



P1477 · Chrysler

Too Much Secondary Air

P1477 on Chrysler vehicles means the powertrain control module (PCM) has detected that the secondary air injection system is delivering too much air into the exhaust stream during the cold-start phase. The PCM monitors the system's air pump and control valve, and when the resulting oxygen sensor signal indicates an excessive air flow condition, it sets this code and turns on the check engine light.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Chrysler specific	Medium	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight hissing or rushing air noise from the engine bay during cold starts, especially if a hose is disconnected or the valve is stuck open.
- Rough idle or stumbling immediately after a cold start, caused by an excessively lean exhaust mixture from too much injected air.
- A sulfur or rotten egg smell from the exhaust if the extra air overheats the catalytic converter.
- In some cases, a brief puff of white or blue smoke from the tailpipe at startup due to altered exhaust chemistry.
- Possible hesitation or surging during the first minute of driving while the system is active.

Common causes, most likely first

- 1 A secondary air injection (AIR) control valve stuck open or leaking internally, allowing constant air flow into the exhaust.
- 2 A faulty or disconnected vacuum line to the AIR control valve, causing the valve to remain open when it should close.
- 3 A shorted or stuck-open AIR pump relay, keeping the electric air pump running continuously.
- 4 A defective AIR pump that continues to run after the commanded shutoff, often due to a failed internal solid-state switch.
- 5 A pinched, cracked, or incorrectly routed air injection hose that bypasses the control valve and feeds air directly to the exhaust.
- 6 A PCM software glitch or faulty driver circuit that commands the AIR pump on when it should be off.
- 7 A leaking or stuck-open check valve in the air injection manifold, allowing exhaust backflow and confusing the system.



How to diagnose and fix it

- 1 Use a scan tool to command the AIR pump and valve on and off while listening and watching oxygen sensor data to confirm the system is active when it should not be.
- 2 Inspect all vacuum lines and air hoses for cracks, disconnections, or misrouting, and repair or replace as needed.
- 3 Test the AIR control valve for proper operation by applying vacuum and checking that it opens and closes fully without sticking.
- 4 Check the AIR pump relay and wiring for signs of sticking, corrosion, or short circuits, and replace the relay if it fails a functional test.
- 5 Measure the resistance of the AIR pump motor and compare to specifications; replace the pump if it runs continuously or draws excessive current.
- 6 Verify the PCM is not commanding the pump on incorrectly by backprobing the control circuit and monitoring the command signal with a lab scope.
- 7 If all mechanical and electrical components test good, reflash or replace the PCM as a last resort after confirming no other faults exist.

When the AIR system delivers too much air

- A stuck-open AIR control valve is the most common cause of P1477 on Chrysler vehicles, but technicians often replace the pump first because it is easier to access.
- The code can be set by a simple disconnected vacuum line that leaves the control valve open, so always check the cheap and obvious items before condemning expensive parts.
- Excessive air flow can overheat the catalytic converter over time, so ignoring the code may lead to a much more costly repair.
- Some Chrysler models use a PWM-controlled AIR pump, and a failed driver in the PCM can keep the pump running even when the key is off, draining the battery.
- P1477 is often accompanied by lean oxygen sensor readings during cold start, but those readings can be misleading if the exhaust has an air leak upstream of the sensor.

Can I keep driving with P1477?

You can usually drive the vehicle short distances to a repair shop, but avoid prolonged driving because excess air can overheat and damage the catalytic converter. If the engine runs rough or you smell sulfur, reduce driving to an absolute minimum and have the system inspected promptly.



Tools that help

- OBD-II scan tool with bidirectional control capability
- Hand vacuum pump
- Digital multimeter
- Lab scope for monitoring control signals
- Basic hand tools and socket set

Reading P1477

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (Chrysler): its meaning depends on the make.
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- 4** Auxiliary emission controls.
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- 77** The exact fault within that area.

Often seen with

P0411 Secondary Air Injection System Incorrect Flow · **P0412** Secondary Air Injection System Switching Valve 'A' Circuit · **P0413** Secondary Air Injection System Switching Valve 'A' Circuit O · **P0414** Secondary Air Injection System Switching Valve 'A' Circuit S · **P0415** Secondary Air Injection System Switching Valve 'B' Circuit

See it working

Watch the animated explainer [How the EVAP System Works: Fuel Vapour and Leak Test](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/chrysler-p1477/>

