

GENERIC · POWERTRAIN

P0033

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0033

Turbo Charger Bypass Valve Control Circuit

P0033 indicates that the powertrain control module (PCM) has detected an electrical fault in the control circuit for the turbocharger bypass valve, which is also called the diverter valve. The PCM monitors the circuit for expected voltage or current and sets the code when the signal falls outside the normal range, often due to an open, short, or excessive resistance.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering and auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Reduced engine performance or a lack of boost when accelerating
- Poor fuel economy or rough running under load
- A slight delay or surge when lifting off the throttle
- In some cases, a whistling or fluttering noise from the turbo area

Common causes, most likely first

- 1 Failed bypass valve solenoid or its internal coil
- 2 Damaged, corroded, or disconnected electrical connector at the bypass valve
- 3 Open or shorted wiring in the control circuit between the PCM and the valve
- 4 Blown fuse or poor ground connection for the circuit
- 5 Sticking or mechanically binding bypass valve
- 6 Faulty PCM driver (rare)



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other systems
- 2 Inspect the bypass valve connector and wiring for corrosion, damage, or loose pins
- 3 Test the bypass valve solenoid resistance with a multimeter and compare to specification
- 4 Check for battery voltage and ground at the valve connector with the key on
- 5 Perform a continuity and short-to-ground test on the control circuit wiring
- 6 If electrical tests pass, remove and inspect the valve for mechanical sticking or carbon buildup
- 7 Replace the faulty bypass valve or repair wiring as needed, then clear codes and verify the repair

What the bypass valve circuit test misses

- A common oversight is assuming the valve itself is faulty when the real problem is a chafed wire hidden inside the loom, often near the turbo where heat and vibration damage insulation.
- The PCM may set P0033 even when the valve is mechanically stuck but electrically intact, so a resistance test alone does not confirm the valve is good.
- On some vehicles, the bypass valve shares a power or ground circuit with other solenoids, so a fault elsewhere can trigger P0033 without any issue in the valve circuit itself.
- Technicians sometimes replace the bypass valve only to find the connector pins have been pushed back or spread, causing an intermittent connection that mimics a failed solenoid.
- A dirty or contaminated valve can cause the PCM to detect an unexpected current draw, leading to P0033 without any open or short in the wiring.

Can I keep driving with P0033?

You can usually continue driving with P0033, but avoid aggressive acceleration or heavy load because the bypass valve may not function correctly, which can reduce performance and potentially stress the turbocharger. Have the fault diagnosed soon to prevent secondary damage.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Wire probe set
- Service manual or wiring diagram for the vehicle
- Basic hand tools for connector and valve access



Reading P0033

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 0** Fuel and air metering and auxiliary emission controls.
- 33** The exact fault within that area.

Often seen with

P0034 Turbo Charger Bypass Valve Control Circuit Low · **P0035** Turbo Charger Bypass Valve Control Circuit High · **P0243** Turbocharger Wastegate Solenoid A Malfunction · **P0244** Turbo/Super Charger Wastegate Solenoid 'A' Range/Performance · **P0299** Turbo/Supercharger Underboost

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0033/>

