



TO: Service Locations

FROM: Technical Support Development

SUBJECT: **EPA07 MBE 900 Fault Codes:**
SPN 615/FMI 9 - Smart Remote Actuator 2, Failsafe Mode, Motor Off
SPN 615/FMI 7 - Smart Remote Actuator 2, Failsafe Mode, Motor On
SPN 615/FMI 14 - Smart Remote Actuator 2, No Failsafe Mode, Motor Off

ISSUE

Certain EPA07 MBE 900 engines are equipped with an electronic Smart Remote Actuator (SRA2) for the exhaust flap instead of being pneumatically controlled. This system sometimes experiences operational problems resulting in AWL/CEL and fault codes:

- SPN 615/FMI 9: Smart Remote Actuator 2, Failsafe Mode, Motor Off.
- SPN 615/FMI 7: Smart Remote Actuator 2, Failsafe Mode, Motor On.
- SPN 615/FMI 14: Smart Remote Actuator 2; No Failsafe Mode; Motor Off.

CAUSE

There are 2 distinct causes for these fault codes:

1. **SPN 615/FMI 9 - Smart Remote Actuator 2, Failsafe Mode, Motor Off:**
This fault code is caused by a seized exhaust flap actuator rod (linkage). Corrosion builds up inside the ball sockets on both ends of the rod, stopping the assembly movement. Every time the key is turned on, the SRA performs a quick check by commanding the exhaust flap to close and open. If no movement is detected, AWL/CEL and fault code become active.
2. **SPN 615/FMI 7 - Smart Remote Actuator 2, Failsafe Mode, Motor On and SPN 615/FMI 14 - Smart Remote Actuator 2; No Failsafe Mode; Motor Off:**
These fault codes are caused by a flap that is stuck closed or has too long of a response time to open the exhaust flap. Once the SRA is deactivated, it commands the exhaust flap to open. If no movement or a slow response is detected, AWL/CEL and fault codes become active (sometimes both codes are active at the same time).

REQUIRED MATERIAL

When repairing fault code SPN 615/FMI 9 - Smart Remote Actuator 2, Failsafe Mode, Motor Off, refer to Table 1 below.

Description	Part Number	Repair Procedure
Exhaust Flap Rod (linkage) Assy	A9261400246	Described in this letter
Anti-Seize Lubricant	See anti-seize lubricant Table 3	---

Table 1 SPN 615/FMI 9 Repair Parts

When repairing fault codes SPN 615/FMI 7 - Smart Remote Actuator 2, Failsafe Mode, Motor On and SPN 615/FMI 14 - Smart Remote Actuator 2; No Failsafe Mode; Motor Off, refer to Table 2 below.

Description	Part Number	Repair Procedure
Exhaust Flap Rod (linkage) Assy	A9261400246	Described in this letter
Exhaust Flap Housing	A9261401554	EPA07 MBE 900 Service Manual
Anti- Seize Lubricant	See anti-seize lubricant table Table 3	---

Table 2 SPN 615/FMI 7 and SPN 615/FMI 14 Repair Parts

Anti-Seize Lubricant is required on the ball joints. The following table lists all available anti-seize lubricants from supplier Permatex® with package size and stock numbers:

Stock #	Description
09175	5g pouch, display boxed
81343	1 oz. tube, carded
80071	4 oz. brush-top bottle
80078	8 oz. brush-top bottle

Table 3 Permatex Anti-Seize Lubricants

NOTE: Do **NOT** replace the Smart Remote Actuator (SRA).

REPAIR PROCEDURE

The reported fault code will define what type of repair procedure needs to be completed (or performed).

For fault code SPN 615/FMI 9 - Smart Remote Actuator 2, Failsafe Mode, Motor Off, replace exhaust flap rod (linkage) assembly. Installation procedure is provided in this letter.

For fault codes SPN 615/FMI 7 - Smart Remote Actuator 2, Failsafe Mode, Motor On and SPN 615/FMI 14 - Smart Remote Actuator 2; No Failsafe Mode; Motor Off:

- Replace exhaust flap rod (linkage) assembly. Installation procedure provided in this letter.
- Replace exhaust flap housing. Installation procedure is provided in the EPA07 MBE 900 Service Manual (DDC-SVC-MAN-0034) in the *Installation of Electronic Wastegate Exhaust Brake Assembly* section.

NOTE: Do **NOT** replace the Smart Remote Actuator (SRA).

