



**No.: 13 TS-30**  
September 30, 2013

TO: Service Locations

FROM: Technical Service

SUBJECT: **GHG14 DD Engine EGR System Fault Codes**

### **ISSUE**

Errors in the EGR system may result in one or more of the following codes.

- SPN 2791/FMI 2 - EGR Valve Actuator, Position Deviation Error
- SPN 2791/FMI 11 - EGR Valve Actuator, Motor Off
- SPN 2791/FMI 16- EGR Valve Actuator, Learn Cycle Too Large
- SPN 520296/FMI 31 - EGR Valve Actuator Learn Cycle Incomplete
- SPN 2659/FMI 0 - EGR Flow Target Error Diagnostic - High Flow
- SPN 2659/FMI 1 - EGR Flow Target Error Diagnostic - Low Flow

### **CAUSE**

Incorrect, missing, or loose parts in the EGR system can cause the above fault codes.

### **REQUIRED ACTION**

Follow all published troubleshooting in Power Service Literature in the *EPA07/10/GHG14 DDEC VI/10/13 Electronics and Troubleshooting Manual* (DDC-SVC-MAN-0084). Note that some EGR system fault codes are covered in Advanced Diagnostics as shown in Technical Service letter 11 TS-3.

1. Carefully inspect the EGR valve system hardware consisting of the EGR valve actuator, lever, pull rod, and EGR valve for incorrect, missing, damaged, or loose parts. The lever on top of the EGR valve actuator is dependent on the type of engine. See Figures 1 and 2 for information on how to correctly identify the lever. Note the numbers stamped on the lever.



**Figure 1 – Location of Lever**



|                  |                                   |                                      |
|------------------|-----------------------------------|--------------------------------------|
| 471 used on DD13 | 472 used on DD15AT (model 472906) | 473 used on DD15TC (472909) and DD16 |
|------------------|-----------------------------------|--------------------------------------|

**Figure 2 – Identification of Lever**

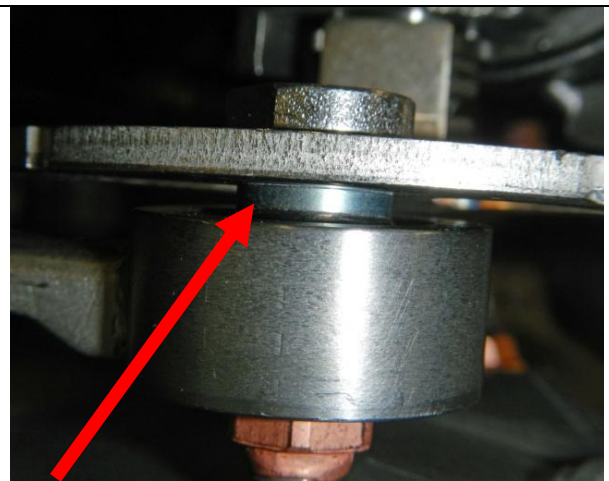
2. Inspect the pull rod connecting the lever to the EGR valve. The hardware should be firmly tightened with no slack, and there should be no binding in movement. The pull rod has a “v” stamped on it at the EGR valve end, and an “s” stamped on it at the EGR valve actuator end. The DD15AT (472906) has some additional hardware at the EGR valve end consisting of a spacer that must also be correctly installed. The spacer is used on the connecting bolt between the top of the pull rod ball socket and the bottom of the EGR valve circular lever. Omission of the spacer can result in binding of the EGR valve during actuation. The EGR pull rod lever design is different on DD13, DD15TC, and DD16 engines and a spacer is not used on those applications. See Figures 3-6 for examples of the various configurations.



**Figure 3 – DD13 System, Pull rod P/N Located On Top**



**EGR Valve Circular Lever**



**Spacer Between Pull rod and Circular Lever**

**Figure 4 – DD15AT (472906) System**



Figure 5 – DD15AT (472906) System, Pull rod P/N Located On Top



Figure 6 – DD15TC (472909) And DD16 System, Pull rod P/N Located On Top



**REQUIRED MATERIAL**

If any parts need replacing, Table 1 provides a list of the correct part numbers for the major components. Part numbers are subject to change without notice.

| Engine Type              | EGR Small Lever Assembly | EGR Valve actuator | Pull rod    |
|--------------------------|--------------------------|--------------------|-------------|
| DD13                     | A4711400124              | A4701500494        | A4711401946 |
| DD15AT (472906)          | A4721400124              | A4701500494        | A4721400946 |
| DD15TC (472909) and DD16 | A4731400124              | A4701500494        | A4731400346 |

**Table 1 – EGR System Major Components**

**REPAIR PROCEDURE**

If any repairs are needed, repair information on the EGR system components can be found in the *EPA07/10/GHG14 Exhaust – EGR – ATS Manual* (DDC-SVCMAN-0083).

Note that if the EGR valve actuator is being replaced, it must be fully installed onto the engine with all necessary hardware attached before the ignition is turned on for the first time in the valve actuator's life. This is because the valve actuator does a “slow learn” the first time it's powered up to correctly learn the end stops as it fully cycles. Subsequent ignition sequences only have a “quick learn”. If the valve actuator is not correctly installed, the initial “slow learn” will be incorrect. This can be corrected by running the “EGR Actuator Slow Learn” procedure in DDDL or DDRS. Choose “EGR Actuator Slow Learn” from the Actions » EGR menu to display the EGR Actuator Slow Learn dialog box.

**CLAIM PROCESS**

Normal in-warranty procedures apply. **Proactive removal of properly functioning EGR system parts is not allowed under warranty.**

**CONTACT INFORMATION**

Please contact the Detroit™ Diesel Customer Support Center at 800-445-1980 or email [csc@daimler.com](mailto:csc@daimler.com) if you have any questions.