

MECH MARVELS

PORTABLE GENERATORS

MM2350/C/DF/DFC

MM4350/C/DF/DFC

MM9350E/EC/DFE/DFEC

INSTRUCTION MANUAL



READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.

This manual provides important information on proper operation & maintenance. Every effort has been made to ensure the accuracy of this manual. These instructions are not meant to cover every possible condition and situation that may occur. We reserve the right to change this product at any time without prior notice.

**IF THERE IS ANY QUESTION ABOUT A CONDITION BEING SAFE OR UNSAFE,
DO NOT OPERATE THIS PRODUCT!**

DO NOT RETURN THIS GENERATOR TO THE RETAILER

If you experience a problem, have questions, or need parts for this product, please call Customer Service at 1-800-832-2966, Monday-Friday, 9 AM - 6 PM Central Time. A copy of the sales receipt is required.

FOR CONSUMER USE ONLY – NOT FOR PROFESSIONAL USE.

KEEP THIS MANUAL, SALES RECEIPT & APPLICABLE WARRANTY FOR FUTURE REFERENCE.

DANGER

CARBON MONOXIDE

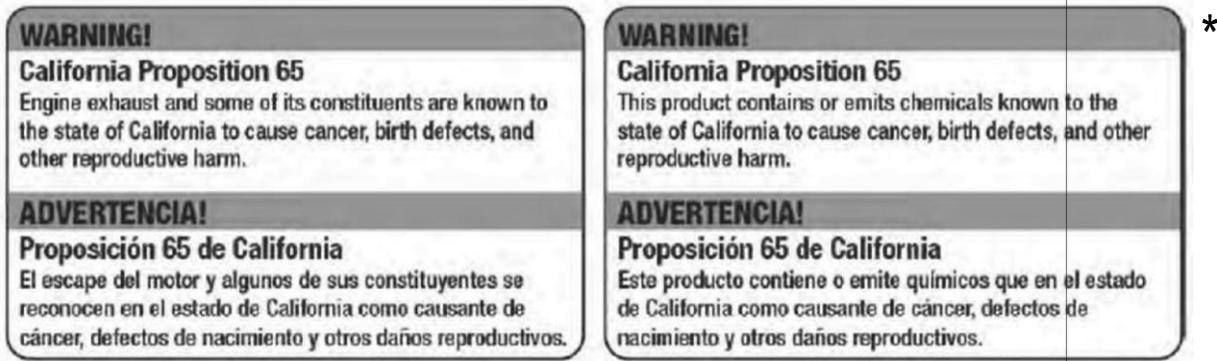
Using a generator indoors **CAN KILL YOU IN MINUTES**

Generator exhaust contains carbon monoxide (CO). This is a poison 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.

CALIFORNIA PROPOSITION 65

WARNING: This product, or the exhaust from this product, may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

For more information, view OEHHA's Proposition 65 page: <https://www.p65warnings.ca.gov>



- ONLY use a generator outside and far away from windows, doors, and vents. These opening 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.
- NEVER use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up quickly in these areas. Using a fan, or opening windows and doors DOES NOT supply enough fresh air.



CO DETECTOR MODELS

Mech Marvels Generators Models MM2350C, MM2350DFC, MM4350C, MM4350DFC, MM9350EC, and MM9350DFEC are equipped with an optional CO Detector with auto-shutdown feature. These units **MUST STILL BE PLACED OUTDOORS**, away from building openings such as doors and windows. Even though these units will detect the presence of carbon monoxide (CO) and automatically shut down, Mech Marvels Generators should **NEVER** be run in an enclosed area.

Model MM2350/C/DF/DFC

This unit is a Gasoline or Gasoline/Propane (LPG) Dual Fuel powered generator.

FEATURES:

- 1500 Surge / 1200 Running Watts Output
- 120VAC Operation
- 3.0 HP Engine, 4 Stroke
- Displacement (CC): 94
- Low Oil Shut Off
- UL Listed Electrical Components
- Engine Shut Off Switch
- Spark Plug Model: Torch E7RTC or NGK BPR7HS
- 1.5 Gallon Gasoline Fuel Tank
- Complies with EPA & CARB* Emissions Standards
- Decibel Rating < 69 dB
- Run time =9hrs @ 50% load Gasoline

Power Outlets:

- (1)-12V DC Outlet
- (2)-120V Outlets



Model MM4350/C/DF/DFC

This unit is a Gasoline or Gasoline/Propane (LPG) Dual Fuel powered generator.

FEATURES:

- 4000 Surge / 3200 Running Watts Output
- 120VAC Operation
- 7.0 HP Engine, 4 Stroke
- Displacement (CC): 212
- Low Oil Shut Off
- UL Listed Electrical Components
- Engine Shut Off Switch
- Spark Plug Model: Torch F7RTC or NGK BPR6ES
- 4 Gallon Gasoline Fuel Tank
- Complies with EPA & CARB* Emissions Standards
- Decibel Rating < 70 dB
- Run time =10hrs @ 50% load Gasoline
- Propane Tank not included

Power Outlets:

- (1)-12V DC Outlet
- (4)-120V Outlets
- (1)-120V RV Outlet



Model MM9350E/EC/DFE/DFEC

This unit is a Gasoline or Gasoline/Propane (LPG) Dual Fuel powered generator.

FEATURES:

- 9000 Surge / 7500 Running Watts Output
- 120VAC Operation
- 15 HP Engine, 4 Stroke
- Displacement (CC): 420
- Low Oil Shut Off
- UL Listed Electrical Components
- Engine Shut Off Switch
- Spark Plug Model: Torch F7RTC or NGK BPR6ES
- 7.5 Gallon Gasoline Fuel Tank
- Complies with EPA & CARB* Emissions Standards
- Decibel Rating < 73 dB
- Run Time = 11hrs @ 50% load Gasoline

Power Outlets:

- (1)-12V DC Outlet
- (4)-120V Outlets
- (1)-120V RV Outlet
- (1) 120/240V Outlet



CAUTION

For all MECH MARVELS Generators in this Manual:

Recommended Fuel types:

- Unleaded Gasoline Only with Octane rating of 87 or higher, and no more than 10% Ethanol content.
- Liquid Propane Gas (commonly referred to as LP, LPG, and Propane).

High Altitude Use: This generator is not recommended for high altitude use (above 3,000 feet) without adjustment to compensate for the decreased airflow available.

If you want to use a propane tank larger than 20lbs, call Customer Service at 1-800-832-2966.

Surge/Running watts can be reduced by up to 10% when Propane Fuel is used instead of Gasoline.

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SAFETY SYMBOLS, WORDS AND LABELS

What You Need to Know About Safety Instructions

Warning and Important Safety Instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when operating or cleaning tools and equipment.

Always contact your dealer, distributor, service agent or manufacturer about problems or conditions you do not understand.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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 used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

High Altitude Use:

This generator is not recommended for high altitude use above 3,000 feet.

Legal Requirements:

Federal and/or State Occupational Safety and Health Administration (OSHA) regulations, local codes, and/or ordinances may apply to the intended use of this generator. Consult a qualified electrician, electrical inspector, and/or the local agency having jurisdiction in your area. Some areas require generators to be registered with local utility companies. Additional regulations may apply if this generator will be used at a construction site.

IMPORTANT SAFETY INSTRUCTIONS

Before using this generator and if you have any questions regarding the hazard and safety notices listed in this manual and/or on this generator, call 1-800-832-2966, Monday - Friday, 9 AM - 6 PM Central Time.

DANGER

Carbon Monoxide Gas: When in operation, the exhaust from this generator contains poisonous carbon monoxide gas. Carbon monoxide gas is both odorless and colorless and may be present even if you do not see or smell gas. Breathing this poison gas can lead to headaches, dizziness, drowsiness, loss of consciousness and eventually death.

Use this generator ONLY outdoors in non-confined areas.

Keep at least several feet of clearance on all sides to allow for proper ventilation for this generator.

DANGER

Powerful Voltage: This generator produces powerful voltage, which can result in electrocution.

Only electrical devices should be plugged into this generator, either directly or with an extension cord. NEVER connect a building electrical system to this generator without a qualified electrician completing the installation. **Doing so voids your warranty.** Such connections must isolate generator power from utility power and comply with local electrical laws and codes. Failure to comply can create a back feed into utility lines creating an electrocution hazard, which may result in serious injury or death. Such a back feed may cause this generator to explode, burn, and create fires when utility power is restored.

Do not use this generator in wet conditions (rain, snow, active sprinkler systems, wet hands, etc.). Always keep this generator dry and operate it with dry hands.

Do not touch bare wires or outlets (receptacles).

Do not allow children or non-qualified persons to operate this generator.

DANGER

High Temperatures: This generator produces heat when in operation. Temperatures near the exhaust can exceed 150° Fahrenheit (65° Celsius).

Do not touch hot surfaces. Observe all warning placards on this generator denoting hot surfaces.

Allow this generator to cool for several minutes after use before touching the engine, muffler, or other areas that are hot during operation and before storing or transporting the generator.

Hot exhaust may ignite some materials. Keep flammable materials away from this generator.

Keep several feet of clearance on all sides of this generator during operation. Do not enclose this generator in any structure.

WARNING

Usage: Avoid the use of extension cords if possible. If you choose to use them, be sure they are sized adequately to handle the flow of electricity. An undersized cord can overheat, short out and cause a fire.

WARNING

Usage: Consult a physician(s) before using this generator if using a pacemaker. Electromagnetic fields in close proximity to a heart pacemaker could cause a pacemaker to malfunction or fail. Caution is necessary when near the engine, or when using the recoil starter.

CAUTION

Usage: Misuse of this generator can damage it or shorten its life.