Installation procedure to replace the exhaust flap rod (linkage) assembly:

1. Make sure vehicle ignition is OFF. Remove retaining clip and carefully remove the linkage from the exhaust flap lever arm and the SRA. See Figure 1.

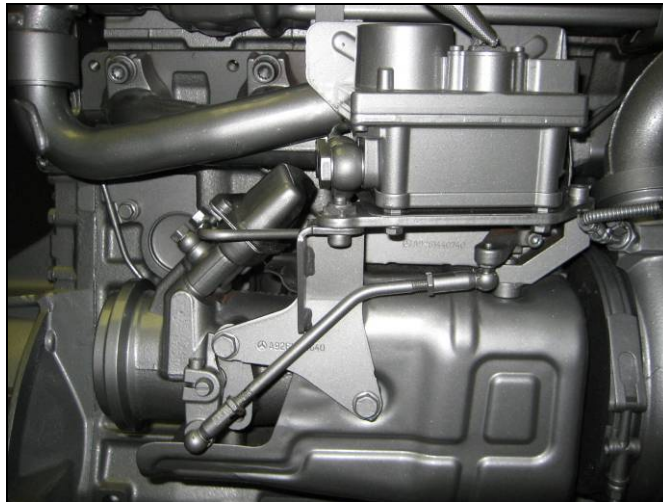


Figure 1 - Actuator Linkage

2. Using an emery cloth, carefully clean any rust from the ball studs on the exhaust flap lever arm and on the SRA lever.

3. Rotate flap to full closed position, the lever "A" should point forward. See Figure 2.



Figure 2 – Exhaust Flap Lever Adjustment

NOTE: If exhaust flap does not open and close smoothly, it must be replaced.

4. Rotate flap to full open position, the lever "A" should point downward. See Figure 3.

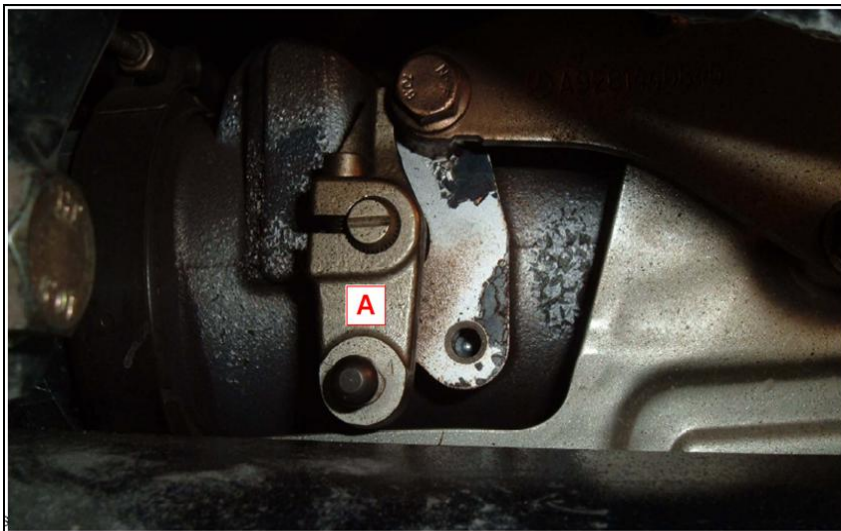


Figure 3 – Exhaust Flap Lever Adjustment

5. Apply the anti-seize lubricant inside of both ball sockets of the new linkage and on the ball studs on the exhaust flap lever arm and SRA lever.
6. Install the new linkage to the exhaust flap lever arm.

7. At the SRA, loosen the adjustment nut and make sure the ball joint socket fits on the actuator lever as shown in Figure 4.

