File in Section: -
Bulletin No.: PI1260
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Service Bulletin

PRELIMINARY INFORMATION

Subject: **Cruze Clean Turbo Diesel Engine Vacuum Pump System Vacuum Leaks — DTC P003A, P24A5, P2598 and/or P2599 Set**

Models: **2014 Chevrolet Cruze**
Equipped with Cruze Clean Turbo Diesel Engine 2.0L, CRI, L4, DOHC, VGT — RPO LUZ

Condition/Concern

Some Customers may comment that the malfunction indicator lamp (MIL) is illuminated.

Upon investigation, the Service Technician may observe on a scan tool DTC P003A, P24A5, P2598 and/or P2599 Set.

Recommendation/Instructions

Diagnostic Graphics and Tips

The following information is a compilation of graphics and diagnostic tips, that the Service Technician can reference when investigating vacuum pump system vacuum leaks and diagnosing the related DTCs.

DTC and Descriptor Caused by a Vacuum Leak

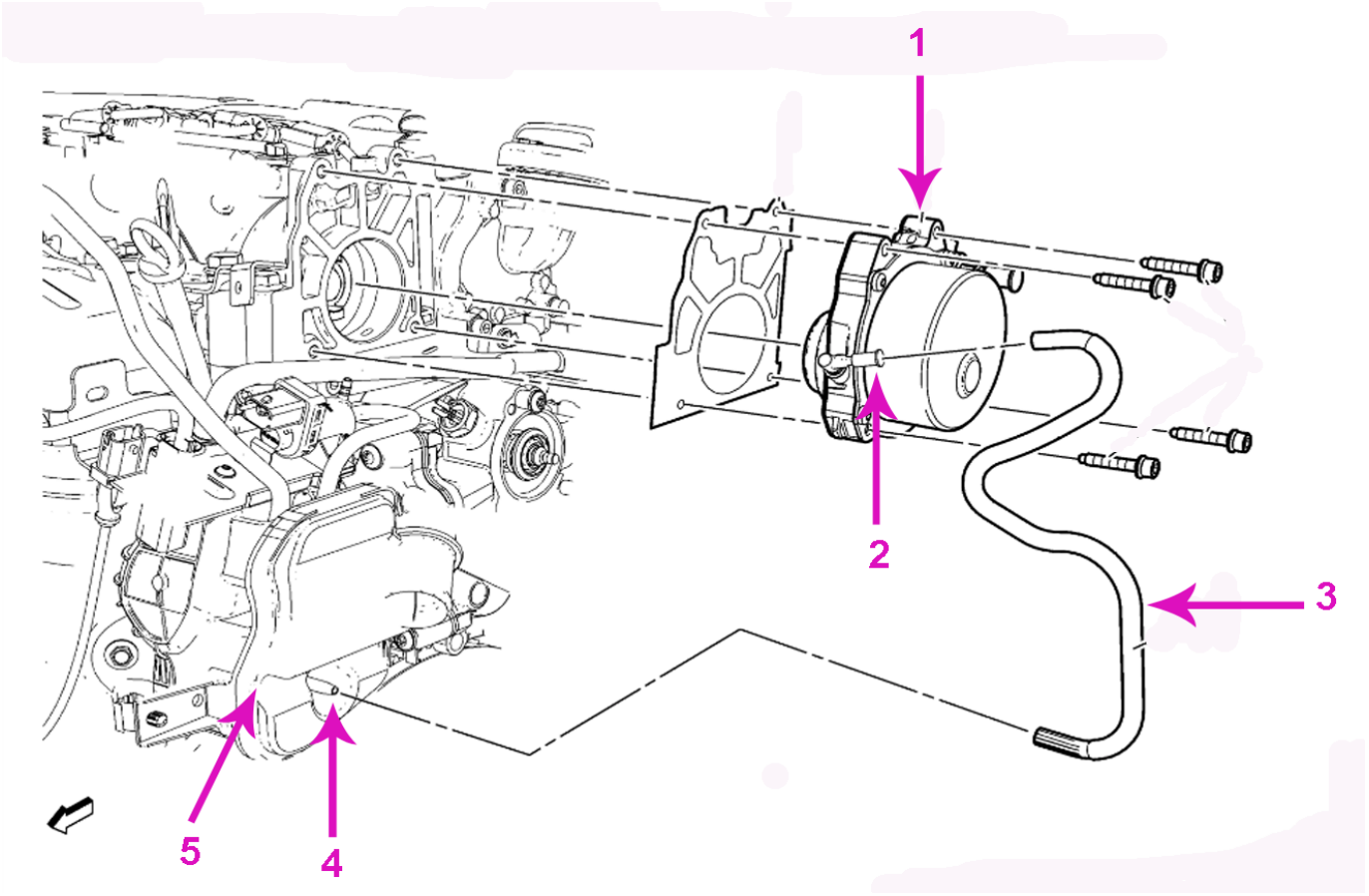
Any of the following diagnostic trouble codes (DTCs) may be caused by a vacuum leak in **any** of the systems supplied by the vacuum pump.

