

Volkswagen Passat 2.0L TDI

Engine Code CKRA

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.

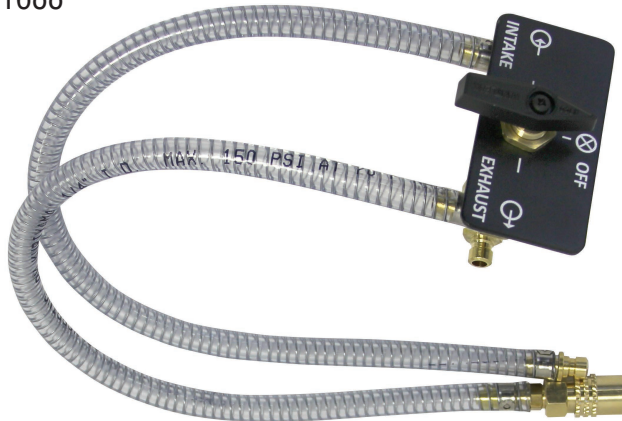
Adaptors required:



BG EF504 EGR flange 1.5" D
intake adaptor
PN E101-1688



BG EF502 EGR 1.75" exhaust adaptor
PN E101-1686



BG EF399 EGR manifold
PN E101-1645

Tool required:

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



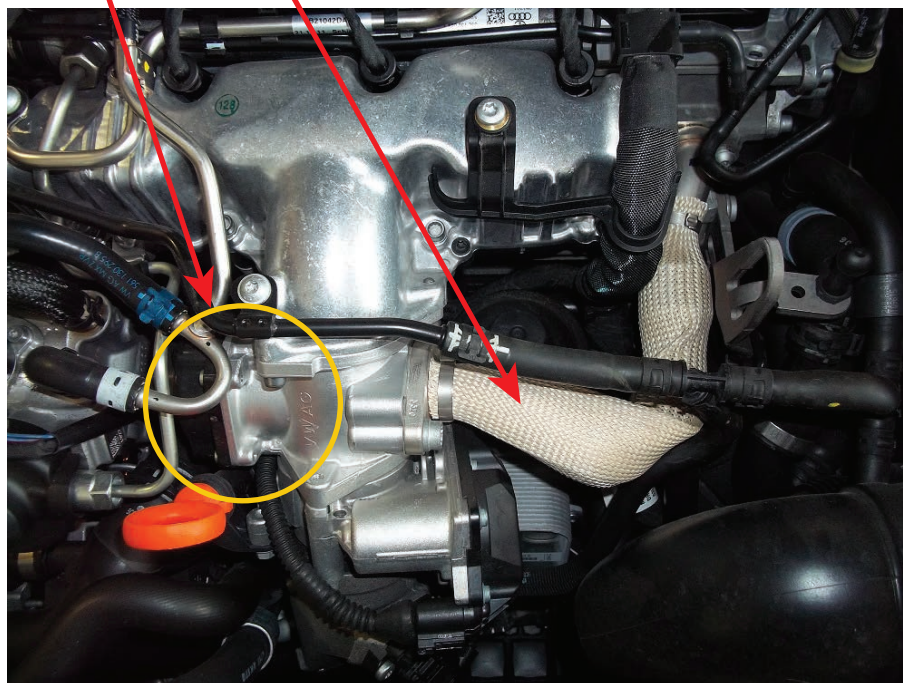
EGR system consists of:

- One hot side EGR valve (no EGR cooler), a high-pressure loop which allows for proper emissions control of NO_x gases
- One cold side EGR valve (after EGR cooler), a low-pressure loop which controls exhaust gases for proper emissions control of NO_x gases located after DOC and DPF filter
- EGR cooler (controls temperature of exhaust gases to the air intake to the engine) – low pressure loop only
- EGR temperature sensor (measures EGR cooler exhaust temperature and efficiency)
- SCR system which controls exhaust gases for proper emissions control of NO_x gases

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

- EGR inlet pipe
- EGR valve and cooler found after DOC and DPF filter low pressure loop
- EGR temperature sensor on low pressure loop
- EGR valves – high pressure loop



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 the four EGR inlet pipe bolts (Figure 1). Remove EGR inlet pipe and gaskets.

