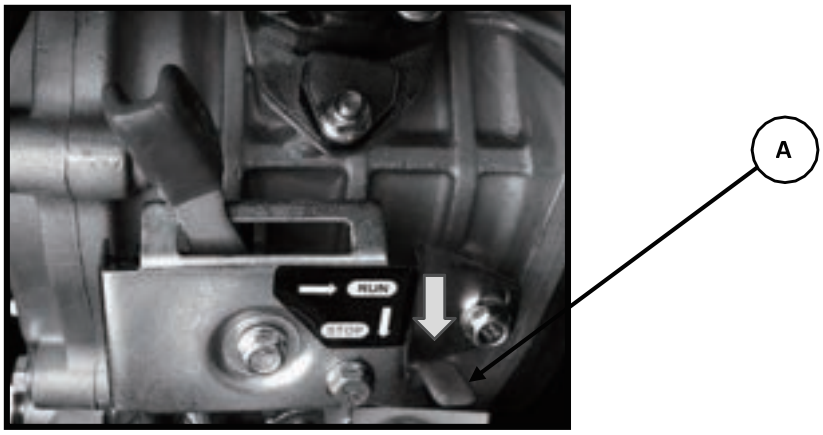
Please turn off AC switch first, otherwise the alternator will become demagnetised.

1. To stop the engine immediately, place the generator key in the "OFF" position.

After stopping the engine, it is recommended to follow the normal engine stop procedure (Disconnect connected devices and turn the ignition and fuel switches to OFF.).

Stopping in Normal Use

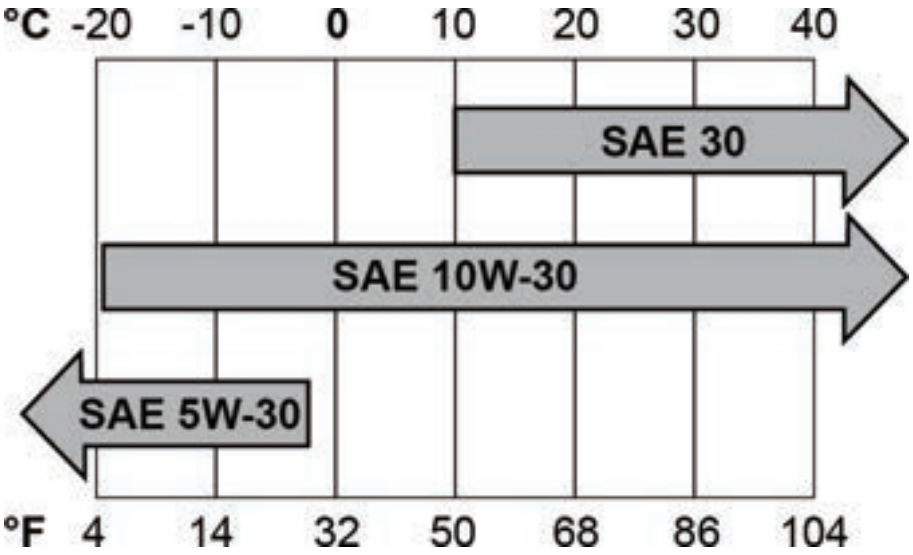
1. OUTPUTS – Turn OFF any connected devices, then unplug them from the generator.
2. Turn off AC Switch.
3. IGNITION – Place the generator key in the "OFF" position. The key can be removed from the ignition switch when in this position.
4. THROTTLE – Press the throttle stop lever (A) down to release the throttle.
5. FUEL – Place the fuel tap in the "OFF" position (rotate the lever left (anti- clockwise).



Environmental Considerations

Altitude – If the engine is being used in altitudes at or above 1500m (approximately 5000'), adjustments to the engine may be required. This is because there is less oxygen in the air as altitude increases, which effectively "enriches" the ratio of fuel to air going into the engine and the higher the altitude, the richer the fuel mixture becomes. If the engine is being permanently operated at high altitude, it is recommended to have an authorised service centre make the necessary adjustments. If the engine is used occasionally at altitude (not extreme altitudes), no adjustments should be required, however, a slight decrease in engine performance can be expected.

Temperature – If the engine is being used in extremely cold or hot environments; for example, desert or snow conditions, the type of engine oil may need to be changed to suit environmental temperatures. Oil thickens as the temperature decreases and thins as temperature increases, which means that if the engine oil is not suited to the temperature, its ability to properly lubricate the engine may be affected. Use the following chart to determine the correct engine oil:



Generator Operation

Allowing the generator to run when being overloaded may permanently damage it and/or shorten its service life and may void product warranty.