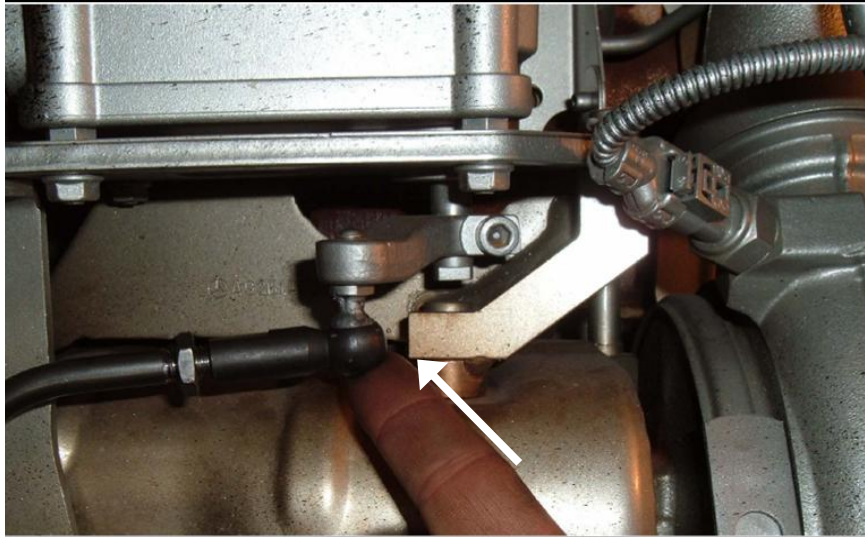


Figure 4 – Smart Remote Actuator Lever Adjustment

7. Remove rod from SRA ball joint.
8. Adjust the ball joint socket on the actuator end of the linkage rod by extending it three complete turns as shown in Figure 5.

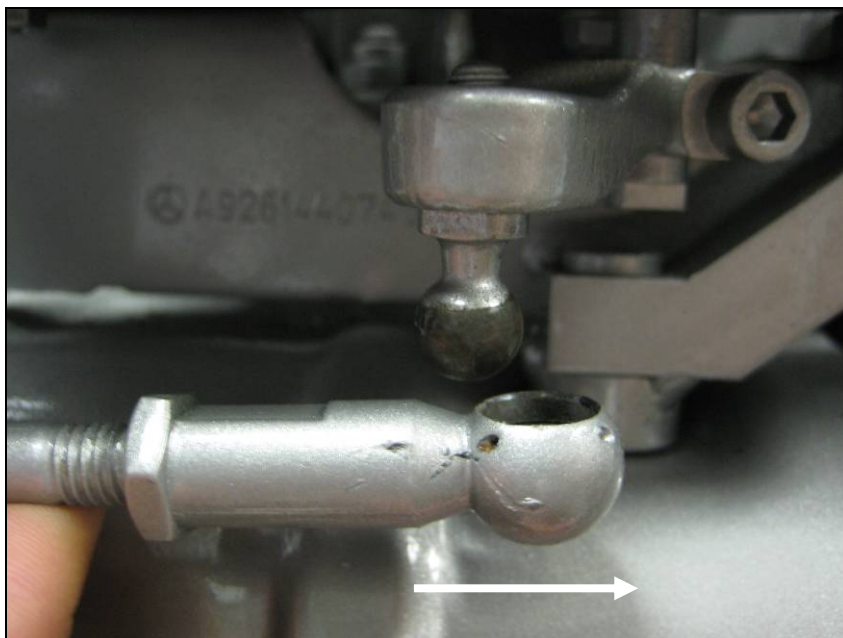


Figure 5 – Smart Remote Actuator Lever Adjustment

9. Reinstall the ball joint socket onto the SRA lever and align the flats of the ball joint sockets with the actuator and exhaust flap lever arms. See Figure 6.

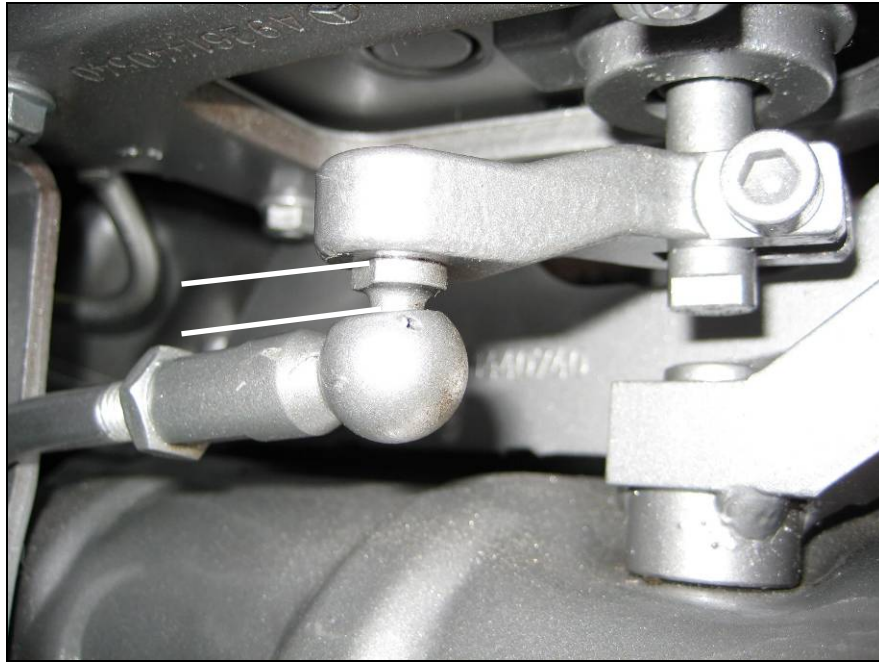


Figure 6 – Smart Remote Actuator Lever Adjustment

10. Tighten the locknut against the ball joint socket to 12.5 N·m (9 lb-ft), being careful not to damage (bend) the linkage or the SRA lever. See Figure 7.