- **DTC P003A: Turbocharger Boost Control Position Not Learned**
  A vacuum leak in any of the systems supplied by the vacuum pump, including the turbocharger vane position actuator, EGR cooler bypass valve actuator and brake booster, may cause this DTC to set.
- **DTC P24A5: Exhaust Gas Recirculation (EGR) Cooler Bypass Control Stuck**
  A vacuum leak in any of the systems supplied by the vacuum pump, including the turbocharger vane position actuator, EGR cooler bypass valve actuator and brake booster, may cause this DTC to set.
- **DTC P2598: Turbocharger Boost Control Position Performance – Low Position**
  A vacuum leak in any of the systems supplied by the vacuum pump, including the turbocharger vane position actuator, EGR cooler bypass valve actuator and brake booster, may cause this DTC to set.
- **DTC P2599: Turbocharger Boost Control Position Performance – High Position**
  A vacuum leak in any of the systems supplied by the vacuum pump, including the turbocharger vane position actuator, EGR cooler bypass valve actuator and brake booster, may cause this DTC to set.

Pinpointing Vacuum Pump System Vacuum Leak Causes and Locations

Utilize the following Graphics and Tips in order to pinpoint the various possible vacuum leak causes and locations.

Vacuum Pump Assembly — Exhaust Gas Recirculation (EGR) Valve Cooler



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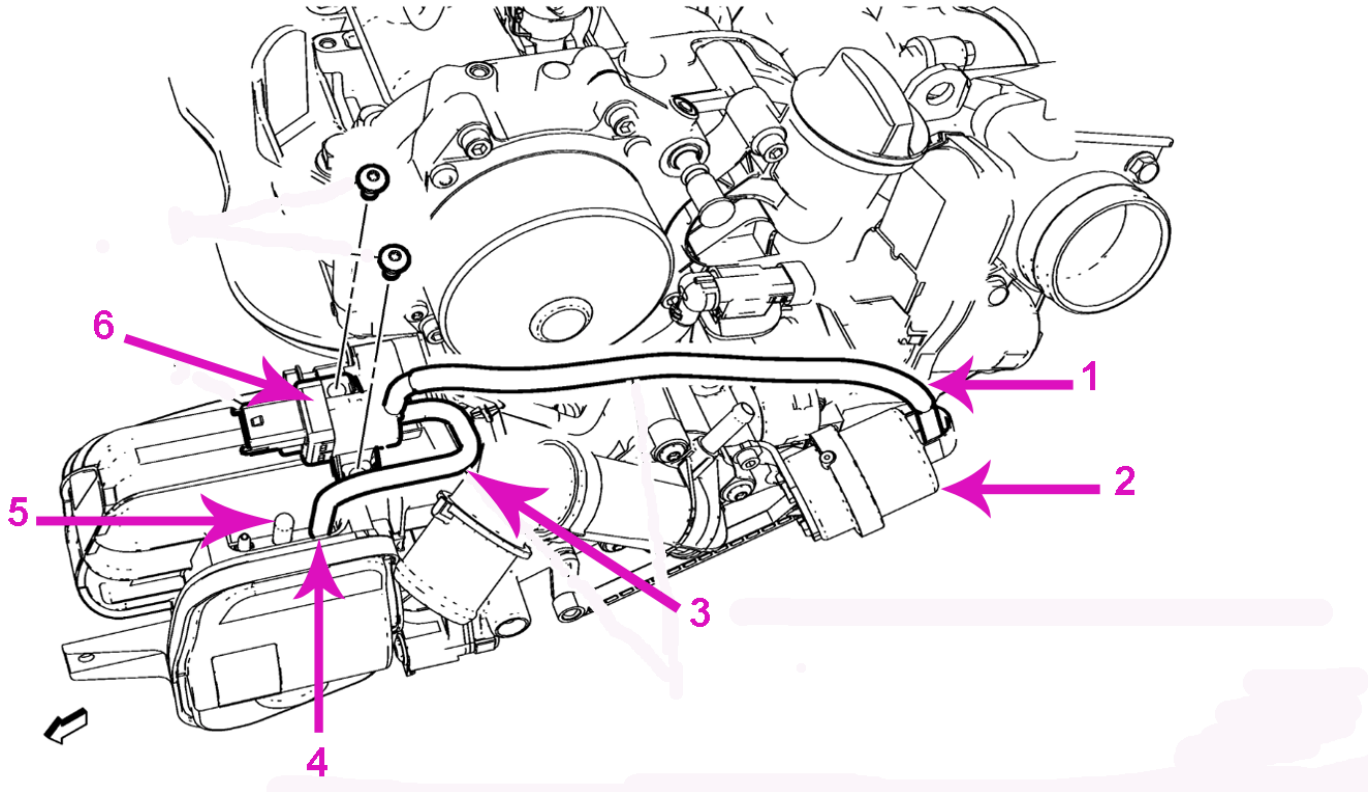
The vacuum pump assembly (1) supplies vacuum from a port (2) via a vacuum hose (3), to a port (4) on the EGR valve cooler (5), which has an integrated vacuum tank.