- Use this generator only for its intended purpose.
- Operate this generator only on a dry, level surface.
- Allow this generator to run for several minutes before connecting any electrical devices.
- Promptly turn off any malfunctioning devices and disconnect them.
- Do not operate an excessive number of electrical devices in excess of the wattage capacity of this generator.
- Do not turn on electrical devices until *after* they are connected to this generator.
- Turn off all connected electrical devices before stopping this generator.

CAUTION

Usage: Prolonged exposure to high noise levels can be hazardous to hearing. Always wear ANSI-approved hearing protection when operating or working around the generator when it is running.

DANGER

Propane Safety: Propane gas (also known as LPG, or PG) is a flammable liquid gas under pressure which can form explosive mixtures with air, and cause other bodily harm if improperly handled.

In case of inhalation: Persons suffering from lack of oxygen should be immediately moved to fresh air. If a victim is not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. ALWAYS obtain medical treatment immediately for any breathing difficulties.

Contact with liquid propane or cold vapor can cause freezing of tissue (frostbite):

In case of eye contact: gently flush eyes with lukewarm, **NOT HOT**, water and seek medical attention immediately.

In case of skin contact: Contact with liquid or cold vapor can cause frostbite. Immediately immerse the affected area in warm water, not to exceed 105°F (40°C).

DANGER

Fire and Explosion Hazards: Propane gas (also known as LPG, or PG) is a flammable liquid gas under pressure which is easily ignited.

Propane is heavier than air: It can collect in low areas, or travel along the ground where an ignition source may be present. Pressure can also build up in the container due to heat, and the container can rupture if the relief devices should fail to function.

Storage: Cylinders should be stored upright with valve protection in place. They should also be secured to prevent falling or tip-over. Protect cylinders from physical damage, DO NOT drag, roll, slide or drop, and NEVER handle propane cylinders by the valve. Use a suitable hand truck or cart for cylinder movement. Ensure all storage areas meet Class 1 Hazardous area standards, preferably outdoors, away from any source of ignition, with explosion proof electrical enclosures, and posted "No Smoking or Open Flames" signs.

DANGER

Fire and Explosion Hazards: Propane smells like rotten eggs, a skunk's spray, or dead animal. IF YOU SMELL GAS, NO FLAMES OR SPARKS! Immediately put out all smoking materials or other open flames. Do not use electrical devices such as lights, appliances, or cell phones—sparks from these sources can trigger an explosion or fire. It can collect in low areas, or travel along the ground where an ignition source may be present. Pressure can also build up in the container due to heat, and the container can rupture if the relief devices should fail to function.

Carbon Monoxide (CO): Carbon monoxide is a byproduct of combustion and is a VERY DANGEROUS gas. CO can come from ANY fuel burning device. Very high levels of CO are possible from a device that is not operating properly, or from a chimney or venting system that is not functioning or becomes blocked. **CARBON MONOXIDE CAN BE DEADLY!** High levels of CO can cause dizziness, lack of consciousness, brain damage, and ultimately death.

Symptoms of CO Poisoning include: headache, dizziness, fatigue, shortness of breath, and nausea.

If you suspect CO is present, ACT IMMEDIATELY:

- 1: If you or anyone shows physical symptoms of CO poisoning, get everyone out of the area and call 911 or your local Fire Department.
- 2: If it is safe to do so, open windows and doors to allow fresh air in, and shut off any devices you suspect may be releasing CO.
- 3: If no one has symptoms, but you suspect that CO is present, call your propane retailer, or qualified service personnel to check CO levels and ensure equipment is operating and being vented properly.

WARNING

Propane (LPG) as your Fuel Source: This generator may emit highly flammable and explosive vapors when using LPG as the fuel source. Any nearby flame source could cause an explosion resulting in bodily harm or even death.

Do not operate this generator near any open flame.

Always operate this generator on a firm, level surface.

Before starting this generator, inspect the LPG tank and valves for damage or leaks. You can use soapy water to spray the connections and look for bubbles indicating a leak. Attach only approved tanks that have been properly filled by an approved filling station. DO NOT light or smoke cigarettes.

Replace the hose at the first sign of cracks or leaks, or if age-cracking becomes apparent.

Always handle Propane fuels and generators outdoors.

Before transporting, disconnect the tank and close all valves. Ensure the generator fuel valve is off, and disconnect the spark plug.

⚠ WARNING

EXHAUST CONTAINS POISONOUS CARBON MONOXIDE GAS THAT CAN BUILD UP TO DANGEROUS LEVELS IN CLOSED AREAS. BREATHING CARBON MONOXIDE CAN CAUSE UNCONSCIOUSNESS OR DEATH. Never run the generator in a closed or even partly closed area where people may be present.

⚠ DANGER

IMPROPER CONNECTIONS TO A BUILDING CAN ALLOW ELECTRICAL CURRENT TO BACKFEED INTO UTILITY LINES, CREATING AN ELECTROCUTION HAZARD. Connections to a building must isolate generator power from utility power and comply with all applicable laws and electrical codes.

⚠ WARNING

THE GENERATOR IS A POTENTIAL SOURCE OF ELECTRICAL SHOCK IF NOT KEPT DRY. Do not expose the generator to moisture, rain or snow. Do not operate the generator with wet hands. READ OWNER'S MANUAL CAREFULLY BEFORE OPERATION.

⚠ WARNING

This product, or exhaust from the generator, can expose you to chemicals including lead compounds which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

⚠ WARNING

THIS GENERATOR PRODUCES HEAT WHEN RUNNING. TEMPERATURES NEAR EXHAUST CAN EXCEED 150°F. (65° C) DO NOT TOUCH HOT SURFACES. PAY ATTENTION TO WARNING LABELS ON THE GENERATOR DENOTING HOT PARTS OF THE MACHINE. ALLOW GENERATOR TO COOL AFTER USE BEFORE TOUCHING ENGINE OR AREAS WHICH HEAT DURING USE.

⚠ WARNING

Propane smells like rotten eggs, a skunk's spray, or a dead animal. IF YOU SMELL GAS- NO FLAMES OR SPARKS! Immediately put out all smoking materials and other open flames. Do not operate lights, appliances, telephones, or cell phones. Flames or sparks from these sources can trigger an explosion or a fire.

In addition to the previously described safety information, familiarize yourself with all safety and hazard notices on this generator:

⚠ DANGER POISONOUS GAS

Generator exhaust contains toxic carbon monoxide gas. Breathing exhaust can cause loss of consciousness and shortness of breath. NEVER operate generator in poorly ventilated areas.

USE THIS GENERATOR ONLY OUTDOORS IN NON-CONFINED AREAS. DO NOT SECURE THE GENERATOR WITH A CHAIN OR ROPE, AS THIS WILL MAKE IT DIFFICULT TO MOVE IN AN EMERGENCY.

⚠ WARNING

Risk of electric shock. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

⚠ WARNING! RISK OF ELECTRIC SHOCK

This generator produces high voltage. Always ground properly before use. Do not connect to any building electrical system. Never use in rainy or wet conditions. Never touch bare wires or receptacles. Never allow children or non-qualified person to operate.

⚠ DANGER

Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.



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



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

Avoid other generator hazards. READ MANUAL BEFORE USE.

⚠ CAUTION! HOT EXHAUST

DO NOT TOUCH

⚠ CAUTION!
HIGH TEMPERATURE
DO NOT TOUCH

PACKAGE CONTENTS

The following items are supplied with MECH MARVELS Portable Generators. Verify that all items are included.

STOP!

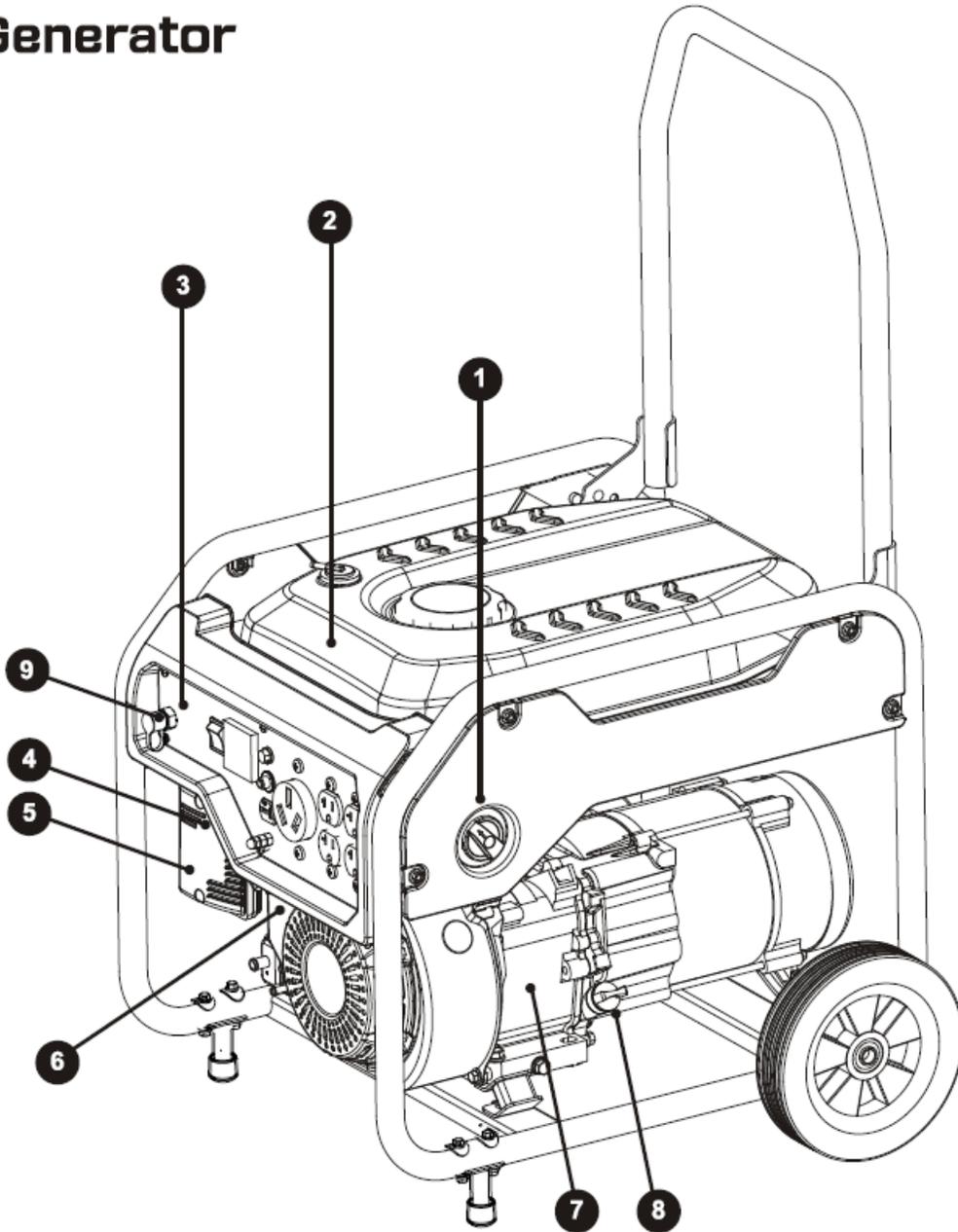
If there are missing items, call 1-800-832-2966 Monday - Friday, 9 AM - 6 PM Central Time for customer service. **DO NOT RETURN THIS GENERATOR TO THE RETAILER.**

