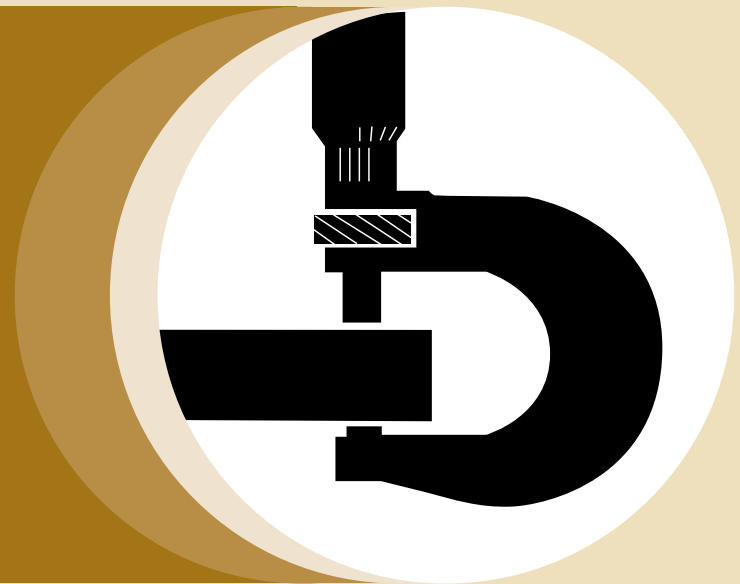


POWERTECH® 10.5 L & 12.5 L Diesel Engines

Base Engine

COMPONENT TECHNICAL MANUAL



For complete service

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POWERTECH® 10.5 L & 12.5 L Diesel
Engines Lucas Electronic Fuel Systems
with Lucas EUIs

..... CTM115

POWERTECH® 10.5 L & 12.5 L Diesel
Engines Level 6 Electronic Fuel Systems
with Lucas EUIs CTM188
OEM Engine Accessories . . . CTM67 (English Only)
Alternators and Starter Motors CTM77

Deere Power Systems Group
CTM100 (20MAR01)

LITHO IN U.S.A.
ENGLISH



Introduction

Forward

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

This manual (CTM100) covers only the base engine. It is one of three volumes on 10.5 L and 12.5 L engines. The following two companion manuals cover electronic fuel system repair, operation and diagnostics:


- CTM115—Lucas Electronic Fuel Systems With Lucas EUIs
- CTM188—Level 6 Electronic Fuel Systems With Lucas EUIs

CTM115 and CTM188 will cover fuel system repair, formerly included in CTM100, Groups 35 and 36.

Other manuals will be added in the future to provide added information on new electronic fuel systems.

A complete set of all three manuals covering the 10.5 L and 12.5 L engines can be procured by ordering CTM650 Binder Set.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

 This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Use this component technical manual in conjunction with the machine technical manual. An application

listing in Section 01, Group 001 identifies product-model/component type-model relationship.

Information is organized in sections and groups for the various components requiring service instruction. At the end of this manual are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Before beginning repair on an engine, clean the engine and mount on a repair stand. (See Section 2, Group 010.)

This manual contains SI Metric units of measure followed immediately by the U.S. customary units of measure. Most hardware on these engines is metric.

Some components of this engine may be serviced without removing the engine from the machine. Refer to the specific machine technical manual for information on this and for engine removal and installation procedures.

Read each block of material completely before performing service to check for differences in procedures or specifications. Follow only the procedures that apply to the engine model number you are working on. If only one procedure is given, that procedure applies to all the engines in the manual.

CALIFORNIA PROPOSITION 65 WARNING
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

RG, RG34710,1 -19-11OCT00-1/1

John Deere Dealers

The changes listed below make your CTM obsolete. Repair, operation and diagnostics on 10.5 L and 12.5 L diesel engines is now covered in three manuals. Fuel system repair has been removed from CTM100 and incorporated into its two companion manuals. **Discard CTM100 dated 09NOV99 and replace with the following new manuals.**

- CTM100—10.5 L and 12.5 L Diesel Engines—Base Engine
- CTM115—10.5 L and 12.5 L Diesel Engines—Lucas Electronic Fuel Systems With Lucas EUIs
- CTM188—10.5 L and 12.5 L Diesel Engines—Level 6 Electronic Fuel Systems With Lucas EUIs

Also, copy these pages listing changes and route through your Service Department.

SECTION 01, GROUP 000 (Safety)

- Updated safety information.

SECTION 01, GROUP 001 (Engine Identification)

- Updated engine model designation chart.
- Updated engine application charts.

SECTION 01, GROUP 002 (Fuels, Lubricants and Coolants)

- Updated engine oil and coolant application guidelines.

SECTION 02, GROUP 010 (Engine Rebuild)

- Updated sealant application guidelines.

SECTION 02, GROUP 020 (Cylinder Head and Valves)

- Revised procedure for adjusting valves and injector preload.
- Revised procedure for repair of crankcase ventilation assembly.
- Revised valve guide specifications.

- Revised procedure for installation of rocker arm assembly.

SECTION 02, GROUP 030 (Cylinder Block, Liners, Pistons and Rods)

- Added additional information on inspecting pistons to include specifications on new 12.5 L pistons.
- Deleted requirement for sealant on front plate gasket.
- Revised cylinder liner manufacturer data codes.
- Revised procedure for disassembly and assembly of pistons and rods to include new piston ring and piston protrusion specifications.

SECTION 02, GROUP 040 (Crankshaft, Main Bearings and Flywheel)

- Revised procedure for installation of timing gear cover and camshaft gear access cover to include new sealing instructions.
- Revised procedure for inspection of vibration damper.
- Added torque specifications for flywheel housing.
- Added procedure for main bearing failure analysis.