- Maximum continuous run time per day without cool-off is 6 hours @ 50% load, or 4 hours @ 100% load. **The manufacturer recommends that the unit run for no longer than 600 hours per year for optimum machine performance and to extend generator life. These conditions assume the engine oil level is correct, servicing is maintained as per the schedule, and conditions are not considered harsh (high temperature, dust etc).**
- Ensure that the generator is grounded (earthed) before using it.
- Ensure that any device to be powered by the generator is switched OFF before connecting it to the generator.
- Ensure that all devices that will be powered by the generator are electrically safe and functioning normally. If at any time a connected device appears to malfunction, stop or slow down etc, immediately switch the generator and device OFF and disconnect the device.
- Do not exceed the rated power output of the generator. Consider the power rating for all connected devices that will be running simultaneously, both AC and DC, and ensure that the sum of all power consumption is no more than the generator rated output with consideration given to actual power output based on altitude and temperature (see Understanding Rated Output). For example, 4 x 1500W devices will be acceptable for a 6.0kW rated output generator, however, will overload a 5.0kW unit.
- Do not exceed the rated current for the output socket. For example, do not connect a device that draws 15A to a 10A socket.
- If using an extension cable, ensure it is an approved type and has a minimum wire gauge of 1.5mm² up to a cable length of 60m; 2.5mm² up to a cable length of 100m.
- For appliances that place high "inductive" loads when being started or stopped (for example, electric motors), consideration should be given to the rated output of the generator and the required inductive load capacity. Rated output equates to approximately 45 to 75% of inductive load capacity.
- Do not connect devices in parallel to the generator.
- Devices sensitive to input voltage fluctuation should be connected via a suitable surge protector.

Understanding Rated Output

The "rated output" is described as the maximum power that the generator can consistently and reliably provide. The rated output of a generator is based around several factors including altitude, ambient temperature and relative humidity. The specified rated output is calculated at an altitude of 0m, ambient temperature of 25°C and relative humidity of 30%. Deviations from these values will affect the actual output capacity of the generator. For example, if the generator is used at high altitude it will produce less power.

Basically, the higher the altitude, the warmer the ambient temperature and the greater the humidity, the less power can be produced. The following table provides a guideline for calculating actual generator output based on ambient temperature and altitude [note that humidity is ignored here as it has a marginal effect]:

	Ambient Temperature (°C)				
	25	30	35	40	45
Altitude (m)	Power Output Coefficient				
0	1.0	0.98	0.96	0.93	0.90
500	0.93	0.91	0.89	0.87	0.84
1000	0.87	0.85	0.82	0.80	0.78
2000	0.75	0.76	0.71	0.69	0.66
3000	0.64	0.62	0.60	0.58	0.56
4000	0.54	0.52	0.50	0.48	0.46

Examples:

- At an approximate altitude of 1000m and 30°C ambient temperature, the power output coefficient is 0.85. So, a rated output of 6kW becomes 6.0 x 0.85, which equates to an actual power output of 5.1kW.

- At an approximate altitude of 2000m and 25°C ambient temperature, the power output coefficient is 0.75. So, a rated output of 6.0kW becomes 6.0 x 0.75, which equates to an actual power output of 4.5kW.
- At an approximate altitude of 3000m and 40°C ambient temperature, the power output coefficient is 0.58. So, a rated output of 6.0kW becomes 6.0 x 0.58, which equates to an actual power output of 3.48kW.

Calculating Generator Load

Most electrical devices clearly state the required power, usually in Watts (W). This information is generally labelled on the device, or listed in its user manual. If a device lists power consumption figures in amperes (A) only, calculate the wattage by multiplying the ampere rating by the voltage. For example, a 10A device @ 240VAC equates to 2400W (10A x 240V). The sum of all devices required to be operating simultaneously needs to equal or be less than the rated output of the generator.

Many devices require a different load on start-up/shut-down that is often much higher than the actual continuous running requirements. For example, a water pump may require 2000W to start, and once started, requires 500W to continue running. When calculating generator load, the start-up requirements need to be factored in. If the start-up power consumption is not known, the table below lists typical consumption figures for several device types that may assist in determining how many or which devices may be connected and a starting order [that is, start the high consumption devices first, followed by devices with no additional start-up power requirements].

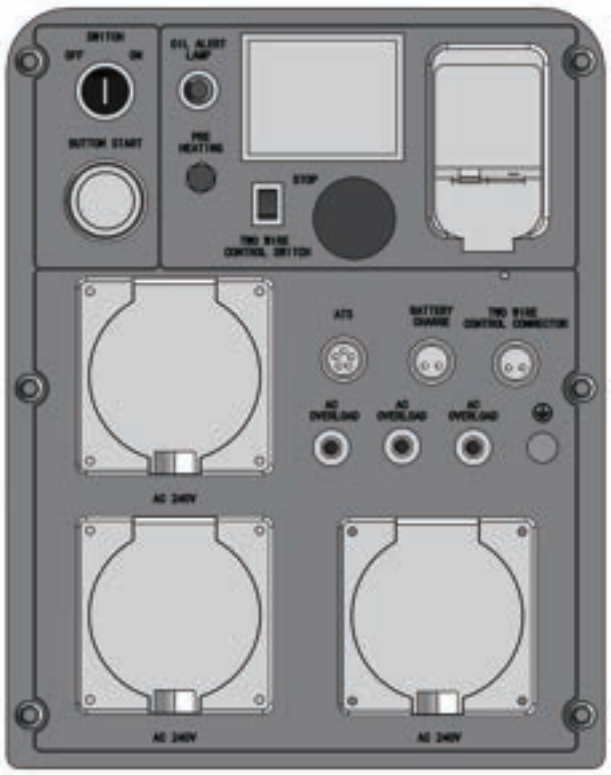
	Incandescent Lamp 	**Radio** 	**Power Tool** 	**Electric Fan** 	**Water Pump** 	**Fluorescent Lamp** 
Start-up Watts	*50 to 150*	*100 to 200*	*1000 to 1500*	*600*	*2500 to 5000*	*N/A*
Running Watts	*50 to 150*	*100 to 200*	*400 to 600*	*200*	*500 to 1000*	*As Stated*