Item List:	
	Set of 2 DC connector wires for charging 12 Volt automotive-type batteries
	Spark plug wrench
	Funnel for adding Oil
	5 Ft. Regulator Hose Kit (Dual Fuel Units only) (YOU MUST USE THE SUPPLIED REGULATOR FOR SAFE OPERATION)

GENERATOR COMPONENTS

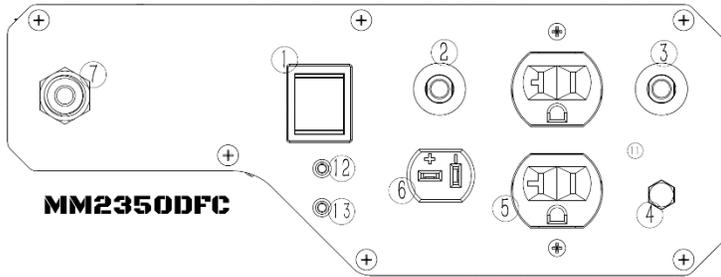
Observe the locations and functions of the various components and controls of this generator.

Generator

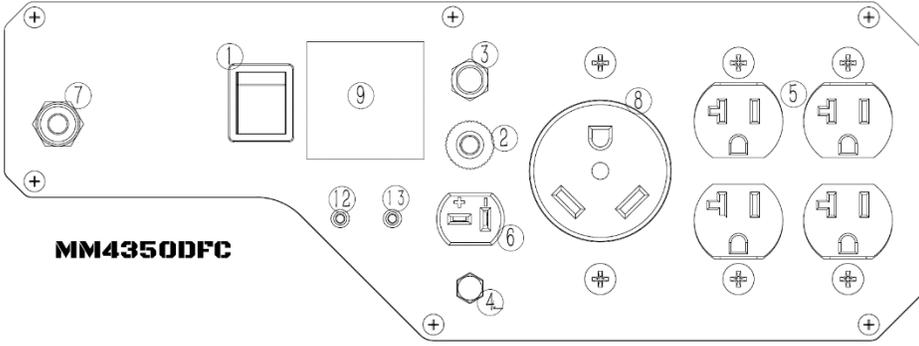


- | | |
|------------------|----------------------------|
| 1. Fuel Valve | 6. Recoil Starter |
| 2. Fuel Tank | 7. Low Oil Shutdown |
| 3. Control Panel | 8. Oil Filler Cap/Dipstick |
| 4. Choke Lever | 9. Propane Inlet |
| 5. Air Filter | |

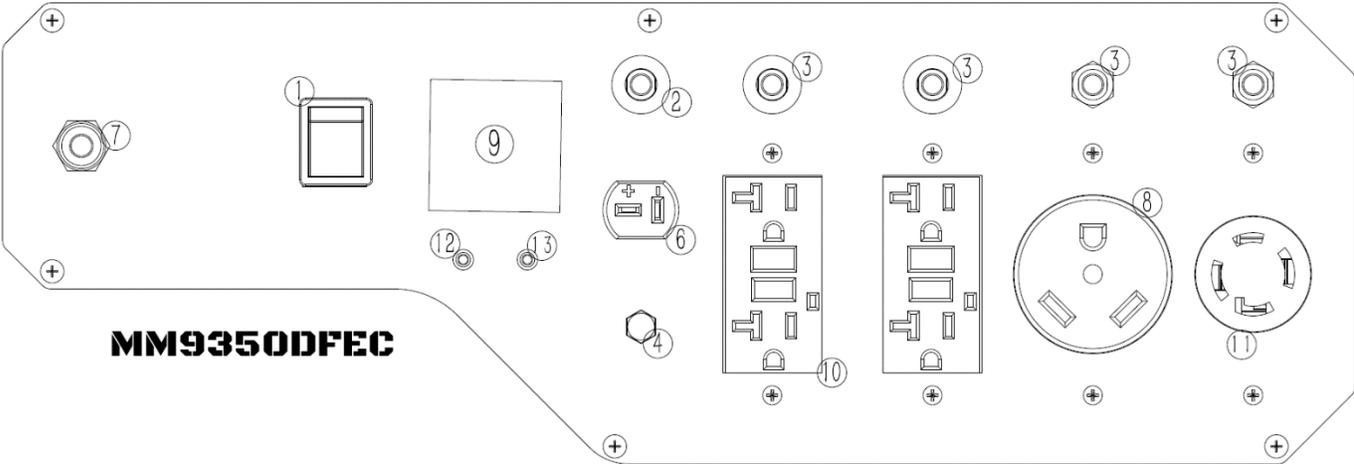
Control Panel Detail



MM2350DFC



MM4350DFC



MM9350DFEC

- | | | |
|-------------------------------|------------------------|----------------------------------|
| 1. Engine On/Off/Start Switch | 6. 12V DC Connector | 10. 120V GFCI Duplex Outlets |
| 2. DC Circuit Breakers | 7. Propane (LPG) Inlet | 11. 120/240VAC Twist Lock Outlet |
| 3. AC Circuit Breakers | 8. 120V RV Outlet | 12. CO Detector Alarm Light |
| 4. Ground Terminal | 9. Voltage Meter | 13. CO Detector Fault Light |
| 5. 120V Duplex Outlets | | |

120VAC Duplex outlets are protected by up to 20A Circuit Breakers

Each Duplex Outlet supports up to 2400 Watts

120VAC RV Outlet is protected by 30A Circuit Breaker

Each RV Outlet supports up to 3600 Watts

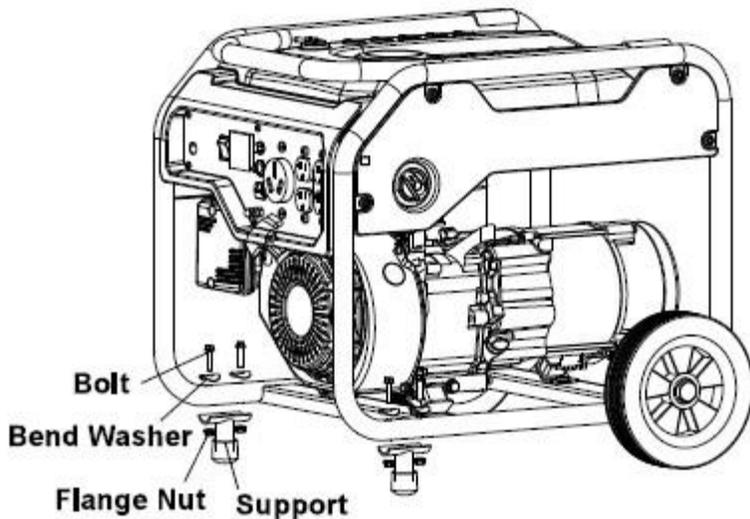
120/240VAC Twist-Lock Outlet is protected by 30A Circuit Breakers on each 120VAC leg

Twist-Lock Outlet will support up to 7200 Watts with a 4-wire connection

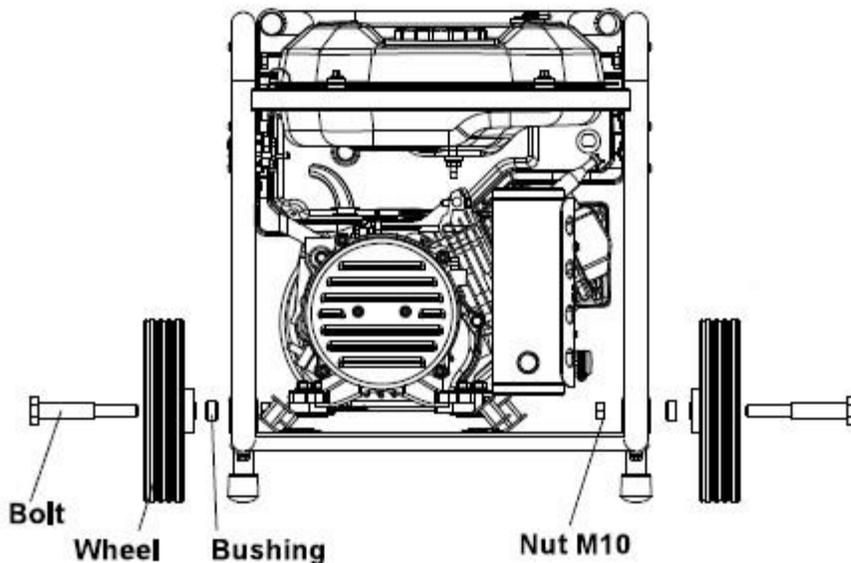
This generator supports 120/240VAC/60Hz Loads only!

