

Cummins ISX14 Medium/Heavy Duty 15.0L

BG Diesel EGR System Service Instructions



Wear safety goggles to protect your eyes.



Wear Nitrile®, Neoprene® or PVC gloves to protect your hands.



Wear a long-sleeved shirt to protect your arms.

IMPORTANT! Read product Safety Data Sheet before handling any BG product.

Adaptors required:

- BG EF621 EGR 2.38" ID hose intake adaptor, PN E101-1664
- BG EF622 EGR flange 4.30" bolt center exhaust adaptor, PN E101-1665
- BG EF399 EGR manifold, PN E101-1645



BG EF621 EGR intake adaptor, PN E101-1664



BG EF622 EGR exhaust adaptor, PN E101-1665



BG EF399 EGR manifold, PN E101-1645

Tools required:

- BG 64 Diesel VIA® supply tool, PN E101-1642

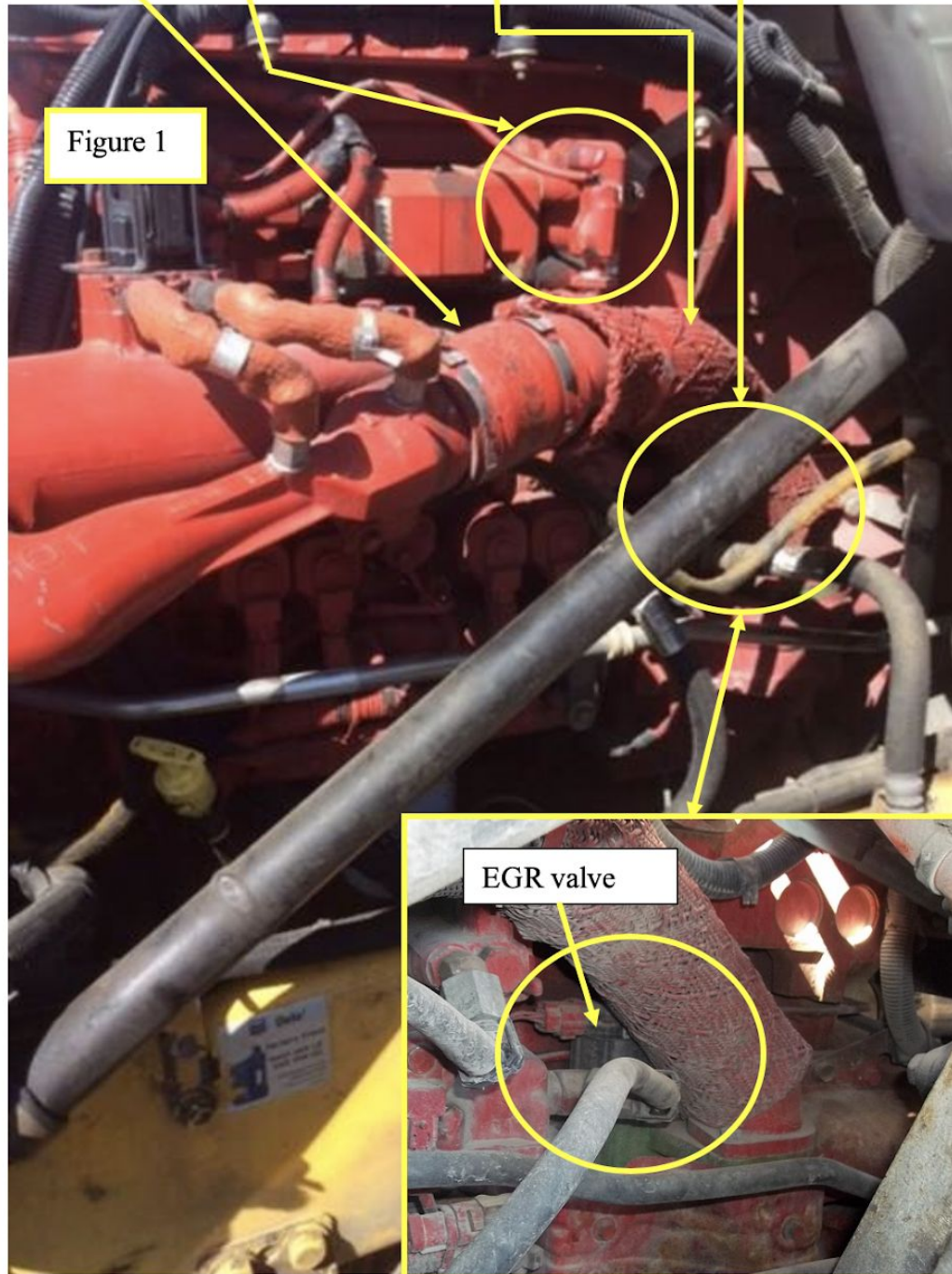
EGR System Consists of:

- Cold side EGR valve (after EGR cooler), which allows for proper emissions control of No_x 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 components are critical for proper emissions control and must be cleaned on a regular basis for optimum efficiency.