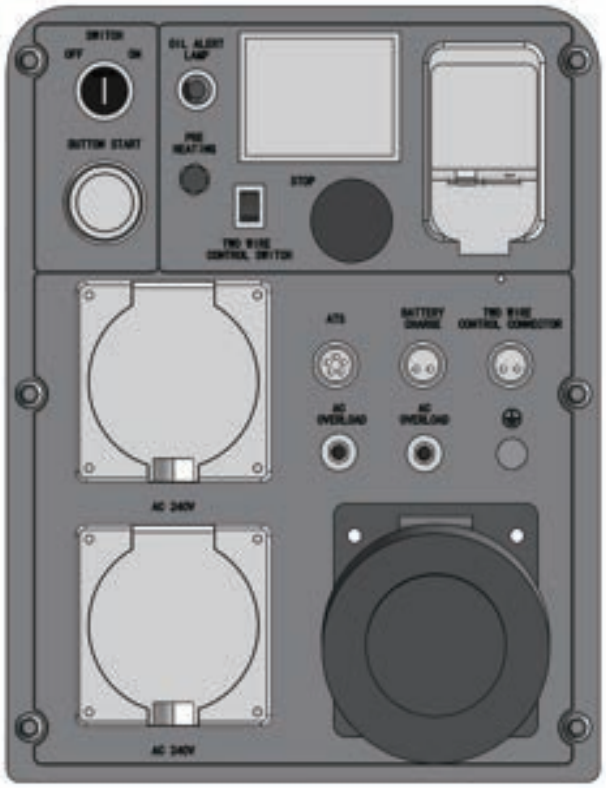
Example (using the typical values above):

• To run a radio, electric fan and 3 power tools requires an approximate running power consumption of 100W (radio) + 200W (fan) + 1800W (power tools) = 2.1kW. However, when factoring in start-up power requirements, the equation becomes 100W (radio) + 600W (fan) + 4500W (power tools) = 5.2kW.

Control Panel

The generator features a control panel for connecting devices and monitor to understand generator status. The main features of this control panel type are described below:

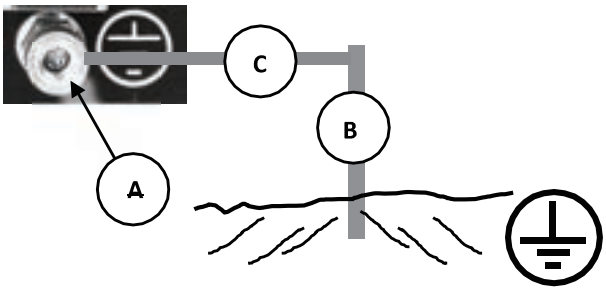




Grounding the Generator

The generator must be properly grounded before use. Failure to ground the generator may create a shock or electrocution hazard.

Connect a length of insulated heavy gauge wire (C) between the generator (Ground connector (A) (on the control panel) and a suitable ground point. You can create a ground point by driving a metal rod (B) into the ground and connecting the free end of the cable to it .



AC Applications

Observe the following safety precautions when powering 240VAC devices:

- Connect only devices that have power requirements compatible with the generator.
- Connect only devices that have connectors compatible with the generator output sockets.
- Always switch the connected device OFF before connecting to or disconnecting from the generator.
- Do not connect devices in parallel to the generator.
- Devices sensitive to input voltage fluctuation should be connected via a suitable surge protector.

1. Ensure that all circuit-breakers and protection devices are "ON" (not tripped).
2. Start the generator.
3. Ensure that any device to be connected is switched OFF, then plug the device into the applicable 240VAC outlet.
4. Switch the connected devices ON, one at a time to help reduce start-up loads, then operate them as normal.
5. When finished using the device, switch it OFF, then unplug the device from the generator.

DC Applications

Observe the following safety precautions when charging batteries:

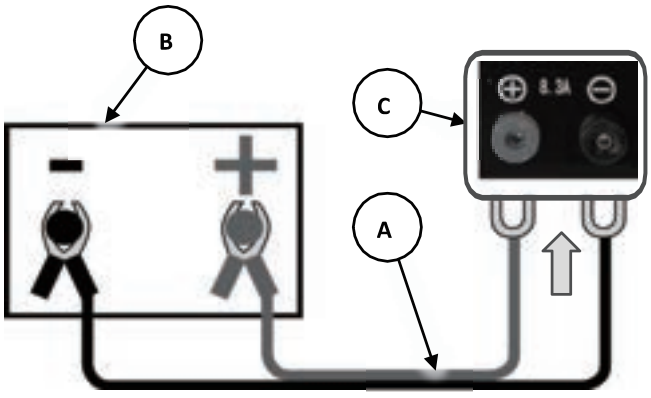
When connecting a battery to the DC output, ENSURE that the polarity (+ to + and – to –) of connections is correct. Failure to do so may represent an explosion hazard and/or damage the generator and/or connected battery.