GENERAL ASSEMBLY INSTRUCTIONS

Installing Wheels and Support Feet



1. Before adding oil or fuel, install the wheels and feet on Models 4350/C/DF/DFC, 9350E/EC/DFE/DFEC.
2. Carefully tip the generator backwards when looking at the control panel and insert the support feet under the frame.
3. Resting the generator on the feet, use the included 6mm nuts and bolts to attach them to the frame.
4. Prepare one of the wheels by inserting the axle bolt and sliding a bushing in place.
5. Carefully lift the rear of the generator and slide the assembly into the frame bracket. Secure the axle bolt with the included lock nut.
6. Install the wheel on the opposite side following instructions 4 and 5.
7. The handle can now be unfolded as well by removing the safety securing pin and lifting the handle upward.
8. Secure the handle in the open position by re-inserting the safety locking pin.
9. Connect the battery cables to the battery for electric start if equipped; red ended cable to the positive (+), and black ended cable to the negative (-).



PREPARING THE GENERATOR FOR USE

Using this Generator for the First-Time

STOP!

CAUTION

The following section describes the required steps for preparing this generator for the first use. Failure to correctly perform these steps can damage this generator and/or shorten its life. If you are still unsure about how to perform any of these steps after reading this section, call 1-800-832-2966 Monday - Friday, 9 AM - 6 PM Central Time for customer service.

If this generator is being used for the first time, the following steps are required to prepare it for operation:

Step 1 - Add Oil

This generator requires engine oil to function. Engine oil is a major factor affecting engine performance and service life. When new from the package, this generator contains no oil in the engine crankcase. Add the correct quantity of oil before operating this generator for the first time. When replenishing oil for subsequent use of this generator, always ensure that this generator has the correct quantity of oil.

Model MM2350 Series Oil Capacity	13.5 Ounces
Model MM4350 Series Oil Capacity	18.6 Ounces
Model MM9350 Series Oil Capacity	28.7 Ounces
Oil Type Recommended for All Models	SAE10W-30

To add oil:

1. Confirm that the generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine as illustrated in Figure 1.
3. Using a funnel, add high detergent (automotive) motor oil to fill the engine crankcase to the correct level. SAE10W-30 oil is recommended for general, all- temperature use. **When the engine crankcase is full, the oil level should reach all the way up to the top of the threads as illustrated in Figure 2.**
4. Replace the oil filler/dipstick cap.

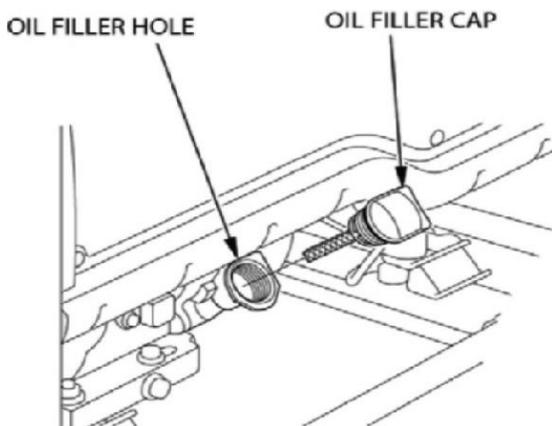


Figure 1- Oil Filler/Dipstick



Figure 2-Add oil to the top of threads

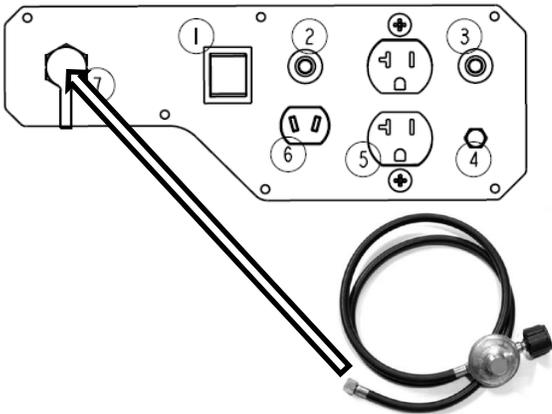
Step 2 – Fueling

Add Unleaded gasoline only with an octane rating of 87 or higher.
Maximum Capacity: 1.5 Gallons (MM2350 Series)
4 Gallons (MM4350 Series)
7.5 Gallons (MM9350 Series)

Or attach a 20lb LPG cylinder using the supplied regulator assembly

WARNING:

YOU MUST USE THE SUPPLIED REGULATOR FOR SAFE OPERATION WHEN USING LPG AS THE FUEL SOURCE



⚠ WARNING

GASOLINE IS HIGHLY FLAMMABLE AND EXPLOSIVE. YOU COULD BE BURNED OR SERIOUSLY INJURED IF THE GASOLINE IS IGNITED. Before refueling, stop the engine and keep heat, sparks and flame away. Handle fuel only outdoors. Do not fill the fuel tank above the upper limit line. Wipe up spills immediately.

Step 3 - Ground the Generator

⚠ WARNING

Failure to properly ground this generator can result in electrocution.

Ground this generator by tightening the grounding nut against a grounding wire as illustrated in Figure 3. Number 6 AWG (American Wire Gauge) stranded copper wire is generally an acceptable grounding wire. The other end of this grounding wire should be connected to a copper or brass grounding rod that is driven at least 24 inches into the earth.

Grounding codes can vary by location. Contact a local electrician for information on grounding regulations for your area.

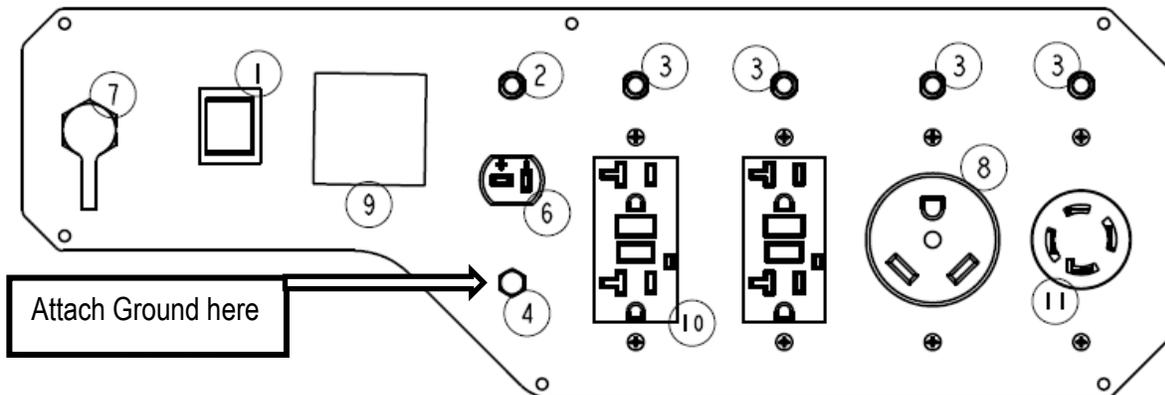


Figure 3 - Attaching the Grounding Wire to this Generator

Pre-Operation Check List

Step 1 Check that the gasoline supply is in good condition, or check that the LPG inlet connection is secured tightly and not leaking. Turn the fuel valve to "on" for gasoline, or open the valve for LPG.

Step 2 Make certain the CHOKE VALVE is at CHOKE (CLOSED) position. The generator may be hard to start if CHOKE VALVE is at the RUN (OPEN) position.

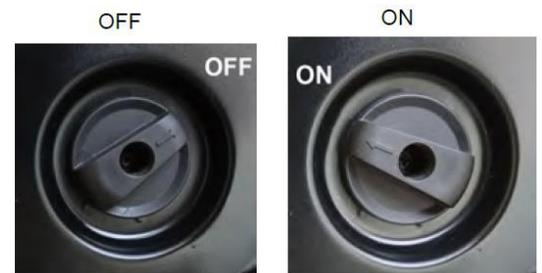
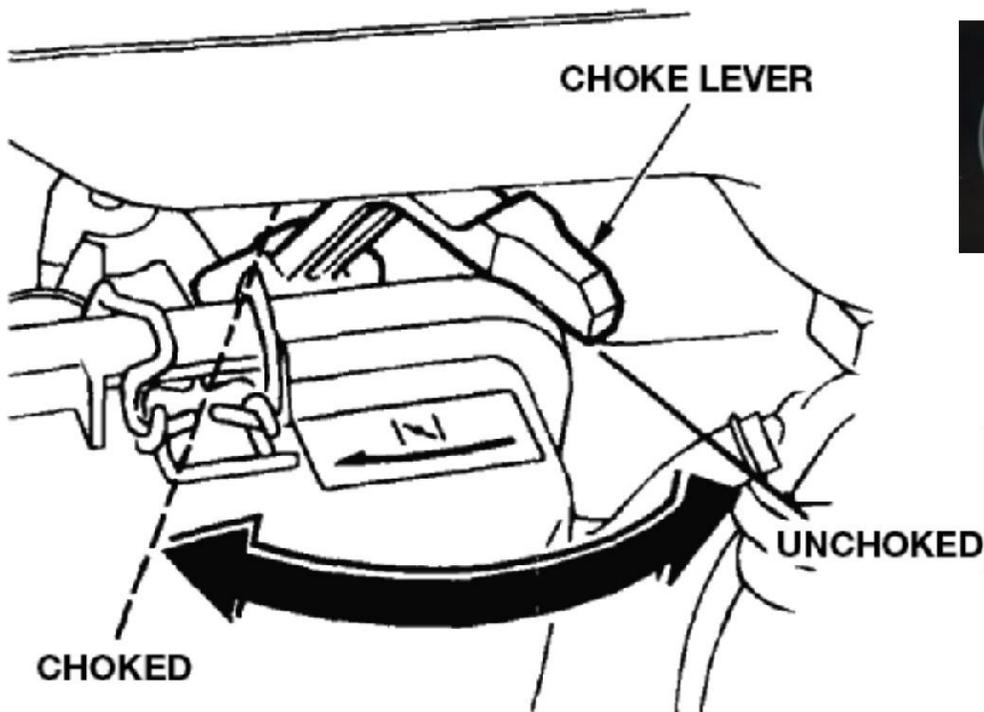
Step 3 Ensure engine oil is full.

