



Service Manual

Cummins **Onan**

Performance you rely on.™



60 Hz Portable Generator Set

EGMBD, P5350 (Spec A)
EGMBD, P5350c (Spec A)
EGMBE, P5450e (Spec A)
EGMBE, P5450ec (Spec A)
EGMBE, P5550e (Spec A)


⚠ WARNING ⚠

Do not use this genset on a boat. Such use may violate U.S. Coast Guard regulations and can result in severe personal injury or death from fire, electrocution, or carbon monoxide poisoning.

⚠ WARNING ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.


⚠ WARNING



Gasoline and its vapor are flammable and explosive.

- Keep gasoline away from heat, sparks, and flame sources.
- Stop and cool 15 minutes before refueling.
- Refuel carefully and only outdoors on level ground.
- Fuel can leak from fuel cap vent.
 - ◇ Do not overfill.
 - ◇ Do not tip unit more than 15° (6.9 inches)
 - ◇ Cool unit and drain fuel before transporting.
- Wipe up fuel leaks immediately.

⚠ WARNING



Generator exhaust contains poisonous CO (carbon monoxide) that can cause serious injury or death.

- You cannot see, taste, or smell CO.
- Operate only outdoors with exhaust directed away from people and building air intakes.
- Never operate a generator inside any enclosed or semi-enclosed area. A hazardous CO level can occur even with open doors and ventilation fans.

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1 Safety Precautions

Thoroughly read the Operator Manual before operating the generator set. Safe operation and top performance can only be obtained when equipment is operated and maintained properly.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to operators, service personnel, and the equipment.



DANGER: This symbol alerts you to an immediate hazard that will result in severe personal injury or death.





WARNING: This symbol alerts you to a hazard or unsafe practice that can result in severe personal injury or death.



CAUTION: This symbol alerts you to a hazard or unsafe practice that can result in personal injury or damage to equipment or property.

1.1 Exhaust Gas Is Deadly

- Operate the generator set outdoors only. Stay away from the exhaust outlet.
- Make sure generator set exhaust will not enter windows, doors, vents, or air intakes of adjacent buildings, vehicles, or boats.
- NEVER USE THE GENERATOR SET INSIDE a home, garage, crawl space, barn, shed, cabin, boat, boat house, RV, or tent; or in a confined outdoor space such as an alley, ditch, parking garage, or courtyard; or in any other space where exhaust can accumulate. Note that HAZARDOUS CARBON MONOXIDE LEVELS FROM ENGINE EXHAUST CAN ACCUMULATE INDOORS, EVEN WHEN ALL WINDOWS AND DOORS ARE OPEN AND FANS ARE RUNNING.
- Even when you use a generator set correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home.
- If you feel sick, dizzy, or weak after the generator set has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

 WARNING	
	<p>Generator exhaust contains poisonous CO (carbon monoxide) that can cause serious injury or death.</p> <ul style="list-style-type: none">▪ You cannot see, taste or smell CO.▪ Operate only outdoors with exhaust directed away from people and building air intakes.▪ Never operate generator inside any enclosed or semi-enclosed area. A hazardous CO level can occur even with open doors and ventilation fans.

1.2 Gasoline is Flammable / Explosive

- Refuel the generator set outdoors only.

-
- Static electric sparks caused by fuel flowing through a service station pump nozzle can ignite gasoline. Never fill the generator set with a service station pump nozzle. Instead, fill a safety tank sitting on the ground and then slowly transfer fuel to the generator set from the safety tank.
 - DO NOT fill fuel tanks while the engine is running. A hot engine can ignite the fuel.
 - To prevent fire due to fuel leakage, always close the fuel valve and let the generator set cool before transporting it or storing it in a confined space.
 - DO NOT SMOKE OR ALLOW AN OPEN FLAME near the generator set. Keep flames, sparks, electrical switches, pilot lights, electrical arcs, arc-producing equipment, and all other sources of ignition well away.