- The DC circuit is not monitored and does not automatically switch off or self regulate depending on the voltage of the connected battery. This means that you must independently monitor battery charge status and disconnect the battery before it is over-charged. Over-charging batteries may present an explosion hazard.
- The DC output over-current protection can be tripped in the event of too much current being drawn (see Specifications for maximum current draw for differing generator models). If this occurs, the DC protection reset switch (on the control panel) will "pop out". Press the switch to reset the protection and re-activate the generator DC output.
- To prevent sparking near the generator, when disconnecting a battery, disconnect the battery charging cable from the battery terminals before unplugging it from the generator DC output socket. Disconnect the negativ e (-) terminal first, followed by disconnecting the positive (+) terminal and do not allow the cable ends to touch.
- When charging a battery that is mounted in a vehicle, at the vehicle battery, disconnect the negative (-) terminal first, followed by disconnecting the positive (+) terminal. Then, proceed to connect the battery charging cable as normal. Ensure that the battery terminals or charging cable terminals do not make contact with the vehicle chassis as sparking may occur.
- Do not attempt to start a vehicle whilst its battery is connected to the generator, as damage to the generator may result.
- Batteries that are being charged may emit dangerous gases. Batteries being charged should be in a well-ventilated area and a safe distance from any sources of flame, heat, flammable, or volatile materials.
- Batteries may contain corrosive substances. Contact with skin or eyes may cause burns – wash with water mmediately (at least 15 minutes if has contacted eyes) and seek professional medical attention. Wear protective clothing and face mask when handling batteries.
- If battery acid is swallowed, administer water or milk and immediately seek professional medical attention.
- All batteries should be kept out of reach of children.

Battery Charging

Features a protected 12VDC outlet that is used for charging suitable batteries (vehicle batteries etc). Use the supplied cable to connect the battery to the generator.

1. Connect the battery charging cable (A) to the battery (B) terminals – RED to the battery POSITIVE (+) terminal, BLACK to the battery NEGATIVE (-) terminal. Connect the POSITIVE (+) terminal first
2. Connect the battery charging cable to the generator DC output connectors (C).
3. Start the generator.



When finished using the DC output, switch the 12VDC output OFF, disconnect the BLACK NEGATIVE (-) battery charging cable from the generator and battery, then disconnect the RED POSITIVE (+) cable from the generator and battery.

Maintenance

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents.

- Petrol / fuel/ gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- Do not have the engine running during inspection and maintenance unless specifically required.
- The engine should be cool enough to touch before performing maintenance activities.
- Some maintenance activities may be beyond the scope of some users. Do NOT attempt procedures that you are not comfortable with, or do not have the necessary tools, experience or knowledge for – take the unit to an authorised service centre or qualified technician for servicing.
- Harsh operating environments such as extreme temperatures, dust etc may necessitate more frequent maintenance.
- **Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void.**

To keep the machine performing at optimal efficiency, regular checks and maintenance is required. The maintenance schedule below specifies preventative maintenance checks and necessary maintenance tasks and how often they should be performed. The schedule applies to multiple engines; some engines may not include some components, so maintenance on those components is not applicable.

Maintenance Schedule

Use the following maintenance schedule for a list of regular maintenance tasks and how often they need to be performed. Maintenance frequency is based on average usage. Be aware of how much the machine is used and be sure to follow the schedule according to time or usage, whichever comes first.

Towards the end of this document is a form you can use for maintenance record keeping. It is recommended that you keep a reference of all maintenance.

Major Servicing and "Heavy-Duty" Usage - For engines that are subject to "heavy-duty" use, which can be defined as being used under loads of 85% or more and / or in use more than approximately 300 hours per year (for example, generators and water pumps), more frequent "Major Service" maintenance is required. In addition to normal service requirements, and as with many smaller machine and off-road bike engines, the following parts (as applicable for petrol, diesel, or 2-stroke engines) may require replacement during a major service:

- Piston rings.
- Big-end bearings.
- Small-end bearings.
- Gudgeon pin.
- Oil rings.
- Gaskets and seals.
- Valve seats.

Inspection of the following items is required:

- Piston for cracks and stress fractures.
- Bore for wear requiring reconditioning.
- Full machine for broken, worn or loose parts.

Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void.

Engine Oil

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use. **Failure to add engine oil will void the product warranty**.

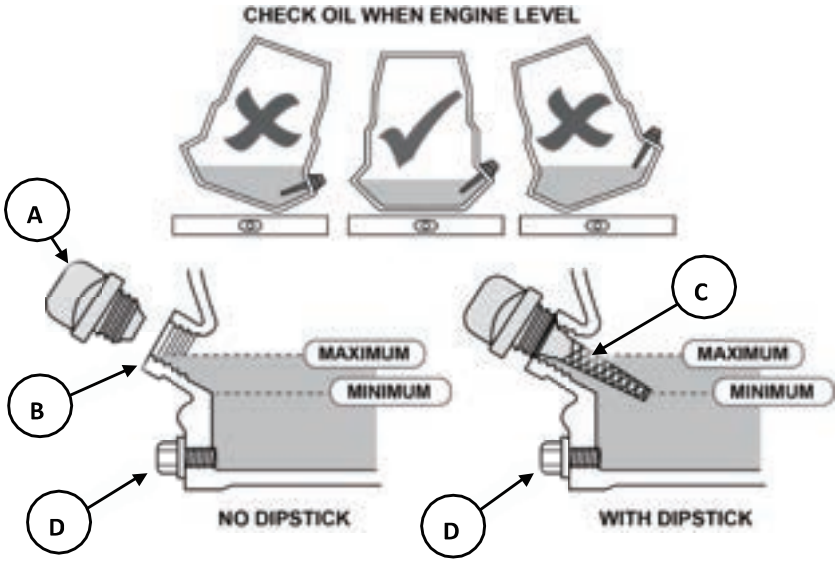
- Always check engine oil level when the machine is in an upright position on a flat and level surface.
- Do not use used or contaminated engine oils.
- Use only engine oils of the correct type (see Specifications).
- Perform the first oil change within the first 20 hours of use. Subsequently, change the oil every 20 hours of use.
- It is recommended that the engine be warm, but not hot, when performing oil changes. When the oil is warm it drains faster.
- Using dirty or incorrect engine oil may cause engine damage and void any warranty
- Always use suitable tools.
- Always dispose of used oil in an environmentally responsible manner and according to regulations.
- Some engines feature oil level detection, which will prevent the engine being started or automatically stop a running engine if there is insufficient oil.
- **Always check the oil level and ensure is at or near the "MAX" indicator before using the machine.**