Step 4 Make sure GROUND TERMINAL is properly grounded.

Step 5 Check AC OUTPUTS and ensure no load is connected.

Disconnect all electrical loads from the generator set before starting the engine. The generator may be hard to start if a load is connected.

Step 6 Check DC OUTPUT and ensure no load is connected.



STARTING THE GENERATOR

STOP!

Before starting this generator, confirm that all the steps in the section titled, "Preparing the Generator for Use," of this manual have been correctly completed. If unsure about how to perform any of these steps, call 1-800-832-2966 Monday - Friday, 9 AM - 6 PM Central Time for customer service.

CAUTION

Disconnect all electrical loads from this generator before attempting to start.

- Step 1 Make sure unleaded gasoline fuel has been added to the tank.
- Step 2 Turn ENGINE SWITCH to the ON position.
- Step 3 Move the CHOKE LEVER to CHOKE (Closed) position.
- Step 4 For recoil start: Pull the STARTER GRIP slowly until resistance is felt and then pull rapidly. After the engine has started, return the STARTER GRIP gently to prevent damage to the starter or housing. DO NOT allow the starter grip to snap back, return it slowly by hand. For electric start, push the ignition switch to the start position and hold until the engine starts. Once started, immediately release the switch. If engine doesn't start within 5-10 seconds, stop and allow the starter to cool. Check generator settings before trying again.
- Step 5 Set the CHOKE to the RUN (Open) position.

Choke Valve

The choke is used to provide an enriched fuel mixture when starting a cold engine. It can be opened and closed by operating it manually. Slide the knob towards CLOSED to enrich the mixture for cold starting. The choke is not needed to start a warm/hot engine.

STARTING THE GENERATOR USING PROPANE

Operate the generator in a well-ventilated area.

Do not connect any electrical devices to the generator prior to starting the engine.

1. Make sure the fuel valve is in the "OFF" position.
2. Make certain the propane hose is properly connected to the generator.
3. Connect the regulator to the LPG fuel supply and open the LPG supply valve. ENSURE THERE ARE NO LEAKS!
4. Upon initially hooking up the LPG fuel supply there will be air in the hose. The use of the choke will help clear this air during the initial start-up.
5. Typically, unless temperatures are below freezing, the choke will not be needed after the initial start-up after attaching the tank.
6. Turn the engine power switch to its "ON" position.
7. Pull on the starter slowly, until resistance is felt, then pull it briskly. For electric start models, engage the start switch until the engine starts.
8. After the engine starts, allow it to warm up to operating temperature. If the choke was necessary, it will generally need opened immediately after starting when using propane.
9. Proceed to connect desired electrical devices. Do not exceed generator capacity. Keep in mind power output can be reduced by up to 10% when using propane as the fuel source.

Switching from Gasoline to Propane

1. Disconnect all load from the generator.
2. Make sure all propane hoses are properly connected, and there are no leaks.
3. While the unit is running on gasoline, turn the fuel valve to "OFF".
4. When the generator starts to sputter/stumble, open the valve on the propane tank, and ensure the yellow fuel switch on the side of the carburetor is switched to LPG on the MM4350 and MM9350 series units.
5. Reconnect electrical loads when the generator is running smoothly.

Switching from Propane to Gasoline

1. Disconnect all load from the generator.
2. While the unit is still running, open the gasoline fuel valve.
3. Immediately close the valve on the propane tank and switch the yellow fuel switch on the side of the carburetor to "GAS" on the MM4350 and MM9350 series units.
4. Reconnect the load when the generator is running smoothly.

Subsequent Use of this Generator

For subsequent uses of this generator after the first use, certain steps still must be completed to prepare it for operation.

IMPORTANT: Be familiar with the procedures described in the previous section titled “Using the Generator for the First Time” of this manual. If not, review this section now.

Step 1 - Verify Oil Level

Even though this generator is equipped with an automatic shutoff to protect it from damage due to low oil, it is important to check the oil level in the engine crankcase before each use to ensure that there is sufficient quantity.

1. Verify that this generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine.
3. With a dry cloth, wipe the oil off of the dipstick that is located on the inside of the cap.
4. Fully insert the dipstick without screwing the filler/dipstick cap and then remove again. There should be oil on the dipstick. If there is no oil on the dipstick, or oil is visible only at the very end of the dipstick, add oil until the engine crankcase is filled. (See “Changing/Adding Oil” in the “Maintenance/Care” section of this manual).
5. Confirm that the oil filler/dipstick cap is properly screwed in place when finished verifying the oil level.

Step 3 - Ground the Generator



Failure to properly ground this generator can result in electrocution.

Ground this generator by tightening the grounding nut against a grounding wire as previously illustrated in Figure 3. A generally acceptable grounding wire is a No. 6 AWG (American Wire Gauge) stranded copper wire. The other end of this grounding wire should be connected to a copper or brass grounding rod that is driven into the earth. Grounding codes can vary by location. Contact a local electrician for information on grounding regulations for your area.

USING THE GENERATOR

After the engine has been running for several minutes, electrical devices may be connected to this generator.

AC Usage

Electrical devices running on AC current may be connected according to their wattage requirements. The rated (running) and surge wattage:

Model MM2350 Series Rated (Running) / (Surge Wattage)	1200/1500
Model MM4350 Series Rated (Running) / (Surge Wattage)	3200/4000
Model MM9350 Series Rated (Running) / (Surge Wattage)	7500/9000

The *rated (running) wattage* corresponds to the maximum wattage a generator can output on a continuous basis.

The *surge wattage* corresponds to the maximum amount of power a generator can output for a short time. Many electrical devices, such as a refrigerator, require short bursts of extra power for starting and stopping fan motors, etc., in addition to their listed rated wattage. Motorized devices typically require more than their rated wattage for startup. The surge wattage ability of a generator allows for this extra power requirement.

The total running wattage requirement of the electrical devices connected to a generator should not exceed the rated wattage of the generator itself. To calculate the total wattage requirement of the electrical devices to be connected, look up the rated (running) wattage of each device and add these numbers together to find the total wattage that all of the devices together will draw from the generator. If the total wattage of the selected devices exceeds the rated wattage of the generator, DO NOT connect all of the devices. Select a combination of the electrical devices that will have a total wattage less than or equal to the rated wattage for the generator. **Ensure appliances connected to the generator are designed to operate within +/- 10% of the rated voltage, and +/- 3% Hz of this generator’s rated frequency output, otherwise damage could result.**

SOME NOTES ABOUT POWER CORDS

Long or thin cords can require more wattage from a generator to power an electrical device. Figure 7 shows the recommended cords according to the power requirement of the electrical device. When using cords that exceed these specifications, allow for the electrical device to have a slightly higher rated wattage requirement.

Device Requirements			Max. Cord Length (ft) by Wire Gauge				
Amps	Watts (120V)	Watts (240V)	#8 wire	#10 wire	#12 wire	#14 wire	#16 wire
2.5	300	600	NR	1000	600	375	250
5	600	1200	NR	500	300	200	125
7.5	900	1800	NR	350	200	125	100
10	1200	2400	NR	250	150	100	50
15	1800	3600	NR	150	100	65	NR
20	2400	4800	175	125	75	50	NR
25	3000	6000	150	100	60	NR	NR
30	3600	7200	125	65	NR	NR	NR
40	4800	9600	90	NR	NR	NR	NR

NR = Not Recommended.

Figure 7 - Maximum Extension Cord Lengths by Power Requirement

CAUTION

This generator can run at its surge wattage capacity for only a short time. Connect electrical devices requiring a rated (running) wattage equal to or less than the rated wattage of this generator. Never connect devices requiring a rated wattage equal to the surge wattage of a generator.

A device's rated (running) wattage should be listed somewhere on the device itself and/or in its manual. If the wattage specification for a device is not available, the wattage can be calculated by multiplying the Voltage requirement (120 or 240) by the Amperage drawn.

Watts = Volts x Amperes

Or, the wattage required by a device can be estimated by using the following chart (see Figure 8). The chart provides only estimates and it is better to know the exact wattage of each electrical device to be powered by this generator.

Electrical Device	Rated (Running) Watts	Additional Surge Watts
air compressor (1 HP)	1500	3000
air compressor (1 - 1/2 HP)	2500	2500
airless sprayer (1/3 HP)	600	1200
box fan	300	600
clock radio AM/FM	300	0
coffee maker	1500	0
computer w/17-inch monitor	800	0
deep freezer	500	500
electric drill (1/2 HP)	1000	1000
DVD/CD player or VCR	100	0
furnace fan blower (1/2 HP)	800	1300
garage door opener (1/2 HP)	480	520
hot plate	2500	0
light bulb (75 watt)	75	0
microwave oven (1000 watt)	1000	0
quartz halogen work light	1000	0
refrigerator/freezer (18 Cu. Ft.)	800	1600
saw - circular (7 1/4 inch)	1500	1500
saw - miter (10 inch)	1800	1800
saw - reciprocating	960	1040
security system	180	0
electric stove - single element	1500	0
sump pump	800	1200
television (27-inch color)	500	0
electric water heater (40 gallon)	4000	0
window air conditioner (10000 BTU)	1200	1800
window fan	300	600

Figure 8 - Estimated wattage requirements for common electrical devices.

