



P1390 · Mazda

Octane Adjust Shorting Bar Out Or Circuit Open

P1390 on Mazda vehicles means the powertrain control module (PCM) has detected an open or missing signal from the octane adjust shorting bar circuit. The PCM uses this circuit to identify the fuel octane rating configuration, and when the circuit is open it can no longer confirm the correct setting, so it stores this manufacturer-specific code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	Low	Intermediate	Ignition system and misfire

Symptoms you may notice

- Illuminated check engine light, often with no other noticeable symptoms
- Slightly reduced engine performance or fuel economy if the PCM defaults to a low-octane strategy
- Intermittent rough idle or hesitation under light acceleration in some cases
- No drivability complaints at all when the open circuit is the only fault
- Possible pending P1390 code that does not immediately turn on the light

Common causes, most likely first

- 1 Octane adjust shorting bar missing, loose, or not fully seated in its connector
- 2 Open circuit in the wiring between the shorting bar and the PCM, often from a broken wire or corroded terminal
- 3 Corroded or backed-out pins at the shorting bar connector or PCM connector
- 4 Damaged shorting bar terminal that no longer makes contact when inserted
- 5 PCM internal fault on the octane adjust input circuit, though this is less common
- 6 Aftermarket or salvage PCM installed without transferring the shorting bar configuration

How to diagnose and fix it

- 1 Verify the octane adjust shorting bar is present and fully inserted into its connector
- 2 Inspect the shorting bar connector and PCM connector for corrosion, bent pins, or loose terminals
- 3 Check continuity of the octane adjust circuit from the shorting bar connector to the PCM with a multimeter
- 4 Repair any open wiring or replace damaged terminals and clear the code
- 5 If the circuit tests good, substitute a known-good shorting bar and recheck
- 6 Confirm the PCM sees the correct input with a scan tool live data parameter before replacing any module
- 7 Clear codes and perform a road test to confirm P1390 does not return



What the octane shorting bar really does

- Many P1390 cases are caused by a shorting bar that was left out after engine service or a previous repair, not by a failed component.
- The octane adjust shorting bar tells the PCM which fuel octane strategy to use, so an open circuit can make the PCM default to a less aggressive timing map without setting drivability symptoms.
- Technicians sometimes replace the PCM when the real problem is a backed-out terminal at the shorting bar connector, so always check connector pin fit first.
- A salvage or aftermarket PCM may not have the shorting bar configured, which sets P1390 even though the original PCM was fine.
- This code can appear alongside misfire or knock sensor codes if the PCM is forced into a low-octane timing strategy, so diagnose the shorting bar circuit before chasing those codes.

Can I keep driving with P1390?

P1390 is safe to drive with in most cases because it does not disable the engine, but avoid heavy load or towing until the circuit is repaired so the PCM can use the correct timing strategy. If the check engine light is accompanied by knocking or poor performance, have it diagnosed promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Electrical terminal pick and connector pin gauge set
- Service information for Mazda octane adjust shorting bar location and wiring diagram
- Basic hand tools for connector access

Reading P1390

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

Often seen with

P1391 CMP Sensor Bank 2 Short To Ground · **P1391** Intermittent Loss Of CMP Or CKP Sensor Signals · **P1391** Wheel Speed Sensor 1 G-Sensor Circuit Performance · **P1391** Glow Plug Circuit Low Input Bank 1 · **P1391** Intermittent Loss of CMP Or CKP · **P0171** System Too Lean (Bank 1) · **P0300** Random/Multiple Cylinder Misfire Detected · **P0325** Knock Sensor 1 Circuit Malfunction (Bank 1) · **P0330** Knock Sensor 2 Circuit



See it working

Watch the animated explainer [How a Catalytic Converter Works: 3D Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1390/>

