



**GM Duramax 6.6 Liter (LML)
2011- 2016 Diesel EGR System**

**Always wear gloves and safety glasses
when performing this service**

EGR System Consists of:

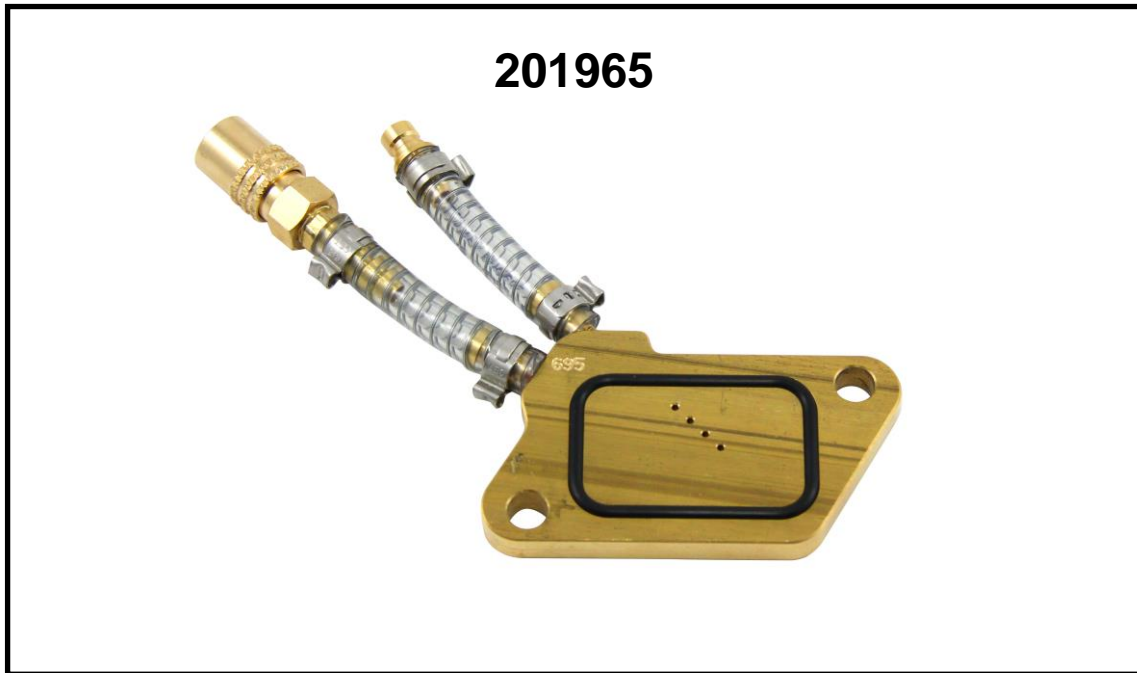
- **Cold side EGR valve (after EGR cooler) controls Exhaust gases for proper emissions control of No_x gases**
- **EGR cooler (controls temperature of Exhaust gases to the air Intake to the engine)**
- **EGR cooler bypass valve (controls Exhaust flow temperature to the air Intake from the Exhaust through the EGR cooler)**
- **EGR temperature sensor (measures EGR cooler Exhaust temperature and efficiency)**

These items are critical for proper emissions management control and must be cleaned on a regular basis for optimum efficiency.

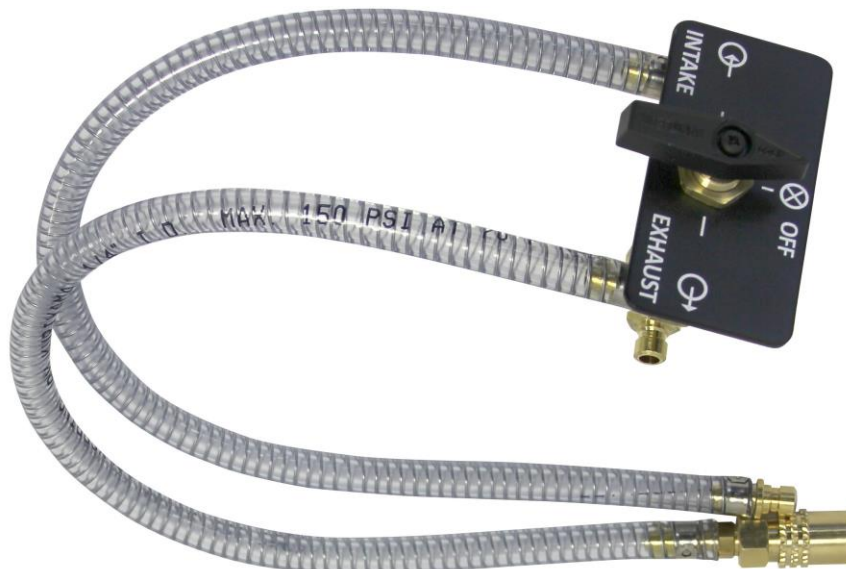
First steps before any service can be performed.