1.3 Generator Voltage is Deadly

- DO NOT CONNECT THE GENERATOR SET DIRECTLY TO ANY BUILDING ELECTRICAL SYSTEM. Back-feed could cause electrocution of utility line workers and could damage equipment. An approved switching device must be used to prevent interconnections. A trained and experienced electrician must make electrical connections when the generator set is used for emergency power.
- Make sure clothing, shoes, and skin are dry when handling electrical equipment.
- Never operate the generator set in rain or snow or when it is sitting on wet ground.

1.4 Moving Parts Can Cause Severe Personal Injury or Death

- Before performing any maintenance on the generator set, disconnect the spark plug wire.
- Always keep hands away from moving parts.
- Do not wear loose clothing or jewelry while servicing the generator set. Loose clothing and jewelry can become caught in moving parts. Jewelry can short out electrical contacts causing sparks, flame, and electrical shock.
- Make sure that fasteners and clamps on the generator set are tight. Keep guards in position over fans, rotors, etc.

1.5 Battery Gases Are Explosive

- Wear safety glasses when servicing batteries.
- Do not smoke.
- To reduce arcing when disconnecting or reconnecting battery cables, always disconnect the negative (–) cable of the battery first and reconnect it last.

1.6 General Precautions

- Keep children away from the generator set.
- Wear hearing protection when near an operating generator set.

- Keep a multi-class ABC fire extinguisher readily at hand. Class A fires involve ordinary combustible materials, such as wood and cloth. Class B fires involve combustible and flammable liquids and gaseous fuels. Class C fires involve live electrical equipment. (ref. NFPA No. 10).
- Benzene and lead may be found in gasoline and have been identified by some state and federal agencies as causing cancer or reproductive toxicity. Do not ingest, inhale, or contact gasoline.
- Used engine oils have been identified by some state and federal agencies as causing cancer or reproductive toxicity. Do not ingest, inhale, or contact used engine oil or its vapors.
- Keep the generator set clean and dry at all times. Excess grease and oil can catch fire and/or accumulate dirt, which can cause overheating.
- Do not store anything on the generator set, such as oil cans, oily rags, chains or wooden blocks. A fire could result or operation could be adversely affected.
- Do not work on the generator set when you are mentally or physically fatigued or have consumed alcohol or drugs.

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2 Introduction

2.1 About This Manual

This manual covers the generator sets listed on the front cover. Study this manual and observe all of its warnings and precautions. Using and maintaining the generator set properly will result in longer generator set life, better performance, and safer operation.

2.2 Model Identification

Be ready to provide the generator set model and serial numbers on the generator set nameplate when contacting Cummins Onan for parts, service, or product information. The nameplate and its location on the generator set is illustrated in the Figures below.



WARNING: *Many troubleshooting procedures or replacement of parts present hazards that can result in equipment damage and severe personal injury or death. Only trained and experienced service personnel with knowledge of fuels, electricity, and machinery hazards should perform service procedures. Review the Safety Precautions section of this manual.*