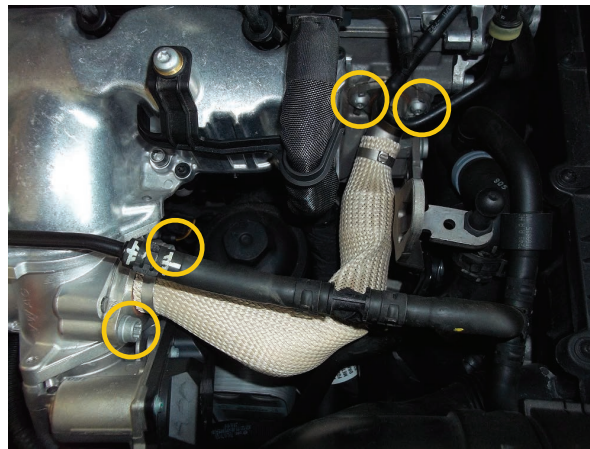


Figure 1

4. Install the BG EF504 intake and BG EF502 exhaust adaptors in place of the EGR inlet pipe using existing bolts and tighten hand tight to secure the adaptors (Figure 2).

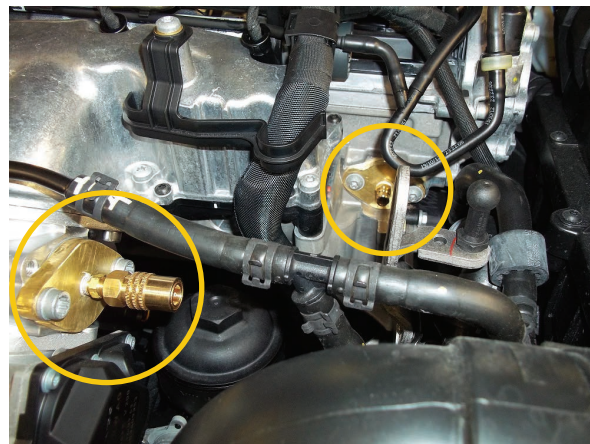


Figure 2

continued



Volkswagen Passat 2.0L TDI *continued*

5. Attach the BG EF399 manifold to the BG EF504 intake and BG EF502 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. Ignition must be off for the EGR system to be cooled. Turn valve on the BG EF399 manifold to exhaust. Open supply the tool air valve, keeping the fluid valve closed 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 tool to 40–50 psi.
9. Start vehicle engine. Set the BG EF399 manifold to “EXHAUST” (Figure 3).

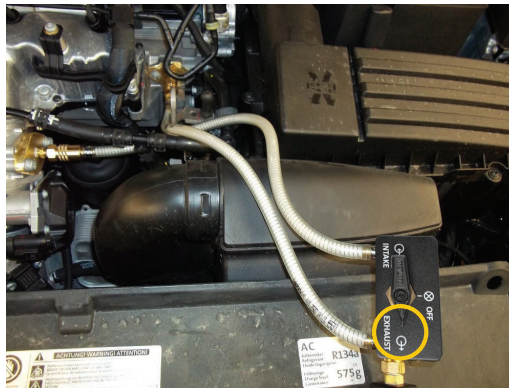


Figure 3

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 ¼ 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. Rev the engine to 1,200 rpm as this will open the EGR valve. Turn the BG EF399 manifold to “INTAKE” (Figure 4). Open supply tool fluid valve and continue service, dispensing another ¼ of the fluid.

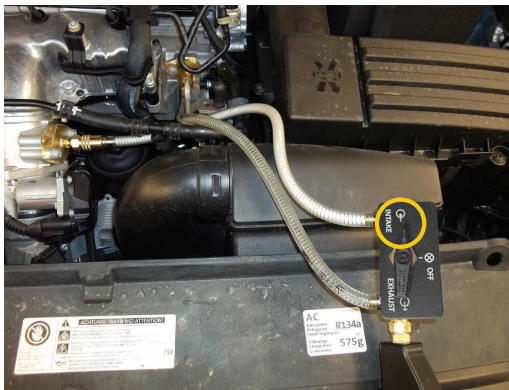


Figure 4

continued



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. Close the supply tool fluid valve and turn the BG EF399 manifold to “EXHAUST.” Let the air flow for an additional two minutes to cool off the exhaust stream.
14. Open supply tool fluid valve and continue service, dispensing another ¼ of the fluid.
15. Rev the engine to 1,200 rpm as this will open the EGR valve. 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.

16. When the 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 the vehicle off. Detach shop air line and depressurize the supply tool by rotating the regulator knob counter-clockwise.
19. Clean EGR outlet pipe using BG Diesel EGR System Cleaner. The cleaner can be saved for use on other EGR cooler outlet pipes.
20. Remove adaptors and reassemble vehicle components in the reverse order of removal.
21. 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.**