- 1. Add TerraDiesel™ Fuel Injector Cleaner (201255) to the vehicle's fuel tank.**
- 2. Remove the plastic engine cover.**
- 3. If engine is hot, the EGR cooler must be cooled – see note in step 8.**

Adapters Required:



201399
EGR Manifold



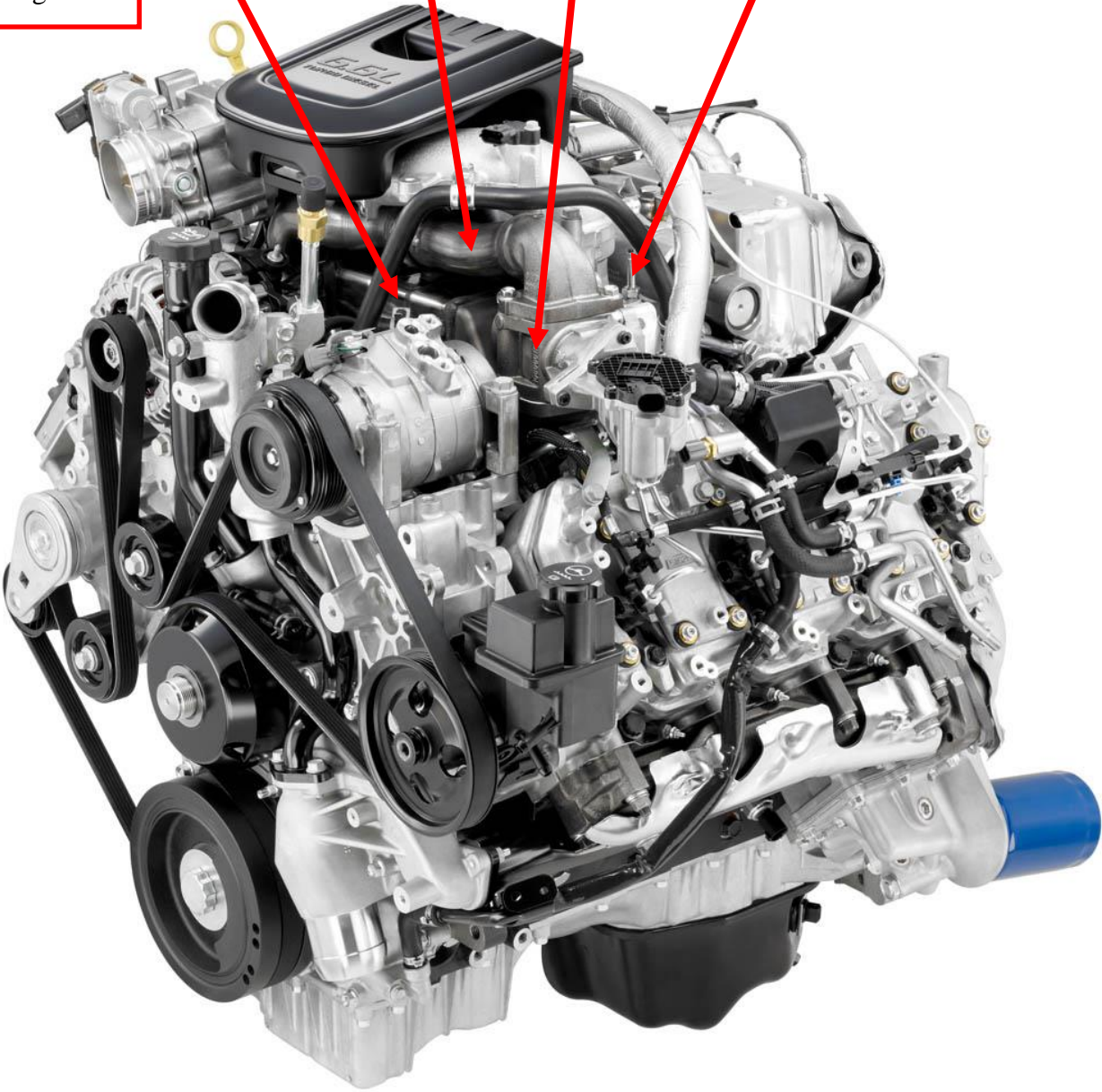
Tools Required:

