P208D-(DIESEL EXHAUST FLUID) REDUCTANT PUMP CONTROL CIRCUIT HIGH

For a complete wiring diagram, refer to the Wiring Information.
Theory of Operation

The Diesel Exhaust Fluid (DEF) Supply Pump Assembly has many functions. Its primary purpose is to build adequate system pressure for dosing into the exhaust. When the system is shut down, the pump is used to purge the fluid out of the line back into the tank. The DEF Dosing Control Unit provides the 12 volt supply and ground for the pump. The DEF Dosing Control Unit also provides a Pulse Width Modulated (PWM) signal to the DEF Supply Pump Assembly to control the speed and output of the pump. The DEF Dosing Control Unit will illuminate the MIL light via the Powertrain Control Module (PCM) immediately after the diagnostics run and fails and diesel exhaust fluid injection into the aftertreatment system is disabled. The DEF Dosing Control Unit will turn off the MIL light via the PCM when the monitor runs and passes in three consecutive key cycles. Note: The DEF Dosing Control Unit is located on the DEF Tank.

The first warning will occur when the p-code becomes pending or active. The customer will hear a chime and get an EVIC message reading "Service DEF System See Dealer." The second warning level will occur if the customer continues to drive and the code has not cleared. The customer will hear a chime and get an EVIC message reading "Speed Limited to 5 mph in XXX MILES See Dealer". Upon driving until the countdown reaches zero, the customer will hear a chime and get an EVIC message reading "5 mph Max on Restart, Long Idle or Refuel See Dealer.” Upon key-off, refuel, or 1 hour long idle, the EVIC message will read, “Speed Limited to 5 mph See Dealer.” Once induced to a 5 mph derate, the inducement will not clear unless the diagnostic runs and passes, or the PCM is recalibrated.

- When Monitored:
  - Continuously with the ignition on.
- Set Condition:
  - The DEF Dosing Control Unit detects that the DEF Supply Pump Assembly circuit is above a calibrated value.

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Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

1. ACTIVE DTC
   1. Turn the ignition on, engine not running.
   2. With the scan tool, navigate to Systems Tests and actuate the Diesel Exhaust Fluid Doser Pump Override Test.
   3. With the scan tool, View DTCs.

Is the DTC active?

Yes   •   Go To 2
2. **CHECK THE DIESEL EXHAUST FLUID**

1. Turn the ignition off.
2. Collect a sample of diesel exhaust fluid from the system.
3. Visually inspect the fluid for signs of contamination or debris.
4. To test for hydrocarbons in the DEF tank use Hydroscopic test paper (223–44–863) available through MoparEssentialTools.com. Then, ENTER EQUIPMENT CATALOG. Or call (855)-298-2687. The test strip must come in contact with the DEF fluid in the tank in order to get a valid reading for hydrocarbons present in tank.
5. Remove the test paper from the package and inspect for color consistency. If the color is not consistent replace strip.
6. Disconnect the DEF fill pipe from tank and try to get a sample or remove the DEF tank.
7. Place the test paper directly into the DEF fluid in the tank. If the light blue paper turns dark blue, that is an indication that oil or hydrocarbon contamination is present.

**Is the Diesel Exhaust Fluid (DEF) free of debris, hydrocarbons, or other contamination?**

- **Yes** Go To 3
- **No**
  - If the DEF fails the Hydroscopic test paper test or shows signs of other contaminants: Drain the Diesel Exhaust Fluid (DEF). Replace the DEF Tank, DEF Supply Pump Assembly, DEF Injector, DEF Supply Tube, DEF Filler Tube, and DEF Filler Cap in accordance with the service information.
  - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

3. **CHECK FOR THE DEF SUPPLY PUMP MOTOR A SUPPLY CIRCUIT SHORTED TO ANOTHER CIRCUIT**

1. Turn the ignition off.
2. Disconnect the DEF Supply Pump Assembly harness connector.
3. Disconnect the DEF Dosing Control Unit C2 harness connector.
4. Measure the resistance between and the DEF Supply Pump Motor A Supply circuit and all other circuits at the DEF Dosing Control Module C2 harness connector.

**Is the resistance above 10k Ohms between the DEF Supply Pump Motor A Supply circuit and all other circuits?**

- **Yes** Go To 4
- **No**
  - Replace the DEF Tank Harness in accordance with the service information.
  - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

4. **CHECK FOR THE DEF SUPPLY PUMP MOTOR B SUPPLY CIRCUIT SHORTED TO ANOTHER CIRCUIT**

1. Measure the resistance between and the DEF Supply Pump Motor B Supply circuit and all other circuits at the DEF Dosing Control Unit C2 harness connector.

**Is the resistance above 10k Ohms between the DEF Supply Pump Motor B Supply circuit and all other circuits?**

- **Yes** Go To 5
5. **CHECK FOR THE DEF SUPPLY PUMP MOTOR C SUPPLY CIRCUIT SHORTED TO ANOTHER CIRCUIT**

1. Measure the resistance between and the DEF Supply Pump Motor C Supply circuit and all other circuits at the DEF Dosing Control Unit C2 harness connector.

**Is the resistance above 10k Ohms between the DEF Supply Pump Motor C Supply circuit and all other circuits?**

- **Yes**
  - Go To 6
- **No**
  - Replace the DEF Tank Harness in accordance with the service information.
  - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).

6. **CHECK THE DEF DOSING CONTROL UNIT**

1. Reconnect the DEF Dosing Control Unit C2 harness connector. Leave the DEF Supply Pump Assembly harness connector disconnected.
2. Turn the ignition on.
3. With a scan tool, View DTCs.

**Did DTC P208A become active and DTC P208D change to stored with the DEF Supply Pump Assembly harness connector disconnected?**

- **Yes**
  - Replace the DEF Supply Pump Assembly in accordance with the service information. (Refer to 25 - Emissions Control/Diesel Exhaust Fluid Emissions/ASSEMBLY, Diesel Exhaust Fluid Pump - Removal).
  - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).
- **No**
  - Replace the DEF Dosing Control Unit in accordance with the service information. (Refer to 25 - Emissions Control/Diesel Exhaust Fluid Emissions/UNIT, Diesel Exhaust Fluid Dosing Control - Removal).
  - Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/ MODULE, Powertrain Control (PCM) - Standard Procedure).