

BMW/Isuzu 3.0L

BG DIESEL EGR SYSTEM SERVICE INSTRUCTIONS



Wear safety goggles to protect your eyes.



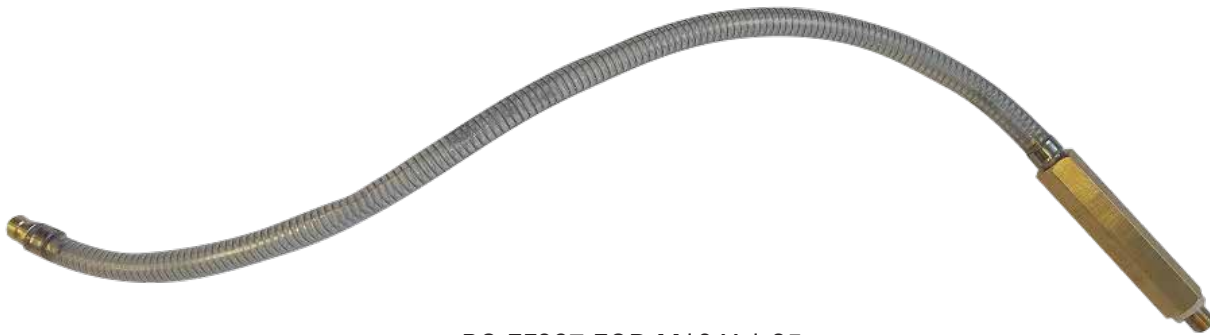
Wear Nitrile,[®] Neoprene[®] or PVC gloves to protect your hands.



Wear a long-sleeved shirt to protect your arms.

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

Adaptor required:



BG EF387 EGR M10 X 1.25
sensor port adaptor
PN E101-1652

Tools required:

- BG 64 Diesel VIA[®] supply tool, PN E101-1642
- Scan tool (for ease of operation but not required)

continued



EGR system consists of:

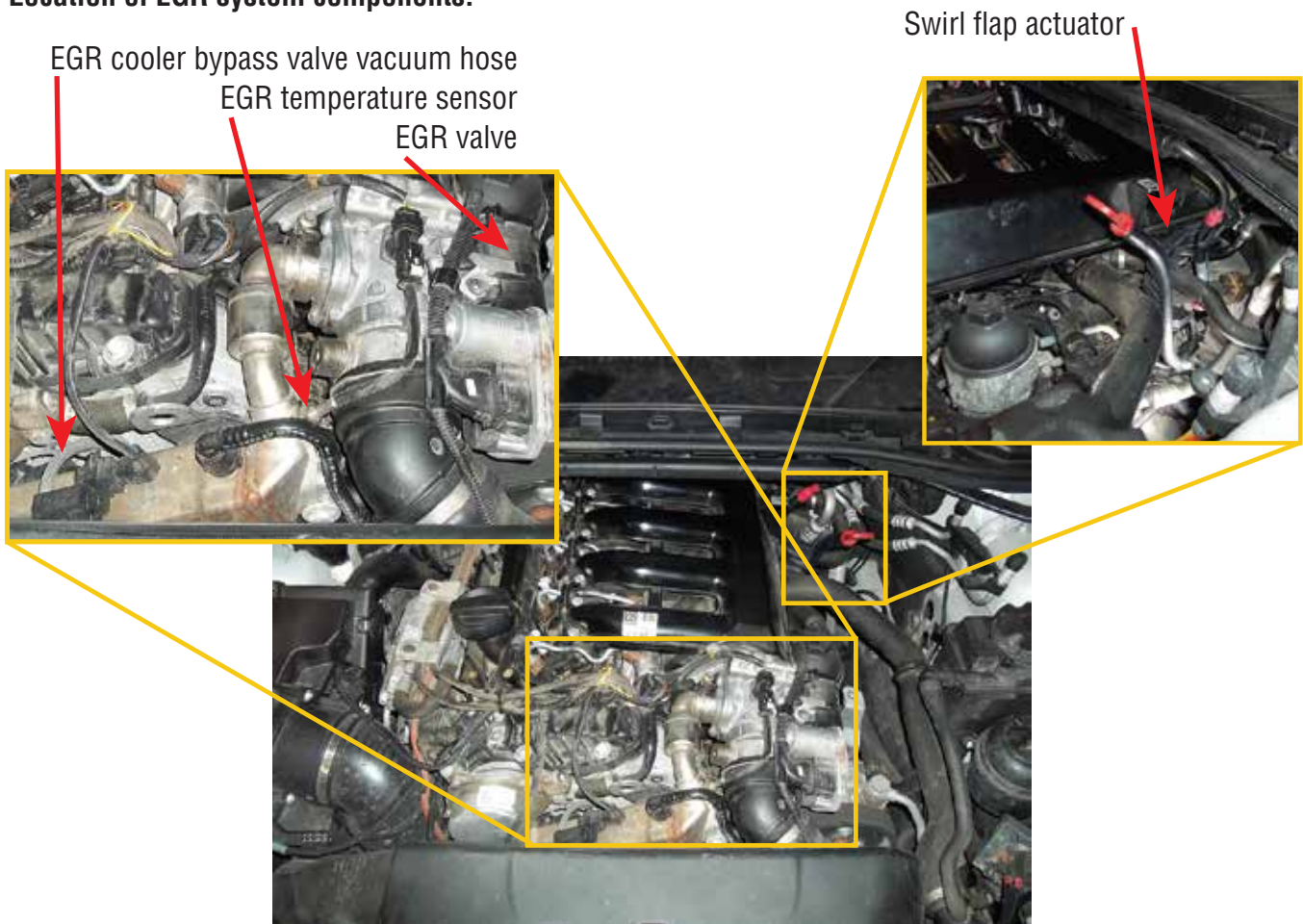
- Two cold side EGR valves (after EGR coolers); a high pressure loop and a low pressure loop which allow for proper emissions control of NO_x gases