Four-stroke engines require engine oil in the crankcase for lubrication of internal components. Severe or irreparable damage may occur if the engine is allowed to run without engine oil. The engine oil level requires regular maintenance as per the maintenance schedule.

Checking and Changing Engine Oil

To check engine oil level:

1. Ensure that the machine is on a flat and level surface.
2. Clean the machine around the oil filler cap (A) so that no dirt or other material enters the engine when the cap is removed.
3. Remove the oil filler cap (rotate left) until fully unscrewed. For machines without a dipstick, the oil level is determined by how close the oil is to the edge of the filler hole (B). For machines equipped with an oil level dipstick:
    a. Remove the dipstick (C) and wipe clean with a piece of cloth or paper.
    b. Insert the dipstick into the oil filler but do not screw it in.
    c. Remove and inspect the dipstick – the oil level is determined by where oil can be seen on it.
4. Ensure that the oil level is at or just under the "maximum". If the oil level is low, add additional oil until the correct level is reached. If the oil level is too high, drain some oil until the correct level is reached.
5. When finished, re-install (rotate right) the oil filler cap until firm. Wipe off any residual oil from the machine.



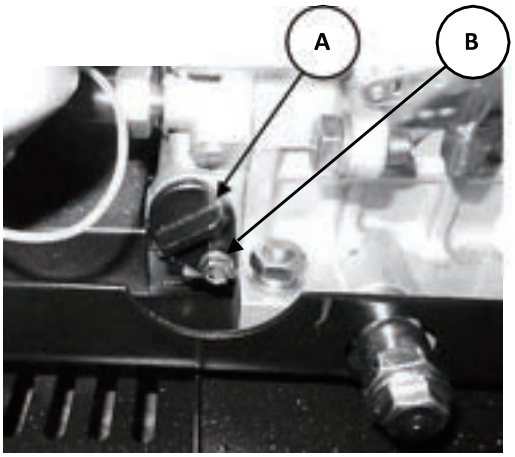
To change the engine oil:

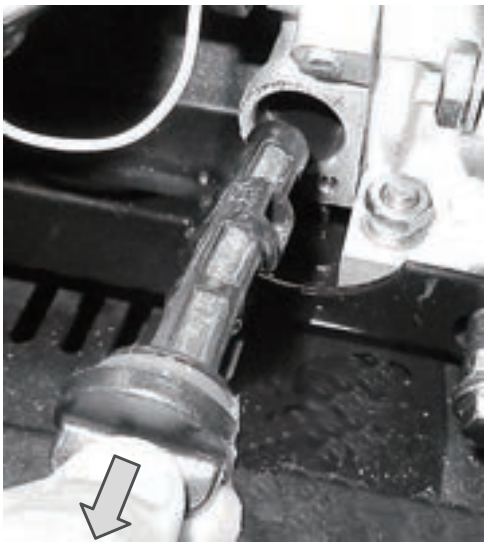
1. Place the machine on a suitable work surface that is flat and level and have a container ready to catch drained oil.
2. Clean the machine around the oil drain plug (D) and oil filler cap/dipstick so that no dirt or other material enters the engine when the plug or cap is removed
3. Unscrew (rotate left) and remove the drain plug and washer.
4. Tilt the machine and drain all oil from the engine. Once drained, allow the machine to sit level again. For engines with an oil strainer, clean it.
5. Clean the drain plug and washer and then reinstall them. Screw in fully (rotate right) and firmly tighten.
6. Remove the oil filler cap (rotate left) until fully unscrewed. Wipe the oil level indicator clean with a piece of cloth or paper.
7. Using a funnel, carefully add oil to the engine until the "maximum" level is reached. Double-check the oi l level (described above).
8. When finished, re-install (rotate right) the oil filler cap until firm. Wipe off any residual oil from the machine.

Oil Strainer

Some engines feature an oil strainer that can be removed for cleaning / replacement:

1. Ensure the engine is drained of oil.
2. Clean the machine around the oil strainer (A).
3. Remove the oil strainer retainer retaining bolt (B).
4. Pull the oil strainer from the engine and clean it thoroughly in solvent or degreaser. Ensure that all particles, sludge etc is removed, then dry it.
5. When finished, slide the oil strainer back into position. Re-install and tighten (rotate right) the retaining bolt. Wipe off any residual oil from the machine.





Air Filter

Operating the machine without a functional air filter may cause severe engine damage and will void any warranty.

- A dirty or oil saturated air filter will restrict air flow, which can be mistaken as fuel system problems. Check the condition of the air filter before adjusting engine idle speed, where applicable.
- If the air filter is damaged (torn, broken, disintegrating), replace it.

