STAR Case

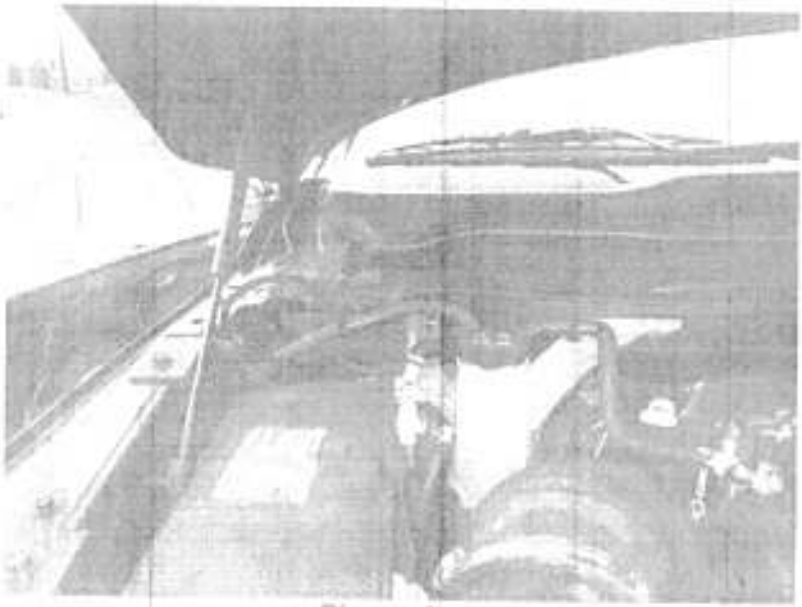

Figure 1

Figure 2

STAR Case

Leak found on EGR By-Pass Valve above shaft

Leak at Exhaust Gas Temperature Sensor (T1 pictured)

Leak at the DOC/DPF Inlet Flange

STAR Case

Note: Some leakage (Type 1 Leak) from the EGR Cooler Bypass Valve shaft is acceptable and is not contributing to the concern. If there is soot on nearby components such as Coolant Tube or on top of the Oil Filter Housing, or a Type 2 leak is observed, replace the EGR by-pass valve.

There are (2) types of leakage:

- Type 1 Leak — Defined as a leak where very small foam like bubbles (1.0 mm or less) appear. If a Type 1 Leak is observed at the EGR Cooler Bypass valve, do not replace the valve as this is considered acceptable and is not contributing to the concern.
- Type 2 Leak — Defined as a leak where larger bubbles (pea size, 8.0 mm or greater) appear. If the EGR Bypass Valve Shaft has large bubbles, then replace EGR by-pass valve.

Below is a chart outlining which component should be repaired or replaced per type of leak found followed by examples of unacceptable leaks. Once all leak sources have been properly addressed, perform the repair procedure further in this document.

Leak Location	Repair Required per leak type
Welded Joints	Type 1 (1.0 mm) or greater
O2 Sensor Sealing Points	Type 1 (1.0 mm) or greater
NOX Sensor 1 Sealing Points	Type 1 (1.0 mm) or greater
NOX Sensor 2 Sealing Points	Type 1 (1.0 mm) or greater
O2 Sensor Boss Welds	Type 1 (1.0 mm) or greater
NOX Sensor 1 Boss Welds	Type 1 (1.0 mm) or greater
NOX Sensor 2 Boss Welds	Type 1 (1.0 mm) or greater
Exhaust Flange/Joint Connections	Type 2 (8.0 mm) or greater
Exhaust Manifold to Cylinder Head Connection	Type 2 (8.0 mm) or greater
EGR Valve gasket and Crossover Tube Sealing Points	Type 2 (8.0 mm) or greater
EGR Cooler Bypass Valve	Type 2 (8.0 mm) or greater