- Scanner to operate EGR valve and EGR Cooler By-Pass Valve
- 201170 – TerraDiesel™ EGR Cleaning Tool

Locations of EGR components:

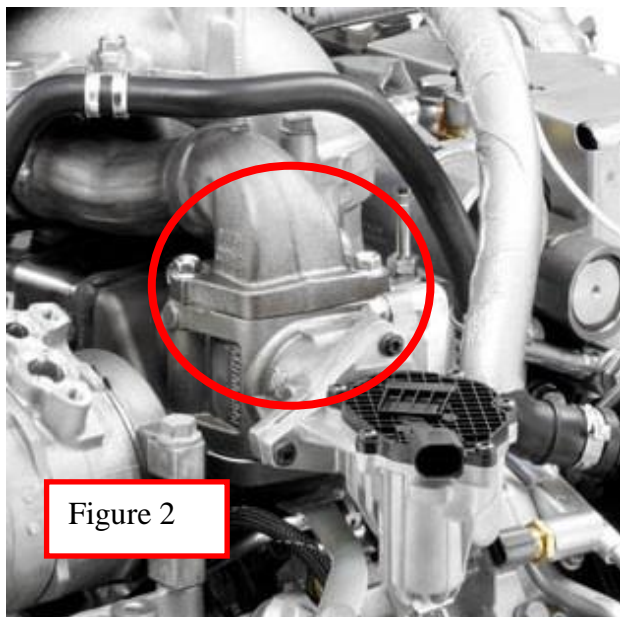
- EGR coolers
- EGR cooler bypass pipe
- EGR valve
 - EGR temp sensor

Figure 1

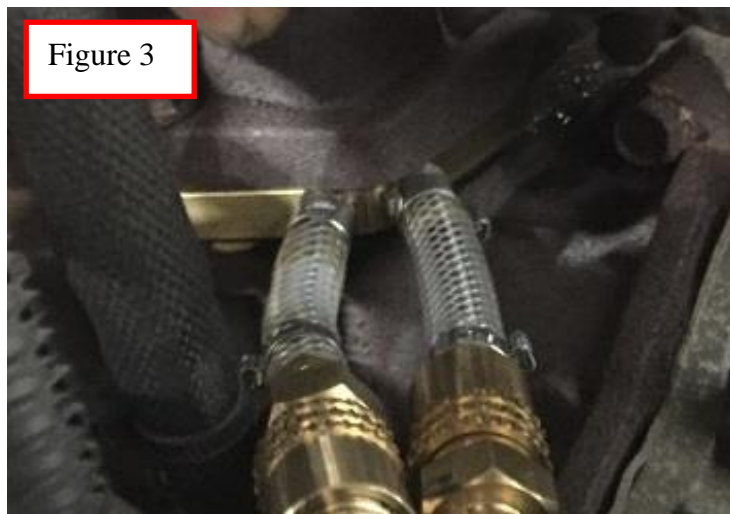


GM Duramax 6.6 Liter Engine EGR Adapter Instructions

4. Remove the EGR cooler bypass pipe bolts to EGR valve (2 bolts), see Figure 2.
For engines without an EGR cooler bypass valve remove cap plate, see figure 2A.



5. Install the EGR Adapter (201965) (see figures 3) between the EGR cooler bypass pipe and EGR valve using existing bolts. Ensure the **INTAKE** side of the adapter is installed on the EGR cooler by-pass side. For non EGR cooler bypass valve ensure the **INTAKE** side of adapter faces cap plate (see figure 3A).



