Cummins R2.8 Turbo Diesel:
Quickstart Guide

How To Locate Your Installation Instructions

To view an electronic copy of the R2.8 CM2220 R101B Installation Guide and Owner's Manual, register with QuickServe® Online (QSOL) for free. Once registered, type your Engine Serial Number (ESN) to find Service and Parts information for your engine.

Free Registration:

1. Enter https://quickserve.cummins.com into web browser, or scan the QR code with a phone app.
2. Select "Create an Account" on left-hand side.
3. Select "Subscription Plan" from drop-down list. Select "Register."
4. Enter Engine Serial Number (ESN) and other requested information. Select "Add ESN Details." ESN can be found on the engine data plate.
5. Verify all information entered is correct. Select "Register."
6. An email will be sent to the email address provided during registration with a temporary password. Use the password to log in for the first time.
7. Once logged in with temporary password, enter permanent password and select "Submit."
8. Account is now officially active and ready to use.

Quick Startup Checklist

NOTE: This is not a replacement for the Installation Guide or the Owner's Manual. Thoroughly review the Installation Guide prior to installation.

1. Carefully open crate and ensure all contents are present and free of damage.
2. Refer to installation guide for engine lift points to safely remove engine from shipping crate.
3. Once engine is secured into vehicle, and appropriate cooling package is installed, refer to installation guide to ensure all air and water connections are properly addressed.

Electrical

1. Make all electrical connections per the Installation Guide requirements, noting that the harness positive and negative leads are to go direct to the battery and that engine block grounding is recommended. In cold weather climates, complete installation of the grid heater relay and circuit are recommended for engine starting.
2. Ensure that factory or custom starter circuit wiring includes a clutch or neutral safety switch and meets Installation Guide wire specifications. Starter wiring is NOT provided as part of the kit.

Initial engine start-up

1. Before attempting to start the engine for the first time, review the installation, paying special attention to safety issues that may occur during the initial engine starting.

Fluids

1. Once remote oil filter head and lines are mounted in final location and filter installed, add engine oil (see Owner's Manual for capacity). Starting the engine dry will lead to catastrophic, unwarrantable damage.
2. Check the volume of oil in the engine by use of the dipstick.
3. Check the volume of coolant in the cooling system by filling the radiator and/or tank to the maximum level.

4. When filling coolant system, refer to procedures in the Installation Guide or on QuickServe Online for appropriate bleeding of air in the system. Air bubbles in the exhaust gas recirculation system can lead to damage.

   NOTE: The coolant level will drop once the coolant is circulated in the system during engine running.

5. Have coolant available to replenish the system of the purged air.
6. Check the volume of fluid in the power steering pump reservoir.

Starting procedure

1. Ensure vehicle is in park or neutral with tires chocked.
2. With the accelerator pedal in the idle position, turn the key-switch to the ON position.
3. With the key in the ON position, the engine indicator lamps will come on momentarily and then go out.

   NOTE: If any of the lamps remain on or begin to flash, the engine installation must be corrected before starting. Please refer to Installation Instructions for proper wiring of all indicator lamps (including Warning, Stop and Wait-to-Start).

4. The engine indicator lamps include:

- Warning (or CHECK ENGINE) lamp, amber in color
- Stop (or STOP ENGINE) lamp, red in color
- The Wait-to-Start lamp will also illuminate at key ON, and will stay on for a period of up to 30 seconds.

  NOTE: The length of time the Wait-to-Start lamp remains illuminated depends on the ambient temperature. The lower the ambient temperature, the longer the lamp will be illuminated.

5. Once the Wait-to-Start lamp turns OFF, turn the key to the starting position to start the engine.
6. CAUTION: Do not engage the starting motor for more than 30 seconds or damage to the starting motor can result. Wait 2 minutes between each attempt to start the engine.
7. Once the engine starts, immediately check the oil pressure gauge and indicator lights.

   NOTE: An oil pressure gauge is not included with this engine. Please refer to Installation Instructions for options on implementing an oil pressure gauge.

8. The engine must have adequate oil pressure within 15 seconds after starting. If the WARNING lamp indicating low oil pressure has not gone out within 15 seconds, shut OFF the engine immediately to avoid engine damage.
9. If all indicating lights are off and adequate oil pressure is present, continue to idle the engine for 3 to 5 minutes monitoring the condition of the engine and looking for any fluid leaks that may be present.
10. After the minimum idle time and a thorough review of the installation, load and engine speed can be slowly increased while continuing to monitor the condition of the engine. Continue this process until the thermostat opens, enabling coolant to flow throughout the system while checking for fluid leaks.
11. Bring the engine back to idle for 3 to 5 minutes, allowing the engine to cool down and proceed to shut the engine off.
12. Check the fluid level as done before start-up.
13. WARNING: Do not remove a pressure cap from a hot engine. Wait until the coolant temperature is below 50˚ C (120˚ F) before removing the pressure cap. Heated coolant spray or steam can cause personal injury.

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