NOTE: Verify flats on ball joint socket are parallel with the exhaust flap lever.

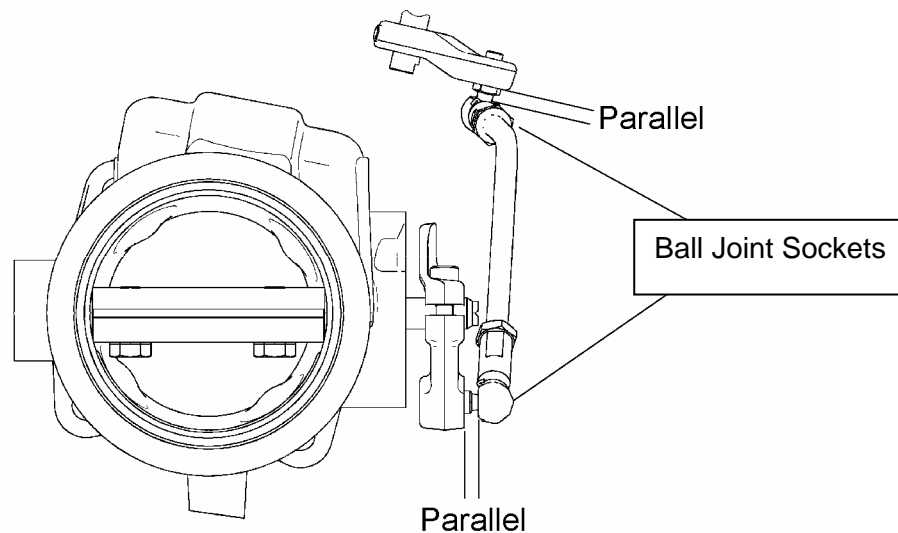


Figure 7 – Parallel Ball Joint Sockets

11. Check for adequate clearance between the linkage rod and the bracket. See Figure 8.

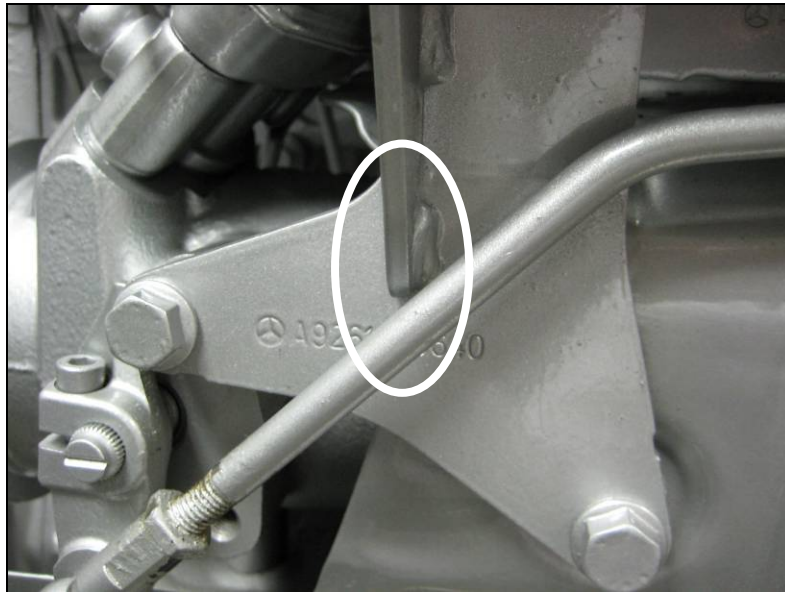


Figure 8 – Clearance Check Between Linkage Rod and Bracket

12. Turn vehicle ignition ON, connect DDDL/DDRS and clear all fault codes.
13. Turn vehicle ignition OFF and wait one minute.
14. Turn vehicle ignition ON, wait for the dashboard gauges to sweep, and start the engine.
Confirm proper operation.

CONTACT INFORMATION

Please contact the Detroit Diesel Customer Support Center at 313-592-5800 or email csc@detroitdiesel.com if you have any questions.