



P1144 · Mazda

HO2S Bank 1 Sensor 3 Signal Above 0.45v AF Ratio Too Rich

P1144 on Mazda vehicles means the powertrain control module (PCM) has detected that the downstream heated oxygen sensor (HO2S) for bank 1, sensor 3, is reporting a voltage above 0.45 volts, which indicates an air-fuel mixture that is too rich. The PCM monitors this sensor after the catalytic converter to verify catalyst efficiency and fuel control, and a sustained high voltage tells the computer that excess fuel is present in the exhaust stream.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- A slight decrease in fuel economy as the engine runs richer than commanded
- A faint fuel or sulfur odor from the exhaust, especially after idling
- Occasional rough idle or hesitation during acceleration if the rich condition is severe
- Failed emissions inspection due to high hydrocarbon or carbon monoxide readings
- In rare cases, black sooty exhaust smoke or fouled spark plugs if the rich condition persists

Common causes, most likely first

- 1 A faulty downstream heated oxygen sensor (bank 1 sensor 3) sending a false high-voltage signal
- 2 A leaking or stuck-open fuel injector on bank 1, delivering excess fuel into the cylinder
- 3 High fuel pressure caused by a failed fuel pressure regulator or a restricted fuel return line
- 4 A contaminated mass air flow (MAF) sensor under-reporting airflow, leading the PCM to add too much fuel
- 5 An engine coolant temperature (ECT) sensor stuck on cold, causing the PCM to command a richer mixture
- 6 A restricted air intake or dirty air filter element reducing actual airflow below what the MAF reports
- 7 Exhaust leaks before the sensor or a damaged sensor wiring harness introducing a false rich signal



How to diagnose and fix it

- 1 Connect a scan tool and verify the P1144 code is current, then check freeze-frame data for bank 1 sensor 3 voltage and fuel trims
- 2 Inspect the bank 1 sensor 3 wiring and connector for chafing, corrosion, or loose pins, and repair any damage found
- 3 Measure fuel pressure with a gauge and compare it to the Mazda specification for the engine, replacing the regulator or pump if pressure is too high
- 4 Clean the mass air flow sensor with a dedicated MAF cleaner and confirm its live reading matches expected airflow at idle and under load
- 5 Check the engine coolant temperature sensor reading against actual engine temperature with an infrared thermometer or scan tool
- 6 Perform an injector balance test or use a fuel injector tester to identify a leaking or stuck-open injector on bank 1, then replace it if faulty
- 7 Replace the downstream heated oxygen sensor only after all other causes are ruled out, using the correct Mazda-specified sensor

When the downstream sensor lies about richness

- A downstream oxygen sensor on Mazda engines can be fooled by a lazy upstream sensor, so always compare bank 1 sensor 1 and sensor 3 readings before condemning the rear sensor.
- Exhaust leaks between the catalytic converter and the sensor draw in outside air and can cause a false lean reading, but a rich code often appears when the leak is before the converter and skews the sensor signal.
- A stuck-open thermostat keeps the engine cool, and the PCM responds by enriching the mixture, which sets a rich code without any fuel system fault at all.
- Mazda's PCM strategy may set P1144 only after two consecutive driving cycles with the rich condition, so a single clear-and-drive may not immediately reset the code.
- After replacing a fuel injector or sensor, the PCM may need a drive cycle or relearn procedure to recalibrate fuel trims, otherwise the code can reappear briefly.

Can I keep driving with P1144?

You can usually drive the vehicle short distances to a repair shop, but avoid sustained high-speed driving or heavy loads because the rich mixture can overheat and damage the catalytic converter. If the check engine light begins flashing or you notice strong fuel smells, stop driving and have the vehicle towed.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for sensor voltage and wiring checks
- Fuel pressure gauge
- Infrared thermometer for coolant temperature verification
- MAF sensor cleaner and basic hand tools
- Fuel injector balance tester or noid light set

Reading P1144

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (Mazda): its meaning depends on the make.
1	Fuel and air metering.
44	The exact fault within that area.

Often seen with

P0132 O2 Sensor Circuit High Voltage (Bank 1 Sensor 1) · **P0138** O2 Sensor Circuit High Voltage (Bank 1 Sensor 2) · **P0172** System Too Rich (Bank 1) · **P0175** System Too Rich (Bank 2) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1144/>