STAR Case

Figure 4

STAR Case

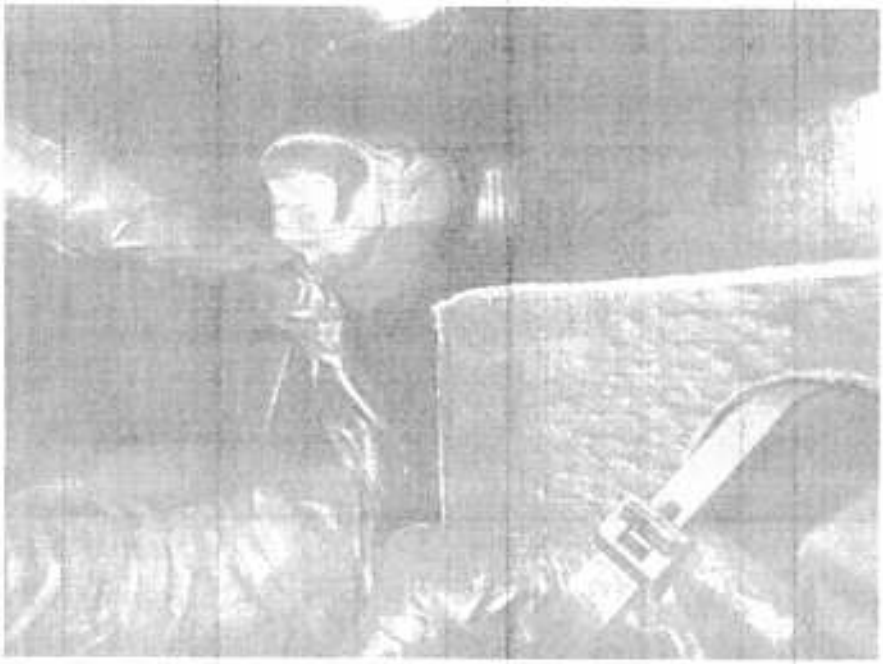

Figure 3

1. Install a new Mastic Patch (P/N 55396938AA). Ensure that the perimeter of the Foil Patch is properly adhered to the Body sheet metal (See Figure 4).

STAR Case

Case Number: S131100008

Release Date: 05/26/2015

Symptom/Vehicle Issue: Diesel Exhaust Odor In Cab Due To Exhaust Leakage – Cummins 6.7L Exhaust System Leak Testing.

Discussion: A small number of customers may experience a slight diesel exhaust odor in the cab of the vehicle. They may comment that the odor is more noticeable after the vehicle has completed an exhaust regeneration event and is at a standstill or driving at low speeds.

The source of the smell may be due to any leak in the exhaust system. For proper diagnosis of any exhaust leaks, refer to ("CHECKING THE EXHAUST SYSTEM FOR LEAKS") in DealerConnect/TechConnect Service Information section 11 – Exhaust System> Diagnosis and Testing> Leak Testing. Check for leaks with soapy water while pressurizing the exhaust system with air (COLD SYSTEM).

Below is an enhanced list of joints and components to the existing STAR Case for exhaust smell:

1. EGR By-Pass Valve flexible connection to EGR Cooler Sealing Joint.
2. Exhaust Transfer Connector to Exhaust Manifold.
3. EGR Cross Over Tube Joints/Clamps.
4. EGR cooler to exhaust manifold gasket.
5. Exhaust manifold to cylinder head gasket area.
6. Exhaust Manifold Pressure Sensor and tube.
7. EGR temperature sensor.
8. EGR valve to intake plenum gasket.
9. NOx Sensor 1 and 2 Boss welds.
10. Exhaust Temperature Sensors (T1/T2/T3/T4).
11. Turbo to exhaust manifold gasket.
12. Turbo exhaust elbow and elbow to exhaust pipe flange.
13. DOC/DPF flange connection and DOC/DPF to SCR connection.
14. DPF Pressure sensor pipe and hose connections.
15. Ammonia sensor boss weld.
16. Shaft of the EGR by-pass valve.

STAR Case

Soot due to Leak of EGR Cooler By-Pass Valve Shaft

Leak found between EGR By-Pass Valve and flexible connection to EGR Cooler surface

FCA

STAR Case

Leak at DOC/DPF Outlet to SCR Inlet

Repair Procedure:

1. Remove the wiper cowl and gain access to the Mastic Patch under the passenger side cowl screen and remove the Mastic Patch.
2. Using a flash light, shine a light into the hole to locate the weld access hole (See Figure 1, 2 and 3).
3. Seal the weld access hole using Butyl on the engine compartment side of the access (P/N 04076274AB). Surface to be sealed must be at room temperature and cleaned using Alcohol or Acetone. Work butyl into a ball approx. 1 inch in diameter and press into each corner.
4. Repeat this on the driver's side of the cowl.

Note: The Mastic Patch will not be present on the driver's side. However, the access hole will be in the same location as the passenger side access hole.