



Power Generation

Service Manual

PowerBox™ 40x Digital Paralleling Generator Set Model C2000D2R

PCC3201 PowerCommand® Control

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS – This manual contains important instructions that should be followed during installation and maintenance of the generator set and batteries.

Before operating the generator set (genset), read the Operator's Manual and become familiar with it and the equipment. **Safe and efficient operation can be achieved only if the equipment is properly operated and maintained.** Many accidents are caused by failure to follow fundamental rules and precautions.

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

⚠ DANGER *This symbol warns of immediate hazards which will result in severe personal injury or death.*

⚠ WARNING *This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.*

⚠ CAUTION *This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.*

FUEL AND FUMES ARE FLAMMABLE

Fire, explosion, and personal injury or death can result from improper practices.

- DO NOT permit any flame, cigarette, pilot light, spark, arcing equipment, or other ignition source near the generator set or fuel tank.
- Be sure all fuel supplies have a positive shutoff valve.
- Be sure battery area has been well-ventilated prior to servicing near it. Lead-acid batteries emit a highly explosive hydrogen gas that can be ignited by arcing, sparking, smoking, etc.

EXHAUST GASES ARE DEADLY

- The generator set must be located where exhaust gases will not enter buildings or accumulate in enclosed or sheltered areas or areas where individuals are likely to congregate. Visually and audibly inspect the exhaust daily for leaks per the maintenance schedule. Make sure that exhaust manifolds are secured and not warped. Do not use exhaust gases to heat a compartment.
- Engine exhaust and some of its constituents are known to the state of California to cause cancer, birth defects, and other reproductive harm.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Keep your hands, clothing, and jewelry away from moving parts.
- Before starting work on the generator set, disconnect battery charger from its AC source, then disconnect starting batteries, negative (–) cable first. This will prevent accidental starting.
- Make sure that fasteners on the generator set are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.
- Do not wear loose clothing or jewelry in the vicinity of moving parts, or while working on electrical equipment. Loose clothing and jewelry can become caught in moving parts.
- If adjustment must be made while the unit is running, use extreme caution around hot manifolds, moving parts, etc.

DO NOT OPERATE IN FLAMMABLE AND EXPLOSIVE ENVIRONMENTS

Flammable vapor can cause a diesel engine to overspeed and become difficult to stop, resulting in possible fire, explosion, severe personal injury and death. Do not operate a genset where a flammable vapor environment can be created by fuel spill, leak, etc. The owners and operators of the genset are solely responsible for operating the genset safely. Contact your authorized Cummins Power Generation distributor for more information.

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Remove electric power before removing protective shields or touching electrical equipment. Use rubber insulation mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surface to be damp when handling electrical equipment. Do not wear jewelry. Jewelry can short out electrical contacts and cause shock or burning.
- Use extreme caution when working on electrical components. High voltages can cause injury or death. DO NOT tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag and lock open switches to avoid accidental closure.
- The generator set has a control suitable for utility paralleling. Proper interconnecting equipment approved by the utility must be used. Failure to do so can lead to electrocution of utility line workers and damage to equipment.

GENERAL SAFETY PRECAUTIONS

- Coolants under pressure have a higher boiling point than water. DO NOT open a radiator or heat exchanger pressure cap while the engine is running. To prevent severe scalding, let engine cool down before removing coolant pres-

sure cap. Turn cap slowly, and do not open it fully until the pressure has been relieved.

- Used engine oils have been identified by some US state and federal agencies as causing cancer or reproductive toxicity. When checking or changing engine oil, take care not to ingest, breathe the fumes, or contact used oil.
- Have multi-class ABC fire extinguishers immediately ready to use. 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. See NFPA No. 10 (Portable Fire Extinguishers) or equivalent—BS EN 3-7:2004.
- Make sure the generator set is located on a stable, level surface and prevented from moving.
- Make sure that access to the generator set emergency stop switches is always kept open.
- To prevent fire or generator set overheating, keep the generator set and the surrounding area clean and free of combustible materials and objects that block cooling and ventilating air or exhaust.
- Do not work on this equipment when mentally or physically fatigued, or after consuming alcohol or drugs.
- Wear hearing protection when near an operating generator set.
- To prevent serious burns, avoid contact with hot metal parts such as radiator system, turbo charger system and exhaust system.

KEEP THIS MANUAL NEAR THE GENSET FOR EASY REFERENCE

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the Complete Manual
Thank you very much!**