



## **Cummins ISL 8.3/8.9 Liter Diesel EGR Cleaning Instructions**

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

### **EGR System Consists of:**

- **Cold side EGR valve (after EGR cooler), which controls exhaust gases for proper emissions control of No<sub>x</sub> gases**
- **EGR cooler (controls temperature of exhaust gases to the air intake to the engine)**
- **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 and foam insulator.**
3. **If engine is hot, the EGR system must be cooled – see note in step 9**

# Adapters Required:

**201576  
Intake**



**201577  
Exhaust**



**201385  
EGR Manual Opener**



**98821345  
Hardware Kit**



**201399  
EGR Manifold**



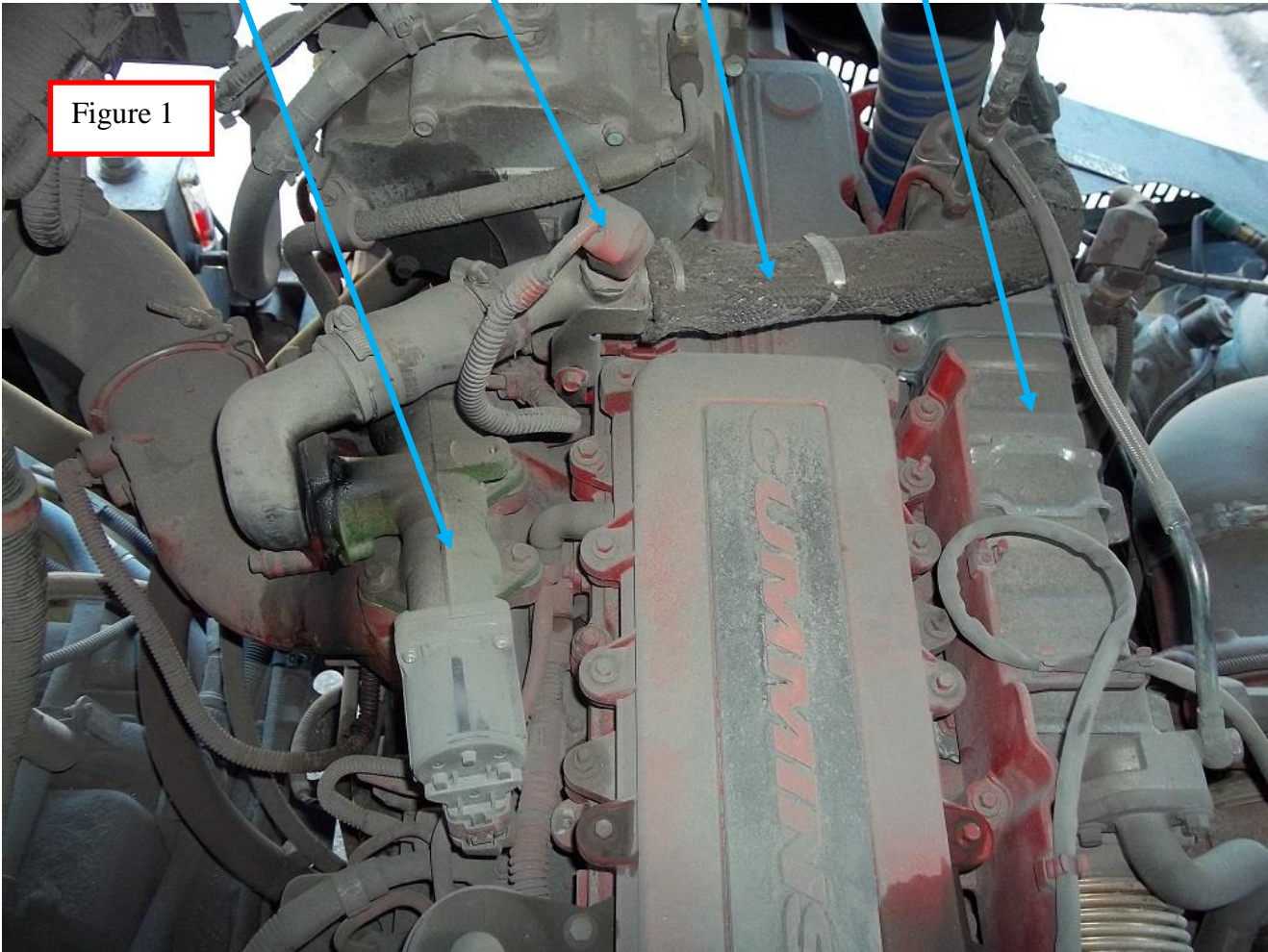
## Tool Required:

