

Canopy Manual

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**Power
Generation**

Rental Set

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This manual should form part of the publication package supplied by Cummins Power Generation Limited with specific generator sets. In the event that this manual has been supplied in isolation please refer to other Cummins Power Generation Limited literature, in particular the Health and Safety manual (0908-0110-00).

The information contained within the manual is based on information available at the time of going to print. In line with Cummins Power Generation Limited policy of continuous development and improvement, information may change at any time without notice. The users should therefore ensure that before commencing any work, they have the latest information available.

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SECTION 1 – SAFETY

1 Safety

1.1 Warning, Caution and Note Styles Used In This Manual

The following safety styles found throughout this manual indicate potentially hazardous conditions to the operator, service personnel or the equipment.

WARNING: WARNS OF A HAZARD THAT MAY RESULT IN SEVERE PERSONAL INJURY OR DEATH.

Caution: Warns of a hazard or an unsafe practice that can result in product or property damage.

Note: A short piece of text giving information that augments the current text.

1.2 General Information

This manual should form part of the documentation package supplied by Cummins Power Generation Limited with specific generator sets. In the event that this manual has been supplied in isolation please refer to other Cummins Power Generation Limited literature, in particular the Health and Safety Manual (0908-0110-00) and the engine manual relevant to your generator set.

Note: It is in the user's interest to read and understand all Health and Safety information together with all Warnings and Cautions contained within the documentation relevant to the generator set and its operation and maintenance.

1.3 Generator Plant Safety Code

Before operating the generator set, read the Health and Safety manual (0908-0110-00) and the engine manual, and become familiar with them 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.

WARNING: IMPROPER OPERATION AND MAINTENANCE CAN LEAD TO SEVERE PERSONAL INJURY OR LOSS OF LIFE AND PROPERTY BY FIRE, ELECTROCUTION, MECHANICAL BREAKDOWN OR EXHAUST GAS ASPHYXIATION. READ AND FOLLOW ALL SAFETY PRECAUTIONS, WARNINGS AND CAUTIONS THROUGHOUT THIS MANUAL AND THE HEALTH AND SAFETY MANUAL 0908-0110-00.

WARNING: LIFTING AND REPOSITIONING ON THE GENERATOR SET MUST ONLY BE CARRIED OUT USING SUITABLE LIFTING EQUIPMENT, SHACKLES AND SPREADER BARS IN ACCORDANCE WITH LOCAL GUIDELINES AND LEGISLATION BY SUITABLY TRAINED AND EXPERIENCED PERSONNEL. INCORRECT LIFTING CAN RESULT IN SEVERE PERSONAL INJURY, DEATH AND/OR EQUIPMENT DAMAGE. FOR MORE INFORMATION CONTACT YOUR AUTHORISED DISTRIBUTOR.

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SECTION 2 – OVERVIEW

2 Overview

2.1 Canopy

These canopies are exceptionally quiet and therefore suitable for the most demanding application, particularly in residential areas. They fit onto the generator set skid and this complete assembly has been designed for easier transportation and maintenance, and incorporates a fuel tank with containment (VRS models) or with a larger fuel capacity and containment (XRS models).