Connect electrical devices to this generator according to the following procedure:

1. Allow the engine to run for several minutes after it has been started.
2. Confirm that the electrical device is switched off prior to plugging it into this generator.

CAUTION

Connect only electrical devices that are in good working order. Faulty devices or power cords present the risk of electrical shock. Immediately turn off and disconnect any device that commences to operate abnormally, sluggish or abruptly stops. Determine if the problem was the device or the rated load capacity of this generator has been exceeded.

NOTE: While this generator is running, power is available from either the standard 120 Volt outlets or the 12 Volt DC outlet. Both 120 Volts and 12V can be simultaneously drawn from this generator.

3. Turn on the connected electrical devices beginning with the device with the highest rated wattage requirement and then each additional device with the next lower rated wattage requirement.

CAUTION

Do not connect 50Hz or 3-phase loads to this generator.

CAUTION

THIS IS NOT AN INVERTER GENERATOR! Do not connect "sensitive" electronics such as Computers to this generator without installing an appropriate line conditioner, otherwise damage may occur to the connected appliance.

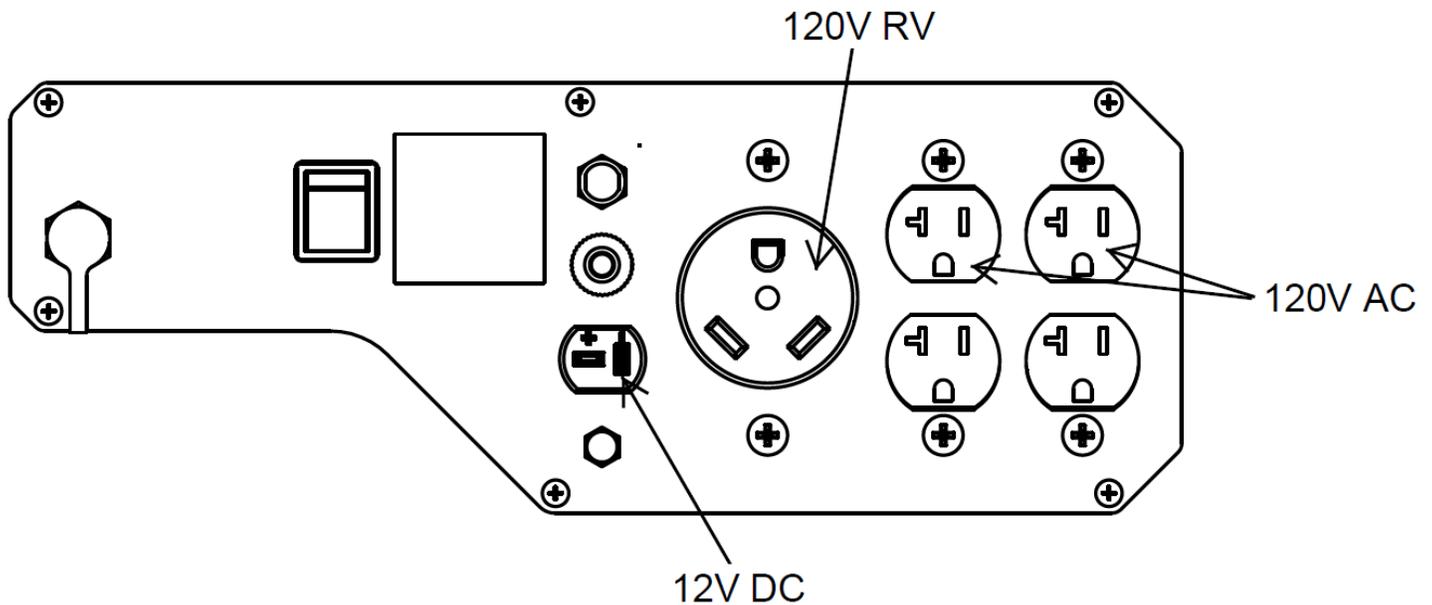


Figure 9-- Sample outlets available on these generators

DC USAGE

To connect 12 Volt batteries to the DC outlet:

1. Connect the red charging wire to the positive terminal of the battery and the black charging wire to the negative terminal of the battery. If charging in a vehicle, always disconnect the vehicle's ground cable first.
2. Connect the plug end of the wire to the 12V DC outlet on this generator.
3. Start this generator.
4. When disconnecting, turn off the generator, and always disconnect the wires from this generator first to avoid the risk of a short circuit and spark.

DANGER

Batteries can emit highly explosive hydrogen gas when charging.

Batteries also contain acid, which can cause severe chemical burns.

- Do not allow open flames or cigarettes nearby for several minutes after charging a battery.
- Always wear protective goggles and rubber gloves when charging a battery.
 - If battery acid gets on the skin, flush with water.
 - If battery acid gets in the eyes, flush with water and immediately call a physician.
 - If battery acid is swallowed, drink large quantities of milk and immediately call a physician.

DANGER

Failing to use the correct procedure can cause a battery to explode, seriously injuring anyone nearby. Keep heat, sparks, flame and smoking materials away from the battery.

CAUTION

The DC outlet is only for recharging 12 Volt automotive-type batteries. Do not connect any other device to this outlet.

CAUTION

Use this generator only for recharging 12 Volt batteries. NEVER attempt to jumpstart a car with this generator.

STOPPING THE GENERATOR

To stop this generator:

1. Turn off all connected electrical devices and then unplug them.
2. Allow this generator to run for several more minutes with no electrical devices connected to help stabilize the temperature of this generator.
3. Turn off the engine switch.

WARNING

Allow this generator to cool down before touching areas that become hot during operation.

CARBON MONOXIDE (CO) DETECTOR

If you have purchased a MM2350C, MM2350DFC, MM4350C, MM4350DFC, MM9350EC, or MM9350DFEC Model it is equipped with a carbon monoxide (CO) Detector with an automatic shut-down system.

The CO Detection module monitors for the accumulation of poisonous CO gas found in engine exhaust when the generator is running. If the CO Detector detects increasing levels of CO gas, it automatically shuts down the engine. CO detector only monitors for carbon monoxide when the engine is running. Generators are intended to be used outdoors, far from occupied buildings and with the exhaust pointed away from personnel and buildings. However, if misused and operated in a location that results in the accumulation of CO, like indoors or in a partially enclosed area, CO detector shuts off the engine, notifies the user of what has happened, and directs the user to take action for safety. **The CO Detector is not a substitute for an indoor carbon monoxide alarm.**



After a shut-down, a blinking RED light in the CO Detector on the control panel of the generator provides notification that the generator was shut off due to an accumulating CO hazard. The RED light will blink for at least five minutes after a CO shut-down. Move the generator to an open, outdoor area and point the exhaust away from people and occupied buildings. Once relocated to a safe area, the generator can be restarted and the proper electrical connections made to supply electrical power. The RED light will stop blinking automatically upon engine re-start. Evacuate personnel, introduce fresh air, and ventilate the location where the generator had shut down.

If a CO Detector system fault has occurred and it no longer provides protection, the portable generator is shut down automatically and the YELLOW light will blink for at least five minutes on the control panel to notify the user of the fault. The CO Detector module can only be diagnosed and repaired by a trained technician. The generator can be re-started, but may continue to shut down if the fault remains present.



The CO Detector will detect the accumulation of Carbon Monoxide from other fuel burning sources such as engine powered tools or propane heaters used in the area of operation. For example, if another generator is used and the exhaust is pointed at a CO Detector equipped generator, CO Detector may initiate a shut-off due to rising CO levels. This is not an error. Hazardous Carbon Monoxide has been detected. The user must take action to move and re-direct these devices to better dissipate Carbon Monoxide far away from personnel and occupied buildings.

MAINTENANCE/CARE

Proper routine maintenance of this generator is essential for safe, economical, and trouble-free operation. It will help prolong the life of this generator as well as help reduce air pollution. Perform maintenance checks and procedures according to the schedule in Figure 10. It is recommended to use genuine Mech Marvels parts for any replacement needs. Use of non-Mech Marvels parts can damage or reduce the life of your generator.

STOP!

If you have questions about maintenance procedures described in this manual, call 1-800-832-2966 Monday - Friday, 9 AM - 6 PM Central Time.

⚠ CAUTION

Never perform maintenance procedures while this generator is running. Allow this generator to cool before commencing any maintenance procedures. Keep heat, sparks, and flame away.

⚠ WARNING

Improper maintenance and/or failure to correct any problems prior to operating this generator can cause a malfunction which could cause death or serious injury. Always follow the inspection and maintenance recommendations and schedules in this manual.

Recommended Maintenance Schedule

		Each Use	Every Month or Each 20 Hours	Every 3 Months or Each 50 Hours	Every 6 Months or Each 100 Hours	Every Year or Each 300 Hours
Engine Oil	Check Level	X				
	Change		X (First Use)		X	
Air Filter	Check	X				
	Clean			X		
Fuel Filter	Clean				X	
Spark Plug	Check/Clean			X		
Spark Arrestor	Clean					X
Valve Clearance	Check/Adjust					X
Fuel Lines	Check/Replace	Check and Replace as needed every 2 years				

Figure 10 – Recommended Maintenance Schedule

Cleaning the Generator

Always try to use this generator in a cool dry place. If this generator becomes dirty, the exterior can be cleaned with a damp cloth, soft brush, vacuum and/or pressurized air.

