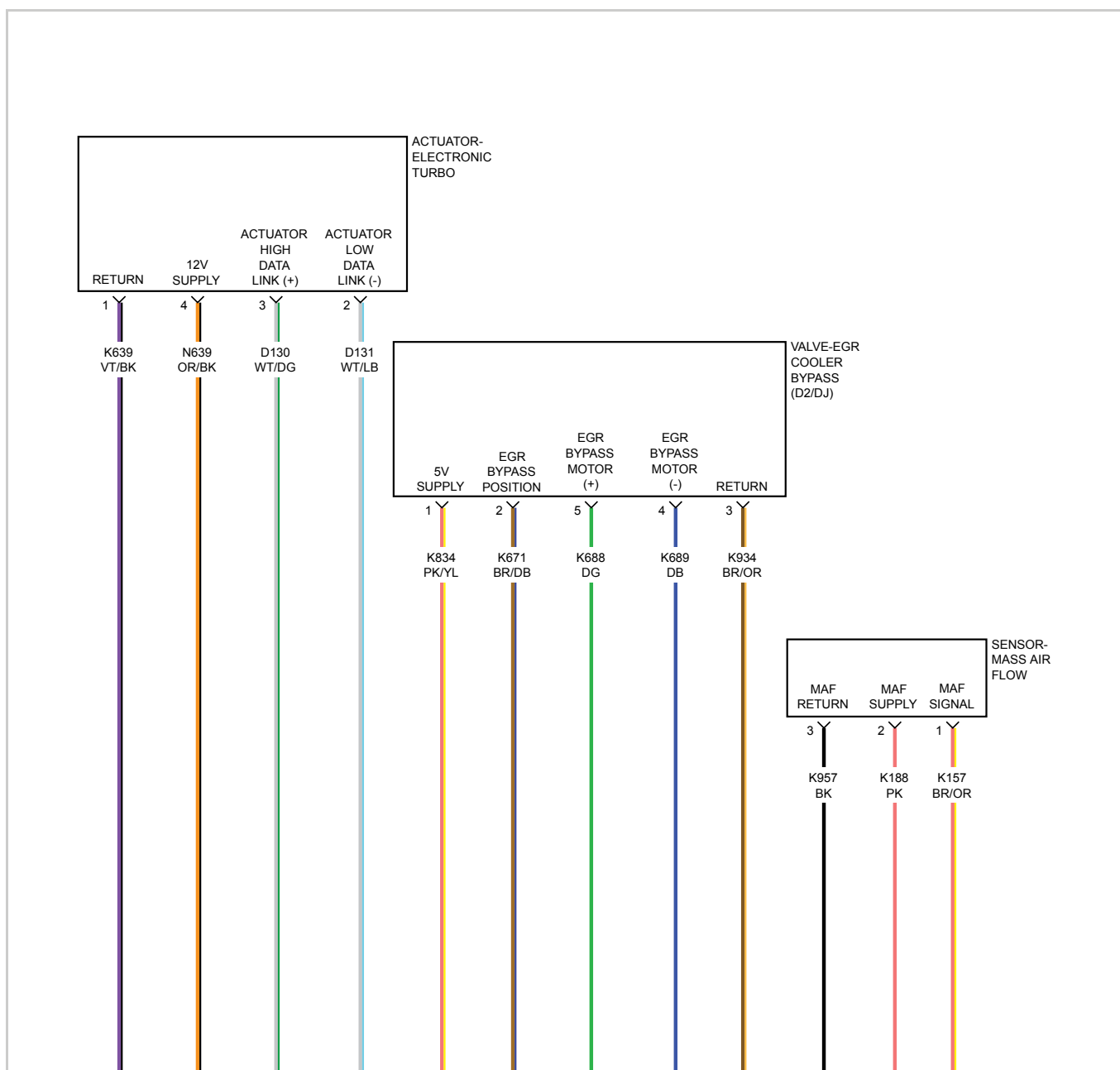


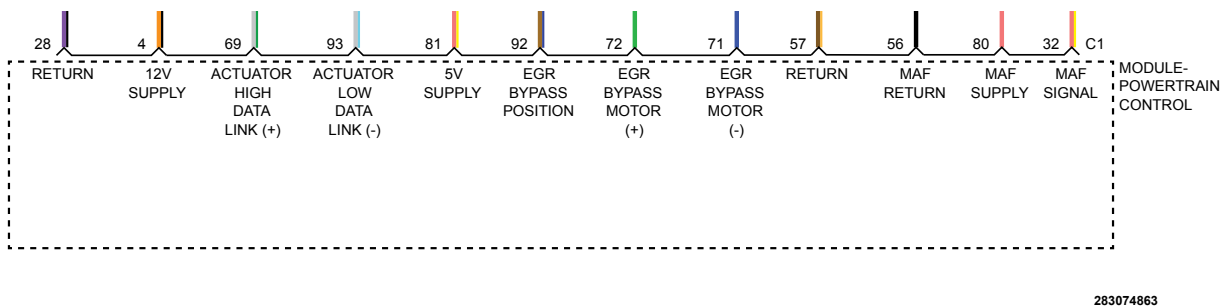
2017 Dodge or Ram Truck RAM 2500 Truck 4WD L6-6.7L DSL Turbo

Vehicle > ALL Diagnostic Trouble Codes (DTC) > Testing and Inspection > P Code Charts > P0046

POWERTRAIN CONTROL MODULE (PCM) - TURBOCHARGER BOOST CONTROL CIRCUIT PERFORMANCE

P0046-TURBOCHARGER BOOST CONTROL CIRCUIT PERFORMANCE





Theory of Operation

The Variable Geometry Turbocharger (VGT) is electronically controlled by the Electronic Turbo Actuator. The Electronic Turbo Actuator is a smart device; it communicates information with the Powertrain Control Module (PCM) over the private Data Link. The Electronic Turbo Actuator performs its own internal diagnostics and reports failures back to the PCM. The PCM then decodes the error message and converts it to a fault code.

When Monitored and Set Conditions

When Monitored: This diagnostic runs continuously when the following conditions are met:

- With the engine running.

Set Conditions:

- The Electronic Turbo Actuator does not receive a valid J1939 BUS position message from the Powertrain Control Module (PCM).

Default Actions:

- The MIL will illuminate.

Possible Causes

ELECTRONIC TURBO ACTUATOR 12 VOLT SUPPLY

ELECTRONIC TURBO ACTUATOR RETURN

ELECTRONIC TURBO ACTUATOR

POWERTRAIN CONTROL MODULE (PCM)

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

Diagnostic Test

1. OTHER DTCs

1. Ignition on, engine not running.
2. With the scan tool, read DTCs.

Is U010C active?

Yes

- Perform the Diagnostics for U010C first.
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

No

- Go To 2

2. POWERTRAIN CONTROL MODULE

1. Turn ignition off.
2. Disconnect the Electronic Turbo Actuator harness connector.