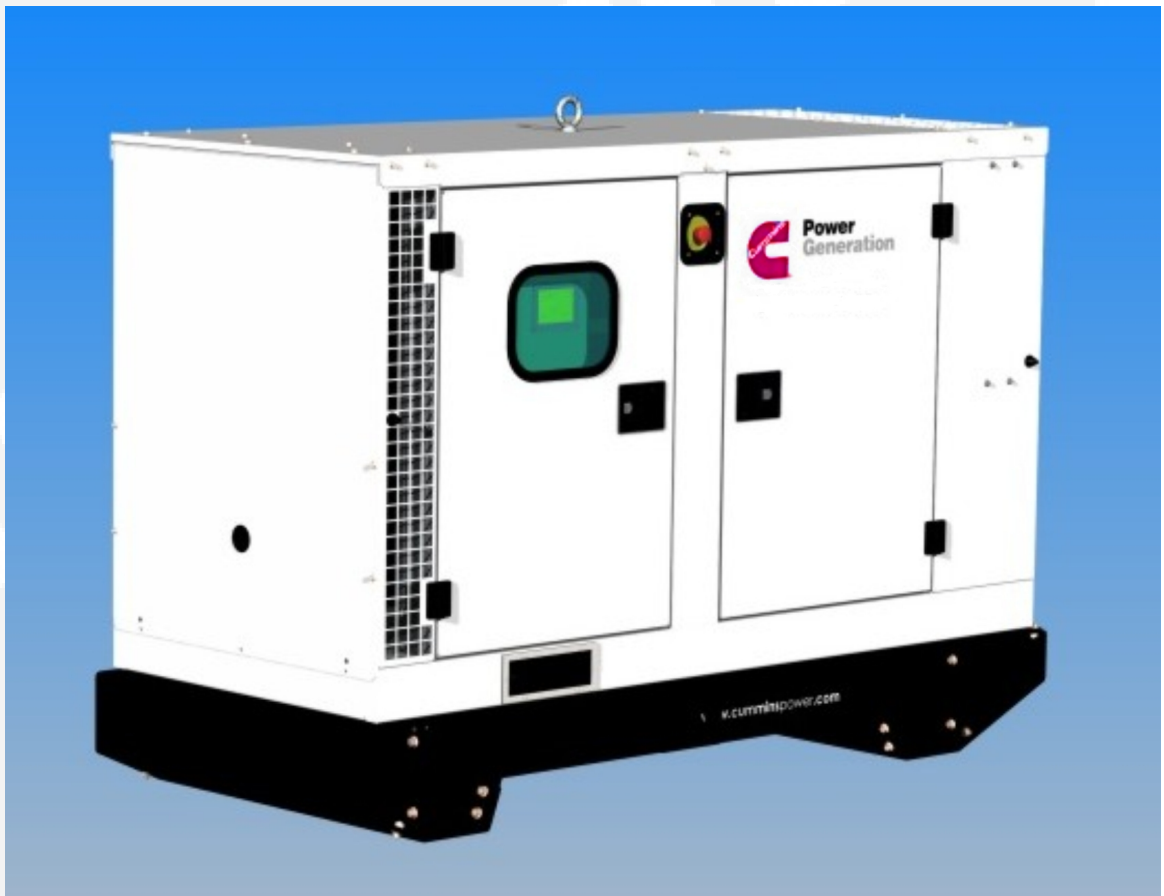


Figure 2-1 Typical Canopy (Doors Closed)

The D2R generator set series has dual frequency capability (except models fitted with the optional socket package).

The D5RS series are 50Hz sets and incorporate the socket pack as standard.

