



P1389 · Ford

Glow Plug Circuit High Side Low Input

P1389 on Ford vehicles means the glow plug control module has detected a low input voltage on the high side of the glow plug circuit, which typically indicates an open circuit or excessive resistance in the wiring or glow plugs themselves. The computer expects to see battery voltage on the high side of the circuit when the glow plugs are commanded on, and a low reading tells it that current is not flowing as designed.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Ford specific	Medium	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illuminated check engine light or glow plug warning lamp, often with no other noticeable symptoms
- Hard starting or extended cranking when the engine is cold
- Rough idle and white smoke immediately after a cold start
- Reduced fuel economy and increased emissions during warm-up
- In severe cases, the engine may fail to start at all in cold weather

Common causes, most likely first

- 1 Open or damaged glow plug harness connector or wire between the control module and the glow plugs
- 2 Failed glow plug with an open internal element, especially on high-mileage Ford diesel engines
- 3 Corroded or loose electrical connections at the glow plug tips or module connector
- 4 Blown fuse or fusible link in the glow plug power circuit
- 5 Faulty glow plug control module not supplying voltage to the high side
- 6 Chafed or broken wire in the engine harness near hot or moving components

How to diagnose and fix it

- 1 Check the glow plug system fuse and relay first, as these are the cheapest and easiest items to verify
- 2 Inspect the glow plug harness connectors for corrosion, looseness, or pushed-back pins
- 3 Measure resistance of each glow plug with a multimeter and compare to the manufacturer's specification
- 4 Perform a voltage drop test on the high-side circuit while the glow plugs are commanded on
- 5 Check for continuity and shorts in the wiring between the control module and each glow plug
- 6 If the circuit checks out, test or replace the glow plug control module as the final step



What Ford techs check before replacing glow plugs

- A single failed glow plug can set P1389 on Ford engines because the module monitors the entire high-side circuit and sees the open as a low input.
- Corroded connectors at the valve cover gasket pass-through are a common hidden cause on Ford Power Stroke engines and are often overlooked during diagnosis.
- The code does not always mean the glow plugs themselves are bad; a chafed harness wire near the exhaust manifold can produce the same low-input reading.
- After replacing glow plugs, clear the code and verify the repair by monitoring glow plug command and circuit voltage with a scan tool during a cold start.
- On some Ford models, a weak battery or poor ground can cause the module to log P1389 because the high-side voltage drops below the expected threshold during the glow plug on-time.

Can I keep driving with P1389?

You can usually drive the vehicle, but cold starting will be difficult and prolonged driving with a failed glow plug system can lead to excessive white smoke and carbon buildup. Avoid heavy loads and cold starts until the fault is repaired, and do not rely on the vehicle for cold-weather operation.

Tools that help

- OBD-II scan tool with Ford-specific software
- Digital multimeter
- Test light
- Glow plug socket set
- Wiring diagram for the specific Ford model

Reading P1389

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Ford): its meaning depends on the make.
3	Ignition system and misfire.
89	The exact fault within that area.

Often seen with

P0380 Glow Plug/Heater Circuit A Malfunction · **P0381** Glow Plug/Heater Indicator Circuit Malfunction · **P0670** Glow Plug Module Control Circuit · **P0671** Cylinder 1 Glow Plug Circuit · **P0672** Cylinder 2 Glow Plug Circuit



See it working

Watch the animated explainer [Disc Brake Trainer: How Car Brakes Stop a Wheel](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1389/>

