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Service Information Bulletin

SUBJECT	DATE
SPN 2791/FMI 7 – ALL YEARS	May 2013

Additions, Revisions, or Updates

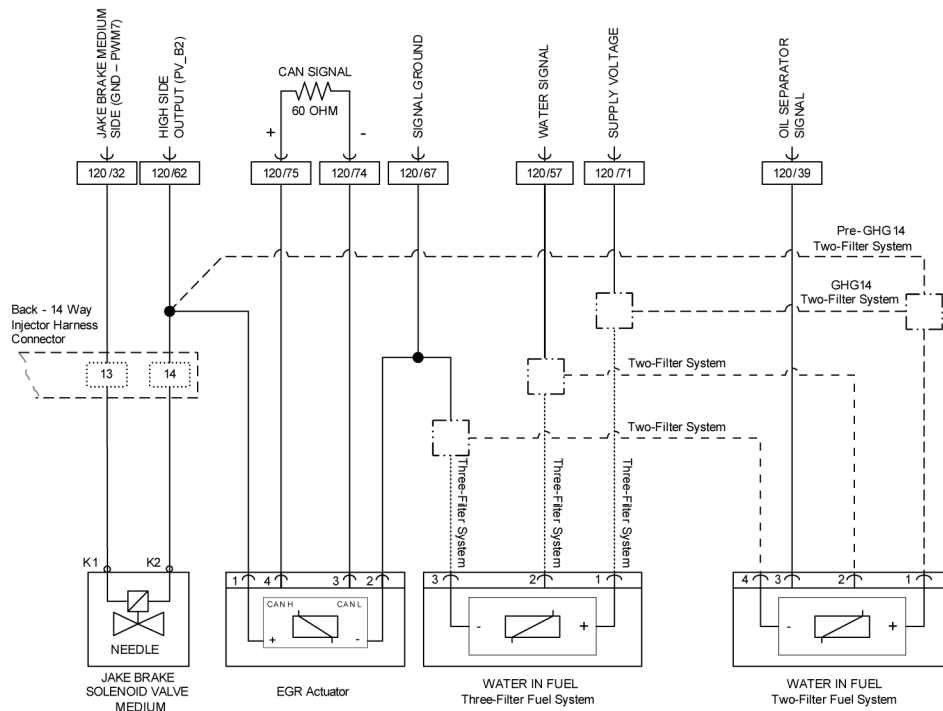
Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 2791/FMI 7	Deleted part numbers from step 4. Added graphics showing the different pull rods.



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This diagnostic is typically the Exhaust Gas Recirculation (EGR) Actuator, Failsafe Mode, Motor On.



d150005

Check as follows:

1. Check for additional voltage fault codes SPN/168 FMI (any).
 - a. If fault codes are present, troubleshoot and repair them first.
 - b. If no additional voltage fault codes are present, Go to step 2.
2. Using DDDL 7.x, check SPN 2791/FMI 7 extended data record #3 "physical data;" refer to chart below for the "Reserved for Extreme Parameter" value.