**201170 - TerraDiesel™ EGR Cleaning Tool**

**Locations of EGR components:**

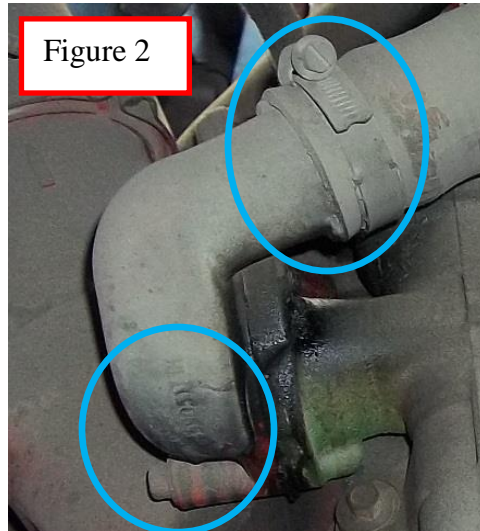
- **EGR valve**
- **EGR Temperature Sensor**
- **EGR Cooler outlet pipe**
  - **EGR cooler**

Figure 1

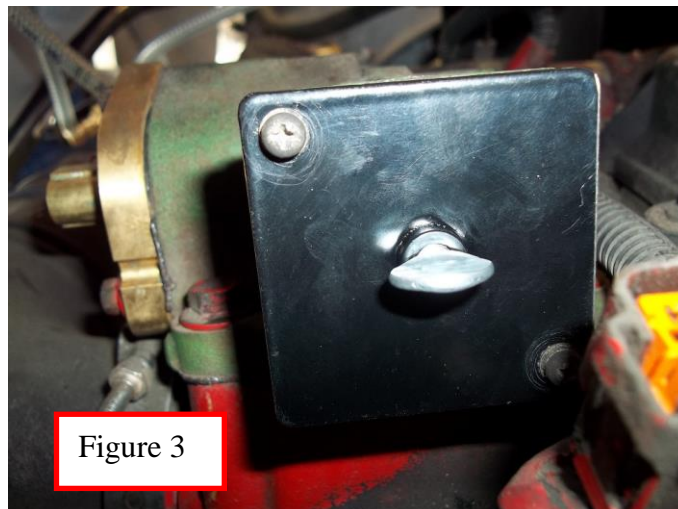


## Cummins ISL 8.3/8.9 L Engine EGR Adapter Instructions

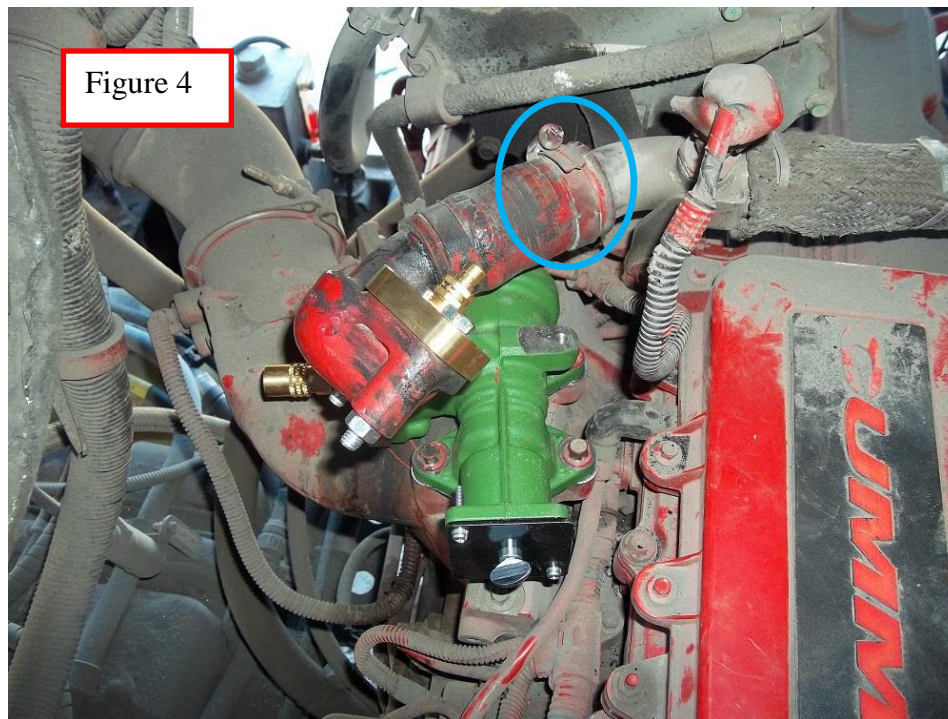
4. Remove both bolts on the EGR cooler outlet where connected at the EGR valve (see Figure 3). Loosen the clamp on the EGR cooler outlet pipe and rotate the EGR outlet cooler pipe 45°-90° towards front of engine bay (see Figure 2).



5. Turn the thumbscrew on the EGR Manual Opener (201385) fully counterclockwise but do not remove it from the adapter. Remove the EGR valve solenoid (4 screws) and set it aside, install the EGR Manual Opener in its place using only two screws. Disconnect the EGR valve solenoid electrical connector. Rotate the thumb screw fully clockwise, the EGR valve is now open (see Figure 3).



6. Install the EGR Intake Adapter (201576) using the two bolts 20mm (98821345) at the EGR valve and install the EGR Exhaust Adapter (201577) using the two nuts and bolts 60mm (98821345) supplied, on the EGR cooler outlet pipe. Tighten EGR cooler outlet pipe clamp (see Figure 4).



7. Attach the EGR Manifold (201399) to the EGR intake and exhaust adapters. Attach the EGR Cleaning Tool (201170) to the EGR Manifold. Ensure that the air valve and fluid valve are closed – see the EGR Cleaning Tool user guide.
8. Unscrew the fill cap and fill with 64oz (1.89L) of EGR System Cleaner (201279 or 201280). For first application or severe coking, 128 oz. or more may be required.