Never clean this generator with a bucket of water and/or a hose as water can get inside and cause a short circuit or corrosion.

Never use gasoline to clean parts of this generator.

Changing/Adding Oil

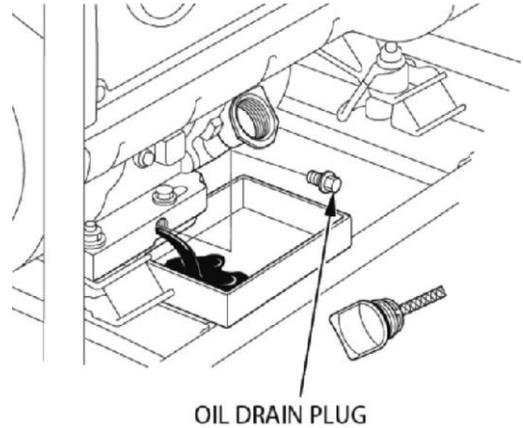
The oil level in this generator should be checked before each use. When the oil level is low, add oil until the level is sufficient to operate this generator.

To drain the oil from this generator:

The oil should be changed after the first 20 hours of operation. The oil should then be changed every 6 months, or for every 100 hours of use time, or when it has become contaminated with water and/or dirt.

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

1. Place a suitable drain pan under the generator.
2. Remove the oil drain plug using a 12mm or 17mm wrench depending upon model.
3. Drain dirty oil into the pan and transfer to a container for recycling
4. Remove the oil fill cap/dipstick.
5. Re-install the drain plug.
6. Refill with the recommended oil, and check the oil level.
7. Wash your hands with soap and water after handling used oil.



NOTE: Never dispose of used motor oil in the trash, down a drain, or on the ground. Put oil in a sealed container and contact your local recycling center or auto garage to arrange oil disposal.

To add oil to the engine crankcase:

1. Confirm that this generator is on a level surface.
2. Unscrew the oil filler/dipstick cap from the engine as illustrated in Figure 11 above.
3. Using a funnel, add high detergent motor oil to fill the engine crankcase to the correct quantity. SAE10W-30 oil is recommended for general use.

When the engine crankcase is full, the oil level should reach the lower lip of the oil filling opening as shown in Figure 12.



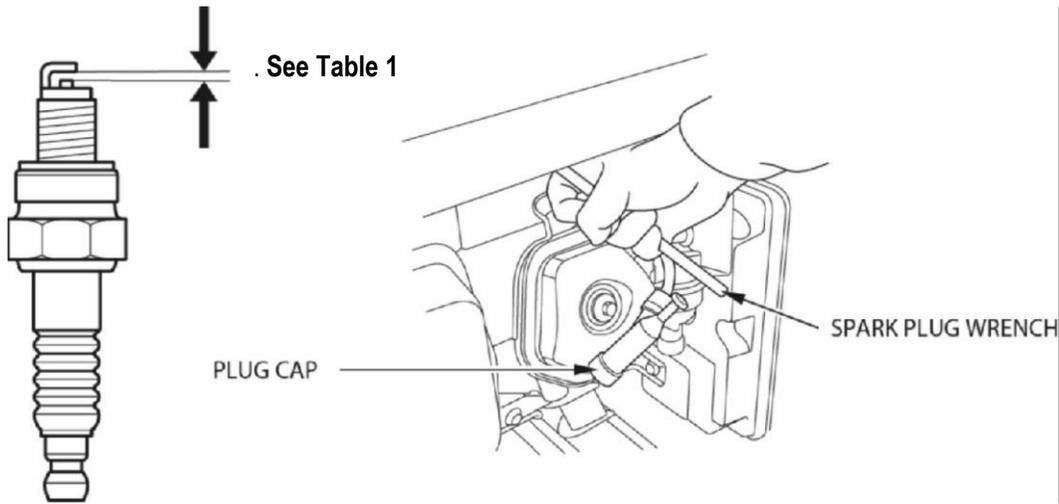
Figure 12

Spark Plug Maintenance

1. Remove the spark plug cable from the spark plug.
2. Using the spark plug tool that came with the generator remove the spark plug.
3. Inspect the plug electrode. It must be clean and unworn to produce a proper spark for ignition.
4. Check the spark plug gap. It should be set according to Table 1
5. After the plug is cleaned and gapped properly, reinsert back into the engine.
6. Start threading the plug into the engine by hand to avoid cross threading.
7. If the plug is new, it will need approximately 1/2 turn after seating to compress the washer. If re-installing the original plug, it will typically require less.
8. Re-attach the plug wire to the plug.

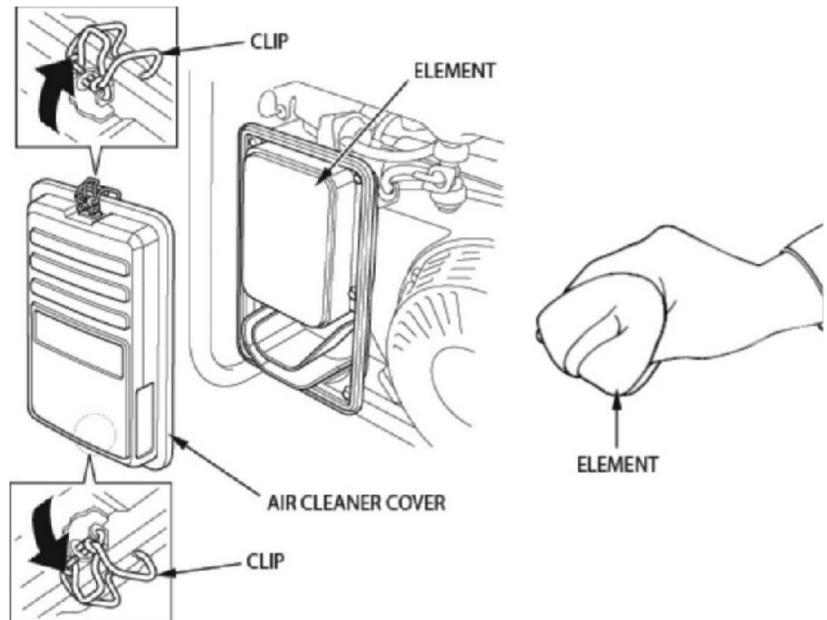
Torch Spark Plug Type	Spark Plug Gap		NGK Spark Plug Type
E7RTC	0.6-0.8mm	0.024-0.032in	BPR7HS
F7RTC	0.5-.07mm	0.020-0.028in	BPR6ES
F6RTC	0.78-0.94mm	0.031-0.037in	BRP6ES

Table 1



Air Filter Maintenance

1. Remove the air filter by releasing the snap clips on the top and bottom of the air cleaner housing cover.
2. Remove the foam element.
3. Wash in liquid detergent and water.
4. Squeeze dry thoroughly in a clean, absorbent cloth.
5. Saturate the filter element in clean engine oil.
6. Squeeze out excess oil.
7. Place the filter back into the air cleaner housing and re-attach the air cleaner housing cover.



Spark Arrester

1. Allow the engine to cool completely before servicing the spark arrester.
2. Remove the band clamp securing the arrester to the muffler.
3. Remove the spark arrester screen.
4. Carefully remove the carbon deposits from the spark arrester with a wire brush.
5. Replace the arrester if damaged.
6. Position the spark arrester in place on the muffler and re-secure with the band clamp.

Changing Fuel Lines

Fuel line installation instructions (including the carburetor, fuel tank, fuel valve):

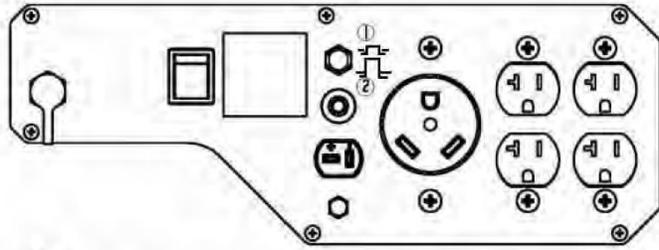
1. Connect the clamp to the fuel hose, and slide down from the end.
2. Slide fuel hose onto the connector until it bottoms out.
3. Move the clamp into place and secure the clamp.

STORAGE/TRANSPORT PROCEDURES

To prevent fuel spill when transporting or during temporary storage, the generator should be secured upright in its normal operating position, with the engine and fuel switches OFF.

1. Be sure the storage area is free of excessive humidity, and dust.
 - a. Keep heat, sparks, and flames away from the generator.
 - b. Handle fuel only outdoors.
 - c. Wipe up spills immediately.
 - d. Keep out of reach of children and pets.
2. Drain the fuel:
 - a. Drain all gasoline from the fuel tank into an approved gasoline container.
 - b. Loosen the carburetor drain bolt and drain the gasoline into a suitable container by the fuel drain pipe.
 - c. When all the fuel is drained, turn the petcock to the OFF position, and tighten the drain screw securely.
3. Change the engine oil.
4. Remove the spark plug and pour about a table- spoon of clean engine oil into the cylinder. Crank the engine several revolutions to distribute the oil, then reinstall the spark plug.
5. Reinstall the spark plug cap on the spark plug.
6. Pull the starter grip slowly until resistance is felt, then return the starter grip gently. This closes the valves so moisture cannot enter the engine's combustion chamber.
7. For storage periods longer than 6 weeks, remove the battery and connect it to a battery storage type charger. Follow directions on the charger for proper use.