SECTION 02, GROUP 050 (Camshaft and Timing Gear Train)

- Revised camshaft lobe lift specifications.
- Revised procedure for adjustment of camshaft-to-crankshaft timing.
- Revised procedure for installation of camshaft.
- Revised procedure for installation of auxiliary drive.

SECTION 02, GROUP 060 (Lubrication System)

- Revised procedure for sealing oil pan mating surfaces.

SECTION 02, GROUP 070 (Cooling System)

- Revised repair procedure for coolant pump (no longer serviceable).
- Revised fan drive hub torque specification.

SECTION 02, GROUP 080 (Air Intake and Exhaust System)

- Added new test specifications for Borg Warner turbocharger.
- Revised procedure for removal and installation of air intake manifold.

SECTION 02—GROUP 090 and 091(Fuel System)

NOTE: Repair procedures for fuel systems has been moved to the following manuals:

- CTM115—Lucas Electronic Fuel Systems With Lucas EUIs, Section 02, Group 090
- CTM188—Level 6 Electronic Fuel Systems With Lucas EUIs, Section 02, Group 090 (Dual Rail System) and Group 091 (Single Rail System)

SECTION 02—GROUP 110 (Electrical Engine Control)

NOTE: Repair procedures for electrical engine control components has been moved to section 02, group 110 of the following manuals:

- CTM115—Lucas Electronic Fuel Systems With Lucas EUIs
- CTM188—Level 6 Electronic Fuel Systems With Lucas EUIs

SECTION 02—GROUP 100 (Starting and Charging Systems)

- Starting and charging systems are now covered in this new section/group.

SECTION 03—GROUP 120 (Base Engine Operation)

- Base engine theory of operation is covered in this new section/group.

NOTE: Fuel system theory of operation has been moved to Section 03, Group 130 of the following manuals:

- CTM115—Lucas Electronic Fuel Systems With Lucas EUIs
- CTM188—Level 6 Electronic Fuel Systems With Lucas EUIs

SECTION 04—GROUP 150 (Observable Diagnostics and Tests)

- Base engine observable tests and diagnostics is covered in this new section/group.
- Added dynamometer test procedure.

NOTE: Fuel system testing and diagnostics has been moved to Section 04, Group 150 in two other technical manuals: CTM115—Lucas Electronic Fuel Systems With Lucas EUIs and CTM188—Level 6 Electronic Fuel Systems With Lucas EUIs.

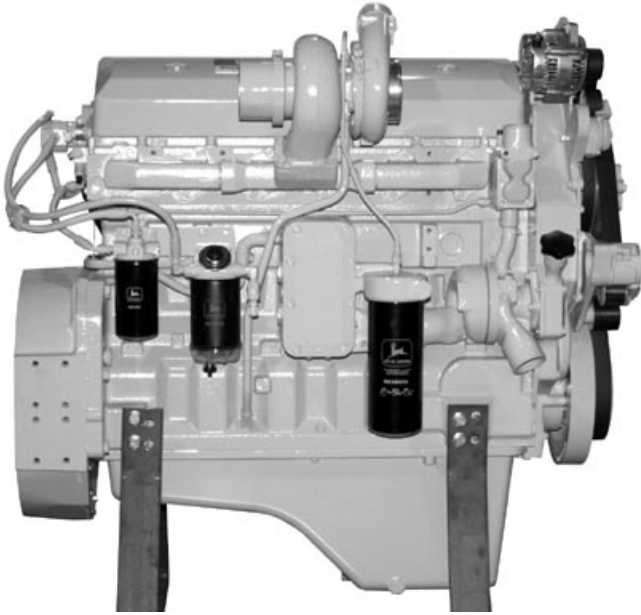
SECTION 5 (Tools and Other Materials)

- All essential tools, service tools, dealer fabricated tools and other materials listed throughout this manual are consolidated in this section for ease of reference.

SECTION 6 (Specifications)

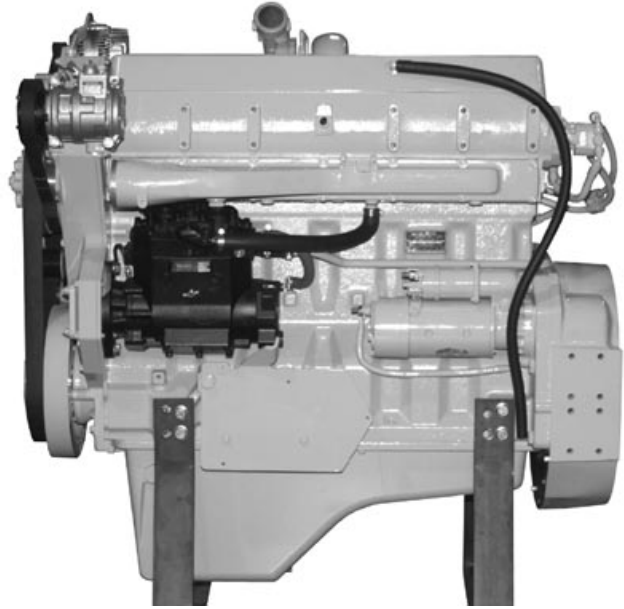
- All repair, test and diagnostic specifications listed throughout this manual are consolidated in this section for ease of reference.
- Revised dynamometer and turbocharger boost specification tables.

POWERTECH® 6105HF and 6125HF Engines



Right Side View (Early Engine)

RG9030 -UN-21MAY98



Left Side View (Early Engine)

RG9031 -UN-21MAY98



3/4 Right Front View (Early Engine)

RG9032 -UN-21MAY98



3/4 Left Front View (Early Engine)

RG9033 -UN-21MAY98

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for your reading.
Please click here
to get more information.