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The engine breather may be connected to the air intake assembly – this may lead to a build-up of oil in the air filter over extended use and is normal. The air filter requires regular maintenance as per the maintenance schedule.

Inspection and Cleaning

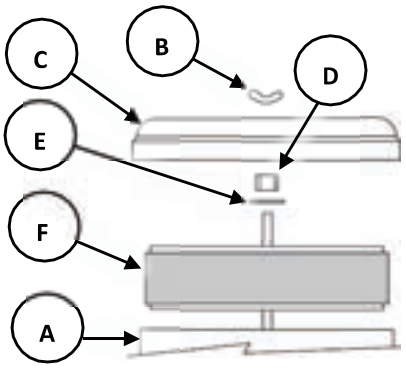
Inspect the air filter for dirtiness and debris, damage etc. Some engine may feature a 2-stage air filter, with a foam "envelope" around a paper element. Clean or replace the filter element as necessary. To clean air filters:

- For foam filters, wash the filter in warm water and mild detergent, then rinse and allow to dry.
- For paper filters, use compressed air to blow particles from it. The air should be blown from the engine side of the filter.
- Clean all other air filter assembly components using water and mild detergent, then dry them.
- For foam filters, place a few drops of clean engine oil on the filter then squeeze it a few times to spread the oil through the filter material and remove any excess oil.

Removal/Installation

To remove the air filter:

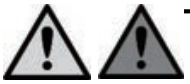
1. Remove the screws (rotate left) securing the air filter access cover and remove the cover. There are differences in appearance and the number of fasteners used between models.
2. Unscrew (rotate left) the nut / wing nut (B) securing the air filter cover.
   (C) and remove the cover from the air intake assembly (A).
3. Unscrew (rotate left) the nut (D) and remove the washer (E) (if equipped) and filter element (F).



To install the air filter:

1. Push the filter element onto the mounting screw and secure with the washer (if equipped) and nut (rotate right) and tighten. Do not over- tighten.
2. Place the air filter cover in position. Reinstall the nut / wing nut (rotate right) and tighten by hand so that all filter components are secure. Do not over-tighten.

Fuel Filter



Remove the battery from the machine before working on the fuel system.

- Operating the machine without a functional fuel filter may cause difficulty starting the engine, poor running and may also result in engine or fuel system damage and will void any warranty.
- If the fuel filter is damaged (torn, broken, disintegrating) or very dirty, replace it.

The fuel filter is used to prevent dirt and other particles from possibly entering the fuel system / engine and causing internal damage to it. The fuel filter requires regular maintenance as per the maintenance schedule. After working on the fuel system, ensure that there are no leaks before using the machine again.

To install the fuel filter:

1. Place the filter element into the housing. Ensure that the smaller hole (X) is facing towards the bottom of the housing. This is so the filter element seals against the spring-loaded rubber washer inside the housing.
2. Bring the housing / filter assembly up to the yoke and screw it on (rotate right) to the filter bolt. Screw the housing on firmly by hand.
3. Tighten the hose connection bolt. Do not over-tighten.

Battery

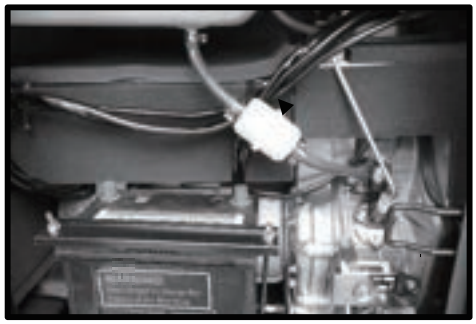
Always replace the battery with a battery of the same voltage and current specification as that of the original battery.

Electric start models feature a 12V battery for engine starting. The generator charges the battery during normal operation; however, the battery will eventually fail and require replacement. The battery also has circuit-breaker protection on the starter circuit. If the battery does not appear to be functional, check the circuit-breaker and reset it before replacing the battery.

Battery Removal/Installation

To remove the battery:

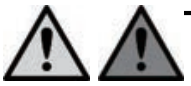
1. Switch OFF the engine.
2. Open the front engine access cover to access the battery.
3. Disconnect the **BLUE NEGATIVE** cable from the battery **NEGATIVE** terminal.
4. Disconnect the **RED POSITIVE** cable from the battery **POSITIVE** (+) terminal.
5. Using a suitable spanner, remove the battery bracket, then carefully remove the battery from the machine. Ensure that the battery terminals do NOT contact any part of the machine.



To re-install and connect the battery:

1. Carefully insert the battery into the machine. Ensure that the battery terminals do NOT contact any part of the machine, and that the terminals are near the applicable battery cable.
2. Re-install the battery bracket so that the battery is securely held.
3. Connect the **RED POSITIVE** (+) cable to the **POSITIVE** (+) battery terminal and firmly secure it.
4. Connect the **BLACK NEGATIVE** (-) cable to the **NEGATIVE** (-) battery terminal and firmly secure it.
5. Ensure that the rubber caps are covering the battery terminals and are fitted securely.
6. Close the engine access cover.

Transportation and Storage



Always ensure that the machine is cool enough to touch before transporting or storing.

- Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- Always transport the machine with the fuel tap and engine ON / OFF switch (where applicable) in the "OFF" position.
- Drain the fuel tank before transportation or storage.