- Inspect the vacuum hose at the vacuum pump assembly port (2) and at the EGR valve cooler port (4) for a secure connection.
- Inspect the vacuum hose for cracks, kinks or damage.
- Inspect the vacuum pump assembly port (2) and the EGR valve cooler port (4) for cracks, being loose or damage.
- Inspect the EGR valve cooler (5) for cracks or damage.

EGR Valve Cooler Vacuum Tank — EGR Vacuum Regulator Valve Solenoid — EGR Valve Actuator



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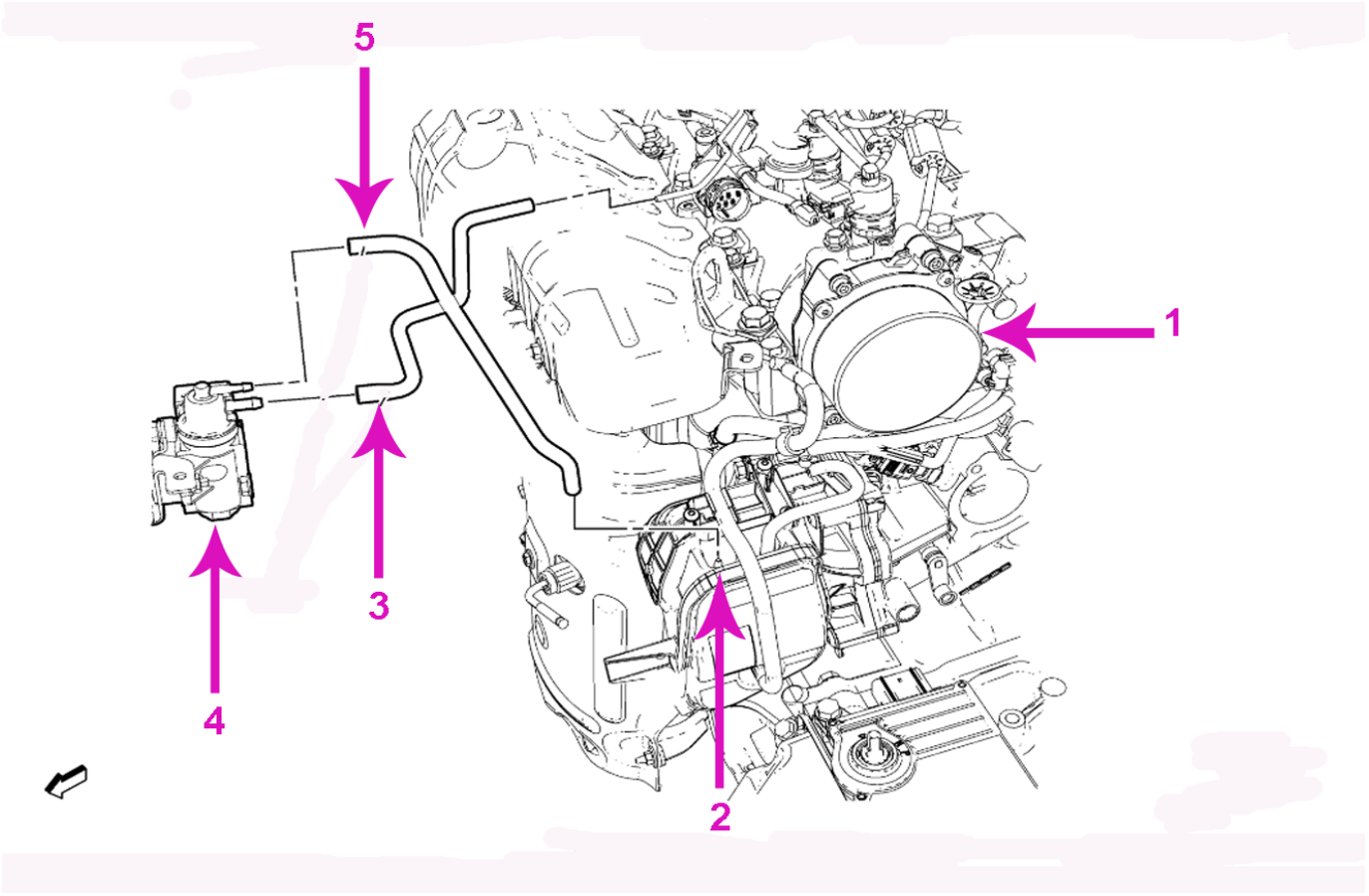
The rear port (4) on the EGR valve cooler vacuum tank supplies vacuum via a vacuum hose (3) to the EGR vacuum regulator valve solenoid (6). This solenoid (6) controls the vacuum via a vacuum hose (1) to the EGR valve actuator (2). The center port (5) on the EGR valve cooler vacuum tank is not used and has a cap on it.