2.1.1 Canopy - Main Features

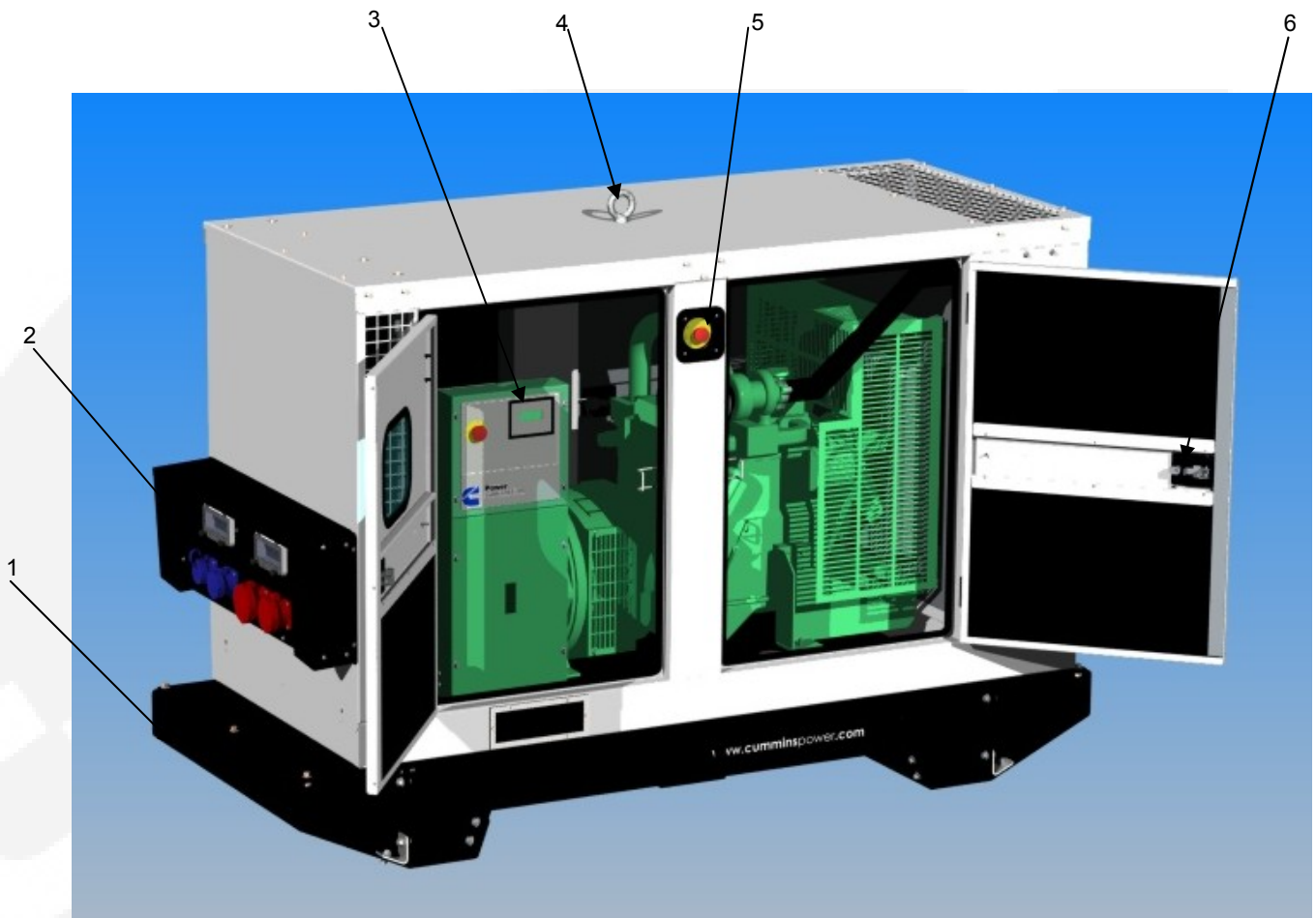


Figure 2-2 Typical Canopy (Doors Open)

KEY


- | | | | |
|----|--|----|----------------------------------|
| 1. | Skid with fork lift capability | 4. | Single point lift (up to 125kVA) |
| 2. | Socket Pack (standard for D5RS models) | 5. | External Emergency Stop Button |
| 3. | Control Panel | 6. | Lockable door for security |



SECTION 3 – FEATURES

3 Features

3.1 Emergency Stop Button


An Emergency Stop push-switch is situated in close proximity to the control panel viewing window. This is a mechanically latched switch that will unconditionally stop the engine when pressed. When the switch is pressed the PCC1301 panel will display the Shutdown condition by illuminating the red Shutdown status LED  and displaying the following message on the graphical LCD display:

**Fault Number: 61
EMERGENCY STOP**

The Emergency Stop push-switch must not be used for a normal shutdown, as this will prevent a cooling run in which the lubricating oil and engine coolant carry heat away from the engine combustion chamber and bearings in a safe manner.

If the generator set is not running, pushing the button in will prevent the starting of the engine, regardless of the Start signal source.

To reset:

- Pull, or twist and pull, the button out.
- Press the  Off button on the Display Module to acknowledge this action.
- Press the Auto or Manual Run Button, as previously determined.

Caution: *Ensure that the cause of the emergency is fully investigated and remedied before an emergency stop Reset, and generator set Start are attempted.*

3.2 Engine Exhaust

Integral exhaust systems are designed to reduce engine noise to acceptable levels.