Preparing for Transport and Storage

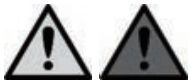
- Drain the fuel system by allowing the engine to run until it stops. It is advised to have the fuel tank as empty as possible before draining.
- Ensure that the fuel tap (if applicable), engine ON/OFF or key switch (where applicable) is in the "OFF" position.
- Disconnect the spark plug lead.
- Avoid exposing the equipment to direct sunlight, particularly during transportation.
- Ensure the equipment is secure and upright during transport.
- Store the unit in a dry, well-ventilated area and out of the reach of children.

Long Term Storage

Follow the normal procedures for storage, then:

- Remove the spark plug and put 10ml of clean engine oil into the cylinder. Re-install the spark plug.
- Cover the equipment.

Troubleshooting



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- Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see Engine Oil. **Failure to add engine oil will void the product warranty**.
- Do not have the engine running during inspection and maintenance unless specifically required.
- The engine should be cool enough to touch before performing maintenance activities.
- Some maintenance activities may be beyond the scope of some users. Do NOT attempt procedures that you are not comfortable with, or do not have the necessary tools, experience or knowledge for – take the unit to an authorised service centre or qualified technician for servicing.

The following information may assist in identifying a problem and rectifying it.

Difficulty starting the engine.

Possible Fault	Action
Lack of fuel	Check that there is fuel in the tank and the fuel tap is in the "ON" position. • To further check if fuel is reaching the engine and check if fuel drains.
Engine "OFF"	Ensure engine ON/OFF switch is in the "ON" position.
Not enough engine oil	Check engine oil level and ensure it is at or just below the MAX indicator. After topping up, shake the generator from side to side a little to distribute the oil.
Engine "flooded" with fuel	Place the choke in "HOT" or "RUN" position. Leave the ON/OFF switch in the "OFF" position. Pull the starter cord several times to assist clearing excess fuel from engine before attempting to start engine.

Electric engine start not working.

Possible Fault	Action
Battery fuse blown	Check and replace fuse if required.
Battery no longer serviceable	Replace battery.

Engine starts but does not idle.

Possible Fault	Action
Blocked air filter	Perform an air filter service.
Idle speed requires adjustment	Adjust idle speed until engine runs smoothly and at a reasonable speed when idling. For fuel-injected models, idle speed adjustment should not be required.

Difficulty restarting the engine after use or engine stops suddenly during use.

Possible Fault	Action
No fuel or engine oil	Check fuel level and ensure adequate fuel is available. For some engines, an engine oil sensor will automatically switch off the engine or prevent starting if a low engine oil level is detected.
Overheating	Allow engine to cool before restarting. If possible, improve engine cooling, such as operating in lower temperatures or in shade etc.
Fuel system blocked	Clean the fuel system.

Reduced engine speed/power during use.

Possible Fault	Action
Blocked air filter	Perform an air filter service.
Carbon build-up in engine and/or entry to exhaust silencer	Remove the engine cylinder head and clean any carbon from the combustion chamber. For the exhaust silencer, remove it and clean any carbon deposits from the exhaust port.
Fuel system blocked	Clean the fuel system.

Generator runs, but connected devices are not receiving power.

Possible Fault	Action
Generator overloaded	Check if **Overload** indicator is illuminated (red). Stop the generator and disconnect all devices. Start the generator and check that **Overload** indicator is not lit and that the **Power** indicator is illuminated green. Connect a device and check that it is being powered properly, if not contact an authorized service centre.

Generator runs and AC outputs OK, but no DC output

Possible Fault	Action
DC output over-current protection switch tripped	Reset DC over-current protection switch.

Specifications

Engine Type	4-stroke, single cylinder, direct injection diesel
Fuel Type	Commercial light fuel diesel
AC Voltage	240V 50Hz
DC Output	12V - 8.3A
Engine Oil Type	SAE 10W-30 automotive engine oil recommended for general use / 10W-40 / 15W-30 / 15W-40 non-synthetic engine
Engine Oil Capacity	Approximately 1.65L (always check level)
Rated Continuous Operation	4hrs (100% load) 6 hours (50% load)

Engine Service and Maintenance Record

Use the following tables as a record of machine servicing and maintenance. Keeping accurate records will help ensure longest machine service life and may simplify fault diagnosis and any possible warranty claims. Fill out date, number of hours of use and the activity performed.

Date	Hours Use	Maintenance Task / Notes

Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally.

- Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.
- Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use. Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).
- Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.
- Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.
- If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.

WARRANTY INFORMATION

WARRANTY CONDITIONS

Thank you for purchasing a quality Maxwatt Power product.

Subject to the exclusions set out below.

Maxwatt Power Products PTY Ltd (the “Company") warrants that that this product will be free from defects in materials or workmanship for (2) years or (500) operating hours, whichever occurs
first, from the date of original sale (hereinafter the “Warranty Period") in normal domestic applications such as personal, residential household or recreational use from the date of purchase.
A Warranty Period of (2) years or three hundred (300) operating hours, whichever occurs first, shall apply in commercial applications such as income producing, rental or other business-related use. Goods sold to a Consumer with an Australian Business Number shall be deemed as being used in a commercial application.
The Warranty Period is continuous from the date of original sale and does not restart upon the repair or replacement of the Goods or any part thereof.
The benefits conferred by this warranty are in addition to all rights and remedies which you may be entitled to under the Australian Consumer Law and any other statutory rights you may have under other applicable laws. This warranty does not exclude, restrict, or modify any such rights or remedies.