NOTE: Check connectors - Clean/repair as necessary.

3. Ignition on, engine not running.
4. After 75 seconds, monitor the system response with the scan tool.

Is U010C active?

Yes

- Go To 3

No

- Replace the Powertrain Control Module 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. INTERMITTENT CONNECTION

1. Turn ignition off.
2. Disconnect the Electronic Turbo Actuator harness connector.

2. Reconnect the Electronic Turbo Actuator harness connector.
3. Ignition on, engine not running.
4. After 75 seconds, monitor the system response with the scan tool.

Is P0046 active?

Yes

- Go To 4

No

- Perform the INTERMITTENT CONDITION - 6.7L diagnostic procedure. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

4. PCM CONNECTION

1. Turn ignition off.
2. Disconnect the PCM harness connector.

NOTE: Check connectors - Clean/repair as necessary.

Were their any dirty or damaged terminals?

Yes

- Repair/Replace as necessary.
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

No

- Go To 5

5. INTERMITTENT CONNECTION

1. Turn ignition off.
2. Reconnect the Electronic Turbo Actuator harness connector.
3. Reconnect the PCM harness connector.
4. Ignition on, engine not running.
5. After 75 seconds, monitor the system response with the scan tool.

Is P0046 active?

Yes

- Replace the Electronic Turbo Actuator in accordance with the Service Information.(Refer to 09 - Engine, 6.7L Diesel/Turbocharger System/ACTUATOR, Turbocharger/Removal)
- Perform the POWERTRAIN VERIFICATION TEST - 6.7L. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).

No

- Perform the INTERMITTENT CONDITION - 6.7L diagnostic procedure. (Refer to 28 - DTC-Based Diagnostics/MODULE, Powertrain Control (PCM) - Standard Procedure).