- Inspect the vacuum hoses at all four vacuum hose ports for a secure connection.
- Inspect the vacuum hose (3) of the EGR valve cooler vacuum tank and the vacuum hose (1) of the EGR valve actuator (2) for cracks, kinks or damage.
- Inspect all four vacuum hose ports for cracks, being loose or damage.
- Inspect the center port (5) **cap** on the EGR valve cooler vacuum tank for cracks, being loose or damage.
- Inspect the EGR vacuum regulator valve solenoid (6) for cracks, being loose or damage.
- Inspect the EGR valve actuator (2) for cracks, being loose or damage.

Turbocharger (TC) Wastegate Actuator Vacuum Control Solenoid Valve — TC Wastegate Vane Control Actuator



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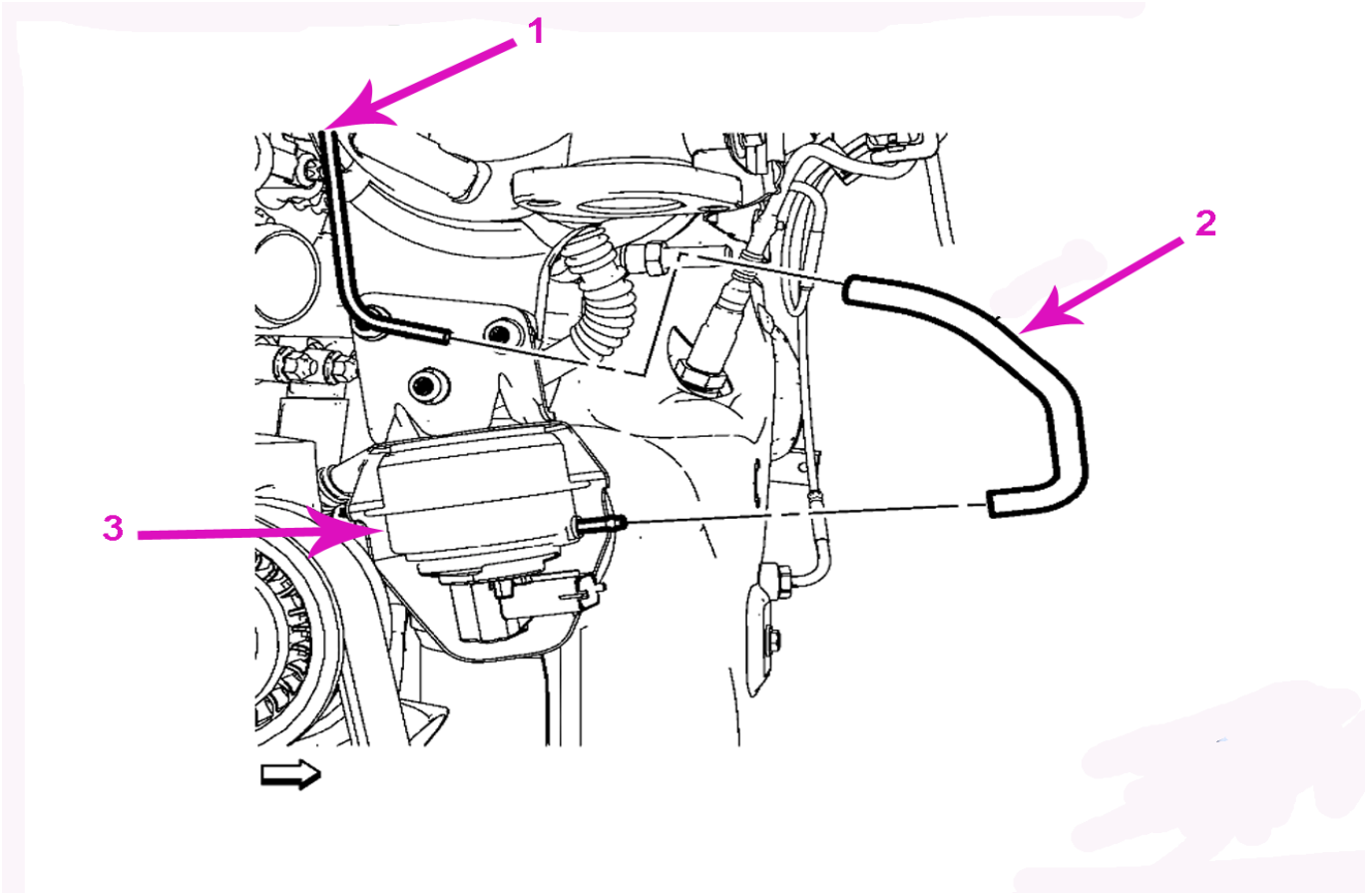
The TC uses an integrated vacuum operated wastegate vane control actuator with an integral vane position sensor, to control the TC vane angle. The TC wastegate vane control actuator utilizes a remotely mounted TC wastegate actuator vacuum control solenoid valve (4) controlled by the ECM, to regulate the vacuum supplied by the vacuum pump assembly (1).

The front port (2) on the EGR valve cooler vacuum tank supplies vacuum through a vacuum hose (5) to the TC wastegate actuator vacuum control solenoid valve (4). The TC wastegate actuator vacuum control solenoid valve (4) then supplies vacuum through a vacuum hose (3), to the TC wastegate vane control actuator (not shown).

- Inspect the vacuum hoses at all four vacuum hose ports for a secure connection.
- Inspect the TC wastegate actuator vacuum control solenoid valve (4) vacuum hoses (3) and (5) for cracks, kinks or damage.
- Inspect all four vacuum hose ports for cracks, being loose or damage.
- Inspect the TC wastegate actuator vacuum control solenoid valve (4) for cracks, being loose or damage.