Locations of EGR components:

- EGR cooler (Right side of engine) (Figure 1)
- EGR valve outlet hose (Figure 1)
 - EGR temperature sensor (Figure 1)
 - EGR valve outlet pipe (Figure 1)
 - EGR valve (Figures 1 & 2)



EGR Inspection

Before starting the EGR cleaning service, inspect the EGR components for severe deposits or clogging. Manual cleaning may be required (by scraping, sucking, wiping, etc.) before performing the service.

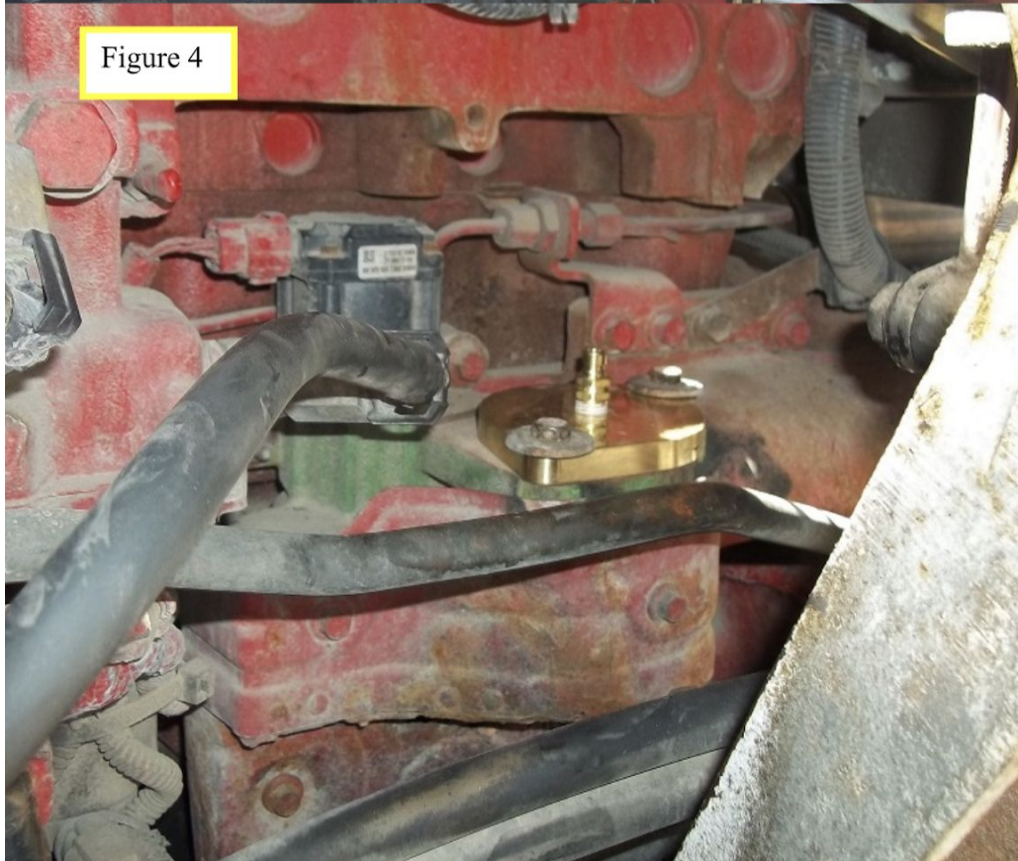
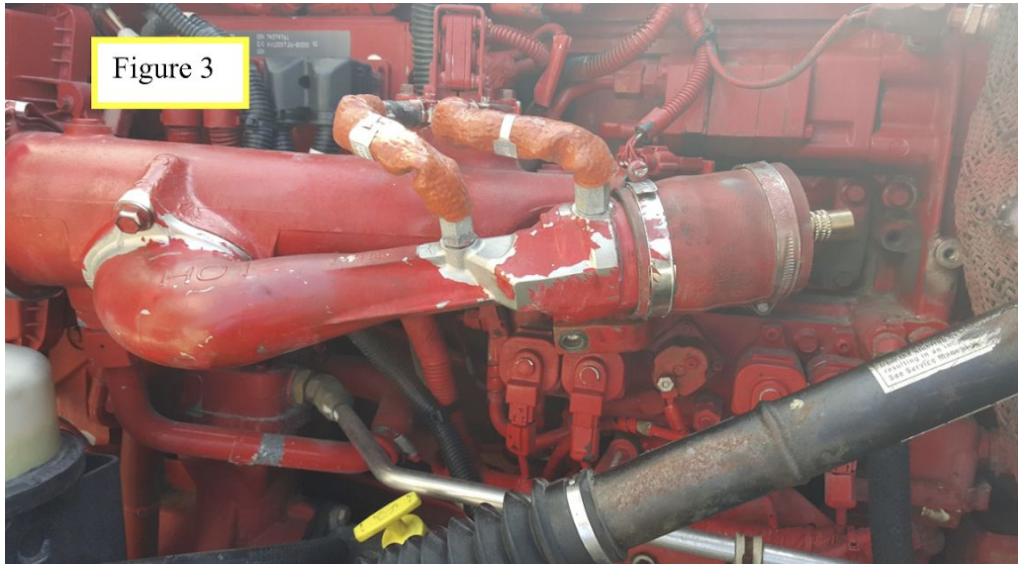
Service procedure

