

# Engine Workshop Manual

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## G-Drive Package

## B5.9G Series

## FOREWORD

This manual is designed to be of assistance to all Personnel concerned with the maintenance and overhaul of the B.5.9G Series Engine.

It presents a complete and detailed Description of the Engine, together with precise instruction on servicing and overhaul procedure and dimensions which should be closely followed when overhauling any part of the Engine to the Manufacturers standards.

Effective maintenance can only be carried out if the personnel concerned are fully conversant with the various components of the Engine.

Before maintenance operations are commenced, this manual should be carefully studied, and it should at all times be kept where it will be needed in the workshop.

Thoroughly read the Workshop Manual before operating the generator set.

Safe operation and top performance can be obtained only when equipment is operated and maintained properly.

This manual is for guidance and assistance with recommendations for correct and safe procedures. Cummins Power Generation Limited cannot accept any liability whatsoever for problems arising as a result of following recommendations in this manual.

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 Installers should therefore ensure that before commencing any work, they have the latest information available.

Consult your Authorised Distributor for further information or assistance if required. It is essential that the utmost care is taken with the application, installation and operation of any diesel engine due to their potentially dangerous nature. Careful reference should also be made to other Cummins Power Generation Limited literature, in particular the Health and Safety Manual 0908-0110.

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## INDEX


Sr.	Contents	Page No.
1.	General Safety Instructions .....	7
2.	Engine Systems : Overview .....	9
3.	Engine Operation .....	13
4.	Fuel, Oil & Coolant Specifications .....	19
5.	Maintenance Schedule .....	23
6.	Engine Maintenance .....	25
7.	Adjustment, Replacement and Repair B Series .....	35
8.	Trobule Shooting.....	51



## Section 1


### GENERAL SAFETY INSTRUCTIONS

Improper practices or carelessness can cause burns, cuts, mutilation or other bodily injury or death. Read & understand all of the safety precautions and warnings before performing any repair. This list contains the general safety precautions that must be followed to provide personal safety.

 **NOTE : On receipt of engine by truck, ensure unloading of the engine by skilled personnel. The personnel have to use necessary personal protective equipment to avoid accidents. Engines are to be un loaded using the lifting hooks fitted on the engines. During the engine installation ensure proper fitment of Anti Vibration Mounting Pad.**

**Warning : Ensure that the shipping bracket is removed during the engine installation.**

- Make sure that the work area surrounding the product is dry, well lit, ventilated, free from clutter, loose tools, parts, ignition sources and hazardous substances.
- Always wear protective glasses and protective shoes while working on the engine.
- Rotating parts can cause cuts, mutilation or strangulation.
- Do not wear loose fitting or torn clothing.
- Disconnect the battery (negative) cable first and discharge before beginning any repair work.
- Use ONLY the proper engine barring techniques for manually rotating the engine. Do not attempt to rotate the crankshaft by pulling or prying the fan. This practice can cause serious personal injury, property damage or damage to fan bladed causing premature failure of the engine.
- If the engine has been operating and the coolant is hot, allow the engine to cool before you slowly loosen the filler cap and relieve the pressure from the cooling system.
- Do not work on anything that is supported only by lifting jacks or a hoist. Always use blocks or proper stands to support the product before performing any service work.
- Be alert for possible pressure when disconnecting any device from a system that utilises pressure. Do not check for pressure leaks with your hand. High pressure oil or fuel can cause serious injury.
- Corrosion inhibitor contains alkali. Do not get the substance in your eyes. Avoid prolonged or repeated contact with your skin. Do not swallow internally. In case of contact, immediately wash skin with soap and water.
- To avoid burns, be alert for hot parts and hot fluids in lines, tubes and compartments.
- Always use tools that are in good condition. Use only genuine Cummins replacement parts.
- Always use the same fastener part number when replacing fasteners. Do not use fasteners of lesser quality if replacements are necessary.
- Avoid inhalation of vapours, ingestion and prolonged contact with used engine oil.

 **CAUTION : Ensure alignment and torque of related fasteners while connecting alternator to the engine fly wheel housing.**

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