

GENERIC · NETWORK

U3551

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U3551

Hydrogen Tank A Valve Enable Circuit

U3551 is a manufacturer-specific network code indicating that the powertrain control module (PCM) has detected a fault in the enable circuit for a hydrogen tank valve, typically on fuel-cell or hydrogen-powered vehicles. The PCM monitors the control wire that commands the tank valve to open or close and sets this code when the expected voltage or current signature is not present, meaning the valve may not actuate when required.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Network	Generic (all makes)	High	Professional	Network communication

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) with no other noticeable driving issues
- The hydrogen tank valve may fail to open, preventing the vehicle from starting or entering ready mode
- Rough running or reduced power if the valve opens intermittently during operation
- A noticeable click or lack of click from the tank area when the ignition is turned on
- Other hydrogen system-related codes stored alongside U3551, such as pressure or temperature sensor faults

Common causes, most likely first

- 1 Open or shorted wiring in the valve enable circuit, including chafed harnesses or corroded connectors
- 2 Failed hydrogen tank valve solenoid or its internal coil
- 3 Blown fuse or faulty relay supplying power to the valve enable circuit
- 4 Poor ground connection at the valve body or chassis grounding point
- 5 PCM internal driver failure or software glitch affecting the enable output
- 6 Water or debris intrusion into the valve connector causing high resistance



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes and freeze-frame data, then clear codes and verify whether U3551 returns immediately
- 2 Inspect the hydrogen tank valve connector and harness for corrosion, loose pins, or physical damage, and repair as needed
- 3 Check the fuse and relay that supply power to the valve enable circuit, replacing any failed components
- 4 Measure resistance across the valve solenoid coil and compare to the manufacturer's specification to rule out an open or shorted coil
- 5 Back-probe the enable circuit at the PCM and command the valve on with a scan tool to verify the PCM output signal is present
- 6 Perform a voltage drop test on the ground circuit from the valve body to the battery negative terminal to confirm a clean ground path
- 7 If all external circuits and components test good, follow the manufacturer's diagnostic flow for PCM replacement or reprogramming

Hydrogen valve circuit diagnosis pitfalls

- A common mistake is replacing the hydrogen tank valve before checking the enable circuit wiring, which often suffers from corrosion in the connector pins due to the valve's location under the vehicle.
- U3551 can be set by a weak battery or low system voltage during cranking, so always verify battery condition and charging system output before condemning the valve or PCM.
- Some vehicles use a smart valve driver module between the PCM and the tank valve; a fault in that module can mimic a direct enable circuit failure and set U3551 without any valve problem.
- The enable circuit may be pulse-width modulated (PWM) rather than a simple on/off signal, so a standard test light or basic multimeter may not show the correct activity; an oscilloscope or a scan tool with bidirectional control is often required.
- After any repair, the hydrogen system may need a leak test and a relearn procedure before the valve will operate normally, and skipping this step can cause the code to reset even when the electrical fault is fixed.

Can I keep driving with U3551?

Do not continue driving with U3551 stored, because a hydrogen tank valve that fails to open or close properly can prevent the vehicle from starting or, in rare cases, create a safety hazard. Have the vehicle inspected by a qualified technician before attempting further operation.



Tools that help

- OBD-II scan tool with bidirectional control and live data capability
- Digital multimeter with resistance and voltage drop functions
- Oscilloscope for analyzing PWM signals
- Factory service information for connector pinouts and circuit specifications
- Basic hand tools for connector and harness inspection

Reading U3551

U Network: communication between the vehicle's control modules.

3 Generic (SAE) code: it means the same thing on every OBD-II vehicle.

5 Network communication.

51 The exact fault within that area.

Often seen with

P0A0D High Voltage System Interlock Circuit A High · **P0A0E** High Voltage System Interlock Circuit A Intermittent · **P0A1F** Battery Energy Control Module A Performance · **U3550** Hydrogen Tank A Valve Control Circuit · **U3552** Hydrogen Tank A Valve Performance

See it working

Watch the animated explainer **Four-Stroke Engine Cutaway: Intake to Exhaust** on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/u3551/>