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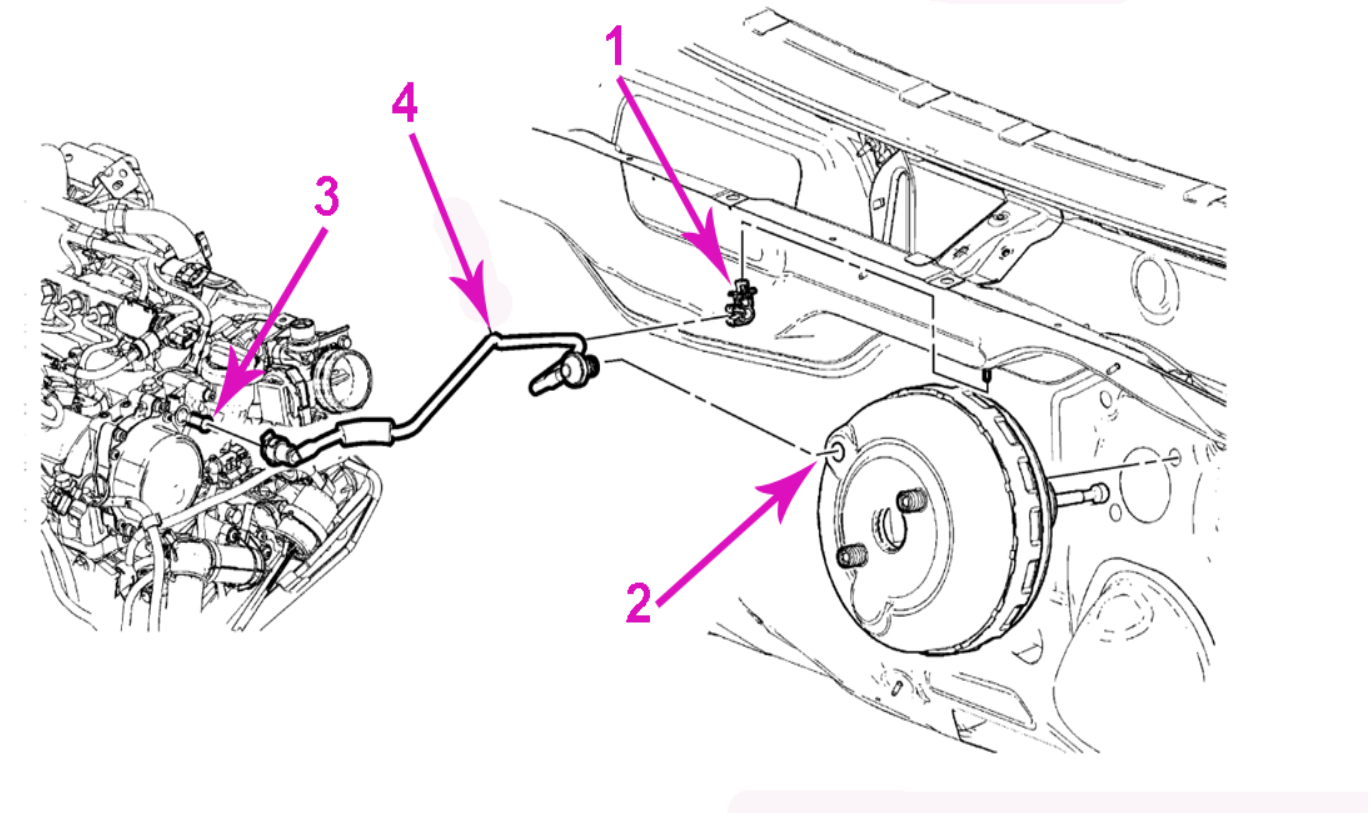
The TC uses an integrated vacuum operated wastegate vane control actuator (3) with an integral vane position sensor, to control the TC vane angle.

The TC wastegate vane control actuator vacuum supply pipe (1) connects to the TC wastegate vane control actuator vacuum supply hose (2) and then connects to the TC wastegate vane control actuator (3). The overall view of this routing is not shown, but it is necessary because the two components are on opposite sides of the engine.

- Inspect the TC wastegate vane control actuator vacuum supply hose (2) at the supply pipe (1) and at the actuator (3) port for a secure connection.
- Inspect the TC wastegate vane control actuator vacuum supply hose (2) and the supply pipe (1) for cracks, kinks or damage.
- Inspect the TC wastegate vane control actuator (3) for cracks, being loose or damage.

Power Brake Booster — Power Brake Booster Vacuum Pipe



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The vacuum pump assembly supplies the necessary brake booster vacuum, from the vacuum pump assembly port (3), through the power brake booster vacuum pipe (4) to the vacuum connection (2) on the power brake booster that is used by the power brake booster to decrease driver brake pedal effort.

- Inspect the vacuum pump assembly port (3) for cracks, being loose or damage.
- Inspect the vacuum pump assembly port (3) plastic collar quick connect fitting for cracks, being loose or damage.
- Inspect the power brake booster vacuum pipe (4) for cracks, kinks or damage.
- Inspect the power brake booster vacuum pipe (4) retaining clip (1) for cracks, being loose or damage.
  Verify that the clip (1) is securely fastened to the vacuum pipe (4) and to the vehicle.
- Inspect the power brake booster vacuum pipe (4) to power brake booster connection (2) and its seal for cracks, being loose or damage.
- Inspect the power brake booster for cracks, being loose or damage.