1. Add BG 245 Premium Diesel Fuel System Cleaner, PN 245, to vehicle's fuel tank.
2. Remove plastic engine cover and foam insulator.
3. Disconnect EGR temperature sensor electrical connector. Remove EGR temperature sensor from EGR valve outlet pipe and reconnect to electrical connector. Remove two bolts on the EGR valve outlet pipe and loosen one clamp on EGR valve outlet hose (Figure 2). Remove EGR valve outlet pipe located on the left side of the engine bay and set aside.



Quick Tip: Place the EGR cooler outlet pipe into a container and fill the container with BG Diesel EGR System Cleaner, PN PD10, until submerged. This will aid in the dislodging of soot from the pipe while the EGR cleaning procedure is performed.

4. Install the BG EF621 intake adaptor using the existing clamps (Figure 3). With the existing bolts, install the BG EF622 exhaust adaptor into the EGR valve outlet hose (Figure 4).



5. Attach the BG EF399 manifold to the BG EF621 intake and BG EF622 exhaust adaptors. Attach the BG 64 Diesel VIA[®] supply tool to the BG EF399 manifold. Ensure that the air valve and fluid valve on the supply tool are closed (see supply tool instructions).
6. If the engine is hot, the EGR cooler must be cooled before treatment can start. Start the engine, and open the supply tool air valve, keeping the fluid valve closed. Turn the BG EF399 manifold to intake and flush the EGR cooler with air for two minutes.
7. Unscrew fill cap and fill supply tool with 64 oz. (1.8 L) of BG Diesel EGR System Cleaner, PN PD10.
8. Reinstall the fill cap and hang supply tool from the hood latch. Connect shop air. Set air pressure on the supply tool to 50–60 psi.
9. Ensure the BG EF399 manifold is set to exhaust. The EGR valve will open when the engine is operating.
10. Open the air valve on the supply tool. Adjust the regulator to maintain the initial pressure of 50–60 psi. Then open the supply tool fluid valve.

NOTE: If no flow is observed then increase engine RPM to 1,000 in order to open the EGR valve as engine may be cold.

11. After ½ of the fluid has been dispensed, close the fluid valve and let the air flow for an additional two minutes to flush deposits into the exhaust stream.
12. Turn the BG EF399 manifold to intake. Open supply tool fluid valve and continue service until the supply tool is empty.

NOTE: If at any time during the intake service you hear a diesel knock sound, turn the BG EF399 manifold to off for two minutes. After two minutes, turn the BG EF399 manifold to intake and continue service.

13. When supply tool is empty, let the vehicle operate for an additional five minutes and rev the engine several times to clear all residual fluid.
14. Repeat steps 7–14 using 32 oz. (946 mL) of BG Diesel EGR System Rinse, PN PD11.

NOTE: For severe coking, it may be necessary to perform the service a second time to achieve desired results.

15. Turn the fluid and air valves on the supply tool to the closed position. Turn the vehicle off. Detach shop air line and depressurize the supply tool by rotating the regulator knob counterclockwise.
16. After the EGR cooler outlet pipe has soaked for 15 minutes, clean the pipe using BG Diesel EGR System Cleaner. The cleaner can be saved for use on other EGR components if required.
17. Remove adaptors and reassemble vehicle components in the reverse order of removal.
18. After service, reset any engine codes. The vehicle should then be set to run a manual regeneration cycle. 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 residual fluid from the passages and cooler(s) and to combust any material that has reached the diesel oxidation catalyst (DOC) and diesel particulate filter (DPF). **This should be done as soon as possible after the service.**