**Note: When using 128 oz, use 64 oz on exhaust side first then use 64 oz on intake side. In between exhaust and intake cleaning the air pressure must first be set to zero before adding the remaining 64 oz.**

9. Reinstall the fill cap and hang the EGR Cleaning Tool from the hood latch. Connect shop air. Set the air pressure on the EGR Cleaning Tool to 40-50 psi.

**NOTE: If the engine is hot, the EGR cooler must be cooled before treatment can start. Before step 10 can proceed, 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.**

10. Start the vehicle engine. Set the EGR Manifold to exhaust.
11. Open the air valve on the EGR Cleaning Tool, adjust regulator to maintain initial pressure and then open the fluid valve on the EGR Cleaning Tool.
12. After 1/4 of the fluid has been consumed, turn the fluid valve off and let the air flow for an additional 2 minutes to flush deposits into exhaust stream.

13. Repeat steps 11-12 allowing another ¼ of the fluid to be consumed.
14. Set the EGR Manifold to intake, open fluid valve and continue service until the EGR Cleaning Tool is empty.

**Note: If 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 intake and continue service.**

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

15. 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.
16. Remove the adapters and reassemble vehicle components in the reverse order of removal.
17. Add one bottle of TerraDiesel™ Multi-function Fuel Treatment (201251) to the vehicle's fuel tank.
18. 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.**