LIMITED WARRANTY

“This is a "walk in" warranty policy and is limited to the range of generators specified herein". We recommend that you take the generator to the nearest service agent for assistance. Please visit
www.maxwatt.com.au for more information. Upon return -transportation charges shall be borne and prepaid by the Consumer -to the Company's or its nominated dealer's premises within the Warranty Period, the Company shall repair or replace, at its option, any Goods which it determines to contain defective material or workmanship and shall return said Goods to the Consumer free-on-board at the Company's or agent's premises. The repair or replacement work will be scheduled and performed according to the Company's normal workflow and availability of replacement parts.

The Company shall not be obligated, however, to repair or replace Goods which have been repaired by others; abused; improperly installed, operated, maintained, repaired, transported, or stored; not serviced to schedule using genuine spare parts; altered or otherwise misused or damaged in any way. This warranty does not apply where a defect or other issue with the product is caused by normal wear and tear, misuse, or abuse of this product.

WHAT THE APPOINTED SERVICE AGENT WILL REPAIR OR REPLACE UNDER WARRANTY:

"The appointed Service Agent will repair or replace, at its sole discretion, any part that is proven to be defective in material or workmanship under normal use during the applicable warranty time period. Warranty repairs will be made without any charge for parts and labour.
All parts replaced will be considered as part of the original product and the warranty on such parts will expire coincident with the original product warranty.

WARRANTY INFORMATION

EXCLUSIONS TO THIS LIMITED WARRANTY INCLUDE:

Neglect in the periodic maintenance as specified in the owner's manual.

Improper repairs or maintenance including any repairs and or maintenance carried out by a non- accredited service agent.

Operating methods other than those indicated in the owner's manual.

The use of non-genuine parts and or accessories other than those supplied by an accredited service agent.

Normal wear and tear including but not limited to the fading of painted or plated surfaces.

Consumable parts including but not limited to keys, spark plugs, fuel and oil filters, recoil starter ropes, wheels, lubricants, oil, grease, and fuel.

Cleaning adjustments and normal periodic maintenance work including but not limited to cleaning the battery, carburetor, engine oil, fuel tank and injectors.

Overloading resulting in the damage of the circuit breaker, stator and rotor. Charging and proper maintenance of the battery.

Correct preparation when using the generator for the first time as set out in the owner's manual.

Fire damage because of but not limited to overloading, incorrect installation, incorrect re-fueling and any other causes as set out in the owner's manual.

Damage to any electronic and or electrical appliances connected to the generator.

BELOW IS A TABLE OF PARTS THAT ARE LIMITED BY THIS WARRANTY

BELOW TABLE OF PARTS THAT ARE LIMITED BY THIS WARRANTY:

PARTS	OUT OF BOX FAILURE(LESS THAN 20 RUNNING HOUR)
STATOR	X
ROTOR	X
CIRCUIT BREAKER	X
FUEL INJECTION PUMP	X
VOLTAGE STABILIZER	X
BATTERY	X

***NOTE:**

OUT OF BOX FAILURE REFERS TO A MACHINE THAT HAS RUN FOR <20 MINUTES.

WARRANTY INFORMATION

DISCLAIMER OF IMPLIED WARRANTIES

Maxwatt Power Products disclaims any responsibility for the loss of time or use of the product, transportation, commercial loss or any other incidental or consequential loss or damage. Any implied warranties are limited to the duration of this written limited warranty policy and procedures manual.

Proof of Purchase

It is recommended that you keep a copy of the original tax invoice for your records.

Warrantor

Name: Maxwatt Power Products Pty Ltd

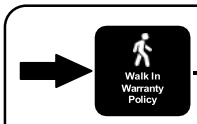
Address: Unit 15/16 1440 New Cleveland Road Chandler 4155

Phone:0737325363

Email: customercare@maxwatt.com.au

Web: www.maxwatt.com.au

Please Note the Following Terms & Conditions.



— Customer is required to return the generator to the store.

— The generator will be repaired at no charge to the customer should the fault be deemed a manufacturer defect only.

— The approximate lead time for repairs is**14 -21 working days** from the time the generator is received at the Maxwatt Service Center.

— A copy of the proof of purchase is required when returning the generator for repairs. The warranty is null and void without a copy of proof of purchase.

WARRANTY INFORMATION

✕ *NOTE: THE FOLLOWING IS EXCLUDED FROM THE MANUFACTURER WARRANTY POLICY.

✕ 

— Neglect in the periodic maintenance as specified in the owners / operator's manual.

✕ 

— Operating methods other than those indicated in the owner / operator's manual.

✕ 

— Overloading resulting in the damage to the Inverter / Circuit Breaker / Alternator.

✕ 

— Improper repairs or maintenance carried out.

✕ 

— Normal **"wear & tear"** due to day- to-day use & operation.

✕ 

— The in-correct installation resulting in the damage to the Inverter / Alternator / Control Panel and remote.

✕ 

✕ 

√ CHECK LIST PRIOR TO SENDING THE GENERATOR IN FOR ASSESSMENT / REPAIR.

√ 

— Ensure that the battery is charged.

√ 

— Ensure that there is the correct amount of oil and that it does not need to be replaced.

√ 

— Ensure that there is sufficient fuel.

√ 

— Ensure that the spark plug does not need to be cleaned or replaced.

√ 

— Ensure that the generator has been serviced if it has run for more than 50 hours. Check the owners / operator's manual for information.

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