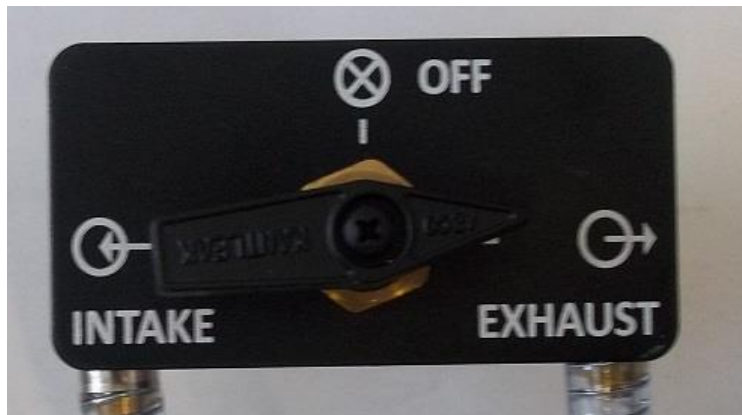
6. Attach the EGR Manifold (201399) to the EGR adapter. Attach the EGR Cleaning Tool (201170) to the EGR Manifold. Ensure that the air valve and fluid valve on the EGR Cleaning Tool are closed – see the EGR Cleaning Tool user guide.
7. Unscrew the fill cap and fill with 32 oz (946 mL) of EGR System Cleaner (201279 or 201280). For the first application or severe coking, 64 oz. may be required.
8. Reinstall the fill cap and hang the EGR Cleaning Tool from the hood latch. Connect shop air. Set air pressure on the EGR Cleaning Tool to 40-50 psi.

NOTE: If engine is hot, the EGR cooler must be cooled before treatment can start. Before step 9 can proceed, ignition must be on and using a scan Tool, command the EGR valve closed or disconnect the EGR valve electrical connector. Open the EGR Cleaning Tool air valve, keeping the fluid valve closed, turn the EGR Manifold to exhaust and flush cooler with air for 2 minutes.

9. Start the vehicle engine. Using the scan Tool, command the EGR valve closed or disconnect the EGR valve electrical connector as this will close EGR valve as well.
10. This procedure is a 3 step process, **STEP 1** to clean EGR valve and EGR coolers, **STEP 2** to clean the EGR valve in intake and finally **STEP 3** clean the EGR cooler bypass pipe and EGR cooler bypass valve.

Note: STEP 3 not required for engines with “NO” EGR cooler bypass valve.

11. **Step 1** set the EGR Manifold to **EXHAUST**.



12. Open the Air valve, adjust the regulator to maintain the initial pressure, and then open the fluid valve on the Tool.
13. After 1/2 of the fluid has been consumed, turn the fluid valve to closed and let the air flow for an additional 2 minutes to flush deposits into Exhaust stream, leave EGR manifold set to **EXHAUST**.
14. **STEP 2** using the scan Tool, command the EGR valve open or reconnect the EGR valve electrical connector this will partially open the EGR valve.

Note: At any time during the Intake service you hear a diesel knock sound, turn the EGR Manifold to off for 2 minutes. After two minutes then turn the EGR Manifold to EXHAUST and continue service.

Let the vehicle operate for an additional 5 minutes and rev the engine several times to clear all residual fluid

15. After 1/2 of the remaining is consumed turn the EGR Manifold to **INTAKE**.



16. **STEP 3** using a Scan Tool command the EGR cooler bypass valve open. During this step cycle the EGR cooler bypass valve several times throughout this step. This will allow cleaning of the EGR cooler bypass port. Continue service until the EGR Cleaning Tool is empty.
17. Turn the fluid and air valve on the EGR Cleaning Tool to the closed position. Turn the vehicle off. Detach shop air line and depressurize the EGR Cleaning Tool by rotating the regulator knob counter clockwise.
18. Remove the adapters and reassemble the vehicle's components in the reverse order of removal.
19. Add one bottle of TerraDiesel™ Multi-function Fuel Treatment (201251) to the vehicle's fuel tank.
20. After service, reset any engine codes. The vehicle should then be set to run a manual regeneration cycle or if that is not possible, the vehicle should be driven at highway speeds (or in the case of non-highway equipment operated under a load) for approximately 30 minutes. This is necessary to remove all of the cleaning solution from the passages and cooler(s) and to combust any material that has reached the diesel oxidation catalyst (DOC) and diesel particulate filters (DPF).

This should be done as soon as possible.