

FORD · POWERTRAIN

P1706

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1706 · Ford

High Vehicle Speed Observed in Park

P1706 on Ford vehicles means the transmission control module (TCM) or powertrain control module (PCM) has calculated a vehicle speed signal that is too high for the transmission range sensor to be reporting Park. The computer cross-checks the output shaft speed sensor, wheel speed sensors, and the transmission range sensor, and it sets this code when the math says the vehicle is moving while the selector is in Park.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Intermediate	Transmission

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the fault is intermittent
- The transmission may refuse to crank or start because the range sensor does not confirm Park
- A harsh engagement or clunk when shifting into Park while the vehicle is still rolling slightly
- The gear indicator on the cluster may flash or show the wrong range
- Cruise control or reverse lamps may act erratically if the range sensor signal is corrupted
- In some cases the PCM commands a limp-home mode with limited gear selection

Common causes, most likely first

- 1 A failing transmission range sensor (also called the digital transmission range sensor or TR sensor) on the side of the transmission
- 2 A misadjusted or loose transmission range sensor linkage or cable
- 3 Wiring damage or corrosion at the range sensor connector or the PCM/TCM connector
- 4 A faulty output shaft speed sensor or wheel speed sensor feeding bad speed data to the PCM
- 5 A defective PCM or TCM, though this is far less common than sensor and wiring faults
- 6 Aftermarket remote start or alarm wiring that backfeeds the range sensor circuit
- 7 A damaged or incorrectly installed transmission range sensor after prior transmission work



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data for P1706 to see the vehicle speed and range sensor state at the moment of failure
- 2 Inspect the transmission range sensor connector and harness for chafing, corrosion, or loose pins, and check the sensor mounting bolts for tightness
- 3 Verify the range sensor adjustment using the alignment tool or the manufacturer's procedure, and confirm the sensor reports Park only when the selector is truly in Park
- 4 Compare the output shaft speed sensor and wheel speed sensor readings on a scan tool while rocking the vehicle in Park to see which signal is inconsistent
- 5 Back-probe the range sensor signal circuit at the PCM and check for voltage drops or shorts to power or ground while wiggling the harness
- 6 Replace the transmission range sensor if adjustment and wiring checks pass but the code returns, then clear codes and perform a relearn or road test
- 7 If all external circuits and sensors test good, follow the Ford pinpoint test for PCM/TCM replacement only as a last step

Range sensor adjustment and hidden wiring faults

- A transmission range sensor that is only slightly out of adjustment can report Park while the vehicle rolls a few inches, which sets P1706 without any driver complaint beyond the light.
- Aftermarket remote start systems that tap into the range sensor circuit are a frequent cause of this code on Ford trucks and SUVs, and the fault often appears only when the remote start is used.
- Technicians sometimes replace the range sensor when the real problem is a corroded ground at the PCM or a chafed harness near the transmission bellhousing, so always load-test the ground circuit first.
- P1706 can be set by a weak battery or low charging voltage that causes the PCM to misread the range sensor signal during cranking, so check battery and charging system health before condemning parts.
- On some Ford models the range sensor is integrated into the transmission internal harness, meaning a fluid leak or internal wiring fault can set this code without any external sensor problem.

Can I keep driving with P1706?

You can usually drive the vehicle to a shop if the only symptom is the warning light and the transmission shifts normally, but avoid relying on Park to hold the vehicle on a hill and use the parking brake. If the transmission will not crank in Park or the gear indicator is erratic, have it towed because the range sensor may leave you stranded.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probe pins
- Transmission range sensor alignment tool or manufacturer's adjustment procedure
- Socket set and torque wrench for sensor mounting bolts
- Wiring diagram for the specific Ford model and year

Reading P1706

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

Often seen with

P0500 Vehicle Speed Sensor Malfunction · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0708** Transmission Range Sensor Circuit High · **P0720** Output Speed Sensor Circuit Malfunction

See it working

Watch the animated explainer [EV Powertrain Trainer: How an Electric Car Drives](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1706/>

