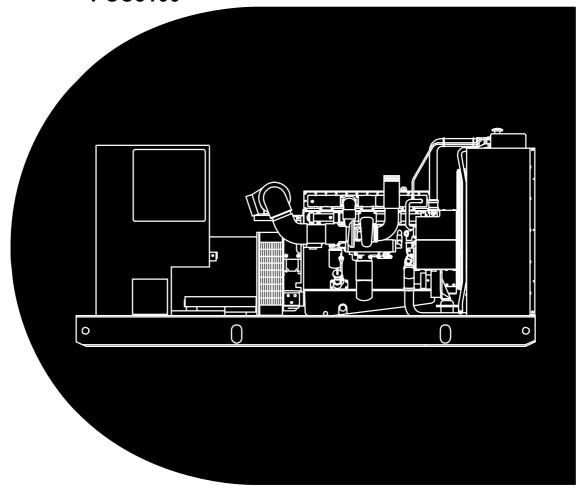


Operation/Service Manual

Digital Paralleling GenSet Model

DFAA, DFAB, DFAC, DFBC, DFBD, DFBE, DFBF, DFCB, DFCC, DFCE, DFEB, DFEC, DFED, DFFA, DFFB, DFGA, DFGB, DFGC, DFJA, DFJB, DFJC, DFJD, DFLA, DFLB, DFLC, DFLD, DFLE, DFMB, DQAA, DQAB, DQBA, DQBB with PowerCommand® Control PCC3100



Printed in U.S.A. 900-0519D 04-2005

Table of Contents

SECTION	TITLE	PAGE
	SAFETY PRECAUTIONS	iii
1	INTRODUCTION	
	About this Manual Test Equipment How To Obtain Service System Overview Generator Set Control Function	1-1 1-1 1-2
2	CONTROL OPERATION	2-1
	General Safety Considerations Sequence of Operation PCC Power On/Standby Mode Front Panel Menu Display and Switches Main Menu Engine Menu Gen Menu	
3	CIRCUIT BOARDS AND MODULES General	2.4
	Digital Board (A32) Engine Interface Board (A31) Analog Board (A33) Digital Display Board (A35) Customer Interface Board (A34) PT/CT Board (A36) Bus PT Board (A39) Genset Communications Module (A41) Voltage Regulator Output Module (A37) Governor Output Module (A38) Master First Start Sensor	3-3 3-4 3-6 3-7 3-8 3-10 3-11 3-12 3-13 3-14
4	TROUBLESHOOTING	
	General Safety Considerations Status Indicators Resetting the Control Warning and Shutdown Codes PCC Oil Pressure Warning and Shutdown Limits Troubleshooting Procedure PCC Fuses Load Sharing Controls Troubleshooting Procedure	4-1 4-2 4-3 4-12 4-13 4-56

SECTION	TITLE	PAGE
5	CONTROL SERVICE AND CALIBRATION	
	General Circuit Board Removal/Replacement Initial Start Setup Menu Adjust Menu Setup and Calibration Menus Calibration Procedure Accessory Box Control Components Engine Sensors Magnetic Speed Pickup Unit (MPU) Installation Current Transformer (CT) Installation	5-1 5-4 5-6 5-8 5-26 5-29 5-42
6	SERVICING THE GENERATOR	
7	Testing the Generator Generator/PCC Control Isolation Procedure Insulation Resistance (Megger) & Polarization Index (PI) Testing Drying the Windings Exciter Stator Exciter Rectifier Bridge (Rotating Rectifier Assembly) Exciter Rotor Main Rotor (Generator Field) Main Stator Test the PMG Bearing Inspection/Removal/Replacement Generator Disassembly Generator Reassembly Aligning Generator with Engine DAY TANK FUEL TRANSFER PUMP AND CONTROL	6-2 6-3 6-5 6-6 6-7 6-8 6-10 6-12 6-15 6-24
7	Operation	7-4 7-6
8	INITIAL SYSTEM STARTUP General The Startup Process Equipment Application Review Individual Generator Set Startup Manual System Operation Automatic System Operation Black Start Testing Test Reports and Acceptance On Site Power System Application Review (Diesel/600VAC and Lower)	8-1 8-2 8-2 8-4 8-7 8-8
9	WIRING DIAGRAMS	
	General	9-1

IMPORTANT SAFETY INSTRUCTIONS

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

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

<u>AWARNING</u> This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

A 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 fill fuel tanks while engine is running, unless tanks are outside the engine compartment.
 Fuel contact with hot engine or exhaust is a potential fire hazard.
- DO NOT permit any flame, cigarette, pilot light, spark, arcing equipment, or other ignition source near the generator set or fuel tank.
- Fuel lines must be adequately secured and free of leaks. Fuel connection at the engine should be made with an approved flexible line. Do not use zinc coated or copper fuel lines with diesel fuel.
- 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

- Provide an adequate exhaust system to properly expel discharged gases away from enclosed or sheltered areas and 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.
- Be sure the unit is well ventilated.
- 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 an 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., unless the genset is equipped with an automatic safety device to block the air intake and stop the engine. 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.

BUY NOW

Then Instant Download the Complete Manual Thank you very much!