OR

- One cold side EGR valve (after EGR cooler), high pressure loop 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 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)
- Swirl flaps (control airflow under different engine speed and loads)—closed when engine is at idle and at low engine speeds or loads below 2250 rpm

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

Location of EGR system components:



continued



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.
3. Remove EGR temperature sensor (Figure 1). Wire connector must be unplugged to remove the sensor.
4. Install BG EF387 adaptor in its place and tighten hand tight to secure the adaptor (Figure 2). Reconnect EGR temperature sensor. Place EGR temperature sensor as shown.



Figure 1



Figure 2

5. Attach BG 64 Diesel VIA® supply tool to the BG EF387 adaptor. Ensure that the air valve and fluid valve on the supply tool are closed (see supply tool instructions).
6. If engine is hot, the EGR cooler must be cooled before treatment can start. Ignition must be off for the EGR to be closed. Open supply tool air valve, keeping fluid valve closed, and flush 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 tool from the hood latch. Connect shop air. Set air pressure on the supply tool to 40–50 psi.

continued



BMW/Isuzu 3.0L *continued*

9. Start vehicle engine. Using the scan tool, command the EGR closed. Disconnect EGR cooler bypass valve vacuum hose (Figure 3). This will close the EGR bypass valve.

Note : If no scan tool is available, disconnect the EGR wire connector to close the EGR valve (Figure 4).



Figure 3



Figure 4

10. Open the air valve on the supply tool. Adjust the regulator to maintain the initial pressure of 40–50 psi. Then open the supply tool fluid valve.
11. After $\frac{1}{4}$ 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. Dispense another $\frac{1}{4}$ of the fluid by revving the engine to 1,200–1,500 rpm and cycling the EGR cooler bypass valve using the scan tool. This will allow cleaning of the EGR cooler bypass port. If no scan tool is available, disconnect and reconnect the EGR bypass valve vacuum hose several times throughout this step (Figure 5).



Figure 5

continued



13. Reconnect EGR valve wire connector.
14. To perform the intake portion of the service, use the scan tool to command the intake swirl flaps to cycle throughout the next step. Rev the engine to 1,200–1,500 rpm. This will allow the EGR valve to open.

Note: If no scan tool is available, disconnect the swirl flap actuator wire connector and manually cycle the swirl flap actuator arm several times throughout the next step (Figures 6 & 7).



Figure 6



Figure 7

15. Open supply tool fluid valve. Perform intake portion of the service until supply tool is empty.
Note: If you hear a diesel knock sound at any time during the intake portion of the service, close the fluid valve for two minutes. After two minutes, open the fluid valve and continue service.
16. 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.
17. Repeat steps 7–16 using 32 oz. (946 mL) of BG Diesel EGR System Rinse, PN PD11.
18. Turn the fluid and air valves on the supply tool to the closed position. Turn Vehicle off. Detach shop air line and depressurize the tool by rotating the regulator knob counter-clockwise.
19. Remove adaptor and reassemble vehicle components in the reverse order of removal. Wipe off EGR temperature sensor using the BG Diesel EGR System Cleaner before reinstalling.
20. 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.**

