

SUBARU · POWERTRAIN

P1704

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1704 · Subaru

2-4 Brake Timing Solenoid Valve Circuit Malfunction

P1704 on a Subaru means the transmission control module (TCM) has detected an electrical fault in the circuit for the 2-4 brake timing solenoid valve, which is a critical shift-control solenoid inside the automatic transmission valve body. The computer monitors the solenoid's commanded current versus the actual current flow and sets this code when the circuit is open, shorted, or out of expected resistance range.

SYSTEM

Powertrain

CODE TYPE

Subaru specific

SEVERITY

Medium

FIX DIFFICULTY

Professional

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed shifts, especially when engaging the 2-4 brake band during upshifts or downshifts
- Transmission may enter limp mode, holding a single gear or refusing to shift
- Flashing 'AT OIL TEMP' light or 'Sport' mode indicator on the dash
- Poor fuel economy or unusual engine RPM fluctuations during steady-speed driving
- In some cases, the vehicle may start off in a higher gear or feel sluggish from a stop

Common causes, most likely first

- 1 Failed 2-4 brake timing solenoid valve itself, often due to internal coil failure or contamination
- 2 Damaged or corroded wiring harness connector at the transmission solenoid pack
- 3 Open or shorted wire in the circuit between the TCM and the solenoid valve
- 4 Contaminated transmission fluid (ATF) causing solenoid sticking or poor electrical contact
- 5 Faulty TCM, though this is less common and should be diagnosed last
- 6 Internal transmission mechanical wear causing the solenoid to work outside its expected electrical parameters
- 7 Loose or damaged ground connection for the transmission control system



How to diagnose and fix it

- 1 Verify the code with a scan tool that can read Subaru-specific transmission codes and check for any related codes in the TCM
- 2 Inspect the transmission fluid level and condition; a low or burnt fluid level can cause solenoid performance issues
- 3 Disconnect the battery and inspect the solenoid valve connector and wiring for corrosion, chafing, or loose pins
- 4 Measure the resistance of the 2-4 brake timing solenoid with a multimeter and compare to Subaru specifications
- 5 Check for continuity and short-to-ground on the wires between the TCM and the solenoid connector
- 6 If the solenoid fails electrical tests, replace the solenoid valve, which may require removing the transmission pan or valve body
- 7 After repair, clear the code and perform a relearn or adaptation drive cycle as specified for the Subaru transmission

What Subaru techs check before replacing the solenoid

- A common misdiagnosis is replacing the solenoid when the real problem is a chafed wire in the harness near the transmission mount, so always perform a wiggle test on the harness while monitoring solenoid resistance.
- Contaminated transmission fluid from neglected service intervals can cause the solenoid to stick mechanically and set P1704 even when the electrical circuit tests good, so fluid condition is a critical first check.
- The 2-4 brake timing solenoid is part of the valve body assembly on many Subaru transmissions, and replacing just the solenoid requires careful cleaning of the valve body passages to prevent debris from damaging the new part.
- P1704 can be set intermittently by a poor ground connection at the transmission case, so checking and cleaning ground points is a cheap step that often resolves the issue.
- On some Subaru models, a failing TCM can mimic a solenoid circuit fault, but TCM failure is rare and should only be considered after all wiring and solenoid tests pass.

Can I keep driving with P1704?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration or towing because the transmission may shift harshly or enter limp mode. If the transmission is stuck in a single gear or the warning light is flashing, stop driving and have the vehicle towed to prevent further damage.



Tools that help

- Subaru-specific scan tool or OBD-II scanner with transmission code capability
- Digital multimeter for resistance and continuity testing
- Transmission fluid level dipstick or fluid inspection kit
- Socket set and trim removal tools for accessing the solenoid connector
- Factory service information for solenoid resistance specifications and torque values

Reading P1704

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Subaru): its meaning depends on the make.
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- 7** Transmission.
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- 04** The exact fault within that area.

Often seen with

P1711 Wheel Speed Signal 1 Range Performance · **P1705** Direct Clutch Speed Circuit Fault · **P1705** TCM ECT Sensor Circuit Fault · **P1710** Back-Up Signal For Speed Sensor Circuit Malfunction · **P1705** 2-4 Brake Pressure Solenoid Valve Solenoid D Circuit · **P1711** Engine Torque Control Signal 1 Circuit Malfunction · **P1705** Throttle Position Sensor Circuit AT · **P1705** Starter Lock-Out Backup Lamp Switch S161 · **P1705** Transmission Range Sensor Out Of Self Test Range · **P1710** Transmission Control Module Solenoid Internal Ground Circuit · **P1711** Transmission Fluid Temperature Sensor Circuit Out Of Self Te · **P1705** TCM A/T Gear Position Switch Circuit Shorted · **P1705** P/N Signal Output Circuit · **P1710** Transmission system problems · **P1705** Manual Lever Position Sensor Out of Self-Test Range · **P1711** Transmission Fluid Temperature Sensor Out of Self-Test Range · **P0700** Transmission Control System Malfunction · **P0730** Incorrect Gear Ratio

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/subaru-p1704/>