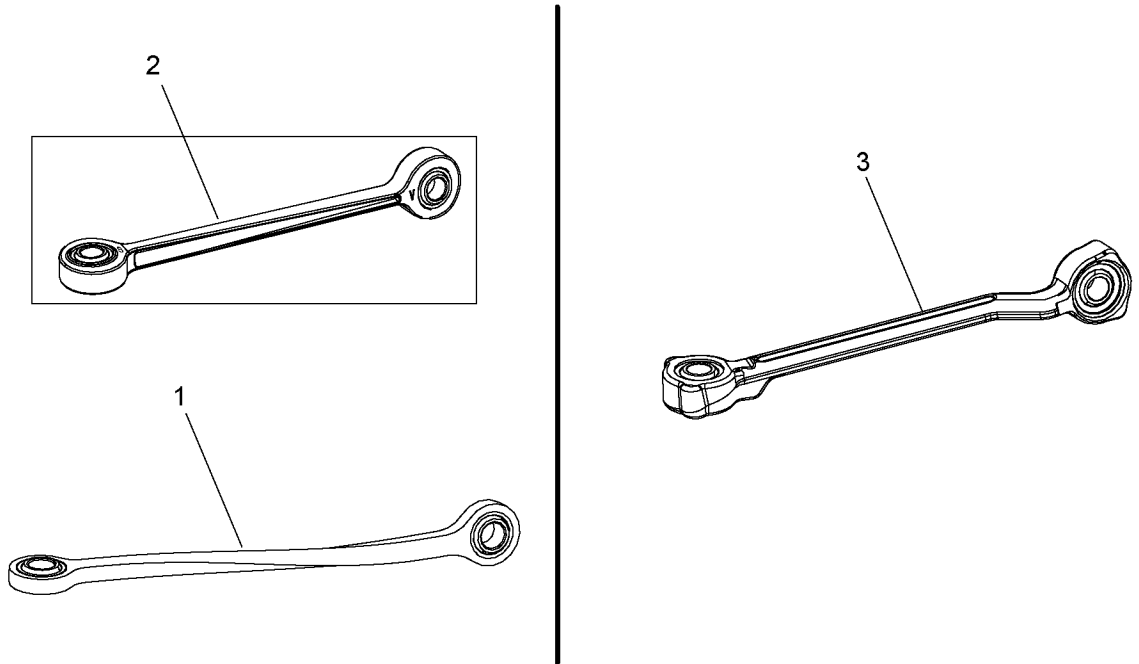
EGR Valve Actuator, Failsafe Mode, Motor On		2791	7
UDS Code		BA7900	
First Occurrence		3/19/2008 9:41:49 A...	
Last Occurrence		3/19/2008 9:41:49 A...	
J1587		SID 146 FMI 7	
Extended Data Record #1 "Counter"		0	
Extended Data Record #2 "Time Stamp"		1	
Extended Data Record #3 "Physical Data"		2	
Engine Speed		2	rpm
Engine Torque		0.0	ft-lb
Engine Coolant Temperature		111	°F
Boost Pressure		13.92	psi
Calculated Load Value		4	%
Vehicle Speed		<<NO MATCHING I...	mph
Reserved for Number of Engine Overrides		255	
Reserved for Extreme Parameter		3	
Extended Data Record #4 "Fault Code Data"		3	
Extended Data Record Number 5th Data Record "Enhanced Environmental Data"		4	
Extended Data Record Number [0x06], "DPF Data"		5	

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Table 1.

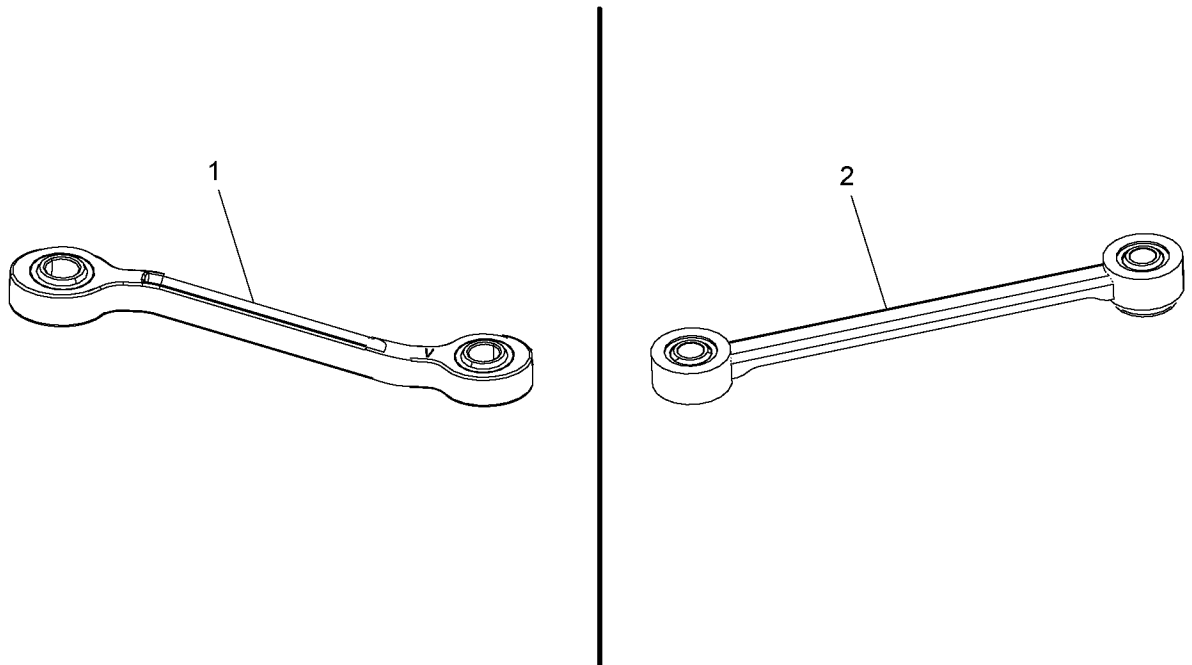
Reserved for Extreme Parameter	Action to take
3	Go to step 3.
8,11	Go to step 9.