TROUBLESHOOTING



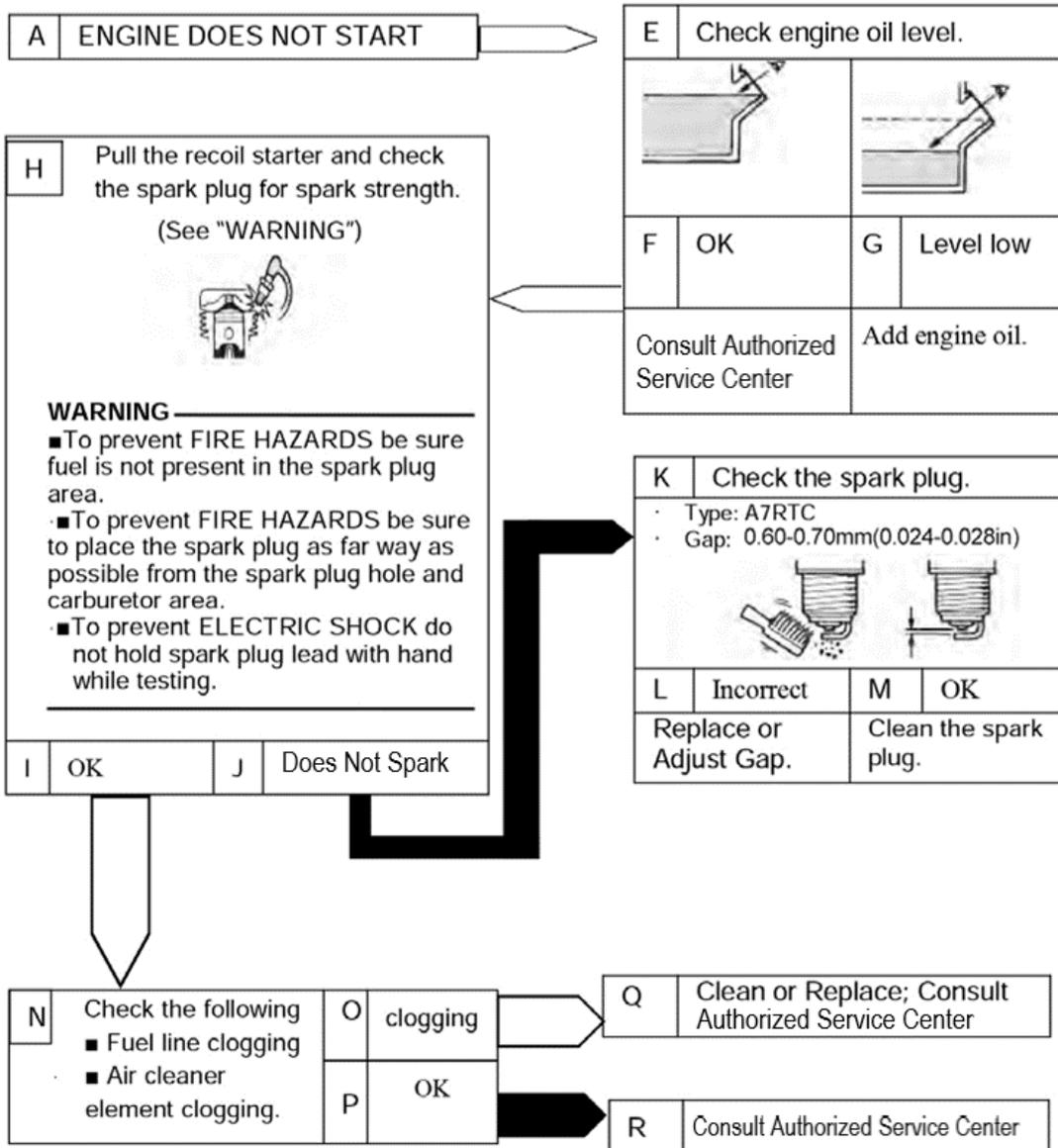
Generator won't produce power

- DC Circuit Breaker "Off" (extended). Press circuit breaker in.
- AC Circuit Breaker "Off" (extended). Press circuit breaker in.



WARNING!

Make sure there is no spilled fuel near the spark plug or on the generator. Testing could cause any spilled fuel to ignite presenting a safety hazard.



SPECIFICATIONS

Generator Model	MM2350/MM2350C	MM2350DF/MM2350DFC	MM4350/MM4350C
Horsepower	3	3	7
Engine Displacement	94cc	94cc	212cc
Running Watts	1200W	1200W	3200w
Starting Watts	1500W	1500W	4000w
Rated Frequency	60Hz	60Hz	60Hz
Rated Voltage	120VAC	120VAC	120VAC
Rated Current	10A	10A	26.7A
Run Time	9Hrs @ 50% Load	9Hrs @ 50% Load	10Hrs @ 50% Load
Receptacles	(2) 120VAC, 10A (1) 12VDC, 8A	(2) 120VAC, 10A (1) 12VDC, 8A	(4) 120VAC, 20A (1) 120VAC, 30A RV (1) 12VDC, 8A
Net/Gross Weight	51.2/58.8Lbs	53.5/60.8Lbs	93.4/99lbs
Noise Level	69dB	69dB	70dB
Fuel Types	Unleaded Gasoline	Unleaded Gasoline LPG, 20lb cylinder	Unleaded Gasoline
Fuel Capacity	1.5gal	1.5gal	4.0gal
Fuel Gauge	No	No	No
Oil Type	SAE 10W-30	SAE 10W-30	SAE 10W-30
Oil Capacity	13.5 ounces	13.5 ounces	18.6 ounces
Starter Type	Recoil	Recoil	Recoil
AC Volt Meter	No	No	Yes
Frame Construction	Tubular Steel	Tubular Steel	Tubular Steel
Wheel & Handle Kit	No	No	Yes (8" Wheels)
Assembled Dimensions (L*W*H) Inches	18.3*14.0*15	18.3*14.0*15	22.6*22.6*20.5

Generator Model	MM4350DF/MM4350DFC	MM9350E/MM9350EC	MM9350DFE/MM9350DFEC
Horsepower	7	15	15
Engine Displacement	212cc	420cc	420cc
Running Watts	3200w Gas	7500W	7500W
Starting Watts	4000w Gas	9000w	9000w
Rated Frequency	60Hz	60Hz	60Hz
Rated Voltage	120VAC	120/240VAC	120/240VAC
Rated Current	26.7A	62.5A/31A	62.5A/31A
Run Time	10Hrs @ 50% Load	11Hrs @ 50% Load	11Hrs @ 50% Load
Receptacles	(4) 120VAC, 20A (1) 120VAC, 30A RV (1) 12VDC, 8A	(4) 120VAC, 20A (1) 120VAC, 30A RV (1) 120/240VAC, 30A (1) 12VDC, 8A	(4) 120VAC, 20A (1) 120VAC, 30A RV (1) 120/240VAC, 30A (1) 12VDC, 8A
Net/Gross Weight	95.4/101lbs	198.2/216.2lbs	200.2/218.2lbs
Noise Level	70dB	73dB	73dB
Fuel Types	Unleaded Gasoline LPG, 20lb cylinder	Unleaded Gasoline	Unleaded Gasoline LPG, 20lb cylinder
Fuel Capacity	4.0gal	7.5gal	7.5gal
Fuel Gauge	No	No	No
Oil Type	SAE 10W-30	SAE 10W-30	SAE 10W-30
Oil Capacity	18.6 ounces	28.7 ounces	28.7 ounces
Starter Type	Recoil	Recoil/Electric	Recoil/Electric
AC Volt Meter	Yes	Yes	Yes
Frame Construction	Tubular Steel	Tubular Steel	Tubular Steel
Wheel & Handle Kit	Yes (8" Wheels)	Yes (10" Wheels)	Yes (10" Wheels)
Assembled Dimensions (L*W*H) Inches	22.6*22.6*20.5	29.5*30.2*25.4	29.5*30.2*25.4

WARRANTY

2 YEAR LIMITED EMISSION-RELATED WARRANTY

THIS ENGINE MEETS U.S. EPA EMISSION STANDARDS UNDER 40 CFR 1054.625. The emission-related limited warranty is valid for two (2) years. Keep the purchase receipt and register your Generator for warranty at www.mechmarvels.com. QJ North America Inc. limits emission-related warranty repairs to authorized service centers for owners located within 100 miles of an authorized service center. For owners located more than 100 miles from an authorized service center, QJ North America Inc. will, in its sole discretion, either pay for shipping costs to and from an authorized service center, provide for a service technician to come to the owner to make the warranty repair, or pay for the repair to be made at a local non-authorized service center.

The provisions of this paragraph apply only for the contiguous states, excluding the states with high-altitude areas identified in 40 CFR part 1068, Appendix III.

To exercise this warranty, DO NOT RETURN TO RETAILER. Instead, call Customer Service toll free at 1-800-832-2966 (email address HELP@mechmarvels.com) and you will be instructed on where to take the engine for warranty service. Take the generator and proof of purchase (your receipt) to the repair facility recommended by the Customer Service Representative. The warranty does not extend to generator s damaged or affected by fuel contamination, accidents, neglect, misuse, unauthorized alterations, use in an application for which the product was not designed and any other modifications or abuse.

1 YEAR LIMITED WARRANTY (30 Day Limited Warranty for Commercial and Rental Purpose)

Generators are warranted to be free from defects in materials and workmanship for a period of 1 YEAR from date of original purchase. QJ North America Inc. is not liable for any indirect, incidental or consequential damages from the sale or use of this product. Any implied warranties are limited to 1 YEAR as stated, or as otherwise stated, in this written limited warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages. Some states do not allow limitation on the length of an implied warranty. QJ North America Inc. will repair or replace, at its discretion, any part that is proven to be defective in materials or workmanship under normal use during the 1 YEAR warranty period. Warranty repairs or replacements will be made without charge for parts or labor. Parts replaced during warranty repairs will be considered as part of the original product and will have the same warranty period as the original product. This warranty gives you specific legal rights, and you may have other rights that vary state to state.

*CARB approval of each unit is based on Model Year and Engine Family, and may not apply to your specific unit.