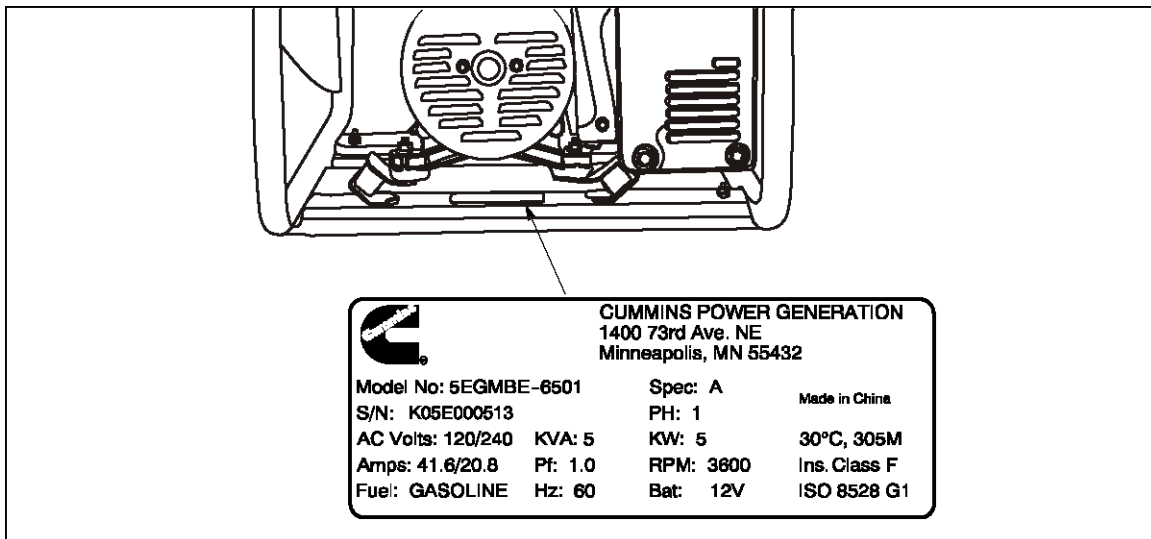


FIGURE 1. NAMEPLATE LOCATION FOR P5350, P5350C, P5450E, P5450EC, AND P5550E GENERATOR SETS

2.3 Wheel Kit

The assembled wheel kit shown below is standard equipment on P5350, P5350c, P5450e, P5450ec, and P5550e models.



FIGURE 2. WHEEL KIT INSTALLED

2.4 Fuel Requirements

Use clean, fresh unleaded gasoline with an octane rating (anti-knock index) of 87 or higher.

During part of the year, only mandated "oxygenated" gasoline may be available. While "oxygenated" gasoline is acceptable for use, it is not preferable. Using leaded gasoline will result in extra maintenance to remove combustion chamber and spark plug deposits. Do not use starting fluids and do not use gasoline or gasoline additives (de-icers) containing methanol. Methanol is corrosive to fuel system components.



WARNING: *Evaporative starting fluids, such as ether, are highly explosive which can result in severe personal injury or death. Do not use starting fluids.*



CAUTION: *Methanol is corrosive to fuel system components. Do not use gasoline or gasoline additives containing methanol.*



CAUTION: *Avoid using leaded gasoline because of the extra engine maintenance that will be required.*



WARNING: *Gasoline is highly flammable and explosive which can result in severe personal injury or death. Do not smoke if you smell gasoline or are near fuel tanks or gasoline-burning equipment, or are in the area sharing ventilations with such equipment. Keep flames, sparks, electrical switches, pilot lights, arc-producing equipment, and all other sources of ignition well away from the area.*

2.5 Generator Set Assembly Instructions

1. Remove the generator set from the box.



WARNING: *The generator set is heavy. Dropping the generator set can cause severe personal injury or death. Keep feet and hands clear when lifting the generator set.*

2. If necessary, install the wheel kit (see the [Wheel Kit Assembly Instructions](#) below).
3. Add oil to the generator set (see [Engine Oil Recommendations](#)).



CAUTION: *Too little oil can cause severe engine damage. Make sure that the oil level is above the Add mark on the dipstick.*