3. Turn the ignition OFF.
4. Disconnect the EGR valve actuator pull rod. Inspect the ball sockets on the pull rod for free movement.
 - a. If the ball sockets do not rotate/move freely or the rod is not the most recent part number, replace the EGR valve actuator pull rod.
For the DD13, Refer to section "Removal of the Exhaust Gas Recirculation Valve Actuator Pull Rod".
Before engine serial number HDE108907, the pull rods (1 and 2) were used. Beginning with engine serial number HDE108907, pull rod (3) is used. The pull rods are not interchangeable.



d140425

For the DD15 and DD16, Refer to section "Removal of the Exhaust Gas Recirculation Valve Actuator Pull Rod". Before engine serial number HDE172591, the pull rod (1) was used. Beginning with engine serial number HDE172591, pull rod (2) is used. The pull rods are not interchangeable.



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b. If the ball sockets move freely and the part number is recent, Go to step 5.

NOTE: Some resistance is normal; however, the actuator should not bind in any particular spots.

5. With the EGR valve actuator pull rod disconnected, physically sweep the EGR actuator throughout its travel.
 - a. If actuator binds at any point in its travel, replace the EGR actuator.
For the DD13, Refer to section "Removal of the Exhaust Manifold".
For the DD15 and DD16, Refer to section "Removal of the DD15 and DD16 Exhaust Gas Recirculation Valve".
 - b. If EGR actuator does not bind, Go to step 6.
6. With the EGR valve actuator pull rod disconnected, turn the ignition ON (key ON, engine OFF) and monitor SRA3 status using DDDL.

Table 2.

SRA3 Status Value		Action to Take
EPA07	EPA10	
9 or 10	"Learn: Span too large, using initial value" OR "Learn: Stops invalid using initial value."	Do not replace the actuator. Cycle ignition 2 more times and continue to monitor SRA3 status; if SRA3 status continues to be the same, Go to step 7.
Any other value.	Any other value.	Replace the EGR valve actuator and Go to step 16.

7. Turn the ignition OFF.
8. With the EGR actuator pull rod disconnected, physically move the EGR valve butterfly from stop to stop to check for full travel (some drag is normal).
 - a. If EGR butterfly does not move fully from stop to stop, replace the EGR valve. Go to step 16.
For the DD13, Refer to section "Removal of the Exhaust Manifold".
For the DD15 and DD16, Refer to section "Removal of the DD15 and DD16 Exhaust Gas Recirculation Valve".
 - b. If EGR butterfly moves stop to stop, reconnect the EGR valve actuator rod to the EGR valve and EGR actuator. Go to step 16.
9. Turn the ignition OFF and disconnect the EGR actuator harness connector.
10. Measure the resistance between pins 3 and 4 of the EGR actuator connector (engine harness side).
 - a. If the resistance is between 55 and 65 ohms, replace the EGR actuator.
 - b. If the resistance is not between 55 and 65 ohms, Go to step 11.
11. Disconnect the MCM 120-pin connector.
12. Measure the resistance between pins 3 and 4 of the EGR valve actuator connector (engine harness side).
 - a. If the resistance is less than 10K ohms, repair short between pins 3 and 4 of the EGR actuator harness connector and MCM pins 74/75.
 - b. If the resistance is greater than 10K ohms, Go to step 13.
13. Measure the resistance between pin 3 of the EGR actuator connector harness and pin 74 of the MCM 120-pin connector.
 - a. If the resistance is greater than 3 ohms, repair wire between pin 3 of the EGR actuator connector harness and pin 74 of the MCM 120-pin connector.
 - b. If the resistance is less than 3 ohms, Go to step 14.
14. Measure the resistance between pin 4 of the EGR valve actuator connector harness and pin 75 of the MCM 120-pin connector.
 - a. If the resistance is greater than 3 ohms, repair wire between pin 4 of the EGR valve actuator connector harness and pin 75 of the MCM 120-pin connector.
 - b. If the resistance is less than 3 ohms, Go to step 15.
15. Install test MCM; reconnect the EGR actuator harness connector. Turn the ignition ON and monitor SRA3 status using DDDL.
 - a. If SRA3 status is "0" or "OK," reprogram the original MCM with the latest settings on the server. Go to step 16.
 - b. If SRA3 status is not "0" or "OK," replace the EGR valve actuator.
16. Clear codes, cycle the ignition ON and monitor SRA3 status using DDDL.
 - a. If SRA3 status is "0" or "OK," clear the codes and release the vehicle.
 - b. If SRA3 status is not "0" or "OK," replace the MCM.