WARNING: EXHAUST PIPES AND CHARGE AIR PIPES ARE HOT AND THEY CAN CAUSE SEVERE PERSONAL INJURY OR DEATH FROM DIRECT CONTACT OR FROM FIRE HAZARD.

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SECTION 4 – MAINTENANCE

4 Maintenance

To ensure maximum performance and reliability from your generator set it is essential that certain components are inspected periodically and, where necessary, maintenance procedures carried out. Maintenance work, particularly in confined areas, should be carried out by two engineers working together.

Read, understand and comply with all Caution and Warning notes in this section, those contained within the documentation supplied with the generator set, and in particular, those contained within the Health and Safety Manual (0908-0110-00).

Ensure adequate lighting and staging (where required) are installed.

Caution: Only authorised and qualified maintenance engineers, who are familiar with the equipment and its operation, should carry out maintenance.

WARNING: DEPENDENT UPON THE CONTROL SYSTEM FITTED, THIS UNIT MAY OPERATE AUTOMATICALLY AND COULD START WITHOUT WARNING.

WARNING: BEFORE CARRYING OUT ANY MAINTENANCE WORK, LOCK OFF FOR SAFE WORKING:

1. PRESS THE OFF MODE SWITCH ON THE GENERATOR SET CONTROL PANEL.
2. AS AN ADDITIONAL PRECAUTION, PRESS THE EMERGENCY STOP BUTTON.
3. ISOLATE ALL SUPPLIES TO THE GENERATOR SET.
4. ISOLATE THE BATTERY CHARGER.
5. DISCONNECT THE BATTERY.
6. REMOVE THE STARTER CONTROL WIRES.
7. A SUITABLE WARNING PLATE STATING 'MAINTENANCE IN PROGRESS' SHOULD BE DISPLAYED PROMINENTLY.

4.1 General

Establish and adhere to a definite schedule for maintenance and service based on the application and severity of the environment. Some of the factors that can affect the maintenance schedule are:

- Use for continuous duty (prime power)
- Extremes in ambient temperature
- Exposure to elements
- Exposure to salt water
- Exposure to windblown dust or sand.

Consult with an authorised distributor if the generator set will be subjected to any extreme operating conditions and determine a suitable schedule of maintenance. Use the running time meter to keep an accurate log of all service performed for warranty support.

4.2 General Inspection

- Visually inspect the external socket pack (if fitted) for indications of damage. If in doubt contact your authorised distributor.
- During operation, be alert for mechanical problems that could create unsafe or hazardous conditions.

4.3 Canopy

4.3.1 External Surfaces

- All external surfaces should be inspected for damage periodically, and cleaned to remove build-up of dirt.

4.3.2 Doors

- Inspect door seals for damage and replace if necessary.
- Apply grease to the door hinges.
- Check the door handles and locks for correct operation.

4.3.3 Inlets/Outlets

- Check that the air inlet and outlets are free from clogging by debris, and that no objects are placed against them.

4.4 Exhaust System

With the generator set operating, inspect the entire exhaust system visually and audibly including the exhaust manifold, muffler, and exhaust pipe. Check for leaks at all connections, welds, gaskets and joints, and ensure that exhaust pipes are not heating surrounding areas excessively. If any leaks are detected, shut down the generator set and have the leaks corrected immediately.

WARNING: INHALATION OF EXHAUST GASES CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH. BE SURE DEADLY EXHAUST GAS IS PIPED OUTSIDE AND AWAY FROM WINDOWS, DOORS OR OTHER INLETS TO BUILDINGS. DO NOT ALLOW TO ACCUMULATE IN HABITABLE AREAS.

- The exhaust system should be inspected periodically for leaks and damage.
- Check that the exhaust pipe exit is free from obstruction and clear of debris.
- Ensure that no materials or debris have come into contact with the exhaust system, particularly surfaces that become hot when the generator set is in operation.

WARNING: EXHAUST PIPES AND CHARGE AIR PIPES ARE HOT AND THEY CAN CAUSE SEVERE PERSONAL INJURY OR DEATH FROM DIRECT CONTACT OR FROM FIRE HAZARD.

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