4. Add gasoline to the fuel tank (see [Fuel Requirements](#) on the previous page).

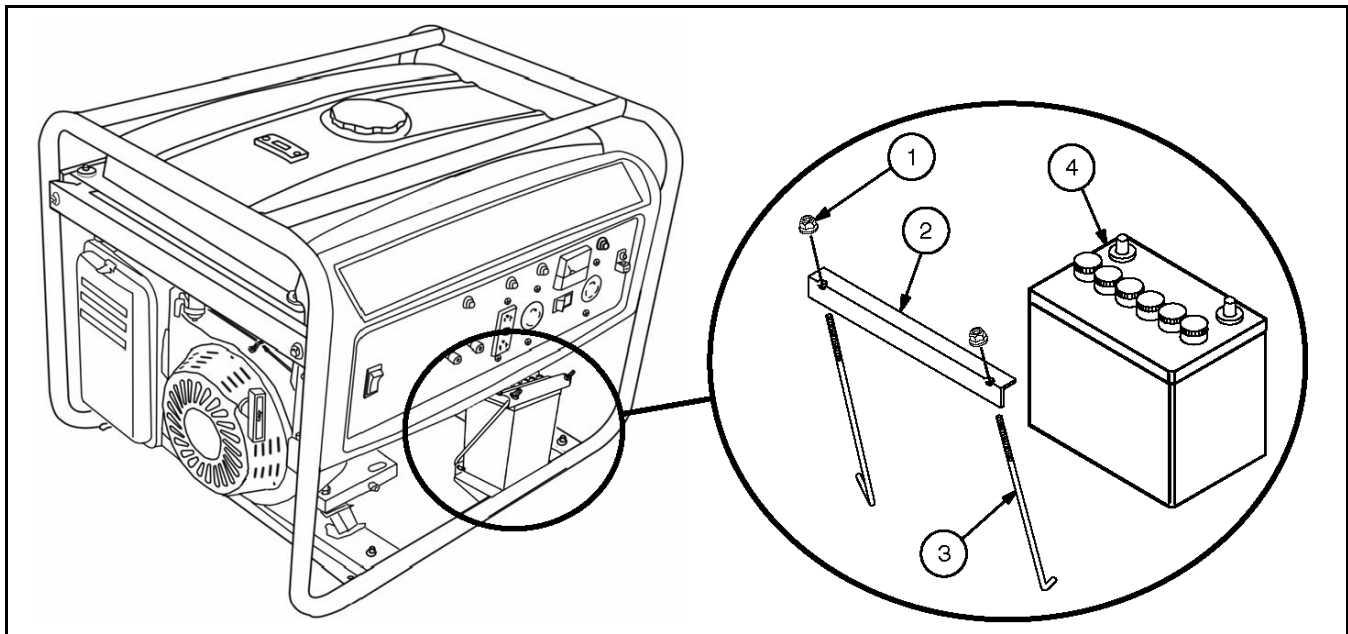


CAUTION: *Methanol is corrosive to fuel system components. Do not use gasoline or gasoline additives containing methanol.*



CAUTION: *The use of leaded gasoline will require extra maintenance. Avoid using leaded gasoline.*

5. If necessary, install a battery. A 12 volt, 14L-A2 type battery is recommended. The battery is not included with the generator set.
 - a. Use the hold-down bracket, along with the two flange hex nuts and fastener studs to secure the battery to the battery tray (see the figure below).
 - b. The battery cables are often tucked up behind the control panel. Connect the positive (+) cable (red) first and then the negative (–) cable (green).



No.	Description	No.	Description
1	Hex Flange Nut	3	Fastener Stud
2	Hold-Down Bracket	4	Battery

FIGURE 3. BATTERY INSTALLATION

2.6 Wheel Kit Assembly Instructions



CAUTION: *Improper handling of the generator set can result in equipment damage. Do not turn the generator set on the side, top, or end. Doing so may damage the generator set or cause dangerous fuel or oil leakage. Do not place items on top of the generator set. The wheel kit is designed to support the generator only.*

Required Tools

- 10 and 12 mm wrenches, sockets, and ratchet
- Three 6-inch high blocks of wood
- Pliers

Installation Procedure

1. Install the handle assembly (handle, bracket, hinge pin, grips, end plugs, two cotter pins, and fasteners).
 - a. Use two long bolts to attach the handle assembly to the frame.
 - b. Tighten securely; do not crush the frame tube.
2. Block up the generator set under both frame tubes as shown below. Place a block under the center of the cross-member on the exhaust end.
3. Install the leg assembly.
 - a. Install a leg assembly (support leg, rubber pad, and fastener) onto each side of the exhaust end cross-member.
 - b. Use two bolts and nuts for each leg and tighten securely.
4. Install the wheel and axle assembly (axle assembly and wheel assemblies).
 - a. Remove the rubber pads secured to the frame where the axle is attached.
 - b. Remove the cotter pins and loose washers from the axle assembly (axle, two loose washers, two cotter pins, and fasteners).
 - c. Install the wheels (flat free tire and wheel); make sure the long hub is to the inside.
 - d. Reinstall the washers and cotter pins on the axle assembly. Bend one leg of each cotter pin.
 - e. Place the axle assembly under the cross member as shown and install four bolts and nuts. Tighten securely.

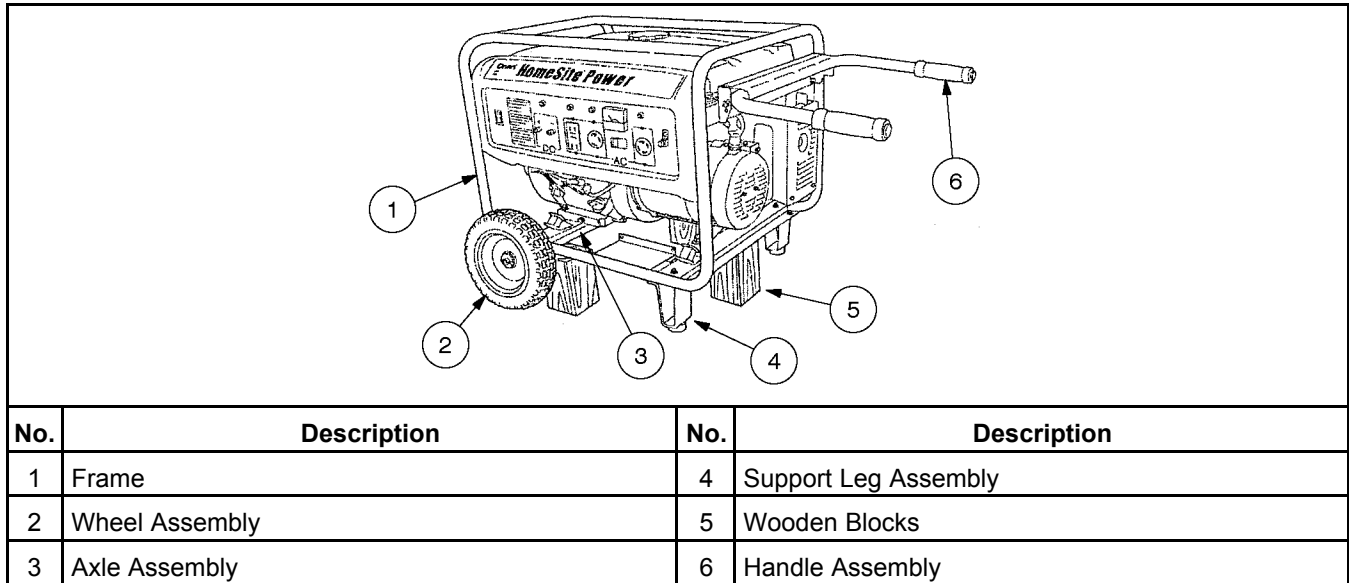


FIGURE 4. INSTALLED WHEEL KIT

2.7 Starting Battery

A starting battery is used in EGMBE models (P5550e, P5450e, and P5450ec).

The electric starter requires a 12 volt starting battery (12 volt, 14L-A2). The battery is not included with the generator set.

Refer to the [Maintenance](#) section and any instructions available from the battery manufacturer for battery maintenance. Note that as long as the generator set is run regularly, the automatic battery recharging system on the engine